Corrective Action Process 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)

SAIC Energy, Environment & Infrastructure, LLC
6310 Allentown Boulevard / Harrisburg, PA 17112 / tel: 717.901.8100 / saic.com/EEandI

September 9, 2013

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

Re: Remedial Action Plan (RAP)
Former York Naval Ordnance Plant, York, Pennsylvania
Former Building 45/50 Unleaded Gasoline UST Release
PADEP Facility I.D. No. 67-00823
USTIF Claim No. 2010-0106(M)
SAIC Project 2603100044-4000-100

Dear Ms. Trowbridge:

On behalf of Harley-Davidson Motor Company Operations, Inc. (Harley-Davidson), SAIC Energy, Environment & Infrastructure, LLC (SAIC) is submitting this Remedial Action Plan (RAP) to the Pennsylvania Department of Environmental Protection (PADEP) for the above-referenced site (**Figure 1**). This RAP addresses a release of unleaded gasoline from Harley-Davidson's Tank 009, a former gasoline underground storage tank (UST) located west of Building 45/50 at the York Vehicle Operations facility.

The site is the former York Naval Ordnance Plant (fYNOP) that is currently undergoing a site-wide remedial investigation (RI) for environmental impacts independent of the UST investigation that is the subject of this RAP. The buildings in the vicinity of former Tank 009 were demolished during 2010/2011, and the western portion of the property that includes the area where former Tank 009 was located was sold to York County Industrial Development Authority (YCIDA) in 2012. Environmental responsibility for this release was retained by Harley-Davidson.

The goal of this RAP is to comply with the Pennsylvania Land Recycling and Remediation Standards Act (Act 2) of 1995. This RAP proposes to address petroleum-related constituents from the former Tank 009 release by application of the site-specific standard (SSS) in soil and the statewide health standard (SHS) in groundwater under Act 2.

1.0 BACKGROUND

1.1 Release Discovery

The release was discovered in July 2010 during removal of Tank 009. Soil samples collected for laboratory analysis under the former gasoline dispenser contained unleaded gasoline constituent concentrations greater than the PADEP Nonresidential Soil to Groundwater Used Aquifer Medium Specific Concentrations (MSCs) but less than the Soil Direct Contact MSCs.

1.2 Site Characterization

In January 2012, a Site Characterization Report (SCR) was submitted to PADEP to document activities performed to address the Tank 009 dispenser release. The SCR summarized soil and groundwater samples, monitoring well (MW-118 through MW-121) installations, groundwater gauging, and light non-aqueous phase liquid (LNAPL) recovery. The SCR included recommendations to delineate the dissolved hydrocarbon plume in groundwater and evaluate the vapor intrusion (VI) pathway. On February 2, 2012, PADEP concurred with the SCR-recommended activities associated with former Tank 009.

The recommended activities were completed in October 2012. The VI evaluation indicated no target constituent concentrations exceeding a soil gas MSC. The magnitude and extent of dissolved-phase unleaded gasoline parameters in groundwater were delineated, and a fate-and-transport analysis evaluated the future (30-year) impact extent. LNAPL was removed to the maximum extent practicable.

In December 2012, a Supplemental SCR was submitted to the PADEP summarizing the results of all the Tank 009 investigations and evaluations. It concluded that no additional investigation or active remediation was necessary because conditions pose no risk to ecological receptors; VI and direct contact with soil pathways are not a concern; dissolved-phase unleaded gasoline constituents in groundwater meet the SHSs; and an SSS is applicable for the soil. Eight quarters of compliant attainment sampling of MW-125 and MW-160, in recognition of their being between the source and the point of compliance (POC), and a post-remedial care (PRC) plan were recommended.

In a March 28, 2013, letter to Harley-Davidson, the PADEP approved the December 2012 Supplemental SCR for Tank 009 (Attachment A). PADEP concurred with the SCR's recommendations for implementation of institutional controls and a PRC plan.

