SITE STATUS REPORT

BOB WARK'S LIBERTY STATION

300 Montgomery Avenue Merion Station, Pennsylvania 19066

PADEP Facility ID #46-22635 USTIF Claim No. 20210104

PREPARED FOR:

Ms. Chelsea Fazzino Pennsylvania Department of Environmental Protection Environmental Cleanup & Brownfields Southeast Regional Office 2 East Main Street Norristown, Pennsylvania 19401

PREPARED BY:

CENTER POINT TANK SERVICES, INC.

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Rachel A. Burkart, P.G. Professional Geologist

By affixing my seal to this document, I am certifying that to the best of my knowledge the information is true and correct. I further certify that 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.

APRIL 2024

SITE STATUS REPORT

BOB WARK'S LIBERTY STATION Unleaded Gasoline Release Site 300 Montgomery Avenue Merion Station, Pennsylvania 19066

GENERAL INFORMATION

Client: Consultant:

Project Manager: Project Geoscientist: PADEP Case Manager:

PADEP Facility ID #: USTIF Claim #: County: Municipality: Bob Wark's Liberty Station Center Point Tank Services, Inc. (CPTS)

Rachel A. Burkart P.G. Abigail Atkinson Chelsea Fazzino – PA DEP Southeast Region

46-22635 20210104 Montgomery Lower Merion Township

SITE OVERVIEW

Bob Wark's Liberty Station, Merion Station, Pennsylvania is a gasoline retail facility with an automotive garage, located at 300 Montgomery Ave, Lower Merion Township, Montgomery County, PA (**Figure 1**). The facility previously operated as a Sunoco until 2006, when it switched to Ewing Oil, and finally to Liberty in 2008.

The facility currently has three 8,000-gallon registered underground storage tanks (USTs) storing gasoline (tanks #003, #004, and #005) and four dual hose dispensers. The three gasoline USTs are located in a common tank pit just north of the facility building on the western side of the parking lot. There are also two 550-gallon USTs storing used motor oil (tanks #001 and #002), tank 001 is located in front of the southern garage bay and tank 002 in front of the northern garage bay. The USTs storing gasoline were installed on November 11, 1971 and the USTs storing used motor oil were installed on March 1, 1987.

SITE HISTORY

There is a history of three previous releases onsite discovered on August 8, 1994; January 14, 2013; and December 29, 2020. Unfortunately, not much is known about the 1994 release, but the Pennsylvania Department of Environmental Protection (PADEP) eFACTS website states that a Site Characterization Report 310(b) was received and accepted on March 3, 1995.

The following is a brief description of the 2013 and 2020 releases:

On January 14, 2013, CPTS discovered gasoline present in the tank top sump. The gasoline was pumped out and an investigation of the piping showed that a clamp on the primary piping was leaking. The piping clamp was replaced and the piping and transition sump retested successfully. Following the successful repairs and testing, the PADEP deemed the cleanup complete on February 26, 2013.

On December 30, 2020, CPTS was on site to investigate the source of fuel vapors. A pinhole leak was discovered in a two-inch pipe T fitting within the transition sump. Liquid in the sump was pumped out. The piping T was replaced and no leaks were detected when the piping was pressurized. CPTS returned to the site the next day and performed a hydrostatic test on the transition sump, which failed. It was discovered that the hose clamp on the bulkhead on the dispenser side piping was missing. CPTS replaced the component, completed additional necessary repairs, and the transition sump passed hydrostatic testing on January 4, 2021. PADEP deemed the cleanup complete on January 21, 2021.

CURRENT RELEASE INVESTIGATION SUMMARY

On July 21, 2021, CPTS was at the facility to replace two transition sumps and associated piping. While removing the former transition sump that fed into Dispenser #2, gasoline-like odors were observed. Water entered the excavation, and a sheen was observed atop the water. It is believed that this is storm water which was perched within the stone backfill, and not groundwater, as groundwater is approximately 10 feet below ground surface (bgs). The soil beneath the perched or ponded water was dry, but water did return to the excavation within minutes after being pumped out.

A photoionization detector (PID) was used to determine the relative presence of petroleum hydrocarbons in soil surrounding the former transition sump. PID readings from the presumed-impacted soil ranged from 40 parts per million (ppm) to 347 ppm.

Presumably impacted soil was excavated from the area surrounding the former transition sump. The excavation was limited to approximately 4 by 4 by 6 feet deep so as not to disrupt fuel sales. The soil was temporarily placed on top of and covered with plastic sheeting, before being placed into drums by CPTS. Six drums of presumed impacted material were generated during these activities.

Two soil samples were collected from the bottom of the excavation at approximately five feet bgs and one water sample was collected from the water that had returned to the excavation. Soil and water samples were placed into laboratory supplied bottleware and submitted to Suburban Testing Laboratories of Reading, PA for laboratory analysis of PAUST unleaded gasoline constituents including benzene, ethylbenzene, toluene, methyl tertiary-butyl ether (MTBE), isopropylbenzene (cumene), naphthalene, 1,2,4-Trimethylbenzene (124-TMB), 1,3,5Trimethylbenzene (135-TMB), and total Xylenes via EPA Method 8260B.

