Remedial Action Progress Report/ Plan Cover Sheet

CHAPTER 245
STORAGE TANK ACT

- ☐ **Site Characterization Report – Section 245.310(b)**
- ☐ **Site Characterization Report – Site-Specific Standard**
- ☐ **Site Characterization Report – Statewide Health or Background Standard**
- ☐ **Site Characterization Report PLUS – Statewide Health Standard**
- ☐ **Remedial Action Plan – Statewide Health or Background Standard**
- ☐ **Remedial Action Plan – Site-Specific Standard**
- ☒ **Remedial Action Progress Report**
- ☐ **Remedial Action Completion Report – Statewide Health or Background Standard**
- ☐ **Remedial Action Completion Report – Site-Specific Standard**
- ☐ **Post-Remediation Care Plan Report**
- ☐ **Environmental Covenant**

(check all that apply to the enclosed submission)

Leidos Engineering, LLC
6310 Allentown Boulevard, Suite 110 / Harrisburg, PA 17112 / 717.901.8100 leidos.com/engineering

November 21, 2014

Ms. Pamela S. Trowbridge, P.G.
Pennsylvania Department of Environmental Protection
Environmental Cleanup and Brownfields Program
Southcentral Region
909 Elmerton Avenue
Harrisburg, PA 17110

Subject: **Remedial Action Progress Report**
Fourth Quarterly Groundwater Monitoring Event
Former York Naval Ordnance Plant, York, Pennsylvania
Former Building 45/50 Unleaded Gasoline UST Release - Tank 009
PADEP Facility I.D. No. 67-00823
USTIF Claim No. 2010-0106(M)
Leidos Project 301425.TM.100044.4000.0100

Dear Ms. Trowbridge:

On behalf of Harley-Davidson Motor Company Operations, Inc. (Harley-Davidson), Leidos Engineering, LLC (Leidos) is submitting this Remedial Action Progress Report (RAPR) to the Pennsylvania Department of Environmental Protection (PADEP) for the above-referenced site (**Figure 1**). This RAPR details the fourth round of quarterly groundwater monitoring performed in accordance with the recommendations presented in the September 9, 2013, Remedial Action Plan (RAP), approved by PADEP on November 22, 2013. The goal of the RAP was to comply with the Site-Specific Standards (SSSs) in soil and the Statewide Health Standards (SHSs) in groundwater to address unleaded gasoline constituents from the former Tank 009 release.

1.0 QUARTERLY GROUNDWATER MONITORING

1.1 Well Gauging

Gauging of monitoring wells MW-26, MW-77, MW-118 through MW-125, and MW-160 was performed by Leidos on September 25, 2014. Groundwater elevations were at a seasonal low stage, generally one to four feet (ft) lower than the two-year mean groundwater elevations for the wells. In particular, MW-119 is 7.32 ft lower than it was the previous quarter. Light non-aqueous phase liquid (LNAPL) was detected in monitoring well MW-119 at a thickness of 0.31 ft. Approximately 100 milliliters (mL) of LNAPL was recovered by bailing and containerized for treatment/disposal. LNAPL was not detected in any of the other wells gauged.

Depth-to-groundwater measurements in the monitoring wells within the study area were subtracted from top-of-casing (TOC) elevations to calculate groundwater elevations. The groundwater elevation at MW-119 was adjusted for the presence of LNAPL using a specific gravity for gasoline of 0.75 (**Table 1**).

A groundwater elevation contour map for wells gauged on September 25, 2014, is presented on **Figure 2**. The hydraulic gradient indicated by the wells is approximately 0.04 southwest from the area of the former dispenser for Tank 009. In general, the hydraulic gradient forms a trough that trends from MW-119 downgradient toward MW-125. The gradient and direction are consistent with previous measurements. Monitoring wells MW-26 and MW-77 were not used to complete the groundwater contour map because they do not represent the groundwater flow system monitored by the Tank 009 wells.

During a site-wide monitoring well gauging event completed on October 7, 2014, LNAPL was again detected in monitoring well MW-119; this event measured a thickness of 0.22 ft. An additional 50 mL of LNAPL was recovered by bailing and containerized for treatment/disposal.

1.2 Groundwater Sampling

On September 25, 2014, groundwater samples were collected by Leidos from monitoring wells MW-125 and MW-160. The wells were purged prior to sampling with a submersible pump at a relatively low purge rate (i.e., less than 0.25 gallons per minute [gpm]) to minimize the drawdown of the groundwater level in the wells. The pump was decontaminated before use at each well by washing with a Liqui-Nox®/potable water solution and a potable water rinse.

During purging, water quality field parameters (temperature, pH, conductivity, dissolved oxygen, and turbidity) were measured and recorded. Upon stabilization of the field parameters during purging, groundwater samples were collected directly from the dedicated pump discharge tubing into laboratory-provided 40 mL volatile organic analysis (VOA) vials containing preservative (i.e., hydrochloric acid). Additionally, a quality assurance/quality control (QA/QC) sample, consisting of a laboratory-provided trip blank, accompanied the groundwater samples.