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2.0 IDENTIFICATION OF REMEDIATION STANDARDS

2.1 Soil

The Supplemental SCR detailed laboratory analyses of soil samples collected with the removal of Tank 009 and during the site characterization activities. The documented concentrations of unleaded gasoline parameters above the Nonresidential Soil-to-Groundwater MSCs (**Tables 1** and **2**) and groundwater fate-and-transport evaluations indicated that maximum historic soil concentrations are not sufficiently high to cause groundwater to exceed the MSCs at the downgradient POC currently or 30 years in the future. Therefore, the recommended SSSs for constituents present in soil are the maximum detected concentrations:

- Benzene: 0.950 milligrams per kilogram (mg/kg)
- Naphthalene: 43.7 mg/kg
- 1,2,4-Trimethylbenzene: 417 mg/kg
- 1,3,5-Trimethylbenzene: 127 mg/kg

2.2 Groundwater

The laboratory analysis of groundwater samples collected during the Tank 009 site characterization activities documented concentrations of dissolved-phase gasoline constituents greater than the PADEP Nonresidential Used Aquifer MSCs (**Table 3**). However, the only parameter that exceeded the MSCs in the downgradient wells was benzene at 180 micrograms per liter (µg/L) in MW-160, approximately 150 feet from the source.

The POC for attainment of the SHS for groundwater is defined by the PADEP as the property boundary that existed at the time the contamination was discovered. The downgradient boundary is at Eden Road, approximately 1,650 feet from Tank 009.

The current data from the study area and the fate-and-transport modeling conducted during site characterization activities show no potential for exceeding the Nonresidential Used Aquifer MSCs for unleaded gasoline parameters at the POC in the foreseeable future. Therefore, the groundwater meets the SHSs at the POC.

3.0 EVALUATION OF REMEDIAL ALTERNATIVES

3.1 Applicable Alternatives

There are several remedial alternatives available to meeting the remedial goals. The scope of the alternatives is guided by PADEP's concurrence with the Supplemental SCR recommendations. The following section reviews the alternative methods, ability to meet remedial goals, and potential costs. The no-action alternative does not meet remedial goals and is not compliant with PADEP regulations. Therefore, it was eliminated from consideration. A representative set of passive remedial alternatives evaluated includes:

- Monitored natural attenuation (MNA);
- Pathway elimination; and
- In-situ soil treatment.

3.2 Monitored Natural Attenuation

Hydrocarbons are typically degraded by bacteria in the natural environment. MNA is conducted to observe degradation as attenuation of concentrations. No equipment is required on-site; therefore, MNA is truly a nonactive remediation. However, the rate of hydrocarbon degradation may be limited by a deficiency in one of many environmental factors (pH, dissolved oxygen, and nutrients) required to promote degradation by bacterial metabolism. Dilution of concentrations is limited by the relatively low hydraulic conductivity of the soils.

By itself, MNA may not meet remedial goals because it cannot assure reduction of concentrations to attain the SHSs. Further, it does not prevent exposure to groundwater above the MSCs. Thus, it is not compliant with PADEP regulations. This alternative is better as a component of pathway elimination to attain an SSS (Section 3.3).

SAIC estimates quarterly groundwater monitoring of two wells (MW-125 and MW-160) and reporting at approximately $9,000 per year. Based on a recently completed project, SAIC estimates closure of the nine monitoring wells installed for Tank 009 at $12,000. Therefore, assuming MNA demonstrates attainment of MSCs in 5 years, the cost of MNA is estimated at $57,000. However, the uncertainty of degradation and dilution could potentially extend the MNA period and the cost of this remedial alternative.

3.3 Pathway Elimination

Pathway elimination is an option that recognizes current site conditions do not pose a threat by direct contact, no one is currently exposed to groundwater on-site, and groundwater meets the SHS at the POC. The anticipated future use of the site is for commercial purposes and is connected to public water. This option applies institutional controls, consisting of a deed restriction or environmental covenant running with the land to perpetuate the conditions of no groundwater use in the future. This allows the soil to meet a remedial goal of SSS and reduces the monitoring period potentially necessary for compliance as compared with MNA.