Laboratory analytical results indicate that all target constituents with the exception of benzene, toluene, and MTBE were detected in sample N. Trans Sump/Disp. 2-W, and all target constituents were detected except for MTBE in sample N. Trans Sump/Disp. 2-E. None of these detections are at concentrations exceeding their current respective non-residential Statewide Health Standards (SHS).

Laboratory results for the excavation water sample (sample ID: Exc. Water 1) indicate that all target constituents with the exception of MTBE were detected in the sample, and of these benzene, ethylbenzene, naphthalene, 124-TMB, and 135-TMB were all present in concentrations exceeding their current respective SHS.

CPTS mobilized to the site with *Geo-Graf Geophysical Investigations* of West Chester, PA on November 29th, 2021, to perform a non-invasive subsurface investigation prior to drilling, and also to identify the exact location of the tanks, piping, and other nearby utilities by conducting a subsurface geophysical investigation. The geophysical investigation utilized ground penetrating radar (GPR), radio frequency, magnetic and electromagnetic delineation techniques. Note that the estimated maximum GPR signal penetration depth achieved at this site is approximately six feet below grade.

On December 16th, 2021, CPTS mobilized to the site with *Benner Environmental Services* of Sunbury, PA, to perform a soil boring investigation. Eight soil borings were advanced via Geoprobe® direct-push drilling techniques to 10-15 feet bgs, with the exception of GP-7, which was advanced to four feet bgs.

Boring GP-1 was advanced at the end of the canopy between dispensers 1/2 and 3/4 to a depth of 15 feet; GP-2 and GP-3 were advanced to depths of 10-15 feet around dispenser 1/2; GP-4 and GP-6 were advanced to approximately 10 feet bgs close to the edge of the road on the northeast edge of the property; GP-5 was advanced to a depth of 11 feet in the northern part of the parking lot, and GP-7 and GP-8 were advanced on either side of the canopy in front of the garages to depths of four feet (GP-7) and 15 feet (GP-8).

The soils from each boring were logged and screened with a PID. PID readings for during this phase of the soil characterization efforts ranged from 0 to 1,800 ppm. Water was encountered in several boring locations. As such, temporary piezometers were installed to allow for the collection of water samples.

A total of 11 soil samples and three water samples were collected during this event. Soil and water samples were placed into laboratory supplied bottleware and submitted to Suburban Testing Laboratories of Reading, PA for laboratory analysis of PAUST unleaded gasoline constituents. Laboratory analytical results indicate that several unleaded gasoline constituents were detected in soil at concentrations exceeding their respective SHS in areas surrounding the canopy. Laboratory results for the water samples collected from temporary piezometers TP-2 and TP-3 indicate that ethylbenzene, naphthalene, 124-TMB, 135-TMB, and xylenes were present at concentrations exceeding their respective SHS; and benzene was detected at a concentration exceeding the SHS in the water sample collected from TP-8. Based on these results it was determined that additional soil and water quality investigation was warranted to further characterize the release.

On March 10th, 2022, CPTS mobilized to the site with C.S. Garber to advance additional soil borings (GP-9 through GP-16) and install monitoring wells (MW-1 through MW-4). Boring GP-9 was advanced to a depth of 19 feet near the sidewalk on the northeast side of the site; and MW-1 was set into this boring. GP-10 was advanced to a depth of 19.5 feet, and MW-2 was set into this boring. GP-11 was advanced to a depth of 19 feet. GP-12 was advanced to a depth of 19.5 feet under the canopy at dispenser 1/2, and a temporary piezometer was set and sampled at this boring. GP-13 was advanced to a depth of 20 feet in front of the northern bays of the auto repair shop, and MW-3 was set into this boring. GP-14 was advanced near dispenser 5/6 to a depth of 5 feet before hitting refusal. GP-15 was advanced to seven feet before hitting refusal. MW-3 was installed in front of the southern bays of the repair shop near the front door of the facility. PID readings for all borings ranged from 0 to 1163 ppm.

A total of ten soil samples and one water sample from a temporary piezometer were collected during this event. Soil and water samples were placed into laboratory supplied bottleware and submitted to Suburban Testing Laboratories of Reading, PA. Laboratory analytical results indicate that several unleaded gasoline constituents were detected in soil at concentrations exceeding their respective SHS in areas surrounding the canopy. Laboratory results for the water sample collected at TP-4 indicate that benzene, ethylbenzene,

MTBE, naphthalene, and 124-TMB were present at concentrations exceeding their respective SHS.

CPTS mobilized to the site with C.S. Garber on February 8, 2023 to install monitoring wells MW-5 through MW-7 behind the site building to further characterize groundwater flow and contaminant migration. Monitoring wells have been sampled on a generally quarterly basis since their installation.

SITE INFORMATION

Well Specifications: All wells are flush mounted. Monitoring well locations and other pertinent site features are illustrated on **Figure 2**.

