SUNOCO STATION #0363-5430
FACILITY ID No. 09-30778
INCIDENT NO. 0000
610 YORK ROAD
WARMINSTER TOWNSHIP
BUCKS COUNTY, PENNSYLVANIA 18974

SITE CHARACTERIZATION REPORT/REMEDIAL ACTION PLAN

Submitted To:

PADEP – Southeast Regional Office
Storage Tank Program
2 East Main Street
Norristown, Pennsylvania 19401

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1 Site Summary

At the request of ***Finch Petroleum, LLC (Finch), RT Environmental Services, Inc. (RT)*** is submitting this Site Characterization Report (SCR) and Remedial Action Plan (RAP) to the Pennsylvania Department of Environmental Protection (*PADEP*). This investigation was completed in response to a reported release of unleaded gasoline and subsequent removal of a 12,000-gallon Ultra unleaded gasoline UST. This property has operated as a retail gasoline service station since the 1950's. The property is located at the intersection of Old York Road and Street Road in Warminster Township, Bucks County, Pennsylvania (Site).

The Site is currently an active retail gasoline service facility and convenience store. The property operates three 12,000-gallon unleaded gasoline underground storage tanks (USTs), dispenser islands and associated piping which were installed in 1983. During annual tank compliance testing in 2018, Trammel Testing, Inc. determined that tank 001 (Ultra gasoline unit) failed the EZY 3 Locator Plus (tightness) test on September 12, 2018 resulting in the submission of a "Notification of Reportable Release" to the Pennsylvania Department of Environmental Protection (PA DEP) Bureau of Environmental Cleanup and Brownfields.

According to the Daily/Monthly Inventory Reconciliation records, tank 001 was removed from service on September 27, 2018 while tanks 002 & 003 remained in operation until July 15, 2019 when they were taken off line and emptied of remaining product by Finch on July 19, 2019. As the tanks were in service for approximately 35 plus years, Finch decided to replace all three units during the tank upgrade.

Finch contracted Matt's Valley Petroleum, Inc. (Matt's) to remove and replace the old units with three new 12,000-gallon fiberglass tanks. In turn, Matt's subcontracted the tank removal work to ECI, LLC (ECI) who is a licensed tank removal contractor in PA. ECI mobilized to the project Site on Monday July 15, 2019 in order to begin disconnecting electrical connections and other tank components in preparation for tank extraction. The contractor re-mobilized on Tuesday July 16th and began uncovering and removing fill from around tank 001 by utilizing a JCB 83 L track excavator. When the tank was clear of pea gravel on all four sides, the retaining straps were cut and the tank lifted out of the excavation. Petroleum contaminated pea gravel and soil removed from the excavation were stored on the asphalt/concrete pads surrounding the

excavation. Since petroleum was documented in the pit excavation, a "Notification of Reportable Release" was submitted by RT on behalf of Finch. This document confirmed that a release was identified on July 16, 2019 during the removal of a regulated UST. A verbal notification to the Department was also made by the certified installer on July 16th.

ECI returned to the property on Wednesday July 17th to continue the removal of the remaining USTs. Storage tank and contaminated soil removal was completed on July 23rd. RT field personnel conducted attainment soil sampling on Tuesday July 24th using a systematic random sampling plan. Due to groundwater seeping into the pit, RT collected twelve (12) sidewall soil samples. The samples were labeled, packed on ice and immediately transported to the TestAmerica login facility in King of Prussia for analysis of the PA Short List of Petroleum Products for unleaded gasoline. Laboratory results indicate that all of the parameters tested were either below the laboratories method detection limits or below the Residential Statewide Health Standard (SHS) Medium Specific Concentration (MSC) for the constituents of concern analyzed.

In total, 11,727-gallons of petroleum impacted water, sludge and sediment were removed from the USTs and the excavation and transported by Monarch to their facility in Woodstown, New Jersey for permanent disposal (US EPA ID No. NJD011881174; NJDEP Certification No. US470102). An additional 578-gallons of petroleum contaminated water was removed by J&J Environmental on July 15, 2019 and transported to Eldridge, Inc. in West Chester on August 9 for permanent disposal. In total, 642.5-tons (459-cubic yards) of petroleum impacted soils were removed from the property on August 8, 2019 and transported by the B. Blair Corporation of Ivyland, PA to the Clean Earth of Southeastern Pennsylvania disposal facility in Morrisville, PA. The rolloff's containing the remnants of the tank shells were transported by A.J. Catagnus, Inc. for disposal at their facility in Norristown on July 19, 2019.

Finch completed the process of replacing the existing tank field with three (3) new 12,000-gallon fiberglass tanks during the last week in August. Matt Valley personnel also installed new product lines to the pump islands. The tanks were filled with Sunoco Ultra and regular gasoline products on August 14th and a concrete pad was poured over the tank field on August 28th & 29th. The system was pressure tested on September 11, 2019 and the facility reopened for public distribution on September 12, 2019.

2 Site Information

To obtain information regarding the physical Site setting, RT completed a review of reasonably ascertainable published information regarding the geologic and topographic characteristics of the Site. Information reviewed included topographic and geologic maps, geologic reports, and online soil reports. The Site setting is summarized in the following sections.

2.1 Site Description

The project Site is located at the intersection of Old York Road and Street Road in Warminster Township, Bucks County, Pennsylvania. The property includes one parcel consisting of approximately 0.75-acres. The approximate Site location coordinates are latitude 40° 12' 22" North and longitude 75° 5' 60" West. The Site, an operating Sunoco retail gasoline station and convenience store since 1996, has just completed the process of upgrading its underground storage tank field in August/September 2019 (refer to **Figures 1 & 2**).

2.2 Topographic Setting

According to the Hatboro, PA United States Geological Survey (*USGS*) 7.5-minute series topographic quadrangle map (2013), the Site is located at an elevation of approximately 290-feet above mean sea level (*msl*). Site topography around the property is slopes gently towards the north, northeast and northwest. The closest surface water body to the project Site is an unnamed tributary to Little Neshaminy Creek situated 3,465-feet (0.65-mile) northwest at an elevation of 270-feet msl.

2.3 Site History

According to a Phase I report prepared by e Phase, Inc. in July 2017, the existing gasoline station building was constructed sometime between 1950 and 1958 with renovations taking place at least when Sunoco assumed operations around 1996. The existing site product storage system consists of three (3) 12,000-gallon unleaded gasoline fiberglass UST's and four (4) unleaded gasoline dispensers which were installed in the same pit during December 1983. The majority of the site is covered with asphalt and concrete.

In November 1995 through February 1996, Groundwater & Environmental Services, Inc. (GES) personnel conducted construction oversight activities on building upgrades performed at the property. The station building, which was formerly an Atlantic two-bay automobile service station, was razed and replaced with the current Sunoco convenience store. This store is equipped with

a natural gas heating system and there are no potable groundwater wells on the property. During Site excavation operations, three (3) steel 3,000-gallon and one (1) steel 4,000-gallon pre-Act 2 unleaded gasoline USTs, that were previously closed in-situ, were discovered at the southern corner of the property and removed. Localized soil contamination was noted in the UST excavation and beneath the eastern dispenser islands. Based on the contamination observed during the UST closure activity, a Notification of Reportable Release (NORR) was submitted to the PADEP on February 28, 1996 thereby initiating a remedial investigation at the Site.

2.4 Prior Investigations

The project Site has historically operated as a retail gasoline service station since the 1950's. The property currently operates three (3) 12,000-gallon unleaded gasoline underground storage tanks (USTs), dispenser islands and associated piping which were installed in 1983 and replaced in 2019. The following is a list of environmental investigations that have been conducted at the property since 1996:

	Document	Consultant	Date
1.	Site Characterization Report	Handex of Eastern PA.	5-28-1996
2.	Additional Site Characterization Report / Remedial Action Plan	GES	1-06- 2006
3.	Site Characterization Report / Remedial Action Completion Report	GES	10-01- 2009
4.	Site Characterization Addendum / Remedial Action Completion Report Addendum	GES	4-08- 2010
5.	Supplemental Information for Site Characterization Report Addendum / Remedial Action Completion Report Addendum	GES	7-20-2010
6.	Remedial Action Completion Report Approval Letter	PA DEP	10-13-2010
7.	Environment Covenant (Site Specific Standard for benzene at 12 µg/L)	GES	11-15-2010
8.	Phase II ESA Report	GES	2-02-2017

9. Phase I ESA	ePhase, Inc.	7-11-2017
10. Notice of Contamination	Trammel Testing	9-12-2018
11. Notification of Reportable Release	RT Environmental	7-24-1019

A copy of documents 2 through 11 have been included in **Appendix D**.

2.5 Site Geology

The Atlas of Preliminary Geologic Quadrangles of Pennsylvania (Map 61) indicates that the site is underlain by the Stockton Formation. The Geology and Hydrology of the Stockton Formation in Southern Pennsylvania describes this formation as a light-gray to buff cross-bedded, coarse-grained, arkosic sandstone, pebbly sandstone, reddish-brown arkosic sandstone siltstone and silty mudstone. Bedrock composition is further described as red to purplish-red sandstone, shale, and siltstone. This formation is weathered to a moderate depth. Native soil conditions were reported as a surface layer of friable, dark reddish-brown silt loam mottled with weak red and grayish-brown, generally about 10 inches in depth. Beneath the surface layer, the subsoil was reported as consisting of a weak-red silt loam mottled with reddish-brown and gray in the upper six inches to yellowish red and gray below six inches to bedrock, generally about ten feet to fourteen feet.

According to subsurface drilling conducted by GES, the Site is underlain by approximately seven (7) feet of silt, sand, and clay. Weathered shale bedrock was encountered at depth of four to seven feet bgs, which is consistent with the regional geologic description.

2.6 Site Hydrological Conditions

2.6.1 Surface Water

The service station is located in the Delaware River Basin, Neshaminy Creek Sub-basin, and the Neshaminy Creek Watershed. The lower Delaware Sub-basin has a drainage area of ~2,708-square miles and the Neshaminy Creek Watershed drains approximately 233-square miles.

2.6.2 Surface Drainage (Streams)

The closest stream to the project Site is an unnamed tributary to Little Neshaminy Creek situated 3,465-feet (0.65-mile) northwest at an elevation of 270-feet above msl. The next closest stream is also an unnamed tributary to Pennypack Creek situated 3,560-feet (0.67-mile) south at an elevation of 275-feet above msl. An unnamed tributary to Neshaminy Creek is situated 3,850-

feet (0.73-mile) northeast of the Site at an elevation of 270-feet above msl. The furthest perennial stream channel still within a 1-mile radius of the project Site is an unnamed tributary to Little Neshaminy Creek situated 4,450-feet (0.84-mile) east at an elevation of 275-feet above msl. All four points are the headwaters of the various stream channels. The approximate elevation of the project site is 295-feet which is near the peak of a small rise which slopes off in all directions (refer to **Figure 2**).

2.6.3 Groundwater Gradient

As detailed in the prior GES reports, groundwater flow direction has varied with seasonal changes in both the shallow and deep water-bearing zones. General flow directions has historically been towards the southwest, west-southwest, west-northwest and east-northeast. The horizontal groundwater gradient in the shallow water-bearing zone across the Site and surrounding area has ranged from 0.01 to 0.25-feet/foot (ft/ft), with an average of 0.08 ft/ft. The horizontal groundwater gradient in the deep water-bearing zone across the site and surrounding area ranged from 0.001 to 0.01 ft/ft, with an average of 0.004 ft/ft. Regional groundwater flow is estimated to be towards the northwest, towards an unnamed tributary of Little Neshaminy Creek.

2.6.4 Supply Wells/Potable Water Well Inventory

To assess potential groundwater receptors in the area, RT completed a review of available state water well database information using the ***Pennsylvania Department of Conservation Natural Resources (PADCNR)*** online ***Pennsylvania Groundwater Information System (PaGWIS)***. According to information included in this database, there are three (3) domestic groundwater wells located within a ½-mile radius of the Site. The location of these observation wells are identified on ***Figure 6*** – *Well Receptor Map* which contains a water well inventory summary beneath the map. The wells varied in depth from 95 to 200-feet although a depth of well #3 was unknown. According to local inquires in the area, the municipal water system which provides potable water to this section of Warminster Township is the Warminster Municipal Water Authority.

2.7 Site Soils

Soils at the Site are identified by the United States Department of Agriculture (*USDA*), Natural Resources Conservation Service (*NRCS*), Web Soil Survey as UgB – Urban land, 0 to 8 percent slopes. Parent material of urban lands are considered to be pavement, buildings and other artificially covered areas of human transported material.

3 Hydrocarbon Release

On September 12, 2018, Trammel Testing, Inc. arrived on-site to conduct the annual UST system testing. Trammel tested the three tanks, associated lines, leak detectors, vapor recovery, impact valves and liquid sensor shut down system. All components passed with the exception of tank 001 (Ultra Grade) which failed the "EZY 3 Locator Plus" (tightness) test. As a result, the Trammel technician submitted a Notification of Reportable Release to the PA DEP for tank 001. The notification document stated "During a facility operations inspection it was discovered that tank 001 – a 12,000 gallon ultra-gasoline tank has been failing the SCLD tank leak tests. The monitor was serviced a few times to correct the problem with unsatisfactory results. The tank continued to fail the CSLD testing. A tank tightness test was performed to determine if there is a problem with the tank. The tank test indication is an air leak above the liquid level of 27.5 inches. The source of the leak could not be identified.

As a follow-up to the "Notice of Contamination" sent to DEP on September 12, 2018 by Trammel Testing, Inc., the Department conducted a site inspection on September 21, 2018. Ms. Quadirah Glover, Water Quality Specialist and Mr. Scott Godshall, Environmental Trainee visited the facility in order to review the tank tightness testing results and leak history. A copy of the "DEP Storage System Report Form – Narrative Information" for the September 21, 2018 inspection can be found in Appendix F.

According to the Daily/Monthly Inventory Reconciliation records, tank 001 was removed from service on September 27, 2018 while tanks 002 & 003 remained in operation until July 15, 2019 when they were taken off line and emptied by Finch of remaining product on July 19, 2019. A release from the 12,000-gallon ultra-unleaded gasoline UST was confirmed on July 16, 2019 during removal of the regulated Ultra tank by ECI, LLC (a subcontractor to Matt's Valley Petroleum, Inc.). This fiberglass tank was installed on the property in December 1983 during a facility upgrade which replaced steel UST's originally installed during the 1950's.

4 Site Characterization Activities

4.1 Soil Characterization

As discussed above, a release of unleaded gasoline was confirmed during the replacement of three (3) fiberglass UST's at the Sunoco retail gasoline station and convenience store in Warminster. The USTs were removed by ECI, LLC beginning on July 16, 2019. RT personnel was on-site in order to provide oversight assistance and to screen soil with a photoionization detector (PID). PID readings ranged from 300 to 2,500 ppm with strong petroleum odors being noted in the excavation. Visible staining of the pea gravel bed was observed along with elevated PID readings exceeding 2,500 ppm.

4.2 Storage Tank Information

The annual Underground Storage Tank Facility Operations Inspection conducted on September 12, 2018 reported the following information:

- Tanks 001, 002 & 003 are single fiberglass tanks installed in December 1983;
- Tank 001 stores Sunoco Ultra gasoline while tanks 002 & 003 store regular gasoline; Tanks 002 and 003 have a manifold tank with 002 being the master tank and 003 is the drone;
- Tank 001 is non-compliant for tank release protection. This tank has not passed a CSLD since July 2nd 2018 and the owner has had the ATG serviced twice to try and rectify the problem but with no success. The tank was precision tested on 9/12/18 but failed the tightness test. A notice of contamination was filed by Trammel Testing on 9/12/18.
- According to the Daily/Monthly Inventory Reconciliation records, tank 001 was removed from service on September 27, 2018 while tanks 002 & 003 remained in operation until July 15, 2019 when they were taken off line and emptied of remaining product by Sunoco on July 19, 2019.
- A "Notification of Reportable Release" was submitted on behalf of Finch by RT on 7-24-2019.

4.3 UST Removal Activities

Finch initially contracted Matt's Valley Petroleum, Inc. (Matt's) to upgrade the Ultra tank (001) and reline the regular product tanks (002 & 003). Matt's subcontracted the tank removal work to ECI, LLC (ECI) who is a licensed tank removal contractor in PA. Personnel from ECI mobilized to the

Site on June 17, 2019 to replace tank 001 with a new 12,000-gallon fiberglass unit. Once the Ultra tank was uncovered, ECI recommended that all three tanks be upgraded with new fiberglass units and feed lines as the existing tanks had been in service for approximately 35-plus years. Based on ECI's recommendation, Finch agreed to replace all three units during the tank upgrade. During this initial site work, two representatives from the PA DEP Norristown office arrived at the property to inspect the removal of the Ultra tank. Ms. Quadirah Glover, Water Quality Specialist and Mr. Scott Godshall, Environmental Trainee inspected the facility on June 17th. Ms. Glover recommended that all soil/pea gravel removed from the excavation be properly stored in accordance with established guidance procedures. Due to Finch's decision to replace all three tanks, the installation of tank 001 was delayed until tanks 002 & 003 could be emptied of remaining product and the additional storage tanks could be ordered via Matt's.

ECI re-mobilized to the project site on Monday July 15, 2019 in order to begin disconnecting electrical connections and other tank components in preparation for tank extraction. Excavation work began on Tuesday July 16th with the removal of fill from around tank 001 by utilizing a JCB 83 L track excavator. When the tank was clear of pea gravel on all four sides, the remaining tie-down straps were cut and the tank lifted out of the excavation. Petroleum contaminated pea gravel and soil removed from the excavation were placed/stored on plastic covered asphalt/concrete surrounding the excavation.

RT personnel were on-site during the tank removal process in order to provide oversight assistance and to screen soil with a photoionization detector (PID). Upon removal of tank 001, PID readings ranged from 300 to 2,500 ppm with strong petroleum odors being noted in the excavation. Visible staining of the pea gravel bed was observed along with petroleum contaminated water in the bottom of the pit and elevated PID readings exceeding 2,500 ppm. As previously stated, any petroleum contaminated material was stockpiled on the plastic lined asphalt surface surrounding the tank excavation. The soil stockpile was covered each night with a plastic tarp.

ECI returned to the property on Wednesday July 17th to continue the removal of the remaining USTs. Monarch Environmental, Inc. (Monarch) arrived on site at 1030 to complete removal of any remaining product and sludge in tanks 002 & 003. Upon completion of soil (pea gravel) excavation activities, tank 002 was lifted from the pit and placed on the contaminated soil stockpile. Remaining fill around tank 003 was removed and the tank lifted from the pit area.

PID screening levels of the material removed from tank 003 varied from 50 to 1,500 ppm. Once the pit was clear, Monarch removed any petroleum contaminated water from the bottom of the excavation. Monarch left the project Site at 1445 and properly disposed of 2,902-gallons of petroleum contaminated fluids (see Disposal Document in **Appendix E**).

After allowing the three tanks to naturally vent overnight, ECI proceeded to dismantle the tanks using the excavator bucket and placed the contents into 20-cubic yard rolloff's on July 18th. Tanks 002 & 003 were compacted into one rolloff while tank 001 was place into a second container. RT proceeded to collect a composite soil sample from the stockpile for disposal profiling required by Clean Earth. Excavation of the tank field continued on July 19th and RT personnel collected a water sample from the pit before making sure that the soil stockpile was covered over the weekend.

RT returned to the Site on Monday July 23rd and continued to provide oversight assistance (PID readings) to ECI as they removed additional soil from the pit area. Monarch re-mobilized to the property and removed an additional 2,726-gallons of petroleum impacted water from the tank excavation. RT conducted attainment soil sampling on Tuesday July 24th using a systematic random sampling plan. Due to groundwater seeping into the pit, RT collected twelve (12) sidewall soil samples. The samples were labeled, packed on ice and immediately transported to the TestAmerica login facility in King of Prussia for analysis of the PA Short List of Petroleum Products for unleaded gasoline. Laboratory results indicate that all of the parameters tested were either below the laboratories method detection limits or below the Residential Statewide Health Standard (SHS) Medium Specific Concentration (MSC) for the constituents of concern analyzed (**Table 1**)

4.4 Analytical Results

Sidewall attainment soil samples, CS-1 through CS-12, were collected at depths ranging from 5.0 to 12.0-feet below surface grade in accordance with a systematic random sampling plan (refer to Figure 4) on July 26, 2019. Analytical results indicate that a majority of the samples collected did not have any reported compounds above the laboratory detection limits (CS-1, CS-4, CS-5, CS-6, CS-8, CS-9, CS-10, CS-11 and CS-12). The remaining three samples (CS-2, CS-3 and CS-7) reported minor detections of ethylbenzene, naphthalene, toluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene and total xylenes. All concentrations were reported at 1.0 mg/kg or less (refer to Table 1).

A grab water sample was obtained from the pit excavation on July 19, 2019. Analytical results reported excesses of benzene, ethylbenzene, naphthalene, toluene, MTBE, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene and total xylenes (refer to Table 2). Based on this information, a groundwater investigation is being initiated at the site.

4.5 Disposal Activities

In total, 11,727-gallons of petroleum impacted water, sludge and sediment were removed from the USTs and the excavation and transported by Monarch to their facility in Woodstown, New Jersey for permanent disposal (US EPA ID No. NJD011881174; NJDEP Certification No. US470102). An additional 578-gallons of petroleum contaminated water was removed by J&J Environmental on July 15, 2019 and transported to Eldridge, Inc. in West Chester on August 9 for permanent disposal. In total, 642.5-tons (459-cubic yards) of petroleum impacted soils were removed from the property on August 8, 2019 and transported by the B. Blair Corporation of Ivyland, PA to the Clean Earth of Southeastern Pennsylvania disposal facility in Morrisville, PA. The rolloff's containing the remnants of the tank shells were transported by A.J. Catagnus, Inc. for disposal at their facility in Norristown on July 19, 2019 (see Disposal Documents in **Appendix E**).

4.6 Completion of Tank Replacement

Finch completed the process of replacing the existing tank field with three (3) new 12,000-gallon fiberglass tanks during the last week in August. Matt Valley personnel also installed new product lines to the pump islands. The tanks were filled with Sunoco Ultra, diesel and regular gasoline products on August 14th and a concrete pad was poured over the tank field on August 28th & 29th. The system was pressure tested on September 11, 2019 and the facility reopened for public distribution on September 12, 2019. The new tanks are designated 004 (Regular), 005 (Ultra) and 006 (Diesel).

4.7 Groundwater Investigation

At the time of tank removal, a sheen of petroleum product was observed on water in the bottom of the excavation. During the course of soil removal, any potentially contaminated groundwater accumulating in the excavation was removed from the pit via vacuum truck. A sample of the pit water was collected by RT personnel on July 19, 2019 and transported to the TestAmerica login facility in King of Prussia for analysis of unleaded gasoline parameters. Analytical results indicated an exceedance of benzene, ethylbenzene, toluene, naphthalene, MTBE, 1,2,4-

Trimethylbenzene and total xylenes of the Direct Contact non-Residential Statewide Health Standards. Based on these results, a groundwater monitoring program will need to be initiated at the Site.

4.8 Existing Groundwater Monitoring Wells

As determined during a recent site survey, there are ten (10) existing monitoring wells on the property from prior investigations. These wells will need to be accessed and gauged in order to determine if they are still functional and in adequate condition to be used in the proposed monitoring program. The following is a brief summary of the existing groundwater monitoring wells at the site:

- Three (3) monitoring wells (MW-1, MW-2 and MW-3) were installed by Handex on 5-28-1996;
- Monitoring well MW-4 was installed by GES on 10-27-1997 to a depth of 25-feet;
- Wells MW-5 and MW-6 were installed by GES on 10-18-2004 to depths of 50 & 47-feet respectively;
- Monitoring Well MW-7 is a deep well installed by air rotary methods on 11-23-2004. This well maintains 6-inch steel casing down to 60-feet with 40-feet of 2-inch well screen and 60-feet of solid PVC pipe; and,
- Monitoring wells MW-8, MW-9 and MW-10 were installed under GES supervision during February 2007. Deep monitoring wells MW-8 and MW-9 were drilled to depths of 100 and 89-feet respectively while MW-10 was extended to a depth of 50-feet.

Summary of Monitoring Well Construction Details

Well ID	Date of Installation	Casing and Screen Material	Depth to Screen Top	Screen Length	Depth to Bottom	Consultant
MW-1	5-28-96	2" Sch 40 PVC	5'	20'	25'	Handex
MW-2	5-28-96	4" Sch 40 PVC	5'	20'	25'	Handex
MW-3	5-28-96	4" Sch 40 PVC	5'	20'	25'	Handex
MW-4	10-27-97	4" Sch 40 PVC	5'	20'	25'	GES
MW-5	10-18-04	4" Sch 40 PVC	10'	40'	50'	GES
MW-6	10-18-04	6" Sch 40 PVC	10'	37'	47'	GES
MW-7	11-23-04	2" Sch 40 PVC	60'	40'	100'	GES
MW-8*	2-25-07	2" Sch 40 PVC	60'	40'	100'	GES
MW-9	2-25-07	2" Sch 40 PVC	59'	30'	89'	GES
MW-10	2-26-07	4" Sch 40 PVC	10'	40'	50'	GES

*Tubing logged in the well; RT will try to remove.

4.9 Initial Monitoring Well Access & Gauging Event

RT field personnel mobilized to the project site on Thursday August 29, 2019 to locate then access the monitoring wells constructed during the previous groundwater investigation by both Handex and GES. It was anticipated that once the well access covers were removed, the well bore would be sealed with either grout or bentonite. However, all of the observation points located in the asphalt parking lot were found to be accessible although the field technician could not remove the protective PVC caps on MW-1 and MW-2. The only existing well that could not be located was MW-3 which may have been under construction material or inadvertently removed during the facility upgrades. RT also opened the three (3) soil gas manhole covers and found the tubing leading to the implant was still in place.

Of the seven (7) wells that could be opened and gauged, four (4) maintained a light non-aqueous phase liquid (LNAPL) (MW-4, MW-5, MW-9 and MW-10) while MW-8 only had a strong petroleum odor. Initial well gauging indicated a groundwater flow towards the northwest.

4.10 Proposed Monitoring Points

Provided that all ten (10) of the existing monitoring wells can be used in the proposed groundwater investigation, RT will make additional well recommendations once the existing observations points have been properly gauged, purged and sampled.

4.11 Proposed Monitoring Program

Once it has been determined which existing wells can be utilized in the monitoring program and upon the installation of additional observation points, if required, Finch will complete attainment monitoring. Finch, through its consultant RT, will analyze the groundwater samples for the PA DEP Short List of Unleaded Gasoline parameters and evaluate the monitoring results as they become available.

5 Site Conceptual Model

A petroleum release was discovered during the annual tank compliance testing in 2018 by Trammel Testing, Inc. During the tightness testing, tank 001 (Ultra gasoline unit) failed the EZY 3 Locator Plus test on September 12, 2018 resulting in the submission of a "Notification of Reportable Release" to the Pennsylvania Department of Environmental Protection (PA DEP) Bureau of Environmental Cleanup and Brownfields. Remedial activities, as further discussed in Section 8, consisted of excavation and removal of three 12,000-gallon USTs and all petroleum

impacted soil from the pit. Three new fiberglass tanks were re-installed in the excavation which was backfilled with quarry supplied pea gravel and capped with concrete.

5.1 Migration Pathways

As previously stated, remedial activities consisted of over excavation via excavator of all petroleum impacted soil by removal of concrete cap overlying the tank field, soil (pea gravel) fill, tanks and impacted soils around/beneath the tanks. Petroleum contamination was detected via PID screening during the soil removal process. Confirmatory sidewall soil samples obtained at the completion of the remedial activity indicated that all constituents-of-concern were reported below the most stringent residential Statewide Standard for soil.

Migration pathways at the Site are limited as all impacted materials have been removed. The UST excavation was completed with three new 12,000-gallon tanks, backfilled with quarry delivered pea gravel and capped with concrete. Bedrock was not encountered during the soil removal process, however; groundwater contamination is a concern and will need to be further addressed in a monitoring program.

No migration pathways exist in the vicinity of the tank field and all petroleum impacted soils have been removed. Therefore, the source of the contamination has been eliminated. All constituents of concern addressed in the attainment soil samples were reported as below default screening values for potential vapor migration.

5.2 Potential Receptors and Completed Exposure Pathways

The Site and surrounding properties are designated for commercial use and are developed with retail structures. Migration pathways present at the Site are incomplete as the source of contamination has been removed from the project Site. In addition, any potential migration routes (sewer and water lines) were not located in the release area and are not of further concern. The indoor air exposure pathway is considered to be incomplete as the concentrations of constituents of concern in Site soils are below DEP screening criteria for a risk of impact to indoor air quality (refer to ***Table 1***). In addition, the affected area associated with the tank field is covered with a concrete pad with a majority of the parcel being asphalt paved (no surface water infiltration).

6 Vapor Intrusion Analysis

In compliance with Act 2 regulations, RT will completed a vapor intrusion analysis to evaluate the potential for any remaining petroleum-impacted groundwater to pose a health risk to humans and/or habitats of concern. This analysis will be conducted in conjunction with the proposed groundwater investigation.

7 Conclusions and Recommendations

Based on the soil attainment sampling conducted by RT on July 26, 2019, no residual soil contamination remains in the excavation at concentrations above the selected rSHS. Therefore, no additional soil excavation/remediation is proposed. However, at the time of the tank removal, a sheen of petroleum product was observed on water in the bottom of the excavation. During the course of soil removal, any potentially contaminated groundwater accumulating in the excavation was removed from the pit via vacuum truck. A sample of the pit water was collected by RT personnel on July 19, 2019 and transported to the TestAmerica login facility in King of Prussia for analysis of unleaded gasoline parameters. Analytical results indicated an exceedance of benzene, ethylbenzene, toluene, naphthalene, MTBE, 1,2,4-Trimethylbenzene and total xylenes of the Direct Contact non-Residential Statewide Health Standards. Based on these results, a groundwater monitoring program will need to be initiated at the Site.

As documented in Section 4.8, there are ten (10) existing monitoring wells on the property from prior investigations. These wells will need to be accessed and gauged in order to determine if they are still functional and in adequate condition to be used in the proposed monitoring program. Once the wells have been verified to be serviceable, RT will monitor each of the wells. During the sampling events, the wells will be gauged then purged of three volumes via a submersible pump. Upon completion of the purging cycle and stabilization of the field parameters (Temperature, Conductivity, Dissolved Oxygen, pH, and Oxidation Reduction Potential) the wells will sampled via the submersible pump. Each sample will be immediately place into laboratory supplied containers, packed in ice, and submitted to the appropriate laboratory under proper chain-of-custody documentation (refer to QA/QC document in Appendix G).

8 Remedial Action Plan

8.1 Remedial Action Options

The following remedial alternatives have been evaluated based on the pit sample groundwater concentrations and depth to water information:

8.1.1 Proposed Alternatives

a. **Option 1 – Vacuum Extraction** - If LNAPL is present in any of the wells once they are properly gauged, a vacuum event will be scheduled to remove product from the water column. The volume of water removed from each well will be recorded along with the rate of LNAPL moving back into the well, if any. The vacuum extraction may need to be conducted on multiple occasions depending on the amount of LNAPL present beneath the Site. The practicality of this option will need to be evaluated after each extraction event.

b. **Option 2 – In-Situ Chemical Injection** - Should Option 1 not be effective, the next likely remedial option would be chemical injection to reduce the constituents-of–concern concentrations in groundwater. This would involve installation of injection points throughout the Site for the application of treatment chemicals. The injection would be monitored over a period of time to determine if the remediation was successful.

c. **Option 3 – No Action** – This option would consist of implementing long term institutional controls to restrict access to the property and would be combined with monitored natural attenuation.

8.1.2 Remedy Selection Criteria

In general, the evaluation criteria is directly or indirectly related to the overall site remediation objective that is to assure water quality complies with the non-residential Statewide Health Standard established for a used aquifer. In addition, the remediator aims to reduce the risks posed by any remaining contamination to human health or the environment.

8.1.3 Alternative Analysis

No Action – This No Action option was eliminated from further consideration based on the presence of the LNAPL and the property owners desire to complete clean-up activities associated with the replacement of the three (3) 12,000-gallom UST on the Site.

In-situ Chemical Injection – This technology will be further evaluate based on the effectiveness of the selected option.

Vacuum Extraction – was further evaluated and selected as the best available option to remediate the site using a non-residential Statewide Health Standard for groundwater.

8.1.4 Conceptual Design

Once the extent of LNAPL has been delineated in the existing wells, it will be the remediator's choice to schedule vacuum extraction events in an effort to remove product from the wells. This practice will continue to be the option selected for any future remedial activity.

8.2 Groundwater Water Monitoring Activities

Finch Petroleum will complete a minimum of eight (8) quarterly groundwater sampling events which will begin once the well are located and properly gauged. The monitoring program will include collection of groundwater samples from the wells that do not contain LNAPL. Finch, through its consultant RT, will continue the quarterly groundwater monitoring for the site and evaluate the monitoring results as they become available. RT will submit further Remedial Action Progress Reports after the monitoring events, in conjunction with the extraction events, in accordance with the following schedule:

Action Item	Action Date	Due Date
Location/Gauging of Wells	1-15-20	
Soil Vapor Sampling (1st)	2-29-20	
Vacuum Extraction Event (If Necessary)	3-3-20	
Second Vacuum Extraction Event (If Necessary)	3-17-20	
(1) First Quarter 2020 Groundwater Monitoring	3-31-20	4-30-20
DEP Quarterly Report	4-15-20	4-30-20
Soil Vapor Sampling (2nd)	4-16-20	
(2) Second Quarter 2020 Groundwater Monitoring	6-30-20	7-31-20
DEP Quarterly Report	7-15-20	7-31-20
(3) Third Quarter 2020 Groundwater Monitoring	9-30-20	10-30-20
DEP Quarterly Report	10-15-20	10-30-20
(4) Fourth Quarter 2020 Groundwater Monitoring	12-31-20	1-29-21
DEP Quarterly Report	1-15-21	1-29-21
(5) First Quarter 2021 Groundwater Monitoring	3-31-21	4-30-21
DEP Quarterly Report	4-15-21	4-30-21
(6) Second Quarter 2021 Groundwater Monitoring	6-30-21	7-30-21

DEP Quarterly Report	7-15-21	7-30-21
(7) Third Quarter 2021 Groundwater Monitoring	9-30-19	10-29-21
DEP Quarterly Report	10-15-21	10-29-21
(8) Fourth Quarter 2021 Groundwater Monitoring	12-31-21	1-31-22
DEP Quarterly Report	1-15-22	1-31-22
Submit Completion Report to DEP	1-12-22	3-31-22

8.3 Analytical Methods

The participating laboratory will utilize EPA Method 5030B/8260B – Volatile Organic Compounds by GC/MS to determine volatile organic compounds in a variety of water matrices. Compounds to be analyzed (PA Short List of Petroleum Products for Unleaded Gasoline) include Benzene, Toluene, Ethylbenzene, Naphthalene, Cumene (isopropylbenzene), MTBE, Total Xylenes, 1,2,4-Trimethylbenzene and 1,3,5-Trimethylbenzene. Soil gas analyses will be completed using Method: TO-15 – Volatile Organic Compounds in Ambient Air during the two (2) proposed sampling events.

8.3.1 Attaining Acceptable Groundwater Concentrations

A non-residential used aquifer statewide standard has been selected for groundwater media. Therefore, once the existing monitoring wells are opened, properly gauged and determined to be operational for the proposed monitoring plan (as stated in Section's 4.8 & 4.9), eight (8) quarters of groundwater sampling will be conducted on the ten (10) groundwater monitoring wells in order to demonstrate attainment of the non-residential statewide health standards for unleaded gasoline constituents in groundwater.

8.3.2 Remedial Action Reporting

Based on the post excavation soil sampling results following the 2019 tank removal activity, soils demonstrate attainment of the applicable rSHS. Soil gas sampling will be completed in and around the convenience store to ensure that there is not a capable exposure pathway. RT will continue the quarterly groundwater monitoring for the site and evaluate the results as they become available.

RT Environmental Services, Inc.

January 31, 2020

Mr. Scott Godshall, P.G.
Pennsylvania Department of Environmental Protection
Environmental Cleanup & Brownfields Program
Southeast Regional Office
2 East Main Street
Norristown, Pennsylvania 19401

Subject: Underground Storage Tank Site
Site Characterization Report
SUNOCO Station #0363-5430, Facility I.D. No. 09-30778
610 York Road, Warminster Township, Bucks County, Pennsylvania

Dear Mr. Godshall:

On behalf of **Finch Petroleum, LLC (Finch), RT Environmental Services, Inc. (RT)** is pleased to provide the enclosed Site Characterization Report for the above-mentioned site. This report documents confirmatory soil sampling and additional groundwater characterization information conducted by Finch in an effort to close out the UST case.

Should you have any questions concerning this matter, please do not hesitate to contact us. I can be contacted at (610) 265.1510 ext. 215 or via e-mail at cherr@rtenv.com. We appreciate the Department's assistance with this project.

Sincerely,

Craig N. Herr, P.G.
Geologist
for RT Environmental Services, Inc.
+1 610-265-1510 Ext. 215
Email: cherr@rtenv.com

Enclosure
cc: Finch Petroleum, LLC
USTIF
File
File: SCR Cover letter (73057-01)
Project # 73057-01

9 References

- Berg, T. M., Edmunds, W. E., Geyer, A. R., and others, compilers, 1980, Geologic map of Pennsylvania (2nd ed.): Pennsylvania Geological Survey, 4th series, Map 1, 3 sheets, scale 1:250,000.
- Miles, C. E., and Whitfield, T. G., compilers, 2001, Bedrock Geology of Pennsylvania: Pennsylvania Geological Survey, 4th ser., dataset, scale 1:250,000.
- United States Department of Agriculture (USDA), Natural Resource Conservation Service, Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm), 610 York Road, Warminster, Pennsylvania.
- Shultz, Charles H., 1999, The Geology of Pennsylvania, Pennsylvania Geological Survey, 888 pp.
- U. S. Geologic Survey Topographic Maps, Philadelphia, PA Quadrangle, 7.5 Minute Series, Imagery Updated July 2010 (NAIP), revised 2016.

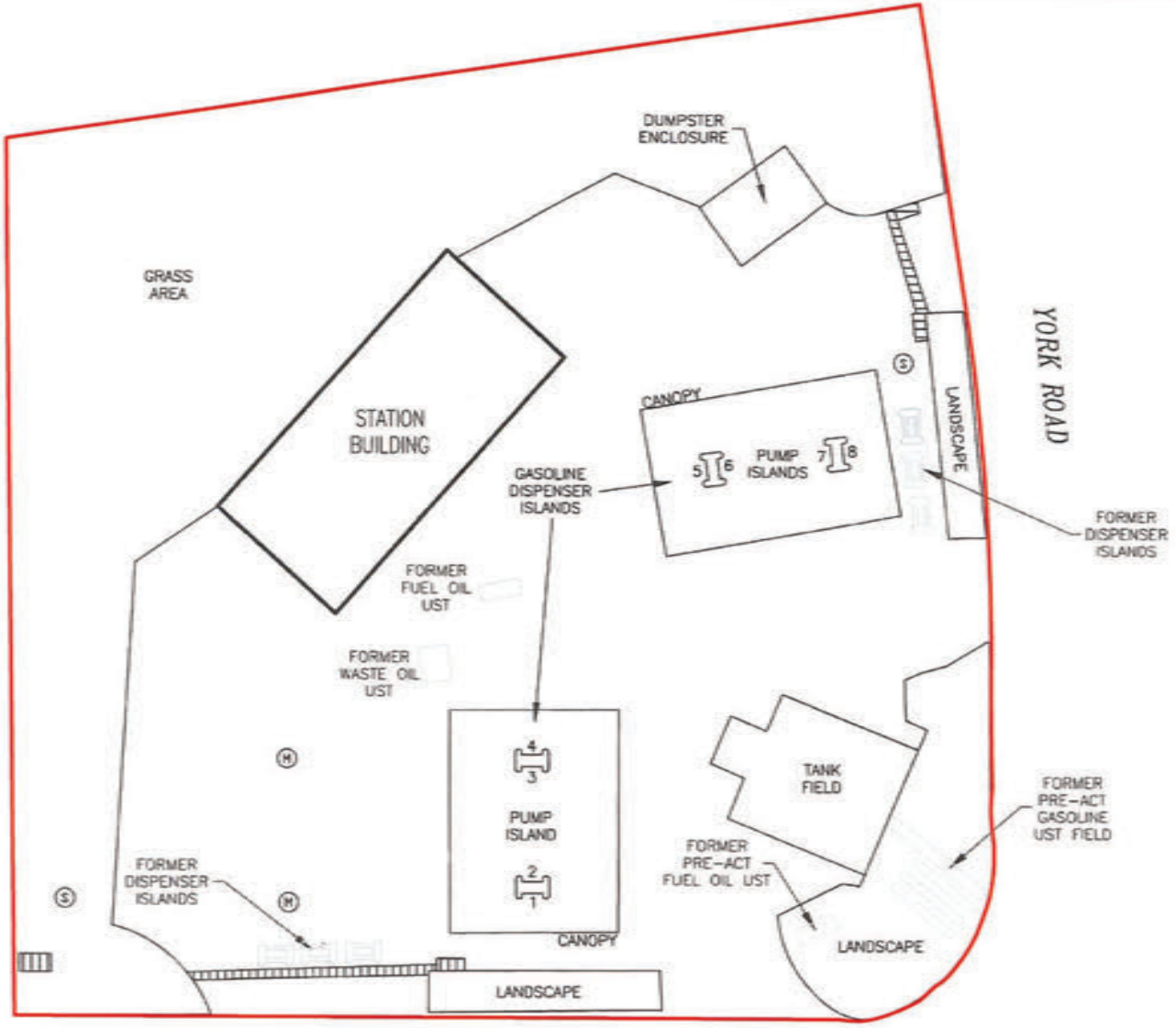
10 Signatures

This Act 2 Statewide Health Standard Final Report was prepared and submitted by:

Craig N. Herr, P.G.
Senior Consultant
RT Environmental Services, Inc.
Pennsylvania Registered Professional Geologist No. PG-4709

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

FIGURES



LEGEND

- MONITORING WELL
- SEWER MANHOLE
- MANHOLE
- STORM DRAINAGE
- SOIL GAS SURVEY POINT
- Property Line

0 40' 80'

BASED ON A PLAN PREPARED BY GROUNDWATER & ENVIRONMENTAL SERVICES, INC. TITLED GROUNDWATER ANALYTICAL MAP DATED 1/227/27.

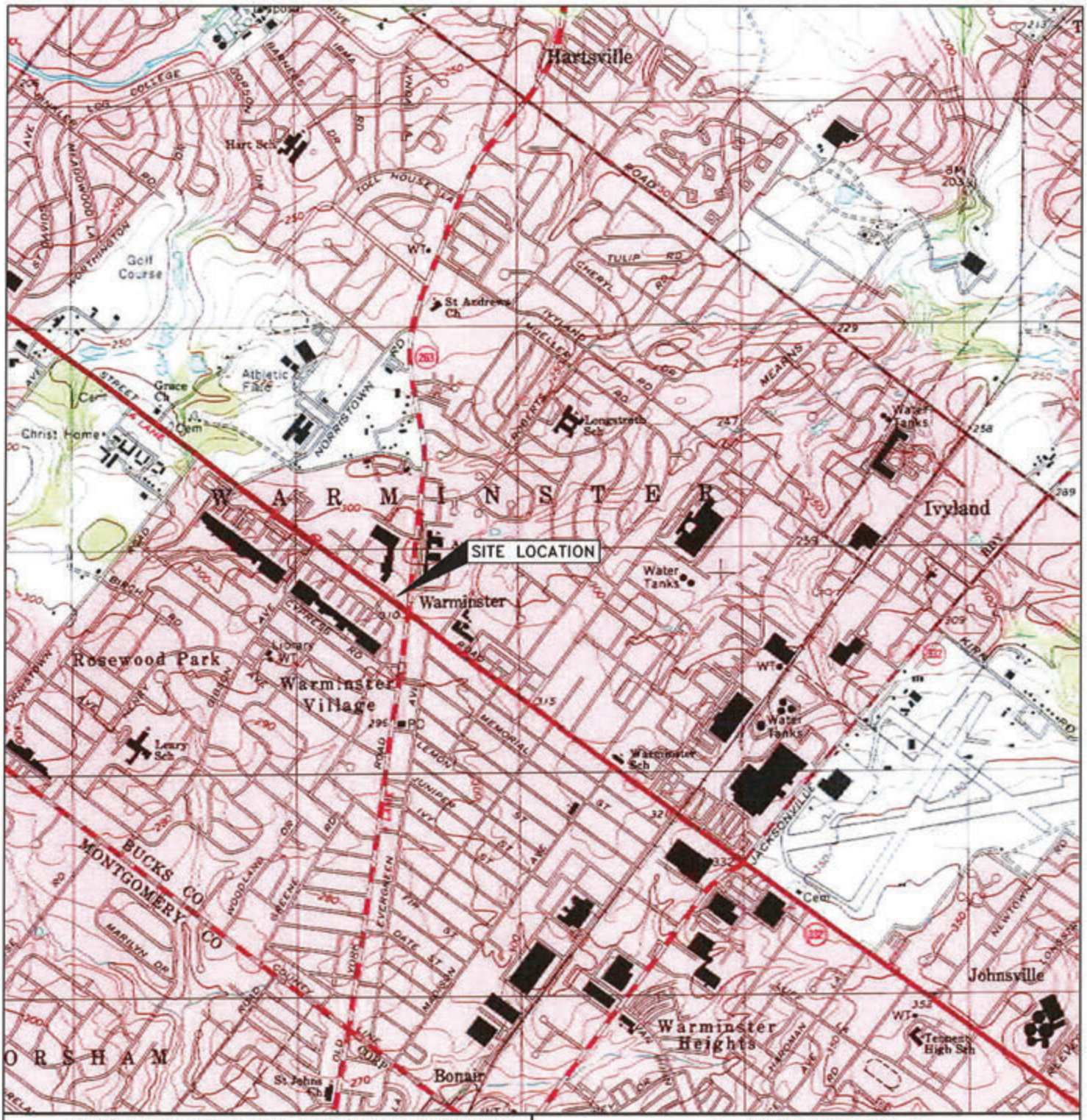
RT Environmental Services, Inc.
215 West Church Road
King of Prussia, PA 19406

FIGURE 1
SITE MAP

610 YORK ROAD
WARMINSTER, PA

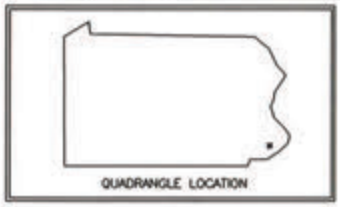
Prepared For:
FINCH PETROLEUM
610 YORK ROAD
WARMINSTER, PA 18974

CHARGE	AUTOCAD FILE	DRAWER	DESIGNER	DRAFTSPERSON
73057-01				RS
SCALE: 1" = 40'	DRAWING NUMBER: y:\rt projects\73000 series\73057-01\figures.dwg			REVISION: 1
DATE: 7/30/2019				



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE
HATBORO, PA
CONTOUR INTERVAL 10 FEET
SCALE (feet)

0 2000' 4000'



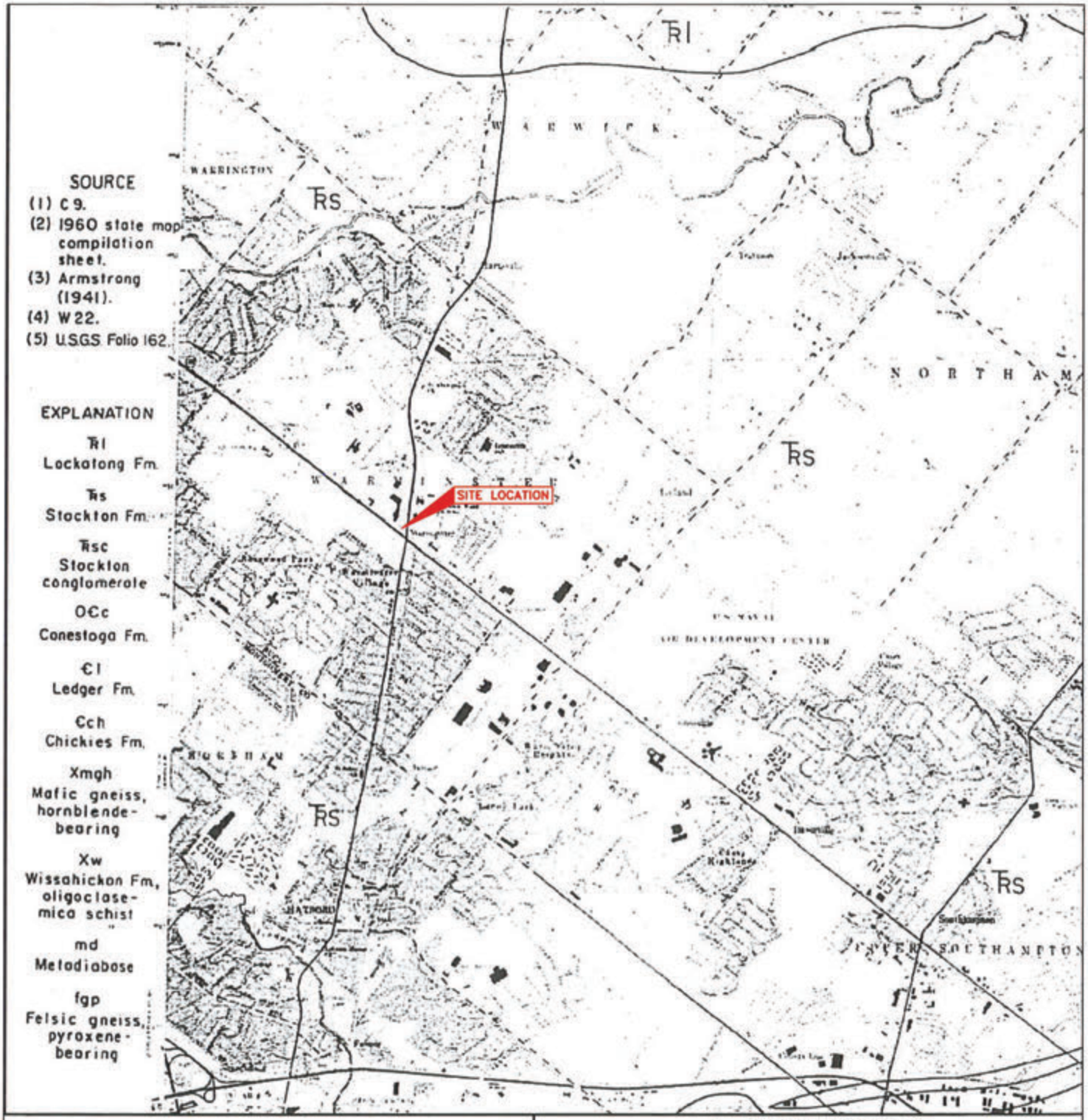
RT Environmental Services, Inc.
215 West Church Road
King of Prussia, PA 19406

FIGURE 2
TOPOGRAPHIC MAP

610 YORK ROAD
WARMINSTER, PA

Prepared For:
FINCH PETROLEUM
610 YORK ROAD
WARMINSTER, PA 18974

CHARGE	73057-01	AUTOCAD FILE	ENGINEER	DESIGNER	DRWTSPERSON	AS
SCALE	1" = 2000'	DRAWING NUMBER			REVISION	
DATE	7/31/19	y:\rt projects\73000 series\73057-01\slm.dwg				



RT Environmental Services, Inc.
215 West Church Road
King of Prussia, PA 19406

FIGURE 3
GEOLOGIC MAP

610 YORK ROAD
WARMINSTER, PA

Prepared For:
FINCH PETROLEUM
610 YORK ROAD
WARMINSTER, PA 18974

CHARGE	73057-01	AUTOCAD FILE	ENGINEER	DESIGNER	DRAFTSPERSON AS
SCALE	NOT TO SCALE	DRAWING NUMBER			REVISION
DATE	7/31/19	y:\rt projects\73000 series\73057-01\slm.dwg			

LEGEND

- Site
- ① Archbishop Wood High School
- ② Residential Developments

1. Properties surrounding the site are used for commercial purposes unless noted otherwise.
2. A representative from Warminster Township confirmed that:

   a) The properties within 1/4-mile of the site are connected to the municipal water system.

   b) There are no residential or public water supply or industrial supply resources at the property or immediately adjacent to the site.

BASE MAP: GoogleEarth 2/8/2019

0 600' 1200'

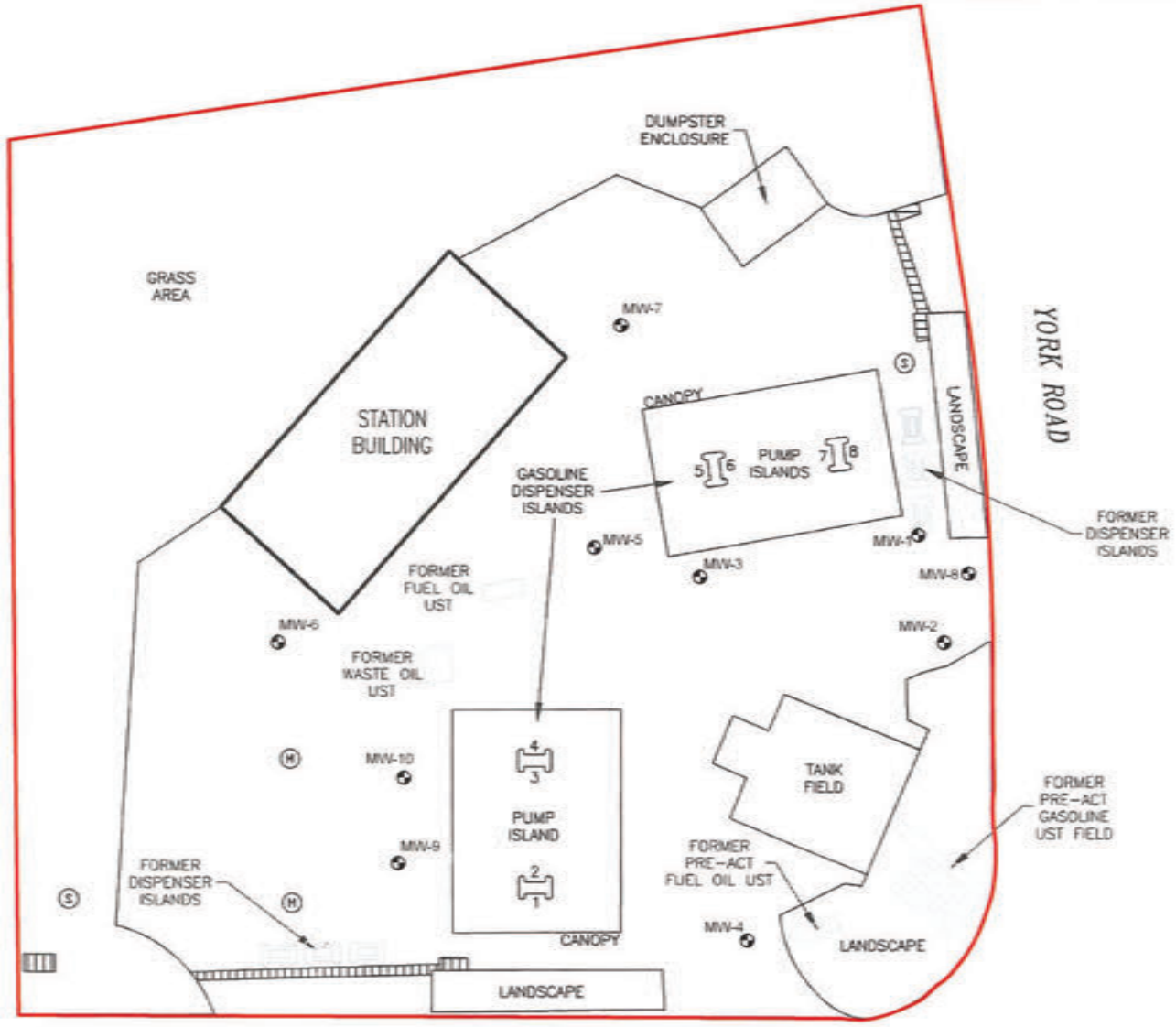
RT Environmental Services, Inc.
215 West Church Road
King of Prussia, PA 19406

FIGURE 4
AREA MAP

610 YORK ROAD
WARMINSTER, PA

Prepared For:
FINCH PETROLEUM
610 YORK ROAD
WARMINSTER, PA 18974

CHARGE	AUTOCAD FILE	ENGINEER	DESIGNER	DRAFTSPERSON
73057-01				AS
SCALE: 1" = 600'	DRAWING NUMBER: y:\rt projects\73000 series\73057-01\figures.dwg			REVISION: 1
DATE: 8/22/2019				



LEGEND

- MONITORING WELL
- SEWER MANHOLE
- MANHOLE
- STORM DRAINAGE
- SOIL GAS SURVEY POINT
- Property Line

0 40' 80'

BASED ON A PLAN PREPARED BY GROUNDWATER & ENVIRONMENTAL SERVICES, INC. TITLED GROUNDWATER ANALYTICAL MAP DATED 1/227/27.

RT Environmental Services, Inc.
215 West Church Road
King of Prussia, PA 19406

FIGURE 5
WELL LOCATION MAP

610 YORK ROAD
WARMINSTER, PA

Prepared For:
FINCH PETROLEUM
610 YORK ROAD
WARMINSTER, PA 18974

CHARGE	AUTOCAD FILE	ENGINEER	DESIGNER	DRAFTSPERSON
73057-01				AS

SCALE	DRAWING NUMBER	REVISION
1" = 40'	y:\rt projects\73000 series\73057-01\figures.dwg	1

DATE 7/30/2019

Map ID	PAWellID	County	Municipality	DateDrilled	LatitudeDD	LongitudeDD	OriginalOwner	WellUse	WaterUse
1	69172	BUCKS	WARMINSTER TWP.	1/1/1970	40.2025	-75.09333	SMITH ELMER	WITHDRAWAL	DOMESTIC
2	6300	BUCKS	WARMINSTER TWP.	1/1/1932	40.21222	-75.10111	CHRIST'S HOME FOR CHILDREN	WITHDRAWAL	DOMESTIC
3	5062	BUCKS	WARMINSTER TWP.		40.20833	-75.1025	JONES C	WITHDRAWAL	DOMESTIC

Note: This figure displays readily available information provided by the Pennsylvania Groundwater Information System (PaGWIS). RT provided the addresses for the above potentially potable wells to the Warminster Municipal Authority and a township representative indicated that, to the best of their knowledge, these properties are connected to the public water supply.

0 1000' 2000'

RT Environmental Services, Inc.
215 West Church Road
King of Prussia, PA 19406

FIGURE 6
1/2-MILE WELL SEARCH RESULTS MAP

610 YORK ROAD
WARMINSTER, PA

Prepared For:
FINCH PETROLEUM
610 YORK ROAD
WARMINSTER, PA 18974

CHARGE	73057-01	AUTOCAD FILE	ENGINEER	DESIGNER	DRAFTSPERSON	VL
SCALE	1" = 30'	DRAWING NUMBER	y:\rt projects\73000 series\73057-01\figures.dwg		REVISION	
DATE	7/30/2019					

TABLES

Table 1
Summary of Laboratory Analytical Results
Attainment Soil Sampling
July 26, 2019
Finch Petroleum, LLC
610 York Road
Warminster Township, Bucks County, Pennsylvania
RT Project Number: 73057-01

Analyte[1]			Constituents[2]								
			Benzene	Ethylbenzene	Cumene	MTBE	Naphthalene	Toluene	1, 2, 4-Trimethylbenzene	1, 3, 5-Trimethylbenzene	Total Xylenes
PADEP RSG MSC[3]			0.5	70	600	2	25	100	8.4	2.3	1,000
Soil SHS VI Screening Values (mg/kg)[4]			0.13	46	600	0.28	25	44	8.4	74	990
Sample ID	Date Sampled	Sample Depth (Feet)									
CS-1	7/26/2019	10.0	<0.012	<0.018	<0.019	<0.0077	<0.052	<0.015	<0.014	<0.015	<0.017
CS-2	7/26/2019	8.0	<0.0086	0.013	<0.014	<0.0055	0.068	0.072	0.067	0.031	0.17
CS-3	7/26/2019	10.0	<0.011	<0.016	<0.017	<0.0070	<0.048	<0.014	<0.012	<0.014	0.017
CS-4	7/26/2019	6.0	<0.012	<0.017	<0.018	<0.0075	<0.050	<0.014	<0.013	<0.014	<0.016
CS-5	7/26/2019	6.0	<0.088	<0.013	<0.014	<0.0057	<0.038	<0.011	<0.010	<0.011	<0.012
CS-6	7/26/2019	7.0	<0.0099	<0.015	<0.016	<0.0064	<0.043	<0.012	<0.011	<0.012	<0.014
CS-7	7/26/2019	12.0	<0.018	<0.027	<0.028	<0.012	<0.078	0.048	0.85	0.49	1.0
CS-8	7/26/2019	11.0	<0.012	<0.017	<0.019	<0.0076	<0.051	0.026	<0.013	<0.015	0.023
CS-9	7/26/2019	5.0	<0.0096	<0.015	<0.016	<0.0063	<0.043	<0.012	<0.011	<0.012	<0.014
CS-10	7/26/2019	12.0	<0.0097	<0.014	<0.015	<0.0062	<0.042	<0.012	<0.011	<0.012	<0.013
CS-11	7/26/2019	9.0	<0.011	<0.016	<0.017	<0.0070	<0.047	<0.013	<0.012	<0.013	<0.015
CS-12	7/26/2019	8.0	<0.010	<0.016	<0.017	<0.0067	<0.046	<0.013	<0.012	<0.013	<0.014
PADEP RSG MSC[3]			0.5	70	600	2	25	100	8.4	2.3	1,000

Notes:

(1) - Soil samples were analyzed for the PADEP short list of required unleaded gasoline parameters.

(2) - All laboratory results reported in milligrams per kilogram (mg/kg).

(3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Residential Medium-Specific Concentrations (August 27, 2016).

MSC - Medium-Specific Concentration

PADEP - Pennsylvania Department of Environmental Protection

RSG - Residential Soil-to-Groundwater

<0.00016 - Compound not detected above the listed laboratory detection limit

Bold - Compound was reported above its Act 2 residential MSC.

Table 2
Summary of Laboratory Analytical Results
Excavation Groundwater Sample
July 19, 2019
Finch Petroleum, LLC
610 York Road
Warminster Township, Bucks County, Pennsylvania
RT Project Number: 73057-01

Sample ID:	Direct Contact Residential	Direct Contact Non-Residential	W-1
Lab ID:			460-187013-1
Sample Date:			7/19/2019
1,2,4-Trimethylbenzene	15	62	**2,000**
1,3,5-Trimethylbenzene	420	1200	**510**
Benzene	5	5	**5,300**
Ethylbenzene	700	700	**1,900**
Isopropylbenzene	840	3500	93
MTBE	20	20	**61**
Naphthalene	100	100	**500**
Toluene	1000	1000	**27,000**
Xylenes, Total	10000	10000	**16,000**

Notes:
Direct Contact R = MSC (Residential Used Aquifer TDS =< 2500)
Direct Contact NR = MSC (NonResidential Used Aquifer TDS =< 2500)
Bold and Highlighted = Detection over the lowest standard
Bold = Detection
Site specific standard 12 ug/L benzene

APPENDICES

APPENDIX A

Laboratory Reports

Soil

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Edison
777 New Durham Road
Edison, NJ 08817
Tel: (732)549-3900

Laboratory Job ID: 460-187530-1
Client Project/Site: Warminster Sunoco

For:
RT Environmental Services, Inc.
215 West Church Road
Suite 300
King of Prussia, Pennsylvania 19406

Attn: Craig Herr

Authorized for release by:
7/29/2019 11:46:47 AM
Elizabeth Flannery, Project Manager I
(732)549-3900
elizabeth.flannery@testamericainc.com

Designee for

Jill Miller, Senior Project Manager
(484)685-0871
jill.miller@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

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Client Sample Results 5
Lab Chronicle 11
Certification Summary 15
Method Summary 16
Sample Summary 17
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Receipt Checklists 20

Definitions/Glossary

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187530-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 460-187530-1

Laboratory: Eurofins TestAmerica, Edison

Narrative

Job Narrative
460-187530-1

Comments
No additional comments.

Receipt
The samples were received on 7/26/2019 11:05 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.7º C.

Receipt Exceptions

The dry weight containers were received with no label or ID on container. Each seperate dry weight container was received with a MeOH vial that is labeled for each sample.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample ID: CS-1

Date Collected: 07/26/19 09:25
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-1

Matrix: Solid
Percent Solids: 78.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.012	U	0.059	0.012	mg/Kg	☼	07/27/19 13:34	07/28/19 10:00	50
Toluene	0.015	U	0.059	0.015	mg/Kg	☼	07/27/19 13:34	07/28/19 10:00	50
Ethylbenzene	0.018	U	0.059	0.018	mg/Kg	☼	07/27/19 13:34	07/28/19 10:00	50
Xylenes, Total	0.017	U	0.12	0.017	mg/Kg	☼	07/27/19 13:34	07/28/19 10:00	50
MTBE	0.0077	U	0.059	0.0077	mg/Kg	☼	07/27/19 13:34	07/28/19 10:00	50
Naphthalene	0.052	U	0.059	0.052	mg/Kg	☼	07/27/19 13:34	07/28/19 10:00	50
1,2,4-Trimethylbenzene	0.014	U	0.059	0.014	mg/Kg	☼	07/27/19 13:34	07/28/19 10:00	50
1,3,5-Trimethylbenzene	0.015	U	0.059	0.015	mg/Kg	☼	07/27/19 13:34	07/28/19 10:00	50
Isopropylbenzene	0.019	U	0.059	0.019	mg/Kg	☼	07/27/19 13:34	07/28/19 10:00	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*69 - 143*	*07/27/19 13:34*	*07/28/19 10:00*	*50*
Toluene-d8 (Surr)	*100*		*67 - 127*	*07/27/19 13:34*	*07/28/19 10:00*	*50*
Bromofluorobenzene	*95*		*61 - 137*	*07/27/19 13:34*	*07/28/19 10:00*	*50*
Dibromofluoromethane (Surr)	*100*		*61 - 135*	*07/27/19 13:34*	*07/28/19 10:00*	*50*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**22.0**		1.0	1.0	%			07/28/19 14:50	1
Percent Solids	**78.0**		1.0	1.0	%			07/28/19 14:50	1

Client Sample ID: CS-2

Date Collected: 07/26/19 08:55
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-2

Matrix: Solid
Percent Solids: 82.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.0086	U	0.042	0.0086	mg/Kg	☼	07/27/19 13:34	07/28/19 13:51	50
Toluene	**0.072**		0.042	0.011	mg/Kg	☼	07/27/19 13:34	07/28/19 13:51	50
Ethylbenzene	**0.013**	**J**	0.042	0.013	mg/Kg	☼	07/27/19 13:34	07/28/19 13:51	50
Xylenes, Total	**0.17**		0.085	0.012	mg/Kg	☼	07/27/19 13:34	07/28/19 13:51	50
MTBE	0.0055	U	0.042	0.0055	mg/Kg	☼	07/27/19 13:34	07/28/19 13:51	50
Naphthalene	**0.068**		0.042	0.037	mg/Kg	☼	07/27/19 13:34	07/28/19 13:51	50
1,2,4-Trimethylbenzene	**0.067**		0.042	0.0098	mg/Kg	☼	07/27/19 13:34	07/28/19 13:51	50
1,3,5-Trimethylbenzene	**0.031**	**J**	0.042	0.011	mg/Kg	☼	07/27/19 13:34	07/28/19 13:51	50
Isopropylbenzene	0.014	U	0.042	0.014	mg/Kg	☼	07/27/19 13:34	07/28/19 13:51	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*69 - 143*	*07/27/19 13:34*	*07/28/19 13:51*	*50*
Toluene-d8 (Surr)	*101*		*67 - 127*	*07/27/19 13:34*	*07/28/19 13:51*	*50*
Bromofluorobenzene	*98*		*61 - 137*	*07/27/19 13:34*	*07/28/19 13:51*	*50*
Dibromofluoromethane (Surr)	*102*		*61 - 135*	*07/27/19 13:34*	*07/28/19 13:51*	*50*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**18.0**		1.0	1.0	%			07/28/19 14:50	1
Percent Solids	**82.0**		1.0	1.0	%			07/28/19 14:50	1

Client Sample ID: CS-3

Date Collected: 07/26/19 09:51
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-3

Matrix: Solid
Percent Solids: 82.2

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.011	U	0.054	0.011	mg/Kg	☼	07/27/19 13:34	07/28/19 10:26	50
Toluene	0.014	U	0.054	0.014	mg/Kg	☼	07/27/19 13:34	07/28/19 10:26	50
Ethylbenzene	0.016	U	0.054	0.016	mg/Kg	☼	07/27/19 13:34	07/28/19 10:26	50
Xylenes, Total	**0.017**	**J**	0.11	0.015	mg/Kg	☼	07/27/19 13:34	07/28/19 10:26	50
MTBE	0.0070	U	0.054	0.0070	mg/Kg	☼	07/27/19 13:34	07/28/19 10:26	50
Naphthalene	0.048	U	0.054	0.048	mg/Kg	☼	07/27/19 13:34	07/28/19 10:26	50
1,2,4-Trimethylbenzene	0.012	U	0.054	0.012	mg/Kg	☼	07/27/19 13:34	07/28/19 10:26	50
1,3,5-Trimethylbenzene	0.014	U	0.054	0.014	mg/Kg	☼	07/27/19 13:34	07/28/19 10:26	50
Isopropylbenzene	0.017	U	0.054	0.017	mg/Kg	☼	07/27/19 13:34	07/28/19 10:26	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*69 - 143*	*07/27/19 13:34*	*07/28/19 10:26*	*50*
Toluene-d8 (Surr)	*103*		*67 - 127*	*07/27/19 13:34*	*07/28/19 10:26*	*50*
Bromofluorobenzene	*95*		*61 - 137*	*07/27/19 13:34*	*07/28/19 10:26*	*50*
Dibromofluoromethane (Surr)	*102*		*61 - 135*	*07/27/19 13:34*	*07/28/19 10:26*	*50*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**17.8**		1.0	1.0	%			07/28/19 14:50	1
Percent Solids	**82.2**		1.0	1.0	%			07/28/19 14:50	1

Client Sample ID: CS-4

Date Collected: 07/26/19 10:08
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-4

Matrix: Solid
Percent Solids: 77.0

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.012	U	0.057	0.012	mg/Kg	☼	07/27/19 13:35	07/28/19 10:51	50
Toluene	0.014	U	0.057	0.014	mg/Kg	☼	07/27/19 13:35	07/28/19 10:51	50
Ethylbenzene	0.017	U	0.057	0.017	mg/Kg	☼	07/27/19 13:35	07/28/19 10:51	50
Xylenes, Total	0.016	U	0.11	0.016	mg/Kg	☼	07/27/19 13:35	07/28/19 10:51	50
MTBE	0.0075	U	0.057	0.0075	mg/Kg	☼	07/27/19 13:35	07/28/19 10:51	50
Naphthalene	0.050	U	0.057	0.050	mg/Kg	☼	07/27/19 13:35	07/28/19 10:51	50
1,2,4-Trimethylbenzene	0.013	U	0.057	0.013	mg/Kg	☼	07/27/19 13:35	07/28/19 10:51	50
1,3,5-Trimethylbenzene	0.014	U	0.057	0.014	mg/Kg	☼	07/27/19 13:35	07/28/19 10:51	50
Isopropylbenzene	0.018	U	0.057	0.018	mg/Kg	☼	07/27/19 13:35	07/28/19 10:51	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*69 - 143*	*07/27/19 13:35*	*07/28/19 10:51*	*50*
Toluene-d8 (Surr)	*104*		*67 - 127*	*07/27/19 13:35*	*07/28/19 10:51*	*50*
Bromofluorobenzene	*96*		*61 - 137*	*07/27/19 13:35*	*07/28/19 10:51*	*50*
Dibromofluoromethane (Surr)	*102*		*61 - 135*	*07/27/19 13:35*	*07/28/19 10:51*	*50*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**23.0**		1.0	1.0	%			07/28/19 14:50	1
Percent Solids	**77.0**		1.0	1.0	%			07/28/19 14:50	1

Client Sample ID: CS-5

Lab Sample ID: 460-187530-5

Date Collected: 07/26/19 09:45
Matrix: Solid
Date Received: 07/26/19 11:05
Percent Solids: 83.3

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.0088	U	0.044	0.0088	mg/Kg	☼	07/27/19 13:35	07/28/19 11:17	50
Toluene	0.011	U	0.044	0.011	mg/Kg	☼	07/27/19 13:35	07/28/19 11:17	50
Ethylbenzene	0.013	U	0.044	0.013	mg/Kg	☼	07/27/19 13:35	07/28/19 11:17	50
Xylenes, Total	0.012	U	0.087	0.012	mg/Kg	☼	07/27/19 13:35	07/28/19 11:17	50
MTBE	0.0057	U	0.044	0.0057	mg/Kg	☼	07/27/19 13:35	07/28/19 11:17	50
Naphthalene	0.038	U	0.044	0.038	mg/Kg	☼	07/27/19 13:35	07/28/19 11:17	50
1,2,4-Trimethylbenzene	0.010	U	0.044	0.010	mg/Kg	☼	07/27/19 13:35	07/28/19 11:17	50
1,3,5-Trimethylbenzene	0.011	U	0.044	0.011	mg/Kg	☼	07/27/19 13:35	07/28/19 11:17	50
Isopropylbenzene	0.014	U	0.044	0.014	mg/Kg	☼	07/27/19 13:35	07/28/19 11:17	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*69 - 143*	*07/27/19 13:35*	*07/28/19 11:17*	*50*
Toluene-d8 (Surr)	*101*		*67 - 127*	*07/27/19 13:35*	*07/28/19 11:17*	*50*
Bromofluorobenzene	*92*		*61 - 137*	*07/27/19 13:35*	*07/28/19 11:17*	*50*
Dibromofluoromethane (Surr)	*100*		*61 - 135*	*07/27/19 13:35*	*07/28/19 11:17*	*50*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**16.7**		1.0	1.0	%			07/28/19 14:50	1
Percent Solids	**83.3**		1.0	1.0	%			07/28/19 14:50	1

Client Sample ID: CS-6

Lab Sample ID: 460-187530-6

Date Collected: 07/26/19 10:13
Matrix: Solid
Date Received: 07/26/19 11:05
Percent Solids: 82.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.0099	U	0.049	0.0099	mg/Kg	☼	07/27/19 13:35	07/28/19 11:43	50
Toluene	0.012	U	0.049	0.012	mg/Kg	☼	07/27/19 13:35	07/28/19 11:43	50
Ethylbenzene	0.015	U	0.049	0.015	mg/Kg	☼	07/27/19 13:35	07/28/19 11:43	50
Xylenes, Total	0.014	U	0.098	0.014	mg/Kg	☼	07/27/19 13:35	07/28/19 11:43	50
MTBE	0.0064	U	0.049	0.0064	mg/Kg	☼	07/27/19 13:35	07/28/19 11:43	50
Naphthalene	0.043	U	0.049	0.043	mg/Kg	☼	07/27/19 13:35	07/28/19 11:43	50
1,2,4-Trimethylbenzene	0.011	U	0.049	0.011	mg/Kg	☼	07/27/19 13:35	07/28/19 11:43	50
1,3,5-Trimethylbenzene	0.012	U	0.049	0.012	mg/Kg	☼	07/27/19 13:35	07/28/19 11:43	50
Isopropylbenzene	0.016	U	0.049	0.016	mg/Kg	☼	07/27/19 13:35	07/28/19 11:43	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*69 - 143*	*07/27/19 13:35*	*07/28/19 11:43*	*50*
Toluene-d8 (Surr)	*100*		*67 - 127*	*07/27/19 13:35*	*07/28/19 11:43*	*50*
Bromofluorobenzene	*94*		*61 - 137*	*07/27/19 13:35*	*07/28/19 11:43*	*50*
Dibromofluoromethane (Surr)	*101*		*61 - 135*	*07/27/19 13:35*	*07/28/19 11:43*	*50*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**17.3**		1.0	1.0	%			07/28/19 14:50	1
Percent Solids	**82.7**		1.0	1.0	%			07/28/19 14:50	1

Client Sample ID: CS-7

Lab Sample ID: 460-187530-7

Date Collected: 07/26/19 09:30
Matrix: Solid
Date Received: 07/26/19 11:05
Percent Solids: 84.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.018	U	0.089	0.018	mg/Kg	☼	07/27/19 13:36	07/28/19 14:17	50
Toluene	**0.048**	**J**	0.089	0.022	mg/Kg	☼	07/27/19 13:36	07/28/19 14:17	50
Ethylbenzene	0.027	U	0.089	0.027	mg/Kg	☼	07/27/19 13:36	07/28/19 14:17	50
Xylenes, Total	**1.0**		0.18	0.025	mg/Kg	☼	07/27/19 13:36	07/28/19 14:17	50
MTBE	0.012	U	0.089	0.012	mg/Kg	☼	07/27/19 13:36	07/28/19 14:17	50
Naphthalene	0.078	U	0.089	0.078	mg/Kg	☼	07/27/19 13:36	07/28/19 14:17	50
1,2,4-Trimethylbenzene	**0.85**		0.089	0.020	mg/Kg	☼	07/27/19 13:36	07/28/19 14:17	50
1,3,5-Trimethylbenzene	**0.49**		0.089	0.022	mg/Kg	☼	07/27/19 13:36	07/28/19 14:17	50
Isopropylbenzene	0.028	U	0.089	0.028	mg/Kg	☼	07/27/19 13:36	07/28/19 14:17	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*69 - 143*	*07/27/19 13:36*	*07/28/19 14:17*	*50*
Toluene-d8 (Surr)	*102*		*67 - 127*	*07/27/19 13:36*	*07/28/19 14:17*	*50*
Bromofluorobenzene	*96*		*61 - 137*	*07/27/19 13:36*	*07/28/19 14:17*	*50*
Dibromofluoromethane (Surr)	*100*		*61 - 135*	*07/27/19 13:36*	*07/28/19 14:17*	*50*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**15.5**		1.0	1.0	%			07/28/19 14:50	1
Percent Solids	**84.5**		1.0	1.0	%			07/28/19 14:50	1

Client Sample ID: CS-8

Lab Sample ID: 460-187530-8

Date Collected: 07/26/19 10:00
Matrix: Solid
Date Received: 07/26/19 11:05
Percent Solids: 83.5

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.012	U	0.058	0.012	mg/Kg	☼	07/27/19 13:36	07/28/19 12:08	50
Toluene	**0.026**	**J**	0.058	0.015	mg/Kg	☼	07/27/19 13:36	07/28/19 12:08	50
Ethylbenzene	0.017	U	0.058	0.017	mg/Kg	☼	07/27/19 13:36	07/28/19 12:08	50
Xylenes, Total	**0.023**	**J**	0.12	0.016	mg/Kg	☼	07/27/19 13:36	07/28/19 12:08	50
MTBE	0.0076	U	0.058	0.0076	mg/Kg	☼	07/27/19 13:36	07/28/19 12:08	50
Naphthalene	0.051	U	0.058	0.051	mg/Kg	☼	07/27/19 13:36	07/28/19 12:08	50
1,2,4-Trimethylbenzene	0.013	U	0.058	0.013	mg/Kg	☼	07/27/19 13:36	07/28/19 12:08	50
1,3,5-Trimethylbenzene	0.015	U	0.058	0.015	mg/Kg	☼	07/27/19 13:36	07/28/19 12:08	50
Isopropylbenzene	0.019	U	0.058	0.019	mg/Kg	☼	07/27/19 13:36	07/28/19 12:08	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*69 - 143*	*07/27/19 13:36*	*07/28/19 12:08*	*50*
Toluene-d8 (Surr)	*102*		*67 - 127*	*07/27/19 13:36*	*07/28/19 12:08*	*50*
Bromofluorobenzene	*99*		*61 - 137*	*07/27/19 13:36*	*07/28/19 12:08*	*50*
Dibromofluoromethane (Surr)	*101*		*61 - 135*	*07/27/19 13:36*	*07/28/19 12:08*	*50*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**16.5**		1.0	1.0	%			07/28/19 14:50	1
Percent Solids	**83.5**		1.0	1.0	%			07/28/19 14:50	1

Client Sample ID: CS-9

Lab Sample ID: 460-187530-9

Date Collected: 07/26/19 09:40
Date Received: 07/26/19 11:05

Matrix: Solid
Percent Solids: 83.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.0098	U	0.049	0.0098	mg/Kg	☼	07/27/19 13:36	07/28/19 12:34	50
Toluene	0.012	U	0.049	0.012	mg/Kg	☼	07/27/19 13:36	07/28/19 12:34	50
Ethylbenzene	0.015	U	0.049	0.015	mg/Kg	☼	07/27/19 13:36	07/28/19 12:34	50
Xylenes, Total	0.014	U	0.097	0.014	mg/Kg	☼	07/27/19 13:36	07/28/19 12:34	50
MTBE	0.0063	U	0.049	0.0063	mg/Kg	☼	07/27/19 13:36	07/28/19 12:34	50
Naphthalene	0.043	U	0.049	0.043	mg/Kg	☼	07/27/19 13:36	07/28/19 12:34	50
1,2,4-Trimethylbenzene	0.011	U	0.049	0.011	mg/Kg	☼	07/27/19 13:36	07/28/19 12:34	50
1,3,5-Trimethylbenzene	0.012	U	0.049	0.012	mg/Kg	☼	07/27/19 13:36	07/28/19 12:34	50
Isopropylbenzene	0.016	U	0.049	0.016	mg/Kg	☼	07/27/19 13:36	07/28/19 12:34	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*69 - 143*	*07/27/19 13:36*	*07/28/19 12:34*	*50*
Toluene-d8 (Surr)	*101*		*67 - 127*	*07/27/19 13:36*	*07/28/19 12:34*	*50*
Bromofluorobenzene	*94*		*61 - 137*	*07/27/19 13:36*	*07/28/19 12:34*	*50*
Dibromofluoromethane (Surr)	*103*		*61 - 135*	*07/27/19 13:36*	*07/28/19 12:34*	*50*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**16.2**		1.0	1.0	%			07/28/19 14:50	1
Percent Solids	**83.8**		1.0	1.0	%			07/28/19 14:50	1

Client Sample ID: CS-10

Lab Sample ID: 460-187530-10

Date Collected: 07/26/19 10:03
Date Received: 07/26/19 11:05

Matrix: Solid
Percent Solids: 84.8

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.0097	U	0.048	0.0097	mg/Kg	☼	07/27/19 13:37	07/28/19 13:00	50
Toluene	0.012	U	0.048	0.012	mg/Kg	☼	07/27/19 13:37	07/28/19 13:00	50
Ethylbenzene	0.014	U	0.048	0.014	mg/Kg	☼	07/27/19 13:37	07/28/19 13:00	50
Xylenes, Total	0.013	U	0.096	0.013	mg/Kg	☼	07/27/19 13:37	07/28/19 13:00	50
MTBE	0.0062	U	0.048	0.0062	mg/Kg	☼	07/27/19 13:37	07/28/19 13:00	50
Naphthalene	0.042	U	0.048	0.042	mg/Kg	☼	07/27/19 13:37	07/28/19 13:00	50
1,2,4-Trimethylbenzene	0.011	U	0.048	0.011	mg/Kg	☼	07/27/19 13:37	07/28/19 13:00	50
1,3,5-Trimethylbenzene	0.012	U	0.048	0.012	mg/Kg	☼	07/27/19 13:37	07/28/19 13:00	50
Isopropylbenzene	0.015	U	0.048	0.015	mg/Kg	☼	07/27/19 13:37	07/28/19 13:00	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*69 - 143*	*07/27/19 13:37*	*07/28/19 13:00*	*50*
Toluene-d8 (Surr)	*100*		*67 - 127*	*07/27/19 13:37*	*07/28/19 13:00*	*50*
Bromofluorobenzene	*94*		*61 - 137*	*07/27/19 13:37*	*07/28/19 13:00*	*50*
Dibromofluoromethane (Surr)	*100*		*61 - 135*	*07/27/19 13:37*	*07/28/19 13:00*	*50*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**15.2**		1.0	1.0	%			07/28/19 14:50	1
Percent Solids	**84.8**		1.0	1.0	%			07/28/19 14:50	1

Client Sample ID: CS-11

Date Collected: 07/26/19 10:10
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-11

Matrix: Solid
Percent Solids: 79.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.011	U	0.054	0.011	mg/Kg	☼	07/27/19 13:37	07/28/19 13:25	50
Toluene	0.013	U	0.054	0.013	mg/Kg	☼	07/27/19 13:37	07/28/19 13:25	50
Ethylbenzene	0.016	U	0.054	0.016	mg/Kg	☼	07/27/19 13:37	07/28/19 13:25	50
Xylenes, Total	0.015	U	0.11	0.015	mg/Kg	☼	07/27/19 13:37	07/28/19 13:25	50
MTBE	0.0070	U	0.054	0.0070	mg/Kg	☼	07/27/19 13:37	07/28/19 13:25	50
Naphthalene	0.047	U	0.054	0.047	mg/Kg	☼	07/27/19 13:37	07/28/19 13:25	50
1,2,4-Trimethylbenzene	0.012	U	0.054	0.012	mg/Kg	☼	07/27/19 13:37	07/28/19 13:25	50
1,3,5-Trimethylbenzene	0.013	U	0.054	0.013	mg/Kg	☼	07/27/19 13:37	07/28/19 13:25	50
Isopropylbenzene	0.017	U	0.054	0.017	mg/Kg	☼	07/27/19 13:37	07/28/19 13:25	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*69 - 143*	*07/27/19 13:37*	*07/28/19 13:25*	*50*
Toluene-d8 (Surr)	*100*		*67 - 127*	*07/27/19 13:37*	*07/28/19 13:25*	*50*
Bromofluorobenzene	*92*		*61 - 137*	*07/27/19 13:37*	*07/28/19 13:25*	*50*
Dibromofluoromethane (Surr)	*99*		*61 - 135*	*07/27/19 13:37*	*07/28/19 13:25*	*50*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**20.9**		1.0	1.0	%			07/28/19 14:50	1
Percent Solids	**79.1**		1.0	1.0	%			07/28/19 14:50	1

Client Sample ID: CS-12

Date Collected: 07/26/19 09:55
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-12

Matrix: Solid
Percent Solids: 80.2

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.010	U	0.052	0.010	mg/Kg	☼	07/27/19 13:37	07/28/19 14:42	50
Toluene	0.013	U	0.052	0.013	mg/Kg	☼	07/27/19 13:37	07/28/19 14:42	50
Ethylbenzene	0.016	U	0.052	0.016	mg/Kg	☼	07/27/19 13:37	07/28/19 14:42	50
Xylenes, Total	0.014	U	0.10	0.014	mg/Kg	☼	07/27/19 13:37	07/28/19 14:42	50
MTBE	0.0067	U	0.052	0.0067	mg/Kg	☼	07/27/19 13:37	07/28/19 14:42	50
Naphthalene	0.046	U	0.052	0.046	mg/Kg	☼	07/27/19 13:37	07/28/19 14:42	50
1,2,4-Trimethylbenzene	0.012	U	0.052	0.012	mg/Kg	☼	07/27/19 13:37	07/28/19 14:42	50
1,3,5-Trimethylbenzene	0.013	U	0.052	0.013	mg/Kg	☼	07/27/19 13:37	07/28/19 14:42	50
Isopropylbenzene	0.017	U	0.052	0.017	mg/Kg	☼	07/27/19 13:37	07/28/19 14:42	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*69 - 143*	*07/27/19 13:37*	*07/28/19 14:42*	*50*
Toluene-d8 (Surr)	*102*		*67 - 127*	*07/27/19 13:37*	*07/28/19 14:42*	*50*
Bromofluorobenzene	*96*		*61 - 137*	*07/27/19 13:37*	*07/28/19 14:42*	*50*
Dibromofluoromethane (Surr)	*104*		*61 - 135*	*07/27/19 13:37*	*07/28/19 14:42*	*50*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**19.8**		1.0	1.0	%			07/28/19 14:50	1
Percent Solids	**80.2**		1.0	1.0	%			07/28/19 14:50	1

Client Sample ID: CS-1
Lab Sample ID: 460-187530-1
Date Collected: 07/26/19 09:25
Matrix: Solid
Date Received: 07/26/19 11:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	627856	07/28/19 14:50	APV	TAL EDI

Client Sample ID: CS-1
Lab Sample ID: 460-187530-1
Date Collected: 07/26/19 09:25
Matrix: Solid
Date Received: 07/26/19 11:05
Percent Solids: 78.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			627728	07/27/19 13:34	DBM	TAL EDI
Total/NA	Analysis	8260C		50	627788	07/28/19 10:00	AAT	TAL EDI

Client Sample ID: CS-2
Lab Sample ID: 460-187530-2
Date Collected: 07/26/19 08:55
Matrix: Solid
Date Received: 07/26/19 11:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	627856	07/28/19 14:50	APV	TAL EDI

Client Sample ID: CS-2
Lab Sample ID: 460-187530-2
Date Collected: 07/26/19 08:55
Matrix: Solid
Date Received: 07/26/19 11:05
Percent Solids: 82.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			627728	07/27/19 13:34	DBM	TAL EDI
Total/NA	Analysis	8260C		50	627788	07/28/19 13:51	AAT	TAL EDI

Client Sample ID: CS-3
Lab Sample ID: 460-187530-3
Date Collected: 07/26/19 09:51
Matrix: Solid
Date Received: 07/26/19 11:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	627856	07/28/19 14:50	APV	TAL EDI

Client Sample ID: CS-3
Lab Sample ID: 460-187530-3
Date Collected: 07/26/19 09:51
Matrix: Solid
Date Received: 07/26/19 11:05
Percent Solids: 82.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			627728	07/27/19 13:34	DBM	TAL EDI
Total/NA	Analysis	8260C		50	627788	07/28/19 10:26	AAT	TAL EDI

Client Sample ID: CS-4
Lab Sample ID: 460-187530-4
Date Collected: 07/26/19 10:08
Matrix: Solid
Date Received: 07/26/19 11:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	627856	07/28/19 14:50	APV	TAL EDI

Lab Chronicle

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187530-1

Client Sample ID: CS-4
Date Collected: 07/26/19 10:08
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-4
Matrix: Solid
Percent Solids: 77.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			627728	07/27/19 13:35	DBM	TAL EDI
Total/NA	Analysis	8260C		50	627788	07/28/19 10:51	AAT	TAL EDI

Client Sample ID: CS-5
Date Collected: 07/26/19 09:45
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	627856	07/28/19 14:50	APV	TAL EDI

Client Sample ID: CS-5
Date Collected: 07/26/19 09:45
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-5
Matrix: Solid
Percent Solids: 83.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			627728	07/27/19 13:35	DBM	TAL EDI
Total/NA	Analysis	8260C		50	627788	07/28/19 11:17	AAT	TAL EDI

Client Sample ID: CS-6
Date Collected: 07/26/19 10:13
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	627856	07/28/19 14:50	APV	TAL EDI

Client Sample ID: CS-6
Date Collected: 07/26/19 10:13
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-6
Matrix: Solid
Percent Solids: 82.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			627728	07/27/19 13:35	DBM	TAL EDI
Total/NA	Analysis	8260C		50	627788	07/28/19 11:43	AAT	TAL EDI

Client Sample ID: CS-7
Date Collected: 07/26/19 09:30
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	627856	07/28/19 14:50	APV	TAL EDI

Lab Chronicle

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187530-1

Client Sample ID: CS-7
Date Collected: 07/26/19 09:30
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-7
Matrix: Solid
Percent Solids: 84.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			627728	07/27/19 13:36	DBM	TAL EDI
Total/NA	Analysis	8260C		50	627788	07/28/19 14:17	AAT	TAL EDI

Client Sample ID: CS-8
Date Collected: 07/26/19 10:00
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	627856	07/28/19 14:50	APV	TAL EDI

Client Sample ID: CS-8
Date Collected: 07/26/19 10:00
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-8
Matrix: Solid
Percent Solids: 83.5

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			627728	07/27/19 13:36	DBM	TAL EDI
Total/NA	Analysis	8260C		50	627788	07/28/19 12:08	AAT	TAL EDI

Client Sample ID: CS-9
Date Collected: 07/26/19 09:40
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	627856	07/28/19 14:50	APV	TAL EDI

Client Sample ID: CS-9
Date Collected: 07/26/19 09:40
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-9
Matrix: Solid
Percent Solids: 83.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			627728	07/27/19 13:36	DBM	TAL EDI
Total/NA	Analysis	8260C		50	627788	07/28/19 12:34	AAT	TAL EDI

Client Sample ID: CS-10
Date Collected: 07/26/19 10:03
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	627856	07/28/19 14:50	APV	TAL EDI

Lab Chronicle

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187530-1

Client Sample ID: CS-10
Date Collected: 07/26/19 10:03
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-10
Matrix: Solid
Percent Solids: 84.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			627728	07/27/19 13:37	DBM	TAL EDI
Total/NA	Analysis	8260C		50	627788	07/28/19 13:00	AAT	TAL EDI

Client Sample ID: CS-11
Date Collected: 07/26/19 10:10
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	627856	07/28/19 14:50	APV	TAL EDI

Client Sample ID: CS-11
Date Collected: 07/26/19 10:10
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-11
Matrix: Solid
Percent Solids: 79.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			627728	07/27/19 13:37	DBM	TAL EDI
Total/NA	Analysis	8260C		50	627788	07/28/19 13:25	AAT	TAL EDI

Client Sample ID: CS-12
Date Collected: 07/26/19 09:55
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-12
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	627856	07/28/19 14:50	APV	TAL EDI

Client Sample ID: CS-12
Date Collected: 07/26/19 09:55
Date Received: 07/26/19 11:05

Lab Sample ID: 460-187530-12
Matrix: Solid
Percent Solids: 80.2

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			627728	07/27/19 13:37	DBM	TAL EDI
Total/NA	Analysis	8260C		50	627788	07/28/19 14:42	AAT	TAL EDI

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: RT Environmental Services, Inc. Job ID: 460-187530-1
Project/Site: Warminster Sunoco

Laboratory: Eurofins TestAmerica, Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State		PH-0200	09-30-20
Connecticut	State Program	1	PH-0200	09-30-20
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	N/A	12-31-19
New Jersey	NELAP	2	12028	06-30-20
New Jersey	NELAP		12028	06-30-20
New York	NELAP	2	11452	04-01-20
New York	NELAP		11452	04-01-20
Pennsylvania	NELAP	3	68-00522	02-28-20
Pennsylvania	NELAP		68-00522	02-28-20
Rhode Island	State		LAO00132	12-30-19
Rhode Island	State Program	1	LAO00132	12-30-19
USDA	Federal		NJCA-003-08	05-03-21
USDA	US Federal Programs		P330-18-00135	05-03-21

Method Summary

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187530-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL EDI
Moisture	Percent Moisture	EPA	TAL EDI
5035	Closed System Purge and Trap	SW846	TAL EDI

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187530-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
460-187530-1	CS-1	Solid	07/26/19 09:25	07/26/19 11:05	
460-187530-2	CS-2	Solid	07/26/19 08:55	07/26/19 11:05	
460-187530-3	CS-3	Solid	07/26/19 09:51	07/26/19 11:05	
460-187530-4	CS-4	Solid	07/26/19 10:08	07/26/19 11:05	
460-187530-5	CS-5	Solid	07/26/19 09:45	07/26/19 11:05	
460-187530-6	CS-6	Solid	07/26/19 10:13	07/26/19 11:05	
460-187530-7	CS-7	Solid	07/26/19 09:30	07/26/19 11:05	
460-187530-8	CS-8	Solid	07/26/19 10:00	07/26/19 11:05	
460-187530-9	CS-9	Solid	07/26/19 09:40	07/26/19 11:05	
460-187530-10	CS-10	Solid	07/26/19 10:03	07/26/19 11:05	
460-187530-11	CS-11	Solid	07/26/19 10:10	07/26/19 11:05	
460-187530-12	CS-12	Solid	07/26/19 09:55	07/26/19 11:05	

Chain of Custody Record

356385

3.7 "KOP-2

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Craig Herr	Site Contact: Aaron Schneider	Date: 7/26/19	COC No:
Company Name: RT ENV	Tel/Fax:	Lab Contact:	Carrier:	____ of ____ COCs
Address:	Analysis Turnaround Time			Sampler: Aaron Schneider
City/State/Zip: KOP, PA	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone:	TAT if different from Below 10 Days			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: Warminster Sewer	☐ 1 week			
Site: Warminster Sewer	☐ 2 days			Job / SDG No.:
PO# 73057-01-01	☐ 1 day			187530

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N) PADEP UL	Sample Specific Notes:
CS-1	7/26/19	9:25	G	Soil	2		X	
CS-2		8:55			2		X	
CS-3		9:51			2		X	
CS-4		10:08			2		X	
CS-5		9:45			2		X	
CS-6		10:13			2		X	
CS-7		9:30			2		X	
CS-8		10:00			2		X	
CS-9		9:40			2		X	
CS-10		10:03			2		X	
CS-11		10:10			2		X	
CS-12		9:55			2		X	

460-187530 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other MeOH 16

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Aaron Schneider	RT ENV	7/26/19 1105		TA-KOP	7/26/19 1105
Relinquished by:	Company: TA KOP	Date/Time: 7/26/19	Received by:	Company: ENV	Date/Time: 7/26/19 1700
Relinquished by:	Company: ENV	Date/Time: 7/26/19 1900	Received in Laboratory by:	Company: TAKOP	Date/Time: 7/26/19 1900

7/29/2019

TestAmerica Edison
Receipt Temperature and pH Log

Job Number: 187530

Number of Coolers: 1 IR Gun # KOP-2

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	3.7 °C	3.7 °C	Cooler #4:	°C	°C	Cooler #7:	°C	°C
Cooler #2:	°C	°C	Cooler #5:	°C	°C	Cooler #8:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C	Cooler #9:	°C	°C

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals* (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other

If pH adjustments are required record the information below:

Sample No(s). adjusted: _____

Preservative Name/Conc.: _____ Volume of Preservative used (ml): _____

Lot # of Preservative(s): _____ Expiration Date: _____

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

** Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

Initials: JK Date: 7/26/19

Login Sample Receipt Checklist

Client: RT Environmental Services, Inc.

Job Number: 460-187530-1

Login Number: 187530
List Number: 1
Creator: Keehn, Jeffrey S

List Source: Eurofins TestAmerica, Edison

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Groundwater

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ANALYTICAL REPORT

Eurofins TestAmerica, Edison
777 New Durham Road
Edison, NJ 08817
Tel: (732)549-3900

Laboratory Job ID: 460-187013-1
Client Project/Site: Warminster Sunoco

For:
RT Environmental Services, Inc.
215 West Church Road
Suite 300
King of Prussia, Pennsylvania 19406

Attn: Craig Herr

Jill Miller

Authorized for release by:
7/22/2019 2:18:17 PM

Jill Miller, Senior Project Manager
(484)685-0871
jill.miller@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187013-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 460-187013-1

Laboratory: Eurofins TestAmerica, Edison

Narrative

Job Narrative
460-187013-1

Comments
No additional comments.

Receipt
The sample was received on 7/19/2019 1:33 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.0º C.

GC/MS VOA
Method(s) 8260C: Four surrogates are used for this analysis. The laboratory's SOP allows one of these surrogates to be outside acceptance criteria without performing re-analysis. The following CCVIS contained an allowable number of surrogate compounds outside limits: (CCVIS 460-626107/3). These results have been reported and qualified.

Method(s) 8260C: The following sample was diluted to bring the concentration of target analytes within the calibration range: W-1 (460-187013-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187013-1

Client Sample ID: W-1
Date Collected: 07/19/19 09:00
Date Received: 07/19/19 13:33

Lab Sample ID: 460-187013-1
Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	5300		100	20	ug/L			07/21/19 17:29	100
Toluene	27000		100	38	ug/L			07/21/19 17:29	100
Ethylbenzene	1900		100	30	ug/L			07/21/19 17:29	100
Xylenes, Total	16000		200	65	ug/L			07/21/19 17:29	100
MTBE	61	J	100	47	ug/L			07/21/19 17:29	100
Naphthalene	500		100	88	ug/L			07/21/19 17:29	100
1,2,4-Trimethylbenzene	2000		100	37	ug/L			07/21/19 17:29	100
1,3,5-Trimethylbenzene	510		100	33	ug/L			07/21/19 17:29	100
Isopropylbenzene	93	J	100	34	ug/L			07/21/19 17:29	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*77*		*74 - 132*		*07/21/19 17:29*	*100*
Toluene-d8 (Surr)	*98*		*80 - 120*		*07/21/19 17:29*	*100*
Bromofluorobenzene	*95*		*77 - 124*		*07/21/19 17:29*	*100*
Dibromofluoromethane (Surr)	*90*		*72 - 131*		*07/21/19 17:29*	*100*

Lab Chronicle

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187013-1

Client Sample ID: W-1

Date Collected: 07/19/19 09:00
Date Received: 07/19/19 13:33

Lab Sample ID: 460-187013-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		100	626107	07/21/19 17:29	VBP	TAL EDI

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: RT Environmental Services, Inc. Job ID: 460-187013-1
Project/Site: Warminster Sunoco

Laboratory: Eurofins TestAmerica, Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State		PH-0200	09-30-20
Connecticut	State Program	1	PH-0200	09-30-20
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	N/A	12-31-19
New Jersey	NELAP	2	12028	06-30-20
New Jersey	NELAP		12028	06-30-20
New York	NELAP	2	11452	04-01-20
New York	NELAP		11452	04-01-20
Pennsylvania	NELAP	3	68-00522	02-28-20
Pennsylvania	NELAP		68-00522	02-28-20
Rhode Island	State Program	1	LAO00132	12-30-19
USDA	Federal		NJCA-003-08	05-03-21

Method Summary

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187013-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL EDI
5030C	Purge and Trap	SW846	TAL EDI

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187013-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
460-187013-1	W-1	Water	07/19/19 09:00	07/19/19 13:33	

777 New Durham Road
Edison, New Jersey 08817
Phone: (732) 549-3900 Fax: (732) 549-3679

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CHAIN OF CUSTODY / ANALYSIS REQUEST

2.0 · KOP-2

Page ____ of ____

Name (for report and invoice) A. Schneider, C. Herr	Samplers Name (Printed) A. Schneider	Site/Project Identification Warminster Sunoco
Company RT Environmental	P. O. #	State (Location of site): NJ: ☐ NY: ☐ Other: PA
		Regulatory Program: PADEP DKQP: ☐
Address	Analysis Turnaround Time: Standard ☐	ANALYSIS REQUESTED (ENTER "X" BELOW TO INDICATE REQUEST)
City KOP State PA	Rush Charges Authorized For: 2 Week ☐ 1 Week ☐ Other ☐ 24 hr	LAB USE ONLY Project No:
Phone Fax		Job No: 187013

Sample Identification	Date	Time	Matrix	No. of Cont.	PADEP UL	Sample Numbers
W-1	7/19/19	9:00	GW	3	X	

460-187013 Chain of Custody

Preservation Used: 1 = ICE, 2 = HCl, 3 = H_2SO_4, 4 = HNO_3, 5 = NaOH
6 = Other _____, 7 = Other _____

Soil: | Water: 1, 2

Special Instructions _____ Water Metals Filtered (Yes/No)? _____

	Relinquished by	Company	Date / Time	Received by	Company
1)		RT ENV	7/19/19 13:35		TA-KOP
2)		TA-KOP	7/19/19		TA 7/19/19 1500
3)		TA	7/19/19 1900		TA 7/19/19 1900
4)					

Laboratory Certifications: New Jersey (12028), New York (11452), Pennsylvania (68-522), Connecticut (PH-0200), Rhode Island (132).

Massachusetts (M-NJ312), North Carolina (No. 578)

TAL - 0016 (0715)

TestAmerica Edison
Receipt Temperature and pH Log

Job Number: 187013

Number of Coolers: 1 IR Gun # KOP-2

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	2.0 °C	2.0 °C	Cooler #4:	°C	°C	Cooler #7:	°C	°C
Cooler #2:	°C	°C	Cooler #5:	°C	°C	Cooler #8:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C	Cooler #9:	°C	°C

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals* (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other

If pH adjustments are required record the information below:

Sample No(s). adjusted: _____

Preservative Name/Conc.: _____ Volume of Preservative used (ml): _____

Lot # of Preservative(s): _____ Expiration Date: _____

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

**Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

Initials: JK Date: 7/19/19

Login Sample Receipt Checklist

Client: RT Environmental Services, Inc.

Job Number: 460-187013-1

Login Number: 187013
List Number: 1
Creator: Keehn, Jeffrey S

List Source: Eurofins TestAmerica, Edison

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Clean Earth Profiling Reports

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ANALYTICAL REPORT

Eurofins TestAmerica, Edison
777 New Durham Road
Edison, NJ 08817
Tel: (732)549-3900

Laboratory Job ID: 460-186928-1
Client Project/Site: Warminster UST

For:
RT Environmental Services, Inc.
215 West Church Road
Suite 300
King of Prussia, Pennsylvania 19406

Attn: Craig Herr

Jill Miller

Authorized for release by:
7/19/2019 2:01:56 PM

Jill Miller, Senior Project Manager
(484)685-0871
jill.miller@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: RT Environmental Services, Inc.
Project/Site: Warminster UST

Job ID: 460-186928-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 460-186928-1

Laboratory: Eurofins TestAmerica, Edison

Narrative

Job Narrative
460-186928-1

Comments
No additional comments.

Receipt
The sample was received on 7/18/2019 3:25 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.3º C.

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client: RT Environmental Services, Inc.
Project/Site: Warminster UST

Job ID: 460-186928-1

Client Sample ID: P-1
Date Collected: 07/18/19 14:16
Date Received: 07/18/19 15:25

Lab Sample ID: 460-186928-1
Matrix: Solid
Percent Solids: 93.1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.0070	U	0.035	0.0070	mg/Kg	☼	07/19/19 01:37	07/19/19 12:19	50
Toluene	**0.016**	**J**	0.035	0.0087	mg/Kg	☼	07/19/19 01:37	07/19/19 12:19	50
Ethylbenzene	0.010	U	0.035	0.010	mg/Kg	☼	07/19/19 01:37	07/19/19 12:19	50
Xylenes, Total	**0.015**	**J**	0.069	0.0097	mg/Kg	☼	07/19/19 01:37	07/19/19 12:19	50
MTBE	0.0045	U	0.035	0.0045	mg/Kg	☼	07/19/19 01:37	07/19/19 12:19	50
Naphthalene	0.030	U	0.035	0.030	mg/Kg	☼	07/19/19 01:37	07/19/19 12:19	50
1,2,4-Trimethylbenzene	0.0080	U	0.035	0.0080	mg/Kg	☼	07/19/19 01:37	07/19/19 12:19	50
1,3,5-Trimethylbenzene	0.0087	U	0.035	0.0087	mg/Kg	☼	07/19/19 01:37	07/19/19 12:19	50
Isopropylbenzene	0.011	U	0.035	0.011	mg/Kg	☼	07/19/19 01:37	07/19/19 12:19	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*69 - 143*	*07/19/19 01:37*	*07/19/19 12:19*	*50*
Toluene-d8 (Surr)	*98*		*67 - 127*	*07/19/19 01:37*	*07/19/19 12:19*	*50*
Bromofluorobenzene	*94*		*61 - 137*	*07/19/19 01:37*	*07/19/19 12:19*	*50*
Dibromofluoromethane (Surr)	*103*		*61 - 135*	*07/19/19 01:37*	*07/19/19 12:19*	*50*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**6.9**		1.0	1.0	%			07/19/19 00:27	1
Percent Solids	**93.1**		1.0	1.0	%			07/19/19 00:27	1

Lab Chronicle

Client: RT Environmental Services, Inc.
Project/Site: Warminster UST

Job ID: 460-186928-1

Client Sample ID: P-1

Lab Sample ID: 460-186928-1

Date Collected: 07/18/19 14:16

Matrix: Solid

Date Received: 07/18/19 15:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	625640	07/19/19 00:27	JLD	TAL EDI

Client Sample ID: P-1

Lab Sample ID: 460-186928-1

Date Collected: 07/18/19 14:16

Matrix: Solid

Date Received: 07/18/19 15:25

Percent Solids: 93.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			625645	07/19/19 01:37	AVM	TAL EDI
Total/NA	Analysis	8260C		50	625662	07/19/19 12:19	KLB	TAL EDI

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: RT Environmental Services, Inc. Job ID: 460-186928-1
Project/Site: Warminster UST

Laboratory: Eurofins TestAmerica, Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State		PH-0200	09-30-20
Connecticut	State Program	1	PH-0200	09-30-20
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	N/A	12-31-19
New Jersey	NELAP	2	12028	06-30-20
New Jersey	NELAP		12028	06-30-20
New York	NELAP	2	11452	04-01-20
New York	NELAP		11452	04-01-20
Pennsylvania	NELAP	3	68-00522	02-28-20
Pennsylvania	NELAP		68-00522	02-28-20
Rhode Island	State Program	1	LAO00132	12-30-19
USDA	Federal		NJCA-003-08	05-03-21

Method Summary

Client: RT Environmental Services, Inc.
Project/Site: Warminster UST

Job ID: 460-186928-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL EDI
Moisture	Percent Moisture	EPA	TAL EDI
5035	Closed System Purge and Trap	SW846	TAL EDI

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: RT Environmental Services, Inc.
Project/Site: Warminster UST

Job ID: 460-186928-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
460-186928-1	P-1	Solid	07/18/19 14:16	07/18/19 15:25	

Chain of Custody Record

356386

4.3 KOP-2

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Craig Herr	Site Contact:	Date:	COC No:
Company Name: PT Environmental	Tel/Fax:	Lab Contact:	Carrier:	____ of ____ COCs
Address: 215 W. Church	Analysis Turnaround Time			Sampler:
City/State/Zip:	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone:	TAT if different from Below ____			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: Warminster UST	☐ 1 week			
Site:	☐ 2 days			Job / SDG No.:
PO# 73057-01-02	☑ 1 day			186928

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	PA DEP VOC	Sample Specific Notes:
Pre-1	7/18/19	14:16	G	Soil	2			X	

460-186928 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____	Therm ID No.: ____

Relinquished by: Craig Herr	Company: PT ENV	Date/Time: 7/19/19 1520	Received by:	Company: TA-KOP	Date/Time: 7/19/19 1525
Relinquished by:	Company: TA KOP	Date/Time: 7/18/19	Received by:	Company: ETP	Date/Time: 1900
Relinquished by:	Company: ETP	Date/Time: 7/18/19	Received in Laboratory by:	Company: TAEDL	Date/Time: 7/18/19 2030

7/19/2019

TestAmerica Edison
Receipt Temperature and pH Log

Job Number: 186928

Number of Coolers: 1 IR Gun # KOP-2

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	4.3 °C	4.3 °C	Cooler #4:	°C	°C	Cooler #7:	°C	°C
Cooler #2:	°C	°C	Cooler #5:	°C	°C	Cooler #8:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C	Cooler #9:	°C	°C

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals* (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other

If pH adjustments are required record the information below:

Sample No(s). adjusted: _____

Preservative Name/Conc.: _____ Volume of Preservative used (ml): _____

Lot # of Preservative(s): _____ Expiration Date: _____

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

** Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

Initials: JK Date: 7/19/19

Login Sample Receipt Checklist

Client: RT Environmental Services, Inc.

Job Number: 460-186928-1

Login Number: 186928
List Number: 1
Creator: Keehn, Jeffrey S

List Source: Eurofins TestAmerica, Edison

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Edison
777 New Durham Road
Edison, NJ 08817
Tel: (732)549-3900

Laboratory Job ID: 460-187354-1
Client Project/Site: Warminster Sunoco

For:
RT Environmental Services, Inc.
215 West Church Road
Suite 300
King of Prussia, Pennsylvania 19406

Attn: Craig Herr

Jill Miller

Authorized for release by:
7/26/2019 4:48:20 PM

Jill Miller, Senior Project Manager
(484)685-0871
jill.miller@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 460-187354-1

Laboratory: Eurofins TestAmerica, Edison

Narrative

Job Narrative
460-187354-1

Comments
No additional comments.

Receipt
The samples were received on 7/24/2019 3:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.7º C.

GC VOA
Method(s) 8015D: The following samples were diluted to bring the concentration of target analytes within the calibration range: P-2 (460-187354-1), P-3 (460-187354-2), P-4 (460-187354-3), P-5 (460-187354-4) and P-6 (460-187354-5). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method EOX: This method was subcontracted to Summit Environmental Technologies Inc.. The subcontract laboratory certification is different from that of the facility issuing the final report.

Client Sample ID: P-2

Date Collected: 07/24/19 13:40
Date Received: 07/24/19 15:35

Lab Sample ID: 460-187354-1

Matrix: Solid
Percent Solids: 85.3

Method: 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO	92		5.2	5.2	mg/Kg	☼	07/25/19 11:19	07/25/19 18:46	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*90*		*80 - 135*	*07/25/19 11:19*	*07/25/19 18:46*	*200*

Method: 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C44	71		10	0.99	mg/Kg	☼	07/25/19 19:00	07/26/19 12:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*88*		*11 - 126*	*07/25/19 19:00*	*07/26/19 12:27*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14.7		1.0	1.0	%			07/25/19 09:59	1
Percent Solids	85.3		1.0	1.0	%			07/25/19 09:59	1

Client Sample ID: P-3

Date Collected: 07/24/19 13:50
Date Received: 07/24/19 15:35

Lab Sample ID: 460-187354-2

Matrix: Solid
Percent Solids: 92.9

Method: 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO	100		3.3	3.3	mg/Kg	☼	07/25/19 11:19	07/25/19 19:14	250

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*101*		*80 - 135*	*07/25/19 11:19*	*07/25/19 19:14*	*250*

Method: 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C44	81		9.4	0.91	mg/Kg	☼	07/25/19 19:00	07/26/19 12:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*84*		*11 - 126*	*07/25/19 19:00*	*07/26/19 12:39*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.1		1.0	1.0	%			07/25/19 09:59	1
Percent Solids	92.9		1.0	1.0	%			07/25/19 09:59	1

Client Sample ID: P-4

Date Collected: 07/24/19 14:00
Date Received: 07/24/19 15:35

Lab Sample ID: 460-187354-3

Matrix: Solid
Percent Solids: 90.8

Method: 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO	250		8.2	8.2	mg/Kg	☼	07/25/19 11:20	07/25/19 20:37	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*106*		*80 - 135*	*07/25/19 11:20*	*07/25/19 20:37*	*500*

Client Sample ID: P-4

Lab Sample ID: 460-187354-3
Date Collected: 07/24/19 14:00
Matrix: Solid
Date Received: 07/24/19 15:35
Percent Solids: 90.8

Method: 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C44	93		9.6	0.93	mg/Kg	☼	07/25/19 19:00	07/26/19 12:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*107*		*11 - 126*	*07/25/19 19:00*	*07/26/19 12:52*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.2		1.0	1.0	%			07/25/19 09:59	1
Percent Solids	90.8		1.0	1.0	%			07/25/19 09:59	1

Client Sample ID: P-5

Lab Sample ID: 460-187354-4
Date Collected: 07/24/19 14:05
Matrix: Solid
Date Received: 07/24/19 15:35
Percent Solids: 91.4

Method: 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO	130		5.0	5.0	mg/Kg	☼	07/25/19 11:20	07/25/19 19:42	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*106*		*80 - 135*	*07/25/19 11:20*	*07/25/19 19:42*	*500*

Method: 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C44	120		9.5	0.92	mg/Kg	☼	07/25/19 19:00	07/26/19 13:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*102*		*11 - 126*	*07/25/19 19:00*	*07/26/19 13:04*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.6		1.0	1.0	%			07/25/19 09:59	1
Percent Solids	91.4		1.0	1.0	%			07/25/19 09:59	1

Client Sample ID: P-6

Lab Sample ID: 460-187354-5
Date Collected: 07/24/19 14:10
Matrix: Solid
Date Received: 07/24/19 15:35
Percent Solids: 89.9

Method: 8015D - Gasoline Range Organics (GRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO	93		3.8	3.8	mg/Kg	☼	07/25/19 11:21	07/25/19 20:09	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
a,a,a-Trifluorotoluene	*116*		*80 - 135*	*07/25/19 11:21*	*07/25/19 20:09*	*500*

Method: 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C10-C44	89		9.7	0.94	mg/Kg	☼	07/25/19 19:00	07/26/19 13:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*96*		*11 - 126*	*07/25/19 19:00*	*07/26/19 13:42*	*1*

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187354-1

Client Sample ID: P-6
Date Collected: 07/24/19 14:10
Date Received: 07/24/19 15:35

Lab Sample ID: 460-187354-5
Matrix: Solid
Percent Solids: 89.9

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	10.1		1.0	1.0	%			07/25/19 09:59	1
Percent Solids	89.9		1.0	1.0	%			07/25/19 09:59	1

Lab Chronicle

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187354-1

Client Sample ID: P-2
Date Collected: 07/24/19 13:40
Date Received: 07/24/19 15:35

Lab Sample ID: 460-187354-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	627129	07/25/19 09:59	MMC	TAL EDI

Client Sample ID: P-2
Date Collected: 07/24/19 13:40
Date Received: 07/24/19 15:35

Lab Sample ID: 460-187354-1
Matrix: Solid
Percent Solids: 85.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			627175	07/25/19 11:19	DBM	TAL EDI
Total/NA	Analysis	8015D		200	627177	07/25/19 18:46	AVM	TAL EDI
Total/NA	Prep	3546			627262	07/25/19 19:00	CPG	TAL EDI
Total/NA	Analysis	8015D		1	627388	07/26/19 12:27	BWM	TAL EDI

Client Sample ID: P-3
Date Collected: 07/24/19 13:50
Date Received: 07/24/19 15:35

Lab Sample ID: 460-187354-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	627129	07/25/19 09:59	MMC	TAL EDI

Client Sample ID: P-3
Date Collected: 07/24/19 13:50
Date Received: 07/24/19 15:35

Lab Sample ID: 460-187354-2
Matrix: Solid
Percent Solids: 92.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			627175	07/25/19 11:19	DBM	TAL EDI
Total/NA	Analysis	8015D		250	627177	07/25/19 19:14	AVM	TAL EDI
Total/NA	Prep	3546			627262	07/25/19 19:00	CPG	TAL EDI
Total/NA	Analysis	8015D		1	627388	07/26/19 12:39	BWM	TAL EDI

Client Sample ID: P-4
Date Collected: 07/24/19 14:00
Date Received: 07/24/19 15:35

Lab Sample ID: 460-187354-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	627129	07/25/19 09:59	MMC	TAL EDI

Client Sample ID: P-4
Date Collected: 07/24/19 14:00
Date Received: 07/24/19 15:35

Lab Sample ID: 460-187354-3
Matrix: Solid
Percent Solids: 90.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			627175	07/25/19 11:20	DBM	TAL EDI
Total/NA	Analysis	8015D		500	627177	07/25/19 20:37	AVM	TAL EDI
Total/NA	Prep	3546			627262	07/25/19 19:00	CPG	TAL EDI
Total/NA	Analysis	8015D		1	627388	07/26/19 12:52	BWM	TAL EDI

Lab Chronicle

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187354-1

Client Sample ID: P-5
Date Collected: 07/24/19 14:05
Date Received: 07/24/19 15:35

Lab Sample ID: 460-187354-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	627129	07/25/19 09:59	MMC	TAL EDI

Client Sample ID: P-5
Date Collected: 07/24/19 14:05
Date Received: 07/24/19 15:35

Lab Sample ID: 460-187354-4
Matrix: Solid
Percent Solids: 91.4

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			627175	07/25/19 11:20	DBM	TAL EDI
Total/NA	Analysis	8015D		500	627177	07/25/19 19:42	AVM	TAL EDI
Total/NA	Prep	3546			627262	07/25/19 19:00	CPG	TAL EDI
Total/NA	Analysis	8015D		1	627388	07/26/19 13:04	BWM	TAL EDI

Client Sample ID: P-6
Date Collected: 07/24/19 14:10
Date Received: 07/24/19 15:35

Lab Sample ID: 460-187354-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	627129	07/25/19 09:59	MMC	TAL EDI

Client Sample ID: P-6
Date Collected: 07/24/19 14:10
Date Received: 07/24/19 15:35

Lab Sample ID: 460-187354-5
Matrix: Solid
Percent Solids: 89.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			627175	07/25/19 11:21	DBM	TAL EDI
Total/NA	Analysis	8015D		500	627177	07/25/19 20:09	AVM	TAL EDI
Total/NA	Prep	3546			627262	07/25/19 19:00	CPG	TAL EDI
Total/NA	Analysis	8015D		1	627388	07/26/19 13:42	BWM	TAL EDI

Laboratory References:

Summit Env = Summit Environmental Technologies Inc., 3310 Win Street, Cuyahoga Falls, OH 44223

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: RT Environmental Services, Inc. Job ID: 460-187354-1
Project/Site: Warminster Sunoco

Laboratory: Eurofins TestAmerica, Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State		PH-0200	09-30-20
Connecticut	State Program	1	PH-0200	09-30-20
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	N/A	12-31-19
New Jersey	NELAP	2	12028	06-30-20
New Jersey	NELAP		12028	06-30-20
New York	NELAP	2	11452	04-01-20
New York	NELAP		11452	04-01-20
Pennsylvania	NELAP	3	68-00522	02-28-20
Pennsylvania	NELAP		68-00522	02-28-20
Rhode Island	State Program	1	LAO00132	12-30-19
USDA	Federal		NJCA-003-08	05-03-21

Method Summary

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187354-1

Method	Method Description	Protocol	Laboratory
8015D	Gasoline Range Organics (GRO) (GC)	SW846	TAL EDI
8015D	Diesel Range Organics (DRO) (GC)	SW846	TAL EDI
Moisture	Percent Moisture	EPA	TAL EDI
Subcontract	EOX	None	Summit Env
3546	Microwave Extraction	SW846	TAL EDI
5035	Closed System Purge and Trap	SW846	TAL EDI

Protocol References:

EPA = US Environmental Protection Agency

None = None

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

Summit Env = Summit Environmental Technologies Inc., 3310 Win Street, Cuyahoga Falls, OH 44223

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187354-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
460-187354-1	P-2	Solid	07/24/19 13:40	07/24/19 15:35	
460-187354-2	P-3	Solid	07/24/19 13:50	07/24/19 15:35	
460-187354-3	P-4	Solid	07/24/19 14:00	07/24/19 15:35	
460-187354-4	P-5	Solid	07/24/19 14:05	07/24/19 15:35	
460-187354-5	P-6	Solid	07/24/19 14:10	07/24/19 15:35	

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

July 26, 2019

Jill Miller
Test America
777 New Durham Rd
Edison, NJ 08817
TEL: (732) 549-3900
FAX:

RE: 460-187354

Dear Jill Miller:

Order No.: 19071658

Summit Environmental Technologies, Inc. received 5 sample(s) on 7/25/2019 for the analyses presented in the following report.

There were no problems with the analytical events associated with this report unless noted in the Case Narrative.

Quality control data is within laboratory defined or method specified acceptance limits except where noted.

If you have any questions regarding these tests results, please feel free to call the laboratory.

Sincerely,

Jennifer Woolf

Project Manager

3310 Win St.
Cuyahoga Falls, Ohio 44223

Arkansas 88-0735, California 07256CA, Colorado, Connecticut PH-0108, Delaware, Florida NELAC E87688, Georgia E87688, Idaho OH00923, Illinois 200061, Indiana C-OH-13, Kansas E-10347, Kentucky (Underground Storage Tank) 3, Kentucky 90146, Louisiana 04061, Maryland 339, Minnesota 409711, New Hampshire 2996, New Jersey OH006, New York 11777, North Carolina 39705 and 631, North Dakota R-201, Ohio DW, Ohio VAP CL0052, Oklahoma 9940, Oregon OH200001, Pennsylvania 010, Rhode Island LA000317, South Carolina 92016001, Texas T104704466-11-5, Utah OH009232011-1, Virginia VELAP 9456, Washington C891

Summit Environmental Technologies, Inc.
3310 Win St.
Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

Case Narrative

WO#: **19071658**
Date: **7/26/2019**

CLIENT: Test America
Project: 460-187354

This report in its entirety consists of the following documents: Cover Letter, Case Narrative, Analytical Results, QC Summary Report, Applicable Accreditation Information, Chain-of-Custody, Cooler Receipt Form, and other applicable forms as necessary. All documents contain the Summit Environmental Technologies, Inc., Work Order Number assigned to this report.

Summit Environmental Technologies, Inc., holds the accreditations/certifications listed at the bottom of the cover letter that may or may not pertain to this report. Please refer to the "Accreditation Program Analytes Report" for accredited analytes list.

The information contained in this analytical report is the sole property of Summit Environmental Technologies, Inc. and that of the customer. It cannot be reproduced in any form without the consent of Summit Environmental Technologies, Inc. or the customer for which this report was issued. The results contained in this report are only representative of the samples received. Conditions can vary at different times and at different sampling conditions. Summit Environmental Technologies, Inc. is not responsible for use or interpretation of the data included herein.

All results for Solid Samples are reported on an "as received" or "wet weight" basis unless indicated as "dry weight" using the "-dry" designation on the reporting units.

This report is believed to meet all of the requirements of the accrediting agency, where applicable. Any comments or problems with the analytical events associated with this report are noted below.

Original

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Workorder Sample Summary

WO#: **19071658**

26-Jul-19

CLIENT: Test America
Project: 460-187354

Lab SampleID	Client Sample ID	Tag No	Date Collected	Date Received	Matrix
19071658-001	460-187354-1		7/24/2019 1:40:00 PM	7/25/2019 10:05:00 AM	Solid
19071658-002	460-187354-2		7/24/2019 1:50:00 PM	7/25/2019 10:05:00 AM	Solid
19071658-003	460-187354-3		7/24/2019 2:00:00 PM	7/25/2019 10:05:00 AM	Solid
19071658-004	460-187354-4		7/24/2019 2:05:00 PM	7/25/2019 10:05:00 AM	Solid
19071658-005	460-187354-5		7/24/2019 2:10:00 PM	7/25/2019 10:05:00 AM	Solid

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Analytical Report

(consolidated)

WO#: **19071658**

Date Reported: **7/26/2019**

CLIENT: Test America
Project: 460-187354
Lab ID: 19071658-001
Client Sample ID 460-187354-1

Collection Date: 7/24/2019 1:40:00 PM
Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EXTRACTABLE ORGANIC HALIDES (EOX) (9023)				**SW9023**		Analyst: **TIR**
Extractable Organic Halides	ND	50.0		ppm	1	7/25/2019 12:02:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded
ND	Not Detected
RL	Reporting Detection Limit
M	Manual Integration used to determine area response
PL	Permit Limit
W	Sample container temperature is out of limit as specified at testcode

Original

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Analytical Report

(consolidated)

WO#: **19071658**

Date Reported: **7/26/2019**

CLIENT: Test America
Project: 460-187354
Lab ID: 19071658-002
Client Sample ID 460-187354-2

Collection Date: 7/24/2019 1:50:00 PM
Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EXTRACTABLE ORGANIC HALIDES (EOX) (9023)				**SW9023**		Analyst: **TIR**
Extractable Organic Halides	ND	50.0		ppm	1	7/25/2019 12:02:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded
ND	Not Detected
RL	Reporting Detection Limit
M	Manual Integration used to determine area response
PL	Permit Limit
W	Sample container temperature is out of limit as specified at testcode

Original

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Analytical Report

(consolidated)

WO#: **19071658**

Date Reported: **7/26/2019**

CLIENT: Test America
Project: 460-187354
Lab ID: 19071658-003
Client Sample ID 460-187354-3

Collection Date: 7/24/2019 2:00:00 PM
Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EXTRACTABLE ORGANIC HALIDES (EOX) (9023)				**SW9023**		Analyst: **TIR**
Extractable Organic Halides	ND	50.0		ppm	1	7/25/2019 12:02:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded
ND	Not Detected
RL	Reporting Detection Limit
M	Manual Integration used to determine area response
PL	Permit Limit
W	Sample container temperature is out of limit as specified at testcode

Original

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Analytical Report

(consolidated)

WO#: **19071658**

Date Reported: **7/26/2019**

CLIENT: Test America
Project: 460-187354
Lab ID: 19071658-004
Client Sample ID 460-187354-4

Collection Date: 7/24/2019 2:05:00 PM
Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EXTRACTABLE ORGANIC HALIDES (EOX) (9023)				**SW9023**		Analyst: **TIR**
Extractable Organic Halides	ND	50.0		ppm	1	7/25/2019 12:02:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded
ND	Not Detected
RL	Reporting Detection Limit
M	Manual Integration used to determine area response
PL	Permit Limit
W	Sample container temperature is out of limit as specified at testcode

Original

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Analytical Report

(consolidated)

WO#: **19071658**

Date Reported: **7/26/2019**

CLIENT: Test America
Project: 460-187354
Lab ID: 19071658-005
Client Sample ID 460-187354-5

Collection Date: 7/24/2019 2:10:00 PM
Matrix: SOLID

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EXTRACTABLE ORGANIC HALIDES (EOX) (9023)				**SW9023**		Analyst: **TIR**
Extractable Organic Halides	ND	50.0		ppm	1	7/25/2019 12:02:00 PM

Qualifiers:

H	Holding times for preparation or analysis exceeded
ND	Not Detected
RL	Reporting Detection Limit
M	Manual Integration used to determine area response
PL	Permit Limit
W	Sample container temperature is out of limit as specified at testcode

Original

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QC SUMMARY REPORT

WO#: **19071658**
26-Jul-19

Client: Test America
Project: 460-187354 **BatchID:** **R101230**

Sample ID	MB-R101230	SampType:	MBLK	TestCode:	EOX_S(9023)	Units:	ppm	Prep Date:		RunNo:	101230
Client ID:	PBS	Batch ID:	R101230	TestNo:	SW9023			Analysis Date:	7/25/2019	SeqNo:	2236250

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Organic Halides	ND	50.0									

Sample ID	LCS-R101230	SampType:	LCS	TestCode:	EOX_S(9023)	Units:	ppm	Prep Date:		RunNo:	101230
Client ID:	LCSS	Batch ID:	R101230	TestNo:	SW9023			Analysis Date:	7/25/2019	SeqNo:	2236252

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Organic Halides	ND	50.0	50.00	0	85.6	81	114				

Sample ID	19071658-001AMS	SampType:	MS	TestCode:	EOX_S(9023)	Units:	ppm	Prep Date:		RunNo:	101230
Client ID:	460-187354-1	Batch ID:	R101230	TestNo:	SW9023			Analysis Date:	7/25/2019	SeqNo:	2236254

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Organic Halides	630	50.0	625.0	0	101	78	116				

Sample ID	19071658-001AMSD	SampType:	MSD	TestCode:	EOX_S(9023)	Units:	ppm	Prep Date:		RunNo:	101230
Client ID:	460-187354-1	Batch ID:	R101230	TestNo:	SW9023			Analysis Date:	7/25/2019	SeqNo:	2236255

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Organic Halides	620	50.0	625.0	0	99.2	78	116	630.0	1.60	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	P	Second column confirmation exceeds	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted reco

Original

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QC SUMMARY REPORT

WO#: **19071658**

26-Jul-19

Client: Test America
Project: 460-187354

BatchID: **R101230**

Sample ID	**19071658-001AMSD**	SampType:	**MSD**	TestCode:	**EOX_S(9023)**	Units:	**ppm**	Prep Date:		RunNo:	**101230**
Client ID:	**460-187354-1**	Batch ID:	**R101230**	TestNo:	**SW9023**			Analysis Date:	**7/25/2019**	SeqNo:	**2236255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Sample ID	**MB-R101230**	SampType:	**MBLK**	TestCode:	**EOX_S(9023)**	Units:	**ppm**	Prep Date:		RunNo:	**101230**
Client ID:	**PBS**	Batch ID:	**R101230**	TestNo:	**SW9023**			Analysis Date:	**7/25/2019**	SeqNo:	**2236261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Extractable Organic Halides	ND	50.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analy
J	Analyte detected below quantitation limits	M	Manual Integration used to determine area response	MC	Value is below Minimum Compound
ND	Not Detected	P	Second column confirmation exceeds	PL	Permit Limit
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	S	Spike Recovery outside accepted reco

Original

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Qualifiers and Acronyms

WO#: **19071658**
Date: **7/26/2019**

These commonly used Qualifiers and Acronyms may or may not be present in this report.

Qualifiers

U	The compound was analyzed for but was not detected above the MDL.
J	The reported value is greater than the Method Detection Limit but less than the Reporting Limit.
H	The hold time for sample preparation and/or analysis was exceeded. Not Clean Water Act compliant.
D	The result is reported from a dilution.
E	The result exceeded the linear range of the calibration or is estimated due to interference.
MC	The result is below the Minimum Compound Limit.
*	The result exceeds the Regulatory Limit or Maximum Contamination Limit.
m	Manual integration was used to determine the area response.
d	Manual integration in which peak was deleted
N	The result is presumptive based on a Mass Spectral library search assuming a 1:1 response.
P	The second column confirmation exceeded 25% difference.
C	The result has been confirmed by GC/MS.
X	The result was not confirmed when GC/MS Analysis was performed.
B	The analyte was detected in the Method Blank at a concentration greater than the RL.
MB+	The analyte was detected in the Method Blank at a concentration greater than the MDL.
G	The ICB or CCB contained reportable amounts of analyte.
QC-/+	The CCV recovery failed low (-) or high (+).
R/QDR	The RPD was outside of accepted recovery limits.
QL-/+	The LCS or LCSD recovery failed low (-) or high (+).
QLR	The LCS/LCSD RPD was outside of accepted recovery limits.
QM-/+	The MS or MSD recovery failed low (-) or high (+).
QMR	The MS/MSD RPD was outside of accepted recovery limits.
QV-/+	The ICV recovery failed low (-) or high (+).
S	The spike result was outside of accepted recovery limits.
W	Samples were received outside temperature limits (0° – 6° C). Not Clean Water Act compliant.
Z	Deviation; A deviation from the method was performed; Please refer to the Case Narrative for additional information

Acronyms

ND	Not Detected	**RL**	Reporting Limit
QC	Quality Control	**MDL**	Method Detection Limit
MB	Method Blank	**LOD**	Level of Detection
LCS	Laboratory Control Sample	**LOQ**	Level of Quantitation
LCSD	Laboratory Control Sample Duplicate	**PQL**	Practical Quantitation Limit
QCS	Quality Control Sample	**CRQL**	Contract Required Quantitation Limit
DUP	Duplicate	**PL**	Permit Limit
MS	Matrix Spike	**RegLvl**	Regulatory Limit
MSD	Matrix Spike Duplicate	**MCL**	Maximum Contamination Limit
RPD	Relative Percent Different	**MinCL**	Minimum Compound Limit
ICV	Initial Calibration Verification	**RA**	Reanalysis
ICB	Initial Calibration Blank	**RE**	Reextraction
CCV	Continuing Calibration Verification	**TIC**	Tentatively Identified Compound
CCB	Continuing Calibration Blank	**RT**	Retention Time
RLC	Reporting Limit Check	**CF**	Calibration Factor

This list of Qualifiers and Acronyms reflects the most commonly utilized Qualifiers and Acronyms for reporting. Please refer to the Analytical Notes in the Case Narrative for any Qualifiers or Acronyms that do not appear in this list or for additional information regarding the use of these Qualifiers on reported data.

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DATES REPORT

WO#: **19071658**

26-Jul-19

Client: Test America
Project: 460-187354

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	Leachate Date	Prep Date	Analysis Date
19071658-001A	460-187354-1	7/24/2019 1:40:00 PM	Solid	Extractable Organic Halides (EOX) (9(			7/25/2019 12:02:00 PM
19071658-002A	460-187354-2	7/24/2019 1:50:00 PM		Extractable Organic Halides (EOX) (9(			7/25/2019 12:02:00 PM
19071658-003A	460-187354-3	7/24/2019 2:00:00 PM		Extractable Organic Halides (EOX) (9(			7/25/2019 12:02:00 PM
19071658-004A	460-187354-4	7/24/2019 2:05:00 PM		Extractable Organic Halides (EOX) (9(			7/25/2019 12:02:00 PM
19071658-005A	460-187354-5	7/24/2019 2:10:00 PM		Extractable Organic Halides (EOX) (9(			7/25/2019 12:02:00 PM

Original

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Accreditation Program Analytes Report

WO#: **19071658**

26-Jul-19

Client: Test America
State: PA
Project: 460-187354
Program Name: Pennsylvanis DEP

Sample ID	Matrix	Test Name	Analyte	Status
19071658-001A	Solid	Extractable Organic Halides (EOX) (9023)	Extractable Organic Halides	A
19071658-002A	Solid	Extractable Organic Halides (EOX) (9023)	Extractable Organic Halides	A
19071658-003A	Solid	Extractable Organic Halides (EOX) (9023)	Extractable Organic Halides	A
19071658-004A	Solid	Extractable Organic Halides (EOX) (9023)	Extractable Organic Halides	A
19071658-005A	Solid	Extractable Organic Halides (EOX) (9023)	Extractable Organic Halides	A

	Key	
PA-NELAP	A	Accredited

Original #1

Eurofins TestAmerica, Edison
777 New Durham Road
Edison, NJ 08817
Phone: 732-549-3900 Fax: 732-549-3679

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Miller, Jill K	Carrier Tracking No(s):	COC No: 460-55485.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: jill.miller@testamericainc.com	State of Origin: Pennsylvania	Page: Page 1 of 1
Company: Summit Environmental Technologies Inc.		Accreditations Required (See note): NELAP - Pennsylvania		Job #: 460-187354-1
Address: 3310 Win Street, ,	Due Date Requested: 7/25/2019			
City: Cuyahoga Falls	TAT Requested (days):			
State, Zip: OH, 44223				
Phone:	PO #:			
Email:	WO #:			
Project Name: Warminster Sunoco	Project #: 46025169			
Site:	SSOW#:			

Analysis Requested

19071658

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (EOX)/ EOX	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
P-2 (460-187354-1)	7/24/19	13:40 Eastern		Solid			X	1	Please report in mg/Kg
P-3 (460-187354-2)	7/24/19	13:50 Eastern		Solid			X	1	Please report in mg/Kg
P-4 (460-187354-3)	7/24/19	14:00 Eastern		Solid			X	1	Please report in mg/Kg
P-5 (460-187354-4)	7/24/19	14:05 Eastern		Solid			X	1	Please report in mg/Kg
P-6 (460-187354-5)	7/24/19	14:10 Eastern		Solid			X	1	Please report in mg/Kg

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 1	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		7/24/19 1619	TA-KOP			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 7/25/19 10.05	Company fedexcourier

Custody Seals Intact: ✗ Yes Δ No | Custody Seal No.: 736879 | Cooler Temperature(s) °C and Other Remarks: 0.3

Ver: 01/16/2019

Summit Environmental Technologies, Inc.
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Cuyahoga Falls, Ohio 44223
TEL: (330) 253-8211 FAX: (330) 253-4489
Website: http://www.settek.com

Sample Log-In Check List

Client Name: **TES-NJ-08817** Work Order Number: **19071658** RcptNo: **1**

Logged by: **Jesseca E. Westfall** **7/25/2019 10:05:00 AM**

Completed By: **Jesseca E. Westfall** **7/25/2019 10:22:17 AM**

Reviewed By:

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☑ No ☐ NA ☐
4. Shipping container/cooler in good condition? Yes ☑ No ☐
   Custody seals intact on shipping container/cooler? Yes ☐ No ☐ Not Present ☑
   No. Seal Date: Signed By:
5. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
6. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
7. Sample(s) in proper container(s)? Yes ☑ No ☐
8. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
9. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
10. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
11. Is the headspace in the VOA vials less than 1/4 inch or 6 mm? Yes ☐ No ☐ No VOA Vials ☑
12. Were any sample containers received broken? Yes ☐ No ☑
13. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
14. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
15. Is it clear what analyses were requested? Yes ☑ No ☐
16. Were all holding times able to be met? Yes ☑ No ☐
    (If no, notify customer for authorization.)

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

18. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.3	Good	Not Present			

Chain of Custody Record

356337

4.7 °C KOP-2

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Craig Kurr	Site Contact: A. Schmeltz	Date: 7/24/19	COC No:
Company Name: RT ENV	Tel/Fax:	Lab Contact:	Carrier:	1 of 1 COCs
Address:	Analysis Turnaround Time			Sampler: A. Schmeltz
City/State/Zip: KOP, PA	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 610-265-1510	TAT if different from Below 24 hr			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: Warminster SunoCo	☐ 1 week			
Site: Warminster SunoCo	☐ 2 days			Job / SDG No.: 187354
PO# 73057-01	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TPH	TOX	Sample Specific Notes:
P-2	7/24/19	1:40	G	Soil	4			X	X	
P-3	"	1:50	"	"	4			X	X	
P-4	"	2:00	"	"	4			X	X	
P-5	"	2:05	"	"	4			X	X	
P-6	"	2:10	"	"	4			X	X	

460-187354 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other MeOH 1,6,6

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:

3.3 °C Cs # 736878

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
A. Schmeltz	RT ENV	7/24/19 15:35		TA-KOP	7/24/19 1535
	TA-KOP	7/24/19 1617			
			Received in Laboratory by:		Date/Time: 7/25/19 9:00

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7/26/2019

TestAmerica Edison
Receipt Temperature and pH Log

Job Number: 187354

Number of Coolers: 1

IR Gun # KOP-2

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	4.7 °C	4.7 °C	Cooler #4:	°C	°C	Cooler #7:	°C	°C
Cooler #2:	°C	°C	Cooler #5:	°C	°C	Cooler #8:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C	Cooler #9:	°C	°C

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals* (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other

If pH adjustments are required record the information below:

Sample No(s). adjusted: _____

Preservative Name/Conc.: _____ Volume of Preservative used (ml): _____

Lot # of Preservative(s): _____ Expiration Date: _____

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

* *Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

Initials: JK Date: 7/24/19

Login Sample Receipt Checklist

Client: RT Environmental Services, Inc.

Job Number: 460-187354-1

Login Number: 187354
List Number: 1
Creator: Keehn, Jeffrey S

List Source: Eurofins TestAmerica, Edison

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	736878
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Edison
777 New Durham Road
Edison, NJ 08817
Tel: (732)549-3900

Laboratory Job ID: 460-187354-2
Client Project/Site: Warminster Sunoco

For:
RT Environmental Services, Inc.
215 West Church Road
Suite 300
King of Prussia, Pennsylvania 19406

Attn: Craig Herr

Jill Miller

Authorized for release by:
8/5/2019 11:26:56 AM

Jill Miller, Senior Project Manager
(484)685-0871
jill.miller@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Client: RT Environmental Services, Inc.
Job ID: 460-187354-2
Project/Site: Warminster Sunoco

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
*	RPD of the LCS and LCSD exceeds the control limits
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187354-2

Job ID: 460-187354-2

Laboratory: Eurofins TestAmerica, Edison

Narrative

Job Narrative
460-187354-2

Comments
No additional comments.

Receipt
The samples were received on 7/24/2019 3:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.7º C.

Receipt Exceptions
The following samples was composited and activated for TCLP VOC, TCLP SVOC, TCLP RCRA Metals +3, Total RCR Metals +3, PCBs and RCRA Characteristics analysis by the client on 7/31/2019: P-2 (460-187354-1), P-3 (460-187354-2), P-4 (460-187354-3), P-5 (460-187354-4) and P-6 (460-187354-5). This analysis was not originally requested on the chain-of-custody (COC).

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: The laboratory control sample duplicate (LCSD) for preparation batch 460-629351 and analytical batch 460-629437 recovered outside control limits for the following analytes: < 1,4-Dichlorobenzene, Hexachlorobutadiene, Hexachloroethane and Pyridine>. These analytes were within limits for the LCS. therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187354-2

Client Sample ID: Composite P2-6

Date Collected: 07/24/19 13:40
Date Received: 07/24/19 15:35

Lab Sample ID: 460-187354-6

Matrix: Solid

Method: 8260C - Volatile Organic Compounds by GC/MS - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2.6	U	10	2.6	ug/L			08/02/19 16:43	10
1,2-Dichloroethane	4.3	U	10	4.3	ug/L			08/02/19 16:43	10
2-Butanone (MEK)	19	U	50	19	ug/L			08/02/19 16:43	10
Benzene	2.0	U	10	2.0	ug/L			08/02/19 16:43	10
Carbon tetrachloride	2.1	U	10	2.1	ug/L			08/02/19 16:43	10
Chlorobenzene	3.8	U	10	3.8	ug/L			08/02/19 16:43	10
Chloroform	3.3	U	10	3.3	ug/L			08/02/19 16:43	10
Tetrachloroethene	2.5	U	10	2.5	ug/L			08/02/19 16:43	10
Trichloroethene	3.1	U	10	3.1	ug/L			08/02/19 16:43	10
Vinyl chloride	1.7	U	10	1.7	ug/L			08/02/19 16:43	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*96*		*74 - 132*		*08/02/19 16:43*	*10*
4-Bromofluorobenzene	*106*		*77 - 124*		*08/02/19 16:43*	*10*
Dibromofluoromethane (Surr)	*96*		*72 - 131*		*08/02/19 16:43*	*10*
Toluene-d8 (Surr)	*88*		*80 - 120*		*08/02/19 16:43*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Cresol	0.30	U	10	0.30	ug/L		08/03/19 07:08	08/04/19 22:24	1
m & p - Cresol	0.20	U	10	0.20	ug/L		08/03/19 07:08	08/04/19 22:24	1
2,4,6-Trichlorophenol	0.30	U	10	0.30	ug/L		08/03/19 07:08	08/04/19 22:24	1
2,4,5-Trichlorophenol	0.30	U	10	0.30	ug/L		08/03/19 07:08	08/04/19 22:24	1
Pentachlorophenol	1.4	U	30	1.4	ug/L		08/03/19 07:08	08/04/19 22:24	1
1,4-Dichlorobenzene	1.3	U *	10	1.3	ug/L		08/03/19 07:08	08/04/19 22:24	1
Hexachloroethane	1.2	U *	2.0	1.2	ug/L		08/03/19 07:08	08/04/19 22:24	1
Nitrobenzene	0.60	U	1.0	0.60	ug/L		08/03/19 07:08	08/04/19 22:24	1
Hexachlorobutadiene	0.80	U *	2.0	0.80	ug/L		08/03/19 07:08	08/04/19 22:24	1
2,4-Dinitrotoluene	1.0	U	2.0	1.0	ug/L		08/03/19 07:08	08/04/19 22:24	1
Hexachlorobenzene	0.40	U	1.0	0.40	ug/L		08/03/19 07:08	08/04/19 22:24	1
Pyridine	1.9	U *	10	1.9	ug/L		08/03/19 07:08	08/04/19 22:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*67*		*51 - 108*	*08/03/19 07:08*	*08/04/19 22:24*	*1*
Phenol-d5	*21*		*14 - 39*	*08/03/19 07:08*	*08/04/19 22:24*	*1*
Terphenyl-d14	*68*		*40 - 148*	*08/03/19 07:08*	*08/04/19 22:24*	*1*
2,4,6-Tribromophenol	*61*		*26 - 139*	*08/03/19 07:08*	*08/04/19 22:24*	*1*
2-Fluorophenol	*32*		*25 - 58*	*08/03/19 07:08*	*08/04/19 22:24*	*1*
2-Fluorobiphenyl	*62*		*45 - 107*	*08/03/19 07:08*	*08/04/19 22:24*	*1*

Method: 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	5.4	U	50.0	5.4	ug/L		08/02/19 10:25	08/02/19 16:58	5
Arsenic	**26.0**	**J**	75.0	13.3	ug/L		08/02/19 10:25	08/02/19 16:58	5
Barium	**917**	**J**	1000	38.4	ug/L		08/02/19 10:25	08/02/19 16:58	5
Cadmium	**1.2**	**J**	20.0	1.1	ug/L		08/02/19 10:25	08/02/19 16:58	5
Chromium	6.3	U	50.0	6.3	ug/L		08/02/19 10:25	08/02/19 16:58	5
Copper	25.5	U	125	25.5	ug/L		08/02/19 10:25	08/02/19 16:58	5
Nickel	**19.7**	**J**	200	8.5	ug/L		08/02/19 10:25	08/02/19 16:58	5
Lead	**18.9**	**J**	50.0	12.3	ug/L		08/02/19 10:25	08/02/19 16:58	5

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187354-2

Client Sample ID: Composite P2-6

Lab Sample ID: 460-187354-6

Date Collected: 07/24/19 13:40
Date Received: 07/24/19 15:35

Matrix: Solid

Method: 6010D - Metals (ICP) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	33.0	U	100	33.0	ug/L		08/02/19 10:25	08/02/19 16:58	5
Zinc	**137**	**J**	150	18.1	ug/L		08/02/19 10:25	08/02/19 16:58	5

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.20	U	0.20	0.20	ug/L		08/02/19 14:22	08/02/19 15:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Burn Rate	2.20	U	2.20	2.20	mm/sec			08/01/19 10:18	1
Cyanide, Reactive	25.0	U	25.0	25.0	mg/Kg		08/01/19 11:00	08/01/19 16:12	1
Sulfide, Reactive	19.4	U	20.0	19.4	mg/Kg		08/01/19 11:00	08/01/19 16:07	1
pH	**10.4**	**HF**			SU			08/01/19 11:48	1
Corrosivity	**10.4**	**HF**			SU			08/01/19 11:48	1
Percent Moisture	**10.7**		1.0	1.0	%			08/01/19 07:57	1
Percent Solids	**89.3**		1.0	1.0	%			08/01/19 07:57	1

Client Sample ID: Composite P2-6

Lab Sample ID: 460-187354-6

Date Collected: 07/24/19 13:40
Date Received: 07/24/19 15:35

Matrix: Solid
Percent Solids: 89.3

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	0.010	U	0.075	0.010	mg/Kg	☼	08/01/19 10:07	08/02/19 17:02	1
Aroclor 1221	0.010	U	0.075	0.010	mg/Kg	☼	08/01/19 10:07	08/02/19 17:02	1
Aroclor 1232	0.010	U	0.075	0.010	mg/Kg	☼	08/01/19 10:07	08/02/19 17:02	1
Aroclor 1242	0.010	U	0.075	0.010	mg/Kg	☼	08/01/19 10:07	08/02/19 17:02	1
Aroclor 1248	0.010	U	0.075	0.010	mg/Kg	☼	08/01/19 10:07	08/02/19 17:02	1
Aroclor 1254	0.010	U	0.075	0.010	mg/Kg	☼	08/01/19 10:07	08/02/19 17:02	1
Aroclor 1260	0.010	U	0.075	0.010	mg/Kg	☼	08/01/19 10:07	08/02/19 17:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*116*		*53 - 150*	*08/01/19 10:07*	*08/02/19 17:02*	*1*
DCB Decachlorobiphenyl	*121*		*53 - 150*	*08/01/19 10:07*	*08/02/19 17:02*	*1*

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.20	U	2.1	0.20	mg/Kg	☼	08/01/19 04:51	08/01/19 14:15	4
Arsenic	**8.5**		3.2	1.2	mg/Kg	☼	08/01/19 04:51	08/01/19 14:15	4
Barium	**104**		42.7	2.4	mg/Kg	☼	08/01/19 04:51	08/01/19 14:15	4
Cadmium	**0.24**	**J**	0.85	0.15	mg/Kg	☼	08/01/19 04:51	08/01/19 14:15	4
Chromium	**52.0**		2.1	0.38	mg/Kg	☼	08/01/19 04:51	08/01/19 14:15	4
Copper	**34.7**		5.3	2.8	mg/Kg	☼	08/01/19 04:51	08/01/19 14:15	4
Nickel	**23.1**		8.5	0.78	mg/Kg	☼	08/01/19 04:51	08/01/19 14:15	4
Lead	**13.9**		2.1	0.56	mg/Kg	☼	08/01/19 04:51	08/01/19 14:15	4
Selenium	2.6	U	4.3	2.6	mg/Kg	☼	08/01/19 04:51	08/01/19 14:15	4
Zinc	**72.6**		6.4	5.0	mg/Kg	☼	08/01/19 04:51	08/01/19 14:15	4

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0099	U	0.017	0.0099	mg/Kg	☼	08/01/19 04:30	08/01/19 09:59	1

Lab Chronicle

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187354-2

Client Sample ID: Composite P2-6

Lab Sample ID: 460-187354-6

Date Collected: 07/24/19 13:40

Matrix: Solid

Date Received: 07/24/19 15:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			628835	08/01/19 09:14	BJB	TAL EDI
TCLP	Analysis	8260C		10	629151	08/02/19 16:43	ZXB	TAL EDI
TCLP	Leach	1311			628944	08/01/19 15:00	YXG	TAL EDI
TCLP	Prep	3510C			629351	08/03/19 07:08	DXD	TAL EDI
TCLP	Analysis	8270D		1	629520	08/04/19 22:24	YAH	TAL EDI
TCLP	Leach	1311			628944	08/01/19 15:00	YXG	TAL EDI
TCLP	Prep	3010A			629118	08/02/19 10:25	QZY	TAL EDI
TCLP	Analysis	6010D		5	629239	08/02/19 16:58	YZH	TAL EDI
TCLP	Leach	1311			628944	08/01/19 15:00	YXG	TAL EDI
TCLP	Prep	7470A			629217	08/02/19 14:22	RBS	TAL EDI
TCLP	Analysis	7470A		1	629267	08/02/19 15:09	RBS	TAL EDI
Total/NA	Analysis	1030		1	628879	08/01/19 10:18	AAP	TAL EDI
Total/NA	Prep	7.3.3			628951	08/01/19 11:00	YAH	TAL EDI
Total/NA	Analysis	9014		1	628960	08/01/19 16:12	YAH	TAL EDI
Total/NA	Prep	7.3.4			628950	08/01/19 11:00	YAH	TAL EDI
Total/NA	Analysis	9034		1	628958	08/01/19 16:07	YAH	TAL EDI
Total/NA	Analysis	9045D		1	628842	08/01/19 11:48	AAP	TAL EDI
Total/NA	Analysis	Moisture		1	628802	08/01/19 07:57	MMC	TAL EDI

Client Sample ID: Composite P2-6

Lab Sample ID: 460-187354-6

Date Collected: 07/24/19 13:40

Matrix: Solid

Date Received: 07/24/19 15:35

Percent Solids: 89.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			628862	08/01/19 10:07	OXG	TAL EDI
Total/NA	Analysis	8082A		1	629157	08/02/19 17:02	JHP	TAL EDI
Total/NA	Prep	3050B			628762	08/01/19 04:51	GMC	TAL EDI
Total/NA	Analysis	6010D		4	628947	08/01/19 14:15	YZH	TAL EDI
Total/NA	Prep	7471B			628759	08/01/19 04:30	TJS	TAL EDI
Total/NA	Analysis	7471B		1	628897	08/01/19 09:59	TJS	TAL EDI

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187354-2

Laboratory: Eurofins TestAmerica, Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Connecticut	State		PH-0200	09-30-20
Connecticut	State Program	1	PH-0200	09-30-20
DE Haz. Subst. Cleanup Act (HSCA)	State Program	3	N/A	12-31-19
New Jersey	NELAP	2	12028	06-30-20
New Jersey	NELAP		12028	06-30-20
New York	NELAP	2	11452	04-01-20
New York	NELAP		11452	04-01-20
Pennsylvania	NELAP	3	68-00522	02-28-20
Pennsylvania	NELAP		68-00522	02-28-20
Rhode Island	State		LAO00132	12-30-19
Rhode Island	State Program	1	LAO00132	12-30-19
USDA	Federal		NJCA-003-08	05-03-21
USDA	US Federal Programs		P330-18-00135	05-03-21

Method Summary

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187354-2

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL EDI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL EDI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL EDI
6010D	Metals (ICP)	SW846	TAL EDI
7470A	Mercury (CVAA)	SW846	TAL EDI
7471B	Mercury (CVAA)	SW846	TAL EDI
1030	Ignitability of Solids	SW846	TAL EDI
9014	Cyanide, Reactive	SW846	TAL EDI
9034	Sulfide, Reactive	SW846	TAL EDI
9045D	pH	SW846	TAL EDI
Moisture	Percent Moisture	EPA	TAL EDI
1311	TCLP Extraction	SW846	TAL EDI
3010A	Preparation, Total Metals	SW846	TAL EDI
3050B	Preparation, Metals	SW846	TAL EDI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL EDI
3546	Microwave Extraction	SW846	TAL EDI
5030C	Purge and Trap	SW846	TAL EDI
7.3.3	Cyanide, Reactive	SW846	TAL EDI
7.3.4	Sulfide, Reactive	SW846	TAL EDI
7470A	Preparation, Mercury	SW846	TAL EDI
7471B	Preparation, Mercury	SW846	TAL EDI

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: RT Environmental Services, Inc.
Project/Site: Warminster Sunoco

Job ID: 460-187354-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
460-187354-6	Composite P2-6	Solid	07/24/19 13:40	07/24/19 15:35	

Chain of Custody Record

356337

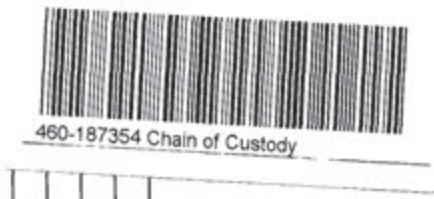
4.7 °C KOP-2

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.
TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: Craig Kurr	Site Contact: A. Schmeltz	Date: 7/24/19	COC No:
Company Name: RT ENV	Tel/Fax:	Lab Contact:	Carrier:	1 of 1 COCs
Address:	Analysis Turnaround Time			Sampler: A. Schmeltz
City/State/Zip: KOP, PA	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
Phone: 610-265-1510	TAT if different from Below 24 hr			Walk-in Client:
Fax:	☐ 2 weeks			Lab Sampling:
Project Name: Warminster SunCo	☐ 1 week			
Site: Warminster SunCo	☐ 2 days			Job / SDG No.: 187354
PO# 73057-01	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TPH	TCL	Sample Specific Notes:
P-2	7/24/19	1:40	G	Soil	4			X	X	
P-3	"	1:50	"	"	4			X	X	
P-4	"	2:00	"	"	4			X	X	
P-5	"	2:05	"	"	4			X	X	
P-6	"	2:10	"	"	4			X	X	



Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other MeOH — 1,6,6

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

3.3 °C Cs # 736878

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temp. (°C): Obs'd:	Corr'd:	Therm ID No.:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
A. Schmeltz	RT ENV	7/24/19 15:35	[signature]	TA-KOP	7/24/19 1535
[signature]	TA-KOP	7/24/19 1617	[signature]		
[signature]			Received in Laboratory by: [signature]		Date/Time: 7/25/19 900

8/5/2019

TestAmerica Edison
Receipt Temperature and pH Log

Job Number: 187354

Number of Coolers: 1

IR Gun # KOP-2

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	4.7 °C	4.7 °C	Cooler #4:	°C	°C	Cooler #7:	°C	°C
Cooler #2:	°C	°C	Cooler #5:	°C	°C	Cooler #8:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C	Cooler #9:	°C	°C

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals* (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other

If pH adjustments are required record the information below:

Sample No(s). adjusted: _____

Preservative Name/Conc.: _____ Volume of Preservative used (ml): _____

Lot # of Preservative(s): _____ Expiration Date: _____

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

* *Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

Initials: JK Date: 7/24/19

Login Sample Receipt Checklist

Client: RT Environmental Services, Inc.

Job Number: 460-187354-2

Login Number: 187354

List Source: Eurofins TestAmerica, Edison

List Number: 1

Creator: Keehn, Jeffrey S

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	736878
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX B

Tank Closure Report

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

UNDERGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

09-30778
Facility I.D.

FINCH PETRO
Facility Name

Warminster — Municipality
Bucks — County

September 25, 2019
Date Prepared

Ijmal M. Ali
Name of Person Submitting Report
(Please Print)

Finch Petro, LLC
Company Name
(If Applicable)

Owner
Title

Closure Method (Check all that apply):

- ☒ UST Removal
- ☐ UST Closure-In-Place
- ☐ UST Change-In-Service

Site Assessment Results (Check all that apply):

- ☐ No Obvious Contamination - Sample Results Meet Standards/Levels
- ☐ No Obvious Contamination - Sample Results Do Not Meet Standards/Levels
- ☒ Obvious, Localized Contamination - Sample Results Meet Standards/Levels - Soil
- ☐ Obvious, Localized Contamination - Sample Results Do Not Meet Standards/Levels
- ☒ Obvious, Extensive Contamination - Groundwater

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS

DATE RECEIVED: _____

UNDERGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

Owners who are permanently closing underground storage tank systems may use this form to demonstrate that a storage tank system closure was performed in accordance with technical guidance document 263-4500-601 "Closure Requirements for Underground Storage Tank Systems". PLEASE PRINT OR TYPE. COMPLETE ALL QUESTIONS.

SECTION I. Owner/Facility/Tank/Waste Management and Disposal Information

1. Facility ID Number 09-30778
2. Facility Name Finch Petro
3. Facility County Bucks
4. Facility Municipality Warminster
5. Facility Address 610 York Road Warminister, PA 18974
6. Facility Contact Person Ijmal M. Ali
7. Facility Telephone Number (215) 956-1670
8. Owner Name Finch Petro, LLC
9. Owner Mailing Address 610 York Road Warminister, PA 18974
10. Description of Underground Storage Tank Systems (Complete for each tank system closed)

DATE OF TANK SYSTEM CLOSURE (Month/Day/Year)		- -	- -	- -	- -
Description of Underground Storage Tank System (Complete for each tank system undergoing closure)					
DEP Tank ID Number		001	002	003	
Total Capacity (Gallons)		12,000	12,000	12,000	
Substance(s) Stored Throughout Operating Life of Tank System (Check All That Apply)	**a. Petroleum**				
	Unleaded Gasoline	☒	☒	☒	☐
	Leaded Gasoline	☐	☐	☐	☐
	Aviation Gasoline	☐	☐	☐	☐
	Pure Ethanol	☐	☐	☐	☐
	Blended Ethanol _____%	☐	☐	☐	☐
	Kerosene	☐	☐	☐	☐
	Jet Fuel	☐	☐	☐	☐
	Diesel Fuel	☐	☐	☐	☐
	Biodiesel _____%	☐	☐	☐	☐
	Fuel Oil No. 1	☐	☐	☐	☐
	Fuel Oil No. 2	☐	☐	☐	☐
	Fuel Oil No. 4	☐	☐	☐	☐
	Fuel Oil No. 5	☐	☐	☐	☐
	Fuel Oil No. 6	☐	☐	☐	☐
	New Motor Oil	☐	☐	☐	☐
	Used Motor Oil	☐	☐	☐	☐
	Nonpetroleum Oil, Specify				
	Other, Specify				
NOTE: If Hazardous Substance Block is Checked, Attach Safety Data Sheets (SDS)	**b. Hazardous Substance**	☐	☐	☐	☐
	Name of Principal CERCLA Substance				
	AND				
	Chemical Abstract Service (CAS) No.				
	c. Unknown	☐	☐	☐	☐

CLOSURE METHOD(s):	DEP Tank ID Number:	001	002	003	
Partial Storage Tank System Closure		☐	☐	☐	☐
Tank ☐ N/A	a. Removal	☒	☒	☒	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐
Piping ☐ N/A	a. Removal	☒	☒	☒	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐
Dispenser ☒ N/A	a. Removal	☐	☐	☐	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐
Other _____	a. Removal	☐	☐	☐	☐
	b. Closure-in-Place	☐	☐	☐	☐
	c. Change-in-Service	☐	☐	☐	☐

Describe Closure Activities:

Finch contracted Matt's Valley Petroleum, Inc. (Matt's Valley) to replace the Ultra tank (001) and reline the regular product tanks (002 & 003). Matt's Valley subcontracted the tank removal work to ECI, LLC (ECI) who is a licensed tank removal contractor in PA. Personnel from ECI mobilized to the Site on June 17, 2019 to replace tank 001 with a new 12,000-gallon fiberglass tank. Once the Ultra tank was uncovered, ECI recommended that all three tanks be upgraded with new fiberglass units and feed lines as the existing tanks had been in service for approximately 35-plus years. Based on ECI's recommendation, Finch decided to replace all three units during the tank upgrade. ECI re-mobilized to the project site on Monday July 15, 2019 in order to begin disconnecting electrical connections and other tank components in preparation for tank extraction. Excavation work began on Tuesday July 16th with the removal of fill from around tank 001 by utilizing a JCB 83 L track excavator. Petroleum contaminated pea gravel and soil removed from the excavation were placed/stored on plastic covered asphalt/concrete surrounding the excavation. On Wednesday July 17th Monarch Environmental, Inc. (Monarch) arrived on site to remove of any remaining product and sludge in tanks 002 & 003 before extraction. After allowing the three tanks to naturally vent overnight, ECI proceeded to dismantle the tanks using the excavator bucket and placed the contents into 20-cubic yard rolloff's on July 18th. Tanks 002 & 003 were compacted into one rolloff while tank 001 was place into a second container. RT conducted attainment soil sampling on Tuesday July 24th using a systematic random sampling plan. Due to groundwater seeping into the pit, RT collected twelve (12) sidewall soil samples (refer to Table 1 & Figure 1). Parameters tested were either below the laboratories method detection limits or below the Residential Statewide Health Standard (SHS) Medium Specific Concentration (MSC) for the constituents of concern analyzed. Contaminated soil was removed from the site on August 8, 2019 and transported to the Clean Earth facility in Morrisville. Matt's Valley installed three (3) new 12,000-gallon fiberglass UST's and associated pump lines during August.

Yes **N/A**

11. Briefly describe the storage tank facility and the nature of the operations which were conducted at the facility (both historical and present) **including use of the storage tank systems:**

The project Site has historically operated as a retail gasoline service station since the 1950's. The property operated three (3) 12,000-gallon unleaded gasoline underground storage tanks (USTs), dispenser islands and associated piping which were installed in 1983. Tank 001 was taken out of service on September 27, 2018 while tanks 002 & 003 operated until July 15, 2019.

☒ ☐ 12. A site location and sampling map of the site, drawn to scale, is attached. See page 11 of 11.

☒ ☐ 13. Original, color photographs of the closure process are attached (i.e., inside of excavation/piping runs, pit water, tanks showing condition).

☒ ☐ 14. An amended "Storage Tanks Registration/Permitting Application" Form was submitted to the DEP, Bureau of Environmental Cleanup and Brownfields, Division of Storage Tanks, P.O. Box 8762, Harrisburg, PA 17105-8762.

Date: 10 / 18 / 2018

☒ ☐ 15. If a release was confirmed, the appropriate regional office of DEP was notified by the owner or operator.

Date: 7 / 24 / 2019 Office: Norristown

Yes N/A

☒ ☐ 16. If tanks were cleaned on-site:

a. Briefly describe the disposition of usable product: Usable product was removed from tank 001 (Ultra) by Sunoco in October 2018. Usuable product from the regular gasoline storage tanks (002 & 003) was removed by Sunoco on July 19, 2019.

b. Briefly describe the disposal of unusable product, sludges, sediments, and wastewater generated during cleaning. Provide the name and permit number of the processing, treatment, storage or disposal facility. (Attach documentation of proper disposal):
Any unusable product , sludges and wastewater generated during tank cleaning was removed by Monarch Environmental Recycling, Inc. on July 17, 2019. A total of 2,902-gallons was transported to their recycling facility at 108 East Lake Road in Woodstown, NJ. EPA ID: NJD011881174

c. If tank contents were determined/deemed to be hazardous waste, provide:
(1) Generator ID Number:
(2) Licensed Hazardous Waste Transporter Name and ID Number:

☐ ☒ 17. If tanks were removed from the site for cleaning:

a. Provide the name and permit number of the processing, treatment, storage or disposal facility performing the tank cleaning:

b. If tank contents were determined/deemed to be hazardous waste, provide:
(1) Generator ID Number:
(2) Licensed Hazardous Waste Transporter Name and ID Number:

18. Briefly describe the disposition of tanks/piping (Attach documentation of proper disposal):
The tanks were crushed on-site and placed in two (2) 20-cubic yard rolloffs. The containers were transported to the A. J. Catagnus, Inc. facility at 1229 W. James Street in Norristown, PA.

☒ ☐ 19. If contaminated soil is excavated:

a. Briefly describe the disposition and amount 642.5 (tons) of contaminated soil. Provide the name and permit number of the processing, treatment, storage or disposal facility. (Attach documentation of proper disposal):
Contaminated soils from the tank closure operation were transported by B. Blair Corporation to the Clean Earth of Southeast PA. facility in Morrisville on August 8, 2019 (Permit # 301254).

b. If contaminated soil is determined/deemed to be hazardous waste, provide:

(1) Generator ID Number: _____

(2) Licensed Hazardous Waste Transporter Name and ID Number: _____

_____

Yes	N/A		
☐	☒	20.	Briefly describe the disposition of and amount _____ (tons) of uncontaminated soil and debris (attach analyses):

_____

_____

_____

☐	☒	21.	If the tanks were "Closed-in-Place" provide information below:

a. Briefly describe the tank cleaning process: _____

_____

b. Describe the inert, non-shrinking material placed into the tanks:

_____

I, Ijmal M. Ali _____, hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating
(Print Name)
to unsworn falsification to authorities) that I am the owner of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section I) is true, accurate and complete to the best of my knowledge and belief.

_____ 9 / 25 / 2019
Signature of Tank Owner Date

Finch Petroleum, LLC
Company Name
(If applicable)

Partner
Title

UNDERGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION II. Tank Handling Information

Facility ID Number 09 - 30778
DEP Tank ID Number(s) 001, 002 & 003

Yes **N/A**

1. Briefly describe the excavation and initial on-site staging of uncontaminated/contaminated soil and debris:

   Contaminated material was removed via excavator and staged on plastic adjacent to tank excavation. Material was covered each night with a plastic tarp.

2. Briefly describe the method of piping system closure and the closure of the piping systems, including the quantity and condition of the piping:

   Piping was closed by removal. Pipe was FRP in excellent condition.

3. Briefly describe the condition of the tanks and any problems encountered during tank handling or tank removal activities:

   Tank 001 apparaently had a hole in it. Tanks 002 & 003 were in good conditon. All UST's were single wall FRP. No problems encountered during removal.

4. Briefly describe the method used to purge the tanks of and monitor for hazardous or explosive vapors:

   UST's were air educted and monitored with an LEL.

☒ ☐ 5. If tanks were cleaned on-site:

   a. Briefly describe the tank cleaning process: All remaining sludge, sediment and product was removed via vacuum truck (Monarch) under the direction of ECI prior to tank removal from the tank field.

   b. If subcontracted, name and address of company that performed the tank cleaning:

☐ ☒ 6. If tanks were "Closed-in-Place", briefly describe the tank fill material:

☒ ☐ 7. If contamination was suspected or observed, the "Notification of Contamination" form was submitted.

I, David J. Spause (Print Name), hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn falsification to authorities) that I am the certified remover who performed the tank handling activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section I) is true, accurate and complete to the best of my knowledge and belief.

Signature of Certified Remover

9 / 17 / 2019
Date

4985
Remover Certification Number

1655
Company Certification Number

ECI, LLC
Company Name

240 Farmview Drive
Street

Harleysville, PA 19438
City/Town, State, Zip

215-852-8370
Phone

UNDERGROUND STORAGE TANK SYSTEM CLOSURE REPORT FORM

SECTION III. Site Assessment Information

Tank Registration # 001 (complete one sheet for EACH tank system and attach ALL laboratory sheets pertaining to that system)

Facility ID Number 09 - 30778

A. Provide depth of *BEDROCK* and *WATER* IF encountered during excavation or soil boring (write "N/A": if NOT encountered).

Bedrock N/A feet below land surface Water 13 feet below land surface

B. Provide Length of *PIPING* IF piping was closed-in-place (write "N/A" if NOT closed-in-place).

Length of piping N/A feet

C. TANK SYSTEM REMOVED FROM THE GROUND/SITE

1.) Was obvious contamination observed while excavating, sampling or removing the tank system?

☐ NO --------► Conduct confirmatory sampling --------► See end of this section for options on submission and maintenance of closure records --------► Do not complete item C.2. below.

☒ YES --------► Report release to DEP within 24 hours ------► Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills): Contamination consisted of impacted pea gravel and soil within the confins of the tank excavation. Release occurred from Ultra tank (001) which failed the tank tightness testing on September 12, 2018.

------► Complete item C.2. below.

2.) Was contamination localized (within three feet of the tank system in every direction with no obvious water contamination)?

☐ YES -----► Remove or remediate contaminated soil -----► Conduct confirmatory sampling -----► See end of this section for options on submission and maintenance of closure records -----► Call Indemnification Fund (717-787-0763).

☒ NO -----► Continue Interim Remedial Actions -----► See end of this section for options on submission and maintenance of closure records -----► Call Indemnification Fund (717-787-0763).

D. TANK SYSTEM CLOSED-IN-PLACE OR CHANGED-IN-SERVICE

Was obvious contamination observed during sampling, boring or assessing water depths?

☐ NO -----► Conduct confirmatory sampling -----► See end of this section for options on submission and maintenance of closure records.

☐ YES -----► Report release to DEP within 24 hours -----► Describe contamination observed and likely source(s) (tank, piping, dispenser, spills, overfills): _____

Continue with corrective action -----► See end of this section for options on submission and maintenance of closure records -----► Call Indemnification Fund (717-787-0763).

E. If the answer to C.1. is "no", the answer to C.2. is "yes" or the answer to D. is "no", confirmatory samples are required. Use the sample/analysis information sheet on page 10 of 11 to provide the information on confirmatory sampling and complete the diagram on Page 11 of 11.

Options for Submission and Maintenance of Closure Site Assessment Records

Records of the site assessment must be maintained for at least three years after completion of permanent closure or change-in-service in one of the following ways:

(a) By the owners and operators who took the tank system out of service;
(b) By the current owners and operators of the tank system site; or
(c) By mailing these records to the DEP regional office responsible for the county in which the tank is located if they cannot be maintained at the closed facility.

Where the results of the site assessment indicate that obvious, localized soil contamination was encountered and the analytical results of the confirmatory sampling show levels below the statewide standard/action levels, this closure report form (Sections I, II, and III) or some other acceptable site characterization report must be received by the Department within 180 days of verbally reporting the release.

Where the results of the site assessment indicate that no obvious contamination or obvious, localized contamination was encountered, but the analytical results of the confirmatory sampling show levels above the statewide standard/action levels, or where there is obvious, extensive contamination, Section 245.310(a)(8) of the Corrective Action Process (CAP) regulations requires that details of removal from service be included in the site characterization report. A copy of the completed closure report form should be submitted as part of the site characterization report to satisfy the requirements of Section 245.310(a)(8) of the CAP regulations.

I, Craig N. Herr (Print Name), hereby certify, under penalty of law as provided in 18 Pa. C.S. §4904 (relating to unsworn falsification to authorities) that I am the person who performed the site assessment activities associated with the closure of the above referenced storage tank system(s) and that the information provided by me in this closure report (Section III) is true, accurate and complete to the best of my knowledge and belief.

Craig Herr
Signature of Person Performing Site Assessment

9 / 25 / 2019
Date

Senior Consultant
Title of Person Performing Site Assessment

RT Environmental Services, Inc.
Name of Company Performing Site Assessment

610-265-1510 Ext. 215
Telephone Number of Person Performing Site Assessment

UNDERGROUND STORAGE TANK SYSTEM
CLOSURE REPORT FORM

Sample/Analysis Information
(Attachment for Section III.)

Facility ID Number 09 - 30778

Sample I.D. (See diagram)	Parameter	Analytical Method[1]		Media	Result (units)	Detection Limit (units)	Date Sample Taken	Date Sample Analyzed
(See Table 1)							/ /	/ /
							/ /	/ /
							/ /	/ /
							/ /	/ /
							/ /	/ /
							/ /	/ /
							/ /	/ /
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							/ /	/ /

[1] Where EPA Method 5035 is used, indicate sample collection option in the right-hand box of this column using the following codes:

P - Samples placed in a soil sample vial with a preservative present.
E - Samples collected and stored in a soil collection device which is airtight and affords little to no headspace.
N - Samples placed in soil sample vial without a preservative present.

Site Location and Sampling Map - Use this page or suitable facsimile to provide a large-scale map of the site where storage tank systems were closed. Scales between 1" = 10 and 1" = 100 feet frequently work well. Include the following information as each applies to the site: facility name and I.D., county, township or borough, property boundaries or area of interest, buildings, roads and streets with names or route numbers, utilities, location and ID number of storage tank systems removed including piping and dispensers, soil stockpile locations, excavations or other locations of product recovery, north arrow, approximate map scale and legend. Also, show depth and location of samples with sample ID numbers cross-referenced to the same ID numbers shown on Page 10 of 11.

Facility Name and ID: 03 - 30778

County: Bucks

Township/Borough: Warminister (See Attached Figure 1)

TABLE 1

Table 1
Summary of Laboratory Analytical Results
Attainment Soil Sampling
July 26, 2019
Finch Petroleum, LLC
610 York Road
Warminster Township, Bucks County, Pennsylvania
RT Project Number: 73057-01

Analyte[1]			Constituents[2]								
			Benzene	Ethylbenzene	Cumene	MTBE	Naphthalene	Toluene	1, 2, 4-Trimethylbenzene	1, 3, 5-Trimethylbenzene	Total Xylenes
PADEP RSG MSC[3]			0.5	70	600	2	25	100	8.4	2.3	1,000
Soil SHS VI Screening Values (mg/kg)[4]			0.13	46	600	0.28	25	44	8.4	74	990
Sample ID	Date Sampled	Sample Depth (Feet)									
CS-1	7/26/2019	10.0	<0.012	<0.018	<0.019	<0.0077	<0.052	<0.015	<0.014	<0.015	<0.017
CS-2	7/26/2019	8.0	<0.0086	0.013	<0.014	<0.0055	0.068	0.072	0.067	0.031	0.17
CS-3	7/26/2019	10.0	<0.011	<0.016	<0.017	<0.0070	<0.048	<0.014	<0.012	<0.014	0.017
CS-4	7/26/2019	6.0	<0.012	<0.017	<0.018	<0.0075	<0.050	<0.014	<0.013	<0.014	<0.016
CS-5	7/26/2019	6.0	<0.088	<0.013	<0.014	<0.0057	<0.038	<0.011	<0.010	<0.011	<0.012
CS-6	7/26/2019	7.0	<0.0099	<0.015	<0.016	<0.0064	<0.043	<0.012	<0.011	<0.012	<0.014
CS-7	7/26/2019	12.0	<0.018	<0.027	<0.028	<0.012	<0.078	0.048	0.85	0.49	1.0
CS-8	7/26/2019	11.0	<0.012	<0.017	<0.019	<0.0076	<0.051	0.026	<0.013	<0.015	0.023
CS-9	7/26/2019	5.0	<0.0098	<0.015	<0.016	<0.0063	<0.043	<0.012	<0.011	<0.012	<0.014
CS-10	7/26/2019	12.0	<0.0097	<0.014	<0.015	<0.0062	<0.042	<0.012	<0.011	<0.012	<0.013
CS-11	7/26/2019	9.0	<0.011	<0.016	<0.017	<0.0070	<0.047	<0.013	<0.012	<0.013	<0.015
CS-12	7/26/2019	8.0	<0.010	<0.016	<0.017	<0.0067	<0.046	<0.013	<0.012	<0.013	<0.014
PADEP RSG MSC[3]			0.5	70	600	2	25	100	8.4	2.3	1,000

Notes:

(1) - Soil samples were analyzed for the PADEP short list of required unleaded gasoline parameters.

(2) - All laboratory results reported in milligrams per kilogram (mg/kg).

(3) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act, Residential Medium-Specific Concentrations (August 27, 2016).

MSC - Medium-Specific Concentration

PADEP - Pennsylvania Department of Environmental Protection

RSG - Residential Soil-to-Groundwater

<0.00016 - Compound not detected above the listed laboratory detection limit

Bold - Compound was reported above its Act 2 residential MSC.

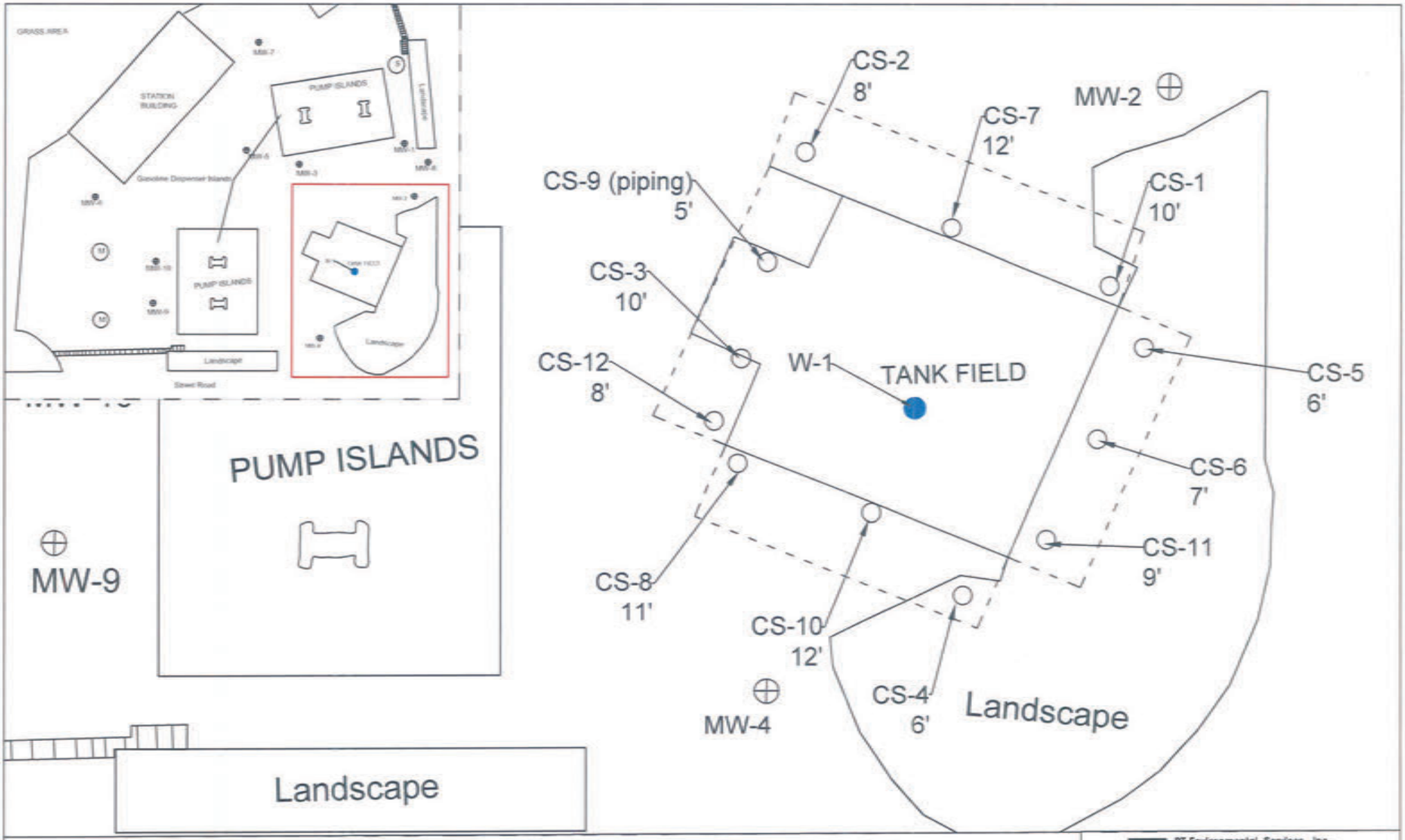
TABLE 2

Table 2
Summary of Laboratory Analytical Results
Excavation Groundwater Sample
July 19, 2019
Finch Petroleum, LLC
610 York Road
Warminster Township, Bucks County, Pennsylvania
RT Project Number: 73057-01

Sample ID:	Direct Contact Residential	Direct Contact Non-Residential	W-1
Lab ID:			460-187013-1
Sample Date:			7/19/2019
1,2,4-Trimethylbenzene	15	62	**2,000**
1,3,5-Trimethylbenzene	420	1200	**510**
Benzene	5	5	**5,300**
Ethylbenzene	700	700	**1,900**
Isopropylbenzene	840	3500	93
MTBE	20	20	**61**
Naphthalene	100	100	**500**
Toluene	1000	1000	**27,000**
Xylenes, Total	10000	10000	**16,000**

Notes:
Direct Contact R = MSC (Residential Used Aquifer TDS =< 2500)
Direct Contact NR = MSC (NonResidential Used Aquifer TDS =< 2500)
Bold and Highlighted = Detection over the lowest standard
Bold = Detection
Site specific standard 12 ug/L benzene

FIGURE 1



RT Environmental Services, Inc.
215 West Church Road
King of Prussia, PA 19406

FIGURE 1
ATTAINMENT SOIL SAMPLE LOCATION MAP

610 YORK ROAD
WARMINSTER, PA

Prepared For:
FINCH PETROLEUM
610 YORK ROAD
WARMINSTER, PA 18974

CHANGE 73057-01	AUTOCAD FILE	ENGINEER	DESIGNER	CHARTERSION AS	
SCALE 1" = 50'	DRAWING NUMBER y:\rt projects\73000 series\73057-01\figures.dwg				REVISION 1
DATE 7/30/2019					

PHOTOGRAPHIC DOCUMENTATION

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

	Photo 1
Date: 7/16/2019 **Description:** Removal of pea gravel and soil from side of Ultra super tank (001).	

	Photo 2
Date: 7/16/19 **Description:** Continuation of removal of pea gravel and soil on the side of the tank 001 in preparation for removing tank from the excavation.	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

Date: 7/16/19 **Description:** Suspected contaminated soil emitting strong petroleum odor and high PID readings.	**Photo 3**
Date: 7/16/19 **Description:** Documentation of product at the bottom of the excavation next to Ultra tank 001.	**Photo 4**

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

Date: 7/16/19 **Description:** Removal of Ultra tank 001 from the excavation pit.	**Photo 5**
Date: 7/17/19 **Description:** Second (002) of the three tanks removed from excavation.	**Photo 6**

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

	Photo 7
Date: 7/16/19 **Description:** Product and visible staining of pea gravel observed underneath the Ultra tank 001 upon removal.	
	Photo 8
Date: 7/17/19 **Description:** Tank field excavation after removal of second tank (002).	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

Date: 7/17/19 **Description:** Petroleum contaminated soil pile on asphalt/concrete surface.	**Photo 9**
Date: 7/17/19 **Description:** Removal of third (003) tank from excavation.	**Photo 10**

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

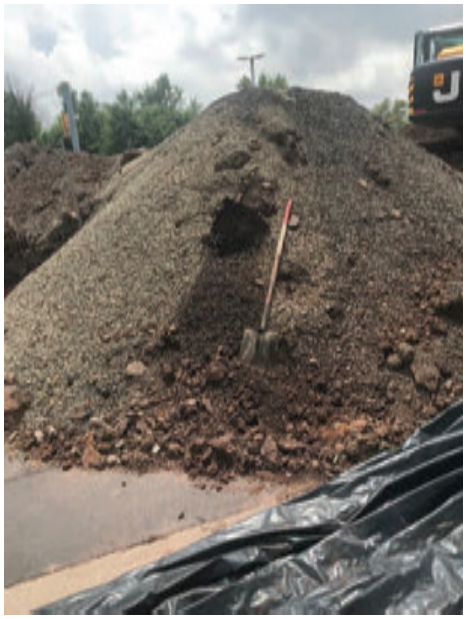
	Photo 11
Date: 7/17/19 **Description:** Water and product observed on pea gravel bedding upon removal of tank 003.	
	Photo 12
Date: 7/17/19 **Description:** Monarch Environmental used a vacuum truck to remove ~2900 gallons of product/water mixture from the excavation.	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

	Photo 13
Date: 7/17/19 **Description:** Petroleum contaminated pea gravel/soil pile placed on and covered with plastic traps.	

	Photo 14
Date: 7/18/19 **Description:** Remaining pea gravel and soil in excavation.	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

Date: 7/18/19 **Description:** Disposal of fiberglass tanks.	**Photo 15**
Date: 7/18/19 **Description:** View of petroleum contaminated soil pile grab sampling location. A sample was collected in order to profile the material for disposal purposes.	**Photo 16** 

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

	Photo 17
Date: 7/18/19 **Description:** View of petroleum contaminated pea gravel/soil pile.	
	Photo 18
Date: 7/18/19 **Description:** Petroleum contaminated soil covered in plastic.	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

	Photo 19
Date: 7/19/19 **Description:** Pea gravel removed to a depth of approximately 12-feet. Groundwater encountered at a depth of 12.5-feet.	
	Photo 20
Date: 7/19/19 **Description:** Continuation of the removal of pea gravel and soil from the excavation.	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

	Photo 21
Date: 7/19/19 **Description:** Suspected contaminated soil pile covered with plastic.	

	Photo 22
Date: 7/23/19 **Description:** Pit water with sheen.	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

Photo 23

Date: 7/23/19

Description:

Alternate view of contaminated soil pile covered with plastic.

Photo 24

Date: 7/24/19

Description:

Continuation of the removal of pea gravel and soil.

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

	Photo 25
Date: 7/26/19 **Description:** View of contaminated soil stockpile.	
	Photo 26
Date: 7/26/19 **Description:** View of tank pit area upon completion of attainment soil sample collection.	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

	Photo 27
Date: 8/27/19 **Description:** View looking northwest from tank field. Photograph shows pump islands and convenience store.	

	Photo 28
Date: 8/27/19 **Description:** View of tank field excavation after installation of new tanks.	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

	Photo 29
Date: 8/27/19 **Description:** View looking northeast at the replacement line trench running from the tank field to pumps 1 & 2.	

	Photo 30
Date: 8/27/19 **Description:** View looking east at fuel line trench leading to pumps 1 & 2.	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

Photo 31

Date: 8/29/19

Description:

View looking east at tank field which has been filled with gravel prior to pouring of concrete cap.

WASTE DISPOSAL DOCUMENTS

Clean Earth of Southeast Pennsylvania

Clean Earth of Southeast Pennsylvania

Profile GTN

Transactions from 08/08/2019 through 08/08/2019
Inbound and Outbound Tickets
Third Party and Intercompany Customers
Sent and Unsent Tickets
Full Details

Ticket	Date	Truck	In / Out	Manifest	Customer	Gross	Tare	Net
193150172 - Finch Petroleum-Warminster Sunoco					Global Job Number: 154550			
700001187313	08/08/19	15BLA211	I	2169748	RTE172-RT ENVIRONMENTAL	36.38	13.58	22.80
700001187326	08/08/19	15BLA206	I	2074968	RTE172-RT ENVIRONMENTAL	30.82	13.47	17.35
700001187337	08/08/19	15BLA216	I	2074989	RTE172-RT ENVIRONMENTAL	37.61	13.54	24.07
700001187360	08/08/19	15BLA215	I	2074969	RTE172-RT ENVIRONMENTAL	35.35	13.35	22.00
700001187378	08/08/19	15BLA208	I	2074974	RTE172-RT ENVIRONMENTAL	33.25	13.29	19.96
700001187385	08/08/19	15TMT56	I	2074988	RTE172-RT ENVIRONMENTAL	33.08	12.67	20.41
700001187569	08/08/19	15BLA217	I	2169717	RTE172-RT ENVIRONMENTAL	36.77	13.32	23.45
700001187581	08/08/19	15BLA211	I	2169720	RTE172-RT ENVIRONMENTAL	35.38	13.58	21.80
700001187591	08/08/19	15BLA206	I	2074966	RTE172-RT ENVIRONMENTAL	33.63	13.47	20.16
700001187600	08/08/19	15BLA216	I	2074991	RTE172-RT ENVIRONMENTAL	35.27	13.54	21.73
700001187610	08/08/19	15BLA215	I	2169723	RTE172-RT ENVIRONMENTAL	32.79	13.35	19.44
700001187644	08/08/19	15BLA208	I	2074978	RTE172-RT ENVIRONMENTAL	34.87	13.30	21.57
700001187675	08/08/19	15TMT56	I	2169715	RTE172-RT ENVIRONMENTAL	34.14	12.67	21.47
700001187829	08/08/19	15BLA211	I	2169721	RTE172-RT ENVIRONMENTAL	31.98	13.58	18.40
700001187834	08/08/19	15BLA217	I	2169716	RTE172-RT ENVIRONMENTAL	34.76	13.32	21.44
700001187847	08/08/19	15BLA216	I	2074990	RTE172-RT ENVIRONMENTAL	31.82	13.54	18.28
700001187868	08/08/19	15BLA206	I	2074964	RTE172-RT ENVIRONMENTAL	32.46	13.47	18.99
700001187891	08/08/19	15BLA215	I	2169747	RTE172-RT ENVIRONMENTAL	34.81	13.35	21.46
700001187899	08/08/19	15BLA208	I	2074975	RTE172-RT ENVIRONMENTAL	31.07	13.30	17.77
700001187925	08/08/19	15TMT56	I	2169714	RTE172-RT ENVIRONMENTAL	32.21	12.67	19.54
700001188041	08/08/19	15BLA211	I	2169722	RTE172-RT ENVIRONMENTAL	32.16	13.58	18.58
700001188058	08/08/19	15BLA216	I	2074992	RTE172-RT ENVIRONMENTAL	32.96	13.54	19.42
700001188067	08/08/19	15BLA206	I	2074967	RTE172-RT ENVIRONMENTAL	33.66	13.47	20.19
700001188077	08/08/19	15BLA215	I	2169745	RTE172-RT ENVIRONMENTAL	32.55	13.35	19.20

Clean Earth of Southeast Pennsylvania

Profile GTN

Transactions from 08/08/2019 through 08/08/2019
Inbound and Outbound Tickets
Third Party and Intercompany Customers
Sent and Unsent Tickets
Full Details

Ticket	Date	Truck	In / Out	Manifest	Customer	Gross	Tare	Net
193150172 - Finch Petroleum-Warminster Sunoco					Global Job Number: 154550			
700001188124	08/08/19	15BLA208	I	2074977	RTE172-RT ENVIRONMENTAL	33.23	13.30	19.93
700001188132	08/08/19	15TMT56	I	2169746	RTE172-RT ENVIRONMENTAL	31.50	12.67	18.83
700001188201	08/08/19	15BLA211	I	2169744	RTE172-RT ENVIRONMENTAL	31.97	13.58	18.39
700001188209	08/08/19	15BLA216	I	2074993	RTE172-RT ENVIRONMENTAL	34.64	13.54	21.10
700001188218	08/08/19	15BLA206	I	2074965	RTE172-RT ENVIRONMENTAL	32.68	13.47	19.21
700001188222	08/08/19	15BLA215	I	2169743	RTE172-RT ENVIRONMENTAL	37.10	13.35	23.75
700001188230	08/08/19	15BLA208	I	2074976	RTE172-RT ENVIRONMENTAL	36.39	13.30	23.09
700001188234	08/08/19	15TMT56	I	2169742	RTE172-RT ENVIRONMENTAL	21.39	12.67	8.72
193150172 - Finch Petroleum-Warminster Sunoco								642.50
32 tickets								

Report Grand Totals

642.50

32 tickets

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001188234

	Date	Time	Scale
In:	8/8/2019	17:22:57	Scale CE
Out:	8/8/2019	17:30:16	P.T.