Pathway elimination requires groundwater attainment monitoring, which will document the tendency of hydrocarbons to degrade but will not rely on degradation for compliance.

Groundwater attainment monitoring demonstrating for 8 quarters (2 years) of compliant results is $18,000, and closure of monitoring wells after receipt of a release of liability (ROL) from PADEP is $12,000. Preparation of a deed restriction or environmental covenant is necessary for this option but will likely be a component of the site-wide remediation of other legacy issues. Therefore, this remedial alternative, less the institutional control costs, is estimated at approximately $30,000.

3.4 In-situ Soil Treatment

In-situ soil treatment is a process of introducing soil amendments—such as pH adjustment, nutrients, or oxygen releasing compound (ORC)—into the zone of documented soil contamination to stimulate bacterial degradation of the hydrocarbons to concentrations less than the MSCs. Treatment is active remediation, but it is followed by passive monitoring to document attenuation. Likely, this alternative can meet the SHS in soil, but institutional controls costs would still be necessary as long as groundwater remains above MSCs.

The site characterization suggested the area where the soil exceeds the MSC concentrations and should be treated is a maximum of 3,500 square feet. Experience indicates soil amendment injections in silty clay may influence an approximately 79-square-foot (5-foot radius) area; therefore, 45 amendment injection sites are necessary. Following approximately six months of activation time, soil sampling will be done to document whether or not concentrations in soil are remediated to the SHSs or whether SSSs are applicable. Such sampling will require systematic random sampling of 12 soil samples. Groundwater monitoring, discussed in the pathway elimination option (Section 3.3), is needed to demonstrate attainment. Upon attainment and after receipt of an ROL, closure of the monitoring wells will be conducted.

A soil amendment injection of ORC has an estimated unit cost of $2,500 per injection site (total $112,500). Soil sampling and analysis of 12 soil samples total approximately $12,000. Groundwater monitoring at $18,000 and closure of monitoring wells at $12,000 bring the total cost to approximately $154,500 even without the costs of institutional controls. Therefore, in-situ soil treatment is the most expensive option.

4.0 RECOMMENDED REMEDIAL ACTION

MNA is not compliant with PADEP regulations and does not meet the remedial goals. PADEP has concurred that active remediation is not necessary; therefore, in-situ soil treatment is not necessary. Pathway elimination can achieve compliance, likely with eight consecutive quarters (two years) of monitoring and institutional controls to prevent potential exposure by barring groundwater use. Pathway elimination is also the least expensive remedial alternative. Based on these evaluations, pathway elimination is recommended.

Eight consecutive quarters of groundwater sampling at monitoring well locations MW-125 and MW-160 are recommended to confirm attainment of the soil SSSs. MW-125 and MW-160 are best positioned to monitor groundwater concentrations, confirm the fate-and-transport projections, and demonstrate that the SHSs are met at the POC. Groundwater sampling will be performed using the following procedures:

1. Monitoring wells MW-26, MW-77, MW-118 through MW-125, and MW-160 will be measured for depth to groundwater and total well depth with an oil/water interface probe. If LNAPL is detected, it will be recovered and containerized for disposal by Harley-Davidson.

2. A variable-speed submersible pump will be used to purge MW-125 and MW-160. The pump, dedicated disposable tubing, and electrical line will be lowered into the well to a depth of approximately one foot above the bottom of the wells. The pump will be decontaminated between wells by washing with a Liqui-Nox® /deionized water solution followed by a deionized water rinse.

3. The wells will be purged at a rate approximately equal to the yield of the well: approximately 0.25 gallons per minute (gpm).

