



American Environmental Associates, Inc.

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UNDERGROUND STORAGE TANK FACILITY INTERIM SITE CHARACTERIZATION REPORT

Leo's 3 Car Wash
PADEP Facility I.D. #25-90615
2938 West 26th Street
Erie, Pennsylvania 16506

February 13, 2003

Prepared for:

Leo's 3 Car Wash
2938 West 26th Street
Erie, Pennsylvania 16506
Attn: James Doleski

Prepared by:

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5946 Southland Drive
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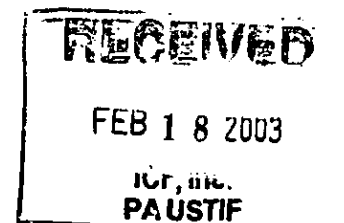


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INITIAL SITE CHARACTERIZATION REPORT

Leo's 3 Car Wash
PADEP Facility I.D. #25-90615
2938 West 26th Street
Erie, Pennsylvania 16506

1.0 INTRODUCTION

American Environmental Associates, Inc. (AEA) has been contracted by Leo's 3 Car Wash to provide environmental services pursuant to Underground Storage Tank (UST) corrective action and Land Recycling and Environmental Remediation Standards Act (Act 2) regulations at the subject site. The site is a retail gasoline filling station, oil change service and automated car wash located at 2938 West 26th Street, Millcreek Township, Erie County, Pennsylvania. The site location is illustrated on a USGS Topographic Map attached as Figure 1, the Geographic Location Map attached as Figure 2 and Figure 3 is the Site Groundwater Contour Map.

Corrective actions were initiated in response to a release that was discovered during construction of a new canopy on January 23, 2002. The release was eventually found to be associated with a loose swing joint in the regular unleaded line for the middle dispenser. A minor amount of contaminated soil was removed, approximately five tons, and then the new canopy footers were poured. The swing joint leak was repaired at this time. Clean soil conditions were never obtained, and over excavation was not performed at this time due to site constraints. A Notification of Contamination was submitted to the PADEP's Meadville Office on January 23, 2002.

On August 6, 2002, a Geoprobe investigation was conducted by AEA to assess the extent of subsurface soil contamination. Confirmatory soil analysis of samples from the unleaded gasoline UST system area exhibited concentrations in excess of Act 2 Statewide Health Standards (SHS). Corrective actions pursuant to 25 PA Code 245, administered by the Pennsylvania Department of Environmental Protection (PADEP), were implemented.

The following reports were prepared to document Site Characterization activities performed at the site:

- Initial Site Characterization Report, November 27, 2002; This report documents the installation and soil/groundwater sampling of monitoring wells MW#1 through MW#6. These wells were installed to delineate subsurface impacts.

The following report outlines the work that has been performed to delineate the extent of subsurface contamination at the subject site.

2.0 SCOPE OF WORK

On January 17, 2003, AEA mobilized to the site to install three additional four-inch monitoring wells (MW#'s 7, 8 & 9) on the subject site utilizing a hollow-stem auger drill rig. Split spoon sampling at 3 foot intervals was performed during soil boring advancement. The split spoon samplers were decontaminated between sampling intervals with a non-phosphatic soap (Alconox) solution and thoroughly rinsed with deionized water. The collected samples were utilized for lithologic description, headspace screening and subsequent laboratory analysis, as applicable.

Each sample was divided into two portions. One sample was placed in a sealable plastic bag to be used for field headspace screening. The other was set aside for potential laboratory analysis. The samples were field screened with a RAE Industries Mini-RAE 2000 photoionization detector (PID) to determine if Volatile Organic Compounds (VOC's) are present. Prior to the initiation of drilling, the instrument was calibrated using an appropriate span gas. The tip of the instrument was placed into the sample container and the highest reading was recorded. The results are summarized on the soil boring and well completion logs included as Appendix A. Also, refer to Site Geology, section 3.0, for more detailed information of the subsurface geology of the site. The sample from each boring exhibiting the highest PID response was submitted to Environmental Laboratory Services, Inc.(ELS), New Castle, PA for analysis.

The soil samples were analyzed for benzene, toluene, ethyl benzene, xylenes (BTEX), methyl-t-butyl ether (MTBE), cumene and naphthalene via EPA Method 5035/8260B. These analytes are indicator parameters for unleaded gasoline as referenced in PADEP's Technical Document: Closure Requirements for Underground Storage Tank Systems, April 1998. Soil analytical results are summarized in Table 1 and the lab sheets are included as Appendix B. The analytical results show that no new soil samples from MW#7, MW#8 or MW#9 exceed any of the PADEP's Statewide Health Standard's for Used Aquifers in soil. The analytical results indicate that the soil samples from previous drilling (MW#4, MW#5 & MW#6) exceed one or more of the PADEP's Statewide Health Standard's for Used Aquifers in soil.

The resultant soil borings were completed as 4-inch diameter PVC monitoring wells. The annular space was backfilled with well gravel and sealed with bentonite pellets. The remaining portion above the bentonite was sealed with concrete to prevent surface water infiltration. The wells were completed with eight inch diameter, bolt-down manholes and set in two feet square concrete pads. The monitoring wells were secured with watertight locking cap assemblies and keyed-alike padlocks. Soil boring and well completion logs are included as Appendix A.

A brief site reconnaissance of the nearby surroundings shows that residential and commercial dwellings rely on municipal water. Utilities running through the site exist no deeper than four feet below grade. With the shallowest static water level at the site being nearly 8 feet below grade, no potential human receptors exist at the site. Due to the detected constituents being associated with light petroleum products, no ecological screening is required.

3.0 SITE GEOLOGY

The regional geology underlying the project site is the Devonian aged Northeast Shale Formation. The Northeast Shale formation chiefly consists of variegated shale and thin-bedded sandstone. Sandstone generally yields small supplies of water. Site specific depth to bedrock is unknown since it was not encountered during the total drilling depth of twenty five feet. Unconsolidated materials, mainly silts, sands and clays, exist from grade to the total drilling depth of 25 feet. Refer to the Geologic Logs in Appendix A for further geologic information.