	Lbs	Tns
Gross:	42780	21.39
Tare:	25340	12.67
Net:	17440	8.72

Manifest: 2169742
Vehicle ID: 15TMT56
Vehicle Permit: WH19935
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	8.72	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: _____

Facility: _____
Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

RT ENVIRONMENTAL SERVICES, INC.

MEMORANDUM

DATE: August 7, 2019

TO: Ali

FROM: Craig Herr

RE: DUE DILIGENCE INFORMATION / AGENT AUTHORIZATION
WARMINSTER SUNOCO SITE
SOIL DISPOSAL
RT PROJECT # 73057-01

Y:\RT Projects\73000 SERIES\73057-01\due diligence memo.docx

Enclosed is the due diligence information for the facility receiving the wastes generated at the above referenced facility during the monitoring well installation activities.

The material is proposed to be treated at Clean Earth, Inc. in Morrisville, Pennsylvania (Attachment A). The facility has the necessary permits and the appropriate insurance.

Please sign below indicating your authorization of the facility.

[signature] 8-7-2019

Authorized Signature - Facility Approval Date

When the material is removed, your signature will be required, as generator of the waste, for the paperwork which is required to accompany the material to the disposal facility. If desired, RT can act as an agent for the generator. Please sign below indicating your authorization for us to sign manifests and bills of lading.

[signature] 8-7-2019

Authorized Signature Date

RT appreciates this opportunity to be of further service on this project. Please call me at (610) 265-1510 ext. 215, if you have any questions.

CLEANEARTH

Manifest # 2169742

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 103150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☑ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☑ Tons ☐ Yards	
Finch Petroleum		
610 York Road	TARE WEIGHT: ☑ Tons ☐ Yards	
Warminster, PA 18974		
GENERATOR'S PHONE: 484-678-5693	NET WEIGHT: ☑ Tons ☐ Yards	8.72

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non-Hazardous Soil

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Authorized Agent - Finch Petro

Signature: _____ Date and Time: _____

TRANSPORTER

Company: B. Blair Corp Phone Number: 215 672 8747

Address: 95 Louise Drive Truck # and License Plate: Tm56 AG 72037

Driver: Warminster PA SW Haulers Permit #: WH 19935

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: _____ Date and Time: 8-8-19 3:45 pm

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: _____ Date and Time: 8-8-19 3:45 pm

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: _____ Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001188230

	Date	Time	Scale
In:	8/8/2019	17:04:21	Scale CE
Out:	8/8/2019	17:04:51	P.T.

	Lbs	Tns
Gross:	72780	36.39
Tare:	26600	13.30
Net:	46180	23.09

Manifest: 2074976
Vehicle ID: 15BLA208
Vehicle Permit: WH5153
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Generator: Finch Petroleum
Job Name: Finch Petroleum-Warminster Su
Gen Address: 610 York Road
Warminster, PA 18974
Job Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	23.09	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: 15BLA208

Facility: Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2074976

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 931/50172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☐Tons ☐Yards	
FINCH PENN WARMINSTER SUNOCO 1010 YORK ROAD WARMINSTER, PA 18974	TARE WEIGHT: ☐Tons ☐Yards	
GENERATOR'S PHONE:	NET WEIGHT: ☐Tons ☐Yards	23.09

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

CONTAMINATED SOIL

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Auth. Agent - Final Rems

Signature: [signature] Date and Time: 8-8-19

TRANSPORTER

Company: B BLAIR CORP Phone Number: 215 672 8787

Address: 5 LOUISE DR LANGHORNE PA Truck # and License Plate: BL208 AF76151-PA

Driver: DARREN K. SW Haulers Permit #: WH5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 8/8/19 3:45 P

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 8/8/19 5:04

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001188222

	Date	Time	Scale
In:	8/8/2019	16:38:49	Scale CE
Out:	8/8/2019	16:39:25	P.T.

	Lbs	Tns
Gross:	74200	37.10
Tare:	26700	13.35
Net:	47500	23.75

Manifest: 2169743
Vehicle ID: 15BLA215
Vehicle Permit: ag70554
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172

Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	23.75	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: _____

Facility: _____
Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2169743

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☒Tons ☐Yards	
Finch Petroleum		
610 York Road	TARE WEIGHT: ☒Tons ☐Yards	
Warminster, PA 18974		
GENERATOR'S PHONE: 484-678-5693	NET WEIGHT: ☒Tons ☐Yards	23.75

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non-Hazardous Soil

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Authorized Agent - Finch Rep

Signature: _____ Date and Time: _____

TRANSPORTER

Company: B-Blan Phone Number: 215

Address: 55 Lange Dr Ivyland Truck # and License Plate: AG 705564 215

Driver: E. Ward SW Haulers Permit #: 4114235

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Eland Ward Date and Time: 8-8-19

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: _____ Date and Time: _____

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: _____ Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001188218

	Date	Time	Scale
In:	8/8/2019	16:21:15	Scale CE
Out:	8/8/2019	16:21:40	P.T.

	Lbs	Tns
Gross:	65360	32.68
Tare:	26940	13.47
Net:	38420	19.21

Manifest: 2074965
Vehicle ID: 15BLA206
Vehicle Permit: WH5135
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Generator: Finch Petroleum
Job Name: Finch Petroleum-Warminster Su
Gen Address: 610 York Road
Warminster, PA 18974
Job Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	19.21	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: _____ Facility: _____
Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2074965

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Clean Earth of Greater Washington, 6250 Dower House Road, Upper Marlboro, MD 20772, Ph: 301-599-0939
- ☐ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of North Jersey, 115 Jacobus Avenue, Kearny, NJ 07032, Ph: 973-344-4004
- ☑ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700
- ☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☐Tons ☐Yards	
FINCH PETROLEUM 610 YORK Rd SUNOCO WARMINSTER PA 18974	TARE WEIGHT: ☐Tons ☐Yards	
GENERATOR'S PHONE:	NET WEIGHT: ☐Tons ☐Yards	19.21

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Auth Agent-Finch Petro

Signature: [signature] Date and Time: 8-8-19

TRANSPORTER

Company: B BLACK CORP Phone Number: 215-672-8787

Address: 95 LOUISE DR DIVLANE Truck # and License Plate: 206 AB57744 PA

Driver: KEVIN HENRY SW Haulers Permit #: WH5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 8-8-19

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: _____ Date and Time: _____

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001188209

	Date	Time	Scale
In:	8/8/2019	16:03:32	Scale CE
Out:	8/8/2019	16:04:28	P.T.

	Lbs	Tns
Gross:	69280	34.64
Tare:	27080	13.54
Net:	42200	21.10

Manifest: 2074993
Vehicle ID: 15BLA216
Vehicle Permit: WH5153
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974
Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	21.10	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: JAMES M BIGGINS

Facility: Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2074993

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☑ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS: WARMINSTER FINCH PETROLEUM SUNOCO 610 YORK RD WARMINSTER, PA 18974	GROSS WEIGHT: ☐Tons ☐Yards	
	TARE WEIGHT: ☐Tons ☐Yards	
GENERATOR'S PHONE:	NET WEIGHT: ☐Tons ☐Yards	21.10

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Auth Agent - Finch Petro

Signature: [signature] Date and Time: 8-8-19

TRANSPORTER

Company: B. BLAIR CORP Phone Number: 215 672-8787

Address: 45 LOUISE DR ENGLAND Truck # and License Plate: AG 70556

Driver: JAMES M BIGGINS #216 SW Haulers Permit #: WH 5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: J-M Biggins Date and Time: 8-8-19 1244

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: J-M Biggins Date and Time: _____

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 8-8-19

GENERATOR

ITEM# CE WMS00 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001188201

	Date	Time	Scale
In:	8/8/2019	15:55:29	Scale CE
Out:	8/8/2019	15:56:40	P.T.

	Lbs	Tns
Gross:	63940	31.97
Tare:	27160	13.58
Net:	36780	18.39

Manifest: 2169744
Vehicle ID: 15BLA211
Vehicle Permit: WH5153
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	18.39	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: Ellc #211

Facility: Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2169744

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☒ Tons ☐ Yards	
Finch Petroleum		
610 York Road	TARE WEIGHT: ☒ Tons ☐ Yards	
Warminster, PA 18974		
GENERATOR'S PHONE: 484-678-5693	NET WEIGHT: ☒ Tons ☐ Yards	18.39

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non-Hazardous Soil

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Authorized Agent - Finch Petro

Signature: _____ Date and Time: _____

TRANSPORTER

Company: B. Blain Phone Number: 215 672 8797

Address: 95 Louise Dr Ivyland Truck # and License Plate: 211 A6-4421 PA

Driver: Eric SW Haulers Permit #: WH 5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Eric Date and Time: 8/8/19

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Eric Date and Time: 8/8/19

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: _____ Date and Time: 8-8-19

GENERATOR

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001188132

	Date	Time	Scale
In:	8/8/2019	14:46:54	Scale CE
Out:	8/8/2019	14:47:51	P.T.

	Lbs	Tns
Gross:	63000	31.50
Tare:	25340	12.67
Net:	37660	18.83

Manifest: 2169746
Vehicle ID: 15TMT56
Vehicle Permit: WH19935
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Generator: Finch Petroleum
Job Name: Finch Petroleum-Warminster Su
Gen Address: 610 York Road
Warminster, PA 18974
Job Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	18.83	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: _____

Facility: _____
Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2169746

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☒ Tons ☐ Yards	
Finch Petroleum		
610 York Road	TARE WEIGHT: ☒ Tons ☐ Yards	
Warminster, PA 18974		
GENERATOR'S PHONE: 484-678-5693	NET WEIGHT: ☒ Tons ☐ Yards	18.83

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non-Hazardous Soil

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Authorized Agent - Finch Petro

Signature: [signature] Date and Time: _____

TRANSPORTER

Company: B. Blair Corp Phone Number: 215 677 8787

Address: 95 Louise Dr. Truck # and License Plate: Tm56 Ag72032

Driver: Warminster PA SW Haulers Permit #: WH 19935

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 8-8-19 1:20

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 8-8-19 1:30

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001188124

	Date	Time	Scale
In:	8/8/2019	14:44:52	Scale CE
Out:	8/8/2019	14:45:24	P.T.

	Lbs	Tns
Gross:	66460	33.23
Tare:	26600	13.30
Net:	39860	19.93

Manifest: 2074977
Vehicle ID: 15BLA208
Vehicle Permit: WH5153
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	19.93	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: 15BLA208

Facility: Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2074977

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☐Tons ☐Yards	
FINCH PETROLEUM WARMINSTER SUNOCO		
610 YORK RD	TARE WEIGHT: ☐Tons ☐Yards	
WARMINSTER, PA 18974		
GENERATOR'S PHONE: _____	NET WEIGHT: ☐Tons ☐Yards	19.93

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

CONTAMINATED SOIL

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: VICTORIA LONG Title: AUTH AGENT - FINCH REPS

Signature: [signature] Date and Time: 8-8-19

TRANSPORTER

Company: B BLAIR CORP Phone Number: 215 672 8787

Address: 15 LOUISE DR LEVITTOWN, PA Truck # and License Plate: B208 AF 76151-PA

Driver: DARREN L. SW Haulers Permit #: WH5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] B208 Date and Time: 8/8/19 2:00

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] B208 Date and Time: 8/8/19 2:43

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-891-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001188077

	Date	Time	Scale
In:	8/8/2019	14:22:06	Scale CE
Out:	8/8/2019	14:23:05	P.T.

	Lbs	Tns
Gross:	65100	32.55
Tare:	26700	13.35
Net:	38400	19.20

Manifest: 2169745
Vehicle ID: 15BLA215
Vehicle Permit: ag70554
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	19.20	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: _____

Facility: _____
Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2169745

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT:	
Finch Petroleum	☒ Tons ☐ Yards	
610 York Road	TARE WEIGHT:	
Warminster, PA 18974	☒ Tons ☐ Yards	
GENERATOR'S PHONE: 484-678-5693	NET WEIGHT:	
	☒ Tons ☐ Yards	19.20

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non-Hazardous Soil

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Authorized Agent - Finch Petro

Signature: _____ Date and Time: 8-8-19

TRANSPORTER

Company: B-Blair Phone Number: 215

Address: 95 Louise Dr Tyrone Truck # and License Plate: 215 GBS 70554

Driver: Ed Logue SW Haulers Permit #: WM-5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: _____ Date and Time: 8-8-19

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: _____ Date and Time: _____

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: _____ Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001188067

	Date	Time	Scale
In:	8/8/2019	14:14:55	Scale CE
Out:	8/8/2019	14:15:44	P.T.

	Lbs	Tns
Gross:	67320	33.66
Tare:	26940	13.47
Net:	40380	20.19

Manifest: 2074967
Vehicle ID: 15BLA206
Vehicle Permit: WH5135
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Generator: Finch Petroleum
Job Name: Finch Petroleum-Warminster Su
Gen Address: 610 York Road
Warminster, PA 18974
Job Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	20.19	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: _____

Facility: _____
Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2074967

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

- ☐ Clean Earth of Carteret — 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland — 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle — 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Clean Earth of Greater Washington — 6250 Dower House Road, Upper Marlboro, MD 20772, Ph: 301-599-0939
- ☐ Clean Earth of Philadelphia — 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of North Jersey — 115 Jacobus Avenue, Kearny, NJ 07032, Ph: 973-344-4004
- ☒ Clean Earth of Southeast Pennsylvania — 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700
- ☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☐Tons ☐Yards	
FINCH PETROLEUM / WARMINSTER 1010 YORK RD SUNOCO WARMINSTER PA 18974	TARE WEIGHT: ☐Tons ☐Yards	
GENERATOR'S PHONE:	NET WEIGHT: ☐Tons ☐Yards	20.19

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Auth Agent - Finch Petro

Signature: _____ Date and Time: 8-8-19

TRANSPORTER

Company: B. Blair Corp Phone Number: 215-672-8787

Address: 95 Louise Dr Ivyland Truck # and License Plate: 206 AG57744 PA

Driver: Kevin Henry SW Haulers Permit #: WH 5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: _____ Date and Time: 8-8-19

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: _____ Date and Time: 8-8-19

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: _____ Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001188058

	Date	Time	Scale
In:	8/8/2019	14:08:29	Scale CE
Out:	8/8/2019	14:09:16	P.T.

	Lbs	Tns
Gross:	65920	32.96
Tare:	27080	13.54
Net:	38840	19.42

Manifest: 2074992
Vehicle ID: 15BLA216
Vehicle Permit: WH5153
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	19.42	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: JAMES M BIGGINS

Facility: Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2074992

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☑ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS: WARMINSTER FINCH PETROLEUM SUNOCO 1610 YORK RD WARMINSTER, PA 18974	GROSS WEIGHT: ☐Tons ☐Yards	
	TARE WEIGHT: ☐Tons ☐Yards	
GENERATOR'S PHONE: _____	NET WEIGHT: ☐Tons ☐Yards	19.42

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Adm. Asst - Finch Petro

Signature: _____ Date and Time: 8-8-19

TRANSPORTER

Company: B. Blair Corp Phone Number: 215 672-8787

Address: 95 Louise Dr Fwtown Truck # and License Plate: HG 70556

Driver: James M Biggins 216 SW Haulers Permit #: WH 5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: _____ Date and Time: 8.8.19 2:10 PM

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: _____ Date and Time: _____

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: _____ Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001188041

	Date	Time	Scale
In:	8/8/2019	13:54:41	Scale CE
Out:	8/8/2019	13:55:49	P.T.

	Lbs	Tns
Gross:	64320	32.16
Tare:	27160	13.58
Net:	37160	18.58

Manifest: 2169722
Vehicle ID: 15BLA211
Vehicle Permit: WH5153
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	18.58	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: EDC #211

Facility: Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2169722

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 103150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☒Tons ☐Yards	
Finch Petroleum		
610 York Road	TARE WEIGHT: ☒Tons ☐Yards	
Warminster, PA 18974		
GENERATOR'S PHONE: 484-678-5693	NET WEIGHT: ☒Tons ☐Yards	18.58

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non-Hazardous Soil

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Authorize Victoria Long Title: Authorized Agent - Finch Petr

Signature: _____ Date and Time: _____

TRANSPORTER

Company: B Blain Phone Number: 215 672 8787

Address: 95 Lewis Dr Ivyland Pa Truck # and License Plate: 211 AG 44215 P

Driver: EdC SW Haulers Permit #: WH 5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: _____ Date and Time: 8/8/19

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: _____ Date and Time: 8/8/19

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: _____ Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187925

	Date	Time	Scale
In:	8/8/2019	12:37:58	Scale CE
Out:	8/8/2019	12:38:34	P.T.

	Lbs	Tns
Gross:	64420	32.21
Tare:	25340	12.67
Net:	39080	19.54

Manifest: 2169714
Vehicle ID: 15TMT56
Vehicle Permit: WH19935
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Generator: Finch Petroleum
Job Name: Finch Petroleum-Warminster Su
Gen Address: 610 York Road
Warminster, PA 18974
Job Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	19.54	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: _____ Facility: _____
Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2169714

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT:	
Finch Petroleum	☒ Tons ☐ Yards	
610 York Road	TARE WEIGHT:	
Warminster, PA 18974	☒ Tons ☐ Yards	
GENERATOR'S PHONE: 484-678-5693	NET WEIGHT:	
	☒ Tons ☐ Yards	19.54

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non-Hazardous Soil

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Authorized Agent - Environmental

Signature: _____ Date and Time: _____

TRANSPORTER

Company: B Blair Corp Phone Number: 715 672 8787

Address: 95 Louise Drive Truck # and License Plate: Tm 56 AG72032

Driver: Warminster PA SW Haulers Permit #: WH 19935

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: _____ Date and Time: 8-8-19 11:30 am

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: _____ Date and Time: _____

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: _____ Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187899

	Date	Time	Scale
In:	8/8/2019	12:31:20	Scale CE
Out:	8/8/2019	12:32:02	P.T.

	Lbs	Tns
Gross:	62140	31.07
Tare:	26600	13.30
Net:	35540	17.77

Manifest: 2074975
Vehicle ID: 15BLA208
Vehicle Permit: WH5153
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974
Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	17.77	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: DBK-RB208

Facility: Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2074975

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS: SUNOCO FINCH PETROLEUM WARMINSTER 1010 YORK ROAD WARMINSTER, PA 18974	GROSS WEIGHT: ☐Tons ☐Yards	
	TARE WEIGHT: ☐Tons ☐Yards	
GENERATOR'S PHONE: _____	NET WEIGHT: ☐Tons ☐Yards	17.77

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

CONTAMINATED SOIL

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Auth. Agent - Finch Reno

Signature: _____ Date and Time: 8-8-19

TRANSPORTER

Company: B B A R. CORP Phone Number: 215 677 8787

Address: 95 LOUISE DR INVILAND, PA Truck # and License Plate: BL208 AF 716151-PA

Driver: DARREN K. SW Haulers Permit #: WH5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: DBLBL208 Date and Time: 8/9/19 11:43A

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: DBLBL208 Date and Time: 8/8/19 12:32

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: _____ Date and Time: 8-8-19

GENERATOR

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187891

	Date	Time	Scale
In:	8/8/2019	12:29:11	Scale CE
Out:	8/8/2019	12:29:38	P.T.

	Lbs	Tns
Gross:	69620	34.81
Tare:	26700	13.35
Net:	42920	21.46

Manifest: 2169747
Vehicle ID: 15BLA215
Vehicle Permit: ag70554
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Generator: Finch Petroleum
Job Name: Finch Petroleum-Warminster Su
Gen Address: 610 York Road
Warminster, PA 18974
Job Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	21.46	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: _____ Facility: _____
Martinez Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2169747

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☒ Tons ☐ Yards	
Finch Petroleum		
610 York Road	TARE WEIGHT: ☒ Tons ☐ Yards	
Warminster, PA 18974		
GENERATOR'S PHONE: 484-678-5693	NET WEIGHT: ☒ Tons ☐ Yards	21.46

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non-Hazardous Soil

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Authorized Agent - Finch Petro

Signature: [signature] Date and Time: 8-8-19 11:25

TRANSPORTER

Company: B-BLAIR Phone Number: 215-672-9867

Address: 95 LOUISE Truck # and License Plate: B-215 · AG 70554

Driver: R.D WOOD (Type or Print Clearly) SW Haulers Permit #: WH 5135 (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 8-8-19

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 8-8-19

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 8/8/19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187868

	Date	Time	Scale
In:	8/8/2019	12:18:48	Scale CE
Out:	8/8/2019	12:19:03	P.T.

	Lbs	Tns
Gross:	64920	32.46
Tare:	26940	13.47
Net:	37980	18.99

Manifest: 2074964
Vehicle ID: 15BLA206
Vehicle Permit: WH5135
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	18.99	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: _____

Facility: _____
Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2074964

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193|50172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☐Tons ☐Yards	
FINCH PETROLEUM SUNOCO		
610 York Rd	TARE WEIGHT: ☐Tons ☐Yards	
Warminster PA. 18974		
GENERATOR'S PHONE: _____	NET WEIGHT: ☐Tons ☐Yards	18.99 T

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Virginia Long Title: Asst Agent - Finch Petro

Signature: [signature] Date and Time: 8-8-19

TRANSPORTER

Company: B Blair Corp Phone Number: 215-672-8787

Address: 95 Louise Dr Ivyland Truck # and License Plate: 206 AG57744 Pa

Driver: Kevin Heney SW Haulers Permit #: WH 5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 8-8-19 - 11:30 AM

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 8-8-19 12:15

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 8/8/19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187847

	Date	Time	Scale
In:	8/8/2019	12:11:25	Scale CE
Out:	8/8/2019	12:11:44	P.T.

	Lbs	Tns
Gross:	63640	31.82
Tare:	27080	13.54
Net:	36560	18.28

Manifest: 2074990
Vehicle ID: 15BLA216
Vehicle Permit: WH5153
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974
Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	18.28	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: JAMES M BIGGINS

Facility: Martins, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2074990

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Clean Earth of Greater Washington, 6250 Dower House Road, Upper Marlboro, MD 20772, Ph: 301-599-0939
- ☐ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of North Jersey, 115 Jacobus Avenue, Kearny, NJ 07032, Ph: 973-344-4004
- ☑ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700
- ☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS: WARMINSTER FINCH PETROLEUM SUNOCO 6610 YORK RD WARMINSTER PA 18974	GROSS WEIGHT: ☐Tons ☐Yards	
	TARE WEIGHT: ☐Tons ☐Yards	
GENERATOR'S PHONE:	NET WEIGHT: ☐Tons ☐Yards	18.28 TN

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Auth Agent-Financial

Signature: [signature] Date and Time: 8-8-19

TRANSPORTER

Company: B. BLAIR CORP Phone Number: 215 672-8787

Address: 45 LOUISE DR ENGLAND Truck # and License Plate: AG 70556

Driver: JAMES M BIGGINS #216 SW Haulers Permit #: WH 5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 8-8-19

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 8/8/19 12:15 pm

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 8/8/19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187834

	Date	Time	Scale
In:	8/8/2019	12:02:58	Scale CE
Out:	8/8/2019	12:04:27	P.T.

	Lbs	Tns
Gross:	69520	34.76
Tare:	26640	13.32
Net:	42880	21.44

Manifest: 2169716
Vehicle ID: 15BLA217
Vehicle Permit: WH5153
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Generator: Finch Petroleum
Job Name: Finch Petroleum-Warminster Su
Gen Address: 610 York Road
Warminster, PA 18974
Job Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	21.44	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: B. Petka

Facility: Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2169716

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☑ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☑ Tons ☐ Yards	
Finch Petroleum		
610 York Road	TARE WEIGHT: ☑ Tons ☐ Yards	
Warminster, PA 18974		
GENERATOR'S PHONE: 484-678-5693	NET WEIGHT: ☑ Tons ☐ Yards	21,441 Tons

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non-Hazardous Soil

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Authorized Agent - Finch Petro

Signature: [signature] Date and Time: _____

TRANSPORTER

Company: B. Blair Corp Phone Number: 215-672-8787

Address: 95 Louise Dr Ivyland Truck # and License Plate: AG-70529

Driver: Bryan Peka SW Haulers Permit #: WH5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Bryan Peka Date and Time: 8/8/14

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Bryan Peka Date and Time: 8/8/14

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 8/8/14

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187829

	Date	Time	Scale
In:	8/8/2019	12:01:02	Scale CE
Out:	8/8/2019	12:01:27	P.T.

	Lbs	Tns
Gross:	63960	31.98
Tare:	27160	13.58
Net:	36800	18.40

Manifest: 2169721
Vehicle ID: 15BLA211
Vehicle Permit: WH5153
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	18.40	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: EDC #211

Facility: Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2169721

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☒ Tons ☐ Yards	
Finch Petroleum		
610 York Road	TARE WEIGHT: ☒ Tons ☐ Yards	
Warminster, PA 18974		
GENERATOR'S PHONE: 484-678-5693	NET WEIGHT: ☒ Tons ☐ Yards	18.40

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non-Hazardous Soil

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Authorized Agent - Finch Petro

Signature: _____ Date and Time: _____

TRANSPORTER

Company: B Blain Phone Number: 215 672 9787

Address: 95 Louisa Dr Thorndale PA Truck # and License Plate: 211 A6442J4 PA

Driver: EJC SW Haulers Permit #: WH 5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: _____ Date and Time: 8/8/19

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: _____ Date and Time: 8/8/19

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: _____ Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187675

	Date	Time	Scale
In:	8/8/2019	10:40:20	Scale CE
Out:	8/8/2019	10:40:52	P.T.

	Lbs	Tns
Gross:	68280	34.14
Tare:	25340	12.67
Net:	42940	21.47

Manifest: 2169715
Vehicle ID: 15TMT56
Vehicle Permit: WH19935
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172

Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	21.47	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: _____

Facility: _____
Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2169715

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☒ Tons ☐ Yards	
Finch Petroleum		
610 York Road	TARE WEIGHT: ☒ Tons ☐ Yards	
Warminster, PA 18974		
GENERATOR'S PHONE: 484-678-5693	NET WEIGHT: ☒ Tons ☐ Yards	21.47

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non-Hazardous Soil

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Authorized Agent - Finch Petro

Signature: _____ Date and Time: _____

TRANSPORTER

Company: B Blair Corp Phone Number: 215 672 8787

Address: 95 Louise Drive Truck # and License Plate: Tr56 AG-7205

Driver: Warminster PA SW Haulers Permit #: WH19935

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: _____ Date and Time: 8-8-19 9:50 am

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: _____ Date and Time: _____

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: _____ Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-881-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187644

	Date	Time	Scale
In:	8/8/2019	10:29:05	Scale CE
Out:	8/8/2019	10:29:22	P.T.

	Lbs	Tns
Gross:	69740	34.87
Tare:	26600	13.30
Net:	43140	21.57

Manifest: 2074978
Vehicle ID: 15BLA208
Vehicle Permit: WH5153
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	21.57	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: 15BLA208

Facility: Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2074978

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☐Tons ☐Yards	
FINCH PETROLEUM, WARMINSTER SUNOCO		
610 YORK RD	TARE WEIGHT: ☐Tons ☐Yards	
WARMINSTER, PA 18974		
GENERATOR'S PHONE: _____	NET WEIGHT: ☐Tons ☐Yards	21.57

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

CONTAMINATED SOIL

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Auth Agent - Finch Petro

Signature: _____ Date and Time: 8-8-19

TRANSPORTER

Company: B. BLAIR CORP. Phone Number: 215 672 8787

Address: 95 LOUBET DR IVYLAND, PA Truck # and License Plate: B208 AF 71615 - PA

Driver: DARREN K. SW Haulers Permit #: WH5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: _____ Date and Time: 8/9/19 9:30A

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: _____ Date and Time: 10:28A

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: _____ Date and Time: 10-28

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187610

	Date	Time	Scale
In:	8/8/2019	10:17:33	Scale CE
Out:	8/8/2019	10:18:24	P.T.

	Lbs	Tns
Gross:	65580	32.79
Tare:	26700	13.35
Net:	38880	19.44

Manifest: 2169723
Vehicle ID: 15BLA215
Vehicle Permit: ag70554
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	19.44	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: _____

Facility: _____
Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2169723

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☒ Tons ☐ Yards	
Finch Petroleum		
610 York Road	TARE WEIGHT: ☒ Tons ☐ Yards	
Warminster, PA 18974		
GENERATOR'S PHONE: 484-678-5693	NET WEIGHT: ☒ Tons ☐ Yards	19.44

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non-Hazardous Soil

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Authorized Agent - Envr Rep

Signature: [signature] Date and Time: 8-8-19 930 AM

TRANSPORTER

Company: B-Blair Phone Number: 215 672 8187

Address: 93- Louise Dawn Ivyland Truck # and License Plate: AG 70554

Driver: Ed Wood SW Haulers Permit #: WH-5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 8-8-19

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: _____

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187600

	Date	Time	Scale
In:	8/8/2019	10:11:08	Scale CE
Out:	8/8/2019	10:13:25	P.T.

	Lbs	Tns
Gross:	70540	35.27
Tare:	27080	13.54
Net:	43460	21.73

Manifest: 2074991
Vehicle ID: 15BLA216
Vehicle Permit: WH5153
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	21.73	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: JAMES H BIGGINS

Facility: Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2074991

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Clean Earth of Greater Washington, 6250 Dower House Road, Upper Marlboro, MD 20772, Ph: 301-599-0939
- ☐ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of North Jersey, 115 Jacobus Avenue, Kearny, NJ 07032, Ph: 973-344-4004
- ☑ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700
- ☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS: WARMINSTER FINCH PETROLEUM SUNOCO 1010 YORK RD WARMINSTER PA 18974	GROSS WEIGHT: ☐Tons ☐Yards	
	TARE WEIGHT: ☐Tons ☐Yards	
GENERATOR'S PHONE: _____	NET WEIGHT: ☐Tons ☐Yards	21.73

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Auth Agent - Finch Petro

Signature: [signature] Date and Time: 8-8-19

TRANSPORTER

Company: B. BLAIR CORP Phone Number: 215 672 8787

Address: 95 LOUISE DR INVLAND Truck # and License Plate: AG 70556

Driver: JAMES M BIGGINS 216 SW Haulers Permit #: WH 5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: J-M B Date and Time: 8-8-19 10:15 AM

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: J-M B Date and Time: _____

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187591

	Date	Time	Scale
In:	8/8/2019	10:07:01	Scale CE
Out:	8/8/2019	10:07:57	P.T.

	Lbs	Tns
Gross:	67260	33.63
Tare:	26940	13.47
Net:	40320	20.16

Manifest: 2074966
Vehicle ID: 15BLA206
Vehicle Permit: WH5135
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	20.16	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: _____

Facility: _____
Martino, Jeremy X8537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2074966

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☐Tons ☐Yards	
FINCH PETROLEUM (SUNOCO)		
610 YORK Rd	TARE WEIGHT: ☐Tons ☐Yards	
WARMINSTER PA 18974		
GENERATOR'S PHONE:	NET WEIGHT: ☐Tons ☐Yards	20.16

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Jones (Eng) Title: Auth Agent - Finch Petro

Signature: [signature] Date and Time: 8-8-19

TRANSPORTER

Company: B. Blair Corp Phone Number: 215-672-8787

Address: 95 Louise Dr Truck # and License Plate: 206 AG57744 PA

Driver: Kevin Henry SW Haulers Permit #: WH 5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 8-8-19 9:15 AM

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 8-8-19 10:05

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187581

	Date	Time	Scale
In:	8/8/2019	10:02:55	Scale CE
Out:	8/8/2019	10:03:41	P.T.

	Lbs	Tns
Gross:	70760	35.38
Tare:	27160	13.58
Net:	43600	21.80

Manifest: 2169720
Vehicle ID: 15BLA211
Vehicle Permit: WH5153
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	21.80	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: EDC #211

Facility: Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

CLEANEARTH

Manifest # 2169720

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Clean Earth of Greater Washington, 6250 Dower House Road, Upper Marlboro, MD 20772, Ph: 301-599-0939
- ☐ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of North Jersey, 115 Jacobus Avenue, Kearny, NJ 07032, Ph: 973-344-4004
- ☒ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700
- ☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT:	
Finch Petroleum	☒ Tons ☐ Yards	
610 York Road	TARE WEIGHT:	
Warminster, PA 18974	☒ Tons ☐ Yards	
GENERATOR'S PHONE: 484-678-5693	NET WEIGHT:	
	☒ Tons ☐ Yards	21.60

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non-Hazardous Soil

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Authorized Agent-Finch Petro

Signature: [signature] Date and Time: _____

TRANSPORTER

Company: B Blain Phone Number: 215 672 8787

Address: 95 Louise Dr Tuy Cod Pa Truck # and License Plate: 211 A6 44215 Pa

Driver: EJC SW Haulers Permit #: WH 5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 8/8/19

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 8/8/19

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187569

	Date	Time	Scale
In:	8/8/2019	09:53:12	Scale CE
Out:	8/8/2019	09:57:47	Scale CE

	Lbs	Tns
Gross:	73540	36.77
Tare:	26640	13.32
Net:	46900	23.45

Manifest: 2169717
Vehicle ID: 15BLA217
Vehicle Permit:
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Generator: Finch Petroleum
Job Name: Finch Petroleum-Warminster Su
Gen Address: 610 York Road
Warminster, PA 18974
Job Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	23.45	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: BPeter

Facility: Martino, Jersey 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

B/a 217

CLEANEARTH

Manifest # 2169717

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☒ Tons ☐ Yards	73540
Finch Petroleum		
610 York Road	TARE WEIGHT: ☒ Tons ☐ Yards	
Warminster, PA 18974		
GENERATOR'S PHONE: 484-678-5693	NET WEIGHT: ☒ Tons ☐ Yards	23.45

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non-Hazardous Soil

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Authorized Agent - Finch Petro

Signature: _____ Date and Time: _____

TRANSPORTER

Company: B. blair corp Phone Number: 215-672-8787

Address: 95 Louise Drive Ivyland Truck # and License Plate: AG-70529

Driver: Bryan Peka SW Haulers Permit #: WH5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Bryan Peka Date and Time: _____

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Bryan Peka Date and Time: _____

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: _____ Date and Time: 5-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187385

	Date	Time	Scale
In:	8/8/2019	08:24:27	Scale CE
Out:	8/8/2019	08:32:29	Scale CE

	Lbs	Tns
Gross:	66160	33.08
Tare:	25340	12.67
Net:	40820	20.41

Manifest: 2074988
Vehicle ID: 15TMT56
Vehicle Permit:
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	20.41	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: _____

Facility: _____
Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

TMT56

CLEANEARTH

Manifest # 2074988

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☐Tons ☐Yards	
Finch-Petroleum - Warminster Service 610 York Rd Warminster PA. 18974	TARE WEIGHT: ☐Tons ☐Yards	
GENERATOR'S PHONE: _____	NET WEIGHT: ☐Tons ☐Yards	20.41

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Auth Agent

Signature: _____ Date and Time: 8-8-19

TRANSPORTER

Company: B. Blair Corp Phone Number: 215 672 8787

Address: 95 Louise Dr Truck # and License Plate: Tm56 - AG72032

Driver: Warminster PA. SW Haulers Permit #: WH 19935

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: _____ Date and Time: 8-8-19 7am

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: _____ Date and Time: _____

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: _____ Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187378

	Date	Time	Scale
In:	8/8/2019	08:22:11	Scale CE
* Out:	8/8/2019	08:27:23	Scale CE

	Lbs	Tns
Gross:	66500	33.25
Tare:	26580	13.29
Net:	39920	19.96

Manifest: 2074974
Vehicle ID: 15BLA208
Vehicle Permit:
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	19.96	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: 15BLA208

Facility: Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

B/9 208

CLEANEARTH

Manifest # 2074974

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 2315017Z

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☐Tons ☐Yards	66,500
Finch Petroleum - Warminster Service 610 York Rd. Warminster PA 18974	TARE WEIGHT: ☐Tons ☐Yards	
GENERATOR'S PHONE:	NET WEIGHT: ☐Tons ☐Yards	19.96

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION
CONTAMINATED SOIL

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Finch Depot - Auth. Agent

Signature: _____ Date and Time: 8/8/19 7:00A

TRANSPORTER

Company: E. Blair Corp Phone Number: 215-672-8787

Address: 26 Louise Dr Fairless Truck # and License Plate: TR268 AF 76151 PA

Driver: DARRELL L. SW Haulers Permit #: LWH5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: _____ Date and Time: 8/8/19 7:00A

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: _____ Date and Time: 8/8/19 8:23A

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: _____ Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-891-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187360

	Date	Time	Scale
In:	8/8/2019	08:12:58	Scale CE
Out:	8/8/2019	08:20:05	Scale CE

	Lbs	Tns
Gross:	70700	35.35
Tare:	26700	13.35
Net:	44000	22.00

Manifest: 2074969
Vehicle ID: 15BLA215
Vehicle Permit:
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Generator: Finch Petroleum
Job Name: Finch Petroleum-Warminster Su
Gen Address: 610 York Road
Warminster, PA 18974
Job Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	22.00	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: _____

Facility: _____
Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

8/9/19

CLEANEARTH

Manifest # 2074969

GLOBAL JOB NUMBER: 154556 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Clean Earth of Greater Washington, 6250 Dower House Road, Upper Marlboro, MD 20772, Ph: 301-599-0939
- ☐ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of North Jersey, 115 Jacobus Avenue, Kearny, NJ 07032, Ph: 973-344-4004
- ☒ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700
- ☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☐Tons ☐Yards	
Finch Petroleum Fueling Station 140 York Rd Willow St PA		70 700
	TARE WEIGHT: ☐Tons ☐Yards	
GENERATOR'S PHONE:	NET WEIGHT: ☐Tons ☐Yards	22-00

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Acct Agent - Finch Petro

Signature: [signature] Date and Time: 8-9-19

TRANSPORTER

Company: BRI Corp Phone Number: 215.677.8187

Address: 96 Louise Dr Tullytown Truck # and License Plate: AG 70654

Driver: _____ SW Haulers Permit #: WH 5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] Date and Time: 8-8-19

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: [signature] Date and Time: 8-8-19

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187337

	Date	Time	Scale
In:	8/8/2019	07:56:15	Scale CE
Out:	8/8/2019	08:07:24	Scale CE

	Lbs	Tns
Gross:	75220	37.61
Tare:	27080	13.54
Net:	48140	24.07

Manifest: 2074989
Vehicle ID: 15BLA216
Vehicle Permit:
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974
Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	24.07	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: JAMES M BIGGINS

Facility: Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

B/a 216

CLEANEARTH

Manifest # 2374989

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Clean Earth of Greater Washington, 6250 Dower House Road, Upper Marlboro, MD 20772, Ph: 301-599-0939
- ☐ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of North Jersey, 115 Jacobus Avenue, Kearny, NJ 07032, Ph: 973-344-4004
- ☒ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700
- ☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☐Tons ☐Yards	75220
Finchietaleom - WARminsterSyaboro		
610 York Rd	TARE WEIGHT: ☐Tons ☐Yards	
WARMINSTER PA 18974		
GENERATOR'S PHONE:	NET WEIGHT: ☐Tons ☐Yards	24.07

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Authorized Agent - Finch Pamo

Signature: Victoria Long Date and Time: _____

TRANSPORTER

Company: BLAIR Corp Phone Number: 215-672 8787

Address: 95 Louise Dr Fairland PA Truck # and License Plate: AG 70556

Driver: X JAMES M. RIGGINS #216 SW Haulers Permit #: X WH 5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: X J-M Biggs Date and Time: X 8.8.19 7:45 AM

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: J-M Biggs Date and Time: _____

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: _____ Date and Time: 8.8.19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187326

	Date	Time	Scale
In:	8/8/2019	07:50:15	Scale CE
Out:	8/8/2019	08:00:22	Scale CE

	Lbs	Tns
Gross:	61640	30.82
Tare:	26940	13.47
Net:	34700	17.35

Manifest: 2074968
Vehicle ID: 15BLA206
Vehicle Permit:
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	17.35	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: _____

Facility: _____
Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

B/9206

CLEANEARTH

Manifest # 2074968

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193/50/172

Please Check One:

☐ Clean Earth of Carteret
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of New Castle
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6633

☐ Clean Earth of Greater Washington
6250 Dower House Road
Upper Marlboro, MD 20772
Ph: 301-599-0939

☐ Clean Earth of Philadelphia
3201 S. 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of North Jersey
115 Jacobus Avenue
Kearny, NJ 07032
Ph: 973-344-4004

☒ Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Other _____

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☐Tons ☐Yards	61640
Fisher Petroleum / Warminster SUNOCO 610 York Rd Warminster	TARE WEIGHT: ☐Tons ☐Yards	
GENERATOR'S PHONE:	NET WEIGHT: ☐Tons ☐Yards	17.35

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long Title: Auth Agent - Fisher Petro

Signature: [signature] Date and Time: 8-8-16 6:30

TRANSPORTER

Company: B Blair Corp Phone Number: 215-672-8787

Address: 95 Louise Dr Telford Truck # and License Plate: AG57744 PA 706

Driver: KEVIN HENRY SW Haulers Permit #: WH 5135

(Type or Print Clearly) (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: [signature] KEVIN HENRY Date and Time: 8-8-19 / 6:50 AM

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: _____ Date and Time: _____

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

Clean Earth of Southeast Pennsylvania
7 Steel Road East
Morrisville, PA 19067
Ph: (215) 428-1700 Fax: (215) 428-1704

Ticket: 700001187313

	Date	Time	Scale
In:	8/8/2019	07:45:34	Scale CE
Out:	8/8/2019	07:53:28	Scale CE

	Lbs	Tns
Gross:	72760	36.38
Tare:	27160	13.58
Net:	45600	22.80

Manifest: 2169748
Vehicle ID: 15BLA211
Vehicle Permit:
Customer: RT ENVIRONMENTAL

Facility Approval#: 193150172
Job Name: Finch Petroleum-Warminster Su
Job Address: 610 York Road
Warminster, PA 18974

Generator: Finch Petroleum
Gen Address: 610 York Road
Warminster, PA 18974

Origin	Materials & Services	Quantity	Unit
Bucks	Soil Treatment Type IV	22.80	Tns

Contaminate Type: 2 thru 4 Oil
Treatment Type: DRS - Direct Reuse Soil
Fac Waste Code: 508 Virgin Petro Fuel Cont Soil/Debris
Storage Area: Area 1
Comment:

Driver: EDC #211

Facility: Martino, Jeremy 78537

Original: Customer Copy - Carbon Copies: Void-Customer do not accept

B1a211

CLEANEARTH

Manifest # 2169748

GLOBAL JOB NUMBER: 154550 **FACILITY APPROVAL NUMBER:** 193150172

Please Check One:

- ☐ Clean Earth of Carteret, 24 Middlesex Avenue, Carteret, NJ 07008, Ph: 732-541-8909
- ☐ Clean Earth of Maryland, 1469 Oak Ridge Place, Hagerstown, MD 21740, Ph: 301-791-6220
- ☐ Clean Earth of New Castle, 94 Pyles Lane, New Castle, DE 19720, Ph: 302-427-6633
- ☐ Clean Earth of Greater Washington, 6250 Dower House Road, Upper Marlboro, MD 20772, Ph: 301-599-0939
- ☐ Clean Earth of Philadelphia, 3201 S. 61st Street, Philadelphia, PA 19153, Ph: 215-724-5520
- ☐ Clean Earth of North Jersey, 115 Jacobus Avenue, Kearny, NJ 07032, Ph: 973-344-4004
- ☒ Clean Earth of Southeast Pennsylvania, 7 Steel Road East, Morrisville, PA 19067, Ph: 215-428-1700
- ☐ Other

Non-Hazardous Material Manifest

(Type or Print Clearly)

GENERATOR'S NAME & SITE ADDRESS:	GROSS WEIGHT: ☒ Tons ☐ Yards	72760
Finch Petroleum		
610 York Road	TARE WEIGHT: ☒ Tons ☐ Yards	
Warminster, PA 18974		
GENERATOR'S PHONE: 484-678-5693	NET WEIGHT: ☒ Tons ☐ Yards	22.80

DESCRIPTION OF MATERIAL/SAMPLE ID AND LOCATION

Non-Hazardous Soil

GENERATOR'S CERTIFICATION/AUTHORIZED AGENT - Incomplete and/or unsigned manifests will cause the load to be delayed and/or rejected.

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been fully and accurately described above, classified, packaged and is in proper condition for transportation according to all applicable state and federal regulations.

Name: Victoria Long - Auth Agent Finch Pe Title:

Signature: Victoria Long Date and Time: 8/8/19

TRANSPORTER

Company: R BLAIR Phone Number: 215 672 8787

Address: 95 Louise Dr. Truck # and License Plate: 211 AG 44215 Pa

Driver: Ed C (Type or Print Clearly) SW Haulers Permit #: WH 5135 (applicable state permit#)

I hereby certify that the above named material was picked up at the site listed above.

Driver Signature: Ed C Date and Time: 8/8/19 730a

DESTINATION

I hereby certify that the above named material was delivered without incident to the facility noted above.

Driver Signature: Ed C Date and Time: 8/9/19

I hereby certify that the above named material has been accepted at the above referenced facility.

Authorized Signature: [signature] Date and Time: 8-8-19

GENERATOR

ITEM# CE WM500 / PRO'S CHOICE PRINTING, INC. 1-888-801-1515

A. J. Catagnus, Inc.

DROP # 92

P/UP #

CHECK #

CASH

CREDIT CARD

BOL № 239453

DROP DATE 7-19-19

PICK-UP DATE

ON ACCT

COD CC

A. J. CATAGNUS, INC.

Recycling Resources

1299 W. James Street
Norristown, PA 19401

C+D

METAL

MASON

OCC

OTHER

COD$

W/ TON INCLUDED

ANYTHING OVER IS AN

ADD'L P/T EXTRA

VINNY
610-277-2727

TONY
610-275-5328

ACCOUNT NAME MATT'S Valley

ADDRESS 610 York Rd Sunoco Station

CITY WARMINSTER MAP PAGE /

PHONE/NEXTEL # 610-428-0928

SIZE 40 Dp

$700.00

DRIVER

Thank You SIGNATURE

WE ASSUME NO RESPONSIBILITY FOR DAMAGES TO SIDEWALKS, LAWNS, DRIVEWAYS OR OTHER PROPERTY WHEN ASKED TO DRIVE BEYOND CURB LINE OR PROPERTY LINE.
CONTAINER MAY NOT BE LOADED HIGHER THAN SIDES W/ TRASH! (MASON 3/4 FULL ONLY)
CONTAINER MAY NOT CONTAIN ANY HAZARDOUS, INFECTIOUS, OR PATHOLOGICAL WASTE
WHEN CONTAINER IS LOADED PLEASE CALL FOR SERVICE WITH YOUR CAN #
PLEASE ALLOW 24 HRS. NOTICE FOR SERVICE
ANY CONTAINER OUT FOR MORE THAN 1 WEEK WILL ADD $10.00 PER DAY RENTAL

Monarch Environmental, Inc.

Monarch

108 East Lake Rd,
PO BOX 330
Woodstown, NJ 08098

Site Sunoco - Warminster 610 York

BOL: 436700

610 York Road

Warminster Pa

Transporter 1 Company Name	US EPA ID Number	Transporter's Phone
Monarch Environmental, Inc.	NJR000040667	856-769-9022

Designated Facility name and Site Address	US EPA ID Number	Facility's Phone
Monarch Environmental Recycling 108 East Lake Rd Woodstown, NJ 08098	NJD031881174	856-769-9022

US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packaing Group	Containers No.	Type	Total Quantity	Unit Wt/Vol
UN 1993 Flammable liquids N.O.S gas, water	___	CM	_____	P / Y
	___	DM	_____	P
	19	TT	2000 + 2902	G

Additional Descriptions for Materials Listed Above
ERG#_____
24-Hr Emergency Phone: (856) 769-9022

GENERATOR'S CERTIFICATION: I herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and are non-hazardous by US EPA and applicable state regulations.

Printed/Typed Name	Signature	Month / Day / Year
x Agent of Imajil Ali	x Agent of Imajil Ali	7 / 17 / 19

Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month / Day /Year
x Antone Greene	x Antone Greene	7 / 17 / 19

Facility Owneror Operator: Certification of Receipt of Above Listed Materials

Printed/Typed Name	Signature	Month / Day / Year
x	x	/ /

LOADING INFORMATION
Start Time:_____
Arrival Time: 10:30
Depart Time: 2:45
Finish Time:_____

Bill To Matt's Valley Petroleum, Inc.
2956 Betz Court
Orefield Pa 18069

PO #_____

Special Instructions

Pick up 8-8:30, Meet customer on site for service call
Ord by Dave 215-852-8370

Monarch

108 East Lake Rd,
PO BOX 330
Woodstown, NJ 08098

Site Sunoco - Warminster 610 York

610 York Road

Warminster Pa

BOL: 436700

Transporter 1 Company Name	US EPA ID Number	Transporter's Phone
Monarch Environmental, Inc.	NJR000080667	856-769-9022

Designated Facility name and Site Address	US EPA ID Number	Facility's Phone
Monarch Environmental Recycling 108 East Lake Rd Woodstown, NJ 08098	NJD011881174	856-769-9022

US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packing Group	Containers No.	Type	Total Quantity	Unit Wt/Vol
UN 1993 FLAMMABLE LIQUIDS N.O.S GAS, WATER	___	CM	_____	P / Y
	___	CM	_____	P
	09	TT	2902 2902	G

Additional Descriptions for Materials Listed Above
ERG#_____
24-Hr Emergency Phone: (856) 769-9022

GENERATOR'S CERTIFICATION: I herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and are non-hazardous by US EPA and applicable state regulations.

Printed/Typed Name	Signature	Month / Day / Year
x Agent of Imajil Ali	x Agent of Imajil Ali	7 / 17 / 19

Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month / Day /Year
x Antone Greene	x Antone Green	7 / 17 / 19

Facility Owner or Operator: Certification of Receipt of Above Listed Materials

Printed/Typed Name	Signature	Month / Day / Year
x Karen Kohut	x [signature]	07 / 18 / 19

LOADING INFORMATION
Start Time: 9:00
Arrival Time: 10:30
Depart Time: 2:45
Finish Time: 5:00

8:00 Pay

Bill To Matt's Valley Petroleum, Inc.
2956 Betz Court
Orefield Pa 18069

PO # _____

Special Instructions

Pick up 8-8:30, Meet customer on site for service call
Ord by Dave 215-852-8370

Monarch Environmental, Inc.
P.O. Box 330
Woodstown, NJ 08098

Phone # (856) 769-9022 Fax # (856) 769-8740

E-mail peg@monarchenv.net Web Site www.monarchenv.net

Invoice

DATE	INVOICE #
7/18/2019	116817

BILL TO

Matt Valley Petroleum, Inc.
2956 Betz Court
Orefield, PA 18069

Location	PA

P.O. NO.	TERMS	PROJECT
	Net 30	

REP	

QTY	DESCRIPTION	RATE	AMOUNT
	Sunoco 610 York Rd Warminster, Pa 07/17/19		
8	Vacuum Truck & Operator	98.00	784.00
1	Fuel Surcharge	62.70	62.70
2,902	Disposal of Gas/Water	0.63	1,828.26
1	Load Verification	80.00	80.00
	BOL # 436700 Antone G		
	Sales Tax	6.625%	0.00

Please remit to P.O. Box 330
Woodstown, NJ 08098

Total $2,754.96

Mon. Env /// Mon. Recy BOL# 436706

Customer	
Ord By	
Phone#	

Job Location

Hourly Rate	$98/hr
Service Charge	
Trip Charge	
Fuel Surcharge	62.70
Toll Surcharge	
Disp./Gal	$.63/gal
Disp./Drum	
Disp./Drum	
L. Verification	$80.00
Site Tax	

Water	Oil / Water	Gas/waste		
Soil	Water	Gas	Debris	Tank Btms
Soil	Water	Gas	Debris	Tank Btms

Misc.	
Misc.	
Misc.	
Misc.	
Notes	

Monarch

108 East Lake Rd,
PO BOX 330
Woodstown, NJ 08098

Site Sunoco - Warminster 610 York

610 York Road

Warminster Pa

BOL: 436800

Transporter 1 Company Name	US EPA ID Number	Transporter's Phone	
Monarch Environmental, Inc.	NJR000080667	856-769-9022	VT.16

Designated Facility name and Site Address	US EPA ID Number	Facility's Phone
Monarch Environmental Recycling 108 East Lake Rd Woodstown, NJ 08098	NJD011881174	856-769-9022

US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packaing Group	Containers No.	Type	Total Quantity	Unit Wt/Vol
Petroleum Contaminated Water	—	CM		P/Y
	—	DM		P
Non RCRA / non DOT Regulated	1	TT	276	G

Additional Descriptions for Materials Listed Above
ERG#_____
24-Hr Emergency Phone: (856) 769-9022

GENERATOR'S CERTIFICATION: I herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and are non-hazardous by US EPA and applicable state regulations.

Printed/Typed Name | Signature | Month / Day / Year

x Agent of Owner, Inc.; I.A. x Agent of Owner, Inc.; I.A. 07/23/19

Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month / Day /Year

x PAUL K. ALBRECHT x 07/23/19

Facility Owneror Operator: Certification of Receipt of Above Listed Materials

Printed/Typed Name | Signature | Month / Day / Year

x x / /

LOADING INFORMATION
Start Time:_____
Arrival Time: 1040
Depart Time: 1140
Finish Time:_____

Bill To Matt's Valley Petroleum, Inc.
2956 Betz Court
Orefield Pa 18069

PO #_____

Special Instructions

Pick up 10-11am, Meet customer on site to vac excavation
Ord by Dave 215-852-8370

Monarch Environmental, Inc.
P.O. Box 330
Woodstown, NJ 08098

Phone # (856) 769-9022 Fax # (856) 769-8740

E-mail peg@monarchenv.net Web Site www.monarchenv.net

Invoice

DATE	INVOICE #
9/18/2019	118383

BILL TO

Matt Valley Petroleum, Inc.
2956 Betz Court
Orefield, PA 18069

Location	PA

P.O. NO.	TERMS	PROJECT
	Net 30	

REP	

QTY	DESCRIPTION	RATE	AMOUNT
	Sunoco 610 York Road Warminster, Pa. 7/23/19		
5	Vacuum Truck & Operator	98.00	490.00
1	Fuel Surcharge	62.70	62.70
2,716	Disposal of Oil/Water	0.40	1,086.40
	BOL#436800 Allbright VT-16 Sales Tax	6.625%	0.00

Please remit to P.O. Box 330
Woodstown, NJ 08098

Total $1,639.10

Monarch

108 East Lake Rd,
PO BOX 330
Woodstown, NJ 08098

Site Job Site

610 York Road

Warminster Pa

BOL: 437091

Transporter 1 Company Name	US EPA ID Number	Transporter's Phone
Monarch Environmental, Inc.	NJR000090667	856-769-9022

Designated Facility name and Site Address	US EPA ID Number	Facility's Phone
Monarch Environmental Recycling 108 East Lake Rd Woodstown, NJ 08098	NJD011881174	856-769-9022

US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packing Group	Containers No.	Type	Total Quantity	Unit Wt/Vol	
Petroleum Contaminated Water	___	CM	_____		P / T
	___	DM	_____		P
NON RCRA/ DOT Regulated NON HAZ	001	TT	5,432	G	

Additional Descriptions for Materials Listed Above

ERG# _____

24-Hr Emergency Phone: (856) 769-9022 TT-31/UTT-103

GENERATOR'S CERTIFICATION: I herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and are non-hazardous by US EPA and applicable state regulations.

Printed/Typed Name	Signature	Month / Day / Year
X Nick Jr	X	8/9/17

Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month / Day /Year
X Joseph Beatty Jr	X Joseph Beatty	8/9/17

Facility Owner or Operator: Certification of Receipt of Above Listed Materials

Printed/Typed Name	Signature	Month / Day / Year
X	X	/ /

LOADING INFORMATION

Start Time: _____

Arrival Time: 7:30

Depart Time: 10:00

Finish Time: _____

Bill To Matt's Valley Petroleum, Inc.

2956 Betz Court

Orefield Pa 18069

PO # _____

Special Instructions

Pick up 8:30. Meet customer on site to vac excavation
Ord by Dave 215-852-8370

Monarch

108 East Lake Rd,
PO BOX 330
Woodstown, NJ 08098

Site Job Site

610 York Road

Warminster Pa

BOL: 437091

Transporter 1 Company Name	US EPA ID Number	Transporter's Phone
Monarch Environmental, Inc.	NJR000040667	856-769-9022

Designated Facility name and Site Address	US EPA ID Number	Facility's Phone
Monarch Environmental Recycling 108 East Lake Rd Woodstown, NJ 08098	NJD011881174	856-769-9022

US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packing Group	Containers No.	Type	Total Quantity	Unit Wt/Vol
Petroleum Contaminated Water	___	CM	_____	P/T
		DM		P
NON RCRA/DOT Regulated NON HAZ	001	TT	5,432.	G

Additional Descriptions for Materials Listed Above

ERG#_____

24-Hr Emergency Phone: (856) 769-9022 TT-31/UTT-103

GENERATOR'S CERTIFICATION: I herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and are non-hazardous by US EPA and applicable state regulations.

Printed/Typed Name	Signature	Month / Day / Year
x Nick Spiers	x	8/9/19

Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month / Day / Year
x Joseph Beatty	x Joseph Beatty	8/9/19

Facility Owner or Operator: Certification of Receipt of Above Listed Materials

Printed/Typed Name	Signature	Month / Day / Year
x	x	/ /

LOADING INFORMATION

Start Time: 6:00
Arrival Time: 7:30
Depart Time: 10:00
Finish Time: 13:00

7.00 HR

Bill To Matt's Valley Petroleum, Inc.

2956 Betz Court

Orefield Pa 18069

Special Instructions

PO #_____

Pick up 8:30, Meet customer on site to vac excavation
Ord by Dave 215-852-8370

Monarch Environmental, Inc.
P.O. Box 330
Woodstown, NJ 08098

Phone # (856) 769-9022 Fax # (856) 769-8740

E-mail peg@monarchenv.net Web Site www.monarchenv.net

Invoice

DATE	INVOICE #
8/12/2019	117454

BILL TO

Matt Valley Petroleum, Inc.
2956 Betz Court
Orefield, PA 18069

Location	PA

P.O. NO.	TERMS	PROJECT
	Net 30	

REP	

QTY	DESCRIPTION	RATE	AMOUNT
	Job Site 610 York Rd Warminster, Pa 08/09/19		
7	Vacuum Truck & Operator	105.00	735.00
1	Fuel Surcharge	62.70	62.70
5,432	Disposal of Oil/Water	0.40	2,172.80
1	Load Verification	80.00	80.00
	BOL # 437091 Beatty TT31/VTT-103		
	Sales Tax	6.625%	0.00

Please remit to P.O. Box 330
Woodstown, NJ 08098

Total $3,050.50

Mon. Env /// Mon. Recy

BOL# 437091

Customer	
Ord By	
Phone#	

Job Location

Hourly Rate	$105/HR
Service Charge	
Trip Charge	
Fuel Surcharge	62.70
Toll Surcharge	
Disp./Gal	$.40/GAL
Disp./Drum	
Disp./Drum	
L. Verification	$60.
Site Tax	

Water	Oil / Water	Gas		
Soil	Water	Gas	Debris	Tank Btms
Soil	Water	Gas	Debris	Tank Btms

Misc.	
Misc.	
Misc.	
Misc.	
Notes	

Monarch

108 East Lake Rd,
PO BOX 330
Woodstown, NJ 08098

Site: Job Site

BOL: 437107

610 York Road

Warminster Pa

Transporter 1 Company Name	US EPA ID Number	Transporter's Phone
Monarch Environmental, Inc.	NJR000040667	856-769-9022

Designated Facility name and Site Address	US EPA ID Number	Facility's Phone
Monarch Environmental Recycling 108 East Lake Rd Woodstown, NJ 08098	NJD011851174	856-769-9022

US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packaing Group	Containers No.	Type	Total Quantity	Unit Wt/Vol	P / Y
Petroleum Contaminated Water	—	CM	_____		
NON RCRA/DOT Regulated NON HAZ	2	DM TT	677	P G	

Additional Descriptions for Materials Listed Above
ERG#_____
24-Hr Emergency Phone: (856) 769-9022 VT-28

GENERATOR'S CERTIFICATION: I herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and are non-hazardous by US EPA and applicable state regulations.

Printed/Typed Name	Signature	Month / Day / Year
x Mathew Staffan	x Matt W Staff	8/12/19

Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month / Day /Year
x Joseph Beatty	x Joseph Beatty	8/12/19

Facility Owner or Operator: Certification of Receipt of Above Listed Materials

Printed/Typed Name	Signature	Month / Day / Year
x	x	/ /

LOADING INFORMATION
Start Time:_____
Arrival Time: 7:15
Depart Time: 8:00
Finish Time:_____

Bill To Matt's Valley Petroleum, Inc.
2956 Betz Court
Orefield Pa 18069

PO #_____

Special Instructions

Pick up 8am, Meet customer on site to vac excavation
Ord by Dave 215-852-8370

Monarch Environmental, Inc.

P.O. Box 330
Woodstown, NJ 08098

Phone # (856) 769-9022 Fax # (856) 769-8740

E-mail peg@monarchenv.net Web Site www.monarchenv.net

Invoice

DATE	INVOICE #
8/13/2019	117504

BILL TO

Matt Valley Petroleum, Inc.
2956 Betz Court
Orefield, PA 18069

Location	PA

P.O. NO.	TERMS	PROJECT
	Net 30	

REP	

QTY	DESCRIPTION	RATE	AMOUNT
	Job Site 610 York Rd Warminster, Pa 08/12/19		
4.25	Vacuum Truck & Operator	98.00	416.50
1	Fuel Surcharge	62.70	62.70
677	Disposal of Oil/Water	0.40	270.80
	BOL # 437107 Beatty VT28		
	Sales Tax	6.625%	0.00

Please remit to P.O. Box 330
Woodstown, NJ 08098

Total $750.00

Monarch

108 East Lake Rd,
PO BOX 330
Woodstown, NJ 08098

Site Job Site

610 York Road

Warminster Pa

BOL: 437107

Transporter 1 Company Name	US EPA ID Number	Transporter's Phone
Monarch Environmental, Inc.	NJRDD040667	856-769-9022

Designated Facility name and Site Address	US EPA ID Number	Facility's Phone
Monarch Environmental Recycling 108 East Lake Rd Woodstown, NJ 08098	NJDD011881174	856-769-9022

US DOT Description (Including Proper Shipping Name, Hazard Class or Division, ID Number and Packing Group	Containers No.	Type	Total Quantity	Unit Wt/Vol
Petroleum Contaminated Water NON RCRA/DOT Regulated NON HAZ	001	CM DM TT	677	P/T P G

Additional Descriptions for Materials Listed Above
ERG#_____
24-Hr Emergency Phone: (856) 769-9022 VT-28

GENERATOR'S CERTIFICATION: I herby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and are non-hazardous by US EPA and applicable state regulations.

Printed/Typed Name	Signature	Month / Day / Year
X Matthew Stoffan	X Matt W Stoff	8/12/19

Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month / Day /Year
X Joseph Beatty	X Joseph Beatty	8/12/19

Facility Owner or Operator: Certification of Receipt of Above Listed Materials

Printed/Typed Name	Signature	Month / Day / Year
X	X	/ /

LOADING INFORMATION
Start Time: 5:45
Arrival Time: 7:15
Depart Time: 9:00
Finish Time: 10:05

4.25 Hrs

Bill To Matt's Valley Petroleum, Inc.
2556 Betz Court
Orefield Pa 18069

PO #_____

Special Instructions

Pick up 8am, Meet customer on site to vac excavation
Ord by Dave 215-852-8370

Mon. Env /// Mon. Recy

BOL# 437107

Customer	
Ord By	
Phone#	

Job Location

Hourly Rate	$98/HR
Service Charge	
Trip Charge	
Fuel Surcharge	62.70
Toll Surcharge	
Disp./Gal	$.40/GAL
Disp./Drum	
Disp./Drum	
L. Verification	
Site Tax	
Misc.	
Misc.	
Misc.	
Misc.	
Notes	

	Water	Oil / Water	Gas		
	Soil	Water	Gas	Debris	Tank Btms
	Soil	Water	Gas	Debris	Tank Btms

J & J Environmental

J&J ENVIRONMENTAL

P.O. Box 370
Blue Bell, PA 19422
610-277-4511

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
# 19246			

GENERATOR

5. Generator's Name and Mailing Address: Sunoco
Generator's Phone: 215-852-8370 Street Rd and York Rd Warminster PA 18974

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: J+J Environmental, Inc — U.S. EPA ID Number: PAR000532702

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address: [illegible] West Chester, PA. 19380 — U.S. EPA ID Number

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	Petroleum contaminated water	001	TT	578	GALS
2.					
3.					
4.					

13. Special Handling Instructions and Additional Information

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name — Signature — Month 7 Day 15 Year 19

TRANSPORTER INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Eric Kunsch (on behalf of generator) — Signature — Month 8 Day 19 Year 19

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Matt Gerick — Signature — Month 8 Day 19 Year 19

169-BLS-C 6 10497 (Rev. 9/09)

TRANSPORTER #1

APPENDIX C

Tank Removal Photographs

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

	Photo 1
Date: 7/16/2019 **Description:** Removal of pea gravel and soil from side of Ultra super tank (001).	

	Photo 2
Date: 7/16/19 **Description:** Continuation of removal of pea gravel and soil on the side of the tank 001 in preparation for removing tank from the excavation.	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

Date: 7/16/19 **Description:** Suspected contaminated soil emitting strong petroleum odor and high PID readings.	**Photo 3**
Date: 7/16/19 **Description:** Documentation of product at the bottom of the excavation next to Ultra tank 001.	**Photo 4**

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

Date: 7/16/19 **Description:** Removal of Ultra tank 001 from the excavation pit.	**Photo 5**
Date: 7/17/19 **Description:** Second (002) of the three tanks removed from excavation.	**Photo 6**

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

	Photo 7
Date: 7/16/19 **Description:** Product and visible staining of pea gravel observed underneath the Ultra tank 001 upon removal.	

	Photo 8
Date: 7/17/19 **Description:** Tank field excavation after removal of second tank (002).	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

Date: 7/17/19 **Description:** Petroleum contaminated soil pile on asphalt/concrete surface.	**Photo 9**
Date: 7/17/19 **Description:** Removal of third (003) tank from excavation.	**Photo 10**

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

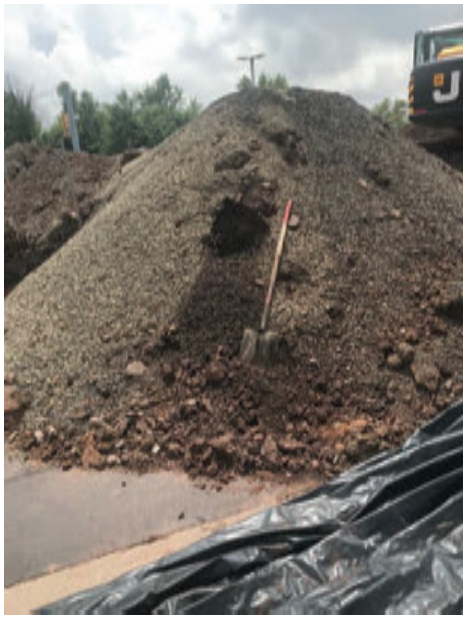
	Photo 11
Date: 7/17/19 **Description:** Water and product observed on pea gravel bedding upon removal of tank 003.	
	Photo 12
Date: 7/17/19 **Description:** Monarch Environmental used a vacuum truck to remove ~2900 gallons of product/water mixture from the excavation.	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

	Photo 13
Date: 7/17/19 **Description:** Petroleum contaminated pea gravel/soil pile placed on and covered with plastic traps.	

	Photo 14
Date: 7/18/19 **Description:** Remaining pea gravel and soil in excavation.	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

	Photo 15
Date: 7/18/19 **Description:** Disposal of fiberglass tanks.	
	Photo 16
Date: 7/18/19 **Description:** View of petroleum contaminated soil pile grab sampling location. A sample was collected in order to profile the material for disposal purposes.	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

	Photo 17
Date: 7/18/19 **Description:** View of petroleum contaminated pea gravel/soil pile.	

	Photo 18
Date: 7/18/19 **Description:** Petroleum contaminated soil covered in plastic.	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

	Photo 19
Date: 7/19/19 **Description:** Pea gravel removed to a depth of approximately 12-feet. Groundwater encountered at a depth of 12.5-feet.	

	Photo 20
Date: 7/19/19 **Description:** Continuation of the removal of pea gravel and soil from the excavation.	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

	Photo 21
Date: 7/19/19 **Description:** Suspected contaminated soil pile covered with plastic.	

	Photo 22
Date: 7/23/19 **Description:** Pit water with sheen.	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

Photo 23

Date: 7/23/19

Description:

Alternate view of contaminated soil pile covered with plastic.

Photo 24

Date: 7/24/19

Description:

Continuation of the removal of pea gravel and soil.

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

	Photo 25
Date: 7/26/19 **Description:** View of contaminated soil stockpile.	

	Photo 26
Date: 7/26/19 **Description:** View of tank pit area upon completion of attainment soil sample collection.	

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

Photo 27

Date: 8/27/19

Description:

View looking northwest from tank field. Photograph shows pump islands and convenience store.

Photo 28

Date: 8/27/19

Description:

View of tank field excavation after installation of new tanks.

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

Photo 29

Date: 8/27/19

Description:

View looking south at pump islands and Giant Shopping Center on south side off Street Road.

Photo 30

Date: 8/29/19

Description:

View of monitoring well MW-7 situated on the north side of parking lot.

Client: Finch Petroleum	**Site Location: 610 York Road Warminster, Pa**
Site Name: Warminster Sunoco	**Project Number: 73057-01**

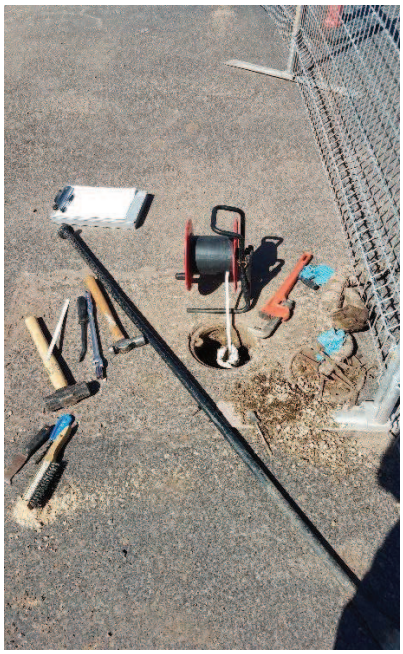
	Photo 31
Date: 8/29/19 **Description:** View looking north at Monitoring well MW-8 at facility entrance from York Road.	

	Photo 32
Date: 8/29/19 **Description:** View of monitoring well MW-4 at facility entrance from Street Road.	

APPENDIX D

Prior Documentation

APPENDIX D

Prior Documentation

Additional Site Characterization Report/Remedial Action Plan

GES - January 6, 2006

Groundwater
& Environmental Services, Inc.

410 Eagleview Boulevard • Suite 110 • Exton, Pennsylvania 19341 • (610) 458-1077 • FAX (610) 458-2300

January 6, 2006

Ms. Kathy Nagle
Pennsylvania Department of Environmental Protection
Environmental Cleanup Program
2 East Main Street
Norristown, Pennsylvania 19401

Re: Additional Site Characterization Report/Remedial Action Plan
Sunoco Station #0363-5430
610 Old York Road
Warminster, Pennsylvania
PADEP Facility ID #09-30778

Dear Ms. Nagle:

Enclosed please find the Additional Site Characterization Report/Remedial Action Plan (ASCR/RAP) prepared on behalf of Sunoco, Inc. (R&M) by Groundwater & Environmental Services, Inc. for the above-referenced facility. The ASCR/RAP presents a summary of the site history, details of site characterization findings, and a proposed remedial approach for addressing subsurface impact.

Please feel free to call either of the undersigned if you have any questions or comments.

Respectfully submitted,

Groundwater & Environmental Services, Inc.

Patrick S Crawford
Patrick Crawford
Project Manager

Jennifer L. O'Reilly, P.G.
Senior Hydrogeologist
Senior Project Manager

Enclosure

CC: M. Liebhardt - Sunoco, Inc.
Sunoco Central File
GES Project File
ICF Consulting – T. Aubel (96-131)

ADDITIONAL SITE CHARACTERIZATION REPORT AND REMEDIAL ACTION PLAN

SUNOCO STATION #0363-5430
610 OLD YORK ROAD
WARMINSTER, PENNSYLVANIA
PADEP FACILITY ID NO. 09-30778

Prepared for:

Sunoco, Inc. (R&M)
350 EAGLEVIEW BLVD. SUITE 300
EXTON, PA 19341

Prepared by:

Groundwater & Environmental Services, Inc.
410 Eagleview Blvd., Suite 110
Exton, PA 19341

January 2006

Corrective Action Process Report/Plan Cover Sheet

CHAPTER 245
STORAGE TANK ACT

- ☐ Site Characterization Report – Section 245.310(b)
- X Site Characterization Report – Site-Specific Standard
- X Site Characterization Report – Statewide Health or Background Standard
- X Remedial Action Plan – Statewide Health or Background Standard
- X 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

(check all that apply to the enclosed submission)

ADDITIONAL SITE CHARACTERIZATION REPORT
AND REMEDIAL ACTION PLAN

SUNOCO STATION #0363-5430
610 OLD YORK ROAD
WARMINSTER, PENNSYLVANIA
PADEP FACILITY ID NO. 09-30778

January 6, 2005

Prepared For:

Sunoco, Inc. (R&M)
P.O. Box 1135
Post Road and Blueball Avenue
Marcus Hook, Pennsylvaina 19061

Prepared By:

Susan E. Cameron
Staff Environmental Scientist

Jaime Johnson
Staff Environmental Scientist

Michael J. Henk
Associate Environmental Scientist

Reviewed By:

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
STEPHEN DALY BROWER
GEOLOGIST
NO. 001809-G

Stephen D. Brower, P.G.
Senior Hydrogeologist

Michael A. Turco, P.E.
Principal Engineer

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.

Groundwater & Environmental Services, Inc.
410 Eagleview Boulevard, Suite 110
Exton, Pennsylvania 19341
(610) 458-1077

"An Equal Opportunity Employer"

EXECUTIVE SUMMARY

Groundwater & Environmental Services, Inc. (GES), on behalf of Sunoco, Inc., R&M (Sunoco) has prepared this Additional Site Characterization Report and Remedial Action Plan for Sunoco Station #0363-5430, located at 610 Old York Road, Warminster Township, Bucks County, Pennsylvania. This report includes available historical information, detailed site characterization activities, a soil and groundwater quality assessment, fate and transport modeling, risk assessment, and remediation standard selection and presents a conceptual remediation strategy to effectively address subsurface hydrocarbon compounds at the site.

The site is currently an active Sunoco retail gasoline facility and convenience store. Currently, there are three 12,000-gallon unleaded gasoline underground storage tanks (USTs), four unleaded gasoline dispenser islands, and associated product piping present at the site. Land use immediately surrounding the site is characterized by a predominantly commercial area with residential areas nearby. The current environmental investigation was initiated in 1996 when localized adsorbed-phase hydrocarbons were observed during the removal of the former dispenser islands and four formerly closed-in-place USTs, which were discovered during station reconstruction activities. Soil samples collected from these excavations indicated the presence of benzene at concentrations exceeding the Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standards (SHS).

Previous site characterization work completed in 1996 and 1997 included the installation of four monitoring wells. The most recent phase of site characterization conducted by GES included the installation of three additional monitoring wells, including one into a deeper aquifer. Adsorbed hydrocarbons were not detected in the soil samples collected during the installation activities. It is recommended that a soil boring investigation be conducted, especially in the vicinity of both sets of the former dispenser islands, to further define the horizontal and vertical extent of adsorbed hydrocarbons at the site.

According to analytical results, the adsorbed- and dissolved-phase hydrocarbon presence appears to be associated with unleaded gasoline parameters. The groundwater quality data indicate the most significant concentrations of dissolved-phase constituents exist in the vicinity of the former dispenser islands located at the eastern property boundary. A chemical oxidation event via hydrogen peroxide injection was conducted on April 28, 2005 to assist in the breakdown of dissolved hydrocarbons in the subsurface.

Historically, benzene, ethylbenzene, methyl *tert*-butyl ether (MTBE), and/or naphthalene have been detected in each of the monitoring wells, with the exception of MW-6, at concentrations exceeding the PADEP SHS. Based on hydrocarbon trend graphs for each of the monitoring wells, the groundwater data over the last eight quarters indicate that benzene, MTBE, and naphthalene concentrations are increasing in monitoring wells MW-1 and MW-2. According to the most recent groundwater analytical data (October 28, 2005), benzene, MTBE, and/or naphthalene were detected at concentrations exceeding the PADEP SHS in all monitoring wells except MW-6.

Fate and transport modeling indicated that none of the constituents-of-concern (benzene, MTBE, and naphthalene) are predicted to migrate off-site, although benzene and MTBE are predicted to remain above the PADEP SHS for more than 30 years. Naphthalene is predicted to fall below the PADEP SHS within 22 to 23 years. According to the risk assessment, there is a possibility of vapor intrusion from volatilization from soil to indoor air (i.e., the station building). Two soil gas surveys are recommended to determine if vapor intrusion is occurring at the site, and the risk assessment will be reevaluated upon receipt of additional data.

This report was developed in accordance with applicable sections of the Pennsylvania Code, Title 25, Chapter 245, Administration of the Storage Tank and Spill Prevention Program, and Chapter 250,

Administration of the Land Recycling Program. Proposed corrective actions are based on findings from the soil and groundwater quality assessments.

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TABLES

Table 1	Historical Soil Analytical Data Summary
Table 2	Historical Groundwater Monitoring Data Summary

APPENDICES

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Appendix E	Domestic Supply Well Search Documentation
Appendix F	Pennsylvania Groundwater Information System (PAGWIS) Report
Appendix G	Groundwater Laboratory Analytical Reports and Chain-of-Custody Documentation
Appendix H	Hydrocarbon Trend Graphs
Appendix I	Fate and Transport Modeling Report by ES&T

1.0 INTRODUCTION

Sunoco, Inc., R&M (Sunoco) retained Groundwater and Environmental Services, Inc. (GES) to prepare this Additional Site Characterization Report (SCR) and Remedial Action Plan (RAP) for Sunoco Station #0363-5430, located at 610 Old York Road, Warminster Township, Bucks County, Pennsylvania. This report presents a chronological summary of available information pertaining to historical site background and characterization information and presents a conceptual remediation strategy to effectively address subsurface hydrocarbon compounds at the site.

The purpose of this site assessment was to further define groundwater quality and flow and delineate the extent of petroleum hydrocarbons in the subsurface. The scope of work performed to complete the most recent phase of site characterization included the installation of three additional on-site groundwater monitoring wells, the collection of liquid-level data and groundwater samples from each of the monitoring wells, fate and transport analysis, and risk assessment.

During fieldwork, GES personnel followed all appropriate guidelines as per United States Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120. All operations were conducted using Level D protection measures with proper respiratory protection equipment and additional protective clothing readily available if site conditions warranted an upgrade to Level C protection. A site-specific health and safety plan detailing applicable safety precautions, as well as specific emergency procedures, was prepared for this site. A copy of the site-specific health and safety plan is on file at GES and is available upon request.

The environmental investigation at the site was initiated in February 1996 due to the presence of adsorbed-phase hydrocarbons observed during the removal of the former dispenser islands and four formerly closed-in-place underground storage tanks (USTs), which were discovered during site reconstruction activities. This report was developed in accordance with applicable sections of Pennsylvania's Storage Tanks, Corrective Action Regulations (Title 25, Chapter 245), as well as the Land Recycling and Environmental Remediation Standards Act (Title 25, Chapter 250). Proposed corrective actions are based on findings from soil and groundwater quality assessments described in the following sections.

2.0 FACILITY DESCRIPTION AND BACKGROUND

2.1 Facility Description

The site is located at the intersection of Old York Road and Street Road, Warminster Township, Bucks County, Pennsylvania (40° 12' 25" N, 75° 5' 60" W). The site consists of one parcel, which is approximately 0.7 acres. **Figure 1** is an annotated United States Geological Society (USGS) 7.5-minute topographic quadrangle (Hatboro, PA) illustrating the site location. According to **Figure 1**, the site and surrounding area slope gently toward the north, northeast, and northwest with an approximate elevation of 290 feet above mean sea level.

Current existing site features at the property include a one-story station building and convenience store, three 12,000-gallon unleaded gasoline fiberglass USTs, and four unleaded gasoline dispenser islands. The current USTs were installed in on December 1, 1983. The majority of the site is covered with asphalt or concrete. There are numerous underground utilities located along Old York Road, including water, telephone, and gas lines. Additionally, there are currently seven monitoring wells (MW-1 through MW-7) located on-site as part of the environmental investigation. A generalized site map showing property boundaries and pertinent site features is included as **Figure 2**.

2.2 Local Land Use

The surrounding area is mainly commercial with residential areas nearby. Center Point Plaza is located to the west, across Street Road. The Eagle Diner and the Warminster Shopping Plaza are located northwest of the site. Archbishop Wood High School, Nativity Catholic Church and School, and Hatboro Savings Bank are located to the east, across York Road. Finally, a light commercial area is located south of the site, with a residential neighborhood beyond. Please see **Figure 3** for a scaled map depicting surrounding properties and land use.

2.3 Environmental Investigation History

2.3.1 Underground Storage Tank System Removal

In November 1995 through February 1996, GES oversaw the reconstruction activities performed at the site, which included the removal of six unleaded gasoline dispenser islands and two 550-gallon steel USTs containing fuel oil and waste oil. Additionally, the station building, which was formerly an Atlantic two-bay automobile service station, was to be removed and replaced with the current Sunoco convenience store.

During excavation, three steel 3,000-gallon and one steel 4,000-gallon pre-Act 2 unleaded gasoline USTs, that were previously closed-in-place, were discovered at the southern corner of the property. These USTs and the associated steel piping that extended from them to the former dispenser islands were removed from the site. During their removal, the USTs were described as rusted and pitted, and the product piping was reportedly in fair condition. All USTs, piping, and other materials were disposed of as commercial waste. The inert substance that filled the closed-in-place USTs was removed and disposed of by Larco Petroleum Services, Inc. of Old Bridge, New Jersey. All excavated soil was disposed of at the Pottstown Landfill in Pottstown, Pennsylvania.

Obvious localized soil contamination was observed in the UST excavations and beneath the eastern dispenser islands, and post-excavation confirmatory samples were collected by GES. A total of 23 soil samples were collected from beneath the former dispensers, product lines, and

UST fields on December 28, 1995 and February 8, 13, and 27, 1996. No samples were collected from the western former dispenser islands due to an inability to access the open excavation.

The samples were submitted to Lancaster Laboratories, Inc. of Lancaster, Pennsylvania and were analyzed for benzene, toluene, ethylbenzene, total xylenes (BTEX), total petroleum hydrocarbons (TPH), and/or TPH-gasoline range organics (GRO) by EPA Method 8020A. Laboratory results indicated concentrations of benzene exceeding the Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standards (SHS) in eight of the soil samples collected from beneath the dispensers and the unleaded gasoline UST field. Results also indicated the presence of BTEX at concentrations below the PADEP SHS in those areas as well as the presence of TPH and TPH-GRO in most samples. Historical soil analytical data is summarized in **Table 1**. Soil sample analytical data sheets and chain-of-custody documentation are presented in **Appendix A**. A map of the UST closure soil samples locations is included as **Figure 4**, which was taken from the GES Underground Storage Tank Closure Report, submitted to the PADEP on April 10, 1996.

The extent of over excavation conducted beneath the former product dispensers and UST field is unknown. Waste manifests associated with the disposal of contaminated soil from the site were submitted in the 1996 UST Closure report mentioned above. However, the manifests are related to all of the excavation activities conducted on-site, including the station reconstruction activities. It is unclear how many tons of soil were removed from the dispenser island and/or UST excavations.

2.3.2 Notice of Reportable Release

As a result of the obvious contamination observed during the UST system closure activities described above, GES verbally reported a Notification of Reportable Release (NORR) to the PADEP on February 28, 1996, identifying the USTs as a possible source of contamination due to strong petroleum vapors and stained soils in the UST excavations. The paperwork was submitted to the PADEP on February 29, 1996. The 1996 NORR is included as **Appendix B**.

2.4 Regulatory Agency Database Review

GES retained the services of InfoMap Technologies, Inc. (InfoMap) to obtain various sources of information from federal and state agencies in order to evaluate areas of potential environmental concern within a 1.0-mile radius of the site. The Environmental FirstSearch™ Report produced by InfoMap searched the following databases: NPL (National Priority List), CERCLIS (Comprehensive Environmental Response Compensation and Liability Information System), RCRIS (Resource Conservation and Recovery Information System), ERNS (Emergency Response Notification System), SPL (State of Pennsylvania Priority List), SWL (Solid Waste List), UST (Regulated Storage Tank Listing), LUST (Confirmed Release Reports for underground and above ground storage tanks). It should be noted that not all of the properties identified in the FirstSearch™ Report have known directions and distances from the subject site. In the report, these properties are listed as non-geocoded and are listed as being within the same postal zip code. A copy of the InfoMap Environmental FirstSearch™ Report is included as **Appendix C.**

Regulatory agency databases identified three sites with regulated USTs within a ¼-mile radius of the site. These are described as follows:

- Sunoco Station #0364-5430, the subject site, is listed as having three 12,000-gallon gasoline USTs that are currently in use, which were installed on December 1, 1983.

- Archbishop Wood High School, located approximately 0.07 miles northeast of the site, is listed in the database, but there is no discussion of current or previous USTs on the property.
- Jiffy Lube #262, located approximately 0.15 miles southeast of the site, is listed as having one 275-gallon aboveground storage tank (AST) that is currently in use. The substance contained in the AST is not listed.

Regulatory agency databases identified 12 sites with leaking USTs (LUSTs) within a half-mile radius of the site. Those sites that have the potential to impact the subject site are described as follows:

- Sunoco Service Station, the subject site, is listed as having a release from a petroleum UST system on March 1, 1996, amount unknown, and remedial actions are deemed initiated or completed.
- Jiffy Lube #262, located approximately 0.15 miles southeast of the site, is listed as having a release from a petroleum UST system, amount unknown. Remedial actions were completed on December 2, 1997.
- Lafferty Chevrolet, located approximately 0.34 miles northwest of the site, is listed as having two releases from a petroleum UST system, amounts unknown. The cleanup activities of one of the releases was deemed complete on June 3, 1997. The status of the second release is unknown. Lafferty Chevrolet was also listed as having two releases of fuel oil (No. 2). The dates, amount, and cleanup status of the releases are unknown.
- Cumberland Gulf Station #143833, located approximately 0.44 miles southeast of the site, is listed as having two releases from a petroleum UST system, amounts unknown. The cleanup status is listed as inactive for each release, last updated on December 31, 1998.
- Amoco Gentle Touch, located approximately 0.44 miles southeast of the site, is listed as having a release from a petroleum UST system, amount unknown, on July 6, 1998. The remedial actions are deemed initiated or complete.

The remaining LUST sites were either located downgradient of the site, or the releases were insignificant.

The NPL is composed of EPA's list of confirmed or proposed Superfund sites. The NPL identified one site within a 1.0-mile radius of the site, the Naval Air Development Center, which covers 734 acres in Warminster Township. This property is located approximately 0.92 miles southeast of the site. The contamination of the site's soil and groundwater resulted from wastes generated during aircraft maintenance and repair. The remedial actions were considered complete on September 28, 2000.

Three RCRA Generators are listed in the databases within a 1.0-mile radius of the subject site. These sites are described as follows:

- Sunoco Service Station, the subject site, is a conditionally exempt small quantity generator of less than 100 kilgrams per month (kg/month) of hazardous waste.
- Heritage Cleaners, located approximately 0.02 miles northeast of the site, is a small quantity generator of 100 to 1,000 kg/month of hazardous waste.
- Archbishop Wood High School, located approximately 0.07 miles northeast of the site, is listed in the RCRA Generator list, but no details are available.

Ten state wells were listed within a ½-mile radius of the site. Six of these wells are listed as used for domestic withdrawal purposes, three are public supply wells, and one is listed as unused.

Six federal wells, owned by the United States Geological Survey (USGS) are located within a ½-mile radius of the site. Additional details are unknown.

Several other facilities/releases were identified in the RCRA and ERNS databases; however, none of the facilities is likely to impact the site. Additionally, based upon site investigation information presented in this report, the sources of the petroleum hydrocarbon impact detected at the site are the formerly closed-in-place (currently removed) UST field, the former dispenser islands, and the product delivery lines associated with them. There is no information in the Environmental FirstSearch™ report to indicate that there is an upgradient source which may contribute to the petroleum hydrocarbon impact observed on-site.

2.5 Previous Site Characterization Report (May 28, 1996)

According to the Site Characterization Report (SCR) submitted to the PADEP by Handex of Eastern Pennsylvania (Handex) on May 28, 1996, the drilling and installation of three on-site monitoring wells (MW-1 through MW-3) were conducted by Pennsylvania-licensed driller B. L. Myers Bros., Inc. of Glenmoore, Pennsylvania under the supervision of Handex personnel on March 13, 1996. The wells were installed by an air rotary drill rig to a depth of 25 feet below ground surface (bgs). Handex personnel continuously monitored the composition, color, texture, odor, and moisture content of all drill cuttings brought to the surface as the borehole was advanced. The drill cuttings were routinely screened in the field with a photoionization detector (PID) to provide a preliminary indication of the presence or absence of volatile organic compounds (VOCs).

One soil sample was collected by split-spoon sampler from each monitoring well boring at depths of five to seven feet bgs. The samples were submitted to Lancaster Labs for the analysis of BTEX by EPA Method 8020 and for TPH-GRO by EPA Method 8015. Analytical results indicated that the unleaded gasoline parameters were not detected in the soil samples. Historical soil analytical data are summarized in **Table 1**. Soil laboratory analytical data sheets and chain-of-custody documentation are presented in **Appendix A**.

Each well was constructed of 20 feet of 0.020-inch slotted Schedule 40 PVC well screen, from 5 to 25 feet bgs, flush-joined to five feet of solid Schedule 40 PVC well casing. After the installation of the wells into each borehole, the annular space between the borehole wall and the well screen was filled with a sand filter pack and capped with a one-foot thick bentonite seal. The bentonite seal acts to prevent infiltration of surface water into the monitoring well. Cement grout was added to the remaining annular space to fill the borehole to surface grade. A locking well cap and flush-mounted manhole cover were then fitted on each well to prevent unauthorized access and to prevent surface runoff from entering the well. Additional details of well construction are included on the subsurface drilling logs in **Appendix D**.

2.6 Additional Monitoring Well Installation

To further delineate the extent of dissolved-phase hydrocarbons, one additional on-site monitoring well (MW-4) was installed on October 27, 1997 by Pennsylvania-licensed driller Lutz Environmental Company, Inc. of Linden, New Jersey under the supervision of GES personnel. The well was installed by an air rotary drill rig to a depth of 25 feet bgs. GES personnel continuously monitored the composition, color, texture, odor, and moisture content of all drill cuttings brought to the surface as the borehole was advanced. The drill cuttings were classified

by the Unified Soil Classification System (USCS) and were routinely screened in the field with a PID to provide a preliminary indication of the presence or absence of volatile organic compounds (VOCs).

A soil sample was collected by a split-spoon sampler at an unknown depth and submitted to Lancaster Labs for the analysis of BTEX, methyl *tert*-butyl ether (MTBE), isopropylbenzene, and naphthalene by EPA Method 8021A. Analytical results indicated that unleaded gasoline parameters were not detected in the soil sample. Historical soil analytical data are summarized in **Table 1**. Laboratory analytical data sheets and chain-of-custody documentation are presented in **Appendix A.**

After the completion of the ten-inch diameter borehole, monitoring well MW-4 was constructed with 20 feet of 0.020-inch slotted Schedule 40 PVC well screen, from 5 to 25 feet bgs, flush joined to five feet of solid four-inch diameter Schedule 40 PVC well casing. The annular space between the borehole wall and well screen was filled with sand and capped with a bentonite seal and cement grout as described above. A locking well cap and a flush-mounted manhole cover were also fitted on the well. Details of well construction are included on the subsurface drilling logs in **Appendix D**.

3.0 ADDITIONAL SITE CHARACTERIZATION

The most recent phase of site characterization was performed to further delineate groundwater quality and flow at the site. This phase of additional site characterization included a sensitive receptor survey, the installation of three additional on-site monitoring wells (MW-5 through MW-7), fate and transport analysis, and risk assessment.

3.1 Potentially Sensitive Receptors

GES performed a detailed reconnaissance of the site and surrounding area to obtain data on the locations of surface water bodies, utilities, and other potentially sensitive receptors. The results of the sensitive receptor survey are as follows:

- The existing on-site structure does not contain a basement;
- There are no basements or crawl spaces in the immediate vicinity of the site;
- Subsurface utilities, including telephone, public water, and natural gas, are located along Old York Road;
- Subsurface utilities, including natural gas, sanitary sewer, and public water, are located in the northeastern portion of the site extending to the station building;
- The nearest surface water body is an unnamed tributary of Little Neshaminy Creek located approximately one mile northwest of the site; and
- Municipal water and sanitary sewer are provided to the site and surrounding area by the Warminster Municipal Water Authority, as discussed below.

3.2 Supply Well Search

On March 9, 2001, GES conducted a door-to-door domestic well survey to determine if surrounding properties were connected to public water. GES also sampled two off-site supply wells, located at 829 West Street Road (Lafferty Chevrolet) and 1220 West Street Road (Christ's Home for Children). The samples were submitted to Accutest of Dayton, New Jersey and analyzed for BTEX, MTBE, isopropylbenzene, and naphthalene by EPA Method 8260B. None of the constituents-of-concern (COCs) were detected in either supply well. Laboratory analytical results for the two supply wells, as well as a table summarizing the domestic well survey, are included in **Appendix E**. See **Figure 3** for the locations of the properties from which surveys were returned to GES and where private wells were found to be located. It should be noted that not all of the private wells are used as the primary drinking water source on these properties. Please refer to **Table 1 in Appendix E** for details.

Additionally, GES reviewed the Pennsylvania Groundwater Information System (PAGWIS) version 3.0 software for information on nearby potable, agricultural, or industrial supply wells within a ½-mile radius of the site. Twelve water well records were identified by the search. Three of the wells are listed as public supply wells used for withdrawal purposes, and two are listed as test public supply wells. Six wells are listed as domestic withdrawal wells, and the last is listed as unused. Of the nine withdrawal wells, only one is located in the downgradient direction, and it is approximately 2,250 feet southwest of the site. It should be noted that the groundwater flow direction on-site varies considerably with the seasons, as described in Section 3.5 of this report. Only one well is located less than 1,000 feet from the site: a domestic withdrawal well located approximately 890 feet to the northwest. The PAGWIS well search is included as **Appendix F**.

3.3 Additional Monitoring Well Installation

On October 18, 2004, the drilling and installation of two additional on-site monitoring wells (MW-5 and MW-6) were conducted by Pennsylvania-licensed driller Eichelbergers, Inc. of Mechanicsburg, Pennsylvania (Eichelbergers) under the supervision of GES personnel. The wells were installed by an air rotary drill rig to depths of 50 and 47 feet bgs, respectively. GES personnel continuously monitored the composition, color, texture, odor, and moisture content of all drill cuttings brought to the surface as the borehole was advanced. The drill cuttings were classified and screened with a PID as described earlier.

Soil samples were collected from the drill cuttings of each borehole at depths of 25 feet (MW-5) and 15 feet (MW-6) bgs. The samples were submitted to Lancaster Labs and were analyzed for BTEX, MTBE, isopropylbenzene, and naphthalene by EPA Method 8260B. Analytical results indicated that the unleaded gasoline parameters were not detected in the soil samples. Historical soil analytical data are summarized in **Table 1**. Laboratory analytical data sheets and chain-of-custody documentation are presented in **Appendix A**.

After the completion of the eight-inch diameter borehole, monitoring well MW-5 was constructed with 40 feet of four-inch diameter, 0.020-inch slotted Schedule 40 PVC well screen, from ten to 50 feet bgs, flush-joined to ten feet of solid four-inch diameter Schedule 40 PVC well casing. Monitoring well MW-6 was constructed with 37 feet of 0.020-inch slotted Schedule 40 PVC well screen, from ten to 47 feet bgs, flush-joined to ten feet of solid four-inch diameter Schedule 40 PVC well casing. The annular spaces between each borehole wall and well screen were filled with sand and capped with a bentonite seal and cement grout as described above. Locking well caps and flush-mounted manhole covers were also fitted on each well.

On November 23, 2004, the drilling and installation of one additional on-site monitoring well (MW-7) were conducted by Eichelbergers under the supervision of GES personnel. The well was installed by an air rotary drill rig to a depth of 100 feet bgs, and the drill cuttings were monitored and classified as previously described. No soil sample was collected for laboratory analysis.

After the completion of the 8-inch diameter borehole, monitoring well MW-7 was constructed with 40 feet of two-inch diameter 0.020-inch slotted Schedule 40 PVC well screen, from 60 to 100 feet bgs. Six-inch diameter steel casing extended from the ground surface to 60 feet bgs to prevent water from the shallow aquifer from infiltrating the well. The annular space between the borehole wall and well screen were filled with sand and capped with a bentonite seal and cement grout as described above. A locking well cap and flush-mounted manhole cover were also fitted on the well. Details of well construction are included on the subsurface drilling logs provided in **Appendix D**.

3.4 Monitoring Well Development and Groundwater Monitoring and Sampling

After their installation and prior to their first groundwater sampling event, each of the monitoring wells were developed via surge and pump to remove residual sediment and drill cuttings from the wells so that representative groundwater samples could be collected. Development water was treated on-site with a portable granular activated carbon (GAC) treatment system and discharged to the surface for infiltration in accordance with PADEP guidelines (Groundwater Monitoring Guidance, February 29, 1996).

Prior to monitoring well sampling, GES collected liquid-level data in accordance with GES Standard Operating Procedures and Quality Control protocols and collected samples using dedicated, disposable bailers.

Groundwater monitoring and sampling is performed on a quarterly basis. Prior to sampling, liquid-level data is collected from each of the wells and the wells are purged of three well volumes via submersible pump to remove fine-grained material from the gravel pack and well screens. Each of the wells is sampled in accordance with GES' Standard Operating Procedures and Quality Control protocols using dedicated, disposable bailers. Samples are submitted to Analytical Laboratory Services, Inc. of Middletown, Pennsylvania (Analytical Labs) for analysis of BTEX, MTBE, isopropylbenzene, and naphthalene by EPA Method 8260B. Historical groundwater analytical data are summarized in **Table 2**. Laboratory analytical data sheets and chain-of-custody documentation are presented in **Appendix G**.

On January 13, 2005, liquid level data and groundwater quality samples were collected from the entire monitoring well network (MW-1 through MW-7). The liquid level data indicated depths to groundwater ranged from 9.31 feet (MW-1) to 14.63 feet (MW-7) below TOC. Based on the January 13, 2005 data, the hydraulic gradient was variable across the site but was predominantly 0.03 feet per foot (ft/ft) toward the west-southwest. A groundwater monitoring map for this gauging and sampling event is included as **Figure 5**. It should be noted that groundwater elevation data for monitoring well MW-7 is never used to calculate hydraulic gradient or groundwater flow direction since it is installed in a deeper aquifer than wells MW-1 through MW-6.

On April 20, 2005, liquid level data and groundwater quality samples were collected from the entire monitoring well network (MW-1 through MW-7). The liquid level data indicated depths to groundwater ranged from 8.52 feet (MW-1) to 14.48 feet (MW-7) below TOC. Based on the April 20, 2005 data, the hydraulic gradient was variable across the site but was predominantly 0.01 ft/ft toward the east-northeast. A groundwater monitoring map for this gauging and sampling event is included as **Figure 6**.

On July 15, 2005, liquid level data and groundwater quality samples were collected from the entire monitoring well network (MW-1 through MW-7). The liquid level data indicated depths to groundwater ranged from 14.31 feet (MW-1) to 20.15 feet (MW-7) below TOC. Based on the July 15, 2005 data, the hydraulic gradient was variable across the site but was predominantly 0.01 ft/ft toward the southwest. A groundwater monitoring map for this gauging and sampling event is included as **Figure 7**. Due to a significant increase in the dissolved concentrations of benzene, MTBE, and naphthalene in several monitoring wells (as discussed in Section 3.6.3 of this report), a confirmatory sampling event was conducted on September 7, 2005.

On September 7, 2005, liquid level data and groundwater quality samples were collected from the entire monitoring well network (MW-1 through MW-7). The liquid level data indicated depths to groundwater ranged from 23.45 feet (MW-2) to 29.81 feet (MW-7) below TOC. Based on the September 7, 2005 data, the hydraulic gradient was generally 0.01 ft/ft toward the northwest. Monitoring wells MW-1 and MW-3 were dry and were not able to be sampled during this event, so a second confirmatory sampling event was conducted on September 20, 2005. A groundwater monitoring map for this gauging and sampling event is included as **Figure 8.**

On September 20, 2005, liquid level data and groundwater quality samples were collected from the entire monitoring well network (MW-1 through MW-7). The liquid level data indicated depths to groundwater ranged from 23.75 feet (MW-3) to 32.85 feet (MW-7) below TOC. Based on the September 20, 2005 data, the hydraulic gradient was variable across the site but was primarily 0.05 ft/ft toward the west-northwest. Monitoring wells MW-1 and MW-2 were dry and were not sampled during this event. A groundwater monitoring map for this gauging and sampling event is included as **Figure 9**.

On October 28, 2005, liquid level data and groundwater quality samples were collected from the entire monitoring well network (MW-1 through MW-7). The liquid level data indicated depths to groundwater ranged from 12.02 feet (MW-1) to 18.81 feet (MW-7) below TOC. Based on the October 28, 2005 data, the hydraulic gradient was variable across the site but was primarily 0.01 ft/ft toward the west-southwest. A groundwater monitoring map for this gauging and sampling event is included as **Figure 10.**

3.5 Regional and Site-Specific Geology and Hydrogeology

The Pennsylvania Geologic Survey Physiographic Provinces of Pennsylvania (Map 13) indicates that this site resides in the Gettysburg-Newark Lowland Section Piedmont Province. The Gettysburg-Newark Lowland Section is characterized by rolling low hills and valleys which have developed over red sedimentary rock. Isolated higher hills are formed on top of diabase, hornfels, and conglomerates. Sedimentary rocks in this region generally dip toward the north-northwest and smaller drainageways are oriented normal to the direction of dip so that some of the topography has a northeast-southwest linearity. However, the basic drainage pattern is dendritic.

The Atlas of Preliminary Geologic Quadrangles of Pennsylvania (Map 61) indicates that the site is underlain by the Stockton Formation. The Stockton Formation consists of gray to buff cross-bedded arkosic sandstone, pebbly sandstone, reddish-brown arkosic sandstone, siltstone, and silty mudstone. In the Hatboro area, the Stockton Formation strikes approximately N 65 degrees E and dips approximately 9 degrees NW.

According to the Engineering Characteristics of the Rocks of Pennsylvania (Geyer and Wilshusen, 1982) rocks of the Stockton Formation form a complex, heterogeneous, multi-aquifer system consisting of a series of gently dipping lithologic units with different hydraulic properties. Most ground water in the unweathered zone moves through a network of interconnecting secondary openings, fractures, bedding plans, and joints. Groundwater is unconfined in the shallower part of the aquifer and semi-confined or confined in the deeper part of the aquifer. The average groundwater yield is 130 gallons per minute (gpm) from the arkosic sandstone and 20 gpm from the shale. Primary porosity occurs within the weathered portion of the formation while secondary permeability is within joints and bedding planes in the unweathered portions of the formation.

According to the subsurface drilling logs (**Appendix D**), the site is underlain by approximately six feet of reddish-brown silty clay. Competent red shale bedrock was encountered at an average of nine feet bgs, which is consistent with the regional geology descriptions.

A review of the United States Geologic Survey 7.5-Minute Hatboro, Pennsylvania topographic quadrangle indicates that the surrounding area slopes gently to the north, northeast, and northwest, suggesting that regional groundwater flow is also to the north, northeast, and northwest. A component of regional flow is likely toward an unnamed tributary of Little Neshaminy Creek, which is located approximately one mile northwest of the site.

Based on data collected during quarterly groundwater monitoring and sampling events, the depth to water at the site is inconsistent through the seasons. The depth to water over the most recent hydrologic cycle has ranged from 8.52 feet to 32.85 feet below TOC. Additionally, monitoring wells MW-1, MW-2, and MW-3 have been dry several times since their installation. It appears that the water table is generally located in competent shale bedrock. The hydraulic gradient does not appear to vary significantly (0.01 to 0.05 ft/ft over the last year), but groundwater flow

direction changes with the seasons, flowing toward the southwest, west-southwest, west-northwest, northwest, and east-northeast.

Based on information collected during site characterization activities, the following is a summary of observations:

- Competent shale bedrock is present beneath unconsolidated clayey soil and fill and is encountered at depths ranging from six to eleven feet bgs.

- Based on measured water levels, groundwater occurs in competent bedrock.

- The shallow (MW-1 through MW-6) and deep (MW-7) aquifers underlying the site appear to be unconfined, and the depth to groundwater in the deep aquifer is deeper than that in the shallow aquifer.

- The groundwater gradient as determined from groundwater elevations varies with the seasons and flows toward the southwest, west-southwest, west-northwest, and east-northeast, which is not consistent with the estimated regional groundwater flow. Regional groundwater flow is estimated to be toward the northwest, toward an unnamed tributary of Little Neshaminy Creek.

3.6 Nature and Extent of Hydrocarbon Presence

There are three primary components to a plume of released hydrocarbon product to the subsurface. These components are generally comprised of an adsorbed-phase, a separate-phase (light, non-aqueous phase liquid), and a dissolved-phase. As the gasoline contacts the soil, a significant percentage of the release will become adsorbed onto the particles of soil. The amount of product that becomes adsorbed will be dependent upon the following factors:

- The properties of the product (viscosity, solubility, etc.);
- The intrinsic permeability of the soil (the relative case with which a porous material transmits liquid);
- The amount of recharge, flushing, or infiltration of precipitation from the surface; and
- The amount of total organic carbon in soil.

The remaining product will continue to migrate through the soil column in the unsaturated zone under the influence of gravity and follow the path of least resistance (lenses or layers with the highest intrinsic permeability). As the product encounters the capillary fringe (the portion of the soil column where water is drawn upward from the saturated zone, and there is a greater percentage of water in this zone as compared to the soils above), it will tend to spread laterally, and a greater percentage will remain adsorbed in this zone.

The product that continues to migrate through the capillary fringe will eventually encounter the saturated zone. The primary mechanism for product migration in the saturated zone of an aquifer is horizontal groundwater flow, which is in turn influenced by the groundwater gradient, specific gravity less than water (tendency to float), and the secondary porosity of the aquifer material. Soluble compounds will dissolve into the groundwater and migrate with the groundwater flow. The fate and transport of these compounds in the groundwater are dependent upon the individual properties of each constituent. The more soluble and resistant to biodegradation the compound is, the greater the ability to dissolve in groundwater and transport greater distances (e.g., MTBE).

The following sections detail the results of the investigations to define the nature and extent of hydrocarbons in the subsurface.

3.6.1 Separate-Phase Hydrocarbons

Separate-phase hydrocarbons (SPH) have never been observed in any of the monitoring wells (MW-1 through MW-7) during groundwater monitoring events.

3.6.2 Soil Quality

Obvious, localized adsorbed-phase contamination was observed in the 1996 excavations related to the former UST and dispenser island removal. Soil samples collected during those activities indicated the presence of benzene at concentrations exceeding the PADEP SHS as well as other BTEX compounds at concentrations below the PADEP SHS. The presence of TPH and/or TPH-GRO was also detected in the soil in those excavations.

Soil samples collected during monitoring well installation (MW-1 through MW-6) indicated that none of the target unleaded gasoline parameters were detected at those locations, supporting the beliefs that the adsorbed contamination was localized in the immediate vicinity of the former USTs and the dispensers and that those areas are the sources of hydrocarbon contamination at the site. Historical soil analytical data are summarized in **Table 1.** Laboratory analytical data sheets and chain-of-custody documentation are presented in **Appendix A.**

3.6.3 Groundwater Quality

Benzene, MTBE, and naphthalene are the primary constituents-of-concern (COCs) in groundwater. Historically, each of the on-site monitoring wells (with the exception of MW-6) has had at least one of these parameters exceed the PADEP SHS. Ethylbenzene was detected one time above the PADEP SHS in monitoring well MW-2 in October 2002. Toluene, total xylenes, and isopropylbenzene have been detected at concentrations below the PADEP SHS across the site.

Groundwater analytical results indicate that monitoring wells MW-1, MW-2, and to a lesser degree MW-3 typically have the highest dissolved COC concentrations. These wells are located southwest of the former dispenser islands, which were located along the eastern property boundary. It should be noted that during the April 20 and September 7, 2005 sampling events, groundwater flow direction was determined to be toward the north-northeast and northwest, respectively. However, the remaining groundwater monitoring maps show wells MW-1 through MW-3 to be downgradient of the former dispensers. This further supports the belief that the former UST system and dispenser islands are the sources of hydrocarbon contamination. See **Figure 11** for the probable source area locations. Historical groundwater analytical data are summarized in **Table 2.** The groundwater laboratory analytical sheets and chain-of-custody documentation are presented in **Appendix G.**

Increases in dissolved hydrocarbon concentrations, specifically benzene and MTBE, were observed during groundwater sampling events on July 15 and October 28, 2005 in each monitoring well on-site. These events were conducted subsequent to a chemical oxidation event via hydrogen peroxide injection, as discussed in Section 6.0 of this report. It should be noted that minor increases in dissolved hydrocarbon concentrations following chemical oxidation events are common, which can be attributed to the desorption of hydrocarbons from the soil into the groundwater when the hydrogen peroxide reaction takes place.

Significant increases in dissolved MTBE concentrations were observed in monitoring wells MW-1, MW-2, MW-3, and MW-5 during the October 28, 2005 sampling event. Increases of this magnitude are not typically observed in GES' experience with the chemical oxidation process, although they might be possible if there was considerable adsorbed contamination in the vicinity of the injection. Monitoring wells MW-1, MW-3, and MW-5 surround the former and current dispenser islands located on the eastern side of the site.

As mentioned in Section 2.3.1 of this report, the amount of contaminated soil beneath the former dispensers and UST field that was removed during closure activities in 1996 is unclear, since the waste manifests were combined with the manifests associated with the station reconstruction. It is possible that the adsorbed-phase hydrocarbons observed in 1996 are still present in the vicinity of the former dispensers and UST field, which could be contributing to the increasing trends of dissolved concentrations in monitoring wells MW-1 and MW-2.

It is also possible that a new release has occurred in the current dispenser island area. Continued quarterly groundwater monitoring will be conducted to verify whether there has been a new release or whether the increasing trends are the result of residual adsorbed contamination in the vicinity of the former dispenser islands. Additionally, Sunoco is in the process of conducting UST system tightness testing and investigating whether there have been fuel inventory inconsistencies at the site. After the results of further monitoring and testing are reviewed, a Notification of Reportable Release will be submitted to the PADEP if warranted.

To further characterize the groundwater quality surrounding the former dispenser islands, it is recommended that an additional on-site monitoring well be installed north of that area, near the eastern property boundary. This additional well would also assist in estimating groundwater flow directions, as groundwater on-site periodically flows toward the northeast and/or northwest.

3.6.4 Hydrocarbon Trends

The changes in dissolved benzene, ethylbenzene, MTBE, and naphthalene concentrations were analyzed for monitoring wells with historical exceedances of the PADEP SHS of any compound of concern to identify temporal trends and evaluate the effect of natural attenuation. Trend analysis was performed to determine the stability of the plume.

The analysis was conducted using procedures described in ASTM E 1943-98, "Standard Guide for Remediation of Groundwater by Natural Attenuation at Petroleum Release Sites." The analysis as specified by ASTM is a graphical approach which consists of plotting the natural log (LN) of the concentrations of each compound over time and fitting a straight line to the resulting plot. By comparing the trend lines for each well, and the location of the well within the plume, a determination can be made regarding the behavior of the plume (e.g., shrinking, stable, or expanding). Downward trends indicated by the plots of concentration over time within the source area and concurrently in the downgradient wells are considered to be the primary line of evidence that natural attenuation is occurring. When the source loading of a particular compound into the aquifer is exceeded by the rate of natural attenuation, the plume is shrinking. Plots indicating a horizontal trend (neither upward nor downward) suggest that the loading rate is equal to the rate of attenuation, and the plume is considered to be stable. Additionally, the r-squared values included on the graphical plots assist in determining a trend. A more consistent trend is indicated by an r-squared value approaching 1.

Historical groundwater analytical data were used to create hydrocarbon trend graphs for benzene, ethylbenzene, MTBE, and naphthalene in monitoring wells where those COCs exceeded the PADEP SHS. Toluene, total xylenes, and isopropylbenzene have never exceeded the PADEP

SHS in any well on-site and were not considered for this analysis. The following is a summary of the hydrocarbon trend graph analysis in which all historical groundwater analytical data were used. The hydrocarbon trend graphs are attached as **Appendix H**.

- Benzene concentrations exhibit decreasing trends in monitoring wells MW-2 and MW-3 but exhibit an increasing trend in monitoring well MW-1. Benzene was not detected above the PADEP SHS in monitoring wells MW-4 through MW-7 and was therefore not plotted for those wells.

- Ethylbenzene concentrations exhibit a decreasing trend in monitoring well MW-2. Ethylbenzene was not detected in any other well on-site at concentrations exceeding the PADEP SHS.

- MTBE concentrations exhibit decreasing trends in monitoring wells MW-3 and MW-4 but exhibit increasing concentrations in monitoring wells MW-1, MW-2, MW-5, and MW-7.

- Naphthalene concentrations exhibit a decreasing trend in monitoring well MW-2 but exhibit an increasing trend in monitoring well MW-1. Naphthalene was not detected above the PADEP SHS in monitoring wells MW-3 through MW-7.

A second hydrocarbon trend graph analysis was conducted which included only groundwater analytical data from the most recent eight quarters (January 2004 through October 2005). It should be noted that only monitoring wells MW-1 through MW-4 were considered in this second analysis, as those are the only wells that have existed for more than two years. Monitoring wells MW-5 through MW-7 were installed within the most recent eight quarters; therefore the second trend analysis would yield the same results as the first.

- Benzene concentrations exhibit increasing trends in monitoring wells MW-1 and MW-2. Benzene was not detected above the PADEP SHS in monitoring wells MW-3 or MW-4 over the last eight quarters.

- MTBE concentrations exhibit increasing concentrations in monitoring wells MW-1 and MW-2, but exhibit overall decreasing concentrations in monitoring wells MW-3 and MW-4. However, it should be noted that although the plots indicate decreasing concentrations in MW-3 and MW-4, the most recent analytical data (October 28, 2005) indicate a significant increase in MTBE concentrations since the previous sampling events in each of the monitoring wells on-site, aside from MW-6.

- Naphthalene concentrations exhibit increasing concentrations in monitoring wells MW-1 and MW-2. Naphthalene was not detected above the PADEP SHS in monitoring wells MW-3 or MW-4 over the last eight quarters.

A series of isoconcentration maps were created to assist in the visualization of the historic trends of dissolved hydrocarbons. Two maps were drafted for each constituent of concern (COC) that has historically exceeded the PADEP SHS at this site (i.e., benzene, ethylbenzene, MTBE, and naphthalene). The historical maximum concentrations in each well for each parameter, representing the worst case scenarios, were depicted first. These maps estimated the maximum extent of the hydrocarbon constituents across the site. Second, the laboratory analytical results from the most recent groundwater sampling event conducted on October 28, 2005 were depicted. These maps estimated the current extent of hydrocarbon presence across the site.

The isoconcentration maps indicate that monitoring wells MW-1 and MW-2 are typically the wells with the highest concentrations of each of the constituents-of-concern. After a review of the groundwater monitoring maps from the last four quarters of groundwater sampling, it appears that MW-1 and MW-2 are normally downgradient of the former dispenser islands located along the eastern property boundary of the site. Additionally, the soil analytical data associated with the station upgrade activities in 1996 indicated that adsorbed hydrocarbons were present beneath the dispensers. This information suggests that a leak in the former product dispensers is a source of the hydrocarbon contamination at this site. The isoconcentration maps are included as **Figures 12 through 15.**

4.0 FATE AND TRANSPORT ANALYSIS

At the site, petroleum hydrocarbon compounds have been detected in soil and groundwater. According to the analytical results and field observations, the adsorbed-phase hydrocarbon impact is localized beneath the former dispenser islands and former UST field. The dissolved-phase hydrocarbons have been detected across the site, with the most significant concentrations near the former dispensers (MW-1 through MW-3). Therefore the former dispenser island along the eastern property boundary and the former UST field are considered the source areas (**Figure 11**).

4.1 Analytical Modeling

GES utilized Environmental Systems & Technologies (ES&T) to perform the fate and transport modeling, which was conducted to predict the extent of off-site migration of dissolved-phase hydrocarbons detected at the site. Analytical modeling was performed utilizing the BIOTRANS method. Analytical models require simplifying assumptions regarding the flow and transport conditions. In this effort, the analytical model was considered to be conservative. Benzene, MTBE, and naphthalene were analyzed in this model since they are constituents-of-concern with concentrations detected above the PADEP SHS over the last 12 quarters of groundwater sampling. Ethylbenzene was detected above the PADEP SHS one time in monitoring well MW-2 on October 30, 2002, but was not considered a concern for the site. The fate and transport analysis is summarized in the following sections. Please refer to **Appendix I** for a detailed explanation of the model in the ES&T report.

4.1.1 Model Description

BIOTRANS is a two-dimensional, finite element model that considers convective-dispersive transport, adsorption, and decay for multiple hydrocarbon constituents in either porous or fractured media. Transport of dissolved-phase species is simulated by solving the two-dimensional, vertically averaged convective-dispersive-reactive equation. The model utilizes steady-state velocity fields that represent average flow conditions. Analysis using BIOTRANS have been previously submitted and accepted by the US EPA and state regulatory agencies.

4.1.2 Model Parameters

Input parameter values were defined from site-specific and published data. The following describes the input parameters of the BIOTRANS model and the values applied in the model.

Dissolved Species
Benzene, MTBE, and naphthalene were used in the model since these constituents were found above the PADEP SHS. The chemical properties of these constituents (molecular weight, solubility, K_d, K_{oc}, and the first order decay rate) were applied in the model. The K_{oc} values used in the model were selected from Appendix A, Table 5, of the Act 2 Regulations (PADEP, 2003).

Initial Concentrations
The maximum concentrations of benzene, MTBE, and naphthalene from the last 12 groundwater sampling events were used as the initial concentrations in the model. Using the maximum concentrations results in a more conservative estimate of the dissolved-phase fate and transport simulation.

Porosity
Due to the competent shale bedrock beneath the site, a porosity value of 0.10 was used in the model.

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Soil Bulk Density
The soil bulk density used in the model is 2.39 g/cm^3.

Longitudinal and Transverse Dispersivity
The longitudinal and transverse dispersivities used in this model were conservatively estimated as 4 feet and 0.4 feet respectively.

Groundwater Flow
Groundwater flow representative of measured site conditions was simulated in the modeling effort. A steady-state, uniform flow field was generated considering site hydrogeologic conditions. Hydraulic conductivity within the aquifer was estimated to be 0.001 feet/day and aquifer thickness was assumed to be 85 feet based on the maximum well depth and average water table elevations at the site.

4.1.3 Modeling Results

Results of the BIOTRANS modeling simulation indicate that the effects of degradation, dispersion, and adsorption will act to reduce benzene, MTBE, and naphthalene concentrations over time. Benzene concentrations are predicted to remain above the PADEP SHS for the entire 30 year simulation. However, no off-site migration of the benzene plume is predicted. MTBE concentrations are predicted decrease to below the PADEP SHS between 22 and 23 years with no off-site migration predicted beyond that of the initial MTBE plume (see **Figure 4 in Appendix I**). Naphthalene concentrations are predicted to remain above the PADEP SHS for the entire 30 year simulation, but no off-site migration is predicted. The fate and transport model results and figures are included as **Appendix I.**

4.2 Vapor Intrusion Assessment

There are three considerations to determine if the vapor intrusion pathway is a potential concern:

- Inhabited buildings must be close (within 100 horizontal feet) to a volatile source.
- There must be at least five feet of soil-like material.
- The source concentration must be above some threshold or screening concentration.

The following table indicates the maximum dissolved concentrations observed on-site as well as the groundwater screening values for protection of indoor air in a non-residential setting as referenced in Table 2 of the Vapor Intrusion into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standards (PADEP, January 24, 2004).

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Regulated Substance	Maximum Observed Concentration (µg/L)	Default Non-Residential Groundwater Screening Value (Volatilization to Indoor Air) (µg/L)	COPIAC
Benzene	430	5,900	No
Toluene	589	NOC	No
Ethylbenzene	886	45,000	Yes
Total Xylenes	1,150	NOC	No
MTBE	12,800	640,000	No
Isopropylbenzene	113	NOC	No
Naphthalene	344	NOC	No

NOC: Not of Concern, value above constituent water solubility

COPIAC: Constituent of Potential Indoor Air Concern

The maximum observed concentrations of BTEX, MTBE, isopropylbenzene, and naphthalene in groundwater are below the PA Default groundwater screening values; therefore, vapor intrusion into a building from groundwater volatilization is not a concern for the site. The historical groundwater analytical data are summarized in **Table 2**.

The following table indicates the maximum adsorbed concentrations observed on-site as well as the soil screening values for protection of indoor air in a non-residential setting as referenced in Table 5 of the Vapor Intrusion into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standards (PADEP, January 24, 2004).

Regulated Substance	Maximum Observed Concentration (µg/kg)	Default Non-Residential Soil Screening Value (Volatilization to Indoor Air) (µg/kg)	COPIAC
Benzene	**1,900**	630	No
Toluene	33,000	110,000	No
Ethylbenzene	**41,000**	9,500	Yes
Total Xylenes	**250,000**	77,000	Yes
MTBE	<20	86,000	No
Isopropylbenzene	<10	360,000+	No
Naphthalene	<20	NOC	No

NOC: Not of Concern

COPIAC: Constituent of Potential Indoor Air Concern

+ - Soil saturation concentration (C_{sat}): Concentration above C_{sat} may suggest the need to investigate the potential presence of NAPL.

The maximum observed adsorbed concentrations of benzene, ethylbenzene, and total xylenes in soil exceed the PA Default non-residential screening values. Therefore, vapor intrusion into a building from soil volatilization is a concern for the site. Historical soil analytical data is summarized in **Table 1**.

4.3 Baseline Risk Assessment

A Baseline Risk Assessment was conducted utilizing Tier 2 Risk-Based Corrective Action (ASTM E-1739, 1995) (RBCA) protocols and guidelines established by 25 PA Code, Chapter

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250. In this section, all potential exposure pathways are reviewed followed by a baseline risk assessment for the pathways applicable to the site using Tier 2 RBCA protocols.

Using PADEP-approved EPA and ASTM guidance, this assessment identified potential current and future exposure pathways for human receptors, as per PA Code §250.402. Where appropriate, incomplete exposure pathways and constituents that were not found in environmental media in exceedance of the PADEP SHS were eliminated from future consideration. Risk was calculated as a commercial scenario, because the current and future property use is commercial.

4.4 Exposure Pathway Assessment

Human or ecological receptors can be exposed to COCs through four major pathway categories: 1) air, 2) groundwater, 3) soil, and 4) surface water. Within each pathway category are specific exposure pathway scenarios. The following is a description of each possible exposure pathway. Pathways pertinent to the site are identified.

4.4.1 Air Exposure Pathways

- *Inhalation of vapors volatilized from subsurface soils to the ambient air*: Analytical results from the subsurface soil samples collected at this site during site characterization activities indicated that concentrations of benzene exceed the PADEP SHS. However, impermeable materials (asphalt) that prevent contact with or ingestion of surface soils cover the majority of the site, which restricts volatilized vapor from entering the breathing zone. Considering these factors, this pathway was not considered relevant for this site and was not considered in the risk assessment.

- *Inhalation of vapors volatilized from groundwater into the ambient air*: The majority of the site is covered by impermeable materials, which restrict volatilized COCs from entering the breathing zone. In addition, average depth to groundwater at this site ranges from ten to 24 feet bgs. Therefore, this pathway was not considered relevant for the risk assessment.

- *Inhalation of vapors volatilized from subsurface soil into an enclosed space*: This scenario includes vapors entering basements, crawl spaces, subsurface utility vaults, and in some situations, enclosed buildings. Analytical results from subsurface soil samples collected during site characterization activities indicated that benzene, toluene, and total xylenes concentrations were above the soil default screening values for vapor intrusion. Therefore, this pathway was considered a concern for the site.

- *Inhalation of vapors volatilized from groundwater into an enclosed space*: This scenario includes vapors entering basements, crawl spaces, subsurface utility vaults, and in some situations, enclosed buildings. Historical groundwater data indicated that none of the dissolved concentration values are above the groundwater default screening values for vapor intrusion. Additionally, separate-phase hydrocarbons (SPH) have never been detected at this site. Therefore, this pathway was not considered relevant for the risk assessment.

4.4.2 Groundwater Exposure Pathways

- *Ingestion of groundwater through a water supply well*: According to a door-to-door survey conducted by GES in March 2001, the Warminster Municipal Water Authority supplies water to the site and surrounding area. There are potable wells used as the

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primary source of drinking water within a ½-mile radius of the site, but unleaded gasoline constituents were not detected in those wells when they were analyzed in 2001 by GES (Section 3.2 of this report). Additionally, fate and transport modeling predicts that the constituents-of-concern (benzene, MTBE, and naphthalene) will not migrate offsite during the 30 year simulation. Based on that information, this pathway was deemed irrelevant for this site and was not considered in the risk assessment.

4.4.3 Soil Exposure Pathways

- *Dermal contact and direct ingestion of contaminated soils*: Impermeable materials that prevent contact with or ingestion of surface soils cover the majority of the site. Additionally, analytical results indicated that all COCs were either not detected or were below the direct contact medium specific concentrations (MSCs) set forth in Act 2. Therefore, this pathway was not considered relevant for this site in the risk assessment.

4.4.4 Surface Water Exposure Pathways

- *Contact with surface water contaminated by runoff from contaminated surface soil*: Since the majority of the site is paved, it is unlikely that runoff will contact surface soil. Therefore, this pathway is deemed irrelevant and will not be considered in the risk assessment.

- *Contact with surface water contaminated by groundwater discharge*: There is no body of surface water located within 2,500 feet of the site. Therefore this pathway was not considered relevant for the site and was not considered in the risk assessment.

In summary, one potential open exposure pathway was identified for the site, specifically volatilization from soil into an enclosed space (i.e., the station building). It is recommended that two to three dedicated soil gas monitoring points be installed between the potential source of vapors (former dispenser islands and the former UST field) and the station building. Upon completion of two soil gas surveys, the exposure pathways at the site will be reevaluated to determine whether additional risk assessment is warranted.

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5.0 SITE CONCEPTUAL MODEL

This site is currently an active retail gasoline station and convenience store. The surrounding area consists mainly of commercial properties with a residential neighborhood beyond them to the south. Center Point Plaza is located to the west, across Street Road. The Eagle Diner and the Warminster Shopping Plaza are located northwest of the site. Archbishop Wood High School, Nativity Catholic Church and School, and Hatboro Savings Bank are located to the east, across York Road. Finally, a light commercial area is located south of the site, with a residential neighborhood beyond.

The subsurface drilling logs indicate the site is underlain by a layer of clayey soil and fill followed by competent red shale bedrock of the Stockton Formation, which was encountered at depths ranging from six to 11 feet bgs.

Based on measured water levels, groundwater typically occurs in the shale bedrock with an average depth to water of approximately 10 to 24 feet below TOC; the shallow and deep aquifers underlying the site appear to be unconfined. The groundwater flow direction on-site, as determined from groundwater elevations, varies with the seasons and is toward the southwest, west-southwest, west-northwest, and east-northeast, which is not consistent with the estimated regional groundwater flow. Regional groundwater flow is estimated to be toward the northwest, toward an unnamed tributary of Little Neshaminy Creek.

Unleaded gasoline constituents from the former UST system have been detected in the subsurface. Site characterization activities identified localized adsorbed-phase hydrocarbons in soil beneath the former dispenser islands and in the former UST excavation. Dissolved-phase hydrocarbons in groundwater were also identified at the site.

Soil analytical results indicated benzene was detected at concentrations above the PADEP SHS beneath the dispenser islands in the vicinity of the former UST field. No other target parameters were detected above the PADEP SHS in soil, but BTEX was detected at concentrations below the PADEP SHS. Adsorbed TPH and TPH-GRO were also observed during the UST closure activities. Soil samples collected during monitoring well installation did not exhibit any of the target parameters.

Dissolved-phase hydrocarbons have dispersed across the site but are primarily concentrated southwest of the former dispenser islands (at the eastern property boundary), as exhibited by groundwater samples collected from monitoring wells MW-1, MW-2, and MW-3. According to the most recent groundwater laboratory analytical results, benzene, MTBE, and/or naphthalene remain above the PADEP SHS in monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, and MW-7.

Based on the extent of contamination at the site, the primary sources of hydrocarbon contamination are considered to be the former dispenser islands, the UST system, and the product delivery lines associated with them, which were removed from the site in 1996 during site reconstruction activities.

According to the trend graph analysis, dissolved benzene, MTBE, and/or naphthalene trends are increasing in monitoring wells MW-1, MW-2, MW-3, MW-5, and MW-7. However, based upon fate and transport analysis, dissolved benzene, MTBE, and naphthalene will not migrate off-site. Benzene and naphthalene concentrations are predicted to remain above the PADEP SHS for the entire 30 year simulation used in the model. Naphthalene concentrations are predicted to remain above the PADEP SHS for 22 to 23 years.

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6.0 INTERIM REMEDIAL ACTION

On April 28, 2005, GES conducted a chemical oxidation via hydrogen peroxide injection event at the site. An injection pump was used to dispense a known volume and concentration of hydrogen peroxide into the subsurface through existing monitoring wells (MW-1, MW-3, and MW-5). The oxidation process breaks down petroleum hydrocarbons in the groundwater into by-products of carbon dioxide and water. Approximately 450 gallons of eight-percent hydrogen peroxide solution were injected into the subsurface.

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7.0 SELECTION OF REMEDIAL STANDARDS

7.1 Soil

Analytical results from soil samples collected during site characterization activities indicated that benzene was detected above the PADEP SHS in eight samples collected during site upgrade activities beneath the former product dispensers, the product delivery lines, and the former UST field. Toluene, ethylbenzene, total xylenes, TPH, and TPH-GRO were detected below the PADEP SHS. MTBE, isopropylbenzene, and naphthalene were not detected in soil at the site. As a result, a combination of Statewide Health and Site-Specific Standards (SSS) will apply to the site.

The applicable SHS selected for soil at this site were determined base on the following criteria:

Non-Residential – The previous, current, and future use of the site is commercial. The current site utilization is a retail gasoline station and convenience store.

Used Aquifer – There are potable wells within 2,500 feet of the site, but drinking water is supplied to the site the surrounding area by the Warminster Municipal Water Authority. The non-use aquifer determination has not been pursued for the purpose of this report and the more conservative used-aquifer values have been used.

Total Dissolved Solids – Total dissolved solids are assumed to be less than or equal to 2,500 µg/L.

Sample Depth – Soil samples were collected from surface (< 2') and subsurface (> 2') locations.

Soil Saturation – Soil samples were collected from unsaturated soil conditions.

Based on the above criteria, the following values were determined to be the applicable SHS for the COCs.

Compound	Unsaturated / Saturated Statewide Health Standard for Soil in a Non-Residential, Used Aquifer (µg/kg)	Site-Specific Standard (µg/kg)
Benzene	500	To be determined
Toluene	100,000	N/A
Ethylbenzene	70,000	N/A
Total Xylenes	1,000,000	N/A
MTBE	2,000	N/A
Isopropylbenzene	1,600,000 / 230,000	N/A
Naphthalene	25,000 / 10,000	N/A

N/A: Not Applicable

7.2 Groundwater

Benzene, ethylbenzene, MTBE, and/or naphthalene concentrations have exceeded the PADEP SHS for groundwater in all monitoring wells except MW-6. All other target unleaded gasoline parameters (toluene, total xylenes, and isopropylbenzene) have been detected below the PADEP SHS.

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According to the most recent groundwater sampling results (October 28, 2005), dissolved concentrations of benzene, MTBE, and naphthalene were detected at concentrations exceeding the PADEP SHS. Toluene, ethylbenzene, total xylenes, and isopropylbenzene were detected at concentrations below the PADEP SHS. As a result, a combination of Statewide Health and Site-Specific Standards (SSS) will apply to this site.

The applicable SHS for groundwater selected for this site were determined based on the following criteria:

Non-Residential – The previous, current, and future use of the site is commercial. The current site utilization is a retail gasoline station and convenience store.

Used Aquifer – There are potable wells within 2,500 feet of the site, but drinking water is supplied to the site the surrounding area by the Warminster Municipal Water Authority. The non-use aquifer determination has not been pursued for the purpose of this report, and the more conservative used-aquifer values have been used.

Total Dissolved Solids – Total dissolved solids are assumed to be less than or equal to 2,500 µg/L.

Based on the above criteria, the below-listed values were determined to be the applicable standards for the compounds of concern.

Compound	Statewide Health Standard for Groundwater in a Non-Residential Used Aquifer (µg/L)	Site-Specific Standard (µg/L)
Benzene	5	To be determined
Toluene	1,000	N/A
Ethylbenzene	700	N/A
Total Xylenes	10,000	N/A
MTBE	20	To be determined
Isopropylbenzene	2,300	N/A
Naphthalene	100	To be determined

N/A: Not Applicable

Since future remedial actions are planned for the site to address adsorbed- and dissolved-phase hydrocarbon impact (see Section 8.0 of this report), SSS for soil and groundwater will not be chosen at this time but will be determined after additional site characterization (i.e., a soil boring investigation and two soil gas surveys) and future remedial actions have been completed.

7.3 Attainment Demonstration

Soil quality at the site meets the general attainment requirements for SHS for toluene, ethylbenzene, total xylenes, isopropylbenzene, and naphthalene for soil in a non-residential, used aquifer. However, benzene was detected at concentrations above the SHS in eight samples during the 1996 station reconstruction activities. Upon completion of future remedial actions and soil attainment sampling, as outlined in 25 Pa Code 250.703, attainment for a combination of SHS and SSS will be demonstrated.

As outlined in 25 Pa Code 250.704, attainment for a combination of SHS and SSS for groundwater will be demonstrated when dissolved-phase petroleum hydrocarbon compounds are

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below their respective cleanup standards for a period of eight consecutive quarterly monitoring and sampling events at and beyond the point of compliance during post-remediation monitoring and sampling. Cleanup standards will not be established until the completion of planned remedial actions (Section 8.0) and when decreasing trends are observed in each of the point-of-compliance wells.

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8.0 REMEDIAL ACTION PLAN

Following the interim remedial actions described in Section 6.0 of this report, remedial activities were suspended to monitor groundwater concentrations for the last two quarters of 2005. The groundwater sampling data obtained during July through October 2005 demonstrate increasing trends in groundwater concentrations in six of the seven on-site monitoring wells. As mentioned in Section 3.6.3 of this report, the increases in groundwater concentrations could be attributed to desorption of hydrocarbons from soil into groundwater as a result of the chemical oxidation process.

Due to steady and increasing groundwater concentrations across the site, GES proposes the following plan to monitor and address the dissolved-phase hydrocarbon concentrations in the subsurface.

8.1 Groundwater Monitoring

Groundwater monitoring will continue as described in Section 3.3 for the first two quarters of 2006. The results of the sampling events will be used to determine whether groundwater concentrations are steady, increasing, or decreasing. If groundwater sampling results indicate steady or increasing trends in hydrocarbon concentrations, active remediation via discrete high-intensity targeted (HIT) events will be reinitiated during third quarter 2006. If groundwater sampling results indicate decreasing hydrocarbon trends and all PADEP SHS and site-specific standards have been met, attainment sampling will begin as described in Section 8.3 of this report.

8.2 High-Intensity Targeted Remediation

If necessary, pending the results of groundwater monitoring during the first and second quarters of 2006, bi-monthly HIT remediation via hydrogen peroxide injection events will be initiated at the site beginning in July 2006. Three injection points will be installed prior to the start of the HIT events. Injection well locations will be determined based upon groundwater sampling data obtained during the first and second quarters 2006.

During each injection event, groundwater chemistry parameters including DO, pH, ORP, depth to groundwater, and groundwater temperature will be recorded to determine what influence hydrogen peroxide has at the surrounding monitoring wells. Prior to subsequent events, available groundwater quality data will be evaluated to ensure that the hydrogen peroxide injection is concentrated at the appropriate injection points. Groundwater chemistry parameters will be recorded during each subsequent HIT remediation event and quarterly groundwater sampling event.

8.3 Remediation Completion and Attainment Sampling Evaluation

At the conclusion of the fourth quarter of 2006, HIT remediation activities will be suspended to allow for evaluation of resultant groundwater conditions and a minimum of two quarters of groundwater sampling will be conducted. Active remediation will be considered complete when the following conditions have been achieved:

- Decreasing hydrocarbon concentration trends are observed for a minimum of two quarters; and
- PADEP SHS and/or site-specific standards are achieved.

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Upon completion of active remediation at the site, it will be necessary, per Section IV of Pennsylvania's Land Recycling Program Technical Guidance Manual (Item #6-Additional Information on Statistical Procedures, Page IV-53 and IV-54), to confirm that groundwater conditions have stabilized prior to beginning attainment sampling. Specifically, stable conditions will be determined by comparing groundwater temperatures and hydrogen peroxide concentrations at wells used for injection and point-of-compliance (POC) wells to an upgradient, non-impacted, non-injection well. To verify that groundwater stabilization has been achieved, the following conditions will be required prior to attainment sampling:

- Field testing indicates that the chemical oxidation reaction is complete and residual hydrogen peroxide solution is no longer present in the injection and/or POC wells. To determine if the reaction is complete, water quality testing strips (or an appropriate alternative field measurement device) designed to indicate the hydrogen peroxide concentration will be used during groundwater sampling events to determine if any residual hydrogen peroxide is in the monitoring and/or POC wells. Any concentrations of peroxide observed in these wells will be compared to readings in an upgradient well known to have not been impacted by peroxide injection. If the concentrations are equal to or are less than the background concentrations, the groundwater will be considered stabilized;

- Groundwater temperature has returned to conditions observed prior to remedial activity. As previously stated, seasonal fluctuations in groundwater temperature are expected and will be considered when determining if pre-remediation conditions exist. Temperature readings collected before the April 28, 2005 chemical oxidation event and those collected at upgradient wells will provide baseline information for evaluation of temperature stabilization.

Since changes in DO and ORP are expected due to the decrease in hydrocarbon concentrations, these parameters will not be considered when determining if pre-remediation conditions exist. Readings for these parameters will continue to be collected and will be used in conjunction with hydrocarbon concentration reductions to determine the overall success of remediation activities at the site.

In the event that decreasing concentrations are not observed, two additional injection and extraction events will be conducted in 2007, and the site will be re-evaluated based on the above criteria. If decreasing concentrations are achieved but all other criteria are not achieved, two additional quarters of groundwater sampling will be conducted to monitor the groundwater chemistry and allow conditions to stabilize. Attainment sampling will be initiated when the above conditions are met; groundwater chemistry parameters will continue to be monitored to ensure that groundwater has stabilized.

8.4 Permitting

The injection process is governed by the requirements of the United States Environmental Protection Agency (USEPA). An application for coverage under the Underground Injection Control (UIC) program was submitted to the USEPA Region III, and permission was granted to perform the chemical oxidation injections.

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8.5 Implementation Schedule

The HIT events are tentatively scheduled to begin in July 2006. Chemical oxidation events will be performed on alternating months, for a period of six months, for a total of three injection (hydrogen peroxide) events. Following this period, the HIT events will be discontinued to evaluate data and make further recommendations and, if necessary, additional events will be scheduled.

A summary of the proposed remediation schedule is presented below. This schedule is dependent upon PADEP approval and changes to site conditions:

First and Second Quarter 2006 – Perform quarterly groundwater sampling.

Third and Fourth Quarter 2006 – Perform quarterly groundwater sampling, three chemical oxidation and three vacuum extraction events as needed, and begin attainment sampling if active remediation is considered complete as outlined in Section 8.3 above.

First Quarter 2007 – Perform additional HIT events if necessary, and begin attainment sampling if active remediation is considered complete as outlined in Section 8.3 above.

8.6 Site Safety

All health and safety standards will be maintained in accordance with Occupational Safety and Health Administrative guidelines 29 CFR 1910.120. It is anticipated that all on-site work will be performed using Level D personal protective equipment recognizing the potential for an upgrade if petroleum hydrocarbon concentrations exceed the action levels identified by the site specific health and safety plan (HASP). Additional safeguards regarding the use and handling of hydrogen peroxide and bioremediation materials will be included in the HASP; these will be communicated to all site personnel prior to site work.

8.7 Reporting

Reports summarizing remedial and monitoring activities and site conditions will be submitted to the PADEP on a quarterly basis. The reports will include a site activities update, well gauging data, groundwater gradient map, sampling summary table, estimated hydrocarbon reduction data, and associated analytical data.

8.8 Disposal of Wastes

Any wastes generated by the remedial activities will be disposed of in accordance with all applicable state and federal regulations.

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9.0 SUMMARY

The following is a summary of site conditions and findings based upon the site characterization activities conducted at Sunoco Station #0363-5430, located at 610 Old York Road, Warminster Township, Bucks County, Pennsylvania.

- Unconsolidated subsurface soils at the site consist of mostly of clayey soil and fill materials overlying competent red shale bedrock of the Stockton Formation, which was encountered at depths ranging from six to 11 feet bgs.

- Historical soil analytical results indicate that benzene was detected at concentrations exceeding the PADEP SHS beneath the former product dispensers and the former UST field. BTEX were also detected at concentrations below the PADEP SHS in the former product dispenser and UST field excavations. No unleaded gasoline constituents were detected in soil during monitoring well installation activities. Adsorbed-phase MTBE and isopropylbenzene have never been detected at this site. Adsorbed TPH and TPH-GRO were detected in the dispenser island and former UST field excavations.

- Based on measured water levels, groundwater generally occurs in an unconfined bedrock aquifer.

- The hydraulic gradient ranges from 0.01 to 0.05 ft/ft across the site with groundwater flow direction varying considerably with the seasons. Groundwater flows toward the southwest, west-southwest, west-northwest, and east-northeast, which is not consistent with the estimated regional groundwater flow. Regional groundwater flow is estimated to be generally toward the northwest, toward an unnamed tributary of Little Neshaminy Creek.

- Analytical results from groundwater samples collected during the most recent sampling event (October 28, 2005) indicate that benzene, MTBE, and/or naphthalene were detected at concentrations exceeding the PADEP SHS in all monitoring wells except MW-6.

- Based on fate and transport modeling, the benzene, MTBE, and naphthalene plumes are not anticipated to migrate off-site.

- Based on the hydrocarbon trend graph analysis, the benzene, MTBE, and naphthalene concentrations in monitoring wells MW-1 and MW-2 are increasing, which may be attributed to the desorption of hydrocarbons from soil into groundwater as a result of the chemical oxidation process. The increases could also indicate that residual adsorbed contamination from the former product dispensers is affecting wells MW-1 and MW-2 or that a new release has occurred at the current product dispenser islands.

  As mentioned in Section 3.6.3, continued quarterly groundwater monitoring will be conducted to verify whether there has been a new release or whether the increasing trends are the result of residual adsorbed contamination in the vicinity of the former dispenser islands. Additionally, Sunoco is in the process of conducting UST system tightness testing and investigating whether there have been fuel inventory inconsistencies at the site. After the results of further monitoring and testing are reviewed, a Notification of Reportable Release will be submitted to the PADEP if warranted.

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10.0 CONCLUSIONS AND RECOMMENDATIONS

The following is a summary of conclusions based on the information presented in this report as well as recommendations to complete the characterization of the site.

- There are two probable sources of unleaded gasoline contamination at the site: the former dispenser islands located along the eastern property boundary and the former UST field.

- The site requires additional characterization before the risk assessment can be considered comprehensive. The following activities should be considered for the near future:

    - A soil boring investigation should be conducted in the vicinity of each of the former dispenser islands to adequately define the adsorbed-phase impact at those locations and to verify whether residual soil contamination is currently affecting dissolved concentrations in groundwater.

    - An additional on-site monitoring well should be installed north of the former dispenser islands near the eastern property boundary to further define groundwater quality and flow direction in that area of the site.

    - Two or three dedicated soil gas collection points should be installed between the source areas and the station building. Two soil gas surveys should be conducted to determine whether vapor intrusion from soil into an enclosed space is a concern for this site. When the soil gas results are available, the risk assessment will be reevaluated for additional potential exposure pathways.

- Groundwater monitoring and sampling will continue on a quarterly basis at the site. If dissolved hydrocarbon concentrations continue to increase, three bi-monthly hydrogen peroxide injection events will be conducted beginning in July 2006.

- A fuel inventory check and UST system tightness testing shall be conducted by Sunoco to determine whether a new release has occurred, causing the increasing groundwater concentrations. Upon receipt of the results of the testing, GES will submit a Notification of Reportable Release to the PADEP if necessary.

- This most recent phase of site characterization was performed to document the Storage Tank Corrective Action Process, and Sunoco plans to demonstrate a combination of Statewide Health Standards and Site-Specific Standards for groundwater and soil in accordance with the applicable provisions of Pennsylvania Act 2.

"An Equal Opportunity Employer"

11.0 REFERENCES

Berg T. M., et al. 1980. Geologic Map of Pennsylvania, Pennsylvania Department of Environmental Resources, Bureau of Topographic and Geologic Survey, Harrisburg, Pennsylvania.

Geyer, A. R., and J. P. Wilshusen. 1982. *Engineering Characteristics of the Rocks of Pennsylvania, Second Edition*, Pennsylvania Geologic Survey, Harrisburg, PA.

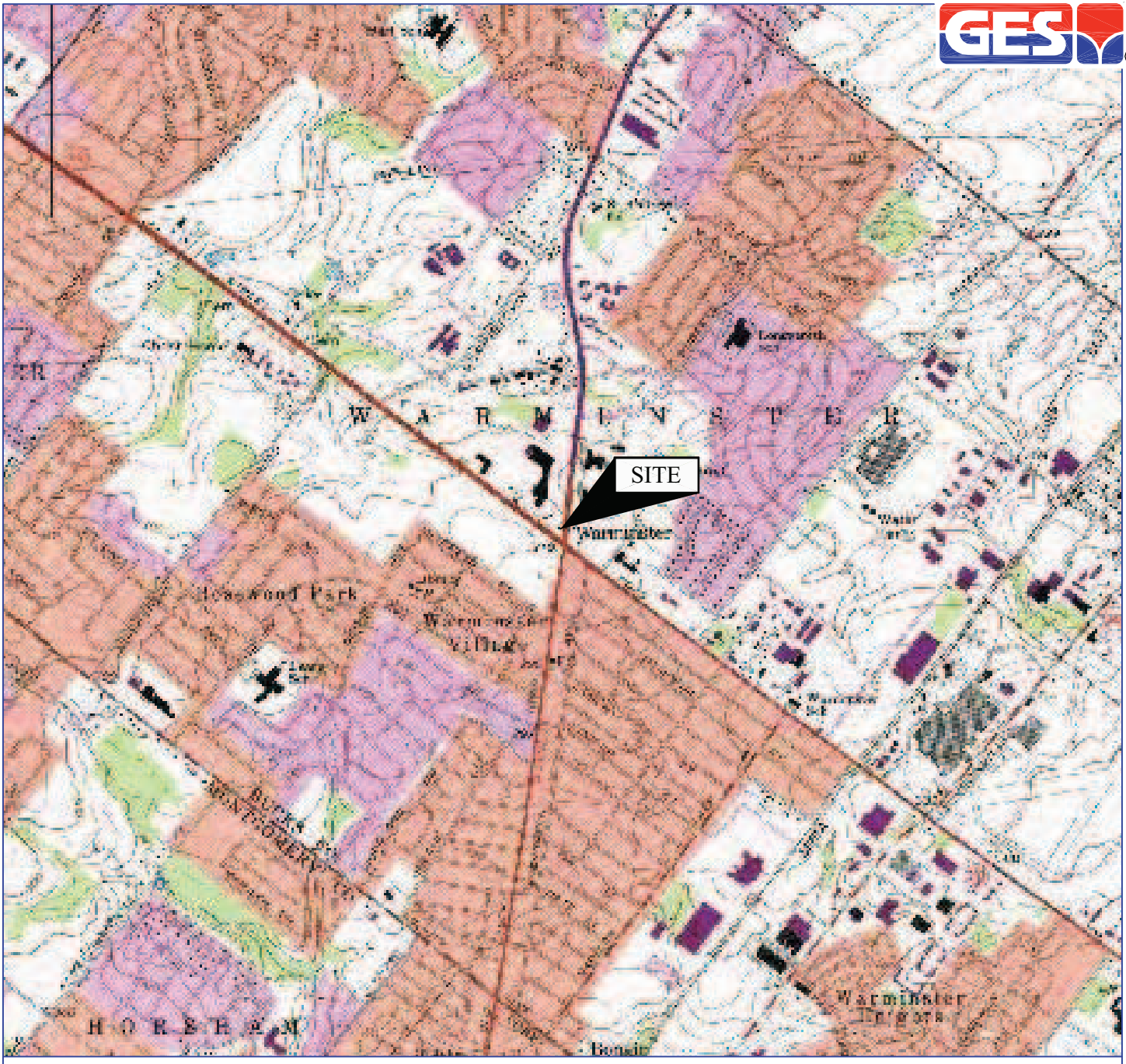
Pennsylvania. Department of Environmental Protection. Closure Requirements of Underground Storage Tank Systems. Harrisburg: 1998.

Pennsylvania. Geological Survey. Atlas of Preliminary Geologic Quadrangle Maps of Pennsylvania. 4th Series. Harrisburg: 1981.

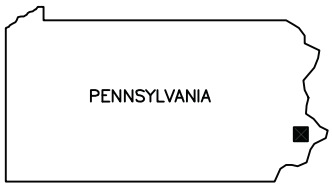
Sevon, W.D. 2000. Physiographic Provinces of Pennsylvania (Map 13), Pennsylvania Department of Conservation and Natural Resources, Bureau of Topographic and Geologic Survey, Harrisburg, Pennsylvania.

United States Geologic Survey. 1983. 7.5 Minute Series Reading Topographic Quadrangle, Pennsylvania.

FIGURES

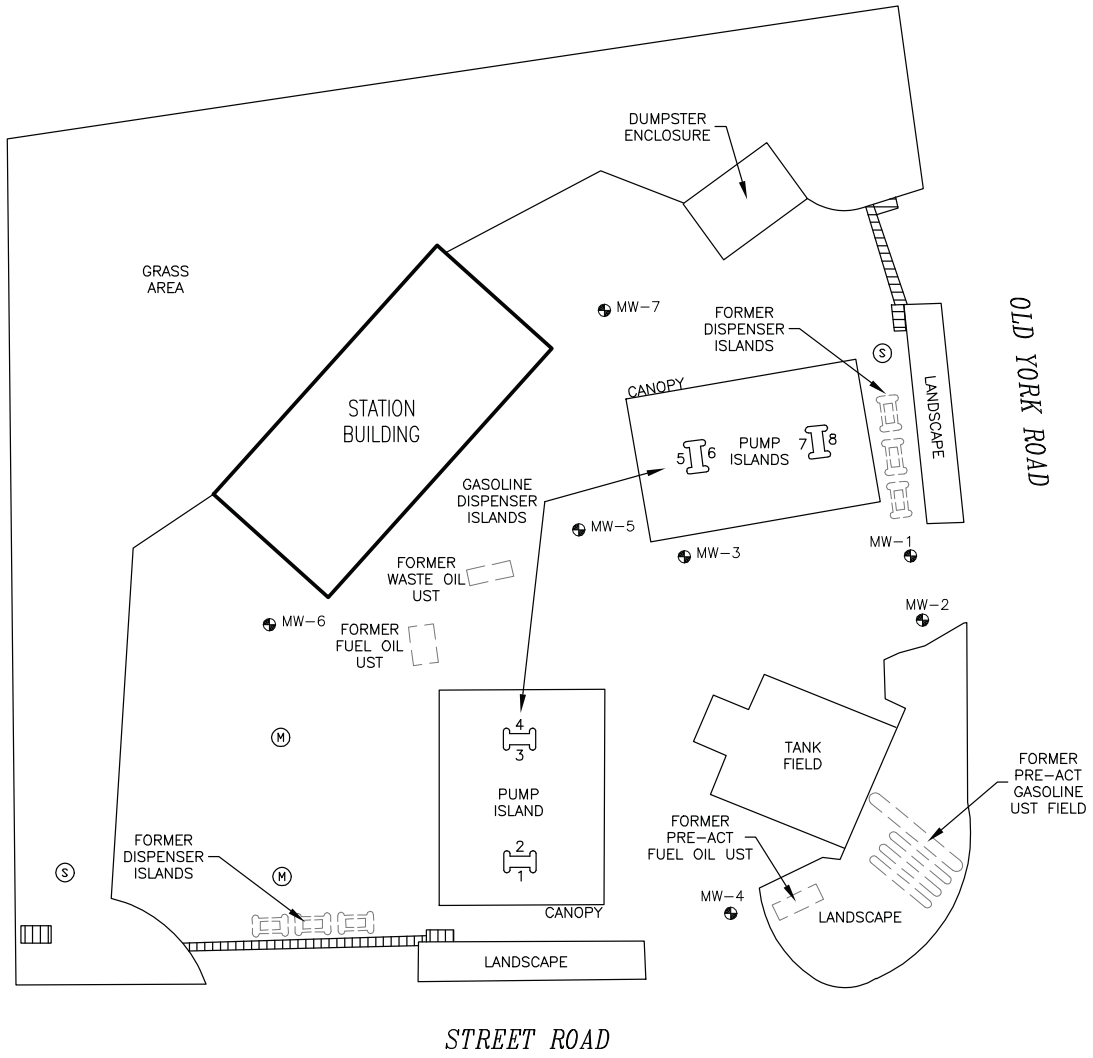


SOURCE: USGS 7.5 MINUTE SERIES
TOPOGRAPHIC QUADRANGLE
HATBORO, PA
CONTOUR INTERVAL = 10' 1966 (1983)

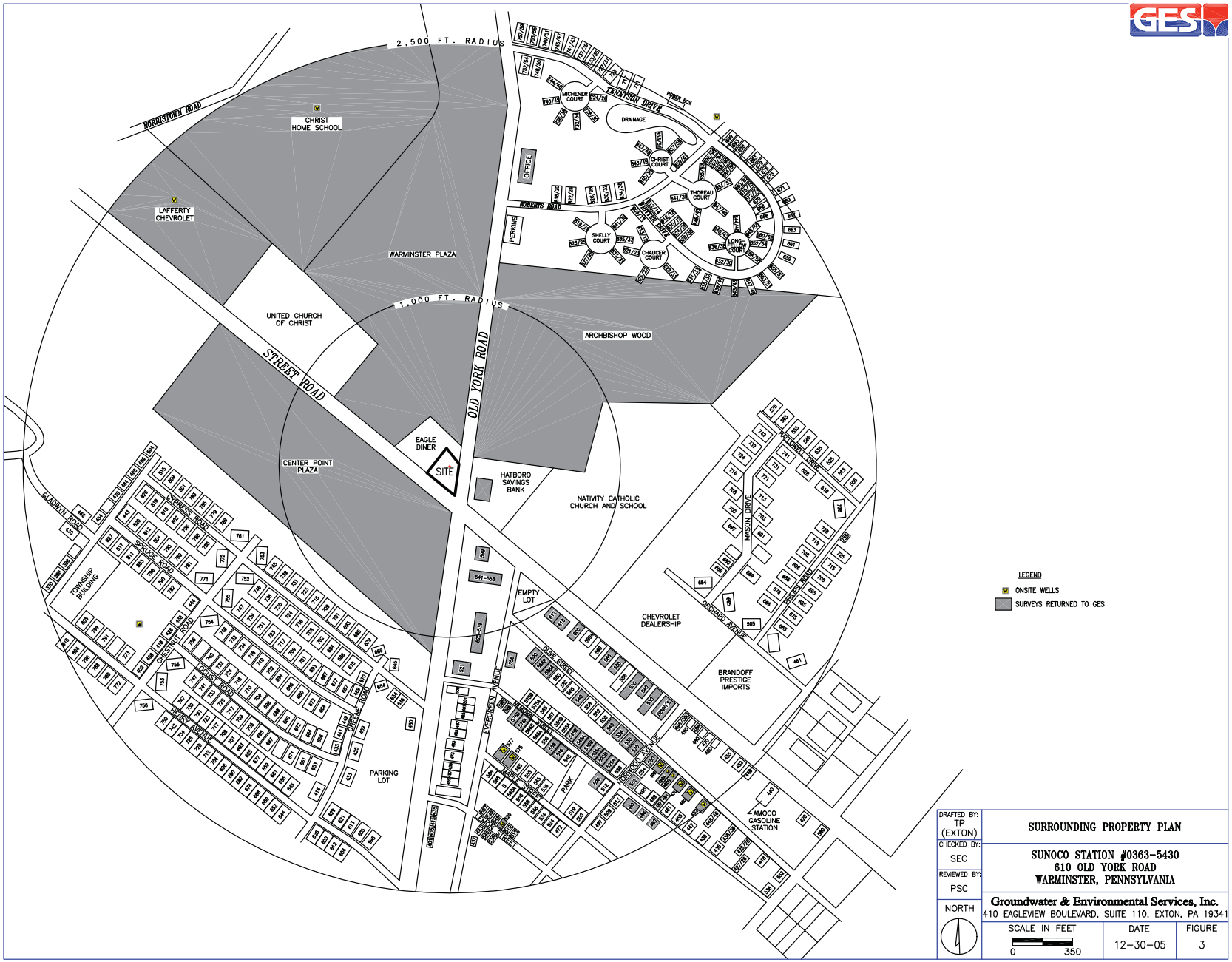


QUADRANGLE LOCATION

DRAFTED BY: TP (EXTON)	SITE LOCATION MAP
CHECKED BY: JJ	SUNOCO STATION #0363-5430 610 OLD YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: PSC	Groundwater & Environmental Services, Inc. 410 EAGLEVIEW BOULEVARD, SUITE 110, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 2000 / DATE: 09-26-05 / FIGURE: 1

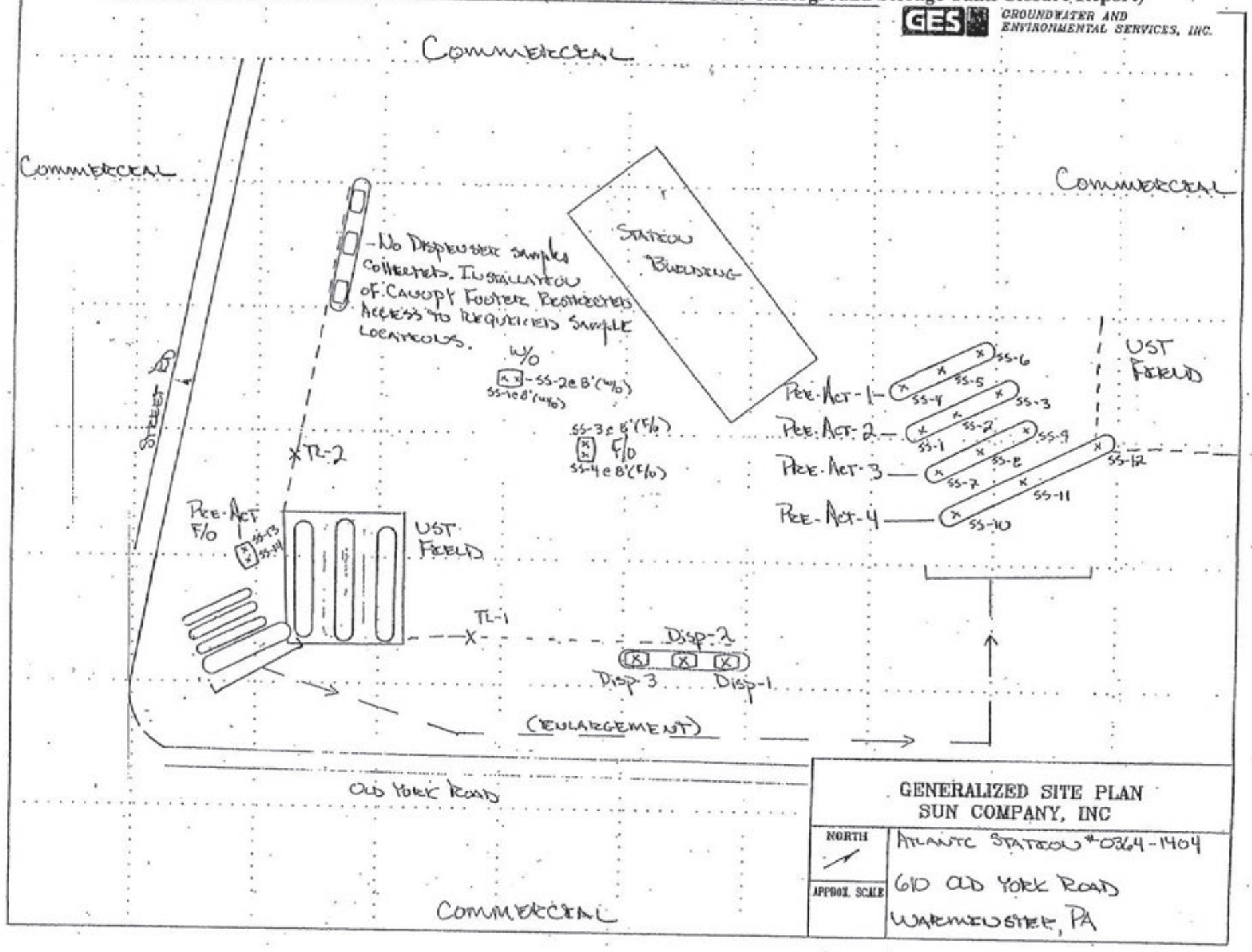


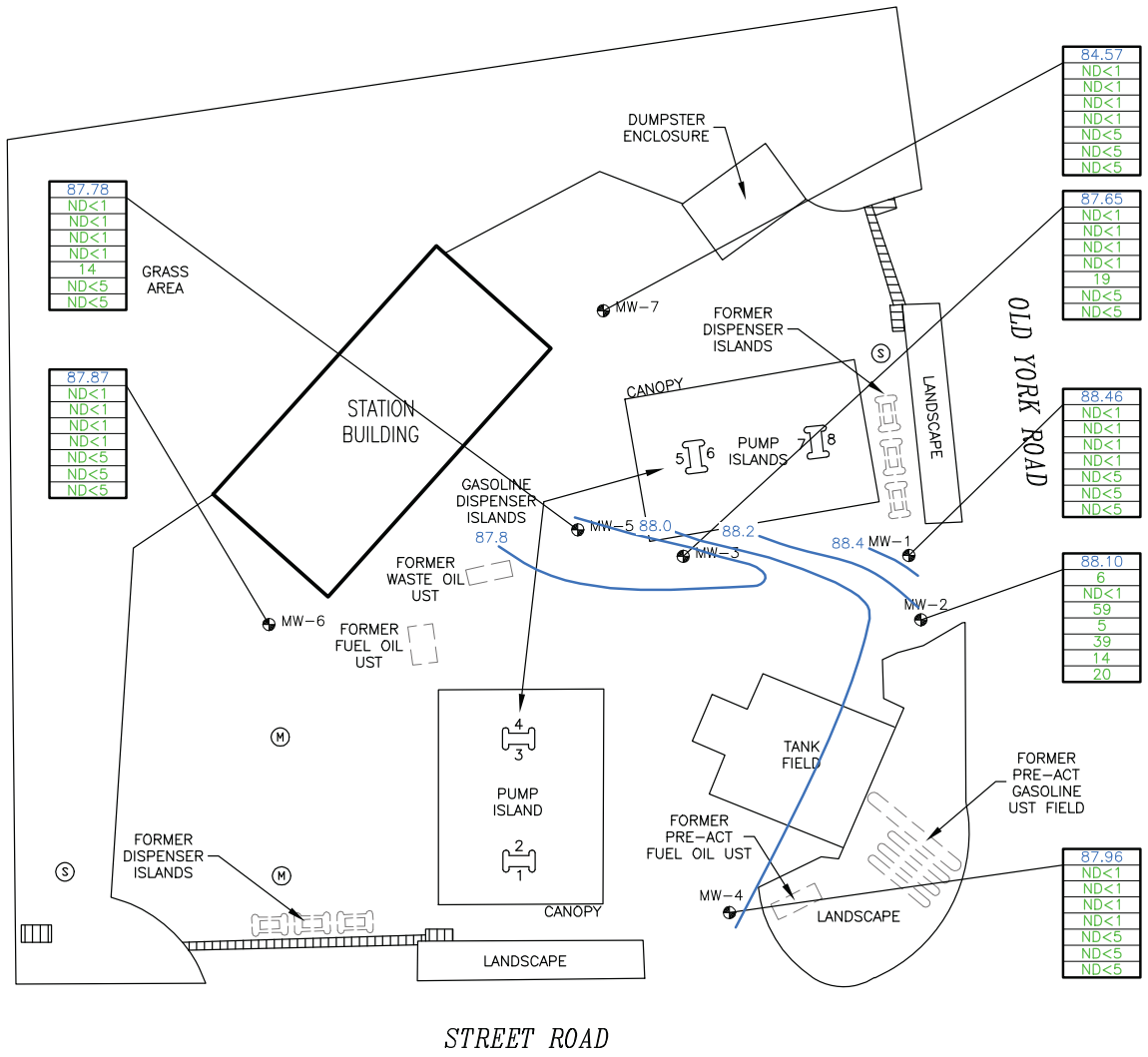
DRAFTED BY: TP (EXTON)	SITE MAP
CHECKED BY: SEC	SUNOCO STATION #0363-5430 610 OLD YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: PSC	Groundwater & Environmental Services, Inc. 410 EAGLEVIEW BOULEVARD, SUITE 110, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 30 / DATE: 01-06-06 / FIGURE: 2



DRAFTED BY: TP (EXTON)	SURROUNDING PROPERTY PLAN
CHECKED BY: SEC	SUNOCO STATION #0363-5430 610 OLD YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: PSC	Groundwater & Environmental Services, Inc. 410 EAGLEVIEW BOULEVARD, SUITE 110, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 350 / DATE: 12-30-05 / FIGURE: 3

FIGURE 4 - SOIL SAMPLE LOCATION MAP (Taken from 1996 GES Underground Storage Tank Closure Report)





LEGEND

- MONITORING WELL
- SEWER MANHOLE
- MANHOLE
- STORM DRAINAGE

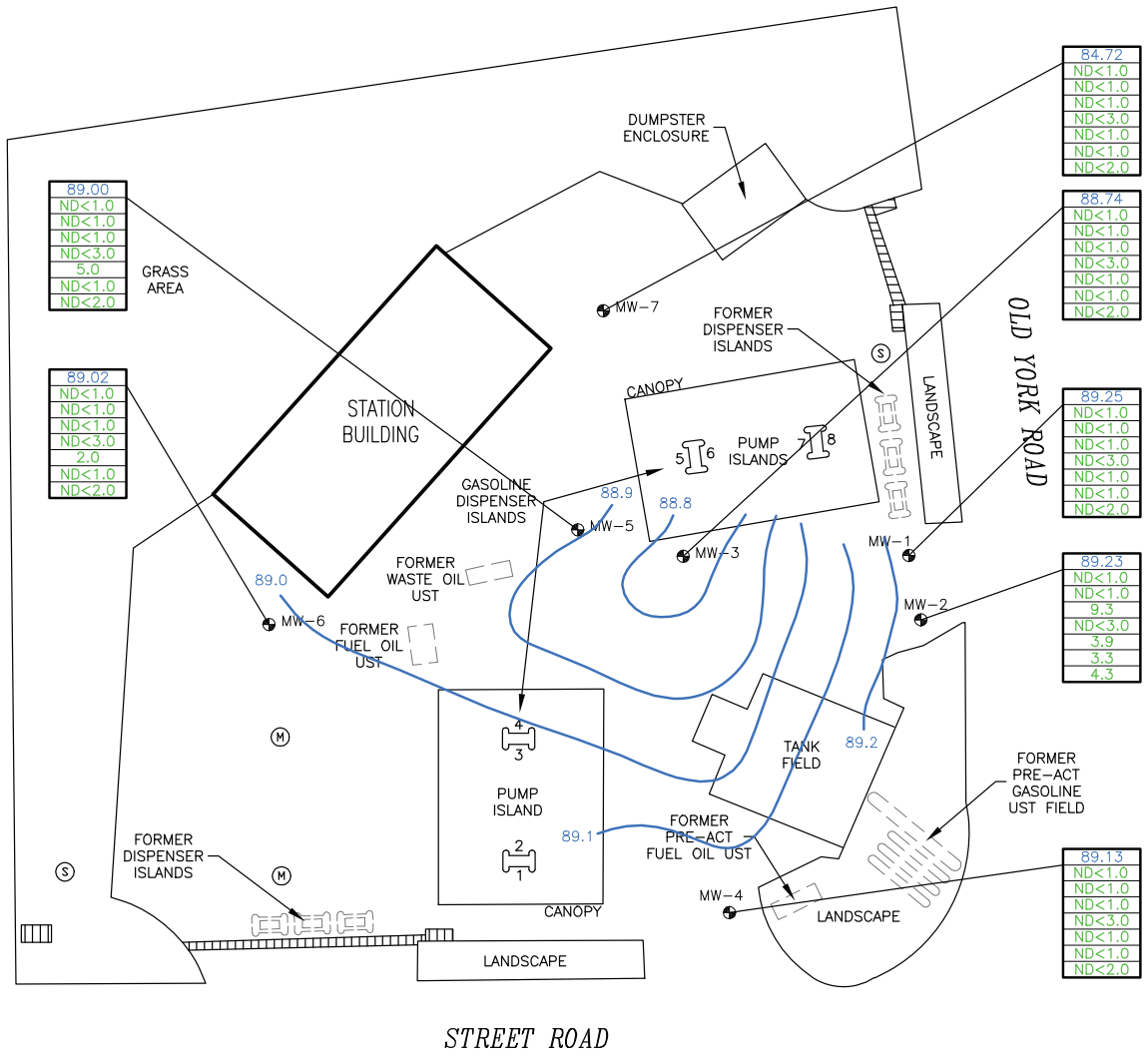
88.10	GROUNDWATER ELEVATION (feet)
6	BENZENE CONCENTRATION (ug/L)
ND<1	TOLUENE CONCENTRATION (ug/L)
59	ETHYLBENZENE CONCENTRATION (ug/L)
5	TOTAL XYLENES CONCENTRATION (ug/L)
39	MTBE CONCENTRATION (ug/L)
14	ISOPROPYLBENZENE CONCENTRATION (ug/L)
20	NAPHTHALENE CONCENTRATION (ug/L)

88.2 — GROUNDWATER CONTOUR (feet)

ND — NOT DETECTED

NOTE: GROUNDWATER ELEVATION DATA FROM MW-7 WAS NOT UTILIZED FOR THE CONTOUR MAP BECAUSE THAT WELL IS SCREENED IN A DEEPER AQUIFER.

DRAFTED BY: TP (EXTON)	GROUNDWATER MONITORING MAP JANUARY 13, 2005
CHECKED BY: SEC	SUNOCO STATION #0363-5430 610 OLD YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: PSC	Groundwater & Environmental Services, Inc. 410 EAGLEVIEW BOULEVARD, SUITE 110, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 30 / DATE: 12-30-05 / FIGURE: 5



LEGEND

- MONITORING WELL
- SEWER MANHOLE
- MANHOLE
- STORM DRAINAGE

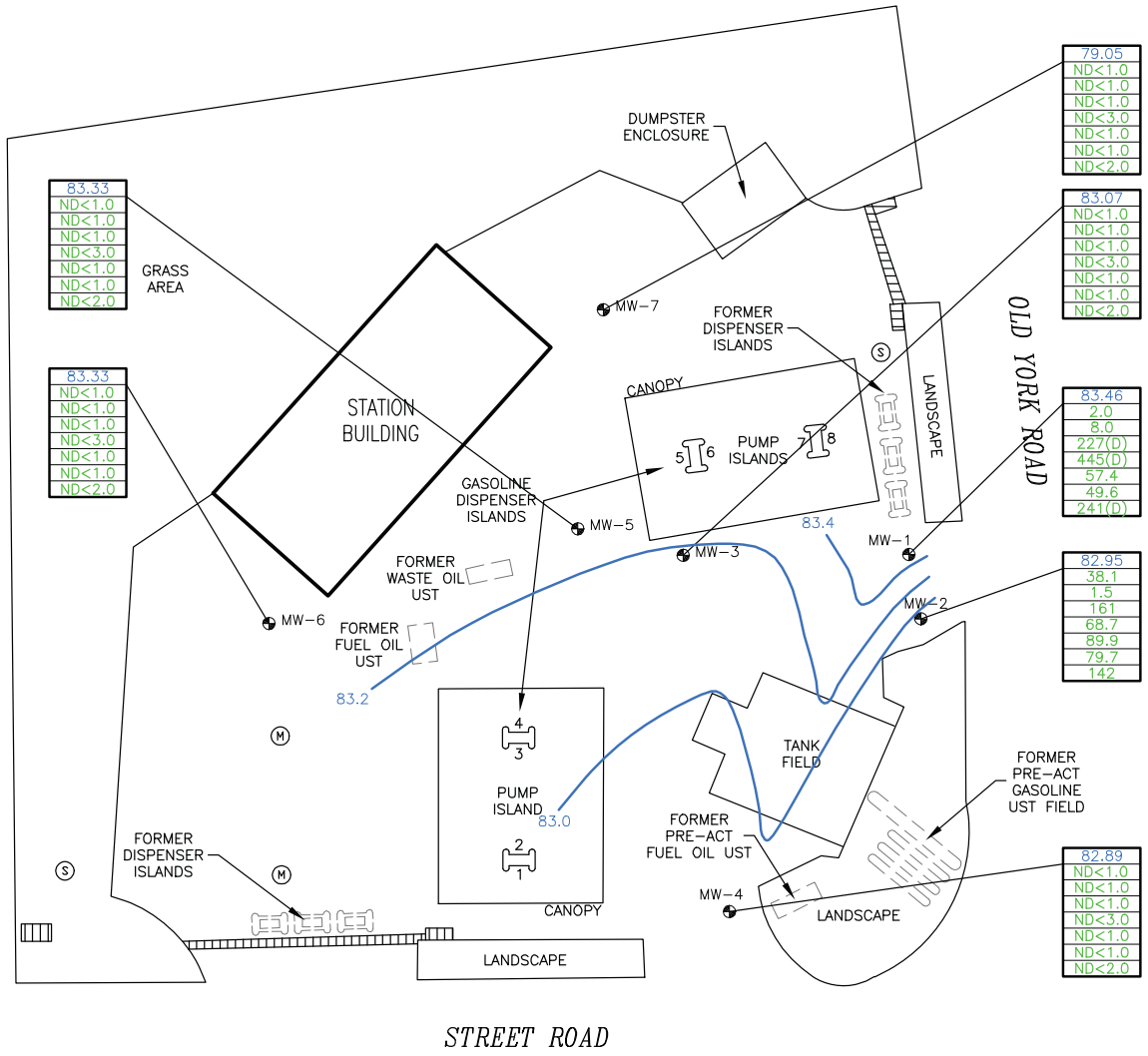
89.23	GROUNDWATER ELEVATION (feet)
ND<1.0	BENZENE CONCENTRATION (ug/L)
ND<1.0	TOLUENE CONCENTRATION (ug/L)
9.3	ETHYLBENZENE CONCENTRATION (ug/L)
ND<3.0	TOTAL XYLENES CONCENTRATION (ug/L)
3.9	MTBE CONCENTRATION (ug/L)
3.3	ISOPROPYLBENZENE CONCENTRATION (ug/L)
4.3	NAPHTHALENE CONCENTRATION (ug/L)

89.1 — GROUNDWATER CONTOUR (feet)

ND — NOT DETECTED

NOTE: GROUNDWATER ELEVATION DATA FROM MW-7 WAS NOT UTILIZED FOR THE CONTOUR MAP BECAUSE THAT WELL IS SCREENED IN A DEEPER AQUIFER.

DRAFTED BY: TP (EXTON)	GROUNDWATER MONITORING MAP APRIL 20, 2005
CHECKED BY: SEC	SUNOCO STATION #0363-5430 610 OLD YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: PSC	Groundwater & Environmental Services, Inc. 410 EAGLEVIEW BOULEVARD, SUITE 110, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 30 / DATE: 12-30-05 / FIGURE: 6



LEGEND

- MONITORING WELL
- (S) SEWER MANHOLE
- (M) MANHOLE
- STORM DRAINAGE

83.46	GROUNDWATER ELEVATION (feet)
2.0	BENZENE CONCENTRATION (ug/L)
8.0	TOLUENE CONCENTRATION (ug/L)
227(D)	ETHYLBENZENE CONCENTRATION (ug/L)
445(D)	TOTAL XYLENES CONCENTRATION (ug/L)
57.4	MTBE CONCENTRATION (ug/L)
49.6	ISOPROPYLBENZENE CONCENTRATION (ug/L)
241(D)	NAPHTHALENE CONCENTRATION (ug/L)

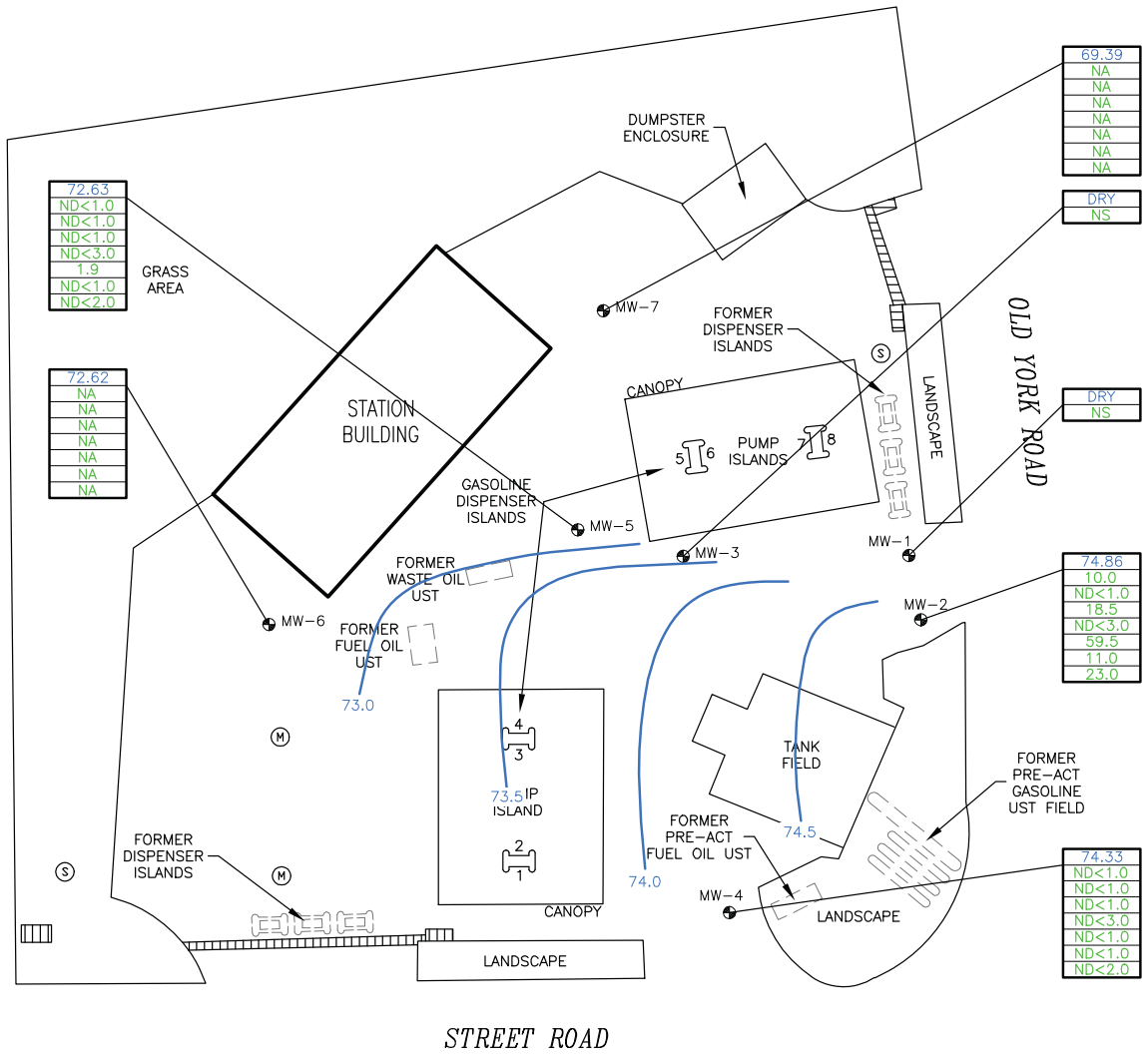
83.2 GROUNDWATER CONTOUR (feet)

ND NOT DETECTED

(D) LABORATORY SECONDARY DILUTION LIMIT

NOTE: GROUNDWATER ELEVATION DATA FROM MW-7 WAS NOT UTILIZED FOR THE CONTOUR MAP BECAUSE THAT WELL IS SCREENED IN A DEEPER AQUIFER.

DRAFTED BY: TP (EXTON)	GROUNDWATER MONITORING MAP JULY 15, 2005
CHECKED BY: SEC	SUNOCO STATION #0363-5430 610 OLD YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: PSC	Groundwater & Environmental Services, Inc. 410 EAGLEVIEW BOULEVARD, SUITE 110, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 30 / DATE: 12-30-05 / FIGURE: 7



LEGEND

- MONITORING WELL
- SEWER MANHOLE
- MANHOLE
- STORM DRAINAGE

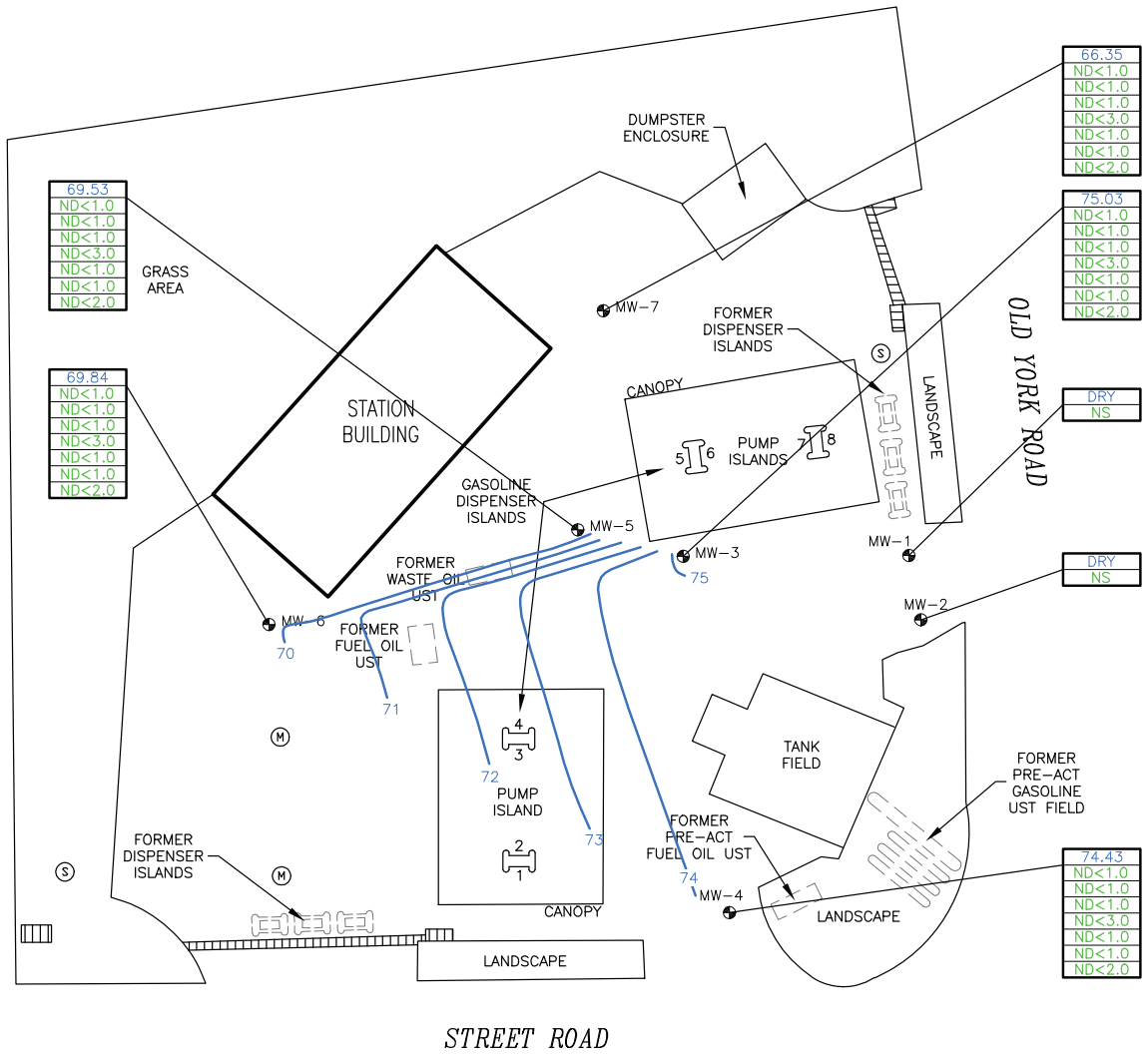
72.63	GROUNDWATER ELEVATION (feet)
ND<1.0	BENZENE CONCENTRATION (ug/L)
ND<1.0	TOLUENE CONCENTRATION (ug/L)
ND<1.0	ETHYLBENZENE CONCENTRATION (ug/L)
ND<3.0	TOTAL XYLENES CONCENTRATION (ug/L)
1.9	MTBE CONCENTRATION (ug/L)
ND<1.0	ISOPROPYLBENZENE CONCENTRATION (ug/L)
ND<2.0	NAPHTHALENE CONCENTRATION (ug/L)
74.5	GROUNDWATER CONTOUR (feet)
ND	NOT DETECTED
NA	NOT ANALYZED
NS	NOT SAMPLED

NOTES:

1) GROUNDWATER ELEVATION DATA FROM MW-7 WAS NOT UTILIZED FOR THE CONTOUR MAP BECAUSE THAT WELL IS SCREENED IN A DEEPER AQUIFER.

2) MONITORING WELLS MW-1 AND MW-3 WERE DRY AND COULD NOT BE SAMPLED DURING THIS SAMPLING EVENT.

DRAFTED BY: TP (EXTON)	GROUNDWATER MONITORING MAP SEPTEMBER 7, 2005
CHECKED BY: SEC	SUNOCO STATION #0363-5430 610 OLD YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: PSC	Groundwater & Environmental Services, Inc. 410 EAGLEVIEW BOULEVARD, SUITE 110, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 30 / DATE: 12-30-05 / FIGURE: 8



LEGEND

- MONITORING WELL
- SEWER MANHOLE
- MANHOLE
- STORM DRAINAGE

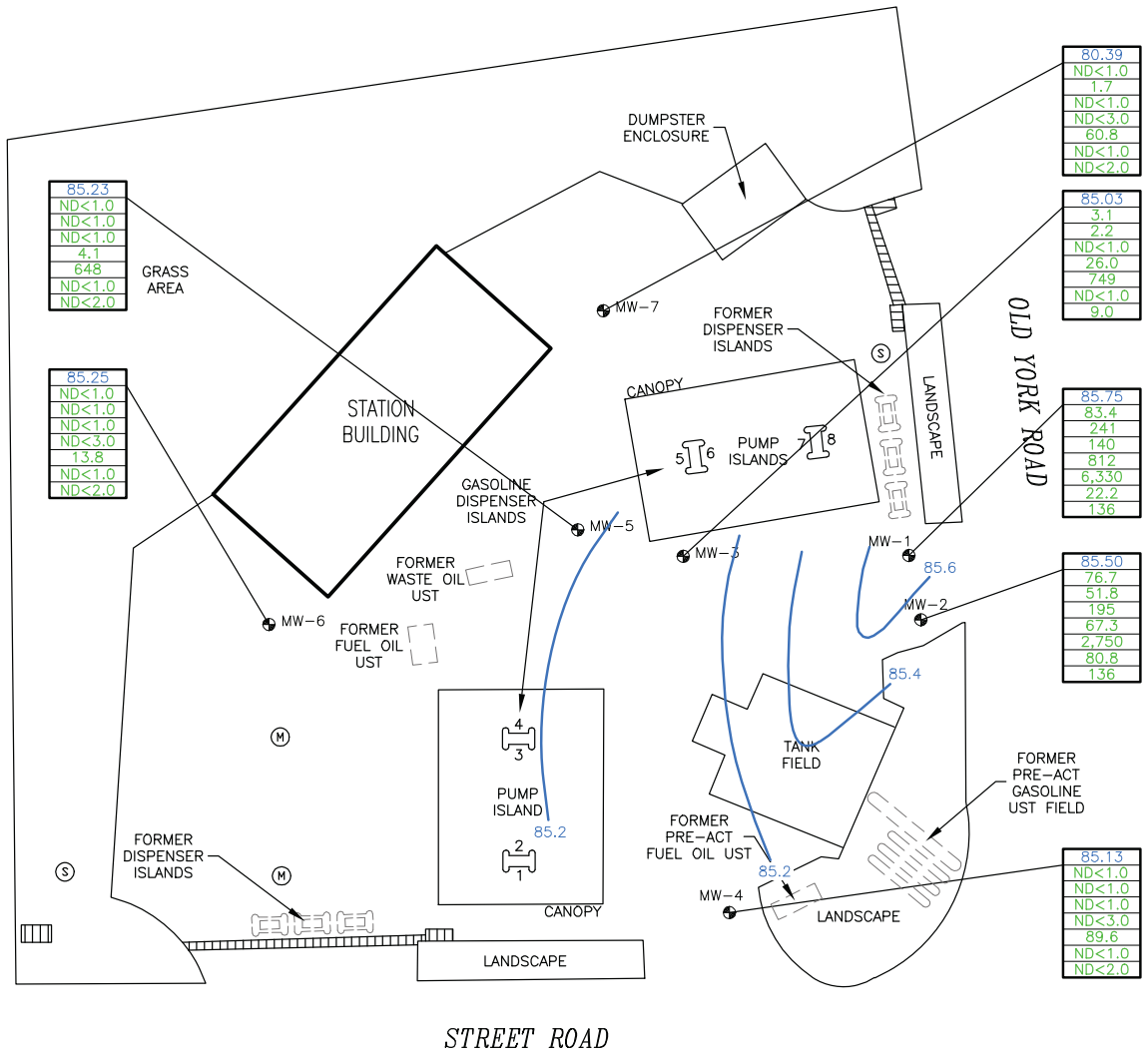
74.43	GROUNDWATER ELEVATION (feet)
ND<1.0	BENZENE CONCENTRATION (ug/L)
ND<1.0	TOLUENE CONCENTRATION (ug/L)
ND<1.0	ETHYLBENZENE CONCENTRATION (ug/L)
ND<3.0	TOTAL XYLENES CONCENTRATION (ug/L)
ND<1.0	MTBE CONCENTRATION (ug/L)
ND<1.0	ISOPROPYLBENZENE CONCENTRATION (ug/L)
ND<2.0	NAPHTHALENE CONCENTRATION (ug/L)
73	GROUNDWATER CONTOUR (feet)
ND	NOT DETECTED
(D)	LABORATORY SECONDARY DILUTION LIMIT
NS	NOT SAMPLED

NOTES:

1) GROUNDWATER ELEVATION DATA FROM MW-7 WAS NOT UTILIZED FOR THE CONTOUR MAP BECAUSE THAT WELL IS SCREENED IN A DEEPER AQUIFER.

