ST 8310
R 8771

Site Characterization Report

Inner City Oil
3814 E 31ST Street
Kansas City, MO
ST8310, R#8771, Claim 62330

Prepared for:

Zill LLC
3814 E 31St Street
Kansas City, MO 65128

January 8, 2014

Prepared by:

APEX
ENVIROTECH, INC.

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MO Dept of Natural Resources

EXECUTIVE SUMMARY

Three underground storage tanks (USTs) were closed by removal at the site in September 2006. The USTs consisted of two (2) 10,000-gallon gasoline and one (1) 4,000-gallon diesel tanks. New tanks were installed in the same tank pit; those are the same tanks located at the site currently. No groundwater was encountered during the closure activities.

Based upon analytical results of the closure sampling, a release was identified at the site and the Missouri Department of Natural Resources (MDNR) assigned R# 8771 to the release. The MDNR requested a work plan for site characterization in a letter dated February 16, 2007.

On December 2 and 3, 2013, Apex Envirotech, Inc (Apex) conducted site characterization activities at the site to delineate soil impact identified during the 2006 closure activities.

Apex drilled nine (9) soil borings (MW-1 through MW-9) and converted five (5) of the borings into monitoring wells (MW-1, MW-3, MW-4, MW-7 and MW-9). The remaining borings were dry, so they were not converted to monitoring wells.

Soil samples were analyzed for BTEX, Oxygenates, TPH-GRO, TPH-DRO and TPH-ORO. Six (6) of the samples were also analyzed for PAHs. All soil samples, except those from MW-5 and MW-8, contained detectable concentrations of COCs. Samples MW-1 13-14', MW-6 7.5-8', MW-7 9-10', MW-7 13-15' and MW-9 11-12' contained concentrations of COCs above the applicable delineation criteria. Samples MW-1 13-14' and MW-7 9-10' and MW-7 13-14' contained concentrations of COCs above the Risk Based Target Levels (RBTLs).

Apex was onsite on December 13, 2013 to gauge and sample the monitoring wells. Wells MW-7 and MW-9 contained small amounts of free product (0.01' and 0.02', respectively) and were not sampled. Samples were collected from MW-1, MW-3 and MW-4. The samples were analyzed for BTEX, Oxygenates and TPH-GRO. The sample from MW-4 was also analyzed for TPH-DRO and TPH-ORO. Insufficient water was present in MW-1 and MW-3 to allow collection of a sample for TPH-DRO/TPH-ORO analysis.

MW-1 contained benzene and TPH-GRO at concentrations above the delineation criteria and benzene at a concentration above the RBTLs. MW-3 and MW-4 contained detectable concentrations of COCs; however, none of the concentrations exceeded the delineation criteria.

Based on the results of the initial site characterization at the site, additional site characterization is needed onsite and offsite to the west for delineation of soil and groundwater impact. In addition, small amounts of free product were present in MW-7 and MW-9, Apex will conduct monthly free product checks.

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1.0 Introduction

1.1 Authorization, Purpose and Scope of Work

Apex requested a scope of work to include nine (9) soil borings converted to 2-inch diameter groundwater monitoring wells, in a work plan dated August 19, 2013 to delineate petroleum impact identified during the closure of USTs in 2006. Costs were approved by the PSTIF in a letter dated October 28, 2013.

The evaluation of the Site was conducted utilizing guidance as set forth in the Missouri Risk Based Guidance documents.

The scope of work was comprised of the following tasks:

- Coordination of events, utility location, and notification of concerned parties;
- Advancement of nine (9) subsurface borings (MW-1 through MW-9);
- Field screening of soil samples utilizing a photoionization detector (PID);
- Installation of monitoring well materials (MW-1 through MW-9);
- Collection and submittal of soil and water samples;
- Analysis of soil samples for BTEX, oxygenates, TPH-GRO, TPH-DRO, TPH-ORO and PAHs;
- Analysis of groundwater samples from the new wells for BTEX, oxygenates, TPH-GRO, TPH-DRO, TPH-ORO and PAHs;
- Collection of soil for geotechnical analysis;
- Analysis of geotechnical samples for Natural Moisture Content, Dry Bulk Density, Hydrometer Analysis, Specific Gravity and Walkley Black Method for organic matter;
- Preparation of a report detailing the results of the investigation.

2.0 Site Background

2.1 Site Location

The site is located at the intersection of E 31st Street and Mersington Avenue in Kansas City, Missouri. North of the site is residential. East of the site lies Mersington Avenue with an active fueling station beyond. South of the site lies E 31st Street with a Park N Ride parking lot and residential beyond. West of the site is an auto repair business.

The site consists of an active service station with a 12,000-gallon gasoline UST and a 12,000-gallon split compartment tank with 8,000-gallons of gasoline and 4,000-gallons of diesel.

2.2 Site History

Three USTs were removed from the property in 2006 and replaced with two new USTs. The older USTs consisted of two 10,000-gallon gasoline tanks and one 4,000-gallon diesel tank. The UST closure report documented petroleum impacted soil above DTLs.

2.3 Geology

Surface topography across the site is generally towards the north. Regional drainage is east towards the Blue River.

Unconsolidated surficial materials in the site area generally consist of silty clay loam and silty clay loam fill material that contains pieces of concrete, bricks, glass, and other manmade material. The thickness of the unconsolidated surface materials at the site are approximately 8' to 15'.

Geotechnical samples were collected from 5-7.5' bgs and 7.5-10' bgs at the site. However, there was not enough soil in the 5-7.5' sample for geotechnical analysis to be conducted. The geotechnical analysis on the 7.5-10' sample indicates that the soil at this depth is clay. However, the more conservative Soil Type 2 RBTLs have been utilized for the site.

Geology in the site area consists of the upper Pennsylvanian Age interbedded limestone and shale of the Kansas City Group.

3.0 Site Conceptual Model

3.1 Current Land Use

The site is currently an active UST facility. The north, northwest and northeast adjacent properties are currently residential. The western adjacent property is currently utilized as an auto repair facility, with a commercial property located farther to the west. Mersington Avenue (2 lane) lies immediately to the east of the site and an active UST facility lies farther to the east. East 31st Street (4 lane) lies immediately to the south of the site. There is a Park N Ride public parking lot located on the south side of East 31st Street and residential properties lie south of the park-n-ride parking lot. The nearest residence to the south lies approximately 200 feet from the site.

Based on the current land use, the delineation criteria for the site is non-residential to the west, east and south and residential to the north.

3.2 Future Land Use

As the site is an active UST facility, the anticipated future usage of the site remains non-residential. It is anticipated that the northern properties will remain residential in the future. As the eastern property is also an active UST facility, the future usage of that property is also non-residential. As East 31st Street is a major 4-lane road, it is anticipated that the future usage of the western adjacent property and the southern park-n-ride parking lot will remain non-residential.

3.3 Evaluation of Groundwater Use

The site and surrounding metropolitan area are supplied with public water by the City of Kansas City Missouri, KC Water Services from wells and surface water intakes located 6.5 miles to the northwest of the site. See Appendix C for Public Drinking Water System maps obtained from the CARES website.

The City of Kansas City Missouri does not allow private wells to be installed within the city limits.

A search of the MEGA and WIMS databases shows that there are no drinking water wells within 1-mile of the site area. There are 24 certified wells shown on the MEGA map within 1-mile of the site; however, they are all monitoring wells or registered soil borings. In addition, a search in WIMS of the well logs identified on the MEGA map (located outside of the 1-mile radius) indicates those wells are mostly oil & gas exploration wells. See Appendix C for a copy of the MEGA map.

As there are no private or public domestic use wells located within at least 1-mile of the site area, the current domestic use pathway is considered not complete.

Due to the easy access to city water, city regulations against installing private wells and no history of water wells in the site area, it is not anticipated that a domestic use well would ever be installed in the site area. In addition, domestic use wells cannot be installed within 300 feet of a UST. Therefore, the future domestic use pathway is also considered not complete.

3.4 Onsite Pathways

The onsite receptors include the current c-store building, future hypothetical building and current and future construction workers.

The complete pathways for the site are:

- Current non-residential indoor inhalation of vapor emissions from soil and groundwater;
- Future non-residential indoor inhalation of vapor emissions from soil and groundwater;
- Current and future construction worker for ingestion, inhalation and dermal contact from soil; and dermal contact and outdoor inhalation of vapor emissions from groundwater.

A Tier 1 Risk Assessment was not completed at this time as delineation has not been achieved.

3.5 Offsite Pathways

Offsite contamination has not been documented at this time; therefore, there are no complete offsite pathways.

Once delineation has been achieved, Apex will evaluate the offsite pathways if offsite contamination is found.

3.6 Ecological Receptors

Apex has completed an Ecological Risk Assessment Screening Checklist for Potential Receptors and Habitat Level 1, Checklist A and performed a Heritage Review on the Missouri Department of Conservation website. See Appendix D for the Ecological Checklist and Heritage Review.

4.0 Site Characterization Activities

4.1 Borehole Advancement

Apex utilized a Geoprobe™ hydraulic-driven drill rig to advance nine (9) soil borings (MW-1 through MW-9) at the site. The Geoprobe™ uses direct-push technology to penetrate into the subsurface. A 2-inch macro-core tube with a soil-cutting shoe and a clear acetate liner is attached to 5-foot long steel drive rods. A hydraulic hammer applies the force and a hydraulic cylinder advances the macro-core through the soil. The soil is collected inside the clear acetate liner as a continuous core representative of the soil strata. The liner is removed with each 5-foot advancement and a new, clean liner is installed for the next 5-foot run. This technology eliminates drill cuttings that need to be disposed as in typical hollow stem auger rig applications. This technology also is usually quicker, less obstructive and can obtain a more representative sample.

Figure 3 shows the locations of the nine (9) borings. Boring logs are presented in Appendix A. Missouri One-Call and a private utility locator were notified to locate all utilities in the area. On-site utilities were identified to Apex prior to site activities. All borings were advanced by Razek Environmental of Louisburg, Kansas, permitted in the State of Missouri and registered with the MDNR, Wellhead Protection Section.

4.2 Decontamination Procedures, QA/QC

All sampling, analysis and decontamination procedures were performed in general accordance with EPA and RCRA approved methodology.

4.3 Soil Sampling

The soil was characterized by a geologist according to the Unified Soil Classification System including noting obvious signs of petroleum contamination, such as staining and odor and relative moisture content. PID readings were collected at approximately 1-foot intervals from all soil borings. See Appendix A for copies of the Soil Boring Logs.

On December 2 and December 3, 2013, soil samples were collected from nine (9) boreholes. Samples were collected from the surficial, vadose, and saturated zones. Soil samples were placed into an iced cooler immediately after labeling. The samples were sent to Pace Analytical, in Lenexa, Kansas, an approved laboratory, under chain of custody. See Tables 1a and 1b for analytical results.

4.4 Monitoring Well Installation

After the total depth of the borehole was reached by probing, the boreholes were left open to determine if they would make water.

Five (5) boreholes (MW-1, MW-3, MW-4, MW-7 and MW-9) were converted to a permanent 2-inch diameter monitoring well.. The remaining 4 boreholes were dry and were not converted to monitoring wells. However, the nomenclature for the boreholes remains as MW-2, MW-5, MW-6 and MW-8 as that is how the soil samples were labeled.

The well included 0.010 inch slotted, schedule 40 PVC screen with a flush threaded bottom cap and solid, schedule 40 PVC flush threaded riser pipe. Environmental silica sand graded to 20/40 mesh was placed around the screened interval as a filter pack from the bottom of the borehole to one (1) foot above the screened interval.

A bentonite seal was installed above the filter pack to the surface. The well was completed at the surface with a manhole cover. Razek Environmental of Louisburg, Kansas, permitted in the State of Missouri, installed all monitoring wells and certification forms were filed with the MDNR, Wellhead Protection Section. Well construction details are included in the boring logs in Appendix A, along with copies of the Well Registration Forms.

4.5 Groundwater Level Measurements

The monitoring wells were gauged on December 13, 2013 and a small amount of free product was found in MW-7 and MW-9 (0.01' and 0.02', respectively). The free product was bailed out and placed in an onsite drum with the purge water. Socks were not placed in the wells so that an accurate gauging of the free product levels can be conducted at a later date.

The monitoring wells have not yet been surveyed, so groundwater flow direction could not be determined at this time.

4.6 Groundwater Sampling

On December 11, 2013, the wells were developed to allow for sorting of the filter pack, removal of groundwater adversely influenced by the probing and well installation, and to re-establish migratory pathways in the borehole wall. The wells were developed by removing three (3) well volumes of water.

Apex returned to the Site on December 13, 2013, to purge and sample the wells. Samples were collected from MW-1, MW-3 and MW-4. Three (3) well volumes of water were removed from the wells before a samples were collected. All samples were collected in accordance to Apex's SOP and transferred to new, clean, and pretreated VOA vials. Immediately after the samples were labeled, they were placed into an iced cooler. The coolers were sent to Pace Analytical, in Lenexa, Kansas, an approved laboratory, under chain of custody. The samples were analyzed for BTEX, Oxygenates and TPH-GRO. The sample from MW-4 was also analyzed for TPH-DRO and TPH-ORO. Insufficient

water was present in MW-1 and MW-3 to allow collection of a sample for TPH-DRO/TPH-ORO analysis. See Table 3 for analytical results.

5.0 Laboratory Analysis and Results

5.1 Laboratory and Analysis Requested

Soil and groundwater samples were collected as described above and sent to Pace Analytical, in Lenexa, Kansas, for analysis. All samples were analyzed for BTEX, Oxygenates, TPH-GRO, TPH-DRO/TPH-ORO and PAHs.

5.2 Soil Sample Results

Soil samples were collected from each of the boreholes. The sample location was determined based upon MDNR risk assessment requirements and visual/field screening observations. Soil analytical results are displayed in Tables 1a and 1b. Actual lab results and chain of custody can be found in Appendix B.

5.3 Groundwater Sample Results

Groundwater samples were collected from MW-1, MW-3 and MW-4. Groundwater analytical results are shown in Table 3 and the lab results and chain of custody forms can be found in Appendix B.

6.0 Conclusions

On December 2 and 3, 2013, Apex Envirotech, Inc (Apex) conducted site characterization activities at the site to delineate soil impact identified during the 2006 closure activities.

Apex drilled nine (9) soil borings (MW-1 through MW-9) and converted five (5) of the borings into monitoring wells (MW-1, MW-3, MW-4, MW-7 and MW-9). The remaining borings were dry, so they were not converted to monitoring wells.

Soil samples were analyzed for BTEX, Oxygenates, TPH-GRO, TPH-DRO and TPH-ORO. Six (6) of the samples were also analyzed for PAHs. All soil samples, except those from MW-5 and MW-8, contained detectable concentrations of COCs. Samples MW-1 13-14', MW-6 7.5-8', MW-7 9-10', MW-7 13-15' and MW-9 11-12' contained concentrations of COCs above the applicable delineation criteria. Samples MW-1 13-14 and MW-7 9-10 and MW-7 13-15' contained concentrations of COCs above the Risk Based Target Levels (RBTLs).

Apex was onsite on December 13, 2013 to gauge and sample the monitoring wells. Wells MW-7 and MW-9 contained small amounts of free product (0.01' and 0.02', respectively) and were not sampled. Samples were collected from MW-1, MW-3 and MW-4. The samples were analyzed for BTEX, Oxygenates and TPH-GRO. The sample from MW-4 was also analyzed for TPH-DRO and TPH-ORO. Insufficient water was present in MW-1 and MW-3 to allow collection of a sample for TPH-DRO/TPH-ORO analysis.

MW-1 contained benzene and TPH-GRO at concentrations above the delineation criteria and benzene at a concentration above the RBTLs. MW-3 and MW-4 contained detectable concentrations of COCs; however, none of the concentrations exceeded the delineation criteria.

Based on the results of the initial site characterization at the site, additional site characterization is needed onsite and offsite to the west for delineation of soil and groundwater impact. In addition, small amounts of free product were present in MW-7 and MW-9, Apex will conduct monthly free product checks.

7.0 Recommendations

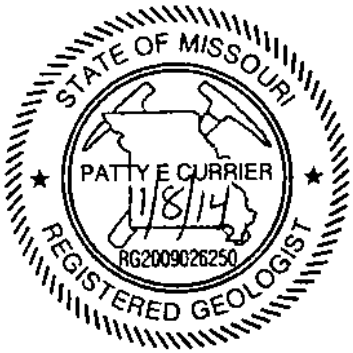
Apex recommends that additional site characterization be conducted to delineate the petroleum impact in the soil and groundwater at the site. A work plan will be submitted under separate cover.

We appreciate the opportunity to provide Zill LLC with geologic, engineering and environmental consulting services. If you have any questions or comments, please call me at 816-807-2856.

Sincerely,
APEX ENVIROTECH, INC.

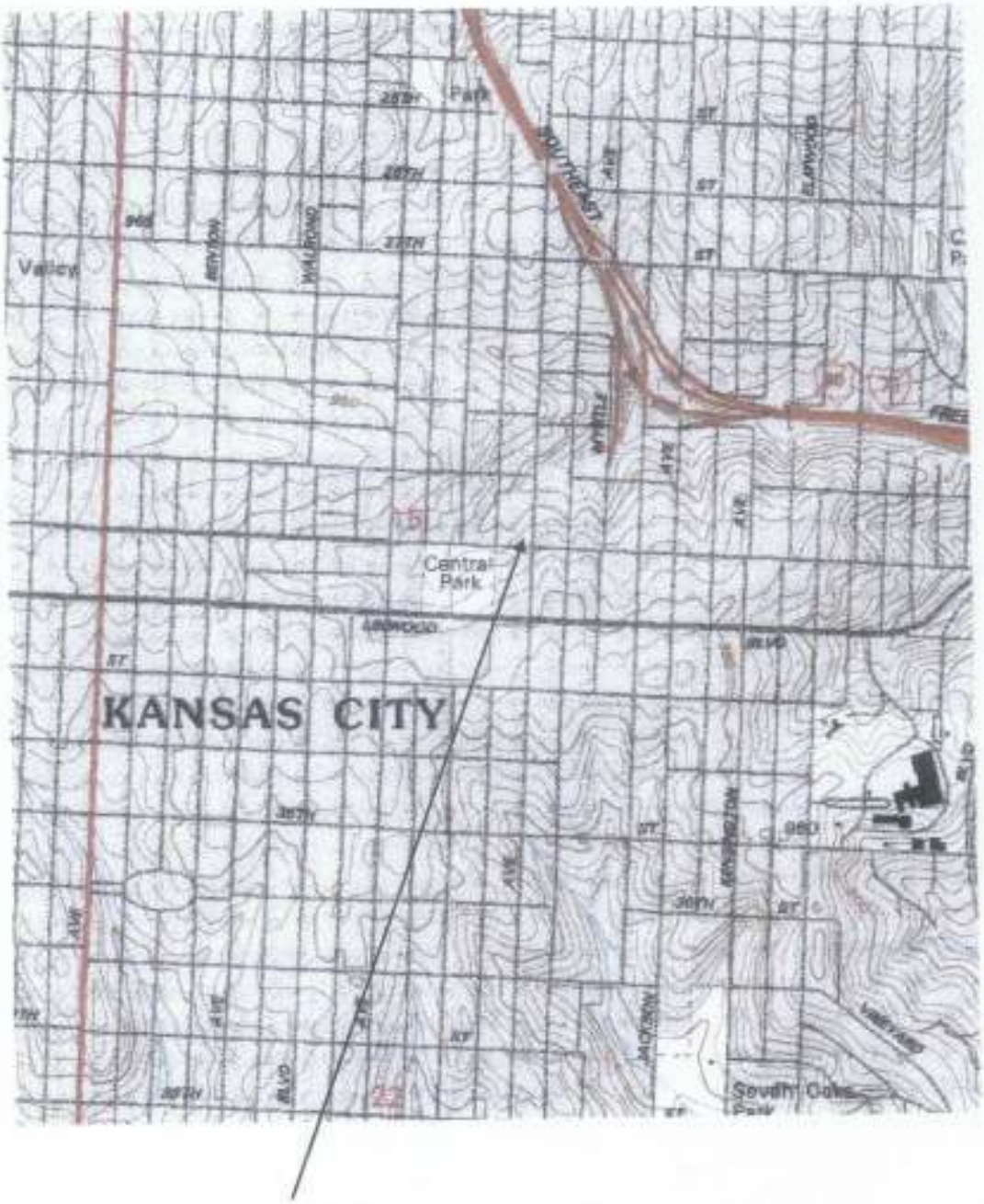
Patty Currier

Patty Currier, R.G.
Project Geologist



CC: MDNR
PSTIF

FIGURES



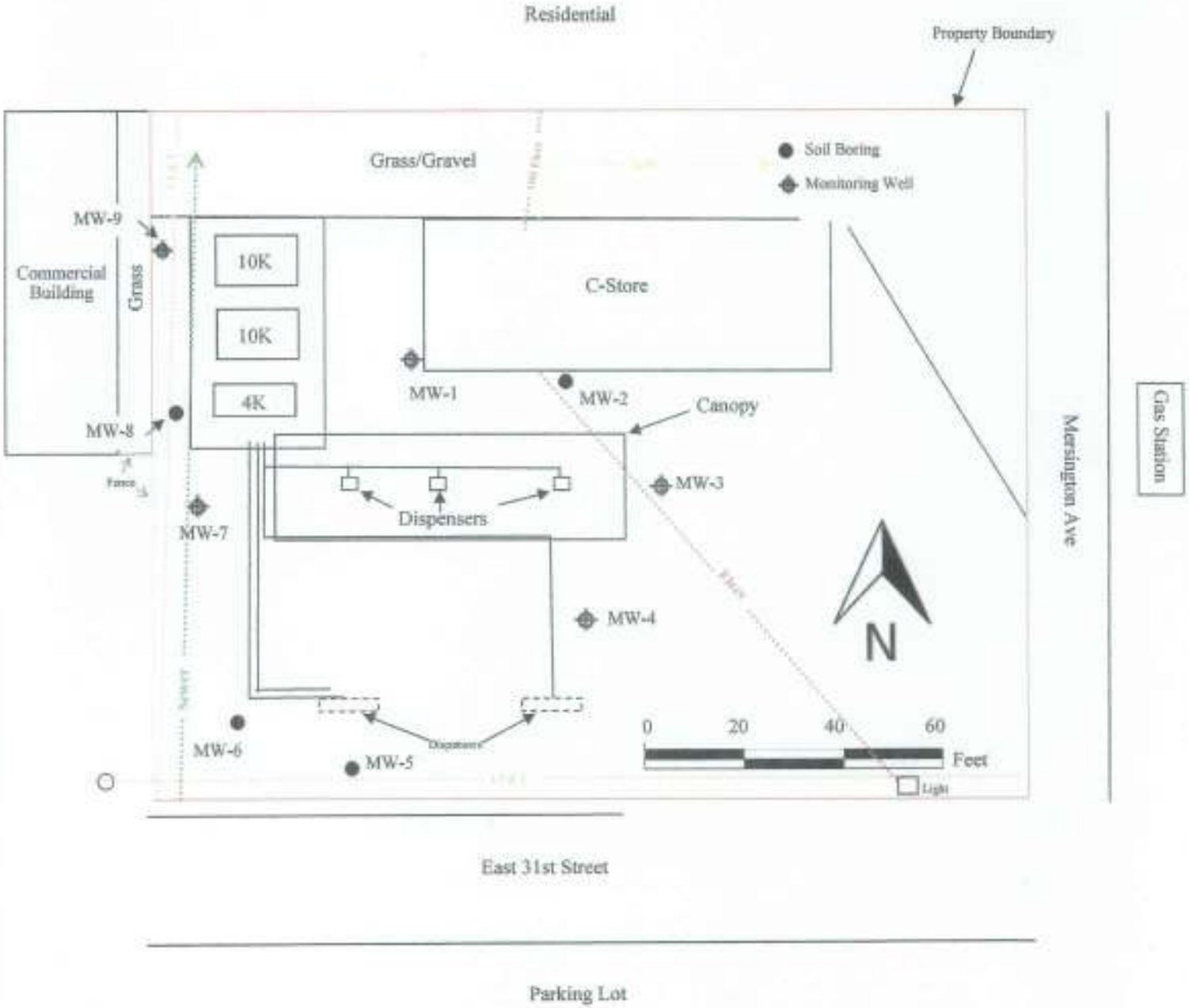
Approximate Site Location

APEX ENVIROTECH, INC.	**Topographic Map** Inner City Oil 3814 E 31st Street Kansas City, MO ST8310, R8771, Claim 62330	Figure 1 12/13 Apex Project Number: ZIL57.001

Site Location

N

APEX ENVIROTECH, INC.	**Aerial Photograph of Site** Inner City Oil 3814 E 31st Street Kansas City, MO ST00008310, Claim 62330	Figure 2 12/13 Apex Project Number: ZIL57



APEX ENVIROTECH, INC.	**Site Map** Inner City Oil 3814 E 31St ST Kansas City, MO ST00008310, Claim 62330	Figure 3 12/13 Apex Project Number: ZIL57.001

TABLES

Table 2: Groundwater Elevations

Well ID	Date	Well Elevation (TOC)	Thickness of Product (Feet)	Depth to Groundwater (TOC)	Well Depth (TOC)
MW-1	12/13/13	NM	NA	13.25	13.94
MW-3	12/13/13	NM	NA	13.30	13.86
MW-4	12/13/13	NM	NA	8.78	12.10
MW-7	12/13/13	NM	0.01	11.23	14.28
MW-9	12/13/13	NM	0.02	12.43	13.11

TOC = Top of Casing NA = Not Applicable NM = Not Measured

Table 3: Groundwater Analytical Results

Well #	Date	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Total Xylenes (ppm)	Naphthalene (ppm)	MTBE (ppm)	TPH-GRO (ppm)	TPH-DRO (ppm)	TPH-ORO (ppm)
Delineation Criteria - North		0.621	41.5	102	81.4	5.4	470	20.7	117	NA
Delineation Criteria - South, West & East		3.25	333	820	654	43.4	2,460	167	939	NA
MRBCA Tier 1 Soil Type 2		5.65	573	1,400	1,130	81.1	4,590	278	1,690	NA
MW-1	12/13/13	5.02	0.532	0.898	2.69	0.119	0.0053	28.9	NA	NA
MW-3	12/13/13	0.228	0.0103	0.0305	<0.015	0.0793	0.264	<2.5	NA	NA
MW-4	12/13/13	2.13	0.0117	0.195	0.0096	0.2270	0.505	<25	9.9	<1.0
MW-7	12/13/13	FP	FP	FP	FP	FP	FP	FP	FP	FP
MW-9	12/13/13	FP	FP	FP	FP	FP	FP	FP	FP	FP

Highlighted = Above Delineation Criteria

BOLD = Above Tier 1 MRBCA value

Delineation Criteria: Tier 1 values from Table 7-1(a) Residential Type 1 Soils Indoor Inhalation (N) and Table 7-1(b) Non-Residential Type 1 Soils Indoor Inhalation (S,W&E)

RBTLs from Table 7-2(a) Residential Type 2 Soils Indoor Inhalation

Values are parts per million - ppm

TOC = below top of casing

NA = Not Applicable

APPENDIX A

Soil Boring Logs and Well Certificates

APEX ENVIROTECH, INC.