4.0 GROUNDWATER MONITORING

On January 22, 2003, all new site monitoring wells (MW#'s 1-9) were gauged utilizing a Solinst Model 122 electronic interface meter to measure the depth to water and to determine the potential presence of separate phase hydrocarbons (SPH's). Depth to groundwater was measured between 8.02 (MW#7) and 13.05 (MW#8) feet below ground surface. Free product or SPH's was encountered during the gauging of monitoring wells MW#3 & MW#4. Monitoring wells MW#3 & MW#4 were not sampled due to the presence of free product. Groundwater elevation data is presented in Table 2, and Figure 3 is a Site Groundwater Contour Map which has been generated from this data.

Each monitoring well was developed by purging at least five well volumes. The wells were then allowed to recover. Samples were collected utilizing dedicated disposable polyethylene bailers and placed in laboratory provided glassware containing an appropriate preservative. Samples were immediately placed in ice filled coolers and shipped to ELS in New Castle, PA under chain of custody protocol. The groundwater samples were analyzed for BTEX, MTBE, cumene, naphthalene, via U.S. EPA Methods 8260. These analytes are indicator parameters for unleaded gasoline as referenced in PADEP's Technical Document: Closure Requirements for Underground Storage Tank Systems, April 1998. The analytical results are summarized in Table 3 and the lab sheets are in Appendix C.

The analytical results indicate that monitoring wells MW#1, MW#2, MW#5, MW#6, MW#7 and MW#8 exceed Statewide Health Standards for Used Aquifers for one or more of the required parameters for unleaded gasoline in groundwater. Monitoring wells MW#3 & MW#4 were not sampled due to the presence of free product. The results are summarized in Table 3, and the groundwater sample lab sheets are attached in Appendix C.

5.0 SUMMARY AND RECOMMENDATIONS

American Environmental Associates, Inc. (AEA) has been contracted by Leo's 3 Car Wash to provide environmental services pursuant to Underground Storage Tank (UST) corrective action and Land Recycling and Environmental Remediation Standards Act (Act 2) regulations at the subject site. The site is a retail gasoline filling station, oil change service and automated car wash located at 2938 West 26th Street, Millcreek Township, Erie County, Pennsylvania. The site location is illustrated on a USGS Topographic Map attached as Figure 1, the Geographic Location Map attached as Figure 2 and Figure 3 is the Site Groundwater Contour Map.

Corrective actions were initiated in response to a release that was discovered during construction of a new canopy on January 23, 2002. The release was eventually found to be associated with a loose swing joint in the regular unleaded line for the middle dispenser. A minor amount of contaminated soil was removed, approximately five tons, and then the new canopy footers were poured. The swing joint leak was repaired at this time. Clean soil conditions were never obtained, and over excavation was not performed at this time due to site constraints. A Notification of Contamination was submitted to the PADEP's Meadville Office on January 23, 2002.

On August 6, 2002, a Geoprobe investigation was conducted by AEA to assess the extent of subsurface soil contamination. Confirmatory soil analysis of samples from the unleaded gasoline UST system area exhibited concentrations in excess of Act 2 Statewide Health Standards (SHS). Corrective actions pursuant to 25 PA Code 245, administered by the Pennsylvania Department of Environmental Protection (PADEP), were implemented.

Activities conducted during this reporting period include the installation and soil sampling of three additional monitoring wells (MW#7, MW#8 & MW#9), and the gauging and groundwater sampling of the site monitoring wells. The analytical results show that no new soil samples from MW#7, MW#8 or MW#9 exceed any of the PADEP's Statewide Health Standard's for Used Aquifers in soil. The analytical results indicate that the soil samples from previous drilling (MW#4, MW#5 & MW#6) exceed one or more of the PADEP's Statewide Health Standard's for Used Aquifers in soil. The analytical results indicate that monitoring wells MW#1, MW#2, MW#5, MW#6, MW#7 and MW#8 exceed Statewide Health Standards for Used Aquifers for one or more of the required parameters for unleaded gasoline in groundwater. Monitoring wells MW#3 & MW#4 were not sampled due to the presence of free product.

The Site Characterization work that is presently being performed is being compared to Pennsylvania Statewide Health Standards for soil and groundwater. Leo's 3 Car Wash is choosing this standard at this time.

Since the full extent of soil and groundwater contamination has not yet been determined, additional site characterization work will be performed in the near future.

FIGURE 1
Leo's 3 Car Wash

USGS 7.5 Minute Topographic Map
1:24,000 Scale



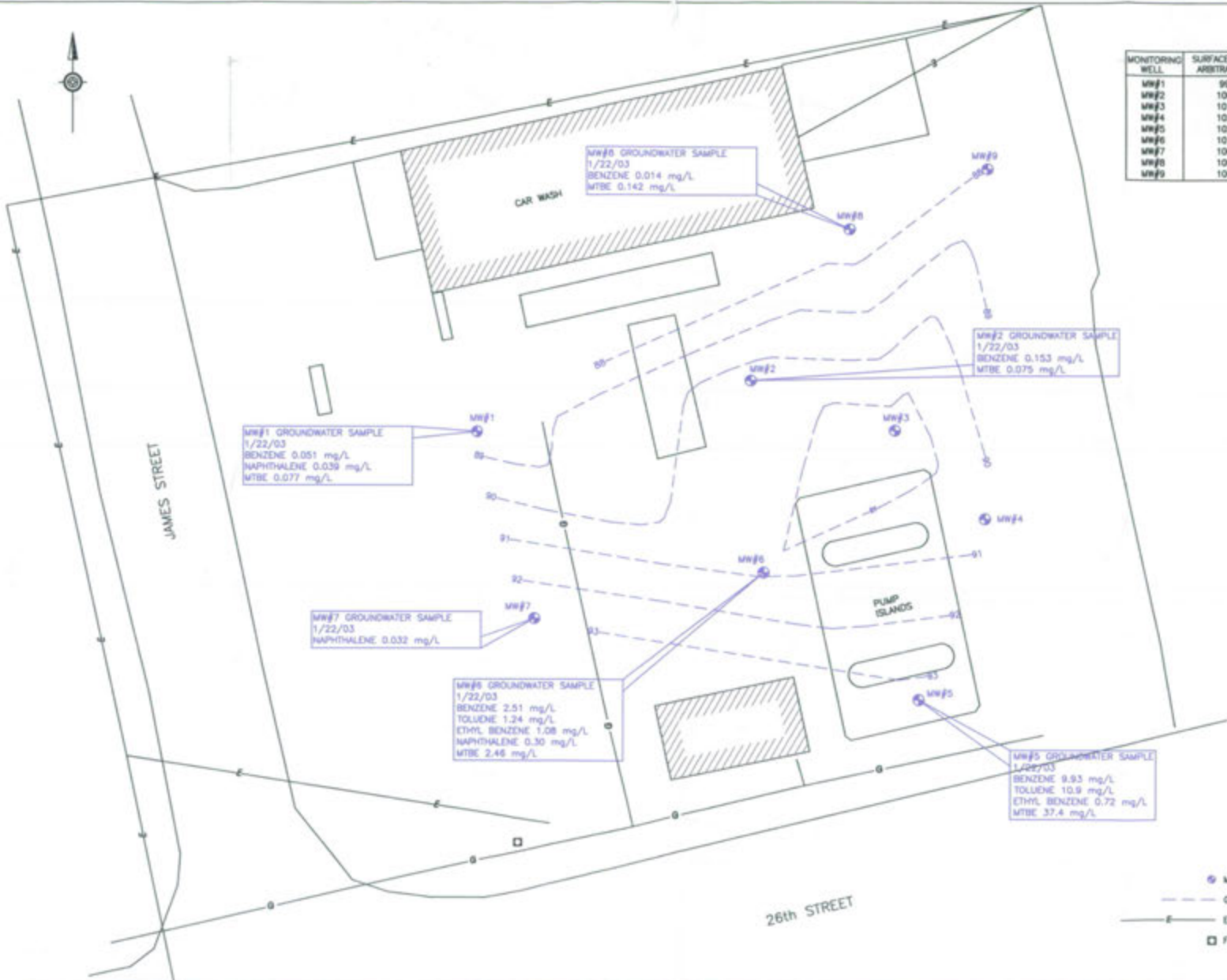
FIGURE 2
Leo's 3 Car Wash
Geographic Location Map