2) MONITORING WELLS MW-1 AND MW-2 WERE DRY AND COULD NOT BE SAMPLED DURING THIS SAMPLING EVENT.

DRAFTED BY: TP (EXTON)	GROUNDWATER MONITORING MAP SEPTEMBER 20, 2005
CHECKED BY: SEC	SUNOCO STATION #0363-5430 610 OLD YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: PSC	Groundwater & Environmental Services, Inc. 410 EAGLEVIEW BOULEVARD, SUITE 110, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 30 / DATE: 12-30-05 / FIGURE: 9



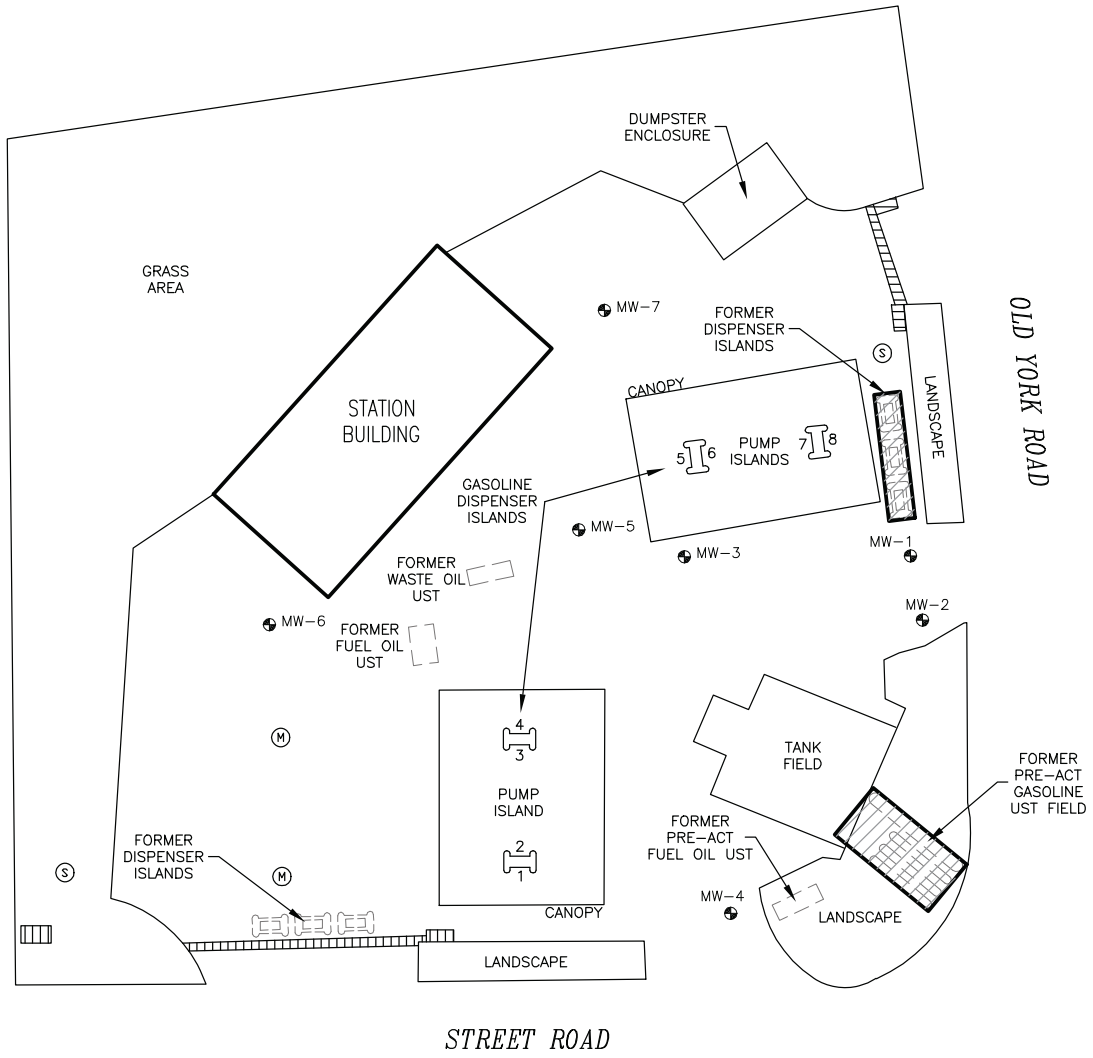
LEGEND

- MONITORING WELL
- SEWER MANHOLE
- MANHOLE
- STORM DRAINAGE

85.75	GROUNDWATER ELEVATION (feet)
83.4	BENZENE CONCENTRATION (ug/L)
241	TOLUENE CONCENTRATION (ug/L)
140	ETHYLBENZENE CONCENTRATION (ug/L)
812	TOTAL XYLENES CONCENTRATION (ug/L)
6,330	MTBE CONCENTRATION (ug/L)
22.2	ISOPROPYLBENZENE CONCENTRATION (ug/L)
136	NAPHTHALENE CONCENTRATION (ug/L)
85.4	GROUNDWATER CONTOUR (feet)
ND	NOT DETECTED

NOTE: GROUNDWATER ELEVATION DATA FROM MW-7 WAS NOT UTILIZED FOR THE CONTOUR MAP BECAUSE THAT WELL IS SCREENED IN A DEEPER AQUIFER.

DRAFTED BY: TP (EXTON)	GROUNDWATER MONITORING MAP OCTOBER 28, 2005
CHECKED BY: SEC	SUNOCO STATION #0363-5430 610 OLD YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: PSC	Groundwater & Environmental Services, Inc. 410 EAGLEVIEW BOULEVARD, SUITE 110, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 30 / DATE: 12-30-05 / FIGURE: 10

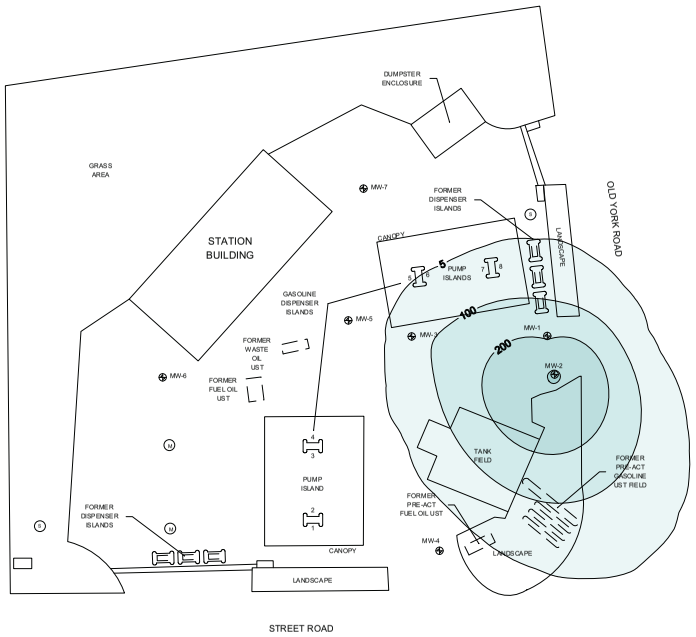


LEGEND

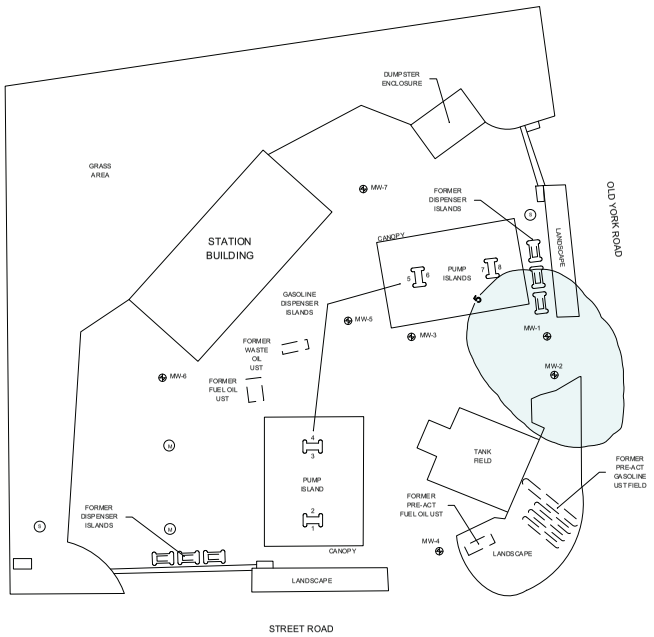
- MONITORING WELL
- SEWER MANHOLE
- MANHOLE
- STORM DRAINAGE
- SOURCE AREA LOCATION

DRAFTED BY: TP (EXTON)	SOURCE AREA MAP		
CHECKED BY: SEC	SUNOCO STATION #0363-5430 610 OLD YORK ROAD WARMINSTER, PENNSYLVANIA		
REVIEWED BY: PSC	Groundwater & Environmental Services, Inc. 410 EAGLEVIEW BOULEVARD, SUITE 110, EXTON, PA 19341		
NORTH	SCALE IN FEET 0 30	DATE 12-30-05	FIGURE 11

Historical Maximum



October 2005



Benzene Concentration (µg/L)

400

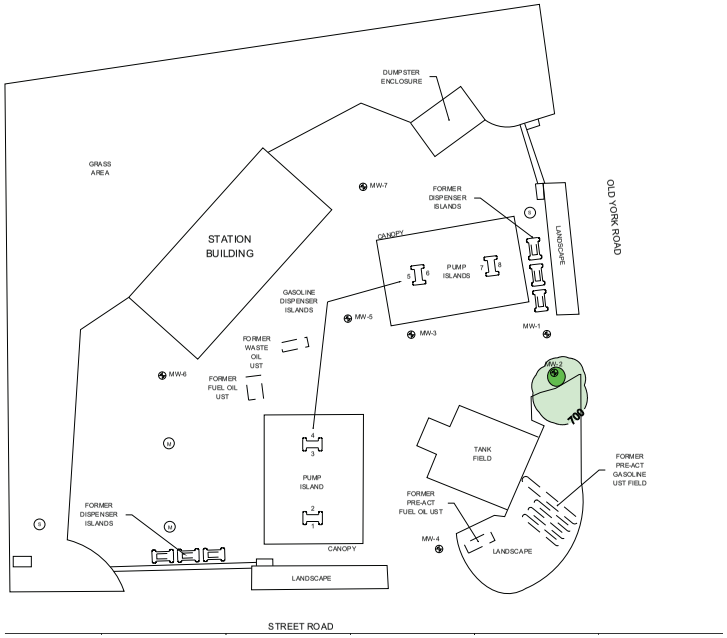
200

100

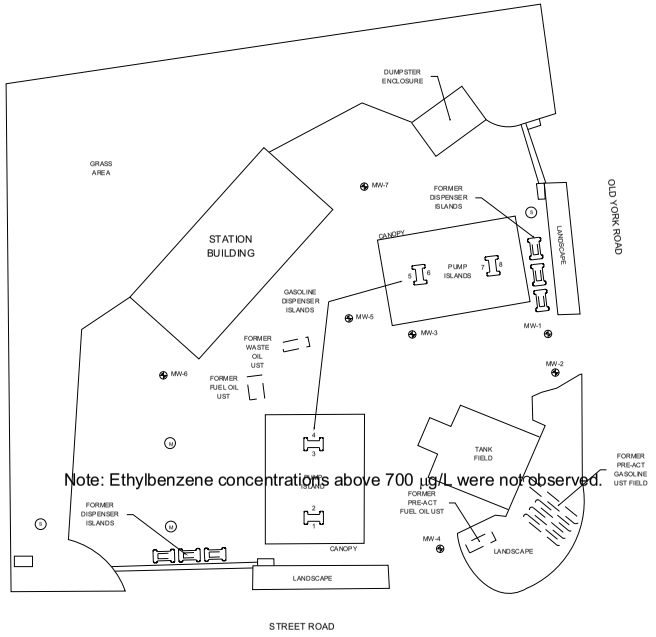
5

DRAFTED BY: SEC	**Benzene Concentrations Historical Max and October 2005**
CHECKED BY: PSC	**Sunoco Station #0363-5430** **610 Old York Road** **Warminster, Pennsylvania**
REVIEWED BY: SDB	**Groundwater & Environmental Services, Inc.** 410 Eagleview Boulevard, Suite 110, Exton, PA 19341
NORTH	SCALE IN FEET: 0 50 / DATE: 12-21-2005 / FIGURE: 12

Historical Maximum



October 2005



Note: Ethylbenzene concentrations above 700 µg/L were not observed.

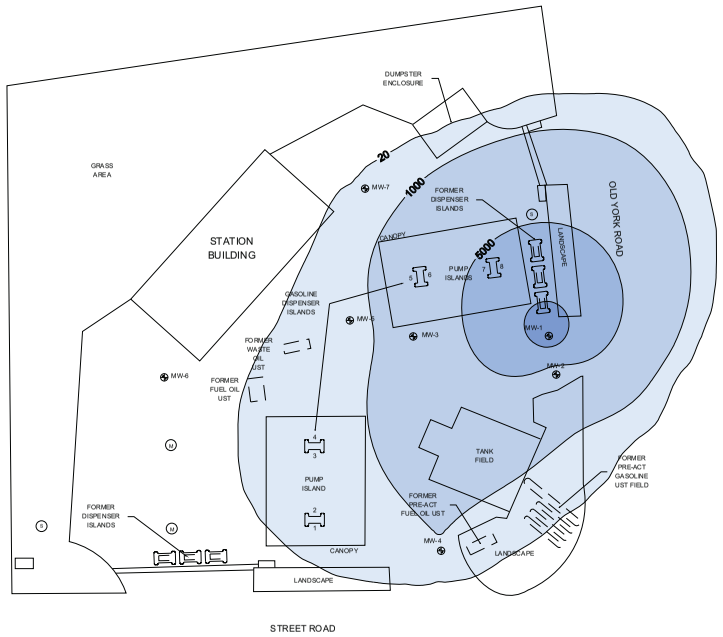
Ethylbenzene Concentration (µg/L)

800

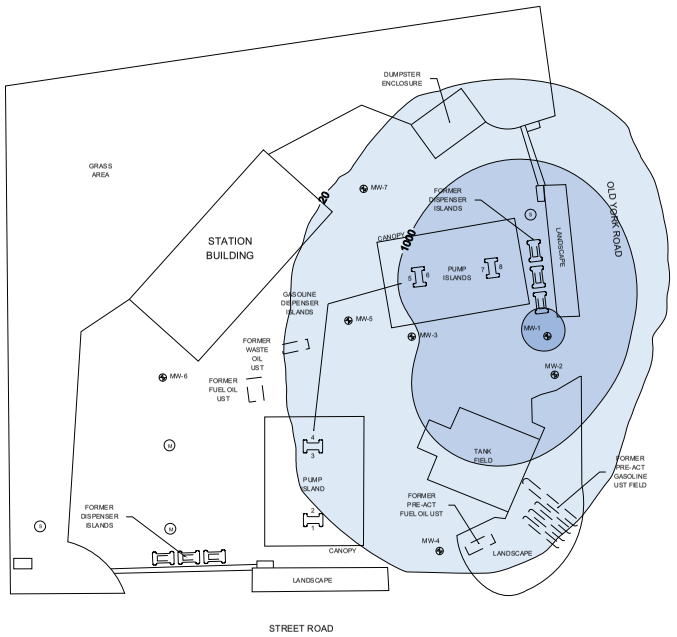
700

DRAFTED BY: SEC	**Ethylbenzene Concentrations Historical Max and October 2005**
CHECKED BY: PSC	**Sunoco Station #0363-5430** **610 Old York Road** **Warminster, Pennsylvania**
REVIEWED BY: SDB	**Groundwater & Environmental Services, Inc.** 410 Eagleview Boulevard, Suite 110, Exton, PA 19341
NORTH	SCALE IN FEET: 0 50 / DATE: 12-21-2005 / FIGURE: 13

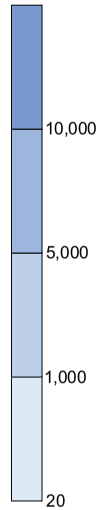
Historical Maximum



October 2005



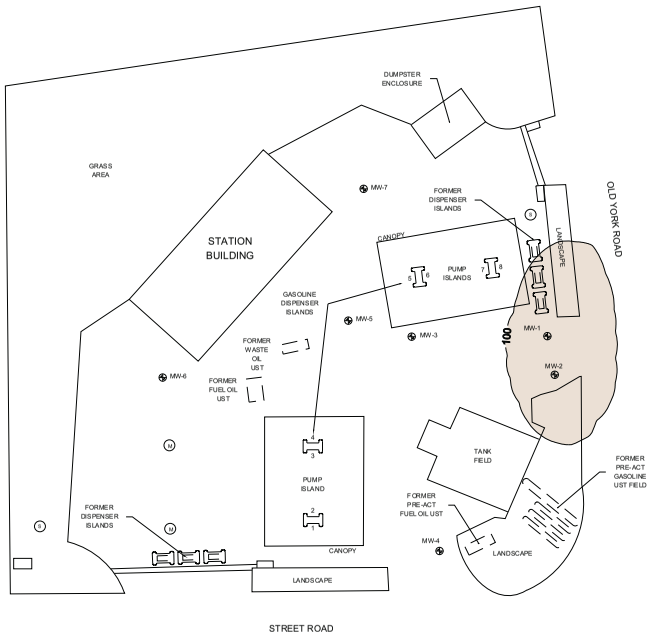
MTBE Concentration (µg/L)



DRAFTED BY: SEC	**MTBE Concentrations Historical Max and October 2005**
CHECKED BY: PSC	**Sunoco Station #0363-5430** **610 Old York Road** **Warminster, Pennsylvania**
REVIEWED BY: SDB	**Groundwater & Environmental Services, Inc.** 410 Eagleview Boulevard, Suite 110, Exton, PA 19341
NORTH	SCALE IN FEET: 0 50 / DATE: 12-21-2005 / FIGURE: 14

Historical Maximum

October 2005



Naphthalene Concentration (µg/L)

250

150

100

DRAFTED BY: SEC	**Naphthalene Concentrations Historical Max and October 2005**
CHECKED BY: PSC	**Sunoco Station #0363-5430 610 Old York Road Warminster, Pennsylvania**
REVIEWED BY SDB	**Groundwater & Environmental Services, Inc.** 410 Eagleview Boulevard, Suite 110, Exton, PA 19341
NORTH	SCALE IN FEET: 0 – 50 / DATE: 12-21-2005 / FIGURE: 15

TABLES

TABLE 1
HISTORICAL SOIL ANALYTICAL DATA SUMMARY

SUNOCO STATION #0363-5430
610 OLD YORK ROAD
WARMINSTER, PA

Sample ID	Depth (ft)	Sample Date	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Total Xylenes (µg/kg)	MTBE (µg/kg)	Isopropyl benzene (µg/kg)	Naphthalene (µg/kg)	TPH-GRO (mg/kg)	TPH (mg/kg)
SS-1	8	12/28/1995	ND<6	<6	ND<6	<18	NA	NA	NA	NA	40
SS-2	8	12/28/1995	ND<6	<6	ND<6	ND<18	NA	NA	NA	NA	370
SS-3	8	12/28/1995	ND<6	<6	ND<6	<17	NA	NA	NA	NA	480
SS-4	8	12/28/1995	ND<6	<6	ND<6	<17	NA	NA	NA	NA	100
DISP-1	1	2/8/1996	100	3,000	3,000	21,000	NA	NA	NA	200	NA
DISP-2	1	2/8/1996	700	51,000	41,000	250,000	NA	NA	NA	1,300	NA
DISP-3	1	2/8/1996	200	14,000	10,000	63,000	NA	NA	NA	310	NA
TL-1	1	2/13/1996	ND<5	ND<5	ND<5	ND<16	NA	NA	NA	ND<1	NA
TL-2	1	2/13/1996	ND<100	800	2,100	19,000	NA	NA	NA	150	NA
SS-1	12	2/27/1996	1,000	23,000	34,000	180,000	NA	NA	NA	1,100	NA
SS-2	12	2/27/1996	1,900	33,000	26,000	160,000	NA	NA	NA	1,100	NA
SS-3	12	2/27/1996	45	270	120	830	NA	NA	NA	6	NA
SS-4	12	2/27/1996	ND<100	300	3,400	17,000	NA	NA	NA	200	NA
SS-5	12	2/27/1996	<6	<6	<6	<19	NA	NA	NA	ND<1	NA
SS-6	12	2/27/1996	31	450	500	2,800	NA	NA	NA	28	NA
SS-7	12	2/27/1996	1,900	10,000	24,000	140,000	NA	NA	NA	1100	NA
SS-8	12	2/27/1996	ND<600	800	6,400	21,000	NA	NA	NA	400	NA
SS-9	12	2/27/1996	<700	<700	11,000	20,000	NA	NA	NA	1,100	NA
SS-10	12	2/27/1996	1,000	11,000	12,000	85,000	NA	NA	NA	800	NA
SS-11	12	2/27/1996	ND<600	4,600	15,000	93,000	NA	NA	NA	700	NA
PADEP Statewide Health Standard for Unsaturated and Saturated Soils in a Non-Residential, Used Aquifer			**500**	**100,000**	**70,000**	**1,000,000**	**2,000**	**1,600,000 / 230,000**	**25,000 / 10,000**	**N/A**	**N/A**

TABLE 1
HISTORICAL SOIL ANALYTICAL DATA SUMMARY

SUNOCO STATION #0363-5430
610 OLD YORK ROAD
WARMINSTER, PA

Sample ID	Depth (ft)	Sample Date	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Total Xylenes (µg/kg)	MTBE (µg/kg)	Isopropyl benzene (µg/kg)	Naphthalene (µg/kg)	TPH-GRO (mg/kg)	TPH (mg/kg)
SS-12	12	2/27/1996	ND<100	500	4,200	9,800	NA	NA	NA	300	NA
SS-13	8	2/27/1996	NA	NA	NA	NA	NA	NA	NA	NA	30
SS-14	8	2/27/1996	NA	NA	NA	NA	NA	NA	NA	NA	90
MW-1	5-7	3/13/1996	ND<6	ND<6	ND<6	ND<18	NA	NA	NA	ND<1	NA
MW-2	5-7	3/13/1996	ND<6	<6	<6	<18	NA	NA	NA	ND<1	NA
MW-3	5-7	3/13/1996	<6	<6	<6	<18	NA	NA	NA	ND<1	NA
MW-4	-	10/27/1997	<6	<6	<6	<17	<20	<10	<20	NA	NA
MW-5	25	10/18/2004	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5	NA	NA
MW-6	15	10/18/2004	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5	NA	NA
PADEP Statewide Health Standard for Unsaturated and Saturated Soils in a Non-Residential, Used Aquifer			**500**	**100,000**	**70,000**	**1,000,000**	**2,000**	**1,600,000 / 230,000**	**25,000 / 10,000**	**N/A**	**N/A**

All results reported on a dry weight basis except samples SS-1 and SS-2 (collected on 2/27/1996). Those samples were reported on an as received basis, due to laboratory error.

ND: Not Detected

NA: Not Analyzed

N/A: Not Applicable

MTBE: Methyl *tert* Butyl Ether

TPH: Total Petroleum Hydrocarbons

GRO: Gasoline Range Organics

mg/kg: milligrams per kilogram

µg/kg: micrograms per kilogram

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 OLD YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					**5**	**1,000**	**700**	**10,000**	**20**	**2,300**	**100**
MW-1	03/23/1996	96.79	8	88.79	ND< 1	ND< 1	ND	2	NA	NA	NA
	09/09/1996	96.79	12.5	84.29	**13**	ND< 10	340	1,060	**240**	NA	**150**
	11/07/1996	96.79	10.12	86.67	ND< 1	ND< 1	ND< 1	3	2	NA	ND< 5
	02/14/1997	96.79	8.47	88.32	ND< 1	ND< 1	ND	ND< 3	**88**	NA	ND< 5
	05/07/1997	96.79	9.58	87.21	ND	ND	ND	ND< 3	ND< 1	NA	ND< 5
	09/15/1997	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	11/11/1997	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	03/17/1998	96.79	8.75	88.04	ND	ND	ND	ND	ND<1	NA	ND<5
	06/15/1998	96.79	5.18	91.61	ND	ND	ND	ND	ND< 5	ND	ND
	06/17/1999	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	02/15/2000	96.79	10.19	86.60	**184**	530	87.4	379	**12,800**	ND	ND
	05/12/2000	96.79	10.16	86.63	2.7	ND	ND	2.8	**242**	ND	2.5
	10/16/2000	96.79	13.83	82.96	**79.8**	589	368	1,020	**957**	40.6	**280**
	03/23/2001	96.79	7.63	89.16	ND	ND	ND	ND	1.9	ND	ND
	06/14/2001	96.79	10.84	85.95	**20.3**	35.5	96.2	130	**221**	13.3	41.6
	09/18/2001	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	12/26/2001	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	03/26/2002	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	06/14/2002	96.79	12.51	84.28	**9.7**	25.5	294	513	**103**	35.3	**214**
	09/13/2002	96.79	NS	-	NS	NS	NS	NS	NS	NS	NS
	10/30/2002	96.79	16.46	80.33	**23.5**	29.2	377	691	**84.0**	72.5	**297**
	03/05/2003	96.79	9.01	87.78	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	05/08/2003	96.79	9.58	87.21	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0
	08/06/2003	96.79	11.99	84.80	<1.0	<5.0	9.5	<10	<5.0	<5.0	5.5
	10/24/2003	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	01/16/2004	96.79	9.14	87.65	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	04/14/2004	96.79	7.97	88.82	<1.0	<5.0	<5.0	<10	**68**	<5.0	<5.0
	07/15/2004	96.79	14.67	82.12	**6.0**	8.0	170	380	**610**	42	**160**
	10/04/2004	97.77	12.55	85.22	2	ND<3	38	35	**43**	16	52
	01/13/2005	97.77	9.31	88.46	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	04/20/2005	97.77	8.52	89.25	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	07/15/2005	97.77	14.31	83.46	2.0	8.0	227 D	445 D	**57.4**	49.6	**241 D**
	09/07/2005	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	09/20/2005	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	10/28/2005	97.77	12.02	85.75	**83.4 D**	241 D	140 D	812 D	**6,330 D**	22.2 D	**136 D**

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 OLD YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-2	03/23/1996	97.43	8.6	88.83	**280**	130	160	1,150	NA	NA	NA
	09/09/1996	97.43	13.25	84.18	**180**	5	180	140	**170**	NA	49
	11/07/1996	97.43	11.25	86.18	**74**	3	85	79	**74**	NA	39
	02/14/1997	97.43	9.33	88.10	**36**	6	35	67	15	NA	18
	05/07/1997	97.43	10.15	87.28	**55**	4	75	81	26	NA	19
	09/15/1997	97.43	23.2	74.23	**430**	13	410	340	**140**	NA	**200**
	11/11/1997	97.43	24.3	73.13	NS	NS	NS	NS	NS	NS	NS
	03/17/1998	97.43	9.35	88.08	**58**	2	100	160	**35**	NA	43
	06/15/1998	97.43	9.86	87.57	**91**	9	240	930	10	27	**120**
	06/17/1999	97.43	21.41	76.02	**87**	ND	160	7	**280**	18	30
	02/15/2000	97.43	11.04	86.39	**91.3**	1.4	242	94.5	**274**	37.6	84.4
	05/12/2000	97.43	10.73	86.70	**21.2**	ND	59.6	9.8	**161**	8.9	12.6
	10/16/2000	97.43	13.4	84.03	**70.4**	27.3	276	123	**359**	49.7	91.4
	03/23/2001	97.43	8.24	89.19	2.1	ND	10.5	ND	8.8	ND	ND
	06/14/2001	97.43	14.37	83.06	**45.8**	2.1	197	45.8	**113**	29.5	56.8
	09/18/2001	97.43	DRY	-	NS	NS	NS	NS	NS	NS	NS
	12/26/2001	97.43	DRY	-	NS	NS	NS	NS	NS	NS	NS
	03/26/2002	97.43	21.74	75.69	**192**	4.3	410	182	**164**	42.1	**104**
	06/14/2002	97.43	13.35	84.08	**35.7**	ND<2.5	173	57.3	**57.2**	29.2	**111**
	09/13/2002	97.43	23.55	73.88	**82.4**	2.6	268	55.5	**123**	43.1	**153**
	10/30/2002	97.43	18.93	78.50	**171**	4.9	**886**	291	**155**	113	**344**
	03/05/2003	97.43	9.96	87.47	**27**	ND<1	160	24	**24**	25	59
	05/08/2003	97.43	10.53	86.90	4.3	<1.0	29	<5.0	<5.0	<5.0	13
	08/06/2003	97.43	13.08	84.35	**13**	<5.0	43	<10	15	8.7	20
	10/24/2003	97.43	20.57	76.86	**54**	<1.6	320	86	**43**	44	**140**
	01/16/2004	97.43	9.72	87.71	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	04/14/2004	97.43	8.88	88.55	**10**	<5.0	72	12	**41**	12	21
	07/15/2004	97.43	17.40	80.03	**53**	31	370	160	**2,300**	56	**180**
	10/04/2004	98.31	13.24	85.07	**34**	ND<7	180	35	**190**	38	60
	01/13/2005	98.31	10.21	88.10	**6**	ND<1	59	5	**39**	14	20
	04/20/2005	98.31	9.08	89.23	ND<1.0	ND<1.0	9.3	ND<3.0	3.9	3.3	4.3
	07/15/2005	98.31	15.36	82.95	**38.1**	1.5	161	68.7	**89.9**	79.7	**142**
	09/07/2005	98.31	23.45	74.86	**10.0**	ND<1.0	18.5	ND<3.0	**59.5**	11.0	23.0
	09/20/2005	98.31	DRY	-	NS	NS	NS	NS	NS	NS	NS
	10/28/2005	98.31	12.81	85.50	**76.7**	51.8	195 D	67.3	**2,750 D**	80.8	**136**

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 OLD YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					**5**	**1,000**	**700**	**10,000**	**20**	**2,300**	**100**
MW-3	03/23/1996	98.08	9.35	88.73	**12**	ND< 1	2	3	NA	NA	NA
	09/09/1996	98.08	13.76	84.32	ND	ND	ND	ND	**480**	NA	ND
	11/07/1996	98.08	11.43	86.65	ND< 1	ND< 1	ND< 1	ND< 3	**170**	NA	ND< 5
	02/14/1997	98.08	10.18	87.90	2	ND< 1	ND	ND< 3	**130**	NA	ND< 5
	05/07/1997	98.08	10.9	87.18	ND	ND	ND	ND	**99**	NA	ND
	09/15/1997	98.08	23.68	74.40	NS	NS	NS	NS	NS	NS	NS
	11/11/1997	98.08	23.95	74.13	NS	NS	NS	NS	NS	NS	NS
	03/17/1998	98.08	10.25	87.83	ND<1	ND<1	ND<1	ND<3	**22**	NA	ND<5
	06/15/1998	98.08	10.56	87.52	ND	ND	ND	ND< 5	8	ND	ND<5
	06/17/1999	98.08	21.97	76.11	ND	ND	ND	ND	7	ND	ND
	02/15/2000	98.08	11.96	86.12	**80**	325	21.7	267	**1,680**	ND	ND
	05/12/2000	98.08	11.43	86.65	ND	ND	ND	ND	**256**	ND	ND
	10/16/2000	98.08	14.15	83.93	ND	ND	ND	ND	**42.3**	ND	ND
	03/23/2001	98.08	9.04	89.04	1.3	ND	ND	ND	**55.2**	ND	ND
	06/14/2001	98.08	12.1	85.98	ND<1	ND<1	ND<1	ND<5	**44.9**	ND<2	ND<5
	09/18/2001	98.08	DRY	-	NS	NS	NS	NS	NS	NS	NS
	12/26/2001	98.08	23.21	74.87	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<5
	03/26/2002	98.08	22.7	75.38	ND<1	ND<1	ND<1	ND<1.4	2.6	ND<2	ND<5
	06/14/2002	98.08	13.95	84.13	ND<1.0	ND<1.0	ND<1.0	ND<1.0	10.6	ND<2.0	ND<5.0
	09/13/2002	98.08	DRY	-	NS	NS	NS	NS	NS	NS	NS
	10/30/2002	98.08	18.45	79.63	ND<1.0	ND<1.0	ND<1.0	ND<1.0	1.8	ND<2.0	6.6
	03/05/2003	98.08	10.71	87.37	ND<1	ND<1	ND<1	ND<1	11	ND<5	ND<5
	05/08/2003	98.08	11.43	86.65	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0
	08/06/2003	98.08	13.51	84.57	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	10/24/2003	98.08	20.74	77.34	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	01/16/2004	98.08	10.53	87.55	<1.0	<5.0	<5.0	<10	**28**	<5.0	<5.0
	04/14/2004	98.08	9.83	88.25	<1.0	<5.0	<5.0	<10	20	<5.0	<5.0
	07/15/2004	98.08	17.05	81.03	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	10/04/2004	98.78	13.92	84.86	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	01/13/2005	98.78	11.13	87.65	ND<1	ND<1	ND<1	ND<1	19	ND<5	ND<5
	04/20/2005	98.78	10.04	88.74	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	07/15/2005	98.78	15.71	83.07	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	98.78	DRY	-	NS	NS	NS	NS	NS	NS	NS
	09/20/2005	98.78	23.75	75.03	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	98.78	13.75	85.03	3.1	2.2	ND<1.0	26.0	749 D	ND<1.0	9.0

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 OLD YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-4	11/11/1997	98.08	23.87	74.21	ND<1	ND<1	ND	ND<3	10	NA	ND<5
	03/17/1998	98.08	10.1	87.98	ND	ND	ND<1	ND<3	ND<1	NA	ND<5
	06/15/1998	98.08	10.32	87.76	ND	ND	ND	ND	ND	ND	ND
	06/17/1999	98.08	22.61	75.47	ND	ND	ND	ND	ND<5	ND	ND
	02/15/2000	98.08	11.91	86.17	ND	ND	ND	ND	15.8	ND	ND
	05/12/2000	98.08	11.41	86.67	ND	ND	ND	ND	9.5	ND	ND
	10/16/2000	98.08	14.03	84.05	ND	ND	ND	ND	**972**	ND	ND
	03/23/2001	98.08	8.94	89.14	ND	ND	ND	ND	ND	ND	ND
	06/14/2001	98.08	12.05	86.03	ND<1	ND<1	ND<1	ND<5	**31.6**	ND<2	ND<5
	09/18/2001	98.08	24.57	73.51	ND<1	ND<1	ND<1	ND<1	4.9	ND<2	ND<5
	12/26/2001	98.08	24.43	73.65	ND<1	ND<1	ND<1	ND<1	1.7	ND<2	ND<5
	03/26/2002	98.08	23.82	74.26	ND<1	ND<1	ND<1	ND<1.4	1.1	ND<2	ND<5
	06/14/2002	98.08	14.01	84.07	ND<1.0	ND<1.0	ND<1.0	ND<1.0	7.5	ND<2.0	ND<5.0
	09/13/2002	98.08	24.67	73.41	ND<1.0	ND<1.0	ND<1.0	ND<1.0	1.2	ND<2.0	ND<5.0
	10/30/2002	98.08	20.38	77.70	ND<1.0	ND<1.0	ND<1.0	ND<1.0	1.6	ND<2.0	ND<5.0
	03/05/2003	98.08	10.68	87.40	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	05/08/2003	98.08	11.25	86.83	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0
	08/06/2003	98.08	13.75	84.33	<1.0	<5.0	<5.0	<10	9.8	<5.0	<5.0
	10/24/2003	98.08	20.63	77.45	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	01/16/2004	98.08	10.46	87.62	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	04/14/2004	98.08	9.86	88.22	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	07/15/2004	98.08	18.63	79.45	<1.0	<5.0	<5.0	<10	5.0	<5.0	<5.0
	10/04/2004	98.94	13.99	84.95	ND<3	ND<4	ND<4	ND<4	**100**	ND<5	ND<5
	01/13/2005	98.94	10.98	87.96	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	04/20/2005	98.94	9.81	89.13	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	07/15/2005	98.94	16.05	82.89	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	98.94	24.61	74.33	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/20/2005	98.94	24.51	74.43	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	98.94	13.81	85.13	ND<1.0	ND<1.0	ND<1.0	ND<3.0	**89.6**	ND<1.0	ND<2.0
MW-5	12/09/2004	99.55	12.52	87.03	ND<1	ND<1	ND<1	ND<1	5	ND<5	ND<5
	01/13/2005	99.55	11.77	87.78	ND<1	ND<1	ND<1	ND<1	14	ND<5	ND<5
	04/20/2005	99.55	10.55	89.00	ND<1.0	ND<1.0	ND<1.0	ND<3.0	5.0	ND<1.0	ND<2.0
	07/15/2005	99.55	16.22	83.33	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	99.55	26.92	72.63	ND<1.0	ND<1.0	ND<1.0	ND<3.0	1.9	ND<1.0	ND<2.0
	09/20/2005	99.55	30.02	69.53	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	99.55	14.32	85.23	ND<1.0	ND<1.0	ND<1.0	4.1	**648 D**	ND<1.0	ND<2.0

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 OLD YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					**5**	**1,000**	**700**	**10,000**	**20**	**2,300**	**100**
MW-6	12/09/2004	99.72	12.69	87.03	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	01/13/2005	99.72	11.85	87.87	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	04/20/2005	99.72	10.70	89.02	ND<1.0	ND<1.0	ND<1.0	ND<3.0	2.0	ND<1.0	ND<2.0
	07/15/2005	99.72	16.39	83.33	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	99.72	27.10	72.62	NA	NA	NA	NA	NA	NA	NA
	09/20/2005	99.72	29.88	69.84	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	99.72	14.47	85.25	ND<1.0	ND<1.0	ND<1.0	ND<3.0	13.8	ND<1.0	ND<2.0
MW-7	12/09/2004	99.20	15.39	83.81	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	01/13/2005	99.20	14.63	84.57	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	04/20/2005	99.20	14.48	84.72	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	07/15/2005	99.20	20.15	79.05	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	99.20	29.81	69.39	NA	NA	NA	NA	NA	NA	NA
	09/20/2005	99.20	32.85	66.35	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	99.20	18.81	80.39	ND<1.0	1.7	ND<1.0	ND<3.0	60.8	ND<1.0	ND<2.0

<# = Less than the method detection limit of #
µg/L = Micrograms/liter
D = Secondary Dilution Limit
DRY = No water for sampling
MTBE = Methyl tertiary butyl ether
NA = Not Available or not analyzed for that specific compound
ND = Not detected (# is method detection limit)
NS = Not Sampled

APPENDIX A

SOIL LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

Analysis Request/Environmental Services Chain of Custody

Lancaster Laboratories
A Thermo Analytical Laboratory

JAN 05 1996

Acct. # 8475 For LLI use only Sample # 2440666-69

Please print. Instructions on reverse side correspond with circled numbers.

Client: SUN - GES Acct. #: 8475

Project Name/#: AR: LURMINSTON PWSID #:

Project Manager: MIKE SARCINELLO P.O.#

Sampler: Ron Devon Ryan Quote #:

Name of state where samples were collected: PA

Sample Identification	Date Collected	Time Collected	(3) Grab	(3) Composite	Matrix (4) Soil	Matrix (4) Water (☐ Potable ☐ NPDES)	Matrix (4) Other	Total # of Containers	(5) Analyses Requested: BTEX 8020	(5) Analyses Requested: TPH 418.1	Remarks	Temperature of samples upon receipt (if requested) (6)
SS-1	12/29/95	—		X	X			2	X	X	1-10' MS-MSD 1-32' MS-MSD	
SS-2		—		X	X			2	X	X	11	
SS-3		—		X	X			2	X	X	11	
SS-4		—		X	X			2	X	X	11	

1.7°C

Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to LLI approval and surchage.)
Date results are needed: 1/2/96
Rush results requested by (please circle): Phone Fax
Phone #: Fax #:

Data Package Options (please circle if requested)
QC Summary Type VI
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes No

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)

Internal Chain of Custody required? Yes No

	Date	Time		Date	Time
Relinquished by:	12/29/95	1545	Received by:	12/29/95	1530
Relinquished by:	12/29/95	13:00	Received by:	12/29/95	1300
Relinquished by:	12/29/95	1945	Received by:		
Relinquished by:			Received by:		
Relinquished by:			Received by:		

(9)

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2440666
Collected: 12/28/95 by RDP

Submitted: 12/29/95 Reported: 1/ 3/96
Discard: 1/18/96

SS-1 Grab Soil Sample

ATL: Warminster, PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. WARMINSTER
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
1562	Petroleum Hydrocarbons	40.	20.	mg/kg	40.	20.
	Petroleum hydrocarbons were detected in the method blank at a concentration of 1 mg/kg on an as received basis. This blank value was not subtracted from the analytical result. Due to the nature of this analysis, it is typical to have a result for the blank.					
6175	BTEX Scan (Total Xylenes) Soil					
2603	Benzene	N.D.	5.	ug/kg	N.D.	6.
2604	Toluene	< 5.	5.	ug/kg	< 6.	6.
2606	Ethylbenzene	N.D.	5.	ug/kg	N.D.	6.
5327	Total Xylenes	< 15.	15.	ug/kg	< 18.	18.
2111	Moisture	15.8	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
1562	Petroleum Hydrocarbons	EPA 418.1 (modified)	1	01/01/96 2030	Mark M. Cheyney
2111	Moisture	EPA 160.3 modified	1	01/02/96 0544	Lee L. Munro
6175	BTEX Scan (Total Xylenes) Soil	SW-846 8020A, mod.	1	01/02/96 1120	Matthew E. Barton

1 COPY TO SUN: Groundwater & Enviro. Sv ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
05:46:15 D 0001 4 119586 498134
854 113.00 00011300 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2440667
Collected: 12/28/95 by RDP

Submitted: 12/29/95 Reported: 1/ 3/96
Discard: 1/18/96

SS-2 Grab Soil Sample

ATL: Warminster, PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. WARMINSTER
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
1562	Petroleum Hydrocarbons	320.	40.	mg/kg	370.	50.
6175	BTEX Scan (Total Xylenes) Soil					
2603	Benzene	N.D.	5.	ug/kg	N.D.	6.
2604	Toluene	< 5.	5.	ug/kg	< 6.	6.
2606	Ethylbenzene	N.D.	5.	ug/kg	N.D.	6.
5327	Total Xylenes	N.D.	15.	ug/kg	N.D.	18.
2111	Moisture	15.2	0.5	% by wt.		

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
1562	Petroleum Hydrocarbons	EPA 418.1 (modified)	1	01/01/96 2030	Mark M. Cheyney
2111	Moisture	EPA 160.3 modified	1	01/02/96 0556	Lee L. Munro
6175	BTEX Scan (Total Xylenes) Soil	SW-846 8020A, mod.	1	01/02/96 1153	Matthew E. Banton

1 COPY TO SUN: Groundwater & Enviro. Sv ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
05:46:28 D 0001 4 119586 498134
854 113.00 00011300 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2440668
Collected: 12/28/95 by RDP

Submitted: 12/29/95 Reported: 1/ 3/96
Discard: 1/18/96

SS-3 Grab Soil Sample

ATL: Warminster, PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. WARMINSTER
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
1562	Petroleum Hydrocarbons	430.	40.	mg/kg	480.	40.
6175	BTEX Scan (Total Xylenes) Soil					
2603	Benzene	N.D.	5.	ug/kg	N.D.	6.
2604	Toluene	< 5.	5.	ug/kg	< 6.	6.
2606	Ethylbenzene	N.D.	5.	ug/kg	N.D.	6.
5327	Total Xylenes	< 15.	15.	ug/kg	< 17.	17.
2111	Moisture	10.2	0.5	% by wt.		

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
1562	Petroleum Hydrocarbons	EPA 418.1 (modified)	1	01/01/96 2030	Mark M. Cheyney
2111	Moisture	EPA 160.3 modified	1	01/02/96 0608	Lee L. Munro
6175	BTEX Scan (Total Xylenes) Soil	SW-846 8020A, mod.	1	01/02/96 1227	Matthew E. Barton

1 COPY TO SUN: Groundwater & Enviro. Sv ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
05:46:40 D 0001 4 119586 498134
854 113.00 00011300 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

See reverse side for explanation of symbols and abbreviations.

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2440669
Collected: 12/28/95 by RDP

Submitted: 12/29/95 Reported: 1/ 3/96
Discard: 1/18/96

SS-4 Grab Soil Sample

ATL: Warminster, PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. WARMINSTER
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
1562	Petroleum Hydrocarbons	90.	20.	mg/kg	100.	20.
	Petroleum hydrocarbons were detected in the method blank at a concentration of 1 mg/kg on an as received basis. This blank value was not subtracted from the analytical result. Due to the nature of this analysis, it is typical to have a result for the blank.					
6175	BTEX Scan (Total Xylenes) Soil					
2603	Benzene	N.D.	5.	ug/kg	N.D.	6.
2604	Toluene	< 5.	5.	ug/kg	< 6.	6.
2606	Ethylbenzene	N.D.	5.	ug/kg	N.D.	6.
5327	Total Xylenes	< 15.	15.	ug/kg	< 17.	17.
2111	Moisture	14.1	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
1562	Petroleum Hydrocarbons	EPA 418.1 (modified)	1	01/01/96 2030	Mark M. Cheyney
2111	Moisture	EPA 160.3 modified	1	01/02/96 0616	Lee L. Munro
6175	BTEX Scan (Total Xylenes) Soil	SW-846 8020A, mod.	1	01/02/96 1300	Matthew E. Barton

1 COPY TO SUN: Groundwater & Enviro. Sv ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
05:46:52 D 0001 4 119586 498134
854 113.00 00011300 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Request/ Environmental Services Chain of Custody

Lancaster Laboratories
A Thermo Analytical Laboratory

FEB 26 1996

For LLI use only
Acct. # 8475 Sample # 245891-93

Please print. Instructions on reverse side correspond with circled numbers.

(1) Client: SUN - GES Acct. #: 8475

Project Name/#: PTL 1010 Old York Rd PWSID #:

Project Manager: M. Haslett P.O.#:

Sampler: B. Ricker Quote #:

Name of state where samples were collected: PA

(2) Sample Identification	Date Collected	Time Collected	(3) Grab	Composite	(4) Matrix: Soil	Potable Water	NPDES Water	Other	Total # of Containers	(5) Analyses Requested: BKx 1&2D	Remarks	(6) Temperature of samples upon receipt (if requested)
Disp-1 @ 1'	2/8/96	835	X		X				1	X	1 125 mL Jar	
Disp-2 @ 1'	"	840	X		X				1	X	↓	
Disp-3 @ 1'	↓	845	X		X				1	X		

2.5 °C 2/9/96 HRB

(7) Turnaround Time Requested (TAT) (please circle): (Normal) Rush
(Rush TAT is subject to LLI approval and surchage.)
Date results are needed:
Rush results requested by (please circle): Phone Fax
Phone #: Fax #:

(8) Data Package Options (please circle if requested)
QC Summary Type VI
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes No

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)

Internal Chain of Custody required? (Yes) No

Relinquished by:	Date	Time	Received by:	Date	Time
	2/8/96	1200	Locked Refrigerator	2/8/96	1200
	2-9-96	945	David J. Wasden	2/9/96	9:45
David J. Wasden 2/9/96		1730			

(9)

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300 Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client 2102 Rev. 6/1/95

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2458591
Collected: 2/ 8/96 at 08:35 by BR

Submitted: 2/ 9/96 Reported: 2/26/96
Discard: 3/12/96

Disp-1 @ 1' Grab Soil Sample

Atl: 610 Old York Rd, PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	80.	50.	ug/kg	100.	60.
2604	Toluene	2,500.	50.	ug/kg	3,000.	60.
2606	Ethylbenzene	2,500.	50.	ug/kg	3,000.	60.
5327	Total Xylenes	17,000.	150.	ug/kg	21,000.	180.
5326	TPH by GC - GRO (Soils)	170.	10.	mg/kg	200.	10.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	18.8	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	02/12/96 1608	Dawn Boley
2111	Moisture	EPA 160.3 modified	1	02/21/96 0531	Lee L. Munro

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
04:52:33 D 0001 3 119586 502915
875 55.20 00005520 ASR00D

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2458592
Collected: 2/ 8/96 at 08:40 by BR

Submitted: 2/ 9/96 Reported: 2/26/96
Discard: 3/12/96

Disp-2 @ 1' Grab Soil Sample

Atl: 610 Old York Rd, PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	600.	500.	ug/kg	700.	600.
2604	Toluene	43,000.	500.	ug/kg	51,000.	600.
2606	Ethylbenzene	34,000.	500.	ug/kg	41,000.	600.
5327	Total Xylenes	210,000.	1,500.	ug/kg	250,000.	1,800.
5326	TPH by GC - GRO (Soils)	1,100.	100.	mg/kg	1,300.	100.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	16.4	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	02/12/96 1902	Dawn Boley
2111	Moisture	EPA 160.3 modified	1	02/21/96 0554	Lee L. Munro

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
04:52:44 D 0001 3 119586 502915
875 55.20 00005520 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

See reverse side for explanation of symbols and abbreviations.

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2458593
Collected: 2/ 8/96 at 08:45 by BR

Submitted: 2/ 9/96 Reported: 2/26/96
Discard: 3/12/96

Disp-3 @ 1' Grab Soil Sample

Atl: 610 Old York Rd, PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	200.	100.	ug/kg	200.	100.
2604	Toluene	11,000.	100.	ug/kg	14,000.	100.
2606	Ethylbenzene	8,900.	100.	ug/kg	10,000.	100.
5327	Total Xylenes	54,000.	300.	ug/kg	63,000.	350.
5326	TPH by GC - GRO (Soils)	270.	20.	mg/kg	310.	20.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	15.0	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	02/12/96 1935	Dawn Boley
2111	Moisture	EPA 160.3 modified	1	02/21/96 0603	Lee L. Munro

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
04:52:55 D 0001 3 119586 502915
875 55.20 00005520 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425

Lancaster Laboratories
A Thermo Analytical Laboratory

MAR 07 1996

For LLI use only
Acct. # 8475 Sample # 246411-12

Please print. Instructions on reverse side correspond with circled numbers.

Client: SUN - GES Acct. #: 8475
Project Name/#: ATC c/o Old York Rd PWSID #:
Project Manager: Mark Haskett P.O.#:
Sampler: Brian S. Ricker Quote #:
Name of state where samples were collected: PA

For LLI use only
FSC:
SCR #:

Sample Identification	Date Collected	Time Collected	(3) Grab	Composite	Matrix (4) Soil	Water	Other	Total # of Containers	(5) Analyses Requested: BTEX/GRO	Remarks	(6) Temperature of cooler(s) upon receipt (if applicable)
TL-1 @ 1'	2/13/96	1745	X		X			1	X	1 125 ml Jar	23°
TL-2 @ 1'	2/13/96	750	X		X			1	X	1 125 ml Jar	↓
										JGP 2/15/96	

Turnaround Time Requested (TAT) (please circle): (Normal) Rush
(Rush TAT is subject to LLI approval and surchage.)
Date results are needed:
Rush results requested by (please circle): Phone Fax
Phone #: Fax #:

Data Package Options (please circle if requested)
QC Summary Type VI
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes No

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? (Yes) No

Relinquished by:	Date	Time	Received by:	(9) Date	Time
[signature]	2/14/96	1500	locked Refrigerator	2/14/96	1500
Relinquished by: RETNY OMAY	2-15-96	1000	[signature]	2/15/96	1000
Relinquished by: [signature]	2/15/96	1645	Received by: [signature]	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by: [signature]	2/15/96	1645

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2461411
Collected: 2/13/96 at 07:45 by SSR

Submitted: 2/15/96 Reported: 2/28/96
Discard: 3/14/96

TL-1 @ 1' Grab Soil Sample

ATL: 610 Old York Rd. - PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O.
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	N.D.	5.	ug/kg	N.D.	5.
2604	Toluene	N.D.	5.	ug/kg	N.D.	5.
2606	Ethylbenzene	N.D.	5.	ug/kg	N.D.	5.
5327	Total Xylenes	N.D.	15.	ug/kg	N.D.	16.
5326	TPH by GC - GRO (Soils)	N.D.	1.	mg/kg	N.D.	1.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	5.0	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	02/22/96 1837	Dawn Boley
2111	Moisture	EPA 160.3 modified	1	02/27/96 0429	Lee L. Munro

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hosterler at (717) 656-2300
03:52:24 D 0001 2 119586 503644
854 55.20 00005520 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2461412
Collected: 2/13/96 at 07:50 by BSR

Submitted: 2/15/96 Reported: 2/28/96
Discard: 3/14/96

TL-2 @ 1' Grab Soil Sample

ATL: 610 Old York Rd. - PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O.
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS	DRY WEIGHT RESULTS	LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	N.D.	100.	ug/kg	N.D.	100.
2604	Toluene	700.	100.	ug/kg	800.	100.
2606	Ethylbenzene	1,800.	100.	ug/kg	2,100.	100.
5327	Total Xylenes	16,000.	300.	ug/kg	19,000.	350.
5326	TPH by GC - GRO (Soils)	120.	20.	mg/kg	150.	20.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene. Due to interferences from the sample matrix, the limit of quantitation for the benzene determination was increased.					
2111	Moisture	15.0	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	02/22/96 2017	Dawn Boley
2111	Moisture	EPA 160.3 modified	1	02/27/96 0434	Lee L. Munro

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:52:37 D 0001 2 119586 503644
854 55.20 00005520 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425

Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
A Thermo Analytical Laboratory

APR 03 1995

For LLI use only
Acct. # 8475 Sample # 246780 2-75

Please print. Instructions on reverse side correspond with circled numbers.

Client: SUN - GES Acct. #: 8475
Project Name/#: ATL Sun: 610 OLD YORK RD. PWSID #:
Project Manager: MARK HASLETTE P.O.#
Sampler: RON DELLA PENNA Quote #:
Name of state where samples were collected: PA

Sample Identification	Date Collected	Time Collected	(3) Grab	Composite	Matrix (4) Soil	Water	Other	Total # of Containers	(5) Analyses Requested: BTEX 8020	GRO 8015	Remarks	(6) Temperature of sample(s) upon receipt (if requested)
SS-1 (12')	2/27/96	1126	X		X			1	X	X	1-125 ML. JAR	2.3°C
SS-2 (12')		1130						1	X	X		
SS-3 (12')		1136						1	X	X		
SS-4 (12')		1340						1	X	X		
SS-5 (12')		1343						1	X	X		
SS-6 (12')		1346						1	X	X		
SS-7 (12')		1436						1	X	X		
SS-8 (12')		1440						1	X	X		
SS-9 (12')		1442						1	X	X		
SS-10 (12')		1536						1	X	X		

Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to LLI approval and surchage.)
Date results are needed:
Rush results requested by (please circle): Phone Fax
Phone #: Fax #:

Data Package Options (please circle if requested)
QC Summary Type VI
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes No

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)

Internal Chain of Custody required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
	2/27/96	800	FEDERAL EXPRESS	2/27/96	800
	2-28-96	1030		2/28/96	1030
	2/28/96	1345			
			K Smith	2-28-96	1345

(9)

Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
A Thermo Analytical Laboratory

For LLI use only
Acct. # 8475 Sample # 2460872-5

APR 11 1996

Please print. Instructions on reverse side correspond with circled numbers.

(1)
Client: SUN - GES Acct. #: 8475
Project Name/#: ATL. 610 OLD YORK RD PWSID #:
Project Manager: MARK HASLETT P.O.#
Sampler: RON. DELLA PENNA Quote #:
Name of state where samples were collected: PA

(2) (3) Matrix (4) (5) Analyses Requested

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total # of Containers	BTEX 8020/602 8015	TPH 418.1	Remarks	Temperature of samples upon receipt (if requested) (6)
SS-11 (12')	2/27/96	1339	X		X			1	X		1-125 ML. JAR	2.3°C
SS-12 (12')		1601	X		X			1	X		1-125 ML. JAR	
SS-13 (8')		1615	X		X			1		X	1-500 ML. JAR	
SS-14 (8')		1617	X		X			1		X	1-500 ML. JAR	
												2/28/96

Turnaround Time Requested (TAT) (please circle): (Normal) Rush
(Rush TAT is subject to LLI approval and surchage.)
Date results are needed:
Rush results requested by (please circle): Phone Fax
Phone #: Fax #:

Data Package Options (please circle if requested)
QC Summary Type VI
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes No

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? (Yes) No

Relinquished by:	Date	Time	Received by:	Date	Time (9)
	2/28/96	800		2/28/96	800
Relinquished by:	Date	Time	Received by:	Date	Time
	2-28-96	1130		2/28/96	1140
Relinquished by:	Date	Time	Received by:	Date	Time
	2/28/96	1345			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
			K. Mentz	2-28-96	1345

Lancaster Laboratories
A Thermo Analytical Laboratory
Where quality is a science.

April 1, 1996

Mr. Mark Haslett
Groundwater & Environmental Services
410 Eagleview Boulevard Suite 110
Exton, PA 19341

Dear Mr. Haslett:

As we had discussed on March 26, 1996, we received soil samples from the Atlantic site at 610 Old York Road in Warminster, Pennsylvania. The samples were misplaced after BTEX/GRO was analyzed, and we have not located them for the moisture analysis. Therefore, these two, SS-1 (12') and SS-2 (12'), are reported only "as received" and not on a dry-weight basis. I apologize for the inconvenience this may have caused you.

Sincerely,

Eileen Hostetler

Eileen Hostetler
Project Management
Environmental Sciences

EH/clw

Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Shipping Address:
Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17601
717-656-2300 Fax: 717-656-2681

Environmental • Foods • Pharmaceuticals
MEMBER ACIL
A subsidiary of Thermo Process Systems Inc., a Thermo Electron company

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467862
Collected: 2/27/96 at 11:26 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-1 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
5325	TPH-GRO API & BTEX (Soils)			
2603	Benzene	1,000.	500.	ug/kg
2604	Toluene	23,000.	500.	ug/kg
2606	Ethylbenzene	34,000.	500.	ug/kg
5327	Total Xylenes	180,000.	1,500.	ug/kg
5326	TPH by GC - GRO (Soils)	1,100.	100.	mg/kg

According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/01/96 1252	Matthew E. Barton

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:14:46 D 0001 14 119586 505239
854 48.00 00004800 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467863
Collected: 2/27/96 at 11:30 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-2 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
5325	TPH-GRO API & BTEX (Soils)			
2603	Benzene	1,900.	5.	ug/kg
2604	Toluene	33,000.	5.	ug/kg
2606	Ethylbenzene	26,000.	5.	ug/kg
5327	Total Xylenes	160,000.	15.	ug/kg
5326	TPH by GC - GRO (Soils)	1,100.	1.	mg/kg

According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/01/96 1324	Matthew E. Barton

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:15:05 D 0001 14 119586 505239
854 48.00 00004800 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467864
Collected: 2/27/96 at 11:36 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-3 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	35.	5.	ug/kg	45.	6.
2604	Toluene	210.	5.	ug/kg	270.	6.
2606	Ethylbenzene	94.	5.	ug/kg	120.	6.
5327	Total Xylenes	660.	15.	ug/kg	830.	19.
5326	TPH by GC - GRO (Soils)	5.	1.	mg/kg	6.	1.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	21.0	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/01/96 1324	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/01/96 1623	Roxanne M. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:15:21 D 0001 14 119586 505239
854 55.20 00005520 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467865
Collected: 2/27/96 at 13:40 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-4 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	< 100.	100.	ug/kg	< 100.	100.
2604	Toluene	300.	100.	ug/kg	300.	100.
2606	Ethylbenzene	2,700.	100.	ug/kg	3,400.	100.
5327	Total Xylenes	14,000.	300.	ug/kg	17,000.	380.
5326	TPH by GC - GRO (Soils)	160.	20.	mg/kg	200.	30.

According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.
Due to interferences from the sample matrix, the limit of quantitation for the benzene determination was increased.

2111	Moisture	20.6	0.5	% by wt.

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/04/96 1220	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/01/96 1655	Roxanne M. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:15:45 D 0001 14 119586 505239
854 55.20 00005520 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467866
Collected: 2/27/96 at 13:43 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-5 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	< 5.	5.	ug/kg	< 6.	6.
2604	Toluene	< 5.	5.	ug/kg	< 6.	6.
2606	Ethylbenzene	< 5.	5.	ug/kg	< 6.	6.
5327	Total Xylenes	< 15.	15.	ug/kg	< 19.	19.
5326	TPH by GC - GRO (Soils)	N.D.	1.	mg/kg	N.D.	1.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	21.6	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/01/96 1436	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/01/96 1710	Roxanne M. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:16:04 D 0001 14 119586 505239
854 55.20 00005520 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467867
Collected: 2/27/96 at 13:46 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-6 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	25.	5.	ug/kg	31.	6.
2604	Toluene	370.	5.	ug/kg	450.	6.
2606	Ethylbenzene	400.	5.	ug/kg	500.	6.
5327	Total Xylenes	2,300.	15.	ug/kg	2,800.	19.
5326	TPH by GC - GRO (Soils)	23.	1.	mg/kg	28.	1.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	19.4	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/04/96 1253	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/01/96 1726	Roxanne M. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:16:24 D 0001 14 119586 505239
854 55.20 00005520 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467868
Collected: 2/27/96 at 14:36 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-7 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	1,400.	500.	ug/kg	1,900.	700.
2604	Toluene	8,000.	500.	ug/kg	10,000.	700.
2606	Ethylbenzene	18,000.	500.	ug/kg	24,000.	700.
5327	Total Xylenes	110,000.	1,500.	ug/kg	140,000.	2,000.
5326	TPH by GC - GRO (Soils)	800.	100.	mg/kg	1,100.	100.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	23.7	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/04/96 1325	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/01/96 1747	Roxanne M. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:16:42 D 0001 14 119586 505239
854 55.20 00005520 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467869
Collected: 2/27/96 at 14:40 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-8 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	N.D.	500.	ug/kg	N.D.	600.
2604	Toluene	700.	500.	ug/kg	900.	600.
2606	Ethylbenzene	4,900.	500.	ug/kg	6,400.	600.
5327	Total Xylenes	17,000.	1,500.	ug/kg	21,000.	1,900.
5326	TPH by GC - GRO (Soils)	400.	100.	mg/kg	500.	100.

According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.
Due to interferences from the sample matrix, the limit of quantitation for the benzene determination was increased.

2111	Moisture	22.9	0.5	% by wt.

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/04/96 1358	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/01/96 1810	Roxanne M. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:17:02 D 0001 14 119586 505239
854 55.20 00005520 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717 656 2300 Fax 717 656 2681

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467870
Collected: 2/27/96 at 14:42 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-9 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	< 500.	500.	ug/kg	< 700.	700.
2604	Toluene	< 500.	500.	ug/kg	< 700.	700.
2606	Ethylbenzene	7,900.	500.	ug/kg	11,000.	700.
5327	Total Xylenes	15,000.	1,500.	ug/kg	20,000.	2,000.
5326	TPH by GC - GRO (Soils)	800.	100.	mg/kg	1,100.	100.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene. Due to interferences from the sample matrix, the limits of quantitation for the benzene and toluene determinations were increased.					
2111	Moisture	25.5	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/04/96 1324	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/01/96 1854	Roxanne M. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:17:22 D 0001 14 119586 505239
854 55.20 00005520 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

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Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717 656 2300 Fax 717 656 2681

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467871
Collected: 2/27/96 at 15:56 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-10 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	800.	500.	ug/kg	1,000.	600.
2604	Toluene	8,800.	500.	ug/kg	11,000.	600.
2606	Ethylbenzene	10,000.	500.	ug/kg	12,000.	600.
5327	Total Xylenes	71,000.	1,500.	ug/kg	85,000.	1,800.
5326	TPH by GC - GRO (Soils)	600.	100.	mg/kg	800.	100.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	16.1	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/04/96 1356	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/01/96 1914	Roxanne M. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:17:41 D 0001 14 119586 505239
854 55.20 00005520 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467872
Collected: 2/27/96 at 15:59 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-11 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	N.D.	500.	ug/kg	N.D.	600.
2604	Toluene	3,800.	500.	ug/kg	4,600.	600.
2606	Ethylbenzene	12,000.	500.	ug/kg	15,000.	600.
5327	Total Xylenes	77,000.	1,500.	ug/kg	93,000.	1,800.
5326	TPH by GC - GRO (Soils)	500.	100.	mg/kg	700.	100.

According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.
Due to interferences from the sample matrix, the limit of quantitation for the benzene determination was increased.

2111	Moisture	17.7	0.5	% by wt.

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/04/96 1429	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/01/96 1933	Roxanne M. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:17:59 D 0001 14 119586 505239
854 55.20 00005520 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax 717-656-2681

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467873
Collected: 2/27/96 at 16:01 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-12 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	N.D.	100.	ug/kg	N.D.	100.
2604	Toluene	400.	100.	ug/kg	500.	100.
2606	Ethylbenzene	3,400.	100.	ug/kg	4,200.	100.
5327	Total Xylenes	8,000.	300.	ug/kg	9,800.	370.
5326	TPH by GC - GRO (Soils)	250.	20.	mg/kg	300.	20.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene. Due to interferences from the sample matrix, the limit of quantitation for the benzene determination was increased.					
2111	Moisture	19.0	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/04/96 1430	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/01/96 1954	Roxanne M. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:18:20 D 0001 14 119586 505239
854 55.20 00005520 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717 656 2300 Fax: 717 656 2681

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467874
Collected: 2/27/96 at 16:15 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-13 (8') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
0111	Moisture	19.4	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius.					
1562	Petroleum Hydrocarbons	30.	20.	mg/kg	30.	20.
	Petroleum hydrocarbons were detected in the method blank at a concentration of 5 mg/kg on an as received basis. This blank value was not subtracted from the analytical result. Due to the nature of this analysis, it is typical to have a result for the blank.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
0111	Moisture	EPA 160.3 (modified)	1	03/01/96 1549	Susan A. Engle
1562	Petroleum Hydrocarbons	EPA 418.1 (modified)	1	03/07/96 2130	Mark M. Cheyney

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:18:38 D 0001 14 119586 505239
854 45.70 00004570 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

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Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467875
Collected: 2/27/96 at 16:17 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-14 (8') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
0111	Moisture	17.8	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius.					
1562	Petroleum Hydrocarbons	70.	20.	mg/kg	90.	20.
	Petroleum hydrocarbons were detected in the method blank at a concentration of 5 mg/kg on an as received basis. This blank value was not subtracted from the analytical result. Due to the nature of this analysis, it is typical to have a result for the blank.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
0111	Moisture	EPA 160.3 (modified)	1	03/01/96 1549	Susan A. Engle
1562	Petroleum Hydrocarbons	EPA 418.1 (modified)	1	03/07/96 2130	Mark M. Cheyney

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:18:52 D 0001 14 119586 505239
854 45.70 00004570 ASR000

Respectfully Submitted
Judy A. Colello, B.S.
Group Leader

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425

Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
Where quality is a science.

For LLI use only
Acct. # 5620 Sample # 2476789-9

Please print. Instructions on reverse side correspond with circled numbers.

(1)
Client: Handex Acct. #:
Project Name/#: Sun : Warminster PWSID #:
Project Manager: Jeff Goudsward P.O.#
Sampler: JG Quote #:
Name of state where samples were collected: PA

(2) Sample Identification	Date Collected	Time Collected	(3) Grab	(3) Composite	(4) Matrix: Soil	(4) Matrix: Water (☐ Potable ☐ NPDES)	(4) Matrix: Other	Total # of Containers	(5) Analyses Requested: TPH-GRO (8015)	(5) Analyses Requested: BTEX (8020)	Remarks	(6) Temperature of samples upon receipt (if requested)
MW-1 (5-7)	3/13/96	0825	✓		✓			2	✓	✓		
MW-2 (5-7)	3/13/96	1035	✓		✓			2	✓	✓		
MW-3 (5-7)	3/13/96	1135	✓		✓			2	✓	✓		
											Cooler Temp 6.4°C	

For LLI use only
FSC:
SCR #:

(7) **Turnaround Time Requested** (TAT) (please circle): (Normal) Rush
(Rush TAT is subject to LLI approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone (Fax)
Phone #: Fax #: 610-650-4004

(8) **Data Package Options** (please circle if requested)
QC Summary GLP
Type I (Tier I) Other
Type II (Tier II)
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes No

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)

Internal Chain of Custody required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
	3/13/96	1730		3/13/96	1730
	3/14/96	1100			

(9)

Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client. 2102 Rev. 1\30\95

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2476789
Collected: 3/13/96 at 09:25 by JG

Submitted: 3/14/96 Reported: 3/28/96
Discard: 4/12/96

MW-1 (5-7) Grab Soil Sample

SUN: Warminster, PA

Account No: 05620
SUN: Handex of PA
136 Greentree Road
PO Box 835
Oaks PA 19456-0835

P.O. WARMINSTER
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
2213	BTEX Scan (8020)					
2603	Benzene	N.D.	5.	ug/kg	N.D.	6.
2604	Toluene	N.D.	5.	ug/kg	N.D.	6.
2606	Ethylbenzene	N.D.	5.	ug/kg	N.D.	6.
2608	o-Xylene	N.D.	5.	ug/kg	N.D.	6.
2609	m-Xylene	N.D.	5.	ug/kg	N.D.	6.
2610	p-Xylene	N.D.	5.	ug/kg	N.D.	6.
5323	TPH-GRO API (Soils)	N.D.	1.	mg/kg	N.D.	1.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	13.5	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
2213	BTEX Scan (8020)	SW-846 8020A, mod.	1	03/18/96 1707	Dawn Boley
5323	TPH-GRO API (Soils)	API/EPA proposed, Revision 6	1	03/18/96 1006	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/25/96 1923	Roxanne M. Roth

1 COPY TO SUN: Handex of PA ATTN: Mr. Jeff Goudsward

Questions? Contact your Client Services Representative
Laura S. Shepler-Moore at (717) 656-2300
03:58:56 D 0001 3 119586 507547
875 82.20 00008220 ASR000

Respectfully Submitted
Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2476790
Collected: 3/13/96 at 10:35 by JG

Submitted: 3/14/96 Reported: 3/28/96
Discard: 4/12/96

MW-2 (5-7) Grab Soil Sample

SUN: Warminster, PA

Account No: 05620
SUN: Handex of PA
136 Greentree Road
PO Box 835
Oaks PA 19456-0835

P.O. WARMINSTER
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
2213	BTEX Scan (8020)					
2603	Benzene	N.D.	5.	ug/kg	N.D.	6.
2604	Toluene	< 5.	5.	ug/kg	< 6.	6.
2606	Ethylbenzene	< 5.	5.	ug/kg	< 6.	6.
2608	o-Xylene	< 5.	5.	ug/kg	< 6.	6.
2609	m-Xylene	< 5.	5.	ug/kg	< 6.	6.
2610	p-Xylene	< 5.	5.	ug/kg	< 6.	6.
5323	TPH-GRO API (Soils)	N.D.	1.	mg/kg	N.D.	1.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	15.3	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
2213	BTEX Scan (8020)	SW-846 8020A, mod.	1	03/18/96 1930	Dawn Boley
5323	TPH-GRO API (Soils)	API/EPA proposed, Revision 6	1	03/19/96 1218	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/25/96 1939	Roxanne M. Roth

1 COPY TO SUN: Handex of PA ATTN: Mr. Jeff Goudsward

Questions? Contact your Client Services Representative
Laura S. Shepler-Moore at (717) 656-2300
03:59:24 D 0001 3 119586 507547
875 82.20 00008220 ASR000

Respectfully Submitted
Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717 656 2300 Fax 717 656 2681

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2476791
Collected: 3/13/96 at 11:35 by JG

Submitted: 3/14/96 Reported: 3/28/96
Discard: 4/12/96

MW-3 (5-7) Grab Soil Sample

SUN: Warminster, PA

Account No: 05620
SUN: Handex of PA
136 Greentree Road
PO Box 835
Oaks PA 19456-0835

P.O. WARMINSTER
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
2213	BTEX Scan (8020)					
2603	Benzene	N.D.	5.	ug/kg	N.D.	6.
2604	Toluene	N.D.	5.	ug/kg	N.D.	6.
2606	Ethylbenzene	N.D.	5.	ug/kg	N.D.	6.
2608	o-Xylene	N.D.	5.	ug/kg	N.D.	6.
2609	m-Xylene	N.D.	5.	ug/kg	N.D.	6.
2610	p-Xylene	N.D.	5.	ug/kg	N.D.	6.
5323	TPH-GRO API (Soils)	N.D.	1.	mg/kg	N.D.	1.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	20.6	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
2213	BTEX Scan (8020)	SW-846 8020A, mod.	1	03/18/96 2018	Dawn Boley
5323	TPH-GRO API (Soils)	API/EPA proposed, Revision 6	1	03/19/96 1250	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/25/96 1947	Roxanne M. Roth

1 COPY TO SUN: Handex of PA ATTN: Mr. Jeff Goudsward

Questions? Contact your Client Services Representative
Laura S. Shepler-Moore at (717) 656-2300
03:59:50 D 0001 3 119586 507547
875 82.20 00008220 ASR000

Respectfully Submitted
Delwyn K. Schumacher, B.S.
Group Leader, ExpressLAB

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Request/ Environmental Services Chain of Custody

Lancaster Laboratories
A division of Thermo Analytical Inc.

NOV 10 1997

For Lancaster Laboratories use only
Acct. # 8475 Sample # 2507883

Please print. Instructions on reverse side correspond with circled numbers.

(1) Client: SUN-GES (WARMINSTER) Acct. #: 8475
Project Name/#: Sun-610 old York Rd PWSID #:
Project Manager: J. Goodsward P.O.#:
Sampler: B. Peterka Quote #:
Name of state where samples were collected: PA

(2) Sample Identification	Date Collected	Time Collected	(3) Grab	Composite	(4) Matrix: Soil	Water (Potable / NPDES)	Other	Total # of Containers	(5) Analyses Requested: BTEX - MTBE - NAPHTHALENE - 8021A	Remarks	(6) Temperature of samples upon receipt (if requested)
MW-4	10-27-97	1100	X		X			2	X	2-125ml jars	1.5C

For lab use only
FSC:
SCR #:

(7) **Turnaround Time Requested** (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax
Phone #: Fax #:

(8) **Data Package Options** (please circle if requested)
QC Summary Type VI (Raw Data)
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes No

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
	102797	1500	Locked fridge	10.27.97	1520
Locked Refrig	10-27-97	1600		10/27/97	1620
	10/27/97	1715			
			Joseph B. Pine	10/27/97	1715

(9)

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300 Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client. 2102 Rev. 7/1/95

Analysis Report

Lancaster Laboratories
A division of Thermo Analytical Inc.

LLI Sample No. SW 2807893
Collected: 10/27/97 at 11:00 by BP

Submitted: 10/27/97 Reported: 11/ 7/97
Discard: 11/22/97

MW-4 Grab Soil Sample

SUN: 610 Old York Rd. - PA

Account No: 08475
SUN: Groundwater & Enviro. Svc
410 Eagleview Blvd.
Suite 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
0111	Moisture	14.2	0.50	% by wt.		
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius.					
1837	BTEX/Isopropylbenz/MTBE/Napth					
0787	Methyl t-butyl ether	< 20.	20.	ug/kg	< 20.	20.
2603	Benzene	< 5.	5.	ug/kg	< 6.	6.
2604	Toluene	< 5.	5.	ug/kg	< 6.	6.
2606	Ethylbenzene	< 5.	5.	ug/kg	< 6.	6.
5327	Total Xylenes	< 15.	15.	ug/kg	< 17.	17.
0786	Isopropylbenzene	< 10.	10.	ug/kg	< 10.	10.
0788	Naphthalene	< 20.	20.	ug/kg	< 20.	20.

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS ID	DATE AND TIME	ANALYST
0111	Moisture	EPA 160.3 modified	1		10/29/97 1913	Sandra Jean Miller
1837	BTEX/Isopropylbenz/MTBE/Napth	SW-846 8021A, modified	1		10/28/97 0424	Stephanie A. Selis

1 COPY TO SUN:Groundwater & Environ Svc ATTN: Mr. Jeff Goudsward

Questions? Contact your Client Services Representative
De Brooks at (717) 656-2300
13:07:59 D 0001 1 126345 588098
320 0.00 00007020 ASR000

Respectfully Submitted
Jenifer E. Hess, B.S.
Group Leader Pesticides/PCBs

MEMBER ACIL
Lancaster Laboratories
2425 New Holland Pike
PO Box: 12425
Lancaster, PA 17605-2425
717-656-2300 Fax: 717-656-2681

Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. # 11224 Group# 916952 Sample # 4381915-16

COC # 0062792

Please print. Instructions on reverse side correspond with circled numbers. cooler temp 2.7°C

Client: Sunoco Acct. #:
Project Name/#: Warminster PWSID #:
Project Manager: Jen O'Reilly P.O.#:
Sampler: Kristen Snyder Quote #:
Name of state where samples were collected: PA

(1) Sample Identification	Date Collected	Time Collected	(3) Grab	Composite	Matrix: Soil	Water	Other (Potable / NPDES)	(4) Total # of Containers	(5) Analyses Requested: 8260B BTEX MTBE cumene naphthalene	moisture	Remarks
mw-5-25	10/18/04	13:00	X		X			4	X	X	
mw-6-15	10/18/04	15:00	X		X			4	X	X	*low level excels

RECEIVED NOV 01 2004

For Lab Use Only
FSC:
SCR #:

(6) Temperature of samples upon receipt (if requested)

Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

Data Package Options (please circle if required)
QC Summary Type VI (Raw Data)
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)
Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

SDG Complete? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	10/18/04	19:00	GESFed Ex		
[signature]	10-19-04	09:05	[signature]	10/19/04	0905
[signature]	10/19/04	1650	[signature]		
			Jessica Bruno	10/20/04	1000

(9)

Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

2102 Rev. 10/27/02

Lancaster Laboratories
2425 New Holland Pike, PO Box 12425, Lancaster, PA • 17605-2425 • 717-656-2300 Fax 717-656-2681 • www.lancasterlabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared for:

SUN Retail:/GES
410 Eagleview Blvd
Suite 110
Exton PA 19341
610-458-1077

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 916952. Samples arrived at the laboratory on Tuesday, October 19, 2004. The PO# for this group is WARMINSTER-610 OLD Y.

Client Description	Lancaster Labs Number
MW-5-25 Grab Soil Sample	4381915
MW-6-15 Grab Soil Sample	4381916

1 COPY TO	Lancaster Labs	Attn: Sandy Patton
ELECTRONIC COPY TO	SUN Retail:/GES	Attn: Ms. Connie Johnson

Lancaster Laboratories

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Analysis Report

Questions? Contact your Client Services Representative
Sandra L Patton at (717) 656-2300.

Respectfully Submitted,

Robin C. Runkle
Senior Chemist

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. SW 4381915

MW-5-25 Grab Soil Sample
Station ID# 0363-5430 Job# 02-01682
SUN: 610 Old York Road - Warminster, PA
Collected:10/18/2004 13:00 by KS

Account Number: 11224

Submitted: 10/19/2004 16:00
Reported: 10/27/2004 at 22:13
Discard: 11/04/2004

SUN Retail:/GES
410 Eagleview Blvd
Suite 110
Exton PA 19341

OYR05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	8.1	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
02304	UST-Unleaded Soils by 8260B					
02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	5.	ug/kg	0.95
05460	Benzene	71-43-2	N.D.	1.	ug/kg	0.95
05466	Toluene	108-88-3	N.D.	1.	ug/kg	0.95
05474	Ethylbenzene	100-41-4	N.D.	1.	ug/kg	0.95
05479	Isopropylbenzene	98-82-8	N.D.	5.	ug/kg	0.95
05498	Naphthalene	91-20-3	N.D.	5.	ug/kg	0.95
06301	Xylene (Total)	1330-20-7	N.D.	1.	ug/kg	0.95

Commonwealth of Pennsylvania Lab Certification No. 36-037

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	10/20/2004 17:50	Scott W Freisher	1
02304	UST-Unleaded Soils by 8260B	SW-846 8260B	1	10/25/2004 17:39	Roy R Mellott Jr	0.95
08389	Low/High Encore Prep Tracking	SW-846 5035	1	10/19/2004 18:32	Medina A Long	n.a.
08389	Low/High Encore Prep Tracking	SW-846 5035	2	10/19/2004 18:33	Medina A Long	n.a.
08389	Low/High Encore Prep Tracking	SW-846 5035	3	10/19/2004 18:34	Medina A Long	n.a.

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. SW 4381916

MW-6-15 Grab Soil Sample
Station ID# 0363-5430 Job# 02-01682
SUN: 610 Old York Road - Warminster, PA
Collected:10/18/2004 15:00 by KS

Account Number: 11224

Submitted: 10/19/2004 16:00
Reported: 10/27/2004 at 22:13
Discard: 11/04/2004

SUN Retail:/GES
410 Eagleview Blvd
Suite 110
Exton PA 19341

OYR06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	8.6	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
02304	UST-Unleaded Soils by 8260B					
02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	5.	ug/kg	1
05460	Benzene	71-43-2	N.D.	1.	ug/kg	1
05466	Toluene	108-88-3	N.D. #	1.	ug/kg	1
05474	Ethylbenzene	100-41-4	N.D. #	1.	ug/kg	1
05479	Isopropylbenzene	98-82-8	N.D.	5.	ug/kg	1
05498	Naphthalene	91-20-3	N.D.	5.	ug/kg	1
06301	Xylene (Total)	1330-20-7	N.D. #	1.	ug/kg	1

Commonwealth of Pennsylvania Lab Certification No. 36-037

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	10/20/2004 17:50	Scott W Freisher	1
02304	UST-Unleaded Soils by 8260B	SW-846 8260B	1	10/25/2004 18:05	Roy R Mellott Jr	1
08389	Low/High Encore Prep Tracking	SW-846 5035	1	10/19/2004 18:36	Medina A Long	n.a.
08389	Low/High Encore Prep Tracking	SW-846 5035	2	10/19/2004 18:37	Medina A Long	n.a.
08389	Low/High Encore Prep Tracking	SW-846 5035	3	10/19/2004 18:38	Medina A Long	n.a.

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

Lancaster Laboratories

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Analysis Report

Quality Control Summary

Client Name: SUN Retail:/GES
Reported: 10/27/04 at 10:13 PM

Group Number: 916952

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 04294820002B	Sample number(s): 4381915-4381916							
Moisture				100		99-101		
Batch number: X042981AB	Sample number(s): 4381915-4381916							
Methyl Tertiary Butyl Ether	N.D.	5.	ug/kg	95	95	75-125	1	30
Benzene	N.D.	1.	ug/kg	92	90	77-119	2	30
Toluene	N.D.	1.	ug/kg	90	88	81-116	2	30
Ethylbenzene	N.D.	1.	ug/kg	91	89	82-115	2	30
Isopropylbenzene	N.D.	5.	ug/kg	91	90	79-117	2	30
Naphthalene	N.D.	5.	ug/kg	68	70	58-114	2	30
Xylene (Total)	N.D.	1.	ug/kg	92	89	82-117	3	30

Sample Matrix Quality Control

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 04294820002B	Sample number(s): 4381915-4381916								
Moisture						8.1	7.8	4	15
Batch number: X042981AB	Sample number(s): 4381915-4381916								
Methyl Tertiary Butyl Ether	86		49-140						
Benzene	88		58-126						
Toluene	86		55-125						
Ethylbenzene	83		50-127						
Isopropylbenzene	79		48-124						
Naphthalene	42		11-142						
Xylene (Total)	82		54-123						

Surrogate Quality Control

Analysis Name: UST-Unleaded Soils by 8260B
Batch number: X042981AB

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4381915	95	95	93	87
4381916	94	91	93	86
Blank	96	94	92	87
LCS	95	94	93	87

*- Outside of specification

(1) The result for one or both determinations was less than five times the LOQ.

(2) The background result was more than four times the spike added.

Lancaster Laboratories

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Analysis Report

Quality Control Summary

Client Name: SUN Retail:/GES
Reported: 10/27/04 at 10:13 PM

Group Number: 916952

Surrogate Quality Control

LCSD	96	92	93	88
MS	95	94	94	88
Limits:	70-129	70-121	70-130	70-128

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions of Lancaster Laboratories and we hereby object to any conflicting terms contained in any acceptance or order submitted by client.

APPENDIX B

1996 NOTICE OF REPORTABLE RELEASE

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*
NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

On August 21, 1993, the Storage Tank Program's Corrective Action Process (CAP) regulations became effective. These regulations establish release reporting requirements for owners and operators of storage tanks and storage tank facilities.

Subsection 245.305(a) of the regulations requires owners or operators to notify the appropriate regional office of the Department as soon as practicable, but no later than 2 hours, after the confirmation of a reportable release.

Subsection 245.305(d) requires owners or operators to provide written notification to the appropriate regional office and to the local municipality, within 15 days of the notice required by Subsection 245.305(a). This form may be used to comply with Subsection 245.305(d).

OWNERS AND OPERATORS (O/O)
PLEASE COMPLETE SECTIONS I, II, IIIA, IIIB, IV, V, VII and VIII.

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

On September 21, 1991, the Storage Tank Program's Certification regulations became effective. These regulations establish standards of performance for certified installers and inspectors of storage tanks and storage tank facilities.

Subsection 245.132(a)(4) of the regulations requires certified installers and inspectors to report to the Department a release of a regulated substance or confirmed or suspected contamination of soil, surface or groundwater from regulated substances observed while performing services as a certified installer or inspector.

This form may be used to comply with Subsection 245.132(a)(4). The Department expects submission of the form within 48 hours of observing suspected or confirmed contamination. Where there is a reportable release, the form may be submitted jointly by the owner, operator, certified installer and certified inspector. In this instance, the form must be received by the appropriate regional office within 15 days of the notice required by Subsection 245.305(a).

CERTIFIED INSTALLERS AND INSPECTORS (I/I)
PLEASE COMPLETE SECTIONS I, II, IIIA, IIIC, VI, VII and VIII.

INSTRUCTIONS

I. **FACILITY INFORMATION** - Record the name, I.D. number and physical location (not P.O. Box) of the facility at which a reportable release has been confirmed or at which suspected or confirmed contamination has been observed. Include the name and phone number of a person to contact at the facility.

II. **OWNER INFORMATION** - Record the name, business address and phone number of the owner of the facility identified in Section I.

III. **REGULATED SUBSTANCE INFORMATION** - Indicate to the best of your knowledge: A) the type of product or products involved; B) the quantity of product or products released; and C) whether the contamination is suspected or confirmed.

IV. **REPORTABLE RELEASE INFORMATION** - Record the date of confirmation of the reportable release, e.g., "08/21/93"; the date and regional office notified; and the date the local municipality (provide name of municipality) was sent a copy of this form. Indicate to the best of your knowledge the extent of contamination resulting from the release of the regulated substance.

V. **INTERIM REMEDIAL ACTIONS** - Indicate the interim remedial actions planned, initiated or completed.

VI. **SUSPECTED/CONFIRMED CONTAMINATION INFORMATION** - Record the date of observation of the suspected or confirmed contamination, e.g., "01/01/94". Indicate to the best of your knowledge the indications of a suspected release or extent of confirmed contamination resulting from the release of the regulated substance.

VII. **ADDITIONAL INFORMATION** - Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include in this section a brief description of the activity that was being conducted when the reportable release was confirmed by the owner or operator or when the suspected/confirmed contamination was observed by the certified installer or inspector, e.g., during a(n) installation, repair or upgrade, removal from service or routine inspection.

VIII. **CERTIFICATION** - Please print your name, and provide your signature and date of signature. If a certified installer/inspector, provide certification number and company certification number.

PLEASE SEND COMPLETED ORIGINAL FORM TO:

PA Department of Environmental Resources
Environmental Cleanup Program
Storage Tank Section
(and the appropriate address below, depending on where the FACILITY is located)

Southeast Region	Northeast Region	Southcentral Region	Northcentral Region	Southwest Region	Northwest Region
Lee Park, Suite 6010 555 North Lane Conshohocken, PA 19428 FAX: 610-832-6259/6260	Cross Valley Centre 667 North River Street Plains, PA 18705 FAX: 717-826-5448	One Ararat Boulevard Harrisburg, PA 17110 FAX: 717-540-7492	200 Pine Street Williamsport, PA 17701 FAX: 717-327-3565	400 Waterfront Drive Pittsburgh, PA 15222 FAX: 412-442-4194	1012 Water Street Meadville, PA 16335 FAX: 814-332-6831
Counties Bucks, Chester, Delaware, Montgomery, Philadelphia	**Counties** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming	**Counties** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties** Bradford, Cameron, Centre, Clinton, Clearfield, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties** Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland	**Counties** Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango, Warren

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: FORMER ATLANTIC SERVICESTATION
Facility I.D. Number: 100549
Street Address (P.O. Box not acceptable): 610 OLD YORK RD.
City: WARMINSTER
State: PA
Zip Code:
County: BUCKS
Municipality: WARMINSTER
Contact Person: BRAD FISH
Phone Number: (610) 859-5701

II. OWNER INFORMATION (Both O/O and I/I)

Owner Name: SUN COMPANY INC.
Address: 4041 MARKET ST
City: ASTON
Zip Code: 19014
State: PA
Phone Number: (610) 859-5701

ER-BWQ-32: 2/94

III. REGULATED SUBSTANCE INFORMATION

A. Type of Product(s) Involved (Mark All That Apply ☒): Both O/O and I/I		B. Quantity (Gallons) of Product(s) Released: O/O Only	C. Contamination Suspected [S] or Confirmed [C]: I/I Only	
Leaded Gasoline	☐		[S]	[C]
Unleaded Gasoline	☒	UNKNOWN	(S)	[C]
Aviation Gasoline	☐		[S]	[C]
Kerosene	☐		[S]	[C]
Jet Fuel	☐		[S]	[C]
Diesel Fuel	☐		[S]	[C]
New Motor Oil	☐		[S]	[C]
Used Motor Oil	☐		[S]	[C]
Fuel Oil No. 1	☐		[S]	[C]
Fuel Oil No. 2	☐		[S]	[C]
Fuel Oil No. 4	☐		[S]	[C]
Fuel Oil No. 5	☐		[S]	[C]
Fuel Oil No. 6	☐		[S]	[C]
Other (Specify) _____	☐		[S]	[C]
Unknown	☐		[S]	[C]

IV. REPORTABLE RELEASE INFORMATION (O/O Only)

Date Reportable Release was Confirmed: 2 / 27 / 96 (m d y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Reportable Release and Office Notified:

Date 2 / 28 / 96 (m d y) Office SOUTH EAST

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality and Name of Municipality Notified:

Date 2 / 29 / 96 (m d y) Municipality WARMINSTER TWP

Environmental Impacts (Mark All That Apply ☒):

Soil	☒
Sediment	☐
Surface Water	☐
Ground Water	☐
Water Supplies	☐

V. INTERIM REMEDIAL ACTIONS (O/O Only)

(Mark All That Apply ☒):

	Planned	Initiated	Completed	Not Applicable
Regulated Substance Removed from Storage Tanks	☐	☐	☒	☐
Fire, Explosion and Safety Hazards Mitigated	☐	☐	☒	☐
Contaminated Soil Excavated	☐	☒	☐	☐
Free Product Recovered	☐	☐	☐	☒
Temporary Water Supplies Provided	☐	☐	☐	☒
Other (Specify) _____	☐	☐	☐	☐

VI. SUSPECTED / CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date of Observation of Suspected/Confirmed Contamination: 2 / 27 / 96 (m d y)

Indication of Suspected Contamination (Mark All That Apply ☒):

Unusual Level of Vapors	☒
Erratic Behavior of Product Dispensing Equipment	☐
Release Detection Results Indicate a Release	☐
Discovery of Holes in the Storage Tank	☐
Other (Specify) _____	☐

Extent of Confirmed Contamination (Mark All That Apply ☒):

Product Stained or Product Saturated Soil or Backfill	☒
Ponded Product	☐
Free Product or Sheen on Ponded Water	☐
Free Product or Sheen on the Ground Water Surface	☐
Free Product or Sheen on Surface Water	☐
Other (Specify) _____	☐

VII. ADDITIONAL INFORMATION (Both O/O and I/I)

Include a brief description of the activity that was being conducted when the reportable release was confirmed by the owner or operator or when the suspected/confirmed contamination was observed by the certified installer or inspector, e.g., during a(n) installation, repair or upgrade, removal from service or routine inspection.

WHILE PERFORMING STATION UPGRADE ACTIVITIES 4 CLOSED-IN-PLACE USTs WERE FOUND ALONG WITH AN ABANDONED 550 GALLON HEATING OIL TANK. ALL TANKS WERE REMOVED AND CONFIRMATORY SAMPLES WERE COLLECTED. STRONG VAPORS AND STAINED SOILS WERE OBSERVED DURING EXCAVATION ACTIVITIES. EXCAVATED SOILS WERE PROPERLY DISPOSED OF IN AN APPROVED LANDFILL.

VIII. CERTIFICATION (Both O/O and I/I)

I, JOHN C. KETCHUM (Print Name), hereby certify, under penalty of law as provided in 18 Pa. C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the owner or operator of the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

John C. Ketchum (for Ketchum Co.) — Signature of Owner or Operator
2-29-96 — Date

I, _____ (Print Name), hereby certify, under penalty of law as provided in 18 Pa. C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified installer who performed tank handling activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

_____ Signature of Certified Installer
_____ Date
_____ Installer Certification Number
_____ Company Certification Number

I, _____ (Print Name), hereby certify, under penalty of law as provided in 18 Pa. C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified inspector who performed inspection activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

_____ Signature of Certified Inspector
_____ Date
_____ Inspector Certification Number
_____ Company Certification Number

APPENDIX C

ENVIRONMENTAL FIRSTSEARCH™ REPORT BY INFOMAP

InfoMap

Technologies Incorporated

Environmental FirstSearch™ Report

TARGET PROPERTY:

610 YORK ROAD

WARMINSTER PA 18974

Job Number: 010697137

PREPARED FOR:

GES, Inc.

410 Eagleview Blvd., Suite 110

Exton, PA 19341

12-21-05

Tel: (610) 430-7530 *Fax: (610) 430-7535*

Environmental FirstSearch is a registered trademark of FirstSearch Technology Corporation. All rights reserved.

Environmental FirstSearch
Search Summary Report

Target Site: 610 YORK ROAD
WARMINSTER PA 18974

FirstSearch Summary

Database	Sel	Updated	Radius	Site	1/8	1/4	1/2	1/2>	ZIP	TOTALS
NPL	Y	10-07-05	1.00	0	0	0	0	1	0	1
CERCLIS	Y	10-07-05	0.50	0	0	0	0	-	0	0
NFRAP	Y	08-01-05	0.50	0	0	0	0	-	0	0
RCRA TSD	Y	09-22-05	0.50	0	0	0	0	-	0	0
RCRA COR	Y	09-22-05	1.00	0	0	0	0	1	0	1
RCRA GEN	Y	06-13-05	0.25	1	2	0	-	-	0	3
ERNS	Y	12-31-04	0.25	0	0	0	-	-	0	0
State Sites	Y	05-16-05	1.00	0	0	0	0	0	0	0
Spills-1990	Y	NA	0.25	0	0	0	-	-	0	0
SWL	Y	06-03-04	0.50	0	0	0	0	-	0	0
REG UST/AST	Y	01-03-05	0.25	1	1	1	-	-	0	3
Leaking UST	Y	12-09-04	0.50	1	0	2	9	-	0	12
State Wells	Y	06-01-98	0.50	0	0	2	8	-	0	10
Federal Wells	Y	05-19-03	0.50	0	0	2	4	-	0	6
- TOTALS -				3	3	7	21	2	0	36

Notice of Disclaimer

Due to the limitations, constraints, inaccuracies and incompleteness of government information and computer mapping data currently available to InfoMap Technologies, certain conventions have been utilized in preparing the locations of all federal, state and local agency sites residing in InfoMap Technologies's databases. All EPA NPL and state landfill sites are depicted by a rectangle approximating their location and size. The boundaries of the rectangles represent the eastern and western most longitudes; the northern and southern most latitudes. As such, the mapped areas may exceed the actual areas and do not represent the actual boundaries of these properties. All other sites are depicted by a point representing their approximate address location and make no attempt to represent the actual areas of the associated property. Actual boundaries and locations of individual properties can be found in the files residing at the agency responsible for such information.

Waiver of Liability

Although InfoMap Technologies uses its best efforts to research the actual location of each site, InfoMap Technologies does not and can not warrant the accuracy of these sites with regard to exact location and size. All authorized users of InfoMap Technologies's services proceeding are signifying an understanding of InfoMap Technologies's searching and mapping conventions, and agree to waive any and all liability claims associated with search and map results showing incomplete and or inaccurate site locations.

Environmental FirstSearch
Sites Summary Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

TOTAL: 36 **GEOCODED:** 36 **NON GEOCODED:** 0 **SELECTED:** 36

Page No.	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
1	LUST	SUNOCO 0363 5430 1091018/2	610 YORK RD WARMINSTER PA 18974	0.00 --	7
2	RCRAGN	SUNOCO SVC STA PAD987348182/VGN	610 OLD YORK RD WARMINSTER PA 18974	0.00 --	7
3	UST	SUNOCO 0363 5430 09-30778	610 YORK RD WARMINSTER PA 18974	0.00 --	7
4	RCRAGN	HERITAGE CLEANERS PAD047324009/SGN	614 YORK RD WARMINSTER PA 18974	0.02 NE	5
5	RCRAGN	ARCHBISHOP WOOD HIGH SCHOOL PAR000525683/SGN	655 YORK RD WARMINSTER PA 18974	0.07 NE	8
5	UST	ARCHBISHOP WOOD HIGH SCH 09-44276	655 YORK RD WARMINSTER PA 18974	0.07 NE	8
6	FEDWELLS	BK 365 FW-PA-18130/USGS GROUNDWATER INV	PA	0.15 SE	26
7	LUST	JIFFY LUBE 262 0797-2861/4	600 W STREET RD WARMINSTER PA 18974	0.15 SE	10
7	UST	JIFFY LUBE 262 09-40540	600 W STREET RD WARMINSTER PA 18974	0.15 SE	10
8	PWS	WARMINSTER HOSIERY CO 5044	WARMINSTER TWP PA	0.15 SW	24
9	FEDWELLS	BK 1038 FW-PA-18099/USGS GROUNDWATER INV	PA	0.16 NW	27
10	PWS	JONES , C 5062	WARMINSTER TWP PA	0.17 NW	19
11	LUST	PNC MID ATLANTIC BANK 0797-2648/NO	521 N YORK RD WARMINSTER PA 18974	0.18 SE	13
12	FEDWELLS	BK 2561 FW-PA-18143/USGS GROUNDWATER INV	PA	0.31 SE	29
13	FEDWELLS	BK 2560 FW-PA-18144/USGS GROUNDWATER INV	PA	0.31 SE	29
14	LUST	LAFFERTY CHEVROLET 1091269/4	829 W STREET RD WARMINSTER PA 18974	0.34 NW	6
15	LUST	LAFFERTY CHEVROLET 0997-255/NO	829 W STREET RD WARMINSTER TWP PA 18974	0.34 NW	6
15	LUST	LAFFERTY CHEVROLET 0797-3302/NO	829 W STREET RD WARMINSTER PA 18974	0.34 NW	6
16	FEDWELLS	BK 364 FW-PA-17401/USGS GROUNDWATER INV	PA	0.37 NW	25
17	PWS	CHRIST S HOME FOR CHILDREN 6300	WARMINSTER TWP PA	0.37 NW	15

Environmental FirstSearch
Sites Summary Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

TOTAL: 36 **GEOCODED:** 36 **NON GEOCODED:** 0 **SELECTED:** 36

Page No.	DB Type	Site Name/ID/Status	Address	Dist/Dir	Map ID
18	PWS	CHRIST S HOME FOR CHILDREN 5082	WARMINSTER TWP PA	0.41 NW	16
19	LUST	CHRIST HOME FOR CHILDREN 0198-42/NO	800 YORK RD WARMINSTER TWP PA 18974	0.42 NE	12
20	PWS	WARMINSTER AUTH 7077	WARMINSTER TWP PA	0.43 SW	23
24	LUST	CUMBERLAND GULF 143833 1091117/5	455 W STREET RD WARMINSTER PA 18974	0.44 SE	9
25	LUST	AMOCO GENTLE TOUCH 1098-96/2	440 W STREET RD WARMINSTER PA 18974	0.44 SE	4
25	LUST	WARMINSTER TWP ADM BLDG 0198-75/NO	HENRY AVE & GIBSON AVE WARMINSTER TWP PA 18974	0.45 SW	11
25	LUST	AVELLINOS TIRE SVC CO INC 0797-2305/YES	409 W STREET RD WARMINSTER PA 18974	0.46 SE	3
26	LUST	TOMLINSON & DIPIETRO RESIDENCE 0800-188/OPEN	725 PHILLIPS DR WARMINSTER TWP PA 18974	0.46 SE	14
26	PWS	SMITH ELMER 65076	WARMINSTER TWP PA	0.46 SE	21
27	PWS	WARMINSTER AUTH 5084	WARMINSTER TWP PA	0.47 NE	22
28	PWS	SMITH , ELMER 5036	WARMINSTER TWP PA	0.47 SE	20
29	FEDWELLS	BK 1062 FW-PA-18166/USGS GROUNDWATER INV	PA	0.48 SE	28
30	PWS	GALLAGHER TOM 65070	WARMINSTER TWP PA	0.49 SE	17
31	PWS	GRADWELL , FRANK 5033	WARMINSTER TWP PA	0.50 SE	18
32	NPL	NAVAL AIR DEVELOPMENT CENTER (8 WA PA6170024545/FINAL	ST & JACKSONVILLE RD WARMINSTER PA 18974	0.92 SE	1
34	RCRACOR	CRC INDUSTRIES INC PAD069880029/CA	885 LOUIS DR WARMINSTER PA 18974	0.98 NE	2

Environmental FirstSearch
Site Information Report

Request Date:	12-21-05	**Search Type:**	COORD
Requestor Name:	GES, Inc.	**Job Number:**	010697137
Standard:	ASTM		**Filtered Report**

TARGET ADDRESS: 610 YORK ROAD
WARMINSTER PA 18974

Demographics

Sites:	36	**Non-Geocoded:**	0	**Population:**	NA
Radon:	0.6 - 8.1 PCI/L				

Site Location

	Degrees (Decimal)	**Degrees (Min/Sec)**		**UTMs**
Longitude:	-75.099872	-75:5:60	**Easting:**	491500.522
Latitude:	40.206944	40:12:25	**Northing:**	4450520.731
			Zone:	18

Comment

Comment:

Additional Requests/Services

Adjacent ZIP Codes: 0 Mile(s)

ZIP Code	City Name	ST	Dist/Dir	Sel

Services:

	Requested?	Date
Sanborns	No	
Aerial Photographs	No	
Topographical Maps	No	
City Directories	No	
Title Search	No	
Municipal Reports	No	
Online Topos	No	

Environmental FirstSearch
Site Detail Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 17 **DIST/DIR:** 0.00 -- **MAP ID:** 7

NAME: SUNOCO 0363 5430
ADDRESS: 610 YORK RD
WARMINSTER PA 18974
CONTACT:

REV: 12/09/04
ID1: 1091018
ID2: 09-30778
STATUS: 2
PHONE:

LUST INFORMATION
INCIDENT DESCRIPTION: ATLANTIC 0363 5430
DATE OF RELEASE: 3/1/1996
TYPE: USTPT-UNDERGROUND STORAGE TANK SYSTEM CONTAINING PETROLEUM
STATUS: 2.Interim Remedial Actions Initiated or Completed - This means that physical activity to remove contaminants is underway or complete
STATUS DATE:

Status Date Info:Date entries for cleanup status 4 and 5 are required. For cleanup status 4 (cleanup completed), this entry represents the date that DEP issued the No Further Action or Liability Protection letter to the responsible party. For cleanup status 5 (inactive), the entry is the date that DEP determines the incident is low priority for corrective action.

Environmental FirstSearch
Site Detail Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

RCRA GENERATOR SITE

SEARCH ID: 4 **DIST/DIR:** 0.00 -- **MAP ID:** 7

NAME: SUNOCO SVC STA
ADDRESS: 610 OLD YORK RD
WARMINSTER PA 18974

CONTACT: SUSAN HICKEY

REV: 9/22/05
ID1: PAD987348182
ID2:
STATUS: VGN
PHONE: 2159776801

SITE INFORMATION

CONTACT INFORMATION: SUSAN HICKEY
1801 MARKET ST 20/10 PC
PHILADELPHIA PA 191031699

PHONE: 2159776801

UNIVERSE INFORMATION:

SNC: N - NO
BOYSNC: N - NO
GPRA PERMIT: N - NO
GPRA POSTCLOSURE: N - NO
GPRA CA: N - NO
GPRA CME: N - NO
PERM PROG: -----

SUBJCA NON TSD: N - NO
CA WRKLD: N - NO
GEN STATUS: CEG - CONDITIONALLY EXEMPT SMALL QUANTITY GENERATORS: GENERATES LESS THAN 100 KG/MONTH OF HAZARDOUS WASTE

PREM WRKLD: -----
CLOSURE WRKLD: -----
P C WRKLD: -----
SUBJCA: N - NO
SUBJCA TSD 3004: N - NO

NAIC INFORMATION

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

Ignitable waste
Benzene

Environmental FirstSearch
Site Detail Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 7 **DIST/DIR:** 0.00 -- **MAP ID:** 7

NAME: SUNOCO 0363 5430
ADDRESS: 610 YORK RD
WARMINSTER PA 18974
CONTACT:

REV: 01/03/05
ID1: 09-30778
ID2:
STATUS:
PHONE:

TANK DETAILS

TANK NO.: 001
CAPACITY: 12000
INSTALLATION DATE: 12/1/1983
LAST INSPECTION DATE: 5/24/2001
TYPE OF INSPECTION: Facility Operation Inspection (UST only)
TANK TYPE: UST
PRODUCT: GASOLINE
STATUS: CURRENTLY IN USE

TANK NO.: 002
CAPACITY: 12000
INSTALLATION DATE: 12/1/1983
LAST INSPECTION DATE: 5/24/2001
TYPE OF INSPECTION: Facility Operation Inspection (UST only)
TANK TYPE: UST
PRODUCT: GASOLINE
STATUS: CURRENTLY IN USE

TANK NO.: 003
CAPACITY: 12000
INSTALLATION DATE: 12/1/1983
LAST INSPECTION DATE: 5/24/2001
TYPE OF INSPECTION: Facility Operation Inspection (UST only)
TANK TYPE: UST
PRODUCT: GASOLINE
STATUS: CURRENTLY IN USE

Environmental FirstSearch
Site Detail Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

RCRA GENERATOR SITE

SEARCH ID: 3 **DIST/DIR:** 0.02 NE **MAP ID:** 5

NAME: HERITAGE CLEANERS
ADDRESS: 614 YORK RD
WARMINSTER PA 18974

CONTACT: LOUIS KANTHER

REV: 9/22/05
ID1: PAD047324009
ID2:
STATUS: SGN
PHONE: 2156742085

SITE INFORMATION

CONTACT INFORMATION: LOUIS KANTHER
614 YORK RD
WARMINSTER PA 18974

PHONE: 2156742085

UNIVERSE INFORMATION:

SNC: N - NO
BOYSNC: N - NO
GPRA PERMIT: N - NO
GPRA POSTCLOSURE: N - NO
GPRA CA: N - NO
GPRA CME: N - NO
PERM PROG: -----

PREM WRKLD: -----
CLOSURE WRKLD: -----
P C WRKLD: -----
SUBJCA: N - NO
SUBJCA TSD 3004: N - NO

SUBJCA NON TSD: N - NO
CA WRKLD: N - NO
GEN STATUS: SQG - SMALL QUANTITY GENERATOR: GENERATES 100 - 1000 KG/MONTH OF HAZARDOUS WASTE

NAIC INFORMATION

81232 - DRYCLEANING AND LAUNDRY SERVICES (EXCEPT COIN-OPERATED)

ENFORCEMENT INFORMATION:

VIOLATION INFORMATION:

HAZARDOUS WASTE INFORMATION:

The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane

Environmental FirstSearch
Site Detail Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

RCRA GENERATOR SITE

SEARCH ID: 36 **DIST/DIR:** 0.07 NE **MAP ID:** 8

NAME: ARCHBISHOP WOOD HIGH SCHOOL
ADDRESS: 655 YORK RD
WARMINSTER PA 18974
BUCKS
CONTACT: DR FREDERICK J CIAO

REV: 9/22/05
ID1: PAR000525683
ID2:
STATUS: SGN
PHONE: 2156725050

DETAILS NOT AVAILABLE

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 5 **DIST/DIR:** 0.07 NE **MAP ID:** 8

NAME: ARCHBISHOP WOOD HIGH SCH
ADDRESS: 655 YORK RD
WARMINSTER PA 18974
CONTACT:

REV:
ID1: 09-44276
ID2:
STATUS:
PHONE:

	Tanks	Installed	Capacity
CURRENT:	0		
REMOVED:	0		
PERMANENT:	0		
UNKNOWN:	0		
TEMP:	0		
CLOSED:	0		

PRODUCTS:
TANK MATERIAL:
PIPE MATERIAL:

Environmental FirstSearch
Site Detail Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

FEDERAL WELLS SITE

SEARCH ID: 31 **DIST/DIR:** 0.15 SE **MAP ID:** 26

NAME: BK 365
ADDRESS:
PA
BUCKS PA
CONTACT:

REV: 5/19/03
ID1: FW-PA-18130
ID2: 401217075060001
STATUS: USGS GROUNDWATER INV
PHONE:

SITE INFORMATION

AGENCY:	USGS
SITE ID:	401217075060001
SITE NAME:	BK 365
SITE TYPE :	GROUND-WATER OTHER THAN SPRING
COUNTY :	BUCKS PA
COUNTRY :	US
LAND NET LOCATION DESC:	
LOCATION MAP:	HATBORO
LOCATION MAP SCALE:	24000
GAGE/LAND SURFACE ALTITUDE:	295
METHOD ALTITUDE DETERMINED:	M
ALTITUDE ACCURACY:	5
ALTITUDE DATUM:	NGVD29
HYDROLOGIC UNIT :	LOWER DELAWARE
DRAINAGE BASIN :	
TOPOGRAPHIC SETTING :	VALLEY FLAT (VALLEYS OF ALL SIZES)
AGENCY USE OF SITE :	INVENTORY DATA SITE ONLY
DATE OF FIRST CONSTRUCTION:	19380101
DATE SITE ESTABLISHED:	
DRAINAGE AREA:	
CONTRIBUTING DRAINAGE AREA:	
MEAN GREENWICH TIME OFFSET:	EST
LOCAL STANDARD TIME FLAG:	Y
DATA RELIABILITY CODE :	C
OTHER GW FILES:	YYNYNNNN
TYPE OF GROUNDWATER SITE:	W
PRIMARY AQUIFER :	231SCKN
AQUIFER TYPE :	
WELL_DEPTH VA:	56.0
HOLE DEPTH:	
DEPTH DATA SOURCE:	
PROJECT NUMBER:	444209300

Environmental FirstSearch
Site Detail Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 12 **DIST/DIR:** 0.15 SE **MAP ID:** 10

NAME: JIFFY LUBE 262
ADDRESS: 600 W STREET RD
WARMINSTER PA 18974
CONTACT:

REV: 12/09/04
ID1: 0797-2861
ID2: 09-40540
STATUS: 4
PHONE:

LUST INFORMATION

INCIDENT DESCRIPTION: JIFFY LUBE 262
DATE OF RELEASE: UNKNOWN
TYPE: USTPT-UNDERGROUND STORAGE TANK SYSTEM CONTAINING PETROLEUM
STATUS: 4.Cleanup Completed -Removal of contaminants to applicable cleanup standards has been demonstrated to DEP.
STATUS DATE: 12/2/1997

Status Date Info:Date entries for cleanup status 4 and 5 are required. For cleanup status 4 (cleanup completed), this entry represents the date that DEP issued the No Further Action or Liability Protection letter to the responsible party. For cleanup status 5 (inactive), the entry is the date that DEP determines the incident is low priority for corrective action.

REGISTERED UNDERGROUND STORAGE TANKS

SEARCH ID: 6 **DIST/DIR:** 0.15 SE **MAP ID:** 10

NAME: JIFFY LUBE 262
ADDRESS: 600 W STREET RD
WARMINSTER PA 18974
CONTACT:

REV: 01/03/05
ID1: 09-40540
ID2:
STATUS:
PHONE:

TANK DETAILS

TANK NO.: 001A
CAPACITY: 275
INSTALLATION DATE: 6/1/1991
LAST INSPECTION DATE:
TYPE OF INSPECTION:

TANK TYPE: AST
PRODUCT: OTHER
STATUS: CURRENTLY IN USE

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

STATE WELLS SITE

SEARCH ID: 29 **DIST/DIR:** 0.15 SW **MAP ID:** 24

NAME: WARMINSTER HOSIERY CO
ADDRESS:
WARMINSTER TWP. PA
CONTACT:

REV: 08/010/99
ID1: 5044
ID2: BK 365
STATUS:
PHONE:

WELL INFORMATION

SOURCE OF RECORD:	USGS - GWSI
QUAD NAME:	HATBORO
FORMATION NAME:	STOCKTON FORMATION
DRILLER:	UNKNOWN
DATE DRILLED:	1/1/1938
USE OF SITE:	UNUSED
WELL DEPTH:	56
DISCHARGE:	
STATIC LEVEL:	
TOP OF CASING:	0
BOTTOM OF CASING:	
DIAMETER:	6
WATER USE:	UNUSED
REMARK:	

WATER QUALITY INFORMATION

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

FEDERAL WELLS SITE

SEARCH ID: 32 **DIST/DIR:** 0.16 NW **MAP ID:** 27

NAME: BK 1038
ADDRESS:
PA
BUCKS PA
CONTACT:

REV: 5/19/03
ID1: FW-PA-18099
ID2: 401230075060901
STATUS: USGS GROUNDWATER INV
PHONE:

SITE INFORMATION

AGENCY:	USGS
SITE ID:	401230075060901
SITE NAME:	BK 1038
SITE TYPE :	GROUND-WATER OTHER THAN SPRING
COUNTY :	BUCKS PA
COUNTRY :	US
LAND NET LOCATION DESC:	
LOCATION MAP:	HATBORO
LOCATION MAP SCALE:	24000
GAGE/LAND SURFACE ALTITUDE:	310
METHOD ALTITUDE DETERMINED:	M
ALTITUDE ACCURACY:	5
ALTITUDE DATUM:	NGVD29
HYDROLOGIC UNIT :	CROSSWICKS-NESHAMINY
DRAINAGE BASIN :	
TOPOGRAPHIC SETTING :	HILLTOP
AGENCY USE OF SITE :	INVENTORY DATA SITE ONLY
DATE OF FIRST CONSTRUCTION:	
DATE SITE ESTABLISHED:	
DRAINAGE AREA:	
CONTRIBUTING DRAINAGE AREA:	
MEAN GREENWICH TIME OFFSET:	EST
LOCAL STANDARD TIME FLAG:	Y
DATA RELIABILITY CODE :	C
OTHER GW FILES:	NYNYNNNN
TYPE OF GROUNDWATER SITE:	W
PRIMARY AQUIFER :	231SCKN
AQUIFER TYPE :	
WELL_DEPTH VA:	
HOLE DEPTH:	
DEPTH DATA SOURCE:	
PROJECT NUMBER:	444209300

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

STATE WELLS SITE

SEARCH ID: 24 **DIST/DIR:** 0.17 NW **MAP ID:** 19

NAME: JONES , C
ADDRESS:
WARMINSTER TWP. PA
CONTACT:

REV: 08/010/99
ID1: 5062
ID2: BK 1038
STATUS:
PHONE:

WELL INFORMATION

SOURCE OF RECORD:	USGS - GWSI
QUAD NAME:	HATBORO
FORMATION NAME:	STOCKTON FORMATION
DRILLER:	
DATE DRILLED:	
USE OF SITE:	WITHDRAWAL
WELL DEPTH:	
DISCHARGE:	
STATIC LEVEL:	
TOP OF CASING:	
BOTTOM OF CASING:	
DIAMETER:	
WATER USE:	DOMESTIC
REMARK:	

WATER QUALITY INFORMATION

Environmental FirstSearch
Site Detail Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 16 **DIST/DIR:** 0.18 SE **MAP ID:** 13

NAME: PNC MID ATLANTIC BANK
ADDRESS: 521 N YORK RD
WARMINSTER PA 18974

CONTACT:

REV:
ID1: 0797-2648
ID2:
STATUS: NO
PHONE:

SUBSTANCE RELEASED: HEATING OIL (NO. 2)
CLEANUP COMPLETION DATE:
CLASS: N

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

FEDERAL WELLS SITE

SEARCH ID: 35 **DIST/DIR:** 0.31 SE **MAP ID:** 29

NAME: BK 2561
ADDRESS:
PA
BUCKS PA
CONTACT:

REV: 5/19/03
ID1: FW-PA-18143
ID2: 401214075054502
STATUS: USGS GROUNDWATER INV
PHONE:

SITE INFORMATION

AGENCY:	USGS
SITE ID:	401214075054502
SITE NAME:	BK 2561
SITE TYPE :	GROUND-WATER OTHER THAN SPRING
COUNTY :	BUCKS PA
COUNTRY :	US
LAND NET LOCATION DESC:	
LOCATION MAP:	HATBORO
LOCATION MAP SCALE:	24000
GAGE/LAND SURFACE ALTITUDE:	308
METHOD ALTITUDE DETERMINED:	M
ALTITUDE ACCURACY:	5
ALTITUDE DATUM:	NGVD29
HYDROLOGIC UNIT :	LOWER DELAWARE
DRAINAGE BASIN :	
TOPOGRAPHIC SETTING :	VALLEY FLAT (VALLEYS OF ALL SIZES)
AGENCY USE OF SITE :	INVENTORY DATA SITE ONLY
DATE OF FIRST CONSTRUCTION:	19940414
DATE SITE ESTABLISHED:	19950605
DRAINAGE AREA:	
CONTRIBUTING DRAINAGE AREA:	
MEAN GREENWICH TIME OFFSET:	EST
LOCAL STANDARD TIME FLAG:	Y
DATA RELIABILITY CODE :	C
OTHER GW FILES:	YYYYNNNN
TYPE OF GROUNDWATER SITE:	W
PRIMARY AQUIFER :	231SCKNM
AQUIFER TYPE :	
WELL_DEPTH VA:	300
HOLE DEPTH:	301
DEPTH DATA SOURCE:	S
PROJECT NUMBER:	444223500

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

FEDERAL WELLS SITE

SEARCH ID: 34 **DIST/DIR:** 0.31 SE **MAP ID:** 29

NAME: BK 2560
ADDRESS:
PA
BUCKS PA
CONTACT:

REV: 5/19/03
ID1: FW-PA-18144
ID2: 401214075054501
STATUS: USGS GROUNDWATER INV
PHONE:

SITE INFORMATION

AGENCY:	USGS
SITE ID:	401214075054501
SITE NAME:	BK 2560
SITE TYPE :	GROUND-WATER OTHER THAN SPRING
COUNTY :	BUCKS PA
COUNTRY :	US
LAND NET LOCATION DESC:	
LOCATION MAP:	HATBORO
LOCATION MAP SCALE:	24000
GAGE/LAND SURFACE ALTITUDE:	308
METHOD ALTITUDE DETERMINED:	M
ALTITUDE ACCURACY:	5
ALTITUDE DATUM:	NGVD29
HYDROLOGIC UNIT :	LOWER DELAWARE
DRAINAGE BASIN :	
TOPOGRAPHIC SETTING :	VALLEY FLAT (VALLEYS OF ALL SIZES)
AGENCY USE OF SITE :	INVENTORY DATA SITE ONLY
DATE OF FIRST CONSTRUCTION:	19940404
DATE SITE ESTABLISHED:	19950605
DRAINAGE AREA:	
CONTRIBUTING DRAINAGE AREA:	
MEAN GREENWICH TIME OFFSET:	EST
LOCAL STANDARD TIME FLAG:	Y
DATA RELIABILITY CODE :	C
OTHER GW FILES:	YYYYNNNN
TYPE OF GROUNDWATER SITE:	W
PRIMARY AQUIFER :	231SCKNM
AQUIFER TYPE :	
WELL_DEPTH VA:	87
HOLE DEPTH:	87
DEPTH DATA SOURCE:	S
PROJECT NUMBER:	444223500

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 13 **DIST/DIR:** 0.34 NW **MAP ID:** 6

NAME: LAFFERTY CHEVROLET
ADDRESS: 829 W STREET RD
WARMINSTER PA 18974
CONTACT:

REV: 12/09/04
ID1: 1091269
ID2: 09-27683
STATUS: 4
PHONE:

LUST INFORMATION
INCIDENT DESCRIPTION: LAFFERTY CHEVROLET
DATE OF RELEASE: UNKNOWN
TYPE: USTPT-UNDERGROUND STORAGE TANK SYSTEM CONTAINING PETROLEUM
STATUS: 5.Inactive - Incidents in this status have not achieved cleanup completed status. However, these incidents have been determined by DEP to be low priority for corrective action as a result of meeting the following criteria: 1.No product in the leaking storage tank system 2.No known free product in the environment 3.Risks to human health and the environment have been mitigated including vapor/fire/explosion hazards, contaminated drinking water supplies, and releases to surface waters 4.Strong potential for receptors to be impacted is not known to exist 5.Responsible party is not performing or planning to perform corrective action 6.The case is at least two (2) years old
STATUS DATE: 12/31/1998

LUST INFORMATION
INCIDENT DESCRIPTION: LAFFERTY CHEVROLET
DATE OF RELEASE: UNKNOWN
TYPE: USTPT-UNDERGROUND STORAGE TANK SYSTEM CONTAINING PETROLEUM
STATUS: 4.Cleanup Completed -Removal of contaminants to applicable cleanup standards has been demonstrated to DEP.
STATUS DATE: 6/3/1997

Status Date Info:Date entries for cleanup status 4 and 5 are required. For cleanup status 4 (cleanup completed), this entry represents the date that DEP issued the No Further Action or Liability Protection letter to the responsible party. For cleanup status 5 (inactive), the entry is the date that DEP determines the incident is low priority for corrective action.

Environmental FirstSearch
Site Detail Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 14 **DIST/DIR:** 0.34 NW **MAP ID:** 6

NAME: LAFFERTY CHEVROLET
ADDRESS: 829 W STREET RD
WARMINSTER TWP. PA 18974
CONTACT:

REV:
ID1: 0997-255
ID2:
STATUS: NO
PHONE:

REPORT DATE:
MATERIAL:
LOW CAPACITY:
PRODUCT: FUEL OIL NO. 2

FED REG: F
NUMBER OF TANKS:
HIGH CAPACITY:

TANK REMOVED:
TANK RELEASE:

UNCONTROLLED RELEASE:
PIPING RELEASE:

EMERGENCY:
OVERFILL RELEASE:

REMEDIATION:
REFERRED:
COMMENT:

COMPLETE: NO

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 15 **DIST/DIR:** 0.34 NW **MAP ID:** 6

NAME: LAFFERTY CHEVROLET
ADDRESS: 829 W STREET RD
WARMINSTER PA 18974
CONTACT:

REV:
ID1: 0797-3302
ID2:
STATUS: NO
PHONE:

SUBSTANCE RELEASED: FUEL OIL NO. 2
CLEANUP COMPLETION DATE:
CLASS: N

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

FEDERAL WELLS SITE

SEARCH ID: 30 **DIST/DIR:** 0.37 NW **MAP ID:** 25

NAME: BK 364
ADDRESS:
PA
BUCKS PA
CONTACT:

REV: 5/19/03
ID1: FW-PA-17401
ID2: 401244075060401
STATUS: USGS GROUNDWATER INV
PHONE:

SITE INFORMATION

AGENCY:	USGS
SITE ID:	401244075060401
SITE NAME:	BK 364
SITE TYPE :	GROUND-WATER OTHER THAN SPRING
COUNTY :	BUCKS PA
COUNTRY :	US
LAND NET LOCATION DESC:	
LOCATION MAP:	HATBORO
LOCATION MAP SCALE:	24000
GAGE/LAND SURFACE ALTITUDE:	300
METHOD ALTITUDE DETERMINED:	M
ALTITUDE ACCURACY:	5
ALTITUDE DATUM:	NGVD29
HYDROLOGIC UNIT :	LOWER DELAWARE
DRAINAGE BASIN :	
TOPOGRAPHIC SETTING :	HILLSIDE (SLOPE)
AGENCY USE OF SITE :	INVENTORY DATA SITE ONLY
DATE OF FIRST CONSTRUCTION:	19320101
DATE SITE ESTABLISHED:	
DRAINAGE AREA:	
CONTRIBUTING DRAINAGE AREA:	
MEAN GREENWICH TIME OFFSET:	EST
LOCAL STANDARD TIME FLAG:	Y
DATA RELIABILITY CODE :	C
OTHER GW FILES:	YYYYNNNN
TYPE OF GROUNDWATER SITE:	W
PRIMARY AQUIFER :	231SCKN
AQUIFER TYPE :	
WELL_DEPTH VA:	200
HOLE DEPTH:	
DEPTH DATA SOURCE:	
PROJECT NUMBER:	444209300

Environmental FirstSearch
Site Detail Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

STATE WELLS SITE

SEARCH ID: 20 **DIST/DIR:** 0.37 NW **MAP ID:** 15

NAME: CHRIST S HOME FOR CHILDREN
ADDRESS:
WARMINSTER TWP. PA
CONTACT:

REV: 08/010/99
ID1: 6300
ID2: BK 364
STATUS:
PHONE:

WELL INFORMATION

SOURCE OF RECORD:	USGS - GWSI
QUAD NAME:	HATBORO
FORMATION NAME:	STOCKTON FORMATION
DRILLER:	JOHN WILEY
DATE DRILLED:	1/1/1932
USE OF SITE:	WITHDRAWAL
WELL DEPTH:	200
DISCHARGE:	35
STATIC LEVEL:	
TOP OF CASING:	0
BOTTOM OF CASING:	
DIAMETER:	6
WATER USE:	DOMESTIC
REMARK:	

WATER QUALITY INFORMATION

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

STATE WELLS SITE

SEARCH ID: 21 **DIST/DIR:** 0.41 NW **MAP ID:** 16

NAME: CHRIST S HOME FOR CHILDREN
ADDRESS:
WARMINSTER TWP. PA
CONTACT:

REV: 08/010/99
ID1: 5082
ID2: BK 363
STATUS:
PHONE:

WELL INFORMATION

SOURCE OF RECORD:	USGS - GWSI
QUAD NAME:	HATBORO
FORMATION NAME:	STOCKTON FORMATION
DRILLER:	JOHN O DONNELL & SON
DATE DRILLED:	1/1/1915
USE OF SITE:	WITHDRAWAL
WELL DEPTH:	161
DISCHARGE:	75
STATIC LEVEL:	
TOP OF CASING:	0
BOTTOM OF CASING:	12
DIAMETER:	6
WATER USE:	PUBLIC SUPPLY
REMARK:	

SOURCE OF RECORD:	USGS - GWSI
QUAD NAME:	HATBORO
FORMATION NAME:	STOCKTON FORMATION
DRILLER:	JOHN O DONNELL & SON
DATE DRILLED:	1/1/1915
USE OF SITE:	WITHDRAWAL
WELL DEPTH:	161
DISCHARGE:	
STATIC LEVEL:	90
TOP OF CASING:	0
BOTTOM OF CASING:	12
DIAMETER:	6
WATER USE:	PUBLIC SUPPLY
REMARK:	

WATER QUALITY INFORMATION

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 10 **DIST/DIR:** 0.42 NE **MAP ID:** 12

NAME: CHRIST HOME FOR CHILDREN
ADDRESS: 800 YORK RD
WARMINSTER TWP. PA 18974

CONTACT:

REV:
ID1: 0198-42
ID2:
STATUS: NO
PHONE:

DETAILS NOT AVAILABLE

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

STATE WELLS SITE

SEARCH ID: 28 **DIST/DIR:** 0.43 SW **MAP ID:** 23

NAME: WARMINSTER AUTH
ADDRESS: WARMINSTER TWP. PA
CONTACT:

REV: 08/010/99
ID1: 7077
ID2: BK 692
STATUS:
PHONE:

WELL INFORMATION

SOURCE OF RECORD:	USGS - GWSI
QUAD NAME:	HATBORO
FORMATION NAME:	STOCKTON FORMATION
DRILLER:	UNKNOWN
DATE DRILLED:	1/1/1954
USE OF SITE:	WITHDRAWAL
WELL DEPTH:	300
DISCHARGE:	
STATIC LEVEL:	13
TOP OF CASING:	0
BOTTOM OF CASING:	63
DIAMETER:	10
WATER USE:	PUBLIC SUPPLY
REMARK:	

SOURCE OF RECORD:	USGS - GWSI
QUAD NAME:	HATBORO
FORMATION NAME:	STOCKTON FORMATION
DRILLER:	UNKNOWN
DATE DRILLED:	1/1/1954
USE OF SITE:	WITHDRAWAL
WELL DEPTH:	300
DISCHARGE:	282
STATIC LEVEL:	13
TOP OF CASING:	0
BOTTOM OF CASING:	44
DIAMETER:	14
WATER USE:	PUBLIC SUPPLY
REMARK:	

SOURCE OF RECORD:	USGS - GWSI
QUAD NAME:	HATBORO
FORMATION NAME:	STOCKTON FORMATION
DRILLER:	UNKNOWN
DATE DRILLED:	1/1/1954
USE OF SITE:	WITHDRAWAL
WELL DEPTH:	300
DISCHARGE:	282
STATIC LEVEL:	13
TOP OF CASING:	0
BOTTOM OF CASING:	63
DIAMETER:	10
WATER USE:	PUBLIC SUPPLY
REMARK:	

SOURCE OF RECORD:	USGS - GWSI
QUAD NAME:	HATBORO

- Continued on next page -

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

STATE WELLS SITE

SEARCH ID: 28 **DIST/DIR:** 0.43 SW **MAP ID:** 23

NAME: WARMINSTER AUTH
ADDRESS:
WARMINSTER TWP. PA
CONTACT:

REV: 08/010/99
ID1: 7077
ID2: BK 692
STATUS:
PHONE:

FORMATION NAME: STOCKTON FORMATION
DRILLER: UNKNOWN
DATE DRILLED: 1/1/1954
USE OF SITE: WITHDRAWAL
WELL DEPTH: 300
DISCHARGE:
STATIC LEVEL: 13
TOP OF CASING: 0
BOTTOM OF CASING: 44
DIAMETER: 14
WATER USE: PUBLIC SUPPLY
REMARK:

WATER QUALITY INFORMATION

DATE: 8/17/1956 **REMARK:** 22 SILICA DISSOLVED (MG/L AS SIO2)

DATE: 8/17/1956 **REMARK:** 13 DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET)

DATE: 8/17/1956 **REMARK:** 300 DEPTH TO BOTTOM OF SAMPLE INTERVAL (FEET BELOW LSD)

DATE: 8/17/1956 **REMARK:** 300 DEPTH OF WELL, TOTAL (FEET)

DATE: 8/17/1956 **REMARK:** 300 ELEVATION OF LAND SURFACE DATUM (LSD) (FEET NGVD)

DATE: 8/17/1956 **REMARK:** 43 NITROGEN, NITRATE, DISSOLVED (MG/L AS NO3)

DATE: 8/17/1956 **REMARK:** 140 ALUMINUM DISSOLVED (UG/L AS AL)

DATE: 7/25/1979 **REMARK:** 420 SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE

DATE: 8/17/1956 **REMARK:** 0.1 FLUORIDE DISSOLVED (MG/L AS F)

DATE: 8/17/1956 **REMARK:** 30 SULFATE DISSOLVED (MG/L AS SO4)

DATE: 8/17/1956 **REMARK:** 16 CHLORIDE DISSOLVED (MG/L AS CL)

DATE: 8/17/1956 **REMARK:** 14 SODIUM PLUS POTASSIUM DISSOLVED (MG/L AS NA)

DATE: 8/17/1956 **REMARK:** 202 SOLIDS, RESIDUE ON EVAPORATION AT 180 DEG C, DISSOLVED (MG/L)

DATE: 7/25/1979 **REMARK:** 80010 AGENCY ANALYZING SAMPLE (CODE NUMBER)

DATE: 8/17/1956 **REMARK:** 58 NONCARBONATE HARDNESS WATER WHOLE TOTAL, FIELD, (MG/L AS CA CO3)

DATE: 7/25/1979 **REMARK:** 6.7 PH, WATER, WHOLE, FIELD, STANDARD UNITS

DATE: 7/25/1979 **REMARK:** 38 CARBON DIOXIDE DISSOLVED (MG/L AS CO2)

DATE: 7/25/1979 **REMARK:** 98 ALKALINITY, WATER, WHOLE, TOTAL, FIXED ENDPOINT TITRATION, FIELD, MG/L AS CACO3

DATE: 7/25/1979 **REMARK:** 4.1 NITROGEN DISSOLVED (MG/L AS N)

- Continued on next page -

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

STATE WELLS SITE

SEARCH ID: 28 **DIST/DIR:** 0.43 SW **MAP ID:** 23

NAME: WARMINSTER AUTH
ADDRESS:
WARMINSTER TWP. PA
CONTACT:

REV: 08/010/99
ID1: 7077
ID2: BK 692
STATUS:
PHONE:

DATE: 7/25/1979 **REMARK:** 0 NITROGEN ORGANIC DISSOLVED (MG/L AS N)

DATE: 7/25/1979 **REMARK:** 0.01 NITROGEN AMMONIA DISSOLVED (MG/L AS N)

DATE: 7/25/1979 **REMARK:** 0.01 NITROGEN, NITRITE, DISSOLVED, MG/L AS N

DATE: 7/25/1979 **REMARK:** 4.1 NITROGEN NITRATE DISSOLVED (MG/L AS N)

DATE: 7/25/1979 **REMARK:** < 0.1 NITROGEN AMMONIA PLUS ORGANIC DISSOLVED (MG/L AS N)

DATE: 7/25/1979 **REMARK:** 4.1 NITROGEN NITRITE PLUS NITRATE DISSOLVED (MG/L AS N)

DATE: 7/25/1979 **REMARK:** 0.18 PHOSPHATE ORTHO DISSOLVED (MG/L AS PO4)

DATE: 7/25/1979 **REMARK:** 0.12 PHOSPHORUS DISSOLVED (MG/L AS P)

DATE: 7/25/1979 **REMARK:** 16 WATER TEMPERATURE, DEGREES CELSIUS

DATE: 7/25/1979 **REMARK:** 1.1 POTASSIUM DISSOLVED (MG/L AS K)

DATE: 8/17/1956 **REMARK:** 0 CARBONATE, WATER, WHOLE, FIXED ENDPOINT TITRATION, FIELD, MG/L AS CO3

DATE: 7/25/1979 **REMARK:** 18 NITROGEN, NITRATE, DISSOLVED (MG/L AS NO3)

DATE: 8/17/1956 **REMARK:** 56 BICARBONATE, WATER, WHOLE, FIXED ENDPOINT TITRATION, FIELD, MG/L AS HCO3

DATE: 7/25/1979 **REMARK:** 0.06 PHOSPHORUS ORTHOPHOSPHATE DISSOLVED (MG/L AS P)

DATE: 8/17/1956 **REMARK:** 46 ALKALINITY, WATER, WHOLE, TOTAL, FIXED ENDPOINT TITRATION, FIELD, MG/L AS CACO3

DATE: 8/17/1956 **REMARK:** 0.9 CARBON DIOXIDE DISSOLVED (MG/L AS CO2)

DATE: 8/17/1956 **REMARK:** 8 PH, WATER, WHOLE, FIELD, STANDARD UNITS

DATE: 7/25/1979 **REMARK:** < 20 CHROMIUM DISSOLVED (UG/L AS CR)

DATE: 7/25/1979 **REMARK:** < 2 CADMIUM DISSOLVED (UG/L AS CD)

DATE: 7/25/1979 **REMARK:** 2 ARSENIC DISSOLVED (UG/L AS AS)

DATE: 7/25/1979 **REMARK:** 24 SILICA DISSOLVED (MG/L AS SIO2)

DATE: 7/25/1979 **REMARK:** 0.1 FLUORIDE DISSOLVED (MG/L AS F)

DATE: 8/17/1956 **REMARK:** 7 MAGNESIUM DISSOLVED (MG/L AS MG)

DATE: 7/25/1979 **REMARK:** 30 CHLORIDE DISSOLVED (MG/L AS CL)

DATE: 8/17/1956 **REMARK:** 30 CALCIUM DISSOLVED (MG/L AS CA)

DATE: 7/25/1979 **REMARK:** 17 SODIUM PLUS POTASSIUM DISSOLVED (MG/L AS NA)

- Continued on next page -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

STATE WELLS SITE

SEARCH ID: 28 **DIST/DIR:** 0.43 SW **MAP ID:** 23

NAME: WARMINSTER AUTH
ADDRESS:
WARMINSTER TWP. PA
CONTACT:

REV: 08/010/99
ID1: 7077
ID2: BK 692
STATUS:
PHONE:

DATE: 7/25/1979 **REMARK:** 18 SODIUM, PERCENT

DATE: 7/25/1979 **REMARK:** 0.6 SODIUM ADSORPTION RATIO

DATE: 7/25/1979 **REMARK:** 16 SODIUM DISSOLVED (MG/L AS NA)

DATE: 7/25/1979 **REMARK:** 11 MAGNESIUM DISSOLVED (MG/L AS MG)

DATE: 7/25/1979 **REMARK:** 43 CALCIUM DISSOLVED (MG/L AS CA)

DATE: 7/25/1979 **REMARK:** 55 NONCARBONATE HARDNESS WATER WHOLE TOTAL, FIELD, (MG/L AS CA CO3)

DATE: 7/25/1979 **REMARK:** 150 HARDNESS TOTAL (MG/L AS CA03)

DATE: 7/25/1979 **REMARK:** 0 CARBON ORGANIC SUSPENDED TOTAL (MG/L AS C)

DATE: 7/25/1979 **REMARK:** 2.9 CARBON ORGANIC DISSOLVED (MG/L AS C)

DATE: 8/17/1956 **REMARK:** 9.71 NITROGEN NITRATE DISSOLVED (MG/L AS N)

DATE: 8/17/1956 **REMARK:** 100 HARDNESS TOTAL (MG/L AS CA03)

DATE: 7/25/1979 **REMARK:** 31 SULFATE DISSOLVED (MG/L AS SO4)

DATE: 8/17/1956 **REMARK:** 1 COLOR (PLATINUM-COBALT)

DATE: 8/17/1956 **REMARK:** 292 SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGRADE

DATE: 8/17/1956 **REMARK:** 282 FLOW RATE INSTANTANEOUS (GALLONS/MINUTE)

DATE: 8/17/1956 **REMARK:** 282 FLOW RATE, YIELD OF WELL, (GALLONS/MINUTE)

DATE: 7/25/1979 **REMARK:** < 0.5 MERCURY, DISSOLVED (UG/L AS HG)

DATE: 7/25/1979 **REMARK:** 0.03 NITROGEN, NITRITE, DISSOLVED (MG/L AS NO2)

DATE: 7/25/1979 **REMARK:** 4 COPPER DISSOLVED (UG/L AS CU)

DATE: 7/25/1979 **REMARK:** 0.39 SOLIDS, DISSOLVED (TONS PER ACRE-FOOT)

DATE: 7/25/1979 **REMARK:** 233 SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)

DATE: 7/25/1979 **REMARK:** 287 SOLIDS, RESIDUE ON EVAPORATION AT 180 DEG C, DISSOLVED (MG/L)

DATE: 7/25/1979 **REMARK:** < 10 MANGANESE DISSOLVED (UG/L AS MN)

DATE: 7/25/1979 **REMARK:** 8 LEAD DISSOLVED (UG/L AS PB)

DATE: 7/25/1979 **REMARK:** < 10 IRON DISSOLVED (UG/L AS FE)

DATE: 7/25/1979 **REMARK:** 0.01 NITROGEN, AMMONIA, DISSOLVED (MG/L AS NH4)

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 11 **DIST/DIR:** 0.44 SE **MAP ID:** 9

NAME: CUMBERLAND GULF 143833
ADDRESS: 455 W STREET RD
WARMINSTER PA 18974
CONTACT:

REV: 12/09/04
ID1: 1091117
ID2: 09-09112
STATUS: 5
PHONE:

LUST INFORMATION
INCIDENT DESCRIPTION: CUMBERALND GULF 143833
DATE OF RELEASE: UNKNOWN
TYPE: USTPT-UNDERGROUND STORAGE TANK SYSTEM CONTAINING PETROLEUM
STATUS: 5.Inactive - Incidents in this status have not achieved cleanup completed status. However, these incidents have been determined by DEP to be low priority for corrective action as a result of meeting the following criteria: 1.No product in the leaking storage tank system 2.No known free product in the environment 3.Risks to human health and the environment have been mitigated including vapor/fire/explosion hazards, contaminated drinking water supplies, and releases to surface waters 4.Strong potential for receptors to be impacted is not known to exist 5.Responsible party is not performing or planning to perform corrective action 6.The case is at least two (2) years old
STATUS DATE: 12/31/1998

LUST INFORMATION
INCIDENT DESCRIPTION: CUMBERALND GULF 143833
DATE OF RELEASE: UNKNOWN
TYPE: USTPT-UNDERGROUND STORAGE TANK SYSTEM CONTAINING PETROLEUM
STATUS: 5.Inactive - Incidents in this status have not achieved cleanup completed status. However, these incidents have been determined by DEP to be low priority for corrective action as a result of meeting the following criteria: 1.No product in the leaking storage tank system 2.No known free product in the environment 3.Risks to human health and the environment have been mitigated including vapor/fire/explosion hazards, contaminated drinking water supplies, and releases to surface waters 4.Strong potential for receptors to be impacted is not known to exist 5.Responsible party is not performing or planning to perform corrective action 6.The case is at least two (2) years old
STATUS DATE: 12/31/1998

Status Date Info:Date entries for cleanup status 4 and 5 are required. For cleanup status 4 (cleanup completed), this entry represents the date that DEP issued the No Further Action or Liability Protection letter to the responsible party. For cleanup status 5 (inactive), the entry is the date that DEP determines the incident is low priority for corrective action.

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 8 **DIST/DIR:** 0.44 SE **MAP ID:** 4

NAME: AMOCO GENTLE TOUCH
ADDRESS: 440 W STREET RD
WARMINSTER PA 18974
BUCKS
CONTACT:

REV: 12/09/04
ID1: 1098-96
ID2: 09-08612
STATUS: 2
PHONE:

LUST INFORMATION
INCIDENT DESCRIPTION: AMOCO 4343
DATE OF RELEASE: 7/6/1998
TYPE: USTPT-UNDERGROUND STORAGE TANK SYSTEM CONTAINING PETROLEUM
STATUS: 2.Interim Remedial Actions Initiated or Completed - This means that physical activity to remove contaminants is underway or complete
STATUS DATE:

Status Date Info:Date entries for cleanup status 4 and 5 are required. For cleanup status 4 (cleanup completed), this entry represents the date that DEP issued the No Further Action or Liability Protection letter to the responsible party. For cleanup status 5 (inactive), the entry is the date that DEP determines the incident is low priority for corrective action.

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 19 **DIST/DIR:** 0.45 SW **MAP ID:** 11

NAME: WARMINSTER TWP ADM BLDG
ADDRESS: HENRY AVE & GIBSON AVE
WARMINSTER TWP. PA 18974
CONTACT:

REV:
ID1: 0198-75
ID2:
STATUS: NO
PHONE:

DETAILS NOT AVAILABLE

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 9 **DIST/DIR:** 0.46 SE **MAP ID:** 3

NAME: AVELLINOS TIRE SVC CO INC
ADDRESS: 409 W STREET RD
WARMINSTER PA 18974
CONTACT:

REV:
ID1: 0797-2305
ID2:
STATUS: YES
PHONE:

SUBSTANCE RELEASED: USED MOTOR OIL
CLEANUP COMPLETION DATE: 5/2/97
CLASS: N

Environmental FirstSearch
Site Detail Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

LEAKING UNDERGROUND STORAGE TANKS

SEARCH ID: 18 **DIST/DIR:** 0.46 SE **MAP ID:** 14

NAME: TOMLINSON & DIPIETRO RESIDENCE
ADDRESS: 725 PHILLIPS DR
WARMINSTER TWP. PA
CONTACT:

REV: 08-21-00
ID1: 0800-188
ID2:
STATUS: OPEN
PHONE:

SUBSTANCE RELEASED: FUEL OIL NO. 2
CLEANUP COMPLETION DATE:
CLASS: N

STATE WELLS SITE

SEARCH ID: 26 **DIST/DIR:** 0.46 SE **MAP ID:** 21

NAME: SMITH ELMER
ADDRESS:
WARMINSTER TWP. PA
CONTACT:

REV: 08/010/99
ID1: 65076
ID2: X 1617
STATUS:
PHONE:

WELL INFORMATION

SOURCE OF RECORD: PAGS WWI PAPER
QUAD NAME: HATBORO
FORMATION NAME: STOCKTON FORMATION
DRILLER: F E BUEHLER & SON
DATE DRILLED: 1/1/1970
USE OF SITE: WITHDRAWAL
WELL DEPTH: 95
DISCHARGE:
STATIC LEVEL:
TOP OF CASING: 0
BOTTOM OF CASING: 41
DIAMETER: 6
WATER USE: DOMESTIC
REMARK:

WATER QUALITY INFORMATION

Environmental FirstSearch
Site Detail Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

STATE WELLS SITE

SEARCH ID: 27 **DIST/DIR:** 0.47 NE **MAP ID:** 22

NAME: WARMINSTER AUTH
ADDRESS:
WARMINSTER TWP. PA
CONTACT:

REV: 08/010/99
ID1: 5084
ID2: BK 1129
STATUS:
PHONE:

WELL INFORMATION

SOURCE OF RECORD:	USGS - GWSI
QUAD NAME:	HATBORO
FORMATION NAME:	STOCKTON FORMATION
DRILLER:	W ROLLIN RAAB & SON INC
DATE DRILLED:	2/9/1980
USE OF SITE:	WITHDRAWAL
WELL DEPTH:	400
DISCHARGE:	
STATIC LEVEL:	
TOP OF CASING:	0
BOTTOM OF CASING:	50
DIAMETER:	8
WATER USE:	PUBLIC SUPPLY
REMARK:	

SOURCE OF RECORD:	USGS - GWSI
QUAD NAME:	HATBORO
FORMATION NAME:	STOCKTON FORMATION
DRILLER:	W ROLLIN RAAB & SON INC
DATE DRILLED:	2/9/1980
USE OF SITE:	WITHDRAWAL
WELL DEPTH:	400
DISCHARGE:	
STATIC LEVEL:	
TOP OF CASING:	0
BOTTOM OF CASING:	
DIAMETER:	12
WATER USE:	PUBLIC SUPPLY
REMARK:	

WATER QUALITY INFORMATION

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

STATE WELLS SITE

SEARCH ID: 25 **DIST/DIR:** 0.47 SE **MAP ID:** 20

NAME: SMITH , ELMER
ADDRESS:
WARMINSTER TWP. PA
CONTACT:

REV: 08/010/99
ID1: 5036
ID2: BK 1062
STATUS:
PHONE:

WELL INFORMATION

SOURCE OF RECORD:	USGS - GWSI
QUAD NAME:	HATBORO
FORMATION NAME:	STOCKTON FORMATION
DRILLER:	F E BUEHLER & SON
DATE DRILLED:	4/17/1970
USE OF SITE:	WITHDRAWAL
WELL DEPTH:	95
DISCHARGE:	
STATIC LEVEL:	
TOP OF CASING:	0
BOTTOM OF CASING:	40
DIAMETER:	6
WATER USE:	DOMESTIC
REMARK:	

WATER QUALITY INFORMATION

Environmental FirstSearch
Site Detail Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

FEDERAL WELLS SITE

SEARCH ID: 33 **DIST/DIR:** 0.48 SE **MAP ID:** 28

NAME: BK 1062
ADDRESS:
PA
BUCKS PA
CONTACT:

REV: 5/19/03
ID1: FW-PA-18166
ID2: 401209075053501
STATUS: USGS GROUNDWATER INV
PHONE:

SITE INFORMATION

AGENCY:	USGS
SITE ID:	401209075053501
SITE NAME:	BK 1062
SITE TYPE :	GROUND-WATER OTHER THAN SPRING
COUNTY :	BUCKS PA
COUNTRY :	US
LAND NET LOCATION DESC:	
LOCATION MAP:	HATBORO
LOCATION MAP SCALE:	24000
GAGE/LAND SURFACE ALTITUDE:	315
METHOD ALTITUDE DETERMINED:	M
ALTITUDE ACCURACY:	5
ALTITUDE DATUM:	NGVD29
HYDROLOGIC UNIT :	CROSSWICKS-NESHAMINY
DRAINAGE BASIN :	
TOPOGRAPHIC SETTING :	HILLSIDE (SLOPE)
AGENCY USE OF SITE :	INVENTORY DATA SITE ONLY
DATE OF FIRST CONSTRUCTION:	19700417
DATE SITE ESTABLISHED:	
DRAINAGE AREA:	
CONTRIBUTING DRAINAGE AREA:	
MEAN GREENWICH TIME OFFSET:	EST
LOCAL STANDARD TIME FLAG:	Y
DATA RELIABILITY CODE :	C
OTHER GW FILES:	YYNYNNNN
TYPE OF GROUNDWATER SITE:	W
PRIMARY AQUIFER :	231SCKN
AQUIFER TYPE :	
WELL_DEPTH VA:	95.0
HOLE DEPTH:	
DEPTH DATA SOURCE:	
PROJECT NUMBER:	444209300

Environmental FirstSearch
Site Detail Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

STATE WELLS SITE

SEARCH ID: 22 **DIST/DIR:** 0.49 SE **MAP ID:** 17

NAME: GALLAGHER TOM
ADDRESS:
WARMINSTER TWP. PA

CONTACT:

REV: 08/010/99
ID1: 65070
ID2: 6192N
STATUS:
PHONE:

WELL INFORMATION

SOURCE OF RECORD:	PAGS WWI PAPER
QUAD NAME:	HATBORO
FORMATION NAME:	STOCKTON FORMATION
DRILLER:	
DATE DRILLED:	11/29/1985
USE OF SITE:	WITHDRAWAL
WELL DEPTH:	100
DISCHARGE:	12
STATIC LEVEL:	
TOP OF CASING:	0
BOTTOM OF CASING:	30
DIAMETER:	6
WATER USE:	DOMESTIC
REMARK:	

WATER QUALITY INFORMATION

Environmental FirstSearch
Site Detail Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

STATE WELLS SITE

SEARCH ID: 23 **DIST/DIR:** 0.50 SE **MAP ID:** 18

NAME: GRADWELL , FRANK
ADDRESS:
WARMINSTER TWP. PA
CONTACT:

REV: 08/010/99
ID1: 5033
ID2: BK 1049
STATUS:
PHONE:

WELL INFORMATION

SOURCE OF RECORD:	USGS - GWSI
QUAD NAME:	HATBORO
FORMATION NAME:	STOCKTON FORMATION
DRILLER:	UNKNOWN
DATE DRILLED:	1/1/1935
USE OF SITE:	WITHDRAWAL
WELL DEPTH:	40
DISCHARGE:	
STATIC LEVEL:	8.76
TOP OF CASING:	0
BOTTOM OF CASING:	
DIAMETER:	8
WATER USE:	DOMESTIC
REMARK:	

WATER QUALITY INFORMATION

Environmental FirstSearch
Site Detail Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

NPL SITE

SEARCH ID: 1 **DIST/DIR:** 0.92 SE **MAP ID:** 1

NAME: NAVAL AIR DEVELOPMENT CENTER (8 WASTE AREAS)
ADDRESS: ST & JACKSONVILLE RD
WARMINSTER TOWNSHIP PA 18974
CONTACT: RPM TEST

REV: 10/7/05
ID1: PA6170024545
ID2: 0302466
STATUS: FINAL
PHONE:

SITE INFORMATION

EVENT TYPE
SITE DISCOVERY BY:
SITE PROPOSED BY:
FINAL LIST BY:

DISCOVERY DATE:
PROPOSED DATE: 06-01-86
FINAL LIST DATE: 10-04-89

ACTIVITIES: WASTES GENERATED DURING AIRCRAFT MAINTAINENCE AND REPAIR

CONTAMINANTS: CHLORINATED VOCS, TCE, PCE, CARBON TETRACHLORIDE
SOURCE OF CONTAMINATION: 8 WASTE AREAS COVERING MORE THAN 2 ACRES

CONTAMINATED: GROUDWATER, SOIL
THREATENED:

EVENT TYPE
SITE DISCOVERY BY:
SITE PROPOSED BY:
FINAL LIST BY:

DISCOVERY DATE:
PROPOSED DATE: 06-01-86
FINAL LIST DATE: 10-04-89

ACTIVITIES: WASTES GENERATED DURING AIRCRAFT MAINTAINENCE AND REPAIR

CONTAMINANTS: CHLORINATED VOCS, TCE, PCE, CARBON TETRACHLORIDE
SOURCE OF CONTAMINATION: 8 WASTE AREAS COVERING MORE THAN 2 ACRES

CONTAMINATED: GROUDWATER, SOIL
THREATENED:

SITE DESCRIPTION

Conditions at proposal (June 10, 1986): The Naval Air Development Center (NADC) covers 734 acres in Warminster Township, Bucks County, Pennsylvania. NADC was commissioned in 1944. Its main mission is research, development, testing, and evaluation for naval aircraft systems. The center also conducts studies in antisubmarine warfare systems and software development.

Waste-generating activities include aircraft maintenance and repair, pest control, fire-fighting training, machine and plating shop operations, spray painting, and various materials research and testing activities in NADC laboratories. Wastes generated include paints, solvents, industrial waste water treatment sludge, and waste oils. Eight waste areas covering more than 2 acres are included in this NPL site.

Navy contractors detected 1,1-dichloroethane, chromium, and nickel in ground water on the base. No significant contamination was detected in nearby surface water. The waste areas potentially affect the Stockton Formation aquifer, which provides water for over 100,000 persons within 3 miles of the site. Local surface water bodies are used for recreational and industrial purposes.

NADC is participating in the Installation Restoration Program, established in 1978. Under this program, the Department of Defense seeks to identify, investigate, and clean up contamination from hazardous materials. The Navy has completed Phase I (records search) and Phase II (confirmation study). As part of these efforts, NADC s contractor installed monitoring wells and completed a ground water quality study. Ground water continues to be monitored.

- Continued on next page -

Environmental FirstSearch
Site Detail Report

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

NPL SITE

SEARCH ID: 1 **DIST/DIR:** 0.92 SE **MAP ID:** 1

NAME: NAVAL AIR DEVELOPMENT CENTER (8 WASTE AREAS)
ADDRESS: ST & JACKSONVILLE RD
WARMINSTER TOWNSHIP PA 18974

CONTACT: RPM TEST

REV: 10/7/05
ID1: PA6170024545
ID2: 0302466
STATUS: FINAL
PHONE:

Status (October 4, 1989): The Navy has drafted a workplan for a remedial investigation to determine the type and extent of contamination at the site. EPA, the Pennsylvania Department of Environmental Resources, and the Navy are negotiating a CERCLA Section 120 Interagency Agreement for oversight of all CERCLA activities at NADC.

CONSTRUCTION COMPLETED DATE: 09/28/2000
CONSTRUCTION COMPLETED DATE: 09/28/2000
FINAL DATE: 10/04/1989

FINAL DATE: 10/04/1989

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

RCRA COR SITE

SEARCH ID: 2 **DIST/DIR:** 0.98 NE **MAP ID:** 2

NAME: CRC INDUSTRIES INC
ADDRESS: 885 LOUIS DR
WARMINSTER PA 18974

CONTACT: MICHELLE MILBURN

REV: 9/22/05
ID1: PAD069880029
ID2:
STATUS: CA
PHONE: 2154426224

SITE INFORMATION

CONTACT INFORMATION: ALLEN_B REED
885 LOUIS DRIVE
WARMINSTER PA 18974

PHONE: 2156744300

CONTACT INFORMATION: JON BROWN
885 LOUIS DR
WARMINSTER PA 18974

PHONE: 2156744300

UNIVERSE INFORMATION:

SNC: N - NO
BOYSNC: N - NO
GPRA PERMIT: N - NO
GPRA POSTCLOSURE: N - NO
GPRA CA: N - NO
GPRA CME: Y
PERM PROG: ---S-

PREM WRKLD: -----
CLOSURE WRKLD: -----
P C WRKLD: -----
SUBJCA: N - NO
SUBJCA TSD 3004: N - NO

SUBJCA NON TSD: Y - NON TSDFS WHERE CORRECTIVE ACTION HAS BEEN IMPOSED
CA WRKLD: N - NO
GEN STATUS: LQG - LARGE QUANTITY GENERATORS: GENERATES MORE THAN 1000 KG/MONTH OF HAZARDOUS WASTE

NAIC INFORMATION

325998 - ALL OTHER MISCELLANEOUS CHEMICAL PRODUCT AND PREPARATION MANUFACTURING
32599 - ALL OTHER CHEMICAL PRODUCT AND PREPARATION MANUFACTURING

ENFORCEMENT INFORMATION:

AGENCY: S - STATE **DATE:** 9/14/1994
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 6/9/1989
TYPE: 120 - WRITTEN INFORMAL

- Continued on next page -

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

RCRA COR SITE

SEARCH ID: 2 **DIST/DIR:** 0.98 NE **MAP ID:** 2

NAME: CRC INDUSTRIES INC
ADDRESS: 885 LOUIS DR
WARMINSTER PA 18974

CONTACT: MICHELLE MILBURN

REV: 9/22/05
ID1: PAD069880029
ID2:
STATUS: CA
PHONE: 2154426224

AGENCY: S - STATE **DATE:** 5/6/1988
TYPE: 120 - WRITTEN INFORMAL

AGENCY: S - STATE **DATE:** 5/19/1997
TYPE: 120 - WRITTEN INFORMAL

VIOLATION INFORMATION:

VIOLATION NUMBER: 0001 **RESPONSIBLE:** S - STATE
DETERMINED: 5/4/1988 **DETERMINED BY:** S - STATE
CITATION:
RESOLVED: 3/7/1990
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0002 **RESPONSIBLE:** S - STATE
DETERMINED: 5/15/1989 **DETERMINED BY:** S - STATE
CITATION:
RESOLVED: 3/7/1990
TYPE: DOT - TSD OTHER REQUIREMENTS (OVERSIGHT LEVEL)

VIOLATION NUMBER: 0003 **RESPONSIBLE:** S - STATE
DETERMINED: 7/25/1994 **DETERMINED BY:** S - STATE
CITATION: 262.34(a)(3)
RESOLVED: 9/1/1995
TYPE: GPT - GENERATOR PRE-TRANSPORT REQUIREMENTS

VIOLATION NUMBER: 0004 **RESPONSIBLE:** S - STATE
DETERMINED: 7/25/1994 **DETERMINED BY:** S - STATE
CITATION: 265.173(c)
RESOLVED: 9/1/1995
TYPE: GPT - GENERATOR PRE-TRANSPORT REQUIREMENTS

VIOLATION NUMBER: 0005 **RESPONSIBLE:** S - STATE
DETERMINED: 7/25/1994 **DETERMINED BY:** S - STATE
CITATION: 265.174
RESOLVED: 9/1/1995
TYPE: GPT - GENERATOR PRE-TRANSPORT REQUIREMENTS

VIOLATION NUMBER: 0006 **RESPONSIBLE:** S - STATE
DETERMINED: 7/25/1994 **DETERMINED BY:** S - STATE
CITATION: 265.178
RESOLVED: 9/1/1995
TYPE: GPT - GENERATOR PRE-TRANSPORT REQUIREMENTS

VIOLATION NUMBER: 0007 **RESPONSIBLE:** S - STATE
DETERMINED: 7/25/1994 **DETERMINED BY:** S - STATE
CITATION: 262.34(a)(4)
RESOLVED: 9/1/1995
TYPE: GPT - GENERATOR PRE-TRANSPORT REQUIREMENTS

VIOLATION NUMBER: 0008 **RESPONSIBLE:** S - STATE
DETERMINED: 6/30/1997 **DETERMINED BY:** S - STATE

- Continued on next page -

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

RCRA COR SITE

SEARCH ID: 2 **DIST/DIR:** 0.98 NE **MAP ID:** 2

NAME: CRC INDUSTRIES INC
ADDRESS: 885 LOUIS DR
WARMINSTER PA 18974

CONTACT: MICHELLE MILBURN

REV: 9/22/05
ID1: PAD069880029
ID2:
STATUS: CA
PHONE: 2154426224

CITATION: 6018.601
RESOLVED: 11/6/1997
TYPE: GGR - GENERATOR GENERAL REQUIREMENTS

VIOLATION NUMBER: 0009 **RESPONSIBLE:** S - STATE
DETERMINED: 6/30/1997 **DETERMINED BY:** S - STATE
CITATION: 6018.610(1)
RESOLVED: 11/6/1997
TYPE: GGR - GENERATOR GENERAL REQUIREMENTS

VIOLATION NUMBER: 0010 **RESPONSIBLE:** S - STATE
DETERMINED: 6/30/1997 **DETERMINED BY:** S - STATE
CITATION: 696.307
RESOLVED: 11/6/1997
TYPE: GGR - GENERATOR GENERAL REQUIREMENTS

VIOLATION NUMBER: 0011 **RESPONSIBLE:** S - STATE
DETERMINED: 10/31/2000 **DETERMINED BY:** S - STATE
CITATION: 262a.100
RESOLVED: 11/21/2000
TYPE: GRR - GENERATOR RECORD KEEPING REQUIREMENTS

VIOLATION NUMBER: 0012 **RESPONSIBLE:** S - STATE
DETERMINED: 10/31/2000 **DETERMINED BY:** S - STATE
CITATION: 262.34(a)(2)
RESOLVED: 10/31/2000
TYPE: DMC - TSD CONTAINERS REQUIREMENTS

VIOLATION NUMBER: 0013 **RESPONSIBLE:** S - STATE
DETERMINED: 11/19/2002 **DETERMINED BY:** S - STATE
CITATION: 25PAcodeChapter265a.175
RESOLVED:
TYPE: DMC - TSD CONTAINERS REQUIREMENTS

CORRECTIVE ACTION INFORMATION

CA EVENT: CA075LO - CA PRIORITIZATION-LOW CA PRIORITY

HAZARDOUS WASTE INFORMATION:

Ethane, 1,1,1-trichloro- (OR) Methyl chloroform
Thiourea
The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/ blends containing, b
The following spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a to
The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane
Tetrachloroethylene
Methanol (I) (OR) Methyl alcohol (I)
Selenium
Trichloroethylene
Methyl ethyl ketone

- Continued on next page -

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

RCRA COR SITE

SEARCH ID: 2 **DIST/DIR:** 0.98 NE **MAP ID:** 2

NAME: CRC INDUSTRIES INC
ADDRESS: 885 LOUIS DR
WARMINSTER PA 18974

CONTACT: MICHELLE MILBURN

REV: 9/22/05
ID1: PAD069880029
ID2:
STATUS: CA
PHONE: 2154426224

2-Butanone (I,T) (OR) Methyl ethyl ketone (MEK) (I,T)
Methane, dichloro- (OR) Methylene chloride
Ignitable waste
Benzene, dimethyl- (I,T) (OR) Xylene (I)
Benzene, methyl- (OR) Toluene
Corrosive waste
Cyclohexanone (I)
Ethene, tetrachloro- (OR) Tetrachloroethylene
Mercury

Environmental FirstSearch
Federal Database Descriptions

ASTM Databases:

CERCLIS: ***Comprehensive Environmental Response Compensation and Liability Information System.*** The EPA's database of current and potential Superfund sites currently or previously under investigation. Source: Environmental Protection Agency.

Updated quarterly.

CERCLIS-NFRAP (Archive): ***Comprehensive Environmental Response Compensation and Liability Information System Archived Sites.*** The Archive designation means that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL). This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Updated quarterly.

ERNS: ***Emergency Response Notification System.*** The EPA's database of emergency response actions. Source: Environmental Protection Agency. Data since January, 2001, has been received from the National Response Center as the EPA no longer maintains this data.

Updated quarterly.

FINDS: ***The Facility Index System.*** The EPA's Index of identification numbers associated with a property or facility which the EPA has investigated or has been made aware of in conjunction with various regulatory programs. Each record indicates the EPA office that may have files on the site or facility. Source: Environmental Protection Agency.

Updated semi-annually.

NPL: ***National Priority List.*** The EPA's list of confirmed or proposed Superfund sites. Source: Environmental Protection Agency.

Updated quarterly.

RCRIS: ***Resource Conservation and Recovery Information System.*** The EPA's database of registered hazardous waste generators and treatment, storage and disposal facilities. Included are RAATS (RCRA Administrative Action Tracking System) and CMEL (Compliance Monitoring & Enforcement List). Source: Environmental Protection Agency.

RCRA TSD: ***Resource Conservation and Recovery Information System Treatment, Storage, and Disposal Facilities.*** The EPA's database of RCRIS sites which treat, store, dispose, or incinerate hazardous waste. This information is also reported in the standard RCRIS detailed data.

ASTM Database Descriptions (continued):

RCRA COR: *Resource Conservation and Recovery Information System **Corrective Action Sites.*** The EPA's database of RCRIS sites with reported corrective action. This information is also reported in the standard RCRIS detailed data.

RCRA GEN: *Resource Conservation and Recovery Information System **Large, Small, and Very Small Quantity Generators.*** The EPA's database of RCRIS sites that create hazardous waste or meet other RCRA requirements. Included are RAATS (RCRA Administrative Action Tracking System) and CMEL (Compliance Monitoring & Enforcement List).

RCRA NLR: *Resource Conservation and Recovery Information System **sites No Longer Regulated.*** FirstSearch□s proprietary database of Resource Conservation and Recovery Information System□s that the EPA cannot categorize.

All RCRA databases are Updated quarterly

Environmental FirstSearch
Federal Database Descriptions

Non-ASTM Databases:

HMIRS: ***Hazardous Materials Incident Response System.*** This database contains information from the US Department of Transportation regarding materials, packaging, and a description of events for tracked incidents.

Updated quarterly.

NCDB: ***National Compliance Database.*** The National Compliance Data Base System (NCDB) tracks regional compliance and enforcement activity and manages the Pesticides and Toxic Substances Compliance and Enforcement program at a national level. The system tracks all compliance monitoring and enforcement activities from the time an inspector conducts and inspection until the time the inspector closes or the case settles the enforcement action. NCDB is the national repository of the 10 regional and Headquarters FIFRA/TSCA Tracking System (FTTS). Data collected in the regional FTTS is transferred to NCDB to support the need for monitoring national performance of regional programs.

Updated quarterly

NPDES: ***National Pollution Discharge Elimination System.*** The EPA's database of all permitted facilities receiving and discharging effluents. Source: Environmental Protection Agency.

Updated semi-annually.

NRDB: ***National Radon Database.*** The NRDB was created by the EPA to distribute information regarding the EPA/State Residential Radon Surveys and the National Residential Radon Survey. The data is presented by zipcode in Environmental FirstSearch Reports. Source: National Technical Information Service (NTIS)

Updated Periodically

Nuclear: The Nuclear Regulatory Commission□s (NRC) list of permitted nuclear facilities.

Updated Periodically

PADS: PCB Activity Database System
The EPA's database PCB handlers (generators, transporters, storers and/or disposers) that are required to notify the EPA, the rules being similar to RCRA. This database indicates the type of handler and registration number. Also included is the PCB Transformer Registration Database.

Updated semi-annually.

Receptors: 1995 TIGER census listing of schools and hospitals that may house individuals deemed sensitive to environmental discharges due to their fragile immune systems.

Updated Periodically

Non-ASTM Database Descriptions (continued):

RELEASES: ***Air and Surface Water Releases.*** A subset of the EPA's ERNS database which have impacted only air or surface water.

Updated semi-annually.

Soils: This database includes the State Soil Geographic (STATSGO) data for the conterminous United States from the United States Geographical Survey (USGS).. It contains information regarding soil characteristics such as water capacity, percent clay, organic material, permeability, thickness of layers, hydrological characteristics, quality of drainage, surface, slope, liquid limit, and the annual frequency of flooding. National Resources Conservation Services Soil Survey Geographic(SSURGO) database, and the USGS Digital Data Series bedrock data.

Updated annually

TRIS: ***Toxic Release Inventory System.*** The EPA's database of all facilities that have had or may be prone to toxic material releases. Source: Environmental Protection Agency.

Updated semi-annually.

Federal Wells: The United State Geographic Survey(USGS) Groundwater Inventory Sites

Updated annually

Environmental FirstSearch
Pennsylvania Database Descriptions

1. **STATE:** The Pennsylvania Priorities List (SPL) is a priority list of sites which have released or could potentially release hazardous substances into the environment. Under the Hazardous Sites Cleanup Act (HSCA) and CERCLA, the Pennsylvania Department of Environmental Protection is authorized to investigate, assess, and cleanup sites in the Commonwealth regardless of whether or not these sites qualify for cleanup under the Federal Superfund Act.

2. **LUST:** The Pennsylvania List of Confirmed Releases report identifies facilities in the Commonwealth with known releases from above ground or underground storage tanks. In this report, the Pennsylvania Department of Environmental Protection, Bureau of Land Recycling and Waste Management provides pertinent site details such as name and address of the facility, type of substance released, and remediation status.

3. **UST:** The Pennsylvania Department of Environmental Protection, Bureau of Water Quality Management, provides a listing of registered underground storage tanks, known as the Regulated Storage Tank Listing.

4. **SWL:** Solid waste facilities within the Commonwealth are regulated by the Pennsylvania Department of Environmental Protection, Bureau of Waste Management. The lists provided by the DEP and searched in this report include Solid Waste Transfer Stations, Inactive Solid Waste Facilities, and the Solid Waste Inventory Database.

Environmental FirstSearch
Federal Database Sources

CERCLIS: The EPA□s Comprehensive Environmental Response Compensation and Liability Information System database. Updated quarterly

CERCLIS NFRAP: The EPA□s Comprehensive Environmental Response Compensation and Liability Information System archived sites. Updated quarterly

ERNS: The EPA□s Emergency Response Notification System. Updated quarterly

FED OTHER: The EPA□s Section Seven Tracking System. Updated Quarterly

FINDS: The EPA□s Facility Index System. Updated as new data becomes available

HMIRS: The EPA□s hazardous Materials Incident Response System Updated quarterly

NCDB: The EPA□s National Compliance Database. Updated quarterly

NPDES: The EPA□s National Pollution Discharge Elimination System Updated quarterly

NPL: The EPA□s list of confirmed or proposed Superfund Sites Updated quarterly

NRDB: The National Technical Information Service□s National Radon Database
Updated as new data becomes available

NUCLEAR: The Nuclear Regulatory Commission□s list of permitted nuclear facilities. Updated periodically

PADS: The EPA□s PCB handlers database. Updated quarterly

RCRA COR: The EPA□s Resource Conservation and Recovery Information System□s Corrective Action Sites. Updated quarterly

RCRA GEN: The EPA□s Resource Conservation and Recovery Information System□s Generators and Transporters. Updated quarterly

RCRA NLR: FirstSearch□s proprietary database of Resource Conservation and Recovery Information System□s that the EPA cannot categorize. Updated quarterly

RCRA TSD: The EPA□s Resource Conservation and Recovery Information System□s Treatment, Storage, and Disposal facilities. Updated quarterly

RECEPTORS: The 2002 Census listing of schools and hospitals Updated as new data becomes available

RELEASES: The EPA□s ERNS air and surface water releases. Updated quarterly

TRIS: The EPA□s Toxic Release Inventory System. Updated quarterly

Environmental FirstSearch
Pennsylvania Database Sources

BROWNFIELDS (BF)
The Pennsylvania Department of Environmental Protection Agency's Land Recycling Program Act II sites , and sites listed on the PA Sitefinder website.
Updated when available

LEAKING UNDERGROUND STORAGE TANKS (LUST)
The Pennsylvania Department of Environmental Protection Agency's Database of Storage Tank Release Incidents
Updated semi-annually

OTHER (OT)
Not available

PERMITS (PE)
Not available

RELEASES (RL)
Not available

90 SPILLS (SP)
Not available

80 SPILLS (80)
Not available

STATE SITES (ST)
The Pennsylvania Department of Environmental Protection Agency□s Hazardous Site Response Actions List (HSCA)
Updated annually

SOLID WASTE LANDFILLS (SWL)
The Pennsylvania Department of Environmental Protection Agency's Database of Active Solid Waste Landfill Facilities
Updated annually

UNDERGROUND STORAGE TANKS (UST)
The Pennsylvania Department of Environmental Protection Agency's database of registered storage tanks
Updated semi-annually

GIS Sources

AREAS OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)
Not available

AQUIFERS (AQ)
Not available

STATE WELLS (PWS)
The Pennsylvania Topographic and Geological Survey(PaGS) provides The Pennsylvania Ground Water Information System.

Environmental FirstSearch
Street Name Report for Streets within .25 Mile(s) of Target Property

TARGET SITE: 610 YORK ROAD
WARMINSTER PA 18974

JOB: 010697137

Street Name	Dist/Dir	Street Name	Dist/Dir
Chestnut St	0.25 SW		
Cypress Rd	0.20 SW		
Evergreen Ave	0.09 SE		
Greene Rd	0.18 SW		
Nemoral St	0.20 SW		
Olive St	0.15 SE		
W Street Rd	0.01 SW		
WEST Street Rd	0.01 SW		
York Rd	0.01 SE		

Environmental FirstSearch

1 Mile Radius

ASTM Map: NPL, RCRACOR, STATE Sites

610 YORK ROAD, WARMINSTER PA 18974

Source: 2002 U.S. Census TIGER Files

Target Site (Latitude: 40.206944 Longitude: -75.099872) .....

Identified Site, Multiple Sites, Receptor .....

NPL, Brownfield, Solid Waste Landfill (SWL) or Hazardous Waste .....

Railroads .....

Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius

Environmental FirstSearch

.5 Mile Radius

ASTM Map: CERCLIS, RCRATSD, LUST, SWL

610 YORK ROAD, WARMINSTER PA 18974

Source: 2002 U.S. Census TIGER Files

Target Site (Latitude: 40.206944 Longitude: -75.099872) .....

Identified Site, Multiple Sites, Receptor .....

NPL, Brownfield, Solid Waste Landfill (SWL) or Hazardous Waste .....

Railroads .....

Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius

Environmental FirstSearch

.25 Mile Radius

ASTM Map: RCRAGEN, ERNS, UST

610 YORK ROAD, WARMINSTER PA 18974

Source: 2002 U.S. Census TIGER Files

Target Site (Latitude: 40.206944 Longitude: -75.099872) .....

Identified Site, Multiple Sites, Receptor .....

NPL, Brownfield, Solid Waste Landfill (SWL) or Hazardous Waste .....

Railroads .....

Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius

Environmental FirstSearch

.5 Mile Radius

State Wells Sites

610 YORK ROAD, WARMINSTER PA 18974

Source: 2002 U.S. Census TIGER Files

Target Site (Latitude: 40.206944 Longitude: -75.099872) .....

Identified Site, Multiple Sites, Receptor .....

NPL, Brownfield, Solid Waste Landfill (SWL) or Hazardous Waste .....

Railroads .....

Public Water Supply, DEP Zone II Boundaries .....

Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius

Environmental FirstSearch

.5 Mile Radius

Federal Wells Sites

610 YORK ROAD, WARMINSTER PA 18974

Source: 2002 U.S. Census TIGER Files

Target Site (Latitude: 40.206944 Longitude: -75.099872) .....

Identified Site, Multiple Sites, Receptor .....

NPL, Brownfield, Solid Waste Landfill (SWL) or Hazardous Waste .....

Railroads .....

Federal Wells .....

Black Rings Represent 1/4 Mile Radii; Red Ring Represents 500 ft. Radius

APPENDIX D

SUBSURFACE DRILLING LOGS

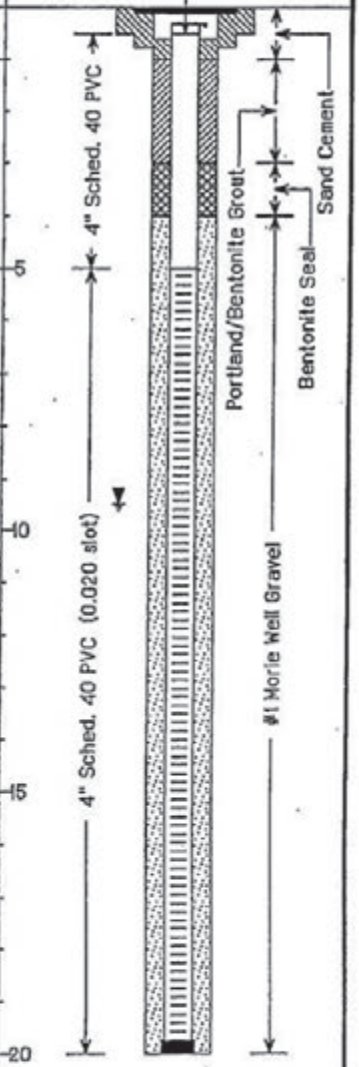
Handex of E. Pennsylvania

WELL LOG: MW-1

Permit #: *N/A*	Drill Date: *3/13/96*	Use: *Monitoring*
Location: *610 York Rd., Warmister, PA*		Owner Loc #: *0363-5430*
Owner: *Sun Company Inc.*		Handex Loc #: *111332-02*
Owner Address: *1801 Market St., Phil., PA*	BORING – Depth: *20 ft.*	Diameter: *4 in.*
Drilling Method: *Air Rotary*	CASING – Length: *4.5 ft.*	Diameter: *4 in.*
Sampling Method: *Split-Spoon/Drill Cuttings*	SCREEN – Length: *15 ft.*	Diameter: *4 in.*
Static Water Level: *9 ft.* *(from TOC 3/13/96)*	WELL – Depth: *20 ft.*	

Depth (ft.)	Sample ID	Sample Depth	Blows/6 in.	P.I.D.	Graphic Log	Geologic Description
5	SS-1*	☒	6,6,5,7	<1		GRAVEL and SAND
						Medium to fine SAND with some Gravel
						SILT and SAND
						Weathered BEDROCK
10	SS-2			5		Competent red/brown SHALE
15	SS-3			7		
20						

Well Diagram



NOTES: * = Sample analyzed at laboratory; ☒ = Sample interval/recovery; ⧩ = Static Water Level (from TOC)

Geologist: J. Goudsward	Driller: B.L. Myers

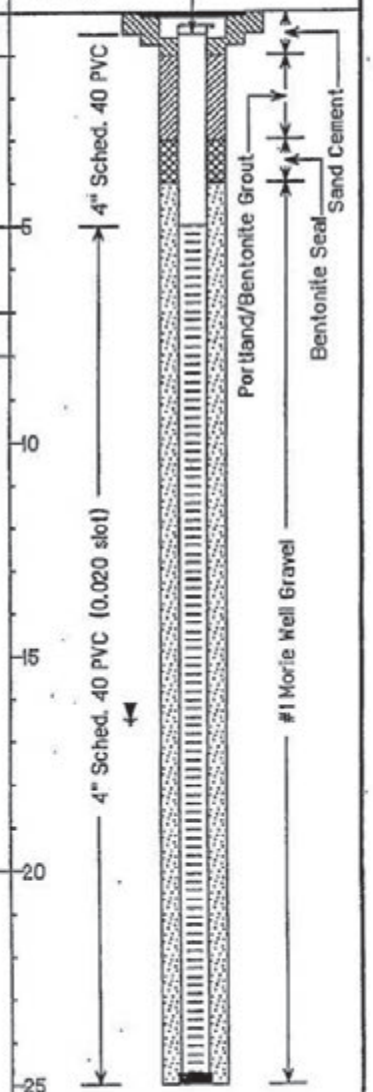
Handex of E. Pennsylvania

WELL LOG: MW-2

Permit #: *N/A*	Drill Date: *3/13/98*	Use: *Monitoring*
Location: *610 York Rd., Warminster, PA*		Owner Loc #: *0383-5430*
Owner: *Sun Company Inc.*		Handex Loc #: *111332-02*
Owner Address: *1801 Market St., Phil., PA*	BORING - Depth: *25 ft.*	Diameter: *4 in.*
Drilling Method: *Air Rotary*	CASING - Length: *4.5 ft.*	Diameter: *4 in.*
Sampling Method: *Split-Spoon/Drill Cuttings*	SCREEN - Length: *20 ft.*	Diameter: *4 in.*
Static Water Level: *16 ft.* *(from TOC 3/13/98)*	WELL - Depth: *25 ft.*	

Depth (ft.)	Sample ID	Sample Depth	Blows/6 in.	P.I.D.	Graphic Log	Geologic Description
						GRAVEL and SAND
						Medium to fine SAND and Silt with gravel
5	SS-1*	☒	6,6,7,7	<1		SILT and SAND
						Weathered BEDROCK
						Competent red/brown SHALE
10	SS-2			2		
15	SS-3			3		
20	SS-4			5		
25						

Well Diagram



NOTES: * = Sample analyzed at laboratory; ☒ = Sample interval/recovery; ↧ = Static Water Level (from TOC)

Geologist: J. Goudsward

Driller: B.L. Myers

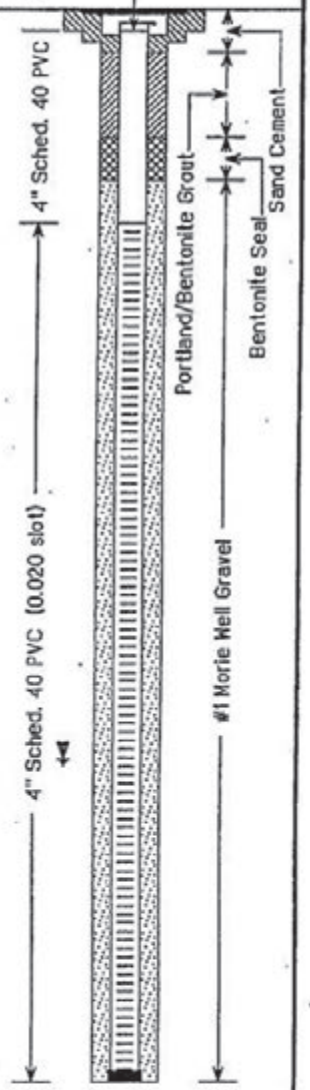
Handex of E. Pennsylvania

WELL LOG: MW-3

Permit #: *N/A*	Drill Date: *3/13/96*	Use: *Monitoring*
Location: *610 York Rd., Warminster, PA*		Owner Loc #: *0363-5430*
Owner: *Sun Company Inc.*		Handex Loc #: *111332-02*
Owner Address: *1801 Market St., Phil., PA*	BORING – Depth: *25 ft.*	Diameter: *4 in.*
Drilling Method: *Air Rotary*	CASING – Length: *4.5 ft.*	Diameter: *4 in.*
Sampling Method: *Split-Spoon/Drill Cuttings*	SCREEN – Length: *20 ft.*	Diameter: *4 in.*
Static Water Level: *17 ft.* *(from TOC 3/13/96)*	WELL – Depth: *25 ft.*	

Depth (ft.)	Sample ID	Sample Depth	Blows/6 in.	P.I.D.	Graphic Log	Geologic Description
5	SS-1*	☒	8,3,6,7	<1		GRAVEL and SAND Fine SAND and Silt with some gravel
						Fine SAND and SILT
						Weathered BEDROCK
10	SS-2			<1		Competent SHALE
15	SS-3			5		
20	SS-4			<1		
25						

Well Diagram



NOTES: * = Sample analyzed at laboratory; ☒ = Sample interval/recovery; ↧ = Static Water Level (from TOC)

Geologist: J. Goudsward

Driller: B.L. Myers

MONITORING WELL LOG MW-4

Groundwater and Environmental Services, Inc.

PROJECT:	Sun Warminster	SURFACE ELEV.:	NA	TOTAL DEPTH:	25 feet
ADDRESS:	610 Old York Road	WATER DEPTH	Dry	CASING EL.:	98.08 feet
		BOREHOLE DIA.:	10 inch	WELL DIA.:	4 inch

Logged By:	Brian Peterley	Drilling Method:	
Dates Drilled:	October 27, 1997	Sampling Method:	Split Spoon
Drilling Company:	Lutz Environmental	Soil Class. System:	Unified Soil Classification System (USCS)
Drill Rig Type:		Field Screening:	PID

Depth (feet)	Blow Counts	Field Screen	SAMPLE LITHOLOGY (USCS)	Stratigraphy	Comments	COMPLETION DETAILS
0			FILL: (0'-1') Asphalt and subbase	FILL		
			CL: (1'-10') Red-brown to dark brown clay, moist, stiff to very stiff, no odor	CL	(0'-5') Hand auger to clear utilities	Flush mount well vault, locking cap, GES well lock
						Type 2 Portland cement (0'-2')
5	6-11-14-20	1 ppm				
	14-21-22-21	2 ppm				Hydrated bentonite (2'-3')
	21-24	2 ppm				
10	Refusal	2 ppm	SHALE: (10'-25') Light brown and red-brown shale, moist, laminated, no odor; Color change to red-brown at 15'	SHALE		4-inch diameter PVC riser (0'-5')
						No. 2 Sand (3'-25')
15		2 ppm				4-inch diameter PVC 0.020" slotted screen (5'-25')
20		2 ppm				
25					Monitoring well boring terminated at 25'	

Location:

Northing/Latitude: NA

Easting/Longitude: NA

General Comments:

SAA - Same as above

A soil sample at an unknown depth was submitted for laboratory analysis.

Symbols:

Apparent Water Level

Fracture

Lab Sample Location

MONITORING WELL LOG MW-5

Groundwater and Environmental Services, Inc.

PROJECT:	Sun Warminster	SURFACE ELEV.:	NA	TOTAL DEPTH:	50 feet
ADDRESS:	610 Old York Road	WATER DEPTH	42 feet	CASING EL.:	
		BOREHOLE DIA.:	8 inch	WELL DIA.:	4 inch

Logged By:	Krista Snyder	Drilling Method:	Air Rotary
Dates Drilled:	10/18/04	Sampling Method:	Cuttings
Drilling Company:	Eichelberger's	Soil Class. System:	Unified Soil Classification System (USCS)
Drill Rig Type:		Field Screening:	Q-Rae Plus Model 2000 (results in ppm)

Depth (feet)	Sample Interval	Field Screen	SAMPLE LITHOLOGY (USCS)	Stratigraphy	Comments	COMPLETION DETAILS
0	0'-4'	0.3	ASPHALT: (0'-0.5') Asphalt	ASPHALT	0' - 4' Air knife and vacuum extraction for utility clearance	Completed with locking cap and flush mount
5	4'-6'		SAND AND SILT: (0.5'-6') Brown silt and fine to medium sand with sparse angular gravel, dry, no odor	SAND AND SILT		Bentonite seal from 1'-3'
	6'-10'	2.0	SHALE: (6'-50') Shale bedrock	SHALE		Sand pack, pea gravel and gravel from 5'-50'
10	10'-15'	1.7				
15						Schedule 40 PVC screen (0.020 slot) 10'-50'
20	15'-25'					
25		3.3			Sample MW-5-25' submitted for Laboratory Analysis	
30	25'-35'					
35		1.6			Shale bedrock at 6'	
40	35-43'				Water at 42'	
					Well casing set at 50'	
45					Borehole completed to 50'	
50						

Location:

Northing/Latitude: NA

Easting/Longitude: NA

General Comments:

Symbols:

Apparent Water Level

Fracture

Lab Sample Location

MONITORING WELL LOG MW-6

Groundwater and Environmental Services, Inc.

PROJECT:	Sun Warminster	SURFACE ELEV.:	NA	TOTAL DEPTH:	47 feet
ADDRESS:	610 Old York Road	WATER DEPTH	20 feet	CASING EL.:	
		BOREHOLE DIA.:	8 inch	WELL DIA.:	4 inch

Logged By:	Krista Snyder	Drilling Method:	Air Rotary
Dates Drilled:	10/18/04	Sampling Method:	Cuttings
Drilling Company:	Eichelberger's	Soil Class. System:	Unified Soil Classification System (USCS)
Drill Rig Type:		Field Screening:	Q-Rae Plus Model 2000 (results in ppm)

Depth (feet)	Sample Interval	Field Screen	SAMPLE LITHOLOGY (USCS)	Stratigraphy	Comments	COMPLETION DETAILS
0	0'-4'		ASPHALT: (0'-0.5') Asphalt	ASPHALT	0' - 4' Air knife and vacuum extraction for utility clearance	Completed with locking cap and flush mount
			SAND AND SILT: (0.5'-6') Brown silt and fine to medium sand, dry, no odor	SAND AND SILT		
5			SHALE: (4'-11') Weathered shale bedrock	SHALE	Weathered shale bedrock from 4'-11'	Bentonite seal from 1'-3'
10	4'-11'					Sand pack, pea gravel and gravel from 5'-50'
			SHALE: (11'-47') Competent shale bedrock	SHALE	Competent shale bedrock at 11'	
15					Sample MW-6-15' submitted for Laboratory Analysis	
20					Water at 20'	Schedule 40 PVC screen (0.020 slot), 10'-47'
25						
30	11'-47'					
35						
40					Well casing set at 47' Borehole completed to 47'	
45					Soil samples from 20'-47'	

Location:

Northing/Latitude: NA

Easting/Longitude: NA

General Comments:

Symbols:

Apparent Water Level

Fracture

Lab Sample Location

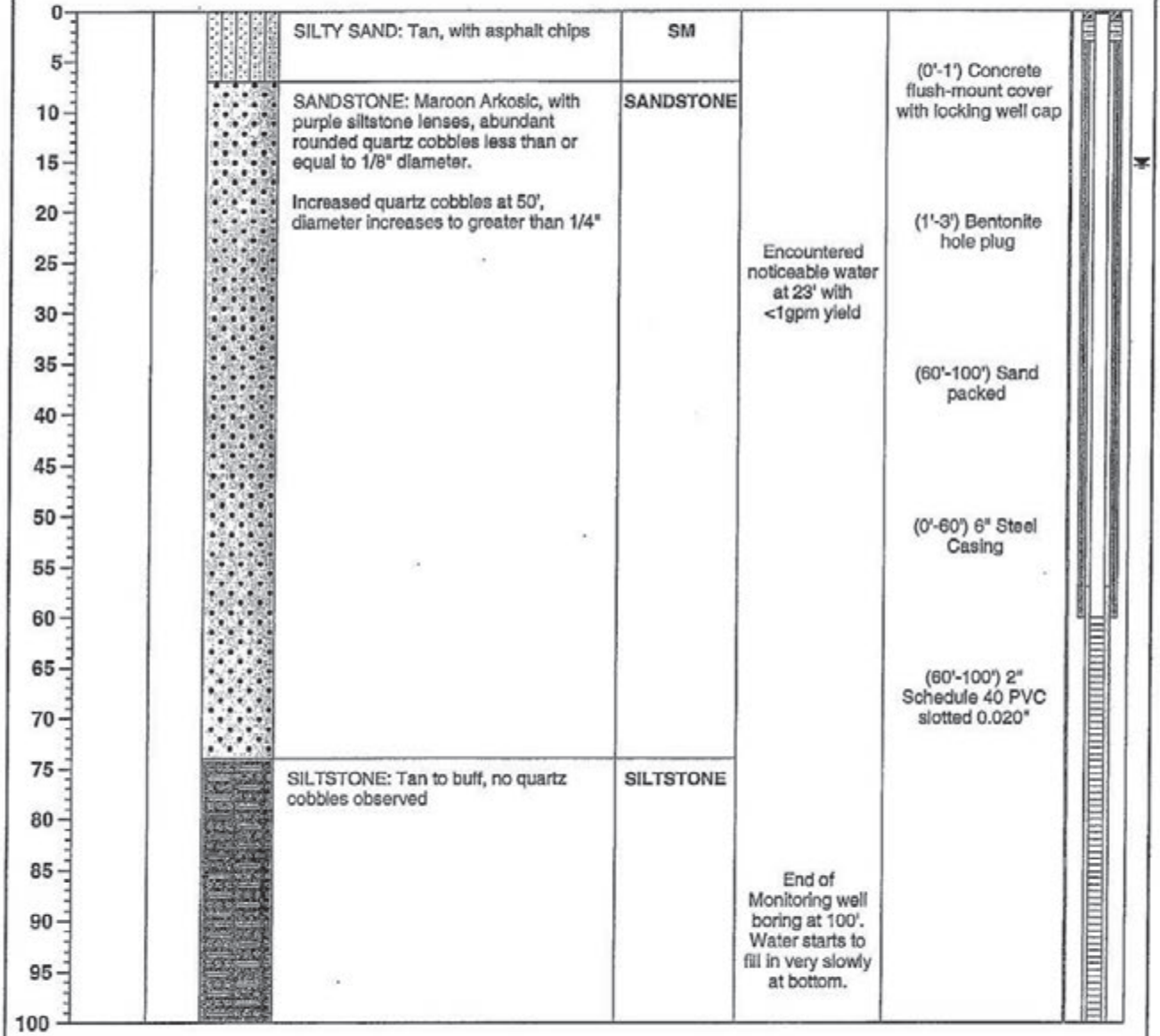
MONITORING WELL LOG MW-7

Groundwater and Environmental Services, Inc.