WELL ID	TOTAL DEPTH (feet)	WELL DIAMETER (in.)	SCREENED INTERVAL (feet)
MW-1	18.61	2	9-19
MW-2	18.56	2	9.5-19.5
MW-3	18.86	2	7-17
MW-4	16.93	2	9-19
MW-5	17.36	2	2.5-17
MW-6	17.11	2	2-17
MW-7	16.22	2	2-17

Based on Pennsylvania Topographic and Geologic Survey geological maps, the site is located within an area underlain by granitic gneiss and granite. According to Geyer and Wilshusen, 1982, granitic gneiss and granite is light buff to light pink and fine to medium grained. Most of the mineral grains are about one millimeter in diameter. It contains quartz, microcline, hornblende, and some biotite. It has massive, poorly developed banding. It crops out in Delaware, Montgomery, and Philadelphia counties. The unit includes the Springfield granodiorite in the Philadelphia area. Its thickness is unknown (Geyer and Wilshusen, 1982). Surrounding the strip of granitic gneiss and granite is the Wissahickon formation, which appears to dominate most of the surrounding area. The Wissahickon Formation is a schist metamorphosed to amphibolite facies. It contains garnet, staurolite, kyanite, and sillimanite. It includes oligoclase-mica schist, some hornblende gneiss, some augen gneiss, and some quartz rich and feldspar-rich members due to various degrees of granitization. Its thickness is unknown (Berg and others, 1980; Kauffman, 1999). Bedrock was not encountered during drilling of wells or advancement of borings.

Based on the U.S. Department of Agriculture's Natural Resource Conservation Service Web Soil Survey (websoilsurvey.nrcs.usda.gov/app /WebSoilSurvey.aspx), the soil types underlying the site consists of primarily Urban Land and Urban land-Gladstone complex soils. Urban Land series soils are mapped beneath the front portion of the site building, and consist of pavement, buildings, and other artificially covered areas, as well as human transported materials/backfill. Urban Land-Gladstone soils are mapped in the rear of the facility, and consist of deep, well drained soils formed in local colluvium and residuum weathered from granite and gneiss. The typical profile is gravelly loam to gravelly clay loam to bedrock. The area slope ranges from 0 to 8 percent. Permeability is moderate.

Soils recovered during drilling are generally consistent with the published description of Urban Land; there was more dark sand and clay as opposed to gneiss and medium grained granite; however, the site and surrounding areas are covered with impervious man-made improvements. Subsurface materials range from sandy loam to clay with some fill material and gravel noted in several borings.

SENSITIVE RECEPTOR EVALUATION

CPTS conducted a desktop sensitive receptor survey in the general area of the site to identify potential receptors that could be impacted by petroleum hydrocarbons in the soil or groundwater. The following is a summary of CPTS's findings during the sensitive receptor survey:

- The immediate vicinity of the subject property is mixed use, consisting of primarily commercial businesses to the north and east and residences located to the south and west of the property. The site building does not have a basement;
- Public water is supplied to the site by Aqua PA Main Division, and there is not an Ordinance in place prohibiting the installation of water wells; however, as per Ryan McCann of Lower Merion Township, the Township follows the International Plumbing Code, which states that you cannot have a private hookup if public water is available. Section 602.3, Individual Water Supply, states that where a potable public water supply is not available, individual sources of potable water supply shall be utilized.
- According to the Pennsylvania Groundwater Information System (PaGWIS) (<u>www.dcnr.state.pa.us/topogeo.groundwater.pagwis.index.htm</u>), only on-site monitoring wells MW-1 through MW-4 are the only wells mapped within a quarter mile of the site.
- The nearest surface water body to the site is a tributary to Gulley Run at approximately 4,300 feet northwest. Gulley Run is also at about 4,700 feet north. The creek is at such a distance that it is not considered a potential receptor of impact from the subject UST system at this time.

RECENT SITE ACTIVITIES

Laboratory analytical results for the groundwater samples collected during the 1st quarter of 2024 are included as **Appendix A**, and are summarized in **Table 1**.

The 1st quarter 2024 groundwater gauging and sampling event was conducted on March 26, 2024. Prior to collection of groundwater samples, the depth to water in each monitoring well was measured. This data along with top of casing elevations was used to calculate the groundwater elevation and hydraulic gradient across the site. Each monitoring well was then purged and sampled in general accordance with parameter stabilization sampling techniques. During well purging, intrinsic groundwater quality parameters including temperature, pH, and oxidation reduction potential (ORP) were monitored with a multi-parameter meter. Each well was purged until the intrinsic parameters stabilized to within 10% over three readings, or until the well went dry. Purge water was treated with granular activated carbon prior to being discharged to the ground surface. Groundwater samples were collected from each well after parameter stabilization or if the well went dry, after it was allowed to recharge. Groundwater samples were placed into laboratory supplied bottleware and submitted to Suburban Testing Laboratories of Reading, Pennsylvania for analysis of the PAUST shortlist for unleaded gasoline constituents via EPA Method 8260B.

The onsite depths to groundwater during the 1st quarter 2024 groundwater sampling event ranged from 6.8 feet bgs in MW-5 to 10.25 feet bgs in MW-4. As compared to the 4th quarter sampling event of 2023, the groundwater elevation across the site generally increased by an average of 1.48 feet.

The average measured hydraulic gradient for groundwater levels collected on March 26, 2024 is 0.0176 ft/ft to the west and southwest. The groundwater elevation contour map for the 1st quarter of 2024 is included as **Figure 3**, and the contaminant distribution map is included as **Figure 4**.

No separate phase hydrocarbons (SPH) have been encountered to date, with the exception of a hydrocarbon sheen on top of the water surface in MW-4. There is currently an oil absorbent sock placed in the well that is replaced regularly.