Figure 2. Geographic Location Map
Leo's 3 Car Wash



Streets98

FIGURE 3
Leo's 3 Car Wash
Site Groundwater Contour Map



MONITORING WELL	SURFACE ELEVATION ARBITRARY DATUM	STATIC WATER LEVEL ELEVATION 1/22/03
mw#1	99.87	11.49/98.38
mw#2	100.85	10.37/90.48
mw#3	101.48	9.98/91.50
mw#4	102.00	11.56/90.42
mw#5	102.19	8.80/93.39
mw#6	101.66	10.75/90.91
mw#7	100.94	8.02/92.92
mw#8	100.33	13.05/87.28
mw#9	100.48	12.42/88.06

mw#1 GROUNDWATER SAMPLE
1/22/03
BENZENE 0.051 mg/L
NAPHTHALENE 0.039 mg/L
MTBE 0.077 mg/L

mw#8 GROUNDWATER SAMPLE
1/22/03
BENZENE 0.014 mg/L
MTBE 0.142 mg/L

mw#2 GROUNDWATER SAMPLE
1/22/03
BENZENE 0.153 mg/L
MTBE 0.075 mg/L

mw#7 GROUNDWATER SAMPLE
1/22/03
NAPHTHALENE 0.032 mg/L

mw#6 GROUNDWATER SAMPLE
1/22/03
BENZENE 2.51 mg/L
TOLUENE 1.24 mg/L
ETHYL BENZENE 1.08 mg/L
NAPHTHALENE 0.30 mg/L
MTBE 2.46 mg/L

mw#5 GROUNDWATER SAMPLE
1/22/03
BENZENE 8.93 mg/L
TOLUENE 10.9 mg/L
ETHYL BENZENE 0.72 mg/L
MTBE 37.4 mg/L

- MONITORING WELL LOCATIONS
- GROUNDWATER CONTOURS
- ELECTRIC
- FIRE HYDRANT

NO.	DATE	REVISIONS DESCRIPTION

DESIGNED BY	DATE 1/22/03	DATE 1/22/03
CHECKED BY	DATE	DATE
APPROVED BY	DATE	DATE
SCALE	1"=20'	
DRAWN BY		

PARADOX TITLE:
LEO'S #3 CAR WASH
ERIE, PA
FIGURE 3: GROUNDWATER
CONTOUR MAP

RAR engineering group, Inc.
1221 North Avenue, Erie, Pennsylvania 16510
Telephone 724.822.2200, Fax 724.822.2201
www.rar-engineering.com

DATE: _____
SCALE: _____

1 of 1
SHEET NUMBER

4/23/2013 2:54:01 PM

TABLES

Table 1. Summary of Analytical Results- Soil Samples
 Leo's 3 Car Wash
 Erie, PA

Parameter	MW#1	MW#2	MW#3	MW#4	MW#5	MW#6	MW#7	MW#8	MW#9	*SHS
Benzene	<0.1	0.26	0.10	7.26	0.59	1.33	<0.1	<0.1	<0.1	0.5
Toluene	<0.2	<0.2	1.23	61.8	0.31	0.58	<0.2	<0.2	<0.2	100
Ethyl benzene	0.90	3.39	3.45	17.6	0.38	14.9	<0.2	<0.2	<0.2	70
Xylenes	1.56	2.03	11.5	98.8	1.33	65.5	<0.2	<0.2	<0.2	1000
Cumene	<0.2	0.50	1.07	4.81	<0.2	0.55	<0.2	<0.2	<0.2	18
Naphthalene	0.29	0.82	1.71	3.42	<0.2	0.57	<0.2	<0.2	<0.2	10
MTBE	<0.2	<0.2	0.25	8.14	<0.2	<0.2	<0.2	<0.2	<0.2	2

Note: All results are in mg/kg or ppm.
Bolded numbers exceed allowable limits.
 *SHS=Statewide Health Standard for Soil.