Upon sample collection, labels were affixed to the sample containers, and they were placed into a cooler with ice and a chain-of-custody. The groundwater and QA/QC samples were submitted to TestAmerica for laboratory analysis of the PADEP Short List of Petroleum Products (unleaded gasoline) using United States Environmental Protection Agency (EPA) Method 8260C. The analytical results for the sample analyses are summarized in **Table 2** and on **Figure 3**. A copy of the laboratory analysis report is provided on the attached CD.

2.0 RESULTS

The following are the significant findings of the groundwater sample analytical results:

1. MW-125 had non-detectable concentrations for all analyzed parameters.

2. The concentration of benzene in MW-160 (440 micrograms per liter [µg/L]) exceeded the PADEP Nonresidential Used Aquifer medium-specific concentration (MSC) of 5 µg/L. All other analyzed compounds were either non-detect or were detected at concentrations below their respective MSCs.

3. The detected benzene in MW-160 is higher in concentration, but within the same order of magnitude as previous measurements. It is well below the concentration of 15,000 µg/L used for fate-and-transport modeling in the December 2012 Supplemental Site Characterization Report (SCR). As a result, the predictions of the fate-and-transport modeling conducted during site characterization activities indicate the groundwater meets the SHS at the point of compliance (POC).

4.0 PLANNED FUTURE ACTIVITIES

The fifth round of quarterly groundwater monitoring is scheduled for December 2014. An RAPR will be submitted to PADEP following receipt of the analytical results.

Harley-Davidson and Leidos appreciate PADEP's continued support and assistance on this project. Please contact the undersigned at (717) 901-8843 if you have any questions.