PROJECT:	Sun Warminster	SURFACE ELEV.:	N/A	TOTAL DEPTH:	100 feet
ADDRESS:	610 Old York Road	WATER DEPTH	15.39 feet	CASING EL.:	99.20 feet
		BOREHOLE DIA.:	8 inches	WELL DIA.:	2 inches

Logged By:	P. Crawford	Drilling Method:	Air Rotary
Dates Drilled:	11/23/04	Sampling Method:	N/A
Drilling Company:	Eichelbergers	Soil Class. System:	USCS
Drill Rig Type:	N/A	Field Screening:	PID

Depth (feet)	Sample Interval	Field Screen	SAMPLE LITHOLOGY (USCS)	Stratigraphy	Comments	COMPLETION DETAILS
0–5			SILTY SAND: Tan, with asphalt chips	SM		(0'-1') Concrete flush-mount cover with locking well cap
5–75			SANDSTONE: Maroon Arkosic, with purple siltstone lenses, abundant rounded quartz cobbles less than or equal to 1/8" diameter. Increased quartz cobbles at 50', diameter increases to greater than 1/4"	SANDSTONE	Encountered noticeable water at 23' with <1gpm yield	(1'-3') Bentonite hole plug; (60'-100') Sand packed; (0'-60') 6" Steel Casing; (60'-100') 2" Schedule 40 PVC slotted 0.020"
75–100			SILTSTONE: Tan to buff, no quartz cobbles observed	SILTSTONE	End of Monitoring well boring at 100'. Water starts to fill in very slowly at bottom.	



Location:

Northing/Latitude: N/A

Easting/Longitude: N/A

General Comments:

No detectable readings observed with PID

Symbols:

Apparent Water Level

Fracture

Lab Sample Location

APPENDIX E

DOMESTIC SUPPLY WELL SEARCH DOCUMENTATION

TABLE 1
DOMESTIC WELL SURVEY

SUNOCO STATION #0363-5430
610 OLD YORK ROAD
WARMINSTER, PENNSYLVANIA

PROPERTY OWNER OR RETAIL/LEASEE NAME	PROPERTY USAGE	ADDRESS NO.	STREET	WMA CUSTOMER? YES	WMA CUSTOMER? NO	SUPPLY WELL? YES	SUPPLY WELL? NO	SURVEY NOT RETURNED	WELL SAMPLED	COMMENTS
Warminster Water Authority	Commercial	415	Gibson Avenue	√		√				215-675-3301
	Residential	529	Lemon Street	√		√				Information from PADEP file review
	Residential	575	Maple Street	√		√				Information from PADEP file review
	Residential	577	Maple Street	√		√				Information from PADEP file review
Robert A. Thomas	Residential	480	Nemoral Street	√			√			
Jeff Walsh	Residential	481	Nemoral Street	√			√			
Anthony and Helen Bongarzone	Residential	486	Nemoral Street	√			√			
	Residential	489	Nemoral Street					√		
George and Kathleen D Krajci	Residential	490	Nemoral Street	√			√			
McHugh	Residential	495	Nemoral Street					√		
	Residential	512	Nemoral Street					√		
	Residential	513	Nemoral Street					√		
Nelson Mears	Residential	525 A/B	Nemoral Street	√			√			
Harold Van Sant	Residential	526	Nemoral Street	√			√			
Moritzs	Residential	536	Nemoral Street					√		
	Residential	535 A/B	Nemoral Street	√			√			
Jane E. Gibson	Residential	545 A/B	Nemoral Street	√			√			
Gabor	Residential	546	Nemoral Street	√			√			
	Residential	548	Nemoral Street					√		
	Residential	555 A/B	Nemoral Street					√		
	Residential	556 A/B	Nemoral Street					√		
Denise M. Guerrelli	Residential	558	Nemoral Street	√			√			
	Residential	565	Nemoral Street					√		
	Residential	566 A/B	Nemoral Street					√		
	Residential	567	Nemoral Street					√		
	Residential	575 A/B	Nemoral Street					√		
No Name	Residential	576 A/B	Nemoral Street	√			√			
	Residential	588	Nemoral Street					√		
Jim Dugan	Residential	590	Nemoral Street	√			√			
Donald P. Pfister	Residential	452	Olive Street	√		√				Well not in use
Moore	Residential	460	Olive Street	√		√				Well not in use
	Residential	470	Olive Street			√				Information from PADEP file review
O'Neill	Residential	480 A/B	Olive Street			√				Information from PADEP file review
	Residential	490	Olive Street			√				Information from PADEP file review
Adam and Helen Sobol	Residential	500	Olive Street	√			√			
William Reichert	Residential	520	Olive Street	√			√			
Dorothy Brundage	Residential	530	Olive Street	√			√			
Mirack	Residential	536	Olive Street	√			√			
McDonnell	Residential	540	Olive Street					√		
Emil Kraiser	Residential	550	Olive Street	√			√			
	Residential	552	Olive Street					√		

TABLE 1
DOMESTIC WELL SURVEY

SUNOCO STATION #0363-5430
610 OLD YORK ROAD
WARMINSTER, PENNSYLVANIA

PROPERTY OWNER OR RETAIL/LEASEE NAME	PROPERTY USAGE	ADDRESS NO.	STREET	WMA CUSTOMER? YES	WMA CUSTOMER? NO	SUPPLY WELL? YES	SUPPLY WELL? NO	SURVEY NOT RETURNED	WELL SAMPLED	COMMENTS
	Residential	556	Olive Street					√		
Richard Stien	Residential	560	Olive Street	√			√			
	Residential	566	Olive Street					√		
	Residential	580	Olive Street					√		
	Residential	582	Olive Street					√		
Robert M. Kraft	Residential	586 A/B	Olive Street	√			√			
	Residential	590	Olive Street	√			√			
Warminster Municipal Authority	Commercial		Roberts Road			√				Pump Station
David Stein (National Auto Sales)	Commercial	336	W. Street Rd	√			√			
Rymar Plaza II	Commercial	530	W. Street Rd	√			√			
Denny's	Commercial	520	W. Street Rd	√			√			
Kinkade (Tree House Flowers)	Commercial	540	W. Street Rd	√			√			
	Commercial	550	W. Street Rd	√			√			
	Commercial	556	W. Street Rd					√		
Burger King	Commercial	580	W. Street Rd	√			√			
Warminster Electronics (Eugene Polron)	Commercial	586	W. Street Rd	√			√			
The Dove Bar	Commercial	590	W. Street Rd					√		
	Residential	590A	W. Street Rd					√		
Penzoil (Jiffy Lube)	Commercial	600	W. Street Rd	√			√			
Ted (Steak & Hoagie factory)	Commercial	610	W. Street Rd	√			√			
Eagle Diner	Commercial		W. Street Rd					√		
United Church of Christ	Commercial	785	W. Street Rd					√		
Lafferty Chevrolet	Commercial	829	W. Street Rd		√	√			30-May-01	Well is main source of water
Center Point Plaza (Wallers & Assoc.)	Commercial		W. Street Rd	√			√			610-444-6000
Christ's Home (retirement village)	Residential	1220	W. Street Rd	√		√			1-Jun-01	Well supplies one permanently unoccupied residence.
John Mayer (office space)	Commercial	755	Old York Rd	√			√			
Pathmark Stores	Commercial	700	Old York Rd	√			√			
Archbishop Wood	Commercial	655	Old York Rd	√			√			
Warminster Plaza	Commercial		Old York Rd	√			√			
Hatboro Federal Savings	Commercial	609	Old York Rd	√			√			
Drug Emporium	Commercial	599	Old York Rd	√			√			
John Meyer (stores)	Commercial	541-553	Old York Rd	√			√			
Delafronzio (stores)	Commercial	525-539	Old York Rd	√			√			
PNC Bank	Commercial	521	Old York Rd	√			√			
Warminster Ambulance Corp	Commercial	555	Evergreen Ave	√			√			
	Residential	552	Norwood Ave	√			√			
	Residential	554	Norwood Ave					√		
	Residential	512	Norwood Ave							

ACCUTEST

06/12/01

RECEIVED JUN 1 8 2001

Technical Report for

Groundwater & Environmental Services

Sun, 610 Old York Road, Warminster, PA 0363-5430

Accutest Job Number: E92327

Report to:

Groundwater & Environmental Services
410 Eagleview Blvd.
Suite 110
Exton, PA 19341

ATTN: Mike Sarcinello

Total number of pages in report: 4

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Vincent J. Pugliese
President

Certifications: NJ(12129), NY(10983), CA, CT, DE, FL, MA, MD, NC, PA, RI, SC, VA

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Accutest Laboratories

Sample Summary

Groundwater & Environmental Services

Job No: E92327

Sun, 610 Old York Road, Warminster, PA 0363-5430

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
E92327-1	06/01/01	14:20	BB	06/04/01	DW	Drinking Water	CHRIST'S HOME

Accutest Laboratories

Report of Analysis

Client Sample ID:	CHRIST'S HOME		
Lab Sample ID:	E92327-1	**Date Sampled:**	06/01/01
Matrix:	DW - Drinking Water	**Date Received:**	06/04/01
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Sun, 610 Old York Road, Warminster, PA 0363-5430		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A45687.D	1	06/08/01	MRD	n/a	n/a	VA1195
Run #2							

VOA Special List

CAS No.	Compound	Result	MCL	RL	Units	Q
71-43-2	Benzene	ND	5.0	1.0	ug/l	
108-88-3	Toluene	ND	1000	1.0	ug/l	
100-41-4	Ethylbenzene	ND	700	1.0	ug/l	
1330-20-7	Xylene (total)	ND	10000	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND		1.0	ug/l	
91-20-3	Naphthalene	ND		5.0	ug/l	
98-82-8	Isopropylbenzene	ND		2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		81-118%
17060-07-0	1,2-Dichloroethane-D4	105%		68-124%
2037-26-5	Toluene-D8	100%		85-119%
460-00-4	4-Bromofluorobenzene	106%		75-127%

ND = Not detected
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

CHAIN OF CUSTODY

ACCUTEST

FRESH PONDS CORPORATE VILLAGE, BUILDING B
2235 ROUTE 130, DAYTON, NJ 08810
732-329-0200 FAX: 732-329-3499/3480

ACCUTEST JOB #: E9207

ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: GES, Inc
ADDRESS: 410 Eagleview blvd, Suite 110
CITY: Exton STATE: Pa ZIP: 19341
SEND REPORT TO: Mike Sarcinello
PHONE #: 610-458-1077 ext 157

FACILITY INFORMATION

PROJECT NAME: Sun - Warminster
LOCATION: Exxon - Old York Rd
PROJECT NO.: # 0363-5430
FAX #:

ANALYTICAL INFORMATION

8260 B - BTEX, MTBE, Naphthalene

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	NaOH	HNO3	H2SO4	NONE	8260	LAB USE ONLY
-1	Christ's Home	6/1/01	1420	BB	GW	3	X					X	951

DATA TURNAROUND INFORMATION

- [X] 21 DAYS STANDARD — APPROVED BY:
- [ ] 14 DAYS *RUSH*
- [ ] 7 DAYS *EMERGENCY*
- [ ] OTHER

21 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] NJ REDUCED
- [ ] NJ Full
- [ ] FULL CLP
- [ ] DISK DELIVERABLE
- [ ] OTHER (SPECIFY)
- [ ] COMMERCIAL "A"
- [ ] COMMERCIAL "B"
- [ ] STATE FORMS

COMMENTS/REMARKS

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1. B Blum	6/1/01 1545	1.	2.	6/4/01 11:25	2. Bert Allen
RELINQUISHED BY: 3. Bert Allen	DATE TIME: 6/4/01 1356	RECEIVED BY: 3.	RELINQUISHED BY: 4.	DATE TIME:	RECEIVED BY: 4.
RELINQUISHED BY: 5.	DATE TIME:	RECEIVED BY: 5.	SEAL #	PRESERVE WHERE APPLICABLE ☑	ON ICE ☑ TEMPERATURE 5 C

4

TRS

ACCUTEST.

06/11/01

RECEIVED JUN 13 2001

Technical Report for

Groundwater & Environmental Services

Sun, 610 Old York Road, Warminster, PA 0363-5430

Accutest Job Number: E92225

Report to:

Groundwater & Environmental Services
410 Eagleview Blvd.
Suite 110
Exton, PA 19341

ATTN: Mike Sarcinello

Total number of pages in report: 4

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Vincent J. Pugliese
President

Certifications: NJ(12129), NY(10983), CA, CT, DE, FL, MA, MD, NC, PA, RI, SC, VA

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.

Accutest Laboratories

Sample Summary

Groundwater & Environmental Services

Sun, 610 Old York Road, Warminster, PA 0363-5430

Job No: E92225

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
E92225-1	05/31/01	13:50	BB	06/01/01	AQ	Ground Water	LAFFERTY CHEVROLET

Accutest Laboratories

Report of Analysis

Client Sample ID:	LAFFERTY CHEVROLET		
Lab Sample ID:	E92225-1	**Date Sampled:**	05/31/01
Matrix:	AQ - Ground Water	**Date Received:**	06/01/01
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Sun, 610 Old York Road, Warminster, PA 0363-5430		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	O41737.D	1	06/08/01	NM	n/a	n/a	VO2286
Run #2							

VOA Special List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		81-118%
17060-07-0	1,2-Dichloroethane-D4	97%		68-124%
2037-26-5	Toluene-D8	99%		85-119%
460-00-4	4-Bromofluorobenzene	100%		75-127%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

CHAIN OF CUSTODY

ACCUTEST

GW

FRESH PONDS CORPORATE VILLAGE, BUILDING B
2235 ROUTE 130, DAYTON, NJ 08810
732-329-0200 FAX: 732-329-3499/3480

ACCUTEST JOB #: E92225
ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: GES, Inc
ADDRESS: 410 Eagleview Blvd, Suite 110
CITY: Exton STATE: Pa ZIP: 19341
SEND REPORT TO: Lisa Holderbach
PHONE #: 610-458-1077 ext 110

FACILITY INFORMATION

PROJECT NAME: Sun - Walmsley
LOCATION: 610 old York Rd
PROJECT NO.: # 0363-543
FAX #:

ANALYTICAL INFORMATION

8260B - BTEX, MTBE, Naphthalene

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	NaOH	HNO3	H2SO4	NONE	6	LAB USE ONLY
-1	Lafferty Chevrolet	5/31/01	1350	BB	GW	3	Y						939

DATA TURNAROUND INFORMATION

- [x] 21 DAYS STANDARD
- [ ] 14 DAYS *RUSH*
- [ ] 7 DAYS *EMERGENCY*
- [ ] OTHER

APPROVED BY:

21 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] NJ REDUCED
- [ ] NJ Full
- [ ] FULL CLP
- [ ] DISK DELIVERABLE
- [ ] OTHER (SPECIFY)
- [ ] COMMERCIAL "A"
- [ ] COMMERCIAL "B"
- [ ] STATE FORMS

COMMENTS/REMARKS

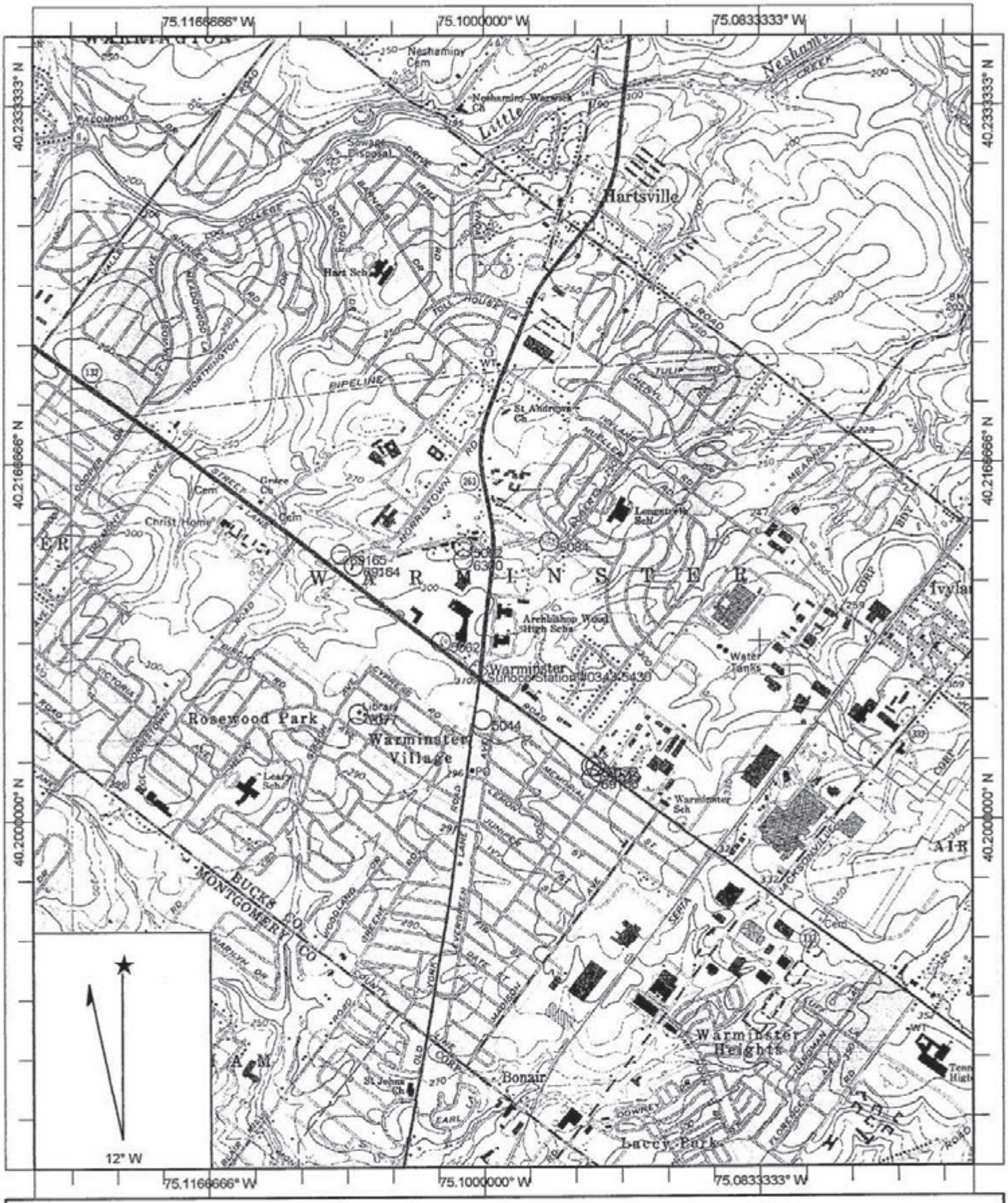
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1. B Blue	5/31/01 1600	1. GES Fridge	2.	6/1/01 10:00	2.
RELINQUISHED BY:	DATE TIME: 6/1/01 1305	RECEIVED BY: 3.	RELINQUISHED BY: 4.	DATE TIME:	RECEIVED BY: A.
RELINQUISHED BY: 5.	DATE TIME:	RECEIVED BY: 5.	SEAL #	PRESERVE WHERE APPLICABLE	ON ICE [X] TEMPERATURE 2 °C

TRS

APPENDIX F

PENNSYLVANIA GROUNDWATER INFORMATION SYSTEM (PAGWIS) SUMMARY



Name: HATBORO
Date: 12/22/105
Scale: 1 inch equals 2000 feet

Location: 040.2101888° N 075.0988450° W
Caption: Sunoco Station #0364-5430
610 Old York Road
Warminster, PA

Copyright (C) 1997, Maptech, Inc.

Markers

Name: Sunoco Station #0343-5430

Short Name: Site

Coordinates: 040.2069440° N, 075.1003000° W

Comment: Sun Warminster, 610 Old York Road

Name: 5082

Short Name: 5082

Coordinates: 040.2127800° N, 075.1011100° W

Comment: Warminster PAGWIS Search #1

Name: 6300

Short Name: 6300

Coordinates: 040.2122200° N, 075.1011100° W

Comment: Warminster PAGWIS Search #2

Name: 69166

Short Name: 69166

Coordinates: 040.2019500° N, 075.0933300° W

Comment: Warminster PAGWIS Search #3

Name: 5033

Short Name: 5033

Coordinates: 040.2022200° N, 075.0927800° W

Comment: Warminster PAGWIS Search #4

Name: 5062

Short Name: 5062

Coordinates: 040.2083300° N, 075.1025000° W

Comment: Warminster PAGWIS Search #5

Name: 5036

Short Name: 5036

Coordinates: 040.2025000° N, 075.0930600° W

Comment: Warminster PAGWIS Search #6

Name: 69172

Short Name: 69172

Coordinates: 040.2025000° N, 075.0933300° W

Comment: Warminster PAGWIS Search #7

Name: 7077

Short Name: 7077

Coordinates: 040.2050000° N, 075.1075000° W

Comment: Warminster PAGWIS Search #8

Name: 5084

Short Name: 5084

Coordinates: 040.2130500° N, 075.0958300° W

Comment: Warminster PAGWIS Search #9

Name: 5044

Short Name: 5044

Coordinates: 040.2047200° N, 075.1000000° W

Comment: Warminster PAGWIS Search #10

Name: 69164

Short Name: 69164

Coordinates: 040.2119400° N, 075.1077800° W

Comment: Warminster PAGWIS Search #11

Name: 69165

Short Name: 69165

Coordinates: 040.2125000° N, 075.1086100° W

Comment: Warminster PAGWIS Search #12

PA Topographic & Geologic Survey

PaGWIS

SELECTED WELLS

Menu | New Selection

Email comments to Topo Geo.

You have selected 12 Well(s). To create a comma separated list of all these wells, click **Create List.** If you want to limit the list, place check marks next to the wells you want to have included, and then click **Create List.**

Create List

Page 1 of 1

Record	PA Well ID	Driller	Driller Well ID	Date Drilled	Owner	County	Municipality	Image
☐ 1	5082	JOHN O'DONNELL & SON		1/1/1915	CHRIST'S HOME FOR CHILDREN	BUCKS	WARMINSTER TWP.	No Image
☐ 2	6300	JOHN WILEY		1/1/1932	CHRIST'S HOME FOR CHILDREN	BUCKS	WARMINSTER TWP.	No Image
☐ 3	69166			11/29/1985	GALLAGHER TOM	BUCKS	WARMINSTER TWP.	No Image
☐ 4	5033	UNKNOWN		1/1/1935	GRADWELL , FRANK	BUCKS	WARMINSTER TWP.	No Image
☐ 5	5062				JONES , C	BUCKS	WARMINSTER TWP.	No Image
☐ 6	5036	F E BUEHLER & SON		4/17/1970	SMITH , ELMER	BUCKS	WARMINSTER TWP.	No Image
☐ 7	69172	F E BUEHLER & SON		1/1/1970	SMITH ELMER	BUCKS	WARMINSTER TWP.	No Image
☐ 8	7077	UNKNOWN		1/1/1954	WARMINSTER AUTH	BUCKS	WARMINSTER TWP.	No Image
☐ 9	5084	W ROLLIN RAAB & SON INC		2/9/1980	WARMINSTER AUTH	BUCKS	WARMINSTER TWP.	No Image
☐ 10	5044	UNKNOWN		1/1/1938	WARMINSTER HOSIERY CO	BUCKS	WARMINSTER TWP.	No Image
☐ 11	69164			11/1/1985	WARMINSTER MUN AUTH	BUCKS	WARMINSTER TWP.	No Image
☐ 12	69165			10/1/1985	WARMINSTER MUN AUTH	BUCKS	WARMINSTER TWP.	No Image

PA Topographic & Geologic Survey

PaGWIS

DETAILS FOR WELL 5082

Menu | New Selection

Email comments to Topo Geo.

Record: 1 of 12

(There is a total of 12 Wells in the list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

Well Driller: **JOHN O'DONNELL & SON**

PA Well ID: **5082**

License: **0399**

Driller Well ID:

Type of Activity:

Original Well By:

Date Drilled: **1/1/1915**

Drilling Method: **CABLE TOOL**

Owner: **CHRIST'S HOME FOR CHILDREN**

Address of Well:

Zipcode:

County: **BUCKS**

Municipality: **WARMINSTER TWP.**

Quadrangle: **HATBORO**

Latitude: **40.21278**

Longitude: **-75.10111**

Well Depth (*ft*): **161**

Well Finish: **OPEN HOLE**

Depth to Bedrock(*ft*):

Did Not Encounter Bedrock:

Well Yield (*gpm*):

Yield Measure Method:

Static Water Level: **90**
(*ft below land surface*)

Water level after yield test:
(*ft below land surface*)

Length of Yield Test:
(*minutes*)

Saltwater Zone(*ft*):

Use of Well: **WITHDRAWAL**

Use of Water: **PUBLIC SUPPLY**

BOREHOLE

	Top	Bottom	Diameter
SECTION 1:	**0**	**161**	**6**

CASING

CASING 1: Top: **0** Bottom: **12** Diameter: **6** Material: **OTHER METAL**

Record: 1 of 12

(There is a total of 12 Wells in the list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

PA Topographic & Geologic Survey

PaGWIS

DETAILS FOR WELL 6300

Menu | New Selection

Email comments to Topo Geo.

Record: 2 of 12

(There is a total of 12 Wells in the list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

Well Driller: **JOHN WILEY**

PA Well ID: **6300**

License: **-241**

Driller Well ID:

Type of Activity:

Original Well By:

Date Drilled: **1/1/1932**

Drilling Method: **CABLE TOOL**

Owner: **CHRIST'S HOME FOR CHILDREN**

Address of Well:

Zipcode:

County: **BUCKS**

Municipality: **WARMINSTER TWP.**

Quadrangle: **HATBORO**

Latitude: **40.21222**

Longitude: **-75.10111**

Well Depth (*ft*): **200**

Well Finish: **OPEN HOLE**

Depth to Bedrock(*ft*):

Did Not Encounter Bedrock:

Well Yield (*gpm*): **35**

Yield Measure Method:

Static Water Level: (*ft below land surface*)

Water level after yield test: (*ft below land surface*)

Length of Yield Test: (*minutes*)

Saltwater Zone(*ft*):

Use of Well: **WITHDRAWAL**

Use of Water: **DOMESTIC**

BOREHOLE

	Top	Bottom	Diameter
SECTION 1:	**0**	**200**	**6**

CASING

CASING 1: Top: **0** Bottom: Diameter: **6** Material: **OTHER METAL**

Record: 2 of 12

(There is a total of 12 Wells in the list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

PA Topographic & Geologic Survey

PaGWIS

DETAILS FOR WELL 69166

Menu | New Selection

Email comments to Topo Geo.

Record: 3 of 12

(There is a total of 12 Wells in the list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

Well Driller: **ALLEN H DORN**

PA Well ID: **69166**

License: **0121**

Driller Well ID:

Type of Activity: **New Well**

Original Well By:

Date Drilled: **11/29/1985**

Drilling Method:

Owner: **GALLAGHER TOM**

Address of Well:

Zipcode:

County: **BUCKS**

Municipality: **WARMINSTER TWP.**

Quadrangle: **HATBORO**

Latitude: **40.20195**

Longitude: **-75.09333**

Well Depth (*ft*): **100**

Well Finish: **OPEN HOLE**

Depth to Bedrock(*ft*): **23**

Did Not Encounter Bedrock:

Well Yield (*gpm*): **12**

Yield Measure Method: **ESTIMATED**

Static Water Level: (*ft below land surface*)

Water level after yield test: **15** (*ft below land surface*)

Length of Yield Test: **0.25** (*minutes*)

Saltwater Zone(*ft*):

Use of Well: **WITHDRAWAL**

Use of Water: **DOMESTIC**

CASING

CASING 1: Top: **0** Bottom: **30** Diameter: **6** Material:

SEAL 1 Top: Bottom: Type: **UNKNOWN**

WATER BEARING ZONE

WATER BEARING ZONE 1: Top: **65** Bottom: Yield:

WATER BEARING ZONE 2: Top: **90** Bottom: Yield:

WATER BEARING ZONE 3: Top: **75** Bottom: Yield:

Record: 3 of 12

(There is a total of 12 Wells in the list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

PA Topographic & Geologic Survey

PaGWIS

DETAILS FOR WELL 5033

Menu | New Selection

Email comments to Topo Geo.

Record: 4 of 12

(There is a total of 12 Wells in the list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

Well Driller: **UNKNOWN**

PA Well ID: **5033**

License: **1**

Driller Well ID:

Type of Activity:

Original Well By:

Date Drilled: **1/1/1935**

Drilling Method: **CABLE TOOL**

Owner: **GRADWELL , FRANK**

Address of Well:

Zipcode:

County: **BUCKS**

Municipality: **WARMINSTER TWP.**

Quadrangle: **HATBORO**

Latitude: **40.20222**

Longitude: **-75.09278**

Well Depth (*ft*): **40**

Well Finish: **OPEN HOLE**

Depth to Bedrock(*ft*):

Did Not Encounter Bedrock:

Well Yield (*gpm*):

Yield Measure Method:

Static Water Level: **8.76**
(*ft below land surface*)

Water level after yield test:
(*ft below land surface*)

Length of Yield Test:
(*minutes*)

Saltwater Zone(*ft*):

Use of Well: **WITHDRAWAL**

Use of Water: **DOMESTIC**

BOREHOLE

	Top	Bottom	Diameter
SECTION 1:	**0**	**40**	**8**

CASING

CASING 1: Top: **0** Bottom: Diameter: **8** Material: **STEEL**

Record: 4 of 12

(There is a total of 12 Wells in the list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

PA Topographic & Geologic Survey

PaGWIS

DETAILS FOR WELL 5062

Menu | New Selection

Email comments to Topo Geo.

Record: 5 of 12

(There is a total of 12 Wells in the list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

Well Driller:

PA Well ID: **5062**

License:

Driller Well ID:

Type of Activity:

Original Well By:

Date Drilled:

Drilling Method:

Owner: **JONES , C**

Address of Well:

Zipcode:

County: **BUCKS**

Municipality: **WARMINSTER TWP.**

Quadrangle: **HATBORO**

Latitude: **40.20833**

Longitude: **-75.1025**

Well Depth (*ft*):

Well Finish:

Depth to Bedrock(*ft*):

Did Not Encounter Bedrock:

Well Yield (*gpm*):

Yield Measure Method:

Static Water Level: (*ft below land surface*)

Water level after yield test: (*ft below land surface*)

Length of Yield Test: (*minutes*)

Saltwater Zone(*ft*):

Use of Well: **WITHDRAWAL**

Use of Water: **DOMESTIC**

Record: 5 of 12

(There is a total of 12 Wells in the list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

PA Topographic & Geologic Survey **PaGWIS**

DETAILS FOR WELL 5036

Menu | New Selection

Email comments to Topo Geo.

Record: 6 of 12

(There is a total of 12 Wells in the list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

Well Driller: **F E BUEHLER & SON, INC.** PA Well ID: **5036**

License: **0130** Driller Well ID:

Type of Activity: Original Well By:

Date Drilled: **4/17/1970** Drilling Method: **AIR ROTARY**

Owner: **SMITH , ELMER**

Address of Well: Zipcode:

County: **BUCKS**

Municipality: **WARMINSTER TWP.**

Quadrangle: **HATBORO** Latitude: **40.2025** Longitude: **-75.09306**

Well Depth (*ft*): **95** Well Finish: **OPEN HOLE**

Depth to Bedrock(*ft*): Did Not Encounter Bedrock:

Well Yield (*gpm*): Yield Measure Method:

Static Water Level: (*ft below land surface*) Water level after yield test: (*ft below land surface*)

Length of Yield Test: (*minutes*) Saltwater Zone(*ft*):

Use of Well: **WITHDRAWAL** Use of Water: **DOMESTIC**

BOREHOLE

	Top	Bottom	Diameter
SECTION 1:	**0**	**95**	**6**

CASING

CASING 1: Top: **0** Bottom: **40** Diameter: **6** Material: **STEEL**

WATER BEARING ZONE

WATER BEARING ZONE 1: Top: **50** Bottom: Yield:

WATER BEARING ZONE 2: Top: **92** Bottom: Yield:

Record: 6 of 12

(There is a total of 12 Wells in the list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

PA Topographic & Geologic Survey **PaGWIS**

DETAILS FOR WELL 69172

Menu | New Selection

Email comments to Topo Geo.

Record: 7 of 12

(There is a total of 12 Wells in the list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

Well Driller: **F E BUEHLER & SON, INC.** PA Well ID: **69172**

License: **0130** Driller Well ID:

Type of Activity: **New Well** Original Well By:

Date Drilled: **1/1/1970** Drilling Method:

Owner: **SMITH ELMER**

Address of Well: Zipcode:

County: **BUCKS**

Municipality: **WARMINSTER TWP.**

Quadrangle: **HATBORO** Latitude: **40.2025** Longitude: **-75.09333**

Well Depth (*ft*): **95** Well Finish: **OPEN HOLE**

Depth to Bedrock(*ft*): **16** Did Not Encounter Bedrock:

Well Yield (*gpm*): Yield Measure Method: **UNKNOWN**

Static Water Level: *(ft below land surface)* Water level after yield test: *(ft below land surface)*

Length of Yield Test: **44** *(minutes)* Saltwater Zone(*ft*):

Use of Well: **WITHDRAWAL** Use of Water: **DOMESTIC**

CASING

CASING 1: Top: **0** Bottom: **41** Diameter: **6** Material:

WATER BEARING ZONE

WATER BEARING ZONE 1: Top: **20** Bottom: Yield:

WATER BEARING ZONE 2: Top: **95** Bottom: Yield:

WATER BEARING ZONE 3: Top: **50** Bottom: Yield:

Record: 7 of 12

(There is a total of 12 Wells in the list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

PA Topographic & Geologic Survey **PaGWIS**

DETAILS FOR WELL 7077

Menu | New Selection

Email comments to Topo Geo.

Record: 8 of 12

(There is a total of 12 Wells in the list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

Well Driller: **UNKNOWN** PA Well ID: **7077**

License: **1** Driller Well ID:

Type of Activity: Original Well By:

Date Drilled: **1/1/1954** Drilling Method: **CABLE TOOL**

Owner: **WARMINSTER AUTH**

Address of Well: Zipcode:

County: **BUCKS**

Municipality: **WARMINSTER TWP.**

Quadrangle: **HATBORO** Latitude: **40.205** Longitude: **-75.1075**

Well Depth (*ft*): **300** Well Finish: **OPEN HOLE**

Depth to Bedrock(*ft*): Did Not Encounter Bedrock:

Well Yield (*gpm*): Yield Measure Method:

Static Water Level: **13** (*ft below land surface*) Water level after yield test: (*ft below land surface*)

Length of Yield Test: (*minutes*) Saltwater Zone(*ft*):

Use of Well: **WITHDRAWAL** Use of Water: **PUBLIC SUPPLY**

BOREHOLE

	Top	Bottom	Diameter
SECTION 1:	**0**	**300**	**10**

CASING

CASING 1: Top: **0** Bottom: **63** Diameter: **10** Material: **STEEL**

CASING 2: Top: **0** Bottom: **44** Diameter: **14** Material: **STEEL**

(There is a total of 12 Wells in the

Record: 8 of 12 list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

PA Topographic & Geologic Survey **PaGWIS**

DETAILS FOR WELL 5084

Menu | New Selection

Email comments to Topo Geo.

Record: 9 of 12

(There is a total of 12 Wells in the list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

Well Driller: **RAAB WELL DRILLING, INC** PA Well ID: **5084**

License: **0330** Driller Well ID:

Type of Activity: Original Well By:

Date Drilled: **2/9/1980** Drilling Method: **AIR ROTARY**

Owner: **WARMINSTER AUTH**

Address of Well: Zipcode:

County: **BUCKS**

Municipality: **WARMINSTER TWP.**

Quadrangle: **HATBORO** Latitude: **40.21305** Longitude: **-75.09583**

Well Depth (*ft*): **400** Well Finish: **OPEN HOLE**

Depth to Bedrock(*ft*): Did Not Encounter Bedrock:

Well Yield (*gpm*): Yield Measure Method:

Static Water Level: *(ft below land surface)* Water level after yield test: *(ft below land surface)*

Length of Yield Test: *(minutes)* Saltwater Zone(*ft*):

Use of Well: **WITHDRAWAL** Use of Water: **PUBLIC SUPPLY**

BOREHOLE

	Top	Bottom	Diameter
SECTION 1:	**0**	**400**	**8**

CASING

CASING 1: Top: **0** Bottom: **50** Diameter: **8** Material: **STEEL**

CASING 2: Top: **0** Bottom: Diameter: **12** Material: **STEEL**

(There is a total of 12 Wells in the

Record: 9 of 12

list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

PA Topographic & Geologic Survey **PaGWIS**

DETAILS FOR WELL 5044

Menu | New Selection

Email comments to Topo Geo.

Record: 10 of 12 **(There is a total of 12 Wells in the list.)**

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

Well Driller: **UNKNOWN** PA Well ID: **5044**

License: **1** Driller Well ID:

Type of Activity: Original Well By:

Date Drilled: **1/1/1938** Drilling Method: **CABLE TOOL**

Owner: **WARMINSTER HOSIERY CO**

Address of Well: Zipcode:

County: **BUCKS**

Municipality: **WARMINSTER TWP.**

Quadrangle: **HATBORO** Latitude: **40.20472** Longitude: **-75.1**

Well Depth (*ft*): **56** Well Finish: **OPEN HOLE**

Depth to Bedrock(*ft*): Did Not Encounter Bedrock:

Well Yield (*gpm*): Yield Measure Method:

Static Water Level: *(ft below land surface)* Water level after yield test: *(ft below land surface)*

Length of Yield Test: *(minutes)* Saltwater Zone(*ft*):

Use of Well: **UNUSED** Use of Water: **UNUSED**

BOREHOLE

	Top	Bottom	Diameter
SECTION 1:	**0**	**56**	**6**

CASING

CASING 1: Top: **0** Bottom: Diameter: **6** Material: **UNKNOWN**

Record: 10 of 12 **(There is a total of 12 Wells in the list.)**

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

PA Topographic & Geologic Survey **PaGWIS**

DETAILS FOR WELL 69164

Menu | New Selection

Email comments to Topo Geo.

Record: 11 of 12

(There is a total of 12 Wells in the list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

Well Driller: **RAAB WELL DRILLING, INC**

PA Well ID: **69164**

License: **0330**

Driller Well ID:

Type of Activity: **New Well**

Original Well By:

Date Drilled: **11/1/1985**

Drilling Method:

Owner: **WARMINSTER MUN AUTH**

Address of Well:

Zipcode:

County: **BUCKS**

Municipality: **WARMINSTER TWP.**

Quadrangle: **HATBORO**

Latitude: **40.21194**

Longitude: **-75.10778**

Well Depth (*ft*): **514**

Well Finish: **OPEN HOLE**

Depth to Bedrock(*ft*): **8**

Did Not Encounter Bedrock:

Well Yield (*gpm*): **80**

Yield Measure Method: **VOLUMETRIC, WATCH & BUCKET**

Static Water Level: **20** (*ft below land surface*)

Water level after yield test: **120** (*ft below land surface*)

Length of Yield Test: **12** (*minutes*)

Saltwater Zone(*ft*):

Use of Well: **TEST**

Use of Water: **PUBLIC SUPPLY**

CASING

CASING 1: Top: **0** Bottom: **20** Diameter: **6** Material:

SEAL 1 Top: Bottom: Type: **NONE**

Record: 11 of 12

(There is a total of 12 Wells in the list.)

First Well | Prev.Well | Next Well | Last Well

Return to Summary List

PA Topographic & Geologic Survey **PaGWIS**

DETAILS FOR WELL 69165

Menu | New Selection

Email comments to Topo Geo.

Record: 12 of 12 **(There is a total of 12 Wells in the list.)**

First Well | Prev.Well | Return to Summary List

Well Driller: **RAAB WELL DRILLING, INC** PA Well ID: **69165**

License: **0330** Driller Well ID:

Type of Activity: **New Well** Original Well By:

Date Drilled: **10/1/1985** Drilling Method:

Owner: **WARMINSTER MUN AUTH**

Address of Well: Zipcode:

County: **BUCKS**

Municipality: **WARMINSTER TWP.**

Quadrangle: **HATBORO** Latitude: **40.2125** Longitude: **-75.10861**

Well Depth (*ft*): **375** Well Finish: **OPEN HOLE**

Depth to Bedrock(*ft*): **10** Did Not Encounter Bedrock:

Well Yield (*gpm*): **105** Yield Measure Method: **VOLUMETRIC, WATCH & BUCKET**

Static Water Level: **8** (*ft below land surface*) Water level after yield test: **108** (*ft below land surface*)

Length of Yield Test: **24** (*minutes*) Saltwater Zone(*ft*):

Use of Well: **TEST** Use of Water: **PUBLIC SUPPLY**

CASING

CASING 1: Top: **0** Bottom: **20** Diameter: **6** Material:

SEAL 1 Top: Bottom: Type: **NONE**

Record: 12 of 12 **(There is a total of 12 Wells in the list.)**

First Well | Prev.Well | Return to Summary List

Distance Calculator

Enter values **Find Answer**

Hints!
Maintain all negitive values

Site Location	
Latitude	**Longitude**
40.206944	**-75.099872**

Well Locations					
Latitude	**Longitude**	**Estimated Distance from Site (feet)**	**Estimated Distance from Site (meter)**	**Direction from Site**	pagwis number
40.21278	-75.10111	**2159**	**658**	**NW**	1
40.21222	-75.10111	**1958**	**597**	**NW**	2
40.20195	-75.09333	**2580**	**786**	**SE**	3
40.20222	-75.09278	**2625**	**800**	**SE**	4
40.20833	-75.1025	**891**	**271**	**NW**	5
40.2025	-75.09306	**2499**	**761**	**SE**	6
40.2025	-75.09333	**2442**	**744**	**SE**	7
40.205	-75.1075	**2243**	**683**	**SW**	8
40.21305	-75.09583	**2499**	**761**	**NE**	9
40.20472	-75.1	**813**	**248**	**SW**	10
40.21194	-75.10778	**2862**	**872**	**NW**	11
40.2125	-75.10861	**3171**	**966**	**NW**	12

APPENDIX G

GROUNDWATER LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared for:

SUN Retail:/GES
410 Eagleview Blvd
Suite 110
Exton PA 19341
610-458-1077

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 928504. Samples arrived at the laboratory on Monday, January 17, 2005. The PO# for this group is WARMINSTER.

Client Description	Lancaster Labs Number
MW-1 Grab Water Sample	4448327
MW-2 Grab Water Sample	4448328
MW-3 Grab Water Sample	4448329
MW-4 Grab Water Sample	4448330
MW-5 Grab Water Sample	4448331
MW-6 Grab Water Sample	4448332
MW-7 Grab Water Sample	4448333

1 COPY TO	SUN Retail:/GES	Attn: Connie Johnson
1 COPY TO	Lancaster Labs	Attn: Sandy Patton

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Questions? Contact your Client Services Representative
Sandra L Patton at (717) 656-2300.

Respectfully Submitted,

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. WW 4448327

MW-1 Grab Water Sample
Station# 0363-5430 Job# 02-01682
SUN: 610 Old York Road - Warminster, PA
Collected:01/13/2005 13:00 by K

Account Number: 11224

Submitted: 01/17/2005 15:00
Reported: 01/20/2005 at 09:44
Discard: 02/20/2005

SUN Retail:/GES
410 Eagleview Blvd
Suite 110
Exton PA 19341

WARM1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	5.	ug/l	1
05401	Benzene	71-43-2	N.D.	1.	ug/l	1
05407	Toluene	108-88-3	N.D.	1.	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	1.	ug/l	1
05420	Isopropylbenzene	98-82-8	N.D.	5.	ug/l	1
05439	Naphthalene	91-20-3	N.D.	5.	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	1.	ug/l	1

Commonwealth of Pennsylvania Lab Certification No. 36-037
Trip blank vials were not received by the laboratory for this sample group.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	01/18/2005 16:33	Carrie J Stock	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	01/18/2005 16:33	Carrie J Stock	n.a.

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. WW 4448328

MW-2 Grab Water Sample
Station# 0363-5430 Job# 02-01682
SUN: 610 Old York Road - Warminster, PA
Collected:01/13/2005 13:20 by K

Account Number: 11224

Submitted: 01/17/2005 15:00
Reported: 01/20/2005 at 09:44
Discard: 02/20/2005

SUN Retail:/GES
410 Eagleview Blvd
Suite 110
Exton PA 19341

WARM2

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	39.	5.	ug/l	1
05401	Benzene	71-43-2	6.	1.	ug/l	1
05407	Toluene	108-88-3	N.D.	1.	ug/l	1
05415	Ethylbenzene	100-41-4	59.	1.	ug/l	1
05420	Isopropylbenzene	98-82-8	14.	5.	ug/l	1
05439	Naphthalene	91-20-3	20.	5.	ug/l	1
06310	Xylene (Total)	1330-20-7	5.	1.	ug/l	1

Commonwealth of Pennsylvania Lab Certification No. 36-037
Trip blank vials were not received by the laboratory for this sample group.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	01/18/2005 16:57	Carrie J Stock	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	01/18/2005 16:57	Carrie J Stock	n.a.

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW 4448329

MW-3 Grab Water Sample
Station# 0363-5430 Job# 02-01682
SUN: 610 Old York Road - Warminster, PA
Collected: 01/13/2005 13:50 by K

Account Number: 11224

Submitted: 01/17/2005 15:00
Reported: 01/20/2005 at 09:44
Discard: 02/20/2005

SUN Retail:/GES
410 Eagleview Blvd
Suite 110
Exton PA 19341

WARM3

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	19.	5.	ug/l	1
05401	Benzene	71-43-2	N.D.	1.	ug/l	1
05407	Toluene	108-88-3	N.D.	1.	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	1.	ug/l	1
05420	Isopropylbenzene	98-82-8	N.D.	5.	ug/l	1
05439	Naphthalene	91-20-3	N.D.	5.	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	1.	ug/l	1

Commonwealth of Pennsylvania Lab Certification No. 36-037
Trip blank vials were not received by the laboratory for this sample group.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	01/18/2005 17:21	Carrie J Stock	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	01/18/2005 17:21	Carrie J Stock	n.a.

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW 4448330

MW-4 Grab Water Sample
Station# 0363-5430 Job# 02-01682
SUN: 610 Old York Road - Warminster, PA
Collected:01/13/2005 13:35 by K

Account Number: 11224

Submitted: 01/17/2005 15:00
Reported: 01/20/2005 at 09:45
Discard: 02/20/2005

SUN Retail:/GES
410 Eagleview Blvd
Suite 110
Exton PA 19341

WARM4

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	5.	ug/l	1
05401	Benzene	71-43-2	N.D.	1.	ug/l	1
05407	Toluene	108-88-3	N.D.	1.	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	1.	ug/l	1
05420	Isopropylbenzene	98-82-8	N.D.	5.	ug/l	1
05439	Naphthalene	91-20-3	N.D.	5.	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	1.	ug/l	1

Commonwealth of Pennsylvania Lab Certification No. 36-037
Trip blank vials were not received by the laboratory for this sample group.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	01/18/2005 17:44	Carrie J Stock	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	01/18/2005 17:44	Carrie J Stock	n.a.

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW 4448331

MW-5 Grab Water Sample
Station# 0363-5430 Job# 02-01682
SUN: 610 Old York Road - Warminster, PA
Collected:01/13/2005 14:10 by K

Account Number: 11224

Submitted: 01/17/2005 15:00
Reported: 01/20/2005 at 09:45
Discard: 02/20/2005

SUN Retail:/GES
410 Eagleview Blvd
Suite 110
Exton PA 19341

WARM5

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	14.	5.	ug/l	1
05401	Benzene	71-43-2	N.D.	1.	ug/l	1
05407	Toluene	108-88-3	N.D.	1.	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	1.	ug/l	1
05420	Isopropylbenzene	98-82-8	N.D.	5.	ug/l	1
05439	Naphthalene	91-20-3	N.D.	5.	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	1.	ug/l	1

Commonwealth of Pennsylvania Lab Certification No. 36-037
Trip blank vials were not received by the laboratory for this sample group.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	01/18/2005 18:07	Carrie J Stock	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	01/18/2005 18:07	Carrie J Stock	n.a.

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW 4448332

MW-6 Grab Water Sample
Station# 0363-5430 Job# 02-01682
SUN: 610 Old York Road - Warminster, PA
Collected:01/13/2005 14:30 by K

Account Number: 11224

Submitted: 01/17/2005 15:00
Reported: 01/20/2005 at 09:45
Discard: 02/20/2005

SUN Retail:/GES
410 Eagleview Blvd
Suite 110
Exton PA 19341

WARM6

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	5.	ug/l	1
05401	Benzene	71-43-2	N.D.	1.	ug/l	1
05407	Toluene	108-88-3	N.D.	1.	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	1.	ug/l	1
05420	Isopropylbenzene	98-82-8	N.D.	5.	ug/l	1
05439	Naphthalene	91-20-3	N.D.	5.	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	1.	ug/l	1

Commonwealth of Pennsylvania Lab Certification No. 36-037
Trip blank vials were not received by the laboratory for this sample group.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	01/18/2005 18:30	Carrie J Stock	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	01/18/2005 18:30	Carrie J Stock	n.a.

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW 4448333

MW-7 Grab Water Sample
Station# 0363-5430 Job# 02-01682
SUN: 610 Old York Road - Warminster, PA
Collected:01/13/2005 12:35 by K

Account Number: 11224

Submitted: 01/17/2005 15:00
Reported: 01/20/2005 at 09:45
Discard: 02/20/2005

SUN Retail:/GES
410 Eagleview Blvd
Suite 110
Exton PA 19341

WARM7

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	5.	ug/l	1
05401	Benzene	71-43-2	N.D.	1.	ug/l	1
05407	Toluene	108-88-3	N.D.	1.	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	1.	ug/l	1
05420	Isopropylbenzene	98-82-8	N.D.	5.	ug/l	1
05439	Naphthalene	91-20-3	N.D.	5.	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	1.	ug/l	1

Commonwealth of Pennsylvania Lab Certification No. 36-037
Trip blank vials were not received by the laboratory for this sample group.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	01/18/2005 18:53	Carrie J Stock	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	01/18/2005 18:53	Carrie J Stock	n.a.

#=Laboratory MethodDetection Limit exceeded target detection limit
N.D.=Not detected at or above the Reporting Limit

Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
Where quality is a science.

Acct. # 11224 6173 Group# 928504 Sample # 4448227-33

For Lancaster Laboratories use only

COC # 0074687

Please print. Instructions on reverse side correspond with circled numbers.

(1)
Client: GES Acct. #:
Project Name/#: 02 02061 06 206 PWSID #:
Project Manager: Kimyarda Faglemana P.O.#:
Sampler: Kurt Rob Quote #:
Name of state where samples were collected: PA

(2) Sample Identification	Date Collected	Time Collected	(3) Grab	Composite	(4) Matrix: Soil	Water (☑ Potable ☐ NPDES)	Other	Total # of Containers	(5) Analyses Requested: BTEX+MTBE 8260B; MAP Known VOCs 8260B	Remarks
MW-1	1-13-05	13:00	X			X		3	X	
MW-2	1-13-05	13:20	X			X		3	X	
MW-3	1-13-05	13:50	X			X		3	X	3.5°C
MW-4	1-13-05	13:35	X			X		3	X	1/17/05
MW-5	1-13-05	14:10	X			X		3	X	
MW-6	1-13-05	14:30	X			X		3	X	
MW-7	1-13-05	12:35	X			X		3	X	

For Lab Use Only
FSC:
SCR #:

(6) Temperature of samples upon receipt (if requested)

(7) **Turnaround Time Requested (TAT)** (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

(8) **Data Package Options** (please circle if required)
QC Summary, Type I (Tier I), Type II (Tier II), Type III (NJ Red. Del.), Type IV (CLP), Type VI (Raw Data), GLP, Other
SDG Complete? Yes No
Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
	1/13/05	18:00	GES Fridge		
	1-17-05	09:00		01/17/05	0900
	01/17/05	1700			
			Mary Beth Stoner	1/17/05	1500

(9)

Lancaster Laboratories, Inc., 2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300
Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

2102 Rev. 10/27/02

Lancaster Laboratories
2425 New Holland Pike • Lancaster, PA 17601

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
meq	milliequivalents	**lb.**	pound(s)
g	gram(s)	**kg**	kilogram(s)
ug	microgram(s)	**mg**	milligram(s)
ml	milliliter(s)	**l**	liter(s)
m3	cubic meter(s)	**ul**	microliter(s)

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

J estimated value – The result is ≥ the Method Detection Limit (MDL) and < the Limit of Quantitation (LOQ).

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.

U.S. EPA CLP Data Qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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Certificate of Analysis

May 3, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
Suite 110
Exton, PA 19341

Lab ID#: **9610667**

Project Name: **Sunoco Warminster, PA 610 Old York Road**
Workorder ID: **Sun Warminster 610 Old York Rd**

PO#: 02-02061-06-160-XX

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Qualifier Flags - These flags may follow individual results for a specific analyte

- U - Indicates that the analyte was not detected
- J - Indicates an estimated value between method detection limit and the practical quantitation limit for the analyte
- E - Indicates an estimated value outside of the calibration range of the analysis
- B - Indicates that the analyte was found in the method blank associated with the sample

A result of ND indicates that the analyte was Not Detected at the Reporting Detection Limit (RDL).

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If you have any questions in reference to this laboratory report, please contact your ALSI project coordinator or the laboratory manager listed at the bottom of this report at 717-944-5541.

Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

The Chain-of-Custody document is included as part of this report.

ALSI's webpage contains links to water quality documents on the internet. Visit us at www.analyticallab.com.

Note: This document is included as part of the Analytical Report and must be retained as a permanent record thereof.

Alan J. Lopez
Laboratory Manager

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May 3, 2005

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Lab ID #: **9610667001**
Received: 04/20/05 21:15
Discard: 05/17/05
Page: 1 Of 1

Project Name: **Sunoco Warminster, PA 610 Old York Road**
PO#: 02-02061-06-160-XX
Workorder ID: **Sun Warminster 610 Old York Rd**
COC Number:

Sample ID: **MW-1**
Matrix: Water
Date Collected: 04/20/05 11:33
Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	05/02/05 04:33	05/02/05	TEH	
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	05/02/05 04:33	05/02/05	TEH	
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	05/02/05 04:33	05/02/05	TEH	
Methyl t-Butyl Ether	ND	ug/L	1.0	SW846 8260B	05/02/05 04:33	05/02/05	TEH	
Naphthalene	ND	ug/L	2.0	SW846 8260B	05/02/05 04:33	05/02/05	TEH	
Toluene	ND	ug/L	1.0	SW846 8260B	05/02/05 04:33	05/02/05	TEH	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	05/02/05 04:33	05/02/05	TEH	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	23.5	ug/L	78.3%	(70 - 134)
Dibromofluoromethane	26	ug/L	86.7%	(71 - 135)
Toluene-d8	27.8	ug/L	92.7%	(74 - 132)
4-Bromofluorobenzene	28.6	ug/L	95.3%	(84 - 116)

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Laboratory Manager

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Certificate of Analysis

May 3, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
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Lab ID #: 9610667002
Received: 04/20/05 21:15
Discard: 05/17/05
Page: 1 Of 1

Project Name: Sunoco Warminster, PA 610 Old York Road
PO#: 02-02061-06-160-XX
Workorder ID: Sun Warminster 610 Old York Rd
COC Number:

Sample ID: MW-2
Matrix: Water
Date Collected: 04/20/05 11:13
Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	05/02/05 05:44	05/02/05	TEH	
Ethylbenzene	9.3	ug/L	1.0	SW846 8260B	05/02/05 05:44	05/02/05	TEH	
Isopropylbenzene	3.3	ug/L	1.0	SW846 8260B	05/02/05 05:44	05/02/05	TEH	
Methyl t-Butyl Ether	3.9	ug/L	1.0	SW846 8260B	05/02/05 05:44	05/02/05	TEH	
Naphthalene	4.3	ug/L	2.0	SW846 8260B	05/02/05 05:44	05/02/05	TEH	
Toluene	ND	ug/L	1.0	SW846 8260B	05/02/05 05:44	05/02/05	TEH	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	05/02/05 05:44	05/02/05	TEH	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	23.9	ug/L	79.7%	(70 - 134)
Dibromofluoromethane	26.4	ug/L	88.0%	(71 - 135)
Toluene-d8	27.5	ug/L	91.7%	(74 - 132)
4-Bromofluorobenzene	26.9	ug/L	89.7%	(84 - 116)

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Certificate of Analysis

May 3, 2005

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Lab ID #: **9610667003**
Received: 04/20/05 21:15
Discard: 05/17/05
Page: 1 Of 1

Project Name: **Sunoco Warminster, PA 610 Old York Road**
PO#: 02-02061-06-160-XX
Workorder ID: **Sun Warminster 610 Old York Rd**
COC Number:

Sample ID: **MW-3**
Matrix: Water
Date Collected: 04/20/05 10:37
Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	05/02/05 06:20	05/02/05	TEH	
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	05/02/05 06:20	05/02/05	TEH	
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	05/02/05 06:20	05/02/05	TEH	
Methyl t-Butyl Ether	ND	ug/L	1.0	SW846 8260B	05/02/05 06:20	05/02/05	TEH	
Naphthalene	ND	ug/L	2.0	SW846 8260B	05/02/05 06:20	05/02/05	TEH	
Toluene	ND	ug/L	1.0	SW846 8260B	05/02/05 06:20	05/02/05	TEH	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	05/02/05 06:20	05/02/05	TEH	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	24.2	ug/L	80.7%	(70 - 134)
Dibromofluoromethane	26.6	ug/L	88.7%	(71 - 135)
Toluene-d8	28.1	ug/L	93.7%	(74 - 132)
4-Bromofluorobenzene	27.8	ug/L	92.7%	(84 - 116)

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Lab ID #: **9610667004**
Received: 04/20/05 21:15
Discard: 05/17/05
Page: 1 Of 1

Project Name: **Sunoco Warminster, PA 610 Old York Road**
PO#: 02-02061-06-160-XX
Workorder ID: **Sun Warminster 610 Old York Rd**
COC Number:

Sample ID: **MW-4**
Matrix: Water
Date Collected: 04/20/05 10:55
Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	05/02/05 06:55	05/02/05	TEH	
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	05/02/05 06:55	05/02/05	TEH	
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	05/02/05 06:55	05/02/05	TEH	
Methyl t-Butyl Ether	ND	ug/L	1.0	SW846 8260B	05/02/05 06:55	05/02/05	TEH	
Naphthalene	ND	ug/L	2.0	SW846 8260B	05/02/05 06:55	05/02/05	TEH	
Toluene	ND	ug/L	1.0	SW846 8260B	05/02/05 06:55	05/02/05	TEH	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	05/02/05 06:55	05/02/05	TEH	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	24.5	ug/L	81.7%	(70 - 134)
Dibromofluoromethane	26.3	ug/L	87.7%	(71 - 135)
Toluene-d8	28.7	ug/L	95.7%	(74 - 132)
4-Bromofluorobenzene	28.6	ug/L	95.3%	(84 - 116)

Comments:

A positive result for oxidant was obtained for this sample - utilizing a HACH test kit. It is recommended that subsequent - sampling events utilize a dechlorination agent if oxidant is - determined to be present. Ref:SW-846 Methodology Table 4.1

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Lab ID #: **9610667005**
Received: 04/20/05 21:15
Discard: 05/17/05
Page: 1 Of 1
PO#: 02-02061-06-160-XX

Project Name: **Sunoco Warminster, PA 610 Old York Road**
Workorder ID: **Sun Warminster 610 Old York Rd**
COC Number:

Sample ID: **MW-5**
Date Collected: 04/20/05 09:43
Matrix: Water
Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	05/02/05 07:30	05/02/05	TEH	
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	05/02/05 07:30	05/02/05	TEH	
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	05/02/05 07:30	05/02/05	TEH	
Methyl t-Butyl Ether	5.0	ug/L	1.0	SW846 8260B	05/02/05 07:30	05/02/05	TEH	
Naphthalene	ND	ug/L	2.0	SW846 8260B	05/02/05 07:30	05/02/05	TEH	
Toluene	ND	ug/L	1.0	SW846 8260B	05/02/05 07:30	05/02/05	TEH	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	05/02/05 07:30	05/02/05	TEH	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	24.9	ug/L	83.0%	(70 - 134)
Dibromofluoromethane	27.2	ug/L	90.7%	(71 - 135)
Toluene-d8	27.7	ug/L	92.3%	(74 - 132)
4-Bromofluorobenzene	29.2	ug/L	97.3%	(84 - 116)

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Laboratory Manager

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Certificate of Analysis

May 3, 2005

Pat Crawford
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Lab ID #: **9610667006**
Received: 04/20/05 21:15
Discard: 05/17/05
Page: 1 Of 1
PO#: 02-02061-06-160-XX

Project Name: **Sunoco Warminster, PA 610 Old York Road**
Workorder ID: **Sun Warminster 610 Old York Rd**
COC Number:

Sample ID: **MW-6**
Matrix: Water
Date Collected: 04/20/05 10:14
Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	05/02/05 08:06	05/02/05	TEH	
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	05/02/05 08:06	05/02/05	TEH	
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	05/02/05 08:06	05/02/05	TEH	
Methyl t-Butyl Ether	2.0	ug/L	1.0	SW846 8260B	05/02/05 08:06	05/02/05	TEH	
Naphthalene	ND	ug/L	2.0	SW846 8260B	05/02/05 08:06	05/02/05	TEH	
Toluene	ND	ug/L	1.0	SW846 8260B	05/02/05 08:06	05/02/05	TEH	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	05/02/05 08:06	05/02/05	TEH	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	24.8	ug/L	82.7%	(70 - 134)
Dibromofluoromethane	27.4	ug/L	91.3%	(71 - 135)
Toluene-d8	28.2	ug/L	94.0%	(74 - 132)
4-Bromofluorobenzene	27.5	ug/L	91.7%	(84 - 116)

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Laboratory Manager

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May 3, 2005

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Lab ID #: 9610667007
Received: 04/20/05 21:15
Discard: 05/17/05
Page: 1 Of 1

Project Name: Sunoco Warminster, PA 610 Old York Road
PO#: 02-02061-06-160-XX
Workorder ID: Sun Warminster 610 Old York Rd
COC Number:

Sample ID: MW-7
Matrix: Water
Date Collected: 04/20/05 09:13
Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	05/02/05 08:41	05/02/05	TEH	
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	05/02/05 08:41	05/02/05	TEH	
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	05/02/05 08:41	05/02/05	TEH	
Methyl t-Butyl Ether	ND	ug/L	1.0	SW846 8260B	05/02/05 08:41	05/02/05	TEH	
Naphthalene	ND	ug/L	2.0	SW846 8260B	05/02/05 08:41	05/02/05	TEH	
Toluene	ND	ug/L	1.0	SW846 8260B	05/02/05 08:41	05/02/05	TEH	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	05/02/05 08:41	05/02/05	TEH	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	25.2	ug/L	84.0%	(70 - 134)
Dibromofluoromethane	27	ug/L	90.0%	(71 - 135)
Toluene-d8	27.7	ug/L	92.3%	(74 - 132)
4-Bromofluorobenzene	28.6	ug/L	95.3%	(84 - 116)

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Alan J. Lopez
Laboratory Manager

Serial Number 9610567

Analytical Labs

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Analytical Labs
Scott Brunk
Customer Service Rep

Project Name:	GES Project Number:	
Sunoco: Warminster, PA	02-02061-06-160-XX	
610 Old York Road	Contract No.: Sunoco GW	
GES Project / Case Manager: Patrick Crawford / Susan Cameron	Client Phone: 610 458-1077, extension 169	Client Fax: 610 458-2300
Client Name: Groundwater & Environmental Services, Inc.	Client E-mail: pcrawford@gesonline.com	
Client Address: 410 Eagleview Blvd., Suite 110, Exton PA 19341		

Page 1 of 1

STANDARD REPORT DELIVERY ✓

DATE DUE_____

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE_____

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT...)	REQUIRED ANALYSES: BTEX, MTBE, Cumene, Naphthalene (8260B) 40 ml vials	EDB (504) 40 ml vials	TPH (Amber Bottles)	Diss Lead (6020) 500 ml plastic							REMARKS
		PRESERVATIVE						HCL	Na2S2O3	HCL	None							
		NUMBER OF CONTAINERS SUBMITTED																
4/20/05	11:33	MW-1	G	x				3										Detection Limits Must Meet PADEP SHS
4/20/05	11:13	MW-2	G	x				3										
4/20/05	10:37	MW-3	G	x				3										
4/20/05	10:56	MW-4	G	x				3										
4/20/05	9:43	MW-5	G	x				3										
4/20/05	10:14	MW-6	G	x				3										
4/20/05	9:13	MW-7	G	x				3										

ENTERED 4/21/05

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	4/20/05	12:30		4-20-05	14:02			
RECEIVED BY: (SIGNATURE) GES Fridge	4/20/05	12:30	RECEIVED BY: (SIGNATURE) D. Hawk AST	4/20/05	1400	RECEIVED BY: (SIGNATURE)	DATE	TIME

Bdc 4200 F 2115

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES / NO	CUSTODY SEAL NO.	STL LOG NO.	LABORATORY REMARKS:
M Hart AST	4-20-05	2115	NO			

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

JLK 4/21/05 1127

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Certificate of Analysis

August 1, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
Suite 110
Exton, PA 19341

Lab ID#: **9618865**

PO#: 02-02061-06-160-XX

Project Name: **Sunoco Warminster, PA 610 Old York Road**
Workorder ID: **Sun Warminster 610 Old York Rd**

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Qualifier Flags - These flags may follow individual results for a specific analyte

- U - Indicates that the analyte was not detected
- J - Indicates an estimated value between method detection limit and the practical quantitation limit for the analyte
- E - Indicates an estimated value outside of the calibration range of the analysis
- B - Indicates that the analyte was found in the method blank associated with the sample

A result of ND indicates that the analyte was Not Detected at the Reporting Detection Limit (RDL).

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If you have any questions in reference to this laboratory report, please contact your ALSI project coordinator or the laboratory manager listed at the bottom of this report at 717-944-5541.

Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

The Chain-of-Custody document is included as part of this report.

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Certificate of Analysis

August 1, 2005

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410 Eagleview Boulevard
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Lab ID #: **9618865001**
Received: 07/15/05 23:30
Discard: 08/15/05

Project Name: **Sunoco Warminster, PA 610 Old York Road**
PO#: 02-02061-06-160-XX
Workorder ID: **Sun Warminster 610 Old York Rd**
COC Number:

Sample ID: **MW-1**
Matrix: Water
Date Collected: 07/15/05 11:38
Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	2.0	ug/L	1.0	SW846 8260B	07/26/05 22:37	07/26/05	TEH	
Ethylbenzene	227	ug/L	10.0	SW846 8260B	07/27/05 08:06	07/27/05	KLH	
Isopropylbenzene	49.6	ug/L	1.0	SW846 8260B	07/26/05 22:37	07/26/05	TEH	
Methyl t-Butyl Ether	57.4	ug/L	1.0	SW846 8260B	07/26/05 22:37	07/26/05	TEH	
Naphthalene	241	ug/L	20.0	SW846 8260B	07/27/05 08:06	07/27/05	KLH	
Toluene	8.0	ug/L	1.0	SW846 8260B	07/26/05 22:37	07/26/05	TEH	
Total Xylenes	445	ug/L	30.0	SW846 8260B	07/27/05 08:06	07/27/05	KLH	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	27.8	ug/L	92.7%	(70 - 134)
1,2-Dichloroethane-d4	290	ug/L	96.7%	(70 - 134)
Dibromofluoromethane	29.4	ug/L	98.0%	(71 - 135)
Dibromofluoromethane	296	ug/L	98.7%	(71 - 135)
Toluene-d8	27.6	ug/L	92.0%	(74 - 132)
Toluene-d8	290	ug/L	96.7%	(74 - 132)
4-Bromofluorobenzene	29	ug/L	96.7%	(84 - 116)
4-Bromofluorobenzene	272	ug/L	90.7%	(84 - 116)

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Laboratory Manager

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Certificate of Analysis

August 1, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
Suite 110
Exton, PA 19341

Lab ID #: **9618865002**
Received: 07/15/05 23:30
Discard: 08/15/05

Project Name: **Sunoco Warminster, PA 610 Old York Road** PO#: 02-02061-06-160-XX
Workorder ID: **Sun Warminster 610 Old York Rd** COC Number:

Sample ID: **MW-2** Matrix: Water
Date Collected: 07/15/05 11:18 Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	38.1	ug/L	1.0	SW846 8260B	07/26/05 20:11	07/26/05	TEH	
Ethylbenzene [1]	161	ug/L	1.0	SW846 8260B	07/26/05 20:11	07/26/05	TEH	
Isopropylbenzene	79.7	ug/L	1.0	SW846 8260B	07/26/05 20:11	07/26/05	TEH	
Methyl t-Butyl Ether	89.9	ug/L	1.0	SW846 8260B	07/26/05 20:11	07/26/05	TEH	
Naphthalene [2]	142	ug/L	2.0	SW846 8260B	07/26/05 20:11	07/26/05	TEH	
Toluene	1.5	ug/L	1.0	SW846 8260B	07/26/05 20:11	07/26/05	TEH	
Total Xylenes	68.7	ug/L	3.0	SW846 8260B	07/26/05 20:11	07/26/05	TEH	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	26.4	ug/L	88.0%	(70 - 134)
Dibromofluoromethane	28.2	ug/L	94.0%	(71 - 135)
Toluene-d8	26.9	ug/L	89.7%	(74 - 132)
4-Bromofluorobenzene	27.6	ug/L	92.0%	(84 - 116)

1 - This compound was recovered below quality control criteria in the matrix spike and matrix spike duplicate of this sample. The LCS had acceptable recoveries, satisfying method criteria.

2 - This compound was recovered above quality control criteria in the matrix spike and matrix spike duplicate of this sample. The LCS had acceptable recoveries, satisfying method criteria.

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Lab ID #: **9618865003**
Received: 07/15/05 23:30
Discard: 08/15/05
Page: 4 Of 8

Project Name: **Sunoco Warminster, PA 610 Old York Road**
PO#: 02-02061-06-160-XX
Workorder ID: **Sun Warminster 610 Old York Rd**
COC Number:

Sample ID: **MW-3**
Matrix: Water
Date Collected: 07/15/05 10:33
Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	07/27/05 07:30	07/27/05	KLH	
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	07/27/05 07:30	07/27/05	KLH	
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	07/27/05 07:30	07/27/05	KLH	
Methyl t-Butyl Ether	ND	ug/L	1.0	SW846 8260B	07/27/05 07:30	07/27/05	KLH	
Naphthalene	ND	ug/L	2.0	SW846 8260B	07/27/05 07:30	07/27/05	KLH	
Toluene	ND	ug/L	1.0	SW846 8260B	07/27/05 07:30	07/27/05	KLH	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	07/27/05 07:30	07/27/05	KLH	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	30.8	ug/L	103.0%	(70 - 134)
Dibromofluoromethane	31	ug/L	103.0%	(71 - 135)
Toluene-d8	30	ug/L	100.0%	(74 - 132)
4-Bromofluorobenzene	27	ug/L	90.0%	(84 - 116)

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Lab ID #: **9618865004**
Received: 07/15/05 23:30
Discard: 08/15/05

PO#: 02-02061-06-160-XX

Project Name: **Sunoco Warminster, PA 610 Old York Road**
Workorder ID: **Sun Warminster 610 Old York Rd**
COC Number:

Sample ID: **MW-4**
Matrix: Water
Date Collected: 07/15/05 10:58
Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	07/26/05 21:24	07/26/05	TEH	
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	07/26/05 21:24	07/26/05	TEH	
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	07/26/05 21:24	07/26/05	TEH	
Methyl t-Butyl Ether	ND	ug/L	1.0	SW846 8260B	07/26/05 21:24	07/26/05	TEH	
Naphthalene	ND	ug/L	2.0	SW846 8260B	07/26/05 21:24	07/26/05	TEH	
Toluene	ND	ug/L	1.0	SW846 8260B	07/26/05 21:24	07/26/05	TEH	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	07/26/05 21:24	07/26/05	TEH	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	26.6	ug/L	88.7%	(70 - 134)
Dibromofluoromethane	26.8	ug/L	89.3%	(71 - 135)
Toluene-d8	27.5	ug/L	91.7%	(74 - 132)
4-Bromofluorobenzene	25.2	ug/L	84.0%	(84 - 116)

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Laboratory Manager

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Lab ID #: 9618865005
Received: 07/15/05 23:30
Discard: 08/15/05

Project Name: Sunoco Warminster, PA 610 Old York Road PO#: 02-02061-06-160-XX
Workorder ID: Sun Warminster 610 Old York Rd COC Number:

Sample ID: MW-5 Matrix: Water
Date Collected: 07/15/05 09:23 Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	07/26/05 22:01	07/26/05	TEH	
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	07/26/05 22:01	07/26/05	TEH	
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	07/26/05 22:01	07/26/05	TEH	
Methyl t-Butyl Ether	ND	ug/L	1.0	SW846 8260B	07/26/05 22:01	07/26/05	TEH	
Naphthalene	ND	ug/L	2.0	SW846 8260B	07/26/05 22:01	07/26/05	TEH	
Toluene	ND	ug/L	1.0	SW846 8260B	07/26/05 22:01	07/26/05	TEH	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	07/26/05 22:01	07/26/05	TEH	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	27.8	ug/L	92.7%	(70 - 134)
Dibromofluoromethane	28.1	ug/L	93.7%	(71 - 135)
Toluene-d8	28.6	ug/L	95.3%	(74 - 132)
4-Bromofluorobenzene	26.4	ug/L	88.0%	(84 - 116)

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Laboratory Manager

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August 1, 2005

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Lab ID #: 9618865006
Received: 07/15/05 23:30
Discard: 08/15/05

Project Name: Sunoco Warminster, PA 610 Old York Road
PO#: 02-02061-06-160-XX
Workorder ID: Sun Warminster 610 Old York Rd
COC Number:

Sample ID: MW-6
Matrix: Water
Date Collected: 07/15/05 09:53
Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	07/27/05 00:48	07/27/05	JHD	
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	07/27/05 00:48	07/27/05	JHD	
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	07/27/05 00:48	07/27/05	JHD	
Methyl t-Butyl Ether	ND	ug/L	1.0	SW846 8260B	07/27/05 00:48	07/27/05	JHD	
Naphthalene	ND	ug/L	2.0	SW846 8260B	07/27/05 00:48	07/27/05	JHD	
Toluene	ND	ug/L	1.0	SW846 8260B	07/27/05 00:48	07/27/05	JHD	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	07/27/05 00:48	07/27/05	JHD	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	23.5	ug/L	78.3%	(70 - 134)
Dibromofluoromethane	23.8	ug/L	79.3%	(71 - 135)
Toluene-d8	30.3	ug/L	101.0%	(74 - 132)
4-Bromofluorobenzene	28.1	ug/L	93.7%	(84 - 116)

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Laboratory Manager

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Certificate of Analysis

August 1, 2005

Pat Crawford
Groundwater Environmental Serv
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Lab ID #: **9618865007**
Received: 07/15/05 23:30
Discard: 08/15/05
Page: 8 Of 8

Project Name: **Sunoco Warminster, PA 610 Old York Road**
PO#: 02-02061-06-160-XX
Workorder ID: **Sun Warminster 610 Old York Rd**
COC Number:

Sample ID: **MW-7**
Matrix: Water
Date Collected: 07/15/05 08:48
Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	07/27/05 01:17	07/27/05	JHD	
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	07/27/05 01:17	07/27/05	JHD	
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	07/27/05 01:17	07/27/05	JHD	
Methyl t-Butyl Ether	ND	ug/L	1.0	SW846 8260B	07/27/05 01:17	07/27/05	JHD	
Naphthalene	ND	ug/L	2.0	SW846 8260B	07/27/05 01:17	07/27/05	JHD	
Toluene	ND	ug/L	1.0	SW846 8260B	07/27/05 01:17	07/27/05	JHD	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	07/27/05 01:17	07/27/05	JHD	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	24.3	ug/L	81.0%	(70 - 134)
Dibromofluoromethane	23.9	ug/L	79.7%	(71 - 135)
Toluene-d8	30.1	ug/L	100.0%	(74 - 132)
4-Bromofluorobenzene	29.4	ug/L	98.0%	(84 - 116)

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Alan J. Lopez
Laboratory Manager

Serial Number

Analytical Labs

Analytical Labs
Scott Brunk
Customer Service Rep

9618865

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Page 1 of 1

Project Name:	GES Project Number:	
Sunoco: Warminster, PA	02-02061-06-160-XX	
610 Old York Road	Contract No.: Sunoco GW	
GES Project / Case Manager: Patrick Crawford / Susan Cameron	Client Phone: 610 458-1077, extension 169	Client Fax: 610 458-2300
Client Name: Groundwater & Environmental Services, Inc.	Client E-mail: pcrawford@gesonline.com	
Client Address: 410 Eagleview Blvd., Suite 110, Exton PA 19341		

STANDARD REPORT DELIVERY (X)
DATE DUE
EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE
NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX: COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT—)	NUMBER OF CONTAINERS SUBMITTED	REQUIRED ANALYSES: BTEX, MTBE, Cumene, Naphthalene (8260B) 40 ml vials	EDB (504) 40 ml vials	TPH (Amber Bottles)	Diss Lead (6020) 500 ml plastic	PRESERVATIVE	REMARKS
									HCL	Na2S2O3	HCL	None		
7/15/05	11:38	MW-1	G	X				3						
7/15/05	11:18	MW-2	G	X				3						
7/15/05	10:39	MW-3	G	X				3						
7/15/05	10:58	MW-4	G	X				3						
7/15/05	9:23	MW-5	G	X				3						
7/15/05	9:53	MW-6	G	X				3						
7/15/05	8:48	MW-7	G	X				3						

Detection Limits

	Y	N	Initials
Custody Seals Present?		X	
(If present) Seals Intact?			
Received on Ice?	X		MT
COC/Labels Complete/Accurate	X		
Cont in Good Cond?	X		
Correct Containers?	X		
Correct Sample Volumes?	X		
Correct Preservation?	X		
Headspace/Volatiles?			

Cooler Temp:
Cooler #:
Therm ID:
Ship Carrier: FedEx UPS DHL Other GES

Tracking #:

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
	7/15/05	12:45		7-15-05	13:50		7-15-05	2350
RECEIVED BY: (SIGNATURE) GES Fridge	7/15/05	12:46	RECEIVED BY: (SIGNATURE)	7-14-05	~~2350~~ 1350	RECEIVED BY: (SIGNATURE) ALS	7/15	2330

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES / NO	CUSTODY SEAL NO.	STL LOG NO.	LABORATORY REMARKS:
						ENTERED 7/19/05

SM 7-15-05 2353

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

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Certificate of Analysis

September 20, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
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Exton, PA 19341

Lab ID#: **9624460**

Project Name: **Sunoco Warminster, PA 610 Old York Road**
Workorder ID: **Sunoco Warminster 610 Old York**

PO#: 02-02061-06-160-XX

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Qualifier Flags - These flags may follow individual results for a specific analyte
- U - Indicates that the analyte was not detected
- J - Indicates an estimated value between method detection limit and the practical quantitation limit for the analyte

A result of ND indicates that the analyte was Not Detected at the Reporting Detection Limit (RDL).

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If you have any questions in reference to this laboratory report, please contact your ALSI project coordinator or the laboratory manager listed at the bottom of this report at 717-944-5541.

Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

The Chain-of-Custody document is included as part of this report.

ALSI's webpage contains links to water quality documents on the internet. Visit us at www.analyticallab.com.

Note: This document is included as part of the Analytical Report and must be retained as a permanent record thereof.

Alan J. Lopez
Laboratory Manager

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Certificate of Analysis

September 20, 2005

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Lab ID #: **9624460001**
Received: 09/07/05 21:00
Discard: 10/04/05

PO#: 02-02061-06-160-XX

Project Name: **Sunoco Warminster, PA 610 Old York Road**
Workorder ID: **Sunoco Warminster 610 Old York** COC Number:

Sample ID: **MW-2** Matrix: Water
Date Collected: 09/07/05 10:40 Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	10.0	ug/L	1.0	SW846 8260B	09/15/05 14:03	09/15/05	KLM	
Ethylbenzene	18.5	ug/L	1.0	SW846 8260B	09/15/05 14:03	09/15/05	KLM	
Isopropylbenzene	11.0	ug/L	1.0	SW846 8260B	09/15/05 14:03	09/15/05	KLM	
Methyl t-Butyl Ether	59.5	ug/L	1.0	SW846 8260B	09/15/05 14:03	09/15/05	KLM	
Naphthalene	23.0	ug/L	2.0	SW846 8260B	09/15/05 14:03	09/15/05	KLM	
Toluene	ND	ug/L	1.0	SW846 8260B	09/15/05 14:03	09/15/05	KLM	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	09/15/05 14:03	09/15/05	KLM	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	28.6	ug/L	95.2%	(50 - 152)
Dibromofluoromethane	28.9	ug/L	96.4%	(63 - 137)
Toluene-d8	27.6	ug/L	91.9%	(80 - 128)
4-Bromofluorobenzene	26.3	ug/L	87.6%	(76 - 125)

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Lab ID #: **9624460002**
Received: 09/07/05 21:00
Discard: 10/04/05

Project Name: **Sunoco Warminster, PA 610 Old York Road** PO#: 02-02061-06-160-XX
Workorder ID: **Sunoco Warminster 610 Old York** COC Number:

Sample ID: **MW-4** Matrix: Water
Date Collected: 09/07/05 10:20 Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	09/15/05 13:28	09/15/05	KLM	
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	09/15/05 13:28	09/15/05	KLM	
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	09/15/05 13:28	09/15/05	KLM	
Methyl t-Butyl Ether	ND	ug/L	1.0	SW846 8260B	09/15/05 13:28	09/15/05	KLM	
Naphthalene	ND	ug/L	2.0	SW846 8260B	09/15/05 13:28	09/15/05	KLM	
Toluene	ND	ug/L	1.0	SW846 8260B	09/15/05 13:28	09/15/05	KLM	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	09/15/05 13:28	09/15/05	KLM	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	29	ug/L	96.8%	(50 - 152)
Dibromofluoromethane	29.4	ug/L	97.9%	(63 - 137)
Toluene-d8	27.7	ug/L	92.3%	(80 - 128)
4-Bromofluorobenzene	25.1	ug/L	83.8%	(76 - 125)

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Laboratory Manager

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34 Dogwood Lane - Middletown, PA 17057 Phone: 717-944-5541 Fax: 717-944-1430

Certificate of Analysis

September 20, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
Suite 110
Exton, PA 19341

Lab ID #: 9624460003
Received: 09/07/05 21:00
Discard: 10/04/05
Page: 4 Of 4

Project Name: Sunoco Warminster, PA 610 Old York Road
PO#: 02-02061-06-160-XX
Workorder ID: Sunoco Warminster 610 Old York
COC Number:

Sample ID: MW-5
Matrix: Water
Date Collected: 09/07/05 09:23
Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	09/15/05 05:51	09/15/05	CPK	
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	09/15/05 05:51	09/15/05	CPK	
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	09/15/05 05:51	09/15/05	CPK	
Methyl t-Butyl Ether	1.9	ug/L	1.0	SW846 8260B	09/15/05 05:51	09/15/05	CPK	
Naphthalene	ND	ug/L	2.0	SW846 8260B	09/15/05 05:51	09/15/05	CPK	
Toluene	ND	ug/L	1.0	SW846 8260B	09/15/05 05:51	09/15/05	CPK	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	09/15/05 05:51	09/15/05	CPK	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	28.2	ug/L	94.1%	(50 - 152)
Dibromofluoromethane	29.5	ug/L	98.3%	(63 - 137)
Toluene-d8	24.8	ug/L	82.7%	(80 - 128)
4-Bromofluorobenzene	25.8	ug/L	85.8%	(76 - 125)

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

Alan J. Lopez
Laboratory Manager

Analytical Laboratory Services, Inc.
Environmental • Industrial Hygiene • Field Services
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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 96244460 | 1 of 1
ALSI Quote #:

Client Name: GES
Address: 410 Eagleview Blvd suite 110 Exton PA
Contact: PAT CRAWFORD
Phone#: 610-458-1077
Project Name/#: Gun Warm inster
Bill To:

TAT: [X] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALSI approval and surcharges.
Date Required: _____ Approved By: _____
Email? [ ] -Y
Fax? [ ] -Y No.: _____

Container Type	Vial										
Container Size	40ml										
Preservative	HCl										

ANALYSES/METHOD REQUESTED

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	(8260B) BTEX/MTBE Chlorinated, naphthalene	Enter Number of Containers Per Sample or Field Results Below.
1 MW-1	9/7/05	[illegible]	6	GW		
2 MW-2	9/7/05	10:40	6	GW		
3 MW-3	9/7/05	[illegible]	6	GW		
4 MW-4	9/7/05	10:20	6	GW		
5 MW-5	9/7/05	9:23	6	GW		
6 MW-6	9/7/05	9:43	6	GW	X	
7 MW-7	9/7/05	9:00	6	GW	X	
8						
9						
10						

Receipt Information (completed by Receiving Lab)
Cooler Temp: _____ Cooler #: _____
Therm. ID _____

	Y	N
Custody Seals Present?		
(if present) Seals Intact?		
Received on Ice?	X	
COC/Labels Agree?		
Cont. in Good Cond.?		
Correct Containers?		
Correct Sample Volumes?		
Correct Preservation?		

Information concerning all nonconformance samples/containers shall be recorded on the COC.

Ship. Carrier: UPS / FedEx / DHL / Other GES
Tracking #: _____

Sample/COC Comments
>10 samples - broken in transit 2ea 9/7/05

ALSI Field Services: [ ] Pickup [ ] Labor [ ] Composite Sampling [ ] Rental Equipment [ ] Other: _____

Project Comments:

Logged By (initials/date/time): CK 9/7/05 2141
Reviewed By (initials/date/time): JLK 9/8/05 1423

Data Deliverables: [ ] Standard [ ] CLP-like [ ] USACE [ ]
Special Processing: [ ] USACE [ ] Navy [ ]
State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] NC [ ]
Reportable to PADEP? [ ] Yes PWSID # _____
Sample Disposal: [ ] Lab [ ] Special
EDDS: Format Type- _____

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Tyler Shadid	9/7/05	13:00	2 GES Fedex	9/7/05	13:00
3 [illegible]	9-7-05	16:10	4 JLA ALSI	9/7/05	16:10
5 JLA ALSI	9/7/05	2100	6 Mgr ALSI	9/7	2100
7			8		
9			10		

* G=Grab; C=Composite
**Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

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Certificate of Analysis

October 4, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
Suite 110
Exton, PA 19341

Lab ID#: **9626056**

Project Name: **Sunoco Warminster, PA 610 Old York Road**
Workorder ID: **Sun Warminster 610 Old York Rd**

PO#: 02-02061-06-160-XX

This report relates only to the sample(s) as received by the laboratory. Laboratory reports may not be reproduced, except in full, without the written approval of the laboratory.

Qualifier Flags - These flags may follow individual results for a specific analyte
- U - Indicates that the analyte was not detected
- J - Indicates an estimated value between method detection limit and the practical quantitation limit for the analyte

A result of ND indicates that the analyte was Not Detected at the Reporting Detection Limit (RDL).

ALSI is a NELAC accredited laboratory. ALSI certifies that all applicable test results meet the requirements of NELAC. For an inventory of our NELAC accreditations and Scope of Work please visit our website at www.analyticallab.com or contact your Project Manager at (717)944-5541 for a complete listing.

If you have any questions in reference to this laboratory report, please contact your ALSI project coordinator or the laboratory manager listed at the bottom of this report at 717-944-5541.

Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

The Chain-of-Custody document is included as part of this report.

ALSI's webpage contains links to water quality documents on the internet. Visit us at www.analyticallab.com.

Note: This document is included as part of the Analytical Report and must be retained as a permanent record thereof.

Alan J. Lopez
Laboratory Manager

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Certificate of Analysis

October 4, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
Suite 110
Exton, PA 19341

Lab ID #: **9626056001**
Received: 09/20/05 22:00
Discard: 10/18/05

Project Name: **Sunoco Warminster, PA 610 Old York Road** PO#: 02-02061-06-160-XX
Workorder ID: **Sun Warminster 610 Old York Rd** COC Number:

Sample ID: **MW-3** Matrix: Water
Date Collected: 09/20/05 10:30 Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	09/30/05 00:42	09/30/05	JHD	
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	09/30/05 00:42	09/30/05	JHD	
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	09/30/05 00:42	09/30/05	JHD	
Methyl t-Butyl Ether	ND	ug/L	1.0	SW846 8260B	09/30/05 00:42	09/30/05	JHD	
Naphthalene	ND	ug/L	2.0	SW846 8260B	09/30/05 00:42	09/30/05	JHD	
Toluene	ND	ug/L	1.0	SW846 8260B	09/30/05 00:42	09/30/05	JHD	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	09/30/05 00:42	09/30/05	JHD	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	36.8	ug/L	123.0%	(50 - 152)
Dibromofluoromethane	33.8	ug/L	113.0%	(63 - 137)
Toluene-d8	36.1	ug/L	120.0%	(80 - 128)
4-Bromofluorobenzene	31.5	ug/L	105.0%	(76 - 125)

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Alan J. Lopez
Laboratory Manager

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Certificate of Analysis

October 4, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
Suite 110
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Lab ID #: 9626056002
Received: 09/20/05 22:00
Discard: 10/18/05

PO#: 02-02061-06-160-XX

Project Name: Sunoco Warminster, PA 610 Old York Road
Workorder ID: Sun Warminster 610 Old York Rd
COC Number:

Sample ID: MW-4
Date Collected: 09/20/05 11:00
Matrix: Water
Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	09/29/05 22:58	09/29/05	JHD	
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	09/29/05 22:58	09/29/05	JHD	
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	09/29/05 22:58	09/29/05	JHD	
Methyl t-Butyl Ether	ND	ug/L	1.0	SW846 8260B	09/29/05 22:58	09/29/05	JHD	
Naphthalene	ND	ug/L	2.0	SW846 8260B	09/29/05 22:58	09/29/05	JHD	
Toluene	ND	ug/L	1.0	SW846 8260B	09/29/05 22:58	09/29/05	JHD	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	09/29/05 22:58	09/29/05	JHD	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	37.8	ug/L	126.0%	(50 - 152)
Dibromofluoromethane	34.8	ug/L	116.0%	(63 - 137)
Toluene-d8	35.2	ug/L	117.0%	(80 - 128)
4-Bromofluorobenzene	31	ug/L	103.0%	(76 - 125)

Comments:
A positive result for oxidant was obtained for this sample - utilizing a HACH test kit. It is recommended that subsequent - sampling events utilize a dechlorination agent if oxidant is - determined to be present. Ref:SW-846 Methodology Table 4.1

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Alan J. Lopez
Laboratory Manager

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Certificate of Analysis

October 4, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
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Exton, PA 19341

Lab ID #: **9626056003**
Received: 09/20/05 22:00
Discard: 10/18/05

Project Name: **Sunoco Warminster, PA 610 Old York Road** PO#: 02-02061-06-160-XX
Workorder ID: **Sun Warminster 610 Old York Rd** COC Number:

Sample ID: **MW-5** Matrix: Water
Date Collected: 09/20/05 10:50 Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	09/30/05 01:17	09/30/05	JHD	
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	09/30/05 01:17	09/30/05	JHD	
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	09/30/05 01:17	09/30/05	JHD	
Methyl t-Butyl Ether	ND	ug/L	1.0	SW846 8260B	09/30/05 01:17	09/30/05	JHD	
Naphthalene	ND	ug/L	2.0	SW846 8260B	09/30/05 01:17	09/30/05	JHD	
Toluene	ND	ug/L	1.0	SW846 8260B	09/30/05 01:17	09/30/05	JHD	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	09/30/05 01:17	09/30/05	JHD	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	37.8	ug/L	126.0%	(50 - 152)
Dibromofluoromethane	34.5	ug/L	115.0%	(63 - 137)
Toluene-d8	35.5	ug/L	118.0%	(80 - 128)
4-Bromofluorobenzene	32.6	ug/L	109.0%	(76 - 125)

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Alan J. Lopez
Laboratory Manager

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Certificate of Analysis

October 4, 2005

Pat Crawford
Groundwater Environmental Serv
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Lab ID #: **9626056004**
Received: 09/20/05 22:00
Discard: 10/18/05

Project Name: **Sunoco Warminster, PA 610 Old York Road**
PO#: 02-02061-06-160-XX
Workorder ID: **Sun Warminster 610 Old York Rd**
COC Number:

Sample ID: **MW-6**
Matrix: Water
Date Collected: 09/20/05 09:45
Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	09/30/05 01:52	09/30/05	JHD	
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	09/30/05 01:52	09/30/05	JHD	
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	09/30/05 01:52	09/30/05	JHD	
Methyl t-Butyl Ether	ND	ug/L	1.0	SW846 8260B	09/30/05 01:52	09/30/05	JHD	
Naphthalene	ND	ug/L	2.0	SW846 8260B	09/30/05 01:52	09/30/05	JHD	
Toluene	ND	ug/L	1.0	SW846 8260B	09/30/05 01:52	09/30/05	JHD	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	09/30/05 01:52	09/30/05	JHD	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	38.9	ug/L	130.0%	(50 - 152)
Dibromofluoromethane	34.9	ug/L	116.0%	(63 - 137)
Toluene-d8	35.4	ug/L	118.0%	(80 - 128)
4-Bromofluorobenzene	31.8	ug/L	106.0%	(76 - 125)

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

Alan J. Lopez
Laboratory Manager

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Certificate of Analysis

October 4, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
Suite 110
Exton, PA 19341

Lab ID #: **9626056005**
Received: 09/20/05 22:00
Discard: 10/18/05
Page: 6 Of 6

Project Name: **Sunoco Warminster, PA 610 Old York Road**
PO#: 02-02061-06-160-XX
Workorder ID: **Sun Warminster 610 Old York Rd**
COC Number:

Sample ID: **MW-7**
Matrix: Water
Date Collected: 09/20/05 10:05
Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	09/30/05 02:26	09/30/05	JHD	
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	09/30/05 02:26	09/30/05	JHD	
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	09/30/05 02:26	09/30/05	JHD	
Methyl t-Butyl Ether	ND	ug/L	1.0	SW846 8260B	09/30/05 02:26	09/30/05	JHD	
Naphthalene	ND	ug/L	2.0	SW846 8260B	09/30/05 02:26	09/30/05	JHD	
Toluene	ND	ug/L	1.0	SW846 8260B	09/30/05 02:26	09/30/05	JHD	
Total Xylenes	ND	ug/L	3.0	SW846 8260B	09/30/05 02:26	09/30/05	JHD	

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	37.9	ug/L	126.0%	(50 - 152)
Dibromofluoromethane	34	ug/L	113.0%	(63 - 137)
Toluene-d8	35.3	ug/L	118.0%	(80 - 128)
4-Bromofluorobenzene	32	ug/L	107.0%	(76 - 125)

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

Alan J. Lopez
Laboratory Manager

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

COC #: 96260526 of
ALSI Quote #:

Client Name: GES
Address: 410 Eagleview Blvd. Exton, PA 19341
Contact: Patrick Crawford
Phone#: 610-458-1077 ext. 169
Project Name/#: Sunoco Warminster
Bill To:

TAT: [✓] Normal-Standard TAT is 10-12 business days. [ ] Rush-Subject to ALSI approval and surcharges.
Date Required: _____ Approved By: _____
Email? [ ] -Y _____
Fax? [ ] -Y No.: _____

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	Container Type	Container Size	Preservative	BTEX, MTBE, Cumene, Naphthalene (8260B)	Enter Number of Containers Per Sample or Field Results Below.	Sample/COC Comments
1 MW-3	9/20/05	10:30	G	GW	CG	40mL	HCl		3	
2 MW-4	9/20/05	11:00	G	GW					3	
3 MW-5	9/20/05	10:50	G	GW					3	
4 MW-6	9/20/05	9:45	G	GW					3	
5 MW-7	9/20/05	10:05	G	GW					3	
6										
7										
8										
9										
10										

ANALYSES/METHOD REQUESTED

Receipt Information (completed by Receiving Lab)
Cooler Temp: _____ Cooler #: _____
Therm. ID _____

	Y	N
Custody Seals Present?		✓
(if present) Seals Intact?		
Received on Ice?	✓	
COC/Labels Agree?	✓	
Cont. In Good Cond.?	✓	
Correct Containers?	✓	
Correct Sample Volumes?	✓	
Correct Preservation?	✓	

Information concerning all nonconformance samples/containers shall be recorded on the COC.

Ship. Carrier: UPS / FedEx / DHL / (Other) FS
Tracking #: _____

ALSI Field Services: ☐Pickup ☐Labor ☐Composite Sampling ☐Rental Equipment ☐Other: _____

Project Comments:

Logged By (initials/date/time): CK 9/21/05 0024
Reviewed By (initials/date/time): JLK 9/21/05 1044

Data Deliverables: [ ] Standard [ ] CLP-like [ ] USACE [ ]
Special Processing: USACE [ ] Navy [ ]
State Samples Collected In: [ ] NY [ ] NJ [ ] PA [ ] NC [ ]
Reportable to PADEP? Yes [ ] PWSID # _____
Sample Disposal: Lab [ ] Special [ ]
EDDS: Format Type- _____

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Keith S. Martin	9/20/05		2 GES Fedex.	9-21-05	
3 [illegible]	9-20-05	11:05	4 JLA ALSI	9/21/05	1105
5 JLA ALSI	9/20/05	2200	6 Mark ALSI	9/20	2200
7			8		
9			10		

* G=Grab; C=Composite **Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

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Certificate of Analysis

November 15, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
Suite 110
Exton, PA 19341

Lab ID#: **9630078**

Project Name: **Sunoco Warminster, PA 610 Old York Road**
Workorder ID: **Sunoco Warminster 610 Old York**

PO#: 02-02061-06-160-XX

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A result of ND indicates that the analyte was Not Detected at the Reporting Detection Limit (RDL).

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Samples collected by ALSI personnel are done so in accordance with the procedures set forth in the ALSI Field Sampling Plan.

If you have any questions in reference to this laboratory report, please contact your ALSI project coordinator or the laboratory manager listed at the bottom of this report at 717-944-5541.

Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.

The Chain-of-Custody document is included as part of this report.

ALSI's webpage contains links to water quality documents on the internet. Visit us at www.analyticallab.com.

All wastewater analyses comply with methodology requirements of 40CFR Part 136. All drinking water analyses comply with methodology requirements of 40 CFR Part 141.

Note: This document is included as part of the Analytical Report and must be retained as a permanent record thereof.

Alan J. Lopez
Laboratory Manager

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Certificate of Analysis

November 15, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
Suite 110
Exton, PA 19341

Lab ID #: **9630078001**
Received: 10/28/05 20:45
Discard: 11/29/05

Project Name: **Sunoco Warminster, PA 610 Old York Road** PO#: 02-02061-06-160-XX
Workorder ID: **Sunoco Warminster 610 Old York** COC Number:

Sample ID: **MW-1** Matrix: Water
Date Collected: 10/28/05 09:20 Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	83.4	ug/L	5.0	SW846 8260B	11/09/05 17:36	11/09/05	KLM	A
Ethylbenzene	140	ug/L	5.0	SW846 8260B	11/09/05 17:36	11/09/05	KLM	A
Isopropylbenzene	22.2	ug/L	5.0	SW846 8260B	11/09/05 17:36	11/09/05	KLM	A
Methyl t-Butyl Ether	6330	ug/L	200	SW846 8260B	11/11/05 06:33	11/11/05	KLM	
Naphthalene	136	ug/L	10.0	SW846 8260B	11/09/05 17:36	11/09/05	KLM	A
Toluene	241	ug/L	5.0	SW846 8260B	11/09/05 17:36	11/09/05	KLM	A
Total Xylenes	812	ug/L	15.0	SW846 8260B	11/09/05 17:36	11/09/05	KLM	A

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	151	ug/L	100.0%	(50 - 152)
1,2-Dichloroethane-d4	4890	ug/L	81.4%	(50 - 152)
Dibromofluoromethane	131	ug/L	87.6%	(63 - 137)
Dibromofluoromethane	5470	ug/L	91.1%	(63 - 137)
Toluene-d8	164	ug/L	110.0%	(80 - 128)
Toluene-d8	6470	ug/L	108.0%	(80 - 128)
4-Bromofluorobenzene	135	ug/L	90.2%	(76 - 125)
4-Bromofluorobenzene	5850	ug/L	97.5%	(76 - 125)

Comments:
The GCMS volatiles analysis was performed at a dilution - due to the level of target compounds.

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

Alan J. Lopez
Laboratory Manager

ANALYTICAL LABORATORY SERVICES, INC.

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PA 22-293
NJ PA010 NY 11759

ACCREDITED IN ACCORDANCE WITH nelac

34 Dogwood Lane - Middletown, PA 17057 Phone: 717-944-5541 Fax: 717-944-1430

Certificate of Analysis

November 15, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
Suite 110
Exton, PA 19341

Lab ID #: **9630078002**
Received: 10/28/05 20:45
Discard: 11/29/05

Project Name: **Sunoco Warminster, PA 610 Old York Road** PO#: 02-02061-06-160-XX
Workorder ID: **Sunoco Warminster 610 Old York** COC Number:

Sample ID: **MW-2** Matrix: Water
Date Collected: 10/28/05 09:40 Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	76.7	ug/L	1.0	SW846 8260B	11/08/05 15:16	11/08/05	JHD	A
Ethylbenzene	195	ug/L	25.0	SW846 8260B	11/10/05 09:07	11/10/05	KLM	
Isopropylbenzene	80.8	ug/L	1.0	SW846 8260B	11/08/05 15:16	11/08/05	JHD	A
Methyl t-Butyl Ether	2750	ug/L	25.0	SW846 8260B	11/10/05 09:07	11/10/05	KLM	
Naphthalene	136	ug/L	2.0	SW846 8260B	11/08/05 15:16	11/08/05	JHD	A
Toluene	51.8	ug/L	1.0	SW846 8260B	11/08/05 15:16	11/08/05	JHD	A
Total Xylenes	67.3	ug/L	3.0	SW846 8260B	11/08/05 15:16	11/08/05	JHD	A

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	24	ug/L	79.9%	(50 - 152)
1,2-Dichloroethane-d4	737	ug/L	98.3%	(50 - 152)
Dibromofluoromethane	23.3	ug/L	77.7%	(63 - 137)
Dibromofluoromethane	723	ug/L	96.4%	(63 - 137)
Toluene-d8	32.3	ug/L	108.0%	(80 - 128)
Toluene-d8	815	ug/L	109.0%	(80 - 128)
4-Bromofluorobenzene	29.4	ug/L	98.1%	(76 - 125)
4-Bromofluorobenzene	715	ug/L	95.4%	(76 - 125)

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

Alan J. Lopez
Laboratory Manager

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Certificate of Analysis

November 15, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
Suite 110
Exton, PA 19341

Lab ID #: **9630078003**
Received: 10/28/05 20:45
Discard: 11/29/05

Project Name: **Sunoco Warminster, PA 610 Old York Road** PO#: 02-02061-06-160-XX
Workorder ID: **Sunoco Warminster 610 Old York** COC Number:

Sample ID: **MW-3** Matrix: Water
Date Collected: 10/28/05 10:15 Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	3.1	ug/L	1.0	SW846 8260B	11/08/05 15:45	11/08/05	JHD	A
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	11/08/05 15:45	11/08/05	JHD	A
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	11/08/05 15:45	11/08/05	JHD	A
Methyl t-Butyl Ether	749	ug/L	10.0	SW846 8260B	11/10/05 09:36	11/10/05	KLM	
Naphthalene	9.0	ug/L	2.0	SW846 8260B	11/08/05 15:45	11/08/05	JHD	A
Toluene	2.2	ug/L	1.0	SW846 8260B	11/08/05 15:45	11/08/05	JHD	A
Total Xylenes	26.0	ug/L	3.0	SW846 8260B	11/08/05 15:45	11/08/05	JHD	A

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	25.1	ug/L	83.7%	(50 - 152)
1,2-Dichloroethane-d4	304	ug/L	101.0%	(50 - 152)
Dibromofluoromethane	24.8	ug/L	82.5%	(63 - 137)
Dibromofluoromethane	290	ug/L	96.8%	(63 - 137)
Toluene-d8	33	ug/L	110.0%	(80 - 128)
Toluene-d8	324	ug/L	108.0%	(80 - 128)
4-Bromofluorobenzene	28.8	ug/L	95.8%	(76 - 125)
4-Bromofluorobenzene	290	ug/L	96.6%	(76 - 125)

Comments:

In the 8260 analysis, MTBE, benzene, and naphthalene were recovered outside quality control criteria in the MS/MSD of this sample. The LCS had acceptable recoveries, satisfying method criteria.
A positive result for oxidant was obtained for this sample - utilizing a HACH test kit. It is recommended that subsequent - sampling events utilize a dechlorination agent if oxidant is - determined to be present. Ref:SW-846 Methodology Table 4.1

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

Alan J. Lopez
Laboratory Manager

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Certificate of Analysis

November 15, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
Suite 110
Exton, PA 19341

Lab ID #: **9630078004**
Received: 10/28/05 20:45
Discard: 11/29/05

Project Name: **Sunoco Warminster, PA 610 Old York Road** PO#: 02-02061-06-160-XX
Workorder ID: **Sunoco Warminster 610 Old York** COC Number:

Sample ID: **MW-4** Matrix: Water
Date Collected: 10/28/05 10:00 Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	11/08/05 16:14	11/08/05	JHD	A
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	11/08/05 16:14	11/08/05	JHD	A
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	11/08/05 16:14	11/08/05	JHD	A
Methyl t-Butyl Ether	89.6	ug/L	1.0	SW846 8260B	11/08/05 16:14	11/08/05	JHD	A
Naphthalene	ND	ug/L	2.0	SW846 8260B	11/08/05 16:14	11/08/05	JHD	A
Toluene	ND	ug/L	1.0	SW846 8260B	11/08/05 16:14	11/08/05	JHD	A
Total Xylenes	ND	ug/L	3.0	SW846 8260B	11/08/05 16:14	11/08/05	JHD	A

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	25.6	ug/L	85.4%	(50 - 152)
Dibromofluoromethane	24.3	ug/L	81.1%	(63 - 137)
Toluene-d8	33.1	ug/L	110.0%	(80 - 128)
4-Bromofluorobenzene	29	ug/L	96.6%	(76 - 125)

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Alan J. Lopez
Laboratory Manager

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Certificate of Analysis

November 15, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
Suite 110
Exton, PA 19341

Lab ID #: **9630078005**
Received: 10/28/05 20:45
Discard: 11/29/05

Project Name: **Sunoco Warminster, PA 610 Old York Road**
PO#: 02-02061-06-160-XX
Workorder ID: **Sunoco Warminster 610 Old York**
COC Number:

Sample ID: **MW-5**
Matrix: Water
Date Collected: 10/28/05 09:56
Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	11/08/05 16:43	11/08/05	JHD	A
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	11/08/05 16:43	11/08/05	JHD	A
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	11/08/05 16:43	11/08/05	JHD	A
Methyl t-Butyl Ether	648	ug/L	10.0	SW846 8260B	11/10/05 10:05	11/10/05	KLM	
Naphthalene	ND	ug/L	2.0	SW846 8260B	11/08/05 16:43	11/08/05	JHD	A
Toluene	ND	ug/L	1.0	SW846 8260B	11/08/05 16:43	11/08/05	JHD	A
Total Xylenes	4.1	ug/L	3.0	SW846 8260B	11/08/05 16:43	11/08/05	JHD	A

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	25.2	ug/L	83.8%	(50 - 152)
1,2-Dichloroethane-d4	300	ug/L	99.9%	(50 - 152)
Dibromofluoromethane	24.3	ug/L	80.9%	(63 - 137)
Dibromofluoromethane	294	ug/L	98.1%	(63 - 137)
Toluene-d8	33.3	ug/L	111.0%	(80 - 128)
Toluene-d8	329	ug/L	110.0%	(80 - 128)
4-Bromofluorobenzene	28.3	ug/L	94.4%	(76 - 125)
4-Bromofluorobenzene	293	ug/L	97.7%	(76 - 125)

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Alan J. Lopez
Laboratory Manager

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Certificate of Analysis

November 15, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
Suite 110
Exton, PA 19341

Lab ID #: **9630078006**
Received: 10/28/05 20:45
Discard: 11/29/05
Page: 7 Of 8

Project Name: **Sunoco Warminster, PA 610 Old York Road**
PO#: 02-02061-06-160-XX
Workorder ID: **Sunoco Warminster 610 Old York**
COC Number:

Sample ID: **MW-6**
Matrix: Water
Date Collected: 10/28/05 10:14
Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	11/08/05 17:12	11/08/05	JHD	A
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	11/08/05 17:12	11/08/05	JHD	A
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	11/08/05 17:12	11/08/05	JHD	A
Methyl t-Butyl Ether	13.8	ug/L	1.0	SW846 8260B	11/08/05 17:12	11/08/05	JHD	A
Naphthalene	ND	ug/L	2.0	SW846 8260B	11/08/05 17:12	11/08/05	JHD	A
Toluene	ND	ug/L	1.0	SW846 8260B	11/08/05 17:12	11/08/05	JHD	A
Total Xylenes	ND	ug/L	3.0	SW846 8260B	11/08/05 17:12	11/08/05	JHD	A

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	25.2	ug/L	83.9%	(50 - 152)
Dibromofluoromethane	24.2	ug/L	80.8%	(63 - 137)
Toluene-d8	34	ug/L	113.0%	(80 - 128)
4-Bromofluorobenzene	28.2	ug/L	94.0%	(76 - 125)

Comments:

A positive result for oxidant was obtained for this sample - utilizing a HACH test kit. It is recommended that subsequent - sampling events utilize a dechlorination agent if oxidant is - determined to be present. Ref:SW-846 Methodology Table 4.1

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

Alan J. Lopez
Laboratory Manager

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Certificate of Analysis

November 15, 2005

Pat Crawford
Groundwater Environmental Serv
410 Eagleview Boulevard
Suite 110
Exton, PA 19341

Lab ID #: **9630078007**
Received: 10/28/05 20:45
Discard: 11/29/05

Project Name: **Sunoco Warminster, PA 610 Old York Road** PO#: 02-02061-06-160-XX
Workorder ID: **Sunoco Warminster 610 Old York** COC Number:

Sample ID: **MW-7** Matrix: Water
Date Collected: 10/28/05 09:28 Collected by: Collected by Customer

Analysis Parameter	Result	Units	RDL	Method	Completed	Prep Date	By	Cntr
VOLATILE ORGANICS								
Benzene	ND	ug/L	1.0	SW846 8260B	11/08/05 17:41	11/08/05	JHD	A
Ethylbenzene	ND	ug/L	1.0	SW846 8260B	11/08/05 17:41	11/08/05	JHD	A
Isopropylbenzene	ND	ug/L	1.0	SW846 8260B	11/08/05 17:41	11/08/05	JHD	A
Methyl t-Butyl Ether	60.8	ug/L	1.0	SW846 8260B	11/08/05 17:41	11/08/05	JHD	A
Naphthalene	ND	ug/L	2.0	SW846 8260B	11/08/05 17:41	11/08/05	JHD	A
Toluene	1.7	ug/L	1.0	SW846 8260B	11/08/05 17:41	11/08/05	JHD	A
Total Xylenes	ND	ug/L	3.0	SW846 8260B	11/08/05 17:41	11/08/05	JHD	A

Surrogates	Result	Units	Recovery	Limits
1,2-Dichloroethane-d4	24.4	ug/L	81.2%	(50 - 152)
Dibromofluoromethane	24.3	ug/L	81.0%	(63 - 137)
Toluene-d8	32.7	ug/L	109.0%	(80 - 128)
4-Bromofluorobenzene	29.2	ug/L	97.4%	(76 - 125)

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

Alan J. Lopez
Laboratory Manager

9630078 Serial Number

Analytical Labs

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Analytical Labs
Scott Brunk
Customer Service Rep

Project Name:	GES Project Number:	
Sunoco: Warminster, PA	02-02061-06-160-XX	
610 Old York Road	Contract No.: Sunoco GW	
GES Project / Case Manager: Patrick Crawford / Susan Cameron	Client Phone: 610 458-1077, extension 169	Client Fax: 610 458-2300
Client Name: Groundwater & Environmental Services, Inc.	Client E-mail: pcrawford@gesonline.com	
Client Address: 410 Eagleview Blvd., Suite 110, Exton PA 19341		

Page 1 of 1

STANDARD REPORT DELIVERY ( )
DATE DUE

EXPEDITED REPORT DELIVERY (SURCHARGE) ( )
DATE DUE

NUMBER OF COOLERS SUBMITTED PER SHIPMENT:

SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION	MATRIX TYPE: COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT...)	REQUIRED ANALYSES: BTEX, MTBE, Cumene, Naphthalene (8260B) 40 ml vials	EDB (504) 40 ml vials	TPH (Amber Bottles)	Diss Lead (6020) 500 ml plastic								PRESERVATIVE
								HCL	Na2S2O3	HCL	None								
								NUMBER OF CONTAINERS SUBMITTED											REMARKS
10/28/05	9:20	MW-1		x				3											Detection Limits Must Meet PADEP SHS
10/28/05	9:40	MW-2		x				3											
10/28/05	10:15	MW-3		x				3											
10/28/05	10:00	MW-4		x				3											
10/28/05	9:56	MW-5		x				3											
10/28/05	10:14	MW-6		x				3											
10/28/05	9:28	MW-7		x				3											

	Y	N	Initials
Custody Seals Present?			MT
(If present) Seals Intact?			
Received on Ice?	✓		
COC/Labels Complete/Accurate	✓		
Cont in Good Cond?	✓		
Correct Containers?	✓		
Correct Sample Volumes?	✓		
Correct Preservation?	✓		
Headspace/Volatiles?			

Cooler Temp:
Cooler #:
Therm ID:
Ship Carrier: FedEx UPS DHL Other: FS
Tracking #:

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
Chris Wheaton	10/28/05	11:30		10-28-05	13:35		10/28/05	
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
GES Fridge	10/28/05	11:30	ACSI	10/28/05	1335	ACSI	10/28	2045

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES ( ) NO ( )	CUSTODY SEAL NO.	STL LOG NO.	LABORATORY REMARKS:
						ENTERED 10/28/05 2145

FCU036:12.20.00:2

Original - Return to Laboratory with Sample(s)

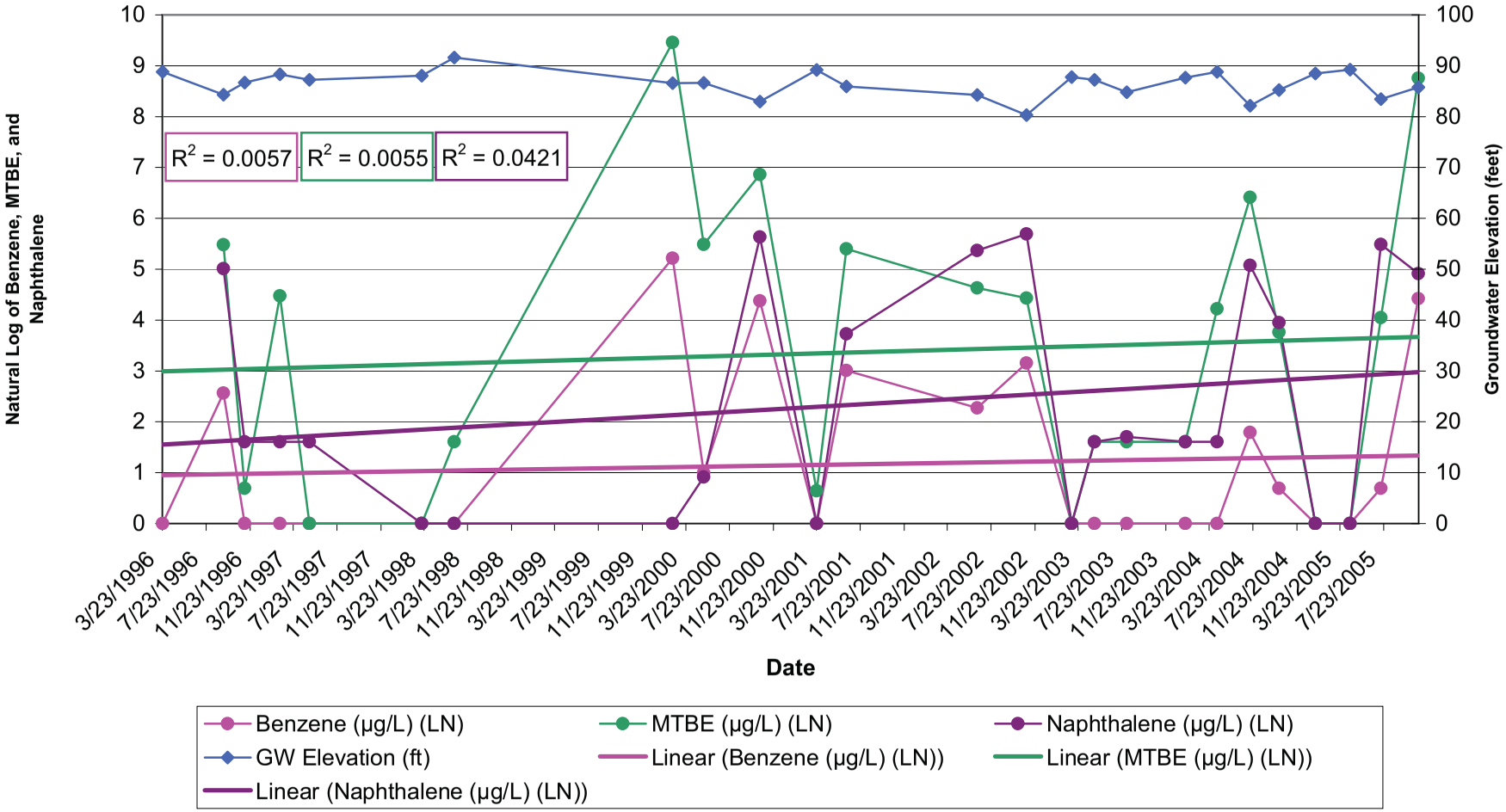
APPENDIX H

HYDROCARBON TREND GRAPHS

ALL HISTORICAL DATA

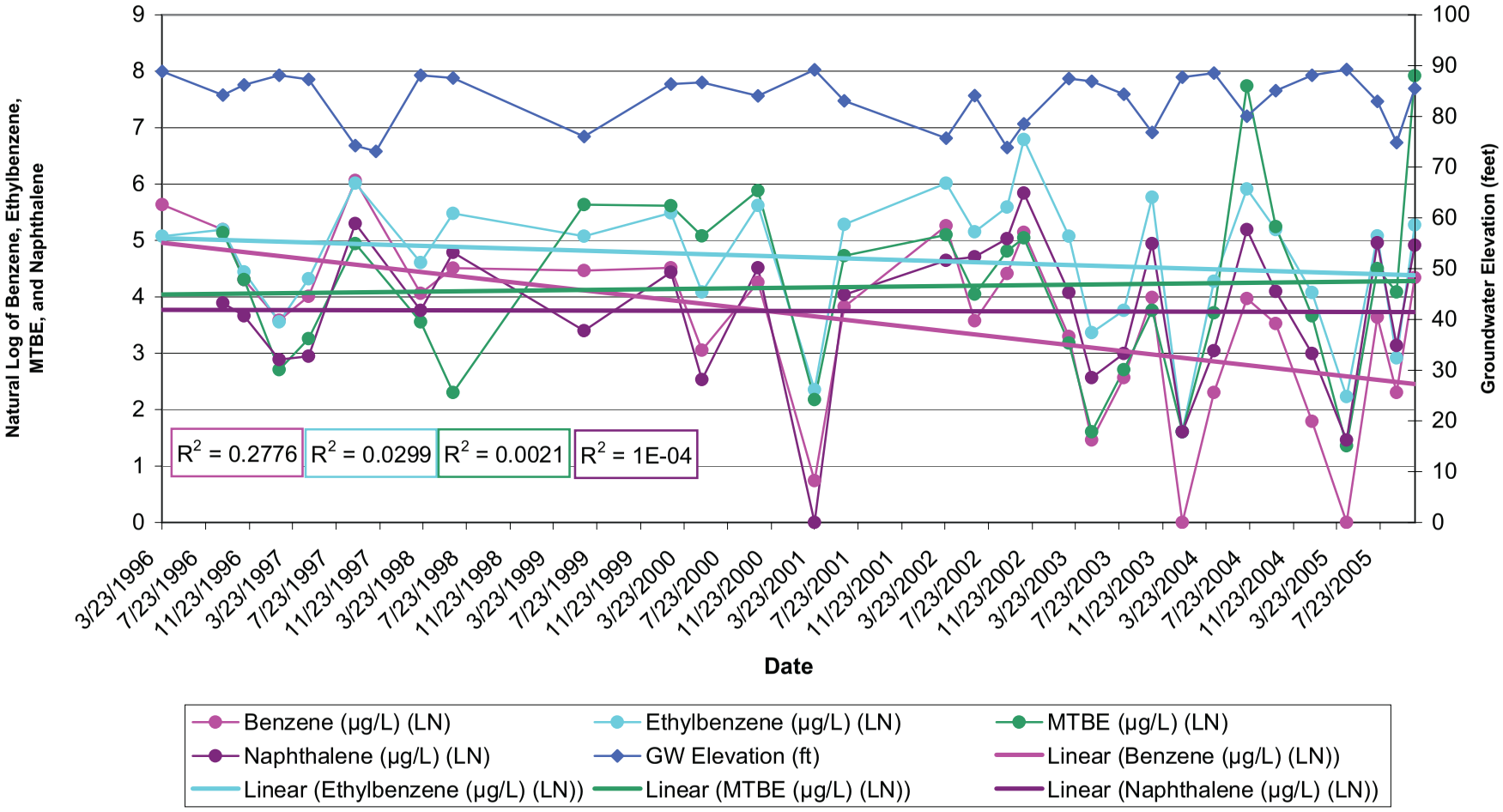
Sunoco Station #0363-5430
610 Old York Road, Warminster, PA

Groundwater Elevation and Natural Log of Benzene, MTBE, and Naphthalene in MW-1 over Time



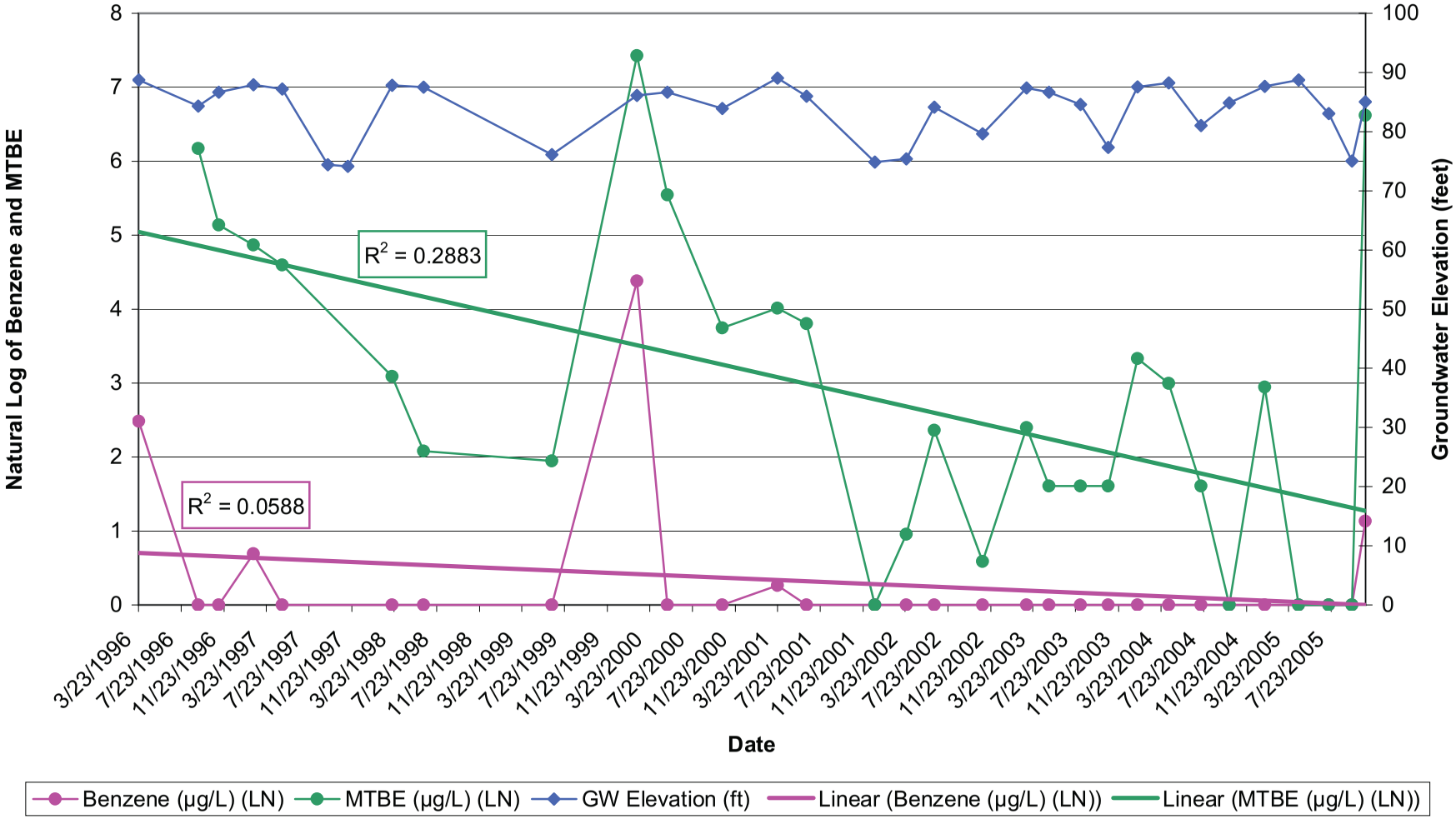
Sunoco Station #0363-5430
610 Old York Road, Warminster, PA

Groundwater Elevation and Natural Log of Benzene, Ethylbenzene, MTBE, and Naphthalene in MW-2 over Time



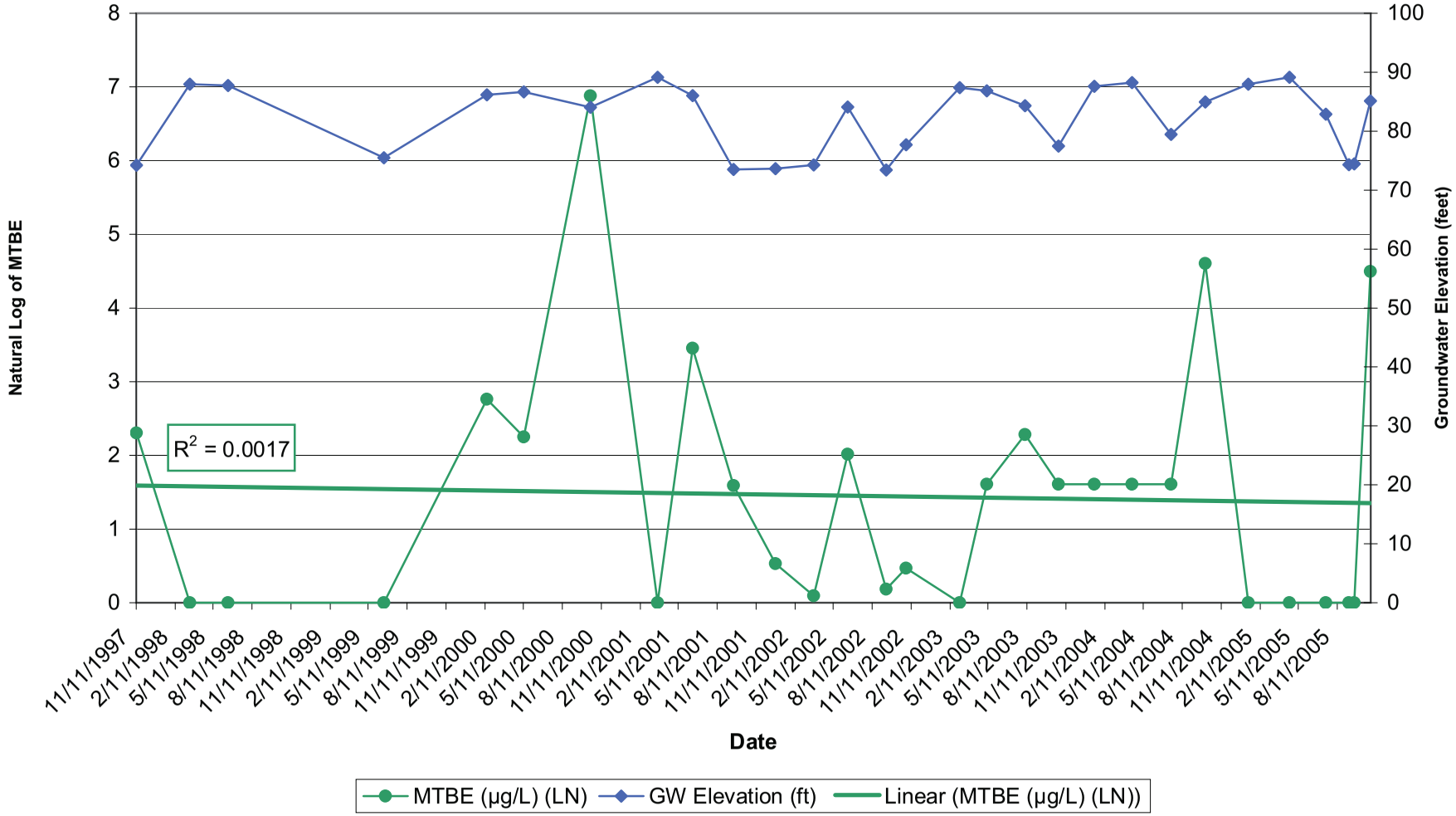
Sunoco Station #0363-5430
610 Old York Road, Warminster, PA

Groundwater Elevation and Natural Log of Benzene and MTBE in MW-3 over Time



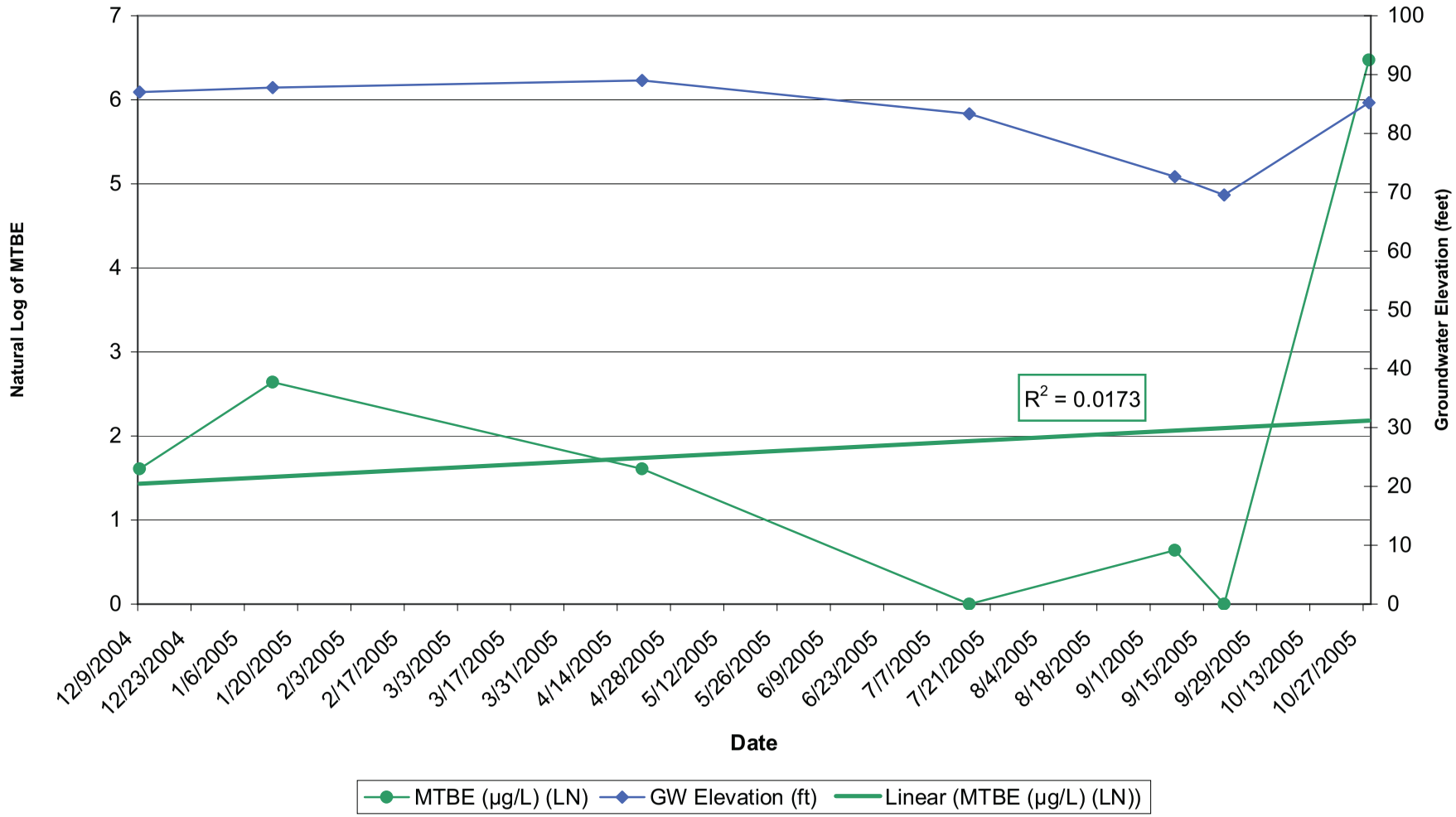
Sunoco Station #0363-5430
610 Old York Road, Warminster, PA

Groundwater Elevation and Natural Log of MTBE in MW-4 over Time



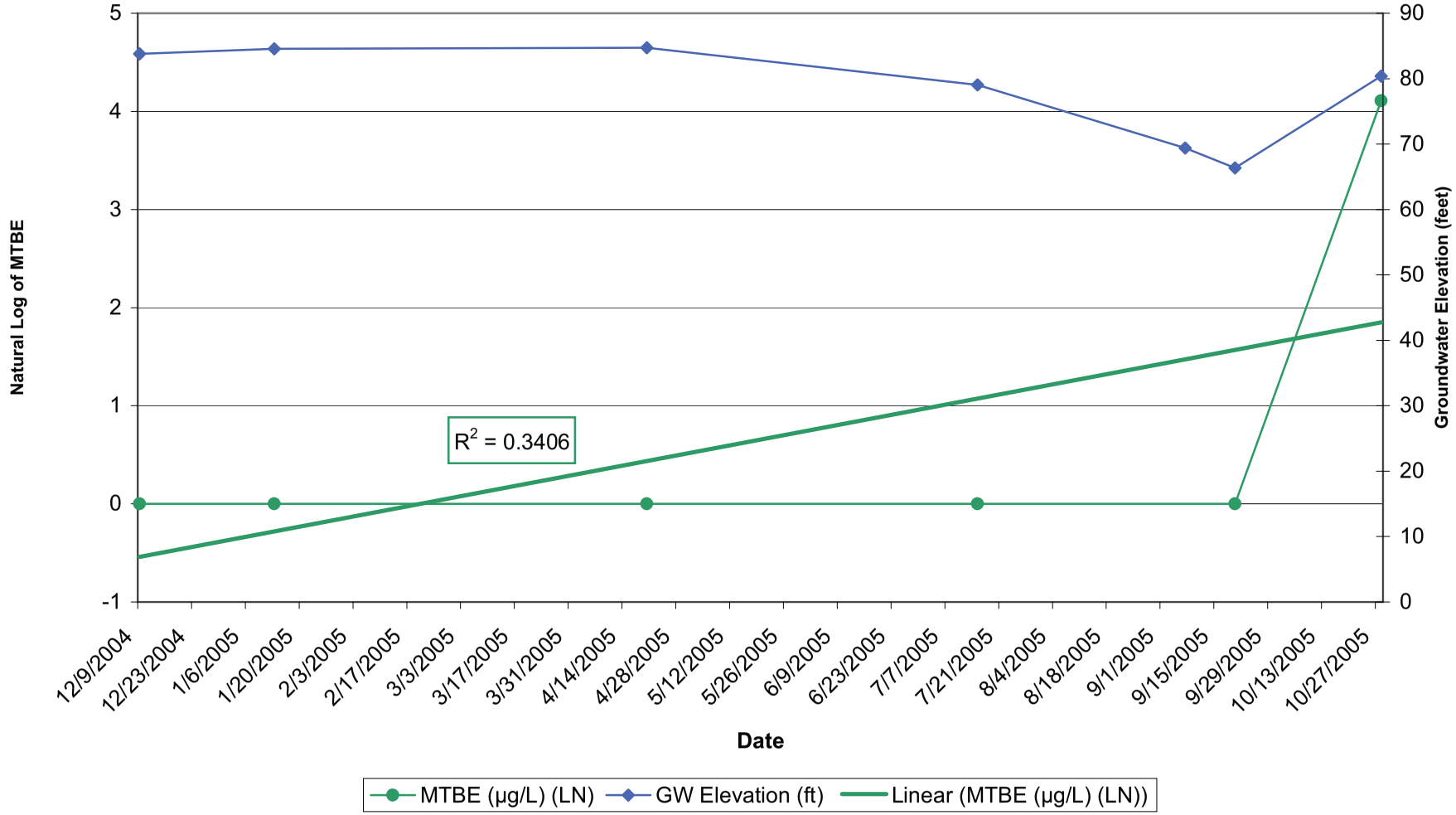
Sunoco Station #0363-5430
610 Old York Road, Warminster, PA

Groundwater Elevation and Natural Log of MTBE in MW-5 over Time



Sunoco Station #0363-5430
610 Old York Road, Warminster, PA

Groundwater Elevation and Natural Log of MTBE in MW-7 over Time

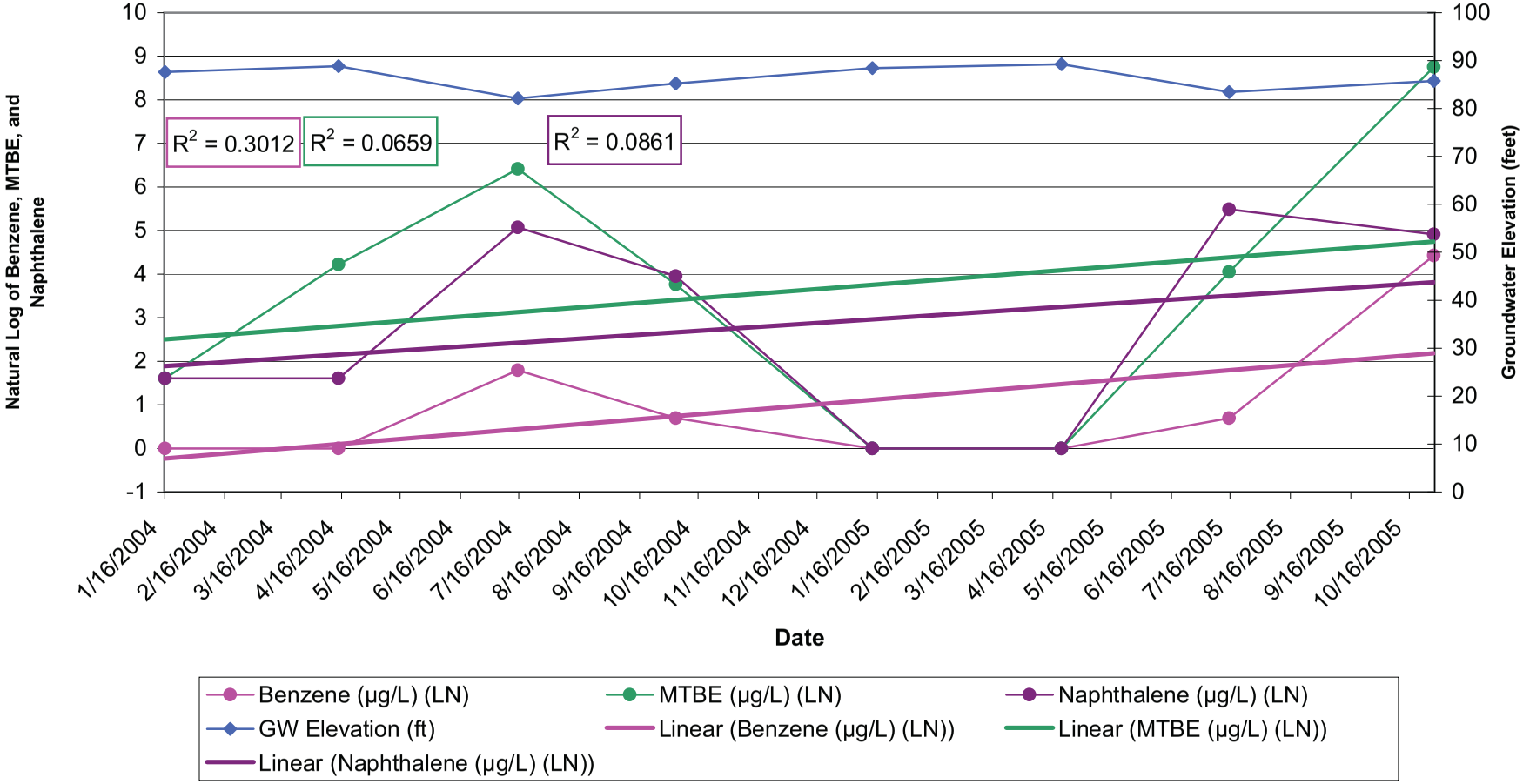


GES

MOST RECENT EIGHT QUARTERS

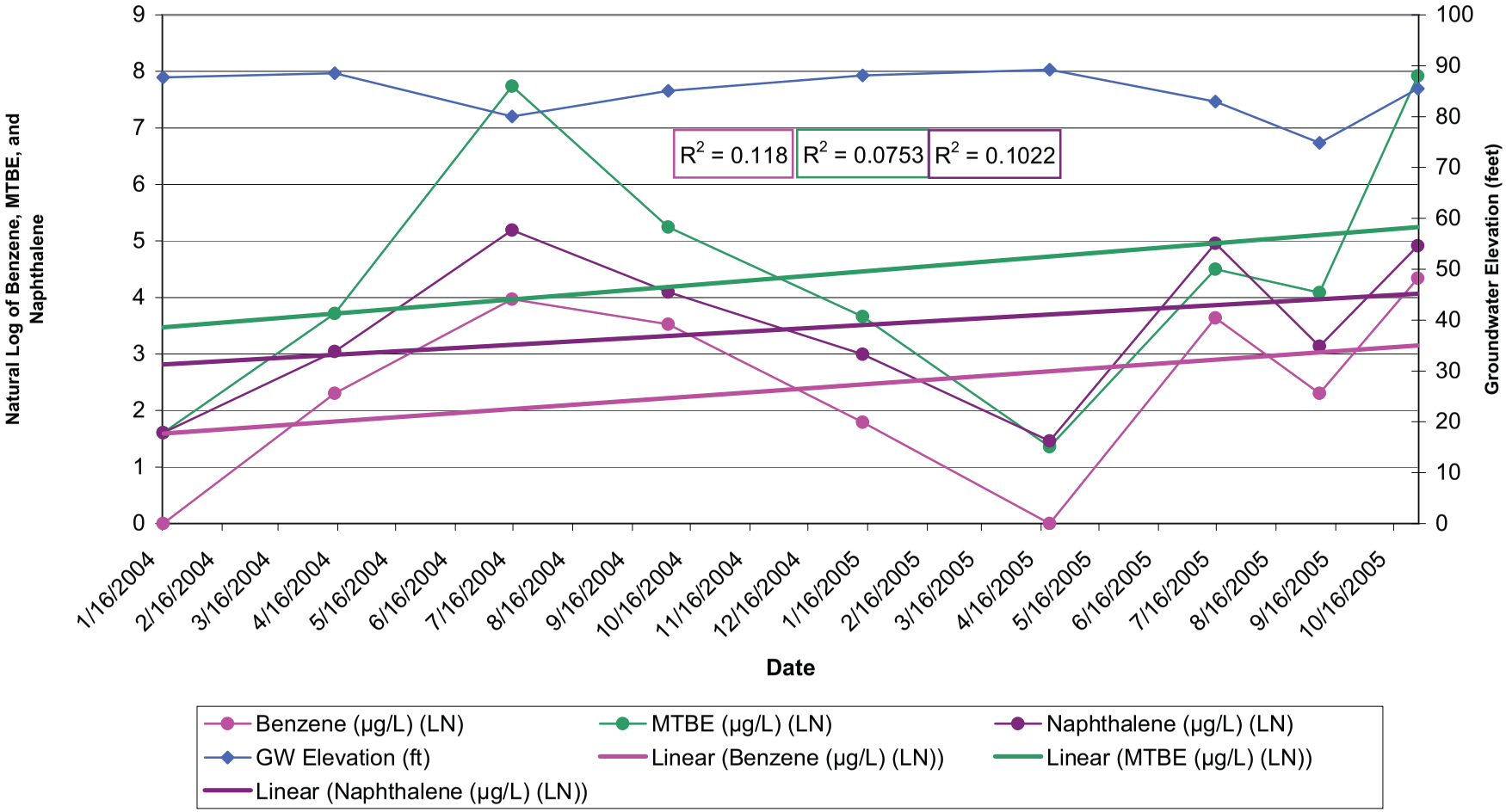
Sunoco Station #0363-5430
610 Old York Road, Warminster, PA

Groundwater Elevation and Natural Log of Benzene, MTBE, and Naphthalene in MW-1 January 2004 through October 2005



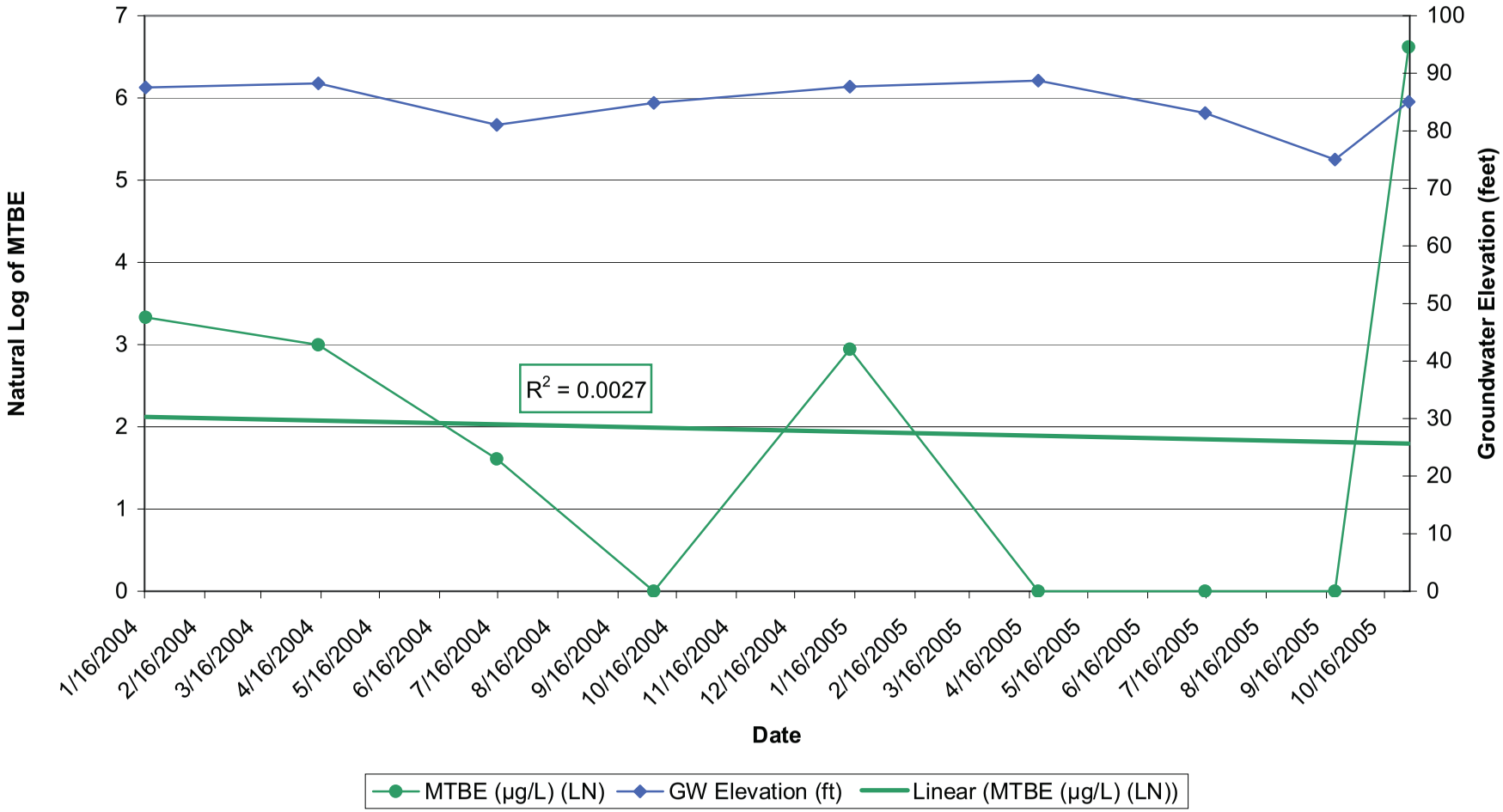
Sunoco Station #0363-5430
610 Old York Road, Warminster, PA

Groundwater Elevation and Natural Log of Benzene, MTBE, and Naphthalene in MW-2
January 2004 through October 2005



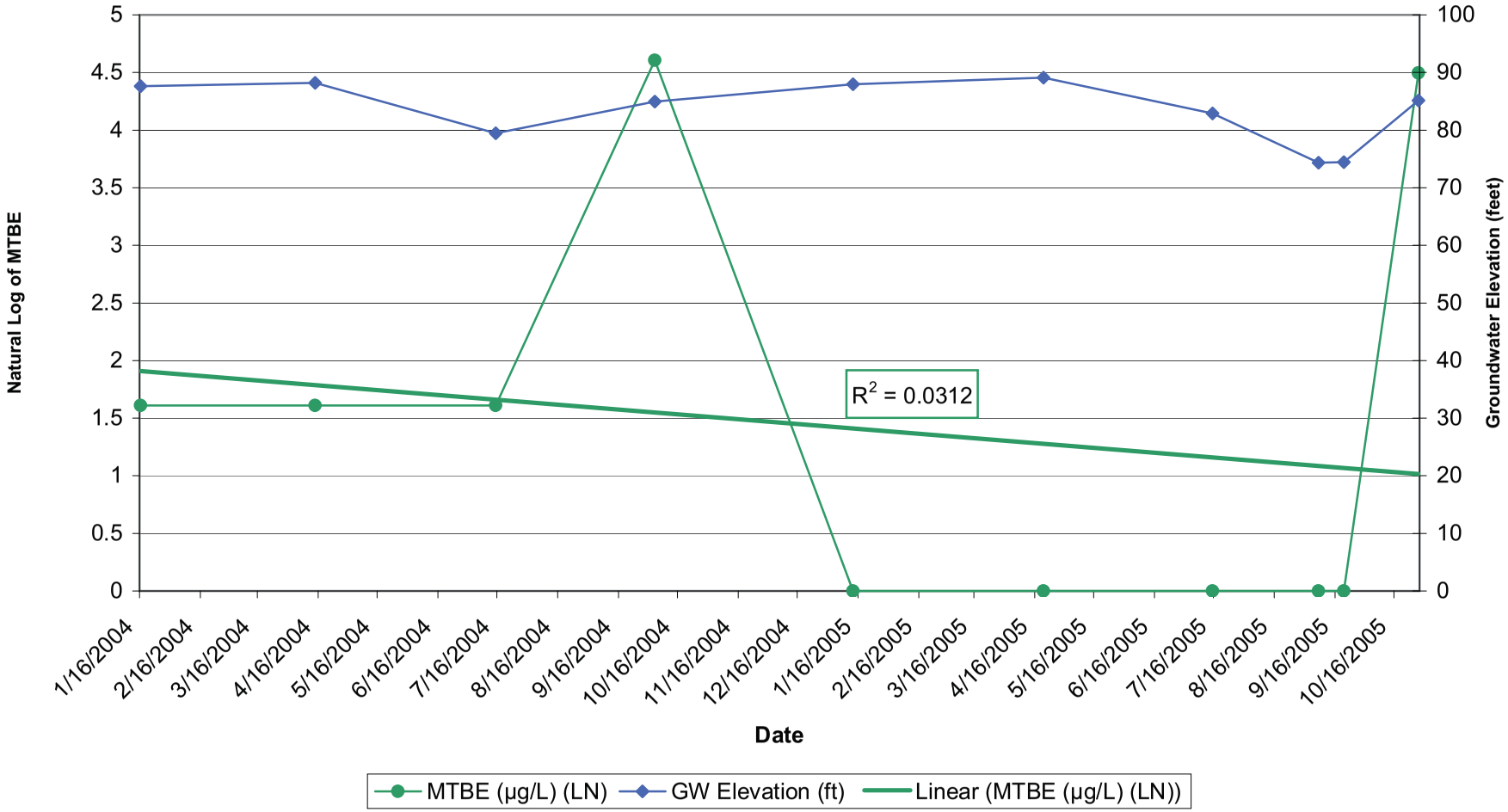
Sunoco Station #0363-5430
610 Old York Road, Warminster, PA

Groundwater Elevation and Natural Log of MTBE in MW-3
January 2004 through October 2005



Sunoco Station #0363-5430
610 Old York Road, Warminster, PA

Groundwater Elevation and Natural Log of MTBE in MW-4
January 2004 through October 2005



APPENDIX I

FATE AND TRANSPORT MODELING REPORT BY ES&T

Fate and Transport Modeling
for Sunoco Station #0363-5430
610 Old York Road
Warminster, Pennsylvania

prepared for

Groundwater & Environmental Services, Inc.
410 Eagleview Blvd., Suite 110
Exton, Pennsylvania 19341

by

Environmental Systems & Technologies
A Division of Groundwater & Environmental Services, Inc.
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1300319-02
December 2005

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1. Introduction

The following provides an overview of the approach and results of fate and transport modeling conducted for the Sunoco Station #0363-5430 located at 610 Old York Road in Warminster, Pennsylvania. The purpose of the modeling is to evaluate the migration potential of dissolved phase constituents observed in groundwater at the site. The modeling activities involved a review of site data, conceptual model development, model selection, model construction, and model simulations. Details of the site conceptualization, modeling analyses, and results are described in the following sections.

2. Fate and Transport Analyses

Fate and transport modeling was conducted to evaluate the migration potential of dissolved phase hydrocarbons from the site and was based on site-specific data. The modeling effort concentrated on the dissolved hydrocarbon constituent concentrations over the last twelve quarters of sampling. Any analyzed constituent that has had an exceedance of the Pennsylvania Department of Environmental Protection Act II Statewide Health Standards (PADEP SHS) within the last twelve quarters was simulated in the modeling effort. Benzene, methyl tert-butyl ether (MTBE), and naphthalene are the only constituents to have exceeded the PADEP SHS during that time. Therefore, these constituents were evaluated in the modeling effort.

2.1 Site Conceptualization

The facility is located on the northwest corner of the intersection of Old York Road and Street Road in Warminster, Pennsylvania, approximately 1.7 miles south of Neshaminy Creek. The nearest surface water body, in the direction of flow, is Neshaminy Creek.

Seven monitoring wells (MW-1 through MW-7) have been installed at the facility. Monitoring well locations and facility features are shown on Figure 1. Groundwater sampling and monitoring activities have been conducted at the site since March 1996. Light non-aqueous phase liquid (LNAPL) has never been detected at the site; therefore, a continuing source will not be simulated in the modeling effort. Groundwater elevations at the site indicate groundwater flow to the north with an average gradient of 0.003.

Groundwater samples have been analyzed for benzene, toluene, ethylbenzene, xylenes, MTBE, isopropyl benzene, and naphthalene. Dissolved benzene, MTBE, and naphthalene are the only constituents that have exceeded the PADEP SHS in the last twelve quarters of sampling, therefore, these constituents were simulated in the modeling effort.

2.2 Model Selection

Numerical modeling of dissolved phase hydrocarbon fate and transport was conducted using the model BIOTRANS. BIOTRANS is a two-dimensional, finite element model that considers convective-dispersive transport, adsorption, and decay for multiple hydrocarbon constituents in

either porous or fractured media. Transport of dissolved species is simulated by solving the two-dimensional, vertically averaged convective-dispersive-reactive equation. The model utilizes steady-state velocity fields that represent average flow conditions. Analyses using BIOTRANS have been previously submitted and accepted by the U.S. EPA and state regulatory agencies. A detailed description of BIOTRANS is available in ES&T (1996).

2.3 Model Construction

The model domain covers an area of approximately 176,000 square feet, encompassing the site and surrounding downgradient areas to enable simulation of potential off-site dissolved migration. The finite element mesh contains 7,056 quadrilateral elements with a nodal spacing of 5 feet. The extent of the model domain and the finite element mesh are depicted in Figure 2. The model simulation was performed for 30 years to predict migration potential.

In the modeling effort, input parameter values were defined from site data whenever possible. When site-specific data were not available, literature values were utilized to define model input values. The following describes the input parameters and the values applied in the modeling effort.

Dissolved Species – Benzene, MTBE, and naphthalene were the constituents of concern considered in the model. For each constituent, the model requires molecular weight, pure phase solubility, and an adsorption coefficient. First-order decay was considered. The soil-water distribution coefficient, K_d, was calculated as the product of f_{oc} and K_{oc}, where f_{oc} represents the organic carbon content of the aquifer material, and K_{oc} is the organic carbon partition coefficient. No site-specific f_{oc} measurements were available, thus a conservative value of 0.005 was applied in the model. K_{oc} is chemical specific and describes the ratio of the amount of constituent adsorbed per unit weight of organic carbon in the aquifer material to the concentration in aqueous solution. The K_{oc} values utilized in the model were selected from Appendix A, Table 5, of the Act 2 regulations (PADEP, 2003). A first-order decay constant was also applied in the model (PADEP, 2003). Table 1 provides the chemical properties for benzene, MTBE, and naphthalene used in the modeling analyses.

Table 1. Chemical Properties Applied in the Modeling.

Parameter	Benzene	MTBE	Naphthalene	Units
Molecular weight[1]	78.11	8.15	128.17	g/mole
Solubility[2]	1,780	45,000	30	mg/L
K_{oc}[2]	58	12	950	cm^3/g
K_d	0.29	0.06	4.75	cm^3/g
First-order decay rate[2]	0.00096	0.0019	0.0027	d^{-1}

[1]http://chemfinder.cambridgesoft.com/
[2]Pa. Code § 250 (Appendix A, Table 5)

Initial Concentrations – The maximum benzene, MTBE, and naphthalene concentrations measured at all wells over the last twelve quarters were used as the initial concentration distributions in the model (Figures 3 through 5). Utilization of the maximum measured concentration distributions result in the most conservative estimate of dissolved-phase fate and transport.

Porosity – Total porosity is the ratio of void volume to total volume in the aquifer. A porosity value of 0.10 was utilized in the modeling effort. This value is representative of the competent shale bedrock encountered in borings at the facility (Freeze and Cherry, 1979).

Soil Bulk Density – The soil bulk density (ρ_b) is the mass of dry soil relative to the bulk soil volume. Bulk density can be calculated using porosity (Φ) and assuming a particle density of 2.65 g/cm^3, which is typical for a quartz, as

$$\rho_b = (1-\Phi) * 2.65 \text{ g/cm}^3$$

The bulk density applied in the modeling is 2.39 g/cm^3.

Longitudinal and Transverse Dispersivity – Hydrodynamic dispersion is the term applied to the combined effects of mechanical dispersion and molecular diffusion in causing a plume to spread within a groundwater system. For this modeling effort, the longitudinal and transverse dispersivities were conservatively estimated as 4 feet and 0.4 feet, respectively.

Groundwater Flow – Groundwater flow representative of measured site conditions was simulated in the modeling effort. A steady-state, uniform flow field was generated considering site hydrologic conditions. Measured groundwater elevations at the site indicate flow toward the northern portion of the facility, with a hydraulic gradient of 0.003. This hydraulic gradient was determined to represent average flow conditions across the site and in the offsite area. Hydraulic conductivity within the aquifer was estimated at 0.001 feet/day based on the competent shale bedrock encountered in borings at the facility (Freeze and Cherry, 1979). The aquifer thickness was assumed to be 85 feet based on the maximum well depth and average water table elevations at the site.

2.4 Modeling Results

Results of the modeling effort indicate that the combined effects of degradation, dispersion, and adsorption act to reduce benzene, MTBE, and naphthalene concentrations over time. Benzene concentrations are predicted to remain above the PADEP SHS of 5 µg/L for the entire 30 year simulation. No dissolved benzene migration is predicted. Predicted benzene concentrations at 5, 10, 15, 20 and 30 years are shown on Figure 3. The maximum benzene concentration in the plume at 5, 10, 15, 20 and 30 years is predicted to be 60.6 µg/L; 49.4 µg/L; 40.3 µg/L; 32.9 µg/L and 22.0 µg/L; respectively. MTBE concentrations are predicted to decrease to below the PADEP SHS of 20 µg/L between 22 and 23 years. No offsite migration beyond the initial MTBE plume extent is predicted. The initial and model-predicted MTBE concentration distributions are shown on Figure 4. The maximum MTBE concentration in the plume at 5, 10, 15 and 20 years is predicted to be 1516.9 µg/L, 420.5 µg/L, 126.4 µg/L and 43.1 µg/L; respectively. Dissolved naphthalene concentrations are predicted remain above the PADEP SHS of 100 µg/L for the

entire 30 year simulation. The initial and model-predicted naphthalene concentration distributions are shown on Figure 5. Offsite migration of dissolved naphthalene concentrations are not predicted. The maximum naphthalene concentration in the plume at 5, 10, 15, 20 and 30 years is predicted to be 203.8 µg/L; 195.9 µg/L; 188.3 µg/L; 181.0 µg/L and 167.23 µg/L; respectively.

3. Summary and Conclusions

Fate and transport modeling has been conducted utilizing current and historical data collected at the site. Site-specific input parameter values were defined from site data whenever possible. The initial concentrations utilized in the model represent the maximum concentrations observed during the most recent eight quarters of sampling.

Model results indicate that benzene concentrations above the PADEP SHS of 5 µg/L persist for the entire 30-year simulation with no off-site migration predicted. Dissolved MTBE concentrations above the PADEP SHS of 20 µg/L are predicted to remain at the site for 22 to 23 years with no additional migration beyond the initial concentration distribution. Dissolved naphthalene concentrations above the PADEP SHS of 100 µg/L are predicted to persist for at least 30 years. No off-site migration of naphthalene concentrations is predicted.

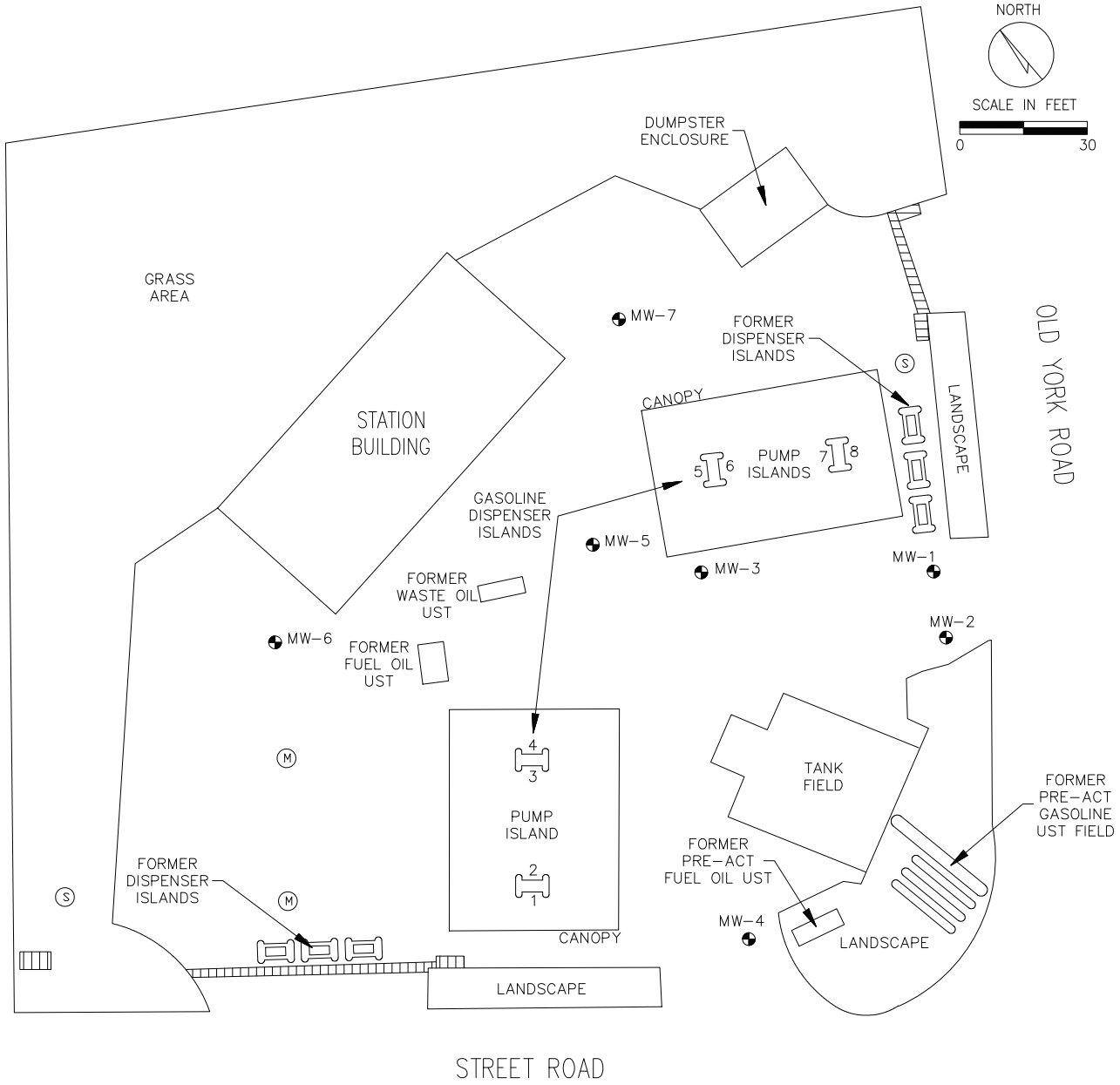
4. References

ChemFinder. Chemical Properties Database. http://chemfinder.cambridgesoft.com/

ES&T. 1996. *BIOTRANS, Areal Dissolved Phase Transport Model for Organic Chemical Spills with Natural or Enhanced Bioremediation, User and Technical Guide*. Environmental Systems & Technologies, Blacksburg, VA.

Freeze, R.A. and J.A. Cherry. 1979. *Groundwater*, Prentice-Hall, Inc., Englewood Cliffs, NJ.

PADEP. 2003. Pennsylvania Bulletin Online.
http://www.pacode.com/secure/data/025/chapter250/chap250toc.html



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Date:	12/19/2005
Drafter:	WMG
Approved:	JWW

Figure 1. Site map showing facility features and monitoring well locations.

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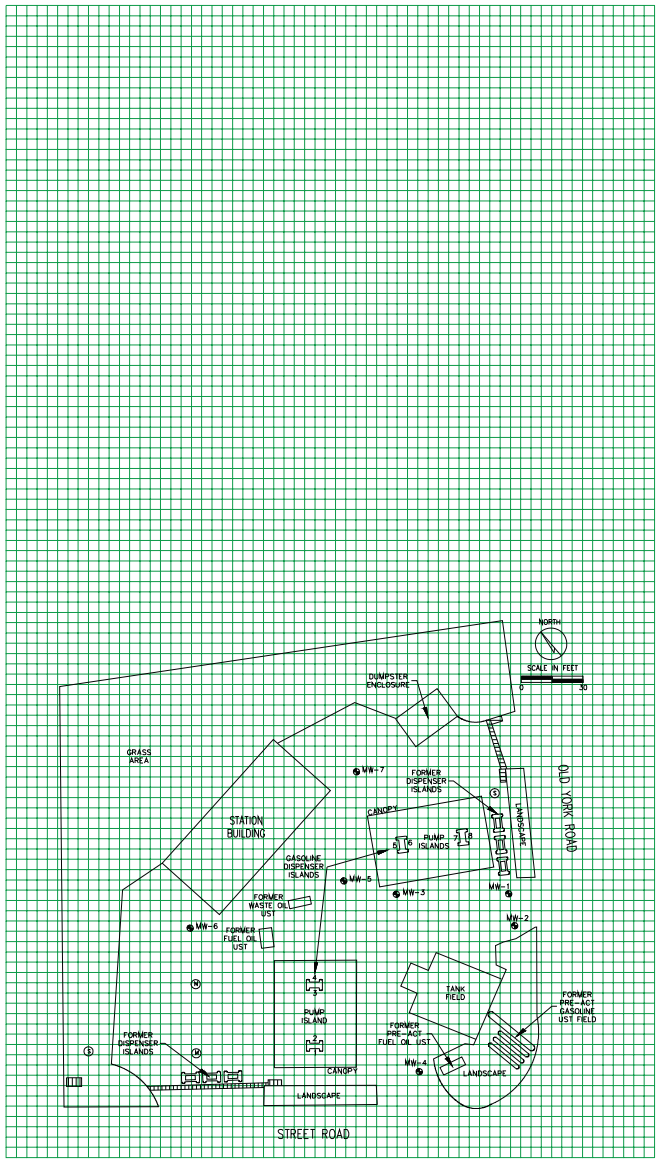

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Date:	12/19/2005
Drafter:	WMG
Approved:	JWW

Figure 2. Model domain.

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Figure 3. Initial benzene concentration distribution and model-predicted benzene concentration distributions at 5, 10, 15, 20 and 30 years.

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Date: 12/19/2005
Drafter: WMG
Approved: JWW

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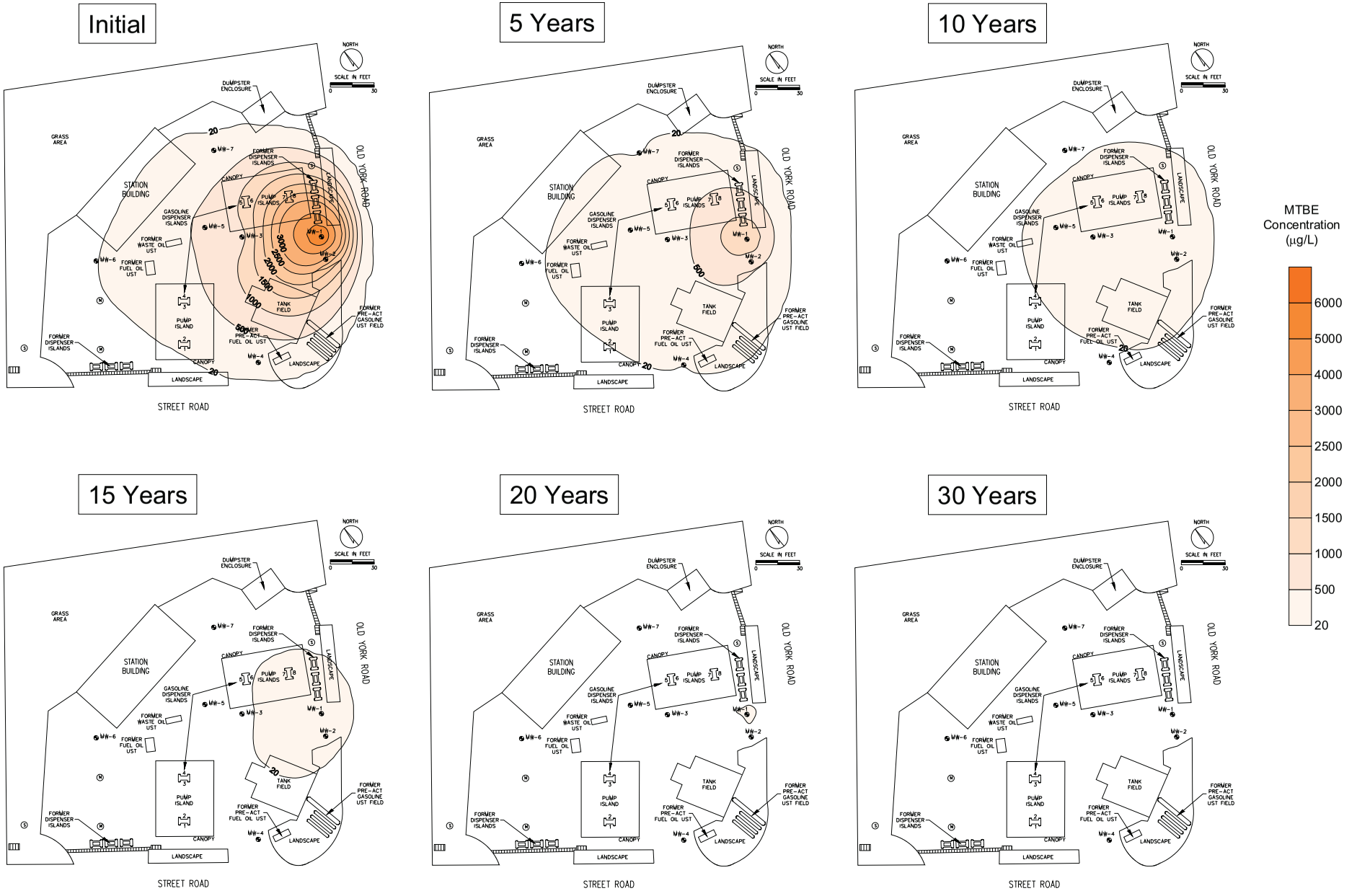

Figure 4. Initial MTBE concentration distribution and model-predicted MTBE concentration distributions at 5, 10, 15, 20 and 30 years.

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Date: 12/19/2005
Drafter: WMG
Approved: JWW

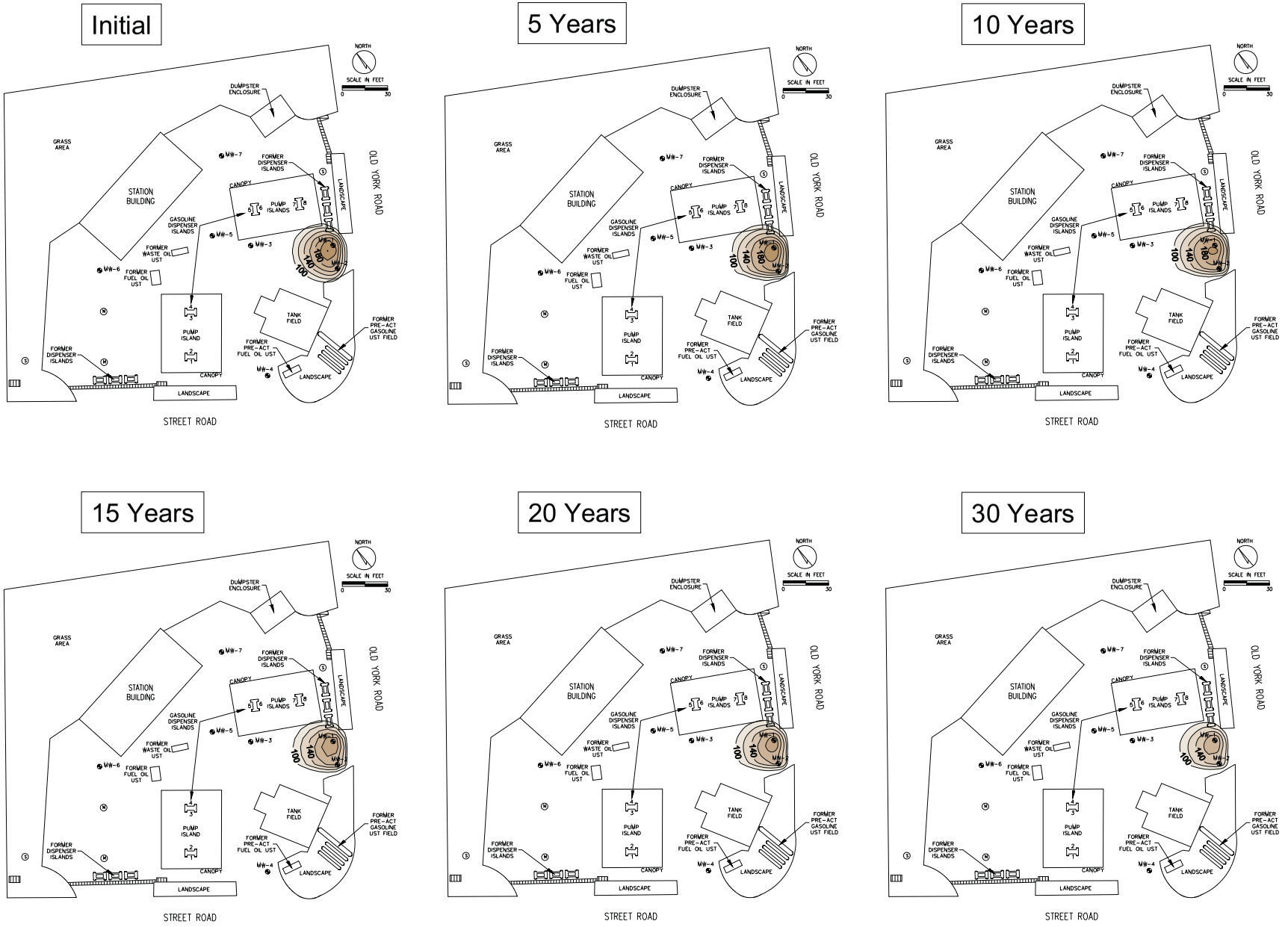

Figure 5. Initial naphthalene concentration distribution and model-predicted naphthalene concentration distributions at 5, 10, 15, 20 and 30 years.

File Name: Warminster11X17
Date: 12/19/2005
Drafter: WMG
Approved: JWW

Site Characterization Report/Remedial Action Completion Report

GES - October 1, 2009

SITE CHARACTERIZATION REPORT ADDENDUM/ REMEDIAL ACTION COMPLETION REPORT

SUNOCO FACILITY DUNS #0363-5430
610 York Road
Warminster, Pennsylvania

Prepared for:

SUNOCO INCORPORATED (R&M)
350 Eagleview Boulevard, Suite 300
Exton, PA 19341

Prepared by:

GROUNDWATER & ENVIRONMENTAL SERVICES, INC.
440 Creamery Way, Suite 500
Exton, PA 19341

October 1, 2009

SITE CHARACTERIZATION REPORT ADDENDUM/ REMEDIAL ACTION COMPLETION REPORT

Sunoco Facility DUNS #0363-5430
PADEP ID 09-30778
610 York Road
Warminster, Pennsylvania

Prepared For:

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Prepared by:

Krista Snyder
Project Manager

Reviewed by:

Jennifer L. O'Reilly, P.G.
Sr. Project Manager
Sr. Hydrogeologist

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.

October 2009

EXECUTIVE SUMMARY

Groundwater & Environmental Services, Inc. (GES), on behalf of Sunoco Inc. (R&M) (Sunoco), has prepared this Site Characterization Report Addendum/ Remedial Action Completion Report (SCRA/RACR) for the Sunoco Station #0363-5430, located at 610 York Road in Warminster Township, Bucks County, Pennsylvania. This report includes available historical information, site characterization activities, presents a conceptual model of subsurface hydrocarbon impact at the site as well as associated risk, and the demonstration of attainment for groundwater and soil.

The site is an active Sunoco gasoline retail facility and convenience store. The station building consists of a one-story convenience store building. Presently there are three 12,000-gallon unleaded gasoline fiberglass USTs and four multi-product dispenser islands on-site. Additionally, there are ten on-site monitoring wells (MW-1 through MW-10) located at the site.

Land use immediately surrounding the site is characterized by light commercial and residential properties. The Eagle Diner and Warminster Shopping Plaza are located northwest of the Site. Center Point Plaza is located to the west of the Site, across Street Road. Archbishop Wood High School, Nativity Catholic Church and School, and Hatboro Savings Bank are located to the east, across York Road. To the south is a light commercial area, with a residential area beyond. The nearest surface water body is an unnamed tributary of Little Neshaminy Creek located approximately one mile northwest of the site.

Soil analytical results indicated benzene was detected at concentrations above the PADEP SHS beneath the former dispenser islands and in the vicinity of the former Pre-Act UST field. No other target parameters were detected above the Pennsylvania Department of Environmental Protection (PADEP) Statewide Health Standards (SHS) in soil. Soil samples collected during monitoring well installation in 2007 exhibited a laboratory detection limit that exceeded the benzene SHS.

The groundwater quality data indicate the most significant presence of dissolved-phase hydrocarbons occurs in the monitoring wells in the vicinity of the former UST field and dispenser islands. According to the analytical results from the most recent groundwater sampling event (July 8, 2009), none of the constituents-of-concern (COCs) were detected at concentrations above the PADEP SHS.

Based on the limited source area of groundwater and soil impact, a short-duration, high-intensity targeted (HIT) remediation event was conducted at the site in April 2005. Groundwater attainment analytical results indicate an overall decreasing trend of hydrocarbon concentrations in groundwater at the site.

The results of the soil-vapor monitoring indicate that the COCs have either been not detected or have been detected at concentrations below the PADEP Non-Residential Indoor Air Criteria.

A risk assessment was completed for the site since potential open exposure pathways were identified; the results indicate that there is no risk associated with the potential open exposure pathways.

This report identifies the presence of dissolved-phase petroleum hydrocarbons and the appropriate remediation standard selection. Groundwater attainment criteria were applied to the entire site, with the northern, western, and eastern property boundaries as the downgradient point of compliance (as based on average groundwater flow).

Groundwater quality at the site meets the general attainment requirements for PADEP SHS for up to eight consecutive quarters (due to dry conditions during various sampling events) of post-remediation sampling of the on-site monitoring wells (MW-1 through MW-10) for toluene, ethylbenzene, total xylenes, isopropylbenzene, and naphthalene. Groundwater quality at the site meets the attainment requirements for Site-Specific Standards developed for benzene and methyl *tert*-butyl ether (MTBE).

To further support Site-Specific Standard attainment for dissolved-phase benzene and MTBE, historic graphical trend analyses of benzene and MTBE in all monitoring wells that have had a concentration exceeding the PADEP SHS are decreasing. The results of groundwater modeling indicate that benzene and MTBE will not migrate off-site at concentrations above the PADEP SHS. Considering the overall decreasing trends, it appears that the plume is decreasing and dissolved hydrocarbon constituents will not exceed Statewide Health or Site-Specific Standards at the property boundary. As a result, sensitive receptors will not be impacted.

As a result of the attainment demonstration of Site-Specific Standards in soil and groundwater, a potable supply well on-site will be prohibited and the property must remain non-residential in use. This activity and use limitation is detailed in the Environmental Covenant, which is required per the Uniform Environmental Covenants Act (UECA).

This report was developed in accordance with applicable sections of Pennsylvania's Storage Tanks, Corrective Action Regulations (Title 25, Chapter 245), as well as the Land Recycling and Environmental Remediation Standards Act (Title 25, Chapter 250). Considering the above, as detailed in this Remedial Action Completion Report, site groundwater and soil have been demonstrated to attain a combination of Statewide Health and Site-Specific Standards as outlined in Act 2 for PA unleaded gasoline parameters benzene, toluene, ethylbenzene, total xylenes, MTBE, isopropylbenzene, and naphthalene.

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1.0 INTRODUCTION

Groundwater & Environmental Services, Inc. (GES) has prepared this Site Characterization Report Addendum/ Remedial Action Completion Report (SCRA/RACR) on behalf of Sunoco Inc. (R&M) (Sunoco) following a release of gasoline from a regulated underground storage tank (UST) system in November 1995, at the Sunoco Station #0363-5430, located at 610 York Road, Warminster Township, Bucks County, Warminster, Pennsylvania (**Figure 1**). This report presents a chronological summary of available information pertaining to historical site background, characterization information, and demonstration of attainment.

The purpose of the investigation was to determine the nature and extent of petroleum hydrocarbon impact in the site subsurface, determine the environmental fate and transport of dissolved-phase hydrocarbons in groundwater, and to evaluate the potential risks posed by residual hydrocarbons in soil and groundwater. Sunoco is requesting a Release of Liability for soil and groundwater from the Pennsylvania Department of Environmental Protection (PADEP) for the site.

This report presents data and information to support Sunoco's request for a Release of Liability based on the following:

- site history;
- characterization of petroleum hydrocarbon impact to soil and groundwater;
- evaluation of potentially sensitive receptors;
- results of environmental fate and transport analysis;
- results from a Baseline Risk Assessment;
- demonstration of a combination of Statewide Health Standard (SHS) and Site-Specific Standard (SSS) attainment for soil; and
- demonstration of a combination of SHS and SSS attainment for groundwater.

During fieldwork, GES personnel followed appropriate guidelines as per United States Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120 procedures. Operations were conducted using Level D protection measures with proper respiratory protection equipment and additional protective clothing readily available if site conditions warranted an upgrade to Level C protection. A site-specific health and safety plan detailing applicable safety precautions, as well as specific emergency procedures, was prepared for this site. A copy of the site-specific health and safety plan is on file at GES and is available upon request.

This report was developed in accordance with applicable sections of Pennsylvania's Storage Tanks, Corrective Action Regulations (Title 25, Chapter 245), as well as the Land Recycling and Environmental Remediation Standards Act (Title 25, Chapter 250).

2.0 FACILITY DESCRIPTION AND BACKGROUND

2.1 Facility Description and Location

The subject site is an active Sunoco service station located at 610 York Road at the intersection of York Road (Route 263) and Street Road, Warminster Township, Bucks County, Pennsylvania, (40° 12' 26" N, -75° 06' 00" W). The facility occupies a parcel that extends approximately 230 feet along York Road and approximately 240 feet along Street Road. The facility encompasses approximately 0.7 acres. **Figure 1** (Site Location Map) illustrates the location of the facility on the United States Geological Survey (USGS) 7.5 Minute Topographic Quadrangle Map for Hatboro, Pennsylvania. According to **Figure 1**, the topography of the site and surrounding area are gently sloping to the north, northeast, and northwest; the elevation of the site is approximately 310 feet above mean sea level.

Current existing features at the property include a one-story station building convenience store, three 12,000-gallon unleaded gasoline fiberglass underground storage tanks (USTs), and four unleaded gasoline dispenser islands. The current USTs were installed in December 1983. There are currently seven shallow monitoring wells (MW-1 through MW-6 and MW-10) and three deep monitoring wells (MW-7 through MW-9) located on-site as part of the environmental investigation. Access to the site is gained from both York Road and Street Road. A generalized site map showing property boundaries and pertinent site features is included as **Figure 2** (Site Map).

2.2 Local Land Use

Land use immediately surrounding the site is characterized by light commercial and residential properties. The Eagle Diner and Warminster Shopping Plaza are located northwest of the Site. Center Point Plaza is located to the west of the Site, across Street Road. Archbishop Wood High School, Nativity Catholic Church and School, and Hatboro Savings Bank are located to the east, across York Road. To the south are is a light commercial area, with a residential area beyond. A map of surrounding properties is included as **Figure 3**.

Warminster Municipal Water Authority supplies public water and sanitary sewer services to the facility and adjacent properties.

2.3 Sensitive Receptor Analysis

GES performed a detailed reconnaissance of the surrounding area and reviewed topographic maps for available data on the locations of nearby public reservoirs, surface water and other potentially sensitive receptors within a 2,500-foot radius of the site. The results of the survey are as follows:

- The existing on-site structure does not contain a basement;
- There are no basements or crawlspaces in the immediate vicinity of the site;
- The nearest surface water body is an unnamed tributary of Little Neshaminy Creek located approximately 3,200 feet northwest of the site;
- Municipal water and sanitary sewer are provided to the site and surrounding area by Warminster Municipal Water Authority;

- Subsurface utilities, including telephone, public water, and natural gas, are located along York Road;
- Subsurface utilities, including natural gas, sanitary sewer, and public water, are located in the northeastern portion of the site extending to the station building; and
- Commercial properties are located to the northwest (downgradient), west (sidegradient), and east (sidegradient) of the facility. Commercial properties, followed by a residential area, are located to the south (upgradient) of the site.

The Pennsylvania Department of Conservation and Natural Resources *"Ground Water Information System"* (PaGWIS) was used to identify private and public potable or withdrawal wells within a 2,500-foot radius of the facility. The database identified 14 total wells within approximately ½-mile of the facility: six domestic withdrawal wells, five public supply wells, and three unused wells. A copy of the PaGWIS water well database report and approximate locations of the identified wells are contained in **Appendix A** (PaGWIS Water Well Inventory Database Report).

Underground utilities in the immediate vicinity of the facility include water, storm sewer, telephone, gas, and sanitary sewer, all located along York Road. In general, underground utilities are located at depths ranging from three to five feet below ground surface (bgs). Historically, groundwater has generally occurred at depths between approximately five and 38 feet below top-of-casing (TOC), with an average depth of approximately 18 feet bgs. Based on these data, underground utilities are not likely to serve as pathways for contaminant migration.

In order to determine the use of applicable soil and groundwater standards, the potential future land use is considered to be non-residential. Available tax assessment information from Bucks County, Pennsylvania indicates that the site is currently zoned commercial. The future anticipated land use is expected to remain commercial.

2.4 Ecological Screening

Under currently accepted ecological principles, the retail gasoline station property offers little in terms of ecological value. The majority of the property is paved and is therefore unavailable for use by ecological receptors. Much of the observable surface soil appears to be ecologically limited, consisting primarily of unconsolidated materials included silty clay with sand overlying extremely weathered mica schist bedrock. There are no extant surface water bodies or ditches for rainwater to temporarily collect on-site; therefore, there are no sources of fresh water for potential receptors. Site photographs are included in **Appendix B**. Furthermore, an on-site evaluation of potential impacts to ecological receptors as defined in §250.311 was not performed since the following initial screening criteria were met:

1. the constituents-of-concern are light petroleum products, specifically gasoline;

2. the site has less than two acres of impacted surface soil; and

3. the site is developed, with paved areas and buildings covering the areas of concern, effectively eliminating specific exposure pathways to ecological receptors.

Since these criteria were met, no further ecological evaluation is required.

3.0 ENVIRONMENTAL INVESTIGATION HISTORY

The facility is located in a mixed commercial and residential area of Warminster, Pennsylvania. In general, commercial and residential properties occupy both sides of York Road and Street Road. The site has been operated by Sunoco as a retail gasoline facility since at least December 1983. Prior use of the property is unknown.

In November 1995, GES oversaw reconstruction activites and UST removal at the site. Handex of Eastern Pennsylvania (Handex) initiated site investigation activities in May 1996. Site activities have included the installation of ten on-site monitoring wells (MW-1 through MW-10) and subsequent quarterly groundwater sampling.