Table 2. Groundwater/ SPH Gauging Data
 Leo's 3 Car Wash
 Erie, PA

Monitoring Well	Depth to SPH	Depth to Groundwater
MW#1	None	11.35'
MW#2	None	10.25'
MW#3	9.45'	10.35'
MW#4	7.03'	10.03'
MW#5	None	8.50'
MW#6	None	11.13'
MW#7	None	8.02'
MW#8	None	13.05'
MW#9	None	12.42'

Note: SPH = Separate Phase Hydrocarbons

Table 3. Summary of Analytical Results- Monitoring Well Samples- 1/22/03
 Leo's 3 Car Wash
 Erie, PA

Parameter	MW#1	MW#2	MW#3	MW#4	MW#5	MW#6	MW#7	MW#8	MW#9	**SHS
Benzene	0.051	0.153	NS	NS	9.93	2.51	0.002	0.014	<0.001	0.005
Toluene	<0.002	0.002	--	--	10.9	1.24	0.010	0.006	<0.002	1.0
Ethyl benzene	0.162	0.066	--	--	0.72	1.08	0.034	0.011	<0.002	0.70
Xylenes	0.508	0.094	--	--	4.59	3.71	0.128	0.035	0.002	10.0
Cumene	0.015	<0.002	--	--	<0.1	<0.1	0.004	<0.002	<0.002	0.025
Naphthalene	0.039	0.005	--	--	<0.1	0.30	0.032	0.009	<0.002	0.020
MTBE	0.077	0.075	--	--	37.4	0.68	<0.002	0.142	0.009	0.020

Note: All results are in mg/l or ppm.

Bolded numbers exceed allowable limits.

*NS=No Sample. This MW was not sampled due to the presence of Free Product.

**SHS=Statewide Health Standard for Groundwater.

APPENDIX A

Test Boring Logs

MONITORING WELL LOG

MW#1

Surface Elevation (MSL): N/A

Casing Stickup: _____

Borehole Diameter: 8 inches, From 0 To 25'
 _____ inches, From _____ To _____

Total Depth: 25'

Depth of Ground Water: _____

Date Measured: _____

Drilling Method: HOLLOW-STEM AUGER

Date Drilled: 10/29/02

Drilled By: CHATFIELD DRILLING

Logged By: CHET ELEWSKI

County: ERIE

Township or Municipality: MILLCREEK TWP

Project Name: LEO'S CARWASH

Depth (Ft.)	Lithologic Description	Strat. Symbol	Samples		PID Meter Response	Comments	Depth (Ft.)
			No.	Rec/Att			
0	6" ASPHALT 6"-3' SAND & BROWN SILTY SOIL	[Symbol]					0
5	BROWN SILTY SAND & GRAVEL	[Symbol]		18"	36.2		5
	BROWN GRAY SANDY SILT	[Symbol]					
10	BROWN GRAY SANDY SILT	[Symbol]		16"	2379		10
	BROWN GRAY SANDY SILT	[Symbol]					
15	GRAY SILTY SAND	[Symbol]		16"	65		15
20	GRAY SILT & SHALE	[Symbol]					20
25							25
30							30
35							35
40						40	

MONITORING WELL LOG

MW#2

Surface Elevation (MSL): N/A

Casing Stickup: _____

Borehole Diameter: 8 inches, From 0 To 25'
 _____ inches, From _____ To _____

Total Depth: 25'

Depth of Ground Water: _____

Date Measured: _____

Drilling Method: HOLLOW-STEM AUGER

Date Drilled: 10/29/02

Drilled By: CHATFIELD DRILLING

Logged By: CHET ELEWSKI

County: ERIE

Township or Municipality: MILLCREEK TWP.

Project Name: LEO'S CARWASH

Depth (Ft.)	Lithologic Description	Strat. Symbol	Samples		PID Meter Response	Comments	Depth (Ft.)
			No.	Rec/Att			
0	6" ASPHALT 6"-3' SAND & DARK BROWN SILTY SOIL, HEAVY PRODUCT ODOR	[Symbol]				MANHOLE COVER W/ LOCKING CAP CONCRETE COLLAR	0
5	DARK BROWN SANDY SILT, HEAVY PRODUCT ODOR	[Symbol]		14"	2871	BENTONITE CLAY SEAL 1' ABOVE SCREEN	5
	DARK BROWN SANDY SILT	[Symbol]				5' OF SOLID WALL 2" PVC PIPE	
10	BROWN DENSE SILTY CLAY	[Symbol]		16"	427		10
	BROWN DENSE SILTY CLAY	[Symbol]					
15	BROWN GRAY SILTY SAND, WET	[Symbol]		10"	10		15
20	GRAY SILT & CLAY W/SHALE LAYERS	[Symbol]				SAND PACK	20
						20' OF 0.010 SLOT 2" PVC SCREEN	
25						PVC END CAP	25
30							30
35							35
40							40

MONITORING WELL LOG

MW#3

Surface Elevation (MSL): N/A

Casing Stickup: _____

Borehole Diameter: 9 inches, From 0 To 24'9"
 _____ inches, From _____ To _____

Total Depth: 24'9"

Depth of Ground Water: -

Date Measured: -

Drilling Method: HOLLOW-STEM AUGER

Date Drilled: 10/30/02

Drilled By: CHATFIELD DRILLING

Logged By: JEREMY HOUK

County: ERIE

Township or Municipality: MILLCREEK TWP

Project Name: LEO'S CARWASH

Depth (Ft.)	Lithologic Description	Strat. Symbol	Samples		PID Meter Response	Comments	Depth (Ft.)
			No.	Rec/Att			
0	2" ASPHALT DARK GRAY FINE SAND & ROCK FRAGMENTS				142	<p>MANHOLE COVER W/ LOCKING CAP CONCRETE COLLAR</p> <p>BENTONITE CLAY SEAL 1' ABOVE SCREEN</p> <p>4'-7" OF SOLID WALL 2" PVC PIPE</p> <p>SAND PACK</p> <p>20' OF 0.010 SLOT 2" PVC SCREEN</p> <p>PVC END CAP</p>	0
5	GRAY SAND & ROCK FRAGMENTS		8"		166		5
	GRAY SILT & SAND W/ROCK FRAGMENTS						
10	DENSE GRAY SILT		14"		22		10
	DENSE GRAY SILT						
15	0-7" DENSE GRAY SILT 7-14" BROWN SAND & ROCK FRAGMENTS, WET		14"		8		15
20	GRAY SHALE						20
25							25
30							30
35							35
40						40	

MONITORING WELL LOG

MW#4

Surface Elevation (MSL): N/A

Casing Stickup: _____

Borehole Diameter: 9 inches, From 0 To 24'8"
 _____ inches, From _____ To _____

Total Depth: 24'8"