Respectfully submitted,

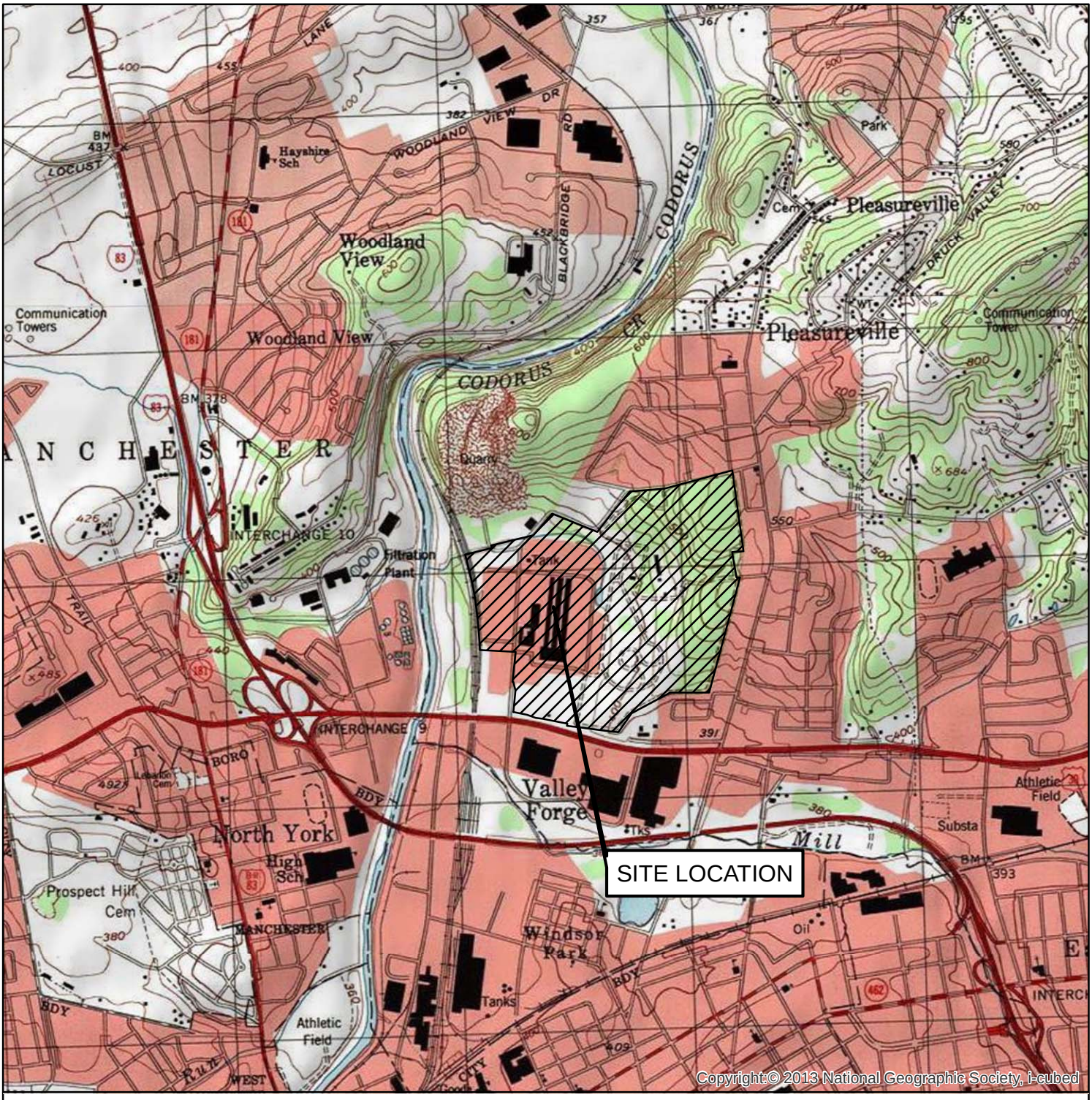
Leidos Engineering, LLC

Kent V. Littlefield, P.G.
Senior Hydrogeologist

Rodney G. Myers
Senior Project Manager

KVL:pr
Attachments
cc: Sharon R. Fisher, Harley-Davidson
Ralph T. Golia, P.G., AMO Environmental Decisions
Gregory Bowman, PADEP, Storage Tank Section
Blanda Nace, YCIDA
Linda Melvin, ICF International – USTIF

FIGURES



2,000 1,000 0 2,000

Feet

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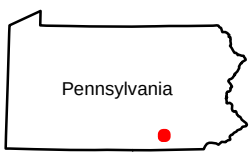

QUADRANGLE LOCATION

FORMER YORK NAVAL ORDNANCE PLANT

1425 EDEN ROAD, YORK, PENNSYLVANIA

Site Location Map

drawn	JEB	checked	EMW	approved	RGM
date	1/30/2014	date	1/30/2014	date	1/30/2014
job no.	2603200245/2000/100			file no.	Site_Map_20131231

figure no. **1**

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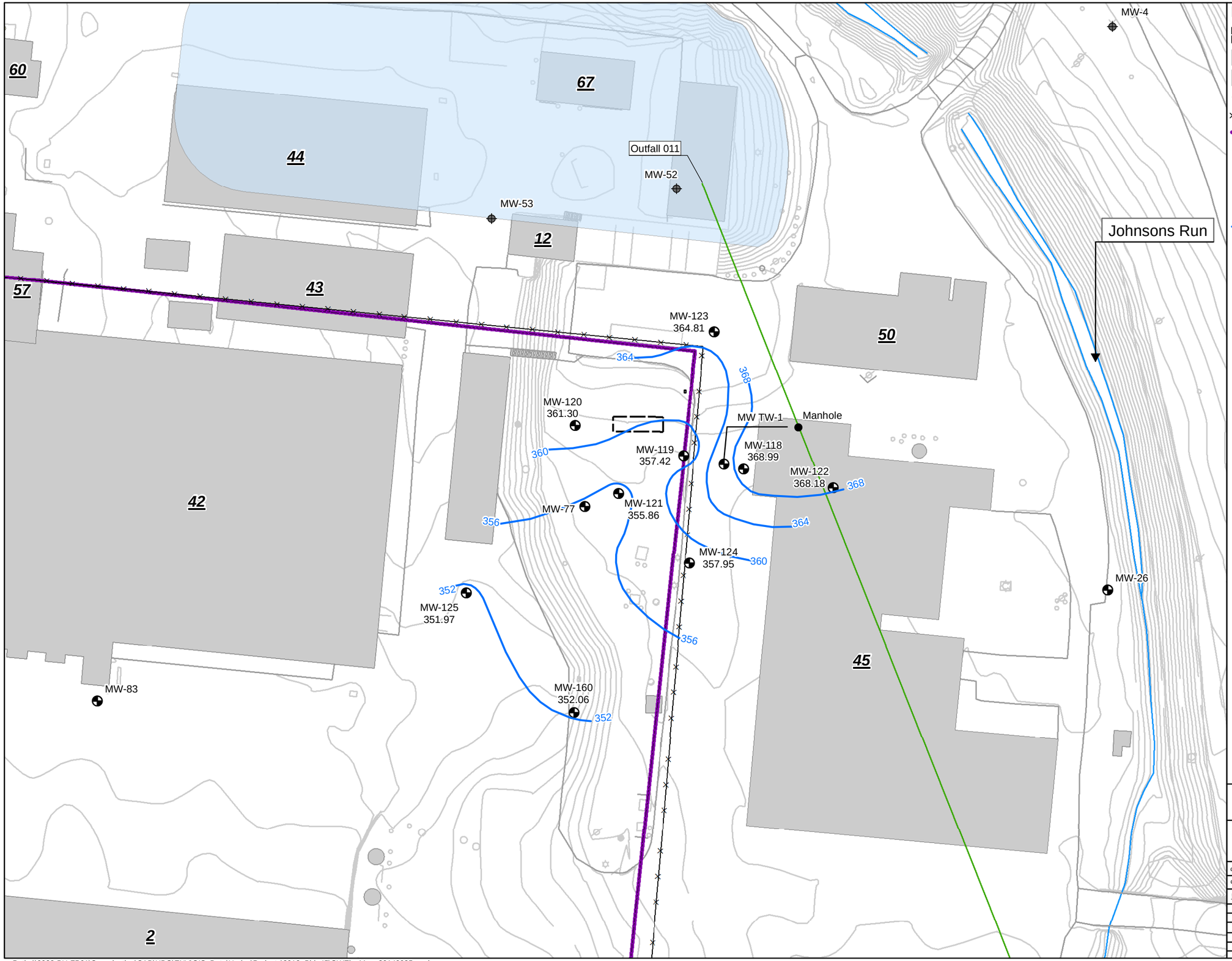
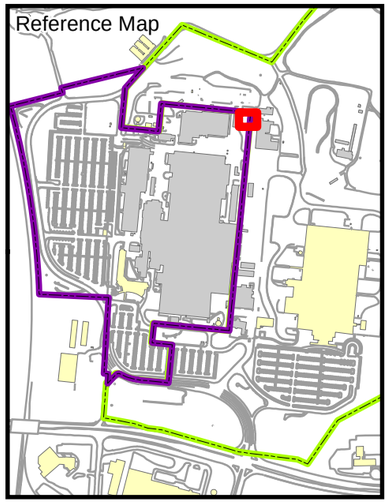