3.1 Underground Storage Tank System Removal (November 1995 – February 1996)

From November 1995 through February 1996, GES oversaw the reconstruction activities performed at the site, which included the removal of six unleaded gasoline dispenser islands and two 550-gallon steel USTs containing fuel oil and waste oil. Additionally, the station building, which was formerly an Atlantic two-bay automobile service station, was removed and replaced with the current Sunoco convenience store.

During excavation, three steel 3,000-gallon and one steel 4,000-gallon Pre-Act unleaded gasoline USTs, that were previously closed-in-place, were discovered at the southern corner of the property. These USTs and the associated steel piping that extended from them to the former dispenser islands were removed from the site. During their removal, the USTs were described as rusted and pitted, and the product piping was reportedly in fair condition. All USTs, piping, and other materials were disposed of as commercial waste. The inert substance that filled the closed-in-place USTs was removed and disposed of by Lorco Petroleum Services, Inc. of Old Bridge, New Jersey. All excavated soil was disposed of at the Pottstown Landfill in Pottstown, Pennsylvania.

Obvious localized soil contamination was observed in the UST excavations and beneath the eastern dispenser islands, and post-excavation confirmatory samples were collected by GES. A total of 23 soil samples were collected from beneath the former dispensers, product lines, and UST fields on December 28, 1995 and February 8, 13, and 27, 1996. No samples were collected from the western former dispenser islands due to an inability to access the open excavation.

The samples were submitted to Lancaster Laboratories, Inc. of Lancaster, Pennsylvania (Lancaster Labs) and were analyzed for benzene, toluene, ethylbenzene, total xylenes (BTEX), total petroleum hydrocarbons (TPH), and/or TPH-gasoline range organics (GRO) by EPA Method 8020A. Laboratory results indicated concentrations of benzene exceeding the PADEP Statewide Health Standards (SHS) in eight of the soil samples collected from beneath the dispensers and the unleaded gasoline UST field. Results also indicated the presence of toluene, ethylbenzene, and total xylenes at concentrations below the PADEP SHS in those areas as well as the presence of TPH and TPH-GRO in most samples. Historical soil analytical data are summarized in **Table 1**. Soil sample analytical data sheets and chain-of-custody documentation are presented in **Appendix C**. A map of the UST closure soil sample locations is included as **Figure 4**, which was taken from the GES Underground Storage Tank Closure Report, submitted to the PADEP on April 10, 1996.

The extent of over excavation conducted beneath the former product dispensers and UST field is unknown. Waste manifests associated with the disposal of contaminated soil from the site were submitted in the 1996 UST Closure report mentioned above. However, the manifests are related to all of the excavation activities conducted on-site, including the station reconstruction activities. It is unclear how many tons of soils were removed from the dispenser islands and/or UST excavations.

3.2 Notification of Reportable Release (February 1996)

As a result of the obvious contamination observed during the UST system closure activities described above, GES verbally reported a Notification of Reportable Release (NORR) to the PADEP on February 28, 1996, identifying the USTs as a possible source of contamination due to strong petroleum vapors and stained soils in the UST excavations. The paperwork was submitted to the PADEP on February 29, 1996. The 1996 NORR is included as **Appendix D**.

3.3 Monitoring Well Installation (May 1996)

According to the Site Characterization Report (SCR) submitted to the PADEP by Handex on May 28, 1996, the drilling and installation of three on-site monitoring wells (MW-1 through MW-3) was conducted by Pennsylvania-licensed driller B. L. Myers Bros., Inc. of Glenmoore, Pennsylvania (B.L. Myers) under the supervision of Handex personnel on March 13, 1996. The wells were installed by an air rotary drill rig to a depth of 25 feet bgs. Handex personnel continuously monitored the composition, color, texture, odor, and moisture content of all drill cuttings brought to the surface as the borehole was advanced. The drill cuttings were routinely screened in the field with a photoionization detector (PID) to provide a preliminary indication of the presence or absence of volatile organic compounds (VOCs).

One soil sample was collected by split-spoon sampler from each monitoring well boring at depths of five to seven feet bgs. The samples were submitted to Lancaster Labs for the analysis of BTEX by EPA Method 8020 and for TPH-GRO by EPA Method 8015. Analytical results indicated that the unleaded gasoline parameters were not detected in the soil samples. Historical soil analytical data are summarized in **Table 1**. Soil laboratory analytical data sheets and chain-of-custody documentation are presented in **Appendix C**.

Monitoring well MW-1 was constructed of 15 feet of 0.020-inch slotted Schedule 40 PVC well screen, from 5 to 20 feet bgs, flush-joined to five feet of solid Schedule 40 PVC well casing. Monitoring wells MW-2 and MW-3 were constructed of 20 feet of 0.020-inch slotted Schedule 40 PVC well screen, from 5 to 25 feet bgs, flush-joined to five feet of solid Schedule 40 PVC well casing. After the installation of the wells into each borehole, the annular space between the borehole wall and the well screen was filled with a sand filter pack and capped with a one-foot thick bentonite seal. The bentonite seal acts to prevent infiltration of surface water into the monitoring well. Cement grout was added to the remaining annular space to fill the borehole to surface grade. A locking well cap and flush-mounted manhole cover were then fitted on each well to prevent unauthorized access and to prevent surface runoff from entering the well. Additional details of well construction are included on the subsurface drilling logs in **Appendix E**.

3.4 Additional Monitoring Well Installation (October 1997)

To further delineate the extent of dissolved-phase hydrocarbons, one additional on-site monitoring well (MW-4) was installed on October 27, 1997 by Pennsylvania-licensed driller Lutz Environmental Company, Inc. of Linden, New Jersey (Lutz) under the supervision of GES personnel. The well was installed by an air rotary drill rig to a depth of 25 feet bgs. GES personnel continuously monitored the composition, color, texture, odor, and moisture content of all drill cuttings brought to the surface as the borehole was advanced. The drill cuttings were classified by the Unified Soil Classification System (USCS) and were routinely screened in the field with a PID to provide a preliminary indication of the presence or absence of volatile organic compounds (VOCs).

A soil sample was collected by a split-spoon sampler at an unknown depth and submitted to Lancaster Labs for the analysis of BTEX, methyl *tert*-butyl ether (MTBE), isopropylbenzene, and naphthalene by EPA Method 8021A. Analytical results indicated that unleaded gasoline parameters were not detected in the soil sample. Historical soil analytical data are summarized in **Table 1**. Laboratory analytical data sheets and chain-of-custody documentation are presented in **Appendix C**.

After the completion of the ten-inch diameter borehole, monitoring well MW-4 was constructed with 20 feet of 0.020-inch slotted Schedule 40 PVC well screen, from 5 to 25 feet bgs, flush joined to five feet of solid four-inch diameter Schedule 40 PVC well casing. The annular space between the borehole wall and well screen was filled with sand and capped with a bentonite seal and cement grout as described above. A locking well cap and a flush-mounted manhole cover were also fitted on the well. Details of well construction are included on the subsurface drilling log in **Appendix E**.

3.5 Supply Well Search (March 2001)

On March 9, 2001, GES conducted a door-to-door domestic well survey to determine if surrounding properties were connected to public water. GES also sampled two off-site supply wells, located at 829 West Street Road (Lafferty Chevrolet) and 1220 West Street Road (Christ's Home for Children). The samples were submitted to Accutest Laboratories of Dayton, New Jersey (Accutest) and analyzed for BTEX, MTBE, isopropylbenzene, and naphthalene by EPA Method 8260B. None of the constituents-of-concern (COCs) were detected in either supply well. Laboratory analytical results for the two supply wells, as well as a table summarizing the domestic well survey, are included in **Appendix F**. **Figure 3** shows the locations of the properties from which surveys were returned to GES and where private wells were found to be located. It should be noted that not all of the private wells are used as the primary drinking water source on these properties. Please refer to **Table 1** in **Appendix F** for details.

3.6 Additional Monitoring Well Installation (October/November 2004)

On October 18, 2004, the drilling and installation of two additional on-site monitoring wells (MW-5 and MW-6) were conducted by Pennsylvania-licensed driller Eichelbergers, Inc. of Mechanicsburg, Pennsylvania (Eichelbergers) under the supervision of GES personnel. The wells were installed by an air rotary drill rig to depths of 50 and 47 feet bgs, respectively. GES personnel continuously monitored the composition, color, texture, odor, and moisture content of all drill cuttings brought to the surface as the

borehole was advanced. The drill cuttings were classified and screened with a PID as described earlier.

Soil samples were collected from the drill cuttings of each borehole at depths of 25 feet (MW-5) and 15 feet (MW-6) bgs. The samples were submitted to Lancaster Labs and were analyzed for BTEX, MTBE, isopropylbenzene, and naphthalene by EPA Method 8260B. Analytical results indicated that the unleaded gasoline parameters were not detected in the soil samples. Historical soil analytical data are summarized in **Table 1**. Laboratory analytical data sheets and chain-of-custody documentation are presented in **Appendix C**.

After the completion of the eight-inch diameter borehole, monitoring well MW-5 was constructed with 40 feet of four-inch diameter, 0.020-inch slotted Schedule 40 PVC well screen, from ten to 50 feet bgs, flush-joined to ten feet of solid four-inch diameter Schedule 40 PVC well casing. Monitoring well MW-6 was constructed with 37 feet of 0.020-inch slotted Schedule 40 PVC well screen, from ten to 47 feet bgs, flush-joined to ten feet of solid four-inch diameter Schedule 40 PVC well casing. The annular spaces between each borehole wall and well screen were filled with sand and capped with a bentonite seal and cement grout as described above. Locking well caps and flush-mounted manhole covers were also fitted on each well.

On November 23, 2004, the drilling and installation of one additional on-site monitoring well (MW-7) were conducted by Eichelbergers under the supervision of GES personnel. The well was installed by an air rotary drill rig to a depth of 100 feet bgs, and the drill cuttings were monitored and classified as previously described. No soil sample was collected for laboratory analysis.

After the completion of the 8-inch diameter borehole, monitoring well MW-7 was constructed with 40 feet of two-inch diameter 0.020-inch slotted Schedule 40 PVC well screen, from 60 to 100 feet bgs. Six-inch diameter steel casing extended from the ground surface to 60 feet bgs to prevent water from the shallow aquifer from infiltrating the well. The annular space between the borehole wall and well screen were filled with sand and capped with a bentonite seal and cement grout as described above. A locking well cap and flush-mounted manhole cover were also fitted on the well. Details of well construction are included on the subsurface drilling logs provided in **Appendix E**.

3.7 High-Intensity Targeted Remediation via Chemical Oxidation

GES conducted a one-day chemical oxidation HIT event at the site on April 28, 2005. The chemical oxidation process uses air and hydrogen peroxide injected into the subsurface via on-site monitoring wells and injection wells. During the injection process, hydroxyl radicals are formed through reactions between hydrogen peroxide and naturally occurring iron. Hydroxyl radicals are known to be powerful oxidizers that will break down petroleum hydrocarbons into by-products of heat, carbon dioxide, and water. The process is carefully monitored and controlled to ensure safe and effective application. In addition to oxidizing petroleum hydrocarbon impact in saturated soil and groundwater, air injection enhances the distribution of hydrogen peroxide solution in subsurface soil and groundwater, and increases dissolved oxygen levels in groundwater, further promoting biodegradation. Based on the site characteristics and the location of the impact, GES determined that a 7-8% hydrogen peroxide solution should be injected into each selected well location at flow rates of approximately one to three gallons per minute (gpm). GES concentrated the chemical oxidation event in the area of the existing and former unleaded gasoline dispensers (monitoring wells MW-1, MW-3, and MW-5). The following is a summary of the HIT

remediation activities via chemical oxidation:

- April 28, 2005: GES performed remediation via chemical oxidation utilizing a 7 to 8% hydrogen peroxide solution. Approximately 450 gallons of the hydrogen peroxide solution were injected into MW-1, MW-3, and MW-5 during the event.

3.8 Soil-Gas Investigation (2007)

On February 9, 2007, GES supervised the installation of three soil-gas points (SG-1 through SG-3) in accordance with the Vapor Intrusion into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standard (Pennsylvania Department of Environmental Protection, dated January 24, 2004). Soil-gas sampling implants were installed in soil-gas points SG-1 through SG-3 to depths of 4 feet each. The ½-inch diameter implants, constructed of stainless steel with a 0.0057-inch screen size, were manually installed to allow for long-term soil-gas monitoring. Polyethylene tubing was connected to the implant to allow for soil-gas sampling. Soil-gas point locations are depicted on **Figure 2**. Subsurface drilling logs are included in **Appendix E**.

On March 8, 2007 and December 14, 2007, the soil-gas points were sampled utilizing vacuum sealed, six-liter SUMMA canisters. During sample collection, a vacuum gauge was used to measure the initial and final vacuum of the canister as well as during collection. The soil-gas samples were transported under proper chain-of-custody documentation to Lancaster Laboratories for laboratory analysis of Pennsylvania unleaded gasoline parameters (BTEX, MTBE, and isopropylbenzene) via Method TO-15. Soil-gas analytical results demonstrate that none of the target parameters were detected in the samples at concentrations above the PADEP residential and non-residential indoor air criteria or EPA Region III risk-based concentrations for indoor air. Laboratory analytical results and chain-of-custody documentation are included in **Appendix G**. Soil-gas analytical data are summarized in **Table 2**.

3.9 Additional Monitoring Well Installation (February 2007)

On January 6, 2006, GES submitted an Additional Site Characterization Report /Remedial Action Plan (SCR/RAP). The PADEP subsequently approved the Additional SCR/RAP with modifications in a letter dated June 9, 2006, requesting that Sunoco install a deep monitoring well north of the former dispenser island and a deep and shallow monitoring well west of the pump island adjacent to Street Road **(Appendix H)**.

Between February 22 and 26, 2007, the drilling and installation of three additional on-site monitoring wells (MW-8 through MW-10) were conducted by B.L. Myers under the supervision of GES personnel. Deep monitoring wells MW-8 and MW-9 are located in the vicinity of the former dispenser island adjacent to York Road and west of the pump island adjacent to Street Road, respectively. Shallow monitoring well MW-10 is located west of the pump island adjacent to Street Road. Monitoring wells MW-8 through MW-10 were installed by an air rotary drill rig to depths of 100 feet, 89 feet, and 50 feet bgs, respectively. GES personnel continuously monitored the composition, color, texture, odor, and moisture content of all drill cuttings brought to the surface as the borehole was advanced. The drill cuttings were classified and screened with a PID as described earlier.

Soil samples were collected from the drill cuttings of each borehole at depths of ranging from 5 feet to 24 feet bgs. The samples were submitted to Lancaster Labs and were analyzed for BTEX, MTBE, isopropylbenzene, and naphthalene by EPA Method 8260B. Analytical results indicated that the unleaded gasoline parameters were not detected in the soil samples at concentrations above the PADEP SHS with the exception of benzene in soil samples MW-8 @ 5' and MW-8 @ 24', where the laboratory detection limit exceeded the PADEP SHS of 500 µg/kg. Historical soil analytical data are summarized in **Table 1**. Laboratory analytical data sheets and chain-of-custody documentation are presented in **Appendix C**.

After the completion of the eight-inch diameter borehole, monitoring well MW-8 was constructed with 40 feet of two-inch diameter, 0.020-inch slotted Schedule 40 PVC well screen, from 60 to 100 feet bgs, flush-joined to 60 feet of solid two-inch diameter Schedule 40 PVC well casing. Monitoring well MW-9 was constructed with 30 feet of two-inch diameter, 0.020-inch slotted Schedule 40 PVC well screen, from 59 to 89 feet bgs, flush-joined to 59 feet of solid two-inch diameter Schedule 40 PVC well casing. Monitoring well MW-10 was constructed with 40 feet of two-inch diameter, 0.020-inch slotted Schedule 40 PVC well screen, from 10 to 50 feet bgs, flush-joined to 10 feet of solid two-inch diameter Schedule 40 PVC well casing. The annular spaces between each borehole wall and well screen were filled with sand and capped with a bentonite seal and cement grout as described above. Locking well caps and flush-mounted manhole covers were also fitted on each well.

3.10 PADEP Meeting (July 2009)

On July 9, 2009, a meeting took place between PADEP (Lauren Mapleton and Walter Payne), Sunoco (Martin Liebhardt), and GES (Krista Snyder). During this meeting, GES presented the findings of the site characterization activities, including absorbed- and dissolved-phase analytical data and PADEP subsequently granted GES approval to utilize soil-gas analytical data to demonstrate that the soil and groundwater to ambient air pathways are incomplete. Evaluation of the exposure pathways are detailed in **Section 5.6**.

3.11 Attainment Monitoring Well Sampling

Attainment groundwater sampling was initiated on October 4, 2007 in monitoring wells MW-1 through MW-10. During each attainment groundwater monitoring and sampling event, liquid-level data and groundwater samples were collected from each monitoring well; it should be noted that samples were not collected from monitoring well MW-1 during two sampling events and from monitoring wells MW-2 and MW-3 during one sampling event because the wells were dry. Prior to sampling, the monitoring wells were purged of a minimum of three standing well volumes to remove fine-grained material from the gravel pack and well screens and promote a hydraulic connection between the well and the surrounding aquifer. Discharged water was treated on-site with a portable granular activated carbon (GAC) treatment system and discharged to the surface for infiltration in accordance with PADEP guidelines (Groundwater Monitoring Guidance, December 1, 2001).

The monitoring wells were sampled in accordance with GES Standard Operating Procedures and Quality Control protocols using dedicated, disposable bailers. The groundwater samples were submitted to Lancaster Labs for analysis of PADEP unleaded gasoline indicator parameters BTEX, MTBE, isopropylbenzene, and naphthalene via EPA Method 8260B. Groundwater laboratory analytical report

and chain-of-custody documentation for the four most recent sampling events are included in **Appendix I.** Historic groundwater analytical data are summarized in **Table 3.** Groundwater quality is discussed in detail in **Section 4.2.3.**

4.0 SUBSURFACE CHARACTERIZATION

4.1 Site-Specific Geology and Hydrogeology

The Pennsylvania Geologic Survey Physiographic Provinces of Pennsylvania (Map 13) indicates that this site resides in the Gettysburg-Newark Lowland Section Piedmont Province. The Gettysburg-Newark Lowland Section is characterized by rolling low hills and valleys which have developed over red sedimentary rock. Isolated higher hills are formed on top of diabase, hornfels, and conglomerates. Sedimentary rocks in this region generally dip toward the north-northwest and smaller drainageways are oriented normal to the direction of dip so that some of the topography has a northeast-southwest linearity. However, the basic drainage pattern is dendritic.

The Atlas of Preliminary Geologic Quadrangles of Pennsylvania (Map 61) indicates that the site is underlain by the Stockton Formation. The Stockton Formation consists of gray to buff cross-bedded arkosic sandstone, pebbly sandstone, reddish-brown arkosic sandstone, siltstone, and silty mudstone. In the Hatboro area, the Stockton Formation strikes approximately N 65 degrees E and dips approximately 9 degrees NW.

According to the Engineering Characteristics of the Rocks of Pennsylvania (Geyer and Wilshusen, 1982), rocks of the Stockton Formation form a complex, heterogeneous, multi-aquifer system consisting of a series of gently dipping lithologic units with different hydraulic properties. Most groundwater in the unweathered zone moves through a network of interconnecting secondary openings, fractures, bedding plans, and joints. Groundwater is unconfined in the shallower part of the aquifer and semi-confined or confined in the deeper part of the aquifer. The average groundwater yield is 130 gpm from the arkosic sandstone and 20 gpm from the shale. Primary porosity occurs within the weathered portion of the formation while secondary permeability is within joints and bedding planes in the unweathered portions of the formation.

According to the subsurface drilling logs (**Appendix E**), the site is underlain by approximately seven feet of silt, sand, and clay. Weathered shale bedrock was encountered at depths of four to seven feet bgs. Competent red shale, sandstone, and siltstone bedrock was encountered at an average of 12 feet bgs, which is consistent with the regional geology descriptions.

A review of the United States Geologic Survey 7.5-Minute Hatboro, Pennsylvania topographic quadrangle indicates that the surrounding area slopes gently to the north, northeast, northwest, and southwest, suggesting that regional groundwater flow is also to the north, northeast, northwest, and southwest. A component of regional flow is likely toward an unnamed tributary of Little Neshaminy Creek, which is located approximately 3,200 feet northwest of the site.

The facility is located in the Delaware River Basin, Neshaminy Creek Subbasin, and the Neshaminy Creek Watershed. The lower Delaware Subbasin has a drainage area of approximately 2,708 square miles and the Neshaminy Creek Watershed drains approximately 233 square miles. The nearest downgradient surface water body is an unnamed tributary of Little Neshaminy Creek, which is located approximately 3,200 feet northwest of the site.

Historically, groundwater flow direction has varied with seasonal changes and has been towards the southwest, west-southwest, west-northwest, and east-northeast. During the most recent eight quarters of groundwater attainment sampling, the groundwater flow direction has been predominately to the north and west in the shallow water-bearing zone and to the north and east in the deep water-bearing zone. The horizontal groundwater gradient in the shallow water-bearing zone across the site and surrounding area has ranged from 0.01 to 0.25 feet/foot (ft/ft), with an average of 0.08 ft/ft (determined from the last four quarters of liquid-level data). The horizontal groundwater gradient in the deep water-bearing zone across the site and surrounding area has ranged from 0.001 to 0.01 ft/ft, with an average of 0.004 ft/ft (determined from the last four quarters of liquid-level data). Historical groundwater analytical data are summarized on **Table 3**.

Liquid-level data and groundwater samples were collected from monitoring wells MW-3 through MW-10 on October 8, 2008. (monitoring wells MW-1 and MW-2 were gauged and found to be dry). Liquid-level data and a groundwater sample were collected from monitoring well MW-2 on October 31, 2008 (monitoring well MW-1 was gauged and found to be dry). The liquid-level data collected on October 8, 2008 indicated depths to groundwater ranged from 23.89 feet (MW-3) to 36.20 feet (MW-7) below TOC. Based on the October 8, 2008 data, the local groundwater flow is toward the north-northwest with a gradient of 0.25 ft/ft in the shallow-bearing zone and toward the north with a gradient of 0.01 ft/ft in the deep water-bearing zone. Groundwater monitoring maps for the gauging and sampling event in the shallow and deep water-bearing zone are included as **Figure 5** and **Figure 6**, respectively (Groundwater Monitoring Map – Shallow Water Bearing Zone October 8, 2008 and Groundwater Monitoring Map – Deep Water Bearing Zone October 8, 2008).

Liquid-level data and groundwater samples were collected from monitoring wells MW-1 through MW-10 on February 3, 2009. The liquid-level data collected indicated depths to groundwater ranged from 13.06 feet (MW-1) to 19.40 feet (MW-7) below TOC. Based on the February 3, 2009 data, the local groundwater flow is variable, but generally toward the west-northwest with a gradient of 0.02 ft/ft in the shallow-bearing zone and toward the east with a gradient of 0.002 ft/ft in the deep water-bearing zone. Groundwater monitoring maps for the gauging and sampling event in the shallow and deep water-bearing zone are included as **Figure 7** and **Figure 8**, respectively (Groundwater Monitoring Map – Shallow Water Bearing Zone February 3, 2009 and Groundwater Monitoring Map – Deep Water Bearing Zone February 3, 2009).

Liquid-level data and groundwater samples were collected from monitoring wells MW-1 through MW-10 on April 6, 2009. The liquid-level data collected indicated depths to groundwater ranged from 17.27 feet (MW-1) to 23.41 feet (MW-7) below TOC. Based on the April 6, 2009 data, the local groundwater flow is variable, but generally toward the west with a gradient of 0.02 ft/ft in the shallow-bearing zone and toward the north with a gradient of 0.002 ft/ft in the deep water-bearing zone. Groundwater monitoring maps for the gauging and sampling event in the shallow and deep water-bearing zone are included as **Figure 9** and **Figure 10**, respectively (Groundwater Monitoring Map – Shallow Water Bearing Zone April 6, 2009 and Groundwater Monitoring Map – Deep Water Bearing Zone April 6, 2009).

Liquid-level data and groundwater samples were collected from monitoring wells MW-1 through MW-10 on July 8, 2009. The liquid-level data collected indicated depths to groundwater ranged from 9.57 feet (MW-1) to 15.99 feet (MW-7) below TOC. Based on the July 8, 2009 data, the local groundwater flow is variable, but generally toward the west-northwest with a gradient of 0.01 ft/ft in the shallow-bearing zone and toward the east with a gradient of 0.001 ft/ft in the deep water-bearing zone. Groundwater

monitoring maps for the gauging and sampling event in the shallow and deep water-bearing zone are included as **Figure 11** and **Figure 12**, respectively (Groundwater Monitoring Map – Shallow Water Bearing Zone July 8, 2009 and Groundwater Monitoring Map – Deep Water Bearing Zone July 8, 2009).

4.2 Nature and Extent of Release

There are three primary components to a plume of released hydrocarbon product to the subsurface. These components are generally comprised of an adsorbed phase, a separate phase (light non-aqueous phase liquid), and a dissolved phase. As a release of hydrocarbon product comes in contact with soil, a percentage of the release will become adsorbed on to the particles of soil. The amount of product that becomes adsorbed will depend upon the following factors:

- the properties of the product (viscosity, solubility, etc.);
- the intrinsic permeability of the soil (the relative ease with which a porous material transmits liquid);
- the amount of recharge, flushing, or infiltration of precipitation from the surface, and
- the amount of total organic carbon in the soil.

The remaining product will continue to migrate through the soil column in the unsaturated zone under the influence of gravity and follow the path of least resistance (lenses or layers with the highest intrinsic permeability). As the product encounters the capillary fringe (the portion of the soil column where water is drawn upward from the saturated zone and there is a greater percentage of water in this zone as compared to the soils above), it will tend to spread laterally and a greater percentage will remain adsorbed in this zone.

The product that continues to migrate through the capillary fringe will eventually encounter the saturated zone. The primary mechanism for product migration in the saturated zone of a bedrock aquifer is horizontal groundwater flow, which is in turn influenced by the following conditions:

- horizontal groundwater flow gradient;
- specific gravity less than water (tendency to float);
- secondary porosity of the aquifer material (bedrock and fractures); and
- the orientations of geologic structures (cleavage and joints).

Soluble compounds will dissolve into the groundwater and migrate with groundwater flow. The fate and transport of these compounds in the groundwater are dependent upon the individual properties of each constituent. The observed downward vertical gradient may influence the vertical migration of constituents. The more soluble and resistant to biodegradation the compound is, the greater the ability to dissolve in groundwater and transport greater distances (e.g., MTBE). The following sections detail the results of the investigations to define the nature and extent of hydrocarbons in the subsurface for this site.

4.2.1 Separate-Phase Hydrocarbons

Separate-phase hydrocarbons (SPH) have not been observed in any monitoring wells.

4.2.2 Soil Quality

Obvious, localized adsorbed-phase contamination was observed in the 1996 excavations related to the former UST and dispenser island removal. Soil analytical results from samples collected during UST closure activities between December 1995 and February 1996 indicated that benzene was detected in six samples (Disp-2, SS-1, SS-2, SS-7, SS-9, and SS-10) at concentrations above the PADEP SHS; however, it should be noted that the laboratory detection limit for soil sample SS-9 exceeded the PADEP SHS. Soil analytical results in two soil samples (SS-8 and SS-11) indicated benzene was non-detect; however, the laboratory detection limit exceeded the PADEP SHS. None of the remaining target parameters (toluene, ethylbenzene, and total xylenes) were detected at concentrations above PADEP SHS.

Soil analytical results for soil samples collected during monitoring well installation (MW-1 through MW-3) in March 1996 indicated that none of the target unleaded gasoline parameters (BTEX) were detected at those locations.

Soil analytical results for soil samples collected during monitoring well installation (MW-4) in October 1997 indicated that none of the target unleaded gasoline parameters (BTEX, MTBE, isopropylbenzene, and naphthalene) were detected at this location.

Soil analytical results for soil samples collected during monitoring well installation (MW-5 and MW-6) in October 2004 indicated that none of the target unleaded gasoline parameters (BTEX, MTBE, isopropylbenzene, and naphthalene) were detected at these locations.

Soil analytical results for soil samples collected during monitoring well installation (MW-8 through MW-10) in February 2007 indicated that the unleaded gasoline parameters (BTEX, MTBE, isopropylbenzene, and naphthalene) were not detected in the soil samples above the PADEP SHS with the exception of benzene in soil samples MW-8 @ 5' and MW-8 @ 24', where the laboratory detection limit exceeded the PADEP SHS of 500 µg/kg.

From these analytical results, it appears that the adsorbed-phase contamination was localized in the immediate vicinity of the former Pre-Act USTs and the former dispensers, and those areas are believed to be the sources of hydrocarbon contamination at the site. Historical soil analytical data are summarized in **Table 1**, the locations of the soil sample locations and soil borings are depicted on **Figure 4**, and the soil laboratory analytical reports are provided in **Appendix C**.

4.2.3 Groundwater Quality

Historically, groundwater samples were analyzed for PADEP unleaded gasoline parameters in accordance with the January 1995 PADEP guidance document titled *Closure Requirements for Underground Storage Tank Systems*. Groundwater monitoring has been conducted at the site since March 1996 in accordance with Act 32 Corrective Action Requirements. Historic groundwater monitoring data are summarized in **Table 3**.

Historical groundwater sampling results demonstrate that dissolved benzene, ethylbenzene, MTBE, and naphthalene were detected at concentrations above the PADEP SHS. Toluene, total xylenes, and isopropylbenzene have never been detected at concentrations above the PADEP SHS. During attainment

monitoring and sampling (initiated on October 4, 2007), benzene has been detected at concentrations above the PADEP SHS in monitoring well MW-2 during two of the eight sampling events. The remaining target parameters were not detected or were detected at concentrations below the PADEP SHS during post-remediation monitoring and sampling. Historical groundwater analytical data are summarized in **Table 3**.

Groundwater analytical results indicate that monitoring wells MW-1, MW-2, and MW-3 typically have historically had the highest dissolved COC concentrations. These wells are located in the vicinity of the former dispenser islands, which were located along the southeastern property boundary, and northeast of the former Pre-Act USTs, which were located in the southern corner of the site. This further supports the belief that the former UST system, dispenser islands, and product delivery lines are the sources of hydrocarbon contamination. See **Figure 13** for the source area locations.

During the most recent sampling event on July 8, 2009, all target parameters were not detected or were detected at concentrations below the PADEP SHS. Historical groundwater analytical data are summarized in **Table 3**. Groundwater laboratory analytical reports and chain-of-custody documentation from the four most recent sampling events are included in **Appendix I**.

Attainment groundwater sampling results indicate the most significant presence of dissolved-phase hydrocarbons is in the vicinity of the former dispenser islands along York Road, as shown by monitoring well MW-2, which is most likely residual contamination as a result of a release from these dispensers prior to replacement in 1996. The distributions of the maximum concentration of each COC detected at a concentration above the PADEP SHS during historic monitoring and sampling (benzene, ethylbenzene [one occasion in MW-2], MTBE, and naphthalene) are compared to concentration distributions detected above the PADEP SHS during the most recent sampling event (July 8, 2009) (**Figures 14** through **17**). Based upon the distributions of the dissolved-phase hydrocarbons (**Figures 14** through **17**), the source of the release appears to be associated with former Pre-Act UST field and the former pump islands located along York Road.

4.3 Source Identification

Based upon the dissolved-phase COCs in the monitoring wells, groundwater flow properties of the site, and the orientation of the former UST system, dispenser islands, and product delivery lines with respect to the historical dissolved-phase hydrocarbon distributions, the source area has been identified as the area encompassing the former Pre-Act UST field and the former pump islands located along York Road. The source area was identified based upon the following:

- the concentrations of dissolved-phase COCs detected in groundwater in monitoring wells MW-1 and MW-2;
- the concentrations of adsorbed-phase COCs detected in soil samples SS-1, SS-2, SS-7, SS-8, SS-9, SS-10, SS-11, and Disp-2 collected during UST removal activities in 2006 and soil sample MW-8 collected during monitoring well installation in 2007; and
- the location of the former pre-Act 2 UST field and former pump islands with respect to monitoring wells MW-1 and MW-2.

4.4 Dissolved-Phase Hydrocarbon Trend Analysis

GES analyzed the changes in dissolved-phase hydrocarbon concentrations in selected monitoring wells that have exhibited an exceedance of a any COC during historic and groundwater attainment monitoring and sampling in order to identify temporal trends and evaluate the effect of remedial actions. Trend analysis was performed to determine the stability of the plume.

The analysis was conducted using procedures described in ASTM E 1943-98, "Standard Guide for Remediation of Groundwater by Natural Attenuation at Petroleum Release sites." The analysis as specified by ASTM is a graphical approach which consists of plotting the natural log (LN) of the concentrations of each compound over time and fitting a straight line to the resulting plot. By comparing the trend lines for each well, and the location of the well within the plume, a determination can be made regarding the behavior of the plume (e.g., shrinking, stable, or expanding). When the source loading of a particular compound is less then the rate of natural attenuation, a downward trend line is exhibited. This downward trend line is evidence that natural attenuation is occurring and the plume is shrinking. When the source loading of a particular compound into the aquifer is exceeded by the rate of natural attenuation, an upward trend line is exhibited and the plume is considered to be expanding. Plots indicating a horizontal trend (neither upward nor downward) suggest that the loading rate is equal to the rate of attenuation, and the plume is considered to be stable. The R^2 value included on the graphical plots also assists in determining a trend.

The trends of each of the COCs in the monitoring wells noted above during historic groundwater sampling as well as the associated R^2 values are described as follows:

Well	COC	Trend	R^2-value
MW-1	Benzene MTBE Naphthalene	Decreasing Decreasing Stable	0.014 0.0677 0.0014
MW-2	Benzene Ethylbenzene MTBE Naphthalene	Decreasing Decreasing Decreasing Decreasing	0.4837 0.3118 0.146 0.2688
MW-3	Benzene MTBE	Decreasing Decreasing	0.0846 0.491
MW-4	MTBE	Decreasing	0.1212
MW-5	MTBE	Decreasing	0.2599
MW-7	MTBE	Decreasing	0.0426

COC – Constituent-of-Concern

The trends of each of the COCs in the monitoring wells noted above during attainment groundwater sampling as well as the associated R^2 values are described as follows:

Well	COC	Trend	R^2-value
MW-2	Benzene	Decreasing	0.1289

COC – Constituent-of-Concern

In summary, the analytical data in monitoring wells exhibiting concentrations of benzene, ethylbenzene, MTBE, and naphthalene above PADEP SHS during historic and attainment groundwater sampling are indicating decreasing trends. It should be noted that during groundwater attainment sampling, the only COC that has been detected at concentrations above the PADEP SHS is benzene in monitoring well MW-2. Historical groundwater analytical data are summarized in **Table 3**. The hydrocarbon trend graphs are presented in **Appendix J**.

5.0 FATE AND TRANSPORT ANALYSIS

5.1 Analytical Modeling

GES utilized Environmental Systems & Technologies (ES&T) to perform fate and transport modeling, which was conducted to predict the extent of off-site migration of dissolved-phase hydrocarbons detected at the site. Analytical modeling was performed utilizing the BIOTRANS method. Analytical models require simplifying assumptions regarding the flow and transport conditions. In this effort, the analytical model was considered to be conservative. Benzene, MTBE, and naphthalene were analyzed in this model since they are constituents-of-concern with concentrations detected above the PADEP SHS during the 12 quarters of groundwater monitoring prior to completion of the model. Ethylbenzene was detected above the PADEP SHS one time in monitoring well MW-2 (on October 30, 2002), but was not considered a concern for the site. The ES&T BIOTRANS model was submitted as part of the Additional SCR/RAP dated January 6, 2006, and was subsequently approved by the PADEP in a letter dated June 9, 2006. The fate and transport analysis is summarized in the following sections. Please refer to **Appendix K** for a detailed explanation of the model in the ES&T report.

5.2 Model Description

BIOTRANS is a two-dimensional, finite element model that considers convective-dispersive transport, adsorption, and decay for multiple hydrocarbon constituents in either porous or fractured media. Transport of dissolved-phase species is simulated by solving the two-dimensional, vertically averaged convective-dispersive-reactive equation. The model utilizes steady-state velocity fields that represent average flow conditions. Analysis using BIOTRANS have been previously submitted and accepted by the US EPA and state regulatory agencies.

5.3 Model Parameters

Input parameter values were defined from site-specific and published data. The following describes the input parameters of the BIOTRANS model and the values applied in the model.

Dissolved Species
Benzene, MTBE, and naphthalene were used in the model since these constituents were found above the PADEP SHS. The chemical properties of these constituents (molecular weight, solubility, K_d, K_{oc}, and the first order decay rate) were applied in the model. The K_{oc} values used in the model were selected from Appendix A, Table 5, of the Act 2 Regulations (PADEP, 2003).

Initial Concentrations
The maximum concentrations of benzene, MTBE, and naphthalene from the 8 groundwater sampling events conducted between August 6, 2005 and April 20, 2007 were used as the initial concentrations in the model. Using the maximum concentrations results in a more conservative estimate of the dissolved-phase fate and transport simulation.

Porosity
Due to the competent shale bedrock beneath the site, a porosity value of 0.10 was used in the model.

Soil Bulk Density
The soil bulk density used in the model is 2.39 g/cm^3.

Longitudinal and Transverse Dispersivity
The longitudinal and transverse dispersivities used in this model were conservatively estimated as 4 feet and 0.4 feet respectively.

Groundwater Flow
Groundwater flow representative of measured site conditions was simulated in the modeling effort. A steady-state, uniform flow field was generated considering site hydrogeologic conditions. Hydraulic conductivity within the aquifer was estimated to be 0.001 feet/day and aquifer thickness was assumed to be 85 feet based on the maximum well depth and average water table elevations at the site.

5.4 Modeling Results

Results of the ES&T BIOTRANS modeling simulation indicate that the effects of degradation, dispersion, and adsorption will act to reduce benzene, MTBE, and naphthalene concentrations over time. Benzene concentrations are predicted to remain above the PADEP SHS for the entire 30-year simulation. However, no off-site migration of the benzene plume is predicted. MTBE concentrations are predicted to decrease to below the PADEP SHS between 22 and 23 years with no off-site migration predicted beyond that of the initial MTBE plume (see **Figure 4** in **Appendix K**). Naphthalene concentrations are predicted to remain above the PADEP SHS for the entire 30-year simulation, but no off-site migration is predicted.

Since the modeling simulation was submitted, three additional monitoring wells (two deep [MW-8 and MW-9] and one shallow [MW-10]), have been installed on-site and subsequent quarterly groundwater monitoring has been conducted. Analytical results of the subsequent groundwater monitoring in the wells that existed on-site prior to model simulation, as well as newly installed shallow and deep monitoring wells, support the results of the modeling effort. Dissolved-phase concentrations have continued to exhibit a decreasing trend for benzene, ethylbenzene, MTBE, and naphthalene in monitoring wells in which they have exceeded the PADEP SHS. Additionally, dissolved-phase hydrocarbon concentrations in point-of-compliance wells remain non-detect or were detected below PADEP SHS. Considering the above, the BIOTRANS model approved as part of the January 2006 Additional SCR/RAP still applies to this site and is consistent with actual site data collected since its original submittal.

5.5 Vapor Intrusion Assessment

This section has been incorporated to assist in satisfying the requirements of Act 2 and the regulations published in Chapter 250 of the PA Code. This specific guidance provides additional attainment screening requirements to prevent the occurrence of unacceptable risk resulting from vapor intrusion of contaminants from soil and/or groundwater into indoor structures. The guidance identifies contaminants of potential indoor air concern (COPIACs), which may be present at the facility, and determines if additional characterization or remedial actions are required to mitigate vapor impacts to sensitive receptors. The guidance utilizes a flow chart (Indoor Air Quality Decision Matrix for SHS) based on the presence of SPH, preferential exposure pathways, dissolved-phase hydrocarbon concentrations, distances to potential receptors, soil type, established screening constituent levels derived from Pennsylvania-specific parameters, the Johnson and Ettinger (J&E) Vapor Intrusion model, and groundwater depths below the potential receptor.

There are two considerations to determine if the vapor intrusion pathway is a potential concern.

- Inhabited buildings must be close (within 100 horizontal feet) to a volatile source; and
- The source concentration must be above some threshold or screening concentration.

There is currently one building on-site: a one-story station building completed with a slab-on-grade construction. There are no additional buildings within 100 feet of the site. The following table indicates the historical maximum groundwater concentrations observed in monitoring wells, as well as the groundwater screening values for protection of indoor air in a residential and non-residential setting as referenced in Table 1 and Table 2 of the Vapor Intrusion into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standard (PADEP, January 24, 2004).

Regulated Substance	Max. Observed Historical Concentration (µg/L)	Default Non-Residential Groundwater Screening Value (Volatilization to Indoor Air) (µg/L)	Default Residential Groundwater Screening Value (Volatilization to Indoor Air) (µg/L)	COPIAC
Benzene	430	5,900	3,500	No
Toluene	589	NOC	490,000	No
Ethylbenzene	886	45,000	27,000	Yes
Total Xylenes	1,150	NOC	130,000	Yes
MTBE	12,800	640,000	380,000	No
Isopropylbenzene	113	NOC	NOC	No
Naphthalene	344	NOC	25,000	Yes

NOC – Not of Concern, value above constituent water solubility
COPIAC - Constituent of Potential Indoor Air Concern

The maximum groundwater concentrations observed in on-site monitoring wells for BTEX, MTBE, isopropylbenzene, and naphthalene, based on historical groundwater sample analytical results are below the applicable PADEP default groundwater screening values. Therefore, vapor intrusion due to the volatilization of the constituents of concern from groundwater into indoor air is not a concern for this site.

The following table indicates the historical maximum adsorbed concentrations observed in soil samples compared to the soil screening values for protection of indoor air in a residential and non-residential setting, as referenced in Table 4 and Table 5 of the Vapor Intrusion into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standard (PADEP, January 24, 2004).

Regulated Substance	Max. Observed Historical Concentration (µg/kg)	Default Non-Residential Soil Screening Value (Volatilization to Indoor Air) (µg/kg)	Default Residential Soil Screening Value (Volatilization to Indoor Air) (µg/kg)	COPIAC
Benzene	**1,900**	630	370	Yes
Toluene	51,000	110,000	76,000	Yes
Ethylbenzene	**41,000**	9,500	5,700	Yes
Total Xylenes	**250,000**	77,000	55,000	Yes
MTBE	<530	86,000	51,000	No
Cumene	<530	360,000+	360,000+	No
Naphthalene	3,700	NOC	64,000	No

NOC – not of concern
+ - Soil saturation concentration (Csat) – concentration above Csat may suggest the need to investigate the potential presence of NAPL.

Benzene, ethylbenzene, and total xylenes in soil exceed the PA default soil screening values. Therefore, vapor intrusion into a building from soil volatilization is a potential concern for this site.

On March 8, 2007 and December 14, 2007, the soil-vapor points (SG-1 through SG-3) were sampled and submitted for laboratory analysis of BTEX, MTBE, and isopropylbenzene via Method TO-15. Soil-gas analytical results demonstrate that none of the target parameters were detected in the samples at concentrations above the PADEP residential and non-residential indoor air criteria or EPA Region III risk-based concentrations for indoor air; therefore, vapor intrusion into a building from soil volatilization is not a concern for the site. Soil-vapor analytical results are summarized in **Table 2**.

5.6 Exposure Pathway Assessment

Using PADEP-approved EPA and ASTM guidance, this assessment identified potential current and future exposure pathways for human receptors, as per Pennsylvania Code §250.402. Where appropriate, incomplete exposure pathways and constituents that were not found in environmental media exceeding the statewide health criteria were eliminated from further consideration.

Human or ecological receptors can be exposed to COCs through four major pathway categories: 1) air, 2) groundwater, 3) soil, and 4) surface water. Within each pathway category are specific exposure pathway scenarios. The following is a description of each possible exposure pathway. Pathways pertinent to the site are identified.

5.6.1 Air Exposure Pathways

- *Inhalation of vapors volatilized from subsurface soils to the ambient air*: Analytical results from the subsurface soil samples collected at this site during site characterization activities indicated

that concentrations of benzene exceed the PADEP SHS. Three soil gas points were installed on-site and two rounds of soil gas sampling were conducted. Soil-vapor analytical results indicate that the target parameters were either not detected or detected at concentrations below the PADEP Residential and Non-Residential Indoor Air Criteria. Therefore, this pathway was not deemed relevant for this site.

- *Inhalation of vapors volatilized from groundwater into the ambient air*: Average depth to groundwater at this site ranges from five to 38 feet below TOC. Additionally, historical maximum groundwater concentrations do not exceed the PADEP Default Residential and Non-Residential Vapor Screening Values. Therefore, this pathway was not deemed relevant for this site.

- *Inhalation of vapors volatilized from subsurface soil into an enclosed space*: This scenario includes vapors entering basements, crawl spaces, subsurface utility vaults, and in some situations, enclosed buildings. Analytical results from subsurface soil samples collected during site characterization activities indicated that benzene, toluene, and total xylenes concentrations were above the default soil screening values for vapor intrusion. Three soil gas points were installed on-site and two rounds of soil gas sampling were conducted. Soil-vapor analytical results indicate that the target parameters were either not detected or detected at concentrations below the PADEP Residential and Non-Residential Indoor Air Criteria. Therefore, this pathway was not deemed relevant for this site.

- *Inhalation of vapors volatilized from groundwater into an enclosed space*: This scenario includes vapors entering basements, crawl spaces, subsurface utility vaults, and in some situations, enclosed buildings. Historical groundwater data indicated that none of the dissolved concentration values are above the default groundwater screening values for vapor intrusion. Additionally, separate-phase hydrocarbons (SPH) have never been detected at this site. Therefore, this pathway was not deemed relevant for this site.

5.6.2 Groundwater Exposure Pathways

- *Ingestion of groundwater through a water supply well*: According to a door-to-door survey conducted by GES in March 2001, the Warminster Municipal Water Authority supplies water to the site and surrounding area. There are potable wells used as the primary source of drinking water within a ½-mile radius of the site, but unleaded gasoline constituents were not detected in those wells when they were analyzed in 2001 by GES (**Section 3.5** of this report). Additionally, fate and transport modeling predicts that the constituents-of-concern (benzene, MTBE, and naphthalene) will not migrate offsite during the 30-year simulation. Based on that information, this pathway was not deemed relevant for this site.

5.6.3 Soil Exposure Pathways

- *Dermal contact and direct ingestion of contaminated soils*: Analytical results indicated that all COCs were either not detected or were below the direct contact medium specific concentrations (MSCs) set forth in Act 2. Therefore, this pathway was not deemed relevant for this site.

5.6.4 Surface Water Exposure Pathways

- *Contact with surface water contaminated by runoff from contaminated surface soil*: There is no body of surface water located within 2,500 feet of the site. Additionally, fate and transport modeling predicts that the constituents-of-concern (benzene, MTBE, and naphthalene) will not migrate offsite during the 30-year simulation. Therefore, this pathway was not deemed relevant for this site.

- *Contact with surface water contaminated by groundwater discharge*: There is no body of surface water located within 2,500 feet of the site. Additionally, fate and transport modeling predicts that the constituents-of-concern (benzene, MTBE, and naphthalene) will not migrate offsite during the 30-year simulation. Therefore, this pathway was not deemed relevant for this site.

There are no open exposure pathways relevant for this site. Due to pathway elimination, no further assessment of risk will be calculated.

6.0 SITE CONCEPTUAL MODEL

This site is currently an active Sunoco retail gasoline station and convenience store. The surrounding area consists mainly of commercial properties with a residential neighborhood beyond them to the south. There are ten on-site monitoring wells (MW-1 through MW-10) for the environmental investigation. According to the subsurface drilling logs, the site is underlain by silt, sand, and clay overlying red shale, siltstone, and sandstone bedrock of the Stockton Formation, which was encountered at an average depth of 12 feet bgs.

Historically, average depth to water across the site occurs from approximately five feet to 38 feet below TOC, with an average depth to water of approximately 16.35 feet bgs. Based on measured water levels, groundwater occurs in the shale bedrock; the aquifer underlying the site appears to be unconfined. During the most recent four quarters of groundwater sampling, the groundwater flow direction has been predominately to the north and west, with an average of 0.08 ft/ft in the shallow water-bearing zone, and to the north and east, with an average of 0.004 ft/ft in the deep water-bearing zone.

Unleaded gasoline constituents from the UST system and dispenser islands have impacted the subsurface. Site characterization activities identified adsorbed-phase hydrocarbons above the PADEP SHS in soil samples collected during UST closure activities in 1996 and site characterization activities in February 2007. Groundwater quality data indicate the most significant concentrations of dissolved-phase hydrocarbons occur in monitoring wells in the vicinity of the former UST field and dispensers (MW-1, MW-2, and MW-3). Concentrations of benzene, ethylbenzene, MTBE, and naphthalene have historically been detected above the PADEP SHS in groundwater. SPH have not been detected in any of the monitoring wells.

Soil analytical results indicated benzene was detected at concentrations above the PADEP SHS beneath the dispenser islands and the former UST field. No other target parameters were detected above the PADEP SHS in soil. Soil samples collected during monitoring well installation in 2007 exhibited a laboratory detection limit of benzene that exceeded the SHS.

Dissolved-phase hydrocarbons have dispersed across the site but are primarily concentrated in the vicinity of the former dispenser islands, as exhibited by groundwater samples collected from monitoring wells MW-1, MW-2, and MW-3. According to the most recent groundwater laboratory analytical results, benzene is the only COC that has been detected at concentrations above the PADEP SHS during groundwater attainment monitoring and sampling (during five of the last eight quarters in monitoring well MW-2 only).

Based on the extent of contamination at the site, the primary sources of hydrocarbon contamination are considered to be the former dispenser islands, the former pre-Act 2 UST field, and the product delivery lines associated with them, which were removed from the site in 1996 during site reconstruction activities.

The results of the soil-vapor monitoring indicate that the COCs have either been not detected or have been detected at concentrations below the PADEP Non-Residential Indoor Air Criteria.

An exposure pathway evaluation was conducted and no open pathways exist for this site. Due to pathway elimination, no further assessment of risk will be calculated.

Trend analysis was used to conservatively evaluate post-remediation site conditions with respect to dissolved-phase hydrocarbons. The results of the trend analysis indicate decreasing dissolved-phase hydrocarbons in the on-site monitoring well network in the shallow and deep water bearing zones.

Analytical fate and transport modeling was conducted to evaluate the conceptual model presented above with respect to the extent of off-site migration of dissolved phase hydrocarbons from the site. The fate and transport of these compounds in the groundwater is dependent upon the individual properties of each constituent. The more soluble and resistant to biodegradation the compound is, the greater the ability to dissolve in groundwater and transport greater distances (e.g., MTBE). Fate and transport results indicate benzene and naphthalene will not migrate off-site at concentrations above the PADEP SHS. Fate and transport modeling results indicate that MTBE will not migrate beyond that of the initial MTBE plume.

7.0 ATTAINMENT DEMONSTRATION

7.1 Soil

7.1.1 Statewide Health Standards

Historical soil analytical results from UST closure and site characterization activities demonstrate that concentrations of benzene have been detected above PADEP SHS in on-site soil samples. None of the remaining target parameters were detected at concentrations above the PADEP SHS. Therefore, soil has attained the PADEP SHS for toluene, ethylbenzene, total xylenes, MTBE, isopropylbenzene, and naphthalene.

The applicable Statewide Health Standards selected for soil at this site were determined based on the following criteria:

Non-residential – The current and future anticipated use of the site is commercial; therefore, the non-residential standard has been selected. The current site utilization is a gasoline retail facility.

Used Aquifer – Public water is provided to the site and surrounding area by the Warminster Municipal Water Authority; however, non-use aquifer determination has not been acquired for the site.

Total Dissolved Solids – Total dissolved solids are assumed to be less than or equal to 2,500.

Sample Depth – Soil samples were collected from surface and subsurface locations.

Soil Saturation – Soil samples were collected from unsaturated and saturated soil conditions.

Based on the above criteria, the below-listed values were determined to be the applicable Statewide Health Standards selected for this site. These standards are also included in **Table 1**, Historical Soil Analytical Data Summary.

Compound	**Statewide Health Standard (µg/kg)**
	Saturated/Unsaturated
Toluene	100,000
Ethylbenzene	70,000
Total Xylenes	1,000,000
MTBE	2,000
Isopropylbenzene	230,000/1,600,000
Naphthalene	10,000/25,000

7.1.2 Site-Specific Standards

Historical soil analytical results from UST closure and site characterization activities demonstrate that concentrations of benzene have been detected above PADEP SHS in on-site soil samples. Since there are no open soil exposure pathways, there is no risk. Therefore, a numeric value for the site-specific standard for benzene will not be determined.

7.2 Groundwater

7.2.1 Statewide Health Standards

During groundwater attainment monitoring and sampling, toluene, ethylbenzene, total xylenes, isopropylbenzene, MTBE, and naphthalene have not been detected at concentrations above the PADEP SHS. It should be noted that consecutive quarters of groundwater sampling could not be conducted at monitoring wells MW-1 through MW-3 due to dry conditions; however, during the last eight sampling events in monitoring well MW-1 and MW-3 all constituents of concern were below the SHS. It should also be noted that during the eight most recent consecutive groundwater sampling events in monitoring well MW-2, benzene and MTBE exceeded the PADEP SHS. Therefore, groundwater quality at the site meets the general attainment requirements for SHS for toluene, ethylbenzene, total xylenes, isopropylbenzene, and naphthalene.

The applicable Statewide Health Standards selected for groundwater at this site were determined based on the following criteria:

Non-residential – The current and future anticipated use of the site is commercial; therefore, the non-residential standard has been selected. The current site utilization is a gasoline retail facility.

Used Aquifer – Public water is provided to the site and surrounding area by the Warminster Municipal Water Authority; however, non-use aquifer determination has not been acquired for the site.

Total Dissolved Solids – Total dissolved solids are assumed to be less than or equal to 2,500.

Based on the above criteria, the below-listed values were determined to be the applicable SHS for the compounds of concern in a non-residential, used aquifer. These Standards are also included in **Table 3** (Historical Groundwater Monitoring Data Summary).

Compound	Statewide Health Standard (µg/L)
Toluene	1,000
Ethylbenzene	700
Total Xylenes	10,000
Isopropylbenzene	2,300
Naphthalene	100

7.2.2 Site-Specific Standards

Benzene and MTBE have been detected at concentrations above the PADEP SHS in monitoring well MW-2 on three and one occasions, respectively, during attainment sampling (seven consecutive and eight overall sampling events). Based on analytical fate and transport modeling, benzene and MTBE concentrations are not predicted to migrate beyond the property boundary at concentrations above the PADEP SHS. Additionally, there are no open groundwater exposure pathways, and subsequently there is no risk. Therefore, numeric values for the site-specific standards for benzene and MTBE will not be determined.

7.3 Environmental Covenant

On December 18, 2007, Governor Rendell signed Act 68, the Uniform Environmental Covenants Act (UECA), into law. UECA provides a standardized process for creating, documenting and assuring the enforceability of activity and use limitations on contaminated sites. Under UECA, an environmental covenant will be required whenever an engineering or institutional control is used to demonstrate the attainment of an Act 2 remediation standard for any cleanup conducted under an applicable Pennsylvania environmental law. This report demonstrates that site groundwater and soil have attained a combination of SHS and SSS as outlined in Act 2 for BTEX, MTBE, isopropylbenzene, and naphthalene for a non-residential, used aquifer. In order to maintain these standards, institutional controls are required to prohibit the future use of groundwater at the site for potable purposes and to maintain a land use that meets the definition of a non-residential property. Draft language for the environmental covenant for this site is included in **Appendix L**.

8.0 CONCLUSIONS

Results of characterization activities and subsequent attainment monitoring provided a comprehensive understanding of potential impacts to soil and groundwater at the site. The data obtained from these investigations formed the basis for comparing soil and groundwater quality to a combination of Statewide Health Standards and Site-Specific Standards, as well as evaluating the potential risks associated with residual concentrations of petroleum hydrocarbon compounds. The characterization and subsequent attainment monitoring established that the hydrocarbon components occur as adsorbed constituents in soil and dissolved constituents in groundwater. A review of all potential exposure pathways did not identify any open pathways for this site.

Additionally, the most recent groundwater analytical results indicated that the dissolved-phase hydrocarbon plumes are decreasing. As further support of the demonstration of attainment, fate and transport analysis was used to conservatively evaluate post-remediation site conditions with respect to dissolved-phase hydrocarbons, as well as to predict the off-site migration of dissolved-phase hydrocarbons and impact to nearby receptors. The results of the fate and transport analysis indicate that the maximum concentrations detected during historical groundwater monitoring will not be exceeded at the downgradient point-of-compliance in the future, and as a result, dissolved-phase hydrocarbon constituents will not impact any sensitive receptors. Furthermore, trend analyses were conducted to document changes in dissolved–phase hydrocarbon concentrations over time. The hydrocarbon graphs indicate that there are decreasing trends at each monitoring well that has exhibited an exceedance of a COC during historical groundwater monitoring and attainment sampling.

Considering the above, site groundwater and soil have been demonstrated to attain a combination of Statewide Health Standards and Site-Specific Standards as outlined in Act 2 for BTEX, MTBE, isopropylbenzene, and naphthalene. Based on the attainment of soil and groundwater standards and based on the findings of this report, Sunoco respectfully requests a Release of Liability for groundwater and soil conditions pertaining to the release of unleaded gasoline at this facility upon completion (signatures and recordation) of the Environmental Covenant.

9.0 REFERENCES

Emergency Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release sites, ASTM E-1739, American Society for Testing and Materials, Philadelphia, PA, 1995.

Engineering Characteristics of the Rocks of Pennsylvania, Alan R. Geyer and J. Peter Wilshusen, Harrisburg, PA, 1982.

Geologic Map of Pennsylvania and Cross Sections, Commonwealth of Pennsylvania, Bureau of Topographic and Geological Survey, Wagner, 1980.

Little Neshaminy Creek River Conservation Plan, Heritage Conservancy, accessed July 23, 2007, https://www.heritageconservancy.org/services-a-projects/85-little-neshaminy-creek-river-conservation-plan-.

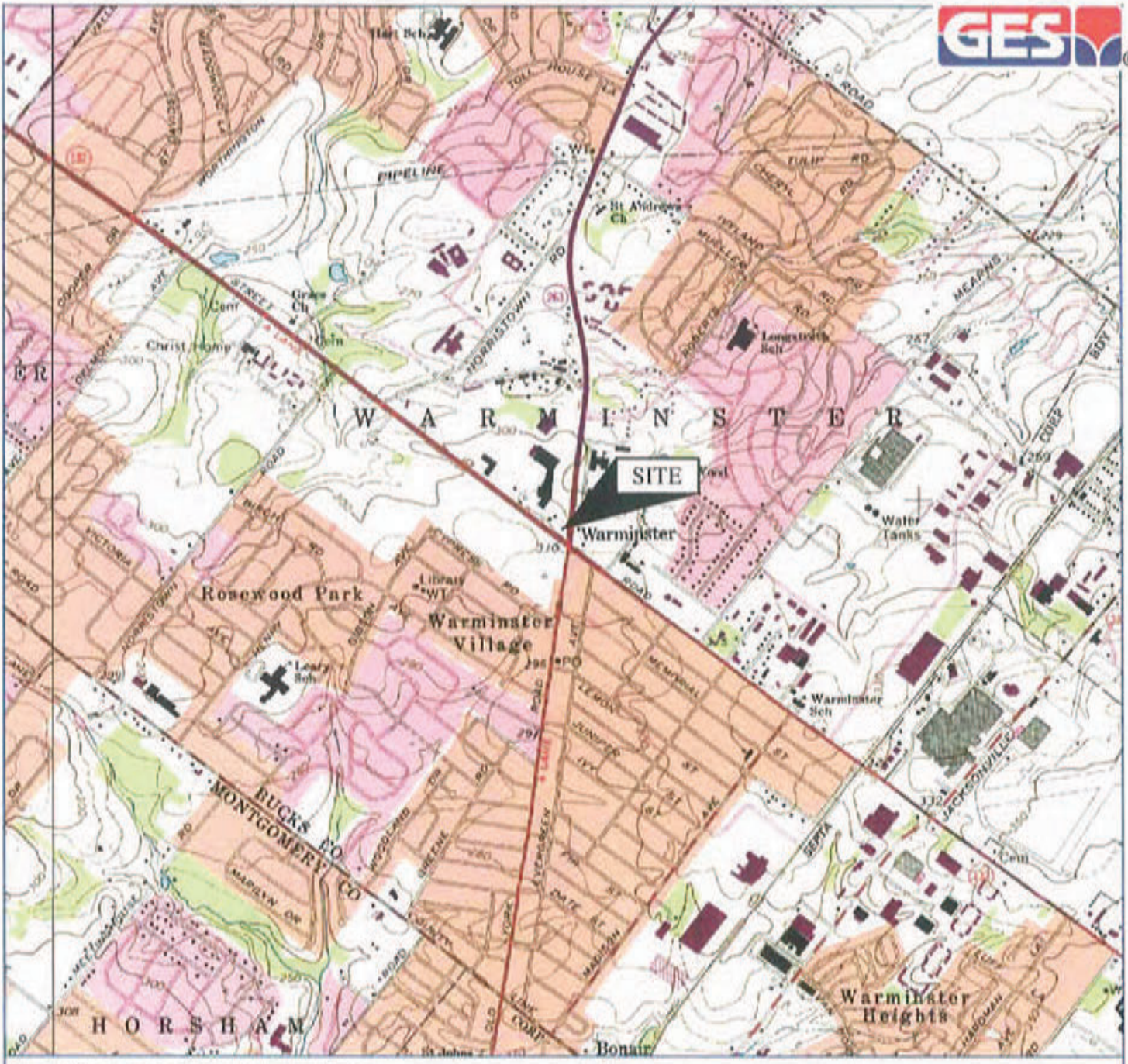
Neshaminy Creek Fact Sheet, Pennsylvania Delaware River Keeper Notebook, accessed July 23, 2007, *http://www.delawareriverkeeper.org/factsheets/neshaminy.html*

Physiographic Provinces of Pennsylvania", Pennsylvania Department of Conservation and Natural Resources, Bureau of Topographic and Geologic Survey, Map 13, 2000, website, <www.dcnr.state.pa.us/topogeo>

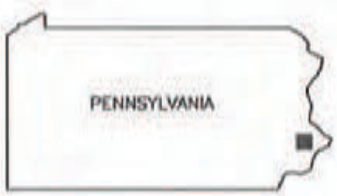
Additional Site Characterization Report and Remedial Action Plan, Groundwater and Environmental Services, Inc., 6 January 2006.

The Geology of Pennsylvania, Charles H. Shultz, editor, Pennsylvania Geological Survey, 1999.

Watershed Notebooks, Pennsylvania Department of Environmental Protection Website, accessed July 23, 2007, <*http://www.dep.state.pa.us/dep/deputate/watermgt/wc/Subjects/WSNoteBks/ws03f.htm*>

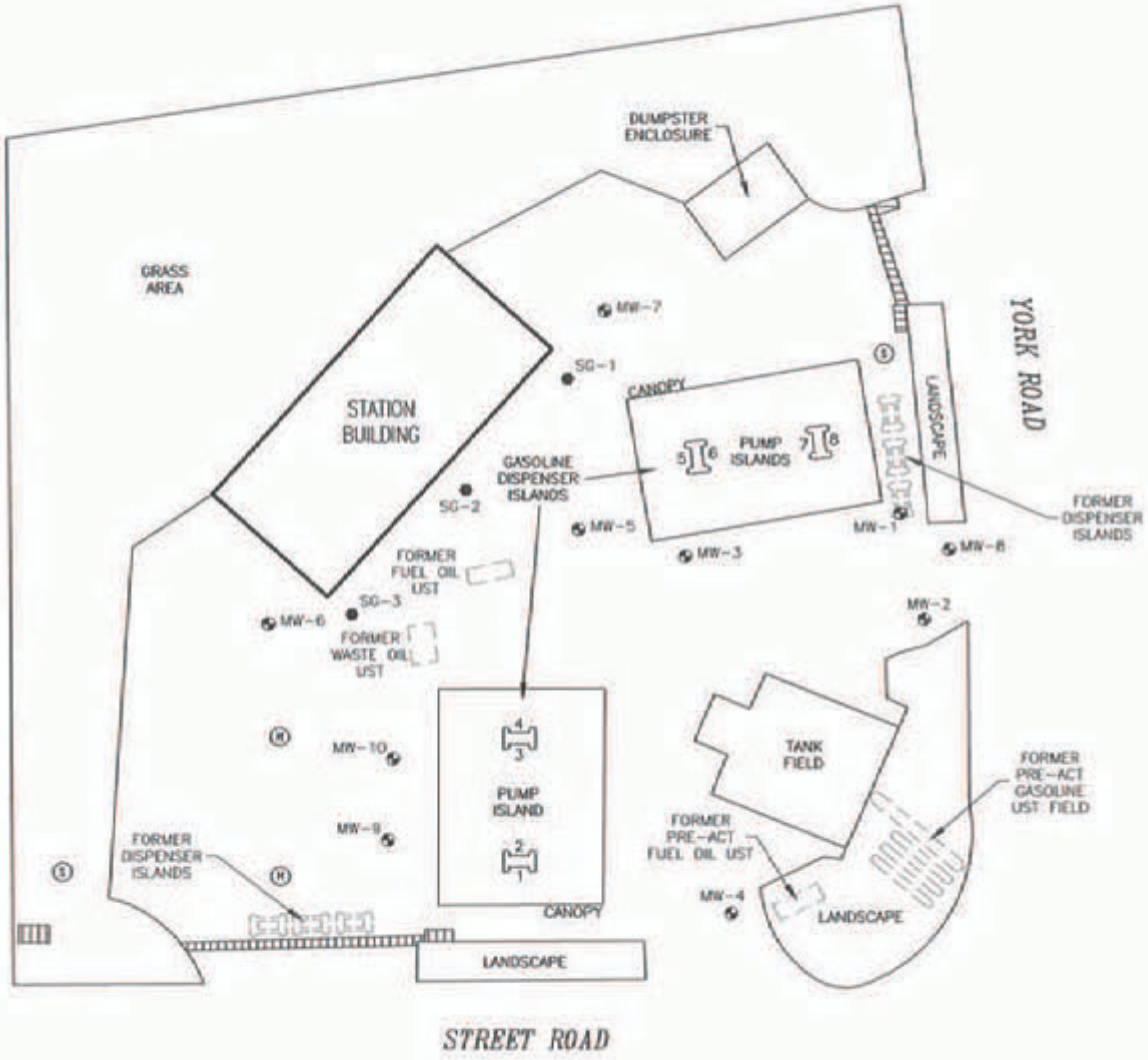


SOURCE: USGS 7.5 MINUTE SERIES
TOPOGRAPHIC QUADRANGLE
HATBORO, PA
CONTOUR INTERVAL = 10' 1966 (1983)



QUADRANGLE LOCATION

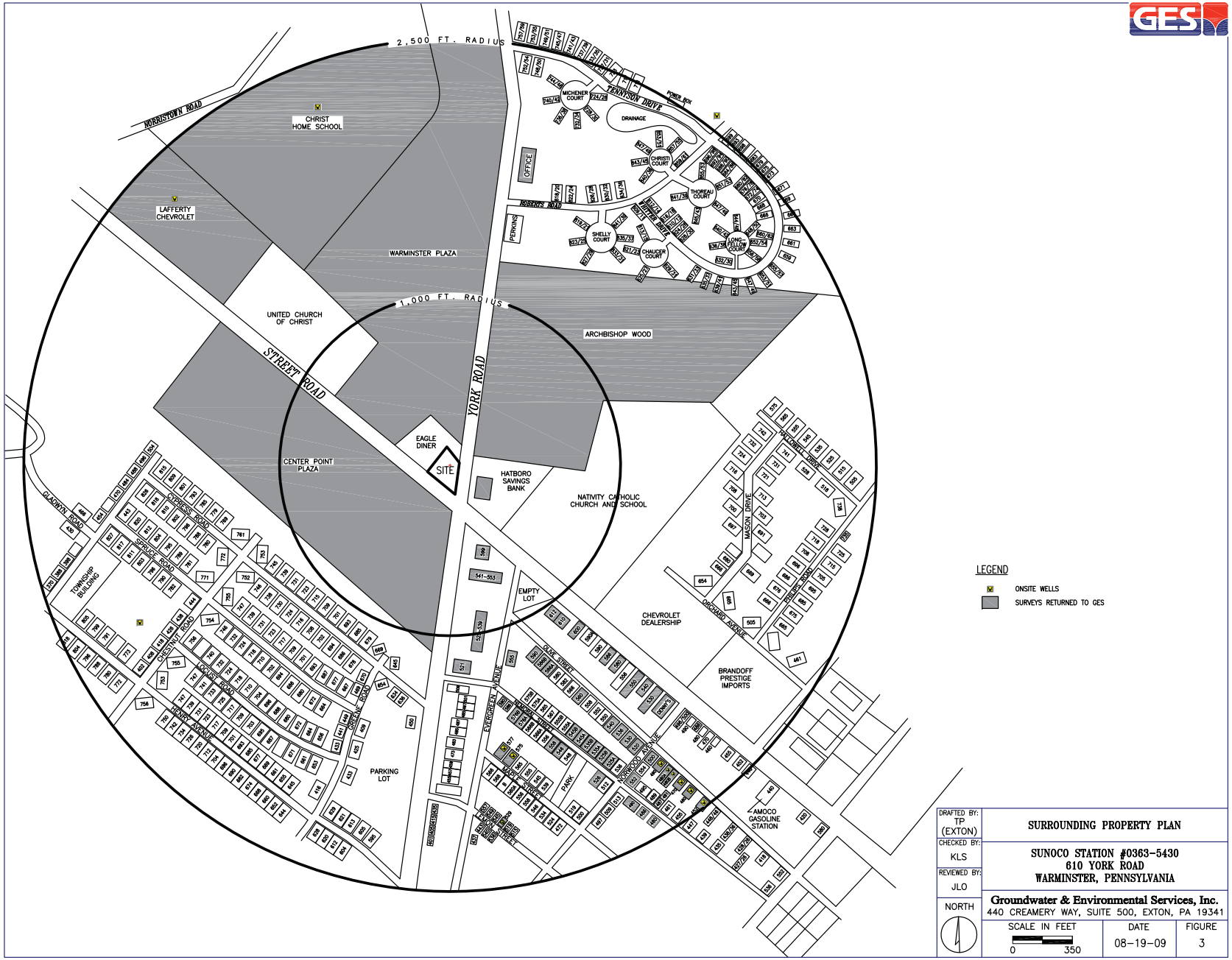
DRAFTED BY: TP (EXTON)	SITE LOCATION MAP
CHECKED BY: KLS	SUNOCO STATION #0363-5430 610 YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: KLS	Groundwater & Environmental Services, Inc. 440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 2000 / DATE: 08-19-09 / FIGURE: 1



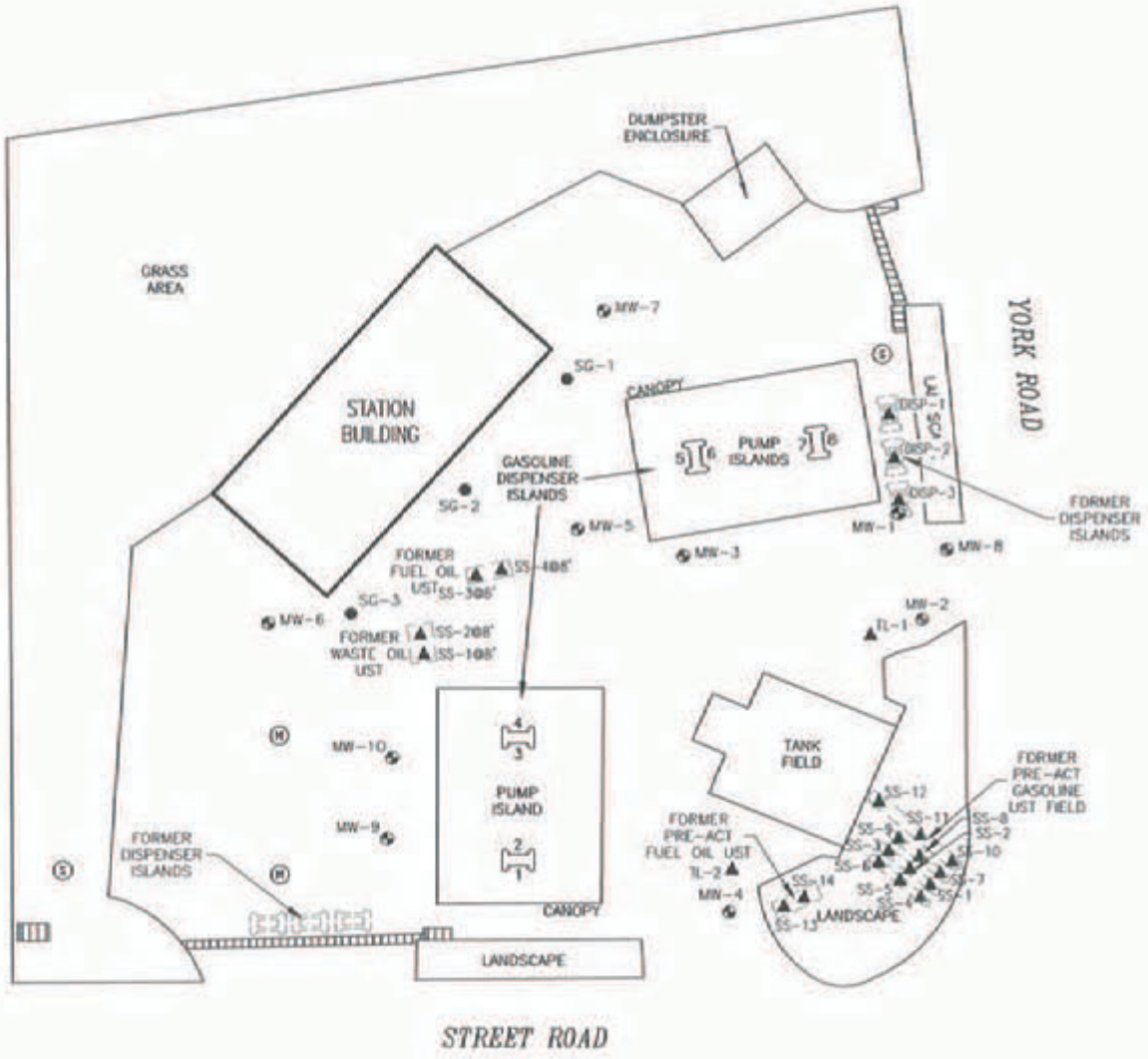
LEGEND

- MONITORING WELL
- SEWER MANHOLE
- MANHOLE
- STORM DRAINAGE
- SOIL GAS SURVEY POINT

DRAFTED BY: TP (EXTON)	SITE MAP
CHECKED BY: KLS	SUNOCO STATION #0363-5430 610 YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: JLO	Groundwater & Environmental Services, Inc. 440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 30 / DATE: 08-19-09 / FIGURE: 2



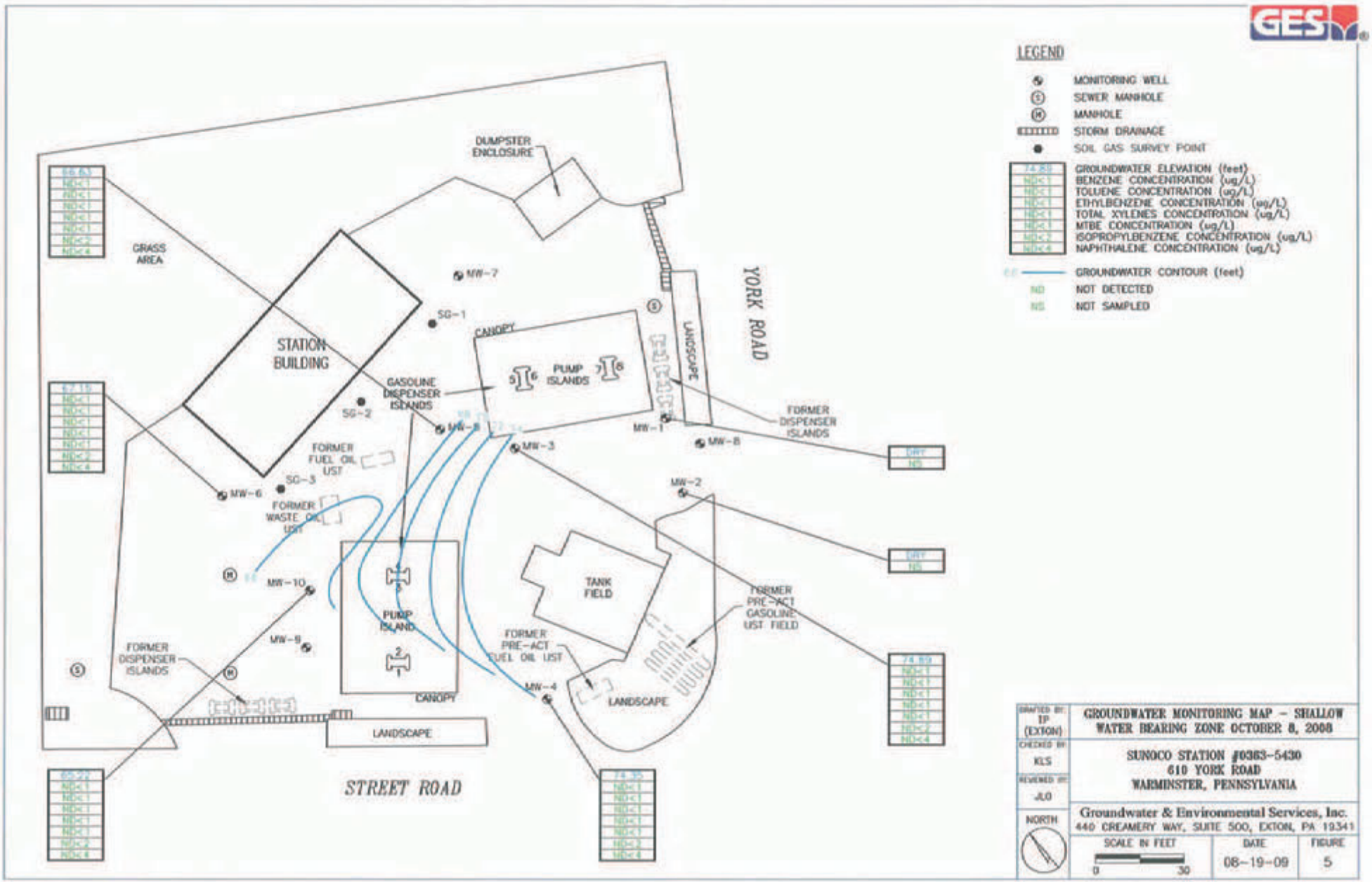
DRAFTED BY: TP (EXTON)	SURROUNDING PROPERTY PLAN
CHECKED BY: KLS	SUNOCO STATION #0363-5430 610 YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: JLO	Groundwater & Environmental Services, Inc. 440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 350 / DATE: 08-19-09 / FIGURE: 3

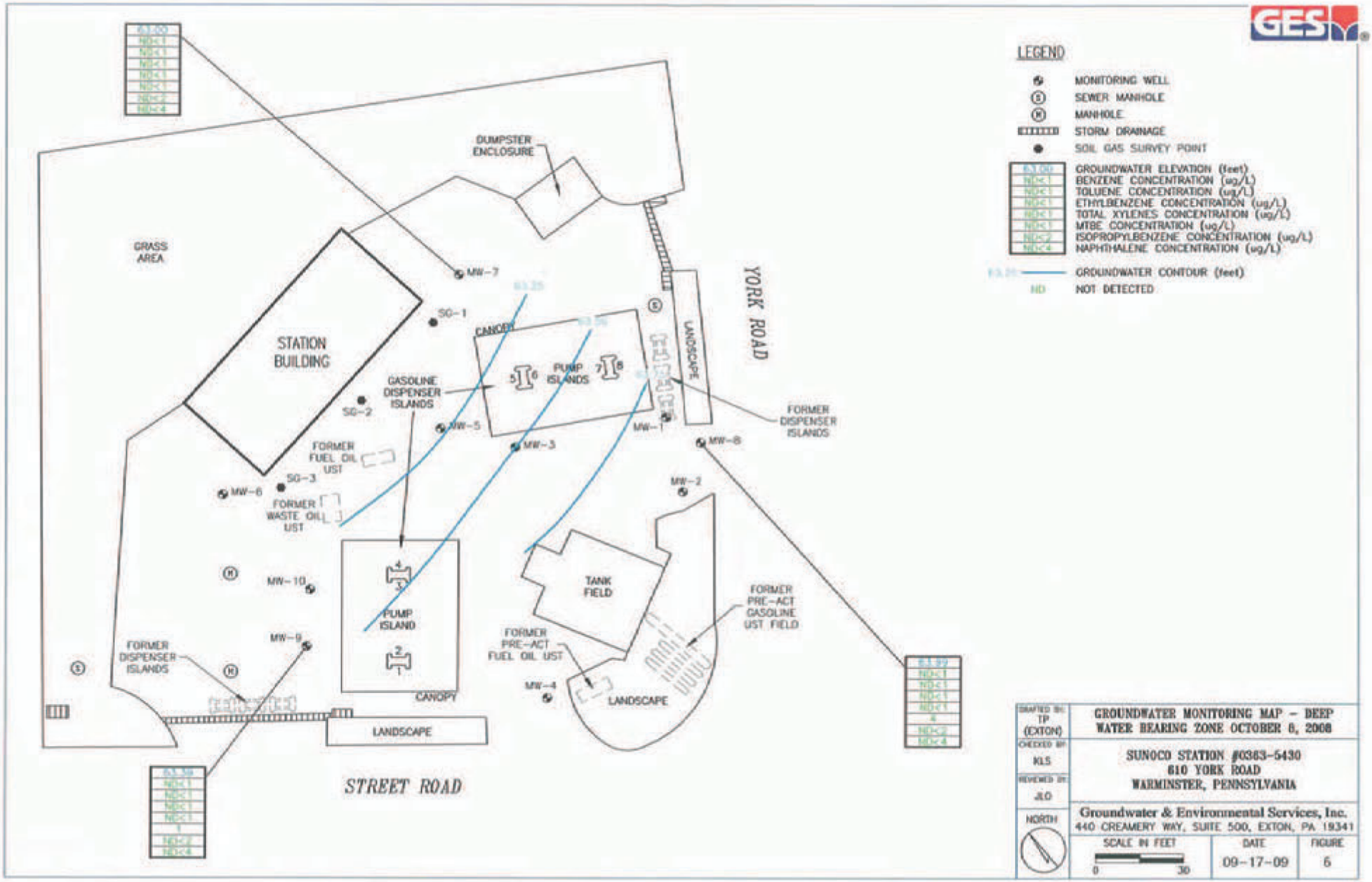


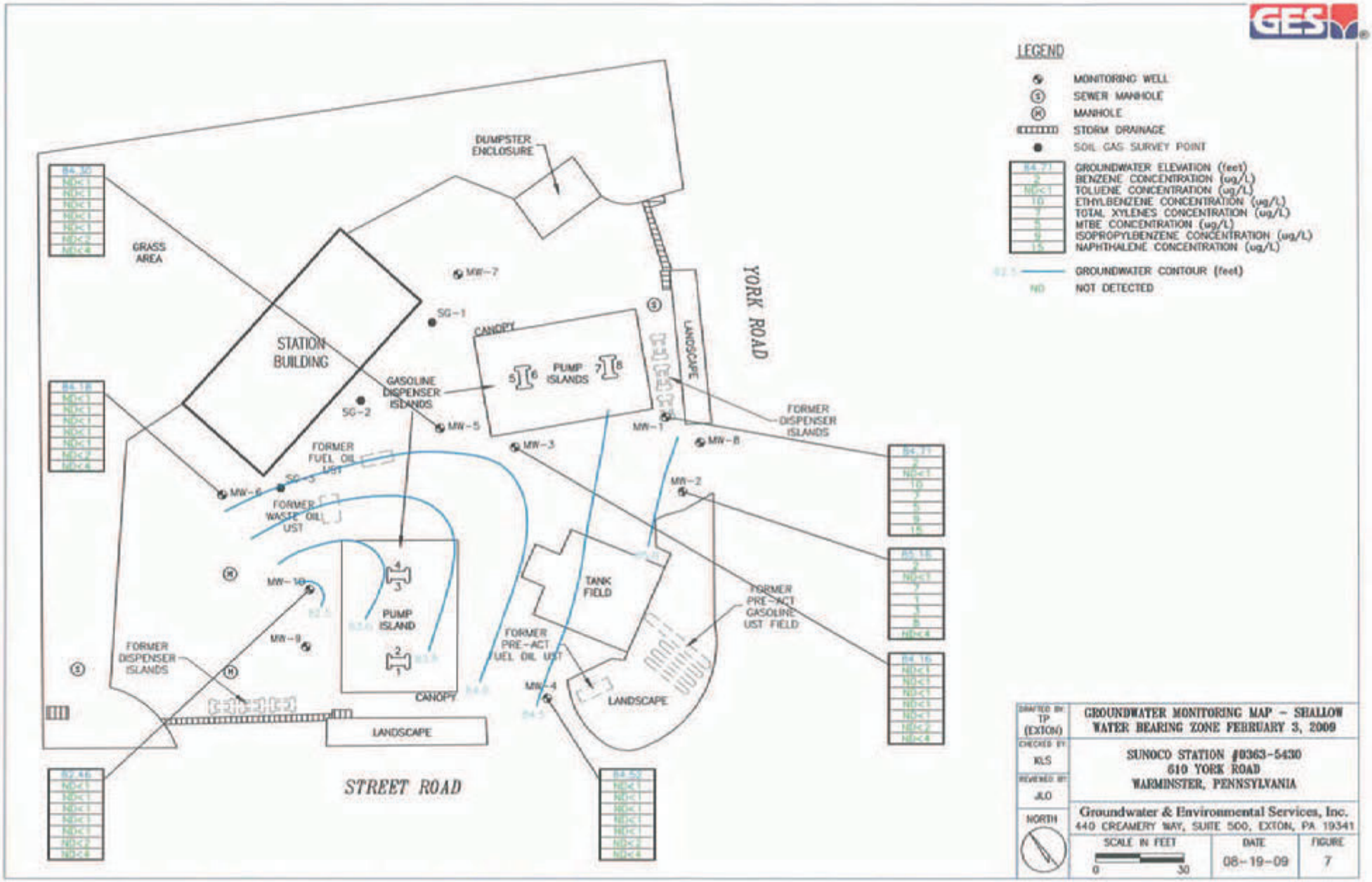
LEGEND

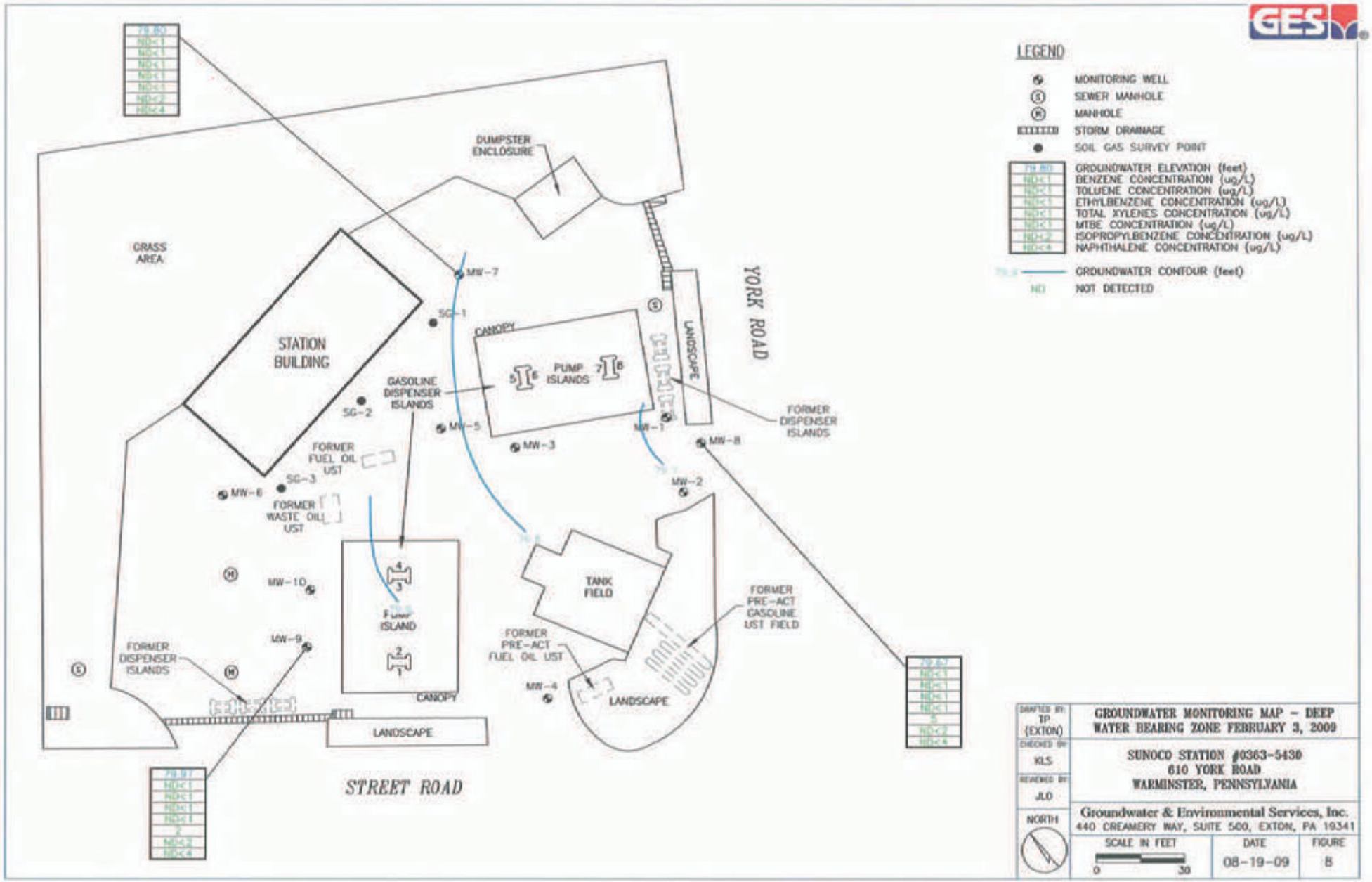
- MONITORING WELL
- SEWER MANHOLE
- MANHOLE
- STORM DRAINAGE
- SOIL GAS SURVEY POINT
- UST CLOSURE SOIL SAMPLE

DRAFTED BY: TP (EXTON)	UST CLOSURE SOIL SAMPLE LOCATION MAP 1995/1996
CHECKED BY: KLS	SUNOCO STATION #0363-5430 610 YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: JLO	Groundwater & Environmental Services, Inc. 440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 30 / DATE: 08-19-09 / FIGURE: 4


LEGEND
MONITORING WELL
SEWER MANHOLE
MANHOLE
STORM DRAINAGE
SOIL GAS SURVEY POINT
GROUNDWATER ELEVATION (feet)
BENZENE CONCENTRATION (ug/L)
TOLUENE CONCENTRATION (ug/L)
ETHYLBENZENE CONCENTRATION (ug/L)
TOTAL XYLENES CONCENTRATION (ug/L)
MTBE CONCENTRATION (ug/L)
ISOPROPYLBENZENE CONCENTRATION (ug/L)
NAPHTHALENE CONCENTRATION (ug/L)
GROUNDWATER CONTOUR (feet)
ND NOT DETECTED
NS NOT SAMPLED
DUMPSTER ENCLOSURE
GRASS AREA
STATION BUILDING
CANOPY
PUMP ISLANDS
GASOLINE DISPENSER ISLANDS
LANDSCAPE
YORK ROAD
FORMER DISPENSER ISLANDS
FORMER FUEL OIL UST
FORMER WASTE OIL UST
TANK FIELD
FORMER PRE-ACT GASOLINE UST FIELD
FORMER PRE-ACT FUEL OIL UST
PUMP ISLAND
FORMER DISPENSER ISLANDS
LANDSCAPE
STREET ROAD
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
SG-1
SG-2
SG-3
DRY
NS
GROUNDWATER MONITORING MAP - SHALLOW WATER BEARING ZONE OCTOBER 8, 2008
SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PENNSYLVANIA
Groundwater & Environmental Services, Inc.
440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
DRAFTED BY: TP (EXTON)
CHECKED BY: KLS
REVIEWED BY: JLO
NORTH
SCALE IN FEET
0
30
DATE
08-19-09
FIGURE
5


LEGEND
MONITORING WELL
SEWER MANHOLE
MANHOLE
STORM DRAINAGE
SOIL GAS SURVEY POINT
GROUNDWATER ELEVATION (feet)
BENZENE CONCENTRATION (ug/L)
TOLUENE CONCENTRATION (ug/L)
ETHYLBENZENE CONCENTRATION (ug/L)
TOTAL XYLENES CONCENTRATION (ug/L)
MTBE CONCENTRATION (ug/L)
ISOPROPYLBENZENE CONCENTRATION (ug/L)
NAPHTHALENE CONCENTRATION (ug/L)
GROUNDWATER CONTOUR (feet)
ND NOT DETECTED
GRASS AREA
DUMPSTER ENCLOSURE
STATION BUILDING
MW-7
SG-1
CANOPY
PUMP ISLANDS
GASOLINE DISPENSER ISLANDS
SG-2
MW-5
MW-3
MW-1
LANDSCAPE
YORK ROAD
FORMER DISPENSER ISLANDS
MW-8
FORMER FUEL OIL UST
SG-3
MW-6
FORMER WASTE OIL UST
MW-2
MW-10
PUMP ISLAND
TANK FIELD
FORMER PRE-ACT GASOLINE UST FIELD
MW-9
FORMER DISPENSER ISLANDS
FORMER PRE-ACT FUEL OIL UST
MW-4
CANOPY
LANDSCAPE
LANDSCAPE
STREET ROAD
DRAFTED BY: TP (EXTON)
CHECKED BY: KLS
REVIEWED BY: JLO
NORTH
GROUNDWATER MONITORING MAP - DEEP WATER BEARING ZONE OCTOBER 8, 2008
SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PENNSYLVANIA
Groundwater & Environmental Services, Inc.
440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
SCALE IN FEET
0 30
DATE
09-17-09
FIGURE
6


LEGEND
MONITORING WELL
SEWER MANHOLE
MANHOLE
STORM DRAINAGE
SOIL GAS SURVEY POINT
GROUNDWATER ELEVATION (feet)
BENZENE CONCENTRATION (ug/L)
TOLUENE CONCENTRATION (ug/L)
ETHYLBENZENE CONCENTRATION (ug/L)
TOTAL XYLENES CONCENTRATION (ug/L)
MTBE CONCENTRATION (ug/L)
ISOPROPYLBENZENE CONCENTRATION (ug/L)
NAPHTHALENE CONCENTRATION (ug/L)
GROUNDWATER CONTOUR (feet)
NOT DETECTED
DUMPSTER ENCLOSURE
GRASS AREA
STATION BUILDING
CANOPY
PUMP ISLANDS
GASOLINE DISPENSER ISLANDS
LANDSCAPE
YORK ROAD
FORMER DISPENSER ISLANDS
FORMER FUEL OIL UST
FORMER WASTE OIL UST
TANK FIELD
FORMER PRE-ACT GASOLINE UST FIELD
FORMER PRE-ACT UEL OIL UST
PUMP ISLAND
CANOPY
FORMER DISPENSER ISLANDS
LANDSCAPE
STREET ROAD
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
SG-1
SG-2
SG-3
DRAFTED BY: TP (EXTON)
CHECKED BY: KLS
REVIEWED BY: JLO
NORTH
GROUNDWATER MONITORING MAP - SHALLOW WATER BEARING ZONE FEBRUARY 3, 2009
SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PENNSYLVANIA
Groundwater & Environmental Services, Inc.
440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
SCALE IN FEET
0
30
DATE
08-19-09
FIGURE
7


LEGEND
MONITORING WELL
SEWER MANHOLE
MANHOLE
STORM DRAINAGE
SOIL GAS SURVEY POINT
GROUNDWATER ELEVATION (feet)
BENZENE CONCENTRATION (ug/L)
TOLUENE CONCENTRATION (ug/L)
ETHYLBENZENE CONCENTRATION (ug/L)
TOTAL XYLENES CONCENTRATION (ug/L)
MTBE CONCENTRATION (ug/L)
ISOPROPYLBENZENE CONCENTRATION (ug/L)
NAPHTHALENE CONCENTRATION (ug/L)
GROUNDWATER CONTOUR (feet)
ND NOT DETECTED
DUMPSTER ENCLOSURE
GRASS AREA
STATION BUILDING
CANOPY
PUMP ISLANDS
GASOLINE DISPENSER ISLANDS
LANDSCAPE
YORK ROAD
FORMER DISPENSER ISLANDS
FORMER FUEL OIL UST
FORMER WASTE OIL UST
MW-1
MW-2
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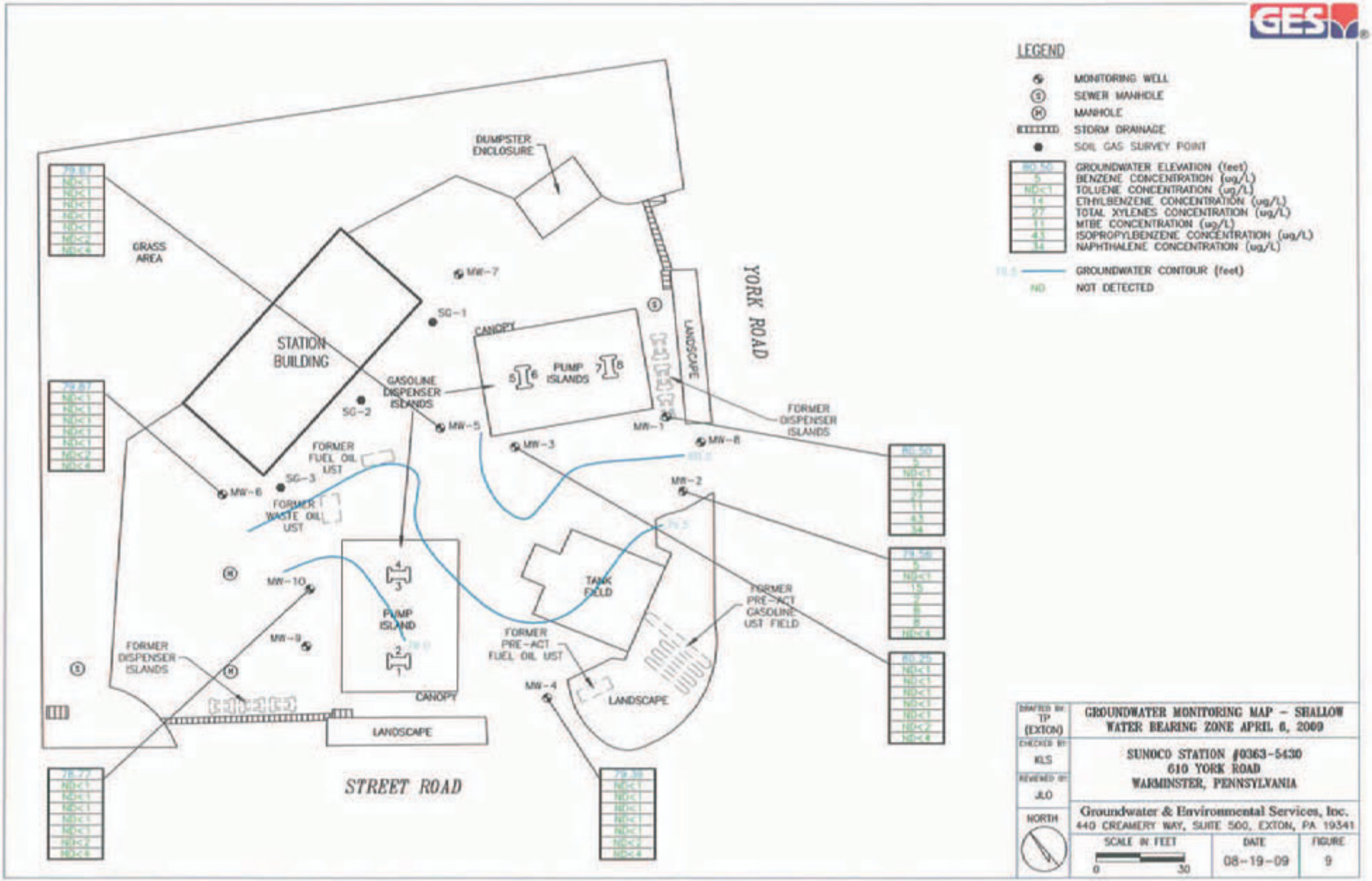
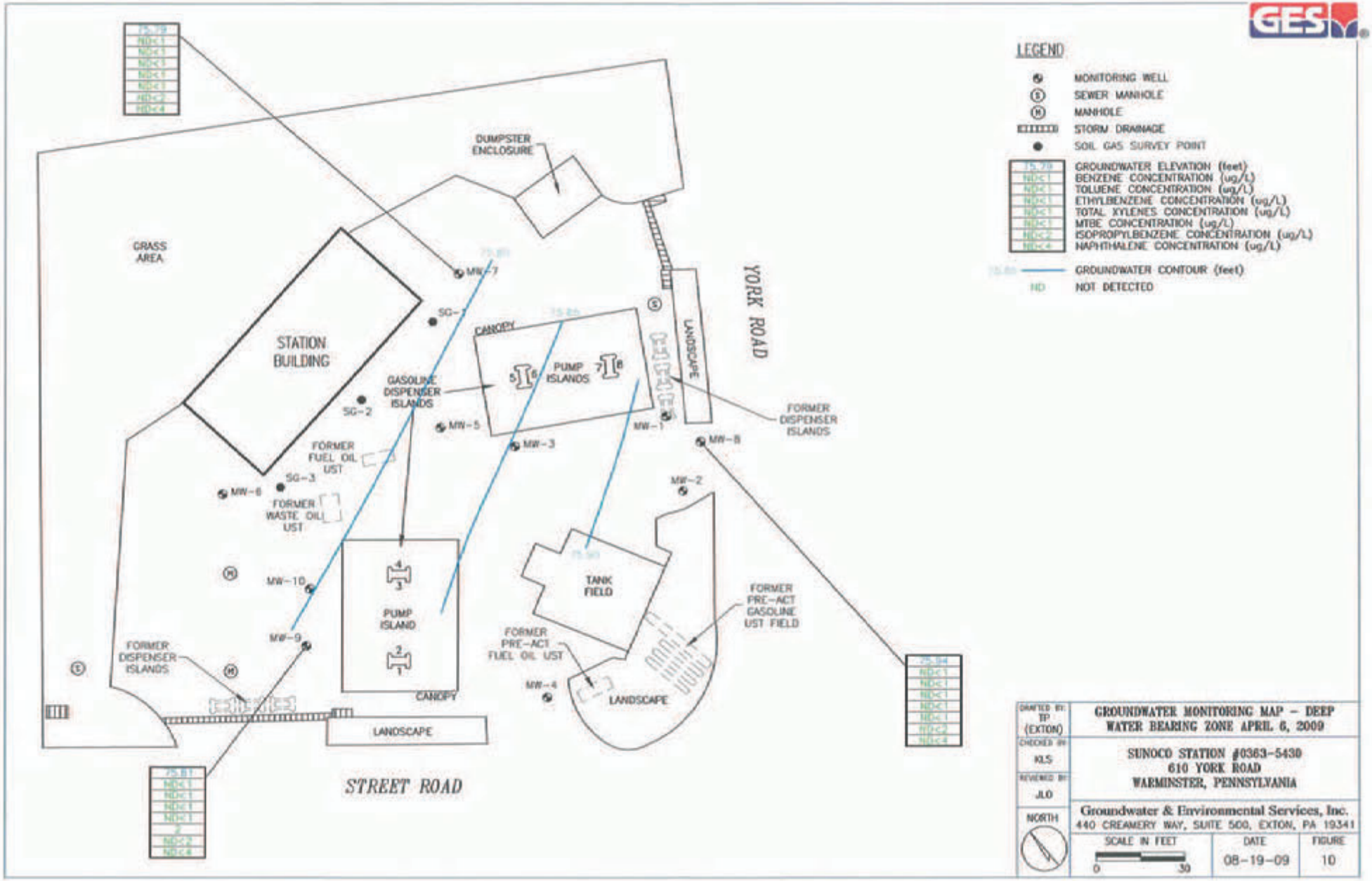
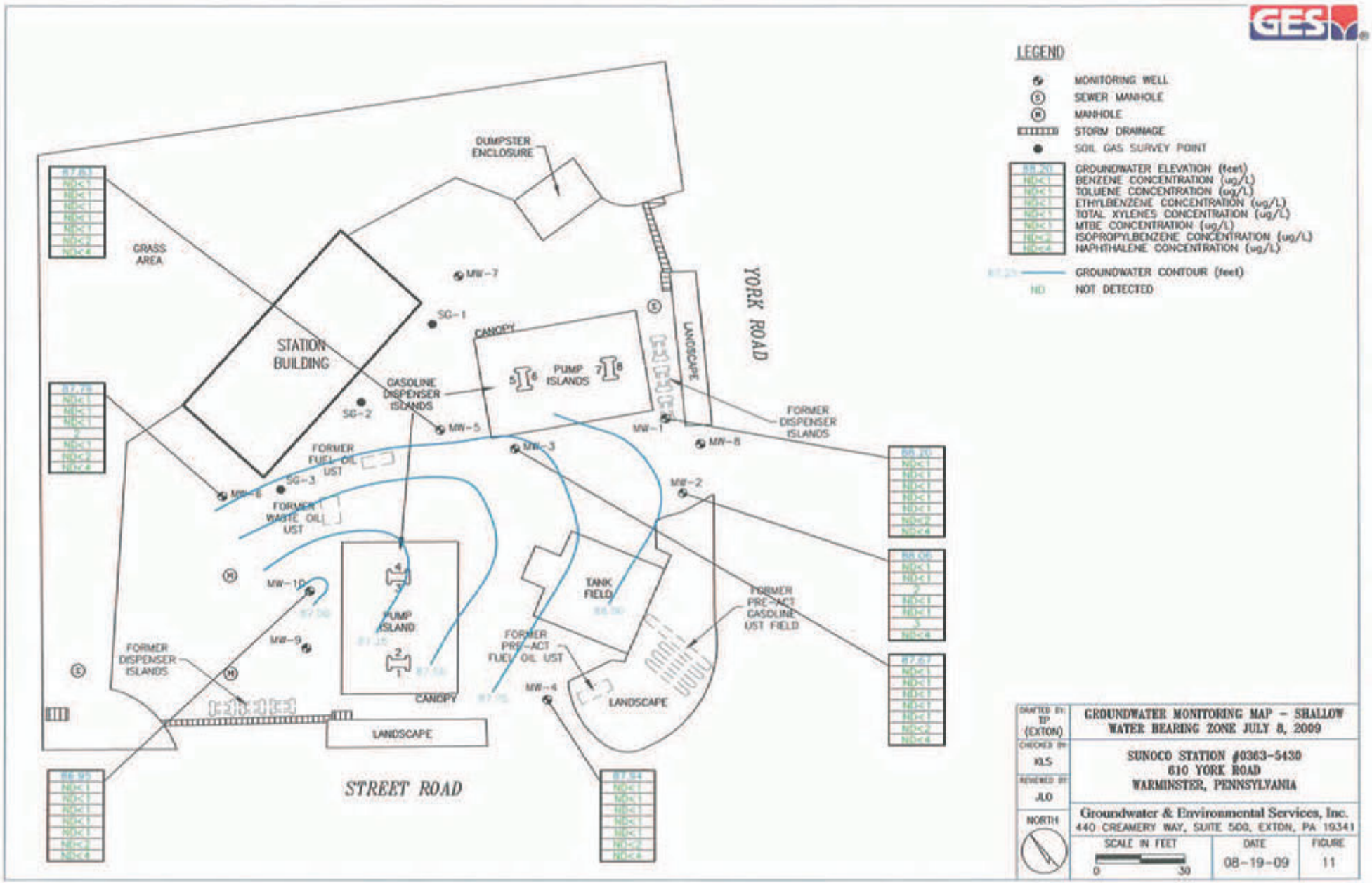
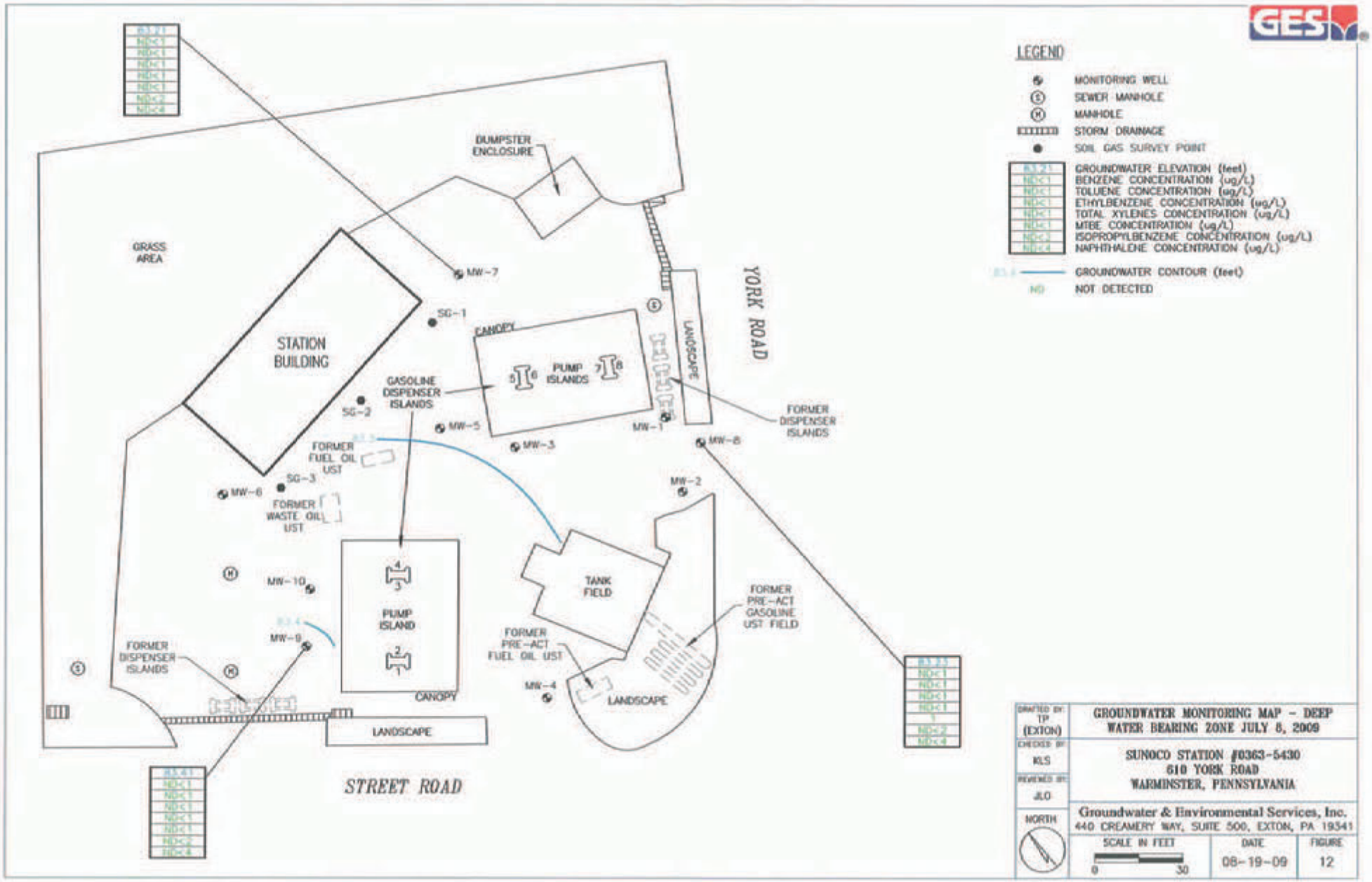
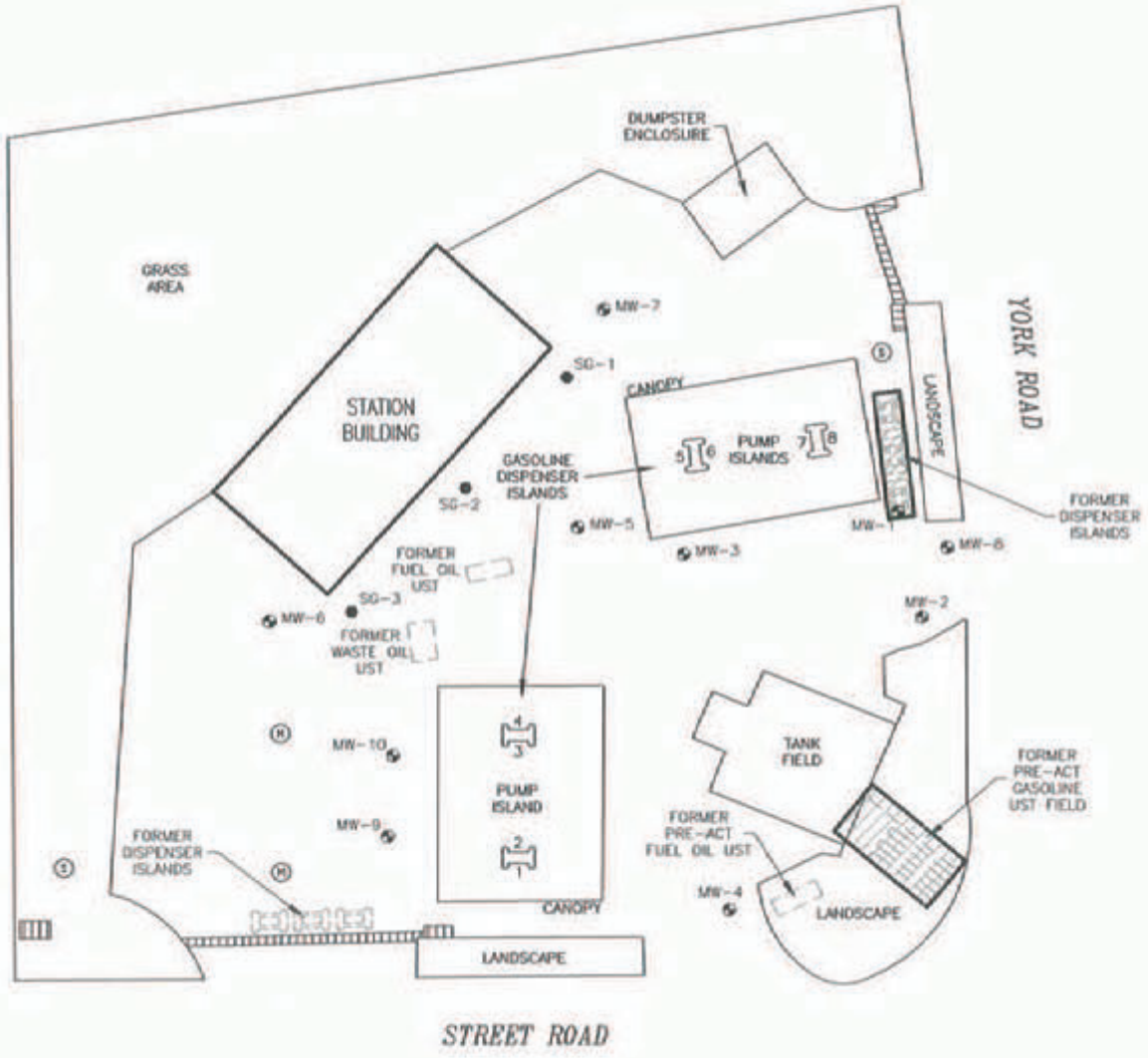
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
SG-1
SG-2
SG-3
TANK FIELD
FORMER PRE-ACT GASOLINE UST FIELD
FORMER PRE-ACT FUEL OIL UST
FORMER DISPENSER ISLANDS
LANDSCAPE
CANOPY
STREET ROAD
DRAFTED BY: TP (EXTON)
CHECKED BY: KLS
REVIEWED BY: JLO
NORTH
GROUNDWATER MONITORING MAP - DEEP WATER BEARING ZONE FEBRUARY 3, 2009
SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PENNSYLVANIA
Groundwater & Environmental Services, Inc.
440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
SCALE IN FEET
0
30
DATE
08-19-09
FIGURE
8


LEGEND
MONITORING WELL
SEWER MANHOLE
MANHOLE
STORM DRAINAGE
SOIL GAS SURVEY POINT
GROUNDWATER ELEVATION (feet)
BENZENE CONCENTRATION (ug/L)
TOLUENE CONCENTRATION (ug/L)
ETHYLBENZENE CONCENTRATION (ug/L)
TOTAL XYLENES CONCENTRATION (ug/L)
MTBE CONCENTRATION (ug/L)
ISOPROPYLBENZENE CONCENTRATION (ug/L)
NAPHTHALENE CONCENTRATION (ug/L)
GROUNDWATER CONTOUR (feet)
NOT DETECTED
DUMPSTER ENCLOSURE
GRASS AREA
STATION BUILDING
CANOPY
PUMP ISLANDS
GASOLINE DISPENSER ISLANDS
LANDSCAPE
YORK ROAD
FORMER DISPENSER ISLANDS
FORMER FUEL OIL UST
FORMER WASTE OIL UST
TANK FIELD
FORMER PRE-ACT GASOLINE UST FIELD
FORMER PRE-ACT FUEL OIL UST
PUMP ISLAND
FORMER DISPENSER ISLANDS
LANDSCAPE
STREET ROAD
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
SG-1
SG-2
SG-3
DRAFTED BY: TP (EXTON)
CHECKED BY: KLS
REVIEWED BY: JLO
NORTH
GROUNDWATER MONITORING MAP - SHALLOW WATER BEARING ZONE APRIL 6, 2009
SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PENNSYLVANIA
Groundwater & Environmental Services, Inc.
440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
SCALE IN FEET
0
30
DATE
08-19-09
FIGURE
9


LEGEND
MONITORING WELL
SEWER MANHOLE
MANHOLE
STORM DRAINAGE
SOIL GAS SURVEY POINT
GROUNDWATER ELEVATION (feet)
BENZENE CONCENTRATION (ug/L)
TOLUENE CONCENTRATION (ug/L)
ETHYLBENZENE CONCENTRATION (ug/L)
TOTAL XYLENES CONCENTRATION (ug/L)
MTBE CONCENTRATION (ug/L)
ISOPROPYLBENZENE CONCENTRATION (ug/L)
NAPHTHALENE CONCENTRATION (ug/L)
GROUNDWATER CONTOUR (feet)
ND NOT DETECTED
DUMPSTER ENCLOSURE
GRASS AREA
STATION BUILDING
CANOPY
PUMP ISLANDS
GASOLINE DISPENSER ISLANDS
LANDSCAPE
YORK ROAD
FORMER DISPENSER ISLANDS
FORMER FUEL OIL UST
FORMER WASTE OIL UST
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
SG-1
SG-2
SG-3
TANK FIELD
FORMER PRE-ACT GASOLINE UST FIELD
FORMER PRE-ACT FUEL OIL UST
PUMP ISLAND
CANOPY
FORMER DISPENSER ISLANDS
LANDSCAPE
STREET ROAD
GROUNDWATER MONITORING MAP - DEEP WATER BEARING ZONE APRIL 6, 2009
SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PENNSYLVANIA
Groundwater & Environmental Services, Inc.
440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
DRAFTED BY: TP (EXTON)
CHECKED BY: KLS
REVIEWED BY: JLO
NORTH
SCALE IN FEET 0 30
DATE 08-19-09
FIGURE 10


LEGEND
MONITORING WELL
SEWER MANHOLE
MANHOLE
STORM DRAINAGE
SOIL GAS SURVEY POINT
GROUNDWATER ELEVATION (feet)
BENZENE CONCENTRATION (ug/L)
TOLUENE CONCENTRATION (ug/L)
ETHYLBENZENE CONCENTRATION (ug/L)
TOTAL XYLENES CONCENTRATION (ug/L)
MTBE CONCENTRATION (ug/L)
ISOPROPYLBENZENE CONCENTRATION (ug/L)
NAPHTHALENE CONCENTRATION (ug/L)
GROUNDWATER CONTOUR (feet)
ND NOT DETECTED
DUMPSTER ENCLOSURE
GRASS AREA
STATION BUILDING
CANOPY
PUMP ISLANDS
GASOLINE DISPENSER ISLANDS
LANDSCAPE
YORK ROAD
FORMER DISPENSER ISLANDS
FORMER FUEL OIL UST
FORMER WASTE OIL UST
TANK FIELD
FORMER PRE-ACT GASOLINE UST FIELD
FORMER PRE-ACT FUEL OIL UST
MW-1
MW-1D
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
SG-1
SG-2
SG-3
STREET ROAD
GROUNDWATER MONITORING MAP - SHALLOW WATER BEARING ZONE JULY 8, 2009
SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PENNSYLVANIA
Groundwater & Environmental Services, Inc.
440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
DRAFTED BY: TP (EXTON)
CHECKED BY: KLS
REVIEWED BY: JLO
NORTH
SCALE IN FEET 0 30
DATE 08-19-09
FIGURE 11


LEGEND
MONITORING WELL
SEWER MANHOLE
MANHOLE
STORM DRAINAGE
SOIL GAS SURVEY POINT
GROUNDWATER ELEVATION (feet)
BENZENE CONCENTRATION (ug/L)
TOLUENE CONCENTRATION (ug/L)
ETHYLBENZENE CONCENTRATION (ug/L)
TOTAL XYLENES CONCENTRATION (ug/L)
MTBE CONCENTRATION (ug/L)
ISOPROPYLBENZENE CONCENTRATION (ug/L)
NAPHTHALENE CONCENTRATION (ug/L)
GROUNDWATER CONTOUR (feet)
ND NOT DETECTED
DUMPSTER ENCLOSURE
GRASS AREA
STATION BUILDING
CANOPY
PUMP ISLANDS
GASOLINE DISPENSER ISLANDS
LANDSCAPE
YORK ROAD
FORMER DISPENSER ISLANDS
FORMER FUEL OIL UST
FORMER WASTE OIL UST
TANK FIELD
FORMER PRE-ACT GASOLINE UST FIELD
FORMER PRE-ACT FUEL OIL UST
PUMP ISLAND
CANOPY
FORMER DISPENSER ISLANDS
LANDSCAPE
STREET ROAD
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
SG-1
SG-2
SG-3
GROUNDWATER MONITORING MAP - DEEP WATER BEARING ZONE JULY 8, 2009
SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PENNSYLVANIA
Groundwater & Environmental Services, Inc.
440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
DRAFTED BY: TP (EXTON)
CHECKED BY: KLS
REVIEWED BY: JLO
NORTH
SCALE IN FEET
0
30
DATE
08-19-09
FIGURE
12



LEGEND

- MONITORING WELL
- SEWER MANHOLE
- MANHOLE
- STORM DRAINAGE
- SOIL GAS SURVEY POINT
- SOURCE AREA LOCATION

DRAFTED BY: TP (EXTON)	SOURCE AREA MAP
CHECKED BY: KLS	SUNOCO STATION #0363-5430 610 YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: JLO	Groundwater & Environmental Services, Inc. 440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 30 / DATE: 08-19-09 / FIGURE: 13

Historical Maximum

July 2009

Benzene Concentration (µg/L)

400
300
200
100
5

Note: Benzene concentrations above 5 µg/L were not observed.

DRAWN BY: MJL	Benzene Concentratioes Historical Maximum and July 2009
CHECKED BY: KLS	Sunoco Station #0363-5430 610 Old York Road Warminster, Pennsylvania
REVIEWED BY: JLO	Groundwater & Environmental Services, Inc. 440 Creamery Way, Suite 500, Exton, PA 19341
NORTH	SCALE IN FEET: 0 50 / DATE: 9-17-09 / FIGURE: 14

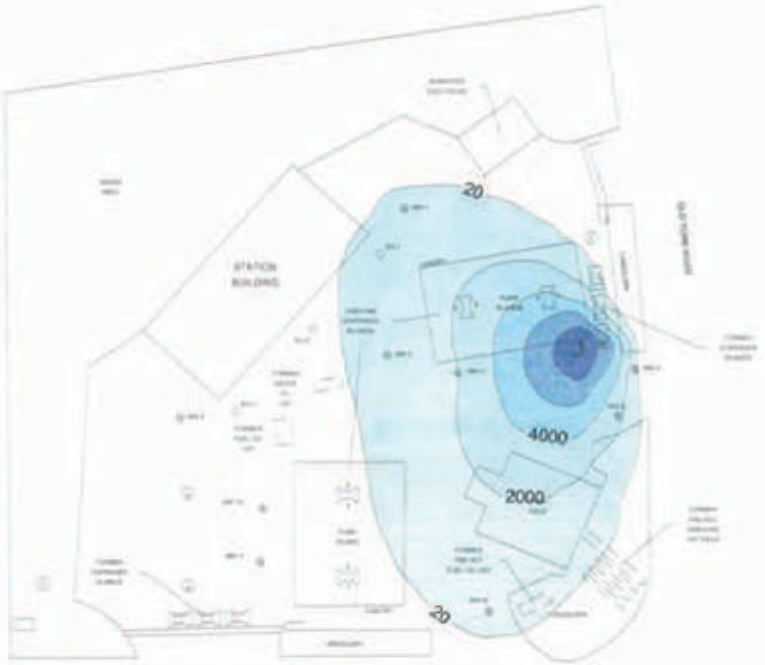
Historical Maximum

July 2009

Note: Ethylbenzene concentrations above 700 µg/L were not observed.

DRAFTED BY: MJL	**Ethylbenzene Concentrations Historical Maximum and July 2009**
CHECKED BY: KLS	**Sunoco Station #0363-5430** **610 Old York Road** **Warminster, Pennsylvania**
REVIEWED BY: JLO	**Groundwater & Environmental Services, Inc.** 440 Creamery Way, Suite 500, Exton, PA 19341
NORTH	SCALE IN FEET: 0 50 / DATE: 9-17-09 / FIGURE: 15

Historical Maximum



July 2009

Note: MTBE concentrations above 20 µg/L were not observed.

DRAFTED BY: MJL	MTBE Concentrations Historical Maximum and July 2009
CHECKED BY: KLS	Sunoco Station #0363-5430 610 Old York Road Warminster, Pennsylvania
REVIEWED BY: JLO	Groundwater & Environmental Services, Inc. 440 Creamery Way, Suite 500, Exton, PA 19341
NORTH	SCALE IN FEET: 0 30 / DATE: 9-17-09 / FIGURE: 16

Historical Maximum

July 2009

Note: Naphthalene concentrations above 100 µg/L were not observed

DEVISED BY: MJL	Naphthalene Concentrations Historical Maximum and July 2009
CHECKED BY: KLS	Sunoco Station #0363-5430 610 Old York Road Warminster, Pennsylvania
REVIEWED BY: JLO	Groundwater & Environmental Services, Inc. 440 Creamery Way, Suite 500, Exton, PA 19341
NORTH	SCALE IN FEET: 0 50 / DATE: 9-17-09 / FIGURE: 17

TABLE 1
HISTORICAL SOIL ANALYTICAL DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Sample ID		Depth (ft)	Sample Date	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Total Xylenes (µg/kg)	MTBE (µg/kg)	Isopropyl benzene (µg/kg)	Naphthalene (µg/kg)	TPH-GRO (mg/kg)	TPH (mg/kg)
UST CLOSURE ACTIVITIES, 1995/1996	SS-1	8	12/28/1995	ND<6	<6	ND<6	<28	NA	NA	NA	NA	40
	SS-2	8	12/28/1995	ND<6	<6	ND<6	ND<28	NA	NA	NA	NA	170
	SS-3	8	12/28/1995	ND<6	<6	ND<6	<17	NA	NA	NA	NA	480
	SS-4	8	12/28/1995	ND<6	<6	ND<6	<17	NA	NA	NA	NA	100
	DISP-1	1	2/8/1996	100	3,600	3,000	21,000	NA	NA	NA	300	NA
	DISP-2	1	2/8/1996	**700**	51,000	41,000	250,000	NA	NA	NA	1,300	NA
	DISP-3	1	2/8/1996	200	14,000	10,000	63,000	NA	NA	NA	110	NA
	TL-1	1	2/13/1996	ND<5	ND<5	ND<5	ND<16	NA	NA	NA	ND<1	NA
	TL-2	1	2/13/1996	ND<100	800	2,300	19,000	NA	NA	NA	150	NA
	SS-1	12	2/27/1996	**1,000**	23,000	34,000	180,000	NA	NA	NA	1,300	NA
	SS-2	12	2/27/1996	**1,900**	33,000	26,000	160,000	NA	NA	NA	1,300	NA
	SS-3	12	2/27/1996	45	270	120	830	NA	NA	NA	6	NA
	SS-4	12	2/27/1996	ND<100	300	3,400	17,000	NA	NA	NA	200	NA
	SS-5	12	2/27/1996	<6	<6	<6	<19	NA	NA	NA	ND<1	NA
	SS-6	12	2/27/1996	31	450	900	2,800	NA	NA	NA	28	NA
	SS-7	12	2/27/1996	**1,900**	10,000	24,000	140,000	NA	NA	NA	1100	NA
	SS-8	12	2/27/1996	**ND<600**	800	6,000	51,000	NA	NA	NA	400	NA
	SS-9	12	2/27/1996	**<700**	<700	11,000	20,000	NA	NA	NA	1,300	NA
	SS-10	12	2/27/1996	**1,000**	11,000	12,000	85,000	NA	NA	NA	800	NA
	SS-11	12	2/27/1996	**ND<600**	4,600	15,000	93,000	NA	NA	NA	700	NA
	SS-12	12	2/27/1996	ND<100	500	4,200	9,800	NA	NA	NA	300	NA
	SS-13	8	2/27/1996	NA	NA	NA	NA	NA	NA	NA	NA	80
	SS-14	8	2/27/1996	NA	NA	NA	NA	NA	NA	NA	NA	90
PADEP Statewide Health Standard for Unsaturated and Saturated Soils in a Non-Residential, Used Aquifer				**500**	**100,000**	**70,000**	**1,000,000**	**2,000**	**1,400,000 / 250,000**	**25,000 / 10,000**	**N/A**	**N/A**

TABLE 1
HISTORICAL SOIL ANALYTICAL DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Sample ID		Depth (ft)	Sample Date	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Total Xylenes (µg/kg)	MTBE (µg/kg)	Isopropyl benzene (µg/kg)	Naphthalene (µg/kg)	TPH-GRO (mg/kg)	TPH (mg/kg)
Monitoring Well Installation, 1996	MW-1	5-7	3/13/1996	ND<6	ND<6	ND<6	ND<18	NA	NA	NA	ND<1	NA
	MW-2	5-7	3/13/1996	ND<6	<6	<6	<18	NA	NA	NA	ND<1	NA
	MW-3	5-7	3/13/1996	<6	<6	<6	<18	NA	NA	NA	ND<1	NA
Monitoring Well Installation, 1997	MW-4	-	10/23/1997	<6	<6	<6	<17	<20	<10	<20	NA	NA
Monitoring Well Installation, 2004	MW-5	25	10/18/2004	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5	NA	NA
	MW-6	15	10/18/2004	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5	NA	NA
Monitoring Well Installation, 2007	MW-8	5	2/22/2007	**<530**	<530	1,200	8,200	<530	<530	3,700	NA	NA
	MW-8	24	2/22/2007	**<520**	<520	<520	<520	<520	<520	<526	NA	NA
	MW-9	5	2/23/2007	<440	<440	<440	<440	<440	<440	720	NA	NA
	MW-9	15	2/23/2007	<280	<280	<280	<280	<280	<280	<280	NA	NA
	MW-10	15	2/23/2007	<480	<480	<480	<480	<480	<480	<480	NA	NA
PADEP Statewide Health Standard for Unsaturated and Saturated Soils in a Non-Residential, Used Aquifer				**500**	**100,000**	**70,000**	**1,000,000**	**2,000**	**1,600,000 / 250,000**	**25,000 / 10,000**	**N/A**	**N/A**

All results reported on a dry weight basis except samples SS-1 and SS-2 (collected on 2/27/1996). These samples were reported on an as received basis, due to laboratory error.

ND: Not Detected

NA: Not Analyzed

N/A: Not Applicable

MTBE: Methyl tert Butyl Ether

TPH: Total Petroleum Hydrocarbons

GRO: Gasoline Range Organics

mg/kg: milligrams per kilogram

µg/kg: micrograms per kilogram

TABLE 2
SOIL GAS SURVEY ANALYTICAL DATA SUMMARY

SUNOCO STATION # 0363-5430
610 YORK ROAD WARMINSTER, PA

Date	Sample ID	Sample Depth (ft)	Benzene (mg/m^3)	Toluene (mg/m^3)	Ethylbenzene (mg/m^3)	Total Xylenes (mg/m^3)	MTBE (mg/m^3)	Isopropyl benzene (mg/m^3)
3/8/2007	SG-1	4'	0.0042	0.0260	0.0086	0.0027	<0.0036	<0.0049
3/8/2007	SG-2	4'	<0.0032	0.0012	<0.0043	0.0043	0.0140	<0.0049
3/8/2007	SG-3	4'	<0.0032	0.0096	<0.0043	0.016	<0.0036	<0.0049
12/14/2007	SG-1	4'	<0.0032	0.0047	<0.0043	<0.0043	<0.0036	<0.0049
12/14/2007	SG-2	4'	<0.0032	<0.0038	<0.0043	0.013	0.0066	<0.0049
12/14/2007	SG-3	4'	<0.0032	0.0064	<0.0043	<0.0043	0.0038	<0.0049
PADEP Residential Indoor Air Criteria			**0.27**	**56**	**1.9**	**14**	**8.1**	**54**
PADEP Non-Residential Indoor Air Criteria			**1.1**	**120**	**7.3**	**30**	**31**	**110**
EPA Region III Risk-Based Concentration for Indoor Air			**0.22**	**42**	**110**	**730**	**310**	**40**

ND: Not Detected (# is Method Detection Limit)
MTBE: Methyl *tert*-butyl ether
mg/m^3: milligrams per cubic meter
ppmv: parts per million per volume
MSC_{SG}: medium specific concentration of soil gas (mg/m^3)
MSC_{IAQ}: medium specific concentration of indoor air quality (mg/m^3)
TF: transfer factor from soil gas to indoor air quality = 0.01
X ppm = (Y mg/m^3)(24.45)/(molecular weight)
Example for Benzene:
X (ppm) = (0.27 mg/m3)(24.45)/78.11
X = 0.08
$MSC_{SG} = MSC_{IAQ}/TF$

NOC = Not of concern

*VP-3 had to be sampled on a separate day due to a defective summa canister on 3/1/2007.

TABLE 3
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-1	03/23/1996	96.79	8	88.79	ND< 1	ND< 1	ND	2	NA	NA	NA
	09/09/1996	96.79	12.5	84.29	**13**	ND< 10	340	1,060	**240**	NA	**150**
	11/07/1996	96.79	10.12	86.67	ND< 1	ND< 1	ND< 1	3	2	NA	ND< 5
	02/14/1997	96.79	8.47	88.32	ND< 1	ND< 1	ND	ND< 3	**88**	NA	ND< 5
	05/07/1997	96.79	9.58	87.21	ND	ND	ND	ND< 3	ND< 1	NA	ND< 5
	09/15/1997	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	11/11/1997	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	03/17/1998	96.79	8.75	88.04	ND	ND	ND	ND	ND<1	NA	ND<5
	06/15/1998	96.79	5.18	91.61	ND	ND	ND	ND	ND< 5	ND	ND
	06/17/1999	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	02/15/2000	96.79	10.19	86.60	**184**	530	87.4	379	**12,800**	ND	ND
	05/12/2000	96.79	10.16	86.63	2.7	ND	ND	2.8	**242**	ND	2.5
	10/16/2000	96.79	13.83	82.96	**79.8**	589	368	1,020	**957**	40.6	**280**
	03/23/2001	96.79	7.63	89.16	ND	ND	ND	ND	1.9	ND	ND
	06/14/2001	96.79	10.84	85.95	**20.3**	35.5	96.2	130	**221**	13.3	41.6
	09/18/2001	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	12/26/2001	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	03/26/2002	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	06/14/2002	96.79	12.51	84.28	**9.7**	25.5	294	513	**103**	35.3	**214**
	09/13/2002	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	10/30/2002	96.79	16.46	80.33	**23.5**	29.2	377	691	**84.0**	72.5	**297**
	03/05/2003	96.79	9.01	87.78	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	05/08/2003	96.79	9.58	87.21	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0
	08/06/2003	96.79	11.99	84.80	<1.0	<5.0	9.5	<10	<5.0	<5.0	5.5
	10/24/2003	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	01/16/2004	96.79	9.14	87.65	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	04/14/2004	96.79	7.97	88.82	<1.0	<5.0	<5.0	<10	**68**	<5.0	<5.0
	07/15/2004	96.79	14.67	82.12	**6.0**	8.0	170	380	**610**	42	**160**
	10/04/2004	97.77	12.55	85.22	2	ND<3	38	35	**43**	16	52
	01/13/2005	97.77	9.31	88.46	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	04/20/2005	97.77	8.52	89.25	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	07/15/2005	97.77	14.31	83.46	2.0	8.0	227	445	**57.4**	49.6	**241**
	09/07/2005	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	09/20/2005	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	10/28/2005	97.77	12.02	85.75	**83.4**	241	140	812	**6,330**	22.2	**136**
	02/10/2006	97.77	9.08	88.69	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	05/15/2006	97.77	18.96	78.81	NS	NS	NS	NS	NS	NS	NS
	08/18/2006	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	11/15/2006	97.77	9.56	88.21	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	03/30/2007	97.77	8.90	88.87	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	05/17/2007	97.77	9.28	88.49	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	10/04/2007	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	01/28/2008	97.77	13.13	84.64	2	ND<1	58	24	12	27	36
	04/07/2008	97.77	9.43	88.34	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	97.77	14.20	83.57	2	ND<1	22	4	7	9	13
	10/08/2008	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	02/03/2009	97.77	13.06	84.71	2	ND<1	10	7	5	9	15
	04/06/2009	97.77	17.27	80.50	5	ND<1	14	27	11	43	34
	07/08/2009	97.77	9.57	88.20	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4

TABLE 3
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res, Aquifer					5	1,000	700	10,000	20	2,300	100
MW-2	03/23/1996	97.43	8.6	88.83	**280**	130	160	1,150	NA	NA	NA
	09/09/1996	97.43	13.25	84.18	**180**	5	180	140	**170**	NA	49
	11/07/1996	97.43	11.25	86.18	**74**	3	85	79	**74**	NA	39
	02/14/1997	97.43	9.33	88.10	**36**	6	35	67	15	NA	18
	05/07/1997	97.43	10.15	87.28	**55**	4	75	81	**26**	NA	19
	09/15/1997	97.43	23.2	74.23	**430**	13	410	340	**140**	NA	**200**
	11/11/1997	97.43	24.3	73.13	NS	NS	NS	NS	NS	NS	NS
	03/17/1998	97.43	9.35	88.08	**58**	2	100	160	**35**	NA	43
	06/15/1998	97.43	9.86	87.57	**91**	9	240	930	10	27	**120**
	06/17/1999	97.43	21.41	76.02	**87**	ND	160	7	**280**	18	30
	02/15/2000	97.43	11.04	86.39	**91.3**	1.4	242	94.5	**274**	37.6	84.4
	05/12/2000	97.43	10.73	86.70	**21.2**	ND	59.6	9.8	**161**	8.9	12.6
	10/16/2000	97.43	13.4	84.03	**70.4**	27.3	276	123	**359**	49.7	91.4
	03/23/2001	97.43	8.24	89.19	2.1	ND	10.5	ND	8.8	ND	ND
	06/14/2001	97.43	14.37	83.06	**45.8**	2.1	197	45.8	**113**	29.5	56.8
	09/18/2001	97.43	DRY	-	NS	NS	NS	NS	NS	NS	NS
	12/26/2001	97.43	DRY	-	NS	NS	NS	NS	NS	NS	NS
	03/26/2002	97.43	21.74	75.69	**192**	4.3	410	182	**164**	42.1	**104**
	06/14/2002	97.43	13.35	84.08	**35.7**	ND<2.5	173	57.3	**57.2**	29.2	**111**
	09/13/2002	97.43	23.55	73.88	**82.4**	2.6	268	55.5	**123**	43.1	**153**
	10/30/2002	97.43	18.93	78.50	**171**	4.9	**886**	291	**155**	113	**344**
	03/05/2003	97.43	9.96	87.47	**27**	ND<1	160	24	**24**	25	59
	05/08/2003	97.43	10.53	86.90	4.3	<1.0	29	<5.0	<5.0	<5.0	13
	08/06/2003	97.43	13.08	84.35	**13**	<5.0	43	<10	15	8.7	20
	10/24/2003	97.43	20.57	76.86	**54**	<1.6	320	86	**43**	44	**140**
	01/16/2004	97.43	9.72	87.71	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	04/14/2004	97.43	8.88	88.55	**10**	<5.0	72	12	**41**	12	21
	07/15/2004	97.43	17.40	80.03	**53**	31	370	160	**2,300**	56	**180**
	10/04/2004	98.31	13.24	85.07	**34**	ND<7	180	35	**190**	38	60
	01/13/2005	98.31	10.21	88.10	**6**	ND<1	59	5	**39**	14	20
	04/20/2005	98.31	9.08	89.23	ND<1.0	ND<1.0	9.3	ND<3.0	3.9	3.3	4.3
	07/15/2005	98.31	15.36	82.95	**38.1**	1.5	161	68.7	**89.9**	79.7	**142**
	09/07/2005	98.31	23.45	74.86	**10.0**	ND<1.0	18.5	ND<3.0	**59.5**	11.0	23.0
	09/20/2005	98.31	DRY	-	NS	NS	NS	NS	NS	NS	NS
	10/28/2005	98.31	12.81	85.50	**76.7**	51.8	195	67.3	**2,750**	80.8	**136**
	02/10/2006	98.31	10.68	87.63	4.7	1.0	30.3	4.1	**39.7**	10.8	8.4
	05/15/2006	98.31	20.04	78.27	**34.7**	7.6	108	46.5	**421**	31.0	43.3
	08/18/2006	98.31	20.68	77.63	**28.8**	1.8	106	8.6	**179**	48.2	31.8
	11/15/2006	98.31	10.39	87.92	**9.4**	ND<1.0	56.5	5.0	**25.1**	26.2	20.3
	03/30/2007	98.31	9.29	89.02	2	ND<1	12	2	5	7	5
	05/17/2007	98.31	9.99	88.32	2	ND<1	14	2	4	8	5
	08/02/2007	98.31	21.74	76.57	7	ND<1	15	3	**28**	12	ND<4
	10/04/2007	98.31	DRY	-	NS	NS	NS	NS	NS	NS	NS
	01/28/2008	98.31	13.42	84.89	**8**	ND<1	12	5	12	15	11
	04/07/2008	98.31	10.03	88.28	2	ND<1	11	2	3	9	5
	07/01/2008	98.31	14.85	83.46	ND<1	ND<1	1	ND<1	2	ND<2	ND<4
	10/31/2008	98.31	21.63	76.68	**15**	ND<1	39	11	8	41	11
	02/03/2009	98.31	13.15	85.16	2	ND<1	7	1	3	8	ND<4
	04/06/2009	98.31	18.75	79.56	5	ND<1	15	2	8	8	ND<4
	07/08/2009	98.31	10.25	88.06	ND<1	ND<1	2	ND<1	ND<1	3	ND<4

TABLE 3
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-3	03/23/1996	98.08	9.35	88.73	12	ND< 1	2	3	NA	NA	NA
	09/09/1996	98.08	13.76	84.32	ND	ND	ND	ND	480	NA	ND
	11/07/1996	98.08	11.43	86.65	ND< 1	ND< 1	ND< 1	ND< 3	170	NA	ND< 5
	02/14/1997	98.08	10.18	87.90	2	ND< 1	ND	ND< 3	130	NA	ND< 5
	05/07/1997	98.08	10.9	87.18	ND	ND	ND	ND	99	NA	ND
	09/15/1997	98.08	23.68	74.40	NS	NS	NS	NS	NS	NS	NS
	11/11/1997	98.08	23.95	74.13	NS	NS	NS	NS	NS	NS	NS
	03/17/1998	98.08	10.25	87.83	ND<1	ND<1	ND<1	ND<3	22	NA	ND<5
	06/15/1998	98.08	10.56	87.52	ND	ND	ND	ND< 5	8	ND	ND<5
	06/17/1999	98.08	21.97	76.11	ND	ND	ND	ND	7	ND	ND
	02/15/2000	98.08	11.96	86.12	80	325	21.7	267	1,680	ND	ND
	05/12/2000	98.08	11.43	86.65	ND	ND	ND	ND	256	ND	ND
	10/16/2000	98.08	14.15	83.93	ND	ND	ND	ND	42.3	ND	ND
	03/23/2001	98.08	9.04	89.04	1.3	ND	ND	ND	55.2	ND	ND
	06/14/2001	98.08	12.1	85.98	ND<1	ND<1	ND<1	ND<5	44.9	ND<2	ND<5
	09/18/2001	98.08	DRY	-	NS	NS	NS	NS	NS	NS	NS
	12/26/2001	98.08	23.21	74.87	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<5
	03/26/2002	98.08	22.7	75.38	ND<1	ND<1	ND<1	ND<1.4	2.6	ND<2	ND<5
	06/14/2002	98.08	13.95	84.13	ND<1.0	ND<1.0	ND<1.0	ND<1.0	10.6	ND<2.0	ND<5.0
	09/13/2002	98.08	DRY	-	NS	NS	NS	NS	NS	NS	NS
	10/30/2002	98.08	18.45	79.63	ND<1.0	ND<1.0	ND<1.0	ND<1.0	1.8	ND<2.0	6.6
	03/05/2003	98.08	10.71	87.37	ND<1	ND<1	ND<1	ND<1	11	ND<5	ND<5
	05/08/2003	98.08	11.43	86.65	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0
	08/06/2003	98.08	13.51	84.57	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	10/24/2003	98.08	20.74	77.34	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	01/16/2004	98.08	10.53	87.55	<1.0	<5.0	<5.0	<10	28	<5.0	<5.0
	04/14/2004	98.08	9.83	88.25	<1.0	<5.0	<5.0	<10	20	<5.0	<5.0
	07/15/2004	98.08	17.05	81.03	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	10/04/2004	98.78	13.92	84.86	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	01/13/2005	98.78	11.13	87.65	ND<1	ND<1	ND<1	ND<1	19	ND<5	ND<5
	04/20/2005	98.78	10.04	88.74	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	07/15/2005	98.78	15.71	83.07	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	98.78	DRY	-	NS	NS	NS	NS	NS	NS	NS
	09/20/2005	98.78	23.75	75.03	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	98.78	13.75	85.03	3.1	2.2	ND<1.0	26.0	749	ND<1.0	9.0
	02/10/2006	98.78	10.59	88.19	ND<1.0	ND<1.0	ND<1.0	ND<3.0	33.8	ND<1.0	ND<2.0
	05/15/2006	98.78	20.37	78.41	ND<1.0	ND<1.0	ND<1.0	ND<3.0	1.5	ND<1.0	ND<2.0
	08/18/2006	98.78	20.91	77.87	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	11/15/2006	98.78	11.32	87.46	ND<1.0	ND<1.0	ND<1.0	ND<3.0	2.6	ND<1.0	ND<2.0
	03/30/2007	98.78	10.28	88.50	ND<1	ND<1	ND<1	ND<1	2	ND<2	ND<4
	05/17/2007	98.78	10.82	87.96	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	98.78	22.12	76.66	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/04/2007	98.78	DRY	-	NS	NS	NS	NS	NS	NS	NS
	01/28/2008	98.78	14.62	84.16	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/07/2008	98.78	11.81	86.97	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	98.78	15.72	83.06	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	98.78	23.89	74.89	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	02/03/2009	98.78	14.62	84.16	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/06/2009	98.78	18.53	80.25	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	98.78	11.11	87.67	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4

TABLE 3
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res, Aquifer					5	1,000	700	10,000	20	2,300	100
MW-4	11/11/1997	98.08	23.87	74.21	ND<1	ND<1	ND	ND<3	10	NA	ND<5
	03/17/1998	98.08	10.1	87.98	ND	ND	ND<1	ND<3	ND<1	NA	ND<5
	06/15/1998	98.08	10.32	87.76	ND	ND	ND	ND	ND	ND	ND
	06/17/1999	98.08	22.61	75.47	ND	ND	ND	ND	ND<5	ND	ND
	02/15/2000	98.08	11.91	86.17	ND	ND	ND	ND	15.8	ND	ND
	05/12/2000	98.08	11.41	86.67	ND	ND	ND	ND	9.5	ND	ND
	10/16/2000	98.08	14.03	84.05	ND	ND	ND	ND	**972**	ND	ND
	03/23/2001	98.08	8.94	89.14	ND	ND	ND	ND	ND	ND	ND
	06/14/2001	98.08	12.05	86.03	ND<1	ND<1	ND<1	ND<5	**31.6**	ND<2	ND<5
	09/18/2001	98.08	24.57	73.51	ND<1	ND<1	ND<1	ND<1	4.9	ND<2	ND<5
	12/26/2001	98.08	24.43	73.65	ND<1	ND<1	ND<1	ND<1	1.7	ND<2	ND<5
	03/26/2002	98.08	23.82	74.26	ND<1	ND<1	ND<1	ND<1.4	1.1	ND<2	ND<5
	06/14/2002	98.08	14.01	84.07	ND<1.0	ND<1.0	ND<1.0	ND<1.0	7.5	ND<2.0	ND<5.0
	09/13/2002	98.08	24.67	73.41	ND<1.0	ND<1.0	ND<1.0	ND<1.0	1.2	ND<2.0	ND<5.0
	10/30/2002	98.08	20.38	77.70	ND<1.0	ND<1.0	ND<1.0	ND<1.0	1.6	ND<2.0	ND<5.0
	03/05/2003	98.08	10.68	87.40	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	05/08/2003	98.08	11.25	86.83	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0
	08/06/2003	98.08	13.75	84.33	<1.0	<5.0	<5.0	<10	9.8	<5.0	<5.0
	10/24/2003	98.08	20.63	77.45	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	01/16/2004	98.08	10.46	87.62	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	04/14/2004	98.08	9.86	88.22	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	07/15/2004	98.08	18.63	79.45	<1.0	<5.0	<5.0	<10	5.0	<5.0	<5.0
	10/04/2004	98.94	13.99	84.95	ND<3	ND<4	ND<4	ND<4	**100**	ND<5	ND<5
	01/13/2005	98.94	10.98	87.96	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	04/20/2005	98.94	9.81	89.13	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	07/15/2005	98.94	16.05	82.89	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	98.94	24.61	74.33	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/20/2005	98.94	24.51	74.43	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	98.94	13.81	85.13	ND<1.0	ND<1.0	ND<1.0	ND<3.0	**89.6**	ND<1.0	ND<2.0
	02/10/2006	98.94	10.46	88.48	ND<1.0	ND<1.0	ND<1.0	ND<3.0	7.4	ND<1.0	ND<2.0
	05/15/2006	98.94	21.19	77.75	ND<1.0	ND<1.0	ND<1.0	ND<3.0	2.2	ND<1.0	ND<2.0
	08/18/2006	98.94	21.72	77.22	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	11/15/2006	98.94	11.25	87.69	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	03/30/2007	98.94	10.11	88.83	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	05/17/2007	98.94	10.75	88.19	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	98.94	23.45	75.49	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/04/2007	98.94	24.61	74.33	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	01/28/2008	98.94	14.36	84.58	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/07/2008	98.94	10.75	88.19	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	98.94	15.57	83.37	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	98.94	24.59	74.35	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	02/03/2009	98.94	14.42	84.52	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/06/2009	98.94	19.55	79.39	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	98.94	11.00	87.94	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4

TABLE 3
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-5	12/09/2004	99.55	12.52	87.03	ND<1	ND<1	ND<1	ND<1	5	ND<5	ND<5
	01/13/2005	99.55	11.77	87.78	ND<1	ND<1	ND<1	ND<1	14	ND<5	ND<5
	04/20/2005	99.55	10.55	89.00	ND<1.0	ND<1.0	ND<1.0	ND<3.0	5.6	ND<1.0	ND<2.0
	07/15/2005	99.55	16.22	83.33	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	99.55	26.92	72.63	ND<1.0	ND<1.0	ND<1.0	ND<3.0	1.9	ND<1.0	ND<2.0
	09/20/2005	99.55	30.02	69.53	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	99.55	14.32	85.23	ND<1.0	ND<1.0	ND<1.0	4.1	**648**	ND<1.0	ND<2.0
	02/10/2006	99.55	11.38	88.17	ND<1.0	ND<1.0	ND<1.0	ND<3.0	**34.0**	ND<1.0	ND<2.0
	05/15/2006	99.55	22.42	77.13	ND<1.0	ND<1.0	ND<1.0	ND<3.0	2.1	ND<1.0	ND<2.0
	08/18/2006	99.55	23.15	76.40	ND<1.0	ND<1.0	ND<1.0	ND<3.0	1.5	ND<1.0	ND<2.0
	11/15/2006	99.55	11.72	87.83	ND<1.0	ND<1.0	ND<1.0	ND<3.0	1.3	ND<1.0	ND<2.0
	03/30/2007	99.55	10.92	88.63	ND<1	ND<1	ND<1	ND<1	2	ND<2	ND<4
	05/17/2007	99.55	11.35	88.20	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	99.55	24.65	74.90	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/04/2007	99.55	36.25	63.30	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	01/28/2008	99.55	15.32	84.23	ND<1	ND<1	ND<1	ND<1	1	ND<2	ND<4
	04/07/2008	99.55	11.66	87.89	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	99.55	16.33	83.22	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	99.55	32.92	66.63	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	02/03/2009	99.55	15.25	84.30	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/06/2009	99.55	19.88	79.67	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	99.55	11.72	87.83	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
MW-6	12/09/2004	99.72	12.69	87.03	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	01/13/2005	99.72	11.85	87.87	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	04/20/2005	99.72	10.70	89.02	ND<1.0	ND<1.0	ND<1.0	ND<3.0	2.0	ND<1.0	ND<2.0
	07/15/2005	99.72	16.39	83.33	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	99.72	27.10	72.62	NA	NA	NA	NA	NA	NA	NA
	09/20/2005	99.72	29.88	69.84	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	99.72	14.47	85.25	ND<1.0	ND<1.0	ND<1.0	ND<3.0	13.8	ND<1.0	ND<2.0
	02/10/2006	99.72	11.40	88.32	ND<1.0	ND<1.0	ND<1.0	ND<3.0	2.3	ND<1.0	ND<2.0
	05/15/2006	99.72	21.25	78.47	ND<1.0	ND<1.0	ND<1.0	ND<3.0	8.7	ND<1.0	ND<2.0
	08/18/2006	99.72	22.29	77.43	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	11/15/2006	99.72	12.05	87.67	ND<1.0	ND<1.0	ND<1.0	ND<3.0	1.1	ND<1.0	ND<2.0
	03/30/2007	99.72	11.06	88.66	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	05/17/2007	99.72	11.52	88.20	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	99.72	23.45	76.27	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/04/2007	99.72	36.06	63.66	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	01/28/2008	99.72	15.50	84.22	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/07/2008	99.72	11.68	88.04	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	99.72	16.45	83.27	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	99.72	32.57	67.15	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	02/03/2009	99.72	15.54	84.18	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/06/2009	99.72	19.85	79.87	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	99.72	11.93	87.79	ND<1	ND<1	ND<1	2	ND<1	ND<2	ND<4

TABLE 3
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-7	12/09/2004	99.20	15.39	83.81	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	01/13/2005	99.20	14.63	84.57	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	04/20/2005	99.20	14.48	84.72	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	07/15/2005	99.20	20.15	79.05	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	99.20	29.81	69.39	NA	NA	NA	NA	NA	NA	NA
	09/20/2005	99.20	32.85	66.35	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	99.20	18.81	80.39	ND<1.0	1.7	ND<1.0	ND<3.0	**60.8**	ND<1.0	ND<2.0
	02/10/2006	99.20	15.83	83.37	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	05/15/2006	99.20	25.99	73.21	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	08/18/2006	99.20	27.13	72.07	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	11/15/2006	99.20	15.85	83.35	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	03/30/2007	99.20	14.20	85.00	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	05/17/2007	99.20	16.23	82.97	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	99.20	28.54	70.66	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/04/2007	99.20	38.36	60.84	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	01/28/2008	99.20	19.96	79.24	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/07/2008	99.20	16.03	83.17	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	99.20	20.64	78.56	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	99.20	36.20	63.00	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	02/03/2009	99.20	19.40	79.80	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/06/2009	99.20	23.41	75.79	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	99.20	15.99	83.21	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
MW-8	03/30/2007	97.78	11.25	86.53	ND<1	ND<1	ND<1	ND<1	17	ND<2	ND<4
	05/17/2007	97.78	13.18	84.60	ND<1	ND<1	ND<1	ND<1	14	ND<2	ND<4
	08/02/2007	97.78	26.55	71.23	ND<1	ND<1	ND<1	ND<1	11	ND<2	ND<4
	10/04/2007	97.78	36.96	60.82	ND<1	ND<1	ND<1	ND<1	5	ND<2	ND<4
	01/28/2008	97.78	17.20	80.58	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/07/2008	97.78	13.62	84.16	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	97.78	18.54	79.24	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	97.78	34.12	63.66	ND<1	ND<1	ND<1	ND<1	4	ND<2	ND<4
	02/03/2009	97.78	18.11	79.67	ND<1	ND<1	ND<1	ND<1	5	ND<2	ND<4
	04/06/2009	97.78	21.84	75.94	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	97.78	14.55	83.23	ND<1	ND<1	ND<1	ND<1	1	ND<2	ND<4

TABLE 3
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res, Aquifer					5	1,000	700	10,000	20	2,300	100
MW-9	03/30/2007	98.68	11.45	87.23	ND<1	ND<1	ND<1	ND<1	7	ND<2	ND<4
	05/17/2007	98.68	13.80	84.88	ND<1	ND<1	ND<1	ND<1	6	ND<2	ND<4
	08/02/2007	98.68	27.02	71.66	ND<1	ND<1	ND<1	ND<1	2	ND<2	ND<4
	10/04/2007	98.68	37.70	60.98	ND<1	ND<1	ND<1	ND<1	5	ND<2	ND<4
	01/28/2008	98.68	18.56	80.12	ND<1	ND<1	ND<1	ND<1	3	ND<2	ND<4
	04/07/2008	98.68	14.48	84.20	ND<1	ND<1	ND<1	ND<1	4	ND<2	ND<4
	07/01/2008	98.68	19.51	79.17	ND<1	ND<1	ND<1	ND<1	3	ND<2	ND<4
	10/08/2008	98.68	35.29	63.39	ND<1	ND<1	ND<1	ND<1	1	ND<2	ND<4
	02/03/2009	98.68	18.71	79.97	ND<1	ND<1	ND<1	ND<1	2	ND<2	ND<4
	04/06/2009	98.68	22.87	75.81	ND<1	ND<1	ND<1	ND<1	2	ND<2	ND<4
	07/08/2009	98.68	15.27	83.41	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
MW-10	03/30/2007	98.44	10.64	87.80	ND<1	ND<1	ND<1	ND<1	2	ND<2	ND<4
	05/17/2007	98.44	11.09	87.35	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	98.44	24.60	73.84	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/04/2007	98.44	36.03	62.41	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	01/28/2008	98.44	15.06	83.38	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/07/2008	98.44	11.22	87.22	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	98.44	16.10	82.34	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	98.44	33.22	65.22	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	02/03/2009	98.44	15.98	82.46	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/06/2009	98.44	19.67	78.77	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	98.44	11.49	86.95	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4

<# = Less than the method detection limit of #
µg/L = Micrograms/liter
DRY = No water for sampling
MTBE = Methyl tertiary butyl ether
NA = Not Available or not analyzed for that specific compound
ND = Not detected (# is method detection limit)
NS = Not Sampled

APPENDIX A

PaGWIS Water Well Inventory Database Report

PaDWS Download LikePA Topographic & Geologic Survey/PaDWS
COMMA SEPARATED LIST OF WELLS
Email comments to Topo Geo

You have requested information on 14 Well(s). Use your browser menu to save this page as a text file on your local hard drive. Delete all text except for the records list and import the list into your database or spreadsheet. The first row in the set is the field names.

PA Well ID	Well Driller	Type of Activity	Abandonment Reason	Date Drilled	Drilling Method	Owner	Well Address	Zip code	County	Municipality	Quadrangle	Latitude	Longitude	Well Depth	Well Finish	Depth To Bedrock	Well Yield	Yield Measure Method	Static Water Level	Water Level After Yield Test	Length Of Yield Test	Well Use	Water Use	Sponge Bottom
415294	EICHELBERGERS INC.	Well Abandonment	Well was unused	12/17/2004		BRITISH PETROLEUM	660 OLIVE ST	18974	BUCKS	WARMINSTER TWP		40.2341667	-75.1078444	50									UNUSED	
415214	EICHELBERGERS INC.	Well Abandonment	Well was unused	12/17/2004		BRITISH PETROLEUM	652 OLIVE ST	18974	BUCKS	WARMINSTER TWP		40.2355556	-75.1091667	50									UNUSED	
8300	JOHN WILEY			1/1/1932	CABLE TOOL	CHRISTS HOME FOR CHILDREN			BUCKS	WARMINSTER TWP	HATBORO	40.2122222	-75.1011111	200	OPEN HOLE		50					WITHDRAWAL	DOMESTIC	200
8302	JOHN O'DONNELL & SON			1/1/1918	CABLE TOOL	CHRISTS HOME FOR CHILDREN			BUCKS	WARMINSTER TWP	HATBORO	40.2127778	-75.1011111	951	OPEN HOLE				60			WITHDRAWAL	PUBLIC SUPPLY	181
59166	ALLEN H DORN	New Well		11/28/1985		GALLAGHER TOM			BUCKS	WARMINSTER TWP	HATBORO	40.2019444	-75.0933333	100	OPEN HOLE		23	12 ESTIMATED		15	0.29	WITHDRAWAL	DOMESTIC	
8333	UNKNOWN			1/1/1935	CABLE TOOL	GRADWELL FRANK			BUCKS	WARMINSTER TWP	HATBORO	40.2022222	-75.0977778	40	OPEN HOLE				8.76			WITHDRAWAL	DOMESTIC	40
8362						JONES , C.			BUCKS	WARMINSTER TWP	HATBORO	40.2083333	-75.1025									WITHDRAWAL	DOMESTIC	
8336	F E BUEHLER & SON INC			4/17/1970	AIR ROTARY	SMITH ELMER			BUCKS	WARMINSTER TWP	HATBORO	40.2028	-75.0930556	55	OPEN HOLE							WITHDRAWAL	DOMESTIC	55
89172	F E BUEHLER & SON, INC.	New Well		1/1/1970		SMITH ELMER			BUCKS	WARMINSTER TWP	HATBORO	40.2028	-75.0933333	65	OPEN HOLE		10	UNKNOWN				WITHDRAWAL	DOMESTIC	44
8364	RAAB WELL DRILLING, INC.			2/9/1980	AIR ROTARY	WARMINSTER AUTH			BUCKS	WARMINSTER TWP	HATBORO	40.2135556	-75.0958333	400	OPEN HOLE							WITHDRAWAL	PUBLIC SUPPLY	400
1077	UNKNOWN			1/1/1954	CABLE TOOL	WARMINSTER AUTH			BUCKS	WARMINSTER TWP	HATBORO	40.208	-75.1078	300	OPEN HOLE				10			WITHDRAWAL	PUBLIC SUPPLY	300
8344	UNKNOWN			1/1/1938	CABLE TOOL	WARMINSTER HOSIERY CO			BUCKS	WARMINSTER TWP	HATBORO	40.2047222	-75.1	99	OPEN HOLE							UNUSED	UNUSED	99
59164	RAAB WELL DRILLING, INC.	New Well		11/1/1985		WARMINSTER MUN AUTH			BUCKS	WARMINSTER TWP	HATBORO	40.2119444	-75.1077778	514	OPEN HOLE		8	80 VOLUMETRIC	WATCH & BUCKET	20	120	12 TEST	PUBLIC SUPPLY	
59165	RAAB WELL DRILLING, INC.	New Well		10/1/1985		WARMINSTER MUN AUTH			BUCKS	WARMINSTER TWP	HATBORO	40.2125	-75.1058111	370	OPEN HOLE		10	100 VOLUMETRIC	WATCH & BUCKET	9	109	24 TEST	PUBLIC SUPPLY	

Distance Calculator

Enter values | Find Answer

Site Location	
Latitude	Longitude
40.207222	-75.1

Well Locations				
Latitude	Longitude	Owner	Estimated Distance from Site (feet)	Direction from Site
40.20416667	-75.10194444	BRITISH PETROLEUM	1,241	SW
40.20555556	-75.09916667	BRITISH PETROLEUM	651	SE
40.21222222	-75.10111111	CHRIST'S HOME FOR CHILDREN	1,852	NW
40.21277778	-75.10111111	CHRIST'S HOME FOR CHILDREN	2,053	NW
40.20194444	-75.09333333	GALLAGHER TOM	2,678	SE
40.20222222	-75.09277778	GRADWELL , FRANK	2,719	SE
40.20833333	-75.1025	JONES , C	807	NW
40.2025	-75.09305556	SMITH , ELMER	2,593	SE
40.2025	-75.09333333	SMITH ELMER	2,536	SE
40.21305556	-75.09583333	WARMINSTER AUTH	2,427	NE
40.205	-75.1075	WARMINSTER AUTH	2,244	SW
40.20472222	-75.1	WARMINSTER HOSIERY CO	913	SW
40.21194444	-75.10777778	WARMINSTER MUN AUTH	2,771	NW
40.2125	-75.10861111	WARMINSTER MUN AUTH	3,080	NW

APPENDIX B

Site Photographs

DATE:
July 21, 2008

PHOTOGRAPHER:
Krista Snyder

LOCATION:
Central portion of the site

DIRECTION:
North

LOCATION OF DISPENSER ISLANDS IN RELATION TO THE STATION BUILDING.

DATE:
April 17, 2008

PHOTOGRAPHER:
Krista Snyder

LOCATION:
Central and southern portion of the site

DIRECTION:
South

LOCATION OF TANK FIELD AND LANDSCAPED AREA OVER THE FORMER TANK FIELD. IN THE BACKGROUND IS THE INTERSECTION OF OLD YORK ROAD AND STREET ROAD

SITE PHOTOGRAPHS

Sunoco Station #0363-5430
610 Old York Road
Warminster, Pennsylvania

GES PROJ: 02-03026
SCALE: NONE
DATE: 8/18/09
APPENDIX : B

DATE:
April 17, 2008

PHOTOGRAPHER:
Krista Snyder

LOCATION:
Western portion of the site

DIRECTION:
Northwest

LOCATION OF DISPENSER ISLANDS ALONG STREET ROAD.

DATE:
April 17, 2008

PHOTOGRAPHER:
Krista Snyder

LOCATION:
Central and eastern portion of the site

DIRECTION:
Northeast

LOCATION OF DISPENSER ISLANDS ALONG OLD YORK ROAD.

SITE PHOTOGRAPHS

Sunoco Station #0363-5430
610 Old York Road
Warminster, Pennsylvania

GES PROJ: 02-03026
SCALE: NONE
DATE: 8/13/09
APPENDIX : B

APPENDIX C

Soil Laboratory Analytical Reports

Analysis Request/Environmental Services Chain of Custody

Lancaster Laboratories
A Thermo Analytical Laboratory

JAN 05 1996

Acct. # 8475 For LLI use only Sample # 2440666-68

Please print. Instructions on reverse side correspond with circled numbers.

Client: SUN – GBS Acct. #: 8475

Project Name/#: MT. LEBANON PWSID #:

Project Manager: MIKE SARCINELLO P.O.#

Sampler: Ron Dean Kern Quote #:

Name of state where samples were collected: PA

Sample Identification	Date Collected	Time Collected	(3) Grab	Composite	(4) Matrix: Soil	Water	Other	Total # of Containers	(5) Analyses Requested: BTEX 8020	TPH 418.1	Remarks	Temperature of samples upon receipt (if requested) (6)
SS-1	12/28/95	—	X	X				2	X	X	1-125 ml. jar 1-250 ml. jar	
SS-2		—	X	X				2	X	X	11	
SS-3		—	X	X				2	X	X	11	
SS-4		—	X	X				2	X	X	11	

1.7°C

For LLI use only
FSC:
SCR #:

Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to LLI approval and surcharge.)
Date results are needed: 1/2/96
Rush results requested by (please circle): Phone Fax
Phone #: Fax #:

Data Package Options (please circle if requested)
QC Summary Type VI
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes No

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time (9)
	12/28/95	1545		12/28/95	1530
	12/29/95	13:00		12/29/95	1300
	12/29/95	1745			

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300 Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client. 2102 Rev. 6/1/95

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2440666
Collected: 12/28/95 by RDP

Submitted: 12/29/95 Reported: 1/ 3/96
Discard: 1/18/96

SS-1 Grab Soil Sample

ATL: Warminster, PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. WARMINSTER
Ref.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
1562	Petroleum Hydrocarbons	40.	20.	mg/kg	40.	20.
	Petroleum hydrocarbons were detected in the method blank at a concentration of 1 mg/kg on an as received basis. This blank value was not subtracted from the analytical result. Due to the nature of this analysis, it is typical to have a result for the blank.					
6175	BTEX Scan (Total Xylenes) Soil					
2603	Benzene	N.D.	5.	ug/kg	N.D.	6.
2604	Toluene	< 5.	5.	ug/kg	< 6.	6.
2606	Ethylbenzene	N.D.	5.	ug/kg	N.D.	6.
5327	Total Xylenes	< 15.	15.	ug/kg	< 18.	18.
2111	Moisture	15.8	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
1562	Petroleum Hydrocarbons	EPA 418.1 (modified)	1	01/01/96 2030	Mark M. Cheyney
2111	Moisture	EPA 160.3 modified	1	01/02/96 0544	Lee L. Munro
6175	BTEX Scan (Total Xylenes) Soil	SW-846 8020A, Mod.	1	01/02/96 1120	Matthew E. Barton

COPY TO SUN: Groundwater & Enviro. Sv ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
05:46:15 D 0001 4 119586 498134
854 313.00 00011300 ASR000

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2440667
Collected: 12/28/95 by RDP

Submitted: 12/29/95 Reported: 1/ 3/96
Discard: 1/18/96

SS-2 Grab Soil Sample

ATL: Warminster, PA

Account No: 08475
SUN: Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. WARMINSTER
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
1562	Petroleum Hydrocarbons	320.	40.	mg/kg	370.	50.
6175	BTEX Scan (Total Xylenes) Soil					
2603	Benzene	N.D.	5.	ug/kg	N.D.	6.
2604	Toluene	< 5.	5.	ug/kg	< 6.	6.
2606	Ethylbenzene	N.D.	5.	ug/kg	N.D.	6.
5327	Total Xylenes	N.D.	15.	ug/kg	N.D.	18.
2111	Moisture	15.2	0.5	% by wt.		

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
1562	Petroleum Hydrocarbons	EPA 418.1 (modified)	1	01/01/96 2030	Mark K. Cheyney
2111	Moisture	EPA 160.3 modified	1	01/02/96 0556	Lee L. Munro
6175	BTEX Scan (Total Xylenes) Soil	SW-846 8020A, mod.	1	01/02/96 1153	Matthew E. Barton

1 COPY TO SUN: Groundwater & Enviro. Sv ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
05:46:28 D 0001 4 119586 498134
854 113.00 00011300 ASR000

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2440668
Collected: 12/28/95 by RDP

Submitted: 12/29/95 Reported: 1/ 3/96
Discard: 1/18/96

SS-3 Grab Soil Sample

ATL: Warminster, PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. WARMINSTER
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
1562	Petroleum Hydrocarbons	430.	40.	mg/kg	480.	40.
6175	BTEX Scan (Total Xylenes) Soil					
2603	Benzene	N.D.	5.	ug/kg	N.D.	6.
2604	Toluene	< 5.	5.	ug/kg	< 6.	6.
2606	Ethylbenzene	N.D.	5.	ug/kg	N.D.	6.
5327	Total Xylenes	< 15.	15.	ug/kg	< 17.	17.
2111	Moisture	10.2	0.5	% by wt.		

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
1562	Petroleum Hydrocarbons	EPA 418.1 (modified)	1	01/01/96 2030	Mark M. Cheyney
2111	Moisture	EPA 160.3 modified	1	01/02/96 0608	Lee L. Munro
6175	BTEX Scan (Total Xylenes) Soil	SW-846 8020A, mod.	1	01/02/96 1227	Matthew E. Barton

1 COPY TO SUN: Groundwater & Enviro. Sv ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
05:46:40 p 0001 4 119586 498134
854 113.00 00011300 ASR000

Respectfully Submitted

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2440669
Collected: 12/28/95 by RDP

Submitted: 12/29/95 Reported: 1/ 3/96
Discard: 1/18/96

SB-4 Grab Soil Sample

ATL: Warminster, PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. WARMINSTER
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
1562	Petroleum Hydrocarbons	90.	20.	mg/kg	100.	20.
	Petroleum hydrocarbons were detected in the method blank at a concentration of 1 mg/kg on an as received basis. This blank value was not subtracted from the analytical result. Due to the nature of this analysis, it is typical to have a result for the blank.					
6175	BTEX Scan (Total Xylenes) Soil					
2603	Benzene	N.D.	5.	ug/kg	N.D.	6.
2604	Toluene	< 5.	5.	ug/kg	< 6.	6.
2606	Ethylbenzene	N.D.	5.	ug/kg	N.D.	6.
5327	Total Xylenes	< 15.	15.	ug/kg	< 17.	17.
2111	Moisture	14.1	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
1562	Petroleum Hydrocarbons	EPA 418.1 (modified)	1	01/01/96 2030	Mark M. Cheyney
2111	Moisture	EPA 160.3 modified	1	01/02/96 0615	Lee L. Munro
6175	BTEX Scan (Total Xylenes) Soil	SW-846 8020A, mod.	1	01/02/96 1300	Matthew E. Barton

1 COPY TO SUN: Groundwater & Enviro. Sv ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
05:46:52 0 0001 4 119586 498134
854 113.00 00011300 ASR000

Lancaster Laboratories
A Thermo Analytical Laboratory

FEB 26 1996

For LLI use only
Acct. # 8475 Sample # 245859-43

Please print. Instructions on reverse side correspond with circled numbers.

(1)
Client: SUN - GES Acct. #: 8475
Project Name/#: ATL Lockbourne Rd PWSID #:
Project Manager: M. Haslett P.O.#:
Sampler: B. Rider Quote #:
Name of state where samples were collected: PA

(2) (3) Matrix (4) (5) Analyses Requested

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil/Solid	Water	Oil	Other	No. of containers	BTEX/ETBE	Remarks	(6) Temperature of sample(s) when received (LLI use only)
Disp-1 @ 1'	2/8/96	835	X		X				1	X	125 mL Jar	
Disp-2 @ 1'	↓	840	X		X				1	X	↓	
Disp-3 @ 1'	↓	845	X		X				1	X	↓	

2.5 °C
HB 2/9/96

(7) Turnaround Time Requested (TAT) (please circle) (Normal) Rush
(Rush TAT is subject to LLI approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax
Phone #: Fax #:

Data Package Options (please circle if requested)
QC Summary Type VI
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes No

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)

Internal Chain of Custody required? (Yes) No

Relinquished by:	Date	Time	Received by:	Date	Time
	2/8/96	1200	Locked Refrigerator	2/8/96	1200
	2-9-96	945	David J. Wade	2/9/96	9:45
	2/9/96	1700			

(8) (9)

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300 Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client 2102 Rev. 6/1/95

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2458591
Collected: 2/ 8/96 at 08:35 by BR

Submitted: 2/ 9/96 Reported: 2/26/96
Discard: 3/12/96

Disp: 1 @ 1° Grab Soil Sample

Attn: 610 Old York Rd, PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	80.	50.	ug/kg	100.	60.
2604	Toluene	2,500.	50.	ug/kg	3,000.	60.
2606	Ethylbenzene	2,500.	50.	ug/kg	3,000.	60.
5327	Total Xylenes	17,000.	150.	ug/kg	21,000.	180.
5326	TPH by GC - GRO (Soils)	170.	10.	mg/kg	200.	10.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	15.8	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	02/12/96 1608	Dawn Boley
2111	Moisture	EPA 160.3 modified	1	02/21/96 0531	Lee L. Munro

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hosteller at (717) 656-2300
04:52:33 D 0001 3 119586 502915
875 55.20 00005520 ASR000

Respectfully Submitted

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2458592
Collected: 2/ 8/96 at 08:40 by BR

Submitted: 2/ 9/96 Reported: 2/26/96
Discard: 3/12/96

Disp-2 @ 1° Grab Soil Sample

Att: 610 Old York Rd, PA

Account No: 00475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	600.	500.	ug/kg	700.	600.
2604	Toluene	43,000.	500.	ug/kg	51,000.	600.
2606	Ethylbenzene	34,000.	500.	ug/kg	41,000.	600.
5327	Total Xylenes	210,000.	1,500.	ug/kg	250,000.	1,800.
5326	TPH by GC - GRO (Soils)	1,100.	100.	mg/kg	1,300.	100.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	16.4	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	02/12/96 1902	Dawn Boley
2111	Moisture	EPA 160.3 modified	1	02/21/96 0554	Lee L. Munro

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Rostetter at (717) 656-2300
04:52:44 D 0001 3 119586 502915
875 55.20 00005520 ABR000

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2458593
Collected: 2/ 8/96 at 08:45 by BR

Submitted: 2/ 9/96 Reported: 2/26/96
Discard: 3/12/96

Disp-S B 1: Grab Soil Sample

Att: 610 Old York Rd, PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	200.	100.	ug/kg	200.	100.
2604	Toluene	14,000.	100.	ug/kg	14,000.	100.
2606	Ethylbenzene	8,900.	100.	ug/kg	10,000.	100.
5327	Total Xylenes	54,000.	300.	ug/kg	65,000.	350.
5326	TPH by GC - GRO (Soils)	270.	20.	mg/kg	310.	20.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	15.0	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	02/12/96 1935	Dawn Boley
2111	Moisture	EPA 160.3 modified	1	02/21/96 0603	Lee L. Munro

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetter at (717) 656-2300
04:52:55 D 0001 3 119586 502915
875 55.20 00005520 ASR000

Lancaster Laboratories
A Thermo Analytical Laboratory

MAR 07 1996

For LLI use only
Acct. # 8475 Sample # 246411-13

Please print. Instructions on reverse side correspond with circled numbers.

Client: SUN - GES Acct. #: 8475
Project Name/#: ATC 610 Old York Rd PWSID #:
Project Manager: Mark Huslett P.O.#:
Sampler: Brian S. Ricker Quote #:
Name of state where samples were collected: PA

Sample Identification	Date Collected	Time Collected	(3) Grab	Composite	Matrix (4) Oil	Water	Other	Total # Containers	(5) BTEX/EDB	Remarks	Temperature Blank Upon Receipt (Lab Use Only)
TL-1 @ 1'	2/13/96	745	X			X		1	X	1 125 ml Jar	2.3°
TL-2 @ 1'	2/13/96	750	X			X		1	X	1 125 ml Jar	↓
										JGP 2/15/96	

Turnaround Time Requested (TAT) (please circle): (Normal) Rush
(Rush TAT is subject to LLI approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax
Phone #: Fax #:

Data Package Options (please circle if requested)
QC Summary Type VI
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes No

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? (Yes) No

Relinquished by:	Date	Time	Received by:	Date	Time
	2/14/96	1500	Locked Refrigerator	2/14/96	1500
Relinquished by:	Date	Time	Received by:	Date	Time
Kerry Quay	2-15-96	1000		2/15/96	1000
Relinquished by:	Date	Time	Received by:	Date	Time
	2/15/96	1645			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
				2/15/96	1645

(9)

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300 Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client. 2107 Rev. 6

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2461411
Collected: 2/13/96 at 07:45 by SSR

Submitted: 2/15/96 Reported: 2/28/96
Entered: 2/14/96

TL-1 @ 1' Grab Soil Sample

ATL: 610 Old York Rd. PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O.
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2602	Benzene	N.D.	5.	ug/kg	N.D.	5.
2604	Toluene	N.D.	5.	ug/kg	N.D.	5.
2606	Ethylbenzene	N.D.	5.	ug/kg	N.D.	5.
5327	Total Xylenes	N.D.	15.	ug/kg	N.D.	16.
5326	TPH by GC - GRO (Soils)	N.D.	1.	mg/kg	N.D.	1.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	5.0	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	02/22/96 1837	Dawn Boley
2111	Moisture	EPA 160.3 modified	1	02/27/96 0429	Lee L. Munro

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetter at (717) 656-2300
03:52:24 D 0001 2 119586 583644
854 55.20 00005520 ASR000

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2461412
Collected: 2/13/96 at 07:50 by BSR

Submitted: 2/15/96 Reported: 2/28/96
Discard: 3/14/96

TL-2 @ 1' Grab Soil Sample

ATL: 610 Old York Rd. PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O.
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO AFI & BTEX (Soils)					
2603	Benzene	N.D.	100.	ug/kg	N.D.	100.
2604	Toluene	700.	100.	ug/kg	800.	100.
2606	Ethylbenzene	1,800.	100.	ug/kg	2,100.	100.
5327	Total Xylenes	16,000.	300.	ug/kg	19,000.	350.
5326	TPH by GC - GRO (Soils)	120.	20.	mg/kg	150.	20.

According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.
Due to interferences from the sample matrix, the limit of quantitation for the benzene determination was increased.

2111	Moisture	15.0	0.5	% by wt.

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	02/22/96 2017	Dawn Boley
2111	Moisture	EPA 160.3 modified	1	02/27/96 0434	Lee L. Munro

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:52:37 D 0001 2 119586 503644
854 55.20 00005520 ASR000

Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
A Thermo Analytical Laboratory

APR 03 1995

For LLI use only
Acct. # 8475 Sample # 246962-75

Please print. Instructions on reverse side correspond with circled numbers.

Client: SUN – GES Acct. #: 8475
Project Name/#: ATL Sun: 610 Old York Rd. PWSID #:
Project Manager: MACK HASLETTE P.O.#
Sampler: Ron Dean Rowan Quote #:
Name of state where samples were collected: PA

Sample Identification	Date Collected	Time Collected	①	②	③ Matrix ④	⑤ Analyses Requested: BTX 8020	GRO 8015	Cont. # of containers	Remarks	For LLI use only
SS-1 (12')	2/27/96	1126	X	X		X	X	1	1-125 ml. jar	23
SS-2 (12')		1130				X	X	1		
SS-3 (12')		1136				X	X	1		
SS-4 (12')		1340				X	X	1		
SS-5 (12')		1343				X	X	1		
SS-6 (12')		1346				X	X	1		
SS-7 (12')		1436				X	X	1		
SS-8 (12')		1440				X	X	1		
SS-9 (12')		1442				X	X	1		
SS-10 (12')		1536				X	X	1		

Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to LLI approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax
Phone #: Fax #:

Relinquished by:	Date	Time	Received by:	Date	Time
	2/28/96	800		2/28/96	800
	2-28-96	1030		2/28/96	1030
	2/28/96	1345			
				2-28-96	1345

Data Package Options (please circle if requested)
QC Summary Type VI
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes No

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)

Internal Chain of Custody required? Yes No

⑨

Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
A Thermo Analytical Laboratory

For LLI use only
Acct. # 8475 Sample # 2460872-5

APR 11 1996

Please print. Instructions on reverse side correspond with circled numbers.

(1) Client: SUN - GES Acct. #: 8475
Project Name/#: ATL. GAS OLD YORK RD PWSID #:
Project Manager: MARK HASLETT P.O. #:
Sampler: Ron Dezra Reeves Quote #:
Name of state where samples were collected: PA

(5) Analyses Requested — For LLI use only: FSC: SCR #:

(2) Sample Identification	Date Collected	Time Collected	(3) Grab	Composite	(4) Matrix: Water	Soil	Other	No. of Containers	BTEX 8020 / 602 8015	TPH 418.1	Remarks	(6) Temperature (°C) of sample(s) upon receipt (if requested)
SS-11 (12')	2/27/96	1559	X		X			1	X		1-125 ML. JAR	2.3°
SS-12 (12')		1601						1	X		1-125 ML. JAR	
SS-13 (8')		1615						1		X	1-500 ML. JAR	
SS-14 (8')	↓	1617	↓		↓			1		X	1-500 ML JAR	↓
												2.5°

Turnaround Time Requested (TAT) (please circle): (Normal) Rush
(Rush TAT is subject to LLI approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax
Phone #: Fax #:

Data Package Options (please circle if requested)
QC Summary, Type I (Tier I), Type II (Tier II), Type III (NJ Red. Del.), Type IV (CLP), Type VI, GLP, Other

SDG Complete? Yes No

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)

Internal Chain of Custody required? (Yes) No

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	2/28/96	800	[signature]	2/28/96	800
[signature]	2-28-96	1130	[signature]	2/28/96	1345
[signature]	2/28/96	1345			
			K. Mott	2-28-96	1345

(9)

Lancaster Laboratories
A Thermo Analytical Laboratory
Where quality is a science

April 1, 1996

Mr. Mark Haslett
Groundwater & Environmental Services
410 Eagleview Boulevard Suite 110
Exton, PA 19341

Dear Mr. Haslett:

As we had discussed on March 26, 1996, we received soil samples from the Atlantic site at 610 Old York Road in Warminster, Pennsylvania. The samples were misplaced after BTEX/GRO was analyzed, and we have not located them for the moisture analysis. Therefore, these two, SS-1 (12') and SS-2 (12'), are reported only "as received" and not on a dry-weight basis. I apologize for the inconvenience this may have caused you.

Sincerely,

Eileen Hostetler

Eileen Hostetler
Project Management
Environmental Sciences

EH/clw

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467862
Collected: 2/27/96 at 11:26 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-1 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
5325	TPH-GRO API & BTEX (Soils)			
2603	Benzene	1,000.	500.	ug/kg
2604	Toluene	25,000.	500.	ug/kg
2606	Ethylbenzene	34,000.	500.	ug/kg
5327	Total Xylenes	180,000.	1,500.	ug/kg
5326	TPH by GC - GRO (Soils)	1,100.	100.	mg/kg

According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/01/96 1252	Matthew E. Barton

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:14:46 D 0001 14 119586 505239
854 48.00 00004800 ASR000

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467863
Collected: 2/27/96 at 11:30 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-2 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 00475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
5325	TPH-GRO API & BTEX (Soils)			
2603	Benzene	1,900.	5.	ug/kg
2604	Toluene	35,000.	5.	ug/kg
2606	Ethylbenzene	26,000.	5.	ug/kg
5327	Total Xylenes	160,000.	15.	ug/kg
5326	TPH by GC - GRO (Soils)	1,100.	1.	mg/kg

According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev.6 / SW-846 8020A, mod.	1	03/01/96 1324	Matthew E. Barton

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eiloun R. Hostetler at (717) 656-2300
03:15:05 0 0001 14 119586 505239
854 48.00 00004800 ABR000

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467864
Collected: 2/27/96 at 11:36 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-3 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	35.	5.	ug/kg	45.	6.
2604	Toluene	210.	5.	ug/kg	270.	6.
2606	Ethylbenzene	94.	5.	ug/kg	120.	6.
5327	Total Xylenes	660.	15.	ug/kg	850.	19.
5326	TPH by GC - GRO (Soils)	5.	1.	mg/kg	6.	1.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	21.0	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/01/96 1324	Matthew E. Barron
2111	Moisture	EPA 160.3 modified	1	03/01/96 1623	Roxanne M. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen E. Hostetter at (717) 656-2300
03:15:21 D 0001 14 119586 505239
854 55.20 00005520 ABROOD

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467865
Collected: 2/27/96 at 13:40 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-4 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	< 100.	100.	ug/kg	< 100.	100.
2604	Toluene	300.	100.	ug/kg	300.	100.
2606	Ethylbenzene	2,700.	100.	ug/kg	3,400.	100.
5327	Total Xylenes	14,000.	300.	ug/kg	17,000.	380.
5326	TPH by GC - GRO (Soils)	160.	20.	mg/kg	200.	30.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene. Due to interferences from the sample matrix, the limit of quantitation for the benzene determination was increased.					
2111	Moisture	20.6	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/04/96 1220	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/01/96 1655	Roxanne M. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:15:45 D 0001 14 119586 535239
854 55.20 00009520 ASRODD

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467866
Collected: 2/27/96 at 13:43 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-5 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 05475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	< 5.	5.	ug/kg	< 6.	6.
2604	Toluene	< 5.	5.	ug/kg	< 6.	6.
2606	Ethylbenzene	< 5.	5.	ug/kg	< 6.	6.
5327	Total Xylenes	< 15.	15.	ug/kg	< 19.	19.
5326	TPH by GC - GRO (Soils)	N.D.	1.	mg/kg	N.D.	1.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	21.6	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/01/96 1436	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/01/96 1710	Roxanne M. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetter at (717) 656-2300
03:16:04 D 0001 14 119586 505239
854 55.20 00005520 ASR000

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467867
Collected: 2/27/96 at 13:46 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-6 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	25.	5.	ug/kg	31.	6.
2604	Toluene	370.	5.	ug/kg	450.	6.
2606	Ethylbenzene	400.	5.	ug/kg	500.	6.
5327	Total Xylenes	2,300.	15.	ug/kg	2,800.	19.
5326	TPH by GC - GRO (Soils)	23.	1.	mg/kg	28.	1.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	19.4	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/04/96 1253	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/01/96 1726	Roxanne M. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen N. Hostetler at (717) 656-2300
03:16:24 D 0001 14 110586 505239
854 55.20 00005520 ASR000

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467868
Collected: 2/27/96 at 14:36 by ROP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-7 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	1,400.	500.	ug/kg	1,900.	700.
2604	Toluene	8,000.	500.	ug/kg	10,000.	700.
2606	Ethylbenzene	18,000.	500.	ug/kg	24,000.	700.
5327	Total Xylenes	110,000.	1,500.	ug/kg	140,000.	2,000.
5326	TPH by GC - GRO (Soils)	800.	100.	mg/kg	1,100.	100.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	23.7	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/04/96 1325	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/01/96 1747	Roxanne K. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:16:42 D 0001 14 119586 505239
854 55.20 00005520 ASR000

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467869
Collected: 2/27/96 at 14:40 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-8 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	N.D.	500.	ug/kg	N.D.	600.
2604	Toluene	700.	500.	ug/kg	900.	600.
2606	Ethylbenzene	4,900.	500.	ug/kg	5,400.	600.
5327	Total Xylenes	17,000.	1,500.	ug/kg	21,000.	1,900.
5326	TPH by GC - GRO (Soils)	400.	100.	mg/kg	500.	100.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene. Due to interferences from the sample matrix, the limit of quantitation for the benzene determination was increased.					
2111	Moisture	22.9	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/04/96 1358	Matthew E. Garson
2111	Moisture	EPA 160.3 modified	1	03/01/96 1810	Roxanne N. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen A. Hostetter at (717) 656-2300
03:17:02 D 0001 14 119586 505239
854 55.20 00005520 ABNOOO

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467870
Collected: 2/27/96 at 14:42 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-9 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	< 500.	500.	ug/kg	< 700.	700.
2604	Toluene	< 500.	500.	ug/kg	< 700.	700.
2606	Ethylbenzene	7,900.	500.	ug/kg	11,000.	700.
5327	Total Xylenes	15,000.	1,500.	ug/kg	20,000.	2,000.
5326	TPH by GC - GRO (Soils)	800.	100.	mg/kg	1,100.	100.

According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.
Due to interferences from the sample matrix, the limits of quantitation for the benzene and toluene determinations were increased.

2111	Moisture	25.5	0.5	% by wt.

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/04/96 1324	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/01/96 1054	Roxanne M. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetter at (717) 656-2300
03:17:22 9 0001 14 119586 505239
854 55.20 00005520 ASR000

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467871
Collected: 2/27/96 at 15:56 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-10 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
610 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	800.	500.	ug/kg	1,000.	600.
2604	Toluene	8,800.	500.	ug/kg	11,000.	600.
2606	Ethylbenzene	10,000.	500.	ug/kg	12,000.	600.
5327	Total Xylenes	71,000.	1,500.	ug/kg	85,000.	1,800.
5326	TPH by GC - GRO (Soils)	600.	100.	mg/kg	800.	100.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	16.1	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/04/96 1356	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/01/96 1914	Roxanne M. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:17:41 D 2001 14 119586 505239
854 55.20 00005520 ASR000

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467872
Collected: 2/27/96 at 15:59 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-11 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	N.D.	500.	ug/kg	N.D.	600.
2604	Toluene	3,900.	500.	ug/kg	4,600.	600.
2605	Ethylbenzene	12,000.	500.	ug/kg	13,000.	600.
5327	Total Xylenes	77,000.	1,500.	ug/kg	93,000.	1,800.
5326	TPH by GC - GRO (Soils)	500.	100.	mg/kg	700.	100.