Depth of Ground Water: _____

Date Measured: _____

Drilling Method: HOLLOW-STEM AUGER

Date Drilled: 10/30/02

Drilled By: CHATFIELD DRILLING

Logged By: JEREMY HOUK

County: ERIE

Township or Municipality: MILLCREEK TWP

Project Name: LEO'S CARWASH

Depth (Ft.)	Lithologic Description	Strat. Symbol	Samples		PID Meter Response	Comments	Depth (Ft.)
			No.	Rec/Att			
0	4" ASPHALT FINE DARK GRAY SAND & ROCK FRAGMENTS				136		0
5	BROWN & GRAY SAND, STRONG ODOR			15"	192		5
	GREENISH GRAY SILT						
10	BROWN & GRAY SILT W/ ROCK FRAGMENTS			10"	210		10
	GRAY SILT & SAND, WET @ 12'						
15	0-8" DENSE GRAY SILT 8-15" BROWN SAND 15-17" DENSE GRAY SILT			17"	120		15
20	GRAY SILT & SHALE					20	
25						25	
30						30	
35						35	
40						40	

MONITORING WELL LOG

MW#5

Surface Elevation (MSL): N/A

Casing Stickup: _____

Borehole Diameter: 9 inches, From 0 To 19.5'
 _____ inches, From _____ To _____

Total Depth: 19.5'

Depth of Ground Water: _____

Date Measured: _____

Drilling Method: HOLLOW-STEM AUGER

Date Drilled: 10/30/02

Drilled By: CHATEFIELD DRILLING

Logged By: JEREMY HOUK

County: ERIE

Township or Municipality: MILLCREEK TWP

Project Name: LEO'S CARWASH

Depth (Ft.)	Lithologic Description	Strat. Symbol	Samples		PID Meter Response	Comments	Depth (Ft.)
			No.	Rec/Att			
0	6" CONCRETE BROWN SAND & ROCK FRAGMENTS						0
5	BROWN SAND & ROCK FRAGMENTS			12"	42		5
	BROWN & GRAY SAND AND ROCK FRAGMENTS						
10	DENSE GRAY SILT & ROCK FRAGMENTS			12"	24		10
	DENSE GRAY SILT						
15	0-14" DENSE GRAY SILT, WET @ 15'; 14-20" BROWN SAND & ROCK FRAGMENTS			20"	5.4		15
	GRAY SHALE						
20	AUGER REFUSAL @ 19.5'						20
25							25
30							30
35							35
40							40

MONITORING WELL LOG

MW#6

Surface Elevation (MSL): N/A

Casing Stickup: _____

Borehole Diameter: 9 inches, From 0 To 24'9"
 _____ inches, From _____ To _____

Total Depth: 24'9"

Depth of Ground Water: _____

Date Measured: _____

Drilling Method: HOLLOW-STEM AUGER

Date Drilled: 10/30/02

Drilled By: CHATFIELD DRILLING

Logged By: JEREMY HOUK

County: ERIE

Township or Municipality: MILLCREEK TWP

Project Name: LEO'S CARWASH

Depth (Ft.)	Lithologic Description	Strat. Symbol	Samples		PID Meter Response	Comments	Depth (Ft.)
			No.	Rec/Att			
0	3" ASPHALT BROWN SAND & ROCK FRAGMENTS						0
5	GRAY SAND & ROCK FRAGMENTS			24"	114		5
	GRAY-GREEN SILT						
10	DENSE GRAY SILT				114		10
	GRAY SILT & SAND						
15	0-4" WET GRAY SAND 4-18" DENSE BROWN SILT			18"	10.4		15
20	GRAY SHALE & SILT						20
25							25
30							30
35							35
40						40	

MONITORING WELL LOG

MW#7

Surface Elevation (MSL): 100.94'

Casing Stickup: _____

Borehole Diameter: 8 inches, From 0 To 25'
 _____ inches, From _____ To _____

Total Depth: 25'

Depth of Ground Water: 8.02/92.92

Date Measured: 1/22/03

Drilling Method: HOLLOW-STEM AUGER

Date Drilled: 1/17/03

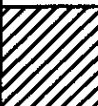
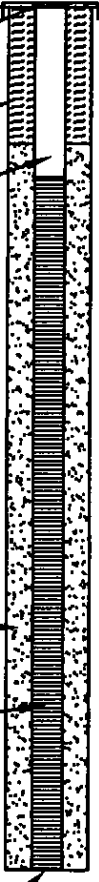






Drilled By: CHATFIELD DRILLING

Logged By: CHET ELEWSKI

County: ERIE

Township or Municipality: MILLCREEK TWP

Project Name: LEO'S CARWASH

Depth (Ft.)	Lithologic Discription	Strat. Symbol	Samples		PID Meter Response	Comments	Depth (Ft.)
			No.	Rec/Att			
0	ASPHALT, CONCRETE, SAND & GRAVEL			-	-	 <p>MANHOLE COVER W/ LOCKING CAP CONCRETE COLLAR</p> <p>BENTONITE CLAY SEAL 1' ABOVE SCREEN</p> <p>5' OF SOLID WALL 4" PVC PIPE</p> <p>SAND PACK</p> <p>20' OF 0.020 SLOT 4" PVC SCREEN</p> <p>PVC END CAP</p>	0
5	BROWN GRAY SANDY SILTY CLAY			16"	20		5
	BROWN GRAY SANDY SILTY CLAY						
10	BROWN SILTY SAND & GRAVEL			16"	NMR		10
	BROWN SILTY SAND & GRAVEL						
15	GRAY SILT & SHALE CHIPS			-	-		15
20	GRAY SILT & SHALE CHIPS						20
25							25
30							30
35							35
40						40	

MONITORING WELL LOG

MW#8

Surface Elevation (MSL): 100.33'

Casing Stickup: _____

Borehole Diameter: 8 inches, From 0 To 25'
 _____ inches, From _____ To _____

Total Depth: 25'