LOG OF BORING

MW-1

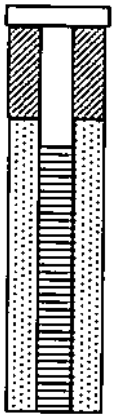
Inner City Oil
3814 E 31St Street
Kansas City, MO
ST8310, Claim 62330

Date Completed	: 12/2/2013	Bore Hole Dia. (in)	: 8.25"
Geologist	: Patty Currier	Depth Drilled (ft)	: 14'
Drilling Company	: Razek Environmental	Ini. Depth to Water (ft)	:
Driller	: Tony Poulter	Stc. Depth to Water (ft)	: 13.25'
Method	: Continuous Core		

Sample Legend: Sample location; Sleeve

Groundwater: Static; Initial

Depth in Feet	DESCRIPTION	USCS	GRAPHIC	Sample	% Recovery	PID
0	0-1' Concrete					0.0
	1-2' Silty Clay, soft, moist to wet, no odor			1-3' 1352	75%	0.0
	2-13' Silty Clay, medium stiffness, moist, no odor					0.0
5						0.0
						0.0
					100%	0.0
						0.0
10						0.0
				12-13' 1405	100%	0.0
						41.4
	13-14' Weathered Shale, stiff, moist, dry, petroleum odor					109
15				13-14' 1410		
	Weathered Limestone in the shoe					
	Refusal on rock at 14' bgs					
20						
25						
30						
35						
40						



Well Construction Information

WELL CONSTRUCTION

WELL CASING Material	: PVC
WELL SCREEN Material	: Slotted PVC
FILTER PACK Material	: Sand
ANNULUS SEAL Material	: Bentonite
GROUT Material	: Surface Concrete

Riser
Screen
Sand
Bentonite

10-08-2008 C:\Documents and Settings\dalston\Desktop\Drilling\UNKNOWN MISSOURI JOB (MELISSA)\Soil Borings\mwBASE.bor

APEX ENVIROTECH, INC.

LOG OF BORING

MW-2

Inner City Oil
3814 E 31St Street
Kansas City, MO
ST8310, Claim 62330

Date Completed	: 12/3/2013	Bore Hole Dia. (in)	: 8.25"
Geologist	: Patty Currier	Depth Drilled (ft)	: 15'
Drilling Company	: Razek Environmental	Ini. Depth to Water (ft)	:
Driller	: Tony Poulter	Stc. Depth to Water (ft)	: NA
Method	: Continuous Core		

Sample Legend: Sample location; Sleeve

Groundwater: Static; Initial

Depth in Feet	DESCRIPTION	USCS	GRAPHIC	Sample	% Recovery	PID	Well Construction Information
0	0-1' Concrete					0.0	No Well Installed
	1-4' Greenish/gray silty clay, med stiffness, softer at 3', moist to very moist, petroleum odor			1-3' 0944	75%	0.0	
						0.0	
5	4-9.5' Grey/green mottled, silty clay, hard, dry to sl moist					0.0	
						0.0	
					100%	0.0	
						0.0	
10	9.5-13' Reddish brown silty clay, very hard, sl moist to moist, sl petro odor at 10' bgs			9-10' 0955		1.4	
						0.0	
					100%	0.0	
	13-14.5' Orange/brown silty clay, very hard, most to very moist, plastic, no odor					1.6	
15	14.5-15' Weathered LS and chert gravel in greenish shale, v hard, dry			14-14.5' 0956		6.6	
	Refusal on rock at 15' bgs						
20							
25							
30							
35							
40							

WELL CONSTRUCTION

WELL CASING Material	:
WELL SCREEN Material	:
FILTER PACK Material	:
ANNULUS SEAL Material	:
GROUT Material	:

Riser
Screen
Sand
Bentonite

10-08-2009 C:\Documents and Settings\dalston\Desktop\Drilling\UNKNOWN MISSOURI JOB (MELISSA)\Soil Borings.mw\BASE.bor

APEX ENVIROTECH, INC.

LOG OF BORING

MW-3

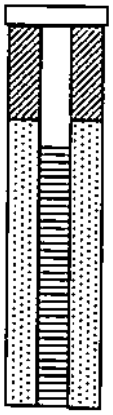
Inner City Oil
3814 E 31St Street
Kansas City, MO
ST8310, Claim 62330

Date Completed	: 12/3/2013	Bore Hole Dia. (in)	: 8.25"
Geologist	: Patty Currier	Depth Drilled (ft)	: 15.5'
Drilling Company	: Razek Environmental	Ini. Depth to Water (ft)	:
Driller	: Tony Poulter	Stc. Depth to Water (ft)	: 13.30'
Method	: Continuous Core		

Sample Legend: Sample location; Sleeve

Groundwater: Static; Initial

Depth in Feet	DESCRIPTION	USCS	GRAPHIC	Sample	% Recovery	PID
0	0-1' Concrete					3.0
	1-6.5' Greenish silty clay, firm, moist, stained black, degraded petroleum odor			1-3' 0920	75%	3.6
						2.1
5						6.2
						2.2
						9.2
						16.6
	6.5-9' Black/green mottled silty clay, med to soft, moist, degraded petroleum odor				100%	216.6
				8-9' 0929		16.6
10	9-14' Brown silty clay, firm, moist, slight odor					103
				13.5-14' 0935	100%	5.6
						135
						10
	14-14.5' Silty clay, soft, moist, stained, petroleum odor					351
15				15-15.5' 0937		35
	14.5-15' Weathered limestone, dry					
	15-15.5' Weathered shale, dry, fissile, v hard					
	Refusal at 15.5' on rock					
20						
25						
30						
35						
40						



Well Construction Information

WELL CONSTRUCTION

WELL CASING Material	: PVC
WELL SCREEN Material	: Slotted PVC
FILTER PACK Material	: Sand
ANNULUS SEAL Material	: Bentonite
GROUT Material	: Surface Concrete

Riser
Screen
Sand
Bentonite

10-08-2009 C:\Documents and Settings\dalston\Desktop\Drilling\UNKNOWN MISSOURI JOB (MELISSA)\Soil Borings\mw\BASE.bor

APEX ENVIROTECH, INC.

LOG OF BORING

MW-4

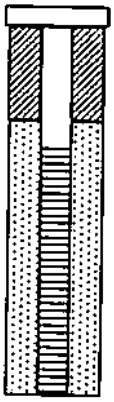
Inner City Oil
3814 E 31St Street
Kansas City, MO
ST8310, Claim 62330

Date Completed	: 12/2/2013	Bore Hole Dia. (in)	: 8.25"
Geologist	: Patty Currier	Depth Drilled (ft)	: 13'
Drilling Company	: Razek Environmental	Ini. Depth to Water (ft)	:
Driller	: Tony Poulter	Stc. Depth to Water (ft)	: 8.78
Method	: Continuous Core		

Sample Legend: Sample location; Sleeve

Groundwater: Static; Initial

Depth in Feet	DESCRIPTION	USCS	GRAPHIC	Sample	% Recovery	PID
0	0-1' Concrete					0.0
	1-7' Greenish silty clay, med stiffness, moist, slight petroleum odor				75%	0.0
						0.0
5						0.0
				6-7' 1540		0.0
	7-12.5' Brown silty clay, firm, moist, slight odor at 10-13'				50%	132
						0.0
						0.0
10						24.5
				12-13' 1545	50%	26.2
	12.5-13' Weathered limestone, moist to wet, petro odor and staining					546
15	Refusal at 13' bgs on rock					
20						
25						
30						
35						
40						



Well Construction Information

WELL CONSTRUCTION

WELL CASING Material	: PVC
WELL SCREEN Material	: Slotted PVC
FILTER PACK Material	: Sand
ANNULUS SEAL Material	: Bentonite
GROUT Material	: Surface Concrete

Riser
Screen
Sand
Bentonite

10-08-2009 C:\Documents and Settings\dalston\Desktop\Drilling\UNKNOWN MISSOURI JOB (MELISSA)\Soil Borings\mwBASE.bor

APEX ENVIROTECH, INC.

LOG OF BORING

MW-5

Inner City Oil
3814 E 31St Street
Kansas City, MO
ST8310, Claim 62330

Date Completed	: 12/2/2013	Bore Hole Dia. (in)	: 8.25"
Geologist	: Patty Currier	Depth Drilled (ft)	: 10.8'
Drilling Company	: Razek Environmental	Ini. Depth to Water (ft)	:
Driller	: Tony Poulter	Stc. Depth to Water (ft)	: NA
Method	: Continuous Core		

Sample Legend: Sample location; Sleeve

Groundwater: Static; Initial

Depth In Feet	DESCRIPTION	USCS	GRAPHIC	Sample	% Recovery	PID
0	0-6" Concrete					0.0
	6" to 4' Fill (clay, gravel), med stiff, moist, no odor				50%	0.0
						0.0
5	4-8.5' Lt brown silty clay, stiff, moist, no odor					0.0
						0.0
					100%	0.0
						0.0
10	8.5-9.5' Greenish brown silty clay, stiff, sl moist to most, no odor			8.5-9.5' 1049		20.6
	9.5-10.8' Weathered limestone with some chert, dry, v slight petroleum odor					
	Refusal at 10.8' on weathered rock					
15						
20						
25						
30						
35						
40						

No Well Installed

Well Construction Information

WELL CONSTRUCTION

WELL CASING Material	:
WELL SCREEN Material	:
FILTER PACK Material	:
ANNULUS SEAL Material	:
GROUT Material	:

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APEX ENVIROTECH, INC.

LOG OF BORING

MW-6

Inner City Oil
3814 E 31St Street
Kansas City, MO
ST8310, Claim 62330

Date Completed	: 12/2/2013	Bore Hole Dia. (in)	: 8.25"
Geologist	: Patty Currier	Depth Drilled (ft)	: 8'
Drilling Company	: Razek Environmental	Ini. Depth to Water (ft)	:
Driller	: Tony Poulter	Stc. Depth to Water (ft)	: NA
Method	: Continuous Core		

Sample Legend: Sample location; Sleeve

Groundwater: Static; Initial

Depth in Feet	DESCRIPTION	USCS	GRAPHIC	Sample	% Recovery	PID
0	0-6" Concrete					
	6" to 7.5' Brown silty clay, med stiff, slight odor, slightly moist				10%	0.2
5				6.5-7.5' 1054		8.5 2.7 504
	7.5-8' Dark green shale, wet, strong gasoline odor			7.5-8' 1055	100%	
10	8' Weathered LS, dry					
	Refusal at 8' on weathered rock					
15						
20						
25						
30						
35						
40						

No Well Installed

Well Construction Information

WELL CONSTRUCTION

WELL CASING Material	:
WELL SCREEN Material	:
FILTER PACK Material	:
ANNULUS SEAL Material	:
GROUT Material	:

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APEX ENVIROTECH, INC.

LOG OF BORING

MW-7

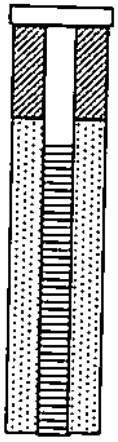
Inner City Oil
3814 E 31St Street
Kansas City, MO
ST8310, Claim 62330

Date Completed	: 12/2/2013	Bore Hole Dia. (in)	: 8.25"
Geologist	: Patty Currier	Depth Drilled (ft)	: 15'
Drilling Company	: Razek Environmental	Ini. Depth to Water (ft)	: 13'
Driller	: Tony Poulter	Stc. Depth to Water (ft)	: 11.23'
Method	: Continuous Core		

Sample Legend: Sample location; Sleeve

Groundwater: Static; Initial

Depth in Feet	DESCRIPTION	USCS	GRAPHIC	Sample	% Recovery	PID
0	0-6" Asphalt			0-3' 1110		0.0
	6" to 10' Brown silty clay grading into greenish silty clay, sl moist to moist, stiff				100%	0.0
						0.0
5						0.0
						0.0
					100%	0.0
						0.0
10	10-13' Brown/green silty clay, soft, moist to wet, strong petro odor			9-10' 1116		129
						1076
					100%	1555
	13-15' Silty clay & gravel, stained black, v strong petro odor, wet to saturated			13-15' 1120		
15	15' Weathered LS, dry					1676
	Refusal at 15' on weathered rock					
20						
25						
30						
35						
40						



Well Construction Information

WELL CONSTRUCTION

WELL CASING Material	: PVC
WELL SCREEN Material	: Slotted PVC
FILTER PACK Material	: Sand
ANNULUS SEAL Material	: Bentonite
GROUT Material	: Surface Concrete

Riser
Screen
Sand
Bentonite

10-08-2009 C:\Documents and Settings\dalston\Desktop\Drilling\UNKNOWN MISSOURI JOB (MELISSA)\Soil Borings\mwBASE.bor

APEX ENVIROTECH, INC.

LOG OF BORING

MW-8

Inner City Oil
3814 E 31St Street
Kansas City, MO
ST8310, Claim 62330

Date Completed	: 12/2/2013	Bore Hole Dia. (in)	: 8.25"
Geologist	: Patty Currier	Depth Drilled (ft)	: 10'
Drilling Company	: Razek Environmental	Ini. Depth to Water (ft)	:
Driller	: Tony Poulter	Stc. Depth to Water (ft)	: NA
Method	: Continuous Core		

Sample Legend: Sample location; Sleeve

Groundwater: Static; Initial

Depth in Feet	DESCRIPTION	USCS	GRAPHIC	Sample	% Recovery	PID
0	0-1' Concrete					0.0
	1-5' Brown silty clay, med stiff, moist, no odor				75%	0.0
5				4-5' 1310		15
	5-8.5' Brown silty clay, hard, sl moist, no odor					0.0
					100%	0.0
	8.5-10' Weathered shale, v hard, fissile, dry, no odor			9-10' 1320		0.0
10	Refusal at 10' on weathered limestone					
15						
20						
25						
30						
35						
40						

No Well Installed

Well Construction Information

WELL CONSTRUCTION

WELL CASING Material	:
WELL SCREEN Material	:
FILTER PACK Material	:
ANNULUS SEAL Material	:
GROUT Material	:

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APEX ENVIROTECH, INC.

LOG OF BORING

MW-9

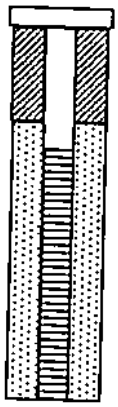
Inner City Oil
3814 E 31St Street
Kansas City, MO
ST8310, Claim 62330

Date Completed	: 12/2/2013	Bore Hole Dia. (in)	: 8.25"
Geologist	: Patty Currier	Depth Drilled (ft)	: 13.5'
Drilling Company	: Razek Environmental	Ini. Depth to Water (ft)	:
Driller	: Tony Poulter	Stc. Depth to Water (ft)	: 12.43'
Method	: Continuous Core		

Sample Legend: Sample location; Sleeve

Groundwater: Static; Initial

Depth in Feet	DESCRIPTION	USCS	GRAPHIC	Sample	% Recovery	PID
0	0-1' Concrete			1-3' 1327		0.0
	1-5' Lt reddish brown silty clay, med stiff, moist, no odor				100%	0.0
5	5-9' Reddish brown silty clay, stiff, sl moist, no odor					15
						0.0
					100%	0.0
						0.0
10	9-12' Greenish weathered shale, sl moist, v hard, sl odor					0.0
				11-12' 1338		6.5
	12-13.5' Weathered LS cobbles and gravel, 1" thick clay/silt at 12.5' with odor and staining, moist at 1" layer, rest was dry				100%	571 0.7
15	Refusal on rock at 13.5' bgs					
20						
25						
30						
35						
40						



Well Construction Information

WELL CONSTRUCTION

WELL CASING Material	: PVC
WELL SCREEN Material	: Slotted PVC
FILTER PACK Material	: Sand
ANNULUS SEAL Material	: Bentonite
GROUT Material	: Surface Concrete

Riser
Screen
Sand
Bentonite

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY PROGRAM

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED	
REFERENCE NO.		
C.R. NO.	CHECK NO.	
STATE WELL NUMBER	REVENUE NO.	
ENTERED Ph1 Ph2 Ph3	APPROVED BY	ROUTE

INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR
NOTE: THIS FORM IS NOT TO BE USED FOR NESTED WELLS

OWNER NAME	CONTACT NAME	VARIANCE GRANTED BY DNR
Zill Inc	Imtiaz Moknijia	

OWNER ADDRESS	CITY	STATE	ZIP CODE	NUMBER
3814 E 31st Street	Kansas City	MO	64128	None

SITE NAME	WELL NUMBER	COUNTY
Inner City Oil	MW-1	Jackson

SITE ADDRESS	CITY	STATIC WATER LEVEL
3816 East 31st Street	Kansas City	13.25'

SURFACE COMPLETION

TYPE
- ☐ ABOVE GROUND
- ☑ FLUSH MOUNT

LENGTH AND DIAMETER OF SURFACE COMPLETION
LENGTH 1 FT.
DIAMETER 8 IN.

DIAMETER AND DEPTH OF THE HOLE SURFACE COMPLETION WAS PLACED
DIAMETER 18 IN.
LENGTH 1.5 FT.

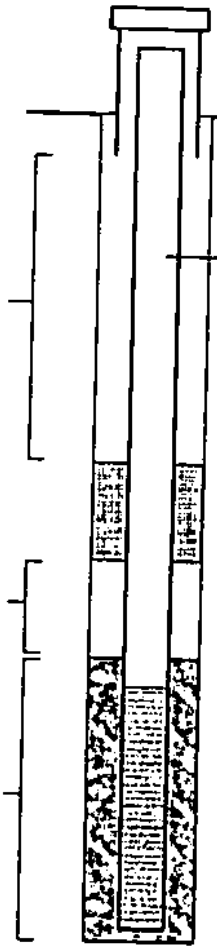
SURFACE COMPLETION GROUT
- ☑ CONCRETE
- ☐ OTHER _____

LOCATION OF WELL (D/M/S FORMAT ONLY)
LAT. 39 · 4 · 10.97 -
LONG. 94 · 32 · 17.80 -

SMALLEST ___ ¼ ___ ¼ ___ ¼ LARGEST
SECTION ___ TOWNSHIP ___ NORTH
RANGE ___ ☐ EAST ☐ WEST

MONITORING FOR: (CHECK ALL THAT APPLY)
- ☐ RADIONUCLIDES
- ☑ PETROLEUM PRODUCTS ONLY
- ☐ EXPLOSIVES
- ☐ METALS
- ☐ VOC
- ☐ SVOCS
- ☐ PESTICIDES/HERBICIDES

PROPOSED USE OF WELL
- ☐ GAS MIGRATION WELL
- ☑ OBSERVATION
- ☐ EXTRACTION WELL
- ☐ OPEN HOLE
- ☐ PIEZOMETERS
- ☐ INJECTION WELL
- ☐ DIRECT PUSH



☐ LOCKING CAP
☐ WEEP HOLE

ELEVATION 0 FT.

ANNULAR SEAL
LENGTH 2 FT.
- ☐ SLURRY
- ☑ CHIPS
- ☐ PELLETS
- ☐ GRANULAR
- ☐ CEMENT/SLURRY

IF CEMENT/BENTONITE MIX:
BAGS OF CEMENT USED ___
% OF BENTONITE USED ___
WATER USED/BAG 5 GAL.

SECONDARY FILTER PACK
LENGTH N/A FT.

DEPTH TO TOP OF PRIMARY FILTER PACK 3.5 FT.

LENGTH OF PRIMARY FILTER PACK 10.5 FT.

SURFACE COMPLETION
☑ STEEL ☐ ALUMINUM ☐ PLASTIC

RISER
RISER PIPE DIAMETER 2 IN.
RISER PIPE LENGTH 5 FT.
DIAMETER OF DRILL HOLE 8.25 IN.
WEIGHT OR SDR# 40

MATERIAL
☐ STEEL ☑ THERMOPLASTIC (PVC)
☐ OTHER _____

BENTONITE SEAL
LENGTH 2
☑ CHIPS ☐ PELLETS ☐ GRANULAR
☐ SLURRY
☐ SATURATED ZONE ☐ HYDRATED

SCREEN
SCREEN DIAMETER 2 IN.
SCREEN LENGTH 9. FT.
DIAMETER OF DRILL HOLE 8.25 IN.
DEPTH TO TOP 5 FT.

SCREEN MATERIAL
☐ STEEL ☑ THERMOPLASTIC (PVC)
☐ OTHER _____

DEPTH TO	DEPTH FROM	FORMATION DESCRIPTION
0'	1'	Concrete
1'	13'	Silty Clay
13'	14'	Weathered Shale
14'		Weathered LS
TOTAL DEPTH:		14

FOR CASED WELLS, SUBMIT ADDITIONAL AS BUILT DIAGRAMS SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE & SIZE OF ALL CASING, HOLE DIAMETER & GROUT USED.

SIGNATURE (PRIMARY CONTACTOR)	PERMIT NUMBER	DATE WELL DRILLING WAS COMPELTED
	004679M	12/02/2013

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH MISSOURI DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS.

☐ PUMP INSTALLED

SIGNATURE (WELL DRILLER)	PERMIT NUMBER	SIGNATURE (OF APPRENTICE)	APPRENTICE PERMIT NUMBER
	002241M		

MO 780-1415 (07-11)

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY PROGRAM

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED	
REFERENCE NO.		
C.R. NO.	CHECK NO.	
STATE WELL NUMBER	REVENUE NO.	
ENTERED Ph1 Ph2 Ph3	APPROVED BY	ROUTE

INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR

NOTE: THIS FORM IS NOT TO BE USED FOR NESTED WELLS

OWNER NAME	CONTACT NAME	VARIANCE GRANTED BY DNR
Zill, Inc	Imtiaz Moknijia	

OWNER ADDRESS	CITY	STATE	ZIP CODE	NUMBER
3814 E 31St Street	Kansas City	MO	64128	None

SITE NAME	WELL NUMBER	COUNTY
Inner City Oil	MW-3	Jackson

SITE ADDRESS	CITY	STATIC WATER LEVEL
3816 East 31st Street	Kansas City	13.30'

SURFACE COMPLETION

TYPE: ☐ ABOVE GROUND ☑ FLUSH MOUNT

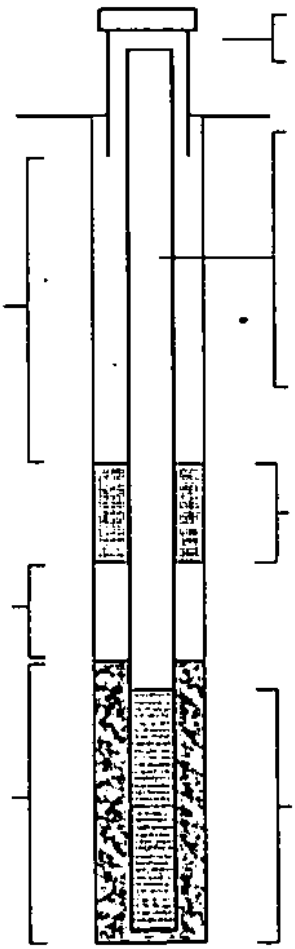
LENGTH AND DIAMETER OF SURFACE COMPLETION: LENGTH 1 FT. DIAMETER 8 IN.