Legend

- Tank 009 (Removed July 2010)
- 45 Demolished Buildings
- Storm Water Detention Basin
- Roads and Curbs
- Fence Line
- West Campus Boundary
- Approximate Stormwater Line
- Monitoring Well
- Abandoned Well
- 356 Groundwater Elevation
- Groundwater Elevation Contour
- MW-118 368.99 Monitoring Well Identification and Groundwater Elevation



NOTES:

1. *Base data (Buildings, Building Boundaries, Roads and Curbs, underground utilities and Contour Lines, from NuTec Survey conducted in 2006).*
2. *Monitoring Wells and Underground Storage Tank Features from Leidos site measurements.*

N

0 25 50 100 Feet

Former York Naval Ordnance Plant
1425 Eden Rd York, Pa 17402

Groundwater Elevation Contour Map September 25, 2014

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date 10/14/2014	date	date	
job no. 301425.TM.100044.4000.0100			file no. GWElevMap_20140925

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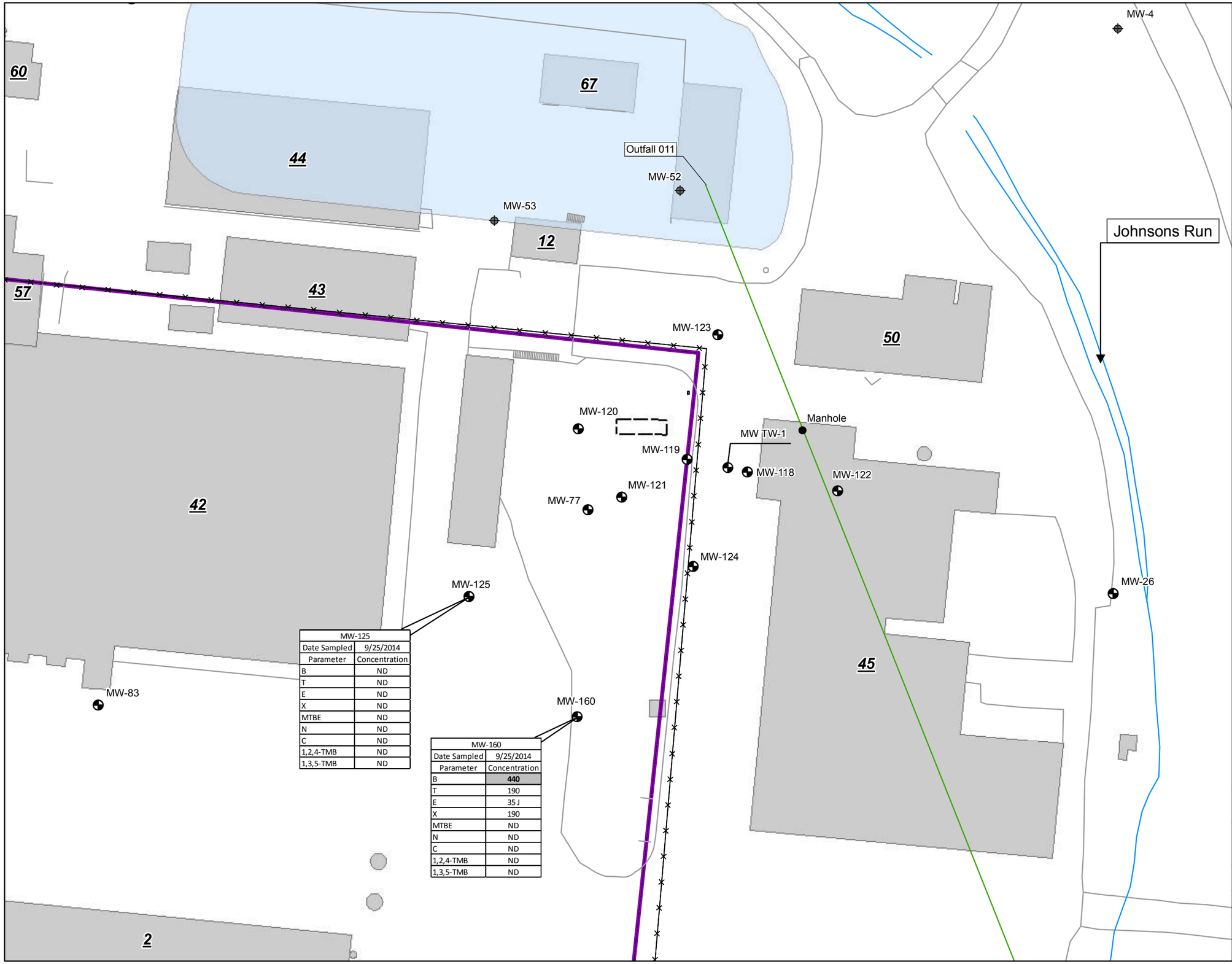
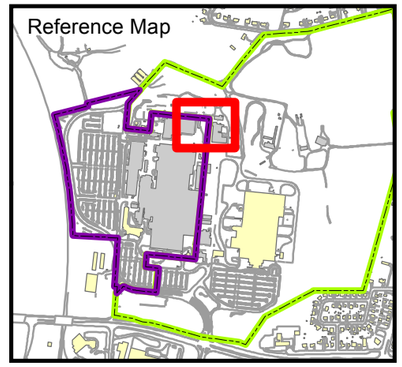