According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.
Due to interferences from the sample matrix, the limit of quantitation for the benzene determination was increased.

2111	Moisture	17.7	0.5	% by wt.

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/04/96 1429	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/01/96 1933	Roxanne M. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:17:59 b 0001 14 119586 505259
854 55.20 00005520 ABROOD

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467873
Collected: 2/27/96 at 16:01 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

BS-12 (12') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
5325	TPH-GRO API & BTEX (Soils)					
2603	Benzene	N.D.	100.	ug/kg	N.D.	100.
2604	Toluene	400.	100.	ug/kg	500.	100.
2606	Ethylbenzene	3,400.	100.	ug/kg	4,200.	100.
5327	Total Xylenes	8,000.	300.	ug/kg	9,800.	370.
5326	TPH by GC - GRO (Soils)	250.	20.	mg/kg	300.	20.

According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.
Due to interferences from the sample matrix, the limit of quantitation for the benzene determination was increased.

2111	Moisture	19.0	0.5	% by wt.

"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
5325	TPH-GRO API & BTEX (Soils)	API Rev 6 / SW-846 8020A, mod.	1	03/04/96 1430	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/01/96 1954	Roxanne M. Roth

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:18:20 D 0001 14 119586 505239
854 55 20 00005520 ASR000

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467874
Collected: 2/27/96 at 16:15 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-13 (8') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Engleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
0111	Moisture	19.4	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius.					
1562	Petroleum Hydrocarbons	30.	20.	mg/kg	30.	20.
	Petroleum hydrocarbons were detected in the method blank at a concentration of 5 mg/kg on an as received basis. This blank value was not subtracted from the analytical result. Due to the nature of this analysis, it is typical to have a result for the blank.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
0111	Moisture	EPA 160.3 (modified)	1	03/01/96 1549	Susan A. Engle
1562	Petroleum Hydrocarbons	EPA 418.1 (modified)	1	03/07/96 2130	Mark M. Cheyney

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetter at (717) 656-2300
03:10:38 0 0001 14 119586 505239
854 45.70 00004570 ASR000

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2467875
Collected: 2/27/96 at 16:17 by RDP

Submitted: 2/28/96 Reported: 3/27/96
Discard: 4/11/96

SS-14 (8') Grab Soil Sample

ATL: 610 Old York Rd., PA

Account No: 08475
SUN:Groundwater & Enviro. Svc.
410 Eagleview Blvd., Ste. 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
0111	Moisture	17.8	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius.					
1562	Petroleum Hydrocarbons	70.	20.	mg/kg	90.	20.
	Petroleum hydrocarbons were detected in the method blank at a concentration of 5 mg/kg on an as received basis. This blank value was not subtracted from the analytical result. Due to the nature of this analysis, it is typical to have a result for the blank.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
0111	Moisture	EPA 160.3 (modified)	1	03/01/96 1549	Susan A. Engle
1562	Petroleum Hydrocarbons	EPA 418.1 (modified)	1	03/07/96 2130	Mark M. Cheney

1 COPY TO SUN:Groundwater & Enviro. Svc. ATTN: Mr. Mark Haslett

Questions? Contact your Client Services Representative
Eileen R. Hostetler at (717) 656-2300
03:18:52 D 0001 14 119586 505239
854 45.70 00004570 AS2000

Analysis Request/Chain of Custody Record

Lancaster Laboratories
Where quality is a science.

For LLI use only
Acct. # 5620 Sample # 2476719-1

Please print. Instructions on reverse side correspond with circled numbers.

(1) Client: Handex | Acct. #:
Project Name/#: Sun : Warminster | PWSID #:
Project Manager: Jeff Goudsward | P.O.#
Sampler: JG | Quote #:
Name of state where samples were collected: PA

(4) Matrix: ☐ Potable ☐ NPDES

(2) Sample Identification	Date Collected	Time Collected	(3) Grab	Composite	Soil	Water	Other	Total # of Containers	(5) Analyses Requested: TPH-GRO (8015)	BTEX (8020)	Remarks	(6) Temperature of samples upon receipt (if requested)
MW-1 (5-7)	3/13/96	0925	✓		✓			2	✓	✓		
MW-2 (5-7)	3/13/96	1035	✓		✓			2	✓	✓		
MW-3 (5-7)	3/13/96	1135	✓		✓			2	✓	✓		
											Cooler Temp 6.4°C	

For LLI use only
FSC:
SCR #:

(7) Turnaround Time Requested (TAT) (please circle): (Normal) Rush
(Rush TAT is subject to LLI approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone (Fax)
Phone # Fax #: 610-650-4004

(8) Relinquished by: [signature] Date 3/13/96 Time 1720 — Received by: [signature] Date 3/14/96 Time 1230
Relinquished by: [signature] Date 3/14/96 Time AM — Received by: Date Time
Relinquished by: Date Time — Received by: Date Time
Relinquished by: Date Time — Received by: Date Time
Relinquished by: Date Time — Received by: [signature] Date 3/14/96 Time 1500

(9) Data Package Options (please circle if requested)
QC Summary Type I (Tier I) Type II (Tier II) Type III (NJ Red. Del.) Type IV (CLP) GLP Other
SDG Complete? Yes No
Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2476789
Collected: 3/13/96 at 09:25 by JG

Submitted: 3/14/96 Reported: 3/28/96
Discard: 4/12/96

MW-1 (5-7) Grab Soil Sample

SUN: Warminster, PA

Account No: 05620
SUN: Hondex of PA
136 Greentree Road
PO Box 835
Oaks PA 19456-0835

P.O. WARMINSTER
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
2213	BTEX Scan (8020)					
2603	Benzene	N.D.	5.	ug/kg	N.D.	6.
2604	Toluene	N.D.	5.	ug/kg	N.D.	6.
2606	Ethylbenzene	N.D.	5.	ug/kg	N.D.	6.
2608	o-Xylene	N.D.	5.	ug/kg	N.D.	6.
2609	m-Xylene	N.D.	5.	ug/kg	N.D.	6.
2610	p-Xylene	N.D.	5.	ug/kg	N.D.	6.
5323	TPH-GRO API (Soils)	N.D.	1.	mg/kg	N.D.	1.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	13.5	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
2213	BTEX Scan (8020)	SW-846 8020A, mod.	1	03/18/96 1707	Dawn Boley
5323	TPH-GRO API (Soils)	API/EPA proposed, Revision 6	1	03/18/96 1006	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/25/96 1923	Roxanne M. Roth

1 COPY TO SUN: Hondex of PA ATTN: Mr. Jeff Goudsward

Questions? Contact your Client Services Representative
Laura S. Shepler-Hoover at (717) 656-2300
03:58:56 D 0001 3 119586 507547
875 82.20 00008220 A88000

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2476790
Collected: 3/13/96 at 10:35 by JC

Submitted: 3/14/96 Reported: 3/28/96
Discard: 4/12/96

MW-2 (5-7) Grab Soil Sample

SUN: Warminster, PA

Account No: 05620
SUN: Handex of PA
136 Greentree Road
PO Box 035
Oaks PA 19456-0035

P.O. WARMINSTER
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
2213	BTEX Scan (8020)					
2603	Benzene	N.D.	5.	ug/kg	N.D.	6.
2604	Toluene	< 5.	5.	ug/kg	< 6.	6.
2606	Ethylbenzene	< 5.	5.	ug/kg	< 6.	6.
2608	o-Xylene	< 5.	5.	ug/kg	< 6.	6.
2609	m-Xylene	< 5.	5.	ug/kg	< 6.	6.
2610	p-Xylene	< 5.	5.	ug/kg	< 6.	6.
5323	TPH-GRO API (Soils)	N.D.	1.	mg/kg	N.D.	1.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	15.3	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
2213	BTEX Scan (8020)	SW-846 8020A, mod.	1	03/18/96 1930	Dawn Boley
5323	TPH-GRO API (Soils)	API/EPA proposed, Revision 6	1	03/19/96 1218	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/25/96 1939	Roxanne M. Roth

1 COPY TO SUN: Handex of PA ATTN: Mr. Jeff Goudsward

Questions? Contact your Client Services Representative
Laura S. Shepler-Moore at (717) 656-2300
03:59:24 0 0001 3 119586 507547
875 82.20 00008220 ABR000

Analysis Report

Lancaster Laboratories
A Thermo Analytical Laboratory

LLI Sample No. SW 2476791
Collected: 3/13/96 at 11:35 by JG

Submitted: 3/14/96 Reported: 3/28/96
Discard: 4/12/96

MW-3 (5-7) Grab Soil Sample

SUN: Warminster, PA

Account No: 05620
SUN: Handex of PA
136 Greentree Road
PO Box 835
Oaks PA 19456-0835

P.O. WARMINSTER
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
2213	BTEX Scan (8020)					
2603	Benzene	N.D.	5.	ug/kg	N.D.	6.
2604	Toluene	N.D.	5.	ug/kg	N.D.	6.
2606	Ethylbenzene	N.D.	5.	ug/kg	N.D.	6.
2608	o-Xylene	N.D.	5.	ug/kg	N.D.	6.
2609	m-Xylene	N.D.	5.	ug/kg	N.D.	6.
2610	p-Xylene	N.D.	5.	ug/kg	N.D.	6.
5323	TPH-GRO API (Soils)	N.D.	1.	mg/kg	N.D.	1.
	According to the API Protocol, the quantitation for Gasoline Range Organics was performed using the total peak area of the sample pattern between 2-methylpentane and 1,2,4-trimethylbenzene.					
2111	Moisture	20.6	0.5	% by wt.		
	"Moisture" represents the loss in weight of the sample after drying with an infrared lamp at 150 degrees Celsius.					

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS DATE AND TIME	ANALYST
2213	BTEX Scan (8020)	SW-846 8020A, mod.	1	03/18/96 2018	Dawn Holey
5323	TPH-GRO API (Soils)	API/EPA proposed, Revision 6	1	03/19/96 1250	Matthew E. Barton
2111	Moisture	EPA 160.3 modified	1	03/25/96 1947	Roxanne M. Roth

COPY TO SUN: Handex of PA ATTN: Mr. Jeff Goudsward

Questions? Contact your Client Services Representative
Laura S. Shepler-Moore at (717) 656-2300
03:50:50 0 0001 3 119586 507547
875 62.20 D0008220 ASR000

Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
A division of Thermo Analytical Inc.

NOV 10 1997

For Lancaster Laboratories use only
Acct. # 8475 Sample # 2507883

Please print. Instructions on reverse side correspond with circled numbers.

(1) Client: SUN-GES (WARMINSTER) Acct. #: 8475
Project Name/#: Sun-610 old York Rd PWSID #:
Project Manager: J. Goodsward P.O.#:
Sampler: B Peterka Quote #:
Name of state where samples were collected: PA

(2) Sample Identification | Date Collected | Time Collected | (3) Grab | Composite | (4) Matrix: Soil | Water (Potable / NPDES applicable) | Other | Total # of Containers | (5) Analyses Requested: SIM - Naphthalene 8310A | Remarks | For lab use only | (6) Temperature of samples upon receipt (if requested)

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	Total # of Containers	SIM - Naphthalene 8310A	Remarks	Temperature
MW-4	10-27-97	1100	X		X			2	X	2-125ml jars	1.5C

FSC:
SCR #:

(7) Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax
Phone #: Fax #:

(8) Data Package Options (please circle if requested)
QC Summary | Type VI (Raw Data)
Type I (Tier I) | GLP
Type II (Tier II) | Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes No

Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)

Internal Chain of Custody required? Yes No

Relinquished by	Date	Time	Received by	Date	Time
	10-27-97	1500	Locked Fridge	10-27-97	1500
Locked Refrig	10-27-97	1600		10-27-97	1620
	10-27-97	1715			
			Joseph B. Fine	10/27/97	1715

(9)

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717) 656-2300 Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client. 7/1/95

Analysis Report

Lancaster Laboratories
A division of Thermo Analytical Inc.

LLI Sample No. SW 2807893
Collected: 10/27/97 at 11:00 by BP

Submitted: 10/27/97 Reported: 11/ 7/97
Discard: 11/22/97

MW-4 Grab Soil Sample

SUN: 610 Old York Rd. - PA

Account No: 09475
SUN: Groundwater & Enviro. Svc
410 Eagleview Blvd.
Suite 110
Exton PA 19341

P.O. 610 OLD YORK RD
Rel.

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	AS RECEIVED LIMIT OF QUANTITATION	AS RECEIVED UNITS	DRY WEIGHT RESULTS	DRY WEIGHT LIMIT OF QUANTITATION
0111	Moisture	14.2	0.50	% by wt.		
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius.					
1837	BTEX/Isopropylbenz/MTBE/Napth					
0787	Methyl t-butyl ether	< 20.	20.	ug/kg	< 20.	20.
2603	Benzene	< 5.	5.	ug/kg	< 6.	6.
2604	Toluene	< 5.	5.	ug/kg	< 6.	6.
2606	Ethylbenzene	< 5.	5.	ug/kg	< 6.	6.
5327	Total Xylenes	< 15.	15.	ug/kg	< 17.	17.
0786	Isopropylbenzene	< 10.	10.	ug/kg	< 10.	10.
0788	Naphthalene	< 20.	20.	ug/kg	< 20.	20.

LABORATORY CHRONICLE

CAT NO	ANALYSIS NAME	METHOD	TRIAL	ANALYSIS ID	DATE AND TIME	ANALYST
0111	Moisture	EPA 160.3 modified	1		10/29/97 1913	Sandra Jean Miller
1837	BTEX/Isopropylbenz/MTBE/Napth	SW-846 8021A, modified	1		10/28/97 0424	Stephanie A. Selis

1 COPY TO SUN:Groundwater & Environ Svc ATTN: Mr. Jeff Goudsward

Questions? Contact your Client Services Representative
De Brooks at (717) 656-2300
13:07:59 D 0001 1 126345 588098
320 0.00 00007020 ASR000

Respectfully Submitted

Analysis Request / Environmental Services Chain of Custody

Lancaster Laboratories
Where quality is a science.

For Lancaster Laboratories use only
Acct. # 11234 Group# 916952 Sample # 4381915-16

COC # 0062792

Please print. Instructions on reverse side correspond with circled numbers. cooler temp 2.7°C

Client: Sunoco Acct. #:
Project Name/#: Warminster PWSID #:
Project Manager: Jen O'Reilly P.O.#:
Sampler: Kristen Snyder Quote #:
Name of state where samples were collected: PA

(1) Sample Identification	Date Collected	Time Collected	(3) Grab	Composite	Matrix: Soil	Water (Potable / NPDES)	Other	(4) Total # of Containers	(5) Analyses Requested: 8260B BTEX MTBE Cumene Naphthalene	Moisture	Remarks	(6) Temperature of samples upon receipt (if requested)
mw-5-25	10/18/04	15:00	X		X			4	X	X	*low level	
mw-6-15	10/18/04	15:00	X		X			4	X	X	excess	

RECEIVED NOV 01 2004

For Lab Use Only
FSC:
SCR #:

Turnaround Time Requested (TAT) (please circle): Normal Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

Data Package Options (please circle if required)
QC Summary Type VI (Raw Data)
Type I (Tier I) GLP
Type II (Tier II) Other
Type III (NJ Red. Del.)
Type IV (CLP)

SDG Complete? Yes No
Site-specific QC required? Yes No
(If yes, indicate QC sample and submit triplicate volume.)
Internal Chain of Custody required? Yes No

(9) Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	10/19/04	19:00	GESF:1st.		
[signature]	10-19-04	09:00	[signature]	10/19/04	0900
[signature]	10/19/04	1630	[signature]		
			Jesse B	10/20/04	0820

Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 (717)656-2300 Fax 717-656-2681 www.lancasterlabs.com

ANALYTICAL RESULTS

Prepared for:

SUN Retail:/GES
410 Eagleview Blvd
Suite 110
Exton PA 19341
610-458-1077

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 916952. Samples arrived at the laboratory on Tuesday, October 19, 2004. The PO# for this group is WARMINSTER-610 OLD Y.

Client Description	Lancaster Labs Number
MW-5-25 Grab Soil Sample	4381915
MW-6-15 Grab Soil Sample	4381916

1 COPY TO	Lancaster Labs	Attn: Sandy Patton
ELECTRONIC COPY TO	SUN Retail:/GES	Attn: Ms. Connie Johnson

Lancaster Laboratories

Analysis Report

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Questions? Contact your Client Services Representative
Sandra L Patton at (717) 656-2300.

Respectfully Submitted,

Robin C. Runkle
Senior Chemist

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. SW 4381915

MW-5-25 Grab Soil Sample
Station ID# 0363-5430 Job# 02-01682
SUN: 510 Old York Road - Warminster, PA
Collected:10/18/2004 13:00 by KS

Account Number: 11224

Submitted: 10/19/2004 16:00
Reported: 10/27/2004 at 22:13
Discard: 11/04/2004

SUN Retail:/GES
410 Eagleview Blvd
Suite 110
Exton PA 19341

OYR05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	8.1	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
02304	UST-Unleaded Soils by 8260B					
02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	5.	ug/kg	0.95
05460	Benzene	71-43-2	N.D.	1.	ug/kg	0.95
05466	Toluene	108-88-3	N.D.	1.	ug/kg	0.95
05474	Ethylbenzene	100-41-4	N.D.	1.	ug/kg	0.95
05479	Isopropylbenzene	98-82-8	N.D.	5.	ug/kg	0.95
05498	Naphthalene	91-20-3	N.D.	5.	ug/kg	0.95
06301	Xylene (Total)	1330-20-7	N.D.	1.	ug/kg	0.95

Commonwealth of Pennsylvania Lab Certification No. 36-037

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	10/20/2004 17:50	Scott W Preisher	1
02304	UST-Unleaded Soils by 8260B	SW-846 8260B	1	10/25/2004 17:19	Roy B Mellott Jr	0.95
08388	Low/High Encore Prep Tracking	SW-846 5035	1	10/19/2004 18:32	Medina A Long	n.a.
08389	Low/High Encore Prep Tracking	SW-846 5035	2	10/19/2004 18:33	Medina A Long	n.a.
08389	Low/High Encore Prep Tracking	SW-846 5035	3	10/19/2004 18:34	Medina A Long	n.a.

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. SW 4381916

MW-6-15 Grab Soil Sample
Station ID# 0363-5430 Job# 02-01682
SUN: 610 Old York Road - Warminster, PA
Collected:10/18/2004 15:00 by KS

Account Number: 11224

Submitted: 10/19/2004 16:00
Reported: 10/27/2004 at 22:13
Discard: 11/04/2004

SUN Retail:/GES
410 Eagleview Blvd
Suite 110
Exton PA 19341

OYR06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Units	Dilution Factor
00111	Moisture	n.a.	8.6	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
02304	UST-Unleaded Soils by 8260B					
02016	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	5.	ug/kg	1
05460	Benzene	71-43-2	N.D.	1.	ug/kg	1
05466	Toluene	108-88-3	N.D. B	1.	ug/kg	1
05474	Ethylbenzene	100-41-4	N.D. B	1.	ug/kg	1
05479	Isopropylbenzene	98-82-8	N.D.	5.	ug/kg	1
05490	Naphthalene	91-20-3	N.D.	5.	ug/kg	1
06301	Xylene (Total)	1330-20-7	N.D. B	1.	ug/kg	1

Commonwealth of Pennsylvania Lab Certification No. 36-037

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	10/20/2004 17:50	Scott W Preisher	1
02304	UST-Unleaded Soils by 8260B	SW-846 8260B	1	10/25/2004 18:05	Roy R Mellott Jr	1
08389	Low/High Encore Prep Tracking	SW-846 5035	1	10/19/2004 18:36	Medina A Long	n.a.
08389	Low/High Encore Prep Tracking	SW-846 5035	2	10/19/2004 18:37	Medina A Long	n.a.
08389	Low/High Encore Prep Tracking	SW-846 5035	3	10/19/2004 18:38	Medina A Long	n.a.

Lancaster Laboratories

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Analysis Report

Quality Control Summary

Client Name: SUN Retail:/GES
Reported: 10/27/04 at 10:13 PM

Group Number: 916952

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 042948200028	Sample number(s): 4381915-4381916							
Moisture				100		99-101		
Batch number: X042981AB	Sample number(s): 4381915-4381916							
Methyl Tertiary Butyl Ether	N.D.	5.	ug/kg	95	95	75-125	1	30
Benzene	N.D.	1.	ug/kg	92	90	77-119	2	30
Toluene	N.D.	1.	ug/kg	90	88	81-116	2	30
Ethylbenzene	N.D.	1.	ug/kg	91	89	82-115	2	30
Isopropylbenzene	N.D.	5.	ug/kg	91	90	79-117	2	30
Naphthalene	N.D.	5.	ug/kg	68	70	58-114	2	30
Xylene (Total)	N.D.	1.	ug/kg	92	89	82-117	3	30

Sample Matrix Quality Control

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 042948200028	Sample number(s): 4381915-4381916								
Moisture						8.1	7.8	4	15
Batch number: X042981AB	Sample number(s): 4381915-4381916								
Methyl Tertiary Butyl Ether	86		49-160						
Benzene	88		58-126						
Toluene	86		55-125						
Ethylbenzene	83		50-127						
Isopropylbenzene	79		60-124						
Naphthalene	62		21-142						
Xylene (Total)	82		54-123						

Surrogate Quality Control

Analysis Name: UST-Unleaded Soils by 8260B
Batch number: X042981AB

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4381915	95	95	93	87
4381916	94	91	93	86
Blank	98	94	92	87
LCS	95	94	93	87

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

Quality Control Summary

Client Name: SUN Retail:/GES Group Number: 916952
Reported: 10/27/04 at 10:13 PM

Surrogate Quality Control

LCSD	96	92	93	88
MS	95	94	94	88
Limits:	70-129	70-121	70-130	70-128

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.

Lancaster Laboratories

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Analysis Report

ANALYTICAL RESULTS

Prepared for:

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

610-458-1077

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1027014. Samples arrived at the laboratory on Monday, February 26, 2007. The PO# for this group is WARMINSTER.

Client Description			Lancaster Labs Number
MW-8 @ 5	Grab	Soil	4991313
MW-8 @ 24	Grab	Soil	4991314
MW-9 @ 5	Grab	Soil	4991315
MW-9 @ 15	Grab	Soil	4991316
MW-10 @ 15	Grab	Soil	4991317

ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Connie Johnson
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Cris Altman
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Heather Nelson
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Patrick Crawford
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Bonnie Cobb
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Krista Snyder
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Keith Montone

Lancaster Laboratories

Analysis Report

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Questions? Contact your Client Services Representative
Lynn M Frederiksen at (717) 656-2300

Respectfully Submitted,

Marla S. Lord
Senior Specialist

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. SW 4991313

MW-8 @ 5 Grab Soil
610 York Rd-Warminster, PA
DUNS# 03635430 COC: 0144045 MW-8 @ 5
Collected:02/22/2007 13:05 by KM

Account Number: 11224

Submitted: 02/26/2007 16:30
Reported: 03/07/2007 at 15:15
Discard: 05/07/2007

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

MW8-5

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Units	Dilution Factor
00111	Moisture	n.a.	12.9	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
02304	UST-Unleaded Soils by 8260B					
02016	Methyl Tertiary Butyl Ether	1634-04-4	< 530.	530.	ug/kg	91.74
05460	Benzene	71-43-2	< 530.	530.	ug/kg	91.74
05466	Toluene	108-88-3	< 530.	530.	ug/kg	91.74
05474	Ethylbenzene	100-41-4	1,200.	530.	ug/kg	91.74
05479	Isopropylbenzene	98-82-8	< 530.	530.	ug/kg	91.74
05498	Naphthalene	91-20-3	3,700.	530.	ug/kg	91.74
06301	Xylene (Total)	1330-20-7	8,200.	530.	ug/kg	91.74

Commonwealth of Pennsylvania Lab Certification No. 36-037

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	02/27/2007 16:17	Justin M Bowers	1
02304	UST-Unleaded Soils by 8260B	SW-846 8260B	1	03/01/2007 04:54	Lauren C Marzario	91.74
00405	GC/MS - Field Preserved MeOH	SW-846 5035	1	02/22/2007 13:05	Client Supplied	n.a.

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. SW 4991314

MW-8 @ 24 Grab Soil
610 York Rd-Warminster, PA
DUNS# 03635430 COC: 0144045 MW-8 @ 24
Collected:02/22/2007 13:15 by KM

Account Number: 11224

Submitted: 02/26/2007 16:30
Reported: 03/07/2007 at 15:15
Discard: 05/07/2007

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

MW824

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Units	Dilution Factor
00111	Moisture	n.a.	12.1	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
02304	UST-Unleaded Soils by 8260B					
02016	Methyl Tertiary Butyl Ether	1634-04-4	< 520.	520.	ug/kg	92.25
05460	Benzene	71-43-2	< 520.	520.	ug/kg	92.25
05466	Toluene	108-88-3	< 520.	520.	ug/kg	92.25
05474	Ethylbenzene	100-41-4	< 520.	520.	ug/kg	92.25
05479	Isopropylbenzene	98-82-8	< 520.	520.	ug/kg	92.25
05498	Naphthalene	91-20-3	< 520.	520.	ug/kg	92.25
06301	Xylene (Total)	1330-20-7	< 520.	520.	ug/kg	92.25

Commonwealth of Pennsylvania Lab Certification No. 36-037

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	02/27/2007 16:17	Justin M Bowers	1
02304	UST-Unleaded Soils by 8260B	SW-846 8260B	1	03/01/2007 05:43	Lauren C Marzario	92.25
00405	GC/MS - Field Preserved MeOH	SW-846 5035	1	02/22/2007 13:15	Client Supplied	n.a.

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. SW 4991315

MW-9 @ 5 **Grab** **Soil**
610 York Rd-Warminster, PA
DUNS# 03635430 COC: 0144045 **MW-9 @ 5**
Collected:02/23/2007 10:50 by KM

Account Number: 11224

Submitted: 02/26/2007 16:30
Reported: 03/07/2007 at 15:15
Discard: 05/07/2007

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

MW9-5

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Units	Dilution Factor
00111	Moisture	n.a.	11.4	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
02304	UST-Unleaded Soils by 8260B					
02016	Methyl Tertiary Butyl Ether	1634-04-4	< 440.	440.	ug/kg	78.62
05460	Benzene	71-43-2	< 440.	440.	ug/kg	78.62
05466	Toluene	108-88-3	< 440.	440.	ug/kg	78.62
05474	Ethylbenzene	100-41-4	< 440.	440.	ug/kg	78.62
05479	Isopropylbenzene	98-82-8	< 440.	440.	ug/kg	78.62
05498	Naphthalene	91-20-3	720.	440.	ug/kg	78.62
06301	Xylene (Total)	1330-20-7	< 440.	440.	ug/kg	78.62

Commonwealth of Pennsylvania Lab Certification No. 36-037

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	02/27/2007 16:17	Justin M Bowers	1
02304	UST-Unleaded Soils by 8260B	SW-846 8260B	1	03/01/2007 06:06	Lauren C Marzario	78.62
00405	GC/MS - Field Preserved MeOH	SW-846 5035	1	02/23/2007 10:50	Client Supplied	n.a.

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. SW 4991316

MW-9 @ 15 Grab Soil
610 York Rd-Warminster, PA
DUNS# 03635430 COC: 0144045 MW-9 @ 15
Collected:02/23/2007 11:00 by KM

Account Number: 11224

Submitted: 02/26/2007 16:30
Reported: 03/07/2007 at 15:15
Discard: 05/07/2007

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

MW915

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Units	Dilution Factor
00111	Moisture	n.a.	6.7	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
02304	UST-Unleaded Soils by 8260B					
02016	Methyl Tertiary Butyl Ether	1634-04-4	< 480.	480.	ug/kg	89.13
05460	Benzene	71-43-2	< 480.	480.	ug/kg	89.13
05466	Toluene	108-88-3	< 480.	480.	ug/kg	89.13
05474	Ethylbenzene	100-41-4	< 480.	480.	ug/kg	89.13
05479	Isopropylbenzene	98-82-8	< 480.	480.	ug/kg	89.13
05498	Naphthalene	91-20-3	< 480.	480.	ug/kg	89.13
06301	Xylene (Total)	1330-20-7	< 480.	480.	ug/kg	89.13

Commonwealth of Pennsylvania Lab Certification No. 36-037

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	02/27/2007 16:17	Justin M Bowers	1
02304	UST-Unleaded Soils by 8260B	SW-846 8260B	1	03/01/2007 06:29	Lauren C Marzario	89.13
00405	GC/MS - Field Preserved MeOH	SW-846 5035	1	02/23/2007 11:00	Client Supplied	n.a.

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. SW 4991317

MW-10 @ 15 Grab Soil
610 York Rd-Warminster, PA
DUNS# 03635430 COC: 0144045 MW-10 @ 15
Collected:02/23/2007 15:00 by KM

Account Number: 11224

Submitted: 02/26/2007 16:30
Reported: 03/07/2007 at 15:15
Discard: 05/07/2007

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

M1015

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Limit of Quantitation	Units	Dilution Factor
00111	Moisture	n.a.	6.8	0.50	%	1
	"Moisture" represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported above is on an as-received basis.					
02304	UST-Unleaded Soils by 8260B					
02016	Methyl Tertiary Butyl Ether	1634-04-4	< 480.	480.	ug/kg	89.45
05460	Benzene	71-43-2	< 480.	480.	ug/kg	89.45
05466	Toluene	108-88-3	< 480.	480.	ug/kg	89.45
05474	Ethylbenzene	100-41-4	< 480.	480.	ug/kg	89.45
05479	Isopropylbenzene	98-82-8	< 480.	480.	ug/kg	89.45
05498	Naphthalene	91-20-3	< 480.	480.	ug/kg	89.45
06301	Xylene (Total)	1330-20-7	< 480.	480.	ug/kg	89.45

Commonwealth of Pennsylvania Lab Certification No. 36-037

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00111	Moisture	EPA 160.3 modified	1	02/27/2007 16:17	Justin M Bowers	1
02304	UST-Unleaded Soils by 8260B	SW-846 8260B	1	03/01/2007 06:51	Lauren C Marsario	89.45
00405	GC/MS - Field Preserved MeOH	SW-846 5035	1	02/23/2007 15:00	Client Supplied	n.a.

Lancaster Laboratories

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Analysis Report

Quality Control Summary

Client Name: Sunoco Retail c/o GES Exton
Reported: 03/07/07 at 03:15 PM

Group Number: 1027014

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 070588200028	Sample number(s): 4991313-4991317							
Moisture				100		99-101		
Batch number: Q070593AA	Sample number(s): 4991313-4991317							
Methyl Tertiary Butyl Ether	< 250.	250.	ug/kg	97	97	72-117	0	30
Benzene	< 250.	250.	ug/kg	91	91	84-115	0	30
Toluene	< 250.	250.	ug/kg	92	91	81-116	1	30
Ethylbenzene	< 250.	250.	ug/kg	89	89	82-115	1	30
Isopropylbenzene	< 250.	250.	ug/kg	85	83	82-110	3	30
Naphthalene	< 250.	250.	ug/kg	80	79	52-121	1	30
Xylene (Total)	< 250.	250.	ug/kg	91	90	82-117	1	30

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: 070588200028	Sample number(s): 4991313-4991317					BKG: 4991314			
Moisture						12.1	11.8	2	15

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: UST-Unleaded Soils by 8260B
Batch number: Q070593AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4991313	84	86	78	79
4991314	85	85	80	78
4991315	83	82	76	78
4991316	86	88	79	78
4991317	87	85	81	77
Blank	87	90	81	78
LCS	89	91	87	86
LCSD	90	92	87	86
Limits:	71-114	70-109	70-123	70-111

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

Quality Control Summary

Client Name: Sunoco Retail c/o GES Exton Group Number: 1027014
Reported: 03/07/07 at 03:15 PM

Surrogate Quality Control

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

Analysis Request/ Environmental Services Chain of Custody

Lancaster Laboratories

For Lancaster Laboratories use only

Acct. # 11724 Group# 1027014 Sample # 4991313-17

COC # 0144045

Please print. Instructions on reverse side correspond with circled numbers.

(1) Client: GES Acct. #:

Project Name/#: Sun Warminster PWSID #:

Project Manager: Patrick Crawford P.O.#:

Sampler: Keith Monroe Quote #:

Name of state where samples were collected: PA

For Lab Use Only
FSC:
SCR#: 396062

Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

(2) Sample Identification	Date Collected	Time Collected	(3) Matrix: Grab	Composite	Soil	Water	Other	(4) Total # of Containers	(5) Analyses Requested: Preservation Codes: MeOH	None	BTEX, MTBE, Naphthalene, Cumene	MOISTURE	(6) Temperature of samples received (optional)	Remarks
MW-8 @ 5'	2/22/07	13:05	X		X			2	1	1				temp 2.1°C
MW-8 @ 24'	2/22/07	13:15	X		X			2	1	1				
MW-9 @ 5'	2/23/07	10:50	X		X			2	1	1				
MW-9 @ 15'	2/23/07	11:00	X		X			2	1	1				
MW-10 @ 15'	2/23/07	15:00	X		X			2	1	1				

(7) **Turnaround Time Requested (TAT)** (please circle): (Normal) Rush

(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)

Date results are needed:

Rush results requested by (please circle): Phone Fax E-mail

Phone #: Fax #:

E-mail address:

(8) **Data Package Options** (please circle if required)

Type I (validation/NJ Reg)
Type II (Tier II)
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)

TX TRRP-13
MA MCP CT RCP

SDG Complete? Yes No

Site-specific QC (MS/MSD/Dup)? Yes No

(If yes, indicate QC sample and submit triplicate volume.)

Internal COC Required? Yes / No

Relinquished by:	Date	Time	Received by:	Date	Time
Battle Storage 02	2007	0711		02/2007	0711
	02/2007	0920	Keith Monroe	2/23/07	10:00
Keith Monroe	2/24/07	1900	GES FRIDGE	2/24	1900
	2-26-07	09:35		02607	0935
	02607	1630		2/26/07	1630

(9)

Lancaster Laboratories, Inc., 2425 New Holland Pike, Lancaster, PA 17601 (717) 656-2300 Fax: (717) 656-6766

Copies: White and yellow should accompany samples to Lancaster Laboratories. The pink copy should be retained by the client.

2102.03

Lancaster Laboratories
Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< less than – The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY – In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions of Lancaster Laboratories and we hereby object to any conflicting terms contained in any acceptance or order submitted by client.

APPENDIX D

Notice of Reportable Release

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*
NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

On August 21, 1993, the Storage Tank Program's Corrective Action Process (CAP) regulations became effective. These regulations establish release reporting requirements for owners and operators of storage tanks and storage tank facilities.

Subsection 245.305(a) of the regulations requires owners or operators to notify the appropriate regional office of the Department as soon as practicable, but no later than 2 hours, after the confirmation of a reportable release.

Subsection 245.305(d) requires owners or operators to provide written notification to the appropriate regional office and to the local municipality, within 15 days of the notice required by Subsection 245.305(a). This form may be used to comply with Subsection 245.305(d).

OWNERS AND OPERATORS (O/O)
PLEASE COMPLETE SECTIONS I, II, IIIA, IIIB, IV, V, VII and VIII.

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

On September 21, 1991, the Storage Tank Program's Certification regulations became effective. These regulations establish standards of performance for certified installers and inspectors of storage tanks and storage tank facilities.

Subsection 245.132(a)(4) of the regulations requires certified installers and inspectors to report to the Department a release of a regulated substance or confirmed or suspected contamination of soil, surface or groundwater from regulated substances observed while performing services as a certified installer or inspector.

This form may be used to comply with Subsection 245.132(a)(4). The Department expects submission of the form within 48 hours of observing suspected or confirmed contamination. Where there is a reportable release, the form may be submitted jointly by the owner, operator, certified installer and certified inspector. In this instance, the form must be received by the appropriate regional office within 15 days of the notice required by Subsection 245.305(a).

CERTIFIED INSTALLERS AND INSPECTORS (I/I)
PLEASE COMPLETE SECTIONS I, II, IIIA, IIIC, VI, VII and VIII.

INSTRUCTIONS

I. **FACILITY INFORMATION** - Record the name, I.D. number and physical location (not P.O. Box) of the facility at which a reportable release has been confirmed or at which suspected or confirmed contamination has been observed. Include the name and phone number of a person to contact at the facility.

II. **OWNER INFORMATION** - Record the name, business address and phone number of the owner of the facility identified in Section I.

III. **REGULATED SUBSTANCE INFORMATION** - Indicate to the best of your knowledge: A) the type of product or products involved; B) the quantity of product or products released; and C) whether the contamination is suspected or confirmed.

IV. **REPORTABLE RELEASE INFORMATION** - Record the date of confirmation of the reportable release, e.g., "08/21/93"; the date and regional office notified; and the date the local municipality (provide name of municipality) was sent a copy of this form. Indicate to the best of your knowledge the extent of contamination resulting from the release of the regulated substance.

V. **INTERIM REMEDIAL ACTIONS** - Indicate the interim remedial actions planned, initiated or completed.

VI. **SUSPECTED/CONFIRMED CONTAMINATION INFORMATION** - Record the date of observation of the suspected or confirmed contamination, e.g., "01/01/94". Indicate to the best of your knowledge the indications of a suspected release or extent of confirmed contamination resulting from the release of the regulated substance.

VII. **ADDITIONAL INFORMATION** - Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include in this section a brief description of the activity that was being conducted when the reportable release was confirmed by the owner or operator or when the suspected/confirmed contamination was observed by the certified installer or inspector, e.g., during a(n) installation, repair or upgrade, removal from service or routine inspection.

VIII. **CERTIFICATION** - Please print your name, and provide your signature and date of signature. If a certified installer/inspector, provide certification number and company certification number.

PLEASE SEND COMPLETED ORIGINAL FORM TO:

PA Department of Environmental Resources
Environmental Cleanup Program
Storage Tank Section
(and the appropriate address below, depending on where the FACILITY is located)

Southeast Region	Northeast Region	Southcentral Region	Northcentral Region	Southwest Region	Northwest Region
Lee Park, Suite 6010 555 North Lane Conshohocken, PA 19428 FAX: 610-832-6259/6260	Cross Valley Centre 667 North River Street Plains, PA 18705 FAX: 717-826-5648	One Ararat Boulevard Harrisburg, PA 17110 FAX: 717-540-7492	208 Pine Street Williamsport, PA 17701 FAX: 717-327-3565	400 Waterfront Drive Pittsburgh, PA 15222 FAX: 412-442-4194	1012 Water Street Meadville, PA 16335 FAX: 814-332-6831
Counties Bucks, Chester, Delaware, Montgomery, Philadelphia	**Counties** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming	**Counties** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties** Bradford, Cameron, Centre, Clinton, Clearfield, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties** Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland	**Counties** Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango, Warren

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: FORMER ATLANTIC SERVICESTATION
Facility I.D. Number: 100549
Street Address (P.O. Box not acceptable): 610 OLD YORK RD
City: WARMINSTER
State: PA
Zip Code:
County: BUCKS
Municipality: WARMINSTER
Contact Person: BRAD FISH
Phone Number: (610) 859-5701

II. OWNER INFORMATION (Both O/O and I/I)

Owner Name: SUN COMPANY INC
Address: 4041 MARKET ST
City: ASTON
State: PA
Zip Code: 19014
Phone Number: (610) 859-5701

ER-BWQ-32: 2/94

III. REGULATED SUBSTANCE INFORMATION

A. Type of Product(s) Involved (Mark All That Apply ☒): Both O/O and I/I		B. Quantity (Gallons) of Product(s) Released: O/O Only	C. Contamination Suspected [S] or Confirmed [C]: I/I Only	
Leaded Gasoline	☐		[S]	[C]
Unleaded Gasoline	☒	UNKNOWN	[S] (C)	[C]
Aviation Gasoline	☐		[S]	[C]
Kerosene	☐		[S]	[C]
Jet Fuel	☐		[S]	[C]
Diesel Fuel	☐		[S]	[C]
New Motor Oil	☐		[S]	[C]
Used Motor Oil	☐		[S]	[C]
Fuel Oil No. 1	☐		[S]	[C]
Fuel Oil No. 2	☐		[S]	[C]
Fuel Oil No. 4	☐		[S]	[C]
Fuel Oil No. 5	☐		[S]	[C]
Fuel Oil No. 6	☐		[S]	[C]
Other (Specify) _____	☐		[S]	[C]
Unknown	☐		[S]	[C]

IV. REPORTABLE RELEASE INFORMATION (O/O Only)

Date Reportable Release was Confirmed: 2 / 27 / 96 (m d y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Reportable Release and Office Notified:

Date 2 / 28 / 96 (m d y) Office SOUTH EAST

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality and Name of Municipality Notified:

Date 2 / 29 / 96 (m d y) Municipality CUMRU TWP

Environmental Impacts (Mark All That Apply ☒):

Soil	☒
Sediment	☐
Surface Water	☐
Ground Water	☐
Water Supplies	☐

V. INTERIM REMEDIAL ACTIONS (O/O Only)

(Mark All That Apply ☒):

	Planned	Initiated	Completed	Not Applicable
Regulated Substance Removed from Storage Tanks	☐	☐	☒	☐
Fire, Explosion and Safety Hazards Mitigated	☐	☐	☒	☐
Contaminated Soil Excavated	☐	☒	☐	☐
Free Product Recovered	☐	☐	☐	☒
Temporary Water Supplies Provided	☐	☐	☐	☒
Other (Specify) _____	☐	☐	☐	☐

VI. SUSPECTED / CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date of Observation of Suspected/Confirmed Contamination: 2 / 27 / 96 (m d y)

Indication of Suspected Contamination (Mark All That Apply ☒):

Unusual Level of Vapors	☒
Erratic Behavior of Product Dispensing Equipment	☐
Release Detection Results Indicate a Release	☐
Discovery of Holes in the Storage Tank	☐
Other (Specify) _____	☐

Extent of Confirmed Contamination (Mark All That Apply ☒):

Product Stained or Product Saturated Soil or Backfill	☒
Ponded Product	☐
Free Product or Sheen on Ponded Water	☐
Free Product or Sheen on the Ground Water Surface	☐
Free Product or Sheen on Surface Water	☐
Other (Specify) _____	☐

VII. ADDITIONAL INFORMATION (Both O/O and I/I)

Include a brief description of the activity that was being conducted when the reportable release was confirmed by the owner or operator or when the suspected/confirmed contamination was observed by the certified installer or inspector, e.g., during a(n) installation, repair or upgrade, removal from service or routine inspection.

WHILE PERFORMING STATION UPGRADE ACTIVITIES 4 CLOSED-IN-PLACE U.S.T.s WERE FOUND ALONG WITH AN ABANDONED 550 GALLON HEATING OIL TANK. ALL TANKS WERE REMOVED AND CONFIRMATORY SAMPLES WERE COLLECTED. STRONG VAPORS AND STAINED SOILS WERE OBSERVED DURING EXCAVATION ACTIVITIES. EXCAVATED SOILS WERE PROPERLY DISPOSED OF IN AN APPROVED LANDFILL.

VIII. CERTIFICATION (Both O/O and I/I)

I, JOHN C. KETCHUM, hereby certify, under penalty of law as provided in 18 Pa. C.S.A. §4904(relating to unsworn falsification to authorities) that I am the owner or operator of the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

(Print Name)

John C. Ketchum (for Sun Co.) — Signature of Owner or Operator

2-29-96 — Date

I, _____, hereby certify, under penalty of law as provided in 18 Pa. C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified installer who performed tank handling activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

(Print Name)

Signature of Certified Installer — Date

Installer Certification Number — Company Certification Number

I, _____, hereby certify, under penalty of law as provided in 18 Pa. C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified inspector who performed inspection activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

(Print Name)

Signature of Certified Inspector — Date

Inspector Certification Number — Company Certification Number

APPENDIX E

Subsurface Drilling Logs

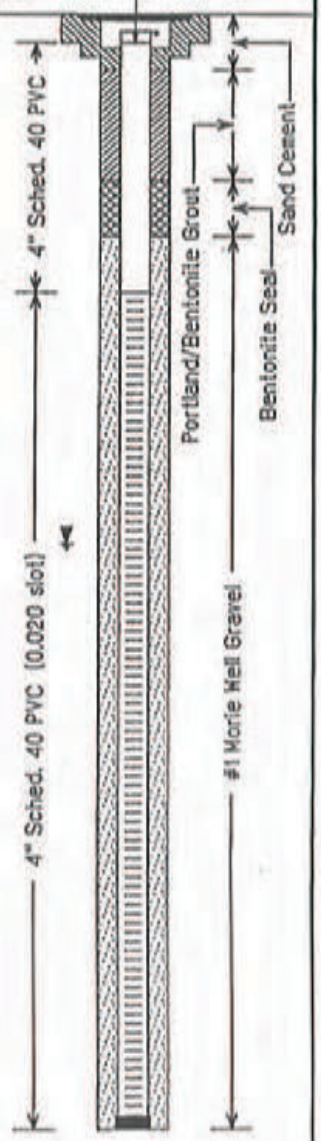
Handex of E. Pennsylvania

WELL LOG: MW-1

Permit #: N/A	Drill Date: 3/13/98	Use: Monitoring
Location: 610 York Rd., Warminster, PA		Owner Loc #: 0363-5430
Owner: Sun Company Inc.		Handex Loc #: 111332-02
Owner Address: 1801 Market St., Phil., PA	BORING - Depth: 20 ft.	Diameter: 4 in.
Drilling Method: Air Rotary	CASING - Length: 4.5 ft.	Diameter: 4 in.
Sampling Method: Split-Spoon/Drill Cuttings	SCREEN - Length: 15 ft.	Diameter: 4 in.
Static Water Level: 9 ft. (from TOC 3/13/98)	WELL - Depth: 20 ft.	

Depth (ft.)	Sample ID	Sample Depth	Blows/6 in.	P.I.D.	Graphic Log	Geologic Description
						GRAVEL and SAND
						Medium to fine SAND with some Gravel
5	SS-1H	☒	6,6,5,7	<1		SILT and SAND
						Weathered BEDROCK
						Competent red/brown SHALE
10	SS-2			6		
15	SS-3			7		
20						

Well Diagram



NOTES: H = Sample analyzed at laboratory; ☒ = Sample interval/recovery; ⧩ = Static Water Level (from TOC)

Geologist: J. Goudsward	Driller: B.L. Myers

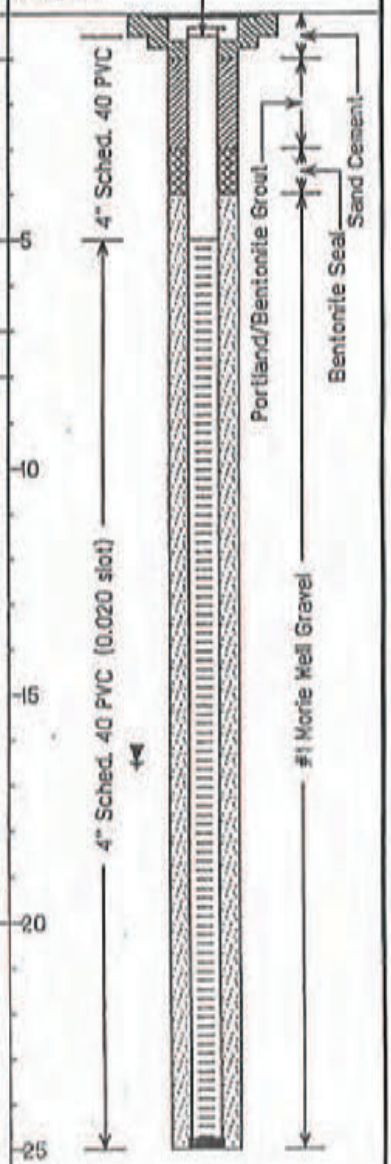
Handex of E. Pennsylvania

WELL LOG: MW-2

Permit #: *N/A*	Drill Date: *3/13/98*	Use: *Monitoring*
Location: *610 York Rd., Warminster, PA*		Owner Loc #: *0383-5430*
Owner: *Sun Company Inc.*		Handex Loc #: *111332-02*
Owner Address: *1801 Market St., Phil., PA*	BORING - Depth: *25 ft.*	Diameter: *4 in.*
Drilling Method: *Air Rotary*	CASING - Length: *4.5 ft.*	Diameter: *4 in.*
Sampling Method: *Split-Spoon/Drill Cuttings*	SCREEN - Length: *20 ft.*	Diameter: *4 in.*
Static Water Level: *18 ft.* *(from TOC 3/13/98)*	WELL - Depth: *25 ft.*	

Depth (ft.)	Sample ID	Sample Depth	Blows/6 in.	P.I.D.	Graphic Log	Geologic Description
5	SS-1	⊠	6,6,7,7	<1		GRAVEL and SAND
						Medium to fine SAND and Silt with gravel
						SILT and SAND
						Weathered BEDROCK
10	SS-2			2		Competent red/brown SHALE
15	SS-3			3		
20	SS-4			5		
25						

Well Diagram



NOTES: ⊠ = Sample analyzed at laboratory; ⊠ = Sample interval/recovery; ▼ = Static Water Level (from TOC)

Geologist: J. Goudsward	Driller: B.L. Myers

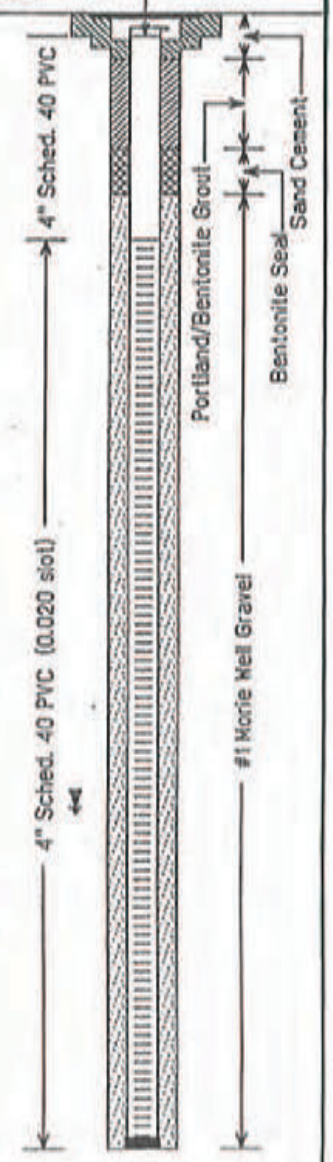
Handex of E. Pennsylvania

WELL LOG: MW-3

Permit #: *N/A*	Drill Date: *3/13/96*	Use: *Monitoring*
Location: *610 York Rd., Warminster, PA*		Owner Loc #: *0363-5430*
Owner: *Sun Company Inc.*		Handex Loc #: *111332-02*
Owner Address: *1801 Market St., Phil., PA*	BORING - Depth: *25 ft.*	Diameter: *4 in.*
Drilling Method: *Air Rotary*	CASING - Length: *4.5 ft.*	Diameter: *4 in.*
Sampling Method: *Split-Spoon/Drill Cuttings*	SCREEN - Length: *20 ft.*	Diameter: *4 in.*
Static Water Level: *17 ft.* *(from TOC 3/13/96)*	WELL - Depth: *25 ft.*	

Depth (ft.)	Sample ID	Sample Depth	Blows/6 in.	P.I.D.	Graphic Log	Geologic Description
5	SS-1	☒	6,3,6,7	<1		GRAVEL and SAND
						Fine SAND and Silt with some gravel
						Fine SAND and SILT
						Weathered BEDROCK
10	SS-2			<1		Competent SHALE
15	SS-3			5		
20	SS-4			<1		
25						

Well Diagram



NOTES: ✕ = Sample analyzed at laboratory; ☒ = Sample interval/recovery; ▼ = Static Water Level (from TOC)

Geologist: J. Goudsward	Driller: B.L. Myers

BORING LOG

BOREHOLE NO. MW-4

Groundwater and Environmental Services, Inc.

PROJECT: Sun Warminster
ADDRESS: 610 Old York Road

TOTAL DEPTH: 25 feet
BOREHOLE DIA.: 10 inch

Logged By: Brian Peterka
Dates Drilled: October 27, 1997
Drilling Company: Lutz Environmental
Drill Rig Type:

Drilling Method:
Sampling Method: Split Spoon
Soil Class. System: Unified Soil Classification System (USCS)
Field Screening: PID

Depth (feet)	Sample Interval	Field Screen (ppm)	Recovery	SAMPLE LITHOLOGY (USCS)	Stratigraphy	Comments	COMPLETION DETAILS
0				FILL: (0'-1') Asphalt and subbase	FILL	(0'-5') Hand auger to clear utilities	Flush mount well vault, locking cap, GES well lock
				CL: (1'-5') Red-brown to dark brown clay, moist, no odors	CL		Type 2 Portland cement (0'-2')
5		1 ppm	18" 75%	CL: (5'-10') Dark brown clay, moist, density increasing with depth, no odors			Hydrated bentonite (2'-3')
		2 ppm	18" 75%				
		2 ppm	12" 100%				
10		2 ppm		CL: (10'-15') Light brown and red-brown clay layers, moist zone at 13', consolidated from 13'-15', no odor			4-inch diameter PVC riser (0'-5')
							No. 2 Sand (3'-25')
15		2 ppm		MUDSTONE: (15'-17') Red-brown consolidated mudstone, moist, no odors	MUDSTONE		4-inch diameter PVC 0.020" slotted screen (5'-25')
				MUDSTONE: (17'-20') Light brown and red-brown mudstone layers, moist zone at 19'			
20		2 ppm		MUDSTONE: (20'-25') Red-brown mudstone, moist at 20' and 22'-23', no odors		Monitoring well boring terminated at 25'	
25							

General Comments:
SAA - Same as above
A soil sample at an unknown depth was submitted for laboratory analysis

Symbol Key:
Apparent Water Level
Lab Sample Location

MONITORING WELL LOG MW-5

Groundwater and Environmental Services, Inc.

PROJECT:	Sun Warminster	SURFACE ELEV.:	NA	TOTAL DEPTH:	50 feet
ADDRESS:	610 Old York Road	WATER DEPTH	42 feet	CASING EL.:	
		BOREHOLE DIA.:	8 inch	WELL DIA.:	4 inch

Logged By:	Krista Snyder	Drilling Method:	Air Rotary
Dates Drilled:	10/18/04	Sampling Method:	Cuttings
Drilling Company:	Eichelberger's	Soil Class. System:	Unified Soil Classification System (USCS)
Drill Rig Type:		Field Screening:	Q-Rae Plus Model 2000 (results in ppm)

Depth (feet)	Sample Interval	Field Screen	SAMPLE LITHOLOGY (USCS)	Stratigraphy	Comments	COMPLETION DETAILS
0	0'-4'	0.3	ASPHALT: (0'-0.5') Asphalt	ASPHALT	0' - 4' Air knife and vacuum extraction for utility clearance	Completed with locking cap and flush mount
5	4'-6'		SAND AND SILT: (0.5'-6') Brown silt and fine to medium sand with sparse angular gravel, dry, no odor	SAND AND SILT		Bentonite seal from 1'-3'
	6'-10'		SHALE: (6'-50') Shale bedrock	SHALE		
10		2.0				Sand pack, pea gravel and gravel from 5'-50'
	10'-15'					
15		1.7				
						Schedule 40 PVC screen (0.020 slot) 10'-50'
20	15'-25'					
25		3.3			Sample MW-5-25' submitted for Laboratory Analysis	
30	25'-35'					
35		1.6			Shale bedrock at 6'	
40	35-43'				Water at 42'	
					Well casing set at 50'	
45					Borehole completed to 50'	
50						

Location:

Northing/Latitude: NA

Easting/Longitude: NA

General Comments:

Symbols:

Apparent Water Level

Fracture

Lab Sample Location

MONITORING WELL LOG MW-6

Groundwater and Environmental Services, Inc.

PROJECT:	Sun Warminster	SURFACE ELEV.:	NA	TOTAL DEPTH:	47 feet
ADDRESS:	610 Old York Road	WATER DEPTH	20 feet	CASING EL.:	
		BOREHOLE DIA.:	8 inch	WELL DIA.:	4 inch

Logged By:	Krista Snyder	Drilling Method:	Air Rotary
Dates Drilled:	10/18/04	Sampling Method:	Cuttings
Drilling Company:	Eichelberger's	Soil Class. System:	Unified Soil Classification System (USCS)
Drill Rig Type:		Field Screening:	Q-Rae Plus Model 2000 (results in ppm)

Depth (feet)	Sample Interval	Field Screen	SAMPLE LITHOLOGY (USCS)	Stratigraphy	Comments	COMPLETION DETAILS
0	0'-4'		ASPHALT: (0'-0.5') Asphalt	ASPHALT	0' - 4' Air knife and vacuum extraction for utility clearance	Completed with locking cap and flush mount
			SAND AND SILT: (0.5'-6') Brown silt and fine to medium sand, dry, no odor	SAND AND SILT		
5			SHALE: (4'-11') Weathered shale bedrock	SHALE	Weathered shale bedrock from 4'-11'	Bentonite seal from 1'-3'
10	4'-11'					Sand pack, pea gravel and gravel from 5'-50'
			SHALE: (11'-47') Competent shale bedrock	SHALE	Competent shale bedrock at 11'	
15					Sample MW-6-15' submitted for Laboratory Analysis	
20					Water at 20'	Schedule 40 PVC screen (0.020 slot) 10'-47'
25						
30	11'-47'					
35						
40					Well casing set at 47' Borehole completed to 47'	
45					Soil samples from 20'-47'	

Location:

Northing/Latitude: NA

Easting/Longitude: NA

General Comments:

Symbols:

Apparent Water Level

Fracture

Lab Sample Location

MONITORING WELL LOG MW-7

Groundwater and Environmental Services, Inc.

PROJECT:	Sun Warminster	SURFACE ELEV.:	N/A	TOTAL DEPTH:	100 feet
ADDRESS:	610 Old York Road	WATER DEPTH	15.39 feet	CASING EL.:	99.20 feet
		BOREHOLE DIA.:	8 inches	WELL DIA.:	2 inches

Logged By:	P. Crawford	Drilling Method:	Air Rotary
Dates Drilled:	11/23/04	Sampling Method:	N/A
Drilling Company:	Eichelbergers	Soil Class. System:	USCS
Drill Rig Type:	N/A	Field Screening:	PID

Depth (feet)	Sample Interval	Field Screen	SAMPLE LITHOLOGY (USCS)	Stratigraphy	Comments	COMPLETION DETAILS
0–5			SILTY SAND: Tan, with asphalt chips	SM		(0'-1') Concrete flush-mount cover with locking well cap
5–75			SANDSTONE: Maroon Arkosic, with purple siltstone lenses, abundant rounded quartz cobbles less than or equal to 1/8" diameter. Increased quartz cobbles at 50', diameter increases to greater than 1/4"	SANDSTONE	Encountered noticeable water at 23' with <1gpm yield	(1'-3') Bentonite hole plug; (60'-100') Sand packed; (0'-60') 6" Steel Casing; (60'-100') 2" Schedule 40 PVC slotted 0.020"
75–100			SILTSTONE: Tan to buff, no quartz cobbles observed	SILTSTONE	End of Monitoring well boring at 100'. Water starts to fill in very slowly at bottom.	

Location:

Northing/Latitude: N/A

Easting/Longitude: N/A

General Comments:

No detectable readings observed with PID

Symbols:

Apparent Water Level

Fracture

Lab Sample Location

MONITORING WELL LOG MW-8

Groundwater and Environmental Services, Inc.

PROJECT:	SUN - Warminster	SURFACE ELEV.:	NA	TOTAL DEPTH:	100 feet
ADDRESS:	610 York Road	WATER DEPTH		CASING EL.:	
		BOREHOLE DIA.:	8 inch	WELL DIA.:	2 inch

Logged By:	Keith Montone	Drilling Method:	Air Rotary
Dates Drilled:	2/22/07 and 2/26/07	Sampling Method:	Grab
Drilling Company:	B.L. Myers Bros	Soil Class. System:	Unified Soil Classification System (USCS)
Drill Rig Type:	Scramm Air Rotary	Field Screening:	PID

Depth (feet)	Sample Interval	Field Screen	SAMPLE LITHOLOGY (USCS)	Stratigraphy	Comments	COMPLETION DETAILS
0			ASPHALT: (0-2') Asphalt, large rocks and ballast	ASPHALT		Cement/Flushmount (0-1')
5	Sample collected for Lab Analysis	2189 ppm	SANDY SILT: (2'-7') Light brown to tan silty sand, strong hydrocarbon odor coming from borehole, slightly moist.	SANDY SILT		
10		175 ppm		SILTSTONE		
15		75 ppm	SILTSTONE: (7'-22') Siltstone bedrock encountered at 7' bgs, reddish brown, slight odor, dry, quarter size rock frags samples from drill rig		Steel Casing grouted in place	2" Riser (0 -60')
20		150 ppm		SAND AND SILT		Steel Casing (0'-60')
25	Sample collected for Lab Analysis	1259 ppm	SAND AND SILT: (22'-25') SOFT SPOT, Light brown tan silty sand, mild odor, moist samples.	SILTSTONE		
30		82 ppm	SILTSTONE: (25'-30') Change back to competent siltstone rock, Reddish brown siltstone, water starting to come from rig, slight odor.			
35				SILTSTONE		
40						#2 Sand pack (57'-100')
45			SILTSTONE: (35'-100') Very wet reddish brown siltstone, 25gpm, noticable water bearing zone at 73'			
50						
55						Bentonite seal (54'-57')
60						
65						
70						
75						
80						PVC Screen 0.0200 Slot (60' - 100')
85						
90						
95						
100						

Location:

Northing/Latitude: NA

Easting/Longitude: NA

General Comments:

Symbols:

Apparent Water Level

Fracture

Lab Sample Location

MONITORING WELL LOG MW-9

Groundwater and Environmental Services, Inc.

PROJECT:	SUN - Warminster	SURFACE ELEV.:	NA	TOTAL DEPTH:	89 Feet
ADDRESS:	610 York Road	WATER DEPTH		CASING EL.:	
		BOREHOLE DIA.:	8 inch	WELL DIA.:	2 inch

Logged By:	Keith Montone	Drilling Method:	Air Rotary
Dates Drilled:	2/23/07 and 2/26/07	Sampling Method:	Grab
Drilling Company:	B.L. Myers Bros	Soil Class. System:	Unified Soil Classification System (USCS)
Drill Rig Type:	Scramm Air Rotary	Field Screening:	PID

Depth (feet)	Sample Interval	Field Screen	SAMPLE LITHOLOGY (USCS)	Stratigraphy	Comments	COMPLETION DETAILS
0			ASPHALT: (0-2') Asphalt, large rocks and ballast	ASPHALT		Cement/Flushmount (0-1')
5	Sample collected for Lab Analysis	55 ppm	SILT: (2'-7') Dark brown silt, no hydrocarbon odor, slightly moist.	SILT		
10		2.0 ppm	SILT: (7'-16') Brown/Red silt, dry, no odor, no rock frags, soft drilling	SILT		
15	Sample collected for Lab Analysis	0.0 ppm	SILTSTONE: (16'-23') Brownish red siltstone rock encountered, hard, quarter size recovery samples, dry no odor	SILTSTONE	Steel Casing grouted in place	Steel Casing (0'-60')
20		0.7 ppm				
25		0.0 ppm	SILTSTONE: (23'-38') Large broken pieces reddish brown siltstone, <5 gpm, no odor			2" Riser (0 -59')
30						
35						Bentonite seal (28'-53')
40			SILTSTONE: (38'-60') SAA brown/red siltstone bedrock, water bearing fracture at 38' 15 gpm	SILTSTONE		
45						
50						
55						
60			SILTSTONE: (60'-89') SAA, additional fractures at 72' and 78', large volume of water 30 gpm	SILTSTONE		#2 Sand pack (53'-89')
65						
70						
75						PVC Screen 0.0200 Slot (59' - 89')
80						
85						

Location:

Northing/Latitude: NA

Easting/Longitude: NA

General Comments:

Symbols:

Apparent Water Level

Fracture

Lab Sample Location

MONITORING WELL LOG

MW-10

Groundwater and Environmental Services, Inc.

PROJECT:	SUN - Warminster	SURFACE ELEV.:	NA	TOTAL DEPTH:	50 feet
ADDRESS:	610 York Road	WATER DEPTH		CASING EL.:	
		BOREHOLE DIA.:	8 inch	WELL DIA.:	4 inch

Logged By:	Keith Montone	Drilling Method:	Air Rotary
Dates Drilled:	2/23/2007	Sampling Method:	Grab
Drilling Company:	B.L. Myers Bros	Soil Class. System:	Unified Soil Classification System (USCS)
Drill Rig Type:	Scramm Air Rotary	Field Screening:	PID

Depth (feet)	Sample Interval	Field Screen	SAMPLE LITHOLOGY (USCS)	Stratigraphy	Comments	COMPLETION DETAILS
0			ASPHALT: (0-2') Asphalt, large rocks and ballast	ASPHALT		Cement/Flushmount (0-1')
			SILT: (2'-5') Dark brown silt, slightly moist, no odor, no rocks, soft	SILT		
5		2.9 ppm	SILT: (7'-17') Dark brown/red silt, slightly moist, no odor, no rock frags, soft	SILT		Bentonite seal (2'-7')
10		1.4 ppm				4" Riser (0 -10')
15	Sample collected for Lab Analysis	0.0 ppm				
20		0.0 ppm	SILTSTONE: (17'-24') Brown/red siltstone, dry, no odor	WEATHERED SHALE		
25		0.0 ppm	SILTSTONE: (24'-30') Encountered water at 24' bgs SAA	SILTSTONE		#2 Sand pack (7'-50')
30			SILTSTONE: (30'-50') Very wet reddish brown siltstone, 25gpm, noticable water bearing zones at 38' and 47'	SILTSTONE		
35						PVC Screen 0.0200 Slot (10' - 50')
40						
45						
50						

Location:

Northing/Latitude: NA

Easting/Longitude: NA

General Comments:

Symbols:

Apparent Water Level

Fracture

Lab Sample Location

SOIL VAPOR POINT

BOREHOLE NO SG-1

Groundwater and Environmental Services, Inc.

PROJECT: Sunoco Station 0363-5430

ADDRESS: 610 York Road Warminster, PA

TOTAL DEPTH: 4 feet

Logged By: Keith Montone

Dates Drilled: February 9, 2007

Drilling Company: Odyssey Environmental

Drill Rig Type: Vacmasters 1000

Drilling Method: Vactron

Soil Class. System: Unified Soil Classification System (USCS)

Field Screening: PID

Depth (feet)	Sample Interval	Field Screen (ppm)	Rec-overy	SAMPLE LITHOLOGY (USCS)	Stratigraphy	Comments	COMPLETION DETAILS
0				ASPHALT: (0' - 1.5') Asphalt, sub base gravel, and stone	ASPHALT		4" Flush mount well vault (0'-1') Concrete
				SILT: (1.5' - 4.0') Light tanish brown silt, dry, no odor	SILT		(1' - 3') Hydrated Bentonite (3'- 4') No. 2 Sand (3.5' - 4') Stainless steel screened vapor implant

General Comments:

Symbol Key:

Apparent Water Level

Lab Sample Location

SOIL VAPOR POINT

BOREHOLE NO SG-2

Groundwater and Environmental Services, Inc.

PROJECT: **Sunoco Station 0363-5430**

ADDRESS: **610 York Road Warminster, PA**

TOTAL DEPTH: **4 feet**

Logged By: **Keith Montone**

Dates Drilled: **February 9, 2007**

Drilling Company: **Odyssey Environmental**

Drill Rig Type: **Vacmasters 1000**

Drilling Method: **Vactron**

Soil Class. System: **Unified Soil Classification System (USCS)**

Field Screening: **PID**

Depth (feet)	Sample Interval	Field Screen (ppm)	Rec-overy	SAMPLE LITHOLOGY (USCS)	Stratigraphy	Comments	COMPLETION DETAILS
0				ASPHALT: (0' - 1.5') Asphalt, sub base gravel, and stone	ASPHALT		4" Flush mount well vault (0'-1') Concrete
				SILT: (1.5' - 4.0') Light tanish brown silt, dry, no odor	SILT		(1' - 3') Hydrated Bentonite (3'- 4') No. 2 Sand (3.5' - 4') Stainless steel screened vapor implant

General Comments:

Symbol Key:

Apparent Water Level

Lab Sample Location

SOIL VAPOR POINT

BOREHOLE NO SG-3

Groundwater and Environmental Services, Inc.

PROJECT: **Sunoco Station 0363-5430**

ADDRESS: **610 York Road Warminster, PA**

TOTAL DEPTH: **4 feet**

Logged By: **Keith Montone**

Dates Drilled: **February 9, 2007**

Drilling Company: **Odyssey Environmental**

Drill Rig Type: **Vacmasters 1000**

Drilling Method: **Vactron**

Soil Class. System: **Unified Soil Classification System (USCS)**

Field Screening: **PID**

Depth (feet)	Sample Interval	Field Screen (ppm)	Rec-overy	SAMPLE LITHOLOGY (USCS)	Stratigraphy	Comments	COMPLETION DETAILS
0				ASPHALT: (0' - 1.5') Asphalt, sub base gravel, and stone	ASPHALT		4" Flush mount well vault (0'-1') Concrete
				SILT: (1.5' - 4.0') Light tanish brown silt, dry, no odor	SILT		(1' - 3') Hydrated Bentonite (3'- 4') No. 2 Sand (3.5' - 4') Stainless steel screened vapor implant

General Comments:

Symbol Key:

Apparent Water Level

Lab Sample Location

APPENDIX F

Domestic Well Survey Results

TABLE 1
DOMESTIC WELL SURVEY

SUNOCO STATION #0363-5430
610 OLD YORK ROAD
WARMINSTER, PENNSYLVANIA

PROPERTY OWNER OR RETAIL/LEASEE NAME	PROPERTY USAGE	ADDRESS NO.	STREET	WMA CUSTOMER? YES	WMA CUSTOMER? NO	SUPPLY WELL? YES	SUPPLY WELL? NO	SURVEY NOT RETURNED	WELL SAMPLED	COMMENTS
Warminster Water Authority	Commercial	415	Gibson Avenue	√		√				215-675-3301
	Residential	529	Lenape Street	√		√				Information from PADEP file review
	Residential	575	Maple Street	√		√				Information from PADEP file review
	Residential	577	Maple Street	√		√				Information from PADEP file review
Robert A. Thomas	Residential	480	Memorial Street	√			√			
Jeff Walsh	Residential	481	Memorial Street	√			√			
Anthony and Helen Bongiovanni	Residential	486	Memorial Street	√			√			
	Residential	489	Memorial Street					√		
George and Kathleen D Krajci	Residential	490	Memorial Street	√			√			
McHugh	Residential	495	Memorial Street					√		
	Residential	512	Memorial Street					√		
	Residential	513	Memorial Street					√		
Nelson Mesa	Residential	525 A/B	Memorial Street	√			√			
Harold Van Sant	Residential	526	Memorial Street	√			√			
Moritzs	Residential	536	Memorial Street					√		
	Residential	535 A/B	Memorial Street	√			√			
Jane E. Gibson	Residential	545 A/B	Memorial Street	√			√			
Gabor	Residential	546	Memorial Street	√			√			
	Residential	548	Memorial Street					√		
	Residential	555 A/B	Memorial Street					√		
	Residential	556 A/B	Memorial Street					√		
Denise M. Guzzelli	Residential	558	Memorial Street	√			√			
	Residential	565	Memorial Street					√		
	Residential	566 A/B	Memorial Street					√		
	Residential	567	Memorial Street					√		
	Residential	575 A/B	Memorial Street					√		
No Name	Residential	576 A/B	Memorial Street	√			√			
	Residential	588	Memorial Street					√		
Jim Dugan	Residential	590	Memorial Street	√			√			
Donald P. Pfister	Residential	452	Olive Street	√		√				Well not in use
Moore	Residential	460	Olive Street	√		√				Well not in use
	Residential	470	Olive Street			√				Information from PADEP file review
O'Neill	Residential	480 A/B	Olive Street			√				Information from PADEP file review
	Residential	490	Olive Street			√				Information from PADEP file review
Adam and Helen Sobol	Residential	500	Olive Street	√			√			
William Reichert	Residential	520	Olive Street	√			√			
Dorothy Brundage	Residential	530	Olive Street	√			√			
Mirack	Residential	536	Olive Street	√			√			
McDonnell	Residential	540	Olive Street					√		
Emil Krasne	Residential	550	Olive Street	√			√			
	Residential	552	Olive Street					√		

TABLE 1
DOMESTIC WELL SURVEY

SUNOCO STATION #0363-5430
610 OLD YORK ROAD
WARMINSTER, PENNSYLVANIA

PROPERTY OWNER OR RETAIL/LEASEE NAME	PROPERTY USAGE	ADDRESS NO.	STREET	WMA CUSTOMER? YES	WMA CUSTOMER? NO	SUPPLY WELL? YES	SUPPLY WELL? NO	SURVEY NOT RETURNED	WELL SAMPLED	COMMENTS
	Residential	556	Olive Street					√		
Rutland Sites	Residential	560	Olive Street	√			√			
	Residential	566	Olive Street					√		
	Residential	580	Olive Street					√		
	Residential	582	Olive Street					√		
Robert M. Kraft	Residential	586 A/B	Olive Street	√			√			
	Residential	590	Olive Street	√			√			
Warminster Municipal Authority	Commercial		Roberts Road			√				Pump Station
David Stein (National Auto Sales)	Commercial	336	W. Street Rd	√			√			
Rymar Plaza II	Commercial	530	W. Street Rd	√			√			
Denny's	Commercial	520	W. Street Rd	√			√			
Kinkade (Tree House Flowers)	Commercial	540	W. Street Rd	√			√			
	Commercial	550	W. Street Rd	√			√			
	Commercial	556	W. Street Rd					√		
Burger King	Commercial	580	W. Street Rd	√			√			
Warminster Electronics (Eugene Poinsol)	Commercial	586	W. Street Rd	√			√			
The Dove Bar	Commercial	590	W. Street Rd					√		
	Residential	590A	W. Street Rd					√		
Pennzoil (Jiffy Lube)	Commercial	600	W. Street Rd	√			√			
Ted (Steak & Hoagie factory)	Commercial	610	W. Street Rd	√			√			
Eagle Diner	Commercial		W. Street Rd					√		
United Church of Christ	Commercial	785	W. Street Rd					√		
Lafferty Chevrolet	Commercial	829	W. Street Rd		√	√			30-May-01	Well is main source of water
Center Point Plaza (Walters & Assoc.)	Commercial		W. Street Rd	√			√			(610-444-6000)
Christ's House (retirement village)	Residential	1220	W. Street Rd	√		√			1-Jun-01	Well supplies one permanently unoccupied residence
John Mayer (office space)	Commercial	755	Old York Rd	√			√			
Pathmark Stores	Commercial	700	Old York Rd	√			√			
Archbishop Wood	Commercial	655	Old York Rd	√			√			
Warminster Plaza	Commercial		Old York Rd	√			√			
Hatboro Federal Savings	Commercial	609	Old York Rd	√			√			
Drug Emporium	Commercial	599	Old York Rd	√			√			
John Meyer (stores)	Commercial	541-553	Old York Rd	√			√			
Delaftongio (stores)	Commercial	525-539	Old York Rd	√			√			
PNC Bank	Commercial	521	Old York Rd	√			√			
Warminster Ambulance Corp	Commercial	555	Evergreen Ave	√			√			
	Residential	552	Norwood Ave	√			√			
	Residential	554	Norwood Ave					√		
	Residential	512	Norwood Ave							

ACCUTEST.

06/12/01

RECEIVED JUN 1 8 2001

Technical Report for

Groundwater & Environmental Services

Sun, 610 Old York Road, Warminster, PA 0363-5430

Accutest Job Number: E92327

Report to:

Groundwater & Environmental Services
410 Eagleview Blvd.
Suite 110
Exton, PA 19341

ATTN: Mike Sarcinello

Total number of pages in report: 4

nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Vincent J. Pugliese
President

Certifications: NJ(12129), NY(10983), CA, CT, DE, FL, MA, MD, NC, PA, RI, SC, VA

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories

Accutest Laboratories

Sample Summary

Groundwater & Environmental Services

Job No: E92327

Sun, 610 Old York Road, Warminster, PA 0363-5430

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
E92327-1	06/01/01	14:20	BB	06/04/01	DW	Drinking Water	CHRIST'S HOME

Accutest Laboratories

Report of Analysis

Client Sample ID:	CHRIST'S HOME		
Lab Sample ID:	E92327-1	**Date Sampled:**	06/01/01
Matrix:	DW - Drinking Water	**Date Received:**	06/04/01
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Sun, 610 Old York Road, Warminster, PA 0363-5430		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A45687.D	1	06/08/01	MRD	n/a	n/a	VA1195
Run #2							

VOA Special List

CAS No.	Compound	Result	MCL	RL	Units	Q
71-43-2	Benzene	ND	5.0	1.0	ug/l	
108-88-3	Toluene	ND	1000	1.0	ug/l	
100-41-4	Ethylbenzene	ND	700	1.0	ug/l	
1330-20-7	Xylene (total)	ND	10000	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND		1.0	ug/l	
91-20-3	Naphthalene	ND		5.0	ug/l	
98-82-8	Isopropylbenzene	ND		2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		81-118%
17060-07-0	1,2-Dichloroethane-D4	105%		68-124%
2037-26-5	Toluene-D8	100%		85-119%
460-00-4	4-Bromofluorobenzene	106%		75-127%

ND = Not detected
MCL = Maximum Contamination Level (40 CFR 141)
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

BJ

ACCUTEST.

CHAIN OF CUSTODY

FRESH PONDS CORPORATE VILLAGE, BUILDING B
2235 ROUTE 130, DAYTON, NJ 08810
732-329-0200 FAX: 732-329-3499/3480

ACCUTEST JOB #: E52027

ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: GES, Inc
ADDRESS: 410 Eagleview blvd, Suite 110
CITY: Exton STATE: Pa ZIP: 19341
SEND REPORT TO: Mike Sarcinello
PHONE #: 610-458-1077 ext 157

FACILITY INFORMATION

PROJECT NAME: Sun - Warminster
LOCATION: Gro - Old York Rd
PROJECT NO.: # 0363 - 5430
FAX #:

ANALYTICAL INFORMATION

BTEX 15 - BTEX MTBE Ethanol Naphthalene

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	HNO3	H2SO4	NONE		LAB USE ONLY
-1	Christ's Home	6/1/16	1420	BB	GW	3	X				X	951

DATA TURNAROUND INFORMATION

- [X] 21 DAYS STANDARD
- [ ] 14 DAYS *RUSH*
- [ ] 7 DAYS *EMERGENCY*
- [ ] OTHER

APPROVED BY:

21 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] NJ REDUCED
- [ ] NJ Full
- [ ] FULL CLP
- [ ] DISK DELIVERABLE
- [ ] OTHER (SPECIFY)
- [ ] COMMERCIAL "A"
- [ ] COMMERCIAL "B"
- [ ] STATE FORMS

COMMENTS/REMARKS

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1. B. Blum	6/1/16 1545	1.	2.	6/2/16 11:25	2. Bert Allen
3. Bert Allen	6/1/16 1756	3.	4.	DATE TIME:	4.
5.	DATE TIME:	5.	SEAL #	PRESERVE WHERE APPLICABLE ☑	ON ICE ☑ TEMPERATURE 5 °C

4

TRS

ACCUTEST.

06/11/01

RECEIVED JUN 13 2001

Technical Report for

Groundwater & Environmental Services

Sun, 610 Old York Road, Warminster, PA 0363-5430

Accutest Job Number: E92225

Report to:

Groundwater & Environmental Services
410 Eagleview Blvd.
Suite 110
Exton, PA 19341

ATTN: Mike Sarcinello

Total number of pages in report: 4

nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Vincent J. Pugliese
President

Certifications: NJ(12129), NY(10983), CA, CT, DE, FL, MA, MD, NC, PA, RI, SC, VA

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Accutest Laboratories

Sample Summary

Groundwater & Environmental Services

Job No: E92225

Sun, 610 Old York Road, Warminster, PA 0363-5430

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
E92225-1	05/31/01	13:50	BB	06/01/01	AQ	Ground Water	LAFFERTY CHEVROLET

Accutest Laboratories

Report of Analysis

Client Sample ID:	LAFFERTY CHEVROLET		
Lab Sample ID:	E92225-1	**Date Sampled:**	05/31/01
Matrix:	AQ - Ground Water	**Date Received:**	06/01/01
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	Sun, 610 Old York Road, Warminster, PA 0363-5430		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	O41737.D	1	06/08/01	NM	n/a	n/a	VO2286
Run #2							

VOA Special List

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	5.0	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
91-20-3	Naphthalene	ND	5.0	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		81-118%
17060-07-0	1,2-Dichloroethane-D4	97%		68-124%
2037-26-5	Toluene-D8	99%		85-119%
460-00-4	4-Bromofluorobenzene	100%		75-127%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

CHAIN OF CUSTODY

ACCUTEST

FRESH PONDS CORPORATE VILLAGE, BUILDING B
2235 ROUTE 130, DAYTON, NJ 08810
732-329-0200 FAX: 732-329-3499/3480

GW

ACCUTEST JOB #: E92225
ACCUTEST QUOTE #:

CLIENT INFORMATION

NAME: GES, Inc
ADDRESS: 910 Edgemere Blvd, Suite 110
CITY: Erlon STATE: Pa ZIP: 19341
SEND REPORT TO: Lisa Holderbach
PHONE #: 610-458-1077 ext 110

FACILITY INFORMATION

PROJECT NAME: Sun - Walmington
LOCATION: 910 old York Rd #0363-5430
PROJECT NO.:
FAX #:

ANALYTICAL INFORMATION

6 BTEX, MTBE, Naphth

MATRIX CODES

DW - DRINKING WATER
GW - GROUND WATER
WW - WASTE WATER
SO - SOIL
SL - SLUDGE
OI - OIL
LIQ - OTHER LIQUID
SOL - OTHER SOLID

ACCUTEST SAMPLE #	FIELD ID / POINT OF COLLECTION	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	# OF BOTTLES	PRESERVATION HCl	PRESERVATION NaOH	PRESERVATION HNO3	PRESERVATION H2SO4	PRESERVATION NONE	LAB USE ONLY
-1	Lafferty chevrolet	5/31/01	1350	BB	GW	3	Y					939

DATA TURNAROUND INFORMATION

- [x] 21 DAYS STANDARD
- [ ] 14 DAYS *RUSH*
- [ ] 7 DAYS *EMERGENCY*
- [ ] OTHER

APPROVED BY:

21 DAY TURNAROUND HARDCOPY. EMERGENCY OR RUSH IS FAX DATA UNLESS PREVIOUSLY APPROVED

DATA DELIVERABLE INFORMATION

- [ ] NJ REDUCED
- [ ] NJ Full
- [ ] FULL CLP
- [ ] DISK DELIVERABLE
- [ ] OTHER (SPECIFY)
- [ ] COMMERCIAL "A"
- [ ] COMMERCIAL "B"
- [ ] STATE FORMS

COMMENTS/REMARKS

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
1. B Bus	5/31/01 1600	1. GES Fridge	2. Tim Cottman	6/1/01 10:00	2.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE TIME:	RECEIVED BY:
3.	6/1/01 1305	3. TB	4.		4.
RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	SEAL #	PRESERVE WHERE APPLICABLE	ON ICE	TEMPERATURE
5.		5.			☒	2 °C

TRS

APPENDIX G

Soil Gas Laboratory Analytical Reports

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

ANALYTICAL RESULTS

Prepared for:

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

610-458-1077

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1028771. Samples arrived at the laboratory on Friday, March 09, 2007. The PO# for this group is WARMINSTER and the release number is 0202577-0600-61.

Client Description		Lancaster Labs Number
SG-1	Air	5001822
SG-2	Air	5001823
SG-3	Air	5001824

ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Connie Johnson
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Patrick Crawford
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Heather Nelson
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Bonnie Cobb
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Cris Altman
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Keith Montone
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Krista Snyder

Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax 717-656-2681 • www.lancasterlabs.com

Questions? Contact your Client Services Representative
Lynn M Frederiksen at (717) 656-2300

Respectfully Submitted,

Michele J. Smith

Michele J. Smith
Group Leader

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. AQ 5001822

SG-1 Air
Summa #0201 610 York Rd-Warminster, PA
DUNS# 03635430 COC: NA SG-1

Collected:03/08/2007 15:15 by KM

Account Number: 11224

Submitted: 03/09/2007 17:45
Reported: 03/19/2007 at 06:59
Discard: 05/19/2007

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

CAT No.	Analysis Name	CAS Number	As Received Final Result	LOQ	Units	As Received Final Result	LOQ	Units	DF
00015	TO-15 VOA special compounds								
00018	Methyl tert-butyl Ether	1634-04-4	< 0.0036	0.0036	mg/m3	< 0.00100	0.00100	ppm(v)	1
00019	Benzene	71-43-2	0.0042	0.0032	mg/m3	0.0013	0.00100	ppm(v)	1
00020	Toluene	108-88-3	0.026	0.0038	mg/m3	0.0070	0.00100	ppm(v)	1
00021	Ethylbenzene	100-41-4	0.0086	0.0043	mg/m3	0.0020	0.00100	ppm(v)	1
00022	m/p-Xylenes	n.a.	0.027	0.0043	mg/m3	0.0062	0.00100	ppm(v)	1
00023	o-Xylene	95-47-6	0.015	0.0043	mg/m3	0.0035	0.00100	ppm(v)	1
00031	Cumene	98-82-8	< 0.0049	0.0049	mg/m3	< 0.00100	0.00100	ppm(v)	1

Commonwealth of Pennsylvania Lab Certification No. 36-037

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

LOQ = Limit of Quantitation

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00015	TO-15 VOA special compounds	EPA TO-15	1	03/15/2007 04:52	Fanella S Zamcho	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax:717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. AQ 5001823

SG-2 Air
Summa #0524 610 York Rd-Warminster, PA
DUNS# 03635430 COC: NA SG-2

Collected:03/08/2007 14:40 by KM

Account Number: 11224

Submitted: 03/09/2007 17:45
Reported: 03/19/2007 at 06:59
Discard: 05/19/2007

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

CAT No.	Analysis Name	CAS Number	As Received Final Result	LOQ	Units	As Received Final Result	LOQ	Units	DF
00015	TO-15 VOA special compounds								
00018	Methyl tert-butyl Ether	1634-04-4	0.014	0.0036	mg/m3	0.0040	0.00100	ppm(v)	1
00019	Benzene	71-43-2	< 0.0032	0.0032	mg/m3	< 0.00100	0.00100	ppm(v)	1
00020	Toluene	108-88-3	0.012	0.0038	mg/m3	0.0033	0.00100	ppm(v)	1
00021	Ethylbenzene	100-41-4	< 0.0043	0.0043	mg/m3	< 0.00100	0.00100	ppm(v)	1
00022	m/p-Xylenes	n.a.	0.020	0.0043	mg/m3	0.0045	0.00100	ppm(v)	1
00023	o-Xylene	95-47-6	0.0061	0.0043	mg/m3	0.0014	0.00100	ppm(v)	1
00031	Cumene	98-82-8	< 0.0049	0.0049	mg/m3	< 0.00100	0.00100	ppm(v)	1

Commonwealth of Pennsylvania Lab Certification No. 36-037

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

LOQ = Limit of Quantitation

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00015	TO-15 VOA special compounds	EPA TO-15	1	03/15/2007 05:38	Fanella S Zamcho	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Lancaster Laboratories Sample No. AQ 5001824

SG-3 Air
Summa #0046 610 York Rd-Warminster, PA
DUNS# 03635430 COC: NA SG-3

Collected:03/08/2007 14:25 by KM

Account Number: 11224

Submitted: 03/09/2007 17:45
Reported: 03/19/2007 at 06:59
Discard: 05/19/2007

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

CAT No.	Analysis Name	CAS Number	As Received Final Result	LOQ	Units	As Received Final Result	LOQ	Units	DF
00015	TO-15 VOA special compounds								
00018	Methyl tert-butyl Ether	1634-04-4	< 0.0036	0.0036	mg/m3	< 0.00100	0.00100	ppm(v)	1
00019	Benzene	71-43-2	< 0.0032	0.0032	mg/m3	< 0.00100	0.00100	ppm(v)	1
00020	Toluene	108-88-3	0.0096	0.0038	mg/m3	0.0026	0.00100	ppm(v)	1
00021	Ethylbenzene	100-41-4	< 0.0043	0.0043	mg/m3	< 0.00100	0.00100	ppm(v)	1
00022	m/p-Xylenes	n.a.	0.016	0.0043	mg/m3	0.0036	0.00100	ppm(v)	1
00023	o-Xylene	95-47-6	0.0063	0.0043	mg/m3	0.0014	0.00100	ppm(v)	1
00031	Cumene	98-82-8	< 0.0049	0.0049	mg/m3	< 0.00100	0.00100	ppm(v)	1

Commonwealth of Pennsylvania Lab Certification No. 36-037

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

LOQ = Limit of Quantitation

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
00015	TO-15 VOA special compounds	EPA TO-15	1	03/15/2007 06:31	Fanella S Zamcho	1

Lancaster Laboratories

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Analysis Report

Quality Control Summary

Client Name: Sunoco Retail c/o GES Exton
Reported: 03/19/07 at 06:59 AM

Group Number: 1028771

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: E0707330A	Sample number(s): 5001822-5001824							
Methyl tert-butyl Ether	< 0.0036	0.0036	mg/m3	88	88	69-144	0	20
Benzene	< 0.0032	0.0032	mg/m3	79	87	53-157	10	20
Toluene	< 0.0038	0.0038	mg/m3	91	93	67-138	1	20
Ethylbenzene	< 0.0043	0.0043	mg/m3	88	88	57-139	0	20
m/p-Xylenes	< 0.0043	0.0043	mg/m3	85	86	56-135	1	20
o-Xylene	< 0.0043	0.0043	mg/m3	86	87	57-137	0	20
Cumene	< 0.0049	0.0049	mg/m3	92	94	60-143	2	20

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The background result was more than four times the spike added.

Chain of Custody Record

On-site Time:	Temp 0.0
Off-site Time:	Temp 0.0
Sky Conditions:	
Meteorological Events:	
Wind Speed: 0.0	Direc

Sunoco DUNS #: 0363-5430
Region: Northeast
State or Lead Regulatory Agency: PADEP - Southeast Region
Requested Due Date (mm/dd/yy): Standard TAT
COC Tracking Number:

Lab Name:	Lancaster Laboratories	Facility Address:	610 York Road	Consultant/Contractor:	GES, Inc.
Address:	2425 New Holland Pike	Facility City, State:	Warminster PA	Address:	440 Creamery Way, Suite 500
	Lancaster, PA 12425	Site Lat/Long:	0.0 0.0		Exton, PA 19341
Lab PM:	Lynn Frederiksen	Sunoco PM Contact:	Marty Liebhardt	Consultant/Contractor Project No.:	0202577-0600-61
Tele/Fax:	(717) 656-2308 / (717) 656-6766	Address:	350 Eagleview Blvd. Suite 300	Consultant/Contractor PM:	Patrick Crawford
E-mail EDD To:	bcobb@pesonline.com		Exton, Pennsylvania 19341	Tele/Fax:	(610) 458-1077x3038 / (610) 458-2300
E-mail EDD To:	SunocoENFOS@deltaenv.com	Tele/Fax:	(610) 450-5345 / (610) 450-5252	Invoice to:	Bonnie Cobb

Report Type & QC Level:

Item No.	Sample Description	Time	Date	Matrix: AIR	Laboratory No. summa canister#	No. of Containers	Preservative: None	Requested Analysis: TO-15 (BTEX, MTBE and Cumene)	Sample Point Lat/Long and Comments
1	SG-1	1515	3/8/07	X	201	1	X	X	Detection Limits must meet
2	SG-2	1440	3/8/07	X	524	1	X	X	PADEP Statewide Health
3	SG-3	1425	3/8/07	X	046	1	X	X	Standards for all samples
4									
5									
6									
7									
8									
9									
10									

Sampler's Name:	Keith Monroe	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company:	GES, Inc.	Keith S. Monroe / GES	3/7/07	1700	GES Warehouse	3/8/07	1700
Shipment Date:			3/8/07	0930		3/9/07	0930
Shipment Method:	Laboratory Courier		3/9/07	1745			
Shipment Tracking No:						3/9/07	1745

Special Instructions:

Custody Seals In Place Yes (No) Temp Blank Yes (No) Cooler Temperature on Receipt ~~OF~~/C Trip Blank Yes (No)

Lancaster Laboratories
Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< less than – The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY – In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions of Lancaster Laboratories and we hereby object to any conflicting terms contained in any acceptance or order submitted by client.

Lancaster Laboratories

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Analysis Report

ANALYTICAL RESULTS

Prepared for:

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

610-458-1077

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1070065. Samples arrived at the laboratory on Monday, December 17, 2007. The PO# for this group is WARMINSTER and the release number is 0202577-0600-61.

Client Description	Lancaster Labs Number
SG-1 Grab Air	5238424
SG-2 Grab Air	5238425
SG-3 Grab Air	5238426

ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Connie Johnson
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Heather Nelson
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Bonnie Cobb
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Cris Altman
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Krista Snyder
ELECTRONIC COPY TO	LLI.	Attn: EDD Group

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Questions? Contact your Client Services Representative
Lynn M Frederiksen at (717) 656-2300

Respectfully Submitted,

Chad A. Moline
Group Leader

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. 5238424 AQ Group No. 1070065

SG-1 Grab Air
610 Old York Road - Warminster, PA
DUNS# 03635430 COC: 0166074 SG-1

Collected:12/14/2007 by SP

Account Number: 11224

Submitted: 12/17/2007 16:45
Reported: 01/09/2008 at 09:18
Discard: 03/10/2008

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

CAT No.	Analysis Name	CAS Number	As Received Final Result	LOQ	Units	As Received Final Result	LOQ	Units	DF
05298	TO 15 VOA Ext. List								
07225	Methyl t-Butyl Ether	1634-04-4	< 0.0036	0.0036	mg/m3	< 0.0010	0.0010	ppm(v)	1
07238	Benzene	71-43-2	< 0.0032	0.0032	mg/m3	< 0.0010	0.0010	ppm(v)	1
07250	Toluene	108-88-3	0.0047	0.0038	mg/m3	0.0013	0.0010	ppm(v)	1
07261	Ethylbenzene	100-41-4	< 0.0043	0.0043	mg/m3	< 0.0010	0.0010	ppm(v)	1
07262	m/p-Xylene	n.a.	< 0.0043	0.0043	mg/m3	< 0.0010	0.0010	ppm(v)	1
07263	o-Xylene	95-47-6	< 0.0043	0.0043	mg/m3	< 0.0010	0.0010	ppm(v)	1
07266	Cumene	98-82-8	< 0.0049	0.0049	mg/m3	< 0.0010	0.0010	ppm(v)	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/08

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

LOQ = Limit of Quantitation

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
05298	TO 15 VOA Ext. List	EPA TO-15	1	12/31/2007 15:44	Jonathan K Nardelli	1

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. 5238425 AQ Group No. 1070065

SG-2 Grab Air
610 Old York Road - Warminster, PA
DUNS# 03635430 COC: 0166074 SG-2

Collected:12/14/2007 by SP

Account Number: 11224

Submitted: 12/17/2007 16:45
Reported: 01/09/2008 at 09:18
Discard: 03/10/2008

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

CAT No.	Analysis Name	CAS Number	As Received Final Result	LOQ	Units	As Received Final Result	LOQ	Units	DF
05298	TO 15 VOA Ext. List								
07225	Methyl t-Butyl Ether	1634-04-4	0.0066	0.0036	mg/m3	0.0018	0.0010	ppm(v)	1
07238	Benzene	71-43-2	< 0.0032	0.0032	mg/m3	< 0.0010	0.0010	ppm(v)	1
07250	Toluene	108-88-3	< 0.0038	0.0038	mg/m3	< 0.0010	0.0010	ppm(v)	1
07261	Ethylbenzene	100-41-4	< 0.0043	0.0043	mg/m3	< 0.0010	0.0010	ppm(v)	1
07262	m/p-Xylene	n.a.	0.013	0.0043	mg/m3	0.0031	0.0010	ppm(v)	1
07263	o-Xylene	95-47-6	< 0.0043	0.0043	mg/m3	< 0.0010	0.0010	ppm(v)	1
07266	Cumene	98-82-8	< 0.0049	0.0049	mg/m3	< 0.0010	0.0010	ppm(v)	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/08

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

LOQ = Limit of Quantitation

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
05298	TO 15 VOA Ext. List	EPA TO-15	1	12/31/2007 16:27	Jonathan K Nardelli	1

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Analysis Report

Lancaster Laboratories Sample No. 5238426 AQ Group No. 1070065

SG-3 Grab Air
610 Old York Road - Warminster, PA
DUNS# 03635430 COC: 0166074 SG-3

Collected:12/14/2007 by SP

Account Number: 11224

Submitted: 12/17/2007 16:45
Reported: 01/09/2008 at 09:18
Discard: 03/10/2008

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

CAT No.	Analysis Name	CAS Number	As Received Final Result	LOQ	Units	As Received Final Result	LOQ	Units	DF
05298	TO 15 VOA Ext. List								
07225	Methyl t-Butyl Ether	1634-04-4	0.0038	0.0036	mg/m3	0.0011	0.0010	ppm(v)	1
07238	Benzene	71-43-2	< 0.0032	0.0032	mg/m3	< 0.0010	0.0010	ppm(v)	1
07250	Toluene	108-88-3	0.0064	0.0038	mg/m3	0.0017	0.0010	ppm(v)	1
07261	Ethylbenzene	100-41-4	< 0.0043	0.0043	mg/m3	< 0.0010	0.0010	ppm(v)	1
07262	m/p-Xylene	n.a.	< 0.0043	0.0043	mg/m3	< 0.0010	0.0010	ppm(v)	1
07263	o-Xylene	95-47-6	< 0.0043	0.0043	mg/m3	< 0.0010	0.0010	ppm(v)	1
07266	Cumene	98-82-8	< 0.0049	0.0049	mg/m3	< 0.0010	0.0010	ppm(v)	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/08

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

LOQ = Limit of Quantitation

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
05298	TO 15 VOA Ext. List	EPA TO-15	1	12/31/2007 17:11	Jonathan K Nardelli	1

Lancaster Laboratories

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Analysis Report

Quality Control Summary

Client Name: Sunoco Retail c/o GES Exton
Reported: 01/09/08 at 09:18 AM

Group Number: 1070065

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: A0736530A	Sample number(s): 5238424-5238426							
Methyl t-Butyl Ether	< 0.0036	0.0036	mg/m3					
Benzene	< 0.0032	0.0032	mg/m3	78	78	54-135	1	20
Toluene	< 0.0038	0.0038	mg/m3	79	77	58-147	2	20
Ethylbenzene	< 0.0043	0.0043	mg/m3	76	72	63-140	6	20
m/p-Xylene	< 0.0043	0.0043	mg/m3	77	73	63-136	6	20
o-Xylene	< 0.0043	0.0043	mg/m3	79	77	62-160	3	20
Cumene	< 0.0049	0.0049	mg/m3					

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Analysis Request/ Environmental Services Chain of Custody

Lancaster Laboratories
02023577-0660-61

For Lancaster Laboratories use only
Acct. # 11224 Group# 1070065 Sample # 5238424-26

COC # 0166074

Please print. Instructions on reverse side correspond with circled numbers.

(1)
Client: Sun-Warminster Acct. #:
Project Name/#: 610 Old York Rd # 0363-5430 PWSID #:
Project Manager: Cris Altman P.O.#:
Sampler: Sergio Pereira Quote #:
Name of state where samples were collected: PA

(3) Matrix: (4) 5 Analyses Requested — Preservation Codes

(2) Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Sludge	Water	Total # of Containers	NA	TO-15: BTEX, MTBE, Carbons
SG-1	12/14/07		X				X	1	X	X
SG-2	12/14/07		X				X	1	X	X
SG-3	12/14/07		X				X	1	X	X

For Lab Use Only
FSC:
SCR#:

(6) Preservation Codes
H=HCl T=Thiosulfate
N=HNO_3 B=NaOH
S=H_2SO_4 O=Other

temp = 34 °F

Remarks
Summa #: 419
Summa #199
Summa #102

6-liter summa canisters

(7) **Turnaround Time Requested (TAT)** (please circle): (Normal) Rush
(Rush TAT is subject to Lancaster Laboratories approval and surcharge.)
Date results are needed:
Rush results requested by (please circle): Phone Fax E-mail
Phone #: Fax #:
E-mail address:

(8) **Data Package Options** (please circle if required)
Type I (validation/NJ Reg)
Type II (Tier II)
Type III (Reduced NJ)
Type IV (CLP SOW)
Type VI (Raw Data Only)
TX TRRP-13
MA MCP CT RCP
Site-specific QC (MS/MSD/Dup)? Yes No
Internal COC Required? Yes / No
SDG Complete? Yes No

Relinquished by:	Date	Time	Received by:	Date	Time
Serge P.	12-14-07	15:00	CES Fridge	12-14	12:01
	12/17/07	850		12/17/07	850
	12/20/07	1645			

@

Lancaster Laboratories
Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< less than – The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY – In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions of Lancaster Laboratories and we hereby object to any conflicting terms contained in any acceptance or order submitted by client.

APPENDIX H

PADEP Letter Dated June 9, 2006

Pennsylvania Department of Environmental Protection

2 East Main Street
Norristown, PA 19401
June 9, 2006

Southeast Regional Office

Phone: 484-250-5960
Fax: 484-250-5961

RECEIVED
JUN 14 2006

Mr. Martin D. Liebhardt, P.G.
Sunoco Marketing
350 Eagleview Boulevard, Suite 300
Exton, PA 19341

Re: Storage Tank Program
Site Characterization Report/Remedial Action
Plan Approval with Modifications
Sunoco SS No. 0363-5430
Facility ID No. 09-30778
Incident No. 7112
610 Old York Road
Warminster Township
Bucks County

Dear Mr. Liebhardt:

Your Site Characterization Report/Remedial Action Plan (SCR/RAP) submitted by Groundwater & Environmental Services, Inc. (GES), dated January 2006, for the above referenced facility, is hereby approved with modifications, as provided for in Chapter 245, Sections 245.310(c)(2) and Section 245.311(c)(2) of the Department of Environmental Protection's (Department) Corrective Action Regulations. Modifications to the report are listed below:

> Due to the variability of groundwater flow direction and the characteristics of the Stockton Formation, the Department requests that in addition to the proposed activities outlined in Section 10.0, you should install additional wells within the shallow and deep aquifers. We request installation of two additional deep wells and one additional shallow well. One deep well north of the former dispenser island in the location of the proposed shallow well and a deep and shallow well west of the pump island adjacent to Street Road.

The RAP is approved based upon site characterization information provided by you and or by your environmental consultant. The goal of a RAP is to identify an approach to remove or eliminate contamination resulting from the release, to prevent further groundwater degradation, and to restore groundwater affected by the release. Cleanup levels required by the Department will be based upon remediation standards identified by you. We have reviewed your plan based upon pursuit of the Statewide Health and Site-Specific Standard. These standards were identified by you in either your SCR/RAP or by contact with either you or your consultant.

If at any time you wish to modify any part of this SCR/RAP, you must prepare and submit a new or modified SCR/RAP to include the selection of a new remediation standard, if applicable.

This letter does not waive any rights of the Commonwealth of Pennsylvania to take enforcement action under applicable law for the conditions discussed in this letter.

Thank you for your cooperation in working with the Department toward the remediation of this site. If you need additional information or have any questions, please call me at 484-250-5783.

Sincerely,

Lauren T. Mapleton
Geologic Specialist
Environmental Cleanup

James R. Burke, P.G.
Licensed Professional Geologist
Environmental Cleanup

cc: Ms. Kunsch - DEP
Ms. McClennen - DEP
Ms. Warren - DEP
Mr. Crawford - GES
Warminster Township
Bucks County Health Department
Re 30 (GJS06ECP)160-1

APPENDIX I

Groundwater Laboratory Analytical Reports, October 2008 – July 2009

Lancaster Laboratories

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Analysis Report

ANALYTICAL RESULTS

Prepared for:

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

610-458-1077

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

July 19, 2009

SAMPLE GROUP

The sample group for this submittal is 1152814. Samples arrived at the laboratory on Thursday, July 09, 2009. The PO# for this group is WARMINSTER and the release number is 0203026-0600-60.

Client Description	Lancaster Labs Number
MW-1 Water	5719715
MW-2 Water	5719716
MW-3 Water	5719717
MW-4 Water	5719718
MW-5 Water	5719719
MW-6 Water	5719720
MW-7 Water	5719721
MW-8 Water	5719722
MW-9 Water	5719723
MW-10 Water	5719724

METHODOLOGY

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Heather Nelson
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Bonnie Cobb

Lancaster Laboratories

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Analysis Report

ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Krista Snyder
ELECTRONIC COPY TO	LLI	Attn: EDD Group

Questions? Contact your Client Services Representative
Lynn M Frederiksen at (717) 656-2300

Respectfully Submitted,

Christine Dulaney
Senior Specialist

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW 5719715

Group No. 1152814
PA

MW-1 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-1

Collected: 07/08/2009 10:25 by LS

Account Number: 11224

Submitted: 07/09/2009 15:45
Reported: 07/19/2009 at 21:45
Discard: 09/18/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

15430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02300	Benzene	71-43-2	< 1	1	1
02300	Ethylbenzene	100-41-4	< 1	1	1
02300	Isopropylbenzene	98-82-8	< 2	2	1
02300	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	1
02300	Naphthalene	91-20-3	< 4	4	1
02300	Toluene	108-88-3	< 1	1	1
02300	Xylene (Total)	1330-20-7	< 1	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01161	GC/MS VOA Water Prep	SW-846 5030B	1	P091941AA	07/13/2009 19:25	Kelly E Brickley	1
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	P091941AA	07/13/2009 19:25	Kelly E Brickley	1

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW 5719716

Group No. 1152814
PA

MW-2 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-2

Collected: 07/08/2009 11:10 by LS

Account Number: 11224

Submitted: 07/09/2009 15:45
Reported: 07/19/2009 at 21:45
Discard: 09/18/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

25430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02300	Benzene	71-43-2	< 1	1	1
02300	Ethylbenzene	100-41-4	2	1	1
02300	Isopropylbenzene	98-82-8	3	1	1
02300	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	1
02300	Naphthalene	91-20-3	< 4	4	1
02300	Toluene	108-88-3	< 1	1	1
02300	Xylene (Total)	1330-20-7	< 1	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037. Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F091941AA	07/13/2009 19:46	Kelly E Brickley	1
02300	DST-Unleaded Waters by 8260B	SW-846 8260B	1	F091941AA	07/13/2009 19:46	Kelly E Brickley	1

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW 5719717

Group No. 1152814
PA

MW-3 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-3

Collected: 07/08/2009 11:45 by LS

Account Number: 11224

Submitted: 07/09/2009 15:45
Reported: 07/19/2009 at 21:45
Discard: 09/18/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

35430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02300	Benzene	71-43-2	< 1	1	1
02300	Ethylbenzene	100-41-4	< 1	1	1
02300	Isopropylbenzene	98-82-8	< 2	2	1
02300	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	1
02300	Naphthalene	91-20-3	< 4	4	1
02300	Toluene	108-88-3	< 1	1	1
02300	Xylene (Total)	1330-20-7	< 1	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F091941AA	07/13/2009 20:08	Kelly E Brickley	1
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	F091941AA	07/13/2009 20:08	Kelly E Brickley	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5719718

Group No. 1152814
PA

MW-4 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-4

Collected: 07/08/2009 12:00 by LS

Account Number: 11224

Submitted: 07/09/2009 15:45
Reported: 07/19/2009 at 21:45
Discard: 09/18/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

45430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02100	Benzene	71-43-2	< 1	1	1
02100	Ethylbenzene	100-41-4	< 1	1	1
02100	Isopropylbenzene	98-82-8	< 2	2	1
02100	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	1
02100	Naphthalene	91-20-3	< 4	4	1
02100	Toluene	108-88-3	< 1	1	1
02100	Xylene (Total)	1330-20-7	< 1	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P091941AA	07/13/2009 20:28	Kelly E Brickley	1
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	P091941AA	07/13/2009 20:28	Kelly E Brickley	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5719719

Group No. 1152814
PA

MW-5 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-5

Collected: 07/08/2009 11:30 by LS

Account Number: 11224

Submitted: 07/09/2009 15:45
Reported: 07/19/2009 at 21:48
Discard: 09/18/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

55430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02300	Benzene	71-43-2	< 1	1	1
02300	Ethylbenzene	100-41-4	< 1	1	1
02300	Isopropylbenzene	98-82-8	< 2	2	1
02300	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	1
02300	Naphthalene	91-20-3	< 4	4	1
02300	Toluene	108-88-3	< 1	1	1
02300	Xylene (Total)	1330-20-7	< 1	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037. Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P091941AA	07/13/2009 20:58	Kelly E Brickley	1
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	P091941AA	07/13/2009 20:58	Kelly E Brickley	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5719720

Group No. 1152814
PA

MW-6 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-6

Collected: 07/08/2009 13:10 by LS

Account Number: 11224

Submitted: 07/09/2009 15:45
Reported: 07/19/2009 at 21:45
Discard: 09/18/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

65430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02100	Benzene	71-43-2	< 1	1	1
02100	Ethylbenzene	100-41-4	< 1	1	1
02100	Isopropylbenzene	98-82-8	< 2	2	1
02100	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	1
02100	Naphthalene	91-20-3	< 4	4	1
02100	Toluene	108-88-3	< 1	1	1
02100	Xylene (Total)	1330-20-7	<	<	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F091941AA	07/13/2009 21:12	Kelly E Brickley	1
02100	UST-Unleaded Waters by 8260B	SW-846 8260B	1	F091941AA	07/13/2009 21:12	Kelly E Brickley	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5719721

Group No. 1152814
PA

MW-7 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-7

Collected: 07/08/2009 10:10 by LS

Account Number: 11224

Submitted: 07/09/2009 15:45
Reported: 07/19/2009 at 21:45
Discard: 09/18/2009

Sunocc Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

75430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02300	Benzene	71-43-2	< 1	1	1
02300	Ethylbenzene	100-41-4	< 1	1	1
02300	Isopropylbenzene	98-82-8	< 2	2	1
02300	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	1
02300	Naphthalene	91-20-3	< 4	4	1
02300	Toluene	108-88-3	< 1	1	1
02300	Xylene (Total)	1330-20-7	< 1	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	FC91941AA	07/13/2009 21:32	Kelly E Brickley	1
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	FC91941AA	07/13/2009 21:32	Kelly E Brickley	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5719722

Group No. 1152814
PA

MW-8 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-8

Collected: 07/08/2009 10:50 by LS

Account Number: 11224

Submitted: 07/09/2009 15:45
Reported: 07/19/2009 at 21:45
Discard: 09/18/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

85430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02300	Benzene	71-43-2	< 1	1	1
02300	Ethylbenzene	100-41-4	< 1	1	1
02300	Isopropylbenzene	98-82-8	< 2	2	1
02300	Methyl Tertiary Butyl Ether	1634-04-4	1	1	1
02300	Naphthalene	91-20-3	< 4	4	1
02300	Toluene	108-88-3	< 1	1	1
02300	Xylene (Total)	1330-20-7	< 1	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P081941AA	07/13/2009 21:54	Kelly E Brickley	1
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	P081941AA	07/13/2009 21:54	Kelly E Brickley	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5719723

Group No. 1152814
PA

MW-9 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-9

Collected: 07/08/2009 12:15 by LE

Account Number: 11224

Submitted: 07/09/2009 15:45
Reported: 07/19/2009 at 21:45
Discard: 09/18/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

95430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02100	Benzene	71-43-2	< 1	1	1
02100	Ethylbenzene	100-41-4	< 1	1	1
02100	Isopropylbenzene	98-82-8	< 2	2	1
02100	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	1
02100	Naphthalene	91-20-3	< 4	4	1
02100	Toluene	108-88-3	< 1	1	1
02100	Xylene (Total)	1330-20-7	< 1	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	FC91941AA	07/13/2009 22:18	Kelly E Brickley	1
02100	UST-Unleaded Waters by 8260B	SW-846 8260B	1	FC91941AA	07/13/2009 22:18	Kelly E Brickley	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5719724

Group No. 1152814
PA

MW-10 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-10

Collected: 07/08/2009 12:45 by LS

Account Number: 11224

Submitted: 07/09/2009 15:45
Reported: 07/19/2009 at 21:45
Discard: 09/18/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

10430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02300	Benzene	71-43-2	< 1	1	1
02300	Ethylbenzene	100-41-4	< 1	1	1
02300	Isopropylbenzene	98-82-8	< 2	2	1
02300	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	1
02300	Naphthalene	91-20-3	< 4	4	1
02300	Toluene	108-88-3	< 1	1	1
02300	Xylene (Total)	1330-20-7	< 1	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F091942AA	07/14/2009 00:31	Kelly E Brickley	1
02300	UST-Unleaded Waters by 82609	SW-846 8260B	1	F091942AA	07/14/2009 00:31	Kelly E Brickley	1

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Analysis Report

Quality Control Summary

Client Name: Sunoco Retail c/o GES Exton
Reported: 07/19/09 at 09:45 PM

Group Number: 1152814

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: F091941AA	Sample number(s): 5719715-5719723							
Benzene	< 1	1.	ug/l	92	94	80-116	2	30
Ethylbenzene	< 1	1.	ug/l	93	94	80-113	1	30
Isopropylbenzene	< 2	2.	ug/l	94	96	79-113	2	30
Methyl Tertiary Butyl Ether	< 1	1.	ug/l	90	92	78-117	2	30
Naphthalene	< 4	4.	ug/l	90	97	61-115	7	30
Toluene	< 1	1.	ug/l	95	95	80-115	0	30
Xylene (Total)	< 1	1.	ug/l	94	95	81-114	1	30
Batch number: F091942AA	Sample number(s): 5719724							
Benzene	< 1	1.	ug/l	91		80-116		
Ethylbenzene	< 1	1.	ug/l	92		80-113		
Isopropylbenzene	< 2	2.	ug/l	94		79-113		
Methyl Tertiary Butyl Ether	< 1	1.	ug/l	90		78-117		
Naphthalene	< 4	4.	ug/l	88		61-115		
Toluene	< 1	1.	ug/l	93		80-115		
Xylene (Total)	< 1	1.	ug/l	94		81-114		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: F091941AA	Sample number(s): 5719715-5719723 UNSPK: P720609								
Benzene	96		80-126						
Ethylbenzene	97		77-125						
Isopropylbenzene	99		75-128						
Methyl Tertiary Butyl Ether	91		72-126						
Naphthalene	95		52-125						
Toluene	97		80-125						
Xylene (Total)	98		79-125						
Batch number: F091942AA	Sample number(s): 5719724 UNSPK: P720737								
Benzene	121	117	80-126	2	30				
Ethylbenzene	188*	160*	77-125	2	30				
Isopropylbenzene	109	108	75-128	1	30				
Methyl Tertiary Butyl Ether	97	96	72-126	0	30				
Naphthalene	231*	208*	52-125	6	30				
Toluene	102	102	80-125	1	30				
Xylene (Total)	214*	208*	79-125	1	30				

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Sunoco Retail c/o GES Exton
Reported: 07/19/09 at 09:45 PM

Group Number: 1152814

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: UST-Unleaded Waters by 8260B
Batch number: F091941AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5719715	85	86	87	96
5719716	85	87	86	96
5719717	85	86	96	95
5719718	85	90	88	96
5719719	87	87	88	96
5719720	88	90	89	99
5719721	86	87	87	96
5719722	88	87	88	99
5719723	86	87	88	98
Blank	88	88	89	97
LCS	87	89	87	97
LCSD	87	88	86	98
MS	86	89	86	96
Limits:	80-116	77-113	80-113	78-113

Analysis Name: UST-Unleaded Waters by 8260B
Batch number: F091942AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5719724	82	83	85	95
Blank	85	86	86	95
LCS	86	84	85	95
MS	85	87	85	97
MSD	84	84	85	96
Limits:	80-116	77-113	80-113	78-113

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

11224/115284/ 5719715-25

Chain of Custody Record

Page 1 of 1

Sunoco DUNS #: 0363-5430
Region: Northeast
State or Lead Regulatory Agency: PADEP - Southeast Region
Requested Due Date (mm/dd/yy): Standard TAT
COC Tracking Number:

On-site Time:	Temp 0.0
Off-site Time:	Temp 0.0
Sky Conditions:	
Meteorological Events:	
Wind Speed: 0.0	Direc

Lab Name:	Lancaster Laboratories	Facility Address:	610 Old York Road	Consultant/Contractor:	GES, Inc.
Address:	2425 New Holland Pike	Facility City, State:	Warminster PA	Address:	440 Creamery Way, Suite 500
	Lancaster, PA 12425	Site Lat/Long:	0.0 0.0		Exton, PA 19341
Lab PM:	Lynn Frederiksen	Sunoco PM Contact:	Marty Liebhardt	Consultant/Contractor Project No.:	02-03026-0600-60
Tele/Fax:	(717) 656-2308 / (717) 656-6766	Address:	350 Eagleview Blvd. Suite 300	Consultant/Contractor PM:	Krista Snyder
E-mail EDD To:	bcobb@gesonline.com		Exton, Pennsylvania 19341	Tele/Fax:	(610) 458-1077x3068 / (610) 458-2300
E-mail EDD To:	SunocoENFOS@deltaenv.com	Tele/Fax:	(610) 450-5345 / (610) 450-5252	Invoice to:	Bonnie Cobb

Report Type & QC Level:

Item No.	Sample Description	Time	Date	Matrix: Liquid	Matrix:	Matrix:	Laboratory No.	No. of Containers	Preservative: HCL	Preservative:	Preservative:	Preservative:	Preservative:	Preservative:	Preservative:	Requested Analysis: 8260B (BTEX, MTBE, Cumene & Napthalene)	Requested Analysis:	Requested Analysis:	Requested Analysis:	Requested Analysis:	Requested Analysis:	Requested Analysis:	Requested Analysis:	Sample Point Lat/Long and Comments
1	MW-1	10:25	7-8-09	X				3	X							X								Detection Limits must meet
2	MW-2	11:10	7-8-09	X				3	X							X								PADEP Statewide Health
3	MW-3	11:45	7-8-09	X				3	X							X								Standards for all samples
4	MW-4	12:00	7-8-09	X				3	X							X								
5	MW-5	11:30	7-8-09	X				3	X							X								
6	MW-6	13:10	7-8-09	X				3	X							X								
7	MW-7	10:40	7-8-09	X				3	X							X								
8	MW-8	10:50	7-8-09	X				3	X							X								Hold Trip Blank Analysis
9	MW-9	12:15	7-8-09	X				3	X							X								Pending GES Notification
10	MW-10	12:45	7-8-09	X				3	X							X								
11	Trip Blank	10:00	7-8-09	X				2	X															

Sampler's Name:	Luke Side	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company:	GES, Inc.	Luke Side	7-8-09	14:15	GES Bridge	7-8-09	14:15
Shipment Date:			7-9-09	0900		7-9-09	0900
Shipment Method:	Laboratory Courier		7-9-09	1045		7/9/09	1515
Shipment Tracking No:							

Special Instructions:

Custody Seals In Place Yes (No) Temp Blank (Yes) No Cooler Temperature on Receipt 2.5°C Trip Blank Yes ✓ No

Lancaster Laboratories
Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< less than – The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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Lancaster Laboratories

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Analysis Report

ANALYTICAL RESULTS

Prepared for:

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

610-458-1077

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

April 15, 2009

SAMPLE GROUP

The sample group for this submittal is 1139377. Samples arrived at the laboratory on Tuesday, April 07, 2009. The PO# for this group is WARMINSTER and the release number is 02-03026-0600.

Client Description	Lancaster Labs Number
MW-1 Water	5640582
MW-2 Water	5640583
MW-3 Water	5640584
MW-4 Water	5640585
MW-5 Water	5640586
MW-6 Water	5640587
MW-7 Water	5640588
MW-8 Water	5640589
MW-9 Water	5640590
MW-10 Water	5640591

ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Heather Nelson
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Bonnie Cobb
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Krista Snyder
ELECTRONIC COPY TO	LLI	Attn: EDD Group

Lancaster Laboratories

Analysis Report

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Questions? Contact your Client Services Representative
Lynn M Frederiksen at (717) 656-2300

Respectfully Submitted,

Marla S. Lord
Senior Specialist

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW 5640582

Group No. 1139377
PA

MW-1 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-1

Collected: 04/06/2009 12:10 by KR

Account Number: 11224

Submitted: 04/07/2009 15:45
Reported: 04/15/2009 at 12:56
Discard: 06/15/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

15430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02300	Benzene	71-43-2	5	1	1
02300	Ethylbenzene	100-41-4	14	1	1
02300	Isopropylbenzene	98-82-8	43	2	1
02300	Methyl Tertiary Butyl Ether	1634-04-4	11	1	1
02300	Naphthalene	91-20-3	34	4	1
02300	Toluene	108-88-3	< 1	1	1
02300	Xylene (Total)	1330-20-7	27	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037. Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	PG90983AA	04/09/2009 04:37	Kelly E Brickley	1
11163	GC/MS VOA Water Prep	SW-846 5030B	1	PG90983AA	04/09/2009 04:37	Kelly E Brickley	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5640583

Group No. 1139377
PA

MW-2 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-2

Collected: 04/06/2009 11:30 by KR

Account Number: 11224

Submitted: 04/07/2009 15:45
Reported: 04/15/2009 at 12:56
Discard: 06/15/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

25430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02300	Benzene	71-43-2	5	1	1
02300	Ethylbenzene	100-41-4	15	1	1
02300	Isopropylbenzene	98-82-8	8	2	1
02300	Methyl Tertiary Butyl Ether	1634-04-4	8	1	1
02300	Naphthalene	91-20-3	< 4	4	1
02300	Toluene	108-88-3	< 1	1	1
02300	Xylene (Total)	1330-20-7	2	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	P090983AA	04/09/2009 05:03	Kelly E Brickley	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P090983AA	04/09/2009 05:03	Kelly E Brickley	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5640584

Group No. 1139377
PA

MW-3 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-3

Collected: 04/06/2009 13:00 by KR

Account Number: 11224

Submitted: 04/07/2009 15:45
Reported: 04/15/2009 at 12:56
Discard: 06/15/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

35430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02300	Benzene	71-43-2	< 1	1	1
02300	Ethylbenzene	100-41-4	< 1	1	1
02300	Isopropylbenzene	98-82-8	< 2	2	1
02300	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	1
02300	Naphthalene	91-20-3	< 4	4	1
02300	Toluene	108-88-3	< 1	1	1
02300	Xylene (Total)	1330-20-7	< 1	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037. Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	P090983AA	04/09/2009 05:30	Kelly E Brickley	1
02163	GC/MS VOA Water Prep	SW-846 5030B	1	P090983AA	04/09/2009 05:30	Kelly E Brickley	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5640585

Group No. 1139377
PA

MW-4 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-4

Collected: 04/06/2009 10:55 by KR

Account Number: 11224

Submitted: 04/07/2009 15:45
Reported: 04/15/2009 at 12:56
Discard: 06/15/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

45430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02300	Benzene	71-43-2	< 1	1	1
02300	Ethylbenzene	100-41-4	< 1	1	1
02300	Isopropylbenzene	98-82-8	< 2	2	1
02300	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	1
02300	Naphthalene	91-20-3	< 4	4	1
02300	Toluene	108-88-3	< 1	1	1
02300	Xylene (Total)	1330-20-7	< 1	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037. Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	P090983AA	04/09/2009 05:57	Kelly R Brickley	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P090983AA	04/09/2009 05:57	Kelly R Brickley	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5640586

Group No. 1139377
PA

MW-5 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-5

Collected: 04/06/2009 13:30 by KR

Account Number: 11224

Submitted: 04/07/2009 15:45
Reported: 04/15/2009 at 12:56
Discard: 06/15/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

55430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02300	Benzene	71-43-2	< 1	1	1
02300	Ethylbenzene	100-41-4	< 1	1	1
02300	Isopropylbenzene	98-82-8	< 2	2	1
02300	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	1
02300	Naphthalene	91-20-3	< 4	4	1
02300	Toluene	108-88-3	< 1	1	1
02300	Xylene (Total)	1330-20-7	< 1	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	9090983AA	04/09/2009 06:24	Kelly E Brickley	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	9090983AA	04/09/2009 06:24	Kelly E Brickley	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5640587

Group No. 1139377
PA

MW-6 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-6

Collected: 04/06/2009 10:20 by KR

Account Number: 11224

Submitted: 04/07/2009 15:45
Reported: 04/15/2009 at 12:56
Discard: 06/15/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

65430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02300	Benzene	71-43-2	< 1	1	1
02300	Ethylbenzene	100-41-4	< 1	1	1
02300	Isopropylbenzene	98-82-8	< 2	2	1
02300	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	1
02300	Naphthalene	91-20-3	< 4	4	1
02300	Toluene	108-88-3	< 1	1	1
02300	Xylene (Total)	1330-20-7	< 1	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037. Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	P090983AA	04/09/2009 06:51	Kelly E Brickley	1
11163	GC/MS VOA Water Prep	SW-846 5030B	1	P090983AA	04/09/2009 06:51	Kelly E Brickley	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5640588

Group No. 1139377
PA

MW-7 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-7

Collected: 04/06/2009 12:39 by KR

Account Number: 11224

Submitted: 04/07/2009 15:45
Reported: 04/15/2009 at 12:56
Discard: 06/15/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

75430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02300	Benzene	71-43-2	< 1	1	1
02300	Ethylbenzene	100-41-4	< 1	1	1
02300	Isopropylbenzene	98-82-8	< 2	2	1
02300	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	1
02300	Naphthalene	91-20-3	< 4	4	1
02300	Toluene	108-88-3	< 1	1	1
02300	Xylene (Total)	1330-20-7	< 1	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037. Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	P090983AA	04/09/2009 07:16	Kelly E Brickley	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P090983AA	04/09/2009 07:16	Kelly E Brickley	1

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW 5640589

Group No. 1139377
PA

MW-8 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-8

Collected: 04/06/2009 11:50 by KR

Account Number: 11224

Submitted: 04/07/2009 15:45
Reported: 04/15/2009 at 12:56
Discard: 06/15/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

85430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02300	Benzene	71-43-2	< 1	1	1
02300	Ethylbenzene	100-41-4	< 1	1	1
02300	Isopropylbenzene	98-82-8	< 2	2	1
02300	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	1
02300	Naphthalene	91-20-3	< 4	4	1
02300	Toluene	108-88-3	< 1	1	1
02300	Xylene (Total)	1330-20-7	< 1	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037. Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	P090983AA	04/09/2009 07:44	Kelly E Brickley	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P090983AA	04/09/2009 07:44	Kelly E Brickley	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5640590

Group No. 1139377
PA

MW-9 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-9

Collected: 04/06/2009 10:40 by KR

Account Number: 11224

Submitted: 04/07/2009 15:45
Reported: 04/15/2009 at 12:56
Discard: 06/15/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

95430

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02300	Benzene	71-43-2	< 1	1	1
02300	Ethylbenzene	100-41-4	< 1	1	1
02300	Isopropylbenzene	98-82-8	< 2	2	1
02300	Methyl Tertiary Butyl Ether	1634-04-4	2	1	1
02300	Naphthalene	91-20-3	< 4	4	1
02300	Toluene	108-88-3	< 1	1	1
02300	Xylene (Total)	1330-20-7	< 1	1	1

General Sample Comments

PA DEP Lab Certification ID 36-00037. Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	P090983AA	04/09/2009 08:11	Kelly E Brickley	1
C1163	GC/MS VOA Water Prep	SW-846 5030B	1	P090983AA	04/09/2009 08:11	Kelly E Brickley	1

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Analysis Report

Lancaster Laboratories Sample No. WW 5640591

Group No. 1139377
PA

MW-10 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-10

Collected: 04/06/2009 11:15 by KR

Account Number: 11224

Submitted: 04/07/2009 15:45
Reported: 04/15/2009 at 12:56
Discard: 06/15/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

10543

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
SW-846 8260B	GC/MS Volatiles		ug/l	ug/l	
02300	Benzene	71-43-2	< 1	1	1
02300	Ethylbenzene	100-41-4	< 1	1	1
02300	Isopropylbenzene	98-82-8	< 2	2	1
02300	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	1
02300	Naphthalene	91-20-3	< 4	4	1
02300	Toluene	108-88-3	< 1	1	1
02300	Xylene (Total)	1330-20-7	< 1	1	1

General Sample Comments

PA DEP Lab Certification ID #68-00037. Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	P090983AA	04/08/2009 08:38	Kelly E Brickley	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P090983AA	04/08/2009 08:38	Kelly E Brickley	1

Quality Control Summary

Client Name: Sunoco Retail c/o GES Exton
Reported: 04/15/09 at 12:56 PM

Group Number: 1139377

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: P090983AA	Sample number(s): 5640582-5640591							
Benzene	< 1	1.	ug/l	89	90	80-116	1	30
Ethylbenzene	< 1	1.	ug/l	85	87	80-113	2	30
Isopropylbenzene	< 2	2.	ug/l	86	87	79-113	1	30
Methyl Tertiary Butyl Ether	< 1	1.	ug/l	91	91	78-117	0	30
Naphthalene	< 4	4.	ug/l	80	81	61-115	1	30
Toluene	< 1	1.	ug/l	86	87	80-115	1	30
Xylene (Total)	< 1	1.	ug/l	86	87	81-114	1	30

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: P090983AA	Sample number(s): 5640582-5640591 UNSPK: P639775								
Benzene	95		80-126						
Ethylbenzene	91		77-125						
Isopropylbenzene	91		78-128						
Methyl Tertiary Butyl Ether	106		72-126						
Naphthalene	105		62-125						
Toluene	91		80-125						
Xylene (Total)	90		79-125						

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: UST-Unleaded Waters by 8260B
Batch number: P090983AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5640582	98	95	92	90
5640583	99	93	91	87
5640584	98	93	91	85
5640585	96	92	91	88
5640586	97	94	91	85
5640587	97	94	91	86
5640588	97	91	91	84

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Sunoco Retail c/o GES Exton
Reported: 04/15/09 at 12:56 PM

Group Number: 1139377

Surrogate Quality Control

5640589	98	94	91	85
5640590	97	94	91	86
5640591	98	92	91	85
Blank	99	93	91	84
LCS	98	96	90	86
LCSD	97	94	90	86
MS	89	98	91	89
Limits:	80-116	77-113	80-113	76-113

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

11224 / 113932 / 5040582-92

Chain of Custody Record

Page 1 of 1

On-site Time:	9:40	Temp 0.0	50
Off-site Time:	14:00	Temp 0.0	50
Sky Conditions:	RAIN	THUNDERSTORMS	
Meteorological Events:	"	"	
Wind Speed:	— 0.0	Direc	—

Sunoco DUNS #: 0363-5430
Region: Northeast
State or Lead Regulatory Agency: PADEP - Southeast Region
Requested Due Date (mm/dd/yy): Standard TAT
COC Tracking Number:

Lab Name:	Lancaster Laboratories	Facility Address:	610 Old York Road	Consultant/Contractor:	GES, Inc.
Address:	2425 New Holland Pike	Facility City, State:	Warminster PA	Address:	440 Creamery Way, Suite 500
	Lancaster, PA 12425	Site Lat/Long:	0.0 0.0		Exton, PA 19341
Lab PM:	Lynn Frederiksen	Sunoco PM Contact:	Marty Liebhardt	Consultant/Contractor Project No.:	02-03026-0600-60
Tele/Fax:	(717) 656-2308 / (717) 656-6766	Address:	350 Eagleview Blvd. Suite 300	Consultant/Contractor PM:	Krista Snyder
E-mail EDD To:	bcobb@gesonline.com		Exton, Pennsylvania 19341	Tele/Fax:	(610) 458-1077x3068 / (610) 458-2300
E-mail EDD To:	SunocoENFOS@deltaenv.com	Tele/Fax:	(610) 450-5345 / (610) 450-5252	Invoice to:	Bonnie Cobb

Report Type & QC Level:

Item No.	Sample Description	Time	Date	Matrix: Liquid	Laboratory No.	No. of Containers	Preservative: HCL	Requested Analysis: 8260B (BTEX, MTBE, Cumene & Naphthalene)	Sample Point Lat/Long and Comments
1	MW-1	12:10	4/6/09	X		3	X	X	Detection Limits must meet
2	MW-2	11:30	4/6/09	X		3	X	X	PADEP Statewide Health
3	MW-3	13:00	4/6/09	X		3	X	X	Standards for all samples
4	MW-4	10:55	4/6/09	X		3	X	X	
5	MW-5	13:30	4/6/09	X		3	X	X	
6	MW-6	10:20	4/6/09	X		3	X	X	
7	MW-7	12:35	4/6/09	X		3	X	X	
8	MW-8	11:50	4/6/09	X		3	X	X	Hold Trip Blank Analysis
9	MW-9	10:40	4/6/09	X		3	X	X	Pending GES Notification
10	MW-10	11:15	4/6/09	X		3	X	X	
11	Trip Blank	-	4/6/09	X		2	X		

		Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name:	KUNKOA, MM.		4/7/09	06:20	GES COURIER		
Sampler's Company:	GES, Inc.		4/7/09	0553		4/7/09	0553
Shipment Date:			4/7/09	0740			
Shipment Method:	Laboratory Courier				Katie Nathan	4/7/09	15:45
Shipment Tracking No:							

Special Instructions:

Custody Seals In Place Yes (No) Temp Blank (Yes) No Cooler Temperature on Receipt 0.0 °C Trip Blank (Yes) No

Lancaster Laboratories
Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< less than – The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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Analysis Report

ANALYTICAL RESULTS

Prepared for:

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

610-458-1077

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1130824. Samples arrived at the laboratory on Wednesday, February 04, 2009. The PO# for this group is WARMINSTER and the release number is 0203026-0600-60.

Client Description	Lancaster Labs Number
MW-1 Water	5592522
MW-2 Water	5592523
MW-3 Water	5592524
MW-4 Water	5592525
MW-5 Water	5592526
MW-6 Water	5592527
MW-7 Water	5592528
MW-8 Water	5592529
MW-9 Water	5592530
MW-10 Water	5592531

ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Connie Johnson
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Heather Nelson
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Bonnie Cobb
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Krista Snyder
ELECTRONIC COPY TO	LLL	Attn: EDD Group

Lancaster Laboratories

Analysis Report

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Questions? Contact your Client Services Representative
Lynn M Frederiksen at (717) 656-2300

Respectfully Submitted,

Dorothy M Love

Dorothy M Love
Group Leader

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW5592522 Group No. 1130824

MW-1 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-1
Collected:02/03/2009 14:05 by KS

Account Number: 11224

Submitted: 02/04/2009 16:30
Reported: 02/10/2009 at 23:18
Discard: 04/12/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

WAR01

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	5	1	ug/l	1
05401	Benzene	71-43-2	2	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	10	1	ug/l	1
05420	Isopropylbenzene	98-82-8	9	2	ug/l	1
05439	Naphthalene	91-20-3	15	4	ug/l	1
06310	Xylene (Total)	1330-20-7	7	1	ug/l	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	02/09/2009 14:51	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	02/09/2009 14:51	Daniel H Heller	1

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Analysis Report

Lancaster Laboratories Sample No. WW5592523 Group No. 1130824

MW-2 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-2
Collected:02/03/2009 14:30 by KS

Account Number: 11224

Submitted: 02/04/2009 16:30
Reported: 02/10/2009 at 23:18
Discard: 04/12/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

WAR02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	3	1	ug/l	1
05401	Benzene	71-43-2	2	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	7	1	ug/l	1
05420	Isopropylbenzene	98-82-8	8	2	ug/l	1
05439	Naphthalene	91-20-3	< 4	4	ug/l	1
06310	Xylene (Total)	1330-20-7	1	1	ug/l	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	02/09/2009 15:18	Daniel H Keller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	02/09/2009 15:18	Daniel H Keller	1

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Analysis Report

Lancaster Laboratories Sample No. WW5592524 Group No. 1130824

MW-3 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-3
Collected:02/03/2009 15:00 by KS

Account Number: 11224

Submitted: 02/04/2009 16:30
Reported: 02/10/2009 at 23:18
Discard: 04/12/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

WAR03

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	ug/l	1
05401	Benzene	71-43-2	< 1	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	< 1	1	ug/l	1
05420	Isopropylbenzene	98-82-8	< 2	2	ug/l	1
05439	Naphthalene	91-20-3	< 4	4	ug/l	1
06310	Xylene (Total)	1330-20-7	< 1	1	ug/l	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	02/09/2009 15:45	Daniel N Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	02/09/2009 15:45	Daniel N Heller	1

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Analysis Report

Lancaster Laboratories Sample No. WW5592525 Group No. 1130824

MW-4 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-4
Collected:02/03/2009 15:29 by KS

Account Number: 11224

Submitted: 02/04/2009 16:30
Reported: 02/10/2009 at 23:18
Discard: 04/12/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

WAR04

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	ug/l	1
05401	Benzene	71-43-2	< 1	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	< 1	1	ug/l	1
05420	Isopropylbenzene	98-82-8	< 2	2	ug/l	1
05439	Naphthalene	91-20-3	< 4	4	ug/l	1
06310	Xylene (Total)	1330-20-7	< 1	1	ug/l	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	02/09/2009 16:12	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	02/09/2009 16:12	Daniel H Heller	1

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Analysis Report

Lancaster Laboratories Sample No. WW5592526 Group No. 1130824

MW-5 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-5
Collected:02/03/2009 11:00 by KS

Account Number: 11224

Submitted: 02/04/2009 16:30
Reported: 02/10/2009 at 23:18
Discard: 04/12/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

WAR05

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	ug/l	1
05401	Benzene	71-43-2	< 1	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	< 1	1	ug/l	1
05420	Isopropylbenzene	98-82-8	< 2	2	ug/l	1
05439	Naphthalene	91-20-3	< 4	4	ug/l	1
06910	Xylene (Total)	1330-20-7	< 1	1	ug/l	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	02/09/2009 16:38	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	02/09/2009 16:38	Daniel H Heller	1

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Analysis Report

Lancaster Laboratories Sample No. WW5592527 Group No. 1130824

MW-6 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-6
Collected:02/03/2009 12:55 by KS

Account Number: 11224

Submitted: 02/04/2009 16:30
Reported: 02/10/2009 at 23:18
Discard: 04/12/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

WAR06

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	ug/l	1
05401	Benzene	71-43-2	< 1	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	< 1	1	ug/l	1
05420	Isopropylbenzene	98-82-8	< 2	2	ug/l	1
05439	Naphthalene	91-20-3	< 4	4	ug/l	1
06310	Xylene (Total)	1330-20-7	< 1	1	ug/l	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	02/09/2009 17:05	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	02/09/2009 17:05	Daniel H Heller	1

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Analysis Report

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Lancaster Laboratories Sample No. WW5592528 Group No. 1130824

MW-7 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-7
Collected:02/03/2009 10:16 by KS

Account Number: 11224

Submitted: 02/04/2009 16:30
Reported: 02/10/2009 at 23:18
Discard: 04/12/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

WAR07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02100	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	ug/l	1
05401	Benzene	71-43-2	< 1	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	< 1	1	ug/l	1
05420	Isopropylbenzene	98-82-8	< 2	2	ug/l	1
05439	Naphthalene	91-20-3	< 4	4	ug/l	1
06310	Xylene (Total)	1330-20-7	< 1	1	ug/l	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02100	UST-Unleaded Waters by 8260B	SW-846 8260B	1	02/09/2009 17:32	Daniel H Heller	1
01161	GC/MS VOA Water Prep	SW-846 5030B	1	02/09/2009 17:32	Daniel H Heller	1

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Analysis Report

Lancaster Laboratories Sample No. WW5592529 Group No. 1130824

MW-8 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-8
Collected:02/03/2009 13:29 by KS

Account Number: 11224

Submitted: 02/04/2009 16:30
Reported: 02/10/2009 at 23:18
Discard: 04/12/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

WAR08

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	5	1	ug/l	1
05401	Benzene	71-43-2	< 1	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	< 1	1	ug/l	1
05420	Isopropylbenzene	98-82-8	< 2	2	ug/l	1
05439	Naphthalene	91-20-3	< 4	4	ug/l	1
06310	Xylene (Total)	1330-20-7	< 1	1	ug/l	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	02/09/2009 17:59	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	02/09/2009 17:59	Daniel H Heller	1

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Analysis Report

Lancaster Laboratories Sample No. WW5592530 Group No. 1130824

MW-9 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-9
Collected:02/03/2009 11:42 by KS

Account Number: 11224

Submitted: 02/04/2009 16:30
Reported: 02/10/2009 at 23:18
Discard: 04/12/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

WAR09

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	3	1	ug/l	1
05401	Benzene	71-43-2	< 1	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	< 1	1	ug/l	1
05420	Isopropylbenzene	98-82-8	< 2	2	ug/l	1
05439	Naphthalene	91-20-3	< 4	4	ug/l	1
06310	Xylene (Total)	1330-20-7	< 1	1	ug/l	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	02/09/2009 12:23	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	02/09/2009 12:23	Daniel H Heller	1

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Analysis Report

Lancaster Laboratories Sample No. WW5592531 Group No. 1130824

MW-10 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-10
Collected:02/03/2009 12:17 by KS

Account Number: 11224

Submitted: 02/04/2009 16:30
Reported: 02/10/2009 at 23:18
Discard: 04/12/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

WAR10

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	ug/l	1
05401	Benzene	71-43-2	< 1	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	< 1	1	ug/l	1
05420	Isopropylbenzene	98-82-8	< 2	2	ug/l	1
05439	Naphthalene	91-20-3	< 4	4	ug/l	1
06310	Xylene (Total)	1330-20-7	< 1	1	ug/l	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/10

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	02/09/2009 12:52	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	02/09/2009 12:52	Daniel H Heller	1

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Analysis Report

Quality Control Summary

Client Name: Sunoco Retail c/o GES Exton
Reported: 02/10/09 at 11:18 PM

Group Number: 1130824

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: P090401AA	Sample number(s): 5592530-5592531							
Methyl Tertiary Butyl Ether	< 1	1.	ug/l	90	88	73-119	1	30
Benzene	< 1	1.	ug/l	87	87	78-119	0	30
Toluene	< 1	1.	ug/l	90	89	85-115	1	30
Ethylbenzene	< 1	1.	ug/l	89	87	82-119	2	30
Isopropylbenzene	< 2	2.	ug/l	88	88	80-113	0	30
Naphthalene	< 4	4.	ug/l	89	88	61-116	2	30
Xylene (Total)	< 1	1.	ug/l	88	88	83-113	0	30
Batch number: P090402AA	Sample number(s): 5592522-5592529							
Methyl Tertiary Butyl Ether	< 1	1.	ug/l	91	93	73-119	2	30
Benzene	< 1	1.	ug/l	88	90	78-119	2	30
Toluene	< 1	1.	ug/l	89	90	85-115	1	30
Ethylbenzene	< 1	1.	ug/l	88	90	82-119	2	30
Isopropylbenzene	< 2	2.	ug/l	90	90	80-113	1	30
Naphthalene	< 4	4.	ug/l	87	87	61-116	0	30
Xylene (Total)	< 1	1.	ug/l	88	90	83-113	2	30

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: P090401AA	Sample number(s): 5592530-5592531 UNSPK: 5592531								
Methyl Tertiary Butyl Ether	88		69-127						
Benzene	87		83-128						
Toluene	87		83-127						
Ethylbenzene	87		82-129						
Isopropylbenzene	87		81-130						
Naphthalene	91		57-125						
Xylene (Total)	87		82-130						
Batch number: P090402AA	Sample number(s): 5592522-5592529 UNSPK: P592469								
Methyl Tertiary Butyl Ether	129*		69-127						
Benzene	171*		83-128						
Toluene	101		83-127						
Ethylbenzene	99		82-129						
Isopropylbenzene	102		81-130						
Naphthalene	100		57-125						
Xylene (Total)	97		82-130						

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Sunoco Retail c/o GES Exton
Group Number: 1130824
Reported: 02/10/09 at 11:18 PM

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: UST-Unleaded Waters by 8260B
Batch number: P090401AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5592530	88	88	88	83
5592531	88	88	89	84
Blank	89	89	88	85
LCS	88	89	88	85
LCSD	88	88	89	85
MS	89	91	88	84
Limits:	80-116	77-113	80-113	78-113

Analysis Name: UST-Unleaded Waters by 8260B
Batch number: P090402AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5592522	96	97	94	90
5592523	96	97	95	90
5592524	96	97	95	88
5592525	96	95	94	87
5592526	95	96	94	87
5592527	95	96	94	87
5592528	95	96	94	88
5592529	96	96	94	87
Blank	96	95	94	87
LCS	96	98	94	89
LCSD	95	100	94	88
MS	96	95	94	92
Limits:	80-116	77-113	80-113	78-113

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

acct 11224 grp 1130824 # 5592522-32

Chain of Custody Record

On-site Time:	Temp 0.0
Off-site Time:	Temp 0.0
Sky Conditions:	
Meteorological Events:	
Wind Speed: 0.0	Direc

Sunoco DUNS #: 0363-5430
Region: Northeast
State or Lead Regulatory Agency: PADEP - Southeast Region
Requested Due Date (mm/dd/yy): Standard TAT
COC Tracking Number:

Lab Name:	Lancaster Laboratories	Facility Address:	610 Old York Road	Consultant/Contractor:	GES, Inc.
Address:	2425 New Holland Pike	Facility City, State:	Warminster PA	Address:	440 Creamery Way, Suite 500
	Lancaster, PA 12425	Site Lat/Long:	0.0 0.0		Exton, PA 19341
Lab PM:	Lynn Frederiksen	Sunoco PM Contact:	Marty Liebhardt	Consultant/Contractor Project No.:	02-03026-8600-60
Tele/Fax:	(717) 656-2308 / (717) 656-6766	Address:	350 Eagleview Blvd. Suite 300	Consultant/Contractor PM:	Krista Snyder
E-mail EDD To:	bcobb@gesonline.com		Exton, Pennsylvania 19341	Tele/Fax:	(610) 458-1077x3068 / (610) 458-2300
E-mail EDD To:	SunocoENFOS@deltaenv.com	Tele/Fax:	(610) 458-5345 / (610) 458-5252	Invoice to:	Bonnie Cobb

Report Type & QC Level:

Item No.	Sample Description	Time	Date	Matrix: Liquid	Laboratory No.	No. of Containers	Preservative: HCL	Requested Analysis: 8260B (BTEX, MTBE, Cumene & Napthalene)	Sample Point Lat/Long and Comments
1	MW-1	11:05	2/3/09	X		3	X	X	Detection Limits must meet
2	MW-2	11:30	2/3/09	X		3	X	X	PADEP Statewide Health
3	MW-3	15:00	2/3/09	X		3	X	X	Standards for all samples
4	MW-4	15:25	2/3/09	X		3	X	X	
5	MW-5	11:00	2/4/09	X		3	X	X	
6	MW-6	12:55	2/4/09	X		3	X	X	
7	MW-7	10:16	2/4/09	X		3	X	X	
8	MW-8	13:29	2/4/09	X		3	X	X	Hold Trip Blank Analysis
9	MW-9	11:43	2/5/09	X		3	X	X	Pending GES Notification
10	MW-10	12:17	2/4/09	X		3	X	X	
11	Trip Blank	/	2/3/09	X		2	X		

Sampler's Name:	Kyle Slutzkill
Sampler's Company:	GES, Inc.
Shipment Date:	
Shipment Method:	Laboratory Courier
Shipment Tracking No:	

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Kyle Slutzkill	2/3/09	17:00	GES Fedex	2/4/09	17:00
	2/4/09	08:45		2/4/09	08:45
	2/4/09	1633	Rare Delivery	2/4/09	16:30

Special Instructions:

Custody Seals In Place Yes (No) Temp Blank (Yes) No Cooler Temperature on Receipt 1.9 °C Trip Blank (Yes) No

Lancaster Laboratories
Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	millliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< less than – The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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Lancaster Laboratories

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Analysis Report

ANALYTICAL RESULTS

Prepared for:

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

610-458-1077

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1118132. Samples arrived at the laboratory on Monday, November 03, 2008. The PO# for this group is WARMINSTER and the release number is 0202922-0600-60.

Client Description	Lancaster Labs Number
MW-2 Water	5516527

ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Connie Johnson
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Heather Nelson
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Bonnie Cobb
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Krista Snyder
ELECTRONIC COPY TO	LLI.	Attn: EDD Group

Lancaster Laboratories

Analysis Report

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Questions? Contact your Client Services Representative
Lynn M Frederiksen at (717) 656-2300

Respectfully Submitted,

Susan M. Goshert
Group Leader

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW5516527 Group No. 1118132

MW-2 Water
610 Old York Rd-Warminster, PA
DUNS# 03635430 COC: MW-2
Collected:10/31/2008 09:50 by KR

Account Number: 11224

Submitted: 11/03/2008 14:05
Reported: 11/11/2008 at 14:59
Discard: 01/11/2009

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

WAR02

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	8	1	ug/l	1
05401	Benzene	71-43-2	15	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	39	1	ug/l	1
05420	Isopropylbenzene	98-82-8	41	2	ug/l	1
05439	Naphthalene	91-20-3	11	4	ug/l	1
06310	Xylene (Total)	1330-20-7	11	1	ug/l	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/09

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	11/10/2008 18:52	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	11/10/2008 18:52	Daniel H Heller	1

Lancaster Laboratories

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Analysis Report

Quality Control Summary

Client Name: Sunoco Retail c/o GES Exton
Group Number: 1118132
Reported: 11/11/08 at 02:59 PM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: P083152AA	Sample number(s): 5516527							
Methyl Tertiary Butyl Ether	< 1	1.	ug/l	89	92	73-119	3	30
Benzene	< 1	1.	ug/l	90	91	78-118	1	30
Toluene	< 1	1.	ug/l	89	90	85-115	0	30
Ethylbenzene	< 1	1.	ug/l	89	89	82-119	0	30
Isopropylbenzene	< 2	2.	ug/l	92	91	80-113	1	30
Naphthalene	< 4	4.	ug/l	86	88	61-116	1	30
Xylene (Total)	< 1	1.	ug/l	93	93	83-113	1	30

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: P083152AA	Sample number(s): 5516527 UNSPK: P519880								
Methyl Tertiary Butyl Ether	95		69-127						
Benzene	96		83-128						
Toluene	96		83-127						
Ethylbenzene	96		82-129						
Isopropylbenzene	99		81-130						
Naphthalene	92		57-125						
Xylene (Total)	99		82-130						

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: UST-Unleaded Waters by 8260B
Batch number: P083152AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5516527	92	92	87	90
Blank	93	93	89	87
LCS	92	96	88	86
LCSD	92	95	90	88
MS	92	95	87	87
Limits:	80-116	77-113	80-113	78-111

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Sunoco Retail c/o GES Exton Group Number: 1118132
Reported: 11/11/08 at 02:59 PM

Surrogate Quality Control

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

acct 11224 grp 111812 # 5516527-28

Chain of Custody Record

On-site Time:	9:30	Temp 0.0	45
Off-site Time:	10:40	Temp 0.0	46
Sky Conditions:	CLEAR		
Meteorological Events:	NONE		
Wind Speed:	0	0.0 Direc	0

Sunoco DUNS #: 0363-5430
Region: Northeast
State or Lead Regulatory Agency: PADEP - Southeast Region
Requested Due Date (mm/dd/yy): Standard TAT
COC Tracking Number:

Lab Name:	Lancaster Laboratories	Facility Address:	610 Old York Road	Consultant/Contractor:	GES, Inc.
Address:	2425 New Holland Pike	Facility City, State:	Warminster PA	Address:	440 Creamery Way, Suite 500
	Lancaster, PA 12425	Site Lat/Long:	0.0 0.0		Exton, PA 19341
Lab PM:	Lynn Frederiksen	Sunoco PM Contact:	Marty Liebhardt	Consultant/Contractor Project No.:	02-02922-0600-60
Tele/Fax:	(717) 656-2308 / (717) 656-6766	Address:	350 Eagleview Blvd. Suite 300	Consultant/Contractor PM:	Krista Snyder
E-mail EDD To:	btobb@gesonline.com		Exton, Pennsylvania 19341	Tele/Fax:	(610) 458-1077x3068 / (610) 458-2300
E-mail EDD To:	SunocoENFOS@deltaenv.com	Tele/Fax:	(610) 450-5345 / (610) 450-5252	Invoice to:	Bonnie Cobb

Report Type & QC Level:

Item No.	Sample Description	Time	Date	Matrix: Liquid	Laboratory No.	No. of Containers	Preservative: HCL	Requested Analysis: 8260B (BTEX, MTBE, Cumene & Napthalene)	Sample Point Lat/Long and Comments
1	~~MW-1~~			X		3	X	X	Detection Limits must meet
2	MW-2	9:50	10/31/08	X		3	X	X	PADEP Statewide Health
3	~~MW-3~~			X		3	X	X	Standards for all samples
4	~~MW-4~~			X		3	X	X	
5	~~MW-5~~			X		3	X	X	
6	~~MW-6~~			X		3	X	X	
7	~~MW-7~~			X		3	X	X	
8	~~MW-8~~			X		3	X	X	Hold Trip Blank Analysis
9	~~MW-9~~			X		3	X	X	Pending GES Notification
10	~~MW-10~~			X		3	X	X	
11	Trip Blank	-	10/31/08	X		2	X		

Sampler's Name:	KURT RUBERSON	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company:	GES, Inc.	GES	10/31/08	17:30	GES CUSTODY		
Shipment Date:			11-3-08			11/4/08	
Shipment Method:	Laboratory Courier		11/3/08	1405		11/3/08	1405
Shipment Tracking No:							

Special Instructions:

Custody Seals In Place Yes (No) Temp Blank (Yes) No Cooler Temperature on Receipt On (C) Trip Blank (Yes) No

2.6C

Lancaster Laboratories
Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< less than – The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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Lancaster Laboratories

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Analysis Report

ANALYTICAL RESULTS

Prepared for:

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

610-458-1077

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

SAMPLE GROUP

The sample group for this submittal is 1114359. Samples arrived at the laboratory on Thursday, October 09, 2008. The PO# for this group is WARMINSTER and the release number is 0202922060060.

Client Description	Lancaster Labs Number
MW-3 Water	5494515
MW-4 Water	5494516
MW-5 Water	5494517
MW-6 Water	5494518
MW-7 Water	5494519
MW-8 Water	5494520
MW-9 Water	5494521
MW-10 Water	5494522

ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Connie Johnson
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Heather Nelson
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Bonnie Cobb
ELECTRONIC COPY TO	Sunoco Retail c/o GES	Attn: Krista Snyder
ELECTRONIC COPY TO	LLI.	Attn: EDD Group

Lancaster Laboratories

Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax 717-656-2681 • www.lancasterlabs.com

Questions? Contact your Client Services Representative
Lynn M Frederiksen at (717) 656-2300

Respectfully Submitted,

Marla S. Lord

Marla S. Lord
Senior Specialist

Lancaster Laboratories

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Analysis Report

Lancaster Laboratories Sample No. WW5494515 Group No. 1114359

MW-3 Water
DUNS# 03635430 COC: MW-3

Collected:10/08/2008 11:55 by VM

Account Number: 11224

Submitted: 10/09/2008 15:45
Reported: 10/18/2008 at 23:53
Discard: 12/18/2008

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

--M3-

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	ug/l	1
05401	Benzene	71-43-2	< 1	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	< 1	1	ug/l	1
05420	Isopropylbenzene	98-82-8	< 2	2	ug/l	1
05439	Naphthalene	91-20-3	< 4	4	ug/l	1
06310	Xylene (Total)	1330-20-7	< 1	1	ug/l	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/09

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	10/12/2008 20:35	Florida A Cimino	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	10/12/2008 20:35	Florida A Cimino	1

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Analysis Report

Lancaster Laboratories Sample No. WW5494516 Group No. 1114359

MW-4 Water
DUNS# 03635430 COC: MW-4

Collected:10/08/2008 11:35 by VM

Account Number: 11224

Submitted: 10/09/2008 15:45
Reported: 10/18/2008 at 23:53
Discard: 12/18/2008

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

--M4-

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	ug/l	1
05401	Benzene	71-43-2	< 1	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	< 1	1	ug/l	1
05420	Isopropylbenzene	98-82-8	< 2	2	ug/l	1
05439	Naphthalene	91-20-3	< 4	4	ug/l	1
06310	Xylene (Total)	1330-20-7	< 1	1	ug/l	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/09

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	10/12/2008 20:56	Florida A Cimino	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	10/12/2008 20:56	Florida A Cimino	1

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Analysis Report

Lancaster Laboratories Sample No. WW5494517 Group No. 1114359

MW-5 Water
DUNS# 03635430 COC: MW-5

Collected:10/08/2008 10:35 by VM

Account Number: 11224

Submitted: 10/09/2008 15:45
Reported: 10/18/2008 at 23:53
Discard: 12/18/2008

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

---MS

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	ug/l	1
05401	Benzene	71-43-2	< 1	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	< 1	1	ug/l	1
05420	Isopropylbenzene	98-82-8	< 2	2	ug/l	1
05439	Naphthalene	91-20-3	< 4	4	ug/l	1
06310	Xylene (Total)	1330-20-7	< 1	1	ug/l	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/09

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	10/12/2008 21:38	Florida A Cimino	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	10/12/2008 21:38	Florida A Cimino	1

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Analysis Report

Lancaster Laboratories Sample No. WW5494518 Group No. 1114359

MW-6 Water
DUNS# 03635430 COC: MW-6

Collected:10/08/2008 11:00 by VM

Account Number: 11224

Submitted: 10/09/2008 15:45
Reported: 10/18/2008 at 23:53
Discard: 12/18/2008

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

--M6-

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	ug/l	1
05401	Benzene	71-43-2	< 1	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	< 1	1	ug/l	1
05420	Isopropylbenzene	98-82-8	< 2	2	ug/l	1
05439	Naphthalene	91-20-3	< 4	4	ug/l	1
06310	Xylene (Total)	1330-20-7	< 1	1	ug/l	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/09

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	10/12/2008 21:59	Florida A Cimino	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	10/12/2008 21:59	Florida A Cimino	1

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Analysis Report

Lancaster Laboratories Sample No. WW5494519 Group No. 1114359

MW-7 Water
DUNS# 03635430 COC: MW-7

Collected:10/08/2008 09:15 by VM

Account Number: 11224

Submitted: 10/09/2008 15:45
Reported: 10/18/2008 at 23:53
Discard: 12/18/2008

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

-M7--

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	ug/l	1
05401	Benzene	71-43-2	< 1	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	< 1	1	ug/l	1
05420	Isopropylbenzene	98-82-8	< 2	2	ug/l	1
05439	Naphthalene	91-20-3	< 4	4	ug/l	1
06310	Xylene (Total)	1330-20-7	< 1	1	ug/l	1

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/09

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	10/12/2008 22:20	Florida A Cimino	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	10/12/2008 22:20	Florida A Cimino	1

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Analysis Report

Lancaster Laboratories Sample No. WW5494520 Group No. 1114359

MW-8 Water
DUNS# 03635430 COC: MW-8

Collected:10/08/2008 09:40 by VM

Account Number: 11224

Submitted: 10/09/2008 15:45
Reported: 10/18/2008 at 23:53
Discard: 12/18/2008

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

-M8--

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	4	1	ug/l	1
05401	Benzene	71-43-2	< 1	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	< 1	1	ug/l	1
05420	Isopropylbenzene	98-82-8	< 2	2	ug/l	1
05439	Naphthalene	91-20-3	< 4	4	ug/l	1
06310	Xylene (Total)	1330-20-7	< 1	1	ug/l	1

PA DEP Lab Certification ID 36-00037. Expiration Date: 1/31/09

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	10/12/2008 22:40	Florida A Cimino	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	10/12/2008 22:40	Florida A Cimino	1

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Analysis Report

Lancaster Laboratories Sample No. WW5494521 Group No. 1114359

MW-9 Water
DUNS# 03635430 COC: MW-9

Collected:10/08/2008 10:15 by VM

Account Number: 11224

Submitted: 10/09/2008 15:45
Reported: 10/18/2008 at 23:53
Discard: 12/18/2008

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

9--M-

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	1	1	ug/l	1
05401	Benzene	71-43-2	< 1	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	< 1	1	ug/l	1
05420	Isopropylbenzene	98-82-8	< 2	2	ug/l	1
05439	Naphthalene	91-20-3	< 4	4	ug/l	1
06310	Xylene (Total)	1330-20-7	< 1	1	ug/l	1

PA DEP Lab Certification ID 36-00037. Expiration Date: 1/31/09

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	10/12/2008 23:02	Florida A Cimino	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	10/12/2008 23:02	Florida A Cimino	1

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Analysis Report

Lancaster Laboratories Sample No. WW5494522 Group No. 1114359

MW-10 Water
DUNS# 03635430 COC: MW-10

Collected:10/08/2008 11:20 by VM

Account Number: 11224

Submitted: 10/09/2008 15:45
Reported: 10/18/2008 at 23:53
Discard: 12/18/2008

Sunoco Retail c/o GES Exton
Suite 500
440 Creamery Way
Exton PA 19341

-10M-

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Units	Dilution Factor
02300	UST-Unleaded Waters by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	< 1	1	ug/l	1
05401	Benzene	71-43-2	< 1	1	ug/l	1
05407	Toluene	108-88-3	< 1	1	ug/l	1
05415	Ethylbenzene	100-41-4	< 1	1	ug/l	1
05420	Isopropylbenzene	98-82-8	< 2	2	ug/l	1
05439	Naphthalene	91-20-3	< 4	4	ug/l	1
06310	Xylene (Total)	1330-20-7	< 1	1	ug/l	1

PA DEP Lab Certification ID 36-00037. Expiration Date: 1/31/09

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
02300	UST-Unleaded Waters by 8260B	SW-846 8260B	1	10/12/2008 23:23	Florida A Cimino	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	10/12/2008 23:23	Florida A Cimino	1

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Analysis Report

Quality Control Summary

Client Name: Sunoco Retail c/o GES Exton
Group Number: 1114359
Reported: 10/18/08 at 11:53 PM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank LOQ	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: F082861AA	Sample number(s): 5494515-5494522							
Methyl Tertiary Butyl Ether	< 1	1.	ug/l	92	91	73-119	1	30
Benzene	< 1	1.	ug/l	91	91	78-119	1	30
Toluene	< 1	1.	ug/l	93	94	85-115	1	30
Ethylbenzene	< 1	1.	ug/l	96	95	82-119	1	30
Isopropylbenzene	< 2	2.	ug/l	96	95	80-113	1	30
Naphthalene	< 4	4.	ug/l	101	98	61-116	3	30
Xylene (Total)	< 1	1.	ug/l	96	96	83-113	0	30

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: F082861AA	Sample number(s): 5494515-5494522 UNSPK: 5494516								
Methyl Tertiary Butyl Ether	94		69-127						
Benzene	95		83-128						
Toluene	100		83-127						
Ethylbenzene	99		82-129						
Isopropylbenzene	99		81-130						
Naphthalene	94		57-128						
Xylene (Total)	99		82-130						

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: UST-Unleaded Waters by 8260B
Batch number: F082861AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5494515	99	100	99	100
5494516	103	102	103	104
5494517	97	101	98	99
5494518	97	97	98	98
5494519	101	100	100	101
5494520	100	101	102	101
5494521	99	100	100	101

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Sunoco Retail c/o GES Exton Group Number: 1114359
Reported: 10/18/08 at 11:53 PM

Surrogate Quality Control

5494522	96	97	98	98
Blank	100	100	100	102
LCS	98	100	98	101
LCSD	100	102	100	102
MS	102	103	103	106
Limits:	80-116	77-113	80-113	78-113

*- Outside of specification
(1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

11224/1114359/5494515-23

Chain of Custody Record

Sunoco DUNS #: 0363-5430
Region: Northeast
State or Lead Regulatory Agency: PADEP - Southeast Region
Requested Due Date (mm/dd/yy): Standard TAT
COC Tracking Number:

On-site Time:	Temp 0.0
Off-site Time:	Temp 0.0
Sky Conditions:	
Meteorological Events:	
Wind Speed: 0.0	Direc

Lab Name:	Lancaster Laboratories	Facility Address:	610 Old York Road	Consultant/Contractor:	GES, Inc.
Address:	2425 New Holland Pike	Facility City, State:	Warminster PA	Address:	440 Creamery Way, Suite 500
	Lancaster, PA 12425	Site Lat/Long:	0.0 0.0		Exton, PA 19341
Lab PM:	Lynn Frederiksen	Sunoco PM Contact:	Marty Liebhardt	Consultant/Contractor Project No.:	02-02922-0600-60
Tele/Fax:	(717) 656-2308 / (717) 656-6766	Address:	350 Eagleview Blvd. Suite 300	Consultant/Contractor PM:	Krista Snyder
E-mail EDD To:	bcobb@gesonline.com		Exton, Pennsylvania 19341	Tele/Fax:	(610) 458-1077x3068 / (610) 458-2300
E-mail EDD To:	SunocoENFOS@deltaenv.com	Tele/Fax:	(610) 450-5345 / (610) 450-5252	Invoice to:	Bonnie Cobb

Report Type & QC Level:

Item No.	Sample Description	Time	Date	Matrix: Liquid	Laboratory No.	No. of Containers	Preservative: HCL	Requested Analysis: 8260B (BTEX, MTBE, Cumene & Napthalene)	Sample Point Lat/Long and Comments
1	~~MW-1~~			X		3	X	X	Detection Limits must meet
2	~~MW-2~~			X		3	X	X	PADEP Statewide Health
3	MW-3	11:55	10-8-08	X		3	X	X	Standards for all samples
4	MW-4	11:35	10-8-08	X		3	X	X	
5	MW-5	10:35	10-8-08	X		3	X	X	
6	MW-6	11:00	10-8-08	X		3	X	X	
7	MW-7	11:15	10-8-08	X		3	X	X	
8	MW-8	11:40	10-8-08	X		3	X	X	Hold Trip Blank Analysis
9	MW-9	10:15	10-8-08	X		3	X	X	Pending GES Notification
10	MW-10	11:20	10-8-08	X		3	X	X	
11	Trip Blank	-	10-8-08	X		2	X		

Sampler's Name: Victor Morales	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Company: GES, Inc.		10-8-08	1330			
Shipment Date:		10-9-08	0918			
Shipment Method: Laboratory Courier		10-9-08	1500			
Shipment Tracking No:					01/09	1545

Special Instructions:

Custody Seals In Place Yes (No) Temp Blank (Yes) No Cooler Temperature on Receipt 0°C Trip Blank (Yes) No

2.1°C LF

Lancaster Laboratories
Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib >5 um/ml**	fibers greater than 5 microns in length per ml

< less than – The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quatitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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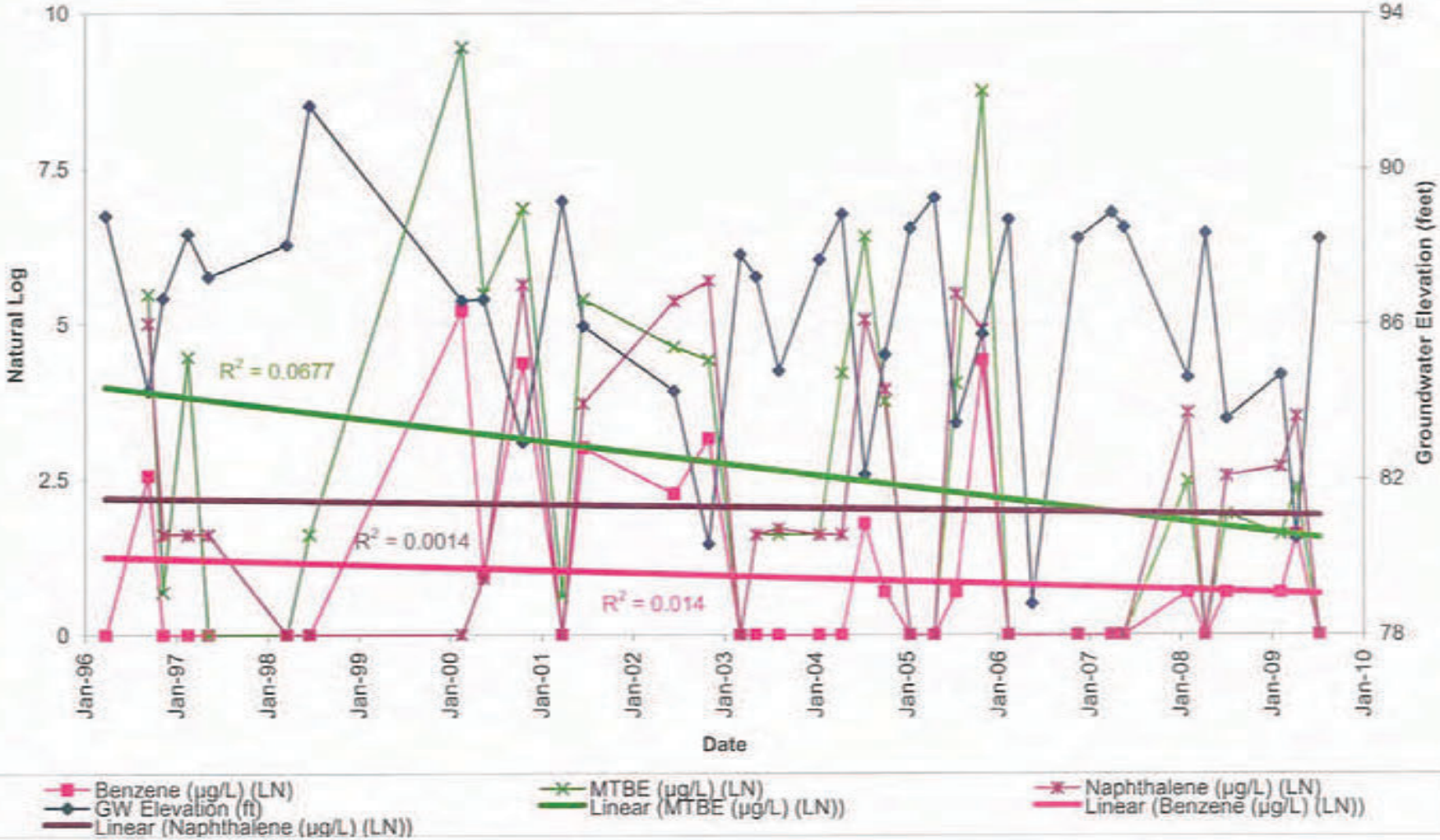
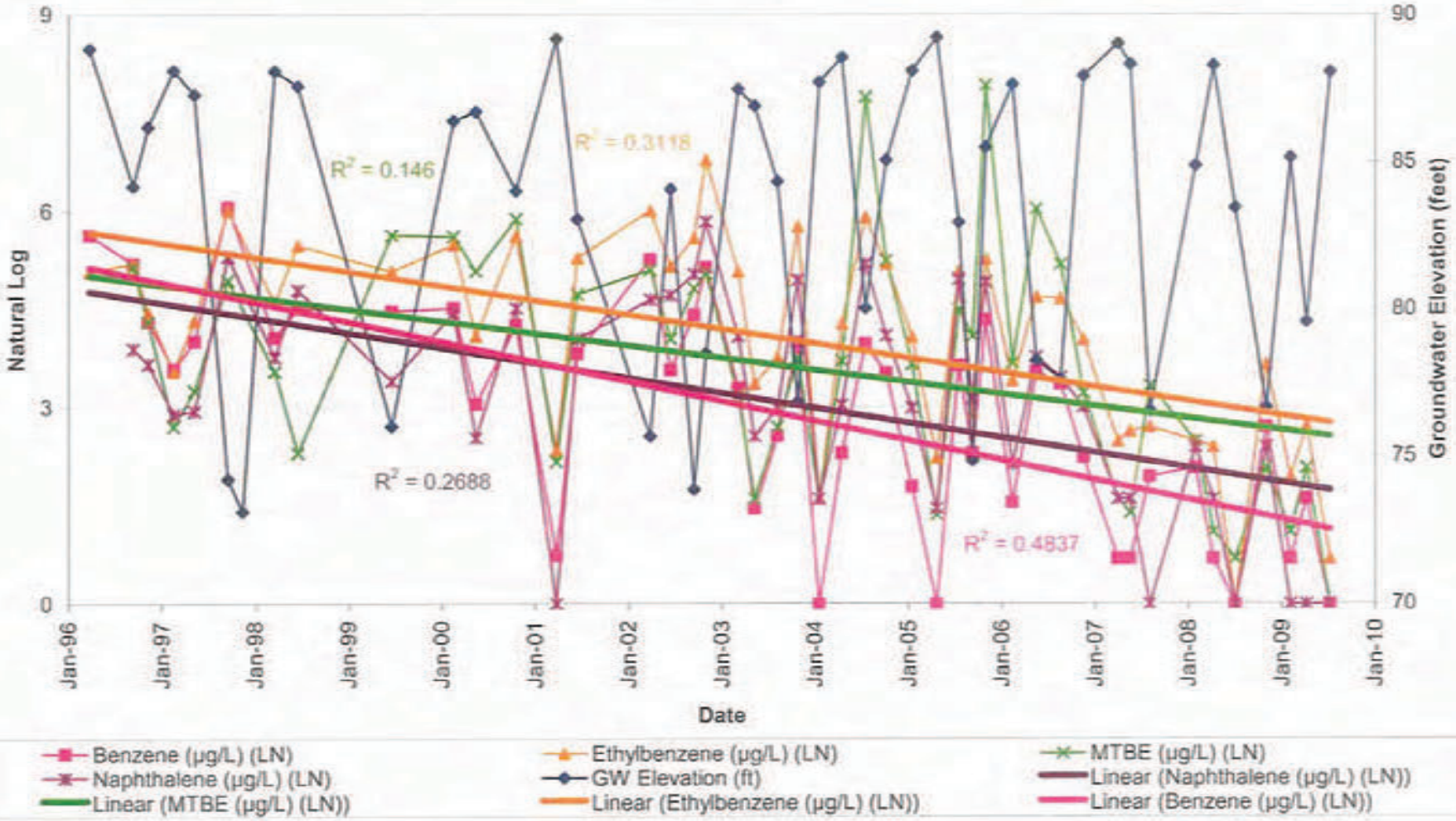
APPENDIX J

Dissolved Phase Hydrocarbon Trend Graphs

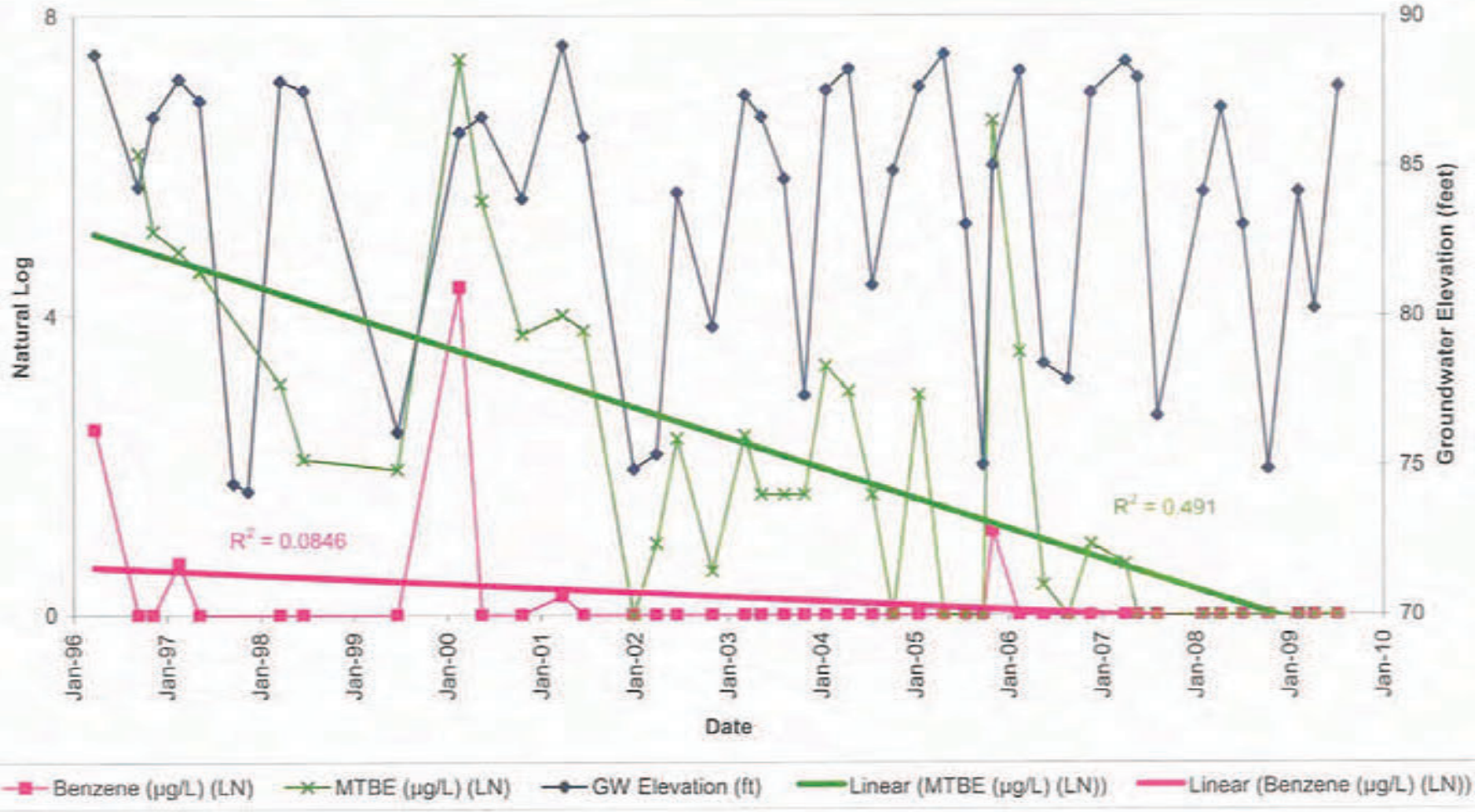
Sunoco Station #0363-5430
610 Old York Road, Warminster, PA
Groundwater Elevation and Natural log of Benzene, MTBE, and Naphthalene in MW-1
All Historical Data



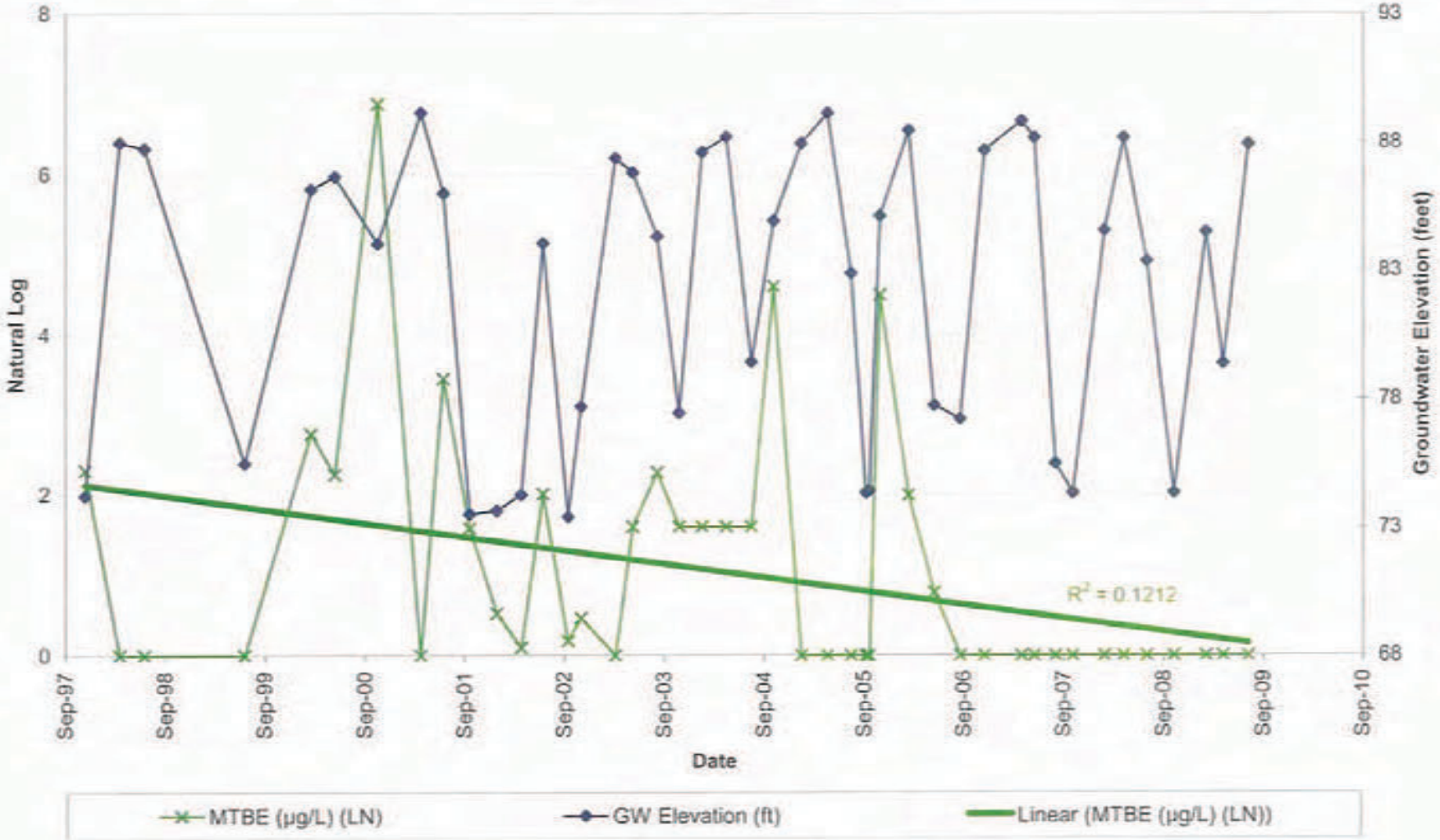
Sunoco Station #0363-5430
610 Old York Road, Warminster, PA
Groundwater Elevation and Natural log of Benzene, Ethylbenzene, MTBE, and Naphthalene in MW-2
All Historical Data



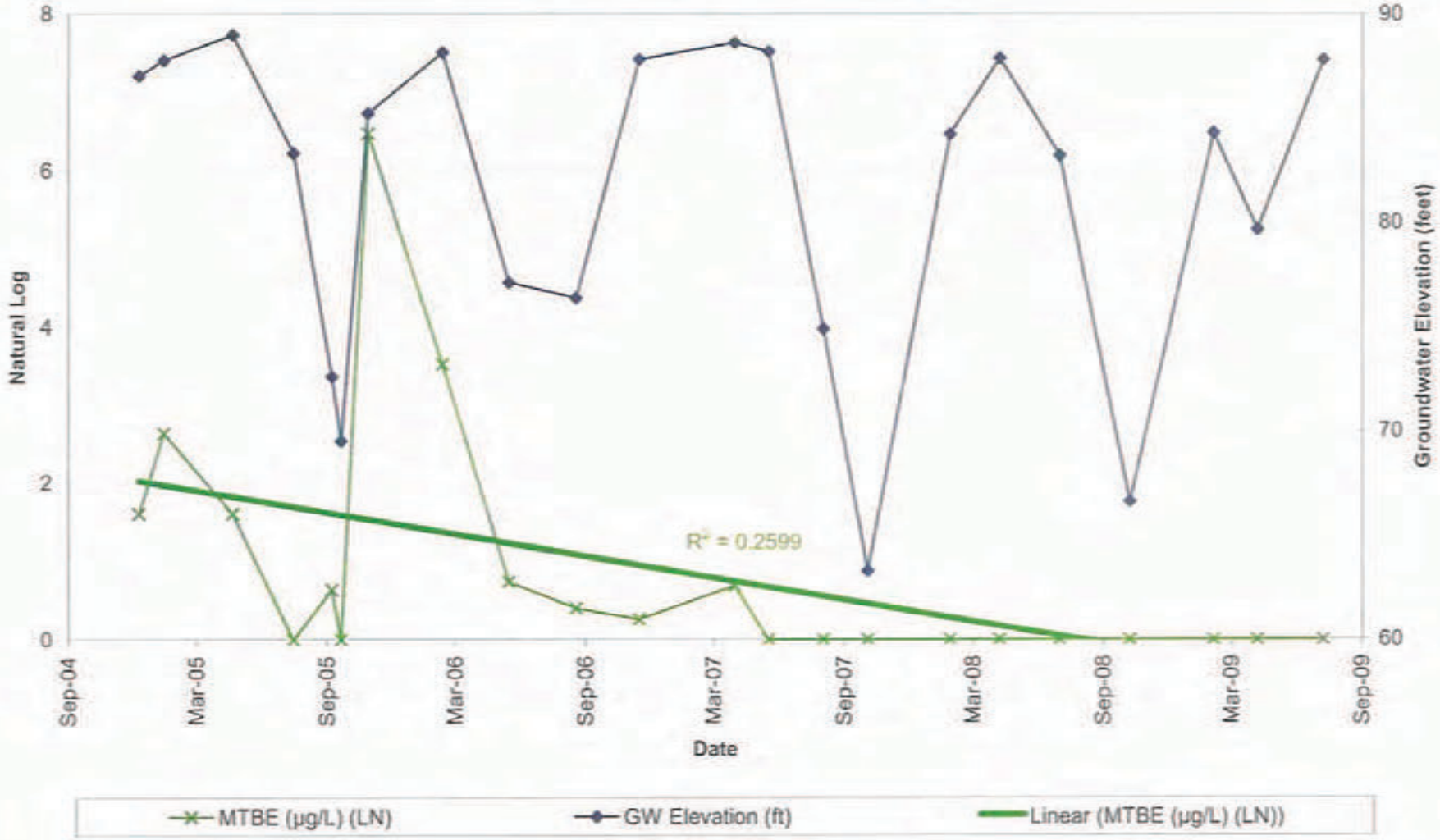
Sunoco Station #0363-5430
610 Old York Road, Warminster, PA
Groundwater Elevation and Natural log of Benzene and MTBE in MW-3
All Historical Data



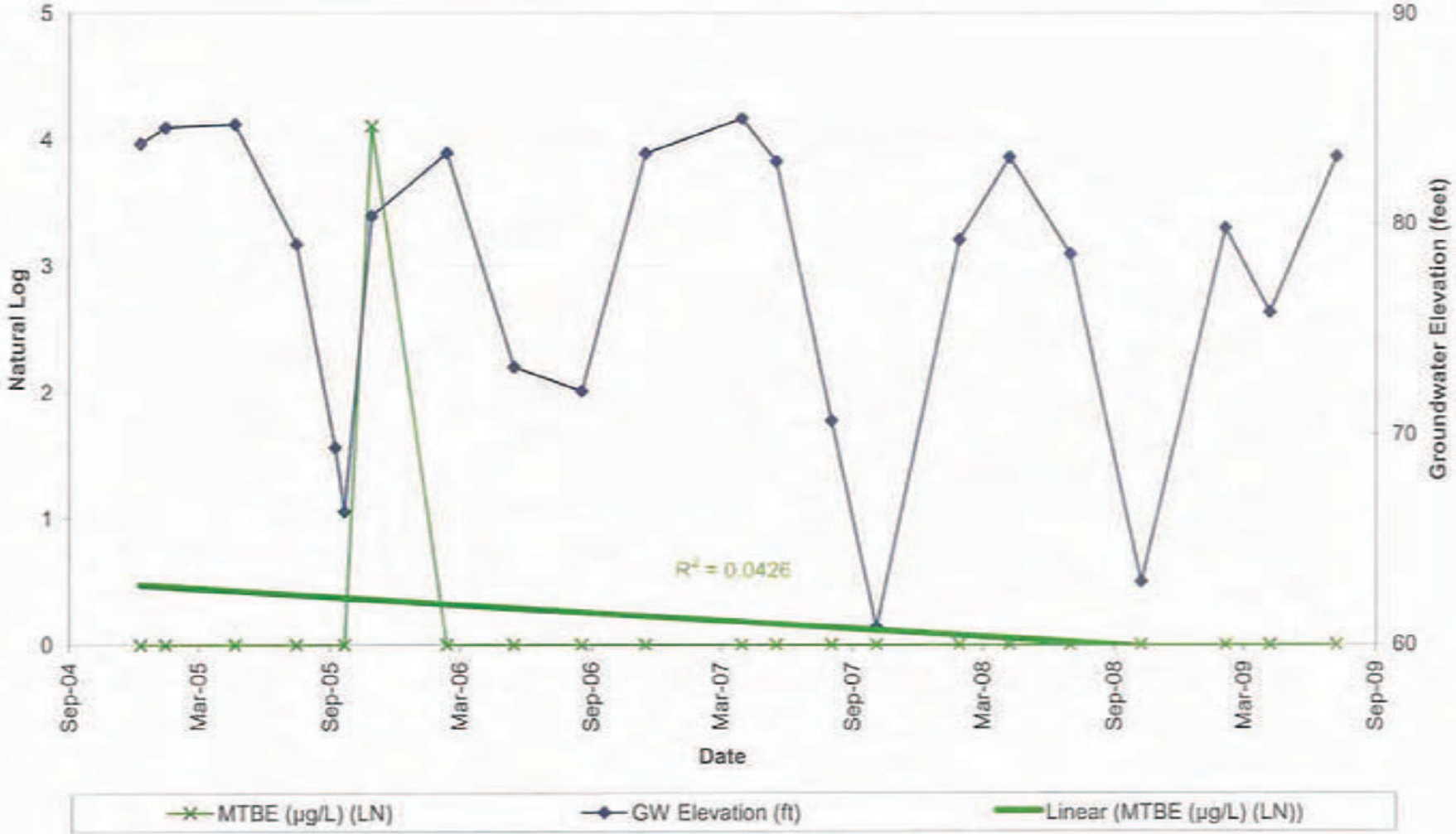
Sunoco Station #0363-5430
610 Old York Road, Warminster, PA
Groundwater Elevation and Natural log of MTBE in MW-4
All Historical Data



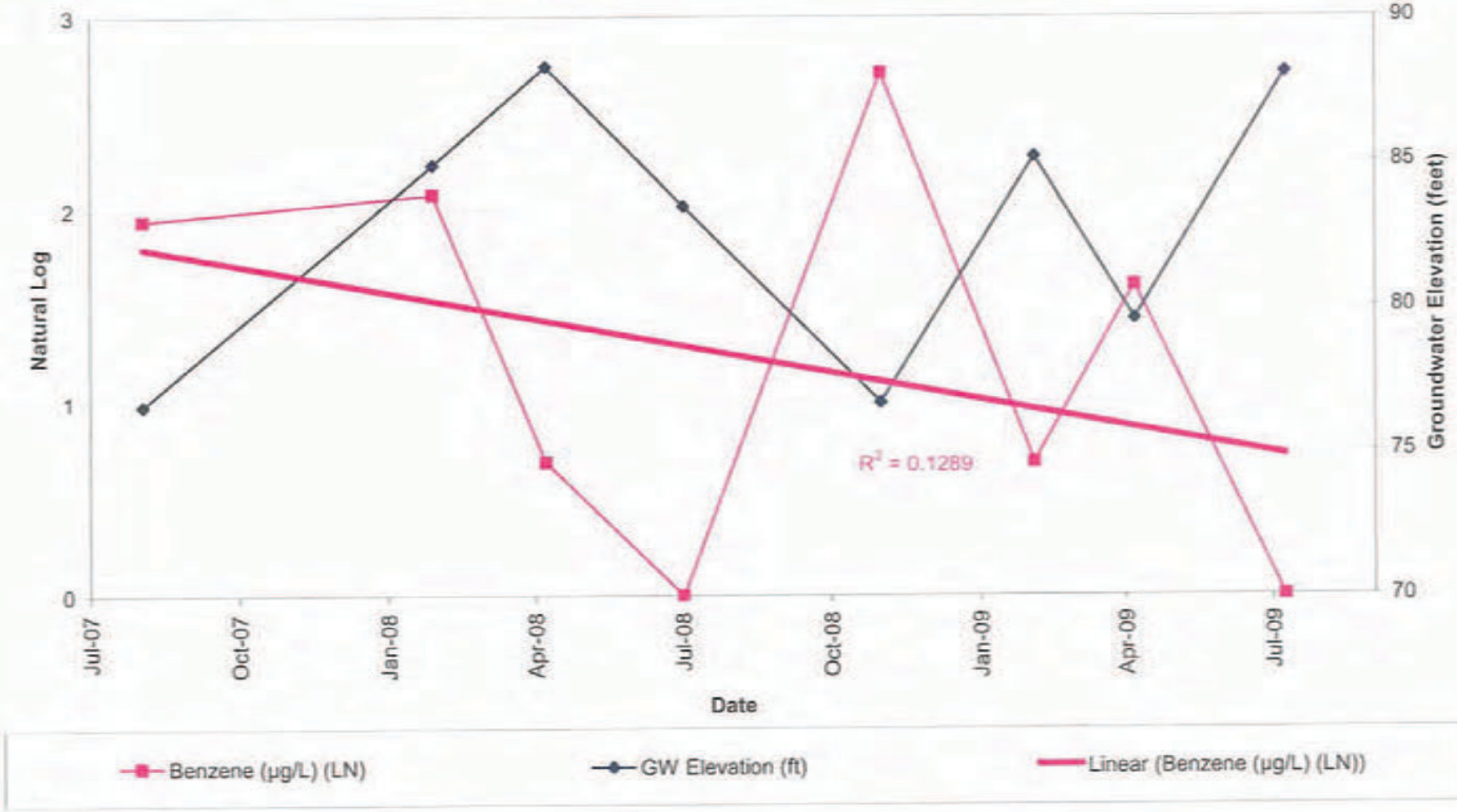
Sunoco Station #0363-5430
610 Old York Road, Warminster, PA
Groundwater Elevation and Natural log of MTBE in MW-5
All Historical Data



Sunoco Station #0363-5430
610 Old York Road, Warminster, PA
Groundwater Elevation and Natural log of MTBE in MW-7
All Historical Data



Sunoco Station #0363-5430
610 Old York Road, Warminster, PA
Groundwater Elevation and Natural log of Benzene in MW-2
During Groundwater Attainment Sampling



APPENDIX K

BIOTRANS Model Documentation

Fate and Transport Modeling
for Sunoco Station #0363-5430
610 Old York Road
Warminster, Pennsylvania

prepared for

Groundwater & Environmental Services, Inc.
410 Eagleview Blvd., Suite 110
Exton, Pennsylvania 19341

by

Environmental Systems & Technologies
A Division of Groundwater & Environmental Services, Inc.
1750 Kraft Drive, Suite 2700
Blacksburg, Virginia 24060

1300319-02
December 2005

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Figure 5. Initial naphthalene concentration distribution and model-predicted naphthalene concentration distributions at 5, 10, 15, 20 and 30 years.