DIAMETER AND DEPTH OF THE HOLE SURFACE COMPLETION WAS PLACED: DIAMETER 18 IN. LENGTH 1.5 FT.

SURFACE COMPLETION GROUT: ☑ CONCRETE ☐ OTHER _____

☐ LOCKING CAP
☐ WEEP HOLE

ELEVATION 0 FT.



SURFACE COMPLETION
☑ STEEL ☐ ALUMINUM ☐ PLASTIC

RISER
RISER PIPE DIAMETER 2 IN.
RISER PIPE LENGTH 5 FT.
DIAMETER OF DRILL HOLE 8.25 IN.
WEIGHT OR SDR# 40

MATERIAL
☐ STEEL ☑ THERMOPLASTIC (PVC)
☐ OTHER _____

ANNULAR SEAL
LENGTH 2 FT.
☐ SLURRY ☑ CHIPS
☐ PELLETS ☐ GRANULAR
☐ CEMENT/SLURRY
IF CEMENT/BENTONITE MIX:
BAGS OF CEMENT USED ____
% OF BENTONITE USED ____
WATER USED/BAG 5 GAL.

BENTONITE SEAL
LENGTH 2
☑ CHIPS ☐ PELLETS ☐ GRANULAR
☐ SLURRY
☐ SATURATED ZONE ☐ HYDRATED

SECONDARY FILTER PACK
LENGTH N/A FT.

SCREEN
SCREEN DIAMETER 2 IN.
SCREEN LENGTH 9.5 FT.
DIAMETER OF DRILL HOLE 8.25 IN.
DEPTH TO TOP 5 FT.

DEPTH TO TOP OF PRIMARY FILTER PACK 3.5 FT.

SCREEN MATERIAL
☐ STEEL ☑ THERMOPLASTIC (PVC)
☐ OTHER _____

LENGTH OF PRIMARY FILTER PACK 11 FT.

LOCATION OF WELL (D/M/S FORMAT ONLY)
LAT. 39 - 4 - 10.82 -
LONG. 94 - 32 - 17.36 -

SMALLEST ____ ¼ LARGEST ____ ¼ ____ ¼
SECTION ____ TOWNSHIP ____ NORTH
RANGE ____ ☐ EAST ☐ WEST

MONITORING FOR: (CHECK ALL THAT APPLY)
☐ RADIONUCLIDES ☑ PETROLEUM PRODUCTS ONLY
☐ EXPLOSIVES ☐ METALS ☐ VOC
☐ SVOCS ☐ PESTICIDES/HERBICIDES

PROPOSED USE OF WELL
☐ GAS MIGRATION WELL ☑ OBSERVATION
☐ EXTRACTION WELL ☐ OPEN HOLE
☐ PIEZOMETERS ☐ INJECTION WELL
☐ DIRECT PUSH

DEPTH TO	DEPTH FROM	FORMATION DESCRIPTION
0'	1'	Concrete
1'	14.5'	Silty Clay
14.5'		Weathered LS
TOTAL DEPTH:		14.5

FOR CASED WELLS, SUBMIT ADDITIONAL AS BUILT DIAGRAMS SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE & SIZE OF ALL CASING, HOLE DIAMETER & GROUT USED.

SIGNATURE (PRIMARY CONTACTOR)	PERMIT NUMBER	DATE WELL DRILLING WAS COMPELTED
		12/03/2013

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH MISSOURI DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS. ☐ PUMP INSTALLED

SIGNATURE (WELL DRILLER)	PERMIT NUMBER	SIGNATURE (OF APPRENTICE)	APPRENTICE PERMIT NUMBER
	002241M		

MO 780-1415 (07-11)

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY PROGRAM

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED	
REFERENCE NO.		
C.R. NO.	CHECK NO.	
STATE WELL NUMBER	REVENUE NO.	
ENTERED Ph1 Ph2 Ph3	APPROVED BY	ROUTE

INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR

NOTE: THIS FORM IS NOT TO BE USED FOR NESTED WELLS

OWNER NAME	CONTACT NAME	VARIANCE GRANTED BY DNR
Zill Inc	Imtiaz Moknijia	

OWNER ADDRESS	CITY	STATE	ZIP CODE	NUMBER
3814 E 31st Street	Kansas City	MO	64128	None

SITE NAME	WELL NUMBER	COUNTY
Inner City Oil	MW-4	Jackson

SITE ADDRESS	CITY	STATIC WATER LEVEL
3816 East 31st Street	Kansas City	8.78'

SURFACE COMPLETION

TYPE: ☐ ABOVE GROUND ☑ FLUSH MOUNT

LENGTH AND DIAMETER OF SURFACE COMPLETION: LENGTH 1 FT. DIAMETER 8 IN.

DIAMETER AND DEPTH OF THE HOLE SURFACE COMPLETION WAS PLACED: DIAMETER 18 IN. LENGTH 1.5 FT.

SURFACE COMPLETION GROUT: ☑ CONCRETE ☐ OTHER _____

LOCATION OF WELL (D/M/S FORMAT ONLY): LAT. 39 - 4 - 10.57 - LONG. 94 - 32 - 17.19 -

SMALLEST ___ ¼ LARGEST ___ ¼ ___ ¼

SECTION ___ TOWNSHIP ___ NORTH

RANGE ___ ☐ EAST ☐ WEST

MONITORING FOR: (CHECK ALL THAT APPLY)
☐ RADIONUCLIDES ☑ PETROLEUM PRODUCTS ONLY
☐ EXPLOSIVES ☐ METALS ☐ VOC
☐ SVOCS ☐ PESTICIDES/HERBICIDES

PROPOSED USE OF WELL
☐ GAS MIGRATION WELL ☑ OBSERVATION
☐ EXTRACTION WELL ☐ OPEN HOLE
☐ PIEZOMETERS ☐ INJECTION WELL
☐ DIRECT PUSH

☐ LOCKING CAP
☐ WEEP HOLE

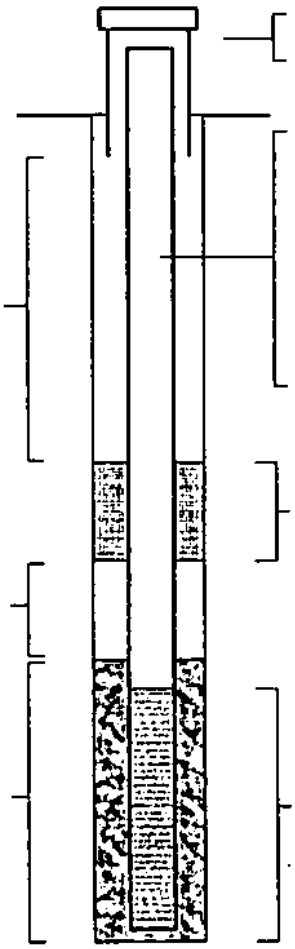
ELEVATION 0 FT.

ANNULAR SEAL
LENGTH 2 FT.
☐ SLURRY ☑ CHIPS
☐ PELLETS ☐ GRANULAR
☐ CEMENT/SLURRY
IF CEMENT/BENTONITE MIX:
BAGS OF CEMENT USED ___
% OF BENTONITE USED ___
WATER USED/BAG 5 GAL.

SECONDARY FILTER PACK
LENGTH N/A FT.

DEPTH TO TOP OF PRIMARY FILTER PACK 3.5 FT.

LENGTH OF PRIMARY FILTER PACK 9.5 FT.



SURFACE COMPLETION
☑ STEEL ☐ ALUMINUM ☐ PLASTIC

RISER
RISER PIPE DIAMETER 2 IN.
RISER PIPE LENGTH 5 FT.
DIAMETER OF DRILL HOLE 8.25 IN.
WEIGHT OR SDR# 40

MATERIAL
☐ STEEL ☑ THERMOPLASTIC (PVC)
☐ OTHER _____

BENTONITE SEAL
LENGTH 2
☑ CHIPS ☐ PELLETS ☐ GRANULAR
☐ SLURRY
☐ SATURATED ZONE ☐ HYDRATED

SCREEN
SCREEN DIAMETER 2 IN.
SCREEN LENGTH 8 FT.
DIAMETER OF DRILL HOLE 8.25 IN.
DEPTH TO TOP 5 FT.

SCREEN MATERIAL
☐ STEEL ☑ THERMOPLASTIC (PVC)
☐ OTHER _____

DEPTH TO	DEPTH FROM	FORMATION DESCRIPTION
0'	1'	Concrete
1'	12.5'	Silty Clay
12.5'	13'	Weathered LS
TOTAL DEPTH:		13

FOR CASED WELLS, SUBMIT ADDITIONAL AS BUILT DIAGRAMS SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE & SIZE OF ALL CASING, HOLE DIAMETER & GROUT USED.

SIGNATURE (PRIMARY CONTACTOR)	PERMIT NUMBER	DATE WELL DRILLING WAS COMPELTED
	004679M	12/02/2013

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH MISSOURI DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS. ☐ PUMP INSTALLED

SIGNATURE (WELL DRILLER)	PERMIT NUMBER	SIGNATURE (OF APPRENTICE)	APPRENTICE PERMIT NUMBER
	002241M		

MO 780-1415 (07-11)

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY PROGRAM

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED	
REFERENCE NO.		
C.R. NO.	CHECK NO.	
STATE WELL NUMBER	REVENUE NO.	
ENTERED Ph1 Ph2 Ph3	APPROVED BY	ROUTE

INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR

NOTE: THIS FORM IS NOT TO BE USED FOR NESTED WELLS

OWNER NAME	CONTACT NAME	VARIANCE GRANTED BY DNR
Zill Inc	Imtiaz Moknijia	

OWNER ADDRESS	CITY	STATE	ZIP CODE	NUMBER
3814 E 31St Street	Kansas City	MO	64128	None

SITE NAME	WELL NUMBER	COUNTY
Inner City Oil	MW-7	Jackson

SITE ADDRESS	CITY	STATIC WATER LEVEL
3816 East 31st Street	Kansas City	11.23'

SURFACE COMPLETION

TYPE: ☐ ABOVE GROUND ☑ FLUSH MOUNT

LENGTH AND DIAMETER OF SURFACE COMPLETION: LENGTH 1 FT. DIAMETER 8 IN.

DIAMETER AND DEPTH OF THE HOLE SURFACE COMPLETION WAS PLACED: DIAMETER 18 IN. LENGTH 1.5 FT.

SURFACE COMPLETION GROUT: ☑ CONCRETE ☐ OTHER _____

LOCATION OF WELL (DM/S FORMAT ONLY): LAT. 39 - 4 - 10.74 - LONG. 94 - 32 - 18.36 -

SMALLEST ___ ½ ___ ½ LARGEST ___ ½

SECTION ___ TOWNSHIP ___ NORTH

RANGE ___ ☐ EAST ☐ WEST

MONITORING FOR: (CHECK ALL THAT APPLY)
☐ RADIONUCLIDES ☑ PETROLEUM PRODUCTS ONLY
☐ EXPLOSIVES ☐ METALS ☐ VOC
☐ SVOCS ☐ PESTICIDES/HERBICIDES

PROPOSED USE OF WELL
☐ GAS MIGRATION WELL ☑ OBSERVATION
☐ EXTRACTION WELL ☐ OPEN HOLE
☐ PIEZOMETERS ☐ INJECTION WELL
☐ DIRECT PUSH

☐ LOCKING CAP
☐ WEEP HOLE

ELEVATION 0 FT.

ANNULAR SEAL
LENGTH 2 FT.
☐ SLURRY ☑ CHIPS
☐ PELLETS ☐ GRANULAR
☐ CEMENT/SLURRY
IF CEMENT/BENTONITE MIX:
BAGS OF CEMENT USED ___
% OF BENTONITE USED ___
WATER USED/BAG 5 GAL.

SECONDARY FILTER PACK
LENGTH N/A FT.

DEPTH TO TOP OF PRIMARY FILTER PACK 3.5 FT.

LENGTH OF PRIMARY FILTER PACK 11 FT.

SURFACE COMPLETION
☑ STEEL ☐ ALUMINUM ☐ PLASTIC

RISER
RISER PIPE DIAMETER 2 IN.
RISER PIPE LENGTH 5 FT.
DIAMETER OF DRILL HOLE 8.25 IN.
WEIGHT OR SDR# 40

MATERIAL
☐ STEEL ☑ THERMOPLASTIC (PVC)
☐ OTHER _____

BENTONITE SEAL
LENGTH 2
☑ CHIPS ☐ PELLETS ☐ GRANULAR
☐ SLURRY
☐ SATURATED ZONE ☐ HYDRATED

SCREEN
SCREEN DIAMETER 2 IN.
SCREEN LENGTH 9.5 FT.
DIAMETER OF DRILL HOLE 8.25 IN.
DEPTH TO TOP 5 FT.

SCREEN MATERIAL
☐ STEEL ☑ THERMOPLASTIC (PVC)
☐ OTHER _____

DEPTH TO	DEPTH FROM	FORMATION DESCRIPTION
0'	0.5'	Asphalt
0.5'	14.5'	Silty Clay
14.5'		Weathered LS
TOTAL DEPTH:		14.5

FOR CASED WELLS, SUBMIT ADDITIONAL AS BUILT DIAGRAMS SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE & SIZE OF ALL CASING, HOLE DIAMETER & GROUT USED.

SIGNATURE (PRIMARY CONTACTOR)	PERMIT NUMBER	DATE WELL DRILLING WAS COMPELTED
	004679M	12/02/2013

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH MISSOURI DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS. ☐ PUMP INSTALLED

SIGNATURE (WELL DRILLER)	PERMIT NUMBER	SIGNATURE (OF APPRENTICE)	APPRENTICE PERMIT NUMBER
	002241M		

MO 780-1415 (07-11)

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
GEOLOGICAL SURVEY PROGRAM

MONITORING WELL CERTIFICATION RECORD

OFFICE USE ONLY	DATE RECEIVED	
REFERENCE NO.		
C.R. NO.	CHECK NO.	
STATE WELL NUMBER	REVENUE NO.	
ENTERED Ph1 Ph2 Ph3	APPROVED BY	ROUTE

INFORMATION SUPPLIED BY PRIMARY CONTRACTOR OR DRILLING CONTRACTOR

NOTE: THIS FORM IS NOT TO BE USED FOR NESTED WELLS

OWNER NAME	CONTACT NAME	VARIANCE GRANTED BY DNR
Zill Inc	Imtiaz Moknijia	

OWNER ADDRESS	CITY	STATE	ZIP CODE	NUMBER
3814 E 31St Street	Kansas City	MO	64128	None

SITE NAME	WELL NUMBER	COUNTY
Inner City Oil	MW-9	Jackson

SITE ADDRESS	CITY	STATIC WATER LEVEL
3816 East 31st Street	Kansas City	12.43'

SURFACE COMPLETION

TYPE: ☐ ABOVE GROUND ☑ FLUSH MOUNT

LENGTH AND DIAMETER OF SURFACE COMPLETION: LENGTH 1 FT. DIAMETER 8 IN.

DIAMETER AND DEPTH OF THE HOLE SURFACE COMPLETION WAS PLACED: DIAMETER 18 IN. LENGTH 1.5 FT.

SURFACE COMPLETION GROUT: ☑ CONCRETE ☐ OTHER _____

LOCATION OF WELL (DM/S FORMAT ONLY)

LAT. 39 - 4 - 11.16 -

LONG. 94 - 32 - 17.36 -

SMALLEST ___ % LARGEST ___ %

SECTION ___ TOWNSHIP ___ NORTH

RANGE ___ ☐ EAST ☐ WEST

MONITORING FOR: (CHECK ALL THAT APPLY)

☐ RADIONUCLIDES ☑ PETROLEUM PRODUCTS ONLY
☐ EXPLOSIVES ☐ METALS ☐ VOC
☐ SVOCS ☐ PESTICIDES/HERBICIDES

PROPOSED USE OF WELL

☐ GAS MIGRATION WELL ☑ OBSERVATION
☐ EXTRACTION WELL ☐ OPEN HOLE
☐ PIEZOMETERS ☐ INJECTION WELL
☐ DIRECT PUSH

☐ LOCKING CAP
☐ WEEP HOLE

ELEVATION 0 FT.

ANNULAR SEAL
LENGTH 2 FT.
☐ SLURRY ☑ CHIPS
☐ PELLETS ☐ GRANULAR
☐ CEMENT/SLURRY
IF CEMENT/BENTONITE MIX:
BAGS OF CEMENT USED ___
% OF BENTONITE USED ___
WATER USED/BAG 5 GAL.

SECONDARY FILTER PACK
LENGTH N/A FT.

DEPTH TO TOP OF PRIMARY FILTER PACK 3.5 FT.

LENGTH OF PRIMARY FILTER PACK 10 FT.

SURFACE COMPLETION
☑ STEEL ☐ ALUMINUM ☐ PLASTIC

RISER
RISER PIPE DIAMETER 2 IN.
RISER PIPE LENGTH 5 FT.
DIAMETER OF DRILL HOLE 8.25 IN.
WEIGHT OR SDR# 40

MATERIAL
☐ STEEL ☑ THERMOPLASTIC (PVC)
☐ OTHER _____

BENTONITE SEAL
LENGTH 2
☑ CHIPS ☐ PELLETS ☐ GRANULAR
☐ SLURRY
☐ SATURATED ZONE ☐ HYDRATED

SCREEN
SCREEN DIAMETER 2 IN.
SCREEN LENGTH 8.5 FT.
DIAMETER OF DRILL HOLE 8.25 IN.
DEPTH TO TOP 5 FT.

SCREEN MATERIAL
☐ STEEL ☑ THERMOPLASTIC (PVC)
☐ OTHER _____

DEPTH TO	DEPTH FROM	FORMATION DESCRIPTION
0'	1'	Concrete
1'	9'	Silty Clay
9'	12'	Weathered Shale
12'	13.5'	Weathered LS
TOTAL DEPTH:		13.5

FOR CASED WELLS, SUBMIT ADDITIONAL AS BUILT DIAGRAMS SHOWING WELL CONSTRUCTION DETAILS INCLUDING TYPE & SIZE OF ALL CASING, HOLE DIAMETER & GROUT USED.

SIGNATURE (PRIMARY CONTACTOR)	PERMIT NUMBER	DATE WELL DRILLING WAS COMPELTED
	004679M	12/03/2013

I HEREBY CERTIFY THAT THE MONITORING WELL HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH MISSOURI DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE CONSTRUCTION OF MONITORING WELLS. ☐ PUMP INSTALLED

SIGNATURE (WELL DRILLER)	PERMIT NUMBER	SIGNATURE (OF APPRENTICE)	APPRENTICE PERMIT NUMBER
	002241M		

MO 780-1415 (07-11)

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APPENDIX B

Analytical Results and Chain of Custody

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

December 19, 2013

Patty Currier
Apex Envirotech, Inc.
1920 W 143rd Street, Suite 100
Overland Park, KS 66224

RE: Project: Inner City Oil/8157
Pace Project No.: 60158719

Dear Patty Currier:
Enclosed are the analytical results for sample(s) received by the laboratory on December 02, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Andy Brownfield

andy.brownfield@pacelabs.com
Project Manager

Enclosures

cc: Melissa Dowling, Apex Envirotech, Inc.

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Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: Inner City Oil/8157
Pace Project No.: 60158719

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: Inner City Oil/8157
Pace Project No.: 60158719

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60158719001	MW-5 6.5-9.5	Solid	12/02/13 10:49	12/02/13 17:15
60158719002	MW-6 6.5-7.5	Solid	12/02/13 10:54	12/02/13 17:15
60158719003	MW-6 7.5-8	Solid	12/02/13 10:55	12/02/13 17:15
60158719004	MW-7 0-3	Solid	12/02/13 11:10	12/02/13 17:15
60158719005	MW-7 9-10	Solid	12/02/13 11:16	12/02/13 17:15
60158719006	MW-7 13-15	Solid	12/02/13 11:20	12/02/13 17:15
60158719007	MW-8 4-5	Solid	12/02/13 13:10	12/02/13 17:15
60158719008	MW-8 9-10	Solid	12/02/13 13:20	12/02/13 17:15
60158719009	MW-9 1-3	Solid	12/02/13 13:27	12/02/13 17:15
60158719010	MW-9 11-12	Solid	12/02/13 13:38	12/02/13 17:15
60158719011	MW-1 1-3	Solid	12/02/13 13:52	12/02/13 17:15
60158719012	MW-1 12-13	Solid	12/02/13 14:05	12/02/13 17:15
60158719013	MW-1 13-14	Solid	12/02/13 14:10	12/02/13 17:15
60158719014	MW-4 6-7	Solid	12/02/13 15:40	12/02/13 17:15
60158719015	MW-4 12-13	Solid	12/02/13 15:45	12/02/13 17:15

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SAMPLE ANALYTE COUNT

Project: Inner City Oil/8157
Pace Project No.: 60158719

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60158719001	MW-5 8.5-9.5	EPA 8270	JMT	5
		EPA 5035A/8260	JKL	18
		ASTM D2974	DWC	1
60158719002	MW-6 6.5-7.5	EPA 8270	JMT	5
		EPA 5035A/8260	JKL	18
		ASTM D2974	DWC	1
60158719003	MW-6 7.5-8	EPA 8270 by SIM	NAW	18
		EPA 8270	JMT	5
		EPA 5035A/8260	JKL	18
		ASTM D2974	DWC	1
60158719004	MW-7 0-3	EPA 8270	JMT	5
		EPA 5035A/8260	JKL	18
		ASTM D2974	DWC	1
60158719005	MW-7 9-10	EPA 8270	JMT	5
		EPA 5035A/8260	JKL	18
		ASTM D2974	DWC	1
60158719006	MW-7 13-15	EPA 8270 by SIM	NAW	18
		EPA 8270	JMT	5
		EPA 5035A/8260	JKL	18
		ASTM D2974	DWC	1
60158719007	MW-8 4-5	EPA 8270	JMT	5
		EPA 5035A/8260	JKL	18
		ASTM D2974	DWC	1
60158719008	MW-8 9-10	EPA 8270	JMT	5
		EPA 5035A/8260	JKL	18
		ASTM D2974	DWC	1
60158719009	MW-9 1-3	EPA 8270	JMT	5
		EPA 5035A/8260	JKL	18
		ASTM D2974	DWC	1
60158719010	MW-9 11-12	EPA 8270	JMT	5
		EPA 5035A/8260	JKL	18
		ASTM D2974	DWC	1
60158719011	MW-1 1-3	EPA 8270 by SIM	NAW	18
		EPA 8270	JMT	5
		EPA 5035A/8260	JKL	18
		ASTM D2974	DWC	1
60158719012	MW-1 12-13	EPA 8270	JMT	5

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SAMPLE ANALYTE COUNT

Project: Inner City Oil/8157
Pace Project No.: 60158719

Lab ID	Sample ID	Method	Analysts	Analytes Reported
		EPA 5035A/8260	JKL	18
		ASTM D2974	DWC	1
60158719013	MW-1 13-14	EPA 8270 by SIM	NAW	18
		EPA 8270	JMT	5
		EPA 5035A/8260	JKL	18
		ASTM D2974	DWC	1
60158719014	MW-4 6-7	EPA 8270	JMT	5
		EPA 5035A/8260	JKL	18
		ASTM D2974	DWC	1
60158719015	MW-4 12-13	EPA 8270	JMT	5
		EPA 5035A/8260	JKL	18
		ASTM D2974	DWC	1

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Lenexa, KS 66219
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ANALYTICAL RESULTS

