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April 25, 2013

Mr. Scott Ferguson, P.G.
Pennsylvania Department of Environmental Protection
Environmental Cleanup Program
208 West Third Street, Suite 101
Williamsport, PA 17701-6448

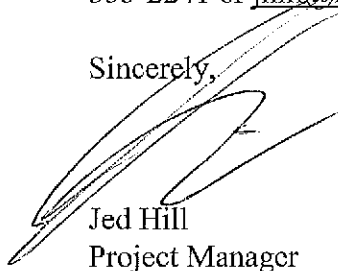
**Re: 1st Quarter 2013 Remedial Action Progress Report
United Refining Company of Pennsylvania
Kwik Fill M-90
1322 South 2nd Street
Lawrence Township, Clearfield County, Clearfield, Pennsylvania
PADEP Facility ID #17-14821/PAUSTIF Claim #2008-0034(M)**

Dear Mr. Ferguson:

Letterle & Associates, LLC (Letterle) is pleased to submit this Remedial Action Progress Report (RAPR) for the above referenced facility. This RAPR presents the groundwater monitoring data from the first quarter of 2013 and also includes a description of remedial activities completed from January 1, 2013 through March 31, 2013 (first quarter of 2013).

If you have any questions or comments regarding this report, please feel free to contact me at (814) 355-2241 or jhill@letterleassociates.com.

Sincerely,



Jed Hill
Project Manager

Enclosure

cc: Mr. Scott C. Wonsettler, P.G., United Refining Company of Pennsylvania (with CD)
Mr. Gerald Hawk, ICF International (via email)
Mr. Robert McDonald, Arch Street Management
L:\Operations\Projects\Project Files\Bellefonte\United Refining\M-90 Clearfield #277\Reports\2013\Clearfield-1st Qtr 2013 RAPR.doc

REMEDIAL ACTION PROGRESS REPORT
1st Quarter 2013

PADEP Facility ID #17-14821
PAUSTIF Claim #2008-0034(M)
Kwik Fill M-90
1322 South 2nd Street
Lawrence Township, Clearfield County
Clearfield, Pennsylvania 16830

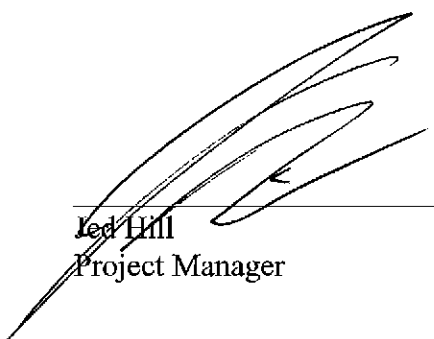
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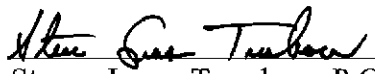
United Refining Company of Pennsylvania
15 Bradley Street
P.O. Box 688
Warren, Pennsylvania 16365

Prepared by:

Letterle & Associates, LLC
629 East Rolling Ridge Drive
Bellefonte, Pennsylvania 16823




Ted Hill
Project Manager


Steven James Treschow, P.G.
Professional Geologist

April 2013

"By affixing my seal to this document, I am certifying that the information is true and correct to the best of my knowledge. I further certify I am licensed to practice in the Commonwealth of Pennsylvania and that it is within my professional expertise to verify the correctness of the information."

Steven James Treschow, P.G. (signed and sealed this day (April 25, 2013))

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GENERAL INFORMATION

Client Contact:	Scott Wonsettlar, P.G.
Letterle Project Manager:	Jed Hill
Regulatory Contact:	Scott Ferguson, P.G.
PADEP Facility ID #:	17-14821
PAUSTIF Claim #:	2008-0034 (M)
Number of Wells:	14 monitoring wells (on-site wells MW-2A, MW-32, and MW-33 and off-site monitoring wells MW-3, MW-4, MW-7, MW-9, MW-10, MW-14, MW-15, MW-17, MW-21, MW-29, and MW-30). 8 remediation system extraction wells (MW-1, MW-1A, MW-2, MW-28, MW-31, MW-34, MW-35, and MW-36).

Wells Containing LNAPL: 0

Letterle & Associates, LLC (Letterle) has been contracted by United Refining Company (United) of Pennsylvania (PA) to perform remedial activities at the Kwik Fill M-90 facility located at 1322 South 2nd Street in Lawrence Township, Clearfield County, Clearfield, PA (the site).

The site location is depicted on the 7.5-minute United States Geological Survey (USGS) Topographic Quadrangles of Clearfield and Glen Richey, PA presented as **Figure 1**. The site exists at an approximate elevation of 1,045 feet above mean sea level (ft-amsl). A more detailed site layout map, which fully depicts the site area, is presented as **Figure 2**.

This Remedial Action Progress Report (RAPR) includes a description of the on-going remedial action activities and presents the groundwater monitoring data obtained at the site during the first quarter of 2013.

SITE HISTORY/PROJECT SUMMARY

The site is currently an active retail fueling (gasoline and diesel) station, which has two, 10,000-gallon and one, 8,000-gallon steel underground storage tanks (USTs). The two 10,000-gallon USTs were installed in 1969 and the 8,000-gallon UST was installed in 1974. One 10,000-gallon UST and one 8,000-gallon contain unleaded gasoline and the remaining 10,000-gallon UST (in the middle) contains diesel fuel.

On June 15, 1995, the 10,000-gallon unleaded gasoline UST (#002) failed a tightness test. The PA Department of Environmental Protection (PADEP) was notified of the failure and subsequently, Mountain Research, Inc. (MRI) was retained by United in May 1996 to perform site characterization activities.

From June 1996 through October 1997, four soil boring/monitoring wells, MW-1, MW-1A, MW-2, and MW-2A, were installed on the site and five monitoring wells, MW-3 through MW-7, were installed off-site, on the Beckwith Machinery Company (BMC) property. Quarterly groundwater sampling began in February 1996. Groundwater analytical results for the monitoring wells indicated unleaded gasoline constituents at concentrations above their respective Medium Specific

Concentration (MSC) values. In June 1997, soil/groundwater samples were collected on-site and in the right-of-way of South 2nd Street. The results of the investigation indicated several soil/groundwater samples contained unleaded gasoline constituents at concentrations above their respective MSC values.

MRI prepared a Remedial Action Plan (RAP) in July 1999 proposing a Matrix Trailer Mounted Oxygen Injection System. The PADEP approved the RAP in January 2000. In February 2000, system installation was initiated. The system consisted of eight oxygen injection points and a small trailer to house any ancillary equipment. On April 12, 2000, the system was activated. The system was operational from April 12, 2000 until the first quarter of 2005. From February 1996 through first quarter of 2005, MRI performed quarterly groundwater sampling from the monitoring well network.

From early 2005 through mid-2006, additional site investigations were initiated at the site to re-evaluate the remedial approach. In October 2006, a Supplemental Site Characterization Report (SCR) and RAP Addendum was submitted to the PADEP. The Supplemental SCR/RAP Addendum identified two separate source areas, one on-site and one off-site at the BMC property. The on-site source area (Source Area #1) was found to have impacted groundwater beneath the site and downgradient on the former BMC property. Impacted groundwater from Source Area #2 was found to be related to an off-site release and not associated with the Kwik Fill M-90 facility. The Supplemental SCR/RAP Addendum strategy included remediating groundwater via an air sparge/soil vapor extraction (AS/SVE) system. An additional RAP Addendum was submitted in December 2006. The PADEP approved the Supplemental SCR/RAP Addendum and additional RAP Addendum in January 2007, with modifications. An AS/SVE system was installed at the site and operated from November 2007 through the fourth quarter of 2008.

A second release of unleaded gasoline occurred at the site, and was reported in February 2008. Additional site characterization activities were initiated and an Additional SCR and RAP Addendum was submitted in June 2011. The June 2011 Additional SCR/RAP Addendum included the selection of a dual phase extraction (DPE)/SVE system to address on-site soil and groundwater and enhanced in-situ bioremediation (EB) to address off-site groundwater. The June RAP Addendum was approved by the PADEP in July 2011.

REMEDIAL ACTION PLAN IMPLEMENTATION

The PA Underground Storage Tank Indemnification Fund (PAUSTIF) and their administrator, ICF International (ICFI), put the site remedial work out for competitive bid. The proposed scope of work was based upon the July 2011 approved RAP. Letterle was awarded the bid in March of 2012 and began implementation of the approved RAP.

Remedial actions completed in previous quarters include off-site well abandonment, DPE well installation, remedial system trenching and piping, remedial system installation, and the application of a chemical oxidant as part of an enhanced bioremediation feasibility study.

Remediation System

The remedial system trailer was constructed and mobbed to the site during the third quarter of 2012 and began operation on October 30, 2012. The principal DPE system components housed within the trailer include:

- Two claw pumps;
- One air compressor;
- One air/water separator (AWS) tank;
- One equalization tank;
- Two transfer pumps and level controls;
- Six pneumatic groundwater pumps;
- Four 400-pound liquid-phase granular activated carbon (GAC) vessels (high pressure units);
- Two 600-pound vapor-phase GAC vessels; and,
- Control panel for the claw pumps, air compressor, and the transfer pumps (including all system interlocks).

The recovered groundwater is treated and discharged to the sanitary sewer under an issued permit from the Clearfield Municipal Authority (CMA). Under the terms of the permit, analytical reports and totalizer readings are reported in Discharge Monitoring Reports (DMR) on a monthly basis to the CMA. Petroleum impacted soil and groundwater remediation systems have been listed as exempt from the Plan Approval/Operating permit requirements by PADEP, Division of Air Quality. The remediation system is operated under the exemption requirements.

QUARTERLY SITE ACTIVITIES COMPLETED – 1ST QUARTER 2013

Remediation System Operating Summary

Start Date:	October 30, 2012
1 st Quarter 2013 System Uptime:	99%
1 st Quarter 2013 Total Gallons Treated:	231,477 gallons
Total Gallons Treated To Date:	453,986 gallons

System Sampling Dates

Groundwater Influent, Midfluent, Effluent:	January 23, 2013
	February 7, 2013
	March 4, 2013

Groundwater Effluent:	January 7, 2013
	January 23, 2013
	February 7, 2013
	February 19, 2013
	March 4, 2013
	March 21, 2013
Vapor:	None

Groundwater Gauging/Sampling

The monitoring well network is gauged and sampled on a quarterly basis to analyze the effectiveness of the remediation system and to monitor groundwater impacts/movement at the site. Approximately one week prior to groundwater gauging/sampling, the remediation system was deactivated to allow for static groundwater conditions.

Groundwater Gauging

Letterle completed a quarterly groundwater gauging event on March 5, 2013. A total of 14 wells were gauged:

- *14 wells in the shallow overburden groundwater monitoring well network: MW-2A, MW-3, MW-4, MW-7, MW-10, MW-14, MW-15, MW-21, MW-22, MW-23, MW-29, MW-30, MW-32, and MW-33.*

Gauging Methodology

Depth-to-groundwater was measured in each well to determine groundwater elevations and interpret the predominant direction of groundwater movement. Depth-to-groundwater measurements were recorded using an electronic water level indicator capable of measuring to within 0.01 feet of accuracy. The electronic water level indicator was decontaminated between wells.

Gauging Results

Groundwater elevation data collected during the first quarter of 2013 groundwater gauging event indicates the following:

- Groundwater elevations in shallow overburden groundwater ranged from 1,135.46 feet in MW-7 to 1,145.67 feet in MW-33;
- The predominant direction of movement in shallow overburden groundwater is interpreted to be to the north (towards the West Branch Susquehanna River);
- Using the March 5, 2013 groundwater elevation data, a groundwater hydraulic gradient of 0.023 feet per foot (ft/ft) between groundwater monitoring wells MW-33 and MW-7 was calculated; and,

- The groundwater elevations observed in MW-10 was considered anomalous and was not used in groundwater contouring.

Table 1 summarizes the historical groundwater gauging data and also presents the resultant groundwater gauging results from the first quarter of 2013 groundwater gauging event. A groundwater potentiometric surface contour map for the March 5, 2013 groundwater gauging event is presented as **Figure 3**.

Groundwater Sampling

Letterle completed a quarterly groundwater sampling event on March 5, 2013. A total of 14 wells were sampled:

- *14 wells in the shallow overburden groundwater monitoring well network:* MW-2A, MW-3, MW-4, MW-7, MW-9, MW-10, MW-14, MW-15, MW-17, MW-21, MW-29, MW-30, MW-32, and MW-33.

Sampling Methodology

Subsequent to gauging the groundwater level in each well, low-flow sampling was initiated. For wells shallower than 20 feet, a combination of polyethylene and silicon tubing are utilized in conjunction with a peristaltic pump. The peristaltic pump is then utilized to purge the well at a low flow rate of <0.5 liters (500 milliliters) per minute. For wells deeper than 20 feet, polyethylene tubing is utilized in conjunction with a two-inch Mini-Monsoon submersible pump to purge the well at a low flow rate of <0.5 liters (500 milliliters) per minute. The intake of each respective pump was placed approximately three feet below the measured water level. In general, each well is purged at a rate of 100-400 milliliters per minute to avoid creating drawdown. If a well was dewatered, a bailer was utilized to collect the sample after the well recovered.

The purged groundwater is then passed through a flow-through cell that measures dissolved oxygen (DO), pH, total dissolved solids (TDS), temperature, specific conductivity, and oxidation-reduction potential (ORP). Measurements of these parameters were recorded every 5 minutes. These measurements were recorded until three consecutive readings stabilized to within 10% of one and other. Purging was considered to be complete upon parameter stabilization for three consecutive readings. Once stabilization was documented, the flow-through cell was disconnected and the sample was immediately collected from the discharge line.

The pump was decontaminated between each sampled well. The purged groundwater was filtered through a mobile GAC vessel and then discharged to the ground surface.

The samples were sealed in pre-preserved laboratory supplied glassware, labeled, custody sealed, placed in an ice-filled cooler, and returned to Letterle's office. The samples were stored in a refrigerator (at 4 °C) until they were collected by the laboratory. The samples were submitted to Fairway Laboratories of Altoona, PA, for analysis of the pre-March 15, 2008 PADEP Land Recycling Program Technical Guidance Manual, Table IV-9 - Short List of Petroleum Products, specifically unleaded gasoline constituents (PADEP unleaded gasoline short list constituents) via

United States Environmental Protection Agency (USEPA) Method 8260B and were accompanied by Chain-of-Custody documentation.

Sampling Results

The groundwater analytical results from the groundwater sampling event conducted on March 5, 2013 indicated the following exceedances of the applicable PADEP Used-Aquifer TDS $\leq 2,500$ milligrams per liter (mg/L)) Residential Statewide Health Standard (UARSHS) MSCs:

- Benzene in well MW-3.

Table 1 summarizes the historical groundwater analytical data and also presents the resultant groundwater analytical results from the first quarter of 2013 groundwater sampling event. Groundwater analytical laboratory reports are included in **Appendix A**.

A benzene isoconcentration contour map for the March 5, 2013 (first quarter of 2013) groundwater sampling event is presented as **Figure 4**.

Groundwater samples were not collected from MW-9 and MW-17 due to the inability to locate the respective monitoring wells.

PLANNED ACTIVITY

The following activities are currently planned for the 2nd Quarter of 2013:

- Remedial system operation and maintenance (including permit-required sampling);
- Quarterly groundwater gauging and sampling; and,
- Quarterly reporting.

TABLE

Table 1
Historic Groundwater Gauging and Analytical Data
United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

Piezometer/Well	Date	Compound							Depth-to-Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Cumene	Naphthalene		
PADEP DARSHS MSCs		20	5	1,000	700	10,000	840	100		
MW-1	3/17/2010	10.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.26	1147.28
	6/8/2010	11.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.57	1146.97
	8/30/2010	18.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.78	1144.76
	11/17/2010	13.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.40	1146.14
	3/1/2011	6.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.78	1147.76
	5/31/2011	13.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.75	1145.79
	8/24/2011	12.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.12	1145.42
	3/28/2012	14.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.12	1147.42
	6/25/2012	Monitoring well converted to remedial extraction well.								
MW-1A	3/17/2010	7.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.57	1147.20
	6/8/2010	6.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.86	1146.91
	8/30/2010	16.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.32	1144.45
	11/17/2010	10.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.88	1145.89
	3/1/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.04	1147.73
	5/31/2011	4.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.29	1145.48
	8/24/2011	8.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.65	1145.12
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.55	1147.22
	6/25/2012	Monitoring well converted to remedial extraction well.								
MW-2	3/17/2010	20.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.07	1146.91
	6/8/2010	20.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.36	1146.62
	8/30/2010	20.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.61	1144.37
	11/17/2010	20.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.36	1145.62
	3/1/2011	11.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.73	1147.25
	5/31/2011	10.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.68	1145.30
	8/24/2011	14.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.90	1145.08
	3/28/2012	11.5	1.1	<1.00	<1.00	<3.00	<1.00	<2.00	2.85	1147.13
	6/25/2012	Monitoring well converted to remedial extraction well.								
MW-2A	3/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.21	1147.66
	6/8/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.27	1147.60
	8/30/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.23	1145.64
	11/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.25	1146.62
	3/1/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.91	1147.96
	5/31/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.16	1146.71
	8/24/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.52	1146.35
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.45	1148.42
	6/25/2012	5.22	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.51	1144.36
	9/6/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.21	1145.66
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.12	1144.75
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.30	1144.57
MW-3	3/18/2010	43.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.43	1143.80
	6/7/2010	44.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.40	1143.83
	8/31/2010	41.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.92	1142.31
	11/17/2010	40.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.48	1142.75
	3/2/2011	33.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.81	1144.42
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	32.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.38	1142.85
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	1.40	1144.83
	6/25/2012	21.9	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.17	1143.06
	9/6/2012	27.5	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.17	1142.06
	12/14/2012	18.4	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.63	1140.60
	3/5/2013	11.8	13.4	<1.00	<1.00	<2.00	<1.00	<1.00	5.36	1140.87
MW-4	3/18/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.97	1144.15
	6/7/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.17	1142.95
	8/31/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.44	1140.68
	11/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.26	1141.86
	3/2/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.92	1144.20
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.24	1141.88
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.20	1143.92
	6/25/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.74	1142.38
	9/6/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.11	1141.01
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.40	1141.72
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.58	1142.54

Table 1
Historic Groundwater Gauging and Analytical Data
United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

Piezometer/Well	Date	Compound							Depth-to-Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Cumene	Naphthalene		
PADEP UARSHS MSCs		20	5	1,000	700	10,000	840	100		
MW-5	3/17/2010	5.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.16	1143.51
	6/7/2010	4.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.53	1143.14
	8/31/2010	3.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.18	1141.49
	11/17/2010	2.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.80	1141.87
	3/1/2011	1.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.43	1144.24
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	5.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.64	1142.03
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	1.04	1143.63
	6/25/2012	Well not part of quarterly sampling program.							2.25	1142.42
MW-6	3/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/7/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/31/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	11/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/1/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	Well could not be located. Well not part of quarterly sampling program.								
MW-7	3/18/2010	3.6	59.5	11.5	44.4	54.7	25.6	44.5	2.60	1139.41
	6/7/2010	3.1	57.7	12.9	55.2	60.3	35.4	61.3	5.77	1136.24
	8/31/2010	6.8	104	14.4	47.9	49.2	29.3	38.7	7.92	1134.09
	11/17/2010	7.2	97.9	12.5	46.5	47.4	27.3	57.7	6.85	1135.16
	3/2/2011	4.1	51.9	8.8	39.3	27.7	22.4	20.9	3.93	1138.08
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	7.7	73.8	10.2	25.8	28.5	31.3	40.7	7.21	1134.80
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	7.15	1134.86
	6/25/2012	3.84	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	7.49	1134.52
	9/6/2012	10.6	NA	<2.00	<2.00	<4.00	<2.00	<2.00	7.76	1134.25
	12/14/2012	<2.00	NA	14.8	89.5	43.6	29.0	65.4	5.80	1136.21
	3/5/2013	<1.00	NA	2.29	5.67	5.16	2.25	3.28	6.55	1135.46
MW-9	3/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/8/2010	32.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.00	1141.97
	8/30/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	11/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/1/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	Well could not be located.								
	9/6/2012									
	12/14/2012									
	3/5/2013									
MW-10	3/17/2010	8.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.64	1147.90
	6/7/2010	8.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.78	1148.76
	8/31/2010	8.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.08	1147.46
	11/17/2010	7.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.50	1147.04
	3/2/2011	7.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.14	1149.40
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	7.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.42	1148.12
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	1.42	1148.12
	6/25/2012	5.01	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	1.23	1148.31
	9/6/2012	6.16	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.10	1147.44
	12/14/2012	5.56	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.08	1147.46
	3/5/2013	5.80	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	1.81	1147.73
MW-12	3/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/7/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/31/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	11/17/2010	30.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.28	1142.28
	3/2/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	Well not part of quarterly sampling program.							2.83	1142.73

Table 1
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United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

Piezometer/Well	Date	Compound							Depth-to-Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Cumene	Naphthalene		
PADEP UARSHS MSCs		20	5	1,000	700	10,000	840	100		
MW-14	3/17/2010	23.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.97	1146.75
	6/7/2010	18.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.22	1146.50
	8/31/2010	35.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.43	1144.29
	11/17/2010	21.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.40	1145.32
	3/2/2011	2.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.62	1147.10
	5/31/2011	21.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.44	1145.28
	8/24/2011	17.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.80	1143.92
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.71	1146.01
	6/25/2012	8.80	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.59	1145.13
	9/6/2012	19.8	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.63	1144.09
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	6.89	1141.83
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	7.14	1141.58
MW-15	3/18/2010	6.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.73	1145.56
	6/7/2010	6.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.08	1145.21
	8/31/2010	7.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.88	1143.41
	11/17/2010	6.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.44	1143.85
	3/2/2011	4.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.51	1145.78
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	6.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.27	1144.02
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.20	1145.09
	6/25/2012	6.98	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.11	1144.18
	9/6/2012	5.64	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.18	1143.11
	12/14/2012	2.23	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.45	1141.84
	3/5/2013	1.70	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.97	1142.32
MW-17	3/18/2010	9.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.73	1142.53
	6/7/2010	1.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.09	1143.17
	8/31/2010	13.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.78	1141.48
	11/17/2010	11.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.70	1141.56
	3/1/2011	7.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.11	1143.15
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	Well could not be located.								
	9/6/2012									
	12/14/2012									
	3/5/2013									
MW-21	3/17/2010	41.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.86	1144.60
	6/7/2010	42.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.12	1144.34
	8/30/2010	40.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.43	1143.03
	11/17/2010	35.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.22	1143.24
	3/2/2011	33.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.50	1144.96
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	37.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.05	1143.41
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.10	1144.36
	6/25/2012	21.7	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.94	1143.52
	9/6/2012	42.1	<2.00	<2.00	<2.00	<4.00	<2.00	<2.00	3.79	1142.67
	12/14/2012	10.8	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.09	1141.37
	3/5/2013	12.7	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.61	1141.85
MW-22	3/17/2010	5.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.79	1143.08
	6/7/2010	8.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.18	1142.69
	8/30/2010	8.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.60	1141.27
	11/17/2010	6.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.38	1141.49
	3/2/2011	6.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.42	1143.45
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	10.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.04	1141.83
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.11	1142.76
	6/25/2012	Well not part of quarterly sampling program.							2.81	1142.06
	9/6/2012								3.43	1141.44
	12/14/2012								4.06	1140.81
	3/5/2013								3.60	1141.27

Table 1
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United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

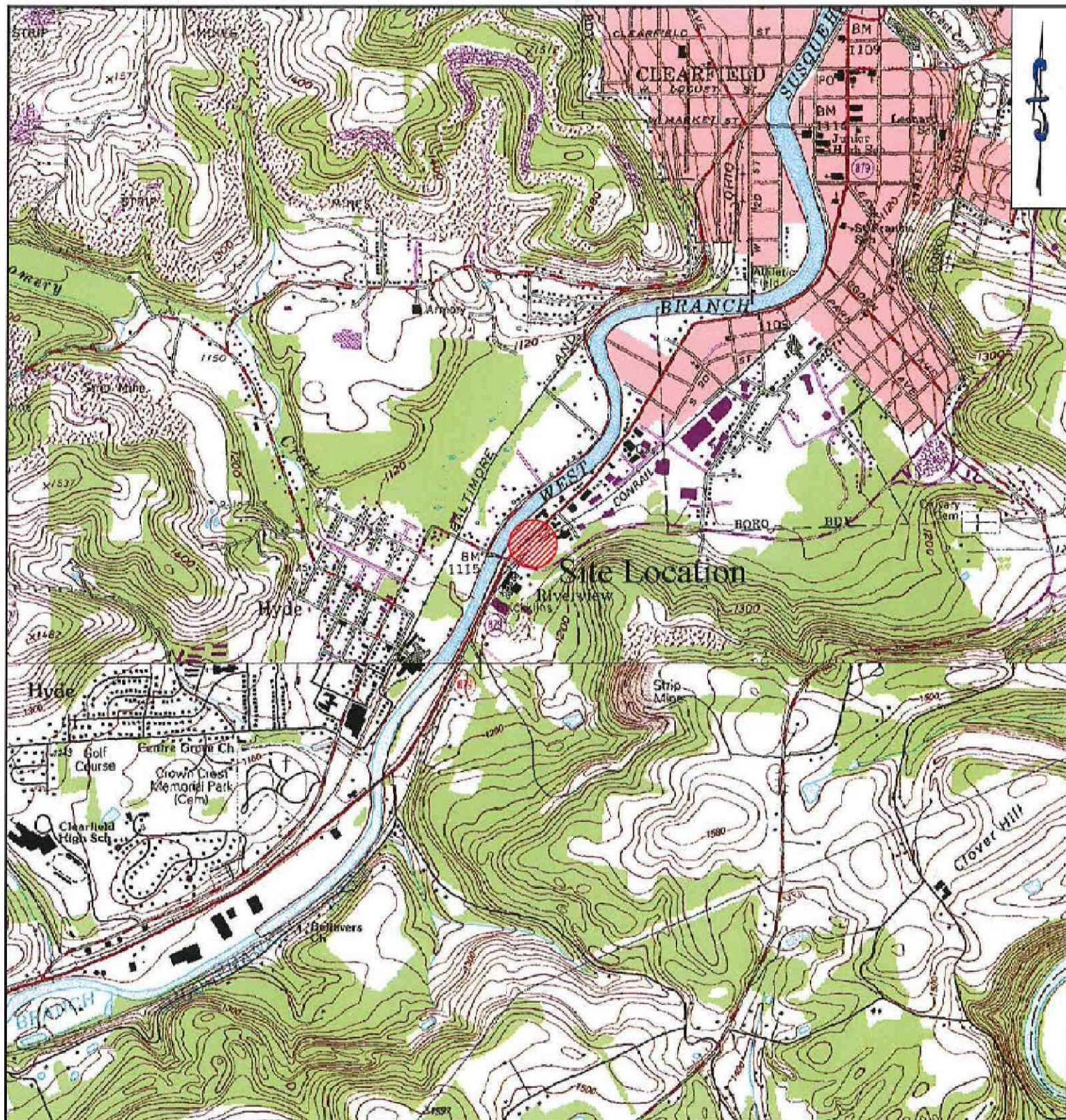
Piezometer/Well	Date	Compound							Depth-to-Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Cumene	Naphthalene		
PADDP UARSHS MSCs		20	5	1,000	700	10,000	840	100		
MW-23	3/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.51	1144.65
	6/7/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.03	1145.13
	8/31/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.63	1142.53
	11/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.90	1143.26
	3/2/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.02	1145.14
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.93	1143.23
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.80	1144.36
	6/25/2012	Well not part of quarterly sampling program.							4.57	1142.59
	9/6/2012								5.37	1141.79
	12/14/2012								5.99	1141.17
	3/5/2013								5.05	1142.11
MW-28	3/17/2010	4.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.13	1146.94
	6/8/2010	3.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.44	1146.63
	8/30/2010	6.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.64	1144.43
	11/17/2010	4.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.46	1145.61
	3/1/2011	7.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.01	1147.06
	5/31/2011	3.4	NA	NA	NA	NA	NA	NA	4.82	1145.25
	8/24/2011	4.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.97	1145.10
	3/28/2012	14.6	NA	NA	NA	NA	NA	NA	2.88	1147.19
	6/25/2012	Monitoring well converted to remedial extraction well.								
MW-29	3/17/2010	35.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.61	1144.65
	6/7/2010	39.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.83	1144.43
	8/30/2010	39.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.95	1142.31
	11/17/2010	37.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.95	1143.31
	3/2/2011	9.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.23	1145.03
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	37.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.81	1143.45
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.71	1144.55
	6/25/2012	22.8	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.58	1143.68
	9/6/2012	25.0	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.58	1142.68
	12/14/2012	3.13	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.77	1141.49
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.36	1141.90
MW-30	3/18/2010	17.0	23.9	<1.00	14.5	12.2	1.9	2.5	2.23	1145.03
	6/7/2010	20.1	17.9	<1.00	12.4	10.5	1.9	<2.00	2.41	1144.85
	8/31/2010	22.7	<1.00	<1.00	3.1	<3.00	<1.00	<2.00	4.07	1143.19
	11/17/2010	25.9	<1.00	<1.00	1.8	<3.00	<1.00	<2.00	3.61	1143.65
	3/2/2011	22.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.35	1144.91
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	8.41	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.31	1143.95
	9/6/2012	10.8	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.30	1142.96
	12/14/2012	4.08	<2.00	<2.00	<2.00	<4.00	<2.00	<2.00	5.91	1141.35
	3/5/2013	6.13	1.80	<1.00	<1.00	<2.00	<1.00	<1.00	5.50	1141.76
MW-31	3/17/2010	7.8	668	783	265	2,700	26.4	119	3.16	1147.07
	6/8/2010	6.3	336	118	119	754	10.2	61.8	3.61	1146.62
	8/30/2010	8.0	18.8	1.1	10.5	34.1	1.3	3.3	5.73	1144.50
	11/17/2010	6.7	60.5	<1.00	20.6	20.4	1.8	4.3	4.73	1145.50
	3/1/2011	4.8	9.2	1.4	3.6	4.1	<1.00	<2.00	3.48	1146.75
	5/31/2011	6.3	66.1	<1.00	20.0	22.1	2.3	2.1	4.74	1145.49
	8/24/2011	14.3	439	7.2	135	272	12	35.7	5.03	1145.20
	3/28/2012	16.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.18	1147.05
	6/25/2012	Monitoring well converted to remedial extraction well.								

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United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

Piezometer/Well	Date	Compound							Depth-to-Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Cumene	Naphthalene		
PADEP UARSHS MSCs		20	5	1,000	700	10,000	840	100		
MW-32	5/28/2010	4.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.22	1145.58
	6/8/2010	2.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.21	1146.59
	8/30/2010	1.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.16	1144.64
	11/17/2010	2.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.64	1145.16
	3/1/2011	2.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.94	1146.86
	5/31/2011	2.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.15	1145.65
	8/24/2011	2.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.58	1145.22
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.49	1147.31
	6/25/2012	4.51	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.51	1145.29
	9/6/2012	4.07	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.51	1144.29
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.65	1144.15
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.50	1144.30
MW-33	5/28/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.41	1145.72
	6/8/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.36	1146.77
	8/30/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.25	1144.88
	11/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.96	1145.17
	3/1/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.42	1146.71
	5/31/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.38	1145.75
	8/24/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.72	1145.41
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.70	1147.43
	6/25/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.66	1145.47
	9/6/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.70	1144.43
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.72	1145.41
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.46	1145.67

Notes: Groundwater elevation data reported in feet (ft).
Depth-to-groundwater results are reported in feet below top-of-casing (ft-bioc).
All results reported in ug/l.
Bold values indicate levels above LRL.
Bold and shaded values indicate exceedance of PADEP UARSHS MSCs.
NG - Not Gauged. NA - Not Analyzed. NS - Not Sampled.

FIGURES



Reference: 7.5-minute United States Geological Survey Topographic Quadrangles of Clearfield and Glen Richey, Pennsylvania, DeLorme 3-D Topographic Quads Program.

Prepared For:	Project Information:	Prepared By:
United Refining Company Kwik Fill M-90 1322 South 2nd Street Clearfield, Pennsylvania	Project Manager: Jed Hill Project Geologist: Steven Treschow, P.G.	 Letterle & Associates, LLC 629 East Rolling Ridge Drive Bellefonte, PA 16823 P: 814-355-2241 F: 814-355-2410 www.letterleassociates.com
Title:	Scale (feet):	
Figure 1 Site Location Map	Scale: 1" = 2000' 	

Prepared By:



629 East Rolling Ridge Drive
Bellefonte, PA 16823
P: 814-355-2241
F: 814-355-2410
www.letterleassociates.com

Project Manager: Jed Hill
Project Geologist: Steven Treschow, P.G.