Review of the laboratory analytical data for the 1st quarter 2024 groundwater sampling event indicates the following:

- No unleaded gasoline constituents were detected at concentrations exceeding their respective SHS in the groundwater samples collected from MW-1, MW-5, MW-6, or MW-7.
- Benzene, ethylbenzene, and naphthalene constituents were detected at concentrations exceeding their respective SHS in the groundwater sample collected from MW-3.
- Benzene, ethylbenzene, naphthalene, toluene, 124-TMB, and xylenes were all detected at concentrations exceeding the SHS in the groundwater samples collected from MW-2 and MW-4; and 135-TMB was also detected at a concentration exceeding the SHS in the groundwater sample collected from MW-4.

REMEDIATION PROGRESS/ PLANNED FUTURE WORK

CPTS has been evaluating site data to identify the locations where additional soil and/or groundwater data is necessary to fully characterize the site. As described above, the water table at the facility is very flat, often with less than one foot of variation between the groundwater high and low. Very minor changes across the well network have significant impact on the measured groundwater flow direction. As of the first quarter sampling event a total of four quarters of groundwater elevation data has been collected that includes MW-5, MW-6 and MW-7. There has been little consistency from quarter to quarter with regard to groundwater flow direction.

A clearer understanding of the predominant groundwater flow direction(s) is necessary to more accurately place additional monitoring wells to fully delineate the extent of groundwater impact at the site. To this end, CPTS is planning to conduct a hydrologic study. The study will include the placement of submersible data loggers placed in each well programmed to collect readings at 12-hour intervals over the course of one month. The data will be analyzed and compared to precipitation data over the monitoring period with the intent to determine a predominant groundwater flow direction and to evaluate the effect of precipitation events on water levels.

The collection of additional groundwater elevation data has revealed that some of the soil samples collected during the initial phase of characterization were from depths below the low water table. This has resulted in gaps in the soil analytical data, and further soil sampling will be necessary. At this time, the next round of soil sampling is currently planned to be conducted after evaluation of the hydrologic study data.

Further assessment of the vapor intrusion pathway is also necessary which is also planned to be reassessed following the hydrologic study. This may involve further desktop evaluation, the installation of vapor wells, and/or the implementation of remedial/mitigation measures as appropriate.

A revised Site Characterization Report (SCR) and Remedial Action Plan (RAP) will be submitted to the Department as soon as possible. While field work and further data collection and evaluation continue in pursuit of fully characterizing the site, CPTS will submit periodic progress reports

ATTACHMENTS

- Figure 1 Site Location Map
- Figure 2 Site Plan
- Figure 3 Groundwater Elevation Contour Map, March 26, 2024
- Figure 4 Contaminant Distribution Map, March 26, 2024
- Table 1 Groundwater Quality Data Summary