4. During purging, water quality field parameters will be measured and recorded every five minutes (temperature, pH conductivity, dissolved oxygen, and turbidity). Upon stabilization of the field parameters (within 10 percent) over 3 consecutive measurements, groundwater samples will be collected directly from the pump discharge tubing into 40-millileter (ml) glass volatile organic analysis (VOA) vials with septa seals containing preservative.

Upon collection, the sample containers will be labeled and placed into a cooler with ice and sent to a PADEP-certified analytical laboratory. A laboratory-provided quality assurance/quality control (QA/QC) trip blank and a chain-of-custody will accompany the samples in the cooler during shipment to the laboratory. The samples will be submitted with instruction to the laboratory for analysis of the PADEP Short List of Petroleum Products (unleaded gasoline

parameters) using United States Environmental Protection Agency (EPA) Method 8260B. Groundwater generated during the purging of the wells will be containerized for on-site treatment by Harley-Davidson.

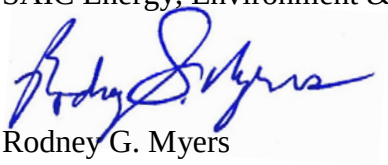
SAIC will document the results of the quarterly groundwater sampling in quarterly reports that will include a brief discussion of results, groundwater contour map, chemical concentration map, data tables, and a copy of the laboratory report. At the conclusion of the attainment monitoring period, SAIC will prepare a remedial action completion report (RACR) in accordance with Chapter 245, Section 245.310, of the PADEP rules and regulations.

The RACR will include a PRC plan. The PRC plan will, at a minimum, assure preparation of a deed restriction or environmental covenant as an institutional control to prohibit groundwater use for potable or agricultural uses. This deed restriction or environmental covenant is anticipated to be prepared in conjunction with the larger ongoing remedial action for the entire site, which will be completed at a later date. The deed restriction or environmental covenant will encompass the area impacted by Tank 009.

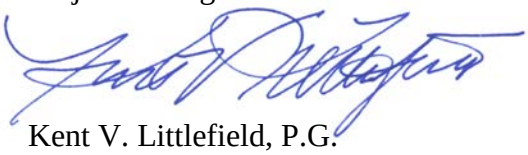
SAIC and Harley-Davidson appreciate PADEP's continued support and assistance on this project. Please contact the undersigned at (717) 901-8100 if you have any questions.