Prepared For:

United Refining Company
Kwik Hill M-90
1322 South 2nd Street
Clearfield, Pennsylvania

Title:

Figure 2
Site Layout Map

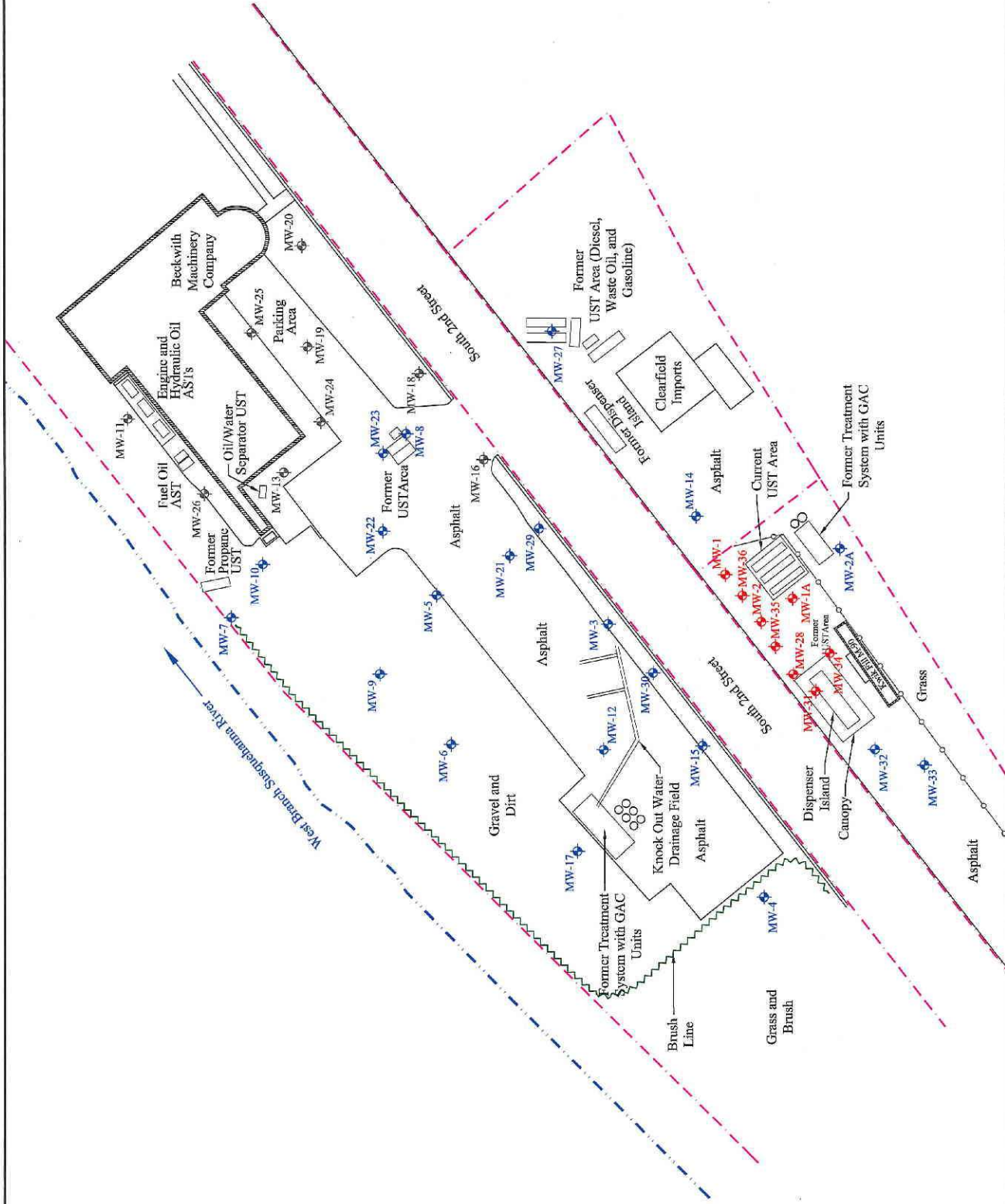
Legend:

- Groundwater Monitoring Well Location
- Abandoned Groundwater Monitoring Well
- Vapor/Groundwater Extraction Well
- Property Boundary
- Guard Rail

Scale (ft.):

1" = 60'

One Inch Equals Sixty Feet



Prepared By:



629 East Rolling Ridge Drive
Belleville, PA 16823
P: 814-355-2241
F: 814-355-2410
www.letterleassociates.com

Project Manager: Jed Hill
Project Geologist: Steven Treschow, P.G.

Prepared For:

United Refining Company
Kwik Fill M-90
1322 South 2nd Street
Clearfield, Pennsylvania

Title:

Figure 3
Groundwater Potentiometric
Surface Contour Map
March 5, 2013

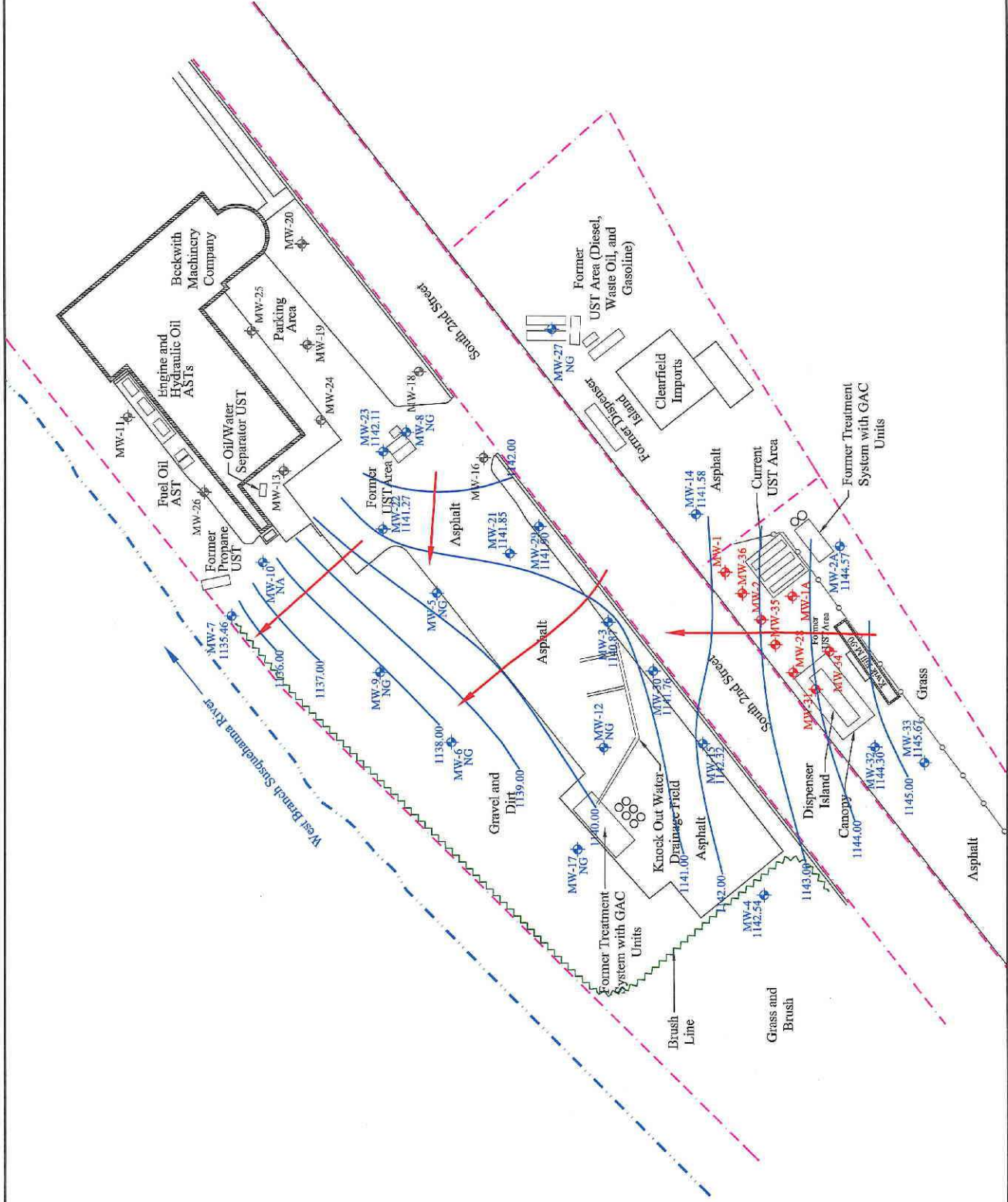
Legend:

- Groundwater Monitoring Well Location
- Abandoned Groundwater Monitoring Well
- Vapor/Groundwater Extraction Well
- Property Boundary
- Guard Rail
- 1145.0 Groundwater Elevation (ft)
- Groundwater Elevation Contour (dashed where inferred)
- Groundwater Flow Direction

Scale (ft):

1" = 60'

One Inch Equals Sixty Feet



Prepared By:



629 East Rolling Ridge Drive
Bellefonte, PA 16823
P: 814-355-2241
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www.letterleassociates.com

Project Manager: Jed Hill
Project Geologist: Steven Treschow, P.G.

Prepared For:

United Refining Company
Kwik Fill M-90
1322 South 2nd Street
Clearfield, Pennsylvania

Title:

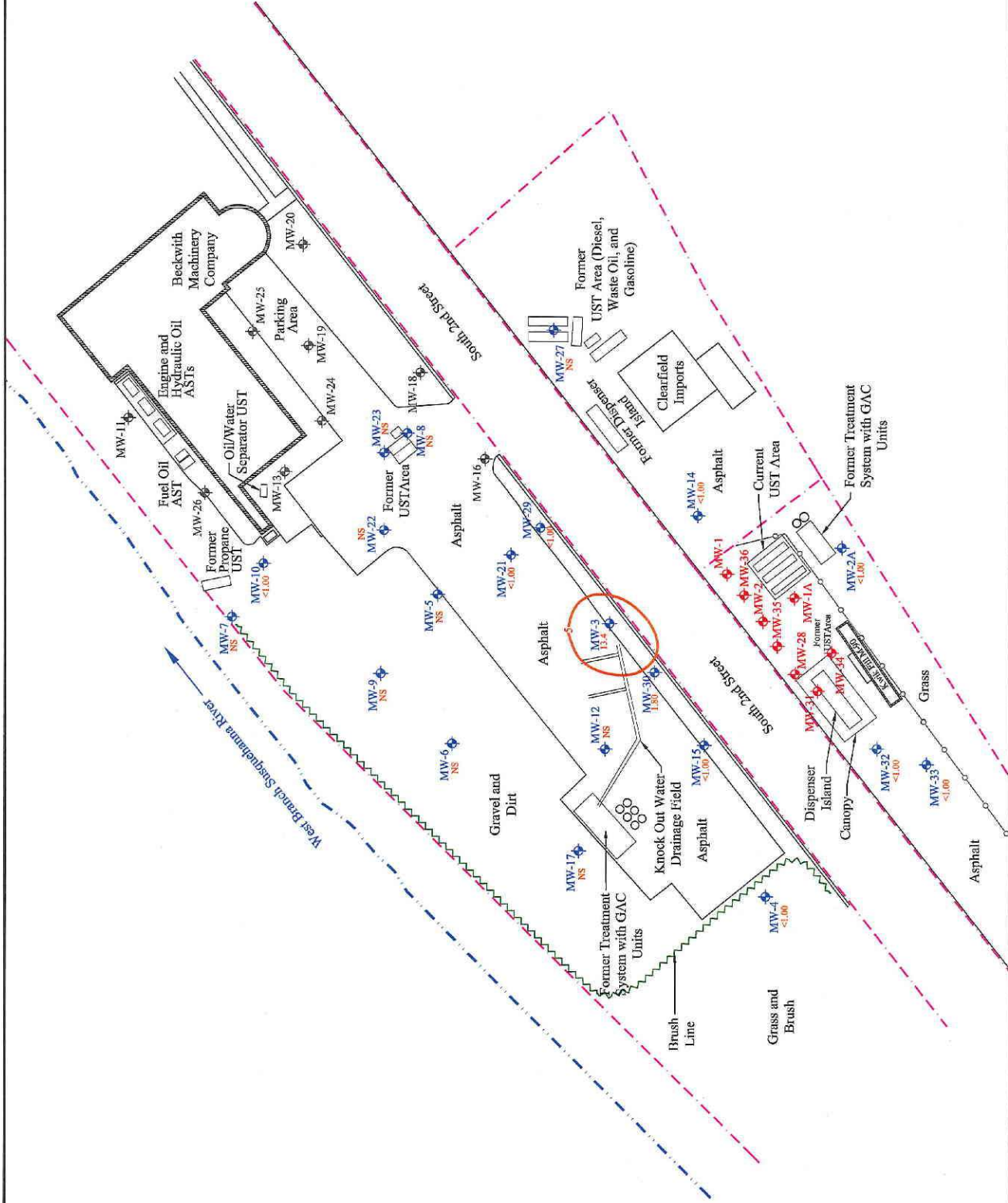
Figure 4
Benzene Isoconcentration Contour
Map
March 5, 2013

Legend:

- Groundwater Monitoring Well Location
- Abandoned Groundwater Monitoring Well
- Vapor/Groundwater Extraction Well
- Property Boundary
- Guard Rail
- Benzene Concentration (ug/L)
- Benzene Isoconcentration Contour Line

Scale (ft.):

1" = 60'
One Inch Equals Sixty Feet



APPENDIX

APPENDIX A

Groundwater Analytical Laboratory Reports



2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684



State Certifications: MD 275, WV 364

www.fairwaylaboratories.com

Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 03/14/13 09:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
MW-2A	3C06056-01	Water	Grab	03/05/13 09:41	03/06/13 14:00
MW-3	3C06056-02	Water	Grab	03/05/13 11:42	03/06/13 14:00
MW-4	3C06056-03	Water	Grab	03/05/13 10:36	03/06/13 14:00
MW-7	3C06056-04	Water	Grab	03/05/13 12:48	03/06/13 14:00
MW-10	3C06056-05	Water	Grab	03/05/13 11:09	03/06/13 14:00
MW-14	3C06056-06	Water	Grab	03/05/13 09:23	03/06/13 14:00
MW-15	3C06056-07	Water	Grab	03/05/13 10:52	03/06/13 14:00
MW-21	3C06056-08	Water	Grab	03/05/13 12:00	03/06/13 14:00
MW-29	3C06056-09	Water	Grab	03/05/13 12:24	03/06/13 14:00
MW-30	3C06056-10	Water	Grab	03/05/13 11:23	03/06/13 14:00
MW-32	3C06056-11	Water	Grab	03/05/13 10:15	03/06/13 14:00
MW-33	3C06056-12	Water	Grab	03/05/13 09:58	03/06/13 14:00

Fairway Laboratories, Inc.

Reviewed and Submitted by:

Michael P. Tyler
Laboratory Director

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Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none] Reported: 03/14/13 09:28
Collector: CLIENT
Number of Containers: 24

Client Sample ID: MW-2A

Date/Time Sampled: 03/05/13 09:41

Laboratory Sample ID: 3C06056-01 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
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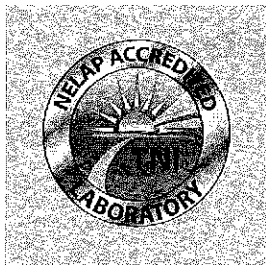
Volatile Organic Compounds by EPA Method 8260B

Benzene	<1.00	1.00	ug/l	03/09/13 09:55	EPA 8260B	mlf
Toluene	<1.00	1.00	ug/l	03/09/13 09:55	EPA 8260B	mlf
Ethylbenzene	<1.00	1.00	ug/l	03/09/13 09:55	EPA 8260B	mlf
Xylenes (total)	<2.00	2.00	ug/l	03/09/13 09:55	EPA 8260B	mlf
Isopropylbenzene	<1.00	1.00	ug/l	03/09/13 09:55	EPA 8260B	mlf
Methyl tert-butyl ether	<1.00	1.00	ug/l	03/09/13 09:55	EPA 8260B	mlf
Naphthalene	<1.00	1.00	ug/l	03/09/13 09:55	EPA 8260B	mlf
Surrogate: 4-Bromofluorobenzene	76.9 %	70-130		03/09/13 09:55	EPA 8260B	mlf
Surrogate: 1,2-Dichloroethane-d4	99.5 %	70-130		03/09/13 09:55	EPA 8260B	mlf
Surrogate: Fluorobenzene	98.7 %	70-130		03/09/13 09:55	EPA 8260B	mlf

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Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none] **Reported:**
Collector: CLIENT 03/14/13 09:28
Number of Containers: 24

Client Sample ID: MW-3

Date/Time Sampled: 03/05/13 11:42

Laboratory Sample ID: 3C06056-02 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B

Benzene	13.4		1.00	ug/l	03/09/13 10:32	EPA 8260B	mlf	
Toluene	<1.00		1.00	ug/l	03/09/13 10:32	EPA 8260B	mlf	
Ethylbenzene	<1.00		1.00	ug/l	03/09/13 10:32	EPA 8260B	mlf	
Xylenes (total)	<2.00		2.00	ug/l	03/09/13 10:32	EPA 8260B	mlf	
Isopropylbenzene	<1.00		1.00	ug/l	03/09/13 10:32	EPA 8260B	mlf	
Methyl tert-butyl ether	11.8		1.00	ug/l	03/09/13 10:32	EPA 8260B	mlf	
Naphthalene	<1.00		1.00	ug/l	03/09/13 10:32	EPA 8260B	mlf	
Surrogate: 4-Bromofluorobenzene	82.6 %		70-130		03/09/13 10:32	EPA 8260B	mlf	
Surrogate: 1,2-Dichloroethane-d4	94.1 %		70-130		03/09/13 10:32	EPA 8260B	mlf	
Surrogate: Fluorobenzene	98.3 %		70-130		03/09/13 10:32	EPA 8260B	mlf	

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Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FIL-L-CLEARFIELD
Project Number: [none] Reported: 03/14/13 09:28
Collector: CLIENT
Number of Containers: 24

Client Sample ID: MW-4

Date/Time Sampled: 03/05/13 10:36

Laboratory Sample ID: 3C06056-03 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
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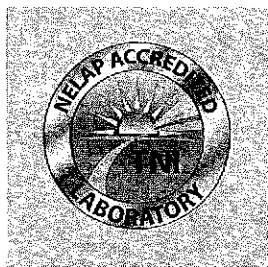
Volatile Organic Compounds by EPA Method 8260B

Benzene	<1.00	1.00	ug/l	03/09/13 11:11	EPA 8260B	mlf
Toluene	<1.00	1.00	ug/l	03/09/13 11:11	EPA 8260B	mlf
Ethylbenzene	<1.00	1.00	ug/l	03/09/13 11:11	EPA 8260B	mlf
Xylenes (total)	<2.00	2.00	ug/l	03/09/13 11:11	EPA 8260B	mlf
Isopropylbenzene	<1.00	1.00	ug/l	03/09/13 11:11	EPA 8260B	mlf
Methyl tert-butyl ether	<1.00	1.00	ug/l	03/09/13 11:11	EPA 8260B	mlf
Naphthalene	<1.00	1.00	ug/l	03/09/13 11:11	EPA 8260B	mlf
Surrogate: 4-Bromofluorobenzene	75.3 %	70-130		03/09/13 11:11	EPA 8260B	mlf
Surrogate: 1,2-Dichloroethane-d4	101 %	70-130		03/09/13 11:11	EPA 8260B	mlf
Surrogate: Fluorobenzene	99.1 %	70-130		03/09/13 11:11	EPA 8260B	mlf

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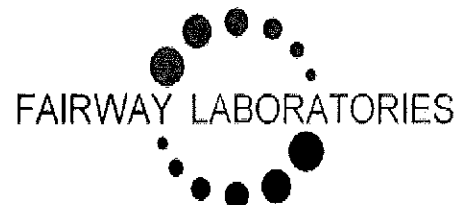
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Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none] **Reported:**
Collector: CLIENT 03/14/13 09:28
Number of Containers: 24

Client Sample ID: MW-7

Date/Time Sampled: 03/05/13 12:48

Laboratory Sample ID: 3C06056-04 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B

Toluene	2.29		1.00	ug/l	03/09/13 12:26	EPA 8260B	mlf	
Ethylbenzene	5.67		1.00	ug/l	03/09/13 12:26	EPA 8260B	mlf	
Xylenes (total)	5.16		2.00	ug/l	03/09/13 12:26	EPA 8260B	mlf	
Isopropylbenzene	2.25		1.00	ug/l	03/09/13 12:26	EPA 8260B	mlf	QB
Methyl tert-butyl ether	<1.00		1.00	ug/l	03/09/13 12:26	EPA 8260B	mlf	
Naphthalene	3.28		1.00	ug/l	03/09/13 12:26	EPA 8260B	mlf	QB
Surrogate: 4-Bromofluorobenzene	90.9 %		70-130		03/09/13 12:26	EPA 8260B	mlf	
Surrogate: 1,2-Dichloroethane-d4	93.9 %		70-130		03/09/13 12:26	EPA 8260B	mlf	
Surrogate: Fluorobenzene	97.3 %		70-130		03/09/13 12:26	EPA 8260B	mlf	

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Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 03/14/13 09:28

Client Sample ID: MW-10

Date/Time Sampled: 03/05/13 11:09

Laboratory Sample ID: 3C06056-05 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
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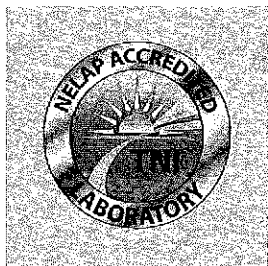
Volatile Organic Compounds by EPA Method 8260B

Benzene	<1.00	1.00	ug/l	03/09/13 17:26	EPA 8260B	mlf
Toluene	<1.00	1.00	ug/l	03/09/13 17:26	EPA 8260B	mlf
Ethylbenzene	<1.00	1.00	ug/l	03/09/13 17:26	EPA 8260B	mlf
Xylenes (total)	<2.00	2.00	ug/l	03/09/13 17:26	EPA 8260B	mlf
Isopropylbenzene	<1.00	1.00	ug/l	03/09/13 17:26	EPA 8260B	mlf
Methyl tert-butyl ether	5.80	1.00	ug/l	03/09/13 17:26	EPA 8260B	mlf
Naphthalene	<1.00	1.00	ug/l	03/09/13 17:26	EPA 8260B	mlf
Surrogate: 4-Bromofluorobenzene	77.4 %	70-130		03/09/13 17:26	EPA 8260B	mlf
Surrogate: 1,2-Dichloroethane-d4	103 %	70-130		03/09/13 17:26	EPA 8260B	mlf
Surrogate: Fluorobenzene	99.2 %	70-130		03/09/13 17:26	EPA 8260B	mlf

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629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 03/14/13 09:28

Client Sample ID: MW-14

Date/Time Sampled: 03/05/13 09:23

Laboratory Sample ID: 3C06056-06 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B

Benzene	<1.00	1.00	ug/l	03/09/13 18:04	EPA 8260B	mlf
Toluene	<1.00	1.00	ug/l	03/09/13 18:04	EPA 8260B	mlf
Ethylbenzene	<1.00	1.00	ug/l	03/09/13 18:04	EPA 8260B	mlf
Xylenes (total)	<2.00	2.00	ug/l	03/09/13 18:04	EPA 8260B	mlf
Isopropylbenzene	<1.00	1.00	ug/l	03/09/13 18:04	EPA 8260B	mlf
Methyl tert-butyl ether	<1.00	1.00	ug/l	03/09/13 18:04	EPA 8260B	mlf
Naphthalene	<1.00	1.00	ug/l	03/09/13 18:04	EPA 8260B	mlf
Surrogate: 4-Bromofluorobenzene	76.7 %	70-130		03/09/13 18:04	EPA 8260B	mlf
Surrogate: 1,2-Dichloroethane-d4	100 %	70-130		03/09/13 18:04	EPA 8260B	mlf
Surrogate: Fluorobenzene	100 %	70-130		03/09/13 18:04	EPA 8260B	mlf

Fairway Laboratories, Inc.

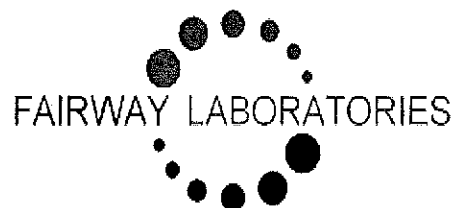
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Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 03/14/13 09:28

Client Sample ID: MW-15

Date/Time Sampled: 03/05/13 10:52

Laboratory Sample ID: 3C06056-07 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B

Benzene	<1.00	1.00	ug/l	03/09/13 18:41	EPA 8260B	mlf
Toluene	<1.00	1.00	ug/l	03/09/13 18:41	EPA 8260B	mlf
Ethylbenzene	<1.00	1.00	ug/l	03/09/13 18:41	EPA 8260B	mlf
Xylenes (total)	<2.00	2.00	ug/l	03/09/13 18:41	EPA 8260B	mlf
Isopropylbenzene	<1.00	1.00	ug/l	03/09/13 18:41	EPA 8260B	mlf
Methyl tert-butyl ether	1.70	1.00	ug/l	03/09/13 18:41	EPA 8260B	mlf
Naphthalene	<1.00	1.00	ug/l	03/09/13 18:41	EPA 8260B	mlf
Surrogate: 4-Bromofluorobenzene	76.4 %	70-130		03/09/13 18:41	EPA 8260B	mlf
Surrogate: 1,2-Dichloroethane-d4	98.2 %	70-130		03/09/13 18:41	EPA 8260B	mlf
Surrogate: Fluorobenzene	99.5 %	70-130		03/09/13 18:41	EPA 8260B	mlf

Fairway Laboratories, Inc.

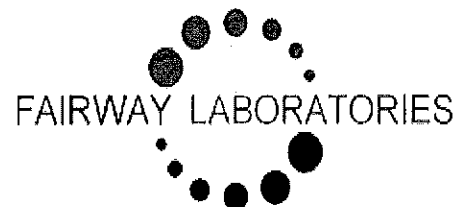
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PaDEP: PA 41-04684



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Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 03/14/13 09:28

Client Sample ID: MW-21

Date/Time Sampled: 03/05/13 12:00

Laboratory Sample ID: 3C06056-08 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
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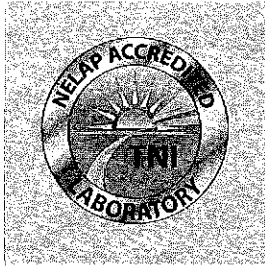
Volatile Organic Compounds by EPA Method 8260B

Benzene	<1.00	1.00	ug/l	03/09/13 19:18	EPA 8260B	mlf
Toluene	<1.00	1.00	ug/l	03/09/13 19:18	EPA 8260B	mlf
Ethylbenzene	<1.00	1.00	ug/l	03/09/13 19:18	EPA 8260B	mlf
Xylenes (total)	<2.00	2.00	ug/l	03/09/13 19:18	EPA 8260B	mlf
Isopropylbenzene	<1.00	1.00	ug/l	03/09/13 19:18	EPA 8260B	mlf
Methyl tert-butyl ether	12.7	1.00	ug/l	03/09/13 19:18	EPA 8260B	mlf
Naphthalene	<1.00	1.00	ug/l	03/09/13 19:18	EPA 8260B	mlf
Surrogate: 4-Bromofluorobenzene	76.6 %	70-130		03/09/13 19:18	EPA 8260B	mlf
Surrogate: 1,2-Dichloroethane-d4	100 %	70-130		03/09/13 19:18	EPA 8260B	mlf
Surrogate: Fluorobenzene	100 %	70-130		03/09/13 19:18	EPA 8260B	mlf

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Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none] Reported: 03/14/13 09:28
Collector: CLIENT
Number of Containers: 24

Client Sample ID: MW-29

Date/Time Sampled: 03/05/13 12:24

Laboratory Sample ID: 3C06056-09 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
---------	--------	-----	----	-------	-------------------------	--------	--------------	------

Volatile Organic Compounds by EPA Method 8260B

Benzene	<1.00	1.00	ug/l	03/09/13 19:56	EPA 8260B	mlf
Toluene	<1.00	1.00	ug/l	03/09/13 19:56	EPA 8260B	mlf
Ethylbenzene	<1.00	1.00	ug/l	03/09/13 19:56	EPA 8260B	mlf
Xylenes (total)	<2.00	2.00	ug/l	03/09/13 19:56	EPA 8260B	mlf
Isopropylbenzene	<1.00	1.00	ug/l	03/09/13 19:56	EPA 8260B	mlf
Methyl tert-butyl ether	<1.00	1.00	ug/l	03/09/13 19:56	EPA 8260B	mlf
Naphthalene	<1.00	1.00	ug/l	03/09/13 19:56	EPA 8260B	mlf
Surrogate: 4-Bromofluorobenzene	73.5 %	70-130		03/09/13 19:56	EPA 8260B	mlf
Surrogate: 1,2-Dichloroethane-d4	98.1 %	70-130		03/09/13 19:56	EPA 8260B	mlf
Surrogate: Fluorobenzene	98.3 %	70-130		03/09/13 19:56	EPA 8260B	mlf

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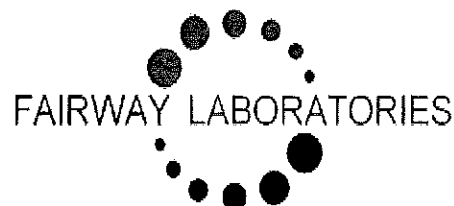
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Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 03/14/13 09:28

Client Sample ID: MW-30

Date/Time Sampled: 03/05/13 11:23

Laboratory Sample ID: 3C06056-10 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	1.80		1.00	ug/l	03/09/13 20:33	EPA 8260B	mlf	
Toluene	<1.00		1.00	ug/l	03/09/13 20:33	EPA 8260B	mlf	
Ethylbenzene	<1.00		1.00	ug/l	03/09/13 20:33	EPA 8260B	mlf	
Xylenes (total)	<2.00		2.00	ug/l	03/09/13 20:33	EPA 8260B	mlf	
Isopropylbenzene	<1.00		1.00	ug/l	03/09/13 20:33	EPA 8260B	mlf	
Methyl tert-butyl ether	6.13		1.00	ug/l	03/09/13 20:33	EPA 8260B	mlf	
Naphthalene	<1.00		1.00	ug/l	03/09/13 20:33	EPA 8260B	mlf	
Surrogate: 4-Bromofluorobenzene	72.3 %		70-130		03/09/13 20:33	EPA 8260B	mlf	
Surrogate: 1,2-Dichloroethane-d4	98.8 %		70-130		03/09/13 20:33	EPA 8260B	mlf	
Surrogate: Fluorobenzene	101 %		70-130		03/09/13 20:33	EPA 8260B	mlf	

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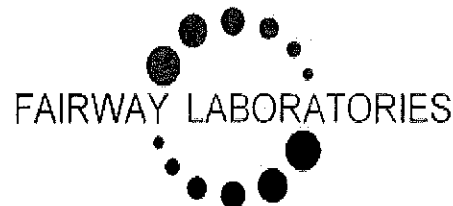
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Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 03/14/13 09:28

Client Sample ID: MW-32

Date/Time Sampled: 03/05/13 10:15

Laboratory Sample ID: 3C06056-11 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
---------	--------	-----	----	-------	----------------------	--------	-----------	------

Volatile Organic Compounds by EPA Method 8260B

Benzene	<1.00	1.00	ug/l	03/09/13 21:11	EPA 8260B	mlf
Toluene	<1.00	1.00	ug/l	03/09/13 21:11	EPA 8260B	mlf
Ethylbenzene	<1.00	1.00	ug/l	03/09/13 21:11	EPA 8260B	mlf
Xylenes (total)	<2.00	2.00	ug/l	03/09/13 21:11	EPA 8260B	mlf
Isopropylbenzene	<1.00	1.00	ug/l	03/09/13 21:11	EPA 8260B	mlf
Methyl tert-butyl ether	<1.00	1.00	ug/l	03/09/13 21:11	EPA 8260B	mlf
Naphthalene	<1.00	1.00	ug/l	03/09/13 21:11	EPA 8260B	mlf
Surrogate: 4-Bromofluorobenzene	72.7 %	70-130		03/09/13 21:11	EPA 8260B	mlf
Surrogate: 1,2-Dichloroethane-d4	101 %	70-130		03/09/13 21:11	EPA 8260B	mlf
Surrogate: Fluorobenzene	101 %	70-130		03/09/13 21:11	EPA 8260B	mlf

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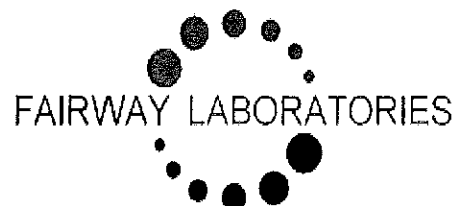
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Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none] Reported: 03/14/13 09:28
Collector: CLIENT
Number of Containers: 24

Client Sample ID: MW-33

Date/Time Sampled: 03/05/13 09:58

Laboratory Sample ID: 3C06056-12 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B

Benzene	<1.00	1.00	ug/l	03/09/13 21:49	EPA 8260B	mlf
Toluene	<1.00	1.00	ug/l	03/09/13 21:49	EPA 8260B	mlf
Ethylbenzene	<1.00	1.00	ug/l	03/09/13 21:49	EPA 8260B	mlf
Xylenes (total)	<2.00	2.00	ug/l	03/09/13 21:49	EPA 8260B	mlf
Isopropylbenzene	<1.00	1.00	ug/l	03/09/13 21:49	EPA 8260B	mlf
Methyl tert-butyl ether	<1.00	1.00	ug/l	03/09/13 21:49	EPA 8260B	mlf
Naphthalene	<1.00	1.00	ug/l	03/09/13 21:49	EPA 8260B	mlf
Surrogate: 4-Bromofluorobenzene	74.7 %	70-130		03/09/13 21:49	EPA 8260B	mlf
Surrogate: 1,2-Dichloroethane-d4	103 %	70-130		03/09/13 21:49	EPA 8260B	mlf
Surrogate: Fluorobenzene	101 %	70-130		03/09/13 21:49	EPA 8260B	mlf

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(570) 494-6380
PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 03/14/13 09:28

Notes

QB The spike recovery was outside acceptance limits for the MS and/or MSD due to sample matrix interferences. The batch was accepted based on acceptable CCV recovery.

Definitions

Surrogate values must be within the indicated range, otherwise the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory.

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

* P indicates analysis performed by Fairway Laboratories, Inc. at the Pennsdc location. This location is PaDEP Chapter 252 certified.

< Represents "less than" - indicates that the result was less than the reporting limit.

MDL Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the MDL are considered estimated values.

RL Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.

[CALC] Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Please print. See back of COC for instructions/terms and conditions.