Depth of Ground Water: 13.05/87.28

Date Measured: 1/22/03

Drilling Method: HOLLOW-STEM AUGER

Date Drilled: 1/17/03

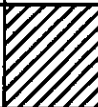
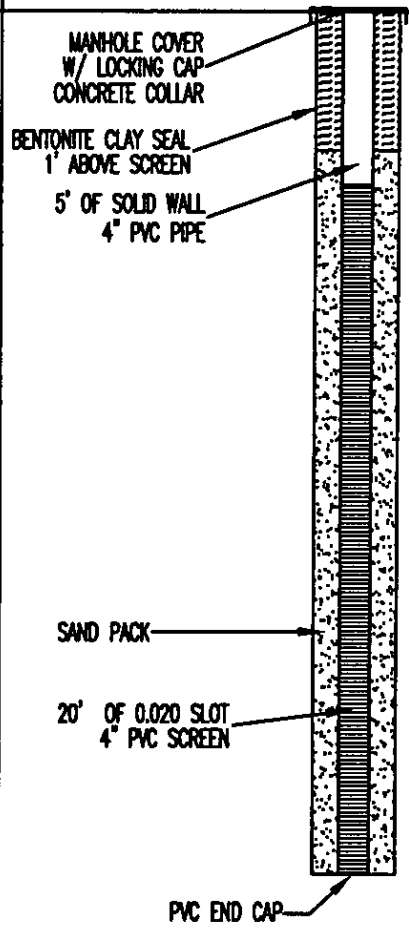





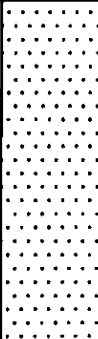
Drilled By: CHATFIELD DRILLING

Logged By: CHET ELEWSKI

County: ERIE

Township or Municipality: MILLCREEK TWP

Project Name: LEO'S CARWASH

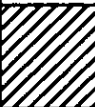
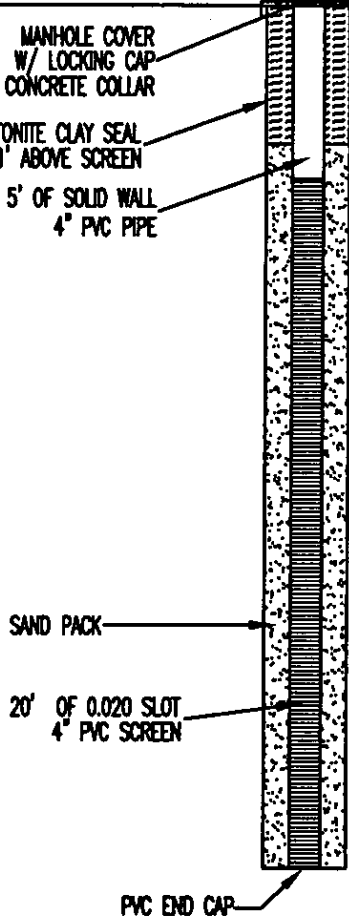






Depth (Ft.)	Lithologic Discription	Strat. Symbol	Samples		PID Meter Response	Comments	Depth (Ft.)
			No.	Rec/Att			
0	ASPHALT, CONCRETE, SAND & GRAVEL			-	-	 <p>MANHOLE COVER W/ LOCKING CAP CONCRETE COLLAR</p> <p>BENTONITE CLAY SEAL 1' ABOVE SCREEN</p> <p>5' OF SOLID WALL 4" PVC PIPE</p> <p>SAND PACK</p> <p>20' OF 0.020 SLOT 4" PVC SCREEN</p> <p>PVC END CAP</p>	0
5	BROWN GRAY SANDY SILTY CLAY			4"	15		5
	BROWN GRAY SANDY SILTY CLAY			-	-		10
10	BROWN SILTY SAND & GRAVEL			16"	20		15
	BROWN SILTY SAND & GRAVEL			-	-		20
15	GRAY SILT & SHALE CHIPS			-	-		25
20	GRAY SILT & SHALE CHIPS					30	
25						35	
30						40	
35							
40							

MONITORING WELL LOG

MW#9

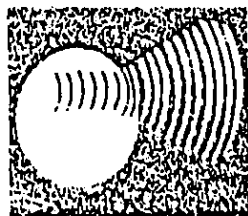
Surface Elevation (MSL): 100.48'
 Casing Stickup: _____
 Borehole Diameter: 8 inches, From 0 To 25'
 _____ inches, From _____ To _____
 Total Depth: 25'
 Depth of Ground Water: 12.42/88.06
 Date Measured: 1/22/03

Drilling Method: HOLLOW-STEM AUGER
 Date Drilled: 1/17/03
 Drilled By: CHATFIELD DRILLING
 Logged By: CHET ELEWSKI
 County: ERIE
 Township or Municipality: MILLCREEK TWP
 Project Name: LEO'S CARWASH

Depth (Ft.)	Lithologic Discription	Strat. Symbol	Samples		PID Meter Response	Comments	Depth (Ft.)
			No.	Rec/Att			
0	ASPHALT, CONCRETE, SAND & GRAVEL			-	-	 <p>MANHOLE COVER W/ LOCKING CAP CONCRETE COLLAR</p> <p>BENTONITE CLAY SEAL 1' ABOVE SCREEN</p> <p>5' OF SOLID WALL 4" PVC PIPE</p> <p>SAND PACK</p> <p>20' OF 0.020 SLOT 4" PVC SCREEN</p> <p>PVC END CAP</p>	0
5	BROWN SANDY SILTY CLAY & GRAVEL			14"	3		5
	BROWN SANDY SILTY CLAY & GRAVEL			-	-		
10	BROWN SANDY SILTY CLAY & GRAVEL			12"	3		10
	BROWN SANDY SILTY CLAY & GRAVEL			-	-		
15	GRAY SILT & SHALE			-	-		15
20	GRAY SILT & SHALE					20	
25						25	
30						30	
35						35	
40						40	

APPENDIX B

Laboratory Analytical Report- Soil



**Environmental
Laboratory
Services, Inc.**

1135 Butler Avenue New Castle, PA. 16101
Phone (724) 652-5770 • Fax (724) 652-3814

**ANALYSIS REQUEST/ENVIRONMENTAL SERVICES
CHAIN OF CUSTODY**

Client: AMERICAN ENV.
 Billing Address: _____
 Project Name#: LEO'S SCHARWASZ
 Project Manager: _____ P.O. #: _____

Sample Identification	Date Collected	Time Collected	Matrix					Total # Containers	Analysis Requested										Method of Shipment:																
			Grab	Composite	Soil	Water	Other												U.P.S.	Remarks															
MW# 7	1/17			X				2	<u>VENTHDED GRs.</u>																										
MW# 8	1/17			X				2																											
MW# 9	1/17			X				2																											

Turnaround Time Requested: Normal Rush
 (Rush TAT is subject to E.L.S. approval & surcharge)

Rush Results Requested By: _____
 FAX Fax #: _____
 PHONE Phone #: _____

Relinquished By:	Date	Time	Received By:	Date	Time
<u>[Signature]</u>	<u>1/17/03</u>		<u>[Signature]</u>	<u>1/21/03</u>	
Relinquished By:	Date	Time	Received By:	Date	Time
Relinquished By:	Date	Time	Received By:	Date	Time
Relinquished By:	Date	Time	Received By:	Date	Time



Environmental Laboratory Services, Inc.