Respectfully submitted,

SAIC Energy, Environment & Infrastructure, LLC



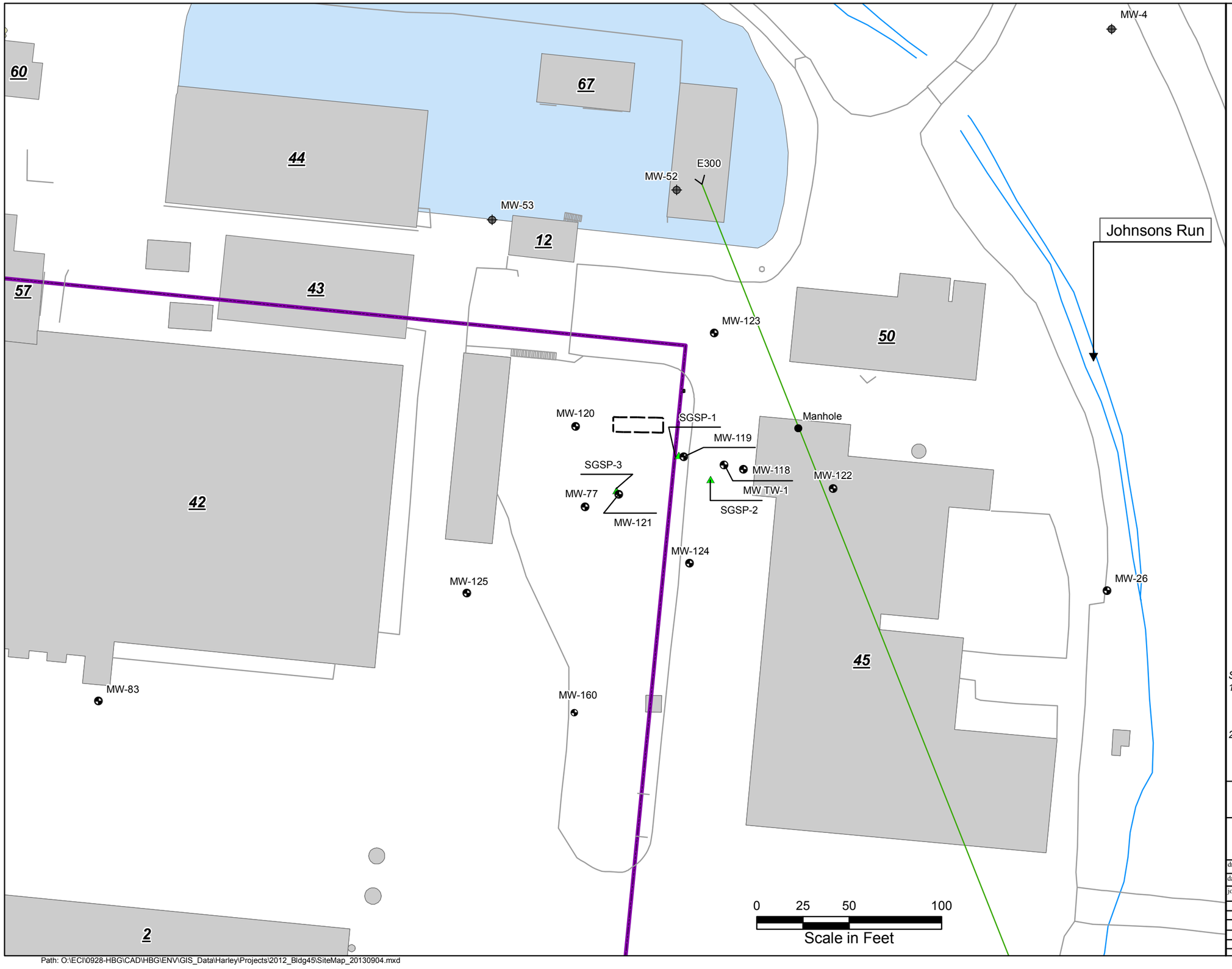
Rodney G. Myers
Project Manager



Kent V. Littlefield, P.G.
Senior Hydrogeologist-Program Manager

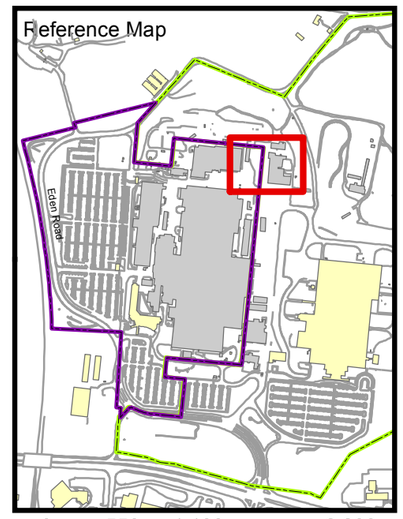
KVL:pr
Attachments
cc: Sharon R. Fisher, Harley-Davidson
Ralph T. Golia, P.G., AMO Environmental Decisions
Blanda Nace, YCIDA
Bethany Smith, ICF International – USTIF

FIGURES



Legend

- Tank 009 (Removed July 2010)
- Existing Buildings
- Demolished Buildings
- Storm Water Detention Basin
- Roads and Curbs
- East/West Campus Boundary
- Approximate Stormwater Line
- Monitoring Well
- Abandoned Well
- Location of Soil Gas Sample Point



SOURCE:

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

Former York Naval Ordnance Plant (FYNOP)