2019 9th Ave.
P.O. Box 1925
Altoona, PA 16602
Phone: (814) 946-4306
Fax: (814) 946-8791

FAIRWAY LABORATORIES
Environmental Laboratory
89 Kristi Rd
Pennsdale, PA 17756
Phone: (570) 494-6380

306056-01
COC #
Page 1 of 2

Client Name: <u>Lehrer & Associates</u> Address: <u>609 E Rolling Ridge Dr</u> <u>Bethesda, MD 16823</u> Contact: <u>Joe Hill</u> Phone #: <u>814-355-2211</u> Fax #: <u>-2910</u> Project Name: <u>Kwik Fill Clearfields</u> Quote/PO #: _____		Received on ice? Y N Sample Temp: _____ PWSID # _____ Reportable to PADEP? Yes ☐ No ☐		Analyses Requested 1998 Unl. Gas 1998 Unl. Gas Except Benzene		LAB USE ONLY FedEx USPS UPS Other Tracking # _____			
TAT: Normal ☒ Rush ☐ Rush TAT subject to pre-approval and surcharge Date Required: ____/____/____		GRAB ☐ Composite ☐		GRAB -or- Composite Start ☐ End ☐		Matrix Solid ☐ Water ☐ Other _____ # of Containers _____			
Sample Description/Location	Start Date	Start Time	End Date	End Time	Solid	Water	Other	# of Containers	Bottle Type/Comments
MW-2A	X		3-5-13	0941		X			
MW-3			1142			X			
MW-4			1036			X			
MW-7			1248			X			
MW-10			1109			X			
MW-14			0913			X			
MW-15			1052			X			
MW-21			1200			X			
MW-25			1224			X			
MW-30			1123			X			
MW-32			1015			X			
Sampled by: <u>[Signature]</u>		Date <u>3-5-13</u>	Time <u>1515</u>	Received by: <u>[Signature]</u>		Date <u>3/6/13</u>	Time <u>1130</u>	Remarks	
Relinquished by: <u>[Signature]</u>		Date <u>3/6/13</u>	Time <u>1240</u>	Received by: <u>[Signature]</u>		Date <u>3/6/13</u>	Time <u>1240</u>		
Relinquished by: <u>[Signature]</u>		Date <u>3/6/13</u>	Time <u>1400</u>	Received by: <u>[Signature]</u>		Date <u>3/6/13</u>	Time <u>1400</u>		

By relinquishing my sample to Fairway Laboratories, Inc., I hereby agree to the terms and conditions printed on the reverse.

White Original - FLJ File Canary - FLJ Copy Pink - Customer Receipt Copy

Please print. See back of COC for instructions/terms and conditions.

Page 2 of 2

Page 16 of 17

[illegible]



629 East Rolling Ridge Drive, Bellefonte, PA 16823
P: 814.355.2241 F: 814.355.2410 www.letterleassociates.com

July 23, 2013

Mr. Scott Ferguson, P.G.
Pennsylvania Department of Environmental Protection
Environmental Cleanup Program
208 West Third Street, Suite 101
Williamsport, PA 17701-6448

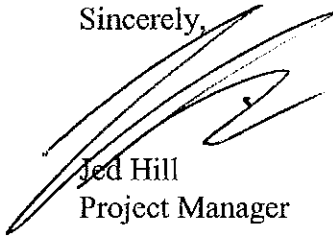
**Re: 2nd Quarter 2013 Remedial Action Progress Report
United Refining Company of Pennsylvania
Kwik Fill M-90
1322 South 2nd Street
Lawrence Township, Clearfield County, Clearfield, Pennsylvania
PADEP Facility ID #17-14821/PAUSTIF Claim #2008-0034(M)**

Dear Mr. Ferguson:

Letterle & Associates, LLC (Letterle) is pleased to submit this Remedial Action Progress Report (RAPR) for the above referenced facility. This RAPR presents the groundwater monitoring data from the second quarter of 2013 and also includes a description of remedial activities completed from April 1, 2013 through June 30, 2013 (second quarter of 2013).

If you have any questions or comments regarding this report, please feel free to contact me at (814) 355-2241 or jhill@letterleassociates.com.

Sincerely,



Jed Hill
Project Manager

Enclosure

cc: Mr. Scott C. Wonsettler, P.G., United Refining Company of Pennsylvania (with CD)
Mr. Gerald Hawk, ICF International (via email)
Mr. Robert McDonald, Arch Street Management
I:\Operations\Projects\Project Files\Bellefonte\United Refining\M-90 Clearfield #277\Reports\2013\Clearfield -
2nd Qtr 2013 RAPR.doc

REMEDIAL ACTION PROGRESS REPORT
2nd Quarter 2013

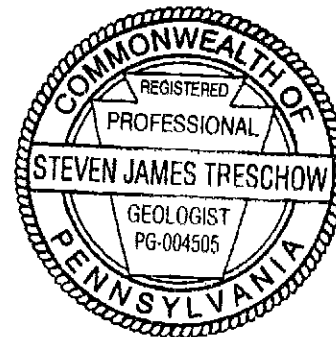
PADEP Facility ID #17-14821
PAUSTIF Claim #2008-0034(M)
Kwik Fill M-90
1322 South 2nd Street
Lawrence Township, Clearfield County
Clearfield, Pennsylvania 16830

Prepared for:

United Refining Company of Pennsylvania
15 Bradley Street
P.O. Box 688
Warren, Pennsylvania 16365

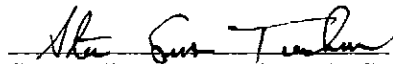
Prepared by:

Letterle & Associates, LLC
629 East Rolling Ridge Drive
Bellefonte, Pennsylvania 16823




Jodi Hill

Project Manager


Steven James Treschow, P.G.
Professional Geologist

July 2013

"By affixing my seal to this document, I am certifying that the information is true and correct to the best of my knowledge. I further certify I am licensed to practice in the Commonwealth of Pennsylvania and that it is within my professional expertise to verify the correctness of the information."

Steven James Treschow, P.G. (signed and sealed this day (July 23, 2013))

TABLE OF CONTENTS

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TABLE

Table 1 – Historic Groundwater Gauging and Analytical Data

FIGURES

Figure 1 – Site Location Map

Figure 2 – Site Layout Map

Figure 3 – Groundwater Potentiometric Surface Contour Map

APPENDIX

Appendix A – Groundwater Analytical Laboratory Reports

GENERAL INFORMATION

Client Contact:	Scott Wonsettler, P.G.
Letterle Project Manager:	Jed Hill
Regulatory Contact:	Scott Ferguson, P.G.
PADEP Facility ID #:	17-14821
PAUSTIF Claim #:	2008-0034 (M)
Number of Wells:	14 monitoring wells (on-site wells MW-2A, MW-32, and MW-33 and off-site monitoring wells MW-3, MW-4, MW-7, MW-9, MW-10, MW-14, MW-15, MW-17, MW-21, MW-29, and MW-30). 8 remediation system extraction wells (MW-1, MW-1A, MW-2, MW-28, MW-31, MW-34, MW-35, and MW-36).
Wells Containing LNAPL:	0

Letterle & Associates, LLC (Letterle) has been contracted by United Refining Company (United) of Pennsylvania (PA) to perform remedial activities at the Kwik Fill M-90 facility located at 1322 South 2nd Street in Lawrence Township, Clearfield County, Clearfield, PA (the site).

The site location is depicted on the 7.5-minute United States Geological Survey (USGS) Topographic Quadrangles of Clearfield and Glen Richey, PA presented as **Figure 1**. The site exists at an approximate elevation of 1,045 feet above mean sea level (ft-amsl). A more detailed site layout map, which fully depicts the site area, is presented as **Figure 2**.

This Remedial Action Progress Report (RAPR) includes a description of the on-going remedial action activities and presents the groundwater monitoring data obtained at the site during the second quarter of 2013.

SITE HISTORY/PROJECT SUMMARY

The site is currently an active retail fueling (gasoline and diesel) station, which has two, 10,000-gallon and one, 8,000-gallon steel underground storage tanks (USTs). The two 10,000-gallon USTs were installed in 1969 and the 8,000-gallon UST was installed in 1974. One 10,000-gallon UST and one 8,000-gallon contain unleaded gasoline and the remaining 10,000-gallon UST (in the middle) contains diesel fuel.

On June 15, 1995, the 10,000-gallon unleaded gasoline UST (#002) failed a tightness test. The PA Department of Environmental Protection (PADEP) was notified of the failure and subsequently, Mountain Research, Inc. (MRI) was retained by United in May 1996 to perform site characterization activities.

From June 1996 through October 1997, four soil boring/monitoring wells, MW-1, MW-1A, MW-2, and MW-2A, were installed on the site and five monitoring wells, MW-3 through MW-7, were installed off-site, on the Beckwith Machinery Company (BMC) property. Quarterly groundwater sampling began in February 1996. Groundwater analytical results for the monitoring wells indicated unleaded gasoline constituents at concentrations above their respective Medium Specific

Concentration (MSC) values. In June 1997, soil/groundwater samples were collected on-site and in the right-of-way of South 2nd Street. The results of the investigation indicated several soil/groundwater samples contained unleaded gasoline constituents at concentrations above their respective MSC values.

MRI prepared a Remedial Action Plan (RAP) in July 1999 proposing a Matrix Trailer Mounted Oxygen Injection System. The PADEP approved the RAP in January 2000. In February 2000, system installation was initiated. The system consisted of eight oxygen injection points and a small trailer to house any ancillary equipment. On April 12, 2000, the system was activated. The system was operational from April 12, 2000 until the first quarter of 2005. From February 1996 through first quarter of 2005, MRI performed quarterly groundwater sampling from the monitoring well network.

From early 2005 through mid-2006, additional site investigations were initiated at the site to re-evaluate the remedial approach. In October 2006, a Supplemental Site Characterization Report (SCR) and RAP Addendum was submitted to the PADEP. The Supplemental SCR/RAP Addendum identified two separate source areas, one on-site and one off-site at the BMC property. The on-site source area (Source Area #1) was found to have impacted groundwater beneath the site and downgradient on the former BMC property. Impacted groundwater from Source Area #2 was found to be related to an off-site release and not associated with the Kwik Fill M-90 facility. The Supplemental SCR/RAP Addendum strategy included remediating groundwater via an air sparge/soil vapor extraction (AS/SVE) system. An additional RAP Addendum was submitted in December 2006. The PADEP approved the Supplemental SCR/RAP Addendum and additional RAP Addendum in January 2007, with modifications. An AS/SVE system was installed at the site and operated from November 2007 through the fourth quarter of 2008.

A second release of unleaded gasoline occurred at the site, and was reported in February 2008. Additional site characterization activities were initiated and an Additional SCR and RAP Addendum was submitted in June 2011. The June 2011 Additional SCR/RAP Addendum included the selection of a dual phase extraction (DPE)/SVE system to address on-site soil and groundwater and enhanced in-situ bioremediation (EB) to address off-site groundwater. The June RAP Addendum was approved by the PADEP in July 2011.

REMEDIAL ACTION PLAN IMPLEMENTATION

The PA Underground Storage Tank Indemnification Fund (PAUSTIF) and their administrator, ICF International (ICFI), put the site remedial work out for competitive bid. The proposed scope of work was based upon the July 2011 approved RAP. Letterle was awarded the bid in March of 2012 and began implementation of the approved RAP.

Remedial actions completed in previous quarters include off-site well abandonment, DPE well installation, remedial system trenching and piping, remedial system installation, and the application of a chemical oxidant as part of an enhanced bioremediation feasibility study.

Remediation System

The remedial system trailer was constructed and mobbed to the site during the third quarter of 2012 and began operation on October 30, 2012. The principal DPE system components housed within the trailer include:

- Two claw pumps;
- One air compressor;
- One air/water separator (AWS) tank;
- One equalization tank;
- Two transfer pumps and level controls;
- Six pneumatic groundwater pumps;
- Four 400-pound liquid-phase granular activated carbon (GAC) vessels (high pressure units);
- Two 600-pound vapor-phase GAC vessels; and,
- Control panel for the claw pumps, air compressor, and the transfer pumps (including all system interlocks).

The recovered groundwater is treated and discharged to the sanitary sewer under an issued permit from the Clearfield Municipal Authority (CMA). Under the terms of the permit, analytical reports and totalizer readings are reported in Discharge Monitoring Reports (DMR) on a monthly basis to the CMA. Petroleum impacted soil and groundwater remediation systems have been listed as exempt from the Plan Approval/Operating permit requirements by PADEP, Division of Air Quality. The remediation system is operated under the exemption requirements.

QUARTERLY SITE ACTIVITIES COMPLETED – 2ND QUARTER 2013

Remediation System Operating Summary

Start Date:	October 30, 2012
2 nd Quarter 2013 System Uptime:	52%
2 nd Quarter 2013 Total Gallons Treated:	127,525 gallons
Total Gallons Treated To Date:	581,511 gallons

System Sampling Dates

Groundwater Influent, Midfluent, Effluent:	April 10, 2013
	May 14, 2013
	June 7, 2013

Groundwater Effluent:	April 10, 2013
	April 30, 2013
	May 14, 2013
	May 29, 2013
	June 7, 2013
	June 19, 2013
Vapor:	June 7, 2013

Groundwater Gauging/Sampling

The monitoring well network is gauged and sampled on a quarterly basis to analyze the effectiveness of the remediation system and to monitor groundwater impacts/movement at the site. Approximately one week prior to groundwater gauging/sampling, the remediation system was deactivated to allow for static groundwater conditions.

Groundwater Gauging

Letterle completed a quarterly groundwater gauging event on May 28, 2013. A total of 15 wells were gauged:

- *15 wells in the shallow overburden groundwater monitoring well network:* MW-2A, MW-3, MW-4, MW-5, MW-7, MW-10, MW-14, MW-15, MW-21, MW-22, MW-23, MW-29, MW-30, MW-32, and MW-33.

Gauging Methodology

Depth-to-groundwater was measured in each well to determine groundwater elevations and interpret the predominant direction of groundwater movement. Depth-to-groundwater measurements were recorded using an electronic water level indicator capable of measuring to within 0.01 feet of accuracy. The electronic water level indicator was decontaminated between wells.

Gauging Results

Groundwater elevation data collected during the second quarter of 2013 groundwater gauging event indicates the following:

- Groundwater elevations in shallow overburden groundwater ranged from 1,135.71 feet in MW-7 to 1,145.98 feet in MW-33;
- The predominant direction of movement in shallow overburden groundwater is interpreted to be to the north (towards the West Branch Susquehanna River);
- Using the May 28, 2013 groundwater elevation data, a groundwater hydraulic gradient of 0.023 feet per foot (ft/ft) between groundwater monitoring wells MW-33 and MW-7 was calculated; and,

- The groundwater elevations observed in MW-10 was considered anomalous and was not used in groundwater contouring.

Table 1 summarizes the historical groundwater gauging data and also presents the resultant groundwater gauging results from the second quarter of 2013 groundwater gauging event. A groundwater potentiometric surface contour map for the May 28, 2013 groundwater gauging event is presented as **Figure 3**.

Groundwater Sampling

Letterle completed a quarterly groundwater sampling event on May 28, 2013. A total of 14 wells were sampled:

- *14 wells in the shallow overburden groundwater monitoring well network:* MW-2A, MW-3, MW-4, MW-7, MW-9, MW-10, MW-14, MW-15, MW-17, MW-21, MW-29, MW-30, MW-32, and MW-33.

Sampling Methodology

Subsequent to gauging the groundwater level in each well, low-flow sampling was initiated. For wells shallower than 20 feet, a combination of polyethylene and silicon tubing are utilized in conjunction with a peristaltic pump. The peristaltic pump is then utilized to purge the well at a low flow rate of <0.5 liters (500 milliliters) per minute. For wells deeper than 20 feet, polyethylene tubing is utilized in conjunction with a two-inch Mini-Monsoon submersible pump to purge the well at a low flow rate of <0.5 liters (500 milliliters) per minute. The intake of each respective pump was placed approximately three feet below the measured water level. In general, each well is purged at a rate of 100-400 milliliters per minute to avoid creating drawdown. If a well was dewatered, a bailer was utilized to collect the sample after the well recovered.

The purged groundwater is then passed through a flow-through cell that measures dissolved oxygen (DO), pH, total dissolved solids (TDS), temperature, specific conductivity, and oxidation-reduction potential (ORP). Measurements of these parameters were recorded every 5 minutes. These measurements were recorded until three consecutive readings stabilized to within 10% of one and other. Purging was considered to be complete upon parameter stabilization for three consecutive readings. Once stabilization was documented, the flow-through cell was disconnected and the sample was immediately collected from the discharge line.

The pump was decontaminated between each sampled well. The purged groundwater was filtered through a mobile GAC vessel and then discharged to the ground surface.

The samples were sealed in pre-preserved laboratory supplied glassware, labeled, custody sealed, placed in an ice-filled cooler, and returned to Letterle's office. The samples were stored in a refrigerator (at 4 °C) until they were collected by the laboratory. The samples were submitted to Fairway Laboratories of Altoona, PA, for analysis of the pre-March 15, 2008 PADEP Land Recycling Program Technical Guidance Manual, Table IV-9 - Short List of Petroleum Products, specifically unleaded gasoline constituents (PADEP unleaded gasoline short list constituents) via

United States Environmental Protection Agency (USEPA) Method 8260B and were accompanied by Chain-of-Custody documentation.

Sampling Results

The groundwater analytical results from the groundwater sampling event conducted on May 28, 2013 indicated no exceedances of the applicable PADEP Used-Aquifer TDS $\leq 2,500$ milligrams per liter (mg/L) Residential Statewide Health Standard (UARSHS) MSCs.

Table 1 summarizes the historical groundwater analytical data and also presents the resultant groundwater analytical results from the second quarter of 2013 groundwater sampling event. Groundwater analytical laboratory reports are included in **Appendix A**.

Groundwater samples were not collected from MW-9 and MW-17 due to the inability to locate the respective monitoring wells.

PLANNED ACTIVITY

The following activities are currently planned for the 3rd Quarter of 2013:

- Remedial system operation and maintenance (including permit-required sampling);
- Quarterly groundwater gauging and sampling; and,
- Quarterly reporting.

TABLE

Table 1
Historic Groundwater Gauging and Analytical Data
United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

Piezometer/Well	Date	Compound							Depth to Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Cumene	Naphthalene		
PADEP UARSHS MSCs		20	5	1,000	700	10,000	840	100		
MW-1	3/17/2010	10.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.26	1147.28
	6/8/2010	11.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.57	1146.97
	8/30/2010	18.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.78	1144.76
	11/17/2010	13.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.40	1146.14
	3/1/2011	6.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.78	1147.76
	5/31/2011	13.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.75	1145.79
	8/24/2011	12.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.12	1145.42
	3/28/2012	14.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.12	1147.42
Monitoring well converted to remedial extraction well.										
MW-1A	3/17/2010	7.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.57	1147.20
	6/8/2010	6.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.86	1146.91
	8/30/2010	16.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.32	1144.45
	11/17/2010	10.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.88	1145.89
	3/1/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.04	1147.73
	5/31/2011	4.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.29	1145.48
	8/24/2011	8.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.65	1145.12
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.55	1147.22
Monitoring well converted to remedial extraction well.										
MW-2	3/17/2010	20.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.07	1146.91
	6/8/2010	20.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.36	1146.62
	8/30/2010	20.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.61	1144.37
	11/17/2010	20.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.36	1145.62
	3/1/2011	11.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.73	1147.25
	5/31/2011	10.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.68	1145.30
	8/24/2011	14.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.90	1145.08
	3/28/2012	11.5	1.1	<1.00	<1.00	<3.00	<1.00	<2.00	2.85	1147.13
Monitoring well converted to remedial extraction well.										
MW-2A	3/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.21	1147.66
	6/8/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.27	1147.60
	8/30/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.23	1145.64
	11/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.25	1146.62
	3/1/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.91	1147.96
	5/31/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.16	1146.71
	8/24/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.52	1146.35
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.45	1148.42
	6/25/2012	5.22	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.51	1144.36
	9/6/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.21	1145.66
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.12	1144.75
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.30	1144.57
	5/28/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.00	1145.87
MW-3	3/18/2010	43.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.43	1143.80
	6/7/2010	44.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.40	1143.83
	8/31/2010	41.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.92	1142.31
	11/17/2010	40.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.48	1142.75
	3/2/2011	33.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.81	1144.42
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	32.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.38	1142.85
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	1.40	1144.83
	6/25/2012	21.9	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.17	1143.06
	9/6/2012	27.5	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.17	1142.06
	12/14/2012	18.4	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.63	1140.60
	3/5/2013	11.8	13.4	<1.00	<1.00	<2.00	<1.00	<1.00	5.36	1140.87
	5/28/2013	12.6	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.40	1141.83
MW-4	3/18/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.97	1144.15
	6/7/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.17	1142.95
	8/31/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.44	1140.68
	11/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.26	1141.86
	3/2/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.92	1144.20
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.24	1141.88
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.20	1143.92
	6/25/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.74	1142.38
	9/6/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.11	1141.01
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.40	1141.72
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.58	1142.54
	5/28/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.61	1141.51

Table 1
Historic Groundwater Gauging and Analytical Data
United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

Piezometer/Well	Date	Compound							Depth-to-Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Cumene	Naphthalene		
PADEP UARSHS MSCs		20	5	1,000	700	10,000	840	100		
MW-5	3/17/2010	5.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.16	1143.51
	6/7/2010	4.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.53	1143.14
	8/31/2010	3.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.18	1141.49
	11/17/2010	2.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.80	1141.87
	3/1/2011	1.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.43	1144.24
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	5.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.64	1142.03
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	1.04	1143.63
	6/25/2012	Well not part of quarterly sampling program.							2.25	1142.42
	9/6/2012								NG	NG
	12/14/2012								NG	NG
	3/5/2013								NG	NG
	5/28/2013								3.00	1141.67
MW-6	3/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/7/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/31/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	11/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/1/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	Well could not be located. Well not part of quarterly sampling program.								
	9/6/2012									
	12/14/2012									
	3/5/2013									
	5/28/2013									
MW-7	3/17/2010	3.6	59.5	11.5	44.4	54.7	25.6	44.5	2.60	1139.41
	6/7/2010	3.1	57.7	12.9	55.2	60.3	35.4	61.3	5.77	1136.24
	8/31/2010	6.8	104	14.4	47.9	49.2	29.3	38.7	7.92	1134.09
	11/17/2010	7.2	97.9	12.5	46.5	47.4	27.3	57.7	6.85	1135.16
	3/2/2011	4.1	51.9	8.8	39.3	27.7	22.4	20.9	3.93	1138.08
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	7.7	73.8	10.2	25.8	28.5	31.3	40.7	7.21	1134.80
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	7.15	1134.86
	6/25/2012	3.84	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	7.49	1134.52
	9/6/2012	10.6	NA	<2.00	<2.00	<4.00	<2.00	<2.00	7.76	1134.25
	12/14/2012	<2.00	NA	14.8	89.5	43.6	29.0	65.4	5.80	1136.21
	3/5/2013	<1.00	NA	2.29	5.67	5.16	2.25	3.28	6.55	1135.46
	5/28/2013	<1.00	NA	<1.00	1.07	<2.00	1.89	<1.00	6.30	1135.71
MW-9	3/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/8/2010	32.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.00	1141.97
	8/30/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	11/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/1/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	Well could not be located.								
	9/6/2012									
	12/14/2012									
	3/5/2013									
	5/28/2013									
MW-10	3/17/2010	8.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.64	1147.90
	6/7/2010	8.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.78	1148.76
	8/31/2010	8.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.08	1147.46
	11/17/2010	7.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.50	1147.04
	3/2/2011	7.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.14	1149.40
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	7.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.42	1148.12
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	1.42	1148.12
	6/25/2012	5.01	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	1.23	1148.31
	9/6/2012	6.16	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.10	1147.44
	12/14/2012	5.56	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.08	1147.46
	3/5/2013	5.80	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	1.81	1147.73
	5/28/2013	4.92	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	1.90	1147.64

Table 1
Historic Groundwater Gauging and Analytical Data
United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

Piezometer/Well	Date	Compound							Depth-to-Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Cumene	Naphthalene		
PADEP UARSIS MSCs		20	5	1,000	700	10,000	840	100		
MW-12	3/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/7/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/31/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	11/17/2010	30.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.28	1142.28
	3/2/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	Well not part of quarterly sampling program.							2.83	1142.73
	9/6/2012								NG	NG
	12/14/2012								NG	NG
	3/5/2013								NG	NG
	5/28/2013								NG	NG
MW-14	3/17/2010	23.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.97	1146.75
	6/7/2010	18.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.22	1146.50
	8/31/2010	35.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.43	1144.29
	11/17/2010	21.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.40	1145.32
	3/2/2011	2.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.62	1147.10
	5/31/2011	21.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.44	1145.28
	8/24/2011	17.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.80	1143.92
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.71	1146.01
	6/25/2012	8.80	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.59	1145.13
	9/6/2012	19.8	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.63	1144.09
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	6.89	1141.83
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	7.14	1141.58
	5/28/2013	1.38	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.80	1143.92
MW-15	3/18/2010	6.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.73	1145.56
	6/7/2010	6.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.08	1145.21
	8/31/2010	7.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.88	1143.41
	11/17/2010	6.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.44	1143.85
	3/2/2011	4.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.51	1145.78
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	6.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.27	1144.02
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.20	1145.09
	6/25/2012	6.98	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.11	1144.18
	9/6/2012	5.64	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.18	1143.11
	12/14/2012	2.23	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.45	1141.84
	3/5/2013	1.70	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.97	1142.32
	5/28/2013	1.09	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.30	1142.99
MW-17	3/18/2010	9.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.73	1142.53
	6/7/2010	1.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.09	1143.17
	8/31/2010	13.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.78	1141.48
	11/17/2010	11.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.70	1141.56
	3/1/2011	7.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.11	1143.15
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	Well could not be located.								
	9/6/2012									
	12/14/2012									
	3/5/2013									
	5/28/2013									
MW-21	3/17/2010	41.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.86	1144.60
	6/7/2010	42.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.12	1144.34
	8/30/2010	40.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.43	1143.03
	11/17/2010	35.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.22	1143.24
	3/2/2011	33.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.50	1144.96
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	37.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.05	1143.41
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.10	1144.36
	6/25/2012	21.7	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.94	1143.52
	9/6/2012	42.1	<2.00	<2.00	<2.00	<4.00	<2.00	<2.00	3.79	1142.67
	12/14/2012	10.8	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.09	1141.37
	3/5/2013	12.7	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.61	1141.85
	5/28/2013	9.92	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.97	1142.49

Table 1
Historic Groundwater Gauging and Analytical Data
United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

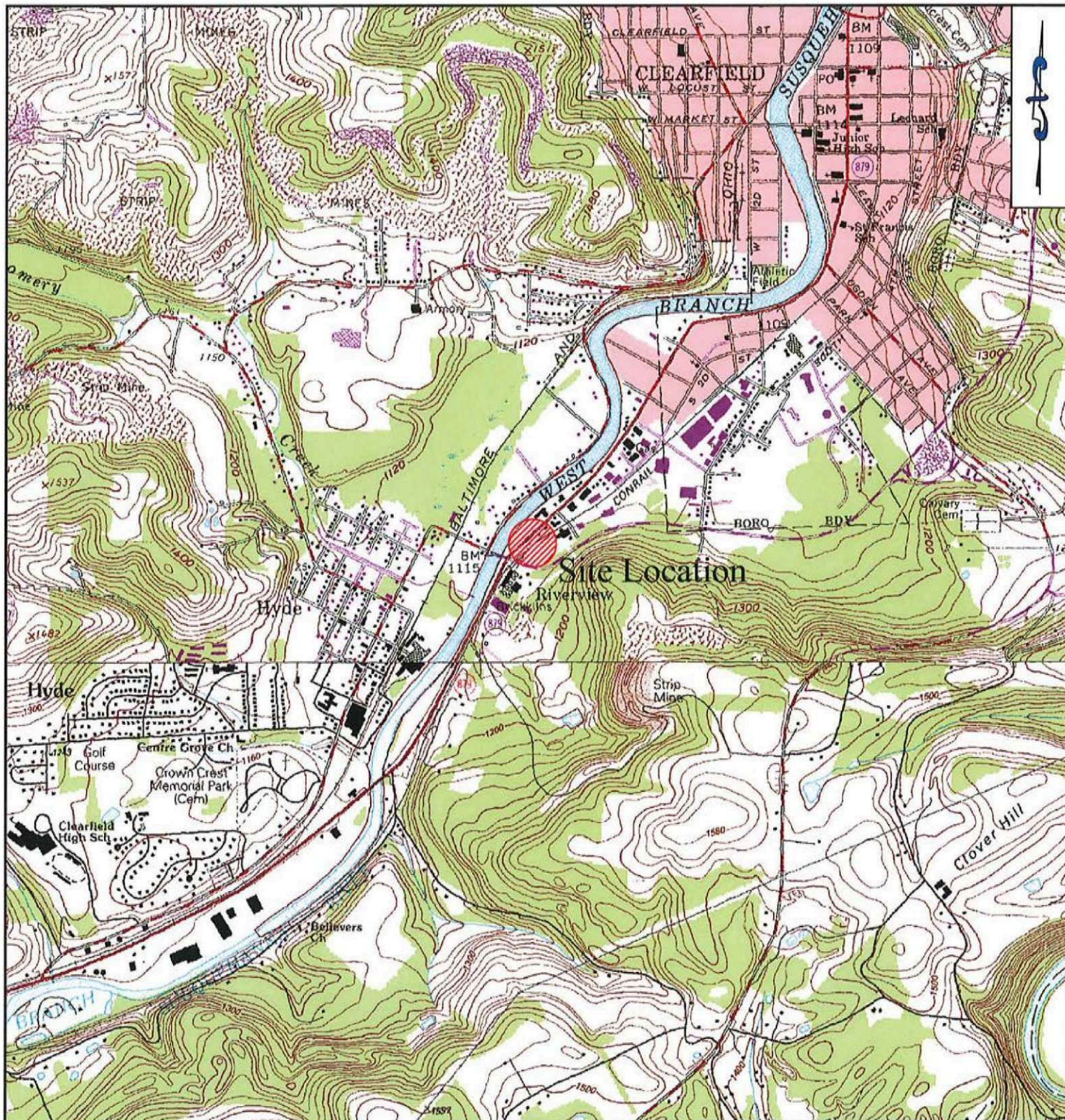
Piezometer/Well	Date	Compound							Depth-to-Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes (Total)	Cumene	Naphthalene		
PADEF UARSHS MSCs		20	5	1,000	700	10,000	840	100		
MW-22	3/17/2010	5.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.79	1143.08
	6/7/2010	8.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.18	1142.69
	8/30/2010	8.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.60	1141.27
	11/17/2010	6.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.38	1141.49
	3/2/2011	6.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.42	1143.45
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	10.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.04	1141.83
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.11	1142.76
	6/25/2012	Well not part of quarterly sampling program.							2.81	1142.06
	9/6/2012								3.43	1141.44
	12/14/2012								4.06	1140.81
	3/5/2013								3.60	1141.27
	5/28/2013								3.50	1141.37
MW-23	3/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.51	1144.65
	6/7/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.03	1145.13
	8/31/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.63	1142.53
	11/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.90	1143.26
	3/2/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.02	1145.14
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.93	1143.23
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.80	1144.36
	6/25/2012	Well not part of quarterly sampling program.							4.57	1142.59
	9/6/2012								5.37	1141.79
	12/14/2012								5.99	1141.17
	3/5/2013								5.05	1142.11
	5/28/2013								5.12	1142.04
MW-28	3/17/2010	4.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.13	1146.94
	6/8/2010	3.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.44	1146.63
	8/30/2010	6.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.64	1144.43
	11/17/2010	4.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.46	1145.61
	3/1/2011	7.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.01	1147.06
	5/31/2011	3.4	NA	NA	NA	NA	NA	NA	4.82	1145.25
	8/24/2011	4.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.97	1145.10
	3/28/2012	14.6	NA	NA	NA	NA	NA	NA	2.88	1147.19
	6/25/2012	Monitoring well converted to remedial extraction well.								
MW-29	3/17/2010	35.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.61	1144.65
	6/7/2010	39.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.83	1144.43
	8/30/2010	39.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.95	1142.31
	11/17/2010	37.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.95	1143.31
	3/2/2011	9.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.23	1145.03
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	37.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.81	1143.45
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.71	1144.55
	6/25/2012	22.8	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.58	1143.68
	9/6/2012	25.0	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.58	1142.68
	12/14/2012	3.13	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.77	1141.49
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.36	1141.90
	5/28/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.70	1142.56
MW-30	3/18/2010	17.0	23.9	<1.00	14.5	12.2	1.9	2.5	2.23	1145.03
	6/7/2010	20.1	17.9	<1.00	12.4	10.5	1.9	<2.00	2.41	1144.85
	8/31/2010	22.7	<1.00	<1.00	3.1	<3.00	<1.00	<2.00	4.07	1143.19
	11/17/2010	25.9	<1.00	<1.00	1.8	<3.00	<1.00	<2.00	3.61	1143.65
	3/2/2011	22.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.35	1144.91
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	8.41	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.31	1143.95
	9/6/2012	10.8	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.30	1142.96
	12/14/2012	4.08	<2.00	<2.00	<2.00	<4.00	<2.00	<2.00	5.91	1141.35
	3/5/2013	6.13	1.80	<1.00	<1.00	<2.00	<1.00	<1.00	5.50	1141.76
	5/28/2013	6.56	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.51	1142.75

Table 1
Historic Groundwater Gauging and Analytical Data
United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

Piezometer/Well	Date	Compound							Depth-to-Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes (Total)	Cumene	Napthalene		
PADEP UARSHS MSCs		20	5	1,000	700	10,000	840	100		
MW-31	3/17/2010	7.8	668	783	265	2,700	26.4	119	3.16	1147.07
	6/8/2010	6.3	336	118	119	754	10.2	61.8	3.61	1146.62
	8/30/2010	8.0	18.8	1.1	10.5	34.1	1.3	3.3	5.73	1144.50
	11/17/2010	6.7	60.5	<1.00	20.6	20.4	1.8	4.3	4.73	1145.50
	3/1/2011	4.8	9.2	1.4	3.6	4.1	<1.00	<2.00	3.48	1146.75
	5/31/2011	6.3	66.1	<1.00	20.0	22.1	2.3	2.1	4.74	1145.49
	8/24/2011	14.3	439	7.2	135	272	12	35.7	5.03	1145.20
	3/28/2012	16.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.18	1147.05
	6/25/2012	Monitoring well converted to remedial extraction well.								
MW-32	5/28/2010	4.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.22	1145.58
	6/8/2010	2.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.21	1146.59
	8/30/2010	1.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.16	1144.64
	11/17/2010	2.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.64	1145.16
	3/1/2011	2.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.94	1146.86
	5/31/2011	2.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.15	1145.65
	8/24/2011	2.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.58	1145.22
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.49	1147.31
	6/25/2012	4.51	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.51	1145.29
	9/6/2012	4.07	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.51	1144.29
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.65	1144.15
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.50	1144.30
	5/28/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.22	1144.58
MW-33	5/28/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.41	1145.72
	6/8/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.36	1146.77
	8/30/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.25	1144.88
	11/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.96	1145.17
	3/1/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.42	1146.71
	5/31/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.38	1145.75
	8/24/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.72	1145.41
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.70	1147.43
	6/25/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.66	1145.47
	9/6/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.70	1144.43
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.72	1145.41
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.46	1145.67
	5/28/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.15	1145.98

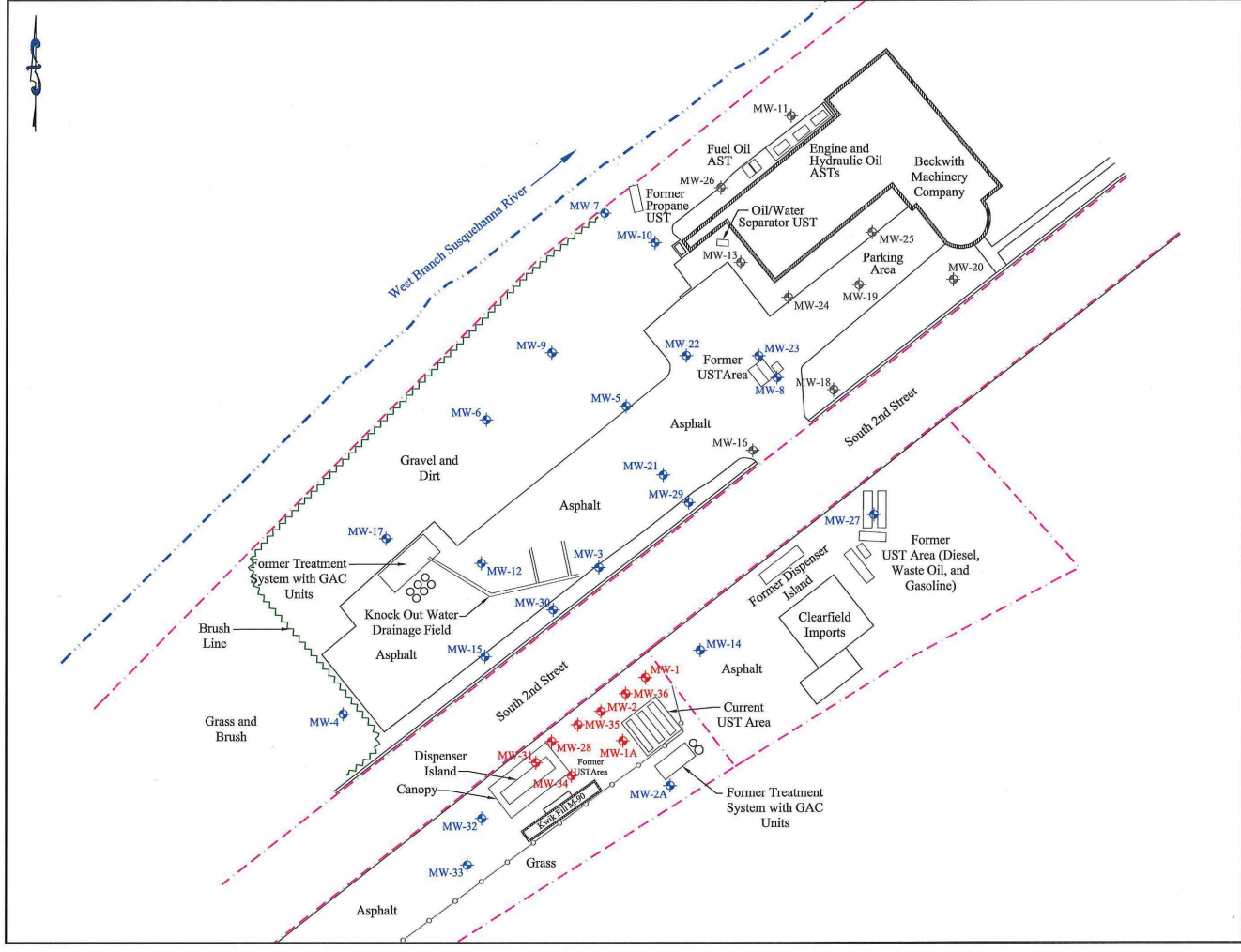
Notes: Groundwater elevation data reported in feet (ft).
Depth-to-groundwater results are reported in feet below top-of-casing (ft-btoc).
All results reported in ug/l.
Bold values indicate levels above LRL.
Bold and shaded values indicate exceedance of PADEP UARSHS MSCs.
NG - Not Gauged. NA - Not Analyzed. NS - Not Sampled.