Appendix A - Groundwater Laboratory Analytical Data Report, March 26, 2024









TABLE 1

GROUNDWATER QUALITY DATA SUMMARY

BOB WARK'S LIBERTY STATION 300 MONTGOMERY AVENUE MERION STATION, PA

		Top of	Depth to	GW	_	Ethyl	Isopropyl						
M	Dit	Casing	Water	Elevation	Benzene	benzene	benzene	MTBE	Naphthalene	Toluene	1,2,4-TMB	1,3,5-TMB	Xylenes
Monitoring Well MSCs for Us	ed Non-Resid	(II) Iental Aquifer	(11)	(ff)	(µg/L)	(µg/L)	(µg/L)	(µg/L) 20	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
MW-1	4/21/2022	308.66	9.01	299.65	<0.5	<0.5	<u> </u>	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
11111	5/5/2022	308.66	9.12	299.54	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.1
*	8/31/2022	308.66			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
	12/21/2022	308.66	10.04	298.62	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0
	3/23/2023	308.66	10.10	298.56	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	< 0.5	<1.0
	9/26/2023	308.66	9.68	298.98	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	< 0.5	<1.0
	12/12/2023	308.66	9.98	298.68	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	< 0.5	<1.0
	3/26/2024	308.66	8.70	299.96	<0.5	<0.5	<0.5	<0.5	<0.5	< 0.5	<0.5	<0.5	<1.0
MW-2	4/21/2022	309.04	9.58	299.46	1,500	3,860	147	<0.5	665	27,800 E	3,180	657	23,800
	5/5/2022	309.04	10.82	298.22	1,060	3,940	140	<50.0	407	36,100	2,930	911	22,900
*	8/31/2022	309.04	10.55	200.40	14.8	56.5	2.3	<0.5	11.6	170	54	14.5	306
	12/21/2022	309.04	10.55	298.49	1,410	3,900	161	<50.0	766	22,900	2,960	824	22,300
	3/23/2023	309.04	10.10	298.94	1,080	2,880	99.0	<0.5	485	19,800	1,950	740	16,300
	9/26/2023	309.04	10.27	298.77	1,100	3,450	114	<50.0	257	25,700	1,890	422	17,900
	3/26/2024	309.04	8 72	300.32	1.300	2,510	96.8	<0.5	280	19,600	1,520	425	16,800
MW-3	4/21/2022	309.66	11.45	298.21	309	379	12.6	14.9	95.8	13.7	233	87.4	557
11111 5	5/5/2022	309.66	10.58	299.08	285	301	8.8	<2.5	26.2	<2.5	94.6	37.2	294
*	8/31/2022	309.66	10.50	277.00	15.5	59	2.7	<0.5	10	177	56.2	15	316
	12/21/2022	309.66	11.38	298.28	115	459	23.6	<2.5	138	<2.5	70.5	39.8	46.2
	3/23/2023	309.66	11.00	298.66	238	548	19.8	<0.5	122	17.0	31.7	27.4	64.5
	9/26/2023	309.66	11.03	298.63	288	697	26.1	<1.0	152	140	67.9	43.5	127
	12/12/2023	309.66	11.27	298.39	72.8	313	14.4	<10.0	57.0	11.4	17.6	12.8	<20.0
	3/26/2024	309.66	9.30	300.36	589	1,130	27.0	< 0.5	157	24.4	81.9	42.0	183
MW-4	4/21/2022	309.37	10.61	298.76	584	3,470	132	< 0.5	852	12,000	4,300	835	22,800
	5/5/2022	309.37	11.30	298.07	773	4,630	248	<50.0	904	13,900	5,450	1,740	24,200
*	8/31/2022	309.37			978	4,630	131	< 0.5	702	12,900	5,050	1,380	26,400
	12/21/2022	309.37	11.40	297.97	478	2,840	175	<50.0	783	6,940	3,910	1,050	19,400
	3/23/2023	309.37	11.50	297.87	508	3,230	174	<100	878	8,540	3,700	5,490	21,000
	9/26/2023	309.37	11.41	297.96	440	4,390	238	<100	966	8,460	4,640	1,320	23,900
	3/26/2023	309.37	10.25	298.16	130	1,370	<100	<100	246 496	5,510	2,780	534 706	10,800
MW 5	3/20/2024	305.37	8.00	209.12	<0.5	<0.5	<0.5	1.0	490	0.5	<0.5	<0.5	<1.0
141 44 -5	9/26/2023	306.12	7.89	298.23	<0.5	4.0	<0.5	1.9	0.9	9.0	1.4	<0.5	8.9
	12/12/2023	306.12	7.96	298.16	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<1.0
	3/26/2024	306.12	6.80	299.32	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0
MW-6	3/23/2023	307.43	9.20	298.23	0.7	< 0.5	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0
	9/26/2023	307.43	9.13	298.30	<0.5	3.7	<0.5	<0.5	0.8	9.5	1.5	<0.5	10.2
	12/12/2023	307.43	9.24	298.19	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	<1.0
	3/26/2024	307.43	7.97	299.46	<0.5	0.5	< 0.5	<0.5	0.5	1.0	0.6	<0.5	2.5
MW-7	3/23/2023	309.17	10.70	298.47	< 0.5	< 0.5	<0.5	<0.5	<0.5	< 0.5	< 0.5	<0.5	<1.0
	9/26/2023	309.17	10.77	298.40	0.5	4.3	< 0.5	< 0.5	0.8	15.2	2.1	0.6	17.0
	12/12/2023	309.17	10.84	298.33	< 0.5	< 0.5	< 0.5	< 0.5	<0.5	< 0.5	< 0.5	< 0.5	<1.0
	3/26/2024	309.17	8.93	300.24	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5	< 0.5	1.1

Notes:

<# = Less than the detection limit of #

* = Depth to water data not available Bold E

= Indicates concentration exceeds PADEP Statewide Health Standard for Non-Residential Used Aquifers

= Reported concentration is outside the caibration range of the equiment

Order ID: 4C05580

Center Point Tank Services Project: Warks Liberty Station										
536 E. Benjamin Franklin Highway Douglasville, PA 19518				Merion Sta	ation, PA					
Attn: Roger Tartaglia, Sr			Re	gulatory ID:						
Sample Number: 4C05580-01 Collector: Client		Site: MW-1 Collect Date:	03/26/2024	1:09 pm	Sampl Sampl	e ID: e Type	e: Grab			
Department / Test / Parameter	Result		Units	Method	R.L.	DF	Prep Date	Ву	Analysis Date	Ву
Volatiles										
VOA, 8260, USTUnleaded										
Benzene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 20:17	NSD
Ethyl Benzene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 20:17	NSD
Isopropylbenzene	< 0.5		μg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 20:17	NSD
Methyl-t-butyl ether (MTBE)	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 20:17	NSD
Naphthalene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 20:17	NSD
Toluene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 20:17	NSD
1,3,5-Trimethylbenzene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 20:17	NSD
1,2,4-Trimethylbenzene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 20:17	NSD
Xylenes, Total	< 1.0		µg/L	SW846 5030C/8260D	1.0	1	03/28/24	NSD	03/28/24 20:17	NSD
Surrogate Recoveries	Results		Units	Method	%Recovery	DF	Limits	(%Recov	very) Analysis [Date
Surrogate: Dibromofluoromethane	19.9		µg/L	SW846 5030C/8260D	99%	1	7	72-136	03/28/24 2	20:17
Surrogate: 1,2-Dichloroethane-d4	20.5		µg/L	SW846 5030C/8260D	102%	1	7	79-135	03/28/24 2	20:17
Surrogate: Toluene-d8	19.2		µg/L	SW846 5030C/8260D	96%	1	8	38-112	03/28/24 2	20:17
Surrogate: Bromofluorobenzene	18.1		ua/L	SW846 5030C/8260D	91%	1	-	75-117	03/28/24 2	20:17