MW-125	
Date Sampled	9/25/2014
Parameter	Concentration
B	ND
T	ND
E	ND
X	ND
MTBE	ND
N	ND
C	ND
1,2,4-TMB	ND
1,3,5-TMB	ND

MW-160	
Date Sampled	9/25/2014
Parameter	Concentration
B	**440**
T	190
E	35 J
X	190
MTBE	ND
N	ND
C	ND
1,2,4-TMB	ND
1,3,5-TMB	ND

Legend

- Tank 009 (Removed July 2010)
- 45 Demolished Buildings
- Storm Water Detention Basin
- Roads and Curbs
- Fence Line
- West Campus Boundary
- Approximate Stormwater Line
- Monitoring Well
- Abandoned Well



B: Benzene
T: Toluene
E: Ethylbenzene
X: Total Xylenes
MTBE: Methyl Tert-Butyl Ether
N: Naphthalene
C: Cumene
1,2,4-TMB: 1,2,4 - Trimethylbenzene
1,3,5-TMB: 1,3,5 - Trimethylbenzene

J: Laboratory reported concentration as an approximate value.
MSC: Medium Specific Concentration
ND: Not Detected
PADEP: Pennsylvania Department of Environmental Protection
All results reported in micrograms per liter (µg/L)

Bold/Shaded concentrations are greater than a PADEP Non-Residential MSC

NOTES:
1. *Base data (Buildings, Building Boundaries, Roads and Curbs, underground utilities and Contour Lines, from NuTec Survey conducted in 2006).*
2. *Monitoring Wells and Underground Storage Tank features from Leidos site measurements.*

N

0 25 50 100 Feet

Former York Naval Ordnance Plant
1425 Eden Rd York, Pa 17402

Groundwater Quality Analytical Data September 25, 2014

drawn TAY	checked	approved	figure no. 3
date 10/14/2014	date	date	
job no. 301425.TM.100044.4000.0100			file no. GWEChemMap_20140925

initials	date	revision

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TABLES

Table 1
Monitoring Well Gauging Data and Groundwater Elevations
Former Building 45/50 Unleaded Gasoline Release - Tank 009
Harley-Davidson Motor Company Operations, Inc.
1425 Eden Road, York, York County, Pennsylvania
PADEP Facility ID No. 67-00823
Leidos Project Number 301425.TM.100044.4000.0100