FIGURES



Reference: 7.5-minute United States Geological Survey Topographic Quadrangles of Clearfield and Glen Richey, Pennsylvania, DeLorme 3-D Topographic Quads Program.

<i>Prepared For:</i>	<i>Project Information:</i>	<i>Prepared By:</i>
United Refining Company Kwik Fill M-90 1322 South 2nd Street Clearfield, Pennsylvania	Project Manager: Jed Hill Project Geologist: Steven Treschow, P.G.	 Letterle & Associates, LLC 629 East Rolling Ridge Drive Bellefonte, PA 16823 P: 814-355-2241 F: 814-355-2410 www.letterleassociates.com
<i>Title:</i>	<i>Scale (feet):</i>	
Figure 1 Site Location Map	Scale: 1" = 2000' 	



Prepared By:



629 East Rolling Ridge Drive
 Bellefonte, PA 16823
 P: 814-355-2241
 F: 814-355-2410
 www.letterleassociates.com

Project Manager: Jed Hill
 Project Geologist: Steven Treschow, P.G.

Prepared For:

United Refining Company
 Kwik Fill M-90
 1322 South 2nd Street
 Clearfield, Pennsylvania

Title:

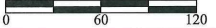
Figure 2
 Site Layout Map

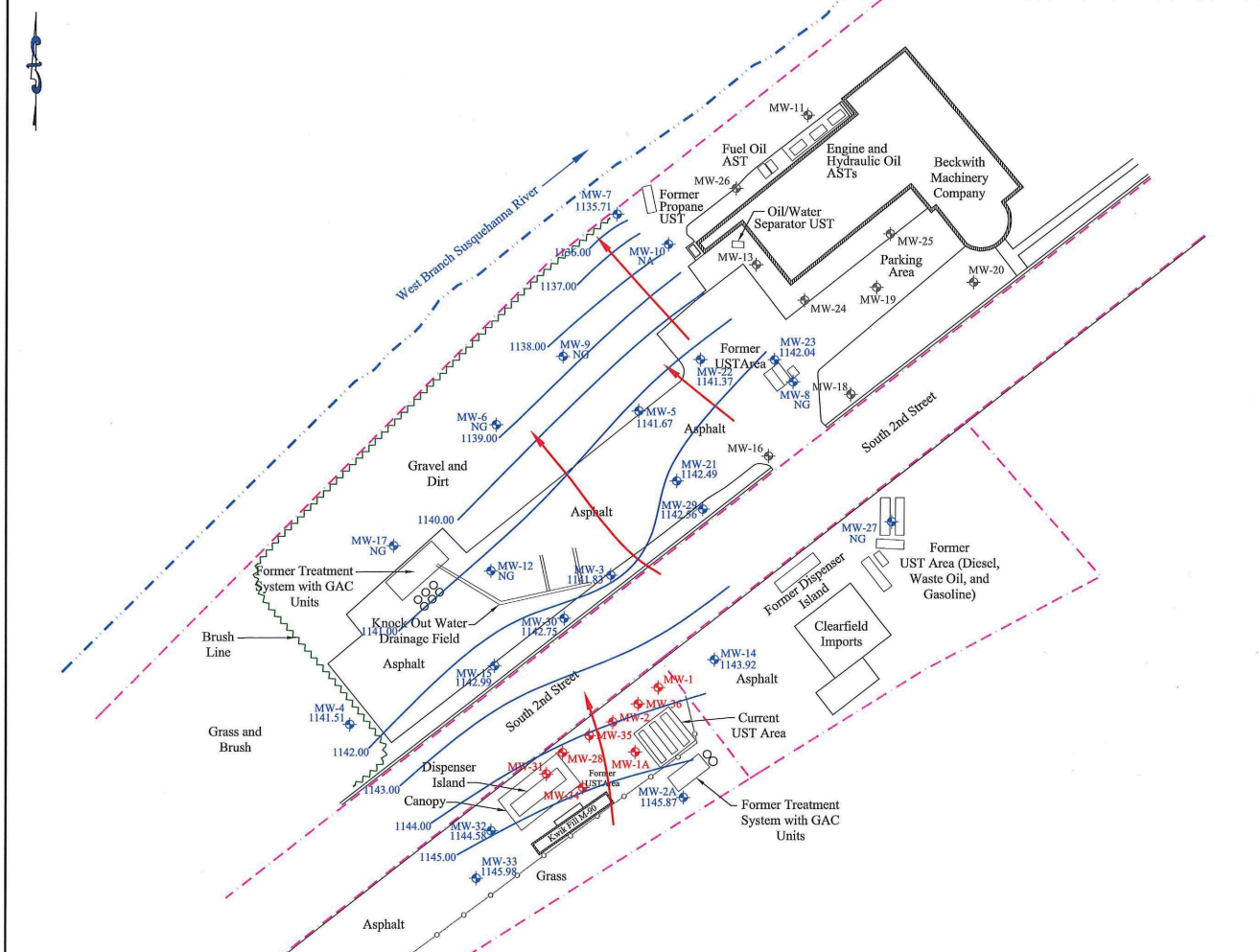
Legend:

- Groundwater Monitoring Well Location
- Abandoned Groundwater Monitoring Well
- Vapor/Groundwater Extraction Well
- Property Boundary
- Guard Rail

Scale (ft.):

1" = 60'
 One Inch Equals Sixty Feet





APPENDIX

APPENDIX A

Groundwater Analytical Laboratory Reports



2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684



www.fairwaylaboratories.com

State Certifications: MD 275, WV 364

Letterle & Associates
629 East Rolling Ridge Drive
Belleville PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 06/14/13 10:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
MW-2A	3E29031-01	Water	Grab	05/28/13 11:18	05/29/13 13:30
MW-3	3E29031-02	Water	Grab	05/28/13 14:19	05/29/13 13:30
MW-4	3E29031-03	Water	Grab	05/28/13 12:12	05/29/13 13:30
MW-7	3E29031-04	Water	Grab	05/28/13 13:58	05/29/13 13:30
MW-10	3E29031-05	Water	Grab	05/28/13 12:44	05/29/13 13:30
MW-14	3E29031-06	Water	Grab	05/28/13 11:00	05/29/13 13:30
MW-15	3E29031-07	Water	Grab	05/28/13 12:27	05/29/13 13:30
MW-21	3E29031-08	Water	Grab	05/28/13 13:20	05/29/13 13:30
MW-29	3E29031-09	Water	Grab	05/28/13 13:39	05/29/13 13:30
MW-30	3E29031-10	Water	Grab	05/28/13 13:01	05/29/13 13:30
MW-32	3E29031-11	Water	Grab	05/28/13 11:54	05/29/13 13:30
MW-33	3E29031-12	Water	Grab	05/28/13 11:41	05/29/13 13:30

Fairway Laboratories, Inc.

Reviewed and Submitted by:

Michael P. Tyler
Laboratory Director

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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PaDEP: PA 41-04684



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629 East Rolling Ridge Drive

Bellefonte PA, 16823

Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD

Project Number: [none]

Collector: CLIENT

Number of Containers: 24

Reported:

06/14/13 10:44

Client Sample ID: MW-2A

Date/Time Sampled: 05/28/13 11:18

Laboratory Sample ID: 3E29031-01 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	05/31/13 03:34	EPA 8260B	mlf	
Toluene	<1.00		1.00	ug/l	05/31/13 03:34	EPA 8260B	mlf	
Ethylbenzene	<1.00		1.00	ug/l	05/31/13 03:34	EPA 8260B	mlf	
Xylenes (total)	<2.00		2.00	ug/l	05/31/13 03:34	EPA 8260B	mlf	
Isopropylbenzene	<1.00		1.00	ug/l	05/31/13 03:34	EPA 8260B	mlf	
Methyl tert-butyl ether	<1.00		1.00	ug/l	05/31/13 03:34	EPA 8260B	mlf	
Naphthalene	<1.00		1.00	ug/l	05/31/13 03:34	EPA 8260B	mlf	
Surrogate: 4-Bromofluorobenzene	94.3 %		70-130		05/31/13 03:34	EPA 8260B	mlf	
Surrogate: 1,2-Dichloroethane-d4	77.4 %		70-130		05/31/13 03:34	EPA 8260B	mlf	
Surrogate: Fluorobenzene	94.1 %		70-130		05/31/13 03:34	EPA 8260B	mlf	

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629 East Rolling Ridge Drive
Bellevue PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 06/14/13 10:44

Client Sample ID: MW-3

Date/Time Sampled: 05/28/13 14:19

Laboratory Sample ID: 3E29031-02 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	05/31/13 04:02	EPA 8260B	mlf	
Toluene	<1.00		1.00	ug/l	05/31/13 04:02	EPA 8260B	mlf	
Ethylbenzene	<1.00		1.00	ug/l	05/31/13 04:02	EPA 8260B	mlf	
Xylenes (total)	<2.00		2.00	ug/l	05/31/13 04:02	EPA 8260B	mlf	
Isopropylbenzene	<1.00		1.00	ug/l	05/31/13 04:02	EPA 8260B	mlf	
Methyl tert-butyl ether	12.6		1.00	ug/l	05/31/13 04:02	EPA 8260B	mlf	
Naphthalene	<1.00		1.00	ug/l	05/31/13 04:02	EPA 8260B	mlf	
Surrogate: 4-Bromofluorobenzene	94.1 %		70-130		05/31/13 04:02	EPA 8260B	mlf	
Surrogate: 1,2-Dichloroethane-d4	77.6 %		70-130		05/31/13 04:02	EPA 8260B	mlf	
Surrogate: Fluorobenzene	93.8 %		70-130		05/31/13 04:02	EPA 8260B	mlf	

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Bellefonte PA, 16823

Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD

Project Number: [none]

Collector: CLIENT

Number of Containers: 24

Reported:

06/14/13 10:44

Client Sample ID: MW-4

Date/Time Sampled: 05/28/13 12:12

Laboratory Sample ID: 3E29031-03 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	05/31/13 04:30	EPA 8260B	mlf	
Toluene	<1.00		1.00	ug/l	05/31/13 04:30	EPA 8260B	mlf	
Ethylbenzene	<1.00		1.00	ug/l	05/31/13 04:30	EPA 8260B	mlf	
Xylenes (total)	<2.00		2.00	ug/l	05/31/13 04:30	EPA 8260B	mlf	
Isopropylbenzene	<1.00		1.00	ug/l	05/31/13 04:30	EPA 8260B	mlf	
Methyl tert-butyl ether	<1.00		1.00	ug/l	05/31/13 04:30	EPA 8260B	mlf	
Naphthalene	<1.00		1.00	ug/l	05/31/13 04:30	EPA 8260B	mlf	
Surrogate: 4-Bromofluorobenzene	94.3 %		70-130		05/31/13 04:30	EPA 8260B	mlf	
Surrogate: 1,2-Dichloroethane-d4	78.0 %		70-130		05/31/13 04:30	EPA 8260B	mlf	
Surrogate: Fluorobenzene	93.9 %		70-130		05/31/13 04:30	EPA 8260B	mlf	

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Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 06/14/13 10:44

Client Sample ID: MW-7

Date/Time Sampled: 05/28/13 13:58

Laboratory Sample ID: 3E29031-04 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Toluene	<1.00		1.00	ug/l	05/31/13 04:58	EPA 8260B	mlf	
Ethylbenzene	1.07		1.00	ug/l	05/31/13 04:58	EPA 8260B	mlf	QA
Xylenes (total)	<2.00		2.00	ug/l	05/31/13 04:58	EPA 8260B	mlf	
Isopropylbenzene	1.89		1.00	ug/l	05/31/13 04:58	EPA 8260B	mlf	QA
Methyl tert-butyl ether	<1.00		1.00	ug/l	05/31/13 04:58	EPA 8260B	mlf	
Naphthalene	<1.00		1.00	ug/l	05/31/13 04:58	EPA 8260B	mlf	
Surrogate: 4-Bromofluorobenzene	93.5 %		70-130		05/31/13 04:58	EPA 8260B	mlf	
Surrogate: 1,2-Dichloroethane-d4	76.7 %		70-130		05/31/13 04:58	EPA 8260B	mlf	
Surrogate: Fluorobenzene	93.5 %		70-130		05/31/13 04:58	EPA 8260B	mlf	

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Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD

Project Number: [none]

Collector: CLIENT

Number of Containers: 24

Reported:

06/14/13 10:44

Client Sample ID: MW-10

Date/Time Sampled: 05/28/13 12:44

Laboratory Sample ID: 3E29031-05 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	05/31/13 05:53	EPA 8260B	mlf	
Toluene	<1.00		1.00	ug/l	05/31/13 05:53	EPA 8260B	mlf	
Ethylbenzene	<1.00		1.00	ug/l	05/31/13 05:53	EPA 8260B	mlf	
Xylenes (total)	<2.00		2.00	ug/l	05/31/13 05:53	EPA 8260B	mlf	
Isopropylbenzene	<1.00		1.00	ug/l	05/31/13 05:53	EPA 8260B	mlf	
Methyl tert-butyl ether	4.92		1.00	ug/l	05/31/13 05:53	EPA 8260B	mlf	
Naphthalene	<1.00		1.00	ug/l	05/31/13 05:53	EPA 8260B	mlf	
Surrogate: 4-Bromofluorobenzene	94.3 %		70-130		05/31/13 05:53	EPA 8260B	mlf	
Surrogate: 1,2-Dichloroethane-d4	76.5 %		70-130		05/31/13 05:53	EPA 8260B	mlf	
Surrogate: Fluorobenzene	93.1 %		70-130		05/31/13 05:53	EPA 8260B	mlf	

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Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 06/14/13 10:44

Client Sample ID: MW-14

Date/Time Sampled: 05/28/13 11:00

Laboratory Sample ID: 3E29031-06 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	05/31/13 18:54	EPA 8260B	wlm	
Toluene	<1.00		1.00	ug/l	05/31/13 18:54	EPA 8260B	wlm	
Ethylbenzene	<1.00		1.00	ug/l	05/31/13 18:54	EPA 8260B	wlm	
Xylenes (total)	<2.00		2.00	ug/l	05/31/13 18:54	EPA 8260B	wlm	
Isopropylbenzene	<1.00		1.00	ug/l	05/31/13 18:54	EPA 8260B	wlm	
Methyl tert-butyl ether	1.38		1.00	ug/l	05/31/13 18:54	EPA 8260B	wlm	
Naphthalene	<1.00		1.00	ug/l	05/31/13 18:54	EPA 8260B	wlm	VC
Surrogate: 4-Bromofluorobenzene	93.8 %		70-130		05/31/13 18:54	EPA 8260B	wlm	
Surrogate: 1,2-Dichloroethane-d4	124 %		70-130		05/31/13 18:54	EPA 8260B	wlm	
Surrogate: Fluorobenzene	105 %		70-130		05/31/13 18:54	EPA 8260B	wlm	

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Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 06/14/13 10:44

Client Sample ID: MW-15

Date/Time Sampled: 05/28/13 12:27

Laboratory Sample ID: 3E29031-07 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	05/31/13 19:31	EPA 8260B	wlm	
Toluene	<1.00		1.00	ug/l	05/31/13 19:31	EPA 8260B	wlm	
Ethylbenzene	<1.00		1.00	ug/l	05/31/13 19:31	EPA 8260B	wlm	
Xylenes (total)	<2.00		2.00	ug/l	05/31/13 19:31	EPA 8260B	wlm	
Isopropylbenzene	<1.00		1.00	ug/l	05/31/13 19:31	EPA 8260B	wlm	
Methyl tert-butyl ether	1.09		1.00	ug/l	05/31/13 19:31	EPA 8260B	wlm	
Naphthalene	<1.00		1.00	ug/l	05/31/13 19:31	EPA 8260B	wlm	VC
Surrogate: 4-Bromofluorobenzene	93.3 %		70-130		05/31/13 19:31	EPA 8260B	wlm	
Surrogate: 1,2-Dichloroethane-d4	127 %		70-130		05/31/13 19:31	EPA 8260B	wlm	
Surrogate: Fluorobenzene	106 %		70-130		05/31/13 19:31	EPA 8260B	wlm	

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Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none] Reported: 06/14/13 10:44
Collector: CLIENT
Number of Containers: 24

Client Sample ID: MW-21

Date/Time Sampled: 05/28/13 13:20

Laboratory Sample ID: 3E29031-08 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	06/01/13 00:35	EPA 8260B	mlf	
Toluene	<1.00		1.00	ug/l	06/01/13 00:35	EPA 8260B	mlf	
Ethylbenzene	<1.00		1.00	ug/l	06/01/13 00:35	EPA 8260B	mlf	
Xylenes (total)	<2.00		2.00	ug/l	06/01/13 00:35	EPA 8260B	mlf	
Isopropylbenzene	<1.00		1.00	ug/l	06/01/13 00:35	EPA 8260B	mlf	
Methyl tert-butyl ether	9.92		1.00	ug/l	06/01/13 00:35	EPA 8260B	mlf	
Naphthalene	<1.00		1.00	ug/l	06/01/13 00:35	EPA 8260B	mlf	VC
Surrogate: 4-Bromofluorobenzene	93.0 %		70-130		06/01/13 00:35	EPA 8260B	mlf	
Surrogate: 1,2-Dichloroethane-d4	127 %		70-130		06/01/13 00:35	EPA 8260B	mlf	
Surrogate: Fluorobenzene	106 %		70-130		06/01/13 00:35	EPA 8260B	mlf	

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Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none] **Reported:**
Collector: CLIENT 06/14/13 10:44
Number of Containers: 24

Client Sample ID: MW-29

Date/Time Sampled: 05/28/13 13:39

Laboratory Sample ID: 3E29031-09 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	06/01/13 01:13	EPA 8260B	mlf	
Toluene	<1.00		1.00	ug/l	06/01/13 01:13	EPA 8260B	mlf	
Ethylbenzene	<1.00		1.00	ug/l	06/01/13 01:13	EPA 8260B	mlf	
Xylenes (total)	<2.00		2.00	ug/l	06/01/13 01:13	EPA 8260B	mlf	
Isopropylbenzene	<1.00		1.00	ug/l	06/01/13 01:13	EPA 8260B	mlf	
Methyl tert-butyl ether	<1.00		1.00	ug/l	06/01/13 01:13	EPA 8260B	mlf	
Naphthalene	<1.00		1.00	ug/l	06/01/13 01:13	EPA 8260B	mlf	VC
Surrogate: 4-Bromofluorobenzene	93.7 %		70-130		06/01/13 01:13	EPA 8260B	mlf	
Surrogate: 1,2-Dichloroethane-d4	126 %		70-130		06/01/13 01:13	EPA 8260B	mlf	
Surrogate: Fluorobenzene	105 %		70-130		06/01/13 01:13	EPA 8260B	mlf	

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Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none] Reported:
Collector: CLIENT 06/14/13 10:44
Number of Containers: 24

Client Sample ID: MW-30

Date/Time Sampled: 05/28/13 13:01

Laboratory Sample ID: 3E29031-10 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	06/01/13 01:51	EPA 8260B	mlf	
Toluene	<1.00		1.00	ug/l	06/01/13 01:51	EPA 8260B	mlf	
Ethylbenzene	<1.00		1.00	ug/l	06/01/13 01:51	EPA 8260B	mlf	
Xylenes (total)	<2.00		2.00	ug/l	06/01/13 01:51	EPA 8260B	mlf	
Isopropylbenzene	<1.00		1.00	ug/l	06/01/13 01:51	EPA 8260B	mlf	
Methyl tert-butyl ether	6.56		1.00	ug/l	06/01/13 01:51	EPA 8260B	mlf	
Naphthalene	<1.00		1.00	ug/l	06/01/13 01:51	EPA 8260B	mlf	VC
Surrogate: 4-Bromofluorobenzene	89.7 %		70-130		06/01/13 01:51	EPA 8260B	mlf	
Surrogate: 1,2-Dichloroethane-d4	126 %		70-130		06/01/13 01:51	EPA 8260B	mlf	
Surrogate: Fluorobenzene	105 %		70-130		06/01/13 01:51	EPA 8260B	mlf	

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629 East Rolling Ridge Drive

Bellefonte PA, 16823

Project Manager: Jcd Hill

Project: KWIK FILL-CLEARFIELD

Project Number: [none]

Collector: CLIENT

Number of Containers: 24

Reported:

06/14/13 10:44

Client Sample ID: MW-32

Date/Time Sampled: 05/28/13 11:54

Laboratory Sample ID: 3E29031-11 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B

Benzene	<1.00	1.00	ug/l	06/01/13 02:29	EPA 8260B	mlf	
Toluene	<1.00	1.00	ug/l	06/01/13 02:29	EPA 8260B	mlf	
Ethylbenzene	<1.00	1.00	ug/l	06/01/13 02:29	EPA 8260B	mlf	
Xylenes (total)	<2.00	2.00	ug/l	06/01/13 02:29	EPA 8260B	mlf	
Isopropylbenzene	<1.00	1.00	ug/l	06/01/13 02:29	EPA 8260B	mlf	
Methyl tert-butyl ether	<1.00	1.00	ug/l	06/01/13 02:29	EPA 8260B	mlf	
Naphthalene	<1.00	1.00	ug/l	06/01/13 02:29	EPA 8260B	mlf	VC
Surrogate: 4-Bromofluorobenzene	93.7 %	70-130		06/01/13 02:29	EPA 8260B	mlf	
Surrogate: 1,2-Dichloroethane-d4	126 %	70-130		06/01/13 02:29	EPA 8260B	mlf	
Surrogate: Fluorobenzene	104 %	70-130		06/01/13 02:29	EPA 8260B	mlf	

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Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684



State Certifications: MD 275, WV 364

www.fairwaylaboratories.com

Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 06/14/13 10:44

Client Sample ID: MW-33

Date/Time Sampled: 05/28/13 11:41

Laboratory Sample ID: 3E29031-12 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	06/01/13 03:06	EPA 8260B	mlf	
Toluene	<1.00		1.00	ug/l	06/01/13 03:06	EPA 8260B	mlf	
Ethylbenzene	<1.00		1.00	ug/l	06/01/13 03:06	EPA 8260B	mlf	
Xylenes (total)	<2.00		2.00	ug/l	06/01/13 03:06	EPA 8260B	mlf	
Isopropylbenzene	<1.00		1.00	ug/l	06/01/13 03:06	EPA 8260B	mlf	
Methyl tert-butyl ether	<1.00		1.00	ug/l	06/01/13 03:06	EPA 8260B	mlf	
Naphthalene	<1.00		1.00	ug/l	06/01/13 03:06	EPA 8260B	mlf	VC
Surrogate: 4-Bromofluorobenzene	92.1 %		70-130		06/01/13 03:06	EPA 8260B	mlf	
Surrogate: 1,2-Dichloroethane-d4	127 %		70-130		06/01/13 03:06	EPA 8260B	mlf	
Surrogate: Fluorobenzene	104 %		70-130		06/01/13 03:06	EPA 8260B	mlf	

Fairway Laboratories, Inc.

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State Certifications: MD 275, WV 364

Letterle & Associates

629 East Rolling Ridge Drive

Bellefonte PA, 16823

Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD

Project Number: [none]

Collector: CLIENT

Number of Containers: 24

Reported:

06/14/13 10:44

Notes

QA The RPD result exceeded the QC control limits for the duplicate sample analyzed.

VC Check standard was outside the QC range. Data accepted based on acceptable LCS.

Definitions

Surrogate values must be within the indicated range, otherwise the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory.

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

* P indicates analysis performed by Fairway Laboratories, Inc. at the Pennsdale location. This location is PaDEP Chapter 252 certified.

< Represents "less than" - indicates that the result was less than the reporting limit.

MDL Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the MDL are considered estimated values.

RL Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.

[CALC] Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

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Fax: (814) 946-8791

FAIRWAY LABORATORIES
Environmental Laboratory
89 Kristi Rd
Remsedale, PA 17756
Phone: (570) 494-6380

3E29031-C1
COC #
Page 1 of 2

Client Name: <u>Leatherly & Associates</u>		Received on ice? Y ☐ N ☐		Reportable to PADEP? Yes ☐		PW/SID #		Analyses Requested		LAB USE ONLY FedEx USPS UPS Other	
Address: <u>609 E. 1st St. Altoona, PA 16602</u>		Sample Temp: _____		Matrix		Solid ☐ Water ☐ Other ☐		1998 Uni Gns		Tracking #	
Contact: <u>500 Hall</u>		Composite Start		GRAB -or- Composite End		# of Containers		1998 Uni. Gas except Benzene		Bottle Type/Comments	
Phone #: <u>814-355-2241</u>		Start Date		End Date		End Time					
Fax #: <u>~2410</u>		Time		Time		Time					
Project Name: <u>Kwik Fill Clearfil</u>		Date		Date		Date					
Quote/PO #:		Date		Date		Date					
TAT: Normal ☒ Rush ☐		Date		Date		Date					
Rush TAT subject to pre-approval and surcharge.		Date		Date		Date					
Date Required: _____		Date		Date		Date					
Sample Description/Location		Date		Date		Date					
MW-24		5-28		11:18		11:18					
MW-3		5-28		12:12		12:12					
MW-4		5-28		13:58		13:58					
MW-7		5-28		12:41		12:41					
MW-10		5-28		11:00		11:00					
MW-14		5-28		12:27		12:27					
MW-15		5-28		13:20		13:20					
MW-21		5-28		13:29		13:29					
MW-29		5-28		13:01		13:01					
MW-30		5-28		11:54		11:54					
MW-32		5-28									
Sampled by: <u>[Signature]</u>		Date		Date		Date					
Time		Time		Time		Time					
5-28 16:00		5-28 16:00		5-28 16:00		5-28 16:00					
Relinquished by: <u>[Signature]</u>		Date		Date		Date					
Time		Time		Time		Time					
5-29 12:30		5-29 12:30		5-29 12:30		5-29 12:30					
Relinquished by: <u>[Signature]</u>		Date		Date		Date					
Time		Time		Time		Time					
5-29 13:30		5-29 13:30		5-29 13:30		5-29 13:30					
Relinquished by: <u>[Signature]</u>		Date		Date		Date					
Time		Time		Time		Time					
5-29 13:30		5-29 13:30		5-29 13:30		5-29 13:30					
Remarks		Remarks		Remarks		Remarks					

By relinquishing my sample to Fairway Laboratories, Inc., I hereby agree to the terms and conditions printed on the reverse.

White Original - FLI File Canary - FLI Copy Pink - Customer Receipt Copy

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Environmental Laboratory

3E24031-02
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Page 2 of 2

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629 East Rolling Ridge Drive, Bellefonte, PA 16823
P: 814.355.2241 F: 814.355.2410 www.letterleassociates.com

October 18, 2013

Mr. Scott Ferguson, P.G.
Pennsylvania Department of Environmental Protection
Environmental Cleanup Program
208 West Third Street, Suite 101
Williamsport, PA 17701-6448

**Re: 3rd Quarter 2013 Remedial Action Progress Report
United Refining Company of Pennsylvania
Kwik Fill M-90
1322 South 2nd Street
Lawrence Township, Clearfield County, Clearfield, Pennsylvania
PADEP Facility ID #17-14821/PAUSTIF Claim #2008-0034(M)**

Dear Mr. Ferguson:

Letterle & Associates, LLC (Letterle) is pleased to submit this Remedial Action Progress Report (RAPR) for the above referenced facility. This RAPR presents the groundwater monitoring data from the third quarter of 2013 and also includes a description of remedial activities completed from July 1, 2013 through September 30, 2013 (third quarter of 2013).

If you have any questions or comments regarding this report, please feel free to contact me at (814) 355-2241 or jhill@letterleassociates.com.

Sincerely,



Jed Hill
Project Manager

Enclosure

cc: Mr. Scott C. Wonsettler, P.G., United Refining Company of Pennsylvania (with CD)
Mr. Gerald Hawk, ICF International (via email)
Mr. Robert McDonald, Arch Street Management
L:\Operations\Projects\Project Files\Bellefonte\United Refining\M-90 Clearfield #277\Reports\2013\Clearfield -
3rd Qtr 2013 RAPR.doc

REMEDIAL ACTION PROGRESS REPORT
3rd Quarter 2013

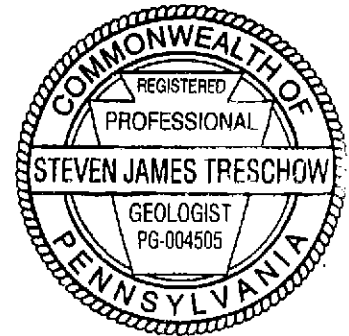
PADEP Facility ID #17-14821
PAUSTIF Claim #2008-0034(M)
Kwik Fill M-90
1322 South 2nd Street
Lawrence Township, Clearfield County
Clearfield, Pennsylvania 16830

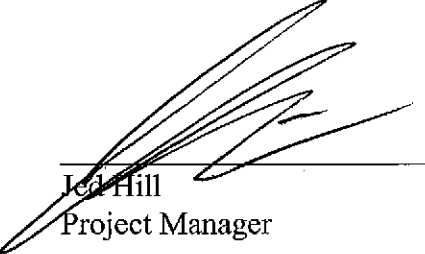
Prepared for:

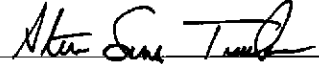
United Refining Company of Pennsylvania
15 Bradley Street
P.O. Box 688
Warren, Pennsylvania 16365

Prepared by:

Letterle & Associates, LLC
629 East Rolling Ridge Drive
Bellefonte, Pennsylvania 16823




Ted Hill
Project Manager


Steven James Treschow, P.G.
Professional Geologist

October 2013

"By affixing my seal to this document, I am certifying that the information is true and correct to the best of my knowledge. I further certify I am licensed to practice in the Commonwealth of Pennsylvania and that it is within my professional expertise to verify the correctness of the information."