Project: Inner City Oil/8157
Pace Project No.: 60158719

Sample: MW-5 8.5-9.5 Lab ID: 60158719001 Collected: 12/02/13 10:49 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV DRO/ORO	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
TPH-ORO	ND	mg/kg	18.5	1	12/04/13 00:00	12/09/13 12:58		
TPH-DRO	ND	mg/kg	18.5	1	12/04/13 00:00	12/09/13 12:58		
Surrogates								
Nitrobenzene-d5 (S)	91	%	15-155	1	12/04/13 00:00	12/09/13 12:58	4165-60-0	
2-Fluorobiphenyl (S)	85	%	20-159	1	12/04/13 00:00	12/09/13 12:58	321-60-8	
Terphenyl-d14 (S)	88	%	18-160	1	12/04/13 00:00	12/09/13 12:58	1718-51-0	
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
tert-Amylmethyl ether	ND	mg/kg	0.0051	1		12/05/13 06:59	994-05-8	
Benzene	ND	mg/kg	0.0051	1		12/05/13 06:59	71-43-2	
tert-Butyl Alcohol	ND	mg/kg	0.026	1		12/05/13 06:59	75-65-0	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.0051	1		12/05/13 06:59	106-93-4	
1,2-Dichloroethane	ND	mg/kg	0.0051	1		12/05/13 06:59	107-06-2	
Diisopropyl ether	ND	mg/kg	0.0051	1		12/05/13 06:59	108-20-3	
Ethylbenzene	ND	mg/kg	0.0051	1		12/05/13 06:59	100-41-4	
Ethyl-tert-butyl ether	ND	mg/kg	0.0051	1		12/05/13 06:59	637-92-3	
Methyl-tert-butyl ether	ND	mg/kg	0.0051	1		12/05/13 06:59	1634-04-4	
Naphthalene	ND	mg/kg	0.021	1		12/05/13 06:59	91-20-3	
Toluene	ND	mg/kg	0.0051	1		12/05/13 06:59	108-88-3	
TPH-GRO	ND	mg/kg	0.51	1		12/05/13 06:59		
Xylene (Total)	ND	mg/kg	0.010	1		12/05/13 06:59	1330-20-7	
m&p-Xylene	ND	mg/kg	0.0051	1		12/05/13 06:59	179601-23-1	
o-Xylene	ND	mg/kg	0.0051	1		12/05/13 06:59	95-47-6	
Surrogates								
Toluene-d8 (S)	99	%	80-120	1		12/05/13 06:59	2037-26-5	
4-Bromofluorobenzene (S)	101	%	80-120	1		12/05/13 06:59	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	76-132	1		12/05/13 06:59	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	20.4	%	0.50	1		12/09/13 00:00		

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ANALYTICAL RESULTS

Project: Inner City OII/8157
Pace Project No.: 60158719

Sample: MW-6 6.5-7.5 **Lab ID: 60158719002** Collected: 12/02/13 10:54 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV DRO/ORO	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
TPH-ORO	ND	mg/kg	18.7	1	12/04/13 00:00	12/09/13 13:18		
TPH-DRO	ND	mg/kg	18.7	1	12/04/13 00:00	12/09/13 13:18		
Surrogates								
Nitrobenzene-d5 (S)	116	%	15-155	1	12/04/13 00:00	12/09/13 13:18	4165-60-0	
2-Fluorobiphenyl (S)	89	%	20-159	1	12/04/13 00:00	12/09/13 13:18	321-60-8	
Terphenyl-d14 (S)	108	%	18-160	1	12/04/13 00:00	12/09/13 13:18	1718-51-0	
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
tert-Amylmethyl ether	ND	mg/kg	0.0051	1		12/05/13 07:15	994-05-8	
Benzene	0.060	mg/kg	0.0051	1		12/05/13 07:15	71-43-2	
tert-Butyl Alcohol	ND	mg/kg	0.026	1		12/05/13 07:15	75-65-0	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.0051	1		12/05/13 07:15	106-93-4	
1,2-Dichloroethane	ND	mg/kg	0.0051	1		12/05/13 07:15	107-06-2	
Diisopropyl ether	ND	mg/kg	0.0051	1		12/05/13 07:15	108-20-3	
Ethylbenzene	0.081	mg/kg	0.0051	1		12/05/13 07:15	100-41-4	
Ethyl-tert-butyl ether	ND	mg/kg	0.0051	1		12/05/13 07:15	637-92-3	
Methyl-tert-butyl ether	0.0066	mg/kg	0.0051	1		12/05/13 07:15	1634-04-4	
Naphthalene	0.045	mg/kg	0.020	1		12/05/13 07:15	91-20-3	
Toluene	ND	mg/kg	0.0051	1		12/05/13 07:15	108-88-3	
TPH-GRO	4.8	mg/kg	0.51	1		12/05/13 07:15		
Xylene (Total)	ND	mg/kg	0.010	1		12/05/13 07:15	1330-20-7	
m&p-Xylene	0.0066	mg/kg	0.0051	1		12/05/13 07:15	179601-23-1	
o-Xylene	ND	mg/kg	0.0051	1		12/05/13 07:15	95-47-6	
Surrogates								
Toluene-d8 (S)	103	%	80-120	1		12/05/13 07:15	2037-26-5	
4-Bromofluorobenzene (S)	102	%	80-120	1		12/05/13 07:15	460-00-4	
1,2-Dichloroethane-d4 (S)	113	%	76-132	1		12/05/13 07:15	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	20.0	%	0.50	1		12/09/13 00:00		

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Lenexa, KS 66219
(913)599-5665

ANALYTICAL RESULTS

Project: Inner City Oil/8157
Pace Project No.: 60158719

Sample: MW-6 7.5-8 **Lab ID: 60158719003** Collected: 12/02/13 10:55 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546							
Acenaphthene	0.086	mg/kg	0.0087	1	12/04/13 00:00	12/16/13 21:49	83-32-9	
Acenaphthylene	0.029	mg/kg	0.0087	1	12/04/13 00:00	12/16/13 21:49	208-96-8	
Anthracene	ND	mg/kg	0.0087	1	12/04/13 00:00	12/16/13 21:49	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.0087	1	12/04/13 00:00	12/16/13 21:49	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.0087	1	12/04/13 00:00	12/16/13 21:49	50-32-8	
Benzo(b)fluoranthene	ND	mg/kg	0.0087	1	12/04/13 00:00	12/16/13 21:49	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.0087	1	12/04/13 00:00	12/16/13 21:49	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.0087	1	12/04/13 00:00	12/16/13 21:49	207-08-9	
Chrysene	ND	mg/kg	0.0087	1	12/04/13 00:00	12/16/13 21:49	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.0087	1	12/04/13 00:00	12/16/13 21:49	53-70-3	
Fluoranthene	ND	mg/kg	0.0087	1	12/04/13 00:00	12/16/13 21:49	206-44-0	
Fluorene	0.037	mg/kg	0.0087	1	12/04/13 00:00	12/16/13 21:49	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.0087	1	12/04/13 00:00	12/16/13 21:49	193-39-5	
Naphthalene	11.3	mg/kg	0.087	10	12/04/13 00:00	12/18/13 02:10	91-20-3	
Phenanthrene	0.052	mg/kg	0.0087	1	12/04/13 00:00	12/16/13 21:49	85-01-8	
Pyrene	ND	mg/kg	0.0087	1	12/04/13 00:00	12/16/13 21:49	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	86	%	47-120	5	12/04/13 00:00	12/16/13 22:08	321-60-8	
Terphenyl-d14 (S)	77	%	42-127	5	12/04/13 00:00	12/16/13 22:08	1718-51-0	
8270 MSSV DRO/ORO	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
TPH-ORO	ND	mg/kg	19.8	1	12/04/13 00:00	12/09/13 13:39		
TPH-DRO	1490	mg/kg	19.8	1	12/04/13 00:00	12/09/13 13:39		
Surrogates								
Nitrobenzene-d5 (S)	3124	%	15-155	1	12/04/13 00:00	12/09/13 13:39	4165-60-0	1e
2-Fluorobiphenyl (S)	359	%	20-159	1	12/04/13 00:00	12/09/13 13:39	321-60-8	1e
Terphenyl-d14 (S)	124	%	18-160	1	12/04/13 00:00	12/09/13 13:39	1718-51-0	
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
tert-Amylmethyl ether	ND	mg/kg	0.29	50		12/05/13 07:30	994-05-8	
Benzene	0.57	mg/kg	0.29	50		12/05/13 07:30	71-43-2	
tert-Butyl Alcohol	ND	mg/kg	1.5	50		12/05/13 07:30	75-65-0	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.29	50		12/05/13 07:30	106-93-4	
1,2-Dichloroethane	ND	mg/kg	0.29	50		12/05/13 07:30	107-06-2	
Diisopropyl ether	ND	mg/kg	0.29	50		12/05/13 07:30	108-20-3	
Ethylbenzene	14.4	mg/kg	5.8	1000		12/05/13 17:52	100-41-4	
Ethyl-tert-butyl ether	ND	mg/kg	0.29	50		12/05/13 07:30	637-92-3	
Methyl-tert-butyl ether	ND	mg/kg	0.29	50		12/05/13 07:30	1634-04-4	
Naphthalene	10.2	mg/kg	1.2	50		12/05/13 07:30	91-20-3	
Toluene	ND	mg/kg	0.29	50		12/05/13 07:30	108-88-3	
TPH-GRO	3980	mg/kg	581	1000		12/05/13 17:52		
Xylene (Total)	ND	mg/kg	0.58	50		12/05/13 07:30	1330-20-7	
m&p-Xylene	ND	mg/kg	0.29	50		12/05/13 07:30	179601-23-1	
o-Xylene	ND	mg/kg	0.29	50		12/05/13 07:30	95-47-6	
Surrogates								
Toluene-d8 (S)	115	%	80-120	50		12/05/13 07:30	2037-26-5	

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ANALYTICAL RESULTS

Project: Inner City Oil/8157
Pace Project No.: 60158719

Sample: MW-6 7.5-8 **Lab ID: 60158719003** Collected: 12/02/13 10:55 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
Surrogates								
4-Bromofluorobenzene (S)	133	%	80-120	50		12/05/13 07:30	460-00-4	S0
1,2-Dichloroethane-d4 (S)	90	%	76-132	50		12/05/13 07:30	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	26.6	%	0.50	1		12/09/13 00:00		

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ANALYTICAL RESULTS

Project: Inner City Oil/8157
Pace Project No.: 60158719

Sample: MW-7 0-3 **Lab ID: 60158719004** Collected: 12/02/13 11:10 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV DRO/ORO	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
TPH-ORO	ND	mg/kg	18.4	1	12/04/13 00:00	12/09/13 13:59		
TPH-DRO	ND	mg/kg	18.4	1	12/04/13 00:00	12/09/13 13:59		
Surrogates								
Nitrobenzene-d5 (S)	58	%	15-155	1	12/04/13 00:00	12/09/13 13:59	4165-60-0	
2-Fluorobiphenyl (S)	68	%	20-159	1	12/04/13 00:00	12/09/13 13:59	321-60-8	
Terphenyl-d14 (S)	93	%	18-160	1	12/04/13 00:00	12/09/13 13:59	1718-51-0	
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
tert-Amylmethyl ether	ND	mg/kg	0.0052	1		12/05/13 07:45	994-05-8	
Benzene	ND	mg/kg	0.0052	1		12/05/13 07:45	71-43-2	
tert-Butyl Alcohol	ND	mg/kg	0.026	1		12/05/13 07:45	75-65-0	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.0052	1		12/05/13 07:45	106-93-4	
1,2-Dichloroethane	ND	mg/kg	0.0052	1		12/05/13 07:45	107-06-2	
Diisopropyl ether	ND	mg/kg	0.0052	1		12/05/13 07:45	108-20-3	
Ethylbenzene	ND	mg/kg	0.0052	1		12/05/13 07:45	100-41-4	
Ethyl-tert-butyl ether	ND	mg/kg	0.0052	1		12/05/13 07:45	637-92-3	
Methyl-tert-butyl ether	ND	mg/kg	0.0052	1		12/05/13 07:45	1634-04-4	
Naphthalene	ND	mg/kg	0.021	1		12/05/13 07:45	91-20-3	
Toluene	ND	mg/kg	0.0052	1		12/05/13 07:45	108-88-3	
TPH-GRO	ND	mg/kg	0.52	1		12/05/13 07:45		
Xylene (Total)	ND	mg/kg	0.010	1		12/05/13 07:45	1330-20-7	
m&p-Xylene	ND	mg/kg	0.0052	1		12/05/13 07:45	179601-23-1	
o-Xylene	ND	mg/kg	0.0052	1		12/05/13 07:45	95-47-6	
Surrogates								
Toluene-d8 (S)	98	%	80-120	1		12/05/13 07:45	2037-26-5	
4-Bromofluorobenzene (S)	101	%	80-120	1		12/05/13 07:45	460-00-4	
1,2-Dichloroethane-d4 (S)	110	%	76-132	1		12/05/13 07:45	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	18.6	%	0.50	1		12/09/13 00:00		

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ANALYTICAL RESULTS

Project: Inner City Oil/8157
Pace Project No.: 60158719

Sample: MW-7 9-10 **Lab ID: 60158719005** Collected: 12/02/13 11:16 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV DRO/ORO	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
TPH-ORO	ND	mg/kg	18.9	1	12/04/13 00:00	12/09/13 14:19		
TPH-DRO	ND	mg/kg	18.9	1	12/04/13 00:00	12/09/13 14:19		
Surrogates								
Nitrobenzene-d5 (S)	64	%	15-155	1	12/04/13 00:00	12/09/13 14:19	4165-60-0	
2-Fluorobiphenyl (S)	67	%	20-159	1	12/04/13 00:00	12/09/13 14:19	321-60-8	
Terphenyl-d14 (S)	66	%	18-160	1	12/04/13 00:00	12/09/13 14:19	1718-51-0	
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
tert-Amylmethyl ether	ND	mg/kg	0.0053	1		12/05/13 08:01	994-05-8	
Benzene	2.7	mg/kg	0.27	50		12/05/13 18:07	71-43-2	
tert-Butyl Alcohol	ND	mg/kg	0.027	1		12/05/13 08:01	75-65-0	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.0053	1		12/05/13 08:01	106-93-4	
1,2-Dichloroethane	ND	mg/kg	0.0053	1		12/05/13 08:01	107-06-2	
Diisopropyl ether	ND	mg/kg	0.0053	1		12/05/13 08:01	108-20-3	
Ethylbenzene	0.17	mg/kg	0.0053	1		12/05/13 08:01	100-41-4	
Ethyl-tert-butyl ether	ND	mg/kg	0.0053	1		12/05/13 08:01	637-92-3	
Methyl-tert-butyl ether	ND	mg/kg	0.0053	1		12/05/13 08:01	1634-04-4	
Naphthalene	ND	mg/kg	0.021	1		12/05/13 08:01	91-20-3	
Toluene	3.6	mg/kg	0.27	50		12/05/13 18:07	108-88-3	
TPH-GRO	ND	mg/kg	26.5	50		12/05/13 18:07		
Xylene (Total)	0.44	mg/kg	0.011	1		12/05/13 08:01	1330-20-7	
m&p-Xylene	0.30	mg/kg	0.0053	1		12/05/13 08:01	179601-23-1	
o-Xylene	0.14	mg/kg	0.0053	1		12/05/13 08:01	95-47-6	
Surrogates								
Toluene-d8 (S)	102	%	80-120	1		12/05/13 08:01	2037-26-5	
4-Bromofluorobenzene (S)	101	%	80-120	1		12/05/13 08:01	460-00-4	
1,2-Dichloroethane-d4 (S)	114	%	76-132	1		12/05/13 08:01	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	21.3	%	0.50	1		12/09/13 00:00		

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ANALYTICAL RESULTS

Project: Inner City Oil/8157
Pace Project No.: 60158719

Sample: MW-7 13-15 Lab ID: 60158719006 Collected: 12/02/13 11:20 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546							
Acenaphthene	0.087	mg/kg	0.0093	1	12/04/13 00:00	12/16/13 22:27	83-32-9	
Acenaphthylene	0.035	mg/kg	0.0093	1	12/04/13 00:00	12/16/13 22:27	208-96-8	
Anthracene	0.016	mg/kg	0.0093	1	12/04/13 00:00	12/16/13 22:27	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.0093	1	12/04/13 00:00	12/16/13 22:27	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.0093	1	12/04/13 00:00	12/16/13 22:27	50-32-8	
Benzo(b)fluoranthene	ND	mg/kg	0.0093	1	12/04/13 00:00	12/16/13 22:27	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.0093	1	12/04/13 00:00	12/16/13 22:27	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.0093	1	12/04/13 00:00	12/16/13 22:27	207-08-9	
Chrysene	ND	mg/kg	0.0093	1	12/04/13 00:00	12/16/13 22:27	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.0093	1	12/04/13 00:00	12/16/13 22:27	53-70-3	
Fluoranthene	0.018	mg/kg	0.0093	1	12/04/13 00:00	12/16/13 22:27	206-44-0	
Fluorene	0.065	mg/kg	0.0093	1	12/04/13 00:00	12/16/13 22:27	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.0093	1	12/04/13 00:00	12/16/13 22:27	193-39-5	
Naphthalene	8.1	mg/kg	0.046	5	12/04/13 00:00	12/16/13 22:46	91-20-3	
Phenanthrene	0.12	mg/kg	0.0093	1	12/04/13 00:00	12/16/13 22:27	85-01-8	
Pyrene	0.029	mg/kg	0.0093	1	12/04/13 00:00	12/16/13 22:27	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	77	%	47-120	5	12/04/13 00:00	12/16/13 22:46	321-60-8	
Terphenyl-d14 (S)	68	%	42-127	5	12/04/13 00:00	12/16/13 22:46	1718-51-0	
8270 MSSV DRO/ORO	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
TPH-ORO	76.5	mg/kg	21.0	1	12/04/13 00:00	12/09/13 14:40		
TPH-DRO	1630	mg/kg	21.0	1	12/04/13 00:00	12/09/13 14:40		
Surrogates								
Nitrobenzene-d5 (S)	6049	%	15-155	1	12/04/13 00:00	12/09/13 14:40	4165-60-0	1e
2-Fluorobiphenyl (S)	462	%	20-159	1	12/04/13 00:00	12/09/13 14:40	321-60-8	1e
Terphenyl-d14 (S)	229	%	18-160	1	12/04/13 00:00	12/09/13 14:40	1718-51-0	1e
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
tert-Amylmethyl ether	ND	mg/kg	0.63	100		12/05/13 08:16	994-05-8	
Benzene	113	mg/kg	63.1	10000		12/05/13 18:22	71-43-2	
tert-Butyl Alcohol	ND	mg/kg	3.2	100		12/05/13 08:16	75-65-0	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.63	100		12/05/13 08:16	106-93-4	
1,2-Dichloroethane	ND	mg/kg	0.63	100		12/05/13 08:16	107-06-2	
Diisopropyl ether	ND	mg/kg	0.63	100		12/05/13 08:16	108-20-3	
Ethylbenzene	221	mg/kg	63.1	10000		12/05/13 18:22	100-41-4	
Ethyl-tert-butyl ether	ND	mg/kg	0.63	100		12/05/13 08:16	637-92-3	
Methyl-tert-butyl ether	ND	mg/kg	0.63	100		12/05/13 08:16	1634-04-4	
Naphthalene	35.2	mg/kg	2.5	100		12/05/13 08:16	91-20-3	
Toluene	611	mg/kg	63.1	10000		12/05/13 18:22	108-88-3	
TPH-GRO	7780	mg/kg	6310	10000		12/05/13 18:22		
Xylene (Total)	901	mg/kg	126	10000		12/05/13 18:22	1330-20-7	
m&p-Xylene	669	mg/kg	63.1	10000		12/05/13 18:22	179601-23-1	
o-Xylene	232	mg/kg	63.1	10000		12/05/13 18:22	95-47-6	
Surrogates								
Toluene-d8 (S)	106	%	80-120	100		12/05/13 08:16	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Inner City Oil/8157
Pace Project No.: 60158719

Sample: MW-7 13-15 **Lab ID: 60158719006** Collected: 12/02/13 11:20 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
Surrogates								
4-Bromofluorobenzene (S)	116	%	80-120	100		12/05/13 08:16	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	76-132	100		12/05/13 08:16	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	30.2	%	0.50	1		12/09/13 00:00		

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ANALYTICAL RESULTS

Project: Inner City Oil/8157
Pace Project No.: 60158719

Sample: MW-8 4-5 **Lab ID: 60158719007** Collected: 12/02/13 13:10 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV DRO/ORO	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
TPH-ORO	ND	mg/kg	17.9	1	12/04/13 00:00	12/09/13 15:00		
TPH-DRO	ND	mg/kg	17.9	1	12/04/13 00:00	12/09/13 15:00		
Surrogates								
Nitrobenzene-d5 (S)	79	%	15-155	1	12/04/13 00:00	12/09/13 15:00	4165-60-0	
2-Fluorobiphenyl (S)	85	%	20-159	1	12/04/13 00:00	12/09/13 15:00	321-60-8	
Terphenyl-d14 (S)	87	%	18-160	1	12/04/13 00:00	12/09/13 15:00	1718-51-0	
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
tert-Amylmethyl ether	ND	mg/kg	0.0052	1		12/05/13 08:31	994-05-8	
Benzene	ND	mg/kg	0.0052	1		12/05/13 08:31	71-43-2	
tert-Butyl Alcohol	ND	mg/kg	0.026	1		12/05/13 08:31	75-65-0	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.0052	1		12/05/13 08:31	106-93-4	
1,2-Dichloroethane	ND	mg/kg	0.0052	1		12/05/13 08:31	107-06-2	
Diisopropyl ether	ND	mg/kg	0.0052	1		12/05/13 08:31	108-20-3	
Ethylbenzene	ND	mg/kg	0.0052	1		12/05/13 08:31	100-41-4	
Ethyl-tert-butyl ether	ND	mg/kg	0.0052	1		12/05/13 08:31	637-92-3	
Methyl-tert-butyl ether	ND	mg/kg	0.0052	1		12/05/13 08:31	1634-04-4	
Naphthalene	ND	mg/kg	0.021	1		12/05/13 08:31	91-20-3	
Toluene	ND	mg/kg	0.0052	1		12/05/13 08:31	108-88-3	
TPH-GRO	ND	mg/kg	0.52	1		12/05/13 08:31		
Xylene (Total)	ND	mg/kg	0.010	1		12/05/13 08:31	1330-20-7	
m&p-Xylene	ND	mg/kg	0.0052	1		12/05/13 08:31	179601-23-1	
o-Xylene	ND	mg/kg	0.0052	1		12/05/13 08:31	95-47-6	
Surrogates								
Toluene-d8 (S)	100	%	80-120	1		12/05/13 08:31	2037-26-5	
4-Bromofluorobenzene (S)	102	%	80-120	1		12/05/13 08:31	460-00-4	
1,2-Dichloroethane-d4 (S)	116	%	76-132	1		12/05/13 08:31	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**18.6**	**%**	0.50	1		12/09/13 00:00		

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ANALYTICAL RESULTS

Project: Inner City Oil/8157
Pace Project No.: 60158719

Sample: MW-8 9-10 **Lab ID: 60158719008** Collected: 12/02/13 13:20 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV DRO/ORO	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
TPH-ORO	ND	mg/kg	18.2	1	12/04/13 00:00	12/09/13 15:21		
TPH-DRO	ND	mg/kg	18.2	1	12/04/13 00:00	12/09/13 15:21		
Surrogates								
Nitrobenzene-d5 (S)	79	%	15-155	1	12/04/13 00:00	12/09/13 15:21	4165-60-0	
2-Fluorobiphenyl (S)	87	%	20-159	1	12/04/13 00:00	12/09/13 15:21	321-60-8	
Terphenyl-d14 (S)	82	%	18-160	1	12/04/13 00:00	12/09/13 15:21	1718-51-0	
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
tert-Amylmethyl ether	ND	mg/kg	0.0047	1		12/05/13 08:46	994-05-8	
Benzene	ND	mg/kg	0.0047	1		12/05/13 08:46	71-43-2	
tert-Butyl Alcohol	ND	mg/kg	0.024	1		12/05/13 08:46	75-65-0	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.0047	1		12/05/13 08:46	106-93-4	
1,2-Dichloroethane	ND	mg/kg	0.0047	1		12/05/13 08:46	107-06-2	
Diisopropyl ether	ND	mg/kg	0.0047	1		12/05/13 08:46	108-20-3	
Ethylbenzene	ND	mg/kg	0.0047	1		12/05/13 08:46	100-41-4	
Ethyl-tert-butyl ether	ND	mg/kg	0.0047	1		12/05/13 08:46	637-92-3	
Methyl-tert-butyl ether	ND	mg/kg	0.0047	1		12/05/13 08:46	1634-04-4	
Naphthalene	ND	mg/kg	0.019	1		12/05/13 08:46	91-20-3	
Toluene	ND	mg/kg	0.0047	1		12/05/13 08:46	108-88-3	
TPH-GRO	ND	mg/kg	0.47	1		12/05/13 08:46		
Xylene (Total)	ND	mg/kg	0.0095	1		12/05/13 08:46	1330-20-7	
m&p-Xylene	ND	mg/kg	0.0047	1		12/05/13 08:46	179601-23-1	
o-Xylene	ND	mg/kg	0.0047	1		12/05/13 08:46	95-47-6	
Surrogates								
Toluene-d8 (S)	99	%	80-120	1		12/05/13 08:46	2037-26-5	
4-Bromofluorobenzene (S)	101	%	80-120	1		12/05/13 08:46	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	76-132	1		12/05/13 08:46	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	18.9	%	0.50	1		12/09/13 00:00		