Location	Monitoring Well Installation Date	TOC Elevation (Feet)	Well Diameter (inches)	Total Drilled Depth (fbg)	Screened Interval (fbg)	Top of Well Screen Elevation (feet)	Date	SWL (fbtoc)	SWL Elevation (feet)
MW-118	8/15/2011	377.44	2	25	8 - 23	369.11	6/27/2012	7.50	369.94
							7/2/2012	7.59	369.85
							7/5/2012	7.49	369.95
							7/10/2012	7.59	369.85
							7/20/2012	7.03	370.41
							7/25/2012	7.62	369.82
							8/1/2012	7.45	369.99
							8/6/2012	7.55	369.89
							8/17/2012	7.25	370.19
							8/24/2012	7.22	370.22
							8/30/2012	7.51	369.93
							9/12/2012	7.50	369.94
							10/8/2012	7.38	370.06
							12/18/2013	NM	NM
							3/25/2014	7.28	370.16
							6/19/2014	7.35	370.09
							9/25/2014	8.45	368.99
MW-119	8/17/2011	377.03	2	27	5 - 25	372.20	6/27/2012	16.28	360.75
							7/2/2012	16.75	360.28
							7/5/2012	16.72	360.31
							7/10/2012	17.33	359.70
							7/20/2012	17.30	359.73
							7/25/2012	16.84	360.19
							8/1/2012	16.60	360.43
							8/6/2012	16.67	360.36
							8/17/2012	16.38	360.65
							8/24/2012	16.65	360.38
							8/30/2012	16.54	360.49
							9/12/2012	16.43	360.60
							10/8/2012	14.99	362.04
							12/18/2013	14.46	362.57
							3/25/2014	12.11	364.92
							6/19/2014	12.52	364.51
							9/25/2014	19.84	*357.42
MW-120	8/17/2011	377.63	2	40	6 - 39	371.30	6/27/2012	9.43	368.20
							7/2/2012	10.50	367.13
							7/5/2012	11.14	366.49
							7/10/2012	12.22	365.41
							7/20/2012	13.20	364.43
							7/25/2012	13.29	364.34
							8/1/2012	13.60	364.03
							8/6/2012	15.73	361.90
							8/17/2012	14.13	363.50
							8/24/2012	14.39	363.24
							8/30/2012	14.41	363.22
							9/12/2012	14.44	363.19
							10/8/2012	10.32	367.31
							12/18/2013	7.72	369.91
							3/25/2014	6.58	371.05
							6/19/2014	7.63	370.00
							9/25/2014	16.33	361.30
MW-121	8/18/2011	376.31	2	36	7 - 35	369.08	6/27/2012	16.61	359.70
							7/2/2012	17.19	359.12
							7/5/2012	17.38	358.93
							7/10/2012	17.94	358.37
							7/20/2012	15.63	360.68
							7/25/2012	17.71	358.60
							8/1/2012	17.47	358.84
							8/6/2012	17.47	358.84
							8/17/2012	17.17	359.14
							8/24/2012	17.50	358.81
							8/30/2012	17.34	358.97
							9/12/2012	17.07	359.24
							10/8/2012	14.72	361.59
							12/18/2013	14.54	361.77
							3/25/2014	11.19	365.12
							6/19/2014	12.05	364.26
							9/25/2014	20.45	355.86
MW-122	6/20/2012	377.61	2	30	7 - 30	370.61	6/27/2012	8.98	368.63
							7/2/2012	8.93	368.68
							7/5/2012	8.90	368.71
							7/10/2012	8.93	368.68
							7/20/2012	8.75	368.86
							7/25/2012	8.78	368.83
							8/1/2012	8.52	369.09
							8/6/2012	8.43	369.18
							8/17/2012	8.34	369.27
							8/24/2012	8.40	369.21
							8/30/2012	8.36	369.25
							9/12/2012	8.30	369.31
							10/8/2012	7.65	369.96
							12/18/2013	8.45	369.16
							3/25/2014	7.98	369.63
							6/19/2014	7.84	369.77
							9/25/2014	9.43	368.18

Table 1
Monitoring Well Gauging Data and Groundwater Elevations
Former Building 45/50 Unleaded Gasoline Release - Tank 009
Harley-Davidson Motor Company Operations, Inc.
1425 Eden Road, York, York County, Pennsylvania
PADEP Facility ID No. 67-00823
Leidos Project Number 301425.TM.100044.4000.0100