1. Introduction

The following provides an overview of the approach and results of fate and transport modeling conducted for the Sunoco Station #0363-5430 located at 610 Old York Road in Warminster, Pennsylvania. The purpose of the modeling is to evaluate the migration potential of dissolved phase constituents observed in groundwater at the site. The modeling activities involved a review of site data, conceptual model development, model selection, model construction, and model simulations. Details of the site conceptualization, modeling analyses, and results are described in the following sections.

2. Fate and Transport Analyses

Fate and transport modeling was conducted to evaluate the migration potential of dissolved phase hydrocarbons from the site and was based on site-specific data. The modeling effort concentrated on the dissolved hydrocarbon constituent concentrations over the last twelve quarters of sampling. Any analyzed constituent that has had an exceedance of the Pennsylvania Department of Environmental Protection Act II Statewide Health Standards (PADEP SHS) within the last twelve quarters was simulated in the modeling effort. Benzene, methyl tert-butyl ether (MTBE), and naphthalene are the only constituents to have exceeded the PADEP SHS during that time. Therefore, these constituents were evaluated in the modeling effort.

2.1 Site Conceptualization

The facility is located on the northwest corner of the intersection of Old York Road and Street Road in Warminster, Pennsylvania, approximately 1.7 miles south of Neshaminy Creek. The nearest surface water body, in the direction of flow, is Neshaminy Creek.

Seven monitoring wells (MW-1 through MW-7) have been installed at the facility. Monitoring well locations and facility features are shown on Figure 1. Groundwater sampling and monitoring activities have been conducted at the site since March 1996. Light non-aqueous phase liquid (LNAPL) has never been detected at the site; therefore, a continuing source will not be simulated in the modeling effort. Groundwater elevations at the site indicate groundwater flow to the north with an average gradient of 0.003.

Groundwater samples have been analyzed for benzene, toluene, ethylbenzene, xylenes, MTBE, isopropyl benzene, and naphthalene. Dissolved benzene, MTBE, and naphthalene are the only constituents that have exceeded the PADEP SHS in the last twelve quarters of sampling, therefore, these constituents were simulated in the modeling effort.

2.2 Model Selection

Numerical modeling of dissolved phase hydrocarbon fate and transport was conducted using the model BIOTRANS. BIOTRANS is a two-dimensional, finite element model that considers convective-dispersive transport, adsorption, and decay for multiple hydrocarbon constituents in

either porous or fractured media. Transport of dissolved species is simulated by solving the two-dimensional, vertically averaged convective-dispersive-reactive equation. The model utilizes steady-state velocity fields that represent average flow conditions. Analyses using BIOTRANS have been previously submitted and accepted by the U.S. EPA and state regulatory agencies. A detailed description of BIOTRANS is available in ES&T (1996).

2.3 Model Construction

The model domain covers an area of approximately 176,000 square feet, encompassing the site and surrounding downgradient areas to enable simulation of potential off-site dissolved migration. The finite element mesh contains 7,056 quadrilateral elements with a nodal spacing of 5 feet. The extent of the model domain and the finite element mesh are depicted in Figure 2. The model simulation was performed for 30 years to predict migration potential.

In the modeling effort, input parameter values were defined from site data whenever possible. When site-specific data were not available, literature values were utilized to define model input values. The following describes the input parameters and the values applied in the modeling effort.

Dissolved Species – Benzene, MTBE, and naphthalene were the constituents of concern considered in the model. For each constituent, the model requires molecular weight, pure phase solubility, and an adsorption coefficient. First-order decay was considered. The soil-water distribution coefficient, K_d, was calculated as the product of f_{oc} and K_{oc}, where f_{oc} represents the organic carbon content of the aquifer material, and K_{oc} is the organic carbon partition coefficient. No site-specific f_{oc} measurements were available, thus a conservative value of 0.005 was applied in the model. K_{oc} is chemical specific and describes the ratio of the amount of constituent adsorbed per unit weight of organic carbon in the aquifer material to the concentration in aqueous solution. The K_{oc} values utilized in the model were selected from Appendix A, Table 5, of the Act 2 regulations (PADEP, 2003). A first-order decay constant was also applied in the model (PADEP, 2003). Table 1 provides the chemical properties for benzene, MTBE, and naphthalene used in the modeling analyses.

Table 1. Chemical Properties Applied in the Modeling.

Parameter	Benzene	MTBE	Naphthalene	Units
Molecular weight[1]	78.11	8.15	128.17	g/mole
Solubility[2]	1,780	45,000	30	mg/L
K_{OC}[2]	58	12	950	cm^3/g
K_d	0.29	0.06	4.75	cm^3/g
First-order decay rate[2]	0.00096	0.0019	0.0027	d^{-1}

[1]http://chemfinder.cambridgesoft.com/
[2]Pa. Code § 250 (Appendix A, Table 5)

Initial Concentrations – The maximum benzene, MTBE, and naphthalene concentrations measured at all wells over the last twelve quarters were used as the initial concentration distributions in the model (Figures 3 through 5). Utilization of the maximum measured concentration distributions result in the most conservative estimate of dissolved-phase fate and transport.

Porosity – Total porosity is the ratio of void volume to total volume in the aquifer. A porosity value of 0.10 was utilized in the modeling effort. This value is representative of the competent shale bedrock encountered in borings at the facility (Freeze and Cherry, 1979).

Soil Bulk Density – The soil bulk density (ρ_b) is the mass of dry soil relative to the bulk soil volume. Bulk density can be calculated using porosity (Φ) and assuming a particle density of 2.65 g/cm^3, which is typical for a quartz, as

$$\rho_b = (1-\Phi) * 2.65 \text{ g/cm}^3$$

The bulk density applied in the modeling is 2.39 g/cm^3.

Longitudinal and Transverse Dispersivity – Hydrodynamic dispersion is the term applied to the combined effects of mechanical dispersion and molecular diffusion in causing a plume to spread within a groundwater system. For this modeling effort, the longitudinal and transverse dispersivities were conservatively estimated as 4 feet and 0.4 feet, respectively.

Groundwater Flow – Groundwater flow representative of measured site conditions was simulated in the modeling effort. A steady-state, uniform flow field was generated considering site hydrologic conditions. Measured groundwater elevations at the site indicate flow toward the northern portion of the facility, with a hydraulic gradient of 0.003. This hydraulic gradient was determined to represent average flow conditions across the site and in the offsite area. Hydraulic conductivity within the aquifer was estimated at 0.001 feet/day based on the competent shale bedrock encountered in borings at the facility (Freeze and Cherry, 1979). The aquifer thickness was assumed to be 85 feet based on the maximum well depth and average water table elevations at the site.

2.4 Modeling Results

Results of the modeling effort indicate that the combined effects of degradation, dispersion, and adsorption act to reduce benzene, MTBE, and naphthalene concentrations over time. Benzene concentrations are predicted to remain above the PADEP SHS of 5 µg/L for the entire 30 year simulation. No dissolved benzene migration is predicted. Predicted benzene concentrations at 5, 10, 15, 20 and 30 years are shown on Figure 3. The maximum benzene concentration in the plume at 5, 10, 15, 20 and 30 years is predicted to be 60.6 µg/L; 49.4 µg/L; 40.3 µg/L; 32.9 µg/L and 22.0 µg/L; respectively. MTBE concentrations are predicted to decrease to below the PADEP SHS of 20 µg/L between 22 and 23 years. No offsite migration beyond the initial MTBE plume extent is predicted. The initial and model-predicted MTBE concentration distributions are shown on Figure 4. The maximum MTBE concentration in the plume at 5, 10, 15 and 20 years is predicted to be 1516.9 µg/L, 420.5 µg/L, 126.4 µg/L and 43.1 µg/L; respectively. Dissolved naphthalene concentrations are predicted remain above the PADEP SHS of 100 µg/L for the

entire 30 year simulation. The initial and model-predicted naphthalene concentration distributions are shown on Figure 5. Offsite migration of dissolved naphthalene concentrations are not predicted. The maximum naphthalene concentration in the plume at 5, 10, 15, 20 and 30 years is predicted to be 203.8 µg/L; 195.9 µg/L; 188.3 µg/L; 181.0 µg/L and 167.23 µg/L; respectively.

3. Summary and Conclusions

Fate and transport modeling has been conducted utilizing current and historical data collected at the site. Site-specific input parameter values were defined from site data whenever possible. The initial concentrations utilized in the model represent the maximum concentrations observed during the most recent eight quarters of sampling.

Model results indicate that benzene concentrations above the PADEP SHS of 5 µg/L persist for the entire 30-year simulation with no off-site migration predicted. Dissolved MTBE concentrations above the PADEP SHS of 20 µg/L are predicted to remain at the site for 22 to 23 years with no additional migration beyond the initial concentration distribution. Dissolved naphthalene concentrations above the PADEP SHS of 100 µg/L are predicted to persist for at least 30 years. No off-site migration of naphthalene concentrations is predicted.

4. References

ChemFinder. Chemical Properties Database. http://chemfinder.cambridgesoft.com/

ES&T. 1996. *BIOTRANS, Areal Dissolved Phase Transport Model for Organic Chemical Spills with Natural or Enhanced Bioremediation, User and Technical Guide.* Environmental Systems & Technologies, Blacksburg, VA.

Freeze, R.A. and J.A. Cherry. 1979. *Groundwater*, Prentice-Hall, Inc., Englewood Cliffs, NJ.

PADEP. 2003. Pennsylvania Bulletin Online.
http://www.pacode.com/secure/data/025/chapter250/chap250toc.html

File Name:	Warminster 8.5x11.ppt
Date:	12/19/2005
Drafter:	WMG
Approved:	JWW

Figure 1. Site map showing facility features and monitoring well locations.

Environmental Systems & Technologies
A Division of GES

File Name:	Warminster 8.5x11.ppt
Date:	12/19/2005
Drafter:	WMG
Approved:	JWW

Figure 2. Model domain.

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Environmental Systems & Technologies
A Division of GES

Figure 3. Initial benzene concentration distribution and model-predicted benzene concentration distributions at 5, 10, 15, 20 and 30 years.

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Date: 12/19/2005
Drafter: WMG
Approved: JWW

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Environmental Systems & Technologies
A Division of GES

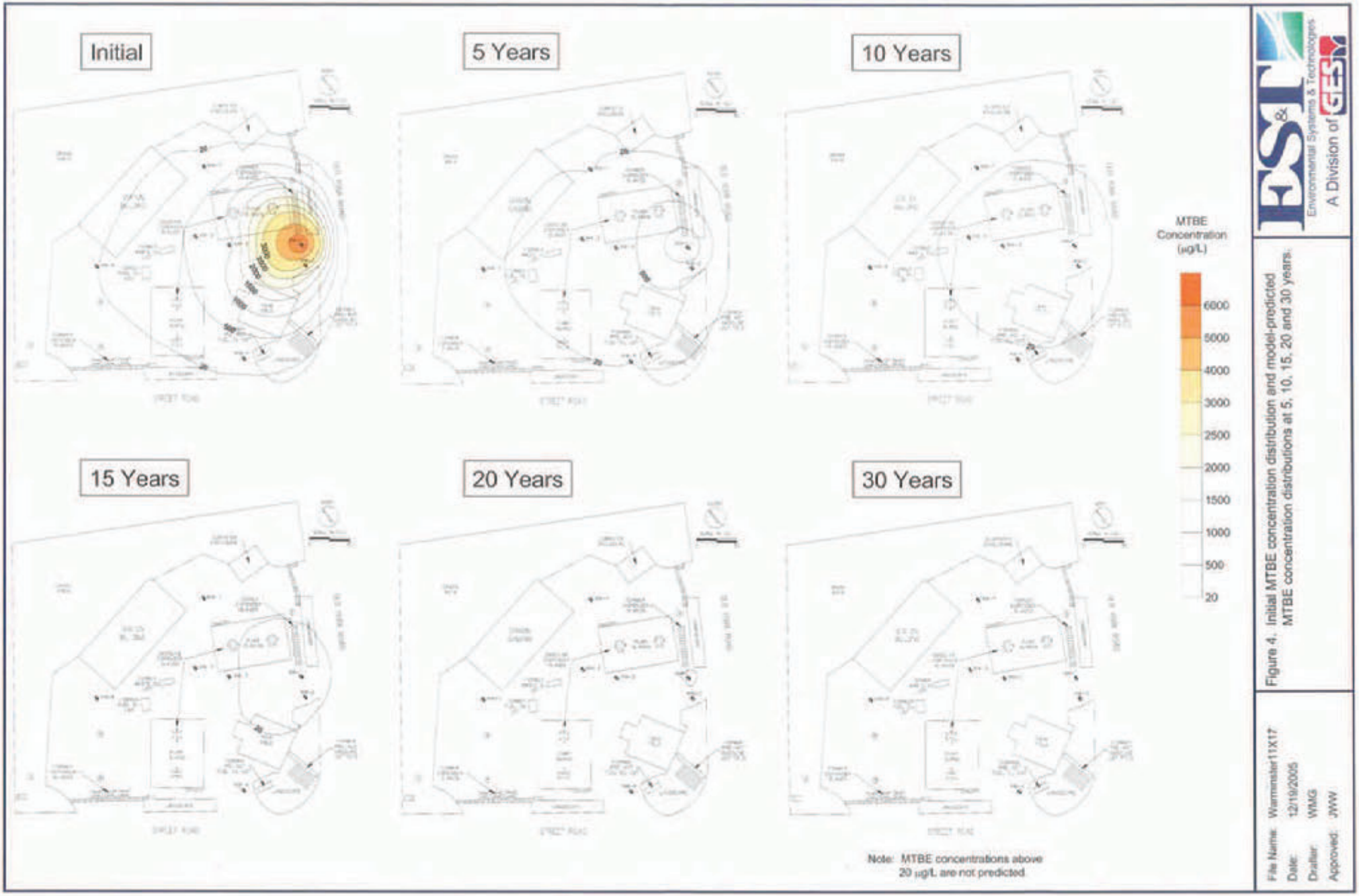
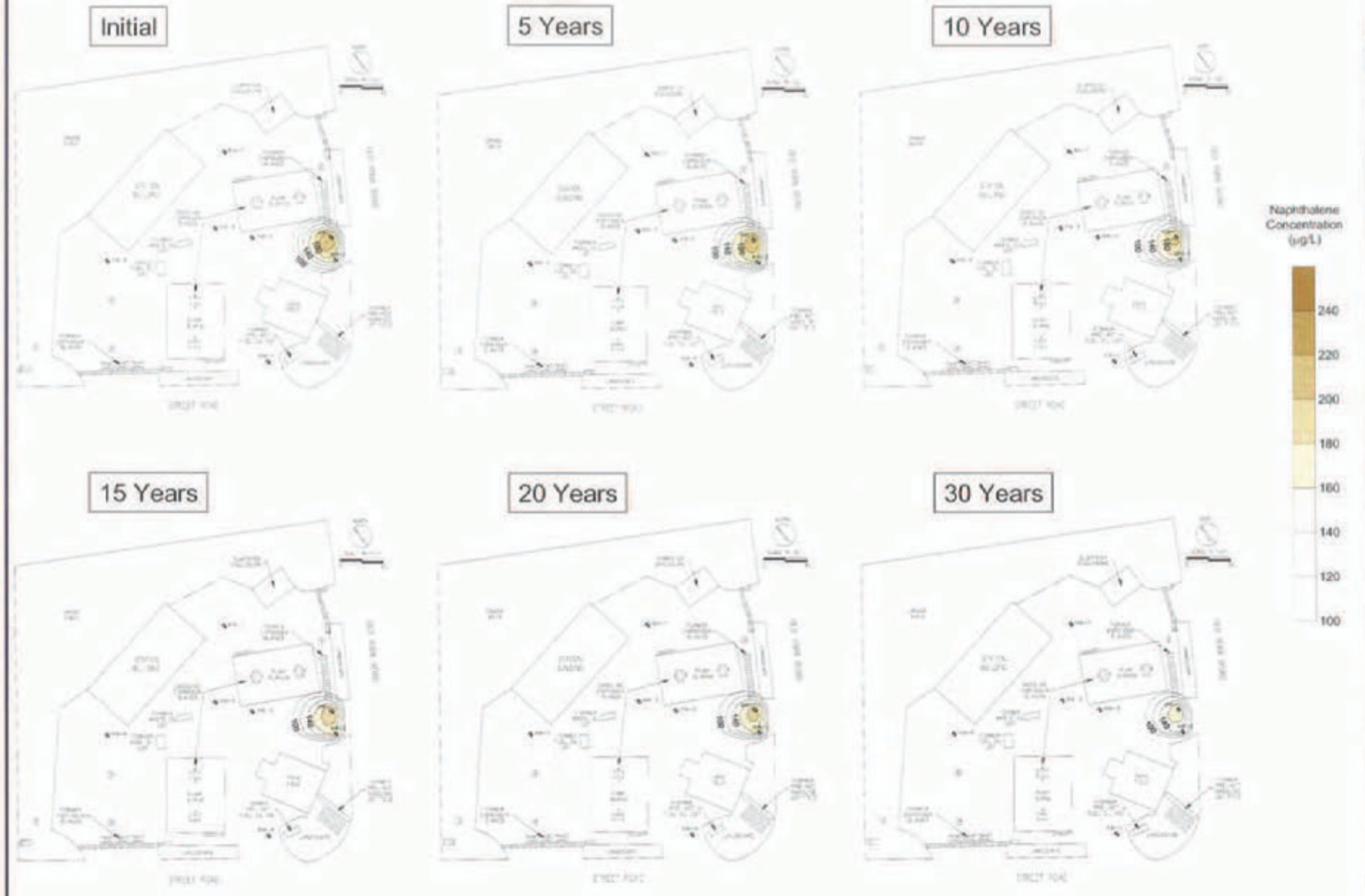


Figure 4. Initial MTBE concentration distribution and model-predicted MTBE concentration distributions at 5, 10, 15, 20 and 30 years.

EST&I Environmental Systems & Technologies
A Division of GES

File Name: Warrenster11X17
Date: 12/19/2005
Drafter: WMG
Approved: JWW



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Environmental Systems & Technologies
A Division of GEI

Figure 5: Initial naphthalene concentration distribution and model-predicted naphthalene concentration distributions at 5, 10, 15, 20 and 30 years.

File Name: Warminster11X17
Date: 12/19/2005
Drafter: WMG
Approved: JWW

APPENDIX L

Draft Uniform Environmental Covenant

Prepared by:
Groundwater and Environmental Services, Inc.
440 Creamery Way, Suite 500
Exton, PA 19341
(610) 458-1077

Return to:
Groundwater and Environmental Services, Inc.
440 Creamery Way, Suite 500
Exton, PA 19341
Attn: Krista Snyder
(610) 458-1077 ext. 3068

The County Parcel Identification No. of the Property is: 49009046
GRANTOR: Sunoco, Inc. (R&M)
PROPERTY ADDRESS: 610 York Road, Warminster, Pennsylvania

ENVIRONMENTAL COVENANT

This Environmental Covenant is executed pursuant to the Pennsylvania Uniform Environmental Covenants Act, Act No. 68 of 2007, 27 Pa. C.S. §§ 6501 – 6517 (UECA). This Environmental Covenant subjects the Property identified in Paragraph 1 to the activity and/or use limitations in this document. As indicated later in this document, this Environmental Covenant has been approved by the Pennsylvania Department of Environmental Protection (Department).

1. **Property affected**. The property affected (Property) by this Environmental Covenant is located in the Township of Warminster, Bucks County.

The postal street address of the Property is: 610 York Road, Warminster, PA. The tax assessment street address of the Property is: 610 York Road, Warminster, PA.

The latitude and longitude of the center of the Property affected by this Environmental Covenant is: 40° 12' 36.6" N, 75° 05' 58.2" W.

The Property has been known by the following name(s): Sunoco Station #0363-5430 with PADEP Facility ID #09-30778.

A complete description of the Property is attached to this Environmental Covenant as Exhibit A. A map of the Property is attached to this Environmental Covenant as Exhibit B.

2. **Property Owner / GRANTOR**. Sunoco, Inc. (R&M) is/are the owner(s) of the Property. The mailing address of the Owner is:
1735 Market Street, STE LL, Philadelphia, Pennsylvania, 19103-7583.

3. **Holder(s) / GRANTEE**. The following is/are a "holder," as that term is defined in 27 Pa. C.S. § 6502, of this Environmental Covenant:
Sunoco, Inc. (R&M)
1735 Market Street, STE LL
Philadelphia, PA 19103-7583

4. **Description of Contamination & Remedy**. The following describes the contamination and remedy of the property.

Groundwater sampling was initiated at the site in March 1996, at which time a groundwater monitoring program was initiated. Dissolved-phase hydrocarbons were detected at concentrations above the Department Statewide Health Standards (SHS) in the monitoring wells. This monitoring program continued until July 2009.

During underground storage tank (UST) closure activities in 1995 and 1996, soils samples were collected at depths ranging from one to 12 feet. Soil analytical results demonstrated that benzene was detected at concentrations above the Department SHS in soil samples collected beneath known UST, pre-Act 2 USTs, and dispenser islands. None of the remaining target parameters (toluene, ethylbenzene, and total xylenes) were detected at concentrations greater than the Department SHS during the UST closure activities. During the 2007 monitoring well installation, benzene was detected at concentrations above the Department SHS in two soil samples. The remaining target parameters (toluene, ethylbenzene, total xylenes, methyl tertiary butyl ether (MTBE), isopropylbenzene, and naphthalene) were not detected or were detected at concentrations below the Department SHS.

Remediation was initiated at this site in April 2005, with a chemical oxidation high-intensity targeted (HIT) remediation event in which approximately 450 gallons of 7 to 8% solution of hydrogen peroxide were injected into monitoring wells MW-1, MW-3, and MW-5.

Following active remediation, the dissolved-phase hydrocarbon impact was detected primarily in monitoring wells MW-1 through MW-3, located in the vicinity of the former pre-Act 2 UST field and former dispenser islands along York Road. Dissolved hydrocarbons continued to exhibit decreasing trends. During post-remediation groundwater monitoring and sampling, benzene, MTBE, and naphthalene were detected at concentrations and/or had a laboratory detection limit above the Department SHS. During attainment groundwater monitoring and sampling, benzene was detected at concentrations above the Department SHS and/or had a laboratory detection limit above the Department SHS in monitoring well MW-2, located in the vicinity of the former dispenser islands along York Road.

The environmental activities conducted at this site were in accordance with the Site Characterization Report prepared by Handex of Eastern Pennsylvania dated May 28, 1996, the Additional SCR / Remedial Action Plan (ASCR/RAP) prepared by GES dated January 6, 2006, and the Remedial Action Completion Report (RACR) prepared by GES dated October 1, 2009.

The Site Characterization Report (dated May 28, 1996), the Additional SCR / Remedial Action Plan (ASCR/RAP) (dated January 6, 2006), and the Remedial Action Completion Report (RACR) (dated October 1, 2009) were developed in accordance with applicable sections of Pennsylvania's Storage Tanks, Corrective Action Regulations (Title 25, Chapter 245), as well as the Land Recycling and Environmental Remediation Standards Act (Title 25, Chapter 250). The full administrative record, including the above-mentioned reports, is available at the Department's Southeast Regional Office located at 2 East Main Street in Norristown, Pennsylvania.

5. **Activity & Use Limitations**. The Property is subject to the following activity and use limitations, which the Owner and each subsequent owner of the Property shall abide by:

(a) The groundwater at or under the property shall not be used for drinking or agricultural purposes,

b) The Owner shall prohibit residential use of the Property without first obtaining written approval from the Department.

6. **Notice of Limitations in Future Conveyances**. Each instrument hereafter conveying any interest in the Property subject to this Environmental Covenant shall contain a notice of the activity and use limitations set forth in this Environmental Covenant and shall provide the recorded location of this Environmental Covenant.

7. **Compliance Reporting**. The owner and each subsequent owner of the Property shall submit to the Department written documentation confirming that the activity and use limitations in this Environmental Covenant are being complied with following transfer of the Property. In addition, the Owner or subsequent owner shall, as appropriate, notify the Department concerning proposed changes in use of the Property, filing of applications for building permits for the Property or proposals for any work at the Property which affect the contamination on the Property subject to this Environmental Covenant. The Owner and each subsequent owner shall also submit, to the Department, written documentation concerning the use of the property and compliance with this Environmental Covenant upon request by the Department.

8. **Access by the Department**. In addition to any rights already possessed by the Department, this Environmental Covenant grants to the Department a right of access of the Property in connection with implementation or enforcement of this Environmental Covenant.

9. **Recordation & Proof & Notification**. Within 30 days after the date of the Department's approval, the Owner(s) shall file this Environmental Covenant with the Recorder of Deeds for each County in which the Property is located, and send a file-stamped copy of this Environmental Covenant to the Department within 60 days recordation. Within that time period, the Owner(s) also shall send a file-stamped copy to each of the following: each Municipality and County in which the Property is located; any Holder identified in this Environmental Covenant; each person holding a recorded interest in the Property; and each person in possession of the Property.

10. **Termination or Modification**. This Environmental Covenant may only be terminated or modified in accordance with Section 9 of UECA, 27 Pa. C.S. § 6509, including as follows:

> In accordance with Section 10 of UECA, 27 Pa. C.S. § 6510(a)(3)(i), Grantor hereby waives the right to consent to any amendment or termination of the Environmental Covenant by consent; it being intended that any amendment to or termination of this Environmental Covenant by consent in accordance with this Paragraph requires only the following signatures on the instrument amending or terminating this Environmental Covenant: (i) the Holder at the time of such amendment or termination; (ii) the then current owner of the Property and (iii) the Department.]

11. **Department's address**. Communications with the Department regarding this Environmental Covenant shall be sent to:

ECP Manager
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

ACKNOWLEDGMENTS by Owner(s) and any Holder(s), in the following form:

Sunoco, Inc. (R&M), "Grantor"

Date: By: _____
Name: _____
Title: _____

APPROVED, by Commonwealth of Pennsylvania,
Department of Environmental Protection

Date: By: _____
Name: Stephan Sinding
Title: ECP Manager

COMMONWEALTH OF PENNSYLVANIA)[other state, if executed outside PA]
)
COUNTY OF _____) SS:

On this ___ day of _____, 20__, before me, the undersigned officer, personally appeared _____ [Owner, Grantor] who acknowledged himself/herself to be the person whose name is subscribed to this Environmental Covenant, and acknowledged that s/he executed same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

_____
Notary Public

COMMONWEALTH OF PENNSYLVANIA)[other state, if executed outside PA]
)
COUNTY OF _____) SS:

On this ___ day of _____, 20__, before me, the undersigned officer, personally appeared _____ [Holder, Grantee] who acknowledged himself/herself to be the person whose name is subscribed to this Environmental Covenant, and acknowledged that s/he executed same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

_____
Notary Public

EXHIBIT A

DESCRIPTION OF PROPERTY

DRAFT

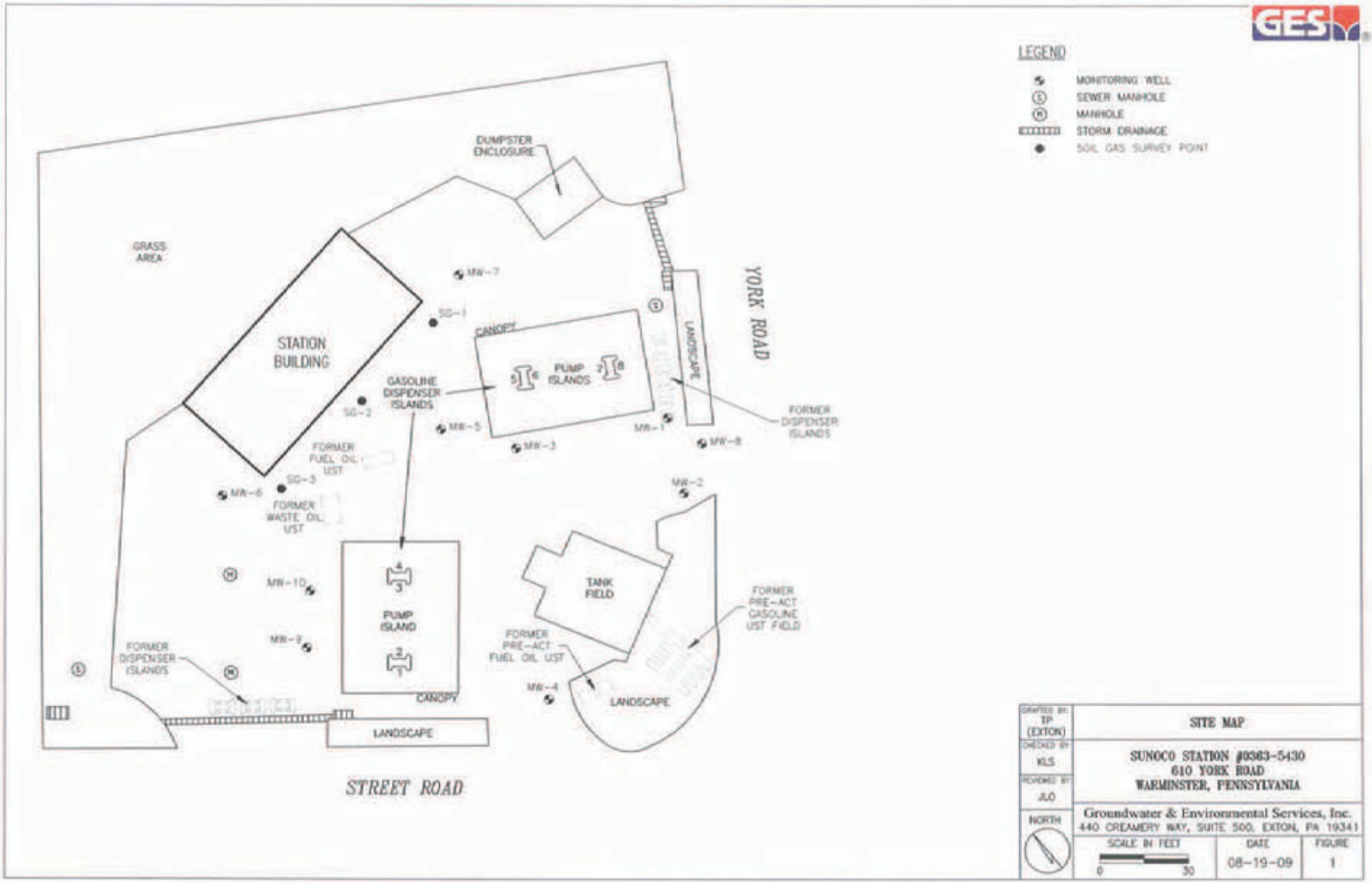
The site, located at the intersection of York Road (Route 263) and Street Road in Warminster, Pennsylvania (40° 12' 36.6" N, 75° 05' 58.2" W), is currently owned by Sunoco, Inc. (R&M), and is currently utilized as a retail gasoline facility and convenience store.

The property is zoned as commercial and is approximately 0.69 acres in size. The currently existing features at the site include a one-story station building and convenience store, four gasoline dispenser islands, three unleaded gasoline underground storage tanks (USTs), and associated subsurface piping. The UST area and dispenser island area are covered with a concrete pad. Removal and closure of fuel oil and waste oil underground storage tanks (USTs), removal of six gasoline dispenser islands, and removal of four pre-Act 2 unleaded gasoline USTs took place between November 1995 and February 1996. The former pre-Act 2 UST tank field and dispenser island areas are comprised of clean fill material and have been resurfaced. Grass and landscaping exists at the intersection of York Road and Street Road as well as behind the station building. The remaining portion of the site is covered in asphalt. There are numerous utility lines located at the site which include sub-grade public water, natural gas, telephone, and sanitary sewer. Ten monitoring wells (MW-1 through MW-10) comprise the monitoring well network and are located on-site. There are also three soil vapor points (SG-1 through SG-3) on-site. These well and soil-gas points will be properly abandoned upon approval of the Remedial Action Completion Report (RACR) (dated October 1, 2009). A site map showing property boundaries and pertinent current and former site features is included as **Exhibit B**.

EXHIBIT B

SITE MAP

DRAFT



DRAFTED BY: TP (EXTON)	SITE MAP
CHECKED BY: KLS	SUNOCO STATION #0363-5430 610 YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: JJO	Groundwater & Environmental Services, Inc. 440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 30 / DATE: 08-19-09 / FIGURE: 1

Groundwater
& Environmental Services, Inc.

440 Creamery Way • Suite 500 • Exton, Pennsylvania 19341 • (610) 458-1077 • Fax (610) 458-2300

October 1, 2009

Ms. Lauren Mapleton
Pennsylvania Department of Environmental Protection
Environmental Cleanup Program
2 East Main Street
Norristown, Pennsylvania 19401

Re: Site Characterization Report Addendum and
Remedial Action Completion Report (SCRA/RACR)
Sunoco Station #0363-5430
610 York Road
Warminster, Pennsylvania
PADEP Facility ID #09-30778

Dear Ms. Mapleton:

Enclosed please find the Site Characterization Report Addendum (SCRA) and Remedial Action Completion Report (RACR) prepared on behalf of Sunoco, Inc. (R&M) by Groundwater & Environmental Services, Inc. (GES) for the above-referenced facility. The SCRA/RACR includes available historical information, site characterization activities, presents a conceptual model of subsurface hydrocarbon impact at the site as well as associated risk, and the demonstration of attainment for groundwater and soil.

Please feel free to call either of the undersigned if you have any questions or comments.

Respectfully submitted,

Groundwater & Environmental Services, Inc.

Krista L. Snyder
Project Manager

Bonnie E. Cobb
Project Management Assistant

Enclosure

cc: Sunoco - Enfos
GES Project File

Site Characterization Addendum/Remedial Action Completion Report Addendum
GES - April 8, 2008

Groundwater
& Environmental Services, Inc.

440 Creamery Way • Suite 500 • Exton, Pennsylvania 19341 • (610) 458-1077 • Fax (610) 458-2300

April 8, 2010

Ms. Lauren Mapleton
Pennsylvania Department of Environmental Protection
Environmental Cleanup Program
Southeastern Regional Office
2 East Main Street
Norristown, Pennsylvania 19401

Re: Site Characterization Report Addendum/ Remedial Action Completion Report Addendum
Sunoco Station #0363-5430
610 York Road
Warminster, PA
Facility Id #: 09-30778

Dear Ms. Mapleton:

Groundwater & Environmental Services, Inc. (GES), on behalf of Sunoco, Inc, (R&M) has prepared this addendum letter for the Site Characterization Report Addendum / Remedial Action Completion Report (SCRA/ RACR) that was submitted to the Pennsylvania Department of Environmental Protection (PADEP) on October 1, 2009. This report included a draft Environmental Covenant (EC) for the subject property. On January 26, 2010, Lauren Mapleton of PADEP stated in email correspondence (**Appendix A**) that maintenance of an impervious cap or proof that an impervious cap is not needed would have to be included as part of the EC for the subject property to obtain site closure.

Based upon the historical analytical results for on-site soils, Site-Specific Standards (SSS) were chosen for benzene in soil at the site. Previous submittals (October 1, 2009 SCRA/ RACR) indicated there are no open soil exposure pathways; therefore, there is no risk. Numeric values for the SSS for benzene were not previously determined. Historical soil analytical data are provided in **Table 1**.

To demonstrate that an impervious cap will not need to be included as an activity and use limitation for the property in the environmental covenant, GES completed additional modeling efforts to evaluate the potential vertical migration of benzene if the asphalt cap were to be removed and surface waters were able to infiltrate the overburden soils. To model this vertical migration, GES utilized the BUFFER1 spreadsheet available on the PADEP website. Soil sample Disp-2 was the only historic soil sample that was considered for this modeling effort since it is the only historic soil sample that is covered in asphalt. All the other historic soil samples that have exhibited a benzene exceedance above the PADEP Statewide Health Standard (SHS) are located in landscaped areas. Soil sample locations are shown on **Figure 1** and historic groundwater analytical data are shown on **Table 2**.

Input parameter values were defined from site-specific and published data. The following describes the input parameters of the BUFFER1 spreadsheet and the values applied in the model.

Recharge Rate (cm/year)
Hydraulic conductivity within the aquifer was estimated to be 0.001 feet/day for the fate and transport modeling that was submitted as part of the October 1, 2009 SCRA/RACR, which is equivalent to 11.1252 cm/year; therefore, 11.1252 cm/year was utilized in the modeling efforts.

Soil Bulk Density
The soil bulk density used in the model is 2.39 g/cm^3 , which is consistent with the soil bulk density that was utilized in the fate and transport modeling that was submitted as part of the October 1, 2009 SCRA/RACR.

Water-Filled Porosity of Soil
Weathered shale bedrock was encountered at depths of four to seven feet bgs. Competent red shale, sandstone, and siltstone bedrock was encountered at an average of 12 feet bgs and the average depth to water at the site is 16 feet; therefore a water-filled porosity value for shale of 0.10 was used in the model, which is consistent with the porosity value used in the fate and transport modeling that was submitted as part of the October 1, 2009 SCRA/RACR.

Apparent Partition Coefficient Kapp (ml/g)
The apparent partition coefficient is defined in the BUFFER1 spreadsheet guidance document provided by PADEP as the ratio of Csorb (contaminant concentration that is non-aqueous in mg/kg) to Caq (aqueous concentration of contaminant in mg/L). For this ratio, the historic high concentration of benzene in monitoring well MW-1 (adjacent to soil sample Disp-1) was utilized for Caq (0.184 mg/L). The benzene concentration in soil sample Disp-2 (Csorb) is 0.700 mg/kg; therefore the ratio of Csorb to Caq is 3.8, which was utilized in the model.

Depth Increment (feet)
Soil sample Disp-2 was collected from one foot below ground surface, directly under the former dispenser island. The benzene concentration in this soil sample is relatively close to the PADEP SHS; therefore, a depth increment of one foot for benzene is utilized in the modeling effort, assuming that the impacted soils are between one and two feet below grade.

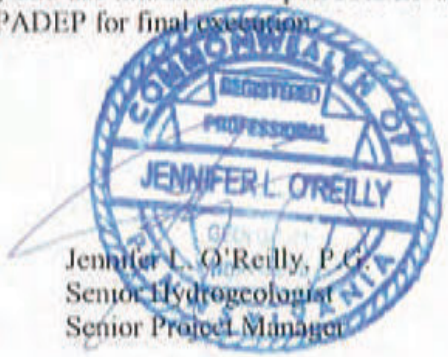
Csoil Initial
An initial soil concentration of 0.7 mg/kg (700 µg/kg) was utilized since this is the observed concentration of benzene in soil sample Disp-2.

Model Results
The BUFFER1 spreadsheet calculated the time increment as 3.29 months; therefore, the 30-year endpoint for the modeling effort as described in Title 25, §250.308(c)(1) is equal to 109 time increments. Depth to water in MW-1, the monitoring well closest to soil sample Disp-2, has ranged from 5.18 to 18.96 feet below top-of-casing (TOC) with an average depth to water of 11.4 feet below TOC. During the most recent eight sampling events, the depth to water in monitoring well MW-1 has ranged from 9.43 to 17.27 feet below TOC with an average of 12.78 feet below TOC. Therefore, in order to be conservative, the total aqueous concentration of benzene at 5 feet below grade after 109 time increments will be utilized as the predicted model output. The BUFFER1.xls spreadsheet predicts that the total aqueous concentration at five feet below grade after 30 years is 0.005 mg/L (5 µg/L), which does not exceed the PADEP SHS for benzene in a non-residential, used aquifer. The BUFFER1 spreadsheet output is attached as **Appendix B**.

Based upon the above assessment, maintenance of an impermeable cap will not be included as an activity and use limitation for the property in the environmental covenant. The draft environmental covenant is included in **Appendix C**, which outlines the activity and use limitations. Upon PADEP approval, Sunoco will sign and notarize this document and submit to PADEP for final execution.

Respectfully submitted,
Groundwater & Environmental Services, Inc.

Krista L. Snyder
Project Manager

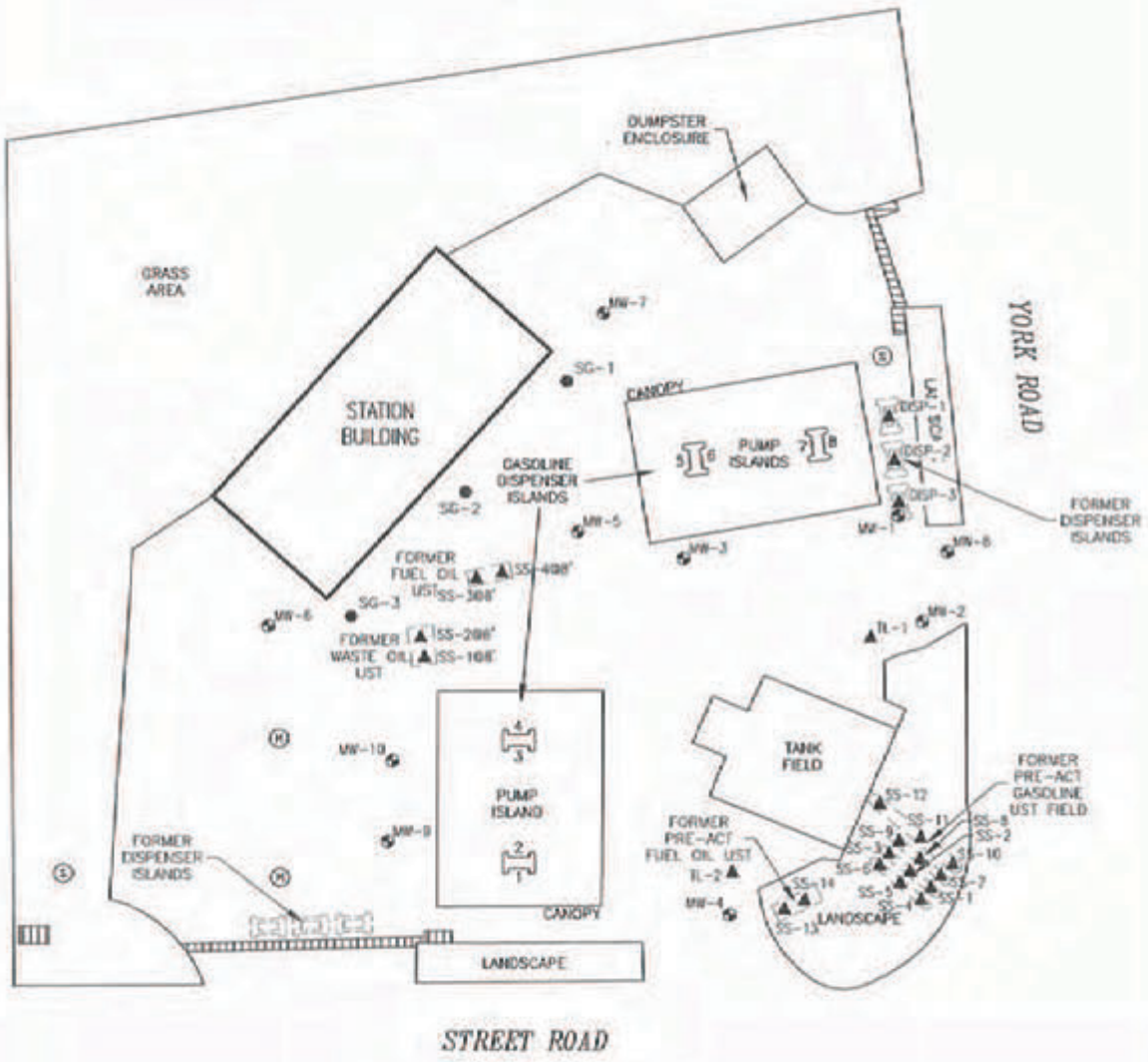


Jennifer L. O'Reilly, P.G.
Senior Hydrogeologist
Senior Project Manager

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.

Enclosure
Cc: William Brochu, Sunoco (ENFOS)
ICF International – T. Aubel (Claim #96-131)
GES Project File

FIGURES



LEGEND

- MONITORING WELL
- SEWER MANHOLE
- MANHOLE
- STORM DRAINAGE
- SOIL GAS SURVEY POINT
- UST CLOSURE SOIL SAMPLE

DRAFTED BY: TP (EXTON)	UST CLOSURE SOIL SAMPLE LOCATION MAP 1995/1996
CHECKED BY: KLS	SUNOCO STATION #0363-5430 610 YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: KLS	Groundwater & Environmental Services, Inc. 440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 30 / DATE: 04-07-10 / FIGURE: 1

TABLES

TABLE 1
HISTORICAL SOIL ANALYTICAL DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Sample ID		Depth (ft)	Sample Date	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Total Xylenes (µg/kg)	MTBE (µg/kg)	Isopropyl benzene (µg/kg)	Naphthalene (µg/kg)	TPH-GRO (mg/kg)	TPH (mg/kg)
UST CLOSURE ACTIVITIES, 1995/1996	SS-1	8	12/28/1995	ND<6	<6	ND<6	<18	NA	NA	NA	NA	40
	SS-2	8	12/28/1995	ND<6	<6	ND<6	ND<18	NA	NA	NA	NA	570
	SS-3	8	12/28/1995	ND<6	<6	ND<6	<17	NA	NA	NA	NA	490
	SS-4	8	12/28/1995	ND<6	<6	ND<6	<17	NA	NA	NA	NA	160
	DISP-1	1	2/8/1996	160	3,000	5,000	23,000	NA	NA	NA	200	NA
	DISP-2	1	2/8/1996	700	51,000	41,000	250,000	NA	NA	NA	1,900	NA
	DISP-3	1	2/8/1996	200	14,000	10,000	63,000	NA	NA	NA	310	NA
	TL-1	1	2/13/1996	ND<5	ND<5	ND<5	ND<16	NA	NA	NA	ND<1	NA
	TL-2	1	2/13/1996	ND<100	800	2,100	19,000	NA	NA	NA	150	NA
	SS-1	12	2/27/1996	1,000	23,000	34,000	180,000	NA	NA	NA	1,100	NA
	SS-2	12	2/27/1996	1,900	33,000	26,000	160,000	NA	NA	NA	1,300	NA
	SS-3	12	2/27/1996	45	270	120	850	NA	NA	NA	6	NA
	SS-4	12	2/27/1996	ND<500	500	3,400	17,000	NA	NA	NA	200	NA
	SS-5	12	2/27/1996	<6	<6	<6	<19	NA	NA	NA	ND<1	NA
	SS-6	12	2/27/1996	31	450	500	2,800	NA	NA	NA	29	NA
	SS-7	12	2/27/1996	1,900	10,000	23,000	130,000	NA	NA	NA	1100	NA
	SS-8	12	2/27/1996	ND<600	800	6,400	21,000	NA	NA	NA	400	NA
	SS-9	12	2/27/1996	<700	<700	11,000	20,000	NA	NA	NA	1,100	NA
	SS-10	12	2/27/1996	1,000	11,000	12,000	85,000	NA	NA	NA	800	NA
	SS-11	12	2/27/1996	ND<600	4,600	15,000	93,000	NA	NA	NA	700	NA
	SS-12	12	2/27/1996	ND<100	900	4,200	9,800	NA	NA	NA	300	NA
	SS-13	8	2/27/1996	NA	NA	NA	NA	NA	NA	NA	NA	30
	SS-14	8	2/27/1996	NA	NA	NA	NA	NA	NA	NA	NA	90
PADEP Statewide Health Standard for Unsaturated and Saturated Soils in a Non-Residential, Used Aquifer				500	100,000	70,000	1,000,000	2,000	1,600,000 / 230,000	25,000 / 10,000	NA	NA

TABLE 1
HISTORICAL SOIL ANALYTICAL DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Sample ID		Depth (ft)	Sample Date	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Total Xylenes (µg/kg)	MTBE (µg/kg)	Isopropyl benzene (µg/kg)	Naphthalene (µg/kg)	TPH-GRO (mg/kg)	TPH (mg/kg)
Monitoring Well Installation, 1996	MW-1	5-7	3/13/1996	ND<6	ND<6	ND<6	ND<18	NA	NA	NA	ND<1	NA
	MW-2	5-7	3/13/1996	ND<6	<6	<6	<18	NA	NA	NA	ND<1	NA
	MW-3	5-7	3/13/1996	<6	<6	<6	<18	NA	NA	NA	ND<1	NA
Monitoring Well Installation, 1997	MW-4	-	10/27/1997	<6	<6	<6	<17	<20	<10	<20	NA	NA
Monitoring Well Installation, 2004	MW-5	25	10/18/2004	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5	NA	NA
	MW-6	15	10/18/2004	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5	NA	NA
Monitoring Well Installation, 2007	MW-8	5	2/22/2007	<530	<530	1,200	8,200	<530	<530	3,700	NA	NA
	MW-8	24	2/22/2007	<520	<520	<520	<520	<520	<520	<520	NA	NA
	MW-9	5	2/23/2007	<440	<440	<440	<440	<440	<440	720	NA	NA
	MW-9	15	2/23/2007	<480	<480	<480	<480	<480	<480	<480	NA	NA
	MW-10	15	2/23/2007	<480	<480	<480	<480	<480	<480	<480	NA	NA
PADEP Statewide Health Standard for Unsaturated and Saturated Soils in a Non-Residential, Used Aquifer				**500**	**100,000**	**70,000**	**1,000,000**	**2,000**	**1,600,000 / 230,000**	**25,000 / 10,000**	**N/A**	**N/A**

All results reported on a dry weight basis except samples SS-1 and SS-2 (collected on 2/27/1996). Those samples were reported on an as received basis, due to laboratory error.

ND: Not Detected

NA: Not Analyzed

N/A: Not Applicable

MTBE: Methyl *tert* Butyl Ether

TPH: Total Petroleum Hydrocarbons

GRO: Gasoline Range Organics

mg/kg: milligrams per kilogram

µg/kg: micrograms per kilogram

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-1	03/23/1996	96.79	8	88.79	ND< 1	ND< 1	ND	2	NA	NA	NA
	09/09/1996	96.79	12.5	84.29	**13**	ND< 10	340	1,060	**240**	NA	**150**
	11/07/1996	96.79	10.12	86.67	ND< 1	ND< 1	ND< 1	3	2	NA	ND< 5
	02/14/1997	96.79	8.47	88.32	ND< 1	ND< 1	ND	ND< 3	**88**	NA	ND< 5
	05/07/1997	96.79	9.58	87.21	ND	ND	ND	ND< 3	ND< 1	NA	ND< 5
	09/15/1997	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	11/11/1997	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	03/17/1998	96.79	8.75	88.04	ND	ND	ND	ND	ND<1	NA	ND<5
	06/15/1998	96.79	5.18	91.61	ND	ND	ND	ND	ND< 5	ND	ND
	06/17/1999	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	02/15/2000	96.79	10.19	86.60	**184**	530	87.4	379	**12,800**	ND	ND
	05/12/2000	96.79	10.16	86.63	2.7	ND	ND	2.8	**242**	ND	2.5
	10/16/2000	96.79	13.83	82.96	**79.8**	589	368	1,020	**957**	40.6	**280**
	03/23/2001	96.79	7.63	89.16	ND	ND	ND	ND	1.9	ND	ND
	06/14/2001	96.79	10.84	85.95	**20.3**	35.5	96.2	130	**221**	13.3	41.6
	09/18/2001	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	12/26/2001	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	03/26/2002	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	06/14/2002	96.79	12.51	84.28	**9.7**	25.5	294	513	**103**	35.3	**214**
	09/13/2002	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	10/30/2002	96.79	16.46	80.33	**23.5**	29.2	377	691	**84.0**	72.5	**297**
	03/05/2003	96.79	9.01	87.78	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	05/08/2003	96.79	9.58	87.21	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0
	08/06/2003	96.79	11.99	84.80	<1.0	<5.0	9.5	<10	<5.0	<5.0	5.5
	10/24/2003	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	01/16/2004	96.79	9.14	87.65	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	04/14/2004	96.79	7.97	88.82	<1.0	<5.0	<5.0	<10	**68**	<5.0	<5.0
	07/15/2004	96.79	14.67	82.12	**6.0**	8.0	170	380	**610**	42	**160**
	10/04/2004	97.77	12.55	85.22	2	ND<3	38	35	**43**	16	52
	01/13/2005	97.77	9.31	88.46	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	04/20/2005	97.77	8.52	89.25	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	07/15/2005	97.77	14.31	83.46	2.0	8.0	227	445	**57.4**	40.6	**241**
	09/07/2005	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	09/20/2005	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	10/28/2005	97.77	12.02	85.75	**83.4**	241	140	812	**6,330**	22.2	**136**
	02/10/2006	97.77	9.08	88.69	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	05/15/2006	97.77	18.96	78.81	NS	NS	NS	NS	NS	NS	NS
	08/18/2006	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	11/15/2006	97.77	9.56	88.21	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	03/30/2007	97.77	8.90	88.87	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	05/17/2007	97.77	9.28	88.49	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	10/04/2007	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	01/28/2008	97.77	13.13	84.64	2	ND<1	58	24	12	27	36
	04/07/2008	97.77	9.43	88.34	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	97.77	14.20	83.57	2	ND<1	22	4	7	9	13
	10/08/2008	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	02/03/2009	97.77	13.06	84.71	2	ND<1	10	7	5	9	15
	04/06/2009	97.77	17.27	80.50	5	ND<1	14	27	11	43	34
	07/08/2009	97.77	9.57	88.20	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-2	03/23/1996	97.43	8.6	88.83	**280**	130	160	1,150	NA	NA	NA
	09/09/1996	97.43	13.25	84.18	**180**	5	180	140	**170**	NA	49
	11/07/1996	97.43	11.25	86.18	**74**	3	85	79	**74**	NA	39
	02/14/1997	97.43	9.33	88.10	**36**	6	35	67	15	NA	18
	05/07/1997	97.43	10.15	87.28	**55**	4	75	81	**26**	NA	19
	09/15/1997	97.43	23.2	74.23	**430**	13	410	340	**140**	NA	**200**
	11/11/1997	97.43	24.3	73.13	NS	NS	NS	NS	NS	NS	NS
	03/17/1998	97.43	9.35	88.08	**58**	2	100	160	35	NA	43
	06/15/1998	97.43	9.86	87.57	**91**	9	240	930	10	27	**120**
	06/17/1999	97.43	21.41	76.02	**87**	ND	160	7	**280**	18	30
	02/15/2000	97.43	11.04	86.39	**91.3**	1.4	242	94.5	**274**	37.6	84.4
	05/12/2000	97.43	10.73	86.70	**21.2**	ND	59.6	9.8	**161**	8.9	12.6
	10/16/2000	97.43	13.4	84.03	**70.4**	27.3	276	123	**359**	49.7	91.4
	03/23/2001	97.43	8.24	89.19	2.1	ND	10.5	ND	8.8	ND	ND
	06/14/2001	97.43	14.37	83.06	**45.8**	2.1	197	45.8	**113**	29.5	56.8
	09/18/2001	97.43	DRY	-	NS	NS	NS	NS	NS	NS	NS
	12/26/2001	97.43	DRY	-	NS	NS	NS	NS	NS	NS	NS
	03/26/2002	97.43	21.74	75.69	**192**	4.3	410	182	**164**	42.1	**104**
	06/14/2002	97.43	13.35	84.08	**35.7**	ND<2.5	173	57.3	**57.2**	29.2	**111**
	09/13/2002	97.43	23.55	73.88	**82.4**	2.6	268	55.5	**123**	43.1	**153**
	10/30/2002	97.43	18.93	78.50	**171**	4.9	**886**	291	**155**	113	**344**
	03/05/2003	97.43	9.96	87.47	**27**	ND<1	160	24	**24**	25	59
	05/08/2003	97.43	10.53	86.90	4.3	<1.0	29	<5.0	<5.0	<5.0	13
	08/06/2003	97.43	13.08	84.35	**13**	<5.0	43	<10	15	8.7	20
	10/24/2003	97.43	20.57	76.86	**54**	<1.6	320	86	**43**	44	**140**
	01/16/2004	97.43	9.72	87.71	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	04/14/2004	97.43	8.88	88.55	**10**	<5.0	72	12	**41**	12	21
	07/15/2004	97.43	17.40	80.03	**53**	31	370	160	**2,300**	56	**180**
	10/04/2004	98.31	13.24	85.07	**34**	ND<7	180	35	**190**	38	60
	01/13/2005	98.31	10.21	88.10	**6**	ND<1	59	5	**39**	14	20
	04/20/2005	98.31	9.08	89.23	ND<1.0	ND<1.0	9.3	ND<3.0	3.9	3.3	4.3
	07/15/2005	98.31	15.36	82.95	**38.1**	1.5	161	68.7	**89.9**	79.7	**142**
	09/07/2005	98.31	23.45	74.86	**10.0**	ND<1.0	18.5	ND<3.0	**59.5**	11.0	23.0
	09/20/2005	98.31	DRY	-	NS	NS	NS	NS	NS	NS	NS
	10/28/2005	98.31	12.81	85.50	**76.7**	51.8	195	67.3	**2,750**	80.8	**136**
	02/10/2006	98.31	10.68	87.63	4.7	1.0	30.3	4.1	**39.7**	10.8	8.4
	05/15/2006	98.31	20.04	78.27	**34.7**	7.6	108	46.5	**421**	31.0	43.3
	08/18/2006	98.31	20.68	77.63	**28.8**	1.8	106	8.6	**179**	48.2	31.8
	11/15/2006	98.31	10.39	87.92	**9.4**	ND<1.0	56.5	5.0	**25.1**	26.2	20.3
	03/30/2007	98.31	9.29	89.02	2	ND<1	12	2	5	7	5
	05/17/2007	98.31	9.99	88.32	2	ND<1	14	2	4	8	5
	08/02/2007	98.31	21.74	76.57	**7**	ND<1	15	3	**28**	12	ND<4
	10/04/2007	98.31	DRY	-	NS	NS	NS	NS	NS	NS	NS
	01/28/2008	98.31	13.42	84.89	**8**	ND<1	12	5	12	15	11
	04/07/2008	98.31	10.03	88.28	2	ND<1	11	2	3	9	5
	07/01/2008	98.31	14.85	83.46	ND<1	ND<1	1	ND<1	2	ND<2	ND<4
	10/31/2008	98.31	21.63	76.68	**15**	ND<1	39	11	8	41	11
	02/03/2009	98.31	13.15	85.16	2	ND<1	7	1	3	8	ND<4
	04/06/2009	98.31	18.75	79.56	5	ND<1	15	2	8	8	ND<4
	07/08/2009	98.31	10.25	88.06	ND<1	ND<1	2	ND<1	ND<1	3	ND<4

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-3	03/23/1996	98.08	9.35	88.73	**12**	ND< 1	2	3	NA	NA	NA
	09/09/1996	98.08	13.76	84.32	ND	ND	ND	ND	**480**	NA	ND
	11/07/1996	98.08	11.43	86.65	ND< 1	ND< 1	ND< 1	ND< 3	**170**	NA	ND< 5
	02/14/1997	98.08	10.18	87.90	2	ND< 1	ND	ND< 3	**130**	NA	ND< 5
	05/07/1997	98.08	10.9	87.18	ND	ND	ND	ND	**99**	NA	ND
	09/15/1997	98.08	23.68	74.40	NS	NS	NS	NS	NS	NS	NS
	11/11/1997	98.08	23.95	74.13	NS	NS	NS	NS	NS	NS	NS
	03/17/1998	98.08	10.25	87.83	ND<1	ND<1	ND<1	ND<3	**22**	NA	ND<5
	06/15/1998	98.08	10.56	87.52	ND	ND	ND	ND< 5	8	ND	ND<5
	06/17/1999	98.08	21.97	76.11	ND	ND	ND	ND	7	ND	ND
	02/15/2000	98.08	11.96	86.12	**80**	325	21.7	267	**1,680**	ND	ND
	05/12/2000	98.08	11.43	86.65	ND	ND	ND	ND	**256**	ND	ND
	10/16/2000	98.08	14.15	83.93	ND	ND	ND	ND	**42.3**	ND	ND
	03/23/2001	98.08	9.04	89.04	1.3	ND	ND	ND	**55.2**	ND	ND
	06/14/2001	98.08	12.1	85.98	ND<1	ND<1	ND<1	ND<5	**44.9**	ND<2	ND<5
	09/18/2001	98.08	DRY	-	NS	NS	NS	NS	NS	NS	NS
	12/26/2001	98.08	23.21	74.87	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<5
	03/26/2002	98.08	22.7	75.38	ND<1	ND<1	ND<1	ND<1.4	2.6	ND<2	ND<5
	06/14/2002	98.08	13.95	84.13	ND<1.0	ND<1.0	ND<1.0	ND<1.0	10.6	ND<2.0	ND<5.0
	09/13/2002	98.08	DRY	-	NS	NS	NS	NS	NS	NS	NS
	10/30/2002	98.08	18.45	79.63	ND<1.0	ND<1.0	ND<1.0	ND<1.0	1.8	ND<2.0	6.6
	03/05/2003	98.08	10.71	87.37	ND<1	ND<1	ND<1	ND<1	11	ND<5	ND<5
	05/08/2003	98.08	11.43	86.65	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0
	08/06/2003	98.08	13.51	84.57	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	10/24/2003	98.08	20.74	77.34	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	01/16/2004	98.08	10.53	87.55	<1.0	<5.0	<5.0	<10	**28**	<5.0	<5.0
	04/14/2004	98.08	9.83	88.25	<1.0	<5.0	<5.0	<10	20	<5.0	<5.0
	07/15/2004	98.08	17.05	81.03	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	10/04/2004	98.78	13.92	84.86	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	01/13/2005	98.78	11.13	87.65	ND<1	ND<1	ND<1	ND<1	19	ND<5	ND<5
	04/20/2005	98.78	10.04	88.74	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	07/15/2005	98.78	15.71	83.07	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	98.78	DRY	-	NS	NS	NS	NS	NS	NS	NS
	09/20/2005	98.78	23.75	75.03	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	98.78	13.75	85.03	3.1	2.2	ND<1.0	26.0	**749**	ND<1.0	9.0
	02/10/2006	98.78	10.59	88.19	ND<1.0	ND<1.0	ND<1.0	ND<3.0	**33.8**	ND<1.0	ND<2.0
	05/15/2006	98.78	20.37	78.41	ND<1.0	ND<1.0	ND<1.0	ND<3.0	1.5	ND<1.0	ND<2.0
	08/18/2006	98.78	20.91	77.87	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	11/15/2006	98.78	11.32	87.46	ND<1.0	ND<1.0	ND<1.0	ND<3.0	2.6	ND<1.0	ND<2.0
	03/30/2007	98.78	10.28	88.50	ND<1	ND<1	ND<1	ND<1	2	ND<2	ND<4
	05/17/2007	98.78	10.82	87.96	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	98.78	22.12	76.66	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/04/2007	98.78	DRY	-	NS	NS	NS	NS	NS	NS	NS
	01/28/2008	98.78	14.62	84.16	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/07/2008	98.78	11.81	86.97	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	98.78	15.72	83.06	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	98.78	23.89	74.89	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	02/03/2009	98.78	14.62	84.16	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/06/2009	98.78	18.53	80.25	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	98.78	11.11	87.67	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-4	11/11/1997	98.08	23.87	74.21	ND<1	ND<1	ND	ND<3	10	NA	ND<5
	03/17/1998	98.08	10.1	87.98	ND	ND	ND<1	ND<3	ND<1	NA	ND<5
	06/15/1998	98.08	10.32	87.76	ND	ND	ND	ND	ND	ND	ND
	06/17/1999	98.08	22.61	75.47	ND	ND	ND	ND	ND<5	ND	ND
	02/15/2000	98.08	11.91	86.17	ND	ND	ND	ND	15.8	ND	ND
	05/12/2000	98.08	11.41	86.67	ND	ND	ND	ND	9.5	ND	ND
	10/16/2000	98.08	14.03	84.05	ND	ND	ND	ND	**972**	ND	ND
	03/23/2001	98.08	8.94	89.14	ND	ND	ND	ND	ND	ND	ND
	06/14/2001	98.08	12.05	86.03	ND<1	ND<1	ND<1	ND<5	**31.6**	ND<2	ND<5
	09/18/2001	98.08	24.57	73.51	ND<1	ND<1	ND<1	ND<1	4.9	ND<2	ND<5
	12/26/2001	98.08	24.43	73.65	ND<1	ND<1	ND<1	ND<1	1.7	ND<2	ND<5
	03/26/2002	98.08	23.82	74.26	ND<1	ND<1	ND<1	ND<1.4	1.1	ND<2	ND<5
	06/14/2002	98.08	14.01	84.07	ND<1.0	ND<1.0	ND<1.0	ND<1.0	7.5	ND<2.0	ND<5.0
	09/13/2002	98.08	24.67	73.41	ND<1.0	ND<1.0	ND<1.0	ND<1.0	1.2	ND<2.0	ND<5.0
	10/30/2002	98.08	20.38	77.70	ND<1.0	ND<1.0	ND<1.0	ND<1.0	1.6	ND<2.0	ND<5.0
	03/05/2003	98.08	10.68	87.40	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	05/08/2003	98.08	11.25	86.83	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0
	08/06/2003	98.08	13.75	84.33	<1.0	<5.0	<5.0	<10	9.8	<5.0	<5.0
	10/24/2003	98.08	20.63	77.45	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	01/16/2004	98.08	10.46	87.62	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	04/14/2004	98.08	9.86	88.22	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	07/15/2004	98.08	18.63	79.45	<1.0	<5.0	<5.0	<10	5.0	<5.0	<5.0
	10/04/2004	98.94	13.99	84.95	ND<3	ND<4	ND<4	ND<4	**100**	ND<5	ND<5
	01/13/2005	98.94	10.98	87.96	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	04/20/2005	98.94	9.81	89.13	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	07/15/2005	98.94	16.05	82.89	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	98.94	24.61	74.33	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/20/2005	98.94	24.51	74.43	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	98.94	13.81	85.13	ND<1.0	ND<1.0	ND<1.0	ND<3.0	**89.6**	ND<1.0	ND<2.0
	02/10/2006	98.94	10.46	88.48	ND<1.0	ND<1.0	ND<1.0	ND<3.0	7.4	ND<1.0	ND<2.0
	05/15/2006	98.94	21.19	77.75	ND<1.0	ND<1.0	ND<1.0	ND<3.0	2.2	ND<1.0	ND<2.0
	08/18/2006	98.94	21.72	77.22	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	11/15/2006	98.94	11.25	87.69	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	03/30/2007	98.94	10.11	88.83	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	05/17/2007	98.94	10.75	88.19	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	98.94	23.45	75.49	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/04/2007	98.94	24.61	74.33	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	01/28/2008	98.94	14.36	84.58	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/07/2008	98.94	10.75	88.19	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	98.94	15.57	83.37	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	98.94	24.59	74.35	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	02/03/2009	98.94	14.42	84.52	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/06/2009	98.94	19.55	79.39	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	98.94	11.00	87.94	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-5	12/09/2004	99.55	12.52	87.03	ND<1	ND<1	ND<1	ND<1	5	ND<5	ND<5
	01/13/2005	99.55	11.77	87.78	ND<1	ND<1	ND<1	ND<1	14	ND<5	ND<5
	04/20/2005	99.55	10.55	89.00	ND<1.0	ND<1.0	ND<1.0	ND<3.0	5.0	ND<1.0	ND<2.0
	07/15/2005	99.55	16.22	83.33	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	99.55	26.92	72.63	ND<1.0	ND<1.0	ND<1.0	ND<3.0	1.9	ND<1.0	ND<2.0
	09/20/2005	99.55	30.02	69.53	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	99.55	14.32	85.23	ND<1.0	ND<1.0	ND<1.0	4.1	**648**	ND<1.0	ND<2.0
	02/10/2006	99.55	11.38	88.17	ND<1.0	ND<1.0	ND<1.0	ND<3.0	**34.0**	ND<1.0	ND<2.0
	05/15/2006	99.55	22.42	77.13	ND<1.0	ND<1.0	ND<1.0	ND<3.0	2.1	ND<1.0	ND<2.0
	08/18/2006	99.55	23.15	76.40	ND<1.0	ND<1.0	ND<1.0	ND<3.0	1.5	ND<1.0	ND<2.0
	11/15/2006	99.55	11.72	87.83	ND<1.0	ND<1.0	ND<1.0	ND<3.0	1.3	ND<1.0	ND<2.0
	03/30/2007	99.55	10.92	88.63	ND<1	ND<1	ND<1	ND<1	2	ND<2	ND<4
	05/17/2007	99.55	11.35	88.20	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	99.55	24.65	74.90	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/04/2007	99.55	36.25	63.30	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	01/28/2008	99.55	15.32	84.23	ND<1	ND<1	ND<1	ND<1	1	ND<2	ND<4
	04/07/2008	99.55	11.66	87.89	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	99.55	16.33	83.22	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	99.55	32.92	66.63	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	02/03/2009	99.55	15.25	84.30	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/06/2009	99.55	19.88	79.67	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	99.55	11.72	87.83	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
MW-6	12/09/2004	99.72	12.69	87.03	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	01/13/2005	99.72	11.85	87.87	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	04/20/2005	99.72	10.70	89.02	ND<1.0	ND<1.0	ND<1.0	ND<3.0	2.0	ND<1.0	ND<2.0
	07/15/2005	99.72	16.39	83.33	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	99.72	27.10	72.62	NA	NA	NA	NA	NA	NA	NA
	09/20/2005	99.72	29.88	69.84	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	99.72	14.47	85.25	ND<1.0	ND<1.0	ND<1.0	ND<3.0	13.8	ND<1.0	ND<2.0
	02/10/2006	99.72	11.40	88.32	ND<1.0	ND<1.0	ND<1.0	ND<3.0	2.3	ND<1.0	ND<2.0
	05/15/2006	99.72	21.25	78.47	ND<1.0	ND<1.0	ND<1.0	ND<3.0	8.7	ND<1.0	ND<2.0
	08/18/2006	99.72	22.29	77.43	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	11/15/2006	99.72	12.05	87.67	ND<1.0	ND<1.0	ND<1.0	ND<3.0	1.1	ND<1.0	ND<2.0
	03/30/2007	99.72	11.06	88.66	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	05/17/2007	99.72	11.52	88.20	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	99.72	23.45	76.27	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/04/2007	99.72	36.06	63.66	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	01/28/2008	99.72	15.50	84.22	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/07/2008	99.72	11.68	88.04	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	99.72	16.45	83.27	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	99.72	32.57	67.15	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	02/03/2009	99.72	15.54	84.18	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/06/2009	99.72	19.85	79.87	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	99.72	11.93	87.79	ND<1	ND<1	ND<1	2	ND<1	ND<2	ND<4

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-7	12/09/2004	99.20	15.39	83.81	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	01/13/2005	99.20	14.63	84.57	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	04/20/2005	99.20	14.48	84.72	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	07/15/2005	99.20	20.15	79.05	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	99.20	29.81	69.39	NA	NA	NA	NA	NA	NA	NA
	09/20/2005	99.20	32.85	66.35	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	99.20	18.81	80.39	ND<1.0	1.7	ND<1.0	ND<3.0	60.8	ND<1.0	ND<2.0
	02/10/2006	99.20	15.83	83.37	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	05/15/2006	99.20	25.99	73.21	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	08/18/2006	99.20	27.13	72.07	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	11/15/2006	99.20	15.85	83.35	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	03/30/2007	99.20	14.20	85.00	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	05/17/2007	99.20	16.23	82.97	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	99.20	28.54	70.66	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/04/2007	99.20	38.36	60.84	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	01/28/2008	99.20	19.96	79.24	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/07/2008	99.20	16.03	83.17	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	99.20	20.64	78.56	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	99.20	36.20	63.00	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	02/03/2009	99.20	19.40	79.80	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/06/2009	99.20	23.41	75.79	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	99.20	15.99	83.21	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
MW-8	03/30/2007	97.78	11.25	86.53	ND<1	ND<1	ND<1	ND<1	17	ND<2	ND<4
	05/17/2007	97.78	13.18	84.60	ND<1	ND<1	ND<1	ND<1	14	ND<2	ND<4
	08/02/2007	97.78	26.55	71.23	ND<1	ND<1	ND<1	ND<1	11	ND<2	ND<4
	10/04/2007	97.78	36.96	60.82	ND<1	ND<1	ND<1	ND<1	5	ND<2	ND<4
	01/28/2008	97.78	17.20	80.58	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/07/2008	97.78	13.62	84.16	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	97.78	18.54	79.24	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	97.78	34.12	63.66	ND<1	ND<1	ND<1	ND<1	4	ND<2	ND<4
	02/03/2009	97.78	18.11	79.67	ND<1	ND<1	ND<1	ND<1	5	ND<2	ND<4
	04/06/2009	97.78	21.84	75.94	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	97.78	14.55	83.23	ND<1	ND<1	ND<1	ND<1	1	ND<2	ND<4

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-9	03/30/2007	98.68	11.45	87.23	ND<1	ND<1	ND<1	ND<1	7	ND<2	ND<4
	05/17/2007	98.68	13.80	84.88	ND<1	ND<1	ND<1	ND<1	6	ND<2	ND<4
	08/02/2007	98.68	27.02	71.66	ND<1	ND<1	ND<1	ND<1	2	ND<2	ND<4
	10/04/2007	98.68	37.70	60.98	ND<1	ND<1	ND<1	ND<1	5	ND<2	ND<4
	01/28/2008	98.68	18.56	80.12	ND<1	ND<1	ND<1	ND<1	3	ND<2	ND<4
	04/07/2008	98.68	14.48	84.20	ND<1	ND<1	ND<1	ND<1	4	ND<2	ND<4
	07/01/2008	98.68	19.51	79.17	ND<1	ND<1	ND<1	ND<1	3	ND<2	ND<4
	10/08/2008	98.68	35.29	63.39	ND<1	ND<1	ND<1	ND<1	1	ND<2	ND<4
	02/03/2009	98.68	18.71	79.97	ND<1	ND<1	ND<1	ND<1	2	ND<2	ND<4
	04/06/2009	98.68	22.87	75.81	ND<1	ND<1	ND<1	ND<1	2	ND<2	ND<4
	07/08/2009	98.68	15.27	83.41	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
MW-10	03/30/2007	98.44	10.64	87.80	ND<1	ND<1	ND<1	ND<1	2	ND<2	ND<4
	05/17/2007	98.44	11.09	87.35	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	98.44	24.60	73.84	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/04/2007	98.44	36.03	62.41	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	01/28/2008	98.44	15.06	83.38	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/07/2008	98.44	11.22	87.22	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	98.44	16.10	82.34	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	98.44	33.22	65.22	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	02/03/2009	98.44	15.98	82.46	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/06/2009	98.44	19.67	78.77	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	98.44	11.49	86.95	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4

=AVERAGE(D3:D304)

<# = Less than the method detection limit of #
µg/L = Micrograms/liter
DRY = No water for sampling
MTBE = Methyl tertiary butyl ether
NA = Not Available or not analyzed for that specific compound
ND = Not detected (# is method detection limit)
NS = Not Sampled

APPENDIX A

Krista Snyder

From: Mapleton, Lauren [lmapleton@state.pa.us]
Sent: Tuesday, January 26, 2010 3:41 PM
To: Krista Snyder
Subject: Sun at York Road

Krista,

Walter Payne and I tried to call you today. We wanted to talk about the requirement to maintain a cap over the former dispenser area that is parallel to York Road due to the benzene exceedance in soil versus providing proof a cap is not needed. Don't know your schedule, but we need to talk about this so we can bring this case to closure.

Let me know when is a good time to contact you.

Lauren

Lauren T. Mapleton | Geologic Specialist Department of Environmental Protection Southeast Regional Office
2 East Main Street | Norristown, PA 19401
Phone: 484.250.5783| Fax: 484.250.5961
www.depweb.state.pa.us

SOIL CONTAMINANT MIGRATION
EQUILIBRIUM PARTITIONING

Recharge rate in cm/year	25.120
Soil bulk density in g/cc	2.00
Water-filled porosity of soil	0.20
Apparent partition coefficient Kapp (ml/g)	0.60
Depth increment in feet	1.00
Time increment in months	3.29

Soil depth increment	SI	Time Increment 1			Time Increment 2			Time Increment 3			Time Increment 4			Time Increment 5			Time Increment 6			Time Increment 7			Time Increment 8		
	Cmix1 initial ng/kg	Caqueous ng/l	Cmorb ng/kg	Cmix1 ng/kg	Caqueous total ng/kg	Cmorb ng/kg	Cmix1 ng/kg	Caqueous total ng/kg	Cmorb ng/kg	Cmix1 ng/kg	Caqueous total ng/kg	Cmorb ng/kg	Cmix1 ng/kg	Caqueous total ng/kg	Cmorb ng/kg	Cmix1 ng/kg	Caqueous total ng/kg	Cmorb ng/kg	Cmix1 ng/kg	Caqueous total ng/kg	Cmorb ng/kg	Cmix1 ng/kg	Caqueous total ng/kg	Cmorb ng/kg	Cmix1 ng/kg
1	0.00	2E-01	2E-01	7E-01	7E-01	2E-01	2E-01	7E-01	7E-01	2E-01	2E-01	7E-01	7E-01	2E-01	2E-01	7E-01	7E-01	2E-01	2E-01	7E-01	7E-01	2E-01	2E-01	7E-01	7E-01	2E-01	2E-01	7E-01	7E-01
2	0.00	0E+00	0E+00	0E+00	8E-03	2E-03	2E-03	8E-03	2E-03	4E-03	4E-03	2E-02	6E-03	4E-03	4E-03	2E-02	6E-03	6E-03	6E-03	2E-02	8E-03	5E-03	1E-02	4E-02	6E-03	5E-03	1E-02	4E-02	6E-03
3	0.00	0E+00	1E+00	0E+00	0E+00	0E+00	1E+00	0E+00	0E+00	2E-05	2E-05	8E-05	5E-04	7E-05	7E-05	3E-04	5E-04	1E-04	1E-04	5E-04	8E-04	1E-03	3E-04	1E-03	2E-03	3E-04	3E-04	1E-03	2E-03
4	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	9E-07	9E-07	2E-07	2E-07	3E-07	6E-06	1E-06	1E-06	6E-06	9E-06	2E-06	2E-06	9E-06	2E-05	5E-06	5E-06	2E-05	3E-05
5	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	1E-08	2E-08	3E-08	3E-08	1E-08	5E-08	3E-08	3E-08	1E-07	4E-08	4E-08	4E-07	9E-08	4E-07	7E-07
6	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
7	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
8	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
9	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
10	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
11	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
12	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
13	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
14	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
15	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
16	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
17	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
18	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
19	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
20	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
21	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
22	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
23	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
24	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
25	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
26	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
27	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
28	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
29	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
30	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
31	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
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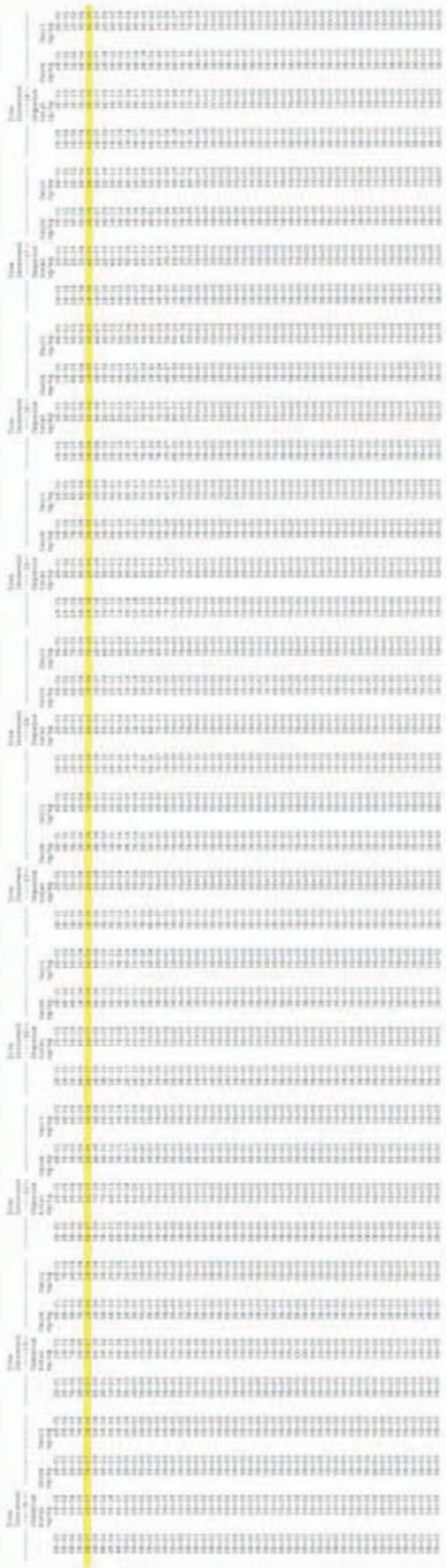
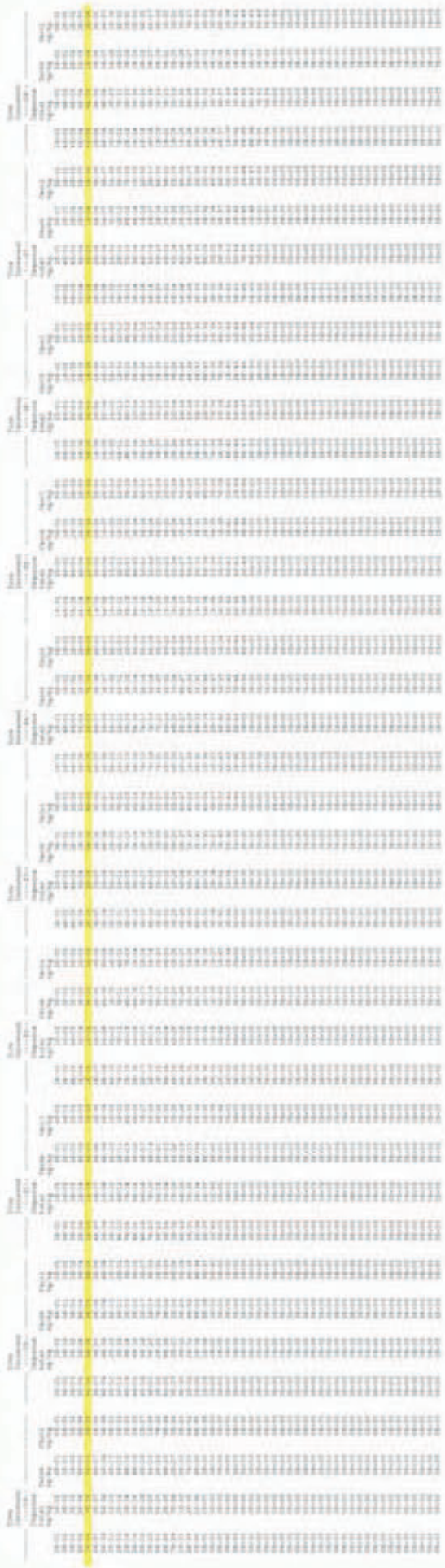
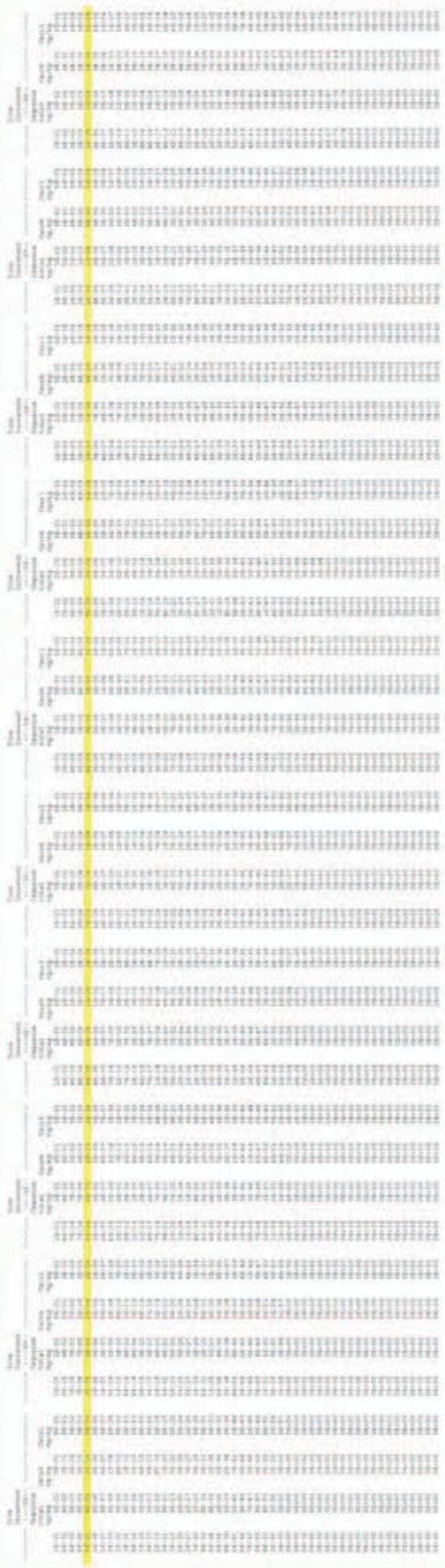
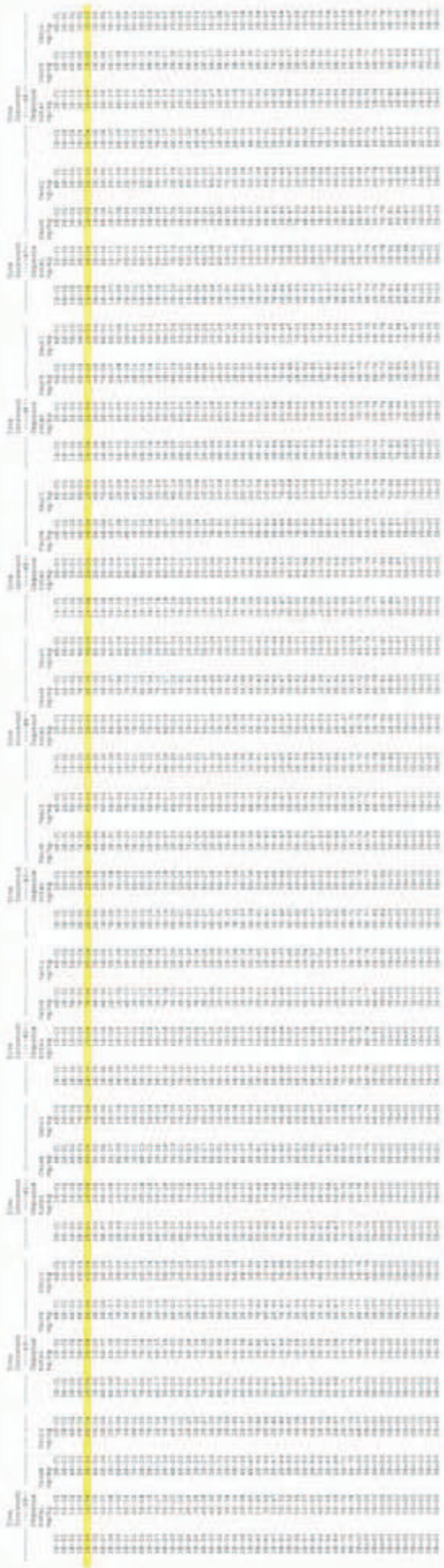
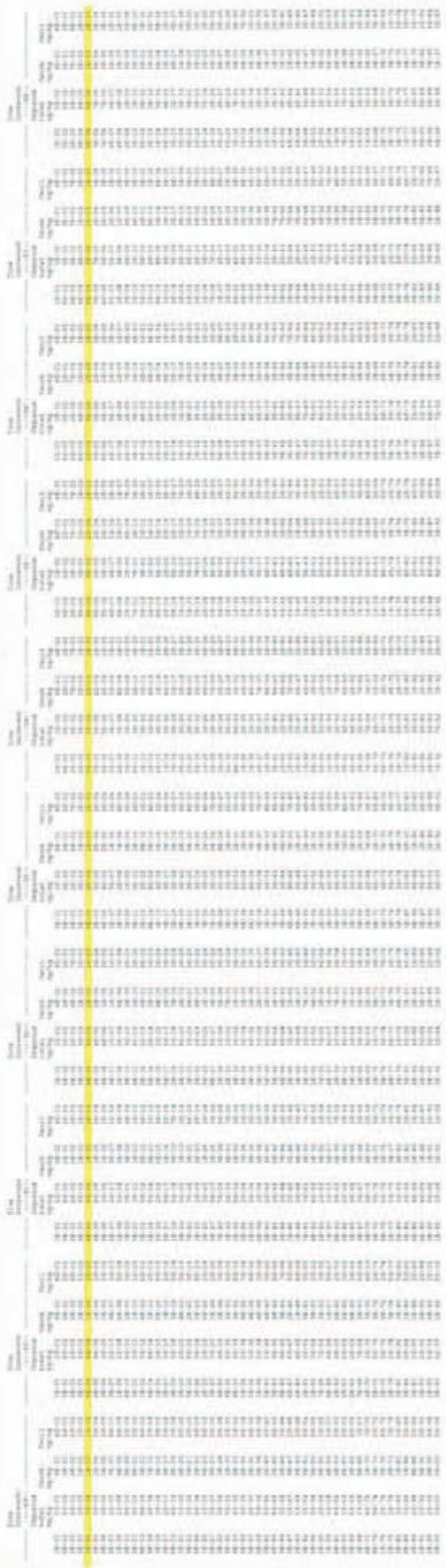
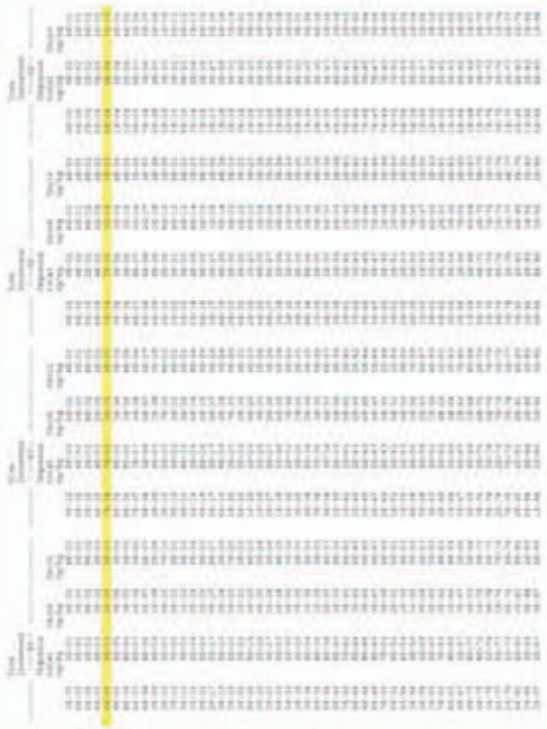


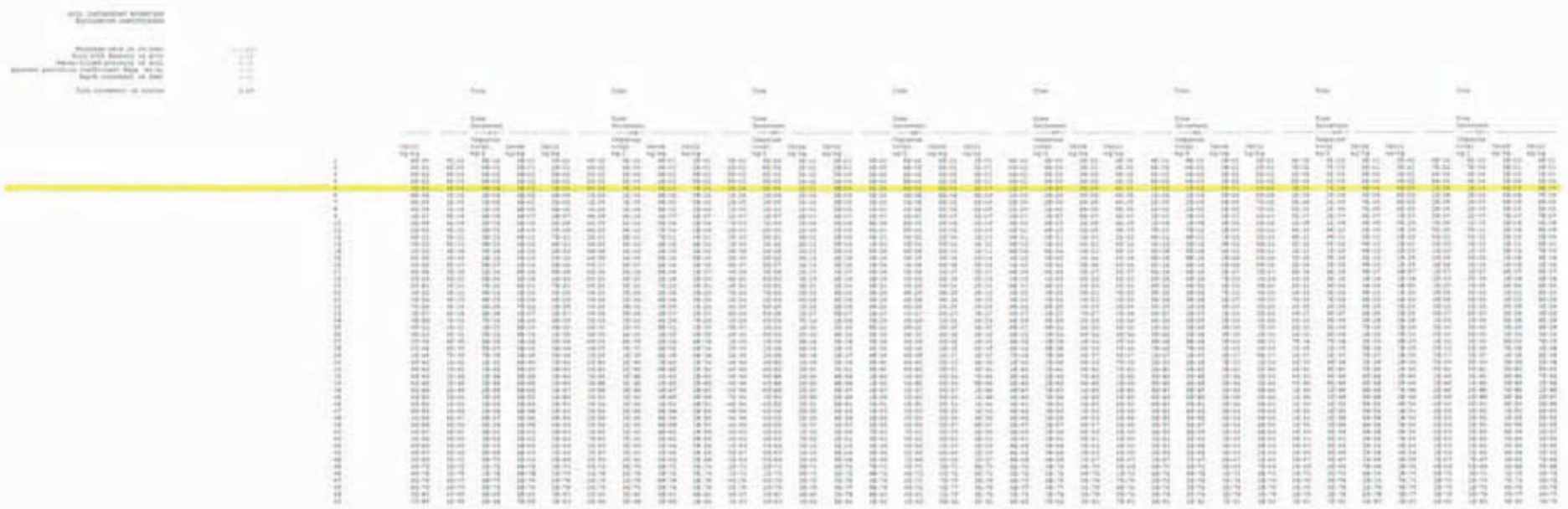


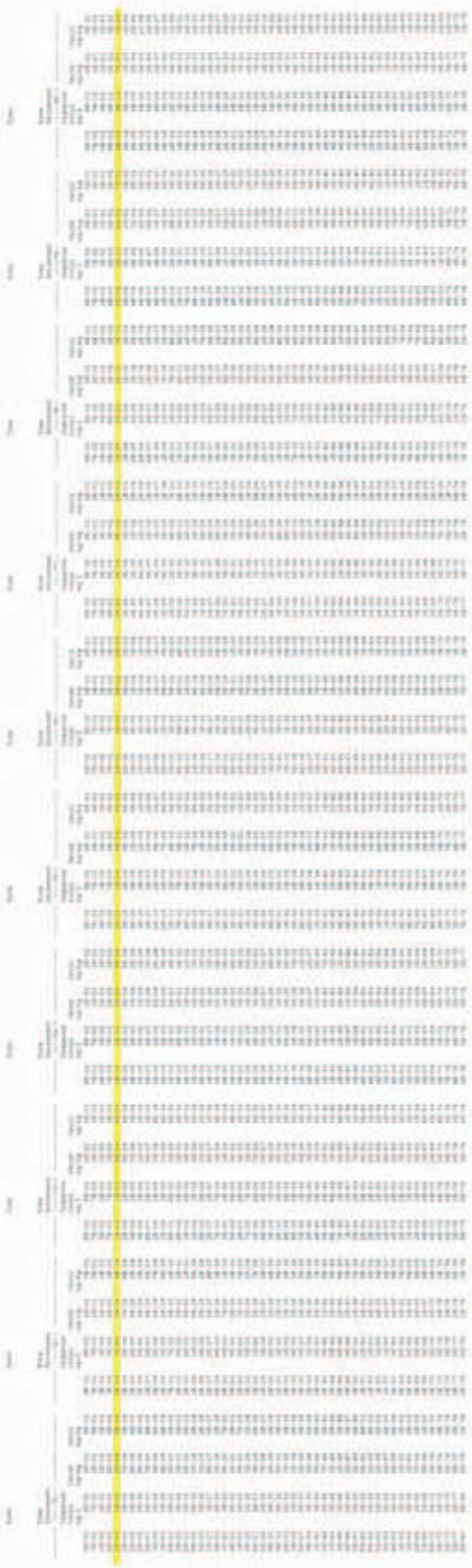


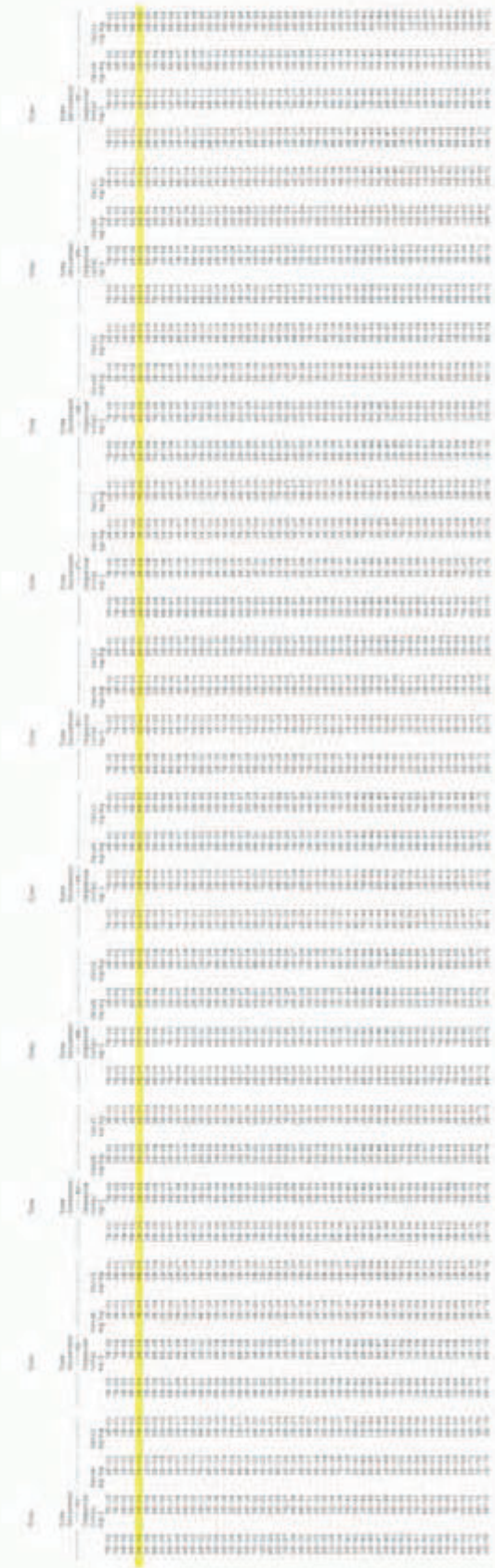


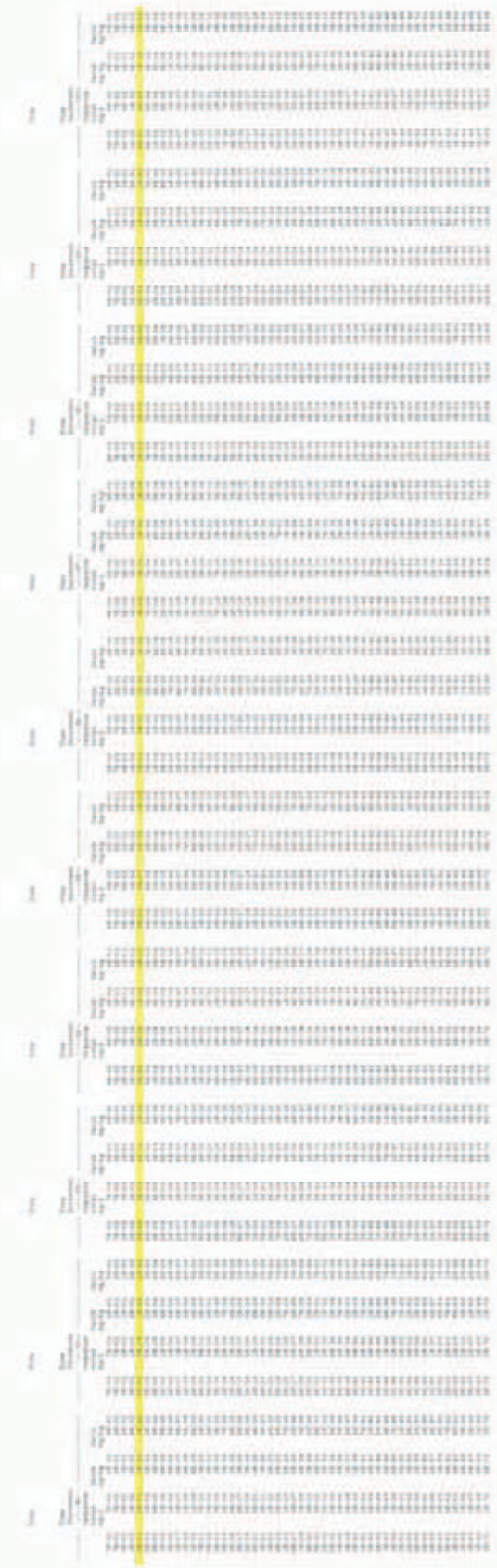


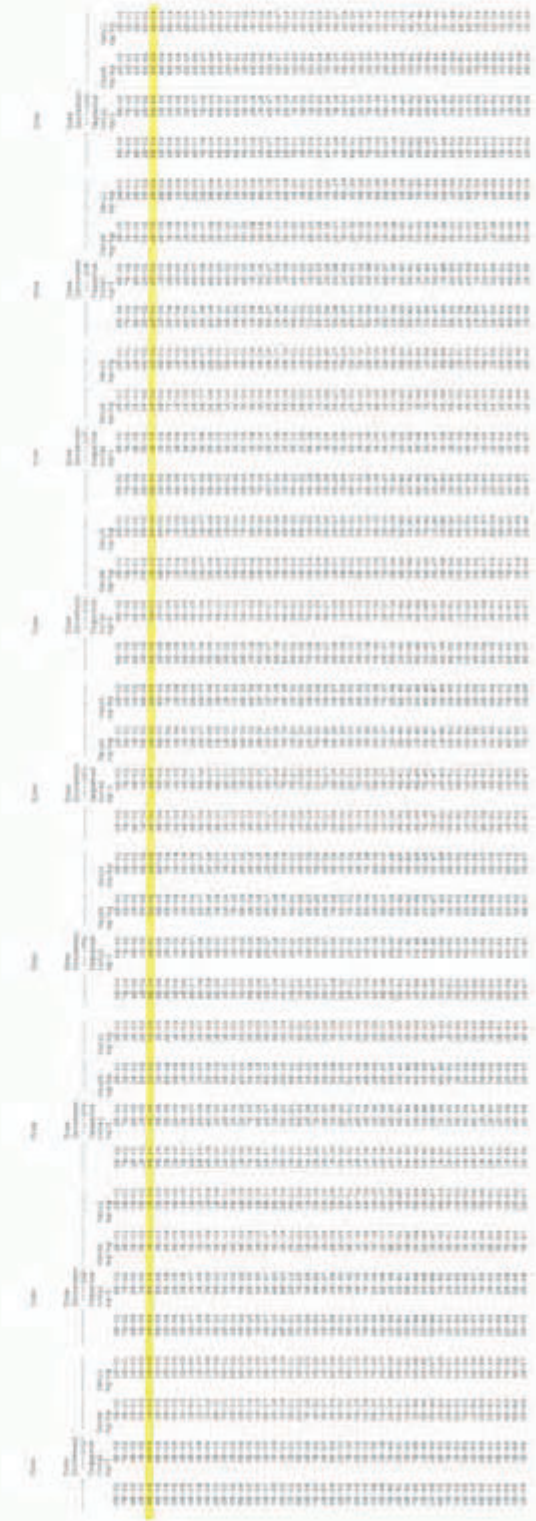












Prepared by:
Groundwater and Environmental Services, Inc.
440 Creamery Way, Suite 500
Exton, PA 19341
(610) 458-1077

Return to:
Groundwater and Environmental Services, Inc.
440 Creamery Way, Suite 500
Exton, PA 19341
Attn: Krista Snyder
(610) 458-1077 ext. 3068

The County Parcel Identification No. of the Property is: 49009046
GRANTOR: Sunoco, Inc.
PROPERTY ADDRESS: 610 York Road, Warminster, Pennsylvania

ENVIRONMENTAL COVENANT

This Environmental Covenant is executed pursuant to the Pennsylvania Uniform Environmental Covenants Act, Act No. 68 of 2007, 27 Pa. C.S. §§ 6501 – 6517 (UECA). This Environmental Covenant subjects the Property identified in Paragraph 1 to the activity and/or use limitations in this document. As indicated later in this document, this Environmental Covenant has been approved by the Pennsylvania Department of Environmental Protection (Department).

1. **Property affected**. The property affected (Property) by this Environmental Covenant is located in the Township of Warminster, Bucks County.

The postal street address of the Property is: 610 York Road, Warminster, PA. The tax assessment street address of the Property is: 610 York Road, Warminster, PA.

The latitude and longitude of the center of the Property affected by this Environmental Covenant is: 40° 12' 36.6" N, 75° 05' 58.2" W.

The Property has been known by the following name(s): Sunoco Station #0363-5430 with PADEP Facility ID #09-30778.

A complete description of the Property is attached to this Environmental Covenant as Exhibit A. A map of the Property is attached to this Environmental Covenant as Exhibit B.

2. **Property Owner / GRANTOR**. Sunoco, Inc. (R&M) is the owner of the Property. The mailing address of the Owner is:
1735 Market Street, STE LL, Philadelphia, Pennsylvania, 19103-7583.

3. **Holder(s) / GRANTEE**. The following is a "holder," as that term is defined in 27 Pa. C.S. § 6502, of this Environmental Covenant:
Sunoco Inc. (R&M)
Philadelphia, PA 19103

4. **Description of Contamination & Remedy**. The following describes the contamination and remedy of the property.

Groundwater sampling was initiated at the site in March 1996, at which time a groundwater monitoring program was initiated. Dissolved-phase hydrocarbons were detected at concentrations above the Department Statewide Health Standards (SHS) in the monitoring wells. This monitoring program continued until July 2009.

During underground storage tank (UST) closure activities in 1995 and 1996, soils samples were collected at depths ranging from one to 12 feet. Soil analytical results demonstrated that benzene was detected at concentrations above the Department SHS in soil samples collected beneath known USTs, pre-Act 2 USTs, and dispenser islands. None of the remaining target parameters (toluene, ethylbenzene, and total xylenes) were detected at concentrations greater than the Department SHS during the UST closure activities. During the 2007 monitoring well installation, benzene was detected at concentrations above the Department SHS in two soil samples. The remaining target parameters (toluene, ethylbenzene, total xylenes, methyl tertiary butyl ether (MTBE), isopropylbenzene, and naphthalene) were not detected or were detected at concentrations below the Department SHS.

Remediation was initiated at this site in April 2005, with a chemical oxidation high-intensity targeted (HIT) remediation event in which approximately 450 gallons of 7 to 8% solution of hydrogen peroxide were injected into monitoring wells MW-1, MW-3, and MW-5.

Following active remediation, the dissolved-phase hydrocarbon impact was detected primarily in monitoring wells MW-1 through MW-3, located in the vicinity of the former pre-Act 2 UST field and former dispenser islands along York Road. Dissolved hydrocarbons continued to exhibit decreasing trends. During post-remediation groundwater monitoring and sampling, benzene, MTBE, and naphthalene were detected at concentrations and/or had a laboratory detection limit above the Department SHS. During attainment groundwater monitoring and sampling, benzene was detected at concentrations above the Department SHS and/or had a laboratory detection limit above the Department SHS in monitoring well MW-2, located in the vicinity of the former dispenser islands along York Road; however, fate and transport modeling did not predict off-site migration of the hydrocarbon plume.

The environmental activities conducted at this site were in accordance with the Site Characterization Report prepared by Handex of Eastern Pennsylvania dated May 28, 1996, the Additional SCR / Remedial Action Plan (ASCR/RAP) prepared by GES dated January 6, 2006, and the Remedial Action Completion Report (RACR) prepared by GES dated October 1, 2009.

The Site Characterization Report (dated May 28, 1996), the Additional SCR / Remedial Action Plan (ASCR/RAP) (dated January 6, 2006), and the Remedial Action Completion Report (RACR) (dated October 1, 2009) were developed in accordance with applicable sections of Pennsylvania's Storage Tanks, Corrective Action Regulations (Title 25, Chapter 245), as well as the Land Recycling and Environmental Remediation Standards Act (Title 25, Chapter 250). The complete file, including the above-mentioned reports, is available at the Department's Southeast Regional Office located at 2 East Main Street in Norristown, Pennsylvania.

5. **Activity & Use Limitations**. The Property is subject to the following activity and use limitations, which the Owner and each subsequent owner of the Property shall abide by:

(a) The groundwater at or under the property shall not be used for drinking or agricultural purposes.

b) The Owner shall prohibit residential use of the Property without first obtaining written approval from the Department.

6. **Notice of Limitations in Future Conveyances**. Each instrument hereafter conveying any interest in the Property subject to this Environmental Covenant shall contain a notice of the activity and use limitations set forth in this Environmental Covenant and shall provide the recorded location of this Environmental Covenant.

7. **Compliance Reporting**. The owner and each subsequent owner of the Property shall submit to the Department written documentation confirming that the activity and use limitations in this Environmental Covenant are being complied with following transfer of the Property. In addition, the Owner or subsequent owner shall, as appropriate, notify the Department concerning proposed changes in use of the Property, filing of applications for building permits for the Property or proposals for any work at the Property which affect the contamination on the Property subject to this Environmental Covenant. The Owner and each subsequent owner shall also submit, to the Department, written documentation concerning the use of the property and compliance with this Environmental Covenant upon request by the Department.

8. **Access by the Department**. In addition to any rights already possessed by the Department, this Environmental Covenant grants to the Department a right of

access of the Property in connection with implementation or enforcement of this Environmental Covenant.

9. **Recordation & Proof & Notification**. Within 30 days after the date of the Department's approval, the Owner shall file this Environmental Covenant with the Recorder of Deeds for each County in which the Property is located, and send a file-stamped copy of this Environmental Covenant to the Department within 60 days recordation. Within that time period, the Owner also shall send a file-stamped copy to each of the following: each Municipality and County in which the Property is located; any Holder identified in this Environmental Covenant; each person holding a recorded interest in the Property; and each person in possession of the Property.

10. **Termination or Modification**. This Environmental Covenant may only be terminated or modified in accordance with Section 9 of UECA, 27 Pa. C.S. § 6509, including as follows:

> In accordance with Section 10 of UECA, 27 Pa. C.S. § 6510(a)(3)(i), Grantor hereby waives the right to consent to any amendment or termination of the Environmental Covenant by consent; it being intended that any amendment to or termination of this Environmental Covenant by consent in accordance with this Paragraph requires only the following signatures on the instrument amending or terminating this Environmental Covenant: (i) the Holder at the time of such amendment or termination; (ii) the then current owner of the Property and (iii) the Department.]

11. **Department's address**. Communications with the Department regarding this Environmental Covenant shall be sent to:

ECP Manager
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

ACKNOWLEDGMENTS by Owner(s) and any Holder(s), in the following form:

Sunoco, Inc. (R&M), "Grantor"

Date: By: _____

Name: _____

Title: _____

COMMONWEALTH OF PENNSYLVANIA)[other state, if executed outside PA]

)

COUNTY OF _____) SS:

On this ___ day of _____, 20__, before me, the undersigned officer, personally appeared _____ [Owner, Grantor] who acknowledged himself/herself to be the person whose name is subscribed to this Environmental Covenant, and acknowledged that s/he executed same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

_____

Notary Public

EXHIBIT A

DESCRIPTION OF PROPERTY

The site, located at the intersection of York Road (Route 263) and Street Road in Warminster, Pennsylvania (40° 12' 36.6" N, 75° 05' 58.2" W), is currently owned by Sunoco, Inc. (R&M), and is currently utilized as a retail gasoline facility and convenience store.

The property is zoned as commercial. The currently existing features at the site include a one-story station building and convenience store, four gasoline dispenser islands, three unleaded gasoline underground storage tanks (USTs), and associated subsurface piping. The UST area and dispenser island area are covered with a concrete pad. Removal and closure of fuel oil and waste oil underground storage tanks (USTs), removal of six gasoline dispenser islands, and removal of four pre-Act 2 unleaded gasoline USTs took place between November 1995 and February 1996. The former pre-Act 2 UST tank field and dispenser island areas are comprised of clean fill material and have been resurfaced. Grass and landscaping exists at the intersection of York Road and Street Road as well as behind the station building. The remaining portion of the site is covered in asphalt. There are numerous utility lines located at the site which include sub-grade public water, natural gas, telephone, and sanitary sewer. Ten monitoring wells (MW-1 through MW-10) comprise the monitoring well network and are located on-site. There are also three soil vapor points (SG-1 through SG-3) on-site. These well and soil-gas points will be properly abandoned upon approval of the Remedial Action Completion Report (RACR) (dated October 1, 2009). A site map showing property boundaries and pertinent current and former site features is included as **Exhibit B**.

ALL THAT CERTAIN piece or parcel of land with the buildings and improvements erected thereon situate in the Township of Warminster, County of Bucks, Commonwealth of Pennsylvania, more particularly described in accordance with a survey and plan thereof made of William S. Erwin, Registered Professional Engineer of Langhorne, Pennsylvania, dated December 10, 1954, as follows, to wit:

BEGINNING at a point in the middle line of Street Road (also known as Pennsylvania Traffic Route No. 132) (33 feet wide) at the distance of 16.70 feet North 50 degrees 30 minutes West of the intersection of the said center line of Street Road with the middle line of Old York Road (also known as United States Traffic Route No 611) (45 feet wide): extending thence (1) North 08 degrees 52 minutes 30 seconds East along a line in said Old York Road distant 8.13 feet Westwardly from and running parallel with the middle line thereof 264.00 feet to a point; thence (2) across said Old York Road North 54 degrees 17 minutes West 9.12 feet to a monument set in a Northwesterly line thereof and continuing thence still North 54 degrees 17 minutes West along line of land now or late of Agnes Taylor 158 feet to a field stone in line of land now or late of Elise Naylor; thence (3) South 39 degrees 15 minutes West along said line of land now or late of said Elsie Naylor 216.15 feet to a railroad spike in the said middle line of said Street Road; and thence (4) South 50 degrees 30 minutes East along said middle line of said Street Road 300.30 feet to the point and place of beginning.

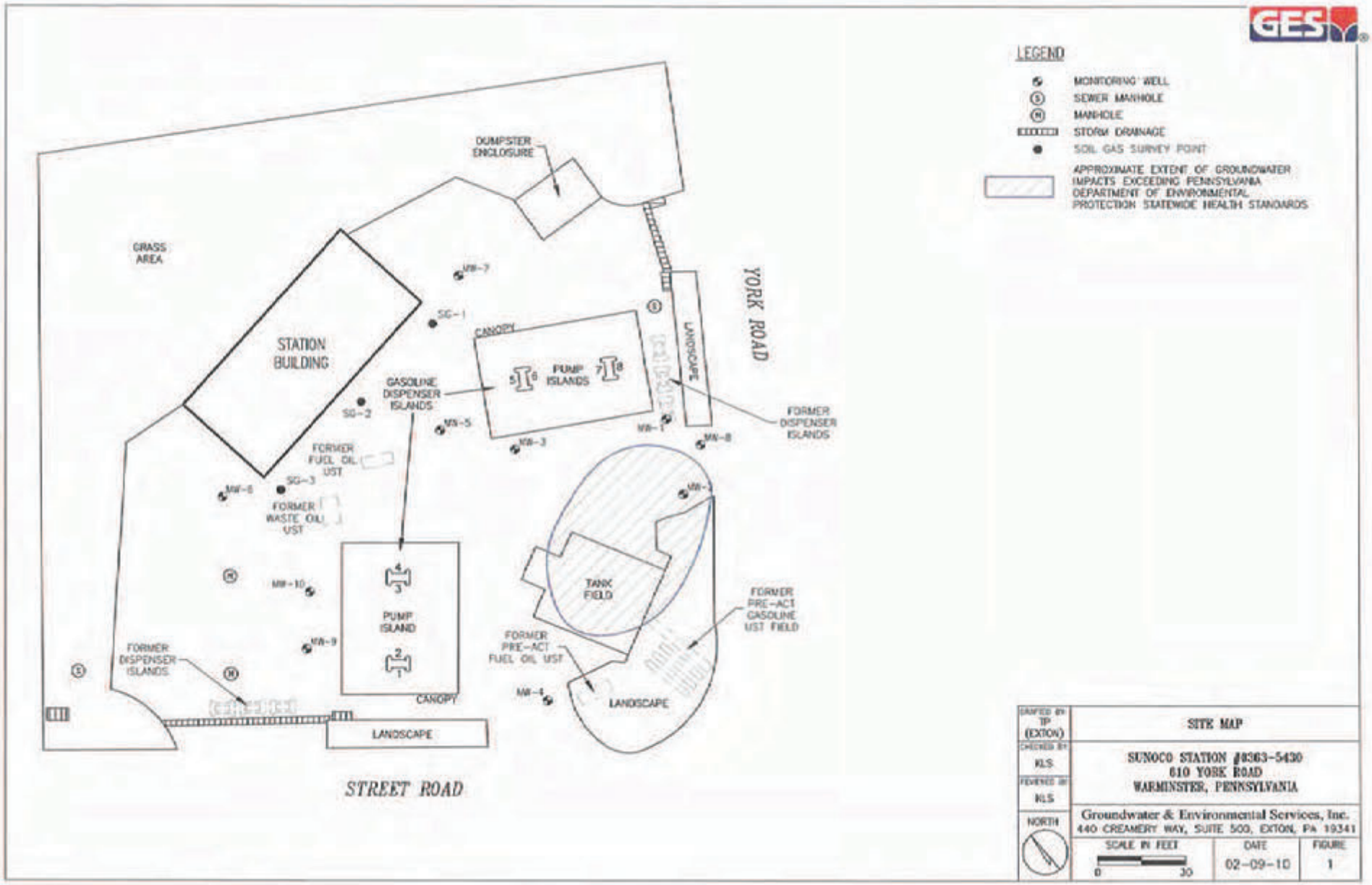
CONTAINING 1.197 acres, more or less.

COUNTY PARCEL NUMBER 49-9-46

BEING the same premises which Charles Schultz and Clara A. Schultz, his wife by Deed dated December 30, 1954 and recorded in Bucks County, in Deed Book 1210 page 238 conveyed unto The Atlantic Refining Company, a Pa. Corp., in fee. And the said Atlantic Refining Company is now known as the Atlantic Richfield Company.

EXHIBIT B

SITE MAP



DRAFTED BY: TP (EXTON)	SITE MAP
CHECKED BY: KLS	SUNOCO STATION #8363-5430 610 YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: KLS	Groundwater & Environmental Services, Inc. 440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 30 / DATE: 02-09-10 / FIGURE: 1

Supplemental Information for Site Characterization Report Addendum/Remedial Action Completion Report Addendum

GES - July 20, 2010

Groundwater
& Environmental Services, Inc.

440 Creamery Way • Suite 500 • Exton, Pennsylvania 19341 • (610) 458-1077 • Fax (610) 458-2300

July 20, 2010

Ms. Lauren Mapleton
Pennsylvania Department of Environmental Protection
Environmental Cleanup Program
Southeastern Regional Office
2 East Main Street
Norristown, Pennsylvania 19401

Re: Supplemental Information for Site Characterization Report Addendum/ Remedial Action Completion Report Addendum
Sunoco Station #0363-5430
610 York Road
Warminster, PA
Facility Id #: 09-30778

Dear Ms. Mapleton:

Groundwater & Environmental Services, Inc. (GES), on behalf of Sunoco, Inc, (R&M) is providing this supplemental information for the Site Characterization Report Addendum / Remedial Action Completion Report (SCRA/ RACR) that was submitted to the Pennsylvania Department of Environmental Protection (PADEP) on October 1, 2009. This report included a draft Environmental Covenant (EC) for the subject property. On January 26, 2010, Lauren Mapleton of PADEP stated in email correspondence that maintenance of an impervious cap or proof that an impervious cap is not needed would have to be included as part of the EC for the subject property to obtain site closure.

To demonstrate that an impervious cap will not need to be included as an activity and use limitation for the property in the EC, GES completed additional modeling efforts to evaluate the potential vertical migration of benzene if the asphalt cap were to be removed and surface waters were able to infiltrate the overburden soils. To model this vertical migration, GES utilized the BUFFER1 spreadsheet available on the PADEP website. Soil sample Disp-2 is the only historic soil sample that was considered for this modeling effort since it is the only historic soil sample that is covered in asphalt (impervious surface). All the other historic soil samples that have exhibited a benzene exceedance above the PADEP Statewide Health Standard (SHS) are located in landscaped areas. Soil sample locations are shown on **Figure 1** and historic soil analytical data are shown on **Table 1**. These additional modeling efforts were submitted to PADEP as part of the SCRA/RACR Addendum dated April 8, 2010.

On June 14, 2010, in response to the April 8, 2010 SCRA/RACR Addendum, Ms. Lauren Mapleton of PADEP requested that the input parameter value used for recharge rate be revised to take infiltration of rainfall in the vicinity of the site into account. Additionally, Ms. Mapleton requested that soil bulk density and porosity input parameters reflective of the overburden soils at the site be utilized (input parameters for shallow bedrock were previously utilized) (**Appendix A**). As a result, GES has completed

additional modeling efforts. The following describes the input parameters of the BUFFER1 spreadsheet and the values applied in the model.

Recharge Rate (cm/year)
The site is located in the Neshaminy River watershed; therefore, a recharge rate was obtained from United States Geological Survey (USGS) data for a stream gauging point located in the Neshaminy Creek near Langhorne, PA. According to data collected by USGS, the mean annual recharge for this stream location ranged from 9.5 to 11.5 inch per year (in/yr). In order to be conservative, the recharge rate within the aquifer was estimated to be 11.5 in/yr, which is equivalent to 29.21 cm/year. A copy of USGS data is attached as **Appendix B.**

Soil Bulk Density
The site is underlain by approximately seven feet of unconsolidated material primarily consisting of silt, sand, and clay. Therefore, a soil bulk density representative of silt (1.38 g/cm^3) was used in the model.[1]

Water-Filled Porosity of Soil
The site is underlain by approximately seven feet of unconsolidated material primarily consisting of silt, sand, and clay. In order to be conservative, a water-filled porosity value representative of both sand and silt (0.40) was used in the model.[2]

Apparent Partition Coefficient Kapp (ml/g)
The apparent partition coefficient is defined in the BUFFER1 spreadsheet guidance document provided by PADEP as the ratio of Csorb (contaminant concentration that is non-aqueous in mg/kg) to Caq (aqueous concentration of contaminant in mg/L). For this ratio, the historic high concentration of benzene in monitoring well MW-1 (adjacent to soil sample Disp-1) was utilized for Caq (0.184 mg/L). The benzene concentration in soil sample Disp-2 (Csorb) is 0.700 mg/kg; therefore the ratio of Csorb to Caq is 3.8, which was utilized in the model.

Depth Increment (feet)
Soil sample Disp-2 was collected from one foot below ground surface, directly under a former dispenser island. The benzene concentration in this soil sample is relatively close to the PADEP SHS; therefore, a depth increment of one foot for benzene is utilized in the modeling effort, assuming that the impacted soils are between one and two feet below grade.

Csoil Initial
An initial soil concentration of 0.7 mg/kg (700 µg/kg) was utilized since this is the observed concentration of benzene in soil sample Disp-2.

Model Results
The BUFFER1 spreadsheet calculated the time increment as 5.01 months; therefore, the 30-year endpoint for the modeling effort as described in Title 25, §250.308(c)(1) is equal to 71.9 time increments. Competent red shale, sandstone, and siltstone bedrock was encountered at an average of 12 feet bgs and the average depth to water at the site is 16 feet. Depth to water in MW-1, the monitoring well closest to soil sample Disp-2, has ranged from 5.18 to 18.96 feet below top-of-casing (TOC) with an average depth to water of 11.4 feet below TOC. During the most recent eight sampling events, the depth to water in monitoring well MW-1 has ranged from 9.43 to 17.27 feet below TOC with an average of 12.78 feet below TOC. Therefore, the total aqueous concentration of benzene at 12 feet below grade after 72 time increments will be utilized as the predicted model output. The BUFFER1.xls spreadsheet predicts that the total aqueous concentration at 12 feet below grade after 30 years is 0.001 mg/L (1 µg/L), which does not

1 Morris, D.A. and A.I. Johnson, 1967. Summary of hydrologic and physical properties of rock and soil materials as analyzed by the Hydrologic Laboratory of the U.S. Geological Survey, U.S. Geological Survey Water-Supply Paper 1839-D.

2 Freeze, R.A. and J.A. Cherry. 1979. Groundwater. Prentice-Hall, Inc., Englewood Cliffs, NJ.

exceed the PADEP SHS for benzene in a non-residential, used aquifer. The BUFFER1 spreadsheet output is attached as **Appendix C**.

Based upon the above assessment, maintenance of an impermeable cap will not be included as an activity and use limitation for the property in the environmental covenant. The draft environmental covenant is included in **Appendix D,** which outlines the activity and use limitations. Upon PADEP approval, Sunoco will sign and notarize this document and submit to PADEP for final execution.

Site-Specific Standard of Benzene

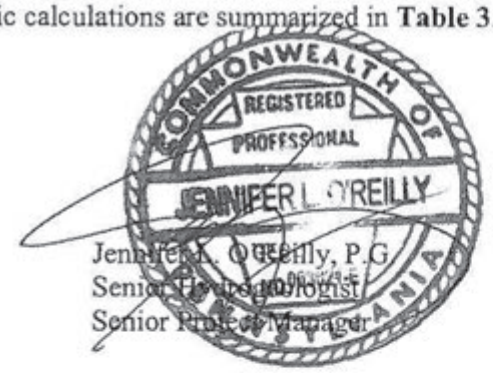
Based upon the historical analytical results for on-site soils, the Site-Specific Standard (SSS) was chosen for benzene in soil at the site. Previous submittals (October 1, 2009 SCRA/ RACR) indicated there are no open soil exposure pathways; therefore, there is no risk. Numeric values for the SSS for benzene were not previously determined. Historical soil analytical data are provided in **Table 1**.

As previously mentioned, the BUFFER1.xls spreadsheet predicts that the total aqueous concentration at 12 feet below grade after 30 years is 0.001 mg/L (1 µg/L), which does not exceed the PADEP SHS for benzene in a non-residential, used aquifer. However, since the model predicts that adsorbed-phase benzene will intersect the water table at a detectable concentration (less than the PADEP SHS) a numerical Site-Specific Standards (SSS) for dissolved-phase benzene will be calculated.

A 95% upper confidence limit (UCL) for a normal distribution data set was calculated to develop the site-specific standard for benzene. The 95% UCL for benzene was calculated using data from monitoring well MW-2, since this is the only well that exhibited concentrations of benzene above the PADEP SHS during the most recent eight groundwater sampling events. Historical groundwater analytical data are provided in **Table 2**. The 95% UCL from monitoring well MW-2 was utilized to calculate a site-specific standard for benzene of 12 µg/L. The site-specific calculations are summarized in **Table 3**.

Respectfully submitted,
Groundwater & Environmental Services, Inc.

Krista L. Snyder
Project Manager

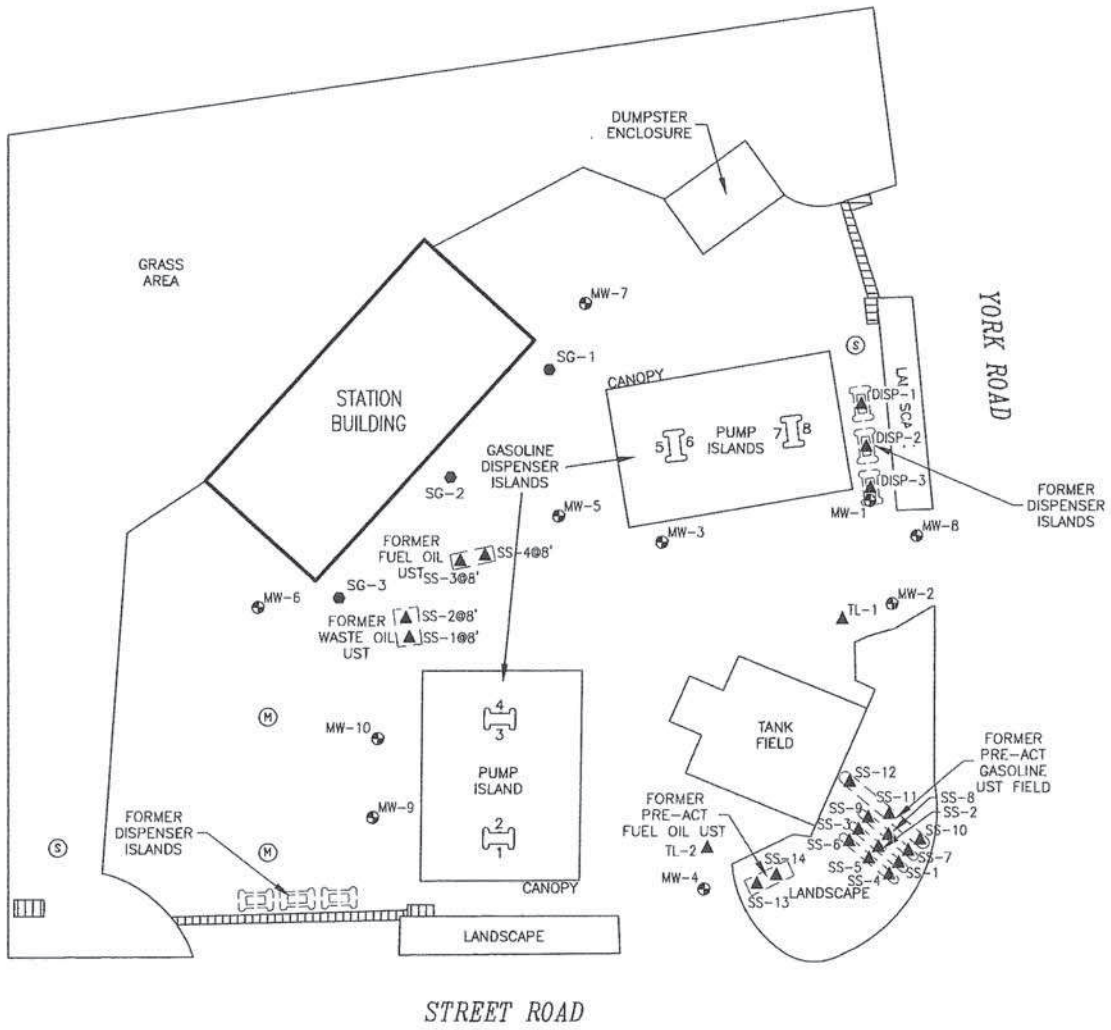


Jennifer L. O'Reilly, P.G.
Senior Hydrogeologist
Senior Project Manager

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.

Enclosure
Cc: William Brochu, Sunoco (ENFOS)
ICF International – T. Aubel (Claim #96-131)
GES Project File

FIGURES



LEGEND

- MONITORING WELL
- SEWER MANHOLE
- MANHOLE
- STORM DRAINAGE
- SOIL GAS SURVEY POINT
- UST CLOSURE SOIL SAMPLE

DRAFTED BY: TP (EXTON)	UST CLOSURE SOIL SAMPLE LOCATION MAP 1995/1996
CHECKED BY: KLS	SUNOCO STATION #0363-5430 610 YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: KLS	Groundwater & Environmental Services, Inc. 440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 30 / DATE: 04-07-10 / FIGURE: 1

TABLES

TABLE 1
HISTORICAL SOIL ANALYTICAL DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Sample ID		Depth (ft)	Sample Date	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Total Xylenes (µg/kg)	MTBE (µg/kg)	Isopropyl benzene (µg/kg)	Naphthalene (µg/kg)	TPH-GRO (mg/kg)	TPH (mg/kg)
UST CLOSURE ACTIVITIES, 1995/1996	SS-1	8	12/28/1995	ND<6	<6	ND<6	<18	NA	NA	NA	NA	40
	SS-2	8	12/28/1995	ND<6	<6	ND<6	ND<18	NA	NA	NA	NA	370
	SS-3	8	12/28/1995	ND<6	<6	ND<6	<17	NA	NA	NA	NA	480
	SS-4	8	12/28/1995	ND<6	<6	ND<6	<17	NA	NA	NA	NA	100
	DISP-1	1	2/8/1996	100	3,000	3,000	21,000	NA	NA	NA	200	NA
	DISP-2	1	2/8/1996	**700**	51,000	41,000	250,000	NA	NA	NA	1,300	NA
	DISP-3	1	2/8/1996	200	14,000	10,000	63,000	NA	NA	NA	310	NA
	TL-1	1	2/13/1996	ND<5	ND<5	ND<5	ND<16	NA	NA	NA	ND<1	NA
	TL-2	1	2/13/1996	ND<100	800	2,100	19,000	NA	NA	NA	150	NA
	SS-1	12	2/27/1996	**1,000**	23,000	34,000	180,000	NA	NA	NA	1,100	NA
	SS-2	12	2/27/1996	**1,900**	33,000	26,000	160,000	NA	NA	NA	1,100	NA
	SS-3	12	2/27/1996	45	270	120	830	NA	NA	NA	6	NA
	SS-4	12	2/27/1996	ND<100	300	3,400	17,000	NA	NA	NA	200	NA
	SS-5	12	2/27/1996	<6	<5	<5	<19	NA	NA	NA	ND<1	NA
	SS-6	12	2/27/1996	31	450	500	2,800	NA	NA	NA	28	NA
	SS-7	12	2/27/1996	**1,900**	10,000	24,000	140,000	NA	NA	NA	1100	NA
	SS-8	12	2/27/1996	**ND<600**	800	6,400	21,000	NA	NA	NA	400	NA
	SS-9	12	2/27/1996	**<700**	<700	11,000	20,000	NA	NA	NA	1,100	NA
	SS-10	12	2/27/1996	**1,000**	11,000	12,000	85,000	NA	NA	NA	800	NA
	SS-11	12	2/27/1996	**ND<600**	4,600	15,000	93,000	NA	NA	NA	700	NA
	SS-12	12	2/27/1996	ND<100	500	4,200	9,800	NA	NA	NA	300	NA
	SS-13	8	2/27/1996	NA	NA	NA	NA	NA	NA	NA	NA	30
	SS-14	8	2/27/1996	NA	NA	NA	NA	NA	NA	NA	NA	90
PADEP Statewide Health Standard for Unsaturated and Saturated Soils in a Non-Residential, Used Aquifer				**500**	**100,000**	**70,000**	**1,000,000**	**2,000**	**1,600,000 / 230,000**	**25,000 / 10,000**	**N/A**	**N/A**

TABLE 1
HISTORICAL SOIL ANALYTICAL DATA SUMMARY

SUNOCO STATION #0363-5430
630 YORK ROAD
WARMINSTER, PA

Sample ID		Depth (ft)	Sample Date	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Total Xylenes (µg/kg)	MTBE (µg/kg)	Isopropyl benzene (µg/kg)	Naphthalene (µg/kg)	TPH-GRO (mg/kg)	TPH (mg/kg)
Monitoring Well Installation, 1996	MW-1	5-7	3/13/1996	ND<6	ND<6	ND<6	ND<18	NA	NA	NA	ND<1	NA
	MW-2	5-7	3/13/1996	ND<6	<6	<6	<18	NA	NA	NA	ND<1	NA
	MW-3	5-7	3/13/1996	<6	<6	<6	<18	NA	NA	NA	ND<1	NA
Monitoring Well Installation, 1997	MW-4	-	10/27/1997	<6	<5	<5	<17	<20	<10	<20	NA	NA
Monitoring Well Installation, 2004	MW-5	25	10/15/2004	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5	NA	NA
	MW-6	15	10/18/2004	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5	NA	NA
Monitoring Well Installation, 2007	MW-8	5	2/22/2007	<530	<530	1,200	8,200	<530	<530	3,700	NA	NA
	MW-8	24	2/22/2007	<520	<520	<520	<520	<520	<520	<520	NA	NA
	MW-9	5	2/23/2007	<440	<440	<440	<440	<440	<440	720	NA	NA
	MW-9	15	2/23/2007	<480	<480	<480	<480	<480	<480	<480	NA	NA
	MW-10	15	2/23/2007	<480	<480	<480	<480	<480	<480	<480	NA	NA
PADEP Statewide Health Standard for Unsaturated and Saturated Soils in a Non-Residential, Used Aquifer				**500**	**100,000**	**70,000**	**1,000,000**	**2,800**	**1,600,000 / 230,000**	**25,000 / 10,000**	**N/A**	**N/A**

All results reported on a dry weight basis except samples SS-1 and SS-2 (collected on 2/27/1996). Those samples were reported on an as received basis, due to laboratory error.

ND: Not Detected

NA: Not Analyzed

N/A: Not Applicable

MTBE: Methyl *tert* Butyl Ether

TPH: Total Petroleum Hydrocarbons

GRO: Gasoline Range Organics

mg/kg: milligrams per kilogram

µg/kg: micrograms per kilogram

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-1	03/23/1996	96.79	8	88.79	ND< 1	ND< 1	ND	2	NA	NA	NA
	09/09/1996	96.79	12.5	84.29	**13**	ND< 10	340	1,060	**240**	NA	**150**
	11/07/1996	96.79	10.12	86.67	ND< 1	ND< 1	ND< 1	3	2	NA	ND< 5
	02/14/1997	96.79	8.47	88.32	ND< 1	ND< 1	ND	ND< 3	**88**	NA	ND< 5
	05/07/1997	96.79	9.58	87.21	ND	ND	ND	ND< 3	ND< 1	NA	ND< 5
	09/15/1997	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	11/11/1997	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	03/17/1998	96.79	8.75	88.04	ND	ND	ND	ND	ND<1	NA	ND<5
	06/15/1998	96.79	5.18	91.61	ND	ND	ND	ND	ND< 5	ND	ND
	06/17/1999	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	02/15/2000	96.79	10.19	86.60	**184**	530	87.4	379	**12,800**	ND	ND
	05/12/2000	96.79	10.16	86.63	2.7	ND	ND	2.8	**242**	ND	2.5
	10/16/2000	96.79	13.83	82.96	**79.8**	589	368	1,020	**957**	40.6	**280**
	03/23/2001	96.79	7.63	89.16	ND	ND	ND	ND	1.9	ND	ND
	06/14/2001	96.79	10.84	85.95	**20.3**	35.5	96.2	130	**221**	13.3	41.6
	09/18/2001	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	12/26/2001	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	03/26/2002	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	06/14/2002	96.79	12.51	84.28	**9.7**	25.5	294	513	**103**	35.3	**214**
	09/13/2002	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	10/30/2002	96.79	16.46	80.33	**23.5**	29.2	377	691	**84.0**	72.5	**297**
	03/05/2003	96.79	9.01	87.78	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	05/08/2003	96.79	9.58	87.21	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0
	08/06/2003	96.79	11.99	84.80	<1.0	<5.0	9.5	<10	<5.0	<5.0	5.5
	10/24/2003	96.79	DRY	-	NS	NS	NS	NS	NS	NS	NS
	01/16/2004	96.79	9.14	87.65	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	04/14/2004	96.79	7.97	88.82	<1.0	<5.0	<5.0	<10	**68**	<5.0	<5.0
	07/15/2004	96.79	14.67	82.12	**6.0**	8.0	170	380	**610**	42	**160**
	10/04/2004	97.77	12.55	85.22	2	ND<3	38	35	**43**	16	52
	01/13/2005	97.77	9.31	88.46	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	04/20/2005	97.77	8.52	89.25	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	07/15/2005	97.77	14.31	83.46	2.0	8.0	227	445	**57.4**	49.6	**241**
	09/07/2005	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	09/20/2005	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	10/28/2005	97.77	12.02	85.75	**83.4**	241	140	812	**6,330**	22.2	**136**
	02/10/2006	97.77	9.08	88.69	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	05/15/2006	97.77	18.96	78.81	NS	NS	NS	NS	NS	NS	NS
	08/18/2006	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	11/15/2006	97.77	9.56	88.21	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	03/30/2007	97.77	8.90	88.87	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	05/17/2007	97.77	9.28	88.49	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	10/04/2007	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	01/28/2008	97.77	13.13	84.64	2	ND<1	58	24	12	27	36
	04/07/2008	97.77	9.43	88.34	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	97.77	14.20	83.57	2	ND<1	22	4	7	9	13
	10/08/2008	97.77	DRY	-	NS	NS	NS	NS	NS	NS	NS
	02/03/2009	97.77	13.06	84.71	2	ND<1	10	7	5	9	15
	04/06/2009	97.77	17.27	80.50	5	ND<1	14	27	11	43	34
	07/08/2009	97.77	9.57	88.20	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-2	03/23/1996	97.43	8.6	88.83	**280**	130	160	1,150	NA	NA	NA
	09/09/1996	97.43	13.25	84.18	**180**	5	180	140	**170**	NA	49
	11/07/1996	97.43	11.25	86.18	**74**	3	85	79	**74**	NA	39
	02/14/1997	97.43	9.33	88.10	**36**	6	35	67	15	NA	18
	05/07/1997	97.43	10.15	87.28	**55**	4	75	81	**26**	NA	19
	09/15/1997	97.43	23.2	74.23	**430**	13	410	340	**140**	NA	**200**
	11/11/1997	97.43	24.3	73.13	NS	NS	NS	NS	NS	NS	NS
	03/17/1998	97.43	9.35	88.08	**58**	2	100	160	**35**	NA	43
	06/15/1998	97.43	9.86	87.57	**91**	9	240	930	10	27	**120**
	06/17/1999	97.43	21.41	76.02	**87**	ND	160	7	**280**	18	30
	02/15/2000	97.43	11.04	86.39	**91.3**	1.4	242	94.5	**274**	37.6	84.4
	05/12/2000	97.43	10.73	86.70	**21.2**	ND	59.6	9.8	**161**	8.9	12.6
	10/16/2000	97.43	13.4	84.03	**70.4**	27.3	276	123	**359**	49.7	91.4
	03/23/2001	97.43	8.24	89.19	2.1	ND	10.5	ND	8.8	ND	ND
	06/14/2001	97.43	14.37	83.06	**45.8**	2.1	197	45.8	**113**	29.5	56.8
	09/18/2001	97.43	DRY	-	NS	NS	NS	NS	NS	NS	NS
	12/26/2001	97.43	DRY	-	NS	NS	NS	NS	NS	NS	NS
	03/26/2002	97.43	21.74	75.69	**192**	4.3	410	182	**164**	42.1	**104**
	06/14/2002	97.43	13.35	84.08	**35.7**	ND<2.5	173	57.3	**57.2**	29.2	**111**
	09/13/2002	97.43	23.55	73.88	**82.4**	2.6	268	55.5	**123**	43.1	**153**
	10/30/2002	97.43	18.93	78.50	**171**	4.9	**886**	291	**155**	113	**344**
	03/05/2003	97.43	9.96	87.47	**27**	ND<1	160	24	**24**	25	59
	05/08/2003	97.43	10.53	86.90	4.3	<1.0	29	<5.0	<5.0	<5.0	13
	08/06/2003	97.43	13.08	84.35	**13**	<5.0	43	<10	15	8.7	20
	10/24/2003	97.43	20.57	76.86	**54**	<1.6	320	86	**43**	44	**140**
	01/16/2004	97.43	9.72	87.71	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	04/14/2004	97.43	8.88	88.55	**10**	<5.0	72	12	**41**	12	21
	07/15/2004	97.43	17.40	80.03	**53**	31	370	160	**2,300**	56	**180**
	10/04/2004	98.31	13.24	85.07	**34**	ND<7	180	35	**190**	38	60
	01/13/2005	98.31	10.21	88.10	**6**	ND<1	59	5	**39**	14	20
	04/20/2005	98.31	9.08	89.23	ND<1.0	ND<1.0	9.3	ND<3.0	3.9	3.3	4.3
	07/15/2005	98.31	15.36	82.95	**38.1**	1.5	161	68.7	**89.9**	79.7	**142**
	09/07/2005	98.31	23.45	74.86	**10.0**	ND<1.0	18.5	ND<3.0	**59.5**	11.0	23.0
	09/20/2005	98.31	DRY	-	NS	NS	NS	NS	NS	NS	NS
	10/28/2005	98.31	12.81	85.50	**76.7**	51.8	195	67.3	**2,750**	80.8	**136**
	02/10/2006	98.31	10.68	87.63	4.7	1.0	30.3	4.1	**39.7**	10.8	8.4
	05/15/2006	98.31	20.04	78.27	**34.7**	7.6	108	46.5	**421**	31.0	43.3
	08/18/2006	98.31	20.68	77.63	**28.8**	1.8	106	8.6	**179**	48.2	31.8
	11/15/2006	98.31	10.39	87.92	**9.4**	ND<1.0	56.5	5.0	**25.1**	26.2	20.3
	03/30/2007	98.31	9.29	89.02	2	ND<1	12	2	5	7	5
	05/17/2007	98.31	9.99	88.32	2	ND<1	14	2	4	8	5
	08/02/2007	98.31	21.74	76.57	7	ND<1	15	3	**28**	12	ND<4
	10/04/2007	98.31	DRY	-	NS	NS	NS	NS	NS	NS	NS
	01/28/2008	98.31	13.42	84.89	**8**	ND<1	12	5	12	15	11
	04/07/2008	98.31	10.03	88.28	2	ND<1	11	2	3	9	5
	07/01/2008	98.31	14.85	83.46	ND<1	ND<1	1	ND<1	2	ND<2	ND<4
	10/31/2008	98.31	21.63	76.68	**15**	ND<1	39	11	8	41	11
	02/03/2009	98.31	13.15	85.16	2	ND<1	7	1	3	8	ND<4
	04/06/2009	98.31	18.75	79.56	5	ND<1	15	2	8	8	ND<4
	07/08/2009	98.31	10.25	88.06	ND<1	ND<1	2	ND<1	ND<1	3	ND<4

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-3	03/23/1996	98.08	9.35	88.73	12	ND< 1	2	3	NA	NA	NA
	09/09/1996	98.08	13.76	84.32	ND	ND	ND	ND	480	NA	ND
	11/07/1996	98.08	11.43	86.65	ND< 1	ND< 1	ND< 1	ND< 3	170	NA	ND< 5
	02/14/1997	98.08	10.18	87.90	2	ND< 1	ND	ND< 3	130	NA	ND< 5
	05/07/1997	98.08	10.9	87.18	ND	ND	ND	ND	99	NA	ND
	09/15/1997	98.08	23.68	74.40	NS	NS	NS	NS	NS	NS	NS
	11/11/1997	98.08	23.95	74.13	NS	NS	NS	NS	NS	NS	NS
	03/17/1998	98.08	10.25	87.83	ND<1	ND<1	ND<1	ND<3	22	NA	ND<5
	06/15/1998	98.08	10.56	87.52	ND	ND	ND	ND< 5	8	ND	ND<5
	06/17/1999	98.08	21.97	76.11	ND	ND	ND	ND	7	ND	ND
	02/15/2000	98.08	11.96	86.12	80	325	21.7	267	1,680	ND	ND
	05/12/2000	98.08	11.43	86.65	ND	ND	ND	ND	256	ND	ND
	10/16/2000	98.08	14.15	83.93	ND	ND	ND	ND	42.3	ND	ND
	03/23/2001	98.08	9.04	89.04	1.3	ND	ND	ND	55.2	ND	ND
	06/14/2001	98.08	12.1	85.98	ND<1	ND<1	ND<1	ND<5	44.9	ND<2	ND<5
	09/18/2001	98.08	DRY	-	NS	NS	NS	NS	NS	NS	NS
	12/26/2001	98.08	23.21	74.87	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<5
	03/26/2002	98.08	22.7	75.38	ND<1	ND<1	ND<1	ND<1.4	2.6	ND<2	ND<5
	06/14/2002	98.08	13.95	84.13	ND<1.0	ND<1.0	ND<1.0	ND<1.0	10.6	ND<2.0	ND<5.0
	09/13/2002	98.08	DRY	-	NS	NS	NS	NS	NS	NS	NS
	10/30/2002	98.08	18.45	79.63	ND<1.0	ND<1.0	ND<1.0	ND<1.0	1.8	ND<2.0	6.6
	03/05/2003	98.08	10.71	87.37	ND<1	ND<1	ND<1	ND<1	11	ND<5	ND<5
	05/08/2003	98.08	11.43	86.65	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0
	08/06/2003	98.08	13.51	84.57	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	10/24/2003	98.08	20.74	77.34	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	01/16/2004	98.08	10.53	87.55	<1.0	<5.0	<5.0	<10	28	<5.0	<5.0
	04/14/2004	98.08	9.83	88.25	<1.0	<5.0	<5.0	<10	20	<5.0	<5.0
	07/15/2004	98.08	17.05	81.03	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	10/04/2004	98.78	13.92	84.86	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	01/13/2005	98.78	11.13	87.65	ND<1	ND<1	ND<1	ND<1	19	ND<5	ND<5
	04/20/2005	98.78	10.04	88.74	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	07/15/2005	98.78	15.71	83.07	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	98.78	DRY	-	NS	NS	NS	NS	NS	NS	NS
	09/20/2005	98.78	23.75	75.03	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	98.78	13.75	85.03	3.1	2.2	ND<1.0	26.0	749	ND<1.0	9.0
	02/10/2006	98.78	10.59	88.19	ND<1.0	ND<1.0	ND<1.0	ND<3.0	33.8	ND<1.0	ND<2.0
	05/15/2006	98.78	20.37	78.41	ND<1.0	ND<1.0	ND<1.0	ND<3.0	1.5	ND<1.0	ND<2.0
	08/18/2006	98.78	20.91	77.87	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	11/15/2006	98.78	11.32	87.46	ND<1.0	ND<1.0	ND<1.0	ND<3.0	2.6	ND<1.0	ND<2.0
	03/30/2007	98.78	10.28	88.50	ND<1	ND<1	ND<1	ND<1	2	ND<2	ND<4
	05/17/2007	98.78	10.82	87.96	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	98.78	22.12	76.66	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/04/2007	98.78	DRY	-	NS	NS	NS	NS	NS	NS	NS
	01/28/2008	98.78	14.62	84.16	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/07/2008	98.78	11.81	86.97	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	98.78	15.72	83.06	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	98.78	23.89	74.89	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	02/03/2009	98.78	14.62	84.16	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/06/2009	98.78	18.53	80.25	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	98.78	11.11	87.67	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-4	11/11/1997	98.08	23.87	74.21	ND<1	ND<1	ND	ND<3	10	NA	ND<5
	03/17/1998	98.08	10.1	87.98	ND	ND	ND<1	ND<3	ND<1	NA	ND<5
	06/15/1998	98.08	10.32	87.76	ND	ND	ND	ND	ND	ND	ND
	06/17/1999	98.08	22.61	75.47	ND	ND	ND	ND	ND<5	ND	ND
	02/15/2000	98.08	11.91	86.17	ND	ND	ND	ND	15.8	ND	ND
	05/12/2000	98.08	11.41	86.67	ND	ND	ND	ND	9.5	ND	ND
	10/16/2000	98.08	14.03	84.05	ND	ND	ND	ND	**972**	ND	ND
	03/23/2001	98.08	8.94	89.14	ND	ND	ND	ND	ND	ND	ND
	06/14/2001	98.08	12.05	86.03	ND<1	ND<1	ND<1	ND<5	**31.6**	ND<2	ND<5
	09/18/2001	98.08	24.57	73.51	ND<1	ND<1	ND<1	ND<1	4.9	ND<2	ND<5
	12/26/2001	98.08	24.43	73.65	ND<1	ND<1	ND<1	ND<1	1.7	ND<2	ND<5
	03/26/2002	98.08	23.82	74.26	ND<1	ND<1	ND<1	ND<1.4	1.1	ND<2	ND<5
	06/14/2002	98.08	14.01	84.07	ND<1.0	ND<1.0	ND<1.0	ND<1.0	7.5	ND<2.0	ND<5.0
	09/13/2002	98.08	24.67	73.41	ND<1.0	ND<1.0	ND<1.0	ND<1.0	1.2	ND<2.0	ND<5.0
	10/30/2002	98.08	20.38	77.70	ND<1.0	ND<1.0	ND<1.0	ND<1.0	1.6	ND<2.0	ND<5.0
	03/05/2003	98.08	10.68	87.40	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	05/08/2003	98.08	11.25	86.83	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<5.0
	08/06/2003	98.08	13.75	84.33	<1.0	<5.0	<5.0	<10	9.8	<5.0	<5.0
	10/24/2003	98.08	20.63	77.45	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	01/16/2004	98.08	10.46	87.62	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	04/14/2004	98.08	9.86	88.22	<1.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0
	07/15/2004	98.08	18.63	79.45	<1.0	<5.0	<5.0	<10	5.0	<5.0	<5.0
	10/04/2004	98.94	13.99	84.95	ND<3	ND<4	ND<4	ND<4	**100**	ND<5	ND<5
	01/13/2005	98.94	10.98	87.96	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	04/20/2005	98.94	9.81	89.13	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	07/15/2005	98.94	16.05	82.89	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	98.94	24.61	74.33	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/20/2005	98.94	24.51	74.43	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	98.94	13.81	85.13	ND<1.0	ND<1.0	ND<1.0	ND<3.0	**89.6**	ND<1.0	ND<2.0
	02/10/2006	98.94	10.46	88.48	ND<1.0	ND<1.0	ND<1.0	ND<3.0	7.4	ND<1.0	ND<2.0
	05/15/2006	98.94	21.19	77.75	ND<1.0	ND<1.0	ND<1.0	ND<3.0	2.2	ND<1.0	ND<2.0
	08/18/2006	98.94	21.72	77.22	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	11/15/2006	98.94	11.25	87.69	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	03/30/2007	98.94	10.11	88.83	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	05/17/2007	98.94	10.75	88.19	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	98.94	23.45	75.49	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/04/2007	98.94	24.61	74.33	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	01/28/2008	98.94	14.36	84.58	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/07/2008	98.94	10.75	88.19	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	98.94	15.57	83.37	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	98.94	24.59	74.35	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	02/03/2009	98.94	14.42	84.52	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/06/2009	98.94	19.55	79.39	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	98.94	11.00	87.94	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-5	12/09/2004	99.55	12.52	87.03	ND<1	ND<1	ND<1	ND<1	5	ND<5	ND<5
	01/13/2005	99.55	11.77	87.78	ND<1	ND<1	ND<1	ND<1	14	ND<5	ND<5
	04/20/2005	99.55	10.55	89.00	ND<1.0	ND<1.0	ND<1.0	ND<3.0	5.0	ND<1.0	ND<2.0
	07/15/2005	99.55	16.22	83.33	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	99.55	26.92	72.63	ND<1.0	ND<1.0	ND<1.0	ND<3.0	1.9	ND<1.0	ND<2.0
	09/20/2005	99.55	30.02	69.53	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	99.55	14.32	85.23	ND<1.0	ND<1.0	ND<1.0	4.1	**648**	ND<1.0	ND<2.0
	02/10/2006	99.55	11.38	88.17	ND<1.0	ND<1.0	ND<1.0	ND<3.0	**34.0**	ND<1.0	ND<2.0
	05/15/2006	99.55	22.42	77.13	ND<1.0	ND<1.0	ND<1.0	ND<3.0	2.1	ND<1.0	ND<2.0
	08/18/2006	99.55	23.15	76.40	ND<1.0	ND<1.0	ND<1.0	ND<3.0	1.5	ND<1.0	ND<2.0
	11/15/2006	99.55	11.72	87.83	ND<1.0	ND<1.0	ND<1.0	ND<3.0	1.3	ND<1.0	ND<2.0
	03/30/2007	99.55	10.92	88.63	ND<1	ND<1	ND<1	ND<1	2	ND<2	ND<4
	05/17/2007	99.55	11.35	88.20	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	99.55	24.65	74.90	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/04/2007	99.55	36.25	63.30	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	01/28/2008	99.55	15.32	84.23	ND<1	ND<1	ND<1	ND<1	1	ND<2	ND<4
	04/07/2008	99.55	11.66	87.89	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	99.55	16.33	83.22	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	99.55	32.92	66.63	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	02/03/2009	99.55	15.25	84.30	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/06/2009	99.55	19.88	79.67	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	99.55	11.72	87.83	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
MW-6	12/09/2004	99.72	12.69	87.03	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	01/13/2005	99.72	11.85	87.87	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	04/20/2005	99.72	10.70	89.02	ND<1.0	ND<1.0	ND<1.0	ND<3.0	2.0	ND<1.0	ND<2.0
	07/15/2005	99.72	16.39	83.33	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	99.72	27.10	72.62	NA	NA	NA	NA	NA	NA	NA
	09/20/2005	99.72	29.88	69.84	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	99.72	14.47	85.25	ND<1.0	ND<1.0	ND<1.0	ND<3.0	13.8	ND<1.0	ND<2.0
	02/10/2006	99.72	11.40	88.32	ND<1.0	ND<1.0	ND<1.0	ND<3.0	2.3	ND<1.0	ND<2.0
	05/15/2006	99.72	21.25	78.47	ND<1.0	ND<1.0	ND<1.0	ND<3.0	8.7	ND<1.0	ND<2.0
	08/18/2006	99.72	22.29	77.43	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	11/15/2006	99.72	12.05	87.67	ND<1.0	ND<1.0	ND<1.0	ND<3.0	1.1	ND<1.0	ND<2.0
	03/30/2007	99.72	11.06	88.66	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	05/17/2007	99.72	11.52	88.20	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	99.72	23.45	76.27	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/04/2007	99.72	36.06	63.66	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	01/28/2008	99.72	15.50	84.22	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/07/2008	99.72	11.68	88.04	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	99.72	16.45	83.27	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	99.72	32.57	67.15	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	02/03/2009	99.72	15.54	84.18	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/06/2009	99.72	19.85	79.87	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	99.72	11.93	87.79	ND<1	ND<1	ND<1	2	ND<1	ND<2	ND<4

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-7	12/09/2004	99.20	15.39	83.81	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	01/13/2005	99.20	14.63	84.57	ND<1	ND<1	ND<1	ND<1	ND<5	ND<5	ND<5
	04/20/2005	99.20	14.48	84.72	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	07/15/2005	99.20	20.15	79.05	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	09/07/2005	99.20	29.81	69.39	NA	NA	NA	NA	NA	NA	NA
	09/20/2005	99.20	32.85	66.35	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	10/28/2005	99.20	18.81	80.39	ND<1.0	1.7	ND<1.0	ND<3.0	**60.8**	ND<1.0	ND<2.0
	02/10/2006	99.20	15.83	83.37	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	05/15/2006	99.20	25.99	73.21	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	08/18/2006	99.20	27.13	72.07	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	11/15/2006	99.20	15.85	83.35	ND<1.0	ND<1.0	ND<1.0	ND<3.0	ND<1.0	ND<1.0	ND<2.0
	03/30/2007	99.20	14.20	85.00	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	05/17/2007	99.20	16.23	82.97	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	99.20	28.54	70.66	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/04/2007	99.20	38.36	60.84	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	01/28/2008	99.20	19.96	79.24	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/07/2008	99.20	16.03	83.17	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	99.20	20.64	78.56	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	99.20	36.20	63.00	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	02/03/2009	99.20	19.40	79.80	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/06/2009	99.20	23.41	75.79	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	99.20	15.99	83.21	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
MW-8	03/30/2007	97.78	11.25	86.53	ND<1	ND<1	ND<1	ND<1	17	ND<2	ND<4
	05/17/2007	97.78	13.18	84.60	ND<1	ND<1	ND<1	ND<1	14	ND<2	ND<4
	08/02/2007	97.78	26.55	71.23	ND<1	ND<1	ND<1	ND<1	11	ND<2	ND<4
	10/04/2007	97.78	36.96	60.82	ND<1	ND<1	ND<1	ND<1	5	ND<2	ND<4
	01/28/2008	97.78	17.20	80.58	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/07/2008	97.78	13.62	84.16	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	97.78	18.54	79.24	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	97.78	34.12	63.66	ND<1	ND<1	ND<1	ND<1	4	ND<2	ND<4
	02/03/2009	97.78	18.11	79.67	ND<1	ND<1	ND<1	ND<1	5	ND<2	ND<4
	04/06/2009	97.78	21.84	75.94	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	97.78	14.55	83.23	ND<1	ND<1	ND<1	ND<1	1	ND<2	ND<4

TABLE 2
HISTORICAL GROUNDWATER MONITORING DATA SUMMARY

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PA

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Isopropyl Benzene (µg/L)	Naphthalene (µg/L)
MSCs for Used, Non-Res. Aquifer					5	1,000	700	10,000	20	2,300	100
MW-9	03/30/2007	98.68	11.45	87.23	ND<1	ND<1	ND<1	ND<1	7	ND<2	ND<4
	05/17/2007	98.68	13.80	84.88	ND<1	ND<1	ND<1	ND<1	6	ND<2	ND<4
	08/02/2007	98.68	27.02	71.66	ND<1	ND<1	ND<1	ND<1	2	ND<2	ND<4
	10/04/2007	98.68	37.70	60.98	ND<1	ND<1	ND<1	ND<1	5	ND<2	ND<4
	01/28/2008	98.68	18.56	80.12	ND<1	ND<1	ND<1	ND<1	3	ND<2	ND<4
	04/07/2008	98.68	14.48	84.20	ND<1	ND<1	ND<1	ND<1	4	ND<2	ND<4
	07/01/2008	98.68	19.51	79.17	ND<1	ND<1	ND<1	ND<1	3	ND<2	ND<4
	10/08/2008	98.68	35.29	63.39	ND<1	ND<1	ND<1	ND<1	1	ND<2	ND<4
	02/03/2009	98.68	18.71	79.97	ND<1	ND<1	ND<1	ND<1	2	ND<2	ND<4
	04/06/2009	98.68	22.87	75.81	ND<1	ND<1	ND<1	ND<1	2	ND<2	ND<4
	07/08/2009	98.68	15.27	83.41	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
MW-10	03/30/2007	98.44	10.64	87.80	ND<1	ND<1	ND<1	ND<1	2	ND<2	ND<4
	05/17/2007	98.44	11.09	87.35	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	08/02/2007	98.44	24.60	73.84	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/04/2007	98.44	36.03	62.41	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	01/28/2008	98.44	15.06	83.38	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/07/2008	98.44	11.22	87.22	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/01/2008	98.44	16.10	82.34	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	10/08/2008	98.44	33.22	65.22	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	02/03/2009	98.44	15.98	82.46	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	04/06/2009	98.44	19.67	78.77	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4
	07/08/2009	98.44	11.49	86.95	ND<1	ND<1	ND<1	ND<1	ND<1	ND<2	ND<4

=AVERAGE(D3:D304)

<# = Less than the method detection limit of #
µg/L = Micrograms/liter
DRY = No water for sampling
MTBE = Methyl tertiary butyl ether
NA = Not Available or not analyzed for that specific compound
ND = Not detected (# is method detection limit)
NS = Not Sampled

TABLE 3

CALCULATION OF SITE-SPECIFIC STANDARD FOR BENZENE

SUNOCO STATION #0003-7101
315 South Main Street
Manheim, Pennsylvania

Test Statistic:	Benzene Concentration (µg/L)	Date Detected
MW-2 Data	**7**	08/02/2007
	8	01/28/2008
	2	04/07/2008
	ND<1	07/01/2008
	15	10/31/2008
	2	02/03/2009
	5	04/06/2009
	ND<1	07/08/2009
Number of Samples	6	
Mean	7	
Standard Deviation	5	
Student-t	3	
95% UCL	12	

Footnotes:
µg/L = micrograms per liter
UCL = upper confidence limit

APPENDIX A

PADEP Correspondence

Krista Snyder

From: Mapleton, Lauren [lmapleton@state.pa.us]
Sent: Monday, June 14, 2010 1:42 PM
To: Krista Snyder
Subject: Sun at 610 York Road, RACR addendum

Krista,

I went over your buffer model and I have two concerns. The recharge rate has to do more with what will infiltrate from the surface than hydraulic conductivity. Infiltration from rainfall should be used to come up with a value for recharge rate. Second, is the water filled porosity of soil value. Since we are looking at water infiltration from the surface, you should consider the porosity of unconsolidated layers also and not just competent bedrock.

I want to talk to Walter who's out until Wednesday and then lets discuss and come to some compromise on values.