York, Pennsylvania

Site Map

drawn JMG	checked	approved	figure no. 1
date 10/11/2012	date	date	
job no. 2603100044/3000/100			file no. SiteMap_20130904

initials	date	revision

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TABLES

Table 1
Soil Sample Analytical Results
Building 45 UST Release Characterization
Former York Naval Ordnance Plant
1425 Eden Road, York, York County, Pennsylvania
PADEP Facility ID No. 67-00823
SAIC Project Number 2603100044-4000-100

Sample Location	Sample ID	Approximate Sample Depth (feet below grade)	Date Sample Collected	Date Sample Analyzed	Analysis Method 8260/5035								
					Benzene	Toluene	Ethylbenzene	Total Xylenes	Methyl Tertiary Butyl Ether (MTBE)	Naphthalene	Isopropylbenzene (Cumene)	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
Tank 009 Closure Samples	North Wall Gas Tank	11.5	7/13/2010	7/19/2010	< 0.0664	< 0.0664	< 0.0664	< 0.199	< 0.0664	< 0.133	< 0.0664	< 0.0664	< 0.0664
	South Wall Gas Tank	11.5	7/13/2010	7/19/2010	< 0.0584	< 0.0584	< 0.0584	< 0.175	< 0.0584	< 0.117	< 0.0584	< 0.0584	< 0.0584
	Under Gas Dispenser	3.5	7/14/2010	7/19/2010	< 0.270	12.5	27.3	223	< 0.270	**43.7**	33.4	**417**	**127**
	Gas Line	4.5	7/14/2010	7/22/2010	< 0.0486	< 0.0486	< 0.0486	< 0.146	< 0.0486	< 0.0972	< 0.0486	0.0522	0.0505
	HD-B45T-SB-001	12.5 - 13	11/12/2010	11/16/2010	< 0.0515	< 0.0515	< 0.0515	<0.155	< 0.0515	<0.103	< 0.0515	< 0.0515	< 0.0515
	HD-B45T-SB-002	16.9 - 17.4	11/12/2010	11/16/2010	< 0.0445	< 0.0445	< 0.0445	<0.134	< 0.0445	<0.089	< 0.0445	< 0.0445	< 0.0445
	HD-B45T-SB-003	16.9 - 17.4	11/12/2010	11/16/2010	< 0.0471	< 0.0471	< 0.0471	< 0.141	< 0.0471	< 0.0942	< 0.0471	< 0.0471	< 0.0471
Site Characterization Samples	HD-B45T-SB-004	10 - 10.5	5/4/2011	5/9/2011	<0.0058	<0.0058	<0.0058	<0.018	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058
	HD-B45T-SB-004	15 - 15.5	5/4/2011	5/9/2011	<0.0055	<0.0055	<0.0055	<0.017	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055
	HD-B45T-SB-005	11.1 - 11.6	5/4/2011	5/9/2011	<2.5	28	17	130	<2.5	25	6.8	**120**	**30**