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Page 1 of 6

Sample Number: 4C05580-02 Collector: Client		Site: MW-2 Collect Date:	03/26/2024	2:13 pm	Sampl Sampl	e ID: e Type	: Grab			
Department / Test / Parameter	Result		Units	Method	R.L.	DF	Prep Date	Ву	Analysis Date	Ву
Volatiles										
VOA, 8260, USTUnleaded										
Isopropylbenzene	96.8		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 20:45	NSD
Methyl-t-butyl ether (MTBE)	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 20:45	NSD
Benzene	1300		μg/L	SW846 5030C/8260D	50.0	100	04/02/24	NSD	04/02/24 14:55	NSD
Ethyl Benzene	3180		µg/L	SW846 5030C/8260D	50.0	100	04/02/24	NSD	04/02/24 14:55	NSD
Naphthalene	280		µg/L	SW846 5030C/8260D	50.0	100	04/02/24	NSD	04/02/24 14:55	NSD
1,3,5-Trimethylbenzene	459		µg/L	SW846 5030C/8260D	50.0	100	04/02/24	NSD	04/02/24 14:55	NSD
1,2,4-Trimethylbenzene	1710		µg/L	SW846 5030C/8260D	50.0	100	04/02/24	NSD	04/02/24 14:55	NSD
Xylenes, Total	16800		µg/L	SW846 5030C/8260D	100	100	04/02/24	NSD	04/02/24 14:55	NSD
Toluene	19600		µg/L	SW846 5030C/8260D	100	200	04/04/24	NSD	04/04/24 12:18	NSD
Surrogate Recoveries	Results		Units	Method	%Recovery	DF	Limits	(%Recov	ery) Analysis I	Date
Surrogate: Dibromofluoromethane	20.2		µg/L	SW846 5030C/8260D	101%	200	7	72-136	04/04/24	12:18
Surrogate: 1,2-Dichloroethane-d4	19.8		µg/L	SW846 5030C/8260D	99%	200	7	79-135	04/04/24	12:18
Surrogate: Toluene-d8	19.4		µg/L	SW846 5030C/8260D	97%	200	8	88-112	04/04/24	12:18
Surrogate: Bromofluorobenzene	20.1		µg/L	SW846 5030C/8260D	100%	200	7	75-117	04/04/24	12:18

Sample Number: 4C05580-03 Collector: Client		Site: MW-3 Collect Date:	03/26/2024	3:19 pm	Sample Sample	Sample ID: Sample Type: Grab				
Department / Test / Parameter	Result		Units	Method	R.L.	DF	Prep Date	Ву	Analysis Date	Ву
Volatiles										
VOA, 8260, USTUnleaded										
Isopropylbenzene	27.0		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 21:13	NSD
Methyl-t-butyl ether (MTBE)	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 21:13	NSD
Naphthalene	157		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 21:13	NSD
Toluene	24.4		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 21:13	NSD
1,3,5-Trimethylbenzene	42.0		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 21:13	NSD
1,2,4-Trimethylbenzene	81.9		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 21:13	NSD
Xylenes, Total	183		µg/L	SW846 5030C/8260D	1.0	1	03/28/24	NSD	03/28/24 21:13	NSD
Benzene	589		µg/L	SW846 5030C/8260D	10.0	20	04/02/24	NSD	04/02/24 15:23	NSD
Ethyl Benzene	1130		µg/L	SW846 5030C/8260D	10.0	20	04/02/24	NSD	04/02/24 15:23	NSD
Surrogate Recoveries	Results		Units	Method	%Recovery	DF	Limits ((%Recov	rery) Analysis I	Date
Surrogate: Dibromofluoromethane	19.8		µg/L	SW846 5030C/8260D	99%	20	7	72-136	04/02/24	15:23
Surrogate: 1,2-Dichloroethane-d4	19.9		µg/L	SW846 5030C/8260D	99%	20	7	79-135	04/02/24	15:23
Surrogate: Toluene-d8	19.6		µg/L	SW846 5030C/8260D	98%	20	8	38-112	04/02/24	15:23
Surrogate: Bromofluorobenzene	19.4		µg/L	SW846 5030C/8260D	97%	20	7	75-117	04/02/24	15:23