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ANALYTICAL RESULTS

Project: Inner City Oil/8157
Pace Project No.: 60158719

Sample: MW-9 1-3 Lab ID: 60158719009 Collected: 12/02/13 13:27 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV DRO/ORO	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
TPH-ORO	ND	mg/kg	18.8	1	12/04/13 00:00	12/09/13 15:41		
TPH-DRO	ND	mg/kg	18.8	1	12/04/13 00:00	12/09/13 15:41		
Surrogates								
Nitrobenzene-d5 (S)	73	%	15-155	1	12/04/13 00:00	12/09/13 15:41	4165-60-0	
2-Fluorobiphenyl (S)	84	%	20-159	1	12/04/13 00:00	12/09/13 15:41	321-60-8	
Terphenyl-d14 (S)	93	%	18-160	1	12/04/13 00:00	12/09/13 15:41	1718-51-0	
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
tert-Amylmethyl ether	ND	mg/kg	0.0048	1		12/05/13 09:02	994-05-8	
Benzene	ND	mg/kg	0.0048	1		12/05/13 09:02	71-43-2	
tert-Butyl Alcohol	ND	mg/kg	0.024	1		12/05/13 09:02	75-65-0	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.0048	1		12/05/13 09:02	106-93-4	
1,2-Dichloroethane	ND	mg/kg	0.0048	1		12/05/13 09:02	107-06-2	
Diisopropyl ether	ND	mg/kg	0.0048	1		12/05/13 09:02	108-20-3	
Ethylbenzene	ND	mg/kg	0.0048	1		12/05/13 09:02	100-41-4	
Ethyl-tert-butyl ether	ND	mg/kg	0.0048	1		12/05/13 09:02	637-92-3	
Methyl-tert-butyl ether	ND	mg/kg	0.0048	1		12/05/13 09:02	1634-04-4	
Naphthalene	ND	mg/kg	0.019	1		12/05/13 09:02	91-20-3	
Toluene	ND	mg/kg	0.0048	1		12/05/13 09:02	108-88-3	
TPH-GRO	ND	mg/kg	0.48	1		12/05/13 09:02		
Xylene (Total)	ND	mg/kg	0.0097	1		12/05/13 09:02	1330-20-7	
m&p-Xylene	ND	mg/kg	0.0048	1		12/05/13 09:02	179601-23-1	
o-Xylene	ND	mg/kg	0.0048	1		12/05/13 09:02	95-47-6	
Surrogates								
Toluene-d8 (S)	99	%	80-120	1		12/05/13 09:02	2037-26-5	
4-Bromofluorobenzene (S)	100	%	80-120	1		12/05/13 09:02	460-00-4	
1,2-Dichloroethane-d4 (S)	112	%	76-132	1		12/05/13 09:02	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	20.5	%	0.50	1		12/09/13 00:00		

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ANALYTICAL RESULTS

Project: Inner City Oil/8157
Pace Project No.: 60158719

Sample: MW-9 11-12 Lab ID: 60158719010 Collected: 12/02/13 13:38 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV DRO/ORO	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
TPH-ORO	ND	mg/kg	19.4	1	12/04/13 00:00	12/09/13 16:01		
TPH-DRO	ND	mg/kg	19.4	1	12/04/13 00:00	12/09/13 16:01		
Surrogates								
Nitrobenzene-d5 (S)	69	%	15-155	1	12/04/13 00:00	12/09/13 16:01	4165-60-0	
2-Fluorobiphenyl (S)	80	%	20-159	1	12/04/13 00:00	12/09/13 16:01	321-60-8	
Terphenyl-d14 (S)	88	%	18-160	1	12/04/13 00:00	12/09/13 16:01	1718-51-0	
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
tert-Amylmethyl ether	ND	mg/kg	0.0048	1		12/05/13 18:37	994-05-8	
Benzene	0.51	mg/kg	0.0048	1		12/05/13 18:37	71-43-2	E
tert-Butyl Alcohol	ND	mg/kg	0.024	1		12/05/13 18:37	75-65-0	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.0048	1		12/05/13 18:37	106-93-4	
1,2-Dichloroethane	ND	mg/kg	0.0048	1		12/05/13 18:37	107-06-2	
Diisopropyl ether	ND	mg/kg	0.0048	1		12/05/13 18:37	108-20-3	
Ethylbenzene	0.038	mg/kg	0.0048	1		12/05/13 18:37	100-41-4	
Ethyl-tert-butyl ether	ND	mg/kg	0.0048	1		12/05/13 18:37	637-92-3	
Methyl-tert-butyl ether	ND	mg/kg	0.0048	1		12/05/13 18:37	1634-04-4	
Naphthalene	ND	mg/kg	0.019	1		12/05/13 18:37	91-20-3	
Toluene	0.15	mg/kg	0.0048	1		12/05/13 18:37	108-88-3	
TPH-GRO	2.5	mg/kg	0.48	1		12/05/13 18:37		
Xylene (Total)	0.034	mg/kg	0.0096	1		12/05/13 18:37	1330-20-7	
m&p-Xylene	0.023	mg/kg	0.0048	1		12/05/13 18:37	179601-23-1	
o-Xylene	0.011	mg/kg	0.0048	1		12/05/13 18:37	95-47-6	
Surrogates								
Toluene-d8 (S)	101	%	80-120	1		12/05/13 18:37	2037-26-5	
4-Bromofluorobenzene (S)	102	%	80-120	1		12/05/13 18:37	460-00-4	
1,2-Dichloroethane-d4 (S)	124	%	76-132	1		12/05/13 18:37	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	22.9	%	0.50	1		12/09/13 00:00		

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ANALYTICAL RESULTS

Project: Inner City Oil/8157
Pace Project No.: 60158719

Sample: MW-1 1-3 Lab ID: **60158719011** Collected: 12/02/13 13:52 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546							
Acenaphthene	ND	mg/kg	0.0085	1	12/04/13 00:00	12/16/13 23:05	83-32-9	
Acenaphthylene	ND	mg/kg	0.0085	1	12/04/13 00:00	12/16/13 23:05	208-96-8	
Anthracene	ND	mg/kg	0.0085	1	12/04/13 00:00	12/16/13 23:05	120-12-7	
Benzo(a)anthracene	**0.0098**	mg/kg	0.0085	1	12/04/13 00:00	12/16/13 23:05	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.0085	1	12/04/13 00:00	12/16/13 23:05	50-32-8	
Benzo(b)fluoranthene	**0.017**	mg/kg	0.0085	1	12/04/13 00:00	12/16/13 23:05	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.0085	1	12/04/13 00:00	12/16/13 23:05	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.0085	1	12/04/13 00:00	12/16/13 23:05	207-08-9	
Chrysene	**0.014**	mg/kg	0.0085	1	12/04/13 00:00	12/16/13 23:05	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.0085	1	12/04/13 00:00	12/16/13 23:05	53-70-3	
Fluoranthene	**0.019**	mg/kg	0.0085	1	12/04/13 00:00	12/16/13 23:05	206-44-0	
Fluorene	ND	mg/kg	0.0085	1	12/04/13 00:00	12/16/13 23:05	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.0085	1	12/04/13 00:00	12/16/13 23:05	193-39-5	
Naphthalene	**0.014**	mg/kg	0.0085	1	12/04/13 00:00	12/16/13 23:05	91-20-3	
Phenanthrene	**0.015**	mg/kg	0.0085	1	12/04/13 00:00	12/16/13 23:05	85-01-8	
Pyrene	**0.016**	mg/kg	0.0085	1	12/04/13 00:00	12/16/13 23:05	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	76	%	47-120	5	12/04/13 00:00	12/16/13 23:24	321-60-8	
Terphenyl-d14 (S)	69	%	42-127	5	12/04/13 00:00	12/16/13 23:24	1718-51-0	
8270 MSSV DRO/ORO	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
TPH-ORO	317	mg/kg	19.4	1	12/04/13 00:00	12/09/13 16:22		
TPH-DRO	19.9	mg/kg	19.4	1	12/04/13 00:00	12/09/13 16:22		
Surrogates								
Nitrobenzene-d5 (S)	74	%	15-155	1	12/04/13 00:00	12/09/13 16:22	4165-60-0	
2-Fluorobiphenyl (S)	85	%	20-159	1	12/04/13 00:00	12/09/13 16:22	321-60-8	
Terphenyl-d14 (S)	218	%	18-160	1	12/04/13 00:00	12/09/13 16:22	1718-51-0	1e
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
tert-Amylmethyl ether	ND	mg/kg	0.0052	1		12/05/13 09:32	994-05-8	
Benzene	ND	mg/kg	0.0052	1		12/05/13 09:32	71-43-2	
tert-Butyl Alcohol	ND	mg/kg	0.026	1		12/05/13 09:32	75-65-0	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.0052	1		12/05/13 09:32	106-93-4	
1,2-Dichloroethane	ND	mg/kg	0.0052	1		12/05/13 09:32	107-06-2	
Diisopropyl ether	ND	mg/kg	0.0052	1		12/05/13 09:32	108-20-3	
Ethylbenzene	ND	mg/kg	0.0052	1		12/05/13 09:32	100-41-4	
Ethyl-tert-butyl ether	ND	mg/kg	0.0052	1		12/05/13 09:32	637-92-3	
Methyl-tert-butyl ether	ND	mg/kg	0.0052	1		12/05/13 09:32	1634-04-4	
Naphthalene	ND	mg/kg	0.021	1		12/05/13 09:32	91-20-3	
Toluene	ND	mg/kg	0.0052	1		12/05/13 09:32	108-88-3	
TPH-GRO	ND	mg/kg	0.52	1		12/05/13 09:32		
Xylene (Total)	ND	mg/kg	0.010	1		12/05/13 09:32	1330-20-7	
m&p-Xylene	ND	mg/kg	0.0052	1		12/05/13 09:32	179601-23-1	
o-Xylene	ND	mg/kg	0.0052	1		12/05/13 09:32	95-47-6	
Surrogates								
Toluene-d8 (S)	99	%	80-120	1		12/05/13 09:32	2037-26-5	

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ANALYTICAL RESULTS

Project: Inner City Oil/8157
Pace Project No.: 60158719

Sample: MW-1 1-3 **Lab ID: 60158719011** Collected: 12/02/13 13:52 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
Surrogates								
4-Bromofluorobenzene (S)	100	%	80-120	1		12/05/13 09:32	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	76-132	1		12/05/13 09:32	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	22.7	%	0.50	1		12/09/13 00:00		

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ANALYTICAL RESULTS

Project: Inner City Oil/8157
Pace Project No.: 60158719

Sample: MW-1 12-13 **Lab ID: 60158719012** Collected: 12/02/13 14:05 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV DRO/ORO	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
TPH-ORO	21.1	mg/kg	19.0	1	12/04/13 00:00	12/09/13 16:42		
TPH-DRO	ND	mg/kg	19.0	1	12/04/13 00:00	12/09/13 16:42		
Surrogates								
Nitrobenzene-d5 (S)	72	%	15-155	1	12/04/13 00:00	12/09/13 16:42	4165-60-0	
2-Fluorobiphenyl (S)	78	%	20-159	1	12/04/13 00:00	12/09/13 16:42	321-60-8	
Terphenyl-d14 (S)	88	%	18-160	1	12/04/13 00:00	12/09/13 16:42	1718-51-0	
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
tert-Amylmethyl ether	ND	mg/kg	0.0050	1		12/05/13 09:48	994-05-8	
Benzene	0.015	mg/kg	0.0050	1		12/05/13 09:48	71-43-2	
tert-Butyl Alcohol	ND	mg/kg	0.025	1		12/05/13 09:48	75-65-0	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.0050	1		12/05/13 09:48	106-93-4	
1,2-Dichloroethane	ND	mg/kg	0.0050	1		12/05/13 09:48	107-06-2	
Diisopropyl ether	ND	mg/kg	0.0050	1		12/05/13 09:48	108-20-3	
Ethylbenzene	ND	mg/kg	0.0050	1		12/05/13 09:48	100-41-4	
Ethyl-tert-butyl ether	ND	mg/kg	0.0050	1		12/05/13 09:48	637-92-3	
Methyl-tert-butyl ether	ND	mg/kg	0.0050	1		12/05/13 09:48	1634-04-4	
Naphthalene	ND	mg/kg	0.020	1		12/05/13 09:48	91-20-3	
Toluene	ND	mg/kg	0.0050	1		12/05/13 09:48	108-88-3	
TPH-GRO	ND	mg/kg	0.50	1		12/05/13 09:48		
Xylene (Total)	ND	mg/kg	0.010	1		12/05/13 09:48	1330-20-7	
m&p-Xylene	ND	mg/kg	0.0050	1		12/05/13 09:48	179601-23-1	
o-Xylene	ND	mg/kg	0.0050	1		12/05/13 09:48	95-47-6	
Surrogates								
Toluene-d8 (S)	101	%	80-120	1		12/05/13 09:48	2037-26-5	
4-Bromofluorobenzene (S)	101	%	80-120	1		12/05/13 09:48	460-00-4	
1,2-Dichloroethane-d4 (S)	109	%	76-132	1		12/05/13 09:48	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	22.4	%	0.50	1		12/09/13 00:00		

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ANALYTICAL RESULTS

Project: Inner City Oil/8157
Pace Project No.: 60158719

Sample: MW-1 13-14 Lab ID: 60158719013 Collected: 12/02/13 14:10 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3546							
Acenaphthene	0.025	mg/kg	0.0089	1	12/04/13 00:00	12/16/13 23:43	83-32-9	
Acenaphthylene	0.012	mg/kg	0.0089	1	12/04/13 00:00	12/16/13 23:43	208-96-8	
Anthracene	0.019	mg/kg	0.0089	1	12/04/13 00:00	12/16/13 23:43	120-12-7	
Benzo(a)anthracene	ND	mg/kg	0.0089	1	12/04/13 00:00	12/16/13 23:43	56-55-3	
Benzo(a)pyrene	ND	mg/kg	0.0089	1	12/04/13 00:00	12/16/13 23:43	50-32-8	
Benzo(b)fluoranthene	ND	mg/kg	0.0089	1	12/04/13 00:00	12/16/13 23:43	205-99-2	
Benzo(g,h,i)perylene	ND	mg/kg	0.0089	1	12/04/13 00:00	12/16/13 23:43	191-24-2	
Benzo(k)fluoranthene	ND	mg/kg	0.0089	1	12/04/13 00:00	12/16/13 23:43	207-08-9	
Chrysene	ND	mg/kg	0.0089	1	12/04/13 00:00	12/16/13 23:43	218-01-9	
Dibenz(a,h)anthracene	ND	mg/kg	0.0089	1	12/04/13 00:00	12/16/13 23:43	53-70-3	
Fluoranthene	ND	mg/kg	0.0089	1	12/04/13 00:00	12/16/13 23:43	206-44-0	
Fluorene	0.048	mg/kg	0.0089	1	12/04/13 00:00	12/16/13 23:43	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	mg/kg	0.0089	1	12/04/13 00:00	12/16/13 23:43	193-39-5	
Naphthalene	2.2	mg/kg	0.045	5	12/04/13 00:00	12/18/13 02:29	91-20-3	
Phenanthrene	0.057	mg/kg	0.0089	1	12/04/13 00:00	12/16/13 23:43	85-01-8	
Pyrene	0.012	mg/kg	0.0089	1	12/04/13 00:00	12/16/13 23:43	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	61	%	47-120	5	12/04/13 00:00	12/18/13 02:29	321-60-8	
Terphenyl-d14 (S)	76	%	42-127	5	12/04/13 00:00	12/18/13 02:29	1718-51-0	
8270 MSSV DRO/ORO	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
TPH-ORO	ND	mg/kg	20.3	1	12/04/13 00:00	12/09/13 17:03		
TPH-DRO	158	mg/kg	20.3	1	12/04/13 00:00	12/09/13 17:03		
Surrogates								
Nitrobenzene-d5 (S)	289	%	15-155	1	12/04/13 00:00	12/09/13 17:03	4165-60-0	1e
2-Fluorobiphenyl (S)	113	%	20-159	1	12/04/13 00:00	12/09/13 17:03	321-60-8	
Terphenyl-d14 (S)	123	%	18-160	1	12/04/13 00:00	12/09/13 17:03	1718-51-0	
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
tert-Amylmethyl ether	ND	mg/kg	0.29	50		12/05/13 10:03	994-05-8	
Benzene	7.1	mg/kg	0.29	50		12/05/13 10:03	71-43-2	
tert-Butyl Alcohol	ND	mg/kg	1.5	50		12/05/13 10:03	75-65-0	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.29	50		12/05/13 10:03	106-93-4	
1,2-Dichloroethane	ND	mg/kg	0.29	50		12/05/13 10:03	107-06-2	
Diisopropyl ether	ND	mg/kg	0.29	50		12/05/13 10:03	108-20-3	
Ethylbenzene	15.3	mg/kg	0.29	50		12/05/13 10:03	100-41-4	
Ethyl-tert-butyl ether	ND	mg/kg	0.29	50		12/05/13 10:03	637-92-3	
Methyl-tert-butyl ether	ND	mg/kg	0.29	50		12/05/13 10:03	1634-04-4	
Naphthalene	2.3	mg/kg	1.2	50		12/05/13 10:03	91-20-3	
Toluene	7.6	mg/kg	0.29	50		12/05/13 10:03	108-88-3	
TPH-GRO	606	mg/kg	147	250		12/05/13 18:53		
Xylene (Total)	54.0	mg/kg	2.9	250		12/05/13 18:53	1330-20-7	
m&p-Xylene	44.5	mg/kg	1.5	250		12/05/13 18:53	179601-23-1	
o-Xylene	9.5	mg/kg	0.29	50		12/05/13 10:03	95-47-6	
Surrogates								
Toluene-d8 (S)	104	%	80-120	50		12/05/13 10:03	2037-26-5	

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ANALYTICAL RESULTS

Project: Inner City OII/8157
Pace Project No.: 60158719

Sample: MW-1 13-14 **Lab ID: 60158719013** Collected: 12/02/13 14:10 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
Surrogates								
4-Bromofluorobenzene (S)	105	%	80-120	50		12/05/13 10:03	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	76-132	50		12/05/13 10:03	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	**26.8**	**%**	0.50	1		12/09/13 00:00		

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ANALYTICAL RESULTS

Project: Inner City Oil/8157
Pace Project No.: 60158719

Sample: MW-4 6-7 **Lab ID: 60158719014** Collected: 12/02/13 15:40 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV DRO/ORO	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
TPH-ORO	ND	mg/kg	18.5	1	12/04/13 00:00	12/09/13 17:23		
TPH-DRO	46.3	mg/kg	18.5	1	12/04/13 00:00	12/09/13 17:23		
Surrogates								
Nitrobenzene-d5 (S)	164	%	15-155	1	12/04/13 00:00	12/09/13 17:23	4165-60-0	1e
2-Fluorobiphenyl (S)	92	%	20-159	1	12/04/13 00:00	12/09/13 17:23	321-60-8	
Terphenyl-d14 (S)	79	%	18-160	1	12/04/13 00:00	12/09/13 17:23	1718-51-0	
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
tert-Amylmethyl ether	ND	mg/kg	0.0049	1		12/05/13 10:18	994-05-8	
Benzene	0.44	mg/kg	0.24	50		12/05/13 19:08	71-43-2	
tert-Butyl Alcohol	ND	mg/kg	0.024	1		12/05/13 10:18	75-65-0	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.0049	1		12/05/13 10:18	106-93-4	
1,2-Dichloroethane	ND	mg/kg	0.0049	1		12/05/13 10:18	107-06-2	
Diisopropyl ether	ND	mg/kg	0.0049	1		12/05/13 10:18	108-20-3	
Ethylbenzene	0.039	mg/kg	0.0049	1		12/05/13 10:18	100-41-4	
Ethyl-tert-butyl ether	ND	mg/kg	0.0049	1		12/05/13 10:18	637-92-3	
Methyl-tert-butyl ether	0.013	mg/kg	0.0049	1		12/05/13 10:18	1634-04-4	
Naphthalene	ND	mg/kg	0.020	1		12/05/13 10:18	91-20-3	
Toluene	ND	mg/kg	0.0049	1		12/05/13 10:18	108-88-3	
TPH-GRO	154	mg/kg	24.3	50		12/05/13 19:08		
Xylene (Total)	0.010	mg/kg	0.0098	1		12/05/13 10:18	1330-20-7	
m&p-Xylene	0.010	mg/kg	0.0049	1		12/05/13 10:18	179601-23-1	
o-Xylene	ND	mg/kg	0.0049	1		12/05/13 10:18	95-47-6	
Surrogates								
Toluene-d8 (S)	106	%	80-120	1		12/05/13 10:18	2037-26-5	
4-Bromofluorobenzene (S)	112	%	80-120	1		12/05/13 10:18	460-00-4	
1,2-Dichloroethane-d4 (S)	104	%	76-132	1		12/05/13 10:18	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	20.4	%	0.50	1		12/09/13 00:00		

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ANALYTICAL RESULTS

Project: Inner City Oil/8157
Pace Project No.: 60158719

Sample: MW-4 12-13 Lab ID: 60158719015 Collected: 12/02/13 15:45 Received: 12/02/13 17:15 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV DRO/ORO	Analytical Method: EPA 8270 Preparation Method: EPA 3546							
TPH-ORO	ND	mg/kg	19.5	1	12/04/13 00:00	12/09/13 17:44		
TPH-DRO	37.8	mg/kg	19.5	1	12/04/13 00:00	12/09/13 17:44		
Surrogates								
Nitrobenzene-d5 (S)	159	%	15-155	1	12/04/13 00:00	12/09/13 17:44	4165-60-0	1e
2-Fluorobiphenyl (S)	90	%	20-159	1	12/04/13 00:00	12/09/13 17:44	321-60-8	
Terphenyl-d14 (S)	80	%	18-160	1	12/04/13 00:00	12/09/13 17:44	1718-51-0	
8260 MSV GRO and Oxygenates	Analytical Method: EPA 5035A/8260							
tert-Amylmethyl ether	ND	mg/kg	0.30	50		12/05/13 10:34	994-05-8	
Benzene	1.0	mg/kg	0.30	50		12/05/13 10:34	71-43-2	
tert-Butyl Alcohol	ND	mg/kg	1.5	50		12/05/13 10:34	75-65-0	
1,2-Dibromoethane (EDB)	ND	mg/kg	0.30	50		12/05/13 10:34	106-93-4	
1,2-Dichloroethane	ND	mg/kg	0.30	50		12/05/13 10:34	107-06-2	
Diisopropyl ether	ND	mg/kg	0.30	50		12/05/13 10:34	108-20-3	
Ethylbenzene	0.86	mg/kg	0.30	50		12/05/13 10:34	100-41-4	
Ethyl-tert-butyl ether	ND	mg/kg	0.30	50		12/05/13 10:34	637-92-3	
Methyl-tert-butyl ether	ND	mg/kg	0.30	50		12/05/13 10:34	1634-04-4	
Naphthalene	2.0	mg/kg	1.2	50		12/05/13 10:34	91-20-3	
Toluene	ND	mg/kg	0.30	50		12/05/13 10:34	108-88-3	
TPH-GRO	436	mg/kg	148	250		12/05/13 19:23		
Xylene (Total)	ND	mg/kg	0.59	50		12/05/13 10:34	1330-20-7	
m&p-Xylene	ND	mg/kg	0.30	50		12/05/13 10:34	179601-23-1	
o-Xylene	ND	mg/kg	0.30	50		12/05/13 10:34	95-47-6	
Surrogates								
Toluene-d8 (S)	102	%	80-120	50		12/05/13 10:34	2037-26-5	
4-Bromofluorobenzene (S)	105	%	80-120	50		12/05/13 10:34	460-00-4	
1,2-Dichloroethane-d4 (S)	97	%	76-132	50		12/05/13 10:34	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974							
Percent Moisture	25.2	%	0.50	1		12/09/13 00:00		

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QUALITY CONTROL DATA

Project: Inner City Oil/8157
Pace Project No.: 60158719

QC Batch: MSV/58143 — Analysis Method: EPA 5035A/8260
QC Batch Method: EPA 5035A/8260 — Analysis Description: 8260 MSV GRO and Oxygenates
Associated Lab Samples: 60158719001, 60158719002, 60158719003, 60158719004, 60158719005, 60158719006, 60158719007, 60158719008, 60158719009, 60158719011, 60158719012, 60158719013, 60158719014, 60158719015