	HD-B45T-SB-005	12 - 12.5	5/4/2011	5/9/2011	<0.26	0.097 J	0.055 J	0.45 J	<0.26	0.18 J	<0.26	0.45	0.13 J
	HD-B45T-SB-005	15.2 - 15.7	5/4/2011	5/9/2011	<0.24	0.29	0.19 J	1.8	<0.24	0.45	0.091 J	1.8	0.5
	HD-B45T-SB-006	7 - 7.5	5/4/2011	5/9/2011	<0.005	<0.005	<0.005	<0.015	<0.005	<0.005	<0.005	<0.005	<0.005
	HD-B45T-SB-006	12 - 12.5	5/4/2011	5/9/2011	<0.0049	0.003 J	0.0035 J	0.013 J	0.0019 J	<0.0049	0.00094 J	0.0059	0.0016 J
	HD-B45T-SB-007	7 - 7.5	5/4/2011	5/9/2011	<0.0062	<0.0062	<0.0062	<0.019	<0.0062	<0.0062	<0.0062	<0.0062	<0.0062
	HD-B45T-SB-007	11.5 - 12	5/4/2011	5/9/2011	<0.0059	<0.0059	<0.0059	<0.018	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059
	HD-B45T-SB-008	5.5 - 6	5/4/2011	5/9/2011	<2.8	3.5	2.5 J	22	<2.8	4.8	1.1 J	22	6.1
	HD-B45T-SB-008	10.3 - 10.8	5/4/2011	5/9/2011	<2.6	1.7 J	1.2 J	10	<2.6	2.7	0.62 J	11	3.1
	HD-B45T-SB-009	7.5 - 8	5/4/2011	5/9/2011	<0.0047	<0.0047	<0.0047	<0.014	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
	HD-B45T-SB-009	15.3 - 15.8	5/4/2011	5/9/2011	<0.0051	<0.0051	<0.0051	<0.015	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051
	HD-B45T-SB-010	7.5 - 8	5/4/2011	5/9/2011	<0.0045	<0.0045	<0.0045	<0.013	<0.0045	<0.0045	<0.0045	<0.0045	<0.0045
	HD-B45T-SB-010	15 - 15.5	5/4/2011	5/9/2011	0.0039 J	0.091	0.058	0.370	<0.0048	0.055	0.011	0.120	0.036
	HD-B45T-SB-011	5.5 - 6	5/4/2011	5/9/2011	<0.0056	<0.0056	<0.0056	<0.017	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056
	HD-B45T-SB-011	9.3 - 9.8	5/4/2011	5/9/2011	<0.0056	<0.0056	<0.0056	<0.017	<0.0056	0.013	<0.0056	<0.0056	<0.0056
	HD-B45T-MW-118	11 - 12	8/15/2011	8/21/2011	<0.32	0.460	0.430	1.7	<0.32	0.1 J	0.061 J	0.580	0.2 J
PADEP Non-Residential Soil-to-Groundwater MSCs					0.5	100	70	1,000	2	25	2,500	35	9.3
PADEP Non-Residential Direct Contact MSCs (2 - 15 feet)					330	10,000	10,000	9,100	9,900	190,000	10,000	640	550
PADEP Default Non-Residential Volatilization to Indoor Air Screening Values for Soil					0.63	110	9.5	77	86	NOC	360+	29	6.4