Location	Monitoring Well Installation Date	TOC Elevation (Feet)	Well Diameter (inches)	Total Drilled Depth (fbg)	Screened Interval (fbg)	Top of Well Screen Elevation (feet)	Date	SWL (fbtoc)	SWL Elevation (feet)
MW-123	6/20/2012	379.64	2	30	7 - 30	372.64	6/27/2012	12.18	367.46
							7/2/2012	12.37	367.27
							7/5/2012	12.33	367.31
							7/10/2012	12.54	367.10
							7/20/2012	12.53	367.11
							7/25/2012	12.55	367.09
							8/1/2012	12.37	367.27
							8/6/2012	12.44	367.20
							8/17/2012	12.28	367.36
							8/24/2012	12.46	367.18
							8/30/2012	12.47	367.17
							9/12/2012	12.47	367.17
							10/8/2012	11.85	367.79
							12/18/2013	12.58	367.06
							3/25/2014	11.32	368.32
							6/19/2014	11.29	368.35
							9/25/2014	14.83	364.81
MW-124	6/21/2012	376.37	2	34	8 - 34	368.37	6/27/2012	14.87	361.50
							7/2/2012	15.50	360.87
							7/5/2012	15.56	360.81
							7/10/2012	16.21	360.16
							7/20/2012	16.31	360.06
							7/25/2012	15.79	360.58
							8/1/2012	15.66	360.71
							8/6/2012	15.68	360.69
							8/17/2012	14.94	361.43
							8/24/2012	15.29	361.08
							8/30/2012	15.14	361.23
							9/12/2012	14.94	361.43
							10/8/2012	13.54	362.83
							12/18/2013	15.39	360.98
							3/25/2014	11.93	364.44
							6/19/2014	12.14	364.23
							9/25/2014	18.42	357.95
MW-125	6/21/2012	366.56	2	24	4 - 24	362.56	6/27/2012	11.37	355.19
							7/2/2012	11.59	354.97
							7/5/2012	11.89	354.67
							7/10/2012	12.32	354.24
							7/20/2012	11.31	355.25
							7/25/2012	11.31	355.25
							8/1/2012	10.78	355.78
							8/6/2012	10.21	356.35
							8/17/2012	10.58	355.98
							8/24/2012	11.14	355.42
							8/30/2012	10.86	355.70
							9/12/2012	NM	NM
							10/8/2012	6.21	360.35
							12/18/2013	7.62	358.94
							3/25/2014	7.24	359.32
							6/19/2014	7.39	359.17
							9/25/2014	14.59	351.97
MW-160	9/4/2012	374.71	2	38	7.5 - 37.5	367.21	9/12/2012	19.04	355.67
							10/8/2012	17.65	357.06
							12/18/2013	16.51	358.20
							3/25/2014	15.56	359.15
							6/19/2014	15.72	358.99
							9/25/2014	22.65	352.06
MW-26	5/20/1987	379.44	2	62	11 - 61	368.44	6/27/2012	25.02	354.42
							7/2/2012	25.32	354.12
							7/5/2012	25.56	353.88
							7/10/2012	26.04	353.40
							7/20/2012	25.11	354.33
							7/25/2012	25.31	354.13
							8/1/2012	24.68	354.76
							8/6/2012	24.28	355.16
							8/17/2012	24.25	355.19
							8/24/2012	24.86	354.58
							8/30/2012	24.71	354.73
							9/12/2012	NM	NM
							10/8/2012	23.68	355.76
							12/18/2013	22.75	356.69
							3/25/2014	20.91	358.53
							6/19/2014	21.40	358.04
							9/25/2014	28.15	351.29
MW-77	6/10/1998	379.48	2	67	40 - 65	339.48	6/27/2012	24.29	355.19
							7/2/2012	24.72	354.76
							7/5/2012	24.93	354.55
							7/10/2012	25.42	354.06
							7/20/2012	24.96	354.52
							7/25/2012	24.83	354.65
							8/1/2012	24.35	355.13
							8/6/2012	24.13	355.35
							8/17/2012	24.15	355.33
							8/24/2012	24.53	354.95
							8/30/2012	24.40	355.08
							9/12/2012	24.20	355.28
							10/8/2012	23.04	356.44
							12/18/2013	22.22	357.26
							3/25/2014	20.51	358.97
							6/19/2014	20.81	358.67
							9/25/2014	27.65	351.83

Notes:

fbtoc - feet below top of well casing
TOC - top of casing
fbg - feet below grade
N/A - not applicable
NM - not measured
SWL - static water level
*- Groundwater elevation corrected for the presence of product using a specific gravity of 0.75 for gasoline

Table 2
Groundwater Sample Analytical Results
Former Building 45/50 Unleaded Gasoline Release - Tank 009
Harley-Davidson Motor Company Operations, Inc.
1425 Eden Road, York, York County, Pennsylvania
PADEP Facility ID No. 67-00823
Leidos Project Number 301425.TM.100044.4000.0100