METHOD BLANK: 1299646 — Matrix: Solid
Associated Lab Samples: 60158719001, 60158719002, 60158719003, 60158719004, 60158719005, 60158719006, 60158719007, 60158719008, 60158719009, 60158719011, 60158719012, 60158719013, 60158719014, 60158719015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	mg/kg	ND	0.0050	12/05/13 06:44	
1,2-Dichloroethane	mg/kg	ND	0.0050	12/05/13 06:44	
Benzene	mg/kg	ND	0.0050	12/05/13 06:44	
Diisopropyl ether	mg/kg	ND	0.0050	12/05/13 06:44	
Ethyl-tert-butyl ether	mg/kg	ND	0.0050	12/05/13 06:44	
Ethylbenzene	mg/kg	ND	0.0050	12/05/13 06:44	
m&p-Xylene	mg/kg	ND	0.0050	12/05/13 06:44	
Methyl-tert-butyl ether	mg/kg	ND	0.0050	12/05/13 06:44	
Naphthalene	mg/kg	ND	0.020	12/05/13 06:44	
o-Xylene	mg/kg	ND	0.0050	12/05/13 06:44	
tert-Amylmethyl ether	mg/kg	ND	0.0050	12/05/13 06:44	
tert-Butyl Alcohol	mg/kg	ND	0.025	12/05/13 06:44	
Toluene	mg/kg	ND	0.0050	12/05/13 06:44	
TPH-GRO	mg/kg	ND	0.50	12/05/13 06:44	
Xylene (Total)	mg/kg	ND	0.010	12/05/13 06:44	
1,2-Dichloroethane-d4 (S)	%	91	76-132	12/05/13 06:44	
4-Bromofluorobenzene (S)	%	98	80-120	12/05/13 06:44	
Toluene-d8 (S)	%	98	80-120	12/05/13 06:44	

LABORATORY CONTROL SAMPLE: 1299647

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane (EDB)	mg/kg	.1	0.11	109	78-120	
1,2-Dichloroethane	mg/kg	.1	0.11	107	76-120	
Benzene	mg/kg	.1	0.10	102	77-120	
Diisopropyl ether	mg/kg	.1	0.10	104	66-121	
Ethyl-tert-butyl ether	mg/kg	.1	0.089	89	70-120	
Ethylbenzene	mg/kg	.1	0.099	99	76-120	
m&p-Xylene	mg/kg	.2	0.20	100	74-120	
Methyl-tert-butyl ether	mg/kg	.1	0.10	105	71-124	
Naphthalene	mg/kg	.1	0.11	114	70-120	
o-Xylene	mg/kg	.1	0.10	100	76-120	
tert-Amylmethyl ether	mg/kg	.1	0.10	102	75-120	
tert-Butyl Alcohol	mg/kg	.5	0.55	110	55-124	
Toluene	mg/kg	.1	0.096	96	74-120	
TPH-GRO	mg/kg	4	3.5	89	62-128	
Xylene (Total)	mg/kg	.3	0.30	100	75-120	
1,2-Dichloroethane-d4 (S)	%			99	76-132	
4-Bromofluorobenzene (S)	%			100	80-120	
Toluene-d8 (S)	%			101	80-120	

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QUALITY CONTROL DATA

Project: Inner City Oil/8157
Pace Project No.: 60158719

QC Batch: MSV/58179 — Analysis Method: EPA 5035A/8260
QC Batch Method: EPA 5035A/8260 — Analysis Description: 8260 MSV GRO and Oxygenates
Associated Lab Samples: 60158719003, 60158719005, 60158719006, 60158719010, 60158719013, 60158719014, 60158719015

METHOD BLANK: 1300656 — Matrix: Solid
Associated Lab Samples: 60158719003, 60158719005, 60158719006, 60158719010, 60158719013, 60158719014, 60158719015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	mg/kg	ND	0.0050	12/05/13 15:34	
1,2-Dichloroethane	mg/kg	ND	0.0050	12/05/13 15:34	
Benzene	mg/kg	ND	0.0050	12/05/13 15:34	
Diisopropyl ether	mg/kg	ND	0.0050	12/05/13 15:34	
Ethyl-tert-butyl ether	mg/kg	ND	0.0050	12/05/13 15:34	
Ethylbenzene	mg/kg	ND	0.0050	12/05/13 15:34	
m&p-Xylene	mg/kg	ND	0.0050	12/05/13 15:34	
Methyl-tert-butyl ether	mg/kg	ND	0.0050	12/05/13 15:34	
Naphthalene	mg/kg	ND	0.020	12/05/13 15:34	
o-Xylene	mg/kg	ND	0.0050	12/05/13 15:34	
tert-Amylmethyl ether	mg/kg	ND	0.0050	12/05/13 15:34	
tert-Butyl Alcohol	mg/kg	ND	0.025	12/05/13 15:34	
Toluene	mg/kg	ND	0.0050	12/05/13 15:34	
TPH-GRO	mg/kg	ND	0.50	12/05/13 15:34	
Xylene (Total)	mg/kg	ND	0.010	12/05/13 15:34	
1,2-Dichloroethane-d4 (S)	%	95	76-132	12/05/13 15:34	
4-Bromofluorobenzene (S)	%	98	80-120	12/05/13 15:34	
Toluene-d8 (S)	%	98	80-120	12/05/13 15:34	

LABORATORY CONTROL SAMPLE: 1300657

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane (EDB)	mg/kg	.1	0.11	107	78-120	
1,2-Dichloroethane	mg/kg	.1	0.11	106	76-120	
Benzene	mg/kg	.1	0.10	105	77-120	
Diisopropyl ether	mg/kg	.1	0.097	97	66-121	
Ethyl-tert-butyl ether	mg/kg	.1	0.085	85	70-120	
Ethylbenzene	mg/kg	.1	0.11	107	76-120	
m&p-Xylene	mg/kg	.2	0.22	108	74-120	
Methyl-tert-butyl ether	mg/kg	.1	0.099	99	71-124	
Naphthalene	mg/kg	.1	0.11	110	70-120	
o-Xylene	mg/kg	.1	0.11	105	76-120	
tert-Amylmethyl ether	mg/kg	.1	0.10	101	75-120	
tert-Butyl Alcohol	mg/kg	.5	0.50	100	55-124	
Toluene	mg/kg	.1	0.10	100	74-120	
TPH-GRO	mg/kg	4	3.6	90	62-128	
Xylene (Total)	mg/kg	.3	0.32	107	75-120	
1,2-Dichloroethane-d4 (S)	%			100	76-132	
4-Bromofluorobenzene (S)	%			101	80-120	
Toluene-d8 (S)	%			99	80-120	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Inner City Oil/8157
Pace Project No.: 60158719

QC Batch: OEXT/41858 — Analysis Method: EPA 8270 by SIM
QC Batch Method: EPA 3546 — Analysis Description: 8270/3546 MSSV PAH by SIM
Associated Lab Samples: 60158719003, 60158719006, 60158719011, 60158719013

METHOD BLANK: 1303699 — Matrix: Solid
Associated Lab Samples: 60158719003, 60158719006, 60158719011, 60158719013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acenaphthene	mg/kg	ND	0.0066	12/16/13 20:52	
Acenaphthylene	mg/kg	ND	0.0066	12/16/13 20:52	
Anthracene	mg/kg	ND	0.0066	12/16/13 20:52	
Benzo(a)anthracene	mg/kg	ND	0.0066	12/16/13 20:52	
Benzo(a)pyrene	mg/kg	ND	0.0066	12/16/13 20:52	
Benzo(b)fluoranthene	mg/kg	ND	0.0066	12/16/13 20:52	
Benzo(g,h,i)perylene	mg/kg	ND	0.0066	12/16/13 20:52	
Benzo(k)fluoranthene	mg/kg	ND	0.0066	12/16/13 20:52	
Chrysene	mg/kg	ND	0.0066	12/16/13 20:52	
Dibenz(a,h)anthracene	mg/kg	ND	0.0066	12/16/13 20:52	
Fluoranthene	mg/kg	ND	0.0066	12/16/13 20:52	
Fluorene	mg/kg	ND	0.0066	12/16/13 20:52	
Indeno(1,2,3-cd)pyrene	mg/kg	ND	0.0066	12/16/13 20:52	
Naphthalene	mg/kg	ND	0.0066	12/16/13 20:52	
Phenanthrene	mg/kg	ND	0.0066	12/16/13 20:52	
Pyrene	mg/kg	ND	0.0066	12/16/13 20:52	
2-Fluorobiphenyl (S)	%	77	47-120	12/16/13 21:11	
Terphenyl-d14 (S)	%	76	42-127	12/16/13 21:11	

LABORATORY CONTROL SAMPLE: 1303700

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	mg/kg	.033	0.029	86	58-120	
Acenaphthylene	mg/kg	.033	0.028	85	56-120	
Anthracene	mg/kg	.033	0.028	84	52-120	
Benzo(a)anthracene	mg/kg	.033	0.029	86	56-120	
Benzo(a)pyrene	mg/kg	.033	0.027	80	52-120	
Benzo(b)fluoranthene	mg/kg	.033	0.028	83	54-124	
Benzo(g,h,i)perylene	mg/kg	.033	0.028	84	47-123	
Benzo(k)fluoranthene	mg/kg	.033	0.028	83	53-126	
Chrysene	mg/kg	.033	0.029	87	47-120	
Dibenz(a,h)anthracene	mg/kg	.033	0.029	86	46-126	
Fluoranthene	mg/kg	.033	0.029	86	55-120	
Fluorene	mg/kg	.033	0.027	82	58-120	
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.029	86	47-123	
Naphthalene	mg/kg	.033	0.029	86	60-120	
Phenanthrene	mg/kg	.033	0.028	85	57-120	
Pyrene	mg/kg	.033	0.027	81	57-123	
2-Fluorobiphenyl (S)	%			85	47-120	
Terphenyl-d14 (S)	%			83	42-127	

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QUALITY CONTROL DATA

Project: Inner City OII/8157
Pace Project No.: 60158719

QC Batch: OEXT/41744 — Analysis Method: EPA 8270
QC Batch Method: EPA 3546 — Analysis Description: 8270 MSSV TPH ORO
Associated Lab Samples: 60158719001, 60158719002, 60158719003, 60158719004, 60158719005, 60158719006, 60158719007, 60158719008, 60158719009, 60158719010, 60158719011, 60158719012, 60158719013, 60158719014, 60158719015

METHOD BLANK: 1299341 — Matrix: Solid
Associated Lab Samples: 60158719001, 60158719002, 60158719003, 60158719004, 60158719005, 60158719006, 60158719007, 60158719008, 60158719009, 60158719010, 60158719011, 60158719012, 60158719013, 60158719014, 60158719015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO	mg/kg	ND	14.9	12/09/13 11:36	
TPH-ORO	mg/kg	ND	14.9	12/09/13 11:36	
2-Fluorobiphenyl (S)	%	112	20-159	12/09/13 11:36	
Nitrobenzene-d5 (S)	%	110	15-155	12/09/13 11:36	
Terphenyl-d14 (S)	%	69	18-160	12/09/13 11:36	

LABORATORY CONTROL SAMPLE: 1299342

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO	mg/kg	333	259	78	55-130	
2-Fluorobiphenyl (S)	%			207	20-159	1e
Nitrobenzene-d5 (S)	%			316	15-155	1e
Terphenyl-d14 (S)	%			157	18-160	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1299343 — 1299344

Parameter	Units	60158719001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH-DRO	mg/kg	ND	412	416	318	289	76	69	25-147	9	34	
2-Fluorobiphenyl (S)	%						174	134	20-159			1e
Nitrobenzene-d5 (S)	%						377	265	15-155			1e
Terphenyl-d14 (S)	%						155	120	18-160			

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Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA

Project: Inner City Oil/8157
Pace Project No.: 60158719

QC Batch: PMST/9210
QC Batch Method: ASTM D2974
Analysis Method: ASTM D2974
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 60158719001, 60158719002, 60158719003, 60158719004, 60158719005, 60158719006, 60158719007, 60158719008, 60158719009, 60158719010, 60158719011, 60158719012, 60158719013, 60158719014, 60158719015

METHOD BLANK: 1302429
Matrix: Solid
Associated Lab Samples: 60158719001, 60158719002, 60158719003, 60158719004, 60158719005, 60158719006, 60158719007, 60158719008, 60158719009, 60158719010, 60158719011, 60158719012, 60158719013, 60158719014, 60158719015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Percent Moisture	%	ND	0.50	12/09/13 00:00	

SAMPLE DUPLICATE: 1302430

Parameter	Units	60158671009 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	19.9	20.0	0	20	

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QUALIFIERS

Project: Inner City OII/8157
Pace Project No.: 60158719

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PRL - Pace Reporting Limit.
RL - Reporting Limit.
S - Surrogate
1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: MSV/58143
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: MSV/58179
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: MSV/58190
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.
Batch: OEXT/41858
[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1e Surrogate recovery outside QC limits due to DRO/ORO concentration.
E Analyte concentration exceeded the calibration range. The reported result is estimated.
S0 Surrogate recovery outside laboratory control limits.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Inner City Oil/8157
Pace Project No.: 60158719

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60158719003	MW-6 7.5-8	EPA 3546	OEXT/41858	EPA 8270 by SIM	MSSV/13324
60158719006	MW-7 13-15	EPA 3546	OEXT/41858	EPA 8270 by SIM	MSSV/13324
60158719011	MW-1 1-3	EPA 3546	OEXT/41858	EPA 8270 by SIM	MSSV/13324
60158719013	MW-1 13-14	EPA 3546	OEXT/41858	EPA 8270 by SIM	MSSV/13324
60158719001	MW-5 8.5-9.5	EPA 3546	OEXT/41744	EPA 8270	MSSV/13277
60158719002	MW-6 6.5-7.5	EPA 3546	OEXT/41744	EPA 8270	MSSV/13277
60158719003	MW-6 7.5-8	EPA 3546	OEXT/41744	EPA 8270	MSSV/13277
60158719004	MW-7 0-3	EPA 3546	OEXT/41744	EPA 8270	MSSV/13277
60158719005	MW-7 9-10	EPA 3546	OEXT/41744	EPA 8270	MSSV/13277
60158719006	MW-7 13-15	EPA 3546	OEXT/41744	EPA 8270	MSSV/13277
60158719007	MW-8 4-5	EPA 3546	OEXT/41744	EPA 8270	MSSV/13277
60158719008	MW-8 9-10	EPA 3546	OEXT/41744	EPA 8270	MSSV/13277
60158719009	MW-9 1-3	EPA 3546	OEXT/41744	EPA 8270	MSSV/13277
60158719010	MW-9 11-12	EPA 3546	OEXT/41744	EPA 8270	MSSV/13277
60158719011	MW-1 1-3	EPA 3546	OEXT/41744	EPA 8270	MSSV/13277
60158719012	MW-1 12-13	EPA 3546	OEXT/41744	EPA 8270	MSSV/13277
60158719013	MW-1 13-14	EPA 3546	OEXT/41744	EPA 8270	MSSV/13277
60158719014	MW-4 6-7	EPA 3546	OEXT/41744	EPA 8270	MSSV/13277
60158719015	MW-4 12-13	EPA 3546	OEXT/41744	EPA 8270	MSSV/13277
60158719001	MW-5 8.5-9.5	EPA 5035A/8260	MSV/58143		
60158719002	MW-6 6.5-7.5	EPA 5035A/8260	MSV/58143		
60158719003	MW-6 7.5-8	EPA 5035A/8260	MSV/58143		
60158719003	MW-6 7.5-8	EPA 5035A/8260	MSV/58179		
60158719004	MW-7 0-3	EPA 5035A/8260	MSV/58143		
60158719005	MW-7 9-10	EPA 5035A/8260	MSV/58143		
60158719005	MW-7 9-10	EPA 5035A/8260	MSV/58179		
60158719006	MW-7 13-15	EPA 5035A/8260	MSV/58143		
60158719006	MW-7 13-15	EPA 5035A/8260	MSV/58179		
60158719007	MW-8 4-5	EPA 5035A/8260	MSV/58143		
60158719008	MW-8 9-10	EPA 5035A/8260	MSV/58143		
60158719009	MW-9 1-3	EPA 5035A/8260	MSV/58143		
60158719010	MW-9 11-12	EPA 5035A/8260	MSV/58179		
60158719010	MW-9 11-12	EPA 5035A/8260	MSV/58190		
60158719011	MW-1 1-3	EPA 5035A/8260	MSV/58143		
60158719012	MW-1 12-13	EPA 5035A/8260	MSV/58143		
60158719013	MW-1 13-14	EPA 5035A/8260	MSV/58143		
60158719013	MW-1 13-14	EPA 5035A/8260	MSV/58179		
60158719014	MW-4 6-7	EPA 5035A/8260	MSV/58143		
60158719014	MW-4 6-7	EPA 5035A/8260	MSV/58179		
60158719015	MW-4 12-13	EPA 5035A/8260	MSV/58143		
60158719015	MW-4 12-13	EPA 5035A/8260	MSV/58179		

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Date: 12/19/2013 11:20 AM

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(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Inner City Oil/8157
Pace Project No.: 60158719

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60158719001	MW-5 8.5-9.5	ASTM D2974	PMST/9210		
60158719002	MW-6 6.5-7.5	ASTM D2974	PMST/9210		
60158719003	MW-6 7.5-8	ASTM D2974	PMST/9210		
60158719004	MW-7 0-3	ASTM D2974	PMST/9210		
60158719005	MW-7 9-10	ASTM D2974	PMST/9210		
60158719006	MW-7 13-15	ASTM D2974	PMST/9210		
60158719007	MW-8 4-5	ASTM D2974	PMST/9210		
60158719008	MW-8 9-10	ASTM D2974	PMST/9210		
60158719009	MW-9 1-3	ASTM D2974	PMST/9210		
60158719010	MW-9 11-12	ASTM D2974	PMST/9210		
60158719011	MW-1 1-3	ASTM D2974	PMST/9210		
60158719012	MW-1 12-13	ASTM D2974	PMST/9210		
60158719013	MW-1 13-14	ASTM D2974	PMST/9210		
60158719014	MW-4 6-7	ASTM D2974	PMST/9210		
60158719015	MW-4 12-13	ASTM D2974	PMST/9210		

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60158719

Optional
Proj Due Date:
Proj Name:

Client Name: APEX

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☒ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☒ No ☐

Custody Seal on Cooler/Box Present: Yes ☒ No ☐ Seals intact: Yes ☒ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Other ☒ ZIPL

Thermometer Used: (T-239) / T-194 Type of Ice: (Wet) Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 4.4 / 6.2

Date and initials of person examining contents: 12/3

Temperature should be above freezing to 6°C

Chain of Custody present:	☒Yes ☐No ☐N/A	1.
Chain of Custody filled out:	☒Yes ☐No ☐N/A	2.
Chain of Custody relinquished:	☒Yes ☐No ☐N/A	3.
Sampler name & signature on COC:	☒Yes ☐No ☐N/A	4.
Samples arrived within holding time:	☒Yes ☐No ☐N/A	5.
Short Hold Time analyses (<72hr):	~~☐Yes~~ ☒No ☐N/A	6.
Rush Turn Around Time requested:	☐Yes ☒No ☐N/A	7.
Sufficient volume:	☒Yes ☐No ☐N/A	8.
Correct containers used:	☒Yes ☐No ☐N/A	
Pace containers used:	☒Yes ☐No ☐N/A	9.
Containers intact:	☒Yes ☐No ☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☒N/A	11.
Filtered volume received for dissolved tests?	☐Yes ☐No ☒N/A	12.
Sample labels match COC: Includes date/time/ID/analyses Matrix: SI	☒Yes ☐No ☐N/A	13.
All containers needing preservation have been checked	☐Yes ☒No ☐N/A	
All containers needing preservation are found to be in compliance with EPA recommendation. Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐Yes ☒No ☐N/A	14. Initial when completed. Lot # of added preservative
Trip Blank present:	☐Yes ☒No ☐N/A	
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	☐Yes ☐No ☒N/A	16.
Project sampled in USDA Regulated Area:	☐Yes ☐No ☒N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y (N) Field Data Required? Y (N)

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: ARB Date: 12/3/13

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The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 2

Section A Required Client Information:

Company: Apex Envirotech, Inc.
Address: 1920 W 143rd Street, Suite 100
Leawood, KS 66224
Email To: PCurrier@apexenvirotech.com
Phone: 816-532-8202 Fax: 816-228-5[illegible]
Requested Due Date/TAT: STD

Section B Required Project Information:

Report To: Patty Currier
Copy To:
Purchase Order No.:
Project Name: Inner City Oil
Project Number: 7157

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: Andy Brownfield
Pace Profile #: 7067

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☒ UST ☐ RCRA ☐ OTHER

Site Location STATE: MO

Requested Analysis Filtered (Y/N)

Section D Required Client Information

Valid Matrix Codes: MATRIX / CODE — DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start Date	Composite Start Time	Composite End/Grab Date	Composite End/Grab Time	Sample Temp at Collection	# of Containers	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test	Residual Chlorine (Y/N)	Pace Project No./Lab I.D.
1	MW-5 8.5-9.5	SL	G			12/2/13	1049		5									X X X	N	60158719
2	MW-6 6.5-7.5						1054													
3	MW-6 7.5-8						1055													
4	MW-7 0-3						1110													
5	MW-7 9-10						1116													
6	MW-7 13-15						1120													
7	MW-8 4-5						1310													
8	MW-8 9-10						1320													
9	MW-9 1-3						1327													
10	MW-9 11-12						1338													
11	~~MW-9~~ MW-1 1-3						1352													
12	MW-1 12-13						1405													

Analysis Test: 8260 (Full Scan), 8260 (Hold Points for Drop), 8260 (Hold Points for Drop)

Pace Project No./Lab I.D.: other, Dup 9m, 2 Dup 9Q

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Hold Points for Drop	Patty Currier apex	12/2/13	4:38	[signature]	12-2	4:38				
				Shelle McCy / PASI	12/2	1715	6.2	Y	Y	Y
							4.4	Y	Y	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Patty Currier
SIGNATURE of SAMPLER: Patty Currier
DATE Signed (MM/DD/YY): 12/2/13

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

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Page: 2 of 2

1634983

Section A Required Client Information:
Company: Apex Envirotech
Address:
Email To: DCurriere@apexenvirotech.com
Phone: 816-867-2856 Fax:
Requested Due Date/TAT: STD

Section B Required Project Information:
Report To:
Copy To:
Purchase Order No.:
Project Name: Inner City Oil
Project Number: 71557

Section C Invoice Information:
Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☒ UST ☐ RCRA ☐ OTHER
Site Location STATE: MO

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

Requested Analysis Filtered (Y/N): Y/N; Analysis Test: BTEX, Naphthalene, Pb-Total, DRO/GRO

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW-1 13-14	SL	G			12/2/13	1410		5										60158719
2	MW-4 6-7						1540												
3	MW-4 12-13						1545												
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

Pace Project No./ Lab I.D.: WGFU, Other, DRAM, 2(40) 113, 114, 115

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Hold Pack for DRO/GRO	Betty Currier, Apex	12/2/13	4:38	[signature]	12/2	4:38
				[signature] MCS/PAST	12/2	1715

SAMPLE CONDITIONS

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
6.2	Y	Y	Y
4.4	Y	Y	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Betty Currier
SIGNATURE of SAMPLER: Betty Currier
DATE Signed (MM/DD/YY): 12/2/13

ORIGINAL

F-ALL-Q-020rev.07, 15-May-2007

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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January 06, 2014

Patty Currier
Apex Envirotech, Inc.
1920 W 143rd Street, Suite 100
Overland Park, KS 66224

RE: Project: INNER CITY OIL
Pace Project No.: 60159603

Dear Patty Currier:
Enclosed are the analytical results for sample(s) received by the laboratory on December 13, 2013. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Andy Brownfield

Andy Brownfield

andy.brownfield@pacelabs.com
Project Manager

Enclosures

cc: Melissa Dowling, Apex Envirotech, Inc.