1135 Butler Avenue • New Castle, PA 16101

(724) 652-5770

FAX (724) 652-3814

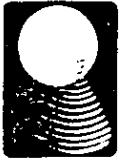
REPORT DATE: 01/28/03

Customer: American Environmental
Generator: Leo's 3 Car Wash
Sample Name: MW#7 (5'-8') Soil Sample
Sample Date: 01/17/03
Lab Sample #: HW38706

EPA METHOD 5035/8260B
LABORATORY RESULTS

<u>Parameter</u>	<u>Result as Received, (mg/kg)</u>	<u>Detection Limit, (mg/kg)</u>
Benzene, mg/kg	<0.1	0.1
Toluene, mg/kg	<0.2	0.2
Ethyl Benzene, mg/kg	<0.2	0.2
Xylenes, (Total, mg/kg)	<0.2	0.2
Cumene, mg/kg	<0.2	0.2
Naphthalene, mg/kg	<0.2	0.2
MTBE, mg/kg	<0.2	0.2

Mark Swansiger
Lab Director



Environmental Laboratory Services, Inc.

(724) 652-5770

1135 Butler Avenue • New Castle, PA 16101

FAX (724) 652-3814

REPORT DATE: 01/28/03

Customer: American Environmental
Generator: Leo's 3 Car Wash
Sample Name: MW#8 (8'-10') Soil Sample
Sample Date: 01/17/03
Lab Sample #: HW38707

EPA METHOD 5035/8260B
LABORATORY RESULTS

<u>Parameter</u>	<u>Result as Received, (mg/kg)</u>	<u>Detection Limit, (mg/kg)</u>
Benzene, mg/kg	<0.1	0.1
Toluene, mg/kg	<0.2	0.2
Ethyl Benzene, mg/kg	<0.2	0.2
Xylenes, (Total, mg/kg)	<0.2	0.2
Cumene, mg/kg	<0.2	0.2
Naphthalene, mg/kg	<0.2	0.2
MTBE, mg/kg	<0.2	0.2

Mark Swansiger

Mark Swansiger
Lab Director



Environmental Laboratory Services, Inc.

1135 Butler Avenue • New Castle, PA 16101

(724) 652-5770

FAX (724) 652-3814

REPORT DATE: 01/28/03

Customer: American Environmental
Generator: Leo's 3 Car Wash
Sample Name: MW#9 (8'-10')
Sample Date: 01/17/03
Lab Sample #: HW38708

EPA METHOD 5035/8260B
LABORATORY RESULTS

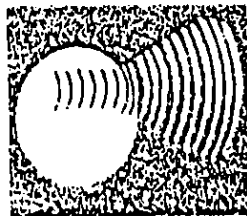
<u>Parameter</u>	<u>Result as Received, (mg/kg)</u>	<u>Detection Limit, (mg/kg)</u>
Benzene, mg/kg	<0.1	0.1
Toluene, mg/kg	<0.2	0.2
Ethyl Benzene, mg/kg	<0.2	0.2
Xylenes, (Total, mg/kg)	<0.2	0.2
Cumene, mg/kg	<0.2	0.2
Naphthalene, mg/kg	<0.2	0.2
MTBE, mg/kg	<0.2	0.2

Mark Swansiger

Mark Swansiger
Lab Director

APPENDIX C

Laboratory Analytical Report- Groundwater



Environmental Laboratory Services, Inc.

1135 Butler Avenue New Castle, PA. 16101
 Phone (724) 652-5770 • Fax (724) 652-3814

ANALYSIS REQUEST/ENVIRONMENTAL SERVICES CHAIN OF CUSTODY

Client: AMERICAN ENV.
 Billing Address: _____
 Project Name#: LEO'S 3 CHALOWASH
 Project Manager: _____ P.O. #: _____

Sample Identification	Date Collect	Time Collect	Matrix				Total # Containers
			Grab	Composite	Soil	Water	
MW#1	1/22				X		2
MW#2					X		2
MW#5					X		2
MW#6					X		2
MW#7					X		2
MW#8					X		2
MW#9	1/22				X		2

Analysis Requested						
UICHTD CAS.						
X						
X						
X						
X						
X						
X						
X						

Method of Shipment:
 U.P.S.
 Federal Express
 E.L.S. Pick Up
 Personal Delivery
 Remarks

Relinquished By:	Date	Time	Received By:	Date	Time
<i>[Signature]</i>	1/22/03		<i>[Signature]</i>	1/22/03	
Relinquished By:	Date	Time	Received By:	Date	Time
Relinquished By:	Date	Time	Received By:	Date	Time
Relinquished By:	Date	Time	Received By:	Date	Time

Turnaround Time Requested: Normal Rush
 (Rush TAT is subject to E.L.S. approval & surcharge)

Rush Results Requested By: _____

FAX Fax #: _____

PHONE Phone #: _____



Environmental Laboratory Services, Inc.

(724) 652-5770

1135 Butler Avenue • New Castle, PA 16101

FAX (724) 652-3814

REPORT DATE: 01/28/03

Customer: American Environmental
Generator: Leo's 3 Car Wash
Sample Name: Monitoring Well MW#1 Groundwater Sample
Sample Date: 01/22/03
Lab Sample #: HW38723

EPA METHOD 5030B/8260B LABORATORY RESULTS

<u>Parameter</u>	<u>Result as Received, (mg/l)</u>	<u>Detection Limit, (mg/l)</u>
Benzene, mg/l	0.051	0.001
Toluene, mg/l	<0.002	0.002
Ethyl Benzene, mg/l	0.162	0.002
Xylenes, (Total, mg/l)	0.508	0.002
Cumene, mg/l	0.015	0.002
Naphthalene, mg/l	0.039	0.002
MTBE, mg/l	0.077	0.002

Mark Swansiger
Mark Swansiger
Lab Director



Environmental Laboratory Services, Inc.