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Page 2 of 6

Sample Number: 4C05580-04 Collector: Client		Site: MW-4 Collect Date:	03/26/2024	4:37 pm	Sampl Sampl	e ID: e Type	e: Grab			
Department / Test / Parameter	Result		Units	Method	R.L.	DF	Prep Date	Ву	Analysis Date	Ву
Volatiles										
VOA, 8260, USTUnleaded										
Isopropylbenzene	99.2		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 21:41	NSD
Methyl-t-butyl ether (MTBE)	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 21:41	NSD
Benzene	384		µg/L	SW846 5030C/8260D	100	200	04/02/24	NSD	04/02/24 15:52	NSD
Ethyl Benzene	3190		µg/L	SW846 5030C/8260D	100	200	04/02/24	NSD	04/02/24 15:52	NSD
Naphthalene	496		µg/L	SW846 5030C/8260D	100	200	04/02/24	NSD	04/02/24 15:52	NSD
Toluene	6610		µg/L	SW846 5030C/8260D	100	200	04/02/24	NSD	04/02/24 15:52	NSD
1,3,5-Trimethylbenzene	706		µg/L	SW846 5030C/8260D	100	200	04/02/24	NSD	04/02/24 15:52	NSD
1,2,4-Trimethylbenzene	2780		µg/L	SW846 5030C/8260D	100	200	04/02/24	NSD	04/02/24 15:52	NSD
Xylenes, Total	18700		µg/L	SW846 5030C/8260D	200	200	04/02/24	NSD	04/02/24 15:52	NSD
Surrogate Recoveries	Results		Units	Method	%Recovery	DF	Limits ((%Recove	ry) Analysis	Date
Surrogate: Dibromofluoromethane	16.6		µg/L	SW846 5030C/8260D	83%	1	7	/2-136	03/28/24	21:41
Surrogate: 1,2-Dichloroethane-d4	17.8		µg/L	SW846 5030C/8260D	89%	1	7	79-135	03/28/24	21:41
Surrogate: Toluene-d8	18.0		µg/L	SW846 5030C/8260D	90%	1	8	38-112	03/28/24	21:41
Surrogate: Bromofluorobenzene	19.0		µg/L	SW846 5030C/8260D	95%	1	7	75-117	03/28/24	21:41

Sample Number: 4C05580-05 Collector: Client	Sampl Sampl	e ID: e Type	e: Grab							
Department / Test / Parameter	Result		Units	Method	R.L.	DF	Prep Date	Ву	Analysis Date	Ву
Volatiles										
VOA, 8260, USTUnleaded										
Benzene	< 0.5	M3	µg/L	SW846 5030C/8260D	0.5	1	04/02/24	NSD	04/02/24 13:30	NSD
Ethyl Benzene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	04/02/24	NSD	04/02/24 13:30	NSD
Isopropylbenzene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	04/02/24	NSD	04/02/24 13:30	NSD
Methyl-t-butyl ether (MTBE)	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	04/02/24	NSD	04/02/24 13:30	NSD
Naphthalene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	04/02/24	NSD	04/02/24 13:30	NSD
Toluene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	04/02/24	NSD	04/02/24 13:30	NSD
1,3,5-Trimethylbenzene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	04/02/24	NSD	04/02/24 13:30	NSD
1,2,4-Trimethylbenzene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	04/02/24	NSD	04/02/24 13:30	NSD
Xylenes, Total	< 1.0		µg/L	SW846 5030C/8260D	1.0	1	04/02/24	NSD	04/02/24 13:30	NSD
Surrogate Recoveries	Results		Units	Method	%Recovery	DF	Limits (%Recov	ery) Analysis	Date
Surrogate: Dibromofluoromethane	21.1		µg/L	SW846 5030C/8260D	106%	1	7	2-136	04/02/24	13:30
Surrogate: 1,2-Dichloroethane-d4	21.4		µg/L	SW846 5030C/8260D	107%	1	7	'9-135	04/02/24	13:30
Surrogate: Toluene-d8	19.5		µg/L	SW846 5030C/8260D	97%	1	8	38-112	04/02/24	13:30
Surrogate: Bromofluorobenzene	18.8		µg/L	SW846 5030C/8260D	94%	1	7	75-117	04/02/24	13:30

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4C05580 Effective: 01/19/2024

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Page 3 of 6

Sample Number: 4C05580-06 Collector: Client		Site: MW-6 Collect Date:	03/26/2024	11:03 am	Samp Samp	le ID: le Type	e: Grab			
Department / Test / Parameter	Result		Units	Method	R.L.	DF	Prep Date	Ву	Analysis Date	Ву
Volatiles										
VOA, 8260, USTUnleaded										
Benzene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 22:37	NSD
Ethyl Benzene	0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 22:37	NSD
Isopropylbenzene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 22:37	NSD
Methyl-t-butyl ether (MTBE)	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 22:37	NSD
Naphthalene	0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 22:37	NSD
Toluene	1.0		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 22:37	NSD
1,3,5-Trimethylbenzene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 22:37	NSD
1,2,4-Trimethylbenzene	0.6		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 22:37	NSD
Xylenes, Total	2.5		µg/L	SW846 5030C/8260D	1.0	1	03/28/24	NSD	03/28/24 22:37	NSD
Surrogate Recoveries	Results		Units	Method	%Recovery	DF	Limits (%Recov	very) Analysis l	Date
Surrogate: Dibromofluoromethane	17.5		µg/L	SW846 5030C/8260D	88%	1	7	2-136	03/28/24 2	22:37
Surrogate: 1,2-Dichloroethane-d4	18.0		µg/L	SW846 5030C/8260D	90%	1	7	9-135	03/28/24 2	22:37
Surrogate: Toluene-d8	19.0		µg/L	SW846 5030C/8260D	95%	1	8	8-112	03/28/24 2	22:37
Surrogate: Bromofluorobenzene	20.1		µg/L	SW846 5030C/8260D	101%	1	7	'5-117	03/28/24 2	22:37