Steven James Treschow, P.G. (signed and sealed this day (October 18, 2013))

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TABLE

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Figure 2 – Site Layout Map

Figure 3 – Groundwater Potentiometric Surface Contour Map

Figure 4 – MTBE Isoconcentration Contour Map

APPENDIX

Appendix A – Groundwater Analytical Laboratory Reports

GENERAL INFORMATION

Client Contact:	Scott Wonsettler, P.G.
Letterle Project Manager:	Jed Hill
Regulatory Contact:	Scott Ferguson, P.G.
PADEP Facility ID #:	17-14821
PAUSTIF Claim #:	2008-0034 (M)
Number of Wells:	14 monitoring wells (on-site wells MW-2A, MW-32, and MW-33 and off-site monitoring wells MW-3, MW-4, MW-7, MW-9, MW-10, MW-14, MW-15, MW-17, MW-21, MW-29, and MW-30). 8 remediation system extraction wells (MW-1, MW-1A, MW-2, MW-28, MW-31, MW-34, MW-35, and MW-36).

Wells Containing LNAPL: 0

Letterle & Associates, LLC (Letterlc) has been contracted by United Refining Company (United) of Pennsylvania (PA) to perform remedial activities at the Kwik Fill M-90 facility located at 1322 South 2nd Street in Lawrence Township, Clearfield County, Clearfield, PA (the site).

The site location is depicted on the 7.5-minute United States Geological Survey (USGS) Topographic Quadrangles of Clearfield and Glen Richey, PA presented as **Figure 1**. The site exists at an approximate elevation of 1,045 feet above mean sea level (ft-amsl). A more detailed site layout map, which fully depicts the site area, is presented as **Figure 2**.

This Remedial Action Progress Report (RAPR) includes a description of the on-going remedial action activities and presents the groundwater monitoring data obtained at the site during the third quarter of 2013.

SITE HISTORY/PROJECT SUMMARY

The site is currently an active retail fueling (gasoline and diesel) station, which has two, 10,000-gallon and one, 8,000-gallon steel underground storage tanks (USTs). The two 10,000-gallon USTs were installed in 1969 and the 8,000-gallon UST was installed in 1974. One 10,000-gallon UST and one 8,000-gallon contain unleaded gasoline and the remaining 10,000-gallon UST (in the middle) contains diesel fuel.

On June 15, 1995, the 10,000-gallon unleaded gasoline UST (#002) failed a tightness test. The PA Department of Environmental Protection (PADEP) was notified of the failure and subsequently, Mountain Research, Inc. (MRI) was retained by United in May 1996 to perform site characterization activities.

From June 1996 through October 1997, four soil boring/monitoring wells, MW-1, MW-1A, MW-2, and MW-2A, were installed on the site and five monitoring wells, MW-3 through MW-7, were installed off-site, on the Beckwith Machinery Company (BMC) property. Quarterly groundwater sampling began in February 1996. Groundwater analytical results for the monitoring wells indicated unleaded gasoline constituents at concentrations above their respective Medium Specific

Concentration (MSC) values. In June 1997, soil/groundwater samples were collected on-site and in the right-of-way of South 2nd Street. The results of the investigation indicated several soil/groundwater samples contained unleaded gasoline constituents at concentrations above their respective MSC values.

MRI prepared a Remedial Action Plan (RAP) in July 1999 proposing a Matrix Trailer Mounted Oxygen Injection System. The PADEP approved the RAP in January 2000. In February 2000, system installation was initiated. The system consisted of eight oxygen injection points and a small trailer to house any ancillary equipment. On April 12, 2000, the system was activated. The system was operational from April 12, 2000 until the first quarter of 2005. From February 1996 through first quarter of 2005, MRI performed quarterly groundwater sampling from the monitoring well network.

From early 2005 through mid-2006, additional site investigations were initiated at the site to re-evaluate the remedial approach. In October 2006, a Supplemental Site Characterization Report (SCR) and RAP Addendum was submitted to the PADEP. The Supplemental SCR/RAP Addendum identified two separate source areas, one on-site and one off-site at the BMC property. The on-site source area (Source Area #1) was found to have impacted groundwater beneath the site and downgradient on the former BMC property. Impacted groundwater from Source Area #2 was found to be related to an off-site release and not associated with the Kwik Fill M-90 facility. The Supplemental SCR/RAP Addendum strategy included remediating groundwater via an air sparge/soil vapor extraction (AS/SVE) system. An additional RAP Addendum was submitted in December 2006. The PADEP approved the Supplemental SCR/RAP Addendum and additional RAP Addendum in January 2007, with modifications. An AS/SVE system was installed at the site and operated from November 2007 through the fourth quarter of 2008.

A second release of unleaded gasoline occurred at the site, and was reported in February 2008. Additional site characterization activities were initiated and an Additional SCR and RAP Addendum was submitted in June 2011. The June 2011 Additional SCR/RAP Addendum included the selection of a dual phase extraction (DPE)/SVE system to address on-site soil and groundwater and enhanced in-situ bioremediation (EB) to address off-site groundwater. The June RAP Addendum was approved by the PADEP in July 2011.

REMEDIAL ACTION PLAN IMPLEMENTATION

The PA Underground Storage Tank Indemnification Fund (PAUSTIF) and their administrator, ICF International (ICFI), put the site remedial work out for competitive bid. The proposed scope of work was based upon the July 2011 approved RAP. Letterle was awarded the bid in March of 2012 and began implementation of the approved RAP.

Remedial actions completed in previous quarters include off-site well abandonment, DPE well installation, remedial system trenching and piping, remedial system installation, and the application of a chemical oxidant as part of an enhanced bioremediation feasibility study.

Remediation System

The remedial system trailer was constructed and mobbed to the site during the third quarter of 2012 and began operation on October 30, 2012. The principal DPE system components housed within the trailer include:

- Two claw pumps;
- One air compressor;
- One air/water separator (AWS) tank;
- One equalization tank;
- Two transfer pumps and level controls;
- Six pneumatic groundwater pumps;
- Four 400-pound liquid-phase granular activated carbon (GAC) vessels (high pressure units);
- Two 600-pound vapor-phase GAC vessels; and,
- Control panel for the claw pumps, air compressor, and the transfer pumps (including all system interlocks).

The recovered groundwater is treated and discharged to the sanitary sewer under an issued permit from the Clearfield Municipal Authority (CMA). Under the terms of the permit, analytical reports and totalizer readings are reported in Discharge Monitoring Reports (DMR) on a monthly basis to the CMA. Petroleum impacted soil and groundwater remediation systems have been listed as exempt from the Plan Approval/Operating permit requirements by PADEP, Division of Air Quality. The remediation system is operated under the exemption requirements.

QUARTERLY SITE ACTIVITIES COMPLETED – 3RD QUARTER 2013

Remediation System Operating Summary

Start Date:	October 30, 2012
3 rd Quarter 2013 System Uptime:	62%
3 rd Quarter 2013 Total Gallons Treated:	102,725 gallons
Total Gallons Treated To Date:	684,236 gallons

System Sampling Dates

Groundwater Influent, Midfluent, Effluent:	July 11, 2013
	August 5, 2013
	September 3, 2013

Groundwater Effluent:	July 11, 2013
	July 23, 2013
	August 5, 2013
	August 20, 2013
	September 3, 2013
	September 18, 2013
Vapor:	September 3, 2013

Groundwater Gauging/Sampling

The monitoring well network is gauged and sampled on a quarterly basis to analyze the effectiveness of the remediation system and to monitor groundwater impacts/movement at the site. Approximately one week prior to groundwater gauging/sampling, the remediation system was deactivated to allow for static groundwater conditions.

Groundwater Gauging

Letterle completed a quarterly groundwater gauging event on September 9, 2013. A total of 15 wells were gauged:

- *15 wells in the shallow overburden groundwater monitoring well network: MW-2A, MW-3, MW-4, MW-5, MW-7, MW-10, MW-14, MW-15, MW-21, MW-22, MW-23, MW-29, MW-30, MW-32, and MW-33.*

Gauging Methodology

Depth-to-groundwater was measured in each well to determine groundwater elevations and interpret the predominant direction of groundwater movement. Depth-to-groundwater measurements were recorded using an electronic water level indicator capable of measuring to within 0.01 feet of accuracy. The electronic water level indicator was decontaminated between wells.

Gauging Results

Groundwater elevation data collected during the third quarter of 2013 groundwater gauging event indicates the following:

- Groundwater elevations in shallow overburden groundwater ranged from 1,134.21 feet in MW-7 to 1,144.81 feet in MW-2A;
- The predominant direction of movement in shallow overburden groundwater is interpreted to be to the northwest (towards the West Branch Susquehanna River); and,
- Using the September 9, 2013 groundwater elevation data, a groundwater hydraulic gradient of 0.028 feet per foot (ft/ft) between groundwater monitoring wells MW-2A and MW-7 was calculated.

Table 1 summarizes the historical groundwater gauging data and also presents the resultant groundwater gauging results from the third quarter of 2013 groundwater gauging event. A groundwater potentiometric surface contour map for the September 9, 2013 groundwater gauging event is presented as **Figure 3**.

Groundwater Sampling

Letterle completed a quarterly groundwater sampling event on September 9, 2013. A total of 14 wells were sampled:

- *14 wells in the shallow overburden groundwater monitoring well network:* MW-2A, MW-3, MW-4, MW-7, MW-9, MW-10, MW-14, MW-15, MW-17, MW-21, MW-29, MW-30, MW-32, and MW-33.

Sampling Methodology

Subsequent to gauging the groundwater level in each well, low-flow sampling was initiated. For wells shallower than 20 feet, a combination of polyethylene and silicon tubing are utilized in conjunction with a peristaltic pump. The peristaltic pump is then utilized to purge the well at a low flow rate of <0.5 liters (500 milliliters) per minute. For wells deeper than 20 feet, polyethylene tubing is utilized in conjunction with a two-inch Mini-Monsoon submersible pump to purge the well at a low flow rate of <0.5 liters (500 milliliters) per minute. The intake of each respective pump was placed approximately three feet below the measured water level. In general, each well is purged at a rate of 100-400 milliliters per minute to avoid creating drawdown. If a well was dewatered, a bailer was utilized to collect the sample after the well recovered.

The purged groundwater is then passed through a flow-through cell that measures dissolved oxygen (DO), pH, total dissolved solids (TDS), temperature, specific conductivity, and oxidation-reduction potential (ORP). Measurements of these parameters were recorded every 5 minutes. These measurements were recorded until three consecutive readings stabilized to within 10% of one another. Purging was considered to be complete upon parameter stabilization for three consecutive readings. Once stabilization was documented, the flow-through cell was disconnected and the sample was immediately collected from the discharge line.

The pump was decontaminated between each sampled well. The purged groundwater was filtered through a mobile GAC vessel and then discharged to the ground surface.

The samples were sealed in pre-preserved laboratory supplied glassware, labeled, custody sealed, placed in an ice-filled cooler, and returned to Letterle's office. The samples were stored in a refrigerator (at 4 °C) until they were collected by the laboratory. The samples were submitted to Fairway Laboratories of Altoona, PA, for analysis of the pre-March 15, 2008 PADEP Land Recycling Program Technical Guidance Manual, Table IV-9 - Short List of Petroleum Products, specifically unleaded gasoline constituents (PADEP unleaded gasoline short list constituents) via United States Environmental Protection Agency (USEPA) Method 8260B and were accompanied by Chain-of-Custody documentation.

Sampling Results

The groundwater analytical results from the groundwater sampling event conducted on September 9, 2013 indicated the following exceedances of the applicable PADEP Used-Aquifer TDS $\leq 2,500$ milligrams per liter (mg/L) Residential Statewide Health Standard (UARSHS) MSCs:

- Methyl tert-butyl ether (MTBE) in wells MW-3 and MW-21.

Table 1 summarizes the historical groundwater analytical data and also presents the resultant groundwater analytical results from the third quarter of 2013 groundwater sampling event. Groundwater analytical laboratory reports are included in **Appendix A**.

A MTBE isoconcentration contour map for the September 9, 2013 (third quarter of 2013) groundwater sampling event is presented as **Figure 4**.

Groundwater samples were not collected from MW-9 and MW-17 due to the inability to locate the respective monitoring wells.

PLANNED ACTIVITY

The following activities are currently planned for the 4th Quarter of 2013:

- Remedial system operation and maintenance (including permit-required sampling);
- Quarterly groundwater gauging and sampling; and,
- Quarterly reporting.

TABLE

Table 1
Historic Groundwater Gauging and Analytical Data
United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

Piezometer/Well	Date	Compound							Depth to Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Cumene	Naphthalene		
PADER OARSHS MSCs		20	5	1,000	700	10,000	840	100		
MW-1	3/17/2010	10.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.26	1147.28
	6/8/2010	11.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.57	1146.97
	8/30/2010	18.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.78	1144.76
	11/17/2010	13.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.40	1146.14
	3/1/2011	6.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.78	1147.76
	5/31/2011	13.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.75	1145.79
	8/24/2011	12.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.12	1145.42
	3/28/2012	14.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.12	1147.42
Monitoring well converted to remedial extraction well.										
MW-1A	3/17/2010	7.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.57	1147.20
	6/8/2010	6.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.86	1146.91
	8/30/2010	16.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.32	1144.45
	11/17/2010	10.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.88	1145.89
	3/1/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.04	1147.73
	5/31/2011	4.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.29	1145.48
	8/24/2011	8.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.65	1145.12
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.55	1147.22
Monitoring well converted to remedial extraction well.										
MW-2	3/17/2010	20.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.07	1146.91
	6/8/2010	20.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.36	1146.62
	8/30/2010	20.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.61	1144.37
	11/17/2010	20.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.36	1145.62
	3/1/2011	11.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.73	1147.25
	5/31/2011	10.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.68	1145.30
	8/24/2011	14.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.90	1145.08
	3/28/2012	11.5	1.1	<1.00	<1.00	<3.00	<1.00	<2.00	2.85	1147.13
Monitoring well converted to remedial extraction well.										
MW-2A	3/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.21	1147.66
	6/8/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.27	1147.60
	8/30/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.23	1145.64
	11/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.25	1146.62
	3/1/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.91	1147.96
	5/31/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.16	1146.71
	8/24/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.52	1146.35
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.45	1148.42
	6/25/2012	5.22	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.51	1144.36
	9/6/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.21	1145.66
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.12	1144.75
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.30	1144.57
	5/28/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.00	1145.87
	9/9/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.06	1144.81
	3/18/2010	43.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.43	1143.80
MW-3	6/7/2010	44.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.40	1143.83
	8/31/2010	41.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.92	1142.31
	11/17/2010	40.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.48	1142.75
	3/22/2011	33.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.81	1144.42
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	32.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.38	1142.85
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	1.40	1144.83
	6/25/2012	21.9	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.17	1143.06
	9/6/2012	27.5	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.17	1142.06
	12/14/2012	18.4	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.63	1140.60
	3/5/2013	11.8	13.4	<1.00	<1.00	<2.00	<1.00	<1.00	5.36	1140.87
	5/28/2013	12.6	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.40	1141.83
	9/9/2013	20.1	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.42	1140.81
	3/18/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.97	1144.15
	6/7/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.17	1142.95
MW-4	8/31/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.44	1140.68
	11/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.26	1141.86
	3/22/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.92	1144.20
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.24	1141.88
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.20	1143.92
	6/25/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.74	1142.38
	9/6/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.31	1141.01
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.40	1141.72
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.58	1142.54
	5/28/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.61	1141.51
	9/9/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.00	1140.12

Table 1
Historic Groundwater Gauging and Analytical Data
United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

Piezometer/Well	Date	Compound							Depth to Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethyl benzene	Xylenes (Total)	Cumene	Naphthalene		
PADEP/IAHS/MSCs		20	5	1,000	700	10,000	840	100		
MW-5	3/17/2010	5.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.16	1143.51
	6/7/2010	4.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.53	1143.14
	8/31/2010	3.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.18	1141.49
	11/17/2010	2.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.80	1141.87
	3/1/2011	1.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.43	1144.24
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	5.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.64	1142.03
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	1.04	1143.63
	6/25/2012	Well not part of quarterly sampling program.							2.25	1142.42
	9/6/2012								NG	NG
	12/14/2012								NG	NG
	3/5/2013								NG	NG
	5/28/2013								3.00	1141.67
	9/9/2013								4.17	1140.50
MW-6	3/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/7/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/31/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	11/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/1/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	Well could not be located. Well not part of quarterly sampling program.								
	9/6/2012									
	12/14/2012									
	3/5/2013									
	5/28/2013									
	9/9/2013									
MW-7	3/18/2010	3.6	59.5	11.5	44.4	54.7	25.6	44.5	2.60	1139.41
	6/7/2010	3.1	57.7	12.9	55.2	60.3	35.4	61.3	5.77	1136.24
	8/31/2010	6.8	104	14.4	47.9	49.2	29.3	38.7	7.92	1134.09
	11/17/2010	7.2	97.9	12.5	46.5	47.4	27.3	57.7	6.85	1135.16
	3/2/2011	4.1	81.9	8.8	39.3	27.7	22.4	20.9	3.93	1138.08
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	7.7	73.8	10.2	25.8	28.5	31.3	40.7	7.21	1134.80
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	7.15	1134.86
	6/25/2012	3.84	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	7.49	1134.52
	9/6/2012	10.6	NA	<2.00	<2.00	<4.00	<2.00	<2.00	7.76	1134.25
	12/14/2012	<2.00	NA	14.8	89.5	43.6	29.0	65.4	5.80	1136.21
	3/5/2013	<1.00	NA	2.29	5.67	5.16	2.25	3.28	6.55	1135.46
	5/28/2013	<1.00	NA	<1.00	1.07	<2.00	1.89	<1.00	6.30	1135.71
	9/9/2013	5.10	NA	<1.00	<1.00	<2.00	2.75	<1.00	7.80	1134.21
MW-9	3/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/7/2010	32.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.00	1141.97
	8/30/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	11/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/1/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	Well could not be located.								
	9/6/2012									
	12/14/2012									
	3/5/2013									
	5/28/2013									
	9/9/2013									
MW-10	3/17/2010	8.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.64	1140.76
	6/7/2010	8.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.78	1141.62
	8/31/2010	8.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.08	1140.32
	11/17/2010	7.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.50	1139.90
	3/2/2011	7.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.14	1142.26
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	7.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.42	1140.98
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	1.42	1140.98
	6/25/2012	5.01	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	1.23	1141.17
	9/6/2012	6.16	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.10	1140.30
	12/14/2012	5.56	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.08	1140.32
	3/5/2013	5.80	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	1.81	1140.59
	5/28/2013	4.92	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	1.90	1140.50
	9/9/2013	6.87	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.70	1139.70

Table 1
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United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

Piezometer/Well	Date	Compound							Depth to Groundwater	Groundwater Elevation
		MTBP	Benzene	Toluene	Ethyl benzene	Xylenes (Total)	Cumene	Napthalene		
PADER LARSHS MSCs		20	5	1,000	700	10,000	840	100		
MW-12	3/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/1/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/1/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	11/17/2010	30.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.28	1142.28
	3/2/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/23/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	Well not part of quarterly sampling program.							2.83	1142.73
	9/6/2012								NG	NG
	12/14/2012								NG	NG
	3/5/2013								NG	NG
	5/28/2013								NG	NG
	9/9/2013								NG	NG
MW-14	3/17/2010	23.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.97	1146.75
	6/1/2010	18.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.22	1146.50
	8/1/2010	35.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.43	1144.29
	11/17/2010	21.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.40	1145.32
	3/2/2011	2.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.62	1147.10
	5/31/2011	21.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.44	1145.28
	8/24/2011	17.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.80	1143.92
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.71	1146.01
	6/25/2012	8.80	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.59	1145.13
	9/6/2012	19.8	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.63	1144.09
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	6.89	1141.83
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	7.14	1141.58
	5/28/2013	1.38	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.80	1143.92
	9/9/2013	3.30	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	6.30	1142.42
MW-15	3/18/2010	6.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.73	1145.56
	6/1/2010	6.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.08	1145.21
	8/1/2010	7.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.88	1143.41
	11/17/2010	6.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.44	1143.85
	3/2/2011	4.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.51	1145.78
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	6.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.27	1144.02
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.20	1145.09
	6/25/2012	6.98	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.11	1144.18
	9/6/2012	5.64	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.18	1143.11
	12/14/2012	2.23	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.45	1141.84
	3/5/2013	1.70	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.97	1142.32
	5/28/2013	1.09	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.30	1142.99
	9/9/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.51	1141.78
MW-17	3/18/2010	9.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.73	1142.53
	6/1/2010	1.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.09	1143.17
	8/1/2010	13.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.78	1141.48
	11/17/2010	11.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.70	1141.56
	3/1/2011	7.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.11	1143.15
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	Well could not be located.								
	9/6/2012									
	12/14/2012									
	3/5/2013									
	5/28/2013									
	9/9/2013									
MW-21	3/17/2010	41.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.86	1144.60
	6/1/2010	42.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.12	1144.34
	8/1/2010	40.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.43	1143.03
	11/17/2010	35.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.22	1143.24
	3/2/2011	33.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.50	1144.96
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	37.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.05	1143.41
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.10	1144.36
	6/25/2012	21.7	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.94	1143.52
	9/6/2012	42.1	<2.00	<2.00	<2.00	<4.00	<2.00	<2.00	3.79	1142.67
	12/14/2012	10.8	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.09	1141.37
	3/5/2013	12.7	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.61	1141.85
	5/28/2013	9.92	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.97	1142.49
	9/9/2013	31.2	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.90	1141.56

Table 1
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United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

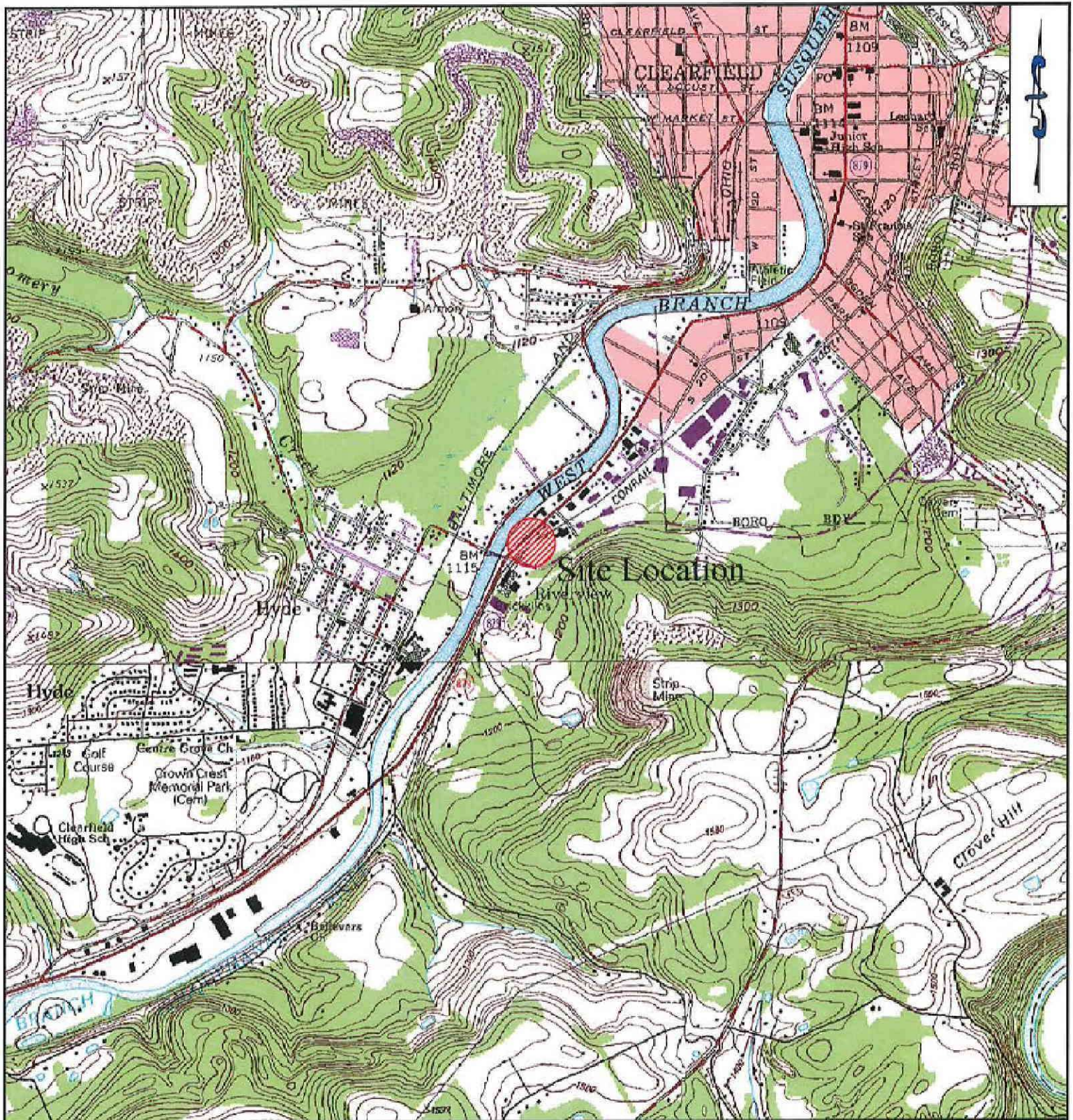
Piezometer/Well	Date	Compound							Depth to Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Cumene	Naphthalene		
BADEP UARSHS MSCS		20	5	1,000	700	10,000	840	100		
MW-22	3/17/2010	5.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.79	1143.08
	6/7/2010	8.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.18	1142.69
	8/30/2010	8.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.60	1141.27
	11/17/2010	6.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.38	1141.49
	3/2/2011	6.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.42	1143.45
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	10.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.04	1141.83
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.11	1142.76
	6/25/2012	Well not part of quarterly sampling program.							2.81	1142.06
	9/6/2012								3.43	1141.44
	12/14/2012								4.06	1140.81
	3/5/2013								3.60	1141.27
	5/28/2013								3.50	1141.37
	9/9/2013								4.52	1140.35
MW-23	3/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.51	1144.65
	6/7/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.03	1145.13
	8/31/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.63	1142.53
	11/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.90	1143.26
	3/2/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.02	1145.14
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.93	1143.23
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.80	1144.36
	6/25/2012	Well not part of quarterly sampling program.							4.57	1142.59
	9/6/2012								5.37	1141.79
	12/14/2012								5.99	1141.17
	3/5/2013								5.05	1142.11
	5/28/2013								5.12	1142.04
	9/9/2013								6.00	1141.16
MW-28	3/17/2010	4.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.13	1146.94
	6/8/2010	3.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.44	1146.63
	8/30/2010	6.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.64	1144.43
	11/17/2010	4.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.46	1145.61
	3/1/2011	7.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.01	1147.06
	5/31/2011	3.4	NA	NA	NA	NA	NA	NA	4.82	1145.25
	8/24/2011	4.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.97	1145.10
	3/28/2012	14.6	NA	NA	NA	NA	NA	NA	2.88	1147.19
	6/25/2012	Monitoring well converted to remedial extraction well.								
MW-29	3/17/2010	35.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.61	1144.65
	6/7/2010	39.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.83	1144.43
	8/30/2010	39.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.95	1142.31
	11/17/2010	37.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.95	1143.31
	3/2/2011	9.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.23	1145.03
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	37.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.81	1143.45
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.71	1144.55
	6/25/2012	22.8	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.58	1143.68
	9/6/2012	25.0	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.58	1142.68
	12/14/2012	3.13	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.77	1141.49
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.36	1141.90
	5/28/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.70	1142.56
	9/9/2013	1.39	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.65	1141.61
MW-30	3/18/2010	17.0	23.9	<1.00	14.5	12.2	1.9	2.5	2.23	1145.03
	6/7/2010	20.1	17.9	<1.00	12.4	10.5	1.9	<2.00	2.41	1144.85
	8/31/2010	22.7	<1.00	<1.00	3.1	<3.00	<1.00	<2.00	4.07	1143.19
	11/17/2010	25.9	<1.00	<1.00	1.8	<3.00	<1.00	<2.00	3.61	1143.65
	3/2/2011	22.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.35	1144.91
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	8.41	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.31	1143.95
	9/6/2012	10.8	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.30	1142.96
	12/14/2012	4.08	<2.00	<2.00	<2.00	<4.00	<2.00	<2.00	5.91	1141.35
	3/5/2013	6.13	1.80	<1.00	<1.00	<2.00	<1.00	<1.00	5.50	1141.76
	5/28/2013	6.56	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.51	1142.75
	9/9/2013	6.28	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.68	1141.58

Table 1
Historic Groundwater Gauging and Analytical Data
United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

Piezometer/Well	Date	Compound							Depth-to-Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Cumene	Naphthalene		
PADEP UARSHS MSCs		20	5	1,000	700	10,000	840	100		
MW-31	3/17/2010	7.8	668	783	265	2,700	26.4	119	3.16	1147.07
	6/8/2010	6.3	336	118	119	754	10.2	61.8	3.61	1146.02
	8/30/2010	8.0	18.8	1.1	10.5	34.1	1.3	3.3	5.73	1144.50
	11/17/2010	6.7	60.5	<1.00	20.6	20.4	1.8	4.3	4.73	1145.50
	3/1/2011	4.8	9.2	1.4	3.6	4.1	<1.00	<2.00	3.48	1146.75
	5/31/2011	6.3	66.1	<1.00	20.0	22.1	2.3	2.1	4.74	1145.49
	8/24/2011	14.3	439	7.2	135	272	12	35.7	5.03	1145.20
	3/28/2012	16.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.18	1147.05
Monitoring well converted to remedial extraction well.										
MW-32	5/28/2010	4.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.22	1145.58
	6/8/2010	2.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.21	1146.59
	8/30/2010	1.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.16	1144.64
	11/17/2010	2.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.64	1145.16
	3/1/2011	2.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.94	1146.86
	5/31/2011	2.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.15	1145.65
	8/24/2011	2.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.58	1145.22
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.49	1147.31
	6/25/2012	4.51	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.51	1145.29
	9/6/2012	4.07	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.51	1144.29
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.65	1144.15
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.50	1144.30
	5/28/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.22	1144.58
	9/9/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	6.50	1143.30
MW-33	5/28/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.41	1145.72
	6/8/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.36	1146.77
	8/30/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.25	1144.88
	11/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.96	1145.17
	3/1/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.42	1146.71
	5/31/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.38	1145.75
	8/24/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.72	1145.41
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.70	1147.43
	6/25/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.66	1145.47
	9/6/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.70	1144.43
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.72	1145.41
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.46	1145.67
	5/28/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.15	1145.98
	9/9/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	6.40	1143.73

Notes: Groundwater elevation data reported in feet (ft).
Depth-to groundwater results are reported in feet below top-of-casing (ft-btoc).
All results reported in µg/l.
Bold values indicate levels above LHL.
Bold and shaded values indicate exceedance of PADEP UARSHS MSCs.
NG - Not Gauged. NA - Not Analyzed. NS - Not Sampled.

FIGURES



Reference: 7.5-minute United States Geological Survey Topographic Quadrangles of Clearfield and Glen Richey, Pennsylvania, DeLorme 3-D Topographic Quads Program.

<i>Prepared For:</i>	<i>Project Information:</i>	<i>Prepared By:</i>
United Refining Company Kwik Fill M-90 1322 South 2nd Street Clearfield, Pennsylvania	Project Manager: Jed Hill Project Geologist: Steven Treschow, P.G.	 Letterle & Associates, LLC 629 East Rolling Ridge Drive Bellefonte, PA 16823 P: 814-355-2241 F: 814-355-2410 www.letterleassociates.com
<i>Title:</i>	<i>Scale (feet):</i>	
Figure 1 Site Location Map	Scale: 1" = 2000' 	

Prepared By:



629 East Rolling Ridge Drive
Bellefonte, PA 16823
P: 814-355-2241
F: 814-355-2410
www.letterleassociates.com

Project Manager: Jed Hill
Project Geologist: Steven Treschow, P.G.