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CERTIFICATIONS

Project: INNER CITY OIL
Pace Project No.: 60159603

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: INNER CITY OIL
Pace Project No.: 60159603

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60159603001	MW1	Water	12/13/13 12:05	12/13/13 15:15
60159603002	MW3	Water	12/13/13 12:15	12/13/13 15:15
60159603003	MW4	Water	12/13/13 12:15	12/13/13 15:15
60159603004	TRIP BLANK	Water	12/13/13 12:05	12/13/13 15:15

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SAMPLE ANALYTE COUNT

Project: INNER CITY OIL
Pace Project No.: 60159603

Lab ID	Sample ID	Method	Analysts	Analytes Reported
60159603001	MW1	EPA 8260	EAK, JTK	19
60159603002	MW3	EPA 8260	JTK	19
60159603003	MW4	EPA 8270	JMT	5
		EPA 8270 by SIM	NAW	18
		EPA 8260	EAK, JTK	19
60159603004	TRIP BLANK	EPA 8260	EAK, JTK	19

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ANALYTICAL RESULTS

Project: INNER CITY OIL
Pace Project No.: 60159603

Sample: MW1 Lab ID: 60159603001 Collected: 12/13/13 12:05 Received: 12/13/13 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV GRO and Oxygenates	Analytical Method: EPA 8260							
tert-Amylmethyl ether	ND	ug/L	1.0	1		12/16/13 13:14	994-05-8	
Benzene	5020	ug/L	50.0	50		12/18/13 13:57	71-43-2	
tert-Butyl Alcohol	16.6	ug/L	10.0	1		12/16/13 13:14	75-65-0	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/16/13 13:14	106-93-4	
1,2-Dichloroethane	ND	ug/L	1.0	1		12/16/13 13:14	107-06-2	
Diisopropyl ether	ND	ug/L	1.0	1		12/16/13 13:14	108-20-3	
Ethylbenzene	898	ug/L	50.0	50		12/18/13 13:57	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	1.0	1		12/16/13 13:14	637-92-3	
Methyl-tert-butyl ether	5.3	ug/L	1.0	1		12/16/13 13:14	1634-04-4	
Naphthalene	119	ug/L	10.0	1		12/16/13 13:14	91-20-3	
Toluene	532	ug/L	50.0	50		12/18/13 13:57	108-88-3	
TPH-GRO	28900	ug/L	25000	50		12/18/13 13:57		
Xylene (Total)	2690	ug/L	150	50		12/18/13 13:57	1330-20-7	
m&p-Xylene	2290	ug/L	100	50		12/18/13 13:57	179601-23-1	
o-Xylene	402	ug/L	50.0	50		12/18/13 13:57	95-47-6	
Surrogates								
Toluene-d8 (S)	102	%	80-120	1		12/16/13 13:14	2037-26-5	
4-Bromofluorobenzene (S)	99	%	80-120	1		12/16/13 13:14	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	80-120	1		12/16/13 13:14	17060-07-0	
Preservation pH	11.0		0.10	1		12/16/13 13:14		

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Date: 01/06/2014 10:47 AM

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ANALYTICAL RESULTS

Project: INNER CITY OIL
Pace Project No.: 60159603

Sample: MW3 Lab ID: 60159603002 Collected: 12/13/13 12:15 Received: 12/13/13 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV GRO and Oxygenates	Analytical Method: EPA 8260							
tert-Amylmethyl ether	9.2	ug/L	5.0	5		12/18/13 14:13	994-05-8	
Benzene	228	ug/L	5.0	5		12/18/13 14:13	71-43-2	
tert-Butyl Alcohol	246	ug/L	50.0	5		12/18/13 14:13	75-65-0	
1,2-Dibromoethane (EDB)	ND	ug/L	5.0	5		12/18/13 14:13	106-93-4	
1,2-Dichloroethane	ND	ug/L	5.0	5		12/18/13 14:13	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	5		12/18/13 14:13	108-20-3	
Ethylbenzene	30.5	ug/L	5.0	5		12/18/13 14:13	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	5.0	5		12/18/13 14:13	637-92-3	
Methyl-tert-butyl ether	264	ug/L	5.0	5		12/18/13 14:13	1634-04-4	
Naphthalene	79.3	ug/L	50.0	5		12/18/13 14:13	91-20-3	
Toluene	10.3	ug/L	5.0	5		12/18/13 14:13	108-88-3	
TPH-GRO	ND	ug/L	2500	5		12/18/13 14:13		
Xylene (Total)	ND	ug/L	15.0	5		12/18/13 14:13	1330-20-7	
m&p-Xylene	ND	ug/L	10.0	5		12/18/13 14:13	179601-23-1	
o-Xylene	5.7	ug/L	5.0	5		12/18/13 14:13	95-47-6	
Surrogates								
Toluene-d8 (S)	105	%	80-120	5		12/18/13 14:13	2037-26-5	
4-Bromofluorobenzene (S)	99	%	80-120	5		12/18/13 14:13	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	80-120	5		12/18/13 14:13	17060-07-0	
Preservation pH	12.0		0.10	5		12/18/13 14:13		

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ANALYTICAL RESULTS

Project: INNER CITY OIL
Pace Project No.: 60159603

Sample: MW4 Lab ID: 60159603003 Collected: 12/13/13 12:15 Received: 12/13/13 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV DRO/ORO	Analytical Method: EPA 8270 Preparation Method: EPA 3510C							
TPH-ORO	ND	mg/L	1.0	1	12/20/13 00:00	12/23/13 18:24		
TPH-DRO	9.9	mg/L	1.0	1	12/20/13 00:00	12/23/13 18:24		
Surrogates								
Nitrobenzene-d5 (S)	918	%	10-135	1	12/20/13 00:00	12/23/13 18:24	4165-60-0	1e
2-Fluorobiphenyl (S)	110	%	19-124	1	12/20/13 00:00	12/23/13 18:24	321-60-8	
Terphenyl-d14 (S)	89	%	24-131	1	12/20/13 00:00	12/23/13 18:24	1718-51-0	
8270 MSSV PAH by SIM	Analytical Method: EPA 8270 by SIM Preparation Method: EPA 3510							
Acenaphthene	ND	ug/L	1.0	1	12/20/13 00:00	12/31/13 19:04	83-32-9	
Acenaphthylene	ND	ug/L	1.0	1	12/20/13 00:00	12/31/13 19:04	208-96-8	
Anthracene	ND	ug/L	1.0	1	12/20/13 00:00	12/31/13 19:04	120-12-7	
Benzo(a)anthracene	ND	ug/L	1.0	1	12/20/13 00:00	12/31/13 19:04	56-55-3	
Benzo(a)pyrene	ND	ug/L	1.0	1	12/20/13 00:00	12/31/13 19:04	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	1.0	1	12/20/13 00:00	12/31/13 19:04	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	1.0	1	12/20/13 00:00	12/31/13 19:04	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	1.0	1	12/20/13 00:00	12/31/13 19:04	207-08-9	
Chrysene	ND	ug/L	1.0	1	12/20/13 00:00	12/31/13 19:04	218-01-9	
Dibenz(a,h)anthracene	ND	ug/L	1.0	1	12/20/13 00:00	12/31/13 19:04	53-70-3	
Fluoranthene	ND	ug/L	1.0	1	12/20/13 00:00	12/31/13 19:04	206-44-0	
Fluorene	ND	ug/L	1.0	1	12/20/13 00:00	12/31/13 19:04	86-73-7	
Indeno(1,2,3-cd)pyrene	ND	ug/L	1.0	1	12/20/13 00:00	12/31/13 19:04	193-39-5	
Naphthalene	227	ug/L	50.0	10	12/20/13 00:00	12/31/13 19:23	91-20-3	
Phenanthrene	ND	ug/L	5.0	1	12/20/13 00:00	12/31/13 19:04	85-01-8	
Pyrene	ND	ug/L	1.0	1	12/20/13 00:00	12/31/13 19:04	129-00-0	
Surrogates								
2-Fluorobiphenyl (S)	99	%	38-120	1	12/20/13 00:00	12/31/13 19:04	321-60-8	
Terphenyl-d14 (S)	85	%	42-126	1	12/20/13 00:00	12/31/13 19:04	1718-51-0	
8260 MSV GRO and Oxygenates	Analytical Method: EPA 8260							
tert-Amylmethyl ether	10.1	ug/L	1.0	1		12/16/13 13:44	994-05-8	
Benzene	2130	ug/L	50.0	50		12/18/13 14:28	71-43-2	
tert-Butyl Alcohol	397	ug/L	10.0	1		12/16/13 13:44	75-65-0	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/16/13 13:44	106-93-4	
1,2-Dichloroethane	ND	ug/L	1.0	1		12/16/13 13:44	107-06-2	
Diisopropyl ether	ND	ug/L	1.0	1		12/16/13 13:44	108-20-3	
Ethylbenzene	195	ug/L	50.0	50		12/18/13 14:28	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	1.0	1		12/16/13 13:44	637-92-3	
Methyl-tert-butyl ether	605	ug/L	50.0	50		12/18/13 14:28	1634-04-4	
Naphthalene	ND	ug/L	500	50		12/18/13 14:28	91-20-3	
Toluene	11.7	ug/L	1.0	1		12/16/13 13:44	108-88-3	
TPH-GRO	ND	ug/L	25000	50		12/18/13 14:28		
Xylene (Total)	9.6	ug/L	3.0	1		12/16/13 13:44	1330-20-7	
m&p-Xylene	7.3	ug/L	2.0	1		12/16/13 13:44	179601-23-1	
o-Xylene	2.2	ug/L	1.0	1		12/16/13 13:44	95-47-6	
Surrogates								
Toluene-d8 (S)	97	%	80-120	1		12/16/13 13:44	2037-26-5	
4-Bromofluorobenzene (S)	95	%	80-120	1		12/16/13 13:44	460-00-4	

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ANALYTICAL RESULTS

Project: INNER CITY OIL
Pace Project No.: 60159603

Sample: MW4 Lab ID: **60159603003** Collected: 12/13/13 12:15 Received: 12/13/13 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV GRO and Oxygenates	Analytical Method: EPA 8260							
Surrogates								
1,2-Dichloroethane-d4 (S)	90	%	80-120	1		12/16/13 13:44	17060-07-0	
Preservation pH	11.0		0.10	1		12/16/13 13:44		

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ANALYTICAL RESULTS

Project: INNER CITY OIL
Pace Project No.: 60159603

Sample: TRIP BLANK Lab ID: 60159603004 Collected: 12/13/13 12:05 Received: 12/13/13 15:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV GRO and Oxygenates	Analytical Method: EPA 8260							
tert-Amylmethyl ether	ND	ug/L	1.0	1		12/16/13 13:59	994-05-8	
Benzene	ND	ug/L	1.0	1		12/18/13 14:44	71-43-2	
tert-Butyl Alcohol	ND	ug/L	10.0	1		12/16/13 13:59	75-65-0	
1,2-Dibromoethane (EDB)	ND	ug/L	1.0	1		12/16/13 13:59	106-93-4	
1,2-Dichloroethane	ND	ug/L	1.0	1		12/16/13 13:59	107-06-2	
Diisopropyl ether	ND	ug/L	1.0	1		12/16/13 13:59	108-20-3	
Ethylbenzene	ND	ug/L	1.0	1		12/18/13 14:44	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	1.0	1		12/16/13 13:59	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	1.0	1		12/16/13 13:59	1634-04-4	
Naphthalene	ND	ug/L	10.0	1		12/18/13 14:44	91-20-3	
Toluene	ND	ug/L	1.0	1		12/16/13 13:59	108-88-3	
TPH-GRO	ND	ug/L	500	1		12/16/13 13:59		
Xylene (Total)	ND	ug/L	3.0	1		12/16/13 13:59	1330-20-7	
m&p-Xylene	ND	ug/L	2.0	1		12/16/13 13:59	179601-23-1	
o-Xylene	ND	ug/L	1.0	1		12/16/13 13:59	95-47-6	
Surrogates								
Toluene-d8 (S)	94	%	80-120	1		12/16/13 13:59	2037-26-5	
4-Bromofluorobenzene (S)	101	%	80-120	1		12/16/13 13:59	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	80-120	1		12/16/13 13:59	17060-07-0	
Preservation pH	11.0		0.10	1		12/16/13 13:59		

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QUALITY CONTROL DATA

Project: INNER CITY OIL
Pace Project No.: 60159603

QC Batch: MSV/58363 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV MO GRO Oxygenates
Associated Lab Samples: 60159603001, 60159603003, 60159603004

METHOD BLANK: 1306267 Matrix: Water
Associated Lab Samples: 60159603001, 60159603003, 60159603004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/16/13 11:13	
1,2-Dichloroethane	ug/L	ND	1.0	12/16/13 11:13	
Diisopropyl ether	ug/L	ND	1.0	12/16/13 11:13	
Ethyl-tert-butyl ether	ug/L	ND	1.0	12/16/13 11:13	
m&p-Xylene	ug/L	ND	2.0	12/16/13 11:13	
Methyl-tert-butyl ether	ug/L	ND	1.0	12/16/13 11:13	
Naphthalene	ug/L	ND	10.0	12/16/13 11:13	
o-Xylene	ug/L	ND	1.0	12/16/13 11:13	
tert-Amylmethyl ether	ug/L	ND	1.0	12/16/13 11:13	
tert-Butyl Alcohol	ug/L	ND	10.0	12/16/13 11:13	
Toluene	ug/L	ND	1.0	12/16/13 11:13	
TPH-GRO	ug/L	ND	500	12/16/13 11:13	
Xylene (Total)	ug/L	ND	3.0	12/16/13 11:13	
1,2-Dichloroethane-d4 (S)	%	96	80-120	12/16/13 11:13	
4-Bromofluorobenzene (S)	%	100	80-120	12/16/13 11:13	
Toluene-d8 (S)	%	95	80-120	12/16/13 11:13	

LABORATORY CONTROL SAMPLE: 1306268

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	20	19.5	98	79-121	
1,2-Dichloroethane	ug/L	20	18.9	94	72-122	
Diisopropyl ether	ug/L	20	17.5	88	70-120	
Ethyl-tert-butyl ether	ug/L	20	18.3	91	69-120	
m&p-Xylene	ug/L	40	39.7	99	75-124	
Methyl-tert-butyl ether	ug/L	20	18.6	93	67-128	
Naphthalene	ug/L	20	20.4	102	64-127	
o-Xylene	ug/L	20	19.6	98	77-122	
tert-Amylmethyl ether	ug/L	20	18.4	92	71-120	
tert-Butyl Alcohol	ug/L	100	88.5	88	50-142	
Toluene	ug/L	20	18.8	94	76-122	
TPH-GRO	ug/L	4000	3370	84	61-131	
Xylene (Total)	ug/L	60	59.2	99	76-122	
1,2-Dichloroethane-d4 (S)	%			100	80-120	
4-Bromofluorobenzene (S)	%			102	80-120	
Toluene-d8 (S)	%			96	80-120	

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QUALITY CONTROL DATA

Project: INNER CITY OIL
Pace Project No.: 60159603

QC Batch: MSV/58434 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV MO GRO Oxygenates
Associated Lab Samples: 60159603001, 60159603002, 60159603003, 60159603004

METHOD BLANK: 1307774 Matrix: Water
Associated Lab Samples: 60159603001, 60159603002, 60159603003, 60159603004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	1.0	12/18/13 13:11	
1,2-Dichloroethane	ug/L	ND	1.0	12/18/13 13:11	
Benzene	ug/L	ND	1.0	12/18/13 13:11	
Diisopropyl ether	ug/L	ND	1.0	12/18/13 13:11	
Ethyl-tert-butyl ether	ug/L	ND	1.0	12/18/13 13:11	
Ethylbenzene	ug/L	ND	1.0	12/18/13 13:11	
m&p-Xylene	ug/L	ND	2.0	12/18/13 13:11	
Methyl-tert-butyl ether	ug/L	ND	1.0	12/18/13 13:11	
Naphthalene	ug/L	ND	10.0	12/18/13 13:11	
o-Xylene	ug/L	ND	1.0	12/18/13 13:11	
tert-Amylmethyl ether	ug/L	ND	1.0	12/18/13 13:11	
tert-Butyl Alcohol	ug/L	ND	10.0	12/18/13 13:11	
Toluene	ug/L	ND	1.0	12/18/13 13:11	
TPH-GRO	ug/L	ND	500	12/18/13 13:11	
Xylene (Total)	ug/L	ND	3.0	12/18/13 13:11	
1,2-Dichloroethane-d4 (S)	%	99	80-120	12/18/13 13:11	
4-Bromofluorobenzene (S)	%	96	80-120	12/18/13 13:11	
Toluene-d8 (S)	%	104	80-120	12/18/13 13:11	

LABORATORY CONTROL SAMPLE: 1307775

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	20	21.2	106	79-121	
1,2-Dichloroethane	ug/L	20	18.8	94	72-122	
Benzene	ug/L	20	19.8	99	73-122	
Diisopropyl ether	ug/L	20	18.6	93	70-120	
Ethyl-tert-butyl ether	ug/L	20	20.1	101	69-120	
Ethylbenzene	ug/L	20	19.9	99	76-123	
m&p-Xylene	ug/L	40	38.6	96	75-124	
Methyl-tert-butyl ether	ug/L	20	19.9	99	67-128	
Naphthalene	ug/L	20	21.3	107	64-127	
o-Xylene	ug/L	20	20.2	101	77-122	
tert-Amylmethyl ether	ug/L	20	18.9	94	71-120	
tert-Butyl Alcohol	ug/L	100	107	107	50-142	
Toluene	ug/L	20	20.0	100	76-122	
TPH-GRO	ug/L	4000	3630	91	61-131	
Xylene (Total)	ug/L	60	58.8	98	76-122	
1,2-Dichloroethane-d4 (S)	%			98	80-120	
4-Bromofluorobenzene (S)	%			105	80-120	
Toluene-d8 (S)	%			102	80-120	

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QUALITY CONTROL DATA

Project: INNER CITY OIL
Pace Project No.: 60159603

QC Batch: OEXT/42034
QC Batch Method: EPA 3510C
Analysis Method: EPA 8270
Analysis Description: 8270 MSSV TPH ORO
Associated Lab Samples: 60159603003

METHOD BLANK: 1309229
Matrix: Water
Associated Lab Samples: 60159603003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO	mg/L	ND	1.0	12/23/13 17:43	
TPH-ORO	mg/L	ND	1.0	12/23/13 17:43	
2-Fluorobiphenyl (S)	%	87	19-124	12/23/13 17:43	
Nitrobenzene-d5 (S)	%	83	10-135	12/23/13 17:43	
Terphenyl-d14 (S)	%	89	24-131	12/23/13 17:43	

LABORATORY CONTROL SAMPLE: 1309230

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO	mg/L	10	10.2	102	40-123	
2-Fluorobiphenyl (S)	%			150	19-124	1e
Nitrobenzene-d5 (S)	%			278	10-135	1e
Terphenyl-d14 (S)	%			102	24-131	

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QUALITY CONTROL DATA

Project: INNER CITY OIL
Pace Project No.: 60159603

QC Batch: OEXT/42110
QC Batch Method: EPA 3510
Analysis Method: EPA 8270 by SIM
Analysis Description: 8270 Water PAH by SIM MSSV
Associated Lab Samples: 60159603003

METHOD BLANK: 1311748
Matrix: Water
Associated Lab Samples: 60159603003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Acenaphthene	ug/L	ND	1.0	12/31/13 18:26	
Acenaphthylene	ug/L	ND	1.0	12/31/13 18:26	
Anthracene	ug/L	ND	1.0	12/31/13 18:26	
Benzo(a)anthracene	ug/L	ND	1.0	12/31/13 18:26	
Benzo(a)pyrene	ug/L	ND	1.0	12/31/13 18:26	
Benzo(b)fluoranthene	ug/L	ND	1.0	12/31/13 18:26	
Benzo(g,h,i)perylene	ug/L	ND	1.0	12/31/13 18:26	
Benzo(k)fluoranthene	ug/L	ND	1.0	12/31/13 18:26	
Chrysene	ug/L	ND	1.0	12/31/13 18:26	
Dibenz(a,h)anthracene	ug/L	ND	1.0	12/31/13 18:26	
Fluoranthene	ug/L	ND	1.0	12/31/13 18:26	
Fluorene	ug/L	ND	1.0	12/31/13 18:26	
Indeno(1,2,3-cd)pyrene	ug/L	ND	1.0	12/31/13 18:26	
Naphthalene	ug/L	ND	5.0	12/31/13 18:26	
Phenanthrene	ug/L	ND	5.0	12/31/13 18:26	
Pyrene	ug/L	ND	1.0	12/31/13 18:26	
2-Fluorobiphenyl (S)	%	112	38-120	12/31/13 18:26	
Terphenyl-d14 (S)	%	130	42-126	12/31/13 18:26	S3

LABORATORY CONTROL SAMPLE: 1311749

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Acenaphthene	ug/L	1	0.83	83	50-120	
Acenaphthylene	ug/L	1	0.82	82	47-120	
Anthracene	ug/L	1	0.79	79	46-120	
Benzo(a)anthracene	ug/L	1	0.84	84	53-120	
Benzo(a)pyrene	ug/L	1	0.82	82	49-120	
Benzo(b)fluoranthene	ug/L	1	0.82	82	49-124	
Benzo(g,h,i)perylene	ug/L	1	0.83	83	38-124	
Benzo(k)fluoranthene	ug/L	1	0.84	84	53-120	
Chrysene	ug/L	1	0.86	86	43-126	
Dibenz(a,h)anthracene	ug/L	1	0.77	77	36-123	
Fluoranthene	ug/L	1	0.84	84	50-120	
Fluorene	ug/L	1	0.84	84	48-120	
Indeno(1,2,3-cd)pyrene	ug/L	1	0.80	80	41-122	
Naphthalene	ug/L	1	0.86	86	50-120	
Phenanthrene	ug/L	1	0.82	82	52-120	
Pyrene	ug/L	1	0.88	88	50-124	
2-Fluorobiphenyl (S)	%			82	38-120	
Terphenyl-d14 (S)	%			89	42-126	

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QUALIFIERS

Project: INNER CITY OIL
Pace Project No.: 60159603

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PRL - Pace Reporting Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

BATCH QUALIFIERS

Batch: MSV/58363

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: MSV/58434

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: OEXT/42034

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

Batch: OEXT/42110

[M5] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

ANALYTE QUALIFIERS

1e Surrogate recovery outside QC limits due to DRO/ORO concentration.

S3 Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated samples. Results unaffected by high bias.

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Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
(913)599-5665

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: INNER CITY OIL
Pace Project No.: 60159603

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60159603003	MW4	EPA 3510C	OEXT/42034	EPA 8270	MSSV/13362
60159603003	MW4	EPA 3510	OEXT/42110	EPA 8270 by SIM	MSSV/13402
60159603001	MW1	EPA 8260	MSV/58363		
60159603001	MW1	EPA 8260	MSV/58434		
60159603002	MW3	EPA 8260	MSV/58434		
60159603003	MW4	EPA 8260	MSV/58363		
60159603003	MW4	EPA 8260	MSV/58434		
60159603004	TRIP BLANK	EPA 8260	MSV/58363		
60159603004	TRIP BLANK	EPA 8260	MSV/58434		

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Pace Analytical
www.pacelabs.com

Sample Condition Upon Receipt

WO#: 60159603

60159603

Client Name: Apex

Courier: Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☑ Other ☐

Tracking #: _____ Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☑ Foam ☑ None ☐ Other ☑ ZPIC

Thermometer Used: T-239 / T-194 Type of Ice: Wet Blue None ☐ Samples received on ice, cooling process has begun. (circle one)

Cooler Temperature: 2-4

Temperature should be above freezing to 6°C

Optional
Proj Due Date:
Proj Name:

Date and initials of person examining contents: PW 12/13/13

Chain of Custody present:	☑Yes ☐No ☐N/A	1.	
Chain of Custody filled out:	☑Yes ☐No ☐N/A	2.	
Chain of Custody relinquished:	☑Yes ☐No ☐N/A	3.	
Sampler name & signature on COC:	☑Yes ☐No ☐N/A	4.	
Samples arrived within holding time:	☑Yes ☐No ☐N/A	5.	
Short Hold Time analyses (<72hr):	☐Yes ☑No ☐N/A	6.	
Rush Turn Around Time requested:	☐Yes ☑No ☐N/A	7.	
Sufficient volume:	☑Yes ☐No ☐N/A	8.	
Correct containers used:	☑Yes ☐No ☐N/A		
Pace containers used:	☑Yes ☐No ☐N/A	9.	
Containers intact:	☑Yes ☐No ☐N/A	10.	
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes ☐No ☑N/A	11.	
Filtered volume received for dissolved tests?	☐Yes ☐No ☑N/A	12.	
Sample labels match COC: Includes date/time/ID/analyses Matrix: WT	☑Yes ☐No ☐N/A	13.	
All containers needing preservation have been checked.	☐Yes ☐No ☑N/A		
All containers needing preservation are found to be in compliance with EPA recommendation.	☐Yes ☐No ☑N/A	14.	
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☑Yes ☐No	Initial when completed	Lot # of added preservative
Trip Blank present: Pace Trip Blank lot # (if purchased): 071513	☑Yes ☐No ☐N/A	15.	
Headspace in VOA vials (>6mm):	☐Yes ☑No ☐N/A	16.	
Project sampled in USDA Regulated Area:	☐Yes ☐No ☑N/A	17. List State:	

KRB

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: CRB Date: 12/13/13

Pace Analytical
www.pacelabs.com

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Apex Envirotech, Inc.	Report To:	Patty Currier	Attention:	
Address:	1920 W 143rd Street, Suite 100	Copy To:		Company Name:	
	Leawood, KS 66224			Address:	
Email To:	PCurrier@apexenvirotech.com	Purchase Order No.:		Pace Quote Reference:	
Phone:	816-532-8202 Fax:	Project Name:	Inner City Oil	Pace Project Manager:	Andy Brownfield
Requested Due Date/TAT:	Standard	Project Number:		Pace Profile #:	7067 L4

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____
Site Location STATE: _____

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

ITEM #	SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start Date	Composite Start Time	Composite End/Grab Date	Composite End/Grab Time	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analysis Filtered (Y/N) Analysis Test Y/N: 8260 GRO BTEX MTBE	8270 TPH 8015 DRO/ORO	PAH (Hold for DRO/ORO)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	MW1	WT	G			12-13-13	1204		2									X			N	2D649
2	MW3	↓	↓			↓	DR		3									X				3D649
3	MW4	↓	↓			↓	1225		5									X	X	X		4 2A614
4	TRIP								2													2D649
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Hold PAH for DRO/ORO Analysis	[signature] Apex	12-13-13	1230	[signature]	12-13	12:20				
				[signature] PAST	12/13/13	1515	2-4	Y	Y	Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER:
SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-Feb-2007