Sample Number: 4C05580-07 Collector: Client		Site: MW-7 Collect Date:	03/26/2024	12:02 pm	Sam Sam	ple ID: ple Type	e: Grab			
Department / Test / Parameter	Result		Units	Method	R.L.	DF	Prep Date	Ву	Analysis Date	Ву
Volatiles										
VOA, 8260, USTUnleaded										
Benzene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 23:05	NSD
Ethyl Benzene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 23:05	NSD
Isopropylbenzene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 23:05	NSD
Methyl-t-butyl ether (MTBE)	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 23:05	NSD
Naphthalene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 23:05	NSD
Toluene	0.6		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 23:05	NSD
1,3,5-Trimethylbenzene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 23:05	NSD
1,2,4-Trimethylbenzene	< 0.5		µg/L	SW846 5030C/8260D	0.5	1	03/28/24	NSD	03/28/24 23:05	NSD
Xylenes, Total	1.1		µg/L	SW846 5030C/8260D	1.0	1	03/28/24	NSD	03/28/24 23:05	NSD
Surrogate Recoveries	Results		Units	Method	%Recover	y DF	Limits ((%Recov	ery) Analysis I	Date
Surrogate: Dibromofluoromethane	17.5		µg/L	SW846 5030C/8260D	88%	1	7	72-136	03/28/24 2	23:05
Surrogate: 1,2-Dichloroethane-d4	18.0		µg/L	SW846 5030C/8260D	90%	1	7	79-135	03/28/24 2	23:05
Surrogate: Toluene-d8	18.9		µg/L	SW846 5030C/8260D	94%	1	8	38-112	03/28/24 2	23:05
Surrogate: Bromofluorobenzene	19.9		µg/L	SW846 5030C/8260D	99%	1	7	75-117	03/28/24 2	23:05

Report Generated On: 04/11/2024 4:01 pm STL_Results Revision #2.2 4C05580 Effective: 01/19/2024

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Data Qualifiers:

M3

The Matrix Spike associated with this sample is above established acceptance criteria, indicating potential matrix interference. Results of this sample may be biased high.

Sample Receipt Conditions:

All samples met the sample receipt requirements for the relevant analyses.

The test *pH, Lab* is performed in the Laboratory as soon as possible. These results are not appropriate for compliance with NPDES, SDWA, or other regulatory programs that require analysis within 15 minutes of sample collection and should be considered for informational purposes only.

*pH, Final for ASTM leachate is performed by method SM 4500-H-B.

All results meet the requirements of STL's TNI (NELAC) Accredited Quality System unless otherwise noted. If your results contain any data qualifiers or comments, you should evaluate useability relative to your needs.

If collectors initials include "STL", samples have been collected in accordance with STL SOP SL0015.

All results reported on an As Received (Wet Weight) basis unless otherwise noted.

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Results are considered Preliminary unless report is signed by authorized representative of STL.

Reviewed and Released By: Lauren Ulle

Project Manager I

puren I Ulle

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 4C05580

 STL_Results
 Revision #2.2
 Effective: 01/19/2024

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Page 5 of 6

TAT(Check One):	X Standard 24hr 48hr 72hr Other apply for rush TAT. If not specified, standard TAT will apply)
	Order ID:

Client Name: (Leviter Point Tanksemin.		Name: Wark's Uberty Station
Address: 536 Ben Franklin Huy	Phone: <u>(103654977</u>	Address: JOD Klovitajowery Ave
	Email: <u>abbinicpts</u>	<i>v</i>
Contact Name: Abbert Atlansun	P.O. Info: 35 MAI UM	Regulatory ID (SDWA/Permit #):

Comments:

121) the mention of the		_				5	See Cod	les Belo	w	1
Sample Description / Site ID:	Date Sampled	Time Samplec	Samplers Initials	Test(s) Requested:	Bottle Quantit	Matrix	Sample Type	Bottle Type	Preservative	Comments / Field Data:
NULW-1	3/24/24	13:09	a	PAUST UNLAGEd Shortist	3	NAN	G	<u>A</u>	C	
MW-2	,	14:13	Q							
WWW.3		15:19	æ							
MW-4		16:37	a							
MW-5		09:55	Q							
Mw-6		11:03	à							
WW-7		12:02	a							
•				Client Dopott						

Relinquished By:	Count	Date: 3/13/241	Temp °C:	Sample Conditions	Matrix Key NPW = Non-Potable Water Solid = Raw Sludge, Dewalered sludge, soll, etc. (reported as mg/kg) PW = Potable Water (not for SDWA compliance) SDWA = Safe Drinking Water Act Potable Sample		Bottle Type Key	
allyatt	21	Time: 12:13	-	Submitted with COC?			P = Plastic PP = Sterile Polypropylene G = Glass PS = Sterile Polystyrene	
Received By:		Date: Time:	Temp °C:	Number of containers			GA = Glass Amber HDPE = High Density Polyethylene VOA = 40mL G or GA O = Other	
Relinquished By:	Date:		Temp %C:		Sample Type Key	SDWA Sample Types	Preservative Key	
		Time:	Acceptable: Y / N	All containers in tact? S/ N Tests within holding	G = Grab C = Composite	D=Distribution E=Entry Point B=Raw	A = Ascorbic Acid C = HCl	^{OH =} NaOH S = H₂SO₄
Received in Lab By:	21	Date: 3 2824 Time: 1222	Temp °C: 2.2 c	times? (Y) / N 40 mL VOA vials free of headspace?	8HC = 8 Hr. Composite 24HC = 24 Hr. Composite	C=Check S=Special M=Maximum Residence	H = HNO ₃ N = Sodium Thiosulfate	O = Olher NA = None Required

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Page 6 of 6