Prepared For:

United Refining Company
Kwik Fill M-90
1322 South 2nd Street
Clearfield, Pennsylvania

Title:

Figure 2
Site Layout Map

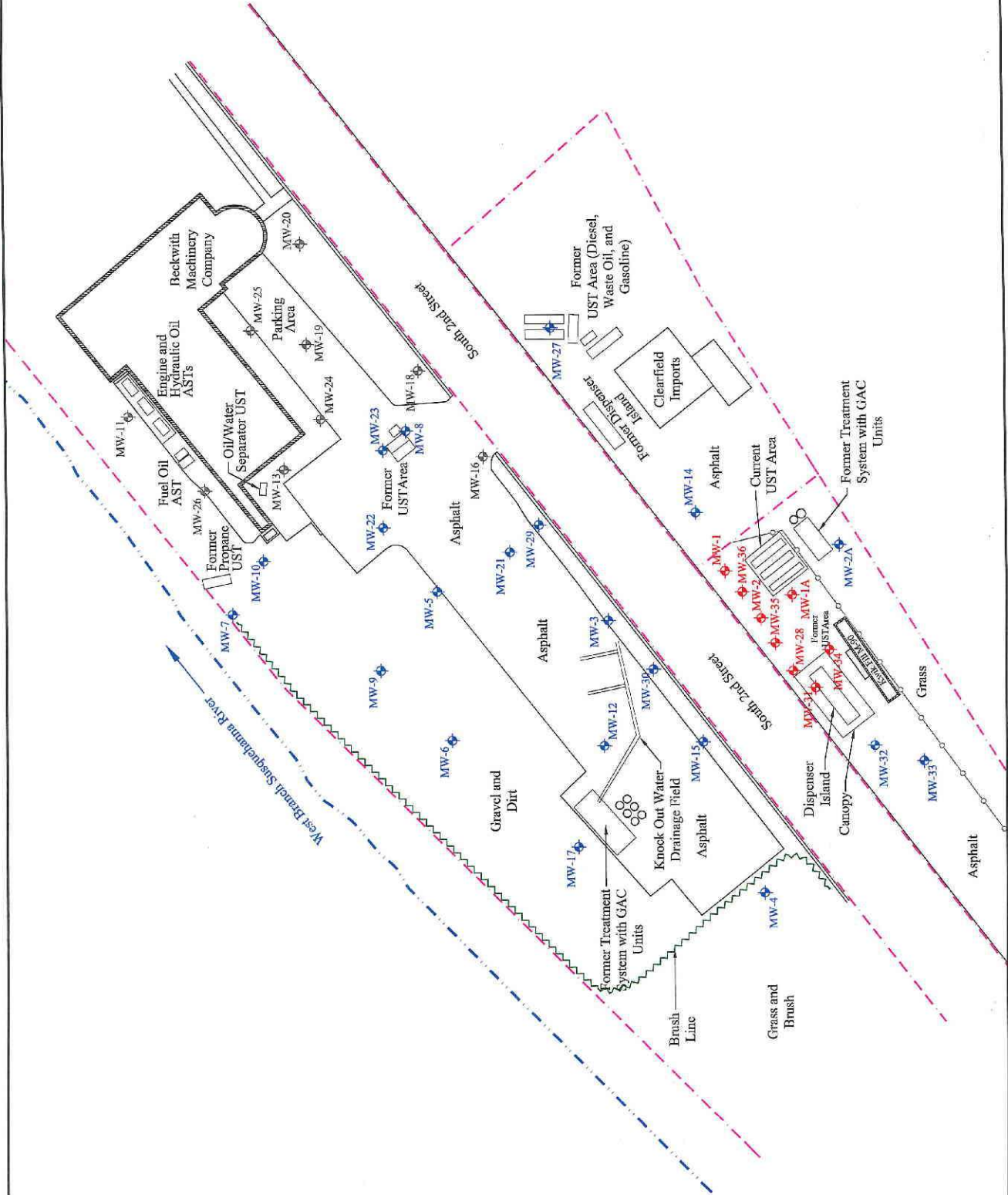
Legend:

- Groundwater Monitoring Well Location
- Abandoned Groundwater Monitoring Well
- Vapor/Groundwater Extraction Well
- Property Boundary
- Guard Rail

Scale (ft):

1" = 60'

One Inch Equals Sixty Feet



**Letterle &
Associates, LLC**

629 East Rolling Ridge Drive
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Project Manager: Jed Hill
Project Geologist: Steven Treschow, P.G.

Prepared For:

United Refining Company
Kwik Fill M-90
1322 South 2nd Street
Clearfield, Pennsylvania

Title:

Figure 3
Groundwater Potentiometric
Surface Contour Map
September 9, 2013

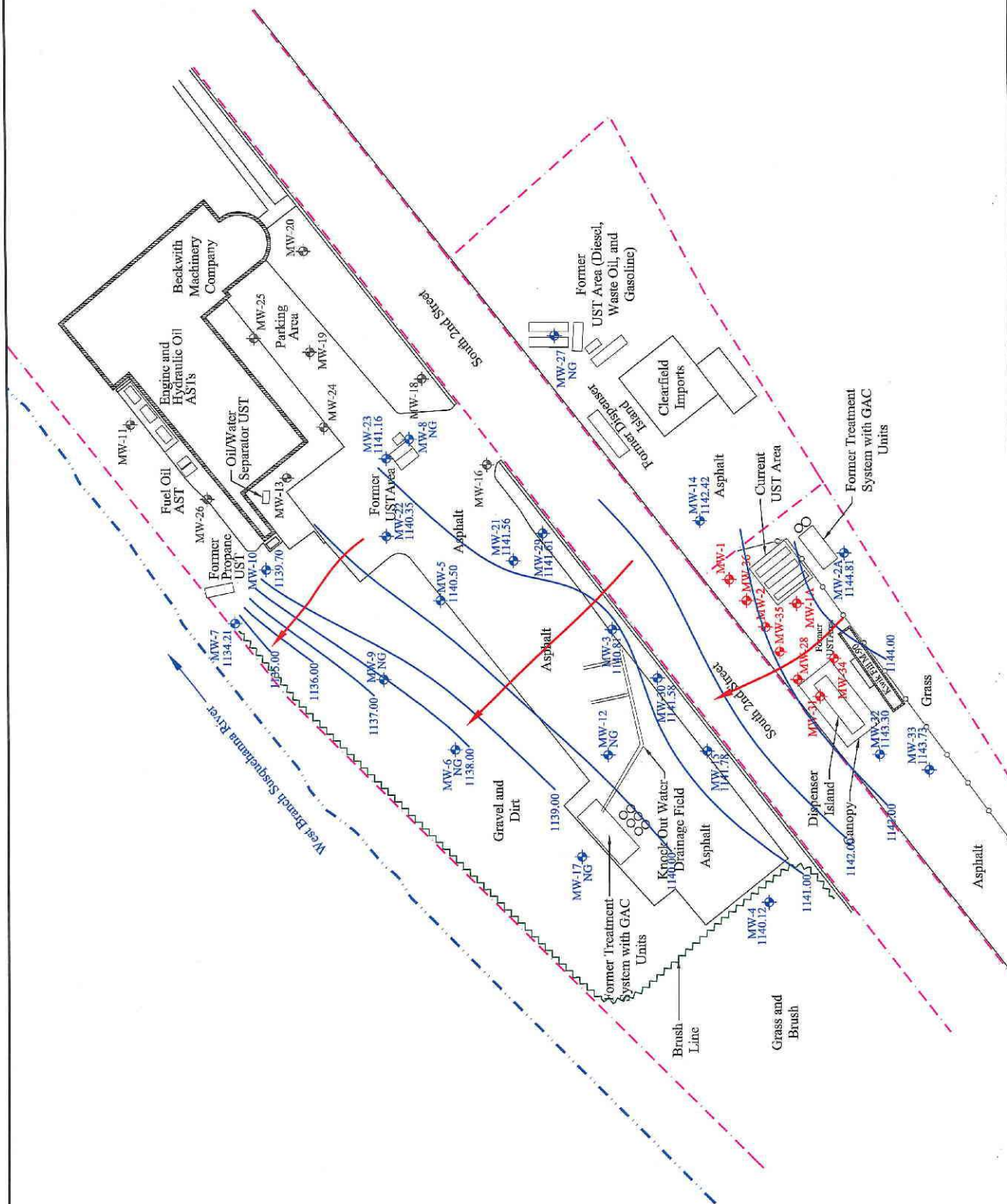
Legend:

- | | |
|---|---|
|  | Groundwater Monitoring Well Location |
|  | Abandoned Groundwater Monitoring Well |
|  | Vapor/Groundwater Extraction Well |
|  | Property Boundary |
|  | Guard Rail |
| 1144.0 | Groundwater Elevation (ft) |
|  | Groundwater Elevation Contour (dashed where inferred) |
|  | Groundwater Flow Direction |

Scale (ft.):

 $1'' = 60'$

One Inch Equals Sixty Feet



Prepared By:



629 East Rolling Ridge Drive
Belleville, PA 16823
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Project Manager: Jed Hill
Project Geologist: Steven Trueschow, P.G.

Prepared For:

United Refining Company
Kwik Fill M-90
1322 South 2nd Street
Clearfield, Pennsylvania

Title:

Figure 4
MTBE Isoconcentration Contour
Map
September 9, 2013

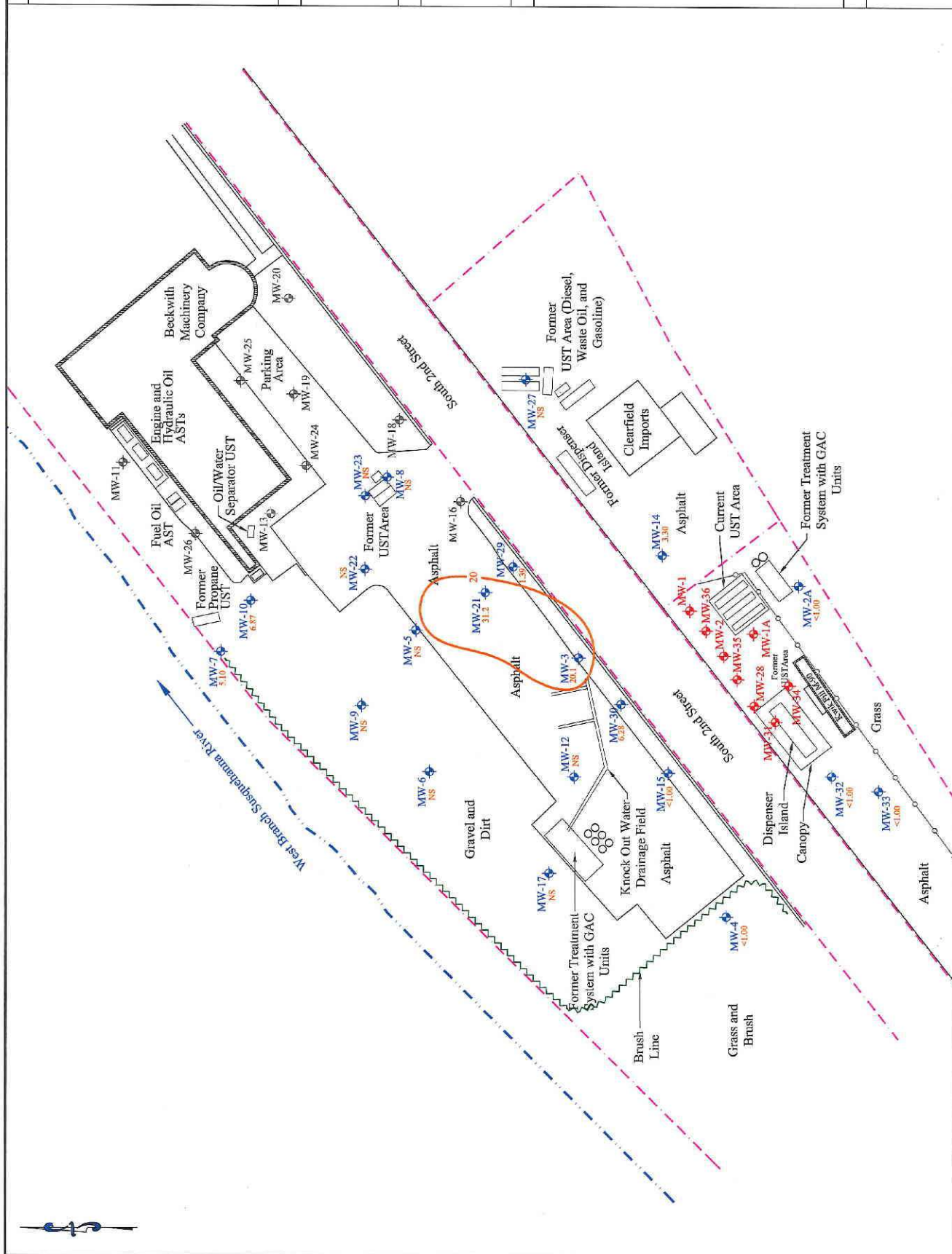
Legend:

- Groundwater Monitoring
- Well Location
- Abandoned Groundwater
- Monitoring Well
- Vapor/Groundwater
- Extraction Well
- Property Boundary
- Guard Rail
- MTBE Concentration (ug/L)
- 20
- MTBE Isoconcentration Contour Line

Scale (ft):

1" = 60'

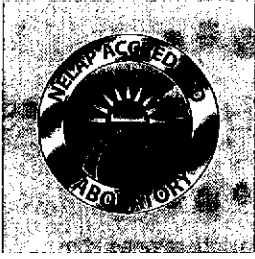
One Inch Equals Sixty Feet



APPENDIX

APPENDIX A

Groundwater Analytical Laboratory Reports



2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennssdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684



www.fairwaylaboratories.com

State Certifications: MD 275, WV 364

Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 09/17/13 09:32

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
MW-2A	3110076-01	Water	Grab	09/09/13 09:51	09/10/13 15:30
MW-3	3110076-02	Water	Grab	09/09/13 12:57	09/10/13 15:30
MW-4	3110076-03	Water	Grab	09/09/13 10:52	09/10/13 15:30
MW-7	3110076-04	Water	Grab	09/09/13 13:24	09/10/13 15:30
MW-10	3110076-05	Water	Grab	09/09/13 11:45	09/10/13 15:30
MW-14	3110076-06	Water	Grab	09/09/13 09:37	09/10/13 15:30
MW-15	3110076-07	Water	Grab	09/09/13 11:27	09/10/13 15:30
MW-21	3110076-08	Water	Grab	09/09/13 12:22	09/10/13 15:30
MW-29	3110076-09	Water	Grab	09/09/13 12:38	09/10/13 15:30
MW-30	3110076-10	Water	Grab	09/09/13 12:07	09/10/13 15:30
MW-32	3110076-11	Water	Grab	09/09/13 10:25	09/10/13 15:30
MW-33	3110076-12	Water	Grab	09/09/13 10:08	09/10/13 15:30

Fairway Laboratories, Inc.

Reviewed and Submitted by:

Michael P. Tyler
Laboratory Director

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennssdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684



www.fairwaylaboratories.com

State Certifications: MD 275, WV 364

Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none] **Reported:**
Collector: CLIENT 09/17/13 09:32
Number of Containers: 24

Client Sample ID: MW-2A

Date/Time Sampled: 09/09/13 09:51

Laboratory Sample ID: 3I10076-01 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
---------	--------	-----	----	-------	-------------------------	--------	--------------	------

Volatile Organic Compounds by EPA Method 8260B

Benzene	<1.00		1.00	ug/l	09/12/13 19:09	EPA 8260B	MTC	
Toluene	<1.00		1.00	ug/l	09/12/13 19:09	EPA 8260B	MTC	
Ethylbenzene	<1.00		1.00	ug/l	09/12/13 19:09	EPA 8260B	MTC	
Xylenes (total)	<2.00		2.00	ug/l	09/12/13 19:09	EPA 8260B	MTC	
Isopropylbenzene	<1.00		1.00	ug/l	09/12/13 19:09	EPA 8260B	MTC	
Methyl tert-butyl ether	<1.00		1.00	ug/l	09/12/13 19:09	EPA 8260B	MTC	
Naphthalene	<1.00		1.00	ug/l	09/12/13 19:09	EPA 8260B	MTC	VC
Surrogate: 4-Bromofluorobenzene	84.6 %		70-130		09/12/13 19:09	EPA 8260B	MTC	
Surrogate: 1,2-Dichloroethane-d4	97.6 %		70-130		09/12/13 19:09	EPA 8260B	MTC	
Surrogate: Fluorobenzene	95.2 %		70-130		09/12/13 19:09	EPA 8260B	MTC	

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State Certifications: MD 275, WV 364

Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none] Reported:
Collector: CLIENT 09/17/13 09:32
Number of Containers: 24

Client Sample ID: MW-3

Date/Time Sampled: 09/09/13 12:57

Laboratory Sample ID: 3I10076-02 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	09/12/13 19:46	EPA 8260B	MTC	
Toluene	<1.00		1.00	ug/l	09/12/13 19:46	EPA 8260B	MTC	
Ethylbenzene	<1.00		1.00	ug/l	09/12/13 19:46	EPA 8260B	MTC	
Xylenes (total)	<2.00		2.00	ug/l	09/12/13 19:46	EPA 8260B	MTC	
Isopropylbenzene	<1.00		1.00	ug/l	09/12/13 19:46	EPA 8260B	MTC	
Methyl tert-butyl ether	20.1		1.00	ug/l	09/12/13 19:46	EPA 8260B	MTC	
Naphthalene	<1.00		1.00	ug/l	09/12/13 19:46	EPA 8260B	MTC	VC
Surrogate: 4-Bromofluorobenzene	86.9 %		70-130		09/12/13 19:46	EPA 8260B	MTC	
Surrogate: 1,2-Dichloroethane-d4	97.5 %		70-130		09/12/13 19:46	EPA 8260B	MTC	
Surrogate: Fluorobenzene	93.4 %		70-130		09/12/13 19:46	EPA 8260B	MTC	

Fairway Laboratories, Inc.

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(570) 494-6380
PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 09/17/13 09:32

Client Sample ID: MW-4

Date/Time Sampled: 09/09/13 10:52

Laboratory Sample ID: 3110076-03 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	09/12/13 20:23	EPA 8260B	MTC	
Toluene	<1.00		1.00	ug/l	09/12/13 20:23	EPA 8260B	MTC	
Ethylbenzene	<1.00		1.00	ug/l	09/12/13 20:23	EPA 8260B	MTC	
Xylenes (total)	<2.00		2.00	ug/l	09/12/13 20:23	EPA 8260B	MTC	
Isopropylbenzene	<1.00		1.00	ug/l	09/12/13 20:23	EPA 8260B	MTC	
Methyl tert-butyl ether	<1.00		1.00	ug/l	09/12/13 20:23	EPA 8260B	MTC	
Naphthalene	<1.00		1.00	ug/l	09/12/13 20:23	EPA 8260B	MTC	VC
Surrogate: 4-Bromofluorobenzene	83.0 %		70-130		09/12/13 20:23	EPA 8260B	MTC	
Surrogate: 1,2-Dichloroethane-d4	95.9 %		70-130		09/12/13 20:23	EPA 8260B	MTC	
Surrogate: Fluorobenzene	96.9 %		70-130		09/12/13 20:23	EPA 8260B	MTC	

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Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none] Reported:
Collector: CLIENT 09/17/13 09:32
Number of Containers: 24

Client Sample ID: MW-7

Date/Time Sampled: 09/09/13 13:24

Laboratory Sample ID: 3110076-04 (Water/Grab)

Analyte	Result	MDL	RI	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Toluene	<1.00		1.00	ug/l	09/12/13 21:01	EPA 8260B	MTC	
Ethylbenzene	<1.00		1.00	ug/l	09/12/13 21:01	EPA 8260B	MTC	
Xylenes (total)	<2.00		2.00	ug/l	09/12/13 21:01	EPA 8260B	MTC	
Isopropylbenzene	2.75		1.00	ug/l	09/12/13 21:01	EPA 8260B	MTC	
Methyl tert-butyl ether	5.10		1.00	ug/l	09/12/13 21:01	EPA 8260B	MTC	
Naphthalene	<1.00		1.00	ug/l	09/12/13 21:01	EPA 8260B	MTC	VC
Surrogate: 4-Bromofluorobenzene	87.0 %		70-130		09/12/13 21:01	EPA 8260B	MTC	
Surrogate: 1,2-Dichloroethane-d4	93.8 %		70-130		09/12/13 21:01	EPA 8260B	MTC	
Surrogate: Fluorobenzene	95.2 %		70-130		09/12/13 21:01	EPA 8260B	MTC	

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Letterle & Associates
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Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 09/17/13 09:32

Client Sample ID: MW-10

Date/Time Sampled: 09/09/13 11:45

Laboratory Sample ID: 3I10076-05 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	09/13/13 15:23	EPA 8260B	mlf	
Toluene	<1.00		1.00	ug/l	09/13/13 15:23	EPA 8260B	mlf	
Ethylbenzene	<1.00		1.00	ug/l	09/13/13 15:23	EPA 8260B	mlf	
Xylenes (total)	<2.00		2.00	ug/l	09/13/13 15:23	EPA 8260B	mlf	
Isopropylbenzene	<1.00		1.00	ug/l	09/13/13 15:23	EPA 8260B	mlf	
Methyl tert-butyl ether	6.87		1.00	ug/l	09/13/13 15:23	EPA 8260B	mlf	
Naphthalene	<1.00		1.00	ug/l	09/13/13 15:23	EPA 8260B	mlf	
Surrogate: 4-Bromofluorobenzene	81.9 %		70-130		09/13/13 15:23	EPA 8260B	mlf	
Surrogate: 1,2-Dichloroethane-d4	95.2 %		70-130		09/13/13 15:23	EPA 8260B	mlf	
Surrogate: Fluorobenzene	93.2 %		70-130		09/13/13 15:23	EPA 8260B	mlf	

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Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 09/17/13 09:32

Client Sample ID: MW-14

Date/Time Sampled: 09/09/13 09:37

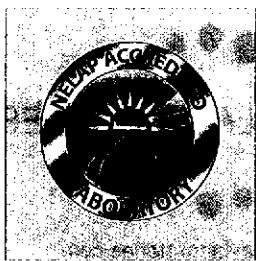
Laboratory Sample ID: 3I10076-06 (Water/Grab)

Analyte	Result	MDL	RI	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	09/13/13 16:01	EPA 8260B	mlf	
Toluene	<1.00		1.00	ug/l	09/13/13 16:01	EPA 8260B	mlf	
Ethylbenzene	<1.00		1.00	ug/l	09/13/13 16:01	EPA 8260B	mlf	
Xylenes (total)	<2.00		2.00	ug/l	09/13/13 16:01	EPA 8260B	mlf	
Isopropylbenzene	<1.00		1.00	ug/l	09/13/13 16:01	EPA 8260B	mlf	
Methyl tert-butyl ether	3.30		1.00	ug/l	09/13/13 16:01	EPA 8260B	mlf	
Naphthalene	<1.00		1.00	ug/l	09/13/13 16:01	EPA 8260B	mlf	
Surrogate: 4-Bromofluorobenzene	83.4 %		70-130		09/13/13 16:01	EPA 8260B	mlf	
Surrogate: 1,2-Dichloroethane-d4	93.9 %		70-130		09/13/13 16:01	EPA 8260B	mlf	
Surrogate: Fluorobenzene	96.8 %		70-130		09/13/13 16:01	EPA 8260B	mlf	

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Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 09/17/13 09:32

Client Sample ID: MW-15

Date/Time Sampled: 09/09/13 11:27

Laboratory Sample ID: 3110076-07 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B

Benzene	<1.00		1.00	ug/l	09/13/13 16:39	EPA 8260B	mlf	
Toluene	<1.00		1.00	ug/l	09/13/13 16:39	EPA 8260B	mlf	
Ethylbenzene	<1.00		1.00	ug/l	09/13/13 16:39	EPA 8260B	mlf	
Xylenes (total)	<2.00		2.00	ug/l	09/13/13 16:39	EPA 8260B	mlf	
Isopropylbenzene	<1.00		1.00	ug/l	09/13/13 16:39	EPA 8260B	mlf	
Methyl tert-butyl ether	<1.00		1.00	ug/l	09/13/13 16:39	EPA 8260B	mlf	
Naphthalene	<1.00		1.00	ug/l	09/13/13 16:39	EPA 8260B	mlf	
Surrogate: 4-Bromofluorobenzene	82.1 %		70-130		09/13/13 16:39	EPA 8260B	mlf	
Surrogate: 1,2-Dichloroethane-d4	97.7 %		70-130		09/13/13 16:39	EPA 8260B	mlf	
Surrogate: Fluorobenzene	96.7 %		70-130		09/13/13 16:39	EPA 8260B	mlf	

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Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 09/17/13 09:32

Client Sample ID: MW-21

Date/Time Sampled: 09/09/13 12:22

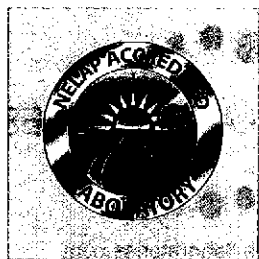
Laboratory Sample ID: 3110076-08 (Water/Grab)

Analyte	Result	MDL	RI	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	09/13/13 17:25	EPA 8260B	mlf	
Toluene	<1.00		1.00	ug/l	09/13/13 17:25	EPA 8260B	mlf	
Ethylbenzene	<1.00		1.00	ug/l	09/13/13 17:25	EPA 8260B	mlf	
Xylenes (total)	<2.00		2.00	ug/l	09/13/13 17:25	EPA 8260B	mlf	
Isopropylbenzene	<1.00		1.00	ug/l	09/13/13 17:25	EPA 8260B	mlf	
Methyl tert-butyl ether	31.2		1.00	ug/l	09/13/13 17:25	EPA 8260B	mlf	
Naphthalene	<1.00		1.00	ug/l	09/13/13 17:25	EPA 8260B	mlf	
Surrogate: 4-Bromofluorobenzene	80.6 %		70-130		09/13/13 17:25	EPA 8260B	mlf	
Surrogate: 1,2-Dichloroethane-d4	92.3 %		70-130		09/13/13 17:25	EPA 8260B	mlf	
Surrogate: Fluorobenzene	91.7 %		70-130		09/13/13 17:25	EPA 8260B	mlf	

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Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none] **Reported:**
Collector: CLIENT 09/17/13 09:32
Number of Containers: 24

Client Sample ID: MW-29

Date/Time Sampled: 09/09/13 12:38

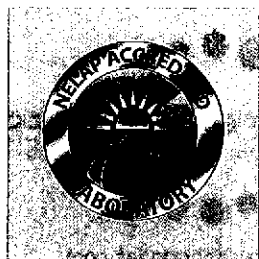
Laboratory Sample ID: 3I10076-09 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	09/13/13 15:18	EPA 8260B	MTC	
Toluene	<1.00		1.00	ug/l	09/13/13 15:18	EPA 8260B	MTC	
Ethylbenzene	<1.00		1.00	ug/l	09/13/13 15:18	EPA 8260B	MTC	
Xylenes (total)	<2.00		2.00	ug/l	09/13/13 15:18	EPA 8260B	MTC	
Isopropylbenzene	<1.00		1.00	ug/l	09/13/13 15:18	EPA 8260B	MTC	
Methyl tert-butyl ether	1.39		1.00	ug/l	09/13/13 15:18	EPA 8260B	MTC	
Naphthalene	<1.00		1.00	ug/l	09/13/13 15:18	EPA 8260B	MTC	
Surrogate: 4-Bromofluorobenzene	98.6 %		70-130		09/13/13 15:18	EPA 8260B	MTC	
Surrogate: 1,2-Dichloroethane-d4	101 %		70-130		09/13/13 15:18	EPA 8260B	MTC	
Surrogate: Fluorobenzene	95.3 %		70-130		09/13/13 15:18	EPA 8260B	MTC	

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Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none] **Reported:**
Collector: CLIENT 09/17/13 09:32
Number of Containers: 24

Client Sample ID: MW-30

Date/Time Sampled: 09/09/13 12:07

Laboratory Sample ID: 3I10076-10 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	09/12/13 19:51	EPA 8260B	MTC	
Toluene	<1.00		1.00	ug/l	09/12/13 19:51	EPA 8260B	MTC	
Ethylbenzene	<1.00		1.00	ug/l	09/12/13 19:51	EPA 8260B	MTC	
Xylenes (total)	<2.00		2.00	ug/l	09/12/13 19:51	EPA 8260B	MTC	
Isopropylbenzene	<1.00		1.00	ug/l	09/12/13 19:51	EPA 8260B	MTC	
Methyl tert-butyl ether	6.28		1.00	ug/l	09/12/13 19:51	EPA 8260B	MTC	
Naphthalene	<1.00		1.00	ug/l	09/12/13 19:51	EPA 8260B	MTC	
Surrogate: 4-Bromofluorobenzene	92.1 %		70-130		09/12/13 19:51	EPA 8260B	MTC	
Surrogate: 1,2-Dichloroethane-d4	103 %		70-130		09/12/13 19:51	EPA 8260B	MTC	
Surrogate: Fluorobenzene	103 %		70-130		09/12/13 19:51	EPA 8260B	MTC	

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Project Manager: Jed Hill

Project: KWIK FILJ.-CLEARFIELD
Project Number: [none] Reported:
Collector: CLIENT 09/17/13 09:32
Number of Containers: 24

Client Sample ID: MW-32

Date/Time Sampled: 09/09/13 10:25

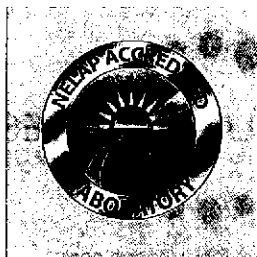
Laboratory Sample ID: 3I10076-11 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	09/12/13 20:29	EPA 8260B	MTC	
Toluene	<1.00		1.00	ug/l	09/12/13 20:29	EPA 8260B	MTC	
Ethylbenzene	<1.00		1.00	ug/l	09/12/13 20:29	EPA 8260B	MTC	
Xylenes (total)	<2.00		2.00	ug/l	09/12/13 20:29	EPA 8260B	MTC	
Isopropylbenzene	<1.00		1.00	ug/l	09/12/13 20:29	EPA 8260B	MTC	
Methyl tert-butyl ether	<1.00		1.00	ug/l	09/12/13 20:29	EPA 8260B	MTC	
Naphthalene	<1.00		1.00	ug/l	09/12/13 20:29	EPA 8260B	MTC	
Surrogate: 4-Bromofluorobenzene	93.6 %		70-130		09/12/13 20:29	EPA 8260B	MTC	
Surrogate: 1,2-Dichloroethane-d4	104 %		70-130		09/12/13 20:29	EPA 8260B	MTC	
Surrogate: Fluorobenzene	101 %		70-130		09/12/13 20:29	EPA 8260B	MTC	

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629 East Rolling Ridge Drive
Belleville PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 09/17/13 09:32

Client Sample ID: MW-33

Date/Time Sampled: 09/09/13 10:08

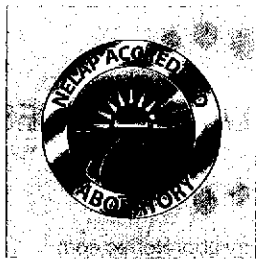
Laboratory Sample ID: 3110076-12 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	09/12/13 21:06	EPA 8260B	MTC	
Toluene	<1.00		1.00	ug/l	09/12/13 21:06	EPA 8260B	MTC	
Ethylbenzene	<1.00		1.00	ug/l	09/12/13 21:06	EPA 8260B	MTC	
Xylenes (total)	<2.00		2.00	ug/l	09/12/13 21:06	EPA 8260B	MTC	
Isopropylbenzene	<1.00		1.00	ug/l	09/12/13 21:06	EPA 8260B	MTC	
Methyl tert-butyl ether	<1.00		1.00	ug/l	09/12/13 21:06	EPA 8260B	MTC	
Naphthalene	<1.00		1.00	ug/l	09/12/13 21:06	EPA 8260B	MTC	
Surrogate: 4-Bromofluorobenzene	92.8 %		70-130		09/12/13 21:06	EPA 8260B	MTC	
Surrogate: 1,2-Dichloroethane-d4	102 %		70-130		09/12/13 21:06	EPA 8260B	MTC	
Surrogate: Fluorobenzene	98.8 %		70-130		09/12/13 21:06	EPA 8260B	MTC	

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Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none] **Reported:**
Collector: CLIENT 09/17/13 09:32
Number of Containers: 24

Notes

VC Check standard was outside the QC range. Data accepted based on acceptable LCS.

Definitions

Surrogate values must be within the indicated range, otherwise the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory.

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

* P indicates analysis performed by Fairway Laboratories, Inc. at the Pennsdale location. This location is PaDEP Chapter 252 certified.

< Represents "less than" - indicates that the result was less than the reporting limit.

MDL Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the MDL are considered estimated values.

RL Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.

[CALC] Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

Please print. See back of COC for instructions/terms and conditions.

FAIRWAY LABORATORIES
Environmental Laboratory
Ph

89 Kristi Rd
Penssdale, PA 17756
Phone: (570) 494-6380

Page 1 of 2

000#

31/00762/

LAB USE ONLY

FedEx	USPS
UPS	Other

Tracking

Bottle Type/Comments

Client Name: <u>Lethbridge + Associates Inc</u>										Reportable to PADEP? Yes ☐										LAB USE ONLY																			
Address: <u>629 E. Collins Ave. N</u>																																							
City/State/Zip: <u>Bellefontaine, OH 45823</u>																																							
Contact: <u>Sue Hall</u>										Received on ice? Y N																													
Phone #: <u>814-355-2241</u>										Sample Temp: _____										PWSSID # _____																			
Fax #: <u>-2410</u>																																							
Project Name: <u>Clearfield Knit Fill</u>																																							
Quote/PO #: _____																																							
TAT: Normal ☒ Rush ☐																																							
Rush TAT subject to pre-approval and surcharge																																							
Date Required: ____ / ____ / ____																																							
Sample Description/Location										GRAB Composite										Bottle Type/Comments																			
MW-2A										X										1998 Onl. Gas																			
MW-3										X										1998 Onl. Gas Minus Benzene																			
MW-7										X																													
MW-10										X																													
MW-14										X																													
MW-15										X																													
MW-21										X																													
MW-29										X																													
MW-30										X																													
MW-32										X																													
Sampled by: <u>MW</u>										Date: <u>9-9</u> Time: <u>1530</u>										Received by: <u>Ry Stebbins</u> Date: <u>9-21-13</u> Time: <u>0915</u>										Remarks									
Relinquished by: <u>Ry Stebbins</u>										Date: <u>9/13/13</u> Time: <u>1530</u>										Received by: <u>[Signature]</u> Date: <u>9/11/10</u> Time: <u>1530</u>																			
Relinquished by:										Date: _____ Time: _____										Received by:										Date: _____ Time: _____									
Relinquished by:										Date: _____ Time: _____										Received by:										Date: _____ Time: _____									

By relinquishing my sample to Fairway Laboratories, Inc., I hereby agree to the terms and conditions printed on the reverse.

White Original - FLI File Canary - FLI Copy Pink - Customer Receipt Copy

Please print. See back of COC for instructions/terms and conditions.