Summary of Laboratory Testing

SLT 22205

Alpha-Omega Geotech, Inc.
1701 State Avenue
Kansas City, KS 66102
Office: (913) 371-0000 Fax: (913) 371-6710
Website: www.aogeotech.com

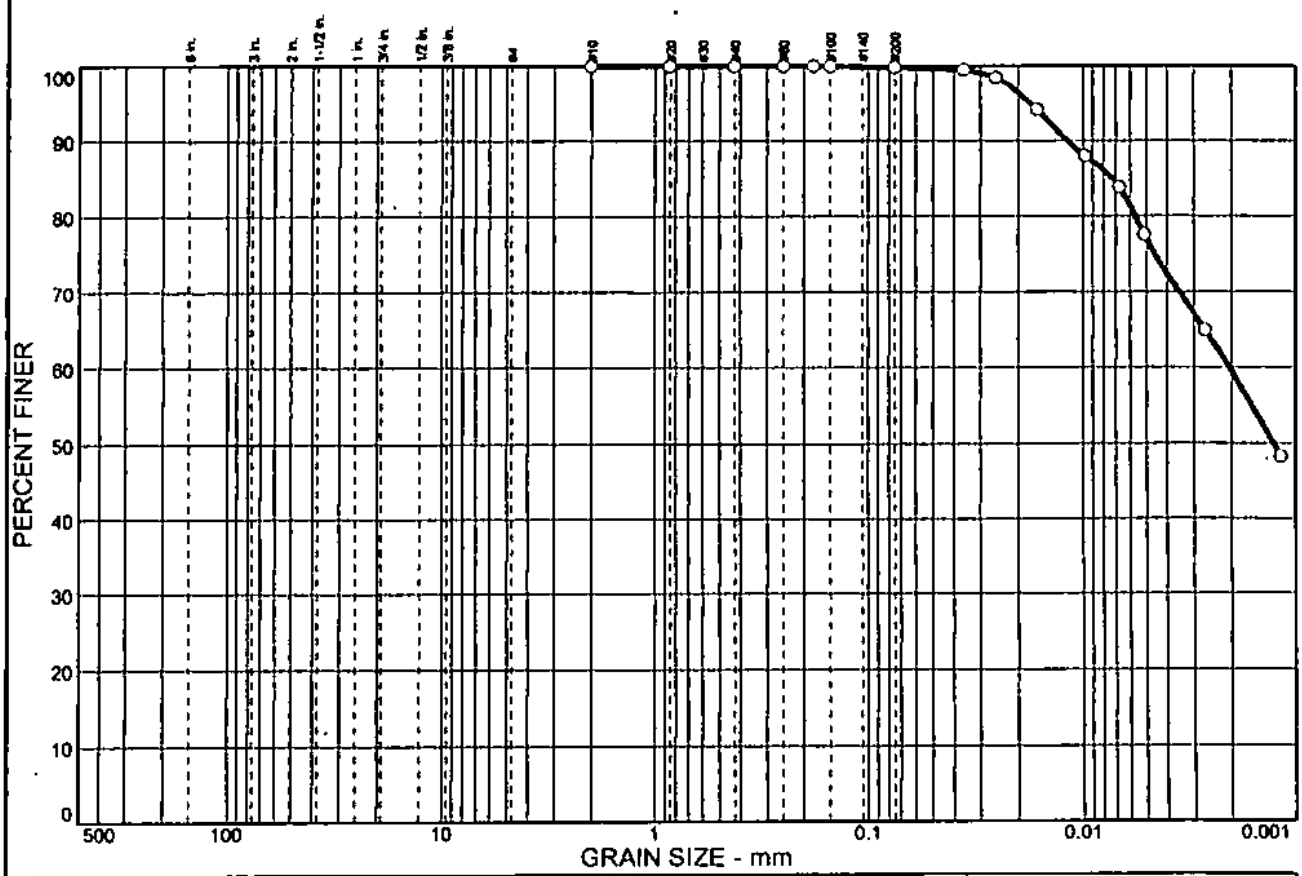
GEOTECH

PROJECT NAME: Inner City Oil
PROJECT LOCATION:

PROJECT NUMBER: 13-368T
DATE: 12/13/13

Boring No.	Sample Number	Depth or Elevation	Description	ASTM (D2216) Gravimetric Moisture (%)	ASTM (D2937) Dry Unit Weight (pcf)	Dry Unit Weight (g/cc)	Volumetric Moisture (cc/cc)	USCS	% Passing No. 200	ASTM (D2974) Ash Content (%)	ASTM (D2974) Organic Matter (%)	F.O.C. (g-C/g-soil)	Porosity	ASTM (D854) Specific Gravity	Remarks
MW-2	GT-1	7.5' - 10'	Olive brown, mottled gray, speckled black & reddish brown LEAN / FAT CLAY	22.0	106.0	1.70	0.374		99.8	96.8	3.2	0.019	0.380	2.75	(USDA - Silty clay)
MW-2	GT-1	5' - 7.5'	Crushed limestone fragments	—	—										*Unable to perform requested testing.
P-4															
P-4															

ASTM D422



% + 3"	% GRAVEL		% SAND			% FINES	
	CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	0.0	0.2	22.9	76.9

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	100.0		
#40	100.0		
#60	100.0		
#80	100.0		
#100	100.0		
#200	99.8		

* (no specification provided)

Material Description

Olive brown, mottled gray, speckled black & reddish brown LEAN / FAT CLAY (USDA - Silty clay)

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.0072 D_{60}= 0.0020 D_{50}= 0.0013
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Sample No.: GT-1 Source of Sample: Date: 12/15/2013
Location: Elev./Depth: 7.5' - 10'

Alpha-Omega Geotech, Inc.

Client: APEX Envirotech, Inc.
Project: Inner City Oil
Project No: 13-368T Figure 1 of 1

Alpha-Omega Geotech, Inc.
1701 State Avenue
Kansas City, KS 66102
Voice: (913) 371-0000
FAX: (913) 371-6710

ASH CONTENT ASTM D2974

Project Name:	Inner City Oil	**Project No.:**	13-368T
		Date:	NOV 25, 2013
Boring No.:		**Sample No.:** GT-1	**Depth:** 7.5' - 10'
Description:	Olive brown, mottled gray, speckled black & reddish brown LEAN / FAT CLAY (USDA - Silty clay)		
Method Used:	C		

Ash Content		
Oven-dried test specimen	108.80	grams
Ash Wt.	105.29	grams
Ash Content	96.8	%
Organic Matter	3.2	%
Percent Fraction Organic Carbon Content	1.9	%
Fraction Organic Carbon Content	0.019	g-C / g-soil

Specific Gravity of Solids ASTM D 854

SGS 3705

Alpha-Omega Geotech, Inc.
1701 State Avenue
Kansas City, KS 66102
Office: (913) 371-0000 Fax: (913) 371-6710
Website: www.aogeotech.com

GEOTECH

Project Name: **Inner City Oil** Project No.: 13-368T

Sample Number: **GT-1** Date: 12/15/2013

Soil Description: Olive brown, mottled gray, speckled black & reddish brown LEAN / FAT CLAY (USDA - Silty clay) Depth: 7.5' - 10'

Tested by: T. B.

Specimen Number:	1			
Flask Number:	A			
Temp,water + soil, T, Celcius	20°			
Dish No.	#3			
Dish + Dry Soil, g	355.41			
Dish, g	252.71			
Dry Soil, g (Ws)	102.70			
Flask + water at T, g (Wbw)	682.42			
Ws + Wbw, g	785.12			
Flask + water + immersed soil, g (Wbwe)	747.82			
Displaced water, Ws + Wbw - Wbwe	37.30			
Correction Factor, K	1.0000			
(WsK) / (Ws + Wbw - Wbwe) = Gs	2.75			

Remarks:

APPENDIX C

Groundwater Use Information Maps

Kansas City

PWSS No. 1010415

14 Wells, Clay County

Prepared by: Map Update: Jul 24, 2013

Missouri Department of Natural Resources

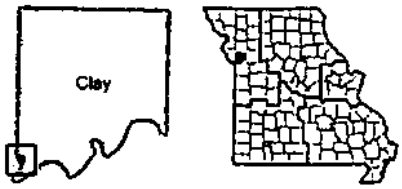
Well System

⊙ System Well

SWAP Delineation Boundary

20-year time of travel

Half-mile buffer



Feet

0 1,750 3,500

SWAP - Source Water Assessment Plan – http://drinkingwater.missouri.edu/swap/
Aerial photos: USDA National Agriculture Inventory Program (NAIP), 2012.

Although all data in this dataset have been used by the Missouri Department of Natural Resources (MoDNR), no warranty, expressed or implied, is made by MoDNR as to the accuracy of the data and related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by MoDNR in the use of these data or related materials. This map is subject to change as additional information is acquired. Additional information at: http://drinkingwater.missouri.edu.

Kansas City

PWSS No. 1010415, Missouri River Intake

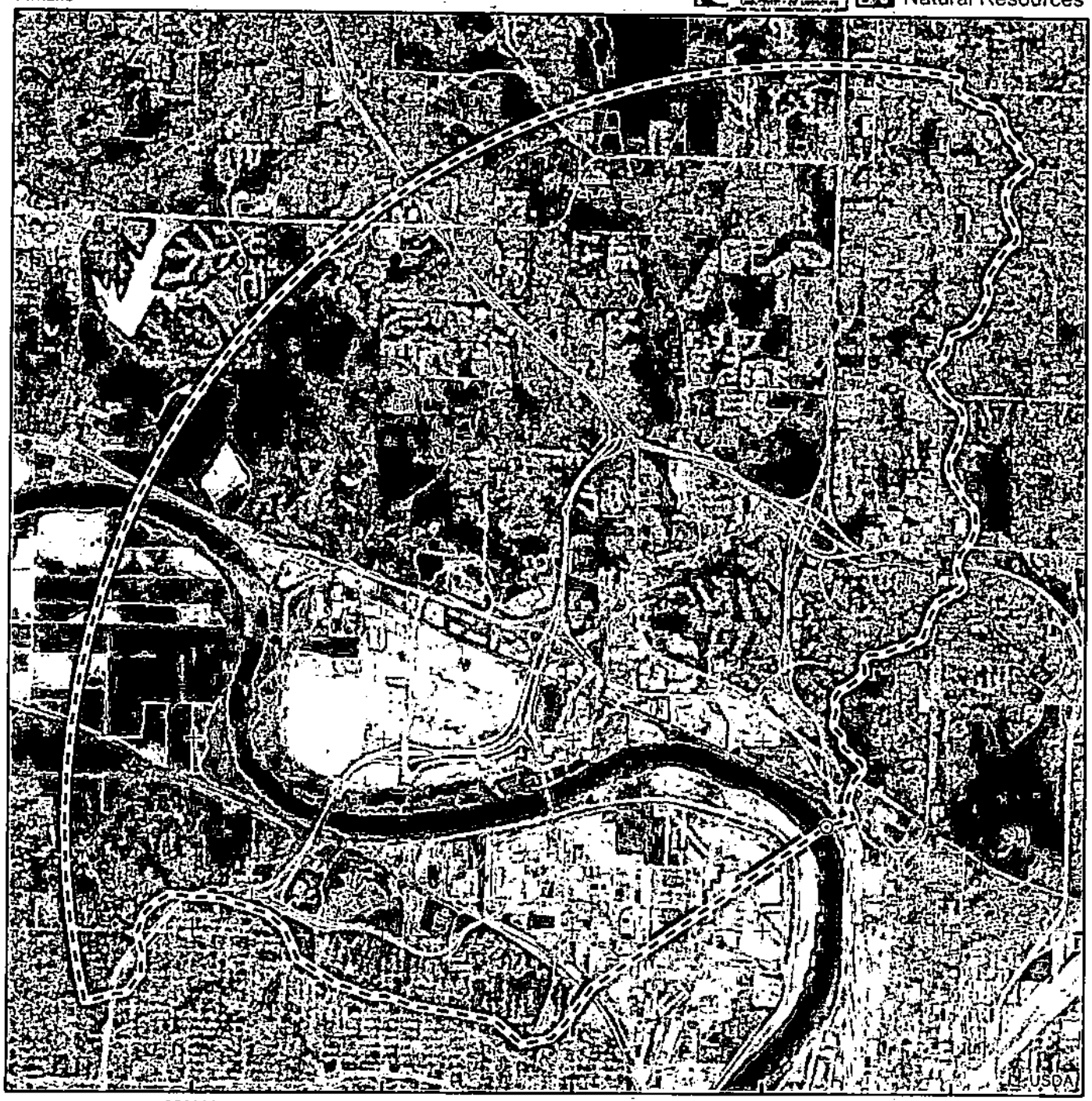
Clay County

1 Intake

Prepared by:

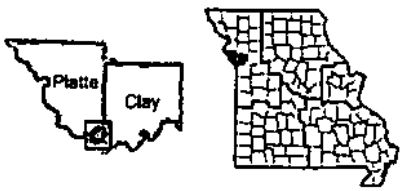
Map Update: Apr 04, 2013

Missouri Department of Natural Resources



Surface Water System

- System Intake
- Drainage Basin
- 5 Mile Upstream Limit



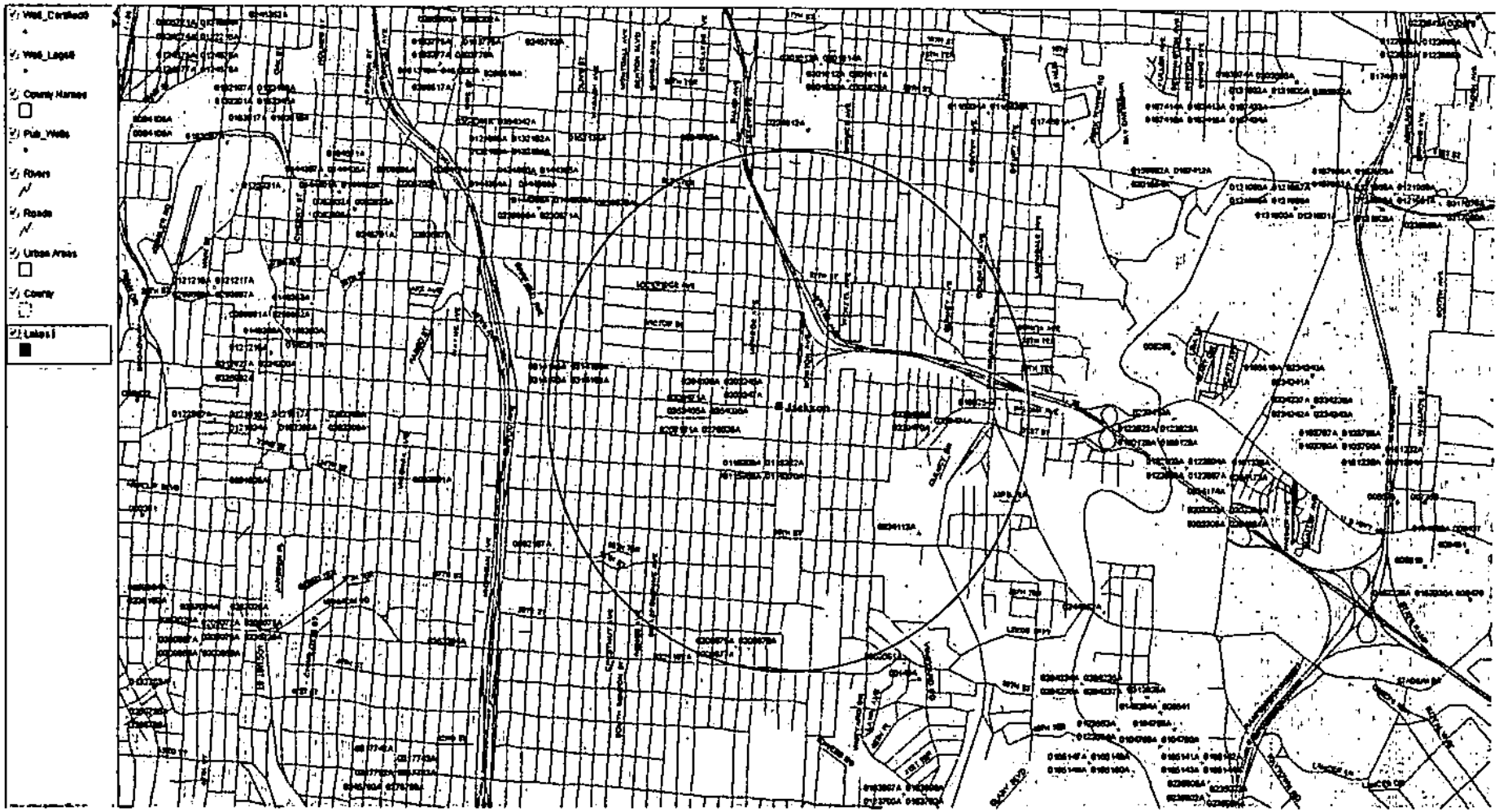
SWAP - Source Water Assessment Plan -- http://drinkingwater.missouri.edu/swap/

Aerial photos from 2012 USDA NAIP

Miles

0 0.8 1.6

Although all data in this dataset have been used by the Missouri Department of Natural Resources (MoDNR), no warranty, expressed or implied, is made by MoDNR as to the accuracy of the data and related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by MoDNR in the use of these data or related materials. This map is subject to change as additional information is acquired. Additional information at: http://drinkingwater.missouri.edu.



APEX ENVIROTECH, INC.

MEGA2007 Well Search Map

Inner City Oil

3814 E 31st Street

Kansas City, MO

ST8310, R8771, Claim 62330

1-Mile Radius

▪ Site

Apex Project Number:

ZIL57.001

APPENDIX D

Ecological Checklist and Heritage Review

Ecological Risk Assessment
Screening Checklist for Potential Receptors and Habitat
Level 1, Checklist A

1. Is the boundary of the contaminated area less than ½ mile to a surface water body (stream, river, pond, lake, etc.)? No

2. Are wetlands (as defined by the 1987 Corps of Engineers' Delineation Manual) on or adjacent to the site? No

3. Are contaminated soils uncovered or otherwise accessible to ecological receptors and the elements? No, the site is covered with concrete and asphalt.

4. Are there karstic features (see Ecological Risk Assessment Figure #2 for definition) on or within ½ mile of the boundary of the contaminated area? No

   Note: A professional opinion may be necessary to make this determination. The Missouri Environmental Geology Atlas (MEGA), published recently by the Department of Natural Resources, Division of Geology and Land Survey (DGLS) provides several state-wide, karst-related data sets, as well as others related to geology and hydrology, in a geographic information system format that can assist in this determination. MEGA, including software to view the data sets, may be obtained from DGLS by calling (573) 368-2125.

5. Are there federal or state rare, threatened, or endangered species on or within ½ mile of the contaminated area? Note: The ½ mile criterion does not apply to situations where a hydrological connection exists between the site and karstic features. Contact the Missouri Department of Conservation for state-listed species and the U.S. Fish and Wildlife Service for federally listed species. No

6. Are there one or more environmentally sensitive areas (see Ecological Risk Assessment Figure #1 for definition) at or within ½ mile of the contaminated area? No

7. Are commercially or recreationally important species (fauna or flora) on or within ½ mile of the contaminated area? No

If the answer is "Yes" to any of the above questions, then complete Ecological Risk Assessment Checklist for Potential Exposure Pathways, Checklist B.

On-line LEVEL 1 Report

Your project information

First Name: Patty

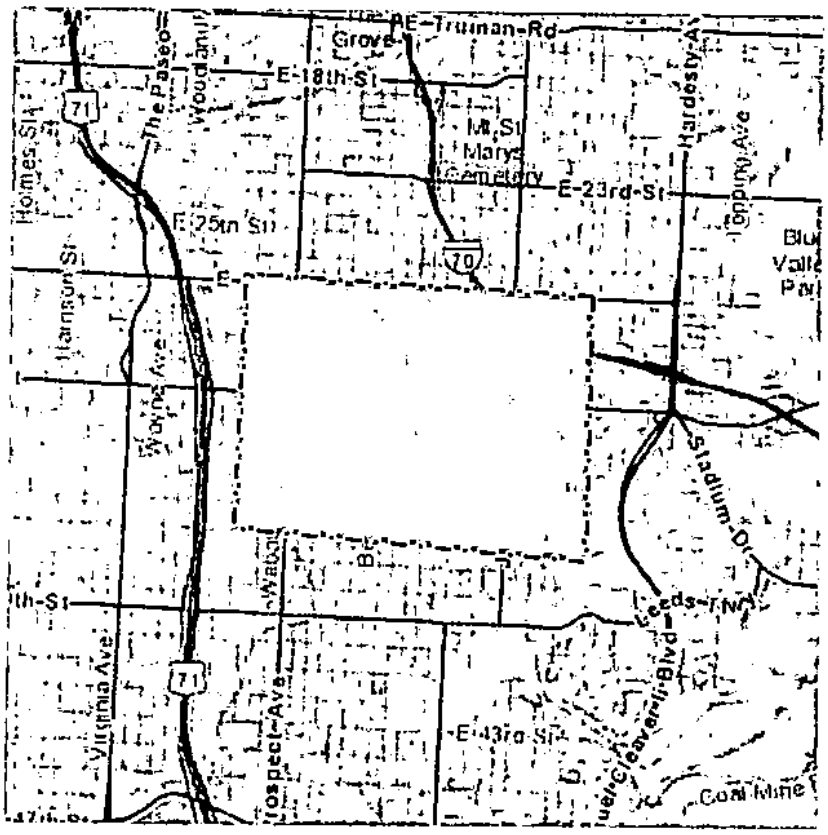
Last Name: Currier

Email Address: pcurrier@apexenvirotech.com

Business: Apex Environtech Inc

Project: Petroleum Site Remediation

Your query information



Details

Cautions related to species/habitats of concern or project type. Please reflect these concerns and recommendations in your plans:

· Even if records of species/habitats of concern do not exist, there is a possibility that your project will encounter a species of concern that is not on record. In Missouri, 93%

of the land is in private ownership, and most of that has never been checked for endangered species. Animals move over varying ranges, and in time both animal and plant populations can move.

· If your project encounters and potentially affects a federally-listed species, immediately report it to the U.S. Fish and Wildlife Service or Missouri Department of Conservation.

No further consultation with the U.S. Fish and Wildlife Service or the Missouri Department of Conservation is necessary. Print this document to establish compliance with requirements to consult with U.S. Fish and Wildlife Service and the Missouri Department of Conservation about this project.

If you need additional information, please contact:

MDC Natural Heritage Review
Resource Science Division
P.O. Box 180
Jefferson City , MO 65102-0180
(Phone 573-522-4115 ext. 3182)
www.mdc.mo.gov

or

U.S. Fish and Wildlife Service Ecological Services
101 Park Deville Drive , Suite A
Columbia , Missouri 65203-0007
(Phone 573-234-2132)

A HERITAGE REVIEW provides information about species and habitats of concern that could be affected by the project. Heritage records note things that were positively identified at some date and time, marked at a location that may be more or less precise. Animals move quickly but plant communities can move also. To say "there is a record" does not mean the species/habitat is still there. To say that "there is no record' does not mean the project may not encounter something. Because of this, reports include information about records near but not necessarily on the project site. Three different kinds of information are provided.

· FEDERAL Concerns are species/habitats protected under the Federal Endangered Species Act and that have been known near enough to the project site to warrant consideration. For these, project managers must contact the U.S. Fish and Wildlife Service Ecological Services (101 Park Deville Drive Suite A, Columbia , Missouri 65203-0007 ; Phone 573-234-2132; Fax 573-234-2181) for consultation.

· STATE Concerns are species/habitats known to exist near enough to the project site to warrant concern and protected under the Wildlife Code of Missouri (RSMo 3 CSR 10). "State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, with requirements expressed in the Missouri Wildlife Code, rule 3CSR10-4.111. "State Rank" is numeric rank of relative rarity, protected under general provisions of the Wildlife Code but not endangered.

· "Concerns & management recommendations" are things for which one might prudently look. There is no specific heritage record, but our knowledge of the surrounding landscape suggests consideration. 93% of Missouri 's land is in private ownership, so most sites have never been carefully inspected by conservation professionals

This report is not a site clearance letter. Rather, it provides an indication of whether or not public lands and sensitive resources are known to be (or are likely to be) located close to the proposed project. Incorporating information from our Heritage Database into project plans is an important step that can help reduce unnecessary impacts to Missouri's sensitive natural resources. However, the Heritage Database is only one reference that should be used to evaluate potential adverse impacts. Other types of information, such as wetland and soils maps and on-site inspections or surveys, should be considered. Reviewing current landscape and habitat information and species biological characteristics would additionally ensure that species of conservation concern are appropriately identified and addressed.

Additional information on rare, endangered and watched species may be found at http://mdc.mo.gov/discover-nature/field-guide/endangered-species. Detailed information about species mentioned may be accessed at http://mdc4.mdc.mo.gov/applications/mofwis/mofwis_search1.aspx . If you would like printed copies of best management practices cited as internet URLs, please contact us.