Notes:
All results reported in milligrams per kilogram (mg/kg)
J - Result is less than the reporting limit (RL), but greater than or equal to the method detection limit (MDL) and the concentrations is an approximate value.
MSCs - Medium Specific Concentrations
NA - Sample not analyzed for this compound
NOC - Not of Concern
PADEP - Pennsylvania Department of Environmental Protection
+ - Soil Saturation Concentration (Csat) - concentrations above Csat may suggest the need to investigate the potential presence of non-aqueous phase liquid (LNAPL)
Results that are bold/shaded are greater than PADEP nonresidential MSCs and/or indoor air screening values

Table 2
Soil Sample Analytical Results
Building 45 UST Release Characterization
Former York Naval Ordnance Plant
1425 Eden Road, York, York County, Pennsylvania
PADEP Facility ID No. 67-00823
SAIC Project Number 2603100044-4000-100

Sample Location	Sample ID	Approximate Sample Depth (feet below grade)	Date Sample Collected	Date Sample Analyzed	Analysis Method 8260/5035								
					Benzene	Toluene	Ethylbenzene	Total Xylenes	Methyl Tertiary Butyl Ether (MTBE)	Naphthalene	Isopropylbenzene (Cumene)	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
	HD-B45T-MW-122	10.5 - 11	6/18/2012	6/25/2012	<0.0056	<0.0056	<0.0056	<0.017	<0.0056	0.0021 JB	<0.0056	<0.0056	<0.0056
	HD-B45T-MW-122	23.3 - 23.8	6/18/2012	6/25/2012	<0.0061	<0.0061	<0.0061	<0.018	<0.0061	0.0022 JB	<0.0061	<0.0061	<0.0061
	HD-B45T-MW-123	13.5 - 14	6/18/2012	6/25/2012	<0.0051	<0.0051	<0.0051	<0.015	<0.0051	0.0021 JB	<0.0051	<0.0051	<0.0051
	HD-B45T-MW-123	22.6 - 23.1	6/18/2012	6/25/2012	<0.005	<0.005	<0.005	<0.015	<0.005	0.0021 JB	<0.005	<0.005	<0.005
	HD-B45T-MW-124	17.5 - 18	6/18/2012	6/25/2012	<0.28	0.310	0.16 J	0.58 J	<0.28	0.034 J	<0.28	0.074 J	<0.28
	HD-B45T-MW-124	30 - 30.5	6/18/2012	6/25/2012	**0.950**	1.300	0.14 J	0.54 J	0.11 J	0.025 J	<0.23	0.055 J	<0.23
	HD-B45T-MW-125	10 - 10.5	6/18/2012	6/25/2012	<0.0046	<0.0046	<0.0046	<0.014	<0.0046	0.0014 JB	<0.0046	<0.0046	<0.0046
	HD-B45T-MW-125	21.4 - 21.9	6/18/2012	6/25/2012	<0.0051	<0.0051	<0.0051	<0.015	<0.0051	0.0015 JB	<0.0051	<0.0051	<0.0051
	HD-B45T-MW-160	20.0 - 20.5	9/4/2012	9/7/2012	<0.0049	<0.0049	<0.0049	<0.015	<0.0049	0.0011 J	<0.0049	<0.0049	<0.0049
	HD-B45T-MW-160	36.0 - 36.5	9/4/2012	9/7/2012	0.0036 J	0.00078 J	<0.0053	<0.016	<0.0053	0.0018 J	<0.0053	<0.0053	<0.0053
PADEP Non-Residential Soil-to-Groundwater MSCs					0.5	100	70	1,000	2	25	2,500	35	9.3
PADEP Non-Residential Direct Contact MSCs (2 - 15 feet)					330	10,000	10,000	9,100	9,900	190,000	10,000	640	550
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Table 3
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Harley-Davidson Motor Company Operations, Inc.
1425 Eden Road, York, York County, Pennsylvania
PADEP Facility ID No. 67-00823
SAIC Project Number 2603100044-4000-100

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
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
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

ATTACHMENT A

PADEP Letter to Harley-Davidson

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ENVIRONMENTAL CLEANUP AND BROWNFIELDS PROGRAM

March 28, 2013

Ms. Sharon R. Fisher, CHMM
Harley-Davidson Motor Company Operations, Inc.
1425 Eden Road
York, PA 17402

Re: Approval of Supplemental Site Characterization Report – Tank 009
Harley-Davidson Motor Company
eFACTS PF # 623248, Facility ID #67-00823
1425 Eden Road, York, PA
Springettsbury Township, York County

Dear Ms. Fisher:

The "Supplemental Site Characterization Report Tank 009 Release" submitted on December 28, 2012, pertaining to the subject site, has been approved by the Department of Environmental Protection (Department) in accordance with the provisions of the Storage Tank and Spill Prevention Act (Act 32). This report was reviewed by a Pennsylvania licensed professional geologist.

The Department concurs with the recommendations provided in Section 5.2 of the above referenced report. Residual groundwater contamination at the site will be addressed using institution controls and a post remedial plan.

It is the Department's determination that further work and reports regarding this site within the larger Former York Naval Ordinance property can be done in accordance with the Land Recycling and Environmental Remediation Standards Act (Act 2). Please include additional information for this site in future Act 2 submittals.

We look forward to working with you towards the remediation of your site and to receipt of subsequent Act 2 reports. Please contact me at 717.705.4839 if you need any additional information regarding this matter.

Sincerely,

Pamela S. Trowbridge, P.G.
Licensed Professional Geologist

cc: Rodney G. Myers, SAIC
Griff Miller, US EPA, 3LC30
Greg Bowman, DEP
York County Conservation District
Springettsbury Township