COC#

33

White Original - FLI File Canary - FLI Copy Pink - Customer Receipt Copy

Chain of Custody Receiving Document

Receiver: ALPage of Date/Time of this check: 9/10/13 1600 Sample Temperature 06 Client Letter + Assn Lab # 3I10076-03Received at Lab on ICE? Y ☐ * Sample Temperature when arrived at Lab: 06 Acceptable? Y ☐ * or In cool down process? ☐ *Custody Seals? Y Intact? YCOCLabels on bottles agree? Y ☐ * Correct containers for all the analysis requested? Y ☐ * Matrix: Date

COC #	Number and Type of BOTTLES									Comments
	Poly Non-Pres.	Poly H2SO4	Poly HNO3	Amber H2SO4	Amber Non-Pres.	Poly NaOH	VOCs (Head space?)	Other ☐ *	Properly Preserved ☐ *	
1							one			
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										

* DEVIATION PRESENT: ☐ No Ice () ☐ Not at Proper Temperature () ☐ Wrong Container () ☐ Missing Information: ()	CLIENT CALLED: YES () By Whom: _____ Date: _____	CLIENT RESPONSE: Proceed with analysis; quality data () Will Resample () Provided Information () No Response; Proceed and qualified () Client Contact: _____ Date: _____
---	---	---

* Comments: _____

Chain of Custody Receiving Document

This is a date sensitive document and may not be current after September 6, 2013.



629 East Rolling Ridge Drive, Bellefonte, PA 16823
P: 814.355.2241 F: 814.355.2410 www.letterleassociates.com

January 27, 2014

Mr. Scott Ferguson, P.G.
Pennsylvania Department of Environmental Protection
Environmental Cleanup Program
208 West Third Street, Suite 101
Williamsport, PA 17701-6448

**Re: 4th Quarter 2013 Remedial Action Progress Report
United Refining Company of Pennsylvania
Kwik Fill M-90
1322 South 2nd Street
Lawrence Township, Clearfield County, Clearfield, Pennsylvania
PADEP Facility ID #17-14821/PAUSTIF Claim #2008-0034(M)**

Dear Mr. Ferguson:

Letterle & Associates, LLC (Letterle) is pleased to submit this Remedial Action Progress Report (RAPR) for the above referenced facility. This RAPR presents the groundwater monitoring data from the fourth quarter of 2013 and also includes a description of remedial activities completed from October 1, 2013 through December 31, 2013 (fourth quarter of 2013).

If you have any questions or comments regarding this report, please feel free to contact me at (814) 355-2241 or jhill@letterleassociates.com.

Sincerely,



Jed Hill
Project Manager

Enclosure

cc: Mr. Scott C. Wonsettler, P.G., United Refining Company of Pennsylvania (with CD)
Mr. Gerald Hawk, ICF International (via email)
Mr. Robert McDonald, Arch Street Management
L:\Operations\Projects\Project Files\Bellefonte\United Refining\M-90 Clearfield #277\Reports\2013\Clearfield -
4th Qtr 2013 RAPR.doc

REMEDIAL ACTION PROGRESS REPORT
4th Quarter 2013

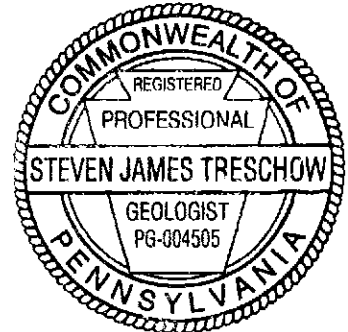
PADEP Facility ID #17-14821
PAUSTIF Claim #2008-0034(M)
Kwik Fill M-90
1322 South 2nd Street
Lawrence Township, Clearfield County
Clearfield, Pennsylvania 16830

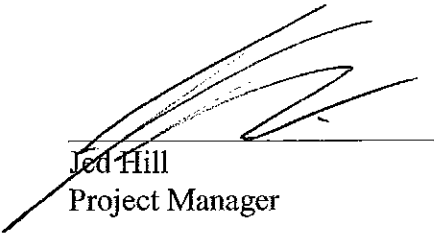
Prepared for:

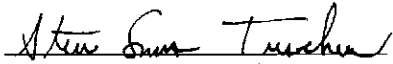
United Refining Company of Pennsylvania
15 Bradley Street
P.O. Box 688
Warren, Pennsylvania 16365

Prepared by:

Letterle & Associates, LLC
629 East Rolling Ridge Drive
Bellefonte, Pennsylvania 16823




Jed Hill
Project Manager


Steven James Treschow, P.G.
Professional Geologist

January 2014

"By affixing my seal to this document, I am certifying that the information is true and correct to the best of my knowledge. I further certify I am licensed to practice in the Commonwealth of Pennsylvania and that it is within my professional expertise to verify the correctness of the information."

Steven James Treschow, P.G. (signed and sealed this day (January 27, 2014))

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Figure 2 – Site Layout Map

Figure 3 – Groundwater Potentiometric Surface Contour Map

APPENDIX

Appendix A – Groundwater Analytical Laboratory Reports

GENERAL INFORMATION

Client Contact:	Scott Wonsettler, P.G.
Letterle Project Manager:	Jed Hill
Regulatory Contact:	Scott Ferguson, P.G.
PADEP Facility ID #:	17-14821
PAUSTIF Claim #:	2008-0034 (M)
Number of Wells:	14 monitoring wells (on-site wells MW-2A, MW-32, and MW-33 and off-site monitoring wells MW-3, MW-4, MW-7, MW-9, MW-10, MW-14, MW-15, MW-17, MW-21, MW-29, and MW-30). 8 remediation system extraction wells (MW-1, MW-1A, MW-2, MW-28, MW-31, MW-34, MW-35, and MW-36).

Wells Containing LNAPL: 0

Letterle & Associates, LLC (Letterle) has been contracted by United Refining Company (United) of Pennsylvania (PA) to perform remedial activities at the Kwik Fill M-90 facility located at 1322 South 2nd Street in Lawrence Township, Clearfield County, Clearfield, PA (the site).

The site location is depicted on the 7.5-minute United States Geological Survey (USGS) Topographic Quadrangles of Clearfield and Glen Richey, PA presented as **Figure 1**. The site exists at an approximate elevation of 1,045 feet above mean sea level (ft-amsl). A more detailed site layout map, which fully depicts the site area, is presented as **Figure 2**.

This Remedial Action Progress Report (RAPR) includes a description of the on-going remedial action activities and presents the groundwater monitoring data obtained at the site during the fourth quarter of 2013.

SITE HISTORY/PROJECT SUMMARY

The site is currently an active retail fueling (gasoline and diesel) station, which has two, 10,000-gallon and one, 8,000-gallon steel underground storage tanks (USTs). The two 10,000-gallon USTs were installed in 1969 and the 8,000-gallon UST was installed in 1974. One 10,000-gallon UST and one 8,000-gallon contain unleaded gasoline and the remaining 10,000-gallon UST (in the middle) contains diesel fuel.

On June 15, 1995, the 10,000-gallon unleaded gasoline UST (#002) failed a tightness test. The PA Department of Environmental Protection (PADEP) was notified of the failure and subsequently, Mountain Research, Inc. (MRI) was retained by United in May 1996 to perform site characterization activities.

From June 1996 through October 1997, four soil boring/monitoring wells, MW-1, MW-1A, MW-2, and MW-2A, were installed on the site and five monitoring wells, MW-3 through MW-7, were installed off-site, on the Beckwith Machinery Company (BMC) property. Quarterly groundwater sampling began in February 1996. Groundwater analytical results for the monitoring wells indicated unleaded gasoline constituents at concentrations above their respective Medium Specific

Concentration (MSC) values. In June 1997, soil/groundwater samples were collected on-site and in the right-of-way of South 2nd Street. The results of the investigation indicated several soil/groundwater samples contained unleaded gasoline constituents at concentrations above their respective MSC values.

MRI prepared a Remedial Action Plan (RAP) in July 1999 proposing a Matrix Trailer Mounted Oxygen Injection System. The PADEP approved the RAP in January 2000. In February 2000, system installation was initiated. The system consisted of eight oxygen injection points and a small trailer to house any ancillary equipment. On April 12, 2000, the system was activated. The system was operational from April 12, 2000 until the first quarter of 2005. From February 1996 through first quarter of 2005, MRI performed quarterly groundwater sampling from the monitoring well network.

From early 2005 through mid-2006, additional site investigations were initiated at the site to re-evaluate the remedial approach. In October 2006, a Supplemental Site Characterization Report (SCR) and RAP Addendum was submitted to the PADEP. The Supplemental SCR/RAP Addendum identified two separate source areas, one on-site and one off-site at the BMC property. The on-site source area (Source Area #1) was found to have impacted groundwater beneath the site and downgradient on the former BMC property. Impacted groundwater from Source Area #2 was found to be related to an off-site release and not associated with the Kwik Fill M-90 facility. The Supplemental SCR/RAP Addendum strategy included remediating groundwater via an air sparge/soil vapor extraction (AS/SVE) system. An additional RAP Addendum was submitted in December 2006. The PADEP approved the Supplemental SCR/RAP Addendum and additional RAP Addendum in January 2007, with modifications. An AS/SVE system was installed at the site and operated from November 2007 through the fourth quarter of 2008.

A second release of unleaded gasoline occurred at the site, and was reported in February 2008. Additional site characterization activities were initiated and an Additional SCR and RAP Addendum was submitted in June 2011. The June 2011 Additional SCR/RAP Addendum included the selection of a dual phase extraction (DPE)/SVE system to address on-site soil and groundwater and enhanced in-situ bioremediation (EB) to address off-site groundwater. The June RAP Addendum was approved by the PADEP in July 2011.

REMEDIAL ACTION PLAN IMPLEMENTATION

The PA Underground Storage Tank Indemnification Fund (PAUSTIF) and their administrator, ICF International (ICFI), put the site remedial work out for competitive bid. The proposed scope of work was based upon the July 2011 approved RAP. Letterle was awarded the bid in March of 2012 and began implementation of the approved RAP.

Remedial actions completed in previous quarters include off-site well abandonment, DPE well installation, remedial system trenching and piping, remedial system installation, and the application of a chemical oxidant as part of an enhanced bioremediation feasibility study.

Remediation System

The remedial system trailer was constructed and mobbed to the site during the third quarter of 2012 and began operation on October 30, 2012. The principal DPE system components housed within the trailer include:

- Two claw pumps;
- One air compressor;
- One air/water separator (AWS) tank;
- One equalization tank;
- Two transfer pumps and level controls;
- Six pneumatic groundwater pumps;
- Four 400-pound liquid-phase granular activated carbon (GAC) vessels (high pressure units);
- Two 600-pound vapor-phase GAC vessels; and,
- Control panel for the claw pumps, air compressor, and the transfer pumps (including all system interlocks).

The recovered groundwater is treated and discharged to the sanitary sewer under an issued permit from the Clearfield Municipal Authority (CMA). Under the terms of the permit, analytical reports and totalizer readings are reported in Discharge Monitoring Reports (DMR) on a monthly basis to the CMA. Petroleum impacted soil and groundwater remediation systems have been listed as exempt from the Plan Approval/Operating permit requirements by PADEP, Division of Air Quality. The remediation system is operated under the exemption requirements.

QUARTERLY SITE ACTIVITIES COMPLETED – 4TH QUARTER 2013

Remediation System Operating Summary

Start Date:	October 30, 2012
4 th Quarter 2013 System Uptime:	86%
4 th Quarter 2013 Total Gallons Treated:	195,199 gallons
Total Gallons Treated To Date:	879,435 gallons

System Sampling Dates

Groundwater Influent, Midfluent, Effluent:	October 7, 2013
	November 4, 2013
	December 13, 2013

Groundwater Effluent:	October 7, 2013
	October 23, 2013
	November 4, 2013
	November 27, 2013
	December 13, 2013
	December 30, 2013
Vapor:	October 7, 2013

Groundwater Gauging/Sampling

The monitoring well network is gauged and sampled on a quarterly basis to analyze the effectiveness of the remediation system and to monitor groundwater impacts/movement at the site. Approximately one week prior to groundwater gauging/sampling, the remediation system was deactivated to allow for static groundwater conditions.

Groundwater Gauging

Letterle completed a quarterly groundwater gauging event on December 2, 2013. A total of 15 wells were gauged:

- *15 wells in the shallow overburden groundwater monitoring well network:* MW-2A, MW-3, MW-4, MW-5, MW-7, MW-10, MW-14, MW-15, MW-21, MW-22, MW-23, MW-29, MW-30, MW-32, and MW-33.

Gauging Methodology

Depth-to-groundwater was measured in each well to determine groundwater elevations and interpret the predominant direction of groundwater movement. Depth-to-groundwater measurements were recorded using an electronic water level indicator capable of measuring to within 0.01 feet of accuracy. The electronic water level indicator was decontaminated between wells.

Gauging Results

Groundwater elevation data collected during the fourth quarter of 2013 groundwater gauging event indicates the following:

- Groundwater elevations in shallow overburden groundwater ranged from 1,134.93 feet in MW-7 to 1,145.39 feet in MW-2A;
- The predominant direction of movement in shallow overburden groundwater is interpreted to be to the northwest (towards the West Branch Susquehanna River); and,
- Using the December 2, 2013 groundwater elevation data, a groundwater hydraulic gradient of 0.027 feet per foot (ft/ft) between groundwater monitoring wells MW-2A and MW-7 was calculated.

Table 1 summarizes the historical groundwater gauging data and also presents the resultant groundwater gauging results from the fourth quarter of 2013 groundwater gauging event. A groundwater potentiometric surface contour map for the December 2, 2013 groundwater gauging event is presented as **Figure 3**.

Groundwater Sampling

Letterle completed a quarterly groundwater sampling event on December 2, 2013. A total of 14 wells were sampled:

- *14 wells in the shallow overburden groundwater monitoring well network:* MW-2A, MW-3, MW-4, MW-7, MW-9, MW-10, MW-14, MW-15, MW-17, MW-21, MW-29, MW-30, MW-32, and MW-33.

Sampling Methodology

Subsequent to gauging the groundwater level in each well, low-flow sampling was initiated. For wells shallower than 20 feet, a combination of polyethylene and silicon tubing are utilized in conjunction with a peristaltic pump. The peristaltic pump is then utilized to purge the well at a low flow rate of <0.5 liters (500 milliliters) per minute. For wells deeper than 20 feet, polyethylene tubing is utilized in conjunction with a two-inch Mini-Monsoon submersible pump to purge the well at a low flow rate of <0.5 liters (500 milliliters) per minute. The intake of each respective pump was placed approximately three feet below the measured water level. In general, each well is purged at a rate of 100-400 milliliters per minute to avoid creating drawdown. If a well was dewatered, a bailer was utilized to collect the sample after the well recovered.

The purged groundwater is then passed through a flow-through cell that measures dissolved oxygen (DO), pH, total dissolved solids (TDS), temperature, specific conductivity, and oxidation-reduction potential (ORP). Measurements of these parameters were recorded every 5 minutes. These measurements were recorded until three consecutive readings stabilized to within 10% of one another. Purging was considered to be complete upon parameter stabilization for three consecutive readings. Once stabilization was documented, the flow-through cell was disconnected and the sample was immediately collected from the discharge line.

The pump was decontaminated between each sampled well. The purged groundwater was filtered through a mobile GAC vessel and then discharged to the ground surface.

The samples were sealed in pre-preserved laboratory supplied glassware, labeled, custody sealed, placed in an ice-filled cooler, and returned to Letterle's office. The samples were stored in a refrigerator (at 4 °C) until they were collected by the laboratory. The samples were submitted to Fairway Laboratories of Altoona, PA, for analysis of the pre-March 15, 2008 PADEP Land Recycling Program Technical Guidance Manual, Table IV-9 - Short List of Petroleum Products, specifically unleaded gasoline constituents (PADEP unleaded gasoline short list constituents) via United States Environmental Protection Agency (USEPA) Method 8260B and were accompanied by Chain-of-Custody documentation.

Sampling Results

The groundwater analytical results from the groundwater sampling event conducted on December 2, 2013 indicated no exceedances of the applicable PADEP Used-Aquifer TDS $\leq 2,500$ milligrams per liter (mg/L) Residential Statewide Health Standard (UARSHS) MSCs.

Table 1 summarizes the historical groundwater analytical data and also presents the resultant groundwater analytical results from the fourth quarter of 2013 groundwater sampling event. Groundwater analytical laboratory reports are included in **Appendix A**.

Groundwater samples were not collected from MW-9 and MW-17 due to the inability to locate the respective monitoring wells.

PLANNED ACTIVITY

The following activities are currently planned for the 1st Quarter of 2014:

- Remedial system operation and maintenance (including permit-required sampling);
- Quarterly groundwater gauging and sampling; and,
- Quarterly reporting.

TABLE

Table 1
Historic Groundwater Gauging and Analytical Data
United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

Piezometer/Well	Date	Compound							Depth to Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Cumene	Naphthalene		
PADEP UARSHS MSCs		20	5	1,000	700	10,000	840	100		
MW-1	3/17/2010	10.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.26	1147.28
	6/8/2010	11.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.57	1146.97
	8/30/2010	18.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.78	1144.76
	11/17/2010	13.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.40	1146.14
	3/1/2011	6.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.78	1147.76
	5/31/2011	13.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.75	1145.79
	8/24/2011	12.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.12	1145.42
	3/28/2012	14.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.12	1147.42
Monitoring well converted to remedial extraction well.										
MW-1A	3/17/2010	7.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.57	1147.20
	6/8/2010	6.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.86	1146.91
	8/30/2010	16.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.32	1144.45
	11/17/2010	10.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.88	1145.89
	3/1/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.04	1147.73
	5/31/2011	4.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.29	1145.48
	8/24/2011	8.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.65	1145.12
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.55	1147.22
Monitoring well converted to remedial extraction well.										
MW-2	3/17/2010	20.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.07	1146.91
	6/8/2010	20.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.36	1146.62
	8/30/2010	20.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.61	1144.37
	11/17/2010	20.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.36	1145.62
	3/1/2011	11.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.73	1147.25
	5/31/2011	10.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.68	1145.30
	8/24/2011	14.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.90	1145.08
	3/28/2012	11.5	1.1	<1.00	<1.00	<3.00	<1.00	<2.00	2.85	1147.13
Monitoring well converted to remedial extraction well.										
MW-2A	3/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.21	1147.66
	6/8/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.27	1147.60
	8/30/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.23	1145.64
	11/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.25	1146.62
	3/1/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.91	1147.96
	5/31/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.16	1146.71
	8/24/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.52	1146.35
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.45	1148.42
	6/25/2012	5.22	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.51	1144.36
	9/6/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.21	1145.66
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.12	1144.75
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.30	1144.57
	5/28/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.00	1145.87
	9/9/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.06	1144.81
	12/2/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.48	1145.39
MW-3	3/18/2010	43.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.43	1143.80
	6/7/2010	44.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.40	1143.83
	8/31/2010	41.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.92	1142.31
	11/17/2010	40.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.48	1142.75
	3/2/2011	33.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.81	1144.42
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	32.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.38	1142.85
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	1.40	1144.83
	6/25/2012	21.9	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.17	1143.06
	9/6/2012	27.5	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.17	1142.06
	12/14/2012	18.4	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.63	1140.60
	3/5/2013	11.8	13.4	<1.00	<1.00	<2.00	<1.00	<1.00	5.36	1140.87
	5/28/2013	12.6	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.40	1141.83
	9/9/2013	20.1	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.42	1140.81
	12/2/2013	17.2	<1.00	<1.00	1.55	<2.00	1.65	<1.00	5.45	1140.78
MW-4	3/18/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.97	1144.15
	6/7/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.17	1142.95
	8/31/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.44	1140.68
	11/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.26	1141.86
	3/2/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.92	1144.20
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.24	1141.88
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.20	1143.92
	6/25/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.74	1142.38
	9/6/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.11	1141.01
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.40	1141.72
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.58	1142.54
	5/28/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.61	1141.51
	9/9/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.00	1140.12
	12/2/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.40	1140.72

Table 1
Historic Groundwater Gauging and Analytical Data
United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

Piezometer/Well	Date	Compound							Depth to Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethyl benzene	Xylenes (Total)	Creosote	Naphthalene		
PADEP UARSHS MSCs		20	5	1,000	700	10,000	840	100		
MW-5	3/17/2010	5.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.16	1143.51
	6/7/2010	4.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.53	1143.14
	8/31/2010	3.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.18	1141.49
	11/17/2010	2.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.80	1141.87
	3/1/2011	1.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.43	1144.24
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	5.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.64	1142.03
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	1.04	1143.63
	6/25/2012	Well not part of quarterly sampling program.							2.25	1142.42
	9/6/2012								NG	NG
	12/14/2012								NG	NG
	3/5/2013								NG	NG
	5/28/2013								3.00	1141.67
	9/9/2013								4.17	1140.50
	12/2/2013								4.01	1140.66
MW-6	3/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/7/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/31/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	11/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/1/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	Well could not be located. Well not part of quarterly sampling program.								
	9/6/2012									
	12/14/2012									
	3/5/2013									
	5/28/2013									
	9/9/2013									
	12/2/2013									
MW-7	3/18/2010	3.6	59.5	11.5	44.4	54.7	25.6	44.5	2.60	1139.41
	6/7/2010	3.1	57.7	12.9	55.2	60.3	35.4	61.3	5.77	1136.24
	8/31/2010	6.8	104	14.4	47.9	49.2	29.3	38.7	7.92	1134.09
	11/17/2010	7.2	97.9	12.5	46.5	47.4	27.3	57.7	6.85	1135.16
	3/2/2011	4.1	51.9	8.8	39.3	27.7	22.4	20.9	3.93	1138.08
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	7.7	73.8	10.2	25.8	28.5	31.3	40.7	7.21	1134.80
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	7.15	1134.86
	6/25/2012	3.84	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	7.49	1134.52
	9/6/2012	10.6	NA	<2.00	<2.00	<4.00	<2.00	<2.00	7.76	1134.25
	12/14/2012	<2.00	NA	14.8	89.5	43.6	29.0	65.4	5.80	1136.21
	3/5/2013	<1.00	NA	2.29	5.67	5.16	2.25	3.28	6.55	1135.46
	5/28/2013	<1.00	NA	<1.00	1.07	<2.00	1.89	<1.00	6.30	1135.71
	9/9/2013	5.10	NA	<1.00	<1.00	<2.00	2.75	<1.00	7.80	1134.21
	12/2/2013	2.97	NA	9.81	29.3	17.1	17.0	38.6	7.08	1134.93
MW-9	3/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/8/2010	32.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.00	1141.97
	8/30/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	11/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/1/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	Well could not be located.								
	9/6/2012									
	12/14/2012									
	3/5/2013									
	5/28/2013									
	9/9/2013									
	12/2/2013									
MW-10	3/17/2010	8.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.64	1140.76
	6/7/2010	8.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.78	1141.62
	8/31/2010	8.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.08	1140.32
	11/17/2010	7.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.50	1139.90
	3/2/2011	7.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.14	1142.26
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	7.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.42	1140.98
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	1.42	1140.98
	6/25/2012	5.01	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	1.23	1141.17
	9/6/2012	6.16	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.10	1140.30
	12/14/2012	5.56	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.08	1140.32
	3/5/2013	5.80	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	1.81	1140.59
	5/28/2013	4.92	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	1.90	1140.50
	9/9/2013	6.87	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.70	1139.70
	12/2/2013	5.58	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.34	1140.06

Table 1
Historic Groundwater Gauging and Analytical Data
United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

Piezometer/Well	Date	Compound							Depth-to-Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Cumene	Naphthalene		
PADEP UARSHS MSCs		20	5	1,000	700	10,000	840	100		
MW-12	3/17/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/7/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/31/2010	NS	NS	NS	NS	NS	NS	NS	NG	NG
	11/17/2010	30.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.28	1142.28
	3/2/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	Well not part of quarterly sampling program.							2.83	1142.73
	9/6/2012								NG	NG
	12/14/2012								NG	NG
	3/5/2013								NG	NG
	5/28/2013								NG	NG
	9/9/2013								NG	NG
	12/2/2013								NG	NG
MW-14	3/17/2010	23.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.97	1146.75
	6/7/2010	18.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.22	1146.50
	8/31/2010	35.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.43	1144.29
	11/17/2010	21.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.40	1145.32
	3/2/2011	2.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.62	1147.10
	5/31/2011	21.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.44	1145.28
	8/24/2011	17.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.80	1143.92
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.71	1146.01
	6/25/2012	8.80	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.59	1145.13
	9/6/2012	19.8	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.63	1144.09
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	6.89	1141.83
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	7.14	1141.58
	5/28/2013	1.38	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.80	1143.92
	9/9/2013	3.30	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	6.30	1142.42
	12/2/2013	1.52	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	6.00	1142.72
MW-15	3/18/2010	6.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.73	1145.56
	6/7/2010	6.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.08	1145.21
	8/31/2010	7.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.88	1143.41
	11/17/2010	6.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.44	1143.85
	3/2/2011	4.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.51	1145.78
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	6.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.27	1144.02
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.20	1145.09
	6/25/2012	6.98	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.11	1144.18
	9/6/2012	5.64	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.18	1143.11
	12/14/2012	2.23	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.45	1141.84
	3/5/2013	1.70	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.97	1142.32
	5/28/2013	1.09	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.30	1142.99
	9/9/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.51	1141.78
	12/2/2013	1.76	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.52	1141.77
MW-17	3/18/2010	9.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.73	1142.53
	6/7/2010	1.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.09	1143.17
	8/31/2010	13.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.78	1141.48
	11/17/2010	11.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.70	1141.56
	3/2/2011	7.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	0.11	1143.15
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	Well could not be located.								
	9/6/2012									
	12/14/2012									
	3/5/2013									
	5/28/2013									
	9/9/2013									
	12/2/2013									
MW-21	3/17/2010	41.3	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.86	1144.60
	6/7/2010	32.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.12	1144.34
	8/30/2010	40.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.43	1143.03
	11/17/2010	35.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.22	1143.24
	3/2/2011	33.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.50	1144.96
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	37.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.05	1143.41
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.10	1144.36
	6/25/2012	21.7	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	2.94	1143.52
	9/6/2012	42.1	<2.00	<2.00	<2.00	<4.00	<2.00	<2.00	3.79	1142.67
	12/14/2012	10.8	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.09	1141.37
	3/5/2013	12.7	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.61	1141.85
	5/28/2013	9.92	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.97	1142.49
	9/9/2013	31.2	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.90	1141.56
	12/2/2013	2.24	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.80	1141.66

Table 1
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United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

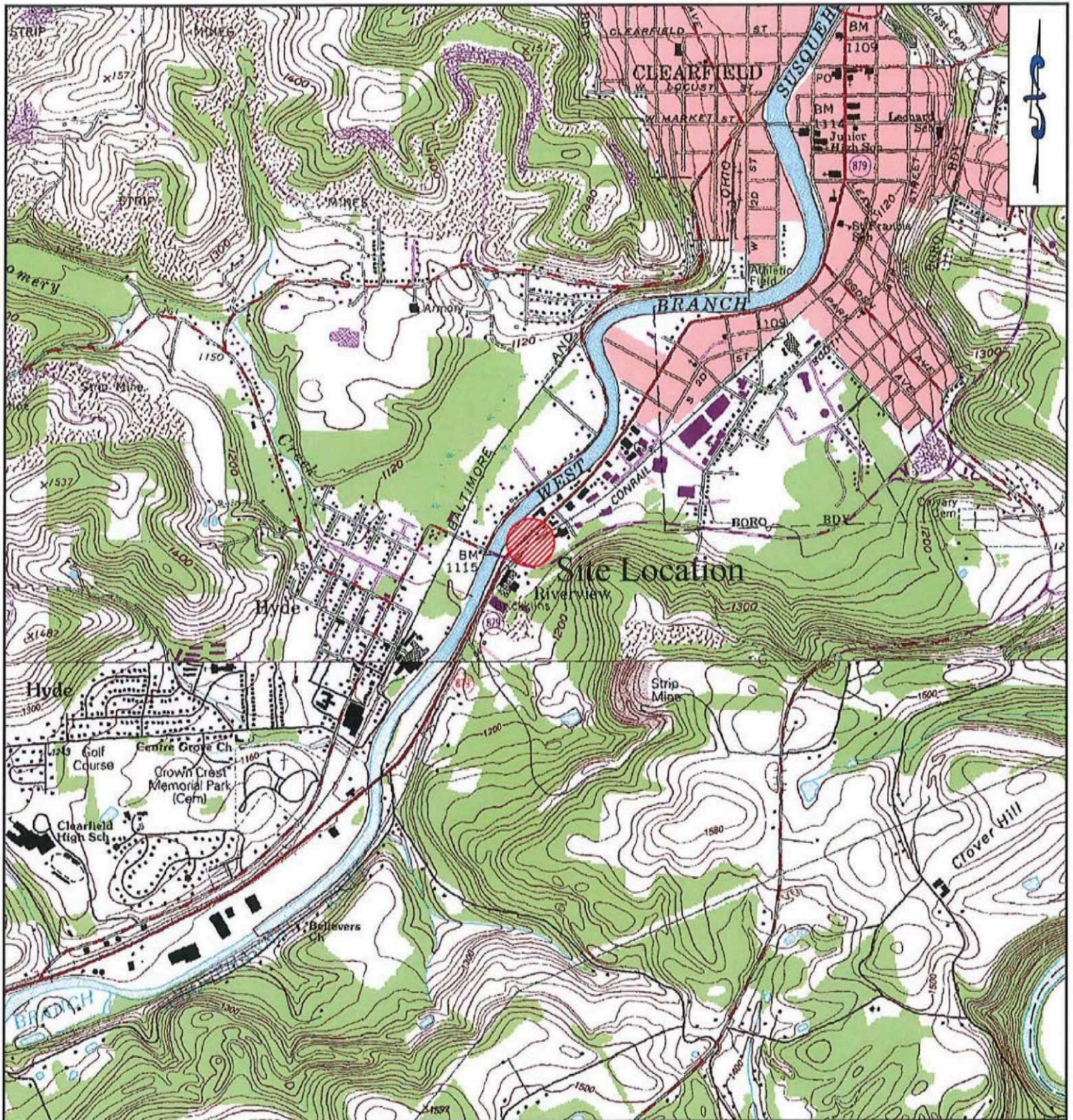
Piezometer/Well	Date	Compound							Depth-to-Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Cumene	Naphthalene		
PADEP UARSHS MSCs		20	5	1,000	700	10,000	840	100		
MW-22	3/17/2010	5.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.79	1143.08
	6/7/2010	8.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.18	1142.69
	8/30/2010	8.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.60	1141.27
	11/17/2010	6.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.38	1141.49
	3/2/2011	6.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	1.42	1143.45
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	10.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.04	1141.83
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.11	1142.76
	6/25/2012	Well not part of quarterly sampling program.							2.81	1142.06
	9/6/2012								3.43	1141.44
	12/14/2012								4.06	1140.81
	3/5/2013								3.60	1141.27
	5/28/2013								3.50	1141.37
	9/9/2013								4.52	1140.35
	12/2/2013								4.31	1140.56
MW-23	3/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.51	1144.65
	6/7/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.03	1145.13
	8/31/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.63	1142.53
	11/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.90	1143.26
	3/2/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.02	1145.14
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.93	1143.23
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.80	1144.36
	6/25/2012	Well not part of quarterly sampling program.							4.57	1142.59
	9/6/2012								5.37	1141.79
	12/14/2012								5.99	1141.17
	3/5/2013								5.05	1142.11
	5/28/2013								5.12	1142.04
	9/9/2013								6.00	1141.16
	12/2/2013								5.68	1141.48
MW-28	3/17/2010	4.5	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.13	1146.94
	6/8/2010	3.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.44	1146.63
	8/30/2010	6.4	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.64	1144.43
	11/17/2010	4.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.46	1145.61
	3/1/2011	7.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.01	1147.06
	5/31/2011	3.4	NA	NA	NA	NA	NA	NA	4.82	1145.25
	8/24/2011	4.9	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.97	1145.10
	3/28/2012	14.6	NA	NA	NA	NA	NA	NA	2.88	1147.19
	6/25/2012	Monitoring well converted to remedial extraction well.								
MW-29	3/17/2010	35.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.61	1144.65
	6/7/2010	39.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.83	1144.43
	8/30/2010	39.0	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.95	1142.31
	11/17/2010	37.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.95	1143.31
	3/2/2011	9.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.23	1145.03
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	37.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.81	1143.45
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	2.71	1144.55
	6/25/2012	22.8	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.58	1143.68
	9/6/2012	25.0	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.58	1142.68
	12/14/2012	3.13	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.77	1141.49
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.36	1141.90
	5/28/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.70	1142.56
	9/9/2013	1.39	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.65	1141.61
	12/2/2013	11.0	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.47	1141.79
MW-30	3/18/2010	17.0	23.9	<1.00	14.5	12.2	1.9	2.5	2.23	1145.03
	6/7/2010	20.1	17.9	<1.00	12.4	10.5	1.9	<2.00	2.41	1144.85
	8/31/2010	22.7	<1.00	<1.00	3.1	<3.00	<1.00	<2.00	4.07	1143.19
	11/17/2010	25.9	<1.00	<1.00	1.8	<3.00	<1.00	<2.00	3.61	1143.65
	3/2/2011	22.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.35	1144.91
	5/31/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	8/24/2011	NS	NS	NS	NS	NS	NS	NS	NG	NG
	3/28/2012	NS	NS	NS	NS	NS	NS	NS	NG	NG
	6/25/2012	8.41	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	3.31	1143.95
	9/6/2012	10.8	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.30	1142.96
	12/14/2012	4.08	<2.00	<2.00	<2.00	<4.00	<2.00	<2.00	5.91	1141.35
	3/5/2013	6.13	1.80	<1.00	<1.00	<2.00	<1.00	<1.00	5.50	1141.76
	5/28/2013	6.56	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.51	1142.75
	9/9/2013	6.28	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.68	1141.58
	12/2/2013	13.5	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.74	1141.52

Table 1
Historic Groundwater Gauging and Analytical Data
United Refining Company - Kwik Fill M-90
Clearfield, Pennsylvania

Piezometer/Well	Date	Compound							Depth-to-Groundwater	Groundwater Elevation
		MTBE	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	Cumene	Naphthalene		
PADEP UARSHS MSCs		20	5	1,000	700	10,000	840	100		
MW-31	3/17/2010	7.8	668	783	265	2,700	26.4	119	3.16	1147.07
	6/8/2010	6.3	336	118	119	754	10.2	61.8	3.61	1146.62
	8/30/2010	8.0	18.8	1.1	10.5	34.1	1.3	3.3	5.73	1144.50
	11/17/2010	6.7	60.5	<1.00	20.6	20.4	1.8	4.3	4.73	1145.50
	3/1/2011	4.8	9.2	1.4	3.6	4.1	<1.00	<2.00	3.48	1146.75
	5/31/2011	6.3	66.1	<1.00	20.0	22.1	2.3	2.1	4.74	1145.49
	8/24/2011	14.3	439	7.2	135	272	12	35.7	5.03	1145.20
	3/28/2012	16.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.18	1147.05
	Monitoring well converted to remedial extraction well.									
MW-32	5/28/2010	4.1	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.22	1145.58
	6/8/2010	2.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.21	1146.59
	8/30/2010	1.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.16	1144.64
	11/17/2010	2.2	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.64	1145.16
	3/1/2011	2.7	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.94	1146.86
	5/31/2011	2.6	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.15	1145.65
	8/24/2011	2.8	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.58	1145.22
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.49	1147.31
	6/25/2012	4.51	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.51	1145.29
	9/6/2012	4.07	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.51	1144.29
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.65	1144.15
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.50	1144.30
	5/28/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.22	1144.58
	9/9/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	6.50	1143.30
	12/2/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.80	1144.00
MW-33	5/28/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.41	1145.72
	6/8/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.36	1146.77
	8/30/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	5.25	1144.88
	11/17/2010	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.96	1145.17
	3/1/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	3.42	1146.71
	5/31/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.38	1145.75
	8/24/2011	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	4.72	1145.41
	3/28/2012	<1.00	<1.00	<1.00	<1.00	<3.00	<1.00	<2.00	2.70	1147.43
	6/25/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.66	1145.47
	9/6/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.70	1144.43
	12/14/2012	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.72	1145.41
	3/5/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.46	1145.67
	5/28/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	4.15	1145.98
	9/9/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	6.40	1143.73
	12/2/2013	<1.00	<1.00	<1.00	<1.00	<2.00	<1.00	<1.00	5.56	1144.57

Notes: Groundwater elevation data reported in feet (ft).
Depth-to-groundwater results are reported in feet below top-of-casing (ft-btoc).
All results reported in ug/l.
Bold values indicate levels above LRL.
Bold and shaded values indicate exceedance of PADEP UARSHS MSCs.
NG - Not Gauged. NA - Not Analyzed. NS - Not Sampled.