(724) 652-5770

1135 Butler Avenue • New Castle, PA 16101

FAX (724) 652-3814

REPORT DATE: 01/28/03

Customer: American Environmental
Generator: Leo's 3 Car Wash
Sample Name: Monitoring Well MW#2 Groundwater Sample
Sample Date: 01/22/03
Lab Sample #: HW38724

EPA METHOD 5030B/8260B
LABORATORY RESULTS

<u>Parameter</u>	<u>Result as Received, (mg/l)</u>	<u>Detection Limit, (mg/l)</u>
Benzene, mg/l	0.153	0.001
Toluene, mg/l	0.002	0.002
Ethyl Benzene, mg/l	0.066	0.002
Xylenes, (Total, mg/l)	0.094	0.002
Cumene, mg/l	<0.002	0.002
Naphthalene, mg/l	0.005	0.002
MTBE, mg/l	0.075	0.002

Mark Swansiger
Mark Swansiger
Lab Director

4/23/2013 2:54:26 PM



Environmental Laboratory Services, Inc.

1135 Butler Avenue • New Castle, PA 16101

(724) 652-5770

FAX (724) 652-3814

REPORT DATE: 01/28/03

Customer: American Environmental
Generator: Leo's 3 Car Wash
Sample Name: Monitoring Well MW#5 Groundwater Sample
Sample Date: 01/22/03
Lab Sample #: HW38725

EPA METHOD 5030B/8260B
LABORATORY RESULTS

<u>Parameter</u>	<u>Result as Received, (mg/l)</u>	<u>Detection Limit, (mg/l)</u>
Benzene, mg/l	9.93	0.05
Toluene, mg/l	10.9	0.1
Ethyl Benzene, mg/l	0.72	0.1
Xylenes, (Total, mg/l)	4.59	0.1
Cumene, mg/l	<0.1	0.1
Naphthalene, mg/l	<0.1	0.1
MTBE, mg/l	37.4	1.0

Mark Swansiger

Mark Swansiger
Lab Director

4/23/2013 2:54:26 PM



Environmental Laboratory Services, Inc.

(724) 652-5770

1135 Butler Avenue • New Castle, PA 16101

FAX (724) 652-3814

REPORT DATE: 01/28/03

Customer: American Environmental
Generator: Leo's 3 Car Wash
Sample Name: Monitoring Well MW#6 Groundwater Sample
Sample Date: 01/22/03
Lab Sample #: HW38726

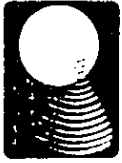
EPA METHOD 5030B/8260B
LABORATORY RESULTS

<u>Parameter</u>	<u>Result as Received, (mg/l)</u>	<u>Detection Limit, (mg/l)</u>
Benzene, mg/l	2.51	0.05
Toluene, mg/l	1.24	0.1
Ethyl Benzene, mg/l	1.08	0.1
Xylenes, (Total, mg/l)	3.71	0.1
Cumene, mg/l	<0.1	0.1
Naphthalene, mg/l	0.30	0.1
MTBE, mg/l	0.68	0.1

Mark Swansiger

Mark Swansiger
Lab Director

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Environmental Laboratory Services, Inc.

1135 Butler Avenue • New Castle, PA 16101

(724) 652-5770

FAX (724) 652-3814

REPORT DATE: 01/28/03

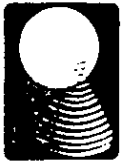
Customer: American Environmental
Generator: Leo's 3 Car Wash
Sample Name: Monitoring Well MW#7 Groundwater Sample
Sample Date: 01/22/03
Lab Sample #: HW38727

EPA METHOD 5030B/8260B
LABORATORY RESULTS

<u>Parameter</u>	<u>Result as Received, (mg/l)</u>	<u>Detection Limit, (mg/l)</u>
Benzene, mg/l	0.002	0.001
Toluene, mg/l	0.010	0.002
Ethyl Benzene, mg/l	0.034	0.002
Xylenes, (Total, mg/l)	0.128	0.002
Cumene, mg/l	0.004	0.002
Naphthalene, mg/l	0.032	0.002
MTBE, mg/l	<0.002	0.002

Mark Swansiger
Mark Swansiger
Lab Director

4/23/2013 2:54:28 PM



Environmental Laboratory Services, Inc.

(724) 652-5770

1135 Butler Avenue • New Castle, PA 16101

FAX (724) 652-3814

REPORT DATE: 01/28/03

Customer: American Environmental
Generator: Leo's 3 Car Wash
Sample Name: Monitoring Well MW#8 Groundwater Sample
Sample Date: 01/22/03
Lab Sample #: HW38728

EPA METHOD 5030B/8260B
LABORATORY RESULTS

<u>Parameter</u>	<u>Result as Received, (mg/l)</u>	<u>Detection Limit, (mg/l)</u>
Benzene, mg/l	0.014	0.001
Toluene, mg/l	0.006	0.002
Ethyl Benzene, mg/l	0.011	0.002
Xylenes, (Total, mg/l)	0.035	0.002
Cumene, mg/l	<0.002	0.002
Naphthalene, mg/l	0.009	0.002
MTBE, mg/l	0.142	0.002

Mark Swansiger

Mark Swansiger
Lab Director

4/23/2013 2:54:29 PM



Environmental Laboratory Services, Inc.

1135 Butler Avenue • New Castle, PA 16101

(724) 652-5770

FAX (724) 652-3814

REPORT DATE: 01/28/03

Customer: American Environmental
Generator: Leo's 3 Car Wash
Sample Name: Monitoring Well MW#9 Groundwater Sample
Sample Date: 01/22/03
Lab Sample #: HW38729

EPA METHOD 5030B/8260B
LABORATORY RESULTS

<u>Parameter</u>	<u>Result as Received, (mg/l)</u>	<u>Detection Limit, (mg/l)</u>
Benzene, mg/l	<0.001	0.001
Toluene, mg/l	<0.002	0.002
Ethyl Benzene, mg/l	<0.002	0.002
Xylenes, (Total, mg/l)	0.002	0.002
Cumene, mg/l	<0.002	0.002
Naphthalene, mg/l	<0.002	0.002
MTBE, mg/l	0.009	0.002

Mark Swansiger
Lab Director