Sample Location	Sample ID	Date Sample Collected	Date Sample Analyzed	Analysis Method 8260B								
				Benzene	Toluene	Ethylbenzene	Total Xylenes	Methyl Tertiary Butyl Ether (MTBE)	Naphthalene	Isopropylbenzene (Cumene)	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
MW-77	HD-MW-77-01-0	6/24/2011	7/7/2011	**1,500**	56	80	74 J	**520**	NA	NA	NA	NA
	HD-MW-77-01-0	8/1/2012	8/7/2012	**2,000**	110	140	130 J	**540**	41 J	24 J	33 J	13 J
MW-118	HD-MW-118-01-0	8/25/2011	9/9/2011	**120 H**	560 H	630 H	1,900 H	<50 H	42 J H	130 H	**460 H**	**130 H**
	HD-MW-118-01-0	9/30/2011	10/11/2011	**120**	520	**1,000**	2,800	<100	**130**	88 J	**790**	**250**
	HD-MW-118-01-0	8/1/2012	8/15/2012	**39 J**	110	**600**	1,400	<50	22 JB	78	**600**	**210**
MW-119	HD-MW-119-01-0	8/25/2011	9/9/2011	**6,100 H**	**6,300 H**	510 J H	1,900 H	<630 H	**280 J H**	<630 H	**170 J H**	<630 H
	HD-MW-119-01-0	9/30/2011	10/11/2011	**11,000**	**18,000**	**2,600**	10,000	<500	**240 J**	<500	**1,300**	**480 J**
	HD-MW-119-01-0	8/1/2012	NS/FP	**NS/FP**	**NS/FP**	**NS/FP**	**NS/FP**	**NS/FP**	**NS/FP**	**NS/FP**	**NS/FP**	**NS/FP**
MW-120	HD-MW-120-01-0	8/25/2011	9/7/2011	2.2 J	0.94 J	<5.0	<15.0	14.0	<5.0	<5.0	<5.0	<5.0
	HD-MW-120-01-0	9/30/2011	10/11/2011	<5.0	<5.0	<5.0	<15.0	1.1 J	<5.0	<5.0	<5.0	<5.0
	HD-MW-120-01-0	8/1/2012	8/6/2012	**7.0**	<5.0	<5.0	<15.0	6.8	<5.0	<5.0	<5.0	<5.0
MW-121	HD-MW-121-01-0	8/25/2011	9/8/2011	**390**	**3,700 E**	**990**	3,600	**45 J**	26 J	120	**430**	**120**
	HD-MW-121-01-0	9/30/2011	10/11/2011	**430**	**4,900**	**1,000**	3,700	**56 J**	<250	45 J	**330**	**140 J**
	HD-MW-121-01-0	8/1/2012	8/7/2012	**480 J**	**6,900**	**1,900**	7,600	**35**	<500	89	**980**	**230**
MW-122	HD-MW-122-01-0	7/2/2012	7/6/2012	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<5.0	<5.0	<5.0
	HD-MW-122-01-0	8/1/2012	8/15/2012	<5.0	<5.0	<5.0	<15.0	<5.0	1.1 JB	<5.0	<5.0	<5.0
MW-123	HD-MW-123-01-0	7/2/2012	7/6/2012	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<5.0	<5.0	<5.0
	HD-MW-123-01-0	8/1/2012	8/15/2012	<5.0	<5.0	<5.0	<15.0	<5.0	2.8 JB	<5.0	<5.0	<5.0
MW-124	HD-MW-124-01-0	7/2/2012	7/6/2012	**1,400**	**4,000**	660	3,800	**39**	**1,600**	57	**550**	**240**
	HD-MW-124-01-0	8/1/2012	8/15/2012	**2,300**	**8,400**	**960**	9,500	**44 J**	**540 B**	36 J	**1,200**	**490**
MW-125	HD-MW-125-01-0	7/2/2012	7/6/2012	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<5.0	<5.0	<5.0
	HD-MW-125-01-0	8/1/2012	8/6/2012	<5.0	<5.0	<5.0	<15.0	<5.0	<5.0	<5.0	<5.0	<5.0
	HD-MW-125-01-0	12/18/2013	12/27/2013	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0
	HD-MW-125-01-0	3/25/2014	4/7/2014	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0
	HD-MW-125-01-0	6/19/2014	6/24/2014	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0
	HD-MW-125-01-0	9/25/2014	10/2/2014	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0
MW-160	HD-MW-160-01-0	9/12/2012	9/21/2012	**180**	17	12	20	<5.0	4.3 J	1.2 J	3.4 J	<5.0
	HD-MW-160-01-0	12/18/2013	12/27/2013	**120**	5.8	6.3	<10	<5.0	<5.0	<5.0	<5.0	<5.0
	HD-MW-160-01-0	3/25/2014	4/8/2014	**340**	61	23 J	51	<25	<25	4.1 J	17 J	<25
	HD-MW-160-01-0	6/19/2014	6/24/2014	**270**	59	22	48	<5.0	<5.0	2.5 J	20	6.0
	HD-MW-160-01-0	9/25/2014	10/2/2014	**440**	190	35 J	190	<50	<50	<50	<50	<50
PADEP Non-Residential Groundwater MSCs				5	1,000	700	10,000	20	100	3,500	62	53
PADEP Default Non-Residential Volatilization to Indoor Air Screening Values for Groundwater				5,900	NOC	45,000	NOC	640,000	NOC	NOC	12,000	10,000

Notes:
All results reported in micrograms per liter (µg/L)
E - Result exceeded calibration range
H - Sample was prepped or analyzed beyond the specified holding time
J - Result is less than the reporting limit (RL) but greater than or equal to the method detection limit (MDL) and the concentration is an approximate value
NS/FP - Not Sampled, Free Product observed.
MSCs - Medium Specific Concentrations
NOC - Not of concern, value above constituent water solubility
PADEP - Pennsylvania Department of Environmental Protection
QA/QC - Quality Assurance/Quality Control
Results that are bold/shaded are greater than PADEP nonresidential MSCs and/or indoor air screening values

APPENDIX A

Groundwater Sample Analytical Report
(Provided on Accompanying CD)