FIGURES



Reference: 7.5-minute United States Geological Survey Topographic Quadrangles of Clearfield and Glen Richey, Pennsylvania, DeLorme 3-D Topographic Quads Program.

Prepared For:	Project Information:	Prepared By:
United Refining Company Kwik Fill M-90 1322 South 2nd Street Clearfield, Pennsylvania	Project Manager: Jed Hill Project Geologist: Steven Treschow, P.G.	 Letterle & Associates, LLC 629 East Rolling Ridge Drive Bellefonte, PA 16823 P: 814-355-2241 F: 814-355-2410 www.letterleassociates.com
Title:	Scale (feet):	
Figure 1 Site Location Map	Scale: 1" = 2000' 	

Prepared By:



629 East Rolling Ridge Drive
Bellefonte, PA 16823
P: 814-355-2241
F: 814-355-2410
www.letterleassociates.com

Project Manager: Jed Hill
Project Geologist: Steven Treschow, P.G.

Prepared For:

United Refining Company
Kwik Fill M-90
1322 South 2nd Street
Clearfield, Pennsylvania

Title:

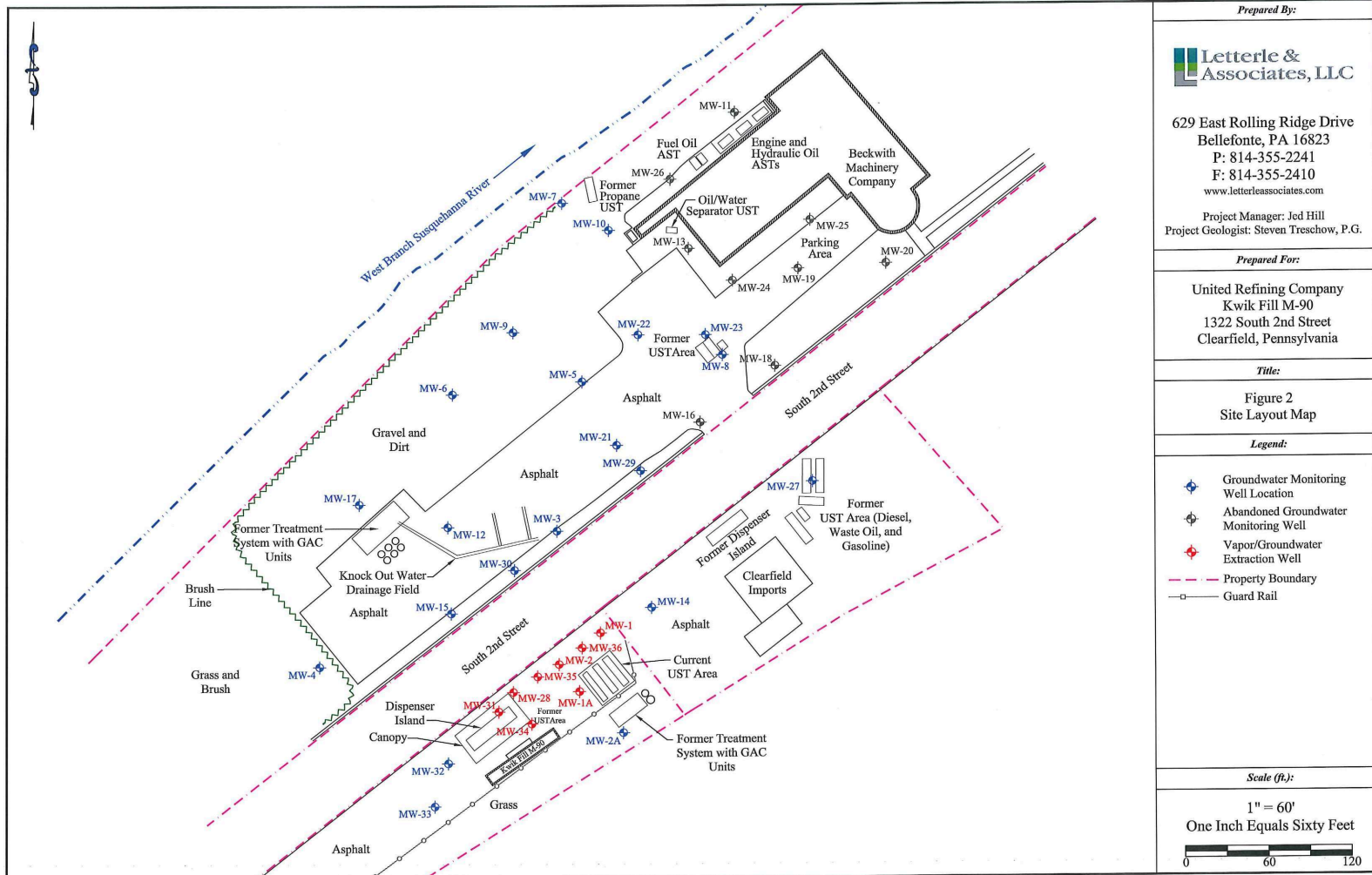
Figure 2
Site Layout Map

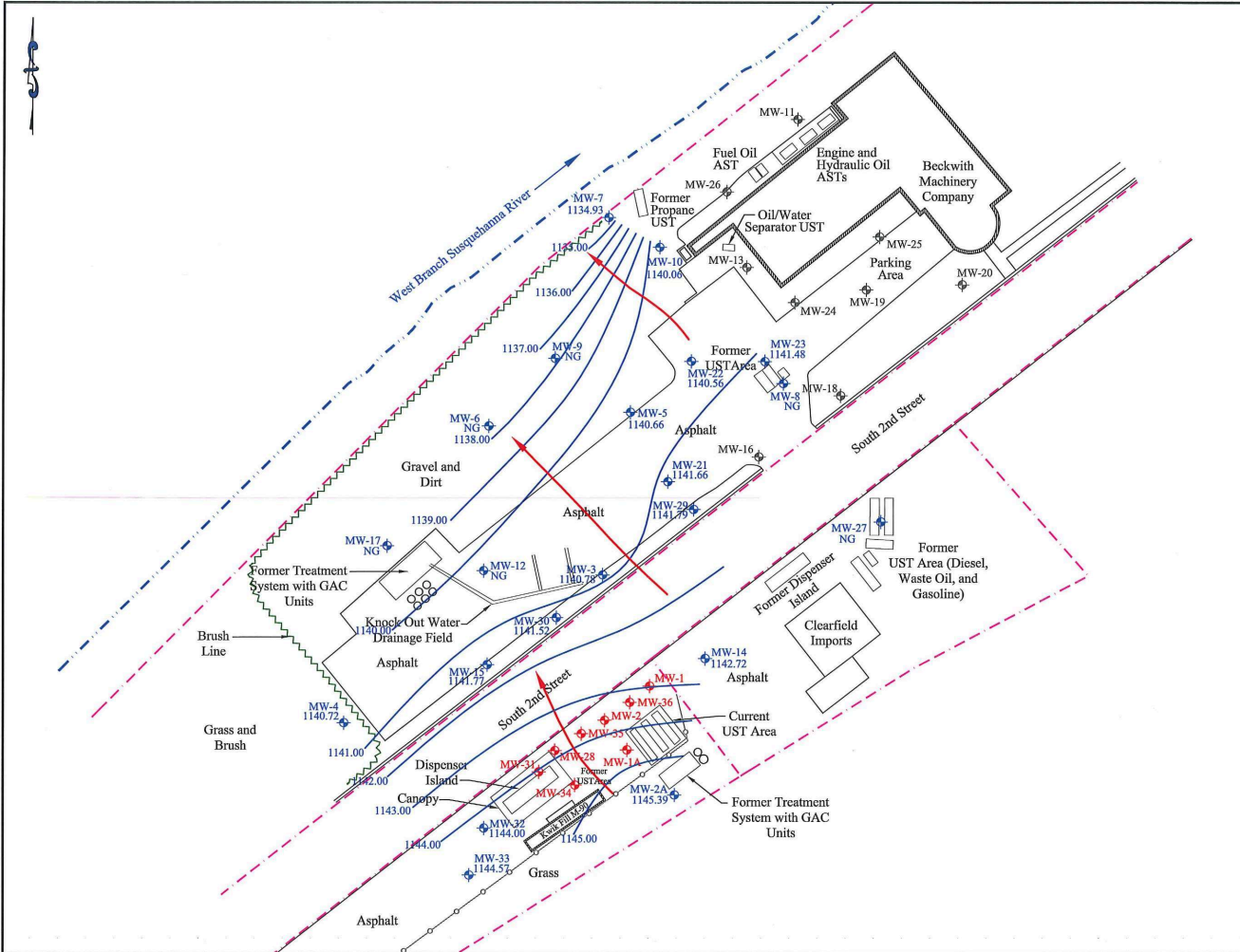
Legend:

- Groundwater Monitoring Well Location
- Abandoned Groundwater Monitoring Well
- Vapor/Groundwater Extraction Well
- Property Boundary
- Guard Rail

Scale (ft.):

1" = 60'
One Inch Equals Sixty Feet





Prepared By:
Letterle & Associates, LLC
 629 East Rolling Ridge Drive
 Bellefonte, PA 16823
 P: 814-355-2241
 F: 814-355-2410
 www.letterleassociates.com
 Project Manager: Jed Hill
 Project Geologist: Steven Treschow, P.G.

Prepared For:
 United Refining Company
 Kwik Fill M-90
 1322 South 2nd Street
 Clearfield, Pennsylvania

Title:
 Figure 3
 Groundwater Potentiometric
 Surface Contour Map
 December 2, 2013

Legend:

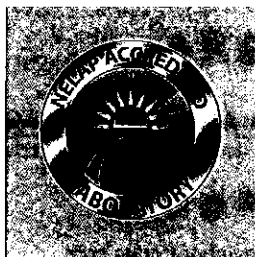
- Groundwater Monitoring Well Location
- Abandoned Groundwater Monitoring Well
- Vapor/Groundwater Extraction Well
- Property Boundary
- Guard Rail
- 1144.0 Groundwater Elevation (ft)
- Groundwater Elevation Contour (dashed where inferred)
- Groundwater Flow Direction

Scale (ft):
 1" = 60'
 One Inch Equals Sixty Feet
 0 60 120

APPENDIX

APPENDIX A

Groundwater Analytical Laboratory Reports



2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684



www.fairwaylaboratories.com

State Certifications: MD 275, WV 364

Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 12/11/13 09:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
MW-2A	3L03025-01	Water	Grab	12/02/13 09:28	12/03/13 12:45
MW-3	3L03025-02	Water	Grab	12/02/13 12:35	12/03/13 12:45
MW-4	3L03025-03	Water	Grab	12/02/13 10:20	12/03/13 12:45
MW-7	3L03025-04	Water	Grab	12/02/13 13:03	12/03/13 12:45
MW-10	3L03025-05	Water	Grab	12/02/13 10:44	12/03/13 12:45
MW-14	3L03025-06	Water	Grab	12/02/13 09:08	12/03/13 12:45
MW-15	3L03025-07	Water	Grab	12/02/13 11:06	12/03/13 12:45
MW-21	3L03025-08	Water	Grab	12/02/13 11:45	12/03/13 12:45
MW-29	3L03025-09	Water	Grab	12/02/13 12:07	12/03/13 12:45
MW-30	3L03025-10	Water	Grab	12/02/13 11:24	12/03/13 12:45
MW-32	3L03025-11	Water	Grab	12/02/13 10:01	12/03/13 12:45
MW-33	3L03025-12	Water	Grab	12/02/13 09:47	12/03/13 12:45

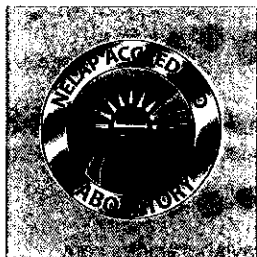
Fairway Laboratories, Inc.

Reviewed and Submitted by:

Michael P. Tyler
Laboratory Director

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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www.fairwaylaboratories.com

State Certifications: MD 275, WV 364

Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none] Reported:
Collector: CLIENT 12/11/13 09:38
Number of Containers: 24

Client Sample ID: MW-2A

Date/Time Sampled: 12/02/13 09:28

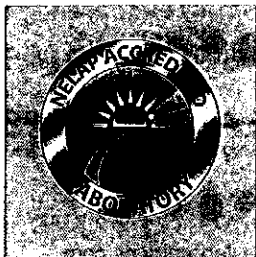
Laboratory Sample ID: 3L03025-01 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	12/05/13 01:08	EPA 8260B	wlm	
Toluene	<1.00		1.00	ug/l	12/05/13 01:08	EPA 8260B	wlm	
Ethylbenzene	<1.00		1.00	ug/l	12/05/13 01:08	EPA 8260B	wlm	
Xylenes (total)	<2.00		2.00	ug/l	12/05/13 01:08	EPA 8260B	wlm	
Isopropylbenzene	<1.00		1.00	ug/l	12/05/13 01:08	EPA 8260B	wlm	
Methyl tert-butyl ether	<1.00		1.00	ug/l	12/05/13 01:08	EPA 8260B	wlm	
Naphthalene	<1.00		1.00	ug/l	12/05/13 01:08	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene	98.0 %		70-130		12/05/13 01:08	EPA 8260B	wlm	
Surrogate: 1,2-Dichloroethane-d4	109 %		70-130		12/05/13 01:08	EPA 8260B	wlm	
Surrogate: Fluorobenzene	105 %		70-130		12/05/13 01:08	EPA 8260B	wlm	

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State Certifications: MD 275, WV 364

Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 12/11/13 09:38

Client Sample ID: MW-3

Date/Time Sampled: 12/02/13 12:35

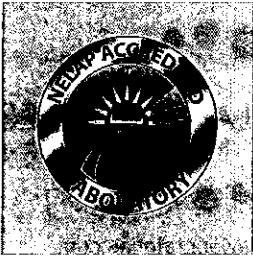
Laboratory Sample ID: 3L03025-02 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	12/05/13 03:21	EPA 8260B	wlm	
Toluene	<1.00		1.00	ug/l	12/05/13 03:21	EPA 8260B	wlm	
Ethylbenzene	1.55		1.00	ug/l	12/05/13 03:21	EPA 8260B	wlm	
Xylenes (total)	<2.00		2.00	ug/l	12/05/13 03:21	EPA 8260B	wlm	
Isopropylbenzene	1.65		1.00	ug/l	12/05/13 03:21	EPA 8260B	wlm	
Methyl tert-butyl ether	17.2		1.00	ug/l	12/05/13 03:21	EPA 8260B	wlm	
Naphthalene	<1.00		1.00	ug/l	12/05/13 03:21	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene	97.8 %		70-130		12/05/13 03:21	EPA 8260B	wlm	
Surrogate: 1,2-Dichloroethane-d4	97.9 %		70-130		12/05/13 03:21	EPA 8260B	wlm	
Surrogate: Fluorobenzene	100 %		70-130		12/05/13 03:21	EPA 8260B	wlm	

Fairway Laboratories, Inc.

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Altoona, PA 16603
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NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennssdale, PA 17756
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PaDEP: PA 41-04684



www.fairwaylaboratories.com

State Certifications: MD 275, WV 364

Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 12/11/13 09:38

Client Sample ID: MW-4

Date/Time Sampled: 12/02/13 10:20

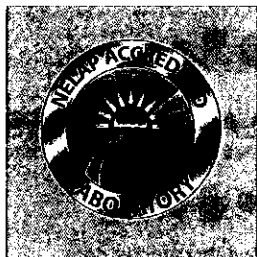
Laboratory Sample ID: 3L03025-03 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	12/05/13 03:49	EPA 8260B	wlm	
Toluene	<1.00		1.00	ug/l	12/05/13 03:49	EPA 8260B	wlm	
Ethylbenzene	<1.00		1.00	ug/l	12/05/13 03:49	EPA 8260B	wlm	
Xylenes (total)	<2.00		2.00	ug/l	12/05/13 03:49	EPA 8260B	wlm	
Isopropylbenzene	<1.00		1.00	ug/l	12/05/13 03:49	EPA 8260B	wlm	
Methyl tert-butyl ether	<1.00		1.00	ug/l	12/05/13 03:49	EPA 8260B	wlm	
Naphthalene	<1.00		1.00	ug/l	12/05/13 03:49	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene	97.8 %		70-130		12/05/13 03:49	EPA 8260B	wlm	
Surrogate: 1,2-Dichloroethane-d4	99.5 %		70-130		12/05/13 03:49	EPA 8260B	wlm	
Surrogate: Fluorobenzene	102 %		70-130		12/05/13 03:49	EPA 8260B	wlm	

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PaDEP: PA 41-04684



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State Certifications: MD 275, WV 364

Letterle & Associates
629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 12/11/13 09:38

Client Sample ID: MW-7

Date/Time Sampled: 12/02/13 13:03

Laboratory Sample ID: 3L03025-04 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Toluene	9.81		1.00	ug/l	12/05/13 08:01	EPA 8260B	wlm	
Ethylbenzene	29.3		1.00	ug/l	12/05/13 08:01	EPA 8260B	wlm	
Xylenes (total)	17.1		2.00	ug/l	12/05/13 08:01	EPA 8260B	wlm	
Isopropylbenzene	17.0		1.00	ug/l	12/05/13 08:01	EPA 8260B	wlm	
Methyl tert-butyl ether	2.97		1.00	ug/l	12/05/13 08:01	EPA 8260B	wlm	
Naphthalene	38.6		1.00	ug/l	12/05/13 08:01	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene	99.7 %		70-130		12/05/13 08:01	EPA 8260B	wlm	
Surrogate: 1,2-Dichloroethane-d4	99.7 %		70-130		12/05/13 08:01	EPA 8260B	wlm	
Surrogate: Fluorobenzene	100 %		70-130		12/05/13 08:01	EPA 8260B	wlm	

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Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 12/11/13 09:38

Client Sample ID: MW-10

Date/Time Sampled: 12/02/13 10:44

Laboratory Sample ID: 3L03025-05 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
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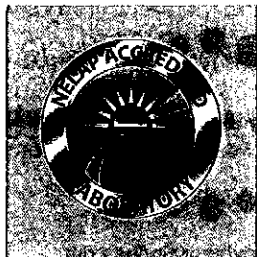
Volatile Organic Compounds by EPA Method 8260B

Benzene	<1.00		1.00	ug/l	12/05/13 04:17	EPA 8260B	wlm	
Toluene	<1.00		1.00	ug/l	12/05/13 04:17	EPA 8260B	wlm	
Ethylbenzene	<1.00		1.00	ug/l	12/05/13 04:17	EPA 8260B	wlm	
Xylenes (total)	<2.00		2.00	ug/l	12/05/13 04:17	EPA 8260B	wlm	
Isopropylbenzene	<1.00		1.00	ug/l	12/05/13 04:17	EPA 8260B	wlm	
Methyl tert-butyl ether	5.58		1.00	ug/l	12/05/13 04:17	EPA 8260B	wlm	
Naphthalene	<1.00		1.00	ug/l	12/05/13 04:17	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene	100 %		70-130		12/05/13 04:17	EPA 8260B	wlm	
Surrogate: 1,2-Dichloroethane-d4	100 %		70-130		12/05/13 04:17	EPA 8260B	wlm	
Surrogate: Fluorobenzene	102 %		70-130		12/05/13 04:17	EPA 8260B	wlm	

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Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 12/11/13 09:38

Client Sample ID: MW-14

Date/Time Sampled: 12/02/13 09:08

Laboratory Sample ID: 3L03025-06 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	12/05/13 04:44	EPA 8260B	wlm	
Toluene	<1.00		1.00	ug/l	12/05/13 04:44	EPA 8260B	wlm	
Ethylbenzene	<1.00		1.00	ug/l	12/05/13 04:44	EPA 8260B	wlm	
Xylenes (total)	<2.00		2.00	ug/l	12/05/13 04:44	EPA 8260B	wlm	
Isopropylbenzene	<1.00		1.00	ug/l	12/05/13 04:44	EPA 8260B	wlm	
Methyl tert-butyl ether	1.52		1.00	ug/l	12/05/13 04:44	EPA 8260B	wlm	
Naphthalene	<1.00		1.00	ug/l	12/05/13 04:44	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene	107 %		70-130		12/05/13 04:44	EPA 8260B	wlm	
Surrogate: 1,2-Dichloroethane-d4	99.1 %		70-130		12/05/13 04:44	EPA 8260B	wlm	
Surrogate: Fluorobenzene	101 %		70-130		12/05/13 04:44	EPA 8260B	wlm	

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629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 12/11/13 09:38

Client Sample ID: MW-15

Date/Time Sampled: 12/02/13 11:06

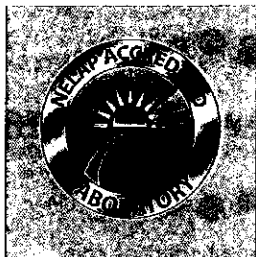
Laboratory Sample ID: 3L03025-07 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	12/05/13 05:13	EPA 8260B	wlm	
Toluene	<1.00		1.00	ug/l	12/05/13 05:13	EPA 8260B	wlm	
Ethylbenzene	<1.00		1.00	ug/l	12/05/13 05:13	EPA 8260B	wlm	
Xylenes (total)	<2.00		2.00	ug/l	12/05/13 05:13	EPA 8260B	wlm	
Isopropylbenzene	<1.00		1.00	ug/l	12/05/13 05:13	EPA 8260B	wlm	
Methyl tert-butyl ether	1.76		1.00	ug/l	12/05/13 05:13	EPA 8260B	wlm	
Naphthalene	<1.00		1.00	ug/l	12/05/13 05:13	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene	97.0 %		70-130		12/05/13 05:13	EPA 8260B	wlm	
Surrogate: 1,2-Dichloroethane-d4	99.2 %		70-130		12/05/13 05:13	EPA 8260B	wlm	
Surrogate: Fluorobenzene	101 %		70-130		12/05/13 05:13	EPA 8260B	wlm	

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Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 12/11/13 09:38

Client Sample ID: MW-21

Date/Time Sampled: 12/02/13 11:45

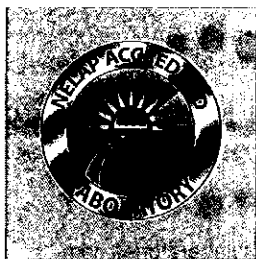
Laboratory Sample ID: 3L03025-08 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	12/05/13 05:41	EPA 8260B	wlm	
Toluene	<1.00		1.00	ug/l	12/05/13 05:41	EPA 8260B	wlm	
Ethylbenzene	<1.00		1.00	ug/l	12/05/13 05:41	EPA 8260B	wlm	
Xylenes (total)	<2.00		2.00	ug/l	12/05/13 05:41	EPA 8260B	wlm	
Isopropylbenzene	<1.00		1.00	ug/l	12/05/13 05:41	EPA 8260B	wlm	
Methyl tert-butyl ether	2.24		1.00	ug/l	12/05/13 05:41	EPA 8260B	wlm	
Naphthalene	<1.00		1.00	ug/l	12/05/13 05:41	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene	97.2 %		70-130		12/05/13 05:41	EPA 8260B	wlm	
Surrogate: 1,2-Dichloroethane-d4	99.9 %		70-130		12/05/13 05:41	EPA 8260B	wlm	
Surrogate: Fluorobenzene	101 %		70-130		12/05/13 05:41	EPA 8260B	wlm	

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Letterle & Associates
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Bellefonte PA, 16823
Project Manager: Jod Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 12/11/13 09:38

Client Sample ID: MW-29

Date/Time Sampled: 12/02/13 12:07

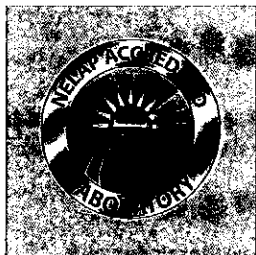
Laboratory Sample ID: 3L03025-09 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	12/05/13 06:09	EPA 8260B	wlm	
Toluene	<1.00		1.00	ug/l	12/05/13 06:09	EPA 8260B	wlm	
Ethylbenzene	<1.00		1.00	ug/l	12/05/13 06:09	EPA 8260B	wlm	
Xylenes (total)	<2.00		2.00	ug/l	12/05/13 06:09	EPA 8260B	wlm	
Isopropylbenzene	<1.00		1.00	ug/l	12/05/13 06:09	EPA 8260B	wlm	
Methyl tert-butyl ether	11.0		1.00	ug/l	12/05/13 06:09	EPA 8260B	wlm	
Naphthalene	<1.00		1.00	ug/l	12/05/13 06:09	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene	97.5 %		70-130		12/05/13 06:09	EPA 8260B	wlm	
Surrogate: 1,2-Dichloroethane-d4	99.7 %		70-130		12/05/13 06:09	EPA 8260B	wlm	
Surrogate: Fluorobenzene	101 %		70-130		12/05/13 06:09	EPA 8260B	wlm	

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Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 12/11/13 09:38

Client Sample ID: MW-30

Date/Time Sampled: 12/02/13 11:24

Laboratory Sample ID: 3L03025-10 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	12/05/13 06:37	EPA 8260B	wlm	
Toluene	<1.00		1.00	ug/l	12/05/13 06:37	EPA 8260B	wlm	
Ethylbenzene	<1.00		1.00	ug/l	12/05/13 06:37	EPA 8260B	wlm	
Xylenes (total)	<2.00		2.00	ug/l	12/05/13 06:37	EPA 8260B	wlm	
Isopropylbenzene	<1.00		1.00	ug/l	12/05/13 06:37	EPA 8260B	wlm	
Methyl tert-butyl ether	13.5		1.00	ug/l	12/05/13 06:37	EPA 8260B	wlm	
Naphthalene	<1.00		1.00	ug/l	12/05/13 06:37	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene	99.9 %		70-130		12/05/13 06:37	EPA 8260B	wlm	
Surrogate: 1,2-Dichloroethane-d4	99.9 %		70-130		12/05/13 06:37	EPA 8260B	wlm	
Surrogate: Fluorobenzene	101 %		70-130		12/05/13 06:37	EPA 8260B	wlm	

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629 East Rolling Ridge Drive
Bellefonte PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none]
Collector: CLIENT
Number of Containers: 24
Reported: 12/11/13 09:38

Client Sample ID: MW-32

Date/Time Sampled: 12/02/13 10:01

Laboratory Sample ID: 3L03025-11 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
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Volatile Organic Compounds by EPA Method 8260B

Benzene	<1.00	1.00	ug/l	12/05/13 07:05	EPA 8260B	wlm
Toluene	<1.00	1.00	ug/l	12/05/13 07:05	EPA 8260B	wlm
Ethylbenzene	<1.00	1.00	ug/l	12/05/13 07:05	EPA 8260B	wlm
Xylenes (total)	<2.00	2.00	ug/l	12/05/13 07:05	EPA 8260B	wlm
Isopropylbenzene	<1.00	1.00	ug/l	12/05/13 07:05	EPA 8260B	wlm
Methyl tert-butyl ether	<1.00	1.00	ug/l	12/05/13 07:05	EPA 8260B	wlm
Naphthalene	<1.00	1.00	ug/l	12/05/13 07:05	EPA 8260B	wlm
Surrogate: 4-Bromofluorobenzene	102 %	70-130		12/05/13 07:05	EPA 8260B	wlm
Surrogate: 1,2-Dichloroethane-d4	99.7 %	70-130		12/05/13 07:05	EPA 8260B	wlm
Surrogate: Fluorobenzene	101 %	70-130		12/05/13 07:05	EPA 8260B	wlm

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629 East Rolling Ridge Drive

Bellefonte PA, 16823

Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD

Project Number: [none]

Collector: CLIENT

Number of Containers: 24

Reported:

12/11/13 09:38

Client Sample ID: MW-33

Date/Time Sampled: 12/02/13 09:47

Laboratory Sample ID: 3L03025-12 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<1.00		1.00	ug/l	12/05/13 07:33	EPA 8260B	wlm	
Toluene	<1.00		1.00	ug/l	12/05/13 07:33	EPA 8260B	wlm	
Ethylbenzene	<1.00		1.00	ug/l	12/05/13 07:33	EPA 8260B	wlm	
Xylenes (total)	<2.00		2.00	ug/l	12/05/13 07:33	EPA 8260B	wlm	
Isopropylbenzene	<1.00		1.00	ug/l	12/05/13 07:33	EPA 8260B	wlm	
Methyl tert-butyl ether	<1.00		1.00	ug/l	12/05/13 07:33	EPA 8260B	wlm	
Naphthalene	<1.00		1.00	ug/l	12/05/13 07:33	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene	96.1 %		70-130		12/05/13 07:33	EPA 8260B	wlm	
Surrogate: 1,2-Dichloroethane-d4	101 %		70-130		12/05/13 07:33	EPA 8260B	wlm	
Surrogate: Fluorobenzene	102 %		70-130		12/05/13 07:33	EPA 8260B	wlm	

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Letterle & Associates
629 East Rolling Ridge Drive
Belleville PA, 16823
Project Manager: Jed Hill

Project: KWIK FILL-CLEARFIELD
Project Number: [none] **Reported:**
Collector: CLIENT 12/11/13 09:38
Number of Containers: 24

Definitions

If surrogate values are not within the indicated range, then the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory.

MBAS, calculated as LAS, mol wt 320

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

Samples collected by Fairway Laboratories' personnel are done so in accordance with Standard Operating Procedures established by Fairway Laboratories.

* P indicates analysis performed by Fairway Laboratories, Inc. at the Pennsdale location. This location is PaDEP Chapter 252 certified.

< Represents "less than" - indicates that the result was less than the reporting limit.

MDL Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the RL are considered estimated values.

RL Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.

[CALC] Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

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89 Kristi Rd
Pennsdale, PA 17756
Phone: (570) 494-6380

3403025-01
COC #
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Client Name: Lehigh + Associates Address: 629 E. Polkway, Suite 100 Contact: Scott Hill Phone #: 814-355-2241 Fax #: 724-10 Project Name: Clearfield Knick Fm Quote/PO #:		Received on ice? Yes ☒ No ☐ Sample Temp: PWSID #		Reportable to PADEP? Yes ☐ Matrix		Analyses Requested		LAB USE ONLY FedEx USPS UPS Other Tracking #	
TAT: Normal ☒ Rush ☐ Rush TAT subject to pre-approval and surcharge. Date Required: / /		GRAB Composite		Composite Start Composite End		Solid Water Other		Bottle Type/Comments	
Sample Description/Location		Start Date		Start Time		End Date		End Time	
MW-24		12/2		0928		12/2		0928	
MW-3		12/3		1235		12/3		1235	
MW-4		12/3		1020		12/3		1020	
MW-7		12/3		1303		12/3		1303	
MW-10		12/3		1044		12/3		1044	
MW-14		12/3		0909		12/3		0909	
MW-15		12/3		1106		12/3		1106	
MW-21		12/3		1145		12/3		1145	
MW-29		12/3		1207		12/3		1207	
MW-30		12/3		1124		12/3		1124	
MW-32		12/3		1001		12/3		1001	
Sampled by: GAA Date: 12/3/15 Time: 1200		Received by: J. H. H. H. Date: 12/3/15 Time: 1045		Date: 12/3/15 Time: 1200		Date: 12/3/15 Time: 1200		Remarks	
Relinquished by: J. H. H. H. Date: 12/3/15 Time: 1200		Received by: J. H. H. H. Date: 12/3/15 Time: 1200		Date: 12/3/15 Time: 1200		Date: 12/3/15 Time: 1200		Remarks	
Relinquished by: J. H. H. H. Date: 12/3/15 Time: 1200		Received by: J. H. H. H. Date: 12/3/15 Time: 1200		Date: 12/3/15 Time: 1200		Date: 12/3/15 Time: 1200		Remarks	

By relinquishing my sample to Fairway Laboratories, Inc., I hereby agree to the terms and conditions printed on the reverse.

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Please print. See back of COC for instructions/terms and conditions.

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