Lauren

Lauren T. Mapleton | Geologic Specialist Department of Environmental Protection Southeast Regional Office
2 East Main Street | Norristown, PA 19401
Phone: 484.250.5783 | Fax: 484.250.5961
www.depweb.state.pa.us

APPENDIX B

USGS Data Sheet

USGS science for a changing world

Pennsylvania Water Science Center

Estimates of Mean-Monthly & Annual Ground-Water Recharge

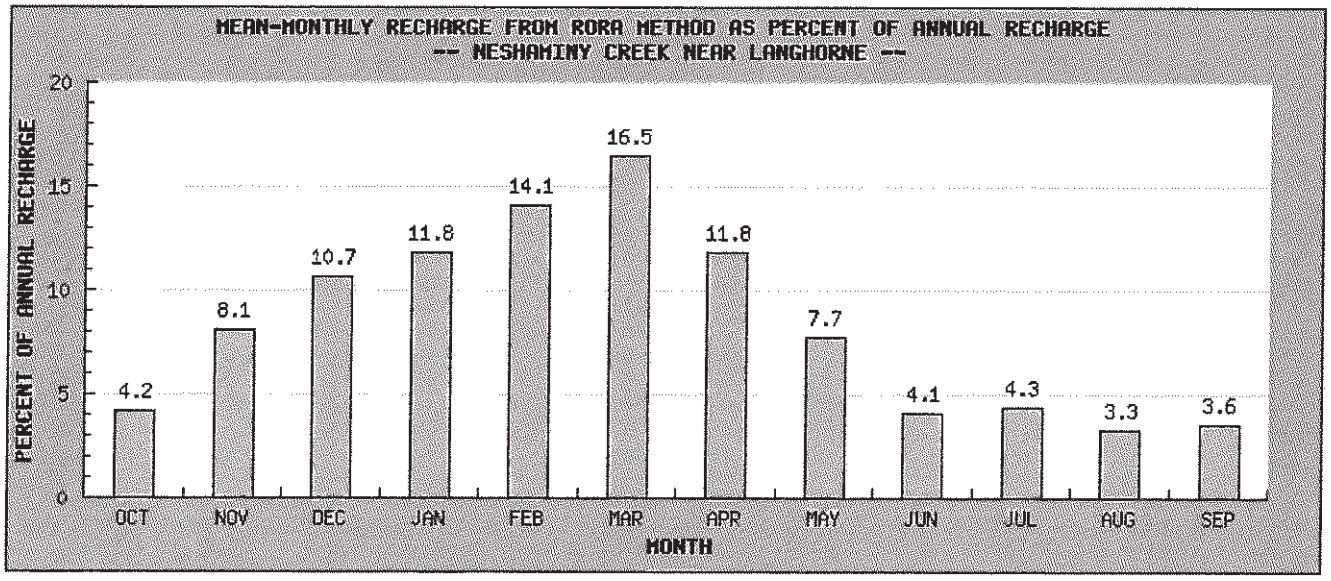
Neshaminy Creek near Langhorne: 01465500

Available Options							
Graphs	Data Tables	Detailed Station Information	Land Use Map	Geology Map	Back to county map	Back to state map	Main Page

Mean-Annual Recharge Estimates for Period of Record, in inches	
From Recession Curve Displacement (RORA) Method	11.5
From Hydrograph Separation of Baseflow (PART) Method	9.5

Basin Characteristics	
Drainage Area (square miles)	210
Period of Record Used for Estimating Recharge (calendar year)	1935-2001
Land Cover (show map) (Forest/Agriculture/Developed/Other) as % of Area	31.9/37.5/28.7/1.8
Rock Types (show map) (Sandstone and Shale/Carbonate/Crystalline/Unconsolidated Sediments) as % of Area	95.6/1.8/2.6/0

Graphs



APPENDIX C

BUFFER1 Spreadsheet Output

SOIL CONTAMINANT MIGRATION
EQUILIBRIUM PARTITIONING

Recharge rate in cm/year	29.2100
Soil bulk density in g/cc	1.38
Water-filled porosity of soil	0.40
Apparent partition coefficient Kapp (ml/g)	3.80
Depth increment in feet	1.00
Time increment in months	5.01

Soil depth increment	TI ---1--- Csoil initial mg/kg		Caqueous mg/l	Csorb mg/kg	Csoil mg/kg		Time Increment ---2--- Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Time Increment ---3--- Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Time Increment ---4--- Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Time Increment ---5--- Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Time Increment ---6--- Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg
1	0.70	2E-01	2E-01	7E-01	6E-01	2E-01	2E-01	6E-01	6E-01	1E-01	1E-01	6E-01	6E-01	1E-01	1E-01	5E-01	5E-01	1E-01	1E-01	5E-01	5E-01	1E-01	1E-01	4E-01	4E-01
2	0.00	0E+00	0E+00	0E+00	5E-02	1E-02	1E-02	5E-02	9E-02	2E-02	2E-02	9E-02	1E-01	3E-02	3E-02	1E-01	2E-01	4E-02	4E-02	1E-01	2E-01	5E-02	5E-02	2E-01	2E-01
3	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	4E-03	9E-04	9E-04	3E-03	1E-02	2E-03	2E-03	6E-03	2E-02	5E-03	5E-03	2E-02	3E-02	7E-03	7E-03	3E-02	4E-02
4	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	3E-04	6E-05	6E-05	2E-04	1E-03	2E-04	2E-04	9E-04	2E-03	5E-04	5E-04	2E-03	4E-03
5	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-05	5E-06	5E-06	5E-06	2E-05	9E-05	2E-05	2E-05	8E-05	2E-04
6	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	1E-06	3E-07	3E-07	1E-06	8E-06
7	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	1E-07
8	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
9	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
10	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
11	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
12	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
13	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
14	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
15	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
16	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
17	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
18	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
19	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
20	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
21	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
22	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
23	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
24	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
25	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
26	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
27	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
28	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
29	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
30	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
31	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
32	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
33	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
34	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
35	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
36	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
37	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
38	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
39	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
40	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
41	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
42	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
43	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
44	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
45	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
46	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
47	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
48	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
49	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
50	0.00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00

	Time Increment ----7----				Time Increment ----8----				Time Increment ----9----				Time Increment ----10----				Time Increment ----11----				Time Increment ----12----				Time Increment ----13----				Time Increment ----14----		
	Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg
1E-01	1E-01	4E-01	4E-01	1E-01	1E-01	4E-01	4E-01	9E-02	9E-02	4E-01	4E-01	9E-02	9E-02	3E-01	3E-01	8E-02	8E-02	3E-01	3E-01	8E-02	8E-02	3E-01	3E-01	7E-02	7E-02	3E-01	3E-01	6E-02	6E-02	2E-01	2E-01
5E-02	5E-02	2E-01	2E-01	6E-02	6E-02	2E-01	2E-01	6E-02	6E-02	2E-01	2E-01	6E-02	6E-02	2E-01	3E-01	6E-02	6E-02	2E-01	3E-01	6E-02	6E-02	2E-01	3E-01	6E-02	6E-02	2E-01	3E-01	7E-02	7E-02	2E-01	3E-01
1E-02	1E-02	4E-02	5E-02	1E-02	1E-02	5E-02	6E-02	2E-02	2E-02	6E-02	8E-02	2E-02	2E-02	7E-02	9E-02	2E-02	2E-02	6E-02	1E-01	2E-02	2E-02	9E-02	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01
1E-03	1E-03	4E-03	7E-03	2E-03	2E-03	6E-03	1E-02	2E-03	2E-03	9E-03	1E-02	3E-03	3E-03	1E-02	2E-02	5E-03	5E-03	2E-02	2E-02	6E-03	6E-03	2E-02	3E-02	7E-03	7E-03	3E-02	4E-02	9E-03	9E-03	3E-02	4E-02
6E-05	6E-05	2E-04	5E-04	1E-04	1E-04	5E-04	1E-03	2E-04	2E-04	9E-04	2E-03	4E-04	4E-04	2E-03	3E-03	6E-04	6E-04	2E-03	4E-03	9E-04	9E-04	3E-03	5E-03	1E-03	1E-03	5E-03	7E-03	2E-03	2E-03	6E-03	9E-03
2E-06	2E-06	7E-06	2E-05	6E-06	6E-06	2E-05	6E-05	1E-05	1E-05	6E-05	1E-04	3E-05	3E-05	1E-04	2E-04	6E-05	6E-05	2E-04	4E-04	1E-04	1E-04	4E-04	6E-04	2E-04	2E-04	6E-04	1E-03	2E-04	2E-04	9E-04	1E-03
2E-08	2E-08	9E-08	6E-07	2E-07	2E-07	6E-07	2E-06	6E-07	6E-07	2E-06	7E-06	2E-06	2E-06	6E-06	2E-05	4E-06	4E-06	1E-05	3E-05	8E-06	8E-06	3E-05	6E-05	1E-05	1E-05	5E-05	1E-04	2E-05	2E-05	9E-05	2E-04
0E+00	0E+00	0E+00	7E-09	2E-09	2E-09	7E-09	5E-08	1E-08	1E-08	5E-08	2E-07	5E-08	5E-08	2E-07	7E-07	2E-07	2E-07	6E-07	2E-06	4E-07	4E-07	2E-06	4E-06	9E-07	9E-07	4E-06	8E-06	2E-06	2E-06	7E-06	1E-05
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	5E-10	1E-10	1E-10	5E-10	4E-09	1E-09	1E-09	4E-09	2E-08	5E-09	5E-09	2E-08	7E-08	2E-08	2E-08	6E-08	2E-07	5E-08	5E-08	2E-07	4E-07	1E-07	1E-07	4E-07	1E-06
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	4E-11	9E-12	9E-12	3E-11	3E-10	8E-11	8E-11	3E-10	2E-09	4E-10	4E-10	2E-09	6E-09	2E-09	2E-09	6E-09	2E-08	5E-09	5E-09	2E-08	5E-08
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	3E-12	6E-13	6E-13	2E-12	3E-11	7E-12	7E-12	2E-11	1E-10	4E-11	4E-11	1E-10	6E-10	1E-10	1E-10	6E-10	2E-09
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-13	5E-14	5E-14	2E-13	2E-12	5E-13	5E-13	2E-12	1E-11	3E-12	3E-12	1E-11	5E-11
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	1E-14	3E-15	3E-15	1E-14	2E-13	4E-14	4E-14	2E-13	1E-12
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	1E-15	2E-16	2E-16	9E-16	1E-14
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	7E-17
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00

	Time Increment ---15---				Time Increment ---16---				Time Increment ---17---				Time Increment ---18---				Time Increment ---19---				Time Increment ---20---				Time Increment ---21---				Time Increment ---22---		
	Csaqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg
6E-02	6E-02	2E-01	2E-01	6E-02	6E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01	4E-02	4E-02	2E-01	2E-01	4E-02	4E-02	2E-01	2E-01	4E-02	4E-02	1E-01	1E-01	4E-02	4E-02	1E-01	1E-01
7E-02	7E-02	2E-01	3E-01	6E-02	6E-02	2E-01	3E-01	6E-02	6E-02	2E-01	3E-01	6E-02	6E-02	2E-01	3E-01	6E-02	6E-02	2E-01	2E-01	6E-02	6E-02	2E-01	2E-01	6E-02	6E-02	2E-01	2E-01	6E-02	6E-02	2E-01	2E-01
3E-02	3E-02	1E-01	1E-01	4E-02	4E-02	1E-01	2E-01	4E-02	4E-02	1E-01	2E-01	4E-02	4E-02	1E-01	2E-01	4E-02	4E-02	2E-01	2E-01	4E-02	4E-02	2E-01	2E-01	4E-02	4E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01
1E-02	1E-02	4E-02	5E-02	1E-02	1E-02	5E-02	6E-02	1E-02	1E-02	5E-02	6E-02	2E-02	2E-02	6E-02	7E-02	2E-02	2E-02	6E-02	8E-02	2E-02	2E-02	7E-02	8E-02	2E-02	2E-02	8E-02	9E-02	2E-02	2E-02	8E-02	1E-01
2E-03	2E-03	8E-03	1E-02	3E-03	3E-03	1E-02	1E-02	3E-03	3E-03	1E-02	2E-02	4E-03	4E-03	2E-02	2E-02	5E-03	5E-03	2E-02	2E-02	6E-03	6E-03	2E-02	3E-02	7E-03	7E-03	3E-02	3E-02	8E-03	8E-03	3E-02	4E-02
3E-04	3E-04	1E-03	2E-03	5E-04	5E-04	2E-03	3E-03	6E-04	6E-04	2E-03	3E-03	8E-04	8E-04	3E-03	4E-03	1E-03	1E-03	4E-03	6E-03	1E-03	1E-03	5E-03	7E-03	2E-03	2E-03	6E-03	8E-03	2E-03	2E-03	8E-03	1E-02
4E-05	4E-05	1E-04	2E-04	6E-05	6E-05	2E-04	4E-04	9E-05	9E-05	3E-04	5E-04	1E-04	1E-04	5E-04	7E-04	2E-04	2E-04	7E-04	1E-03	2E-04	2E-04	9E-04	1E-03	3E-04	3E-04	1E-03	2E-03	4E-04	4E-04	2E-03	2E-03
3E-06	3E-06	1E-05	2E-05	6E-06	6E-06	2E-05	4E-05	1E-05	1E-05	4E-05	6E-05	2E-05	2E-05	6E-05	1E-04	4E-05	4E-05	1E-04	2E-04	5E-05	5E-05	2E-04	3E-04	7E-05	7E-05	3E-04	4E-04	1E-05	1E-05	4E-05	6E-05
2E-07	2E-07	9E-07	2E-06	5E-07	5E-07	2E-06	4E-06	9E-07	9E-07	3E-06	6E-06	2E-06	2E-06	6E-06	1E-05	3E-06	3E-06	1E-05	2E-05	4E-06	4E-06	2E-05	3E-05	6E-06	6E-06	2E-05	4E-05	1E-05	1E-05	4E-05	6E-05
1E-08	1E-08	5E-08	1E-07	3E-08	3E-08	1E-07	2E-07	6E-08	6E-08	2E-07	5E-07	1E-07	1E-07	5E-07	9E-07	2E-07	2E-07	8E-07	2E-06	4E-07	4E-07	1E-06	3E-06	7E-07	7E-07	2E-06	4E-06	1E-06	1E-06	4E-06	7E-06
5E-10	5E-10	2E-09	5E-09	1E-09	1E-09	5E-09	1E-08	3E-09	3E-09	1E-08	3E-08	7E-09	7E-09	3E-08	6E-08	2E-08	2E-08	6E-08	1E-07	3E-08	3E-08	1E-07	2E-07	6E-08	6E-08	2E-07	4E-07	1E-07	1E-07	4E-07	7E-07
1E-11	1E-11	5E-11	2E-10	5E-11	5E-11	2E-10	6E-10	1E-10	1E-10	5E-10	1E-09	4E-10	4E-10	1E-09	4E-09	9E-10	9E-10	3E-09	6E-09	2E-09	2E-09	7E-09	2E-08	4E-09	4E-09	1E-08	3E-08	8E-09	8E-09	3E-08	6E-08
3E-13	3E-13	1E-12	5E-12	1E-12	1E-12	5E-12	2E-11	4E-12	4E-12	2E-11	6E-11	1E-11	1E-11	5E-11	2E-10	4E-11	4E-11	1E-10	4E-10	1E-10	1E-10	4E-10	9E-10	2E-10	2E-10	9E-10	2E-09	5E-10	5E-10	2E-09	4E-09
3E-15	3E-15	1E-14	9E-14	2E-14	2E-14	8E-14	4E-13	1E-13	1E-13	4E-13	2E-12	4E-13	4E-13	2E-12	6E-12	1E-12	1E-12	5E-12	2E-11	4E-12	4E-12	2E-11	4E-11	1E-11	1E-11	4E-11	1E-10	3E-11	3E-11	1E-10	2E-10
2E-17	2E-17	7E-17	1E-15	2E-16	2E-16	9E-16	7E-15	2E-15	2E-15	7E-15	4E-14	9E-15	9E-15	4E-14	2E-13	4E-14	4E-14	1E-13	6E-13	1E-13	1E-13	5E-13	2E-12	4E-13	4E-13	2E-12	5E-12	1E-12	1E-12	4E-12	1E-11
0E+00	0E+00	0E+00	5E-18	1E-18	1E-18	5E-18	7E-17	2E-17	2E-17	7E-17	6E-16	1E-16	1E-16	5E-16	3E-15	8E-16	8E-16	3E-15	1E-14	4E-15	4E-15	1E-14	5E-14	1E-14	1E-14	5E-14	2E-13	4E-14	4E-14	2E-13	5E-13
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	4E-19	9E-20	9E-20	3E-19	6E-18	1E-18	1E-18	5E-18	5E-17	1E-17	1E-17	4E-17	3E-16	7E-17	7E-17	3E-16	1E-15	3E-16	3E-16	1E-15	5E-15	1E-15	1E-15	5E-15	2E-14
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	3E-20	6E-21	6E-21	2E-20	4E-19	1E-19	1E-19	4E-19	4E-18	9E-19	9E-19	4E-18	2E-17	6E-18	6E-18	2E-17	1E-16	3E-17	3E-17	1E-16	5E-16
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-21	5E-22	5E-22	2E-21	3E-20	8E-21	8E-21	3E-20	3E-19	8E-20	8E-20	3E-19	2E-18	5E-19	5E-19	2E-18	1E-17
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	1E-22	3E-23	3E-23	1E-22	3E-21	6E-22	6E-22	2E-21	2E-20	6E-21	6E-21	2E-20	2E-19
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	1E-23	2E-24	2E-24	9E-24	2E-22	5E-23	5E-23	2E-22	2E-21
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	7E-25	2E-25	2E-25	7E-25	1E-23
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	5E-26
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00

	Time Increment ---23---				Time Increment ---24---				Time Increment ---25---				Time Increment ---26---				Time Increment ---27---				Time Increment ---28---				Time Increment ---29---				Time Increment ---30---		
	Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg
3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	2E-02	2E-02	9E-02	9E-02	2E-02	2E-02	9E-02	9E-02	2E-02	2E-02	8E-02	8E-02	2E-02	2E-02	7E-02	7E-02
6E-02	6E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01	4E-02	4E-02	2E-01	2E-01
5E-02	5E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01
2E-02	2E-02	9E-02	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01
9E-03	9E-03	3E-02	4E-02	1E-02	1E-02	4E-02	4E-02	1E-02	1E-02	4E-02	5E-02	1E-02	1E-02	5E-02	5E-02	1E-02	1E-02	5E-02	6E-02	1E-02	1E-02	5E-02	6E-02	2E-02	2E-02	6E-02	7E-02	2E-02	2E-02	6E-02	7E-02
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5E-04	5E-04	2E-03	3E-03	7E-04	7E-04	3E-03	3E-03	8E-04	8E-04	3E-03	4E-03	1E-03	1E-03	4E-03	5E-03	1E-03	1E-03	5E-03	6F-03	1E-03	1E-03	6E-03	7E-03	2E-03	2E-03	7E-03	8E-03	2E-03	2E-03	8E-03	1E-02
1E-04	1E-04	4E-04	5E-04	1E-04	1E-04	5E-04	7E-04	2E-04	2E-04	6E-04	9E-04	2E-04	2E-04	8E-04	1E-03	3E-04	3F-04	1E-03	1E-03	3E-04	3E-04	1E-03	2E-03	4E-04	4F-04	2E-03	2E-03	5E-04	5E-04	2E-03	3E-03
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2E-06	2E-06	6E-06	1E-05	3E-06	3E-06	1E-05	2E-05	4E-06	4E-06	1E-05	2E-05	5E-06	5E-06	2E-05	3E-05	8E-06	8E-06	3E-05	4E-05	1E-05	1E-05	4E-05	6E-05	1E-05	1E-05	6E-05	8E-05	2E-05	2E-05	6E-05	1E-04
2E-07	2E-07	6E-07	1E-06	3E-07	3E-07	1E-06	2E-06	4E-07	4E-07	2E-06	3E-06	7E-07	7E-07	3E-06	4E-06	1E-06	1E-06	4E-06	6E-06	2E-06	2E-06	6E-06	9E-06	2E-06	2E-06	8E-06	1E-05	3E-06	3E-06	1E-05	2E-05
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6E-11	6E-11	2E-10	5E-10	1E-10	1E-10	5E-10	1E-09	3E-10	3E-10	1E-09	2E-09	5E-10	5E-10	2E-09	4E-09	9E-10	9E-10	4E-09	7E-09	2E-09	2E-09	6E-09	1E-08	3E-09	3E-09	1E-08	2E-08	5E-09	5E-09	2E-08	3E-08
3E-12	3E-12	1E-11	3E-11	7E-12	7E-12	3E-11	7E-11	2E-11	2E-11	6E-11	1E-10	3E-11	3E-11	1E-10	3E-10	7E-11	7E-11	3E-10	5E-10	1E-10	1E-10	5E-10	1E-09	2E-10	2E-10	9E-10	2E-09	4E-10	4E-10	2E-09	3E-09
1E-13	1E-13	5E-13	1E-12	3E-13	3E-13	1E-12	3E-12	8E-13	8E-13	3E-12	8E-12	2E-12	2E-12	7E-12	2E-11	4E-12	4E-12	2E-11	4E-11	9E-12	9E-12	3E-11	7E-11	2E-11	2E-11	7E-11	1E-10	3E-11	3E-11	1E-10	3E-10
4E-15	4E-15	2E-14	5E-14	1E-14	1E-14	5E-14	1E-13	4E-14	4E-14	1E-13	4E-13	9E-14	9E-14	4E-13	9E-13	2E-13	2E-13	8E-13	2E-12	5E-13	5E-13	2E-12	5E-12	1E-12	1E-12	4E-12	9E-12	2E-12	2E-12	9E-12	2E-11
1E-16	1E-16	4E-16	2E-15	4E-16	4E-16	2E-15	5E-15	1E-15	1E-15	5E-15	2E-14	4E-15	4E-15	1E-14	4E-14	1E-14	1E-14	4E-14	1E-13	3E-14	3E-14	1E-13	2E-13	6E-14	6E-14	2E-13	6E-13	1E-13	1E-13	5E-13	1E-12
2E-18	2E-18	9E-18	4E-17	1E-17	1E-17	4E-17	2E-16	4E-17	4E-17	2E-16	5E-16	1E-16	1E-16	5E-16	2E-15	4E-16	4E-16	2E-15	5E-15	1E-15	1E-15	4E-15	1E-14	3E-15	3E-15	1E-14	3E-14	7E-15	7E-15	3E-14	7E-14
4E-20	4E-20	2E-19	9E-19	2E-19	2E-19	8E-19	4E-18	1E-18	1E-18	4E-18	2E-17	4E-18	4E-18	1E-17	5E-17	1E-17	1E-17	5E-17	2E-16	4E-17	4E-17	2E-16	5E-16	1E-16	1E-16	4E-16	1E-15	3E-16	3E-16	1E-15	3E-15
5E-22	5E-22	2E-21	1E-20	3E-21	3E-21	1E-20	8E-20	2E-20	2E-20	7E-20	4E-19	9E-20	9E-20	3E-19	1E-18	4E-19	4E-19	1E-18	5E-18	1E-18	1E-18	5E-18	2E-17	4E-18	4E-18	2E-17	5E-17	1E-17	1E-17	5E-17	1E-16
4E-24	4E-24	1E-23	2E-22	4E-23	4E-23	1E-22	1E-21	3E-22	3E-22	1E-21	7E-21	2E-21	2E-21	6E-21	3E-20	8E-21	8E-21	3E-20	1E-19	3E-20	3E-20	1E-19	5E-19	1E-19	1E-19	5E-19	2E-18	4E-19	4E-19	2E-18	5E-18
1E-26	1E-26	5E-26	1E-24	3E-25	3E-25	1E-24	1E-23	3E-24	3E-24	1E-23	9E-23	2E-23	2E-23	9E-23	6E-22	1E-22	1E-22	5E-22	3E-21	7E-22	7E-22	3E-21	1E-20	3E-21	3E-21	1E-20	5E-20	1E-20	1E-20	4E-20	2E-19
0E+00	0E+00	0E+00	4E-27	9E-28	9E-28	3E-27	8E-26	2E-26	2E-26	8E-26	9E-25	2E-25	2E-25	9E-25	8E-24	2E-24	2E-24	7E-24	5E-23	1E-23	1E-23	4E-23	2E-22	6E-23	6E-23	2E-22	1E-21	3E-22	3E-22	1E-21	4E-21
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	3E-28	6E-29	6E-29	2E-28	6E-27	1E-27	1E-27	6E-27	7E-26	2E-26	2E-26	7E-26	6E-25	1E-25	1E-25	6E-25	4E-24	1E-24	1E-24	4E-24	2E-23	5E-24	5E-24	2E-23	1E-22
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-29	5E-30	5E-30	2E-29	5E-28	1E-28	1E-28	4E-28	6E-27	1E-27	1E-27	5E-27	5E-26	1E-26	1E-26	5E-26	3E-25	8E-26	8E-26	3E-25	2E-24
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	3E-31	3E-31	1E-30	3E-29	8E-30	8E-30	3E-29	4E-28	1E-28	1E-28	4E-28	4E-27	1E-27	1E-27	4E-27	3E-26
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	1E-31	2E-32	2E-32	9E-32	3E-30	6E-31	6E-31	2E-30	3E-29	8E-30	8E-30	3E-29	3E-28
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	7E-33	2E-33	2E-33	7E-33	2E-31	5E-32	5E-32	2E-31	3E-30
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	5E-34	1E-34	1E-34	5E-34	1E-32
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	4E-35
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00

	Time Increment ----31----				Time Increment ----32----				Time Increment ----33----				Time Increment ----34----				Time Increment ----35----				Time Increment ----36----				Time Increment ----37----				Time Increment ----38----		
	Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg
2E-02	2E-02	7E-02	7E-02	2E-02	2E-02	6E-02	6E-02	2E-02	2E-02	6E-02	6E-02	1E-02	1E-02	6E-02	6E-02	1E-02	1E-02	5E-02	5E-02	1E-02	1E-02	5E-02	5E-02	1E-02	1E-02	4E-02	4E-02	1E-02	1E-02	4E-02	4E-02
4E-02	4E-02	2E-01	2E-01	4E-02	4E-02	2E-01	2E-01	4E-02	4E-02	1E-01	2E-01	4E-02	4E-02	1E-01	1E-01	4E-02	4E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01
5E-02	5E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01	5E-02	5E-02	2E-01	2E-01	4E-02	4E-02	2E-01	2E-01	4E-02	4E-02	2E-01	2E-01	4E-02	4E-02	2E-01	2E-01
3E-02	3E-02	1E-01	1E-01	4E-02	4E-02	1E-01	1E-01	4E-02	4E-02	1E-01	2E-01	4E-02	4E-02	1E-01	2E-01	4E-02	4E-02	1E-01	2E-01	4E-02	4E-02	1E-01	2E-01	4E-02	4E-02	1E-01	2E-01	4E-02	4E-02	1E-01	2E-01
2E-02	2E-02	7E-02	8E-02	2E-02	2E-02	7E-02	8E-02	2E-02	2E-02	8E-02	9E-02	2E-02	2E-02	8E-02	9E-02	2E-02	2E-02	9E-02	1E-01	2E-02	2E-02	9E-02	1E-01	2E-02	2E-02	9E-02	1E-01	3E-02	3E-02	1E-01	1E-01
7E-03	7E-03	3E-02	3E-02	6E-03	6E-03	3E-02	4E-02	9E-03	9E-03	3E-02	4E-02	1E-02	1E-02	4E-02	4E-02	1E-02	1E-02	4E-02	5E-02	1E-02	1E-02	4E-02	5E-02	1E-02	1E-02	5E-02	5E-02	1E-02	1E-02	5E-02	6E-02
2E-03	2E-03	9E-03	1E-02	3E-03	3E-03	1E-02	1E-02	3E-03	3E-03	1E-02	1E-02	4E-03	4E-03	1E-02	2E-02	4E-03	4E-03	2E-02	2E-02	4E-03	4E-03	2E-02	2E-02	5E-03	5E-03	2E-02	2E-02	5E-03	5E-03	2E-02	2E-02
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1E-04	1E-04	5E-04	7E-04	2E-04	2E-04	7E-04	9E-04	2E-04	2E-04	8E-04	1E-03	3E-04	3E-04	1E-03	1E-03	3E-04	3E-04	1E-03	2E-03	4E-04	4E-04	1E-03	2E-03	5E-04	5E-04	2E-03	2E-03	5E-04	5E-04	2E-03	3E-03
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7E-08	7E-08	3E-07	5E-07	1E-07	1E-07	4E-07	7E-07	2E-07	2E-07	6E-07	1E-06	2E-07	2E-07	9E-07	1E-06	4E-07	4E-07	1E-06	2E-06	5E-07	5E-07	2E-06	3E-06	7E-07	7E-07	3E-06	4E-06	9E-07	9E-07	4E-06	5E-06
8E-09	8E-09	3E-08	5E-08	1E-08	1E-08	5E-08	8E-08	2E-08	2E-08	8E-08	1E-07	3E-08	3E-08	1E-07	2E-07	5E-08	5E-08	2E-07	3E-07	7E-08	7E-08	3E-07	4E-07	1E-07	1E-07	4E-07	6E-07	1E-07	1E-07	5E-07	8E-07
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0E+00	0E+00	0E+00	3E-36	6E-37	6E-37	2E-36	8E-35	2E-35	2E-35	7E-35	1E-33	3E-34	3E-34	1E-33	1E-32	3E-33	3E-33	1E-32	1E-31	2E-32	2E-32	9E-32	7E-31	2E-31	2E-31	6E-31	4E-30	1E-30	1E-30	4E-30	2E-29
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-37	5E-38	5E-38	2E-37	6E-36	1E-36	1E-36	5E-36	9E-35	2E-35	2E-35	8E-35	1E-33	2E-34	2E-34	9E-34	8E-33	2E-33	2E-33	8E-33	6E-32	1E-32	1E-32	5E-32	3E-31
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	1E-36	3E-39	3E-39	1E-38	4E-37	1E-37	1E-37	4E-37	7E-36	2E-36	2E-36	6E-36	8E-35	2E-35	2E-35	7E-35	7E-34	2E-34	2E-34	6E-34	5E-33
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	1E-39	2E-40	2E-40	9E-40	3E-38	8E-39	8E-39	3E-38	5E-37	1E-37	1E-37	5E-37	6E-36	1E-36	1E-36	6E-36	5E-35
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	7E-41	2E-41	2E-41	7E-41	2E-39	6E-40	6E-40	2E-39	4E-38	1E-38	1E-38	4E-38	5E-37
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	4E-43	9E-44	9E-44	3E-43	1E-41
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00

	Time Increment ---39---				Time Increment ---40---				Time Increment ---41---				Time Increment ---42---				Time Increment ---43---				Time Increment ---44---				Time Increment ---45---				Time Increment ---46---		
	Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg
1E-02	1E-02	4E-02	4E-02	9E-03	9E-03	4E-02	4E-02	9E-03	9E-03	3E-02	3E-02	8E-03	8E-03	3E-02	3E-02	7E-03	7E-03	3E-02	3E-02	7E-03	7E-03	3E-02	3E-02	6E-03	6E-03	2E-02	2E-02	6E-03	6E-03	2E-02	2E-02
3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	2E-02	2E-02	9E-02	9E-02	2E-02	2E-02	9E-02	9E-02	2E-02	2E-02	8E-02	8E-02	2E-02	2E-02	8E-02	8E-02
4E-02	4E-02	2E-01	2E-01	4E-02	4E-02	2E-01	2E-01	4E-02	4E-02	2E-01	2E-01	4E-02	4E-02	2E-01	2E-01	4E-02	4E-02	1E-01	2E-01	4E-02	4E-02	1E-01	1E-01	4E-02	4E-02	1E-01	1E-01	4E-02	4E-02	1E-01	1E-01
4E-02	4E-02	1E-01	2E-01	4E-02	4E-02	2E-01	2E-01	4E-02	4E-02	2E-01	2E-01	4E-02	4E-02	2E-01	2E-01	4E-02	4E-02	2E-01	2E-01	4E-02	4E-02	2E-01	2E-01	4E-02	4E-02	2E-01	2E-01	4E-02	4E-02	1E-01	2E-01
3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01
1E-02	1E-02	5E-02	6E-02	2E-02	2E-02	6E-02	7E-02	2E-02	2E-02	6E-02	7E-02	2E-02	2E-02	6E-02	7E-02	2E-02	2E-02	7E-02	8E-02	2E-02	2E-02	7E-02	8E-02	2E-02	2E-02	7E-02	8E-02	2E-02	2E-02	8E-02	9E-02
6E-03	6E-03	2E-02	3E-02	7E-03	7E-03	3E-02	3E-02	7E-03	7E-03	3E-02	3E-02	8E-03	8E-03	3E-02	3E-02	8E-03	8E-03	3E-02	4E-02	9E-03	9E-03	3E-02	4E-02	1E-02	1E-02	4E-02	4E-02	1E-02	1E-02	4E-02	5E-02
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6E-04	6E-04	2E-03	3E-03	7E-04	7E-04	3E-03	4E-03	9E-04	9E-04	3E-03	4E-03	1E-03	1E-03	4E-03	5E-03	1E-03	1E-03	4E-03	5E-03	1E-03	1E-03	5E-03	6E-03	1E-03	1E-03	6E-03	7E-03	2E-03	2E-03	6E-03	8E-03
2E-04	2E-04	6E-04	8E-04	2E-04	2E-04	8E-04	1E-03	2E-04	2E-04	9E-04	1E-03	3E-04	3E-04	1E-03	1E-03	3E-04	3E-04	1E-03	2E-03	4E-04	4E-04	2E-03	2E-03	5E-04	5E-04	2E-03	2E-03	5E-04	5E-04	2E-03	3E-03
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2E-19	2E-19	8E-19	2E-18	5E-19	5E-19	2E-18	5E-18	1E-18	1E-18	5E-18	1E-17	3E-18	3E-18	1E-17	2E-17	6E-18	6E-18	2E-17	5E-17	1E-17	1E-17	5E-17	1E-16	3E-17	3E-17	1E-16	2E-16	5E-17	5E-17	2E-16	4E-16
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0E+00	0E+00	0E+00	2E-45	5E-46	5E-46	2E-45	7E-44	2E-44	2E-44	7E-44	1E-42	3E-43	3E-43	1E-42	2E-41	4E-42	4E-42	2E-41	2E-40	4E-41	4E-41	2E-40	1E-39	3E-40	3E-40	1E-39	1E-38	2E-39	2E-39	9E-39	6E-38
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0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	5E-50	1E-50	1E-50	5E-50	2E-48	5E-49	5E-49	2E-48	4E-47	1E-47	1E-47	4E-47	6E-46
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	4E-51	9E-52	9E-52	3E-51	2E-49	4E-50	4E-50	1E-49	3E-48
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	3E-52	6E-53	6E-53	2E-52	1E-50
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-53
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00

	Time Increment ----47----				Time Increment ----48----				Time Increment ----49----				Time Increment ----50----				Time Increment ----51----				Time Increment ----52----				Time Increment ----53----				Time Increment ----54----		
	Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg
6E-03	6E-03	2E-02	2E-02	5E-03	5E-03	2E-02	2E-02	5E-03	5E-03	2E-02	2E-02	4E-03	4E-03	2E-02	2E-02	4E-03	4E-03	2E-02	2E-02	4E-03	4E-03	1E-02	1E-02	4E-03	4E-03	1E-02	1E-02	3E-03	3E-03	1E-02	1E-02
2E-02	2E-02	7E-02	6E-02	2E-02	2E-02	7E-02	7E-02	2E-02	2E-02	7E-02	7E-02	2E-02	2E-02	6E-02	6E-02	2E-02	2E-02	6E-02	6E-02	2E-02	2E-02	6E-02	6E-02	1E-02	1E-02	5E-02	5E-02	1E-02	1E-02	5E-02	5E-02
3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01
4E-02	4E-02	1E-01	2E-01	4E-02	4E-02	1E-01	2E-01	4E-02	4E-02	1E-01	2E-01	4E-02	4E-02	1E-01	2E-01	4E-02	4E-02	1E-01	2E-01	4E-02	4E-02	1E-01	1E-01	4E-02	4E-02	1E-01	1E-01	4E-02	4E-02	1E-01	1E-01
3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01
2E-02	2E-02	8E-02	9E-02	2E-02	2E-02	8E-02	9E-02	2E-02	2E-02	9E-02	1E-01	2E-02	2E-02	9E-02	1E-01	2E-02	2E-02	9E-02	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01
1E-02	1E-02	4E-02	5E-02	1E-02	1E-02	5E-02	5E-02	1E-02	1E-02	5E-02	5E-02	1E-02	1E-02	5E-02	6E-02	1E-02	1E-02	5E-02	6E-02	1E-02	1E-02	6E-02	6E-02	2E-02	2E-02	6E-02	7E-02	2E-02	2E-02	6E-02	7E-02
5E-03	5E-03	2E-02	2E-02	5E-03	5E-03	2E-02	2E-02	6E-03	6E-03	2E-02	3E-02	6E-03	6E-03	2E-02	3E-02	7E-03	7E-03	3E-02	3E-02	7E-03	7E-03	3E-02	3E-02	8E-03	8E-03	3E-02	3E-02	8E-03	8E-03	3E-02	4E-02
2E-03	2E-03	7E-03	9E-03	2E-03	2E-03	8E-03	1E-02	2E-03	2E-03	9E-03	1E-02	3E-03	3E-03	1E-02	1E-02	3E-03	3E-03	1E-02	1E-02	3E-03	3E-03	1E-02	1E-02	3E-03	3E-03	1E-02	2E-02	4E-03	4E-03	1E-02	2E-02
6E-04	6E-04	2E-03	3E-03	7E-04	7E-04	3E-03	3E-03	8E-04	8E-04	3E-03	4E-03	9E-04	9E-04	3E-03	4E-03	1E-03	1E-03	4E-03	5E-03	1E-03	1E-03	4E-03	5E-03	1E-03	1E-03	5E-03	6E-03	1E-03	1E-03	6E-03	7E-03
2E-04	2E-04	7E-04	9E-04	2E-04	2E-04	8E-04	1E-03	2E-04	2E-04	9E-04	1E-03	3E-04	3E-04	1E-03	1E-03	3E-04	3E-04	1E-03	2E-03	4E-04	4E-04	1E-03	2E-03	4E-04	4E-04	2E-03	2E-03	5E-04	5E-04	2E-03	2E-03
4E-05	4E-05	2E-04	2E-04	5E-05	5E-05	2E-04	3E-04	7E-05	7E-05	2E-04	3E-04	8E-05	8E-05	3E-04	4E-04	9E-05	9E-05	4E-04	5E-04	1E-04	1E-04	4E-04	5E-04	1E-04	1E-04	5E-04	6E-04	2E-04	2E-04	6E-04	7E-04
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2E-06	2E-06	8E-06	1E-05	3E-06	3E-06	1E-05	1E-05	3E-06	3E-06	1E-05	2E-05	4E-06	4E-06	2E-05	2E-05	5E-06	5E-06	2E-05	3E-05	7E-06	7E-06	3E-05	3E-05	8E-06	8E-06	3E-05	4E-05	1E-05	1E-05	4E-05	5E-05
4E-07	4E-07	1E-06	2E-06	5E-07	5E-07	2E-06	3E-06	7E-07	7E-07	2E-06	3E-06	8E-07	8E-07	3E-06	4E-06	1E-06	1E-06	4E-06	6E-06	1E-06	1E-06	5E-06	7E-06	2E-06	2E-06	7E-06	9E-06	2E-06	2E-06	9E-06	1E-05
6E-08	6E-08	2E-07	3E-07	8E-08	8E-08	3E-07	5E-07	1E-07	1E-07	4E-07	6E-07	2E-07	2E-07	8E-07	1E-06	3E-07	3E-07	1E-06	1E-06	3E-07	3E-07	1E-06	1E-06	3E-07	3E-07	1E-06	2E-06	5E-07	5E-07	2E-06	2E-06
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2E-10	2E-10	6E-10	1E-09	2E-10	2E-10	9E-10	1E-09	4E-10	4E-10	1E-09	2E-09	5E-10	5E-10	2E-09	3E-09	8E-10	8E-10	3E-09	4E-09	1E-09	1E-09	4E-09	6E-09	2E-09	2E-09	6E-09	9E-09	2E-09	2E-09	8E-09	1E-08
2E-11	2E-11	7E-11	1E-10	3E-11	3E-11	1E-10	2E-10	4E-11	4E-11	2E-10	3E-10	7E-11	7E-11	3E-10	4E-10	1E-10	1E-10	4E-10	6E-10	1E-10	1E-10	6E-10	9E-10	2E-10	2E-10	8E-10	1E-09	3E-10	3E-10	1E-09	2E-09
2E-12	2E-12	7E-12	1E-11	3E-12	3E-12	1E-11	2E-11	5E-12	5E-12	2E-11	3E-11	8E-12	8E-12	3E-11	5E-11	1E-11	1E-11	5E-11	7E-11	2E-11	2E-11	7E-11	1E-10	3E-11	3E-11	1E-10	2E-10	4E-11	4E-11	2E-10	2E-10
2E-13	2E-13	7E-13	1E-12	3E-13	3E-13	1E-12	2E-12	5E-13	5E-13	2E-12	3E-12	8E-13	8E-13	3E-12	5E-12	1E-12	1E-12	5E-12	9E-12	2E-12	2E-12	8E-12	1E-11	3E-12	3E-12	1E-11	2E-11	5E-12	5E-12	2E-11	3E-11
2E-14	2E-14	6E-14	1E-13	3E-14	3E-14	1E-13	2E-13	5E-14	5E-14	2E-13	3E-13	8E-14	8E-14	3E-13	6E-13	1E-13	1E-13	5E-13	9E-13	2E-13	2E-13	8E-13	1E-12	4E-13	4E-13	1E-12	2E-12	6E-13	6E-13	2E-12	4E-12
1E-15	1E-15	5E-15	1E-14	2E-15	2E-15	9E-15	2E-14	4E-15	4E-15	2E-14	3E-14	7E-15	7E-15	3E-14	5E-14	1E-14	1E-14	5E-14	9E-14	2E-14	2E-14	8E-14	1E-13	4E-14	4E-14	1E-13	2E-13	6E-14	6E-14	2E-13	4E-13
1E-16	1E-16	4E-16	8E-16	2E-16	2E-16	7E-16	1E-15	3E-16	3E-16	1E-15	3E-15	6E-16	6E-16	2E-15	5E-15	1E-15	1E-15	4E-15	8E-15	2E-15	2E-15	7E-15	1E-14	3E-15	3E-15	1E-14	2E-14	6E-15	6E-15	2E-14	4E-14
7E-18	7E-18	3E-17	5E-17	1E-17	1E-17	5E-17	1E-16	3E-17	3E-17	1E-16	2E-16	5E-17	5E-17	2E-16	4E-16	9E-17	9E-17	3E-16	7E-16	2E-16	2E-16	6E-16	1E-15	3E-16	3E-16	1E-15	2E-15	5E-16	5E-16	2E-15	4E-15
4E-19	4E-19	2E-18	4E-18	9E-19	9E-19	3E-18	7E-18	2E-18	2E-18	7E-18	1E-17	3E-18	3E-18	1E-17	3E-17	7E-18	7E-18	3E-17	5E-17	1E-17	1E-17	5E-17	1E-16	2E-17	2E-17	9E-17	2E-16	4E-17	4E-17	2E-16	3E-16
2E-20	2E-20	9E-20	2E-19	5E-20	5E-20	2E-19	5E-19	1E-19	1E-19	4E-19	9E-19	2E-19	2E-19	9E-19	2E-18	5E-19	5E-19	2E-18	4E-18	9E-19	9E-19	3E-18	7E-18	2E-18	2E-18	7E-18	1E-17	3E-18	3E-18	1E-17	3E-17
1E-21	1E-21	5E-21	1E-20	3E-21	3E-21	1E-20	3E-20	6E-21	6E-21	2E-20	6E-20	1E-20	1E-20	5E-20	1E-19	3E-20	3E-20	1E-19	2E-19	6E-20	6E-20	2E-19	5E-19	1E-19	1E-19	5E-19	1E-18	2E-19	2E-19	9E-19	2E-18
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1E-25	1E-25	4E-25	1E-24	3E-25	3E-25	1E-24	3E-24	8E-25	8E-25	3E-24	6E-24	2E-24	2E-24	7E-24	2E-23	5E-24	5E-24	2E-23	5E-23	1E-23	1E-23	4E-23	1E-22	3E-23	3E-23	1E-22	2E-22	6E-23	6E-23	2E-22	5E-22
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1E-28	1E-28	5E-28	2E-27	4E-28	4E-28	2E-27	5E-27	1E-27	1E-27	4E-27	1E-26	3E-27	3E-27	1E-26	4E-26	9E-27	9E-27	3E-26	1E-25	2E-26	2E-26	9E-26	3E-25	6E-26	6E-26	2E-25	6E-25	2E-25	2E-25	6E-25	1E-24
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2E-33	2E-33	9E-33	4E-32	9E-33	9E-33	4E-32	1E-31	4E-32	4E-32	1E-31	5E-31	1E-31	1E-31	5E-31	2E-30	4E-31	4E-31	2E-30	5E-30	1E-30	1E-30	5E-30	2E-29	4E-30	4E-30	1E-29	5E-29	1E-29	1E-29	4E-29	1E-28
5E-35	5E-35	2E-34	9E-34	2E-34	2E-34	6E-34	4E-33	9E-34	9E-34	3E-33	1E-32	3E-33	3E-33	1E-32	5E-32	1E-32	1E-32	5E-32	2E-31	4E-32	4E-32	2E-31	5E-31	1E-31	1E-31	5E-31	2E-30	4E-31	4E-31	2E-30	5E-30
9E-37	9E-37	3E-36	2E-35	4E-36	4E-36	2E-35	8E-35	2E-35	2E-35	6E-35	3E-34	8E-35	8E-35	3E-34	1E-33	3E-34	3E-34	1E-33	5E-33	1E-33	1E-33	4E-33	2E-32	4E-33	4E-33	2E-32	5E-32	1E-32	1E-32	5E-32	2E-31
1E-38	1E-38	6E-38	3E-37	8E-38	8E-38	3E-37	2E-36	4E-37	4E-37	2E-36	7E-36	2E-36	2E-36	7E-36	3E-35	8E-36	8E-36	3E-35	1E-34	3E-35	3E-35	1E-34	5E-34	1E-34	1E-34	4E-34	2E-33	4E-34	4E-34	1E-33	5E-33
2E-40	2E-40	8E-40	5E-39	1E-39	1E-39	5E-39	3E-38	7E-39	7E-39	3E-38	1E-37	3E-38	3E-38	1E-37	7E-37	2E-37	2E-37	6E-37	3E-36	7E-37	7E-37	3E-36	1E-35	3E-36	3E-36	1E-35	4E-35	1E-35	1E-35	4E-35	2E-34
2E-42	2E-42	9E-42	7E-41	2E-41	2E-41	6E-41	4E-40	1E-40	1E-40	4E-40	2E-39	6E-40	6E-40	2E-39	1E-38	3E-39	3E-39	1E-38	6E-38	1E-38	1E-38	5E-38	3E-37	6E-38	6E-38	2E-37	1E-36	3E-37	3E-37	1E-36	4E-36
2E-44	2E-44	8E-44	7E-43	2E-43	2E-43	7E-43	6E-42	1E-42	1E-42	5E-42	4E-41	9E-42	9E-42	3E-41	2E-40	5E-41	5E-41	2E-40	1E-39	3E-40	3E-40	1E-39	5E-39	1E-39	1E-39	5E-39	2E-38	6E-39	6E-39	2E-38	1E-37
2E-46	2E-46	6E-46	7E-45	2E-45	2E-45	6E-45	6E-44	1E-44	1E-44	6E-44	5E-43	1E-43	1E-43	4E-43	3E-42	7E-43	7E-43	3E-42	2E-41	4E-42	4E-42	2E-41	1E-40	2E-41	2E-41	9E-41	5E-40	1E-40	1E-40	4E-40	2E-39
8E-49	8E-49	3E-48	5E-47	1E-47	1E-47	4E-47	5E-46	1E-46	1E-46	5E-46	5E-45	1E-45	1E-45	4E-45	4E-44	9E-45	9E-45	3E-44	3E-43	6E-44	6E-44	2E-43	2E-42	4E-43	4E-43	1E-42	8E-42	2E-42	2E-42	8E-42	4E-41
3E-51	3E-51	1E-50	2E-49	6E-50	6E-50	2E-49	4E-48	9E-49	9E-49	3E-48	4E-47	1E-47	1E-47	4E-47	4E-46	9E-47	9E-47	4E-46	3E-45	7E-46	7E-46	3E-45	2E-44	5E-45	5E-45	2E-44	1E-43	3E-44	3E-44	1E-43	7E-43
5E-54	5E-54	2E-53	6E-52	2E-52	2E-52	8E-52	2E-50	4E-51	4E-51	2E-50	3E-49	7E-50	7E-50	3E-49	3E-48	8E-49	8E-49	3E-48	3E-47	7E-48	7E-48	3E-47	2E-46	6E-47	6E-47	2E-46	2E-45	4E-46	4E-46	2E-45	1E-44
0E+00	0E+00	0E+00	1E-54	3E-55	3E-55	1E-54	6E-53	1E-53	1E-53	6E-53	1E-51	3E-52	3E-52	1E-51	2E-50	5E-51	5E-51	2E-50	3E-49	6E-50	6E-50	2E-49	2E-48	6E-49	6E-49	2E-48	2E-47	5E-48	5E-48	2E-47	1E-46
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	1E-55	2E-56	2E-56	9E-56	4E-54	1E-54	1E-54	4E-54	1E-52	3E-53	3E-53	1E-52	2E-51	4E-52	4E-52	2E-51	2E-50	5E-51	5E-51	2E-50	2E-49	5E-50	5E-50	2E-49	2E-48
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	7E-57	2E-57	2E-57	7E-57	3E-55	8E-56	8E-56	3E-55	6E-54	2E-54	2E-54	7E-54	1E-52	3E-53	3E-53	1E-52	2E-51	4E-52	4E-52	1E-51	2E-50

	Time Increment ---55---				Time Increment ---56---				Time Increment ---57---				Time Increment ---58---				Time Increment ---59---				Time Increment ---60---				Time Increment ---61---				Time Increment ---62---	
	Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg	Csoil mg/kg		Caqueous total mg/kg	Csorb mg/kg
3E-03	3E-03	1E-02	1E-02	3E-03	3E-03	1E-02	1E-02	3E-03	3E-03	1E-02	1E-02	2E-03	2E-03	9E-03	9E-03	2E-03	2E-03	9E-03	9E-03	2E-03	2E-03	8E-03	8E-03	2E-03	2E-03	7E-03	7E-03	2E-03	2E-03	7E-03
1E-02	1E-02	5E-02	5E-02	1E-02	1E-02	5E-02	5E-02	1E-02	1E-02	4E-02	4E-02	1E-02	1E-02	4E-02	4E-02	1E-02	1E-02	4E-02	4E-02	1E-02	1E-02	4E-02	4E-02	9E-03	9E-03	3E-02	3E-02	9E-03	9E-03	3E-02
3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	2E-02	2E-02	9E-02	1E-01	2E-02	2E-02	9E-02	9E-02	2E-02	2E-02	8E-02	9E-02	2E-02	2E-02	8E-02	8E-02	2E-02	2E-02	6E-02	6E-02	2E-02	2E-02	6E-02
4E-02	4E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1F-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01
3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01
3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01
2E-02	2E-02	6E-02	7E-02	2E-02	2E-02	7E-02	8E-02	2E-02	2E-02	7E-02	8E-02	2E-02	2E-02	7E-02	8E-02	2E-02	2E-02	8E-02	8E-02	2E-02	2E-02	8E-02	8E-02	2E-02	2E-02	8E-02	9E-02	2E-02	2E-02	8E-02
9E-03	9E-03	3E-02	4E-02	1E-02	1E-02	4E-02	4E-02	1E-02	1E-02	4E-02	4E-02	1E-02	1E-02	4E-02	5E-02	1E-02	1E-02	4E-02	5E-02	1E-02	1E-02	5E-02	5E-02	1E-02	1E-02	5E-02	5E-02	1E-02	1E-02	5E-02
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1E-33	1E-33	5E-33	2E-32	4E-33	4E-33	2E-32	5E-32	1E-32	1E-32	5E-32	2E-31	4E-32	4E-32	1E-31	4E-31	1E-31	1E-31	4E-31	1E-30	3E-31	3E-31	1E-30	3E-30	8E-31	8E-31	3E-30	8E-30	2E-30	2E-30	8E-30
4E-35	4E-35	1E-34	5E-34	1E-34	1E-34	5E-34	2E-33	4E-34	4E-34	2E-33	5E-33	1E-33	1E-33	5E-33	2E-32	4E-33	4E-33	1E-32	5E-32	1E-32	1E-32	4E-32	1E-31	3E-32	3E-32	1E-31	3E-31	8E-32	8E-32	3E-31
1E-36	1E-36	4E-36	1E-35	4E-36	4E-36	1E-35	5E-35	1E-35	1E-35	5E-35	2E-34	4E-35	4E-35	2E-34	5E-34	1E-34	1E-34	5E-34	2E-33	4E-34	4E-34	2E-33	5E-33	1E-33	1E-33	4E-33	1E-32	3E-33	3E-33	1E-32
2E-38	2E-38	9E-38	4E-37	9E-38	9E-38	4E-37	1E-36	4E-37	4E-37	1E-36	5E-36	1E-36	1E-36	5E-36	2E-35	4E-36	4E-36	2E-35	5E-35	1E-35	1E-35	5E-35	2E-34	4E-35	4E-35	2E-34	5E-34	1E-34	1E-34	5E-34
5E-40	5E-40	2E-39	9E-39	2E-39	2E-39	8E-39	4E-38	9E-39	9E-39	3E-38	1E-37	3E-38	3E-38	1E-37	5E-37	1E-37	1E-37	5E-37	2E-36	4E-37	4E-37	2E-36	6E-36	1E-36	1E-36	5E-36	2E-35	4E-36	4E-36	2E-35
1E-41	1E-41	4E-41	2E-40	5E-41	5E-41	2E-40	8E-40	2E-40	2E-40	8E-40	3E-39	8E-40	8E-40	3E-39	1E-38	3E-39	3E-39	1E-38	5E-38	1E-38	1E-38	4E-38	2E-37	4E-38	4E-38	2E-37	5E-37	1E-37	1E-37	5E-37
2E-43	2E-43	7E-43	4E-42	9E-43	9E-43	3E-42	2E-41	4E-42	4E-42	2E-41	8E-41	2E-41	2E-41	7E-41	3E-40	8E-41	8E-41	3E-40	1E-39	3E-40	3E-40	1E-39	5E-39	1E-39	1E-39	4E-39	2E-38	4E-39	4E-39	1E-38
3E-45	3E-45	1E-44	6E-44	1E-44	1E-44	6E-44	3E-43	8E-44	8E-44	3E-43	2E-42	4E-43	4E-43	1E-42	7E-42	2E-42	2E-42	6E-42	3E-41	7E-42	7E-42	3E-41	1E-40	3E-41	3E-41	1E-40	4E-40	1E-40	1E-40	4E-40
3E-47	3E-47	1E-46	9E-46	2E-46	2E-46	8E-46	5E-45	1E-45	1E-45	5E-45	3E-44	7E-45	7E-45	3E-44	1E-43	3E-44	3E-44	1E-43	6E-43	2E-43	2E-43	6E-43	3E-42	7E-43	7E-43	2E-42	1E-41	3E-42	3E-42	1E-41
4E-49	4E-49	1E-48	1E-47	3E-48	3E-48	1E-47	8E-47	2E-47	2E-47	7E-47	4E-46	1E-46	1E-46	4E-46	2E-45	6E-46	6E-46	2E-45	1E-44	3E-45	3E-45	1E-44	6E-44	1E-44	1E-44	5E-44	2E-43	6E-44	6E-44	2E-43
4E-51	4E-51	1E-50	1E-49	3E-50	3E-50	1E-49	1E-48	2E-49	2E-49	9E-49	6E-48	2E-48	2E-48	6E-48	4E-47	9E-48	9E-48	4E-47	2E-46	5E-47	5E-47	2E-46	1E-45	3E-46	3E-46	1E-45	5E-45	1E-45	1E-45	5E-45

Time	Time Increment ----63---- Caqueous total mg/l	Csorb mg/kg	Csoil mg/kg	Time	Time Increment ----64---- Caqueous total mg/l	Csorb mg/kg	Csoil mg/kg	Time	Time Increment ----65---- Caqueous total mg/l	Csorb mg/kg	Csoil mg/kg	Time	Time Increment ----66---- Caqueous total mg/l	Csorb mg/kg	Csoil mg/kg	Time	Time Increment ----67---- Caqueous total mg/l	Csorb mg/kg	Csoil mg/kg	Time	Time Increment ----68---- Caqueous total mg/l	Csorb mg/kg	Csoil mg/kg	Time	Time Increment ----69---- Caqueous total mg/l	Csorb mg/kg	Csoil mg/kg	Time	Time Increment ----70---- Caqueous total mg/l	Csorb mg/kg	Csoil mg/kg
2E-03	2E-03	6E-03	6E-03	2E-03	2E-03	6E-03	6E-03	1E-03	1E-03	5E-03	5E-03	1E-03	1E-03	5E-03	5E-03	1E-03	1E-03	5E-03	5E-03	1E-03	1E-03	4E-03	4E-03	1E-03	1E-03	4E-03	4E-03	1E-03	1E-03	4E-03	4E-03
8E-03	8E-03	3E-02	3E-02	8E-03	8E-03	3E-02	3E-02	7E-03	7E-03	3E-02	3E-02	7E-03	7E-03	3E-02	3E-02	6E-03	6E-03	2E-02	2E-02	6E-03	6E-03	2E-02	2E-02	6E-03	6E-03	2E-02	2E-02	5E-03	5E-03	2E-02	2E-02
2E-02	2E-02	7E-02	7E-02	2E-02	2E-02	7E-02	7E-02	2E-02	2E-02	7E-02	7E-02	2E-02	2E-02	6E-02	7E-02	2E-02	2E-02	6E-02	6E-02	2E-02	2E-02	6E-02	6E-02	1E-02	1E-02	6E-02	6E-02	1E-02	1E-02	5E-02	5E-02
3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	2E-02	2E-02	9E-02	1E-01	2E-02	2E-02	9E-02	1E-01
3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01
3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01
2E-02	2E-02	8E-02	9E-02	2E-02	2E-02	9E-02	1E-01	2E-02	2E-02	9E-02	1E-01	2E-02	2E-02	9E-02	1E-01	2E-02	2E-02	9E-02	1E-01	2E-02	2E-02	9E-02	1E-01	3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01
1E-02	1E-02	5E-02	6E-02	1E-02	1E-02	5E-02	6E-02	2E-02	2E-02	6E-02	6E-02	2E-02	2E-02	6E-02	7E-02	2E-02	2E-02	6E-02	7E-02	2E-02	2E-02	6E-02	7E-02	2E-02	2E-02	7E-02	7E-02	2E-02	2E-02	7E-02	8E-02
7E-03	7E-03	3E-02	3E-02	8E-03	8E-03	3E-02	3E-02	8E-03	8E-03	3E-02	4E-02	9E-03	9E-03	4E-02	4E-02	1E-02	1E-02	4E-02	4E-02	1E-02	1E-02	4E-02	4E-02	1E-02	1E-02	4E-02	5E-02	6E-03	6E-03	2E-02	8E-02
3E-03	3E-03	1E-02	2E-02	4E-03	4E-03	1E-02	2E-02	4E-03	4E-03	2E-02	2E-02	4E-03	4E-03	2E-02	2E-02	5E-03	5E-03	2E-02	2E-02	5E-03	5E-03	2E-02	2E-02	5E-03	5E-03	2E-02	2E-02	6E-03	6E-03	2E-02	2E-02
1E-03	1E-03	5E-03	6E-03	2E-03	2E-03	6E-03	7E-03	2E-03	2E-03	7E-03	8E-03	2E-03	2E-03	7E-03	8E-03	2E-03	2E-03	8E-03	9E-03	2E-03	2E-03	8E-03	9E-03	2E-03	2E-03	9E-03	1E-02	3E-03	3E-03	1E-02	1E-02
5E-04	5E-04	2E-03	2E-03	6E-04	6E-04	2E-03	3E-03	7E-04	7E-04	2E-03	3E-03	7E-04	7E-04	3E-03	3E-03	8E-04	8E-04	3E-03	4E-03	9E-04	9E-04	3E-03	4E-03	1E-03	1E-03	4E-03	5E-03	1E-03	1E-03	4E-03	5E-03
2E-04	2E-04	6E-04	8E-04	2E-04	2E-04	7E-04	9E-04	2E-04	2E-04	8E-04	1E-03	3E-04	3E-04	1E-03	1E-03	3E-04	3E-04	1E-03	1E-03	3E-04	3E-04	1E-03	2E-03	4E-04	4E-04	1E-03	2E-03	4E-04	4E-04	2E-03	2E-03
5E-05	5E-05	2E-04	2E-04	6E-05	6E-05	2E-04	3E-04	7E-05	7E-05	3E-04	3E-04	8E-05	8E-05	3E-04	4E-04	9E-05	9E-05	4E-04	4E-04	1E-04	1E-04	4E-04	5E-04	1E-04	1E-04	5E-04	6E-04	1E-04	1E-04	5E-04	7E-04
1E-05	1E-05	5E-05	7E-05	2E-05	2E-05	6E-05	8E-05	2E-05	2E-05	7E-05	9E-05	2E-05	2E-05	9E-05	1E-04	3E-05	3E-05	1E-04	1E-04	3E-05	3E-05	1E-04	2E-04	4E-05	4E-05	1E-04	2E-04	4E-05	4E-05	2E-04	2E-04
3E-06	3E-06	1E-05	2E-05	4E-06	4E-06	2E-05	2E-05	5E-06	5E-06	2E-05	2E-05	6E-06	6E-06	2E-05	3E-05	7E-06	7E-06	3E-05	4E-05	9E-06	9E-06	3E-05	4E-05	1E-05	1E-05	4E-05	5E-05	1E-05	1E-05	5E-05	6E-05
8E-07	8E-07	3E-06	4E-06	1E-06	1E-06	4E-06	5E-06	1E-06	1E-06	5E-06	6E-06	1E-06	1E-06	6E-06	7E-06	2E-06	2E-06	7E-06	9E-06	2E-06	2E-06	8E-06	1E-05	3E-06	3E-06	1E-05	1E-05	3E-06	3E-06	1E-05	2E-05
2E-07	2E-07	6E-07	9E-07	2E-07	2E-07	8E-07	1E-06	3E-07	3E-07	1E-06	1E-06	3E-07	3E-07	1E-06	2E-06	4E-07	4E-07	2E-06	2E-06	5E-07	5E-07	2E-06	3E-06	6E-07	6E-07	2E-06	3E-06	8E-07	8E-07	3E-06	4E-06
3E-06	3E-06	1E-05	2E-05	4E-06	4E-06	2E-05	2E-05	5E-06	5E-06	2E-05	3E-05	7E-06	7E-06	3E-05	4E-05	9E-06	9E-06	4E-05	5E-05	1E-05	1E-05	4E-05	6E-05	1E-05	1E-05	5E-05	7E-05	2E-05	2E-05	9E-05	1E-04
6E-09	6E-09	2E-08	3E-08	8E-09	8E-09	3E-08	4E-08	1E-08	1E-08	4E-08	5E-08	1E-08	1E-08	5E-08	7E-08	2E-08	2E-08	7E-08	9E-08	2E-08	2E-08	8E-08	1E-07	3E-08	3E-08	1E-07	1E-07	4E-08	4E-08	1E-07	2E-07
1E-09	1E-09	4E-09	5E-09	1E-09	1E-09	5E-09	7E-09	2E-09	2E-09	7E-09	1E-08	2E-09	2E-09	9E-09	1E-08	3E-09	3E-09	1E-08	2E-08	4E-09	4E-09	2E-08	2E-08	5E-09	5E-09	2E-08	3E-08	7E-09	7E-09	3E-08	4E-08
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2E-11	2E-11	8E-11	1E-10	3E-11	3E-11	1E-10	2E-10	4E-11	4E-11	2E-10	2E-10	6E-11	6E-11	2E-10	3E-10	8E-11	8E-11	3E-10	5E-10	1E-10	1E-10	4E-10	7E-10	2E-10	2E-10	6E-10	9E-10	2E-10	2E-10	8E-10	1E-09
3E-12	3E-12	1E-11	2E-11	4E-12	4E-12	2E-11	2E-11	6E-12	6E-12	2E-11	4E-11	9E-12	9E-12	3E-11	5E-11	1E-11	1E-11	5E-11	7E-11	2E-11	2E-11	7E-11	1E-10	2E-11	2E-11	9E-11	1E-10	3E-11	3E-11	1E-10	2E-10
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5E-16	5E-16	2E-15	3E-15	8E-16	8E-16	3E-15	5E-15	1E-15	1E-15	5E-15	8E-15	2E-15	2E-15	8E-15	1E-14	3E-15	3E-15	1E-14	2E-14	5E-15	5E-15	2E-14	3E-14	8E-15	8E-15	3E-14	5E-14	1E-14	1E-14	4E-14	7E-14
5E-17	5E-17	2E-16	3E-16	8E-17	8E-17	3E-16	5E-16	1E-16	1E-16	5E-16	9E-16	2E-16	2E-16	8E-16	1E-15	3E-16	3E-16	1E-15	2E-15	5E-16	5E-16	2E-15	4E-15	9E-16	9E-16	3E-15	6E-15	1E-15	1E-15	5E-15	9E-15
4E-18	4E-18	2E-17	3E-17	7E-18	7E-18	3E-17	5E-17	1E-17	1E-17	5E-17	9E-17	2E-17	2E-17	8E-17	1E-16	3E-17	3E-17	1E-16	2E-16	6E-17	6E-17	2E-16	4E-16	9E-17	9E-17	4E-16	6E-16	1E-16	1E-16	6E-16	1E-15
4E-19	4E-19	1E-18	3E-18	7E-19	7E-19	2E-18	5E-18	1E-18	1E-18	4E-18	8E-18	2E-18	2E-18	7E-18	1E-17	3E-18	3E-18	1E-17	2E-17	6E-18	6E-18	2E-17	4E-17	9E-18	9E-18	4E-17	6E-17	2E-17	2E-17	6E-17	1E-16
3E-20	3E-20	1E-19	2E-19	5E-20	5E-20	2E-19	4E-19	1E-19	1E-19	4E-19	7E-19	2E-19	2E-19	7E-19	1E-18	3E-19	3E-19	1E-18	2E-18	5E-19	5E-19	2E-18	4E-18	9E-19	9E-19	3E-18	6E-18	1E-18	1E-18	6E-18	1E-17
2E-21	2E-21	8E-21	2E-20	4E-21	4E-21	2E-20	3E-20	8E-21	8E-21	3E-20	6E-20	1E-20	1E-20	5E-20	1E-19	3E-20	3E-20	1E-19	2E-19	5E-20	5E-20	2E-19	3E-19	8E-20	8E-20	3E-19	6E-19	1E-19	1E-19	5E-19	1E-18
2E-22	2E-22	6E-22	1E-21	3E-22	3E-22	1E-21	2E-21	6E-22	6E-22	2E-21	4E-21	1E-21	1E-21	4E-21	8E-21	2E-21	2E-21	8E-21	2E-20	4E-21	4E-21	1E-20	3E-20	7E-21	7E-21	3E-20	5E-20	1E-20	1E-20	5E-20	9E-20
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6E-25	6E-25	2E-24	5E-24	1E-24	1E-24	5E-24	1E-23	3E-24	3E-24	1E-23	2E-23	5E-24	5E-24	2E-23	4E-23	1E-23	1E-23	4E-23	9E-23	2E-23	2E-23	8E-23	2E-22	4E-23	4E-23	2E-22	3E-22	8E-23	8E-23	3E-22	6E-22
4E-26	4E-26	1E-25	3E-25	8E-26	8E-26	3E-25	7E-25	2E-25	2E-25	6E-25	1E-24	4E-25	4E-25	1E-24	3E-24	7E-25	7E-25	3E-24	6E-24	1E-24	1E-24	6E-24	1E-23	3E-24	3E-24	1E-23	2E-23	6E-24	6E-24	2E-23	4E-23
2E-27	2E-27	8E-27	2E-26	5E-27	5E-27	2E-26	4E-26	1E-26	1E-26	4E-26	9E-26	2E-26	2E-26	8E-26	2E-25	5E-26	5E-26	2E-25	4E-25	9E-26	9E-26	4E-25	8E-25	2E-25	2E-25	7E-25	2E-24	4E-25	4E-25	1E-24	3E-24
1E-28	1E-28	4E-28	1E-27	2E-28	2E-28	9E-28	2E-27	6E-28	6E-28	2E-27	5E-27	1E-27	1E-27	5E-27	1E-26	3E-27	3E-27	1E-26	2E-26	6E-27	6E-27	2E-26	5E-26	1E-26	1E-26	5E-26	1E-25	3E-26	3E-26	1E-25	2E-25
5E-30	5E-30	2E-29	5E-29	1E-29	1E-29	5E-29	1E-28	3E-29	3E-29	1E-28	3E-28	7E-29	7E-29	3E-28	6E-28	2E-28	2E-28	6E-28	1E-27	3E-28	3E-28	1E-27	3E-27	7E-28	7E-28	3E-27	6E-27	2E-27	2E-27	6E-27	1E-26
2E-31	2E-31	8E-31	2E-30	6E-31	6E-31	2E-30	6E-30	1E-30	1E-30	5E-30	1E-29	3E-30	3E-30	1E-29	3E-29	8E-30	8E-30	3E-29	7E-29	2E-29	2E-29	7E-29	2E-28	4E-29	4E-29	2E-28	4E-28	9E-29	9E-29	3E-28	8E-28
9E-33	9E-33	3E-32	1E-31	2E-32	2E-32	9E-32	3E-31	6E-32	6E-32	2E-31	6E-31	2E-31	2E-31	6E-31	2E-30	4E-31	4E-31	1E-30	4E-30	9E-31	9E-31	4E-30	9E-30	2E-30	2E-30	8E-30	2E-29	5E-30	5E-30	2E-29	5E-29
4E-34	4E-34	1E-33	4E-33	1E-33	1E-33	4E-33	1E-32	3E-33	3E-33	1E-32	3E-32	7E-33	7E-33	3E-32	7E-32	2E-32	2E-32	7E-32	2E-31	4E-32	4E-32	2E-31	4E-31	1E-31	1E-31	4E-31	1E-30	3E-31	3E-31	1E-30	2E-30
1E-35	1E-35	5E-35	2E-34	4E-35	4E-35	1E-34	4E-34	1E-34	1E-34	4E-34	1E-33	3E-34	3E-34	1E-33	3E-33	8E-34	8E-34	3E-33	8E-33	2E-33	2E-33	8E-33	2E-32	5E-33	5E-33	2E-32	5E-32	1E-32	1E-32	5E-32	1E-31
4E-37	4E-37	2E-36	5E-36	1E-36	1E-36	5E-36	2E-35	4E-36	4E-36	1E-35	5E-35	1E-35	1E-35	5E-35	1E-34	3E-35	3E-35	1E-34	3E-34	8E-35	8E-35	3E-34	9E-34	2E-34	2E-34	8E-34	2E-33	6E-34	6E-34	2E-33	6E-33
1E-38	1E-38	5E-38	2E-37	4E-38	4E-38	2E-37	6E-37	1E-37	1E-37	5E-37	2E-36	4E-37	4E-37	2E-36	5E-36	1E-36	1E-36	5E-36	1E-35	3E-36	3E-36	1E-35	4E-35	9E-36	9E-36	4E-35	1E-34	2E-35	2E-35	9E-35	3E-34
4E-40	4E-40	1E-39	5E-39	1E-39	1E-39	5E-39	2E-38	4E-39	4E-39	2E-38	6E-38	1E-38	1E-38	5E-38	2E-37	4E-38	4E-38	2E-37	5E-37	1E-37	1E-37	5E-37	1E-36	4E-37	4E-37	1E-36	4E-36	1E-36	1E-36	4E-36	1E-35
1E-41	1E-41	4E-41	2E-40	4E-41	4E-41	1E-40	5E-40	1E-40	1E-40	5E-40	2E-39	4E-40	4E-40	2E-39	6E-39	1E-39	1E-39	5E-39	2E-38	4E-39	4E-39	2E-38	5E-38	1E-38	1E-38	5E-38	2E-37	4E-38	4E-38	1E-37	4E-37
2E-43	2E-43	9E-43	4E-42	1E-42	1E-42	4E-42	1E-41	4E-42	4E-42	1E-41	5E-41	1E-41	1E-41	5E-41	2E-40	4E-41	4E-41	2E-40	6E-40	1E-40	1E-40	5E-40	2E-39	4E-40	4E-40	2E-39	5E-39	1E-39	1E-39	5E-39	2E-38
5E-45	5E-45	2E-44	9E-44	2E-44	2E-44	9E-44	4E-43	9E-44	9E-44	3E-43	1E-42	3E-43	3E-43	1E-42	5E-42	1E-42	1E-42	5E-42	2E-41	4E-42	4E-42	2E-41	6E-41	1E-41	1E-41	5E-41	2E-40	4E-41	4E-41	2E-40	6E-40

Time	Time Increment ---71--- Caqueous total mg/l	Csorb mg/kg	Csoil mg/kg	Time	Time Increment ---72--- Caqueous total mg/l	Csorb mg/kg	Csoil mg/kg
9E-04	9E-04	3E-03	3E-03	9E-04	9E-04	3E-03	3E-03
5E-03	5E-03	2E-02	2E-02	5E-03	5E-03	2E-02	2E-02
1E-02	1E-02	5E-02	5E-02	1E-02	1E-02	5E-02	5E-02
2E-02	2E-02	9E-02	9E-02	2E-02	2E-02	9E-02	9E-02
3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01
3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01
3E-02	3E-02	1E-01	1E-01	3E-02	3E-02	1E-01	1E-01
2E-02	2E-02	7E-02	8E-02	2E-02	2E-02	7E-02	8E-02
1E-02	1E-02	4E-02	5E-02	1E-02	1E-02	5E-02	5E-02
6E-03	6E-03	2E-02	3E-02	6E-03	6E-03	2E-02	3E-02
3E-03	3E-03	1E-02	1E-02	3E-03	3E-03	1E-02	1E-02
1E-03	1E-03	5E-03	5E-03	1E-03	1E-03	5E-03	6E-03
5E-04	5E-04	2E-03	2E-03	5E-04	5E-04	2E-03	2E-03
2E-04	2E-04	6E-04	7E-04	2E-04	2E-04	7E-04	8E-04
5E-05	5E-05	2E-04	2E-04	6E-05	6E-05	2E-04	3E-04
1E-05	1E-05	6E-05	7E-05	2E-05	2E-05	7E-05	8E-05
4E-06	4E-06	1E-05	2E-05	5E-06	5E-06	2E-05	2E-05
1E-06	1E-06	4E-06	5E-06	1E-06	1E-06	4E-06	6E-06
2E-07	2E-07	8E-07	1E-06	3E-07	3E-07	1E-06	1E-06
5E-08	5E-08	2E-07	2E-07	6E-08	6E-08	2E-07	3E-07
9E-09	9E-09	4E-08	5E-08	1E-08	1E-08	5E-08	6E-08
2E-09	2E-09	6E-09	9E-09	2E-09	2E-09	9E-09	1E-08
3E-10	3E-10	1E-09	2E-09	4E-10	4E-10	2E-09	2E-09
5E-11	5E-11	2E-10	3E-10	7E-11	7E-11	2E-10	4E-10
7E-12	7E-12	3E-11	4E-11	1E-11	1E-11	4E-11	6E-11
1E-12	1E-12	4E-12	6E-12	1E-12	1E-12	6E-12	9E-12
1E-13	1E-13	5E-13	8E-13	2E-13	2E-13	8E-13	1E-12
2E-14	2E-14	7E-14	1E-13	3E-14	3E-14	1E-13	2E-13
2E-15	2E-15	8E-15	1E-14	3E-15	3E-15	1E-14	2E-14
2E-16	2E-16	9E-16	2E-15	4E-16	4E-16	1E-15	2E-15
2E-17	2E-17	9E-17	2E-16	4E-17	4E-17	2E-18	3E-16
2E-18	2E-18	9E-18	2E-17	4E-18	4E-18	2E-17	3E-17
2E-19	2E-19	9E-19	2E-18	4E-19	4E-19	2E-18	3E-18
2E-20	2E-20	8E-20	1E-19	4E-20	4E-20	1E-19	3E-19
2E-21	2E-21	7E-21	1E-20	3E-21	3E-21	1E-20	2E-20
1E-22	1E-22	5E-22	1E-21	3E-22	3E-22	1E-21	2E-21
1E-23	1E-23	4E-23	8E-23	2E-23	2E-23	8E-23	2E-22
8E-25	8E-25	3E-24	6E-24	1E-24	1E-24	6E-24	1E-23
5E-26	5E-26	2E-25	4E-25	1E-25	1E-25	4E-25	8E-25
3E-27	3E-27	1E-26	3E-26	7E-27	7E-27	3E-26	6E-26
2E-28	2E-28	7E-28	2E-27	4E-28	4E-28	2E-27	4E-27
1E-29	1E-29	4E-29	1E-28	2E-29	2E-29	9E-29	2E-28
6E-31	6E-31	2E-30	6E-30	1E-30	1E-30	5E-30	1E-29
3E-32	3E-32	1E-31	3E-31	7E-32	7E-32	3E-31	7E-31
1E-33	1E-33	5E-33	1E-32	3E-33	3E-33	1E-32	3E-32
6E-35	6E-35	2E-34	7E-34	2E-34	2E-34	6E-34	2E-33
3E-36	3E-36	1E-35	3E-35	7E-36	7E-36	3E-35	7E-35
1E-37	1E-37	4E-37	1E-36	3E-37	3E-37	1E-36	3E-36
4E-39	4E-39	2E-38	5E-38	1E-38	1E-38	4E-38	1E-37
1E-40	1E-40	5E-40	2E-39	4E-40	4E-40	2E-39	5E-39

Soil depth increment	TI 1	TI 2	TI 3	TI 4	TI 5	TI 6	TI 7	TI 8	TI 9	TI 10	TI 11	TI 12	TI 13	TI 14	TI 15	TI 16	TI 17	TI 18	TI 19	TI 20	TI 21	TI 22	TI 23	TI 24	TI 25
1	2E-01	2E-01	1E-01	1E-01	1E-01	1E-01	1E-01	1E-01	9E-02	9E-02	8E-02	8E-02	7E-02	6E-02	6E-02	6E-02	5E-02	5E-02	4E-02	4E-02	4E-02	4E-02	3E-02	3E-02	3E-02
2	0E+00	1E-02	2E-02	3E-02	4E-02	5E-02	5E-02	6E-02	6E-02	6E-02	6E-02	6E-02	6E-02	7E-02	7E-02	6E-02	6E-02	6E-02	6E-02	6E-02	6E-02	6E-02	6E-02	5E-02	5E-02
3	0E+00	0E+00	9E-04	2E-03	5E-03	7E-03	1E-02	1E-02	2E-02	2E-02	2E-02	2E-02	3E-02	3E-02	3E-02	4E-02	4E-02	4E-02	4E-02	4E-02	4E-02	5E-02	5E-02	5E-02	5E-02
4	0E+00	0E+00	0E+00	6E-05	2E-04	5E-04	1E-03	2E-03	2E-03	3E-03	5E-03	6E-03	7E-03	9E-03	1E-02	1E-02	1E-02	2E-02	2E-02	2E-02	2E-02	2E-02	2E-02	3E-02	3E-02
5	0E+00	0E+00	0E+00	0E+00	5E-06	2E-05	6E-05	1E-04	2E-04	4E-04	6E-04	9E-04	1E-03	2E-03	2E-03	3E-03	3E-03	4E-03	5E-03	6E-03	7E-03	8E-03	9E-03	1E-02	1E-02
6	0E+00	0E+00	0E+00	0E+00	0E+00	3E-07	2E-06	6E-06	1E-05	3E-05	6E-05	1E-04	2E-04	2E-04	3E-04	5E-04	6E-04	8E-04	1E-03	1E-03	2E-03	2E-03	2E-03	3E-03	3E-03
7	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-08	2E-07	6E-07	2E-06	4E-06	6E-06	1E-05	2E-05	4E-05	6E-05	9E-05	1E-04	2E-04	2E-04	3E-04	4E-04	5E-04	7E-04	8E-04
8	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-09	1E-08	5E-08	2E-07	4E-07	9E-07	2E-06	3E-06	6E-06	1E-05	2E-05	2E-05	4E-05	5E-05	7E-05	1E-04	1E-04	2E-04
9	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	1E-10	1E-09	5E-09	2E-08	5E-08	1E-07	2E-07	5E-07	9E-07	2E-06	3E-06	4E-06	6E-06	1E-05	1E-05	2E-05	3E-05
10	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	9E-12	8E-11	4E-10	2E-09	5E-09	1E-08	3E-08	6E-08	1E-07	2E-07	4E-07	7E-07	1E-06	2E-06	3E-06	4E-06
11	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	6E-13	7E-12	4E-11	1E-10	5E-10	1E-09	3E-09	7E-09	2E-08	3E-08	6E-08	1E-07	2E-07	3E-07	4E-07
12	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	5E-14	5E-13	3E-12	1E-11	5E-11	1E-10	4E-10	9E-10	2E-09	4E-09	8E-09	1E-08	3E-08	4E-08
13	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	3E-15	4E-14	3E-13	1E-12	4E-12	1E-11	4E-11	1E-10	2E-10	5E-10	1E-09	2E-09	4E-09
14	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-16	3E-15	2E-14	1E-13	4E-13	1E-12	4E-12	1E-11	3E-11	6E-11	1E-10	3E-10
15	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-17	2E-16	2E-15	9E-15	4E-14	1E-13	4E-13	1E-12	3E-12	7E-12	2E-11
16	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	1E-18	2E-17	1E-16	8E-16	4E-15	1E-14	4E-14	1E-13	3E-13	8E-13
17	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	9E-20	1E-18	1E-17	7E-17	3E-16	1E-15	4E-15	1E-14	4E-14
18	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	6E-21	1E-19	9E-19	6E-18	3E-17	1E-16	4E-16	1E-15
19	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	5E-22	8E-21	8E-20	5E-19	2E-18	1E-17	4E-17
20	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	3E-23	6E-22	6E-21	4E-20	2E-19	1E-18
21	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-24	5E-23	5E-22	3E-21	2E-20
22	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-25	4E-24	4E-23	3E-22
23	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	1E-26	3E-25	3E-24
24	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	9E-28	2E-26
25	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	6E-29
26	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
27	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
28	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
29	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00
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TI 26	TI 27	TI 28	TI 29	TI 30	TI 31	TI 32	TI 33	TI 34	TI 35	TI 36	TI 37	TI 38	TI 39	TI 40	TI 41	TI 42	TI 43	TI 44	TI 45	TI 46	TI 47	TI 48	TI 49	TI 50	TI 51	TI 52	TI 53	TI 54	TI 55	TI 56	TI 57
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0E+00	0E+00	0E+00	0E+00	9E-36	3E-34	4E-33	4E-32	3E-31	2E-30	1E-29	5E-29	2E-28	1E-27	4E-27	1E-26	4E-26	1E-25	4E-25	1E-24	3E-24	7E-24	2E-23	4E-23	9E-23	2E-22	5E-22	1E-21	2E-21	4E-21	8E-21	
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	6E-37	2E-35	3E-34	3E-33	2E-32	2E-31	1E-30	5E-30	2E-29	9E-29	3E-28	1E-27	4E-27	1E-26	4E-26	1E-25	3E-25	6E-25	2E-24	5E-24	1E-23	3E-23	6E-23	1E-22	3E-22	6E-22
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	5E-38	1E-36	2E-35	2E-34	2E-33	1E-32	8E-32	4E-31	2E-30	8E-30	3E-29	1E-28	4E-28	1E-27	4E-27	1E-26	3E-26	8E-26	2E-25	5E-25	1E-24	3E-24	7E-24	2E-23	3E-23
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	3E-39	1E-37	2E-36	2E-35	2E-34	1E-33	7E-33	4E-32	2E-31	8E-31	3E-30	1E-29	4E-29	1E-28	4E-28	1E-27	3E-27	9E-27	2E-26	6E-26	2E-25	4E-25	8E-25	2E-24
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-40	8E-39	1E-37	1E-36	1E-35	9E-35	6E-34	3E-33	2E-32	7E-32	3E-31	1E-30	4E-30	1E-29	4E-29	1E-28	4E-28	1E-27	3E-27	7E-27	2E-26	4E-26	1E-25
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-41	6E-40	1E-38	1E-37	1E-36	6E-36	5E-35	3E-34	1E-33	6E-33	3E-32	1E-31	4E-31	1E-30	4E-30	1E-29	4E-29	1E-28	3E-28	8E-28	2E-27	5E-27
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	1E-42	4E-41	7E-40	9E-39	8E-38	6E-37	4E-36	2E-35	1E-34	6E-34	2E-33	9E-33	4E-32	1E-31	4E-31	1E-30	4E-30	1E-29	3E-29	6E-29	2E-28
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	9E-44	3E-42	6E-41	7E-40	7E-39	5E-38	3E-37	2E-36	1E-35	5E-35	2E-34	9E-34	3E-33	1E-32	4E-32	1E-31	4E-31	1E-30	3E-30	9E-30
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	6E-45	2E-43	4E-42	5E-41	5E-40	4E-39	3E-38	2E-37	9E-37	4E-36	2E-35	8E-35	3E-34	1E-33	4E-33	1E-32	4E-32	1E-31	4E-31
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	5E-46	2E-44	3E-43	4E-42	4E-41	3E-40	2E-39	1E-38	8E-38	4E-37	2E-36	8E-36	3E-35	1E-34	4E-34	1E-33	4E-33	1E-32
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	3E-47	1E-45	2E-44	3E-43	3E-42	3E-41	2E-40	1E-39	7E-39	3E-38	2E-37	7E-37	3E-36	1E-35	4E-35	1E-34	4E-34
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-48	9E-47	2E-45	3E-44	3E-43	2E-42	2E-41	1E-40	6E-40	3E-39	1E-38	6E-38	3E-37	1E-36	4E-36	1E-35
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-49	7E-48	1E-46	2E-45	2E-44	2E-43	1E-42	9E-42	5E-41	3E-40	1E-39	6E-39	2E-38	9E-38	4E-37
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	1E-50	5E-49	1E-47	2E-46	2E-45	1E-44	1E-43	7E-43	4E-42	2E-41	1E-40	5E-40	2E-39	9E-39
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	9E-52	4E-50	8E-49	1F-47	1E-46	1E-45	9E-45	6E-44	4E-43	2E-42	1E-41	5E-41	2E-40
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	6E-53	3E-51	6E-50	9E-49	1E-47	9E-47	7E-46	5E-45	3E-44	2E-43	9E-43	4E-42
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	5E-54	2E-52	4E-51	7E-50	8E-49	7E-48	6E-47	4E-46	3E-45	1E-44	6E-44
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	3E-55	1E-53	3E-52	5E-51	6E-50	6E-49	5E-48	3E-47	2E-46	1E-45
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-56	1E-54	3E-53	4E-52	5E-51	5E-50	4E-49	3E-48	2E-47
0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	0E+00	2E-57	8E-56	2E-54	3E-53	4E-52	4E-51	3E-50	2E-49

Tl 58	Tl 59	Tl 60	Tl 61	Tl 62	Tl 63	Tl 64	Tl 65	Tl 66	Tl 67	Tl 68	Tl 69	Tl 70	Tl 71	Tl 72
2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	1E-03	1E-03	1E-03	1E-03	1E-03	1E-03	9E-04	9E-04
1E-02	1E-02	1E-02	9E-03	9E-03	8E-03	6E-03	7E-03	7E-03	6E-03	6E-03	6E-03	5E-03	5E-03	5E-03
2E-02	2E-02	2E-02	2E-02	2E-02	2E-02	2E-02	2E-02	2E-02	2E-02	2E-02	1E-02	1E-02	1E-02	1E-02
3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	2E-02	2E-02	2E-02	2E-02
3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02
3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02	3E-02
2E-02	2E-02	2E-02	2E-02	2E-02	2E-02	2E-02	2E-02	2E-02	2E-02	2E-02	3E-02	3E-02	3E-02	3E-02
1E-02	1E-02	1E-02	1E-02	1E-02	1E-02	1E-02	2E-02	2E-02	2E-02	2E-02	2E-02	2E-02	2E-02	2E-02
5E-03	6E-03	6E-03	6E-03	7E-03	7E-03	8E-03	8E-03	9E-03	9E-03	1E-02	1E-02	1E-02	1E-02	1E-02
2E-03	2E-03	3E-03	3E-03	3E-03	3E-03	4E-03	4E-03	4E-03	5E-03	5E-03	5E-03	6E-03	6E-03	6E-03
8E-04	9E-04	1E-03	1E-03	1E-03	1E-03	2E-03	2E-03	2E-03	2E-03	2E-03	2E-03	3E-03	3E-03	3E-03
3E-04	3E-04	4E-04	4E-04	5E-04	5E-04	6E-04	7E-04	7E-04	8E-04	9E-04	1E-03	1E-03	1E-03	1E-03
8E-05	9E-05	1E-04	1E-04	1E-04	2E-04	2E-04	2E-04	3E-04	3E-04	3E-04	4E-04	4E-04	5E-04	5E-04
2E-05	3E-05	3E-05	4E-05	4E-05	5E-05	6E-05	7E-05	8E-05	9E-05	1E-04	1E-04	1E-04	2E-04	2E-04
5E-06	6E-06	8E-06	1E-05	1E-05	1E-05	2E-05	2E-05	2E-05	3E-05	3E-05	4E-05	4E-05	5E-05	6E-05
1E-06	1E-06	2E-06	2E-06	3E-06	3E-06	4E-06	5E-06	6E-06	7E-06	9E-06	1E-05	1E-05	1E-05	2E-05
2E-07	3E-07	4E-07	5E-07	6E-07	8E-07	1E-06	1E-06	1E-06	2E-06	2E-06	3E-06	3E-06	4E-06	5E-06
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8E-09	1E-08	1E-08	2E-08	2E-08	3E-08	4E-08	5E-08	7E-08	9E-08	1E-07	1E-07	2E-07	2E-07	3E-07
1E-09	2E-09	2E-09	3E-09	4E-09	6E-09	8E-09	1E-08	1E-08	2E-08	2E-08	3E-08	4E-08	5E-08	6E-08
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3E-12	5E-12	7E-12	1E-11	1E-11	2E-11	3E-11	4E-11	6E-11	8E-11	1E-10	2E-10	2E-10	3E-10	4E-10
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2E-19	4E-19	8E-19	1E-18	2E-18	4E-18	7E-18	1E-17	2E-17	3E-17	6E-17	9E-17	1E-16	2E-16	4E-16
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8E-40	3E-39	1E-38	4E-38	1E-37	4E-37	1E-36	4E-36	1E-35	3E-35	8E-35	2E-34	6E-34	1E-33	3E-33
2E-41	8E-41	3E-40	1E-39	4E-39	1E-38	4E-38	1E-37	4E-37	1E-36	3E-36	9E-36	2E-35	6E-35	2E-34
4E-43	2E-42	7E-42	3E-41	1E-40	4E-40	1E-39	4E-39	1E-38	4E-38	1E-37	4E-37	1E-36	3E-36	7E-36
7E-45	3E-44	2E-43	7E-43	3E-42	1E-41	4E-41	1E-40	4E-40	1E-39	4E-39	1E-38	4E-38	1E-37	3E-37
1E-46	6E-46	3E-45	1E-44	6E-44	2E-43	1E-42	4E-42	1E-41	4E-41	1E-40	4E-40	1E-39	4E-39	1E-38
2E-48	9E-48	5E-47	3E-46	1E-45	5E-45	2E-44	9E-44	3E-43	1E-42	4E-42	1E-41	4E-41	1E-40	4E-40

APPENDIX D

Draft Environmental Covenant

Prepared by:
Groundwater and Environmental Services, Inc.
440 Creamery Way, Suite 500
Exton, PA 19341
(610) 458-1077
County Parcel Identification Number: 49009046

Return to:
Groundwater and Environmental Services, Inc.
440 Creamery Way, Suite 500
Exton, PA 19341
Attn: Krista Snyder
(610) 458-1077 ext. 3068

The County Parcel Identification No. of the Property is: 49009046
GRANTOR: Sunoco, Inc.
PROPERTY ADDRESS: 610 York Road, Warminster, Pennsylvania

ENVIRONMENTAL COVENANT

This Environmental Covenant is executed pursuant to the Pennsylvania Uniform Environmental Covenants Act, Act No. 68 of 2007, 27 Pa. C.S. §§ 6501 – 6517 (UECA). This Environmental Covenant subjects the Property identified in Paragraph 1 to the activity and/or use limitations in this document. As indicated later in this document, this Environmental Covenant has been approved by the Pennsylvania Department of Environmental Protection (Department).

1. **Property affected**. The property affected (Property) by this Environmental Covenant is located in the Township of Warminster, Bucks County.

The postal street address of the Property is: 610 York Road, Warminster, PA. The tax assessment street address of the Property is: 610 York Road, Warminster, PA.

The latitude and longitude of the center of the Property affected by this Environmental Covenant is: 40° 12' 36.6" N, 75° 05' 58.2" W.

The Property has been known by the following name(s): Sunoco Station #0363-5430 with PADEP Storage Tank Facility ID #09-30778.

A complete description of the Property is attached to this Environmental Covenant as Exhibit A. A map of the Property is attached to this Environmental Covenant as Exhibit B.

2. **Property Owner / GRANTOR**. Sunoco, Inc. (R&M) is the owner of the Property. The mailing address of the Owner is:
1735 Market Street, STE LL, Philadelphia, Pennsylvania, 19103-7583.

3. **Holder(s) / GRANTEE**. The following is a "holder," as that term is defined in 27 Pa. C.S. § 6502, of this Environmental Covenant:
Sunoco Inc. (R&M)
Philadelphia, PA 19103

4. **Description of Contamination & Remedy**. The following describes the contamination and remedy of the property.

Groundwater sampling was initiated at the site in March 1996, at which time a groundwater monitoring program was initiated. Dissolved-phase hydrocarbons were detected at concentrations above the Department Statewide Health Standards (SHS) in the monitoring wells. This monitoring program continued until July 2009.

During underground storage tank (UST) closure activities in 1995 and 1996, soils samples were collected at depths ranging from one to 12 feet. Soil analytical results demonstrated that benzene was detected at concentrations above the Department SHS in soil samples collected beneath known USTs, pre-Act 2 USTs, and dispenser islands. None of the remaining target parameters (toluene, ethylbenzene, and total xylenes) were detected at concentrations greater than the Department SHS during the UST closure activities. During the 2007 monitoring well installation, benzene was detected at concentrations above the Department SHS in two soil samples. The remaining target parameters (toluene, ethylbenzene, total xylenes, methyl tertiary butyl ether (MTBE), isopropylbenzene, and naphthalene) were not detected or were detected at concentrations below the Department SHS.

Remediation was initiated at this site in April 2005, with a chemical oxidation high-intensity targeted (HIT) remediation event in which approximately 450 gallons of 7 to 8% solution of hydrogen peroxide were injected into monitoring wells MW-1, MW-3, and MW-5.

Following active remediation, the dissolved-phase hydrocarbon impact was detected primarily in monitoring wells MW-1 through MW-3, located in the vicinity of the former pre-Act 2 UST field and former dispenser islands along York Road. Dissolved hydrocarbons continued to exhibit decreasing trends. During post-remediation groundwater monitoring and sampling, benzene, MTBE, and naphthalene were detected at concentrations and/or had a laboratory detection limit above the Department SHS.

During attainment groundwater monitoring and sampling, benzene was detected at concentrations above the Department SHS and/or had a laboratory detection limit above the Department SHS in monitoring well MW-2, located in the vicinity of the former dispenser islands along York Road; however, fate and transport modeling did not predict off-site migration of the hydrocarbon plume exceeding the Department SHS and the Practical Quantitation Limit (PQL).

The environmental activities conducted at this site were in accordance with the Site Characterization Report (SCR) prepared by Handex of Eastern Pennsylvania dated May 28, 1996, the Additional SCR / Remedial Action Plan (ASCR/RAP) prepared by GES dated January 6, 2006, the SCR Addendum / Remedial Action Completion Report (SCRA/RACR) prepared by GES dated October 1, 2009, and the ASCR/RACR Addendums dated April 8 and July 15, 2010.

The SCR (dated May 28, 1996), the ASCR/RAP (dated January 6, 2006), the SCRA/RACR (dated October 1, 2009), and the ASRC/RACR Addendums (dated April 8 and July 15, 2010) were developed in accordance with applicable sections of Pennsylvania's Storage Tanks, Corrective Action Regulations (Title 25, Chapter 245), as well as the Land Recycling and Environmental Remediation Standards Act (Title 25, Chapter 250). The complete file, including the above-mentioned reports, is available at the Department's Southeast Regional Office located at 2 East Main Street in Norristown, Pennsylvania.

5. **Activity & Use Limitations**. The Property is subject to the following activity and use limitations, which the Owner and each subsequent owner of the Property shall abide by:

(a) The groundwater at or under the property shall not be used.

b) The Owner shall prohibit residential use of the Property.

6. **Notice of Limitations in Future Conveyances**. Each instrument hereafter conveying any interest in the Property subject to this Environmental Covenant shall contain a notice of the activity and use limitations set forth in this Environmental Covenant and shall provide the recorded location of this Environmental Covenant.

7. **Compliance Reporting**. The owner and each subsequent owner of the Property shall submit to the Department written documentation confirming that the activity and use limitations in this Environmental Covenant are being complied with following transfer of the Property. In addition, the Owner or subsequent owner shall, as appropriate, notify the Department concerning proposed changes in use of the Property, filing of applications for building permits for the Property or proposals for any work at the Property which affect the contamination on the Property subject to this Environmental Covenant. The Owner and each subsequent owner shall also submit, to the Department,

written documentation concerning the use of the property and compliance with this Environmental Covenant upon request by the Department.

8. **Access by the Department**. In addition to any rights already possessed by the Department, this Environmental Covenant grants to the Department a right of access of the Property in connection with implementation or enforcement of this Environmental Covenant.

9. **Recordation & Proof & Notification**. Within 30 days after the date of the Department's approval, the Owner shall file this Environmental Covenant with the Recorder of Deeds for each County in which the Property is located, and send a file-stamped copy of this Environmental Covenant to the Department within 60 days recordation. Within that time period, the Owner also shall send a file-stamped copy to each of the following: each Municipality and County in which the Property is located; any Holder identified in this Environmental Covenant; each person holding a recorded interest in the Property; and each person in possession of the Property.

10. **Termination or Modification**. This Environmental Covenant may only be terminated or modified in accordance with Section 9 of UECA, 27 Pa. C.S. § 6509, including as follows:

> In accordance with Section 10 of UECA, 27 Pa. C.S. § 6510(a)(3)(i), Grantor hereby waives the right to consent to any amendment or termination of the Environmental Covenant by consent; it being intended that any amendment to or termination of this Environmental Covenant by consent in accordance with this Paragraph requires only the following signatures on the instrument amending or terminating this Environmental Covenant: (i) the Holder at the time of such amendment or termination; (ii) the then current owner of the Property and (iii) the Department.

11. **Department's address**. Communications with the Department regarding this Environmental Covenant shall be sent to:

ECP Manager
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

ACKNOWLEDGMENTS by Owner(s) and any Holder(s), in the following form:

Sunoco, Inc. (R&M), "Grantor"

Date:

By: _____

Name: _____

Title: _____

COMMONWEALTH OF PENNSYLVANIA)[other state, if executed outside PA]

)

COUNTY OF _____) SS:

On this ___ day of _____, 20__, before me, the undersigned officer, personally appeared _____ [Owner, Grantor] who acknowledged himself/herself to be the person whose name is subscribed to this Environmental Covenant, and acknowledged that s/he executed same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

_____

Notary Public

EXHIBIT A

DESCRIPTION OF PROPERTY

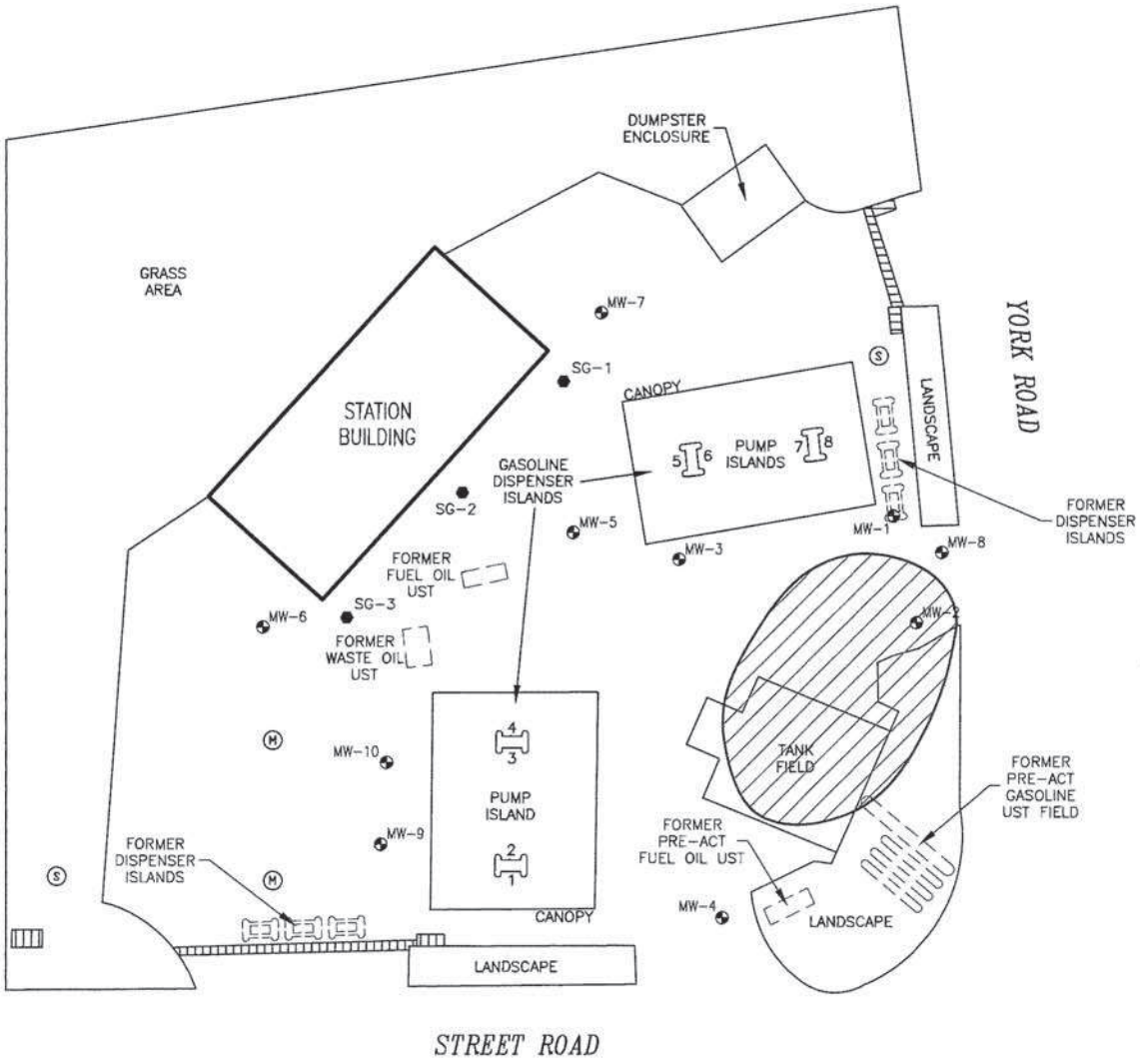
The site, located at the intersection of York Road (Route 263) and Street Road in Warminster, Pennsylvania (40° 12' 36.6" N, 75° 05' 58.2" W), is currently owned by Sunoco, Inc. (R&M), and is currently utilized as a retail gasoline facility and convenience store.

The property is zoned as commercial. The currently existing features at the site include a one-story station building and convenience store, four gasoline dispenser islands, three unleaded gasoline underground storage tanks (USTs), and associated subsurface piping. The UST area and dispenser island area are covered with a concrete pad. Removal and closure of fuel oil and waste oil underground storage tanks (USTs), removal of six gasoline dispenser islands, and removal of four pre-Act 2 unleaded gasoline USTs took place between November 1995 and February 1996. The former pre-Act 2 UST tank field and dispenser island areas are comprised of clean fill material and have been resurfaced. Grass and landscaping exists at the intersection of York Road and Street Road as well as behind the station building. The remaining portion of the site is covered in asphalt. There are numerous utility lines located at the site which include sub-grade public water, natural gas, telephone, and sanitary sewer. Ten monitoring wells (MW-1 through MW-10) comprise the monitoring well network and are located on-site. There are also three soil vapor points (SG-1 through SG-3) on-site. These well and soil-gas points will be properly abandoned upon approval of the Remedial Action Completion Report (RACR) (dated October 1, 2009). A site map showing property boundaries and pertinent current and former site features is included as **Exhibit B**.

ALL THAT CERTAIN piece or parcel of land with the buildings and improvements erected thereon situate in the Township of Warminster, County of Bucks, Commonwealth of Pennsylvania, more particularly described in accordance with a survey and plan thereof made of William S. Erwin, Registered Professional Engineer of Langhorne, Pennsylvania, dated December 10, 1954, as follows, to wit:

BEGINNING at a point in the middle line of Street Road (also known as Pennsylvania Traffic Route No. 132) (33 feet wide) at the distance of 16.70 feet North 50 degrees 30 minutes West of the intersection of the said center line of Street Road with the middle line of Old York Road (also known as United States Traffic Route No 611) (45 feet wide): extending thence (1) North 08 degrees 52 minutes 30 seconds East along a line in said Old York Road distant 8.13 feet Westwardly from and running parallel with the middle line thereof 264.00 feet to a point; thence (2) across said Old York Road North 54 degrees 17 minutes West 9.12 feet to a monument set in a Northwesterly line thereof and continuing thence still North 54 degrees 17 minutes West along line of land now or late of Agnes Taylor 158 feet to a field stone in line of land now or late of Elise Naylor; thence (3) South 39 degrees 15 minutes West along said line of land now or late of said Elsie Naylor 216.15 feet to a railroad spike in the said middle line of said Street Road; and thence (4) South 50 degrees 30 minutes East along said middle line of said Street Road 300.30 feet to the point and place of beginning.

CONTAINING 1.197 acres, more or less.



LEGEND

- MONITORING WELL
- SEWER MANHOLE
- MANHOLE
- STORM DRAINAGE
- SOIL GAS SURVEY POINT
- APPROXIMATE EXTENT OF GROUNDWATER IMPACTS EXCEEDING PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION STATEWIDE HEALTH STANDARDS

DRAFTED BY: TP (EXTON)	SITE MAP
CHECKED BY: KLS	SUNOCO STATION #0363-5430 610 YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: KLS	Groundwater & Environmental Services, Inc. 440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 30 / DATE: 02-09-10 / FIGURE: 1

Remedial Action Completion Report Approval Letter

PA DEP - October 13, 2010

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHEAST REGIONAL OFFICE

RECEIVED
OCT 25 2010
By

October 13, 2010

Mr. Bill Brochu, P.G.
Sunoco, Inc.
P.O. Box 4209
Concord, NH 03302-4209

Re: Storage Tank Program
Remedial Action Completion Report Approval
Sunoco S/S No. 0363-5430
Facility ID No. 09-30778
Incident No. 7112
610 York Road
Warminster Township
Bucks County

Dear Mr. Brochu:

The Department of Environmental Protection ("Department") has received and reviewed documentation detailing the outcome of remedial actions taken subsequent to a release of regulated substances from the above-named facility. Your release was confirmed on March 1, 1996. Your Remedial Action Completion Report ("RACR") and succeeding addendums, dated October 1, 2009, April 8 and July 20, 2010, identifies each of the specific regulated substances involved in your release and cleanup.

Groundwater

Our review of the RACR confirms that based on results from eight consecutive sampling rounds you have attained the residential Statewide Health Standards in groundwater for the following compounds of concern: toluene, ethyl benzene, total xylenes, isopropylbenzene, methyl tertiary butyl ether ("MTBE"), and naphthalene.

Additionally, our review of the RACR confirms you have attained a residential site-specific cleanup in groundwater for benzene. Your site-specific cleanup attainment demonstration consisted of identifying exposure pathways, providing evidence that pathways are incomplete and providing model results predicting benzene plume would not migrate offsite above medium specific concentration of 5 ug/l over a 30-year period.

Soil

Based on soil quality beneath former distribution lines, dispensers, and underground storage tanks ("UST") removed in 1993 and 1995 through 1996, the Department has identified four areas of concern ("AOC") where you have provided adequate data for attainment demonstration.

AOC-1 is dispensers parallel to York Road removed and replaced in 1996. It is defined by soil samples labeled DISP-1 through DISP-3 and MW-8. Our review of the RACR confirms that based on sample results, you have attained residential Statewide Health Standards in soil for toluene, ethyl benzene, and xylenes. Additionally, our review confirms you have attained a residential site-specific cleanup for benzene in soil. Site-specific attainment demonstration consisted of identifying and evaluating exposure pathways, including the soil-to-groundwater pathway and providing evidence that they are incomplete. Based on Buffer Model results documented in the July 2010 addendum, an engineering control in the way of a cap is not needed to maintain groundwater quality below the AOC-1.

AOC-2 is the former pre-Act gasoline UST field where four previously closed-in-place tanks were removed in 1996. It is defined by samples labeled SS-1 through SS-11, TL-1, and TL-2. Our review confirms that based on sample results, you have attained residential Statewide Health Standards in soil for toluene, ethyl benzene, and xylenes. Additionally, our review confirms you have attained a residential site-specific cleanup for benzene in soil. Site-specific attainment demonstration consisted of identifying exposure pathways and providing evidence that they are incomplete. AOC-2 has historically been uncapped as it lies below a landscaped area. Therefore, engineering control to maintain groundwater quality is unnecessary.

AOC-3 is where two former 1,000-gallon gasoline USTs were removed in October 1993. It is defined by samples labeled 1 through 6. Our review confirms that based on sample results, you have attained residential Statewide Health Standards in soil for benzene, toluene, ethyl benzene, and xylenes.

AOC-4 is where two former 550-gallon USTs were removed in November 1995. It is defined by samples labeled SS-1 through SS-4. Our review confirms that based on sample results, you have attained residential Statewide Health Standards in soil for benzene, toluene, ethylbenzene, and xylenes.

Soil quality beneath the dispensers formerly located parallel to Street Road and removed in 1996 was not evaluated due to restricted access caused by the canopy footer. Soil from beneath the former 550-gallon UST that held fuel oil previously located adjacent to the pre-Act tankfield was evaluated for total petroleum hydrocarbons ("TPH") only. Releases of liability will not be issued for these two areas due to insufficient information.

You have complied with the procedural requirements of the Department's Corrective Action Regulations as promulgated under the Pennsylvania Storage Tank and Spill Prevention Act. The relief of liability for attaining this cleanup standard is set forth in Chapter 5 of the Land Recycling and Environmental Remediation Standards Act of 1995.

The Department approves the Remedial Action Completion report, subject to the following conditions. The conditions are filing the enclosed Environmental Covenant with the Recorder of Deeds in the proper County and providing the Department with proof of recordation, within the time frame set forth in the Environmental Covenant.

If you chose to abandon the monitoring wells at your facility, please be advised that all abandoned wells shall be reported to Bureau of Topographic and Geologic Survey ("BTGS"), on forms required by BTGS (and any other forms). If available, the original driller's log should be included along with the details of the well abandonment procedure. A photograph should be taken of the site, and a reference map should be made to locate the abandoned well. It also may be appropriate to survey the exact location of the well. This is especially important for wells associated with contaminated sites. Please provide a copy of your BTGS submission to this office.

This letter does not waive any rights of the Commonwealth of Pennsylvania to take enforcement action under applicable law for the conditions discussed in this letter.

Thank you for your cooperation in working with the Department toward the remediation of this site. If you need additional information or have any questions, please call Ms. Lauren Mapleton at 484.250.5783.

Sincerely,

Stephan Sinding
Regional Manager
Environmental Cleanup

Enclosure

cc: Mr. Miceli - USTIF
Mr. Payne, P.G. - DEP
Ms. Mapleton - DEP
Mr. Sepsy - DEP
Ms. Warren - DEP
Ms. Snyder - GES
Warminster Township
Bucks County Health Department
Re 30 (CM10ECP)258-1

Environmental Covenant

GES - November 15, 2010

Groundwater
& Environmental Services, Inc.

440 Creamery Way • Suite 500 • Exton, Pennsylvania 19341 • (610) 458-1077 • Fax (610) 458-2300

November 15, 2010

Ms. Lauren Mapleton
Pennsylvania Department of Environmental Protection
Environmental Cleanup Program
Southeastern Regional Office
2 East Main Street
Norristown, Pennsylvania 19401

Re: Sunoco Station #0363-5430
610 York Road
Warminster, PA
Facility Id #: 09-30778

To Whom It May Concern:

Enclosed is a fully executed environmental covenant for the above-referenced facility that has been approved by the Pennsylvania Department of Environmental Protection. A copy is being provided to you in accordance with Section 9: Recordation & Proof & Notification of the environment covenant, which states that a copy shall be sent to the Municipality and County in which the property is located. Should you have any questions, do not hesitate to call either of the undersigned.

Respectfully submitted,

Krista Snyder
Project Manager

for: Stephanie R. Grillo
Senior Project Manager

Enclosure

cc: GES project File
Sunoco, Inc. (ENFOS)

BUCKS COUNTY RECORDER OF DEEDS

55 East Court Street
Doylestown, Pennsylvania 18901
(215) 348-6209

Instrument Number - 2010076988
Recorded On 10/29/2010 At 10:39:29 AM * Total Pages - 12
* Instrument Type - DEED AGREEMENT - NO PROPERTY TRANSFER
Invoice Number - 399935 User - NMS
* Grantor - SUNOCO INC
* Grantee - PENNA COMWTH DEPT ENVIRONMENTAL PROTECTION
* Customer - SUNOCO
* FEES

RECORDING FEES	$61.00
TOTAL PAID	$61.00

This is a certification page

DO NOT DETACH

This page is now part of this legal document.

RETURN DOCUMENT TO:
SUNOCO

I hereby CERTIFY that this document is recorded in the Recorder of Deeds Office of Bucks County, Pennsylvania.

THE RECORDERS OFFICE OF BUCKS COUNTY, PA.

Robert W. Dickson
Acting Recorder of Deeds

* - Information denoted by an asterisk may change during the verification process and may not be reflected on this page.

0ADCD2

Book: 6543 Page: 1767

Environmental Covenant

RECEIVED
2010 OCT 29 A 10: 21
BUCKS COUNTY
RECORDER OF DEEDS

Prepared by:
Groundwater and Environmental Services, Inc.
440 Creamery Way, Suite 500
Exton, PA 19341
(610) 458-1077

Return to:
Groundwater and Environmental Services, Inc.
440 Creamery Way, Suite 500
Exton, PA 19341
Attn: Krista Snyder
(610) 458-1077 ext. 3068

The County Parcel Identification No. of the Property is: 49009046
GRANTOR: Sunoco, Inc.
PROPERTY ADDRESS: 610 York Road, Warminster, Pennsylvania

ENVIRONMENTAL COVENANT

This Environmental Covenant is executed pursuant to the Pennsylvania Uniform Environmental Covenants Act, Act No. 68 of 2007, 27 Pa. C.S. §§ 6501 – 6517 (UECA). This Environmental Covenant subjects the Property identified in Paragraph 1 to the activity and/or use limitations in this document. As indicated later in this document, this Environmental Covenant has been approved by the Pennsylvania Department of Environmental Protection (Department).

1. **Property affected**. The property affected (Property) by this Environmental Covenant is located in the Township of Warminster, Bucks County.

The postal street address of the Property is: 610 York Road, Warminster, PA. The tax assessment street address of the Property is: 610 York Road, Warminster, PA.

The latitude and longitude of the center of the Property affected by this Environmental Covenant is: 40° 12' 36.6" N, 75° 05' 58.2" W.

The Property has been known by the following name(s): Sunoco Station #0363-5430 with PADEP Storage Tank Facility ID #09-30778.

A complete description of the Property is attached to this Environmental Covenant as Exhibit A. A map of the Property is attached to this Environmental Covenant as Exhibit B.

2. **Property Owner / GRANTOR**. Sunoco, Inc. (R&M) is the owner of the Property. The mailing address of the Owner is:
1735 Market Street, STE LL, Philadelphia, Pennsylvania, 19103-7583.

3. **Holder(s) / GRANTEE**. The following is a "holder," as that term is defined in 27 Pa. C.S. § 6502, of this Environmental Covenant:
Sunoco Inc. (R&M)
Philadelphia, PA 19103

4. **Description of Contamination & Remedy**. The following describes the contamination and remedy of the property.

Groundwater sampling was initiated at the site in March 1996, at which time a groundwater monitoring program was initiated. Dissolved-phase hydrocarbons were detected at concentrations above the Department Statewide Health Standards (SHS) in the monitoring wells. This monitoring program continued until July 2009.

During underground storage tank (UST) closure activities in 1995 and 1996, soils samples were collected at depths ranging from one to 12 feet. Soil analytical results demonstrated that benzene was detected at concentrations above the Department SHS in soil samples collected beneath known USTs, pre-Act 2 USTs, and dispenser islands. None of the remaining target parameters (toluene, ethylbenzene, and total xylenes) were detected at concentrations greater than the Department SHS during the UST closure activities. During the 2007 monitoring well installation, benzene was detected at concentrations above the Department SHS in two soil samples. The remaining target parameters (toluene, ethylbenzene, total xylenes, methyl tertiary butyl ether (MTBE), isopropylbenzene, and naphthalene) were not detected or were detected at concentrations below the Department SHS.

Remediation was initiated at this site in April 2005, with a chemical oxidation high-intensity targeted (HIT) remediation event in which approximately 450 gallons of 7 to 8% solution of hydrogen peroxide were injected into monitoring wells MW-1, MW-3, and MW-5.

Following active remediation, the dissolved-phase hydrocarbon impact was detected primarily in monitoring wells MW-1 through MW-3, located in the vicinity of the former pre-Act 2 UST field and former dispenser islands along York Road. Dissolved hydrocarbons continued to exhibit decreasing trends. During post-remediation groundwater monitoring and sampling, benzene, MTBE, and naphthalene were detected at concentrations and/or had a laboratory detection limit above the Department SHS.

During attainment groundwater monitoring and sampling, benzene was detected at concentrations above the Department SHS and/or had a laboratory detection limit above the Department SHS in monitoring well MW-2, located in the vicinity of the former dispenser islands along York Road; however, fate and transport modeling did not predict off-site migration of the hydrocarbon plume exceeding the Department SHS and the Practical Quantitation Limit (PQL).

The environmental activities conducted at this site were in accordance with the Site Characterization Report (SCR) prepared by Handex of Eastern Pennsylvania dated May 28, 1996, the Additional SCR / Remedial Action Plan (ASCR/RAP) prepared by GES dated January 6, 2006, the SCR Addendum / Remedial Action Completion Report (SCRA/RACR) prepared by GES dated October 1, 2009, and the ASCR/RACR Addendums dated April 8 and July 15, 2010.

The SCR (dated May 28, 1996), the ASCR/RAP (dated January 6, 2006), the SCRA/RACR (dated October 1, 2009), and the ASRC/RACR Addendums (dated April 8 and July 15, 2010) were developed in accordance with applicable sections of Pennsylvania's Storage Tanks, Corrective Action Regulations (Title 25, Chapter 245), as well as the Land Recycling and Environmental Remediation Standards Act (Title 25, Chapter 250). The complete file, including the above-mentioned reports, is available at the Department's Southeast Regional Office located at 2 East Main Street in Norristown, Pennsylvania.

5. **Activity & Use Limitations**. The Property is subject to the following activity and use limitations, which the Owner and each subsequent owner of the Property shall abide by:

(a) The groundwater at or under the property shall not be used.

b) The Owner shall prohibit residential use of the Property.

6. **Notice of Limitations in Future Conveyances**. Each instrument hereafter conveying any interest in the Property subject to this Environmental Covenant shall contain a notice of the activity and use limitations set forth in this Environmental Covenant and shall provide the recorded location of this Environmental Covenant.

7. **Compliance Reporting**. The owner and each subsequent owner of the Property shall submit to the Department written documentation confirming that the activity and use limitations in this Environmental Covenant are being complied with following transfer of the Property. In addition, the Owner or subsequent owner shall, as appropriate, notify the Department concerning proposed changes in use of the Property, filing of applications for building permits for the Property or proposals for any work at the Property which affect the contamination on the Property subject to this Environmental Covenant. The Owner and each subsequent owner shall also submit, to the Department,

written documentation concerning the use of the property and compliance with this Environmental Covenant upon request by the Department.

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9. **Recordation & Proof & Notification**. Within 30 days after the date of the Department's approval, the Owner shall file this Environmental Covenant with the Recorder of Deeds for each County in which the Property is located, and send a file-stamped copy of this Environmental Covenant to the Department within 60 days recordation. Within that time period, the Owner also shall send a file-stamped copy to each of the following: each Municipality and County in which the Property is located; any Holder identified in this Environmental Covenant; each person holding a recorded interest in the Property; and each person in possession of the Property.

10. **Termination or Modification**. This Environmental Covenant may only be terminated or modified in accordance with Section 9 of UECA, 27 Pa. C.S. § 6509, including as follows:

> In accordance with Section 10 of UECA, 27 Pa. C.S. § 6510(a)(3)(i), Grantor hereby waives the right to consent to any amendment or termination of the Environmental Covenant by consent; it being intended that any amendment to or termination of this Environmental Covenant by consent in accordance with this Paragraph requires only the following signatures on the instrument amending or terminating this Environmental Covenant: (i) the Holder at the time of such amendment or termination; (ii) the then current owner of the Property and (iii) the Department.

11. **Department's address**. Communications with the Department regarding this Environmental Covenant shall be sent to:

ECP Manager
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

ACKNOWLEDGMENTS by Owner(s) and any Holder(s), in the following form:

Date: 9/23/10

Sunoco, Inc. (R&M), "Grantor"
By: _____
Name: Roy Lance
Title: Manager Real Estate

COMMONWEALTH OF PENNSYLVANIA)[other state, if executed outside PA]
)
COUNTY OF Philadelphia) SS:

On this 23rd day of September, 2010, before me, the undersigned officer, personally appeared Roy G. Lance [Owner, Grantor] who acknowledged himself/herself to be the person whose name is subscribed to this Environmental Covenant, and acknowledged that s/he executed same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

Toni Ng
Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Toni Ng, Notary Public
City of Philadelphia, Philadelphia County
My Commission Expires Aug. 13, 2013
Member, Pennsylvania Association of Notaries

Property Owner: Sunoco, Inc. (R&M)
Property Address: 610 York Road
Warminster Township
Bucks County

APPROVED, by Commonwealth of Pennsylvania,
Department of Environmental Protection
By: _____ Date: 10-20-10
Name: Stephan Sinding
Title: Environmental Cleanup Program Manager
PADEP - SERO

COMMONWEALTH OF PENNSYLVANIA

COUNTY OF BUCKS

On this 20th day of October, 2010, before me, the undersigned officer, personally appeared Stephan Sinding who acknowledged himself to be the Manager of the Environmental Cleanup Program of the Commonwealth of Pennsylvania, Department of Environmental Protection, Southeast Regional Office, whose name is subscribed to this Environmental Covenant, and acknowledged that he executed same for the purposes therein contained.

In witness whereof, I hereunto set my hand and official seal.

_____
Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Judy Lashley, Notary Public
Norristown Boro, Montgomery County
My Commission Expires July 28, 2012
Member, Pennsylvania Association of Notaries

EXHIBIT A

DESCRIPTION OF PROPERTY

The site, located at the intersection of York Road (Route 263) and Street Road in Warminster, Pennsylvania (40° 12' 36.6" N, 75° 05' 58.2" W), is currently owned by Sunoco, Inc. (R&M), and is currently utilized as a retail gasoline facility and convenience store.

The property is zoned as commercial. The currently existing features at the site include a one-story station building and convenience store, four gasoline dispenser islands, three unleaded gasoline underground storage tanks (USTs), and associated subsurface piping. The UST area and dispenser island area are covered with a concrete pad. Removal and closure of fuel oil and waste oil underground storage tanks (USTs), removal of six gasoline dispenser islands, and removal of four pre-Act 2 unleaded gasoline USTs took place between November 1995 and February 1996. The former pre-Act 2 UST tank field and dispenser island areas are comprised of clean fill material and have been resurfaced. Grass and landscaping exists at the intersection of York Road and Street Road as well as behind the station building. The remaining portion of the site is covered in asphalt. There are numerous utility lines located at the site which include sub-grade public water, natural gas, telephone, and sanitary sewer. Ten monitoring wells (MW-1 through MW-10) comprise the monitoring well network and are located on-site. There are also three soil vapor points (SG-1 through SG-3) on-site. These well and soil-gas points will be properly abandoned upon approval of the Remedial Action Completion Report (RACR) (dated October 1, 2009). A site map showing property boundaries and pertinent current and former site features is included as **Exhibit B**.

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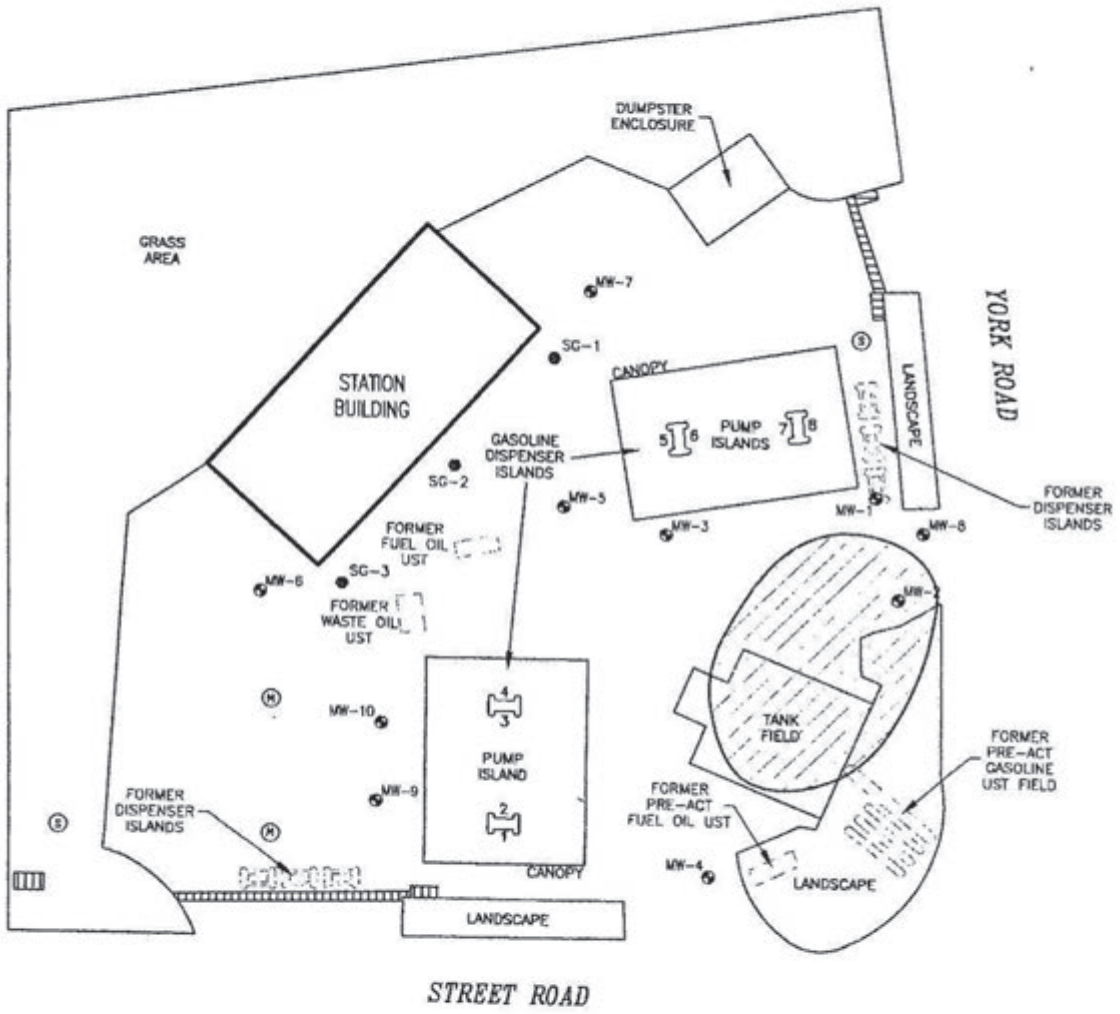
CONTAINING 1.197 acres, more or less.

COUNTY PARCEL NUMBER 49-9-46

BEING the same premises which Charles Schultz and Clara A. Schultz, his wife by Deed dated December 30, 1954 and recorded in Bucks County, in Deed Book 1210 page 238 conveyed unto The Atlantic Refining Company, a Pa. Corp., in fee. And the said Atlantic Refining Company is now known as the Atlantic Richfield Company.

EXHIBIT B

SITE MAP



GES

LEGEND

- MONITORING WELL
- SEWER MANHOLE
- MANHOLE
- STORM DRAINAGE
- SOIL GAS SURVEY POINT
- APPROXIMATE EXTENT OF GROUNDWATER IMPACTS EXCEEDING PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION STATEWIDE HEALTH STANDARDS

DRAFTED BY: TP (EXTON)	SITE MAP
CHECKED BY: KLS	SUNOCO STATION #0363-5430 610 YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: KLS	Groundwater & Environmental Services, Inc. 440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 — 30 / DATE: 02-09-10 / FIGURE: 1

Groundwater
& Environmental Services, Inc.

440 Creamery Way • Suite 500 • Exton, Pennsylvania 19341 • (610) 458-1077 • Fax (610) 458-2300

November 15, 2010

Bucks County
55 East Court Street
Doylestown, PA 18901

Re: Sunoco Station #0363-5430
610 York Road
Warminster, PA
Facility Id #: 09-30778

To Whom It May Concern:

Enclosed is a fully executed environmental covenant for the above-referenced facility that has been approved by the Pennsylvania Department of Environmental Protection. A copy is being provided to you in accordance with Section 9: Recordation & Proof & Notification of the environment covenant, which states that a copy shall be sent to the Municipality and County in which the property is located. Should you have any questions, do not hesitate to call either of the undersigned.

Respectfully submitted,

Krista Snyder
Project Manager

for Stephanie R. Grillo
Senior Project Manager

Enclosure

cc: GES project File
Warminster Township
PADEP – L. Mapleton
Sunoco, Inc. (ENFOS)

Groundwater
& Environmental Services, Inc.

440 Creamery Way • Suite 500 • Exton, Pennsylvania 19341 • (610) 458-1077 • Fax (610) 458-2300

November 15, 2010

Warminster Township
401 Gibson Road
Warminster, PA 18974

Re: Sunoco Station #0363-5430
610 York Road
Warminster, PA
Facility Id #: 09-30778

To Whom It May Concern:

Enclosed is a fully executed environmental covenant for the above-referenced facility that has been approved by the Pennsylvania Department of Environmental Protection. A copy is being provided to you in accordance with Section 9: Recordation & Proof & Notification of the environment covenant, which states that a copy shall be sent to the Municipality and County in which the property is located. Should you have any questions, do not hesitate to call either of the undersigned.

Respectfully submitted,

Krista Snyder
Project Manager

for Stephanie R. Grillo
Senior Project Manager

Enclosure

cc: GES project File
Bucks County
PADEP – L. Mapleton
Sunoco, Inc. (ENFOS)

Phase II ESA Report

GES - February 2, 2017

February 2, 2017

Ms. Rhonda Giovannitti
Sunoco, Inc.
3801 West Chester Pike
Newtown Square, Pennsylvania 19073

RE: Phase II Environmental Site Assessment Report
Sunoco Station #0363-5430
610 York Road
Warminster, Bucks County, Pennsylvania

Dear Ms. Giovannitti:

Attached for your review is the Phase II Environmental Site Assessment Report for the Sunoco Station #0363-5430 located at 610 York Road in Warminster, Pennsylvania. At the site, there are no open spill numbers identified.

If you have any questions regarding the information provided in this report, please contact Stephanie Grillo at (800) 426-9871, extension 3064.

Sincerely,
GROUNDWATER & ENVIRONMENTAL SERVICES, INC.

Stephanie R. Grillo
Senior Project Manager

Attachments

Phase II Limited Site Assessment

Date: February 2, 2017

I. SITE NAME

Sunoco Station #0363-5430
610 York Road
Warminster, Bucks County, Pennsylvania

II. SITE DESCRIPTION

FEATURES

Lot Size:	Approximately 0.75 acre(s).
Structures:	One story building housing a convenience store, an active Sunoco retail gasoline station, and two dispenser island canopies located southeast and southwest of the station building.
Surrounding Properties:	(North and northwest) A shopping plaza (Warminster Shopping Plaza) with multiple retails stores including a dry cleaning facility and The Eagle Diner restaurant; (Northeast) Precious Friends of St. Gianna Child Care Center and Archbishop Wood High School; (East) Hatboro Federal Savings Bank with sports fields beyond; (West) Center Point Plaza; (South) Retail shopping areas followed by residences.
Site/Area Topography:	The surface elevation of the site is approximately 310 feet above mean sea level according to the U. S. Geological Survey (USGS) Hatboro, PA topographic quadrangle map (USGS 2013). ***See attached Figure 1 (Site Location Map)***
Water Supply:	Municipal Water Supply
Sewerage:	Public System

POTENTIALLY SENSITIVE RECEPTORS

Environmental Receptors:	There are no wells within ¼ mile of the site. The closest well is located approximately 0.36 miles north of the site; the purpose of this well is listed as a community water system, it should be noted that the well was listed as inactive on 4/30/1998. Warminster Municipal Water Authority supplies public water and sanitary sewer services to the facility and adjacent properties. There is a child care facility and High School located to the northeast of the site and there are residences located northeast and south of the site. The nearest surface water body is an unnamed tributary of Little Neshaminy Creek located approximately 3,200 feet northwest of the site.

SITE HISTORY

Current:	Convenience store with retail gasoline fuel sales (branded Sunoco).
Regulatory Status:	At the start of this investigation there were no open spill numbers identified. There was a historic spill from March 1, 1996 – October 13, 2010, incident No. 7112 due to a Leaking Underground Storage Tank (LUST). On October 1, 2009 a Remedial Action Completion Report (RACR) was submitted to the Pennsylvania

Department of Environmental Protection (PADEP). A RACR Addendum was submitted on July 20, 2010. In a letter from the PADEP dated October 13, 2010 the RACR was approved, subject to an Environmental Covenant being filed with the Recorder of Deeds in Bucks County. A Release of Liability was granted on October 13, 2010 for an attainment demonstration of a combination of Statewide Health and Site Specific Standards. The site specific standard (SSS) for benzene in groundwater was established at a concentration of 12 micrograms per liter (µg/L).

III. SUBSURFACE INVESTIGATION

RECENT SUBSURFACE WORK

Date Drilled:	1/11/2017-1/12/2017
Drilling Method:	Direct Push (Geoprobe)
Number of Borings:	Four soil borings were advanced at the site.
Boring Locations:	***See attached Figure 2 for the Site Map showing boring locations and pertinent site features.***
Maximum Depth Explored:	14 feet below ground surface (bgs) via Geoprobe ***Boring logs are presented as Attachment A.***

GEOLOGY/HYDROGEOLOGY

General Soil Characteristics:	Primarily silt, sand, and clay followed by sandstone. The sandstone fragments were primarily observed from approximately 11 feet to greater than 14 feet bgs. Previous investigations indicated weathered shale bedrock was encountered at depths of four to seven feet bgs. Interbedded shale, sandstone, and siltstone bedrock was encountered at an average of 12 feet bgs
Depth of Refusal:	Refusal encountered in all four soil borings ranging from 11-14 feet bgs.
Depth to Groundwater:	Ranged from approximately 14–15 feet bgs, it should be noted that the liquid levels were measured from four existing monitoring wells that were on-site from the previous site investigation.
Flow/Gradient:	Based on the liquid level data, groundwater generally flows to the southwest under unconfined conditions at a hydraulic gradient of approximately 0.01 feet per foot (ft/ft).

SOIL QUALITY

Number of Soil Samples:	Four soil samples were collected during site assessment activities from SB-1 through SB-4.
Sample Analyses:	Volatile Organic Compounds (VOCs) including benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl tert-butyl ether (MTBE), isopropylbenzene (cumene), naphthalene, 1,2,4-trimethylbenzene (1,2,4-TMB), and 1,3,5-trimethylbenzene (1,3,5-TMB) via US EPA Method 8260B. ***See attached Table 1 and Figure 3 (Soil Analytical Map)***

GROUNDWATER QUALITY

Monitoring Wells:	Four existing monitoring wells were sampled (MW-3, MW-4, MW-5, and MW-10); these wells were installed during the previous site investigation. The wells ranged from a depth of 25-50 feet.
Sample Date:	1/12/2017
Depth to Groundwater:	Groundwater depth ranged from 14.60 feet in monitoring well MW-3 to 15.27 feet in monitoring well MW-5.
Flow:	Generally towards the north and west
Number of Groundwater Samples:	Four groundwater samples were collected from the existing monitoring wells during site assessment activities.
Sample Analysis:	Volatile Organic Compounds (VOCs) including BTEX, MTBE, cumene, naphthalene, 1,2,4-TMB, and 1,3,5-TMB via US EPA Method 8260B.
Monitoring Wells:	MW-1 through MW-10 (previously existing from prior investigation)
Onsite Supply Well:	None Identified on-site

See attached Table 2 and Figure 4 (Groundwater Analytical Map)

ENVIRONMENTAL SITE ASSESSMENT RESULTS

Summary:	The soil analytical results indicate that samples collected during this assessment do not exceed the PADEP Statewide Health Standards (SHS) for unsaturated/saturated soil in a Non-Residential, Used Aquifer. The groundwater analytical results for the samples collected during this assessment indicate that the samples do not exceed the previously approved SSS for a Non-Residential, Used Aquifer for the site.

Table 1 is a summary of soil analytical results. Table 2 is a summary of groundwater analytical results. Boring logs are provided in Attachment A. Attachment B presents the soil laboratory analytical results and Attachment C presents the groundwater laboratory analytical results.

TABLES

Table 1

SOIL QUALITY DATA

Sunoco Station #0363-5430
610 York Road
Warminster, Pennsylvania

Soil Sample ID	Depth (feet)	Date	Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Total Xylenes (µg/kg)	MTBE (µg/kg)	Naphthalene (µg/kg)	Isopropyl-benzene (µg/kg)	1,2,4-TMB (µg/kg)	1,3,5-TMB (µg/kg)
PADEP Act 2 U/NR MSCs			**500**	**100,000**	**70,000**	**1,000,000**	**2,000**	**25,000**	**2,500,000**	**35,000**	**210,000**
SB-1	12-13	01/12/17	ND<1.11	ND<5.53	ND<1.11	ND<3.32 J4	ND<1.11	ND<5.53	ND<1.11	ND<1.11	ND<1.11
SB-2	10-11	01/12/17	ND<1.07	ND<5.37	ND<1.07	ND<3.22 J4	ND<1.07	ND<5.37	ND<1.07	ND<1.07	ND<1.07
SB-3	13-14	01/12/17	ND<1.26	ND<6.30	ND<1.26	ND<3.78 J4	ND<1.26	ND<6.30	ND<1.26	ND<1.26	ND<1.26
SB-4	10-11	01/12/17	ND<1.20	ND<5.98	11.2	58.4 J4	ND<1.20	10.6	5.91	54.8	15.9

PADEP =Pennsylvania Department of Environmental Protection
U/NR MSCs = Used Aquifer/non-residential, medium specific concentrations
µg/kg = Microgram per kilogram
MTBE = Methyl tertiary butyl ether
Total Xylenes = Sum of o-xylene, m-xylene and p-xlyene isomers
TMB = Trimethlybenzene
J4 = The associated batch QC was outside the established quality control range for accuracy.

Table 2

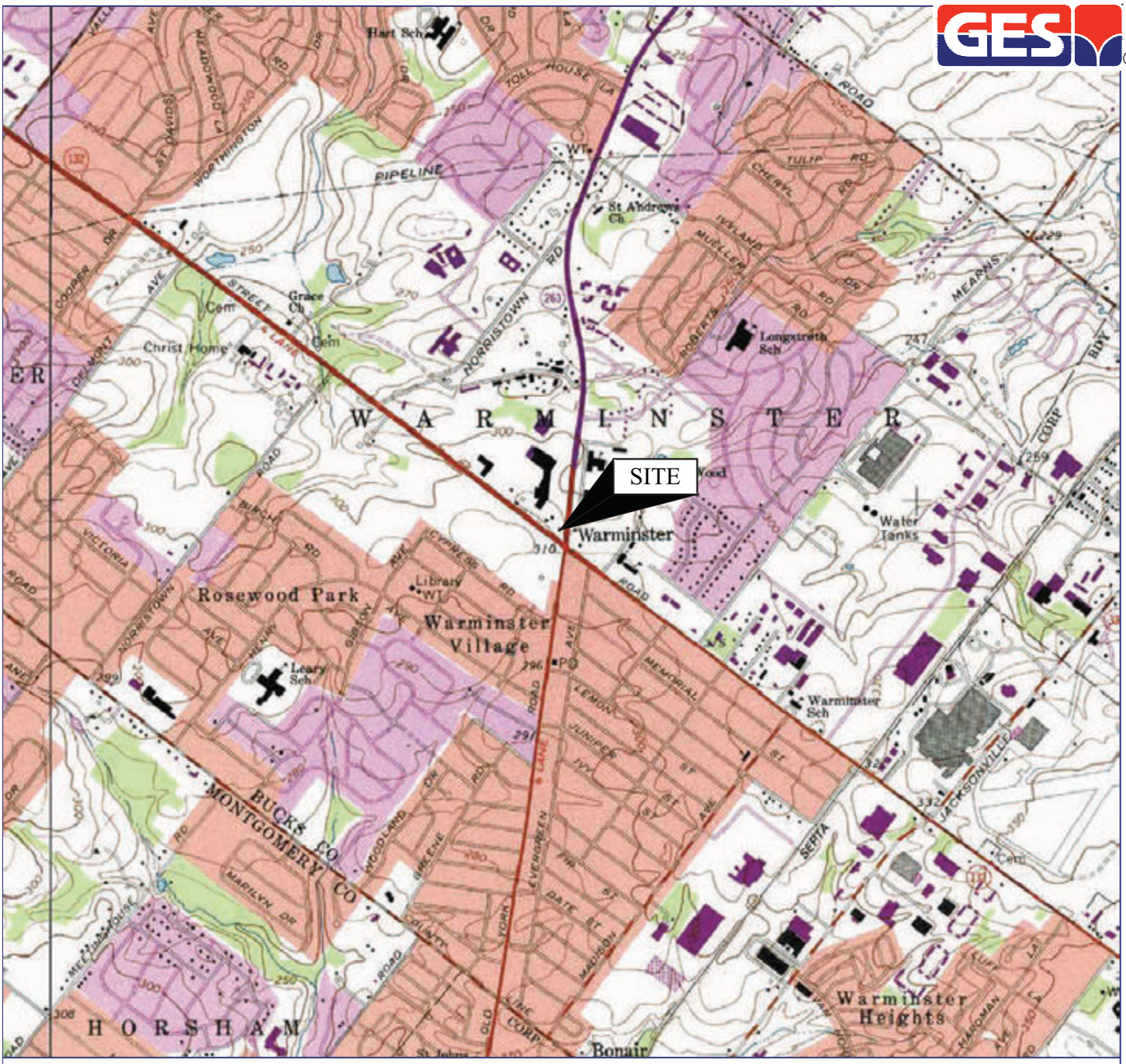
GROUNDWATER QUALITY DATA

Sunoco Station #0363-5430
610 York Road
Warminster, Pennsylvania

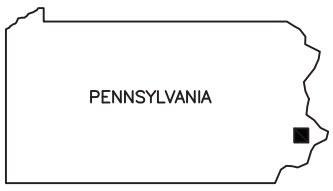
Temporary Well ID	Depth to Water (feet)	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	Cumene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)
PADEP Act 2 U/NR MSCs			**5**	**1,000**	**700**	**10,000**	**20**	**100**	**3,500**	**62**	**1,200**
MW-3	14.60	01/12/17	**5.25**	ND(1.0)	ND(0.5)	ND(1.5)	ND(0.5)	ND(0.5) J4	ND(0.5)	ND(0.5)	ND(0.5)
MW-4	14.90	01/12/17	ND(0.5)	ND(1.0)	ND(0.5)	ND(1.5)	ND(0.5)	ND(0.5) J4	ND(0.5)	ND(0.5)	ND(0.5)
MW-5	15.27	01/12/17	ND(0.5)	ND(1.0)	ND(0.5)	ND(1.5)	ND(0.5)	ND(0.5) J4	ND(0.5)	ND(0.5)	ND(0.5)
MW-10	14.94	01/12/17	ND(0.5)	ND(1.0)	ND(0.5)	ND(1.5)	ND(0.5)	ND(0.5) J4	ND(0.5)	ND(0.5)	ND(0.5)

PADEP =Pennsylvania Department of Environmental Protection
U/NR MSCs = Used Aquifer/non-residential, medium specific concentrations
µg/L = Microgram per Liter
MTBE = Methyl tertiary butyl ether
Total Xylenes = Sum of o-xylene, m-xylene and p-xlyene isomers
TMB = Trimethlybenzene
NA = Not Available or not analyzed for that specific compound
NS = Not sampled
BOLD =Bolded/shaded value indicates the result or detection limit is greater than the Act 2 U/NR MSCs
J4 = The associated batch QC was outside the established quality control range for accuracy.

FIGURES



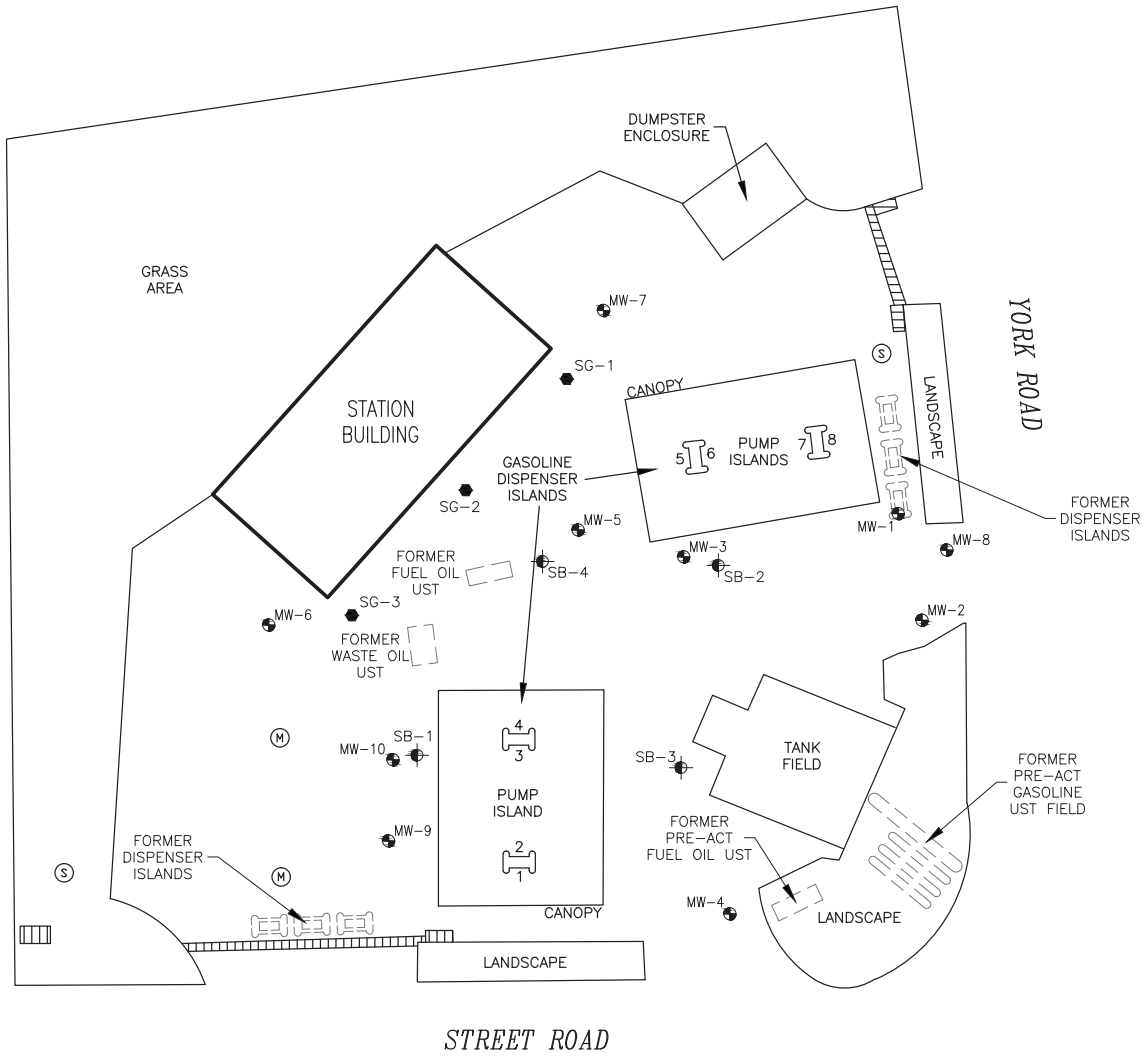
SOURCE: USGS 7.5 MINUTE SERIES
TOPOGRAPHIC QUADRANGLE
HATBORO, PA
CONTOUR INTERVAL = 10' 1966 (1983)



QUADRANGLE LOCATION

DRAFTED BY: TP	SITE LOCATION MAP
CHECKED BY: BCH	SUNOCO STATION #0363-5430 610 YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: SRG	Groundwater & Environmental Services, Inc. 440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 2000 / DATE: 01-30-17 / FIGURE: 1

N:_Corporate\Graphics-Exton\Exton\Sunoco\Sun-Optimization Divestment\Pennsylvania\Warminster, Pa\Warminster 610 York Rd SLM.dwg, Layout1, tpeters



LEGEND

- MONITORING WELL
- SEWER MANHOLE
- MANHOLE
- STORM DRAINAGE
- SOIL GAS SURVEY POINT
- SOIL BORING LOCATION

DRAFTED BY: TP	SITE MAP
CHECKED BY: BCH	SUNOCO STATION #0363-5430 610 YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: SRG	Groundwater & Environmental Services, Inc. 440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
NORTH	SCALE IN FEET: 0 30 / DATE: 01-27-17 / FIGURE: 2

N:_Corporate\Graphics-Exton\Exton\Sunoco\Sun-Optimization Divestment\Pennsylvania\Warminster, Pa\Warminster 610 York Rd SM (new).dwg, Model, tpeters

LEGEND

- MONITORING WELL
- SEWER MANHOLE
- MANHOLE
- STORM DRAINAGE
- SOIL GAS SURVEY POINT
- SOIL BORING LOCATION

SB-1	SOIL SAMPLE ID
12-13'	SAMPLE DEPTH (feet)
ND<1.11	BENZENE CONCENTRATION (µg/kg)
ND<5.53	TOLUENE CONCENTRATION (µg/kg)
ND<1.11	ETHYLBENZENE CONCENTRATION (µg/kg)
ND<3.32(J4)	TOTAL XYLENES CONCENTRATION (µg/kg)
ND<1.11	MTBE CONCENTRATION (µg/kg)
ND<5.53	NAPHTHALENE CONCENTRATION (µg/kg)
ND<1.11	CUMENE CONCENTRATION (µg/kg)
ND<1.11	1,2,4-TMB CONCENTRATION (µg/kg)
ND<1.11	1,3,5-TMB CONCENTRATION (µg/kg)

<#	LESS THAN THE LABORATORY DETECTION LIMIT
(J4)	THE ASSOCIATED BATCH QC WAS OUTSIDE THE ESTABLISHED QUALITY CONTROL RANGE FOR ACCURACY
(µg/kg)	MICROGRAM PER KILOGRAM
MTBE	METHYL *tert*-BUTYL ETHER
TMB	TRIMETHYLBENZENE

DRAFTED BY: TP
CHECKED BY: BCH
REVIEWED BY: SRG
NORTH

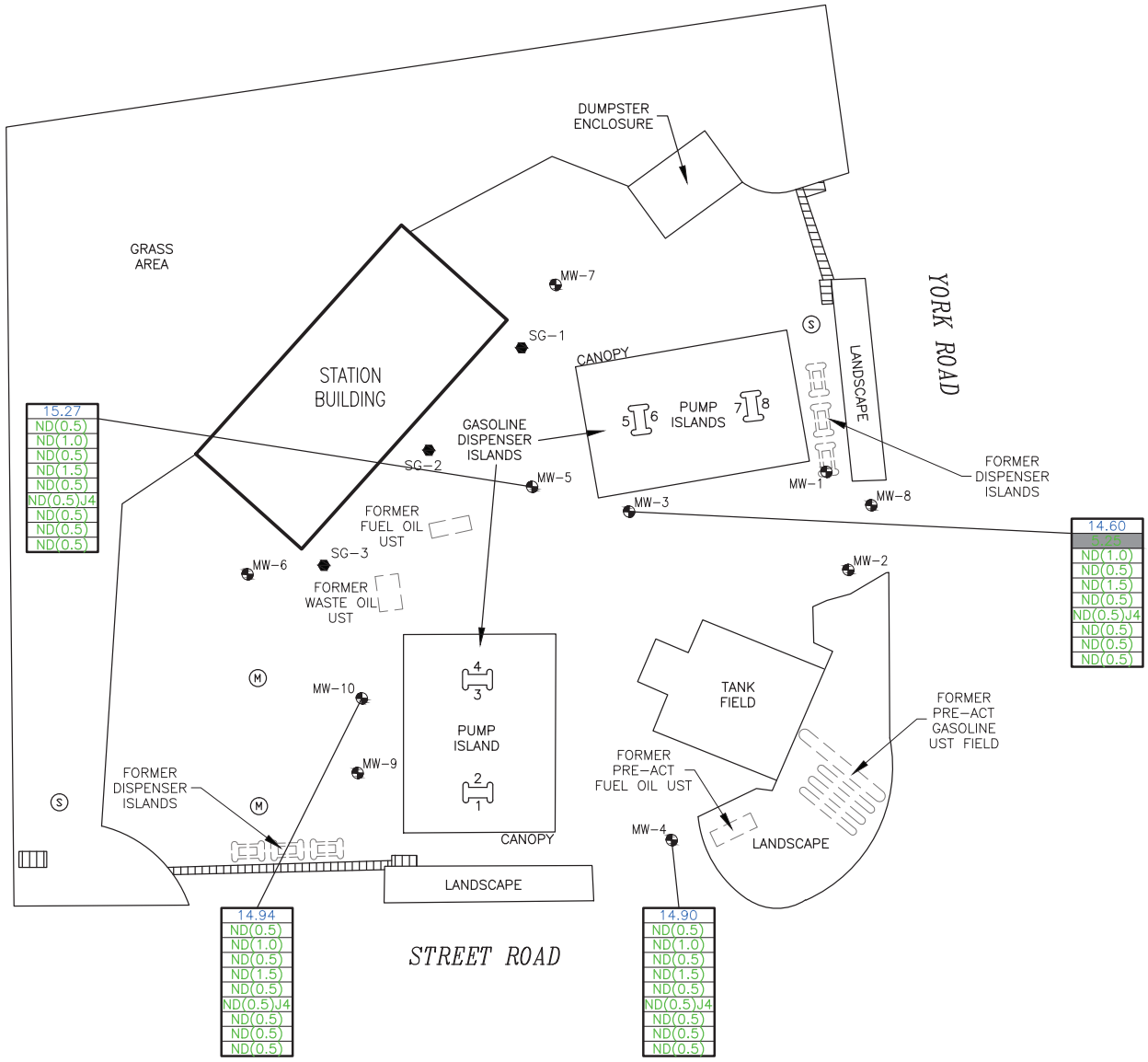
SOIL ANALYTICAL MAP
JANUARY 12, 2017

SUNOCO STATION #0363-5430
610 YORK ROAD
WARMINSTER, PENNSYLVANIA

Groundwater & Environmental Services, Inc.
440 CREAMERY WAY, SUITE 500, EXTON, PA 19341

SCALE IN FEET: 0 30
DATE: 01-27-17
FIGURE: 3

N:_Corporate\Graphics-Exton\Exton\Sunoco\Sun-Optimization Divestment\Pennsylvania\Warminster, Pa\Warminster 610 York Rd SM (new).dwg, Model, tpeters



LEGEND

- MONITORING WELL
- SEWER MANHOLE
- MANHOLE
- STORM DRAINAGE
- SOIL GAS SURVEY POINT

14.60	DEPTH TO WATER (feet)
5.25	BENZENE CONCENTRATION (µg/L)
ND(1.0)	TOLUENE CONCENTRATION (µg/L)
ND(0.5)	ETHYLBENZENE CONCENTRATION (µg/L)
ND(1.5)	TOTAL XYLENES CONCENTRATION (µg/L)
ND(0.5)	MTBE CONCENTRATION (µg/L)
ND(0.5)J4	NAPHTHALENE CONCENTRATION (µg/L)
ND(0.5)	CUMENE CONCENTRATION (µg/L)
ND(0.5)	1,2,4-TMB CONCENTRATION (µg/L)
ND(0.5)	1,3,5-TMB CONCENTRATION (µg/L)

ND	NOT DETECTED
J4	THE ASSOCIATED BATCH QC WAS OUTSIDE THE ESTABLISHED QUALITY CONTROL RANGE FOR ACCURACY
(µg/L)	MICROGRAM PER LITER
MTBE	METHYL *tert*-BUTYL ETHER
TMB	TRIMETHYLBENZENE

NOTE: SHADED VALUES EXCEED PADEP ACT 2 MSCs.

DRAFTED BY: TP	GROUNDWATER ANALYTICAL MAP JANUARY 12, 2017
CHECKED BY: BCH	SUNOCO STATION #0363-5430 610 YORK ROAD WARMINSTER, PENNSYLVANIA
REVIEWED BY: SRG	Groundwater & Environmental Services, Inc. 440 CREAMERY WAY, SUITE 500, EXTON, PA 19341
NORTH	SCALE IN FEET 0 30 / DATE 01-27-17 / FIGURE 4

N:_Corporate\Graphics-Exton\Exton\Sunoco\Sun-Optimization Divestment\Pennsylvania\Warminster, Pa\Warminster 610 York Rd SM (new).dwg, Model, tpeters

ATTACHMENT A

Soil Boring Log

ID NO. **SB-1**

Groundwater and Environmental Services, Inc.

PROJECT:	**Sunoco - Optimization Divestment**	SURFACE ELEV.: **NA**	TOTAL DEPTH: **13 ft.**
ADDRESS:	**610 York Rd, Warminster, PA**	WATER DEPTH: **NA**	CASING EL.: **NA**
JOB NO.	**0204690-635430-201**	BOREHOLE DIA.: **3-inch**	WELL DIA.: **NA**

Logged By:	**Brian Hale**	Drilling Method:	**Air Knife\Vacuum Excavation\Direct Push**
Dates Drilled:	**1/11/17 - 1/12/17**	Sampling Method:	**Grab sample**
Drilling Company:	**Odyssey Environmental Services**	Soil Class. System:	**USCS**
Drill Rig Type:	**Geoprobe 7822 DT**	Field Screening:	**Photoionization Detector**

Elevation (feet)	Sample Interval	Field Screen	Rec-overy	SAMPLE LITHOLOGY	Stratigraphy	Comments	COMPLETION DETAILS
0				ASPHALT: (0-0.5') Asphalt and sub-base	ASPHALT	Hand cleared via hand auger and vacuum excavation to 8' bgs	Topped with cold-patch asphalt (0-0.5')
				FILL: (0.5'-2') Tan to brown silt and coarse-grained sand with fine to coarse angular gravel, dry	FILL		
		0.0 ppm		SM: (2'-5') Brown, red brown, and orange brown silt and clay with trace fine to coarse grained sand, slightly moist	SM		Filled in bore hole with soil cuttings (0.5'-13')
-5		0.9 ppm		SM: (5'-6') Orange brown fine to medium-grained sand and silt, 80% sand to 20% silt, slightly moist			
		0.0 ppm		SM: (6'-9') Red brown to maroon silt and fine-grained sand, trace fine angular gravel, moist			
		0.6 ppm					
		0.0 ppm		SM: (9'-10') Red brown to maroon silt and clay, some sand and fine angular gravel, moist			
-10		0.1 ppm		SM: (10'-13') Red brown sand and silt with fine to coarse angular gravel, trace red brown silt and sandstone, moist			
	12'-13' submitted to laboratory for analysis	0.0 ppm				Geoprobe refusal at 13' bgs	
		0.6 ppm					

Location:

Northing/Latitude: **NA**
Easting/Longitude: **NA**
Horizontal Datum: **NA**
Vertical Datum: **NA**

General Comments:

SAA = same as above
bgs = below ground surface
ppm = parts per million

Symbol Key:

Static Water Level
Lab Sample Location
Apparent Water Level

SB-1

Soil Boring Log

ID NO. **SB-2**

Groundwater and Environmental Services, Inc.

PROJECT:	**Sunoco - Optimization Divestment**	SURFACE ELEV.: **NA**	TOTAL DEPTH: **11 ft.**
ADDRESS:	**610 York Rd, Warminster, PA**	WATER DEPTH: **NA**	CASING EL.: **NA**
JOB NO.	**0204690-635430-201**	BOREHOLE DIA.: **3-inch**	WELL DIA.: **NA**

Logged By:	**Brian Hale**	Drilling Method:	**Air Knife\Vacuum Excavation\Direct Push**
Dates Drilled:	**1/11/17 - 1/12/17**	Sampling Method:	**Grab sample**
Drilling Company:	**Odyssey Environmental Services**	Soil Class. System:	**USCS**
Drill Rig Type:	**Geoprobe 7822 DT**	Field Screening:	**Photoionization Detector**

Elevation (feet)	Sample Interval	Field Screen	Rec-overy	SAMPLE LITHOLOGY	Stratigraphy	Comments	COMPLETION DETAILS
0				ASPHALT: (0-0.5') Asphalt and sub-base	ASPHALT	Hand cleared via hand auger and vacuum excavation to 5.5' bgs	Topped with cold-patch asphalt (0-0.5')
				FILL: (0.5'-1') Concrete	FILL		
				PEA GRAVEL: (1'-2.5') Pea Gravel	PEA GRAVEL		Filled in bore hole with soil cuttings (0.5'-11')
-5				SM: (2.5'-5.5') Red brown silt and clay, trace fine angular gravel and coarse sand, slightly moist	CL		
				SM: (5.5'-8') Red brown to maroon silt, some coarse angular gravel and red-brown sandstone gravel, dry	SM		
		0.0 ppm		SM: (8'-10') SAA, wet at 9'-10'			
-10	10'-11' submitted to laboratory for analysis	6.0 ppm 30.0 ppm		SM: (10'-11') Red brown coarse-grained sand with silt and fine to coarse angular red brown gravel, slightly moist		Geoprobe refusal at 11' bgs	

Location:
- Northing/Latitude: **NA**
- Easting/Longitude: **NA**
- Horizontal Datum: **NA**
- Vertical Datum: **NA**

General Comments:
- SAA = same as above
- bgs = below ground surface
- ppm = parts per million

Symbol Key:
- Static Water Level
- Lab Sample Location
- Apparent Water Level

SB-2

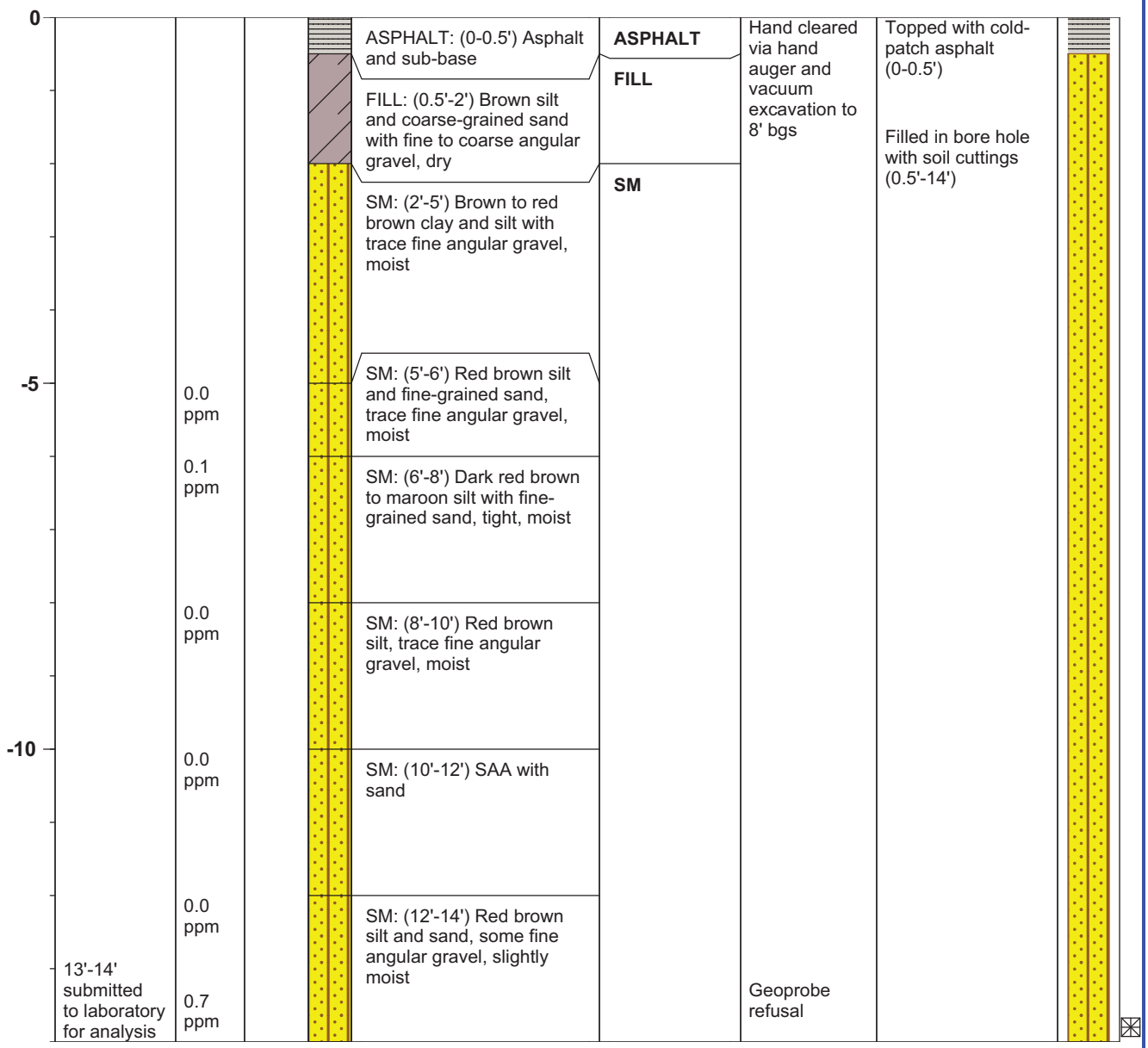
Soil Boring Log

ID NO. **SB-3**

Groundwater and Environmental Services, Inc.

PROJECT:	**Sunoco - Optimization Divestment**	SURFACE ELEV.:	**NA**	TOTAL DEPTH:	**14 ft.**
ADDRESS:	**610 York Rd, Warminster, PA**	WATER DEPTH:	**NA**	CASING EL.:	**NA**
JOB NO.	**0204690-635430-201**	BOREHOLE DIA.:	**3-inch**	WELL DIA.:	**NA**

Logged By:	**Brian Hale**	Drilling Method:	**Air Knife\Vacuum Excavation\Direct Push**
Dates Drilled:	**1/11/17 - 1/12/17**	Sampling Method:	**Grab sample**
Drilling Company:	**Odyssey Environmental Services**	Soil Class. System:	**USCS**
Drill Rig Type:	**Geoprobe 7822 DT**	Field Screening:	**Photoionization Detector**



Location:

Northing/Latitude: **NA**
Easting/Longitude: **NA**
Horizontal Datum: **NA**
Vertical Datum: **NA**

General Comments:

SAA = same as above
bgs = below ground surface
ppm = parts per million

Symbol Key:

Static Water Level
Lab Sample Location
Apparent Water Level

SB-3

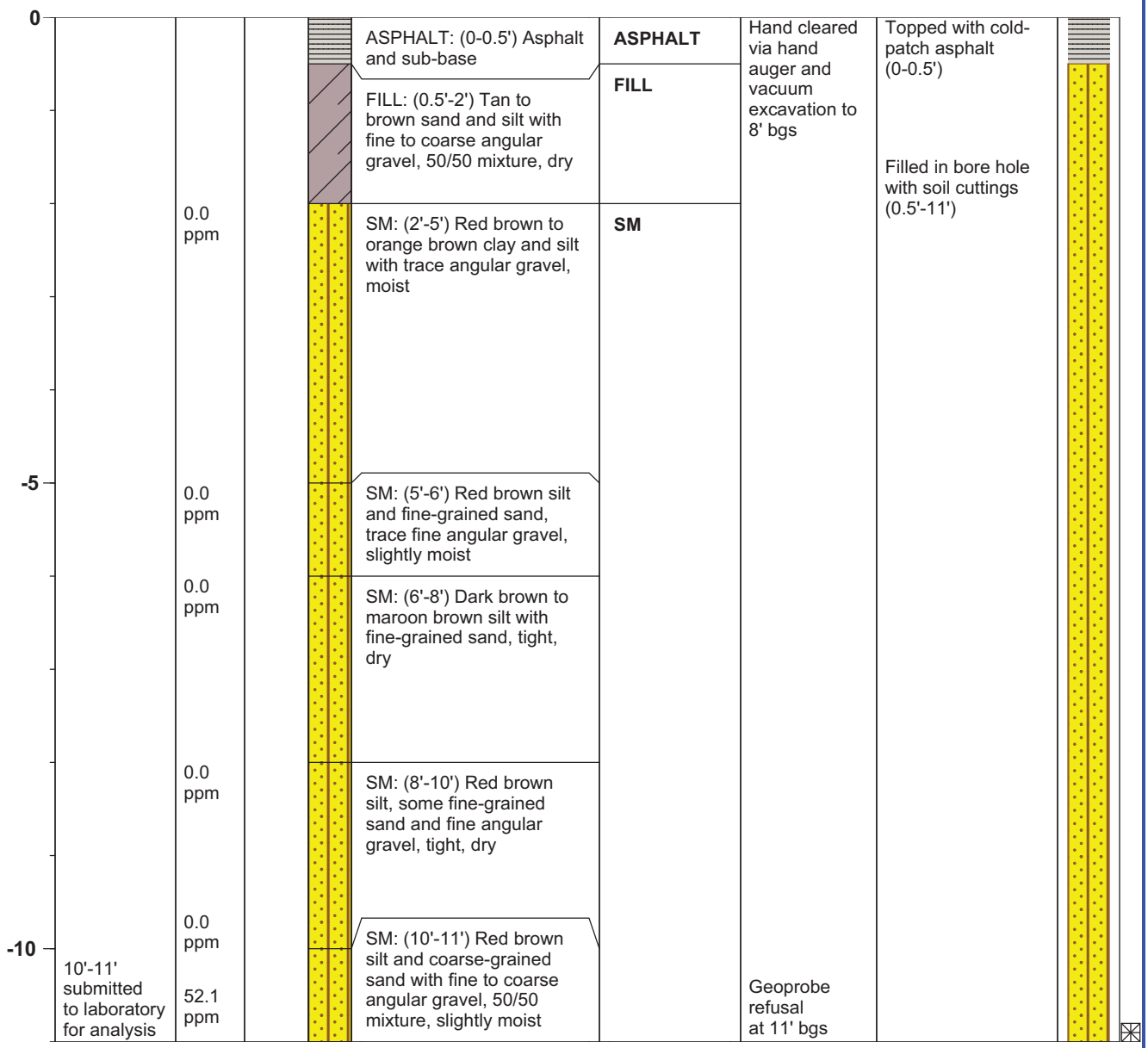
Soil Boring Log

ID NO. **SB-4**

Groundwater and Environmental Services, Inc.

PROJECT:	**Sunoco - Optimization Divestment**	SURFACE ELEV.: **NA**	TOTAL DEPTH: **11 ft.**
ADDRESS:	**610 York Rd, Warminster, PA**	WATER DEPTH: **NA**	CASING EL.: **NA**
JOB NO.	**0204690-635430-201**	BOREHOLE DIA.: **3-inch**	WELL DIA.: **NA**

Logged By:	**Brian Hale**	Drilling Method:	**Air Knife\Vacuum Excavation\Direct Push**
Dates Drilled:	**1/11/17 - 1/12/17**	Sampling Method:	**Grab sample**
Drilling Company:	**Odyssey Environmental Services**	Soil Class. System:	**USCS**
Drill Rig Type:	**Geoprobe 7822 DT**	Field Screening:	**Photoionization Detector**



Elevation (feet)	Sample Interval	Field Screen	Rec-overy	SAMPLE LITHOLOGY	Stratigraphy	Comments	COMPLETION DETAILS

Location:

Northing/Latitude: **NA**
Easting/Longitude: **NA**
Horizontal Datum: **NA**
Vertical Datum: **NA**

General Comments:

SAA = same as above
bgs = below ground surface
ppm = parts per million

Symbol Key:

Static Water Level
Lab Sample Location
Apparent Water Level

SB-4

ATTACHMENT B

ANALYTICAL REPORT

January 17, 2017

GES, Inc - Sunoco

Sample Delivery Group:	L883629
Samples Received:	01/13/2017
Project Number:	0204690-635430-201
Description:	Sunoco Warminster PA

Report To: Stephanie Grillo
440 Creamery Way, Ste 500
Exton, PA 19341

Entire Report Reviewed By:

Chris McCord
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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SB-1 12-13 L883629-01 Solid

Collected by: Brian Hale
Collected date/time: 01/12/17 09:15
Received date/time: 01/13/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG943633	1	01/16/17 11:44	01/16/17 11:52	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG943478	1	01/12/17 09:15	01/15/17 14:47	DWR

SB-3 13-14 L883629-02 Solid

Collected by: Brian Hale
Collected date/time: 01/12/17 09:50
Received date/time: 01/13/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG943633	1	01/16/17 11:44	01/16/17 11:52	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG943478	1	01/12/17 09:50	01/15/17 17:24	DWR

SB-2 10-11 L883629-03 Solid

Collected by: Brian Hale
Collected date/time: 01/12/17 10:15
Received date/time: 01/13/17 09:00

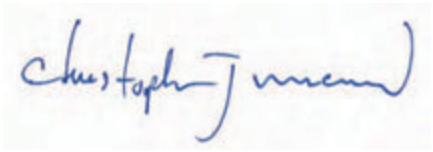
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG943633	1	01/16/17 11:44	01/16/17 11:52	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG943478	1	01/12/17 10:15	01/15/17 17:41	DWR

SB-4 10-11 L883629-04 Solid

Collected by: Brian Hale
Collected date/time: 01/12/17 11:30
Received date/time: 01/13/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG943633	1	01/16/17 11:44	01/16/17 11:52	MEL
Volatile Organic Compounds (GC/MS) by Method 8260B	WG943478	1	01/12/17 11:30	01/17/17 07:16	JHH

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris McCord
Technical Service Representative

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	90.4		1	01/16/2017 11:52	WG943633

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.00111	1	01/15/2017 14:47	WG943478
Ethylbenzene	ND		0.00111	1	01/15/2017 14:47	WG943478
Isopropylbenzene	ND		0.00111	1	01/15/2017 14:47	WG943478
Methyl tert-butyl ether	ND		0.00111	1	01/15/2017 14:47	WG943478
Naphthalene	ND		0.00553	1	01/15/2017 14:47	WG943478
Toluene	ND		0.00553	1	01/15/2017 14:47	WG943478
1,2,4-Trimethylbenzene	ND		0.00111	1	01/15/2017 14:47	WG943478
1,3,5-Trimethylbenzene	ND		0.00111	1	01/15/2017 14:47	WG943478
Xylenes, Total	ND	J4	0.00332	1	01/15/2017 14:47	WG943478
(S) Toluene-d8	*104*		*80.0-120*		*01/15/2017 14:47*	WG943478
(S) Dibromofluoromethane	*101*		*74.0-131*		*01/15/2017 14:47*	WG943478
(S) 4-Bromofluorobenzene	*97.0*		*64.0-132*		*01/15/2017 14:47*	WG943478

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	79.4		1	01/16/2017 11:52	WG943633

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.00126	1	01/15/2017 17:24	WG943478
Ethylbenzene	ND		0.00126	1	01/15/2017 17:24	WG943478
Isopropylbenzene	ND		0.00126	1	01/15/2017 17:24	WG943478
Methyl tert-butyl ether	ND		0.00126	1	01/15/2017 17:24	WG943478
Naphthalene	ND		0.00630	1	01/15/2017 17:24	WG943478
Toluene	ND		0.00630	1	01/15/2017 17:24	WG943478
1,2,4-Trimethylbenzene	ND		0.00126	1	01/15/2017 17:24	WG943478
1,3,5-Trimethylbenzene	ND		0.00126	1	01/15/2017 17:24	WG943478
Xylenes, Total	ND	J4	0.00378	1	01/15/2017 17:24	WG943478
(S) Toluene-d8	*106*		*80.0-120*		*01/15/2017 17:24*	WG943478
(S) Dibromofluoromethane	*101*		*74.0-131*		*01/15/2017 17:24*	WG943478
(S) 4-Bromofluorobenzene	*94.8*		*64.0-132*		*01/15/2017 17:24*	WG943478

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	93.0		1	01/16/2017 11:52	WG943633

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.00107	1	01/15/2017 17:41	WG943478
Ethylbenzene	ND		0.00107	1	01/15/2017 17:41	WG943478
Isopropylbenzene	ND		0.00107	1	01/15/2017 17:41	WG943478
Methyl tert-butyl ether	ND		0.00107	1	01/15/2017 17:41	WG943478
Naphthalene	ND		0.00537	1	01/15/2017 17:41	WG943478
Toluene	ND		0.00537	1	01/15/2017 17:41	WG943478
1,2,4-Trimethylbenzene	ND		0.00107	1	01/15/2017 17:41	WG943478
1,3,5-Trimethylbenzene	ND		0.00107	1	01/15/2017 17:41	WG943478
Xylenes, Total	ND	J4	0.00322	1	01/15/2017 17:41	WG943478
(S) Toluene-d8	*106*		*80.0-120*		*01/15/2017 17:41*	WG943478
(S) Dibromofluoromethane	*102*		*74.0-131*		*01/15/2017 17:41*	WG943478
(S) 4-Bromofluorobenzene	*86.9*		*64.0-132*		*01/15/2017 17:41*	WG943478

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	83.6		1	01/16/2017 11:52	WG943633

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.00120	1	01/17/2017 07:16	WG943478
Ethylbenzene	0.0112		0.00120	1	01/17/2017 07:16	WG943478
Isopropylbenzene	0.00591		0.00120	1	01/17/2017 07:16	WG943478
Methyl tert-butyl ether	ND		0.00120	1	01/17/2017 07:16	WG943478
Naphthalene	0.0106		0.00598	1	01/17/2017 07:16	WG943478
Toluene	ND		0.00598	1	01/17/2017 07:16	WG943478
1,2,4-Trimethylbenzene	0.0548		0.00120	1	01/17/2017 07:16	WG943478
1,3,5-Trimethylbenzene	0.0159		0.00120	1	01/17/2017 07:16	WG943478
Xylenes, Total	0.0584	J4	0.00359	1	01/17/2017 07:16	WG943478
(S) Toluene-d8	*100*		*80.0-120*		*01/17/2017 07:16*	WG943478
(S) Dibromofluoromethane	*103*		*74.0-131*		*01/17/2017 07:16*	WG943478
(S) 4-Bromofluorobenzene	*103*		*64.0-132*		*01/17/2017 07:16*	WG943478

Method Blank (MB)

(MB) R3190859-1 01/16/17 11:52

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Total Solids	0.000600			

L882897-01 Original Sample (OS) • Duplicate (DUP)

(OS) L882897-01 01/16/17 11:52 • (DUP) R3190859-3 01/16/17 11:52

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	94.8	95.1	1	0.229		5

Laboratory Control Sample (LCS)

(LCS) R3190859-2 01/16/17 11:52

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3190824-2 01/15/17 12:12

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000270	0.00100
Ethylbenzene	U		0.000297	0.00100
Isopropylbenzene	U		0.000243	0.00100
Methyl tert-butyl ether	U		0.000212	0.00100
Naphthalene	U		0.00100	0.00500
Toluene	0.00101	J	0.000434	0.00500
1,2,4-Trimethylbenzene	0.000467	J	0.000211	0.00100
1,3,5-Trimethylbenzene	U		0.000266	0.00100
Xylenes, Total	U		0.000698	0.00300
(S) Toluene-d8	*103*			*80.0-120*
(S) Dibromofluoromethane	*91.7*			*74.0-131*
(S) 4-Bromofluorobenzene	*97.8*			*64.0-132*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3190824-1 01/15/17 11:03 • (LCSD) R3190824-3 01/15/17 12:47

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0273	0.0279	109	112	71.0-124			2.07	20
Ethylbenzene	0.0250	0.0293	0.0291	117	116	77.0-120			0.710	20
Isopropylbenzene	0.0250	0.0290	0.0279	116	112	75.0-120			3.82	20
Methyl tert-butyl ether	0.0250	0.0256	0.0267	102	107	66.0-125			4.26	20
Naphthalene	0.0250	0.0285	0.0283	114	113	64.0-125			0.610	20
Toluene	0.0250	0.0289	0.0293	115	117	77.0-120			1.56	20
1,2,4-Trimethylbenzene	0.0250	0.0291	0.0287	116	115	75.0-120			1.37	20
1,3,5-Trimethylbenzene	0.0250	0.0297	0.0291	119	117	75.0-120			1.80	20
Xylenes, Total	0.0750	0.0904	0.0886	121	118	77.0-120	J4		2.02	20
(S) Toluene-d8				*104*	*104*	*80.0-120*				
(S) Dibromofluoromethane				*98.5*	*97.8*	*74.0-131*				
(S) 4-Bromofluorobenzene				*94.3*	*93.5*	*64.0-132*				

L883629-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L883629-01 01/15/17 14:47 • (MS) R3190824-4 01/15/17 13:55 • (MSD) R3190824-5 01/15/17 14:13

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.0277	ND	0.0253	0.0279	91.3	101	1	13.0-146			10.1	27
Ethylbenzene	0.0277	ND	0.0248	0.0274	89.6	99.2	1	10.0-147			10.1	31

L883629-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L883629-01 01/15/17 14:47 • (MS) R3190824-4 01/15/17 13:55 • (MSD) R3190824-5 01/15/17 14:13

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Isopropylbenzene	0.0277	ND	0.0236	0.0265	85.4	95.9	1	10.0-147			11.6	33
Methyl tert-butyl ether	0.0277	ND	0.0267	0.0297	96.4	107	1	21.0-145			10.8	29
Naphthalene	0.0277	ND	0.0297	0.0334	107	121	1	10.0-153			11.7	36
Toluene	0.0277	ND	0.0264	0.0279	93.1	98.4	1	10.0-144			5.41	28
1,2,4-Trimethylbenzene	0.0277	ND	0.0235	0.0261	83.9	93.3	1	10.0-151			10.5	34
1,3,5-Trimethylbenzene	0.0277	ND	0.0245	0.0272	88.4	98.4	1	10.0-150			10.7	33
Xylenes, Total	0.0830	ND	0.0758	0.0814	90.3	97.1	1	10.0-150			7.17	31
(S) Toluene-d8					*104*	*103*		*80.0-120*				
(S) Dibromofluoromethane					*104*	*106*		*74.0-131*				
(S) 4-Bromofluorobenzene					*90.8*	*90.9*		*64.0-132*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J4	The associated batch QC was outside the established quality control range for accuracy.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

***** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

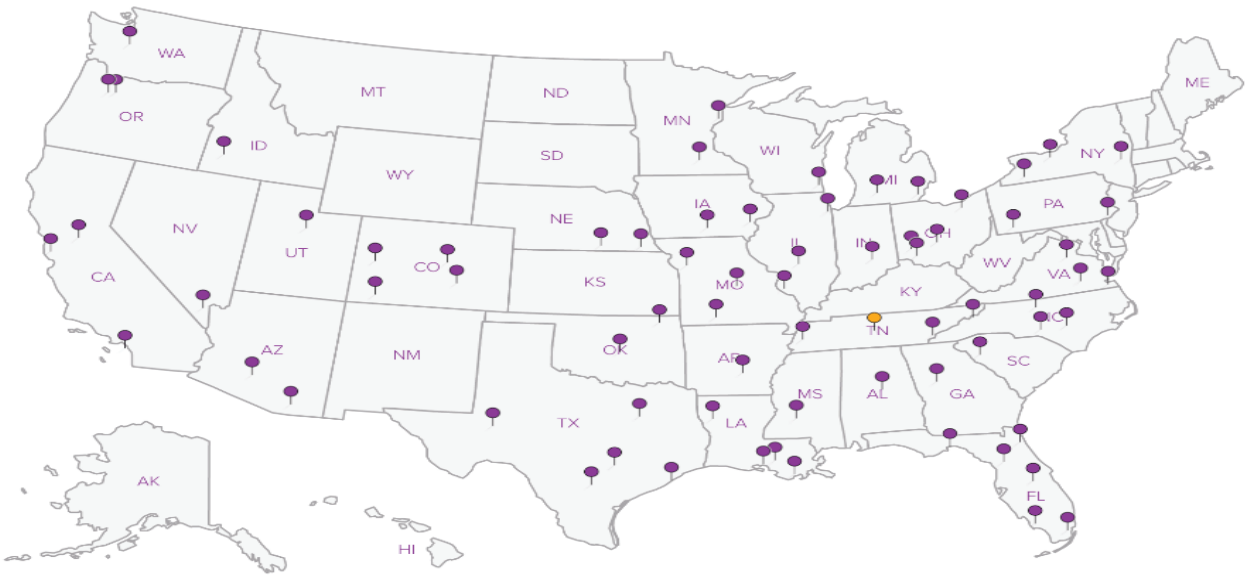
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



GES, Inc - Sunoco

440 Creamery Way, Ste 500
Exton, PA 19341

Billing Information & Quote Number:

Accounts Payable
440 Creamery Way, Ste 500
Exton, PA 19341

Report to: **Stephanie Grillo**

Email To: **sgrillo@gesonline.com**

Project Description: Sunoco Warminster PA

City/State Collected: Warminster Pennsylvania

Phone: **610-458-1077**
Fax:

Client Project # 0204690-635430-201

Lab Project # **SUNGES-122316L PA**

Collected by (print): Brian Hale

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
~~X~~ Three Day 25%

Date Results Needed

Email? ___No X__Yes
FAX? ___No ___Yes

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TS 4ozClr-NoPres	V8260LL - UGPA List 40mlAmb-HCl	V8260UGPA 40ml/NaHSO4/Syr/MeOH							Rem./Contaminant	Sample # (lab only)
SB-1 At 12-13'	Grab	SS	12'-13'	1/12/17	0915	4	X		X								-01
SB-3 At 13-14'	Grab	SS	13-14'	1/12/17	0950	4	X		X								02
SB-2 At 10-11'	Grab	SS	10-11'	1/12/17	1015	4	X		X								03
SB-4 At 10-11'	Grab	SS	10-11'	1/12/17	1130	4	X		X								04
		SS				4	X		X								
		SS				4	X		X								
		SS				4	X		X								
		SS				4	X		X								
		SS				4	X		X								
		GW				2		X									

* Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

Remarks:**Log as R4 - 3 day TAT******

pH _____ Temp _____

Flow _____ Other _____

Chain of Custody Page ___ of ___

ESC LABORATORY SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L883629

B186

Acctnum: **SUNGES**
Template: **T119161**
Prelogin: **P584120**
TSR: **134 - Mark W. Beasley**
PB:
Shipped Via: **FedEx Ground**

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Brian Hale	1/12/17	1415	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
			526 5108 4574
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☑ SWA

Temp: 2.4° °C Bottles Received: 16

Date: 1/13/17 Time: 0900

Hold #

Condition: (lab use only) tol (OK)

COC Seal Intact: ✓ Y ___N ___NA

pH Checked: NCF:

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Cooler Receipt Form

Client: SUNGES	SDG#	L883629
Cooler Received/Opened On: 1/13/17	Temperature Upon Receipt:	2.4 °c
Received By: Don Wright		
Signature:		

Receipt Check List	Yes	No	N/A
Were custody seals on outside of cooler and intact?			
Were custody papers properly filled out?			
Did all bottles arrive in good condition?			
Were correct bottles used for the analyses requested?			
Was sufficient amount of sample sent in each bottle?			
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)			
If applicable, was an observable VOA headspace present?			
Non Conformance Generated. (If yes see attached NCF)			

ATTACHMENT C

ANALYTICAL REPORT

January 16, 2017

GES, Inc - Sunoco

Sample Delivery Group:	L883636
Samples Received:	01/13/2017
Project Number:	0204690-635430-201
Description:	Sunoco Warminster

Report To: Stephanie Grillo
440 Creamery Way, Ste 500
Exton, PA 19341

Entire Report Reviewed By:

Mark W. Beasley
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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MW-10 L883636-01 GW

Collected by: Brian Hale
Collected date/time: 01/12/17 07:50
Received date/time: 01/13/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG943214	1	01/14/17 19:07	01/14/17 19:07	JHH

MW-3 L883636-02 GW

Collected by: Brian Hale
Collected date/time: 01/12/17 08:02
Received date/time: 01/13/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG943214	1	01/14/17 19:30	01/14/17 19:30	JHH

MW-4 L883636-03 GW

Collected by: Brian Hale
Collected date/time: 01/12/17 08:16
Received date/time: 01/13/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG943214	1	01/14/17 19:53	01/14/17 19:53	JHH

MW-5 L883636-04 GW

Collected by: Brian Hale
Collected date/time: 01/12/17 08:26
Received date/time: 01/13/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG943214	1	01/14/17 20:17	01/14/17 20:17	JHH

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Mark W. Beasley
Technical Service Representative

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	01/14/2017 19:07	WG943214
Ethylbenzene	ND		0.000500	1	01/14/2017 19:07	WG943214
Toluene	ND		0.00100	1	01/14/2017 19:07	WG943214
Xylenes, Total	ND		0.00150	1	01/14/2017 19:07	WG943214
Methyl tert-butyl ether	ND		0.000500	1	01/14/2017 19:07	WG943214
Isopropylbenzene	ND		0.000500	1	01/14/2017 19:07	WG943214
Naphthalene	ND	J4	0.000500	1	01/14/2017 19:07	WG943214
1,2,4-Trimethylbenzene	ND		0.000500	1	01/14/2017 19:07	WG943214
1,3,5-Trimethylbenzene	ND		0.000500	1	01/14/2017 19:07	WG943214
(S) Toluene-d8	*96.1*		*80.0-120*		*01/14/2017 19:07*	WG943214
(S) Dibromofluoromethane	*93.9*		*76.0-123*		*01/14/2017 19:07*	WG943214
(S) 4-Bromofluorobenzene	*97.7*		*80.0-120*		*01/14/2017 19:07*	WG943214

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.00525		0.000500	1	01/14/2017 19:30	WG943214
Ethylbenzene	ND		0.000500	1	01/14/2017 19:30	WG943214
Toluene	ND		0.00100	1	01/14/2017 19:30	WG943214
Xylenes, Total	ND		0.00150	1	01/14/2017 19:30	WG943214
Methyl tert-butyl ether	ND		0.000500	1	01/14/2017 19:30	WG943214
Isopropylbenzene	ND		0.000500	1	01/14/2017 19:30	WG943214
Naphthalene	ND	J4	0.000500	1	01/14/2017 19:30	WG943214
1,2,4-Trimethylbenzene	ND		0.000500	1	01/14/2017 19:30	WG943214
1,3,5-Trimethylbenzene	ND		0.000500	1	01/14/2017 19:30	WG943214
(S) Toluene-d8	*97.2*		*80.0-120*		*01/14/2017 19:30*	WG943214
(S) Dibromofluoromethane	*94.2*		*76.0-123*		*01/14/2017 19:30*	WG943214
(S) 4-Bromofluorobenzene	*97.5*		*80.0-120*		*01/14/2017 19:30*	WG943214

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.000500	1	01/14/2017 19:53	WG943214
Ethylbenzene	ND		0.000500	1	01/14/2017 19:53	WG943214
Toluene	ND		0.00100	1	01/14/2017 19:53	WG943214
Xylenes, Total	ND		0.00150	1	01/14/2017 19:53	WG943214
Methyl tert-butyl ether	ND		0.000500	1	01/14/2017 19:53	WG943214
Isopropylbenzene	ND		0.000500	1	01/14/2017 19:53	WG943214
Naphthalene	ND	J4	0.000500	1	01/14/2017 19:53	WG943214
1,2,4-Trimethylbenzene	ND		0.000500	1	01/14/2017 19:53	WG943214
1,3,5-Trimethylbenzene	ND		0.000500	1	01/14/2017 19:53	WG943214
(S) Toluene-d8	*96.5*		*80.0-120*		*01/14/2017 19:53*	WG943214
(S) Dibromofluoromethane	*94.8*		*76.0-123*		*01/14/2017 19:53*	WG943214
(S) 4-Bromofluorobenzene	*98.7*		*80.0-120*		*01/14/2017 19:53*	WG943214

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.000500	1	01/14/2017 20:17	WG943214
Ethylbenzene	ND		0.000500	1	01/14/2017 20:17	WG943214
Toluene	ND		0.00100	1	01/14/2017 20:17	WG943214
Xylenes, Total	ND		0.00150	1	01/14/2017 20:17	WG943214
Methyl tert-butyl ether	ND		0.000500	1	01/14/2017 20:17	WG943214
Isopropylbenzene	ND		0.000500	1	01/14/2017 20:17	WG943214
Naphthalene	ND	J4	0.000500	1	01/14/2017 20:17	WG943214
1,2,4-Trimethylbenzene	ND		0.000500	1	01/14/2017 20:17	WG943214
1,3,5-Trimethylbenzene	ND		0.000500	1	01/14/2017 20:17	WG943214
(S) Toluene-d8	*97.5*		*80.0-120*		*01/14/2017 20:17*	WG943214
(S) Dibromofluoromethane	*93.6*		*76.0-123*		*01/14/2017 20:17*	WG943214
(S) 4-Bromofluorobenzene	*102*		*80.0-120*		*01/14/2017 20:17*	WG943214

Method Blank (MB)

(MB) R3190781-3 01/14/17 13:15

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000896	0.000500
Ethylbenzene	U		0.000158	0.000500
Isopropylbenzene	U		0.000126	0.000500
Methyl tert-butyl ether	U		0.000102	0.000500
Naphthalene	U		0.000174	0.000500
Toluene	U		0.000412	0.00100
1,2,4-Trimethylbenzene	U		0.000123	0.000500
1,3,5-Trimethylbenzene	U		0.000124	0.000500
Xylenes, Total	U		0.000316	0.00150
(S) Toluene-d8	*96.9*			*80.0-120*
(S) Dibromofluoromethane	*95.7*			*76.0-123*
(S) 4-Bromofluorobenzene	*96.5*			*80.0-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3190781-1 01/14/17 11:41 • (LCSD) R3190781-2 01/14/17 12:05

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0250	0.0224	0.0234	89.6	93.6	69.0-123			4.36	20
Ethylbenzene	0.0250	0.0248	0.0258	99.1	103	77.0-120			3.90	20
Isopropylbenzene	0.0250	0.0235	0.0243	94.1	97.0	75.0-120			3.02	20
Methyl tert-butyl ether	0.0250	0.0212	0.0220	84.8	87.9	64.0-123			3.63	20
Naphthalene	0.0250	0.0136	0.0160	54.5	64.1	62.0-128	J4		16.1	20
Toluene	0.0250	0.0226	0.0237	90.3	94.7	77.0-120			4.72	20
1,2,4-Trimethylbenzene	0.0250	0.0223	0.0232	89.3	93.0	75.0-120			4.02	20
1,3,5-Trimethylbenzene	0.0250	0.0222	0.0233	89.0	93.1	75.0-120			4.50	20
Xylenes, Total	0.0750	0.0730	0.0758	97.3	101	77.0-120			3.74	20
(S) Toluene-d8				*96.5*	*96.7*	*80.0-120*				
(S) Dibromofluoromethane				*94.3*	*95.3*	*76.0-123*				
(S) 4-Bromofluorobenzene				*98.1*	*97.3*	*80.0-120*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
J4	The associated batch QC was outside the established quality control range for accuracy.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

***** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

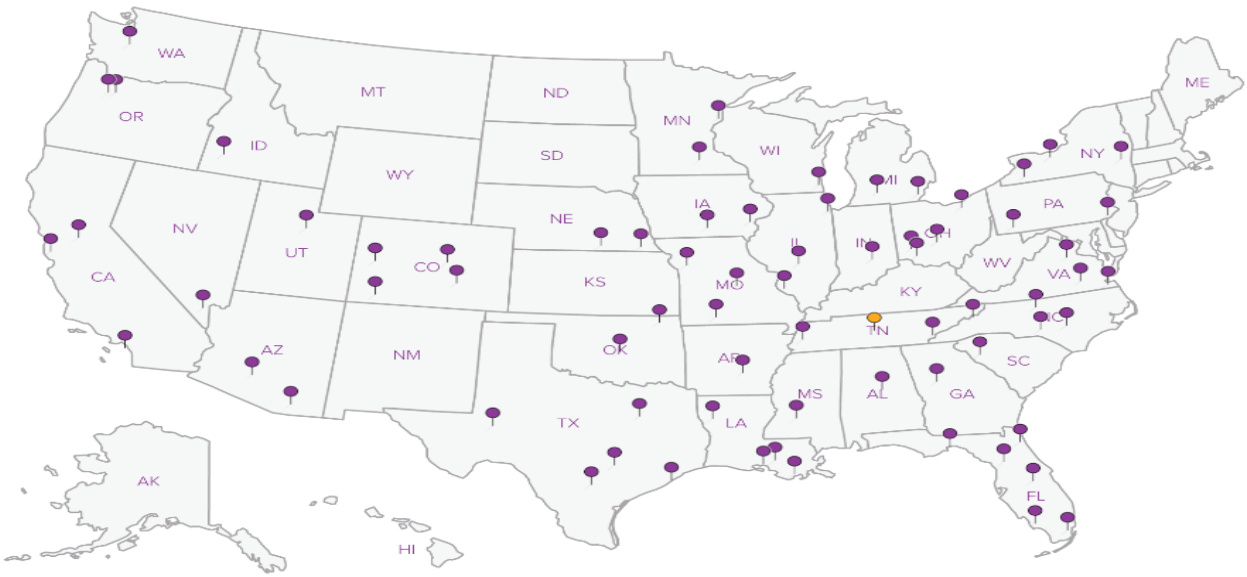
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



GES, Inc - Sunoco
440 Creamery Way, Ste 500
Exton, PA 19341

Billing Information & Quote Number:
Accounts Payable
440 Creamery Way, Ste 500
Exton, PA 19341

Report to: **Stephanie Grillo**

Email To: **sgrillo@gesonline.com**

Project Description: Sunoco Warminster

City/State Collected: Warminster PA

Phone: **610-458-1077**
Fax:

Client Project # 0204690 - 635430-201

Lab Project # **SUNGES-122316L PA**

Collected by (print): Brian Hale (GES)

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
X Three Day 25%

Date Results Needed

Email? ___No X_Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TS 4ozClr-NoPres	V8260LL - UGPA List 40mlAmb-HCl	V8260UGPA 40ml/NaHSO4/Syr/MeOH	Rem./Contaminant	Sample # (lab only)
MW-10	—	GW	—	1/12/17	0750	2		X			-01
MW-3	—	GW	—	1/12/17	0802	2		X			02
MW-4	—	GW	—	1/12/17	0816	2		X			03
MW-5	—	GW	—	1/12/17	0826	2		X			04
		GW				2		X			
		GW				2		X			

* Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

Remarks:**Log as R4 - 3 day TAT******

pH _____ Temp _____
Flow _____ Other _____

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Brian Hale (GES)	1/12/17	1415	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature) 526 5108 4574
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐ SNA
Temp: 2.4° °C Bottles Received: 8
Date: 1/13/17 Time: 0900

Hold #
Condition: (lab use only) Tol1 OK
COC Seal Intact: ✓ Y ___N ___NA
pH Checked: NCF:

Chain of Custody Page ___ of ___

ESC LABORATORY SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L883636
B185

Acctnum: **SUNGES**
Template: **T119161**
Prelogin: **P584120**
TSR: **134 - Mark W. Beasley**
PB:
Shipped Via: **FedEx Ground**

ESC
L·A·B S·C·I·E·N·C·E·S
YOUR LAB OF CHOICE

Cooler Receipt Form

Client: SUNGES	SDG#	L883636
Cooler Received/Opened On: 1/3/17	Temperature Upon Receipt:	2.4 °c
Received By: Don Wright		
Signature:		

Receipt Check List	Yes	No	N/A
Were custody seals on outside of cooler and intact?	✓		
Were custody papers properly filled out?	✓		
Did all bottles arrive in good condition?	✓		
Were correct bottles used for the analyses requested?	✓		
Was sufficient amount of sample sent in each bottle?	✓		
Were all applicable sample containers correctly preserved and checked for preservation? (Any not in accepted range noted on COC)			✓
If applicable, was an observable VOA headspace present?		✓	
Non Conformance Generated. (If yes see attached NCF)			

Phase I ESA

ePhase, Inc. - July 11, 2017

Phase I Environmental Site Assessment

Sunoco **Gasoline Station**
610 York Road
Warminster
Bucks County, Pennsylvania

Project Number: 17-179.103
Date Issued: July 11, 2017
Date of Site Inspection: June 23, 2017

Prepared For:

WSFS Bank
500 Delaware Avenue
Wilmington, DE 19801

By:

e Phase, Inc.
P.O. Box 44
West Chester, PA 19381-0044
(610) 692-7007
www.ephase.com

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APPENDICES

Appendix A: Glossary of Terms

Appendix B: Qualifications of responsible environmental professionals

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Appendix F: Supporting Documentation

Executive Summary

At the request of Mr. Earl Timmons of *WSFS Bank* (the Client), *e Phase, Inc.* has performed a Phase I Environmental Site Assessment (ESA) of a *Sunoco* gasoline station, tax parcel 49-009-046, located at 610 York Road, Warminster Township, Bucks County, Pennsylvania, the Site.

The Site consists of a 0.527-acre, irregularly-shaped parcel of land situated in the northwest corner of Route 132 (West Street Road) and Route 263 (York Road) in Warminster Township. The Site currently serves as a *Sunoco* gasoline station and convenience store. The subject property includes an approximate 1,800-square foot convenience store building, an approximate 1,750-square foot canopy covering two pump islands, an approximate 2,000-square foot canopy covering two pump islands, surface-level asphalt and concrete paving used for parking and access purposes, a tank field area, and grassed/landscaped areas. The interior of the Site building includes public accessible retail space, private office space, a walk-in cooler, a public bathroom, and a storage closet.

The current gasoline station building was built sometime between 1950 and 1958. Pump dispenser locations have been located along the south and eastern edges of the property since development as a gasoline station. The current pump, tank field, building structure, and parking lot/grassy area was in place around 1992. Historic records indicate prior to this time, the Site consisted of two buildings as far back as at least 1876. Use of these buildings is unclear but may have been residential or agricultural related.

The Site is located in a mixed-use residential, commercial, industrial, and institutional area of Warminster Township. The subject property is bounded to the north by *Eagle Diner* and associated parking lot, to the south by West Street Road, York Road, and commercial properties, to the east by York Road and *Hatboro Federal Savings Bank*, and to the west by West Street Road and *Wells Fargo Bank*. Based upon previous groundwater investigations at the Site, groundwater flow in the shallow aquifer varies but mainly flows to the north and west and the deep aquifer groundwater flow is generally to the north.

This ESA has been prepared in general accordance with the ASTM E 1527-13 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. Any exceptions to, or deletions from, this practice and any site-specific limiting conditions and/or data gaps are described in Sections 1.4 and 11.0 of this report. Any

additional services requested by the Client which were conducted beyond the scope of this practice are described in Section 12.0 of this report.

The purpose of this ESA was to evaluate the surficial conditions at the Site to identify any *recognized environmental conditions* (*RECs*), *historical recognized environmental conditions* (*HRECs*) and *controlled recognized environmental conditions (CRECs)* in connection with the subject property. In addition, *e Phase, Inc.* conducted an evaluation of the surficial conditions of the Site for other environmental findings, namely significant environmental concerns, moderate environmental concerns, and *de minimis* conditions, as a supplement to the standard ASTM requirements.

e Phase, Inc. has identified the following evidence of *RECs, HRECs and CRECs* in connection with the subject property and/or vicinity:

Summary of RECs, HRECs and CRECs

	Identified	Conclusions	Recommendations
Recognized Environmental Conditions	Yes (4)	1) A cement pad with two metal covers and one small metal cover was located to the north of the building. According to William Brochu of *Sunoco* this structure is associated with a grease trap. Due to the historic use of this property as an auto repair shop (prior to *Sunoco*'s ownership) this grease trap is assumed to be an oil/water separator. Mr. Brochu and Mr. Bernard could not provide any details regarding the structure, contents, tightness testing, discharge location, and/or age of the "grease trap". Oil/water separators can become a conduit for subsurface contamination if hazardous substances or petroleum products are improperly disposed of in them. Moreover, given the historic use of the Site for auto repair purposes, the presence of an on-Site oil/water separator is currently believed to be a *recognized environmental condition*.	Information regarding the structure, purpose, discharge location, and potential contents should be further determined. A subsurface investigation should be conducted to confirm that the soil and/or groundwater has not been impacted by the historic use of the Site and the oil/water separator.
		2) *e Phase, Inc.* observed three metal covers within the parking lot of the Site. Their use is unknown at this time but could be of *de minimis* concern if related to utility access. However, should the use of these metal covers be identified as non-utility related underground structures such as access covers to USTs, there would need to be further investigation into their contents, age, and tightness.	As of the date of this report, *Sunoco* was still attempting to determine the purpose of these metal covers. *Sunoco* should provide the actual purpose of these underground structures.
		3) Based on the *Warminster Municipal Authority* website and the *Bucks County Courier Times*,	Potentially high levels of perfluorinated compounds (PFCs)

	Identified	Conclusions	Recommendations
		the groundwater in *Warminster Township* is known to contain potentially high levels of perfluorinated compounds (PFCs) due to the operations at the *Former Naval Air Station Joint Reserve Base* in Horsham, along with the active *Horsham Air Guard Station*. A known area of impact is provided by the *Bucks County Courier Times* and is included as an Appendix. Based on the general vicinity around the Site, it is possible the groundwater is impacted with PFCs; however, there are areas below and areas above the health advisory level. Therefore, it will be considered a regional groundwater issue within the entire township likely impacting the Site. Since this compound is not a compound of interest for gasoline stations it may be present but unknown despite the significant amount of groundwater sampling previously conducted.	should be investigated by collecting groundwater samples from the existing groundwater wells. These samples would be used to evaluate if the Site falls within the PFC areawide impacted groundwater. They would also be used to determine if an indoor vapor intrusion issue exists from any potential levels of PFCs.
		4) The Site was identified in the UNREG TANK database which includes unregistered tanks that have been removed, permanently closed in place, closed without a permit, or under other circumstances. The Site had the following tanks noted at the Site, none of which are noted with a date of removal: a. Tank 004: 550-gallon used oil UST installed in 1962. b. Tank 005: 1,000-gallon heating oil tank installed in 1962. c. Tank 006: 1,000-gallon tank with unknown content and unknown installation date. d. Tank 007: 550-gallon heating oil tank installed in 1962. Two of these tanks (the 550 gallon USTs) may have been closed during the 1995/1996 tank removal activities, however, this could not be confirmed as part of the scope of this ESA. However, the other sizes/types of tanks were not noted to have been closed during the 1995/1996 tank removal activities. Additional information should be provided by *Sunoco* to confirm they were removed from the Site and not closed in place.	Additional information should be provided by *Sunoco* to confirm they were removed from the Site and not closed in place.
Historical Recognized Environmental Conditions	Yes (1)	1) In 2012, a release of less than 12 gallons occurred at the Site due to an overflow of gas from a vehicle. The appropriate measures were taken for cleanup and an investigation of all storm drains was completed. PADEP considers the cleanup of the incident to be completed.	No further action.
Controlled Recognized Environmental	Yes (1)	1) Groundwater and soil impact was reported in 1995/1996 during tank and dispenser island removal activities. The tank removal investigation revealed that benzene exceeded	Closure of un-used groundwater monitoring wells should be conducted within local, state, and federal requirements.

	Identified	Conclusions	Recommendations
Conditions		the PADEP SHS within the excavation. According to the reports provided, benzene, ethylbenzene, methyl tert butyl ether (MTBE), and/or naphthalene have been detected in each of the groundwater monitoring wells, except MW-6, above the PADEP SHS Attainment of a non-residential statewide health standard was achieved and approved by the PADEP in October 2010 for toluene, ethylbenzene, xylenes, MTBE, cumene, and naphthalene in soils and for toluene, ethylbenzene, xylenes, cumene, and naphthalene in groundwater. Pathway elimination was utilized for attainment of benzene in soils and groundwater and MTBE in groundwater. A covenant was recorded in October 2010 for the property which include activity and use limitations restricting groundwater use and residential use.	
The information presented in this summary table is a synopsis of the conclusions and recommendations for the RECs, HRECs and/or CRECs identified in connection with the Site and vicinity. Additional details on the RECs, HRECs and/or CRECs are provided in the report text; therefore, this summary table should not be used as a stand-alone document			

e Phase, Inc. has identified the following evidence of significant environmental concerns, moderate environmental concerns, and *de minimis* conditions in connection with the subject property and/or vicinity:

Summary of Other Environmental Findings

	Identified	Conclusions	Recommendations
Significant Environmental Concerns	No	NA	NA
Moderate Environmental Concerns	Yes (3)	1) The possible historic presence of a UST to the east across York Road is of environmental interest. According to groundwater investigations conducted at the Site, this property would potentially be located up- or crossgradient. The Site has already conducted numerous soil and groundwater investigations as the Site; therefore, any concerns regarding this potential UST would likely have been identified.	No further action.
		2) It is possible that portions of the Site building contain ACBM and/or LBP based on its pre-1978 construction date.	A comprehensive asbestos and LBP survey should be conducted of the Site building should renovation/demolition activities occur in the future.
		3) According to the database	No further action (based upon non-

	Identified	Conclusions	Recommendations
		report, radon concentrations in the vicinity of the Site average 5.7 picocuries per liter (pCi/L), which is above the EPA's recommended action level of 4.0 pCi/L. Radon poses a potential health risk to Site occupants and workers who breathe ambient air.	residential use of building).
de minimis Conditions	Yes (2)	1) The database search identified numerous off-Site facilities within the prescribed search radii. Based upon groundwater flow direction, their regulatory statuses and/or distances, the properties identified by the database search are unlikely to be impacting Site subsurface conditions.	No further action.
		2) Due to the pre-1984 construction date of portions of the Site building, it is possible that Site fluorescent light ballasts contain PCBs. However, since no evidence of releases was observed in the vicinity of inspected fluorescent lights, they are currently believed to be of minimal environmental concern.	Fluorescent light ballasts known or suspected of containing PCBs should be properly disposed by a qualified recycler.

The information presented in this summary table is a synopsis of the conclusions and recommendations for the significant environmental concerns, moderate environmental concerns, and/or de minimis conditions identified in connection with the Site and vicinity. Additional details on these environmental findings are provided in the report text; therefore, this summary table should not be used as a stand-alone document.

1.0 Introduction

This report describes the Phase I ESA performed by *e Phase, Inc.* at *Sunoco* gasoline station, tax parcel 49-009-046, located at 610 York Road, Warminster Township, Bucks County, Pennsylvania (the Site). *e Phase, Inc.* conducted this ESA at the request of Mr. Earl Timmons of *WSFS Bank* (the Client) who authorized this project on June 12, 2017.

1.1 Purpose

This ESA has been prepared in general accordance with the ASTM E 1527-13 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. The ASTM standard practice is designed to "define good commercial and customary practice in the United States of America for conducting an environmental site assessment of a parcel of commercial real estate with respect to the range of contaminants within the scope of CERCLA and petroleum products." As such, this practice is intended to constitute "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice," which is one of the requirements necessary to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on CERCLA liability (landowner liability protection). The purpose of this ESA was to evaluate the surficial conditions at the Site to identify any *recognized environmental conditions, historical recognized environmental conditions* or *controlled recognized environmental conditions* in connection with the subject property.

A *recognized environmental condition (REC)* is defined as "the presence or likely presence of any *hazardous substances* or *petroleum products* in, on, or at a Site: (1) due to any *release* to the *environment;* (2) under conditions indicative of a *release* to the *environment;* or (3) under conditions that pose a *material threat* of a *release* to the *environment*."

A *historical recognized environmental condition (HREC)* is defined as "a past *release* of any *hazardous substances* or *petroleum products* that has occurred in connection with the Site and had been addressed to the satisfaction of the applicable regulatory authority, without subjecting the Site to any required controls."

A *controlled recognized environmental condition (CREC)* is defined as "a *recognized environmental condition* resulting from a past *release* of *hazardous substances* or *petroleum products* that has been addressed to the satisfaction of the applicable regulatory authority, with *hazardous substances* or *petroleum products* allowed to remain in place subject to the implementation of required controls." Note that a condition identified as a *CREC* does not imply that the *environmental professional* has evaluated or confirmed the adequacy, implementation, or continued effectiveness of the require control that has been, or is intended to be, implemented.

In addition, *e Phase, Inc.* conducted an evaluation of the surficial conditions of the Site for other environmental findings, namely significant environmental concerns, moderate environmental concerns, and *de minimis* conditions, as a supplement to the standard ASTM requirements. Determinations of these other environmental findings were based on the inspector's interpretation and the judgment and opinion of the environmental professional. In general, for the purposes of this report a significant environmental concern is defined as representing a significant threat to the environmental condition of the Site, a moderate environmental concern is defined as representing a moderate threat to the environmental condition of the Site, and a *de minimis* condition is defined as representing a minimal threat or no threat to the environmental condition of the Site. These other environmental findings do not rise to the level of a *recognized environmental condition* but may warrant further environmental investigation, as determined on a case-by-case basis.

1.2 Scope of Services

In general accordance with the guidelines set forth in the ASTM E 1527-13 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, *e Phase, Inc.* performed the following activities as part of our assessment:

- Conducted a visual review of surface conditions at interior and exterior portions of the Site on June 23, 2017 to evaluate the current environmental condition of the Site;
- Conducted a visual review of surface conditions at adjoining properties from within the boundaries of the Site or other vantage point to assess the potential environmental threat to the Site from these properties;

- Interviewed the Site contact on June 23, 2017 to identify specialized knowledge or experience in regards to Site characteristics;
- Reviewed online resources retained by Bucks County municipal offices to ascertain the history, physical setting, and environmental issues at and in the immediate vicinity of the Site;
- Reviewed a report of Federal and state environmental records conducted by a database search contractor to identify any Federal- or state-listed sites within the search radii specified in the ASTM E 1527-13 standard which have the potential to impact the environmental condition of the Site;
- Visually evaluated the Site building for the presence of friable suspect ACBM and flaking, peeling, and/or chipping suspect LBP;
- Requested records retained for the Site by the Pennsylvania Department of Environmental Protection (PADEP); and,
- Reviewed various environmental documents provided by the client, owner, and the PADEP.

e Phase, Inc. did not conduct laboratory analyses for the presence of ACBM, LBP, drinking water quality, radon, urea foam formaldehyde insulation, or electromagnetic radiation. Our preliminary inspections for friable suspect ACBM and flaking suspect LBP consisted of only a visual inspection of readily-accessible areas of the Site building. They were not intended to substitute for a comprehensive survey for the purposes of the renovation/demolition of the Site building or to evaluate potential health risks. Although the accepted method of evaluating subsurface conditions at the Site in more detail would be to conduct a *subsurface evaluation* (including the collection and analysis of soil and groundwater samples), such evaluation was beyond the scope of this ESA. Lastly, this ESA was not intended to substitute for a regulatory compliance audit of the Site.

1.3 Significant Assumptions

The recommendations and conclusions discussed herein are based solely and in reliance upon information collected as a result of the activities and services described above in the "Scope of Services." *e Phase, Inc.* neither certifies as to the accuracy nor renders an opinion as to the accuracy or completeness of the statements of the individuals interviewed, governmental records obtained, environmental reports prepared by other consultants, analytical results, or the database search results provided by the

database contractor. There is a possibility that even with the proper application of these methodologies property conditions may exist that could not be identified within the scope of the assessment or which were not reasonably identifiable from the available information. The methodologies of this assessment are not intended to produce all-inclusive or comprehensive results, but rather to provide the Client with information relating to the property.

1.4 Limitations and Exceptions

The observations in this ESA are valid on the date of the site reconnaissance and made under the limitations and conditions noted herein. *e Phase, Inc.* renders no opinion as to the presence of hazardous substances or petroleum products at portions of the Site that were unavailable for direct observation.

e Phase, Inc. has drawn conclusions and developed recommendations with information obtained from "publicly available," "reasonably obtainable," and "practically reviewable" information available at the time of this ESA and an evaluation of Site surficial conditions. The results and conclusions of the Phase I ESA process were limited to Site surficial conditions observed at the time of the site reconnaissance and by the completeness and accuracy of information obtained from records of various sources and interviews with persons that might be knowledgeable of the Site and the conditions thereof.

No reasonable level of Site inspection or records evaluation can completely guarantee that a property is totally free of environmental contamination or potential exposure to some degree of environmental liability. Rather, this site assessment effort was structured to provide "appropriate inquiry" and adequate "environmental due diligence" to qualify our Client for protection under the "innocent landowner defense," the "bona fide prospective purchaser defense," and the "contiguous property owner defense" as described by both CERCLA and the Superfund Amendments and Reauthorization Act.

Subsurface investigations may result in the discovery of conditions in addition to or different from the conditions discovered by surficial observation only. *e Phase, Inc.* does not give any warranty, either expressed or implied, as to the presence of hazardous substances or petroleum products other than set forth elsewhere in this ESA.

Specific limiting conditions and/or data gaps encountered during this ESA are set forth below:

- No response to request for information from the Hartsville Fire Department and the Warminster Township at the time of issuance of this report.
- Inability to obtain standard historical sources documenting the previous uses and ownership of the property since the time of initial Site development or first significant use.

e Phase, Inc. is not of the opinion that the above limitations have impacted our ability to render conclusions with regard to the environmental condition of the subject property. In addition, our inspection did not include the building rooftop; areas behind existing walls, above existing ceilings, or beneath existing flooring; areas underneath parked motor vehicles; and areas obstructed by furniture, stored materials, equipment, etc.

1.5 Special Terms & Conditions

Authorization to perform this work was given by a directive from the Client listed on the cover page of this document.

e Phase, Inc. was directed not to interview the employees of the *Sunoco* station; however, the *Sunoco* regional manager was available for questioning.

1.6 User Reliance

This report has been prepared exclusively for the party to whom it has been delivered to by *e Phase, Inc.* It is confidential and proprietary. It may not be copied, disseminated, distributed or disclosed to any other parties without the expressed written permission of *e Phase, Inc.* No third party may rely on the information contained herein.

2.0 Site Description

2.1 Site Location and Legal Description

Provided below is a description of the Site:

Table 1: Site Description

Property Name:	*Sunoco* Gasoline Station
Site Address:	610 York Road
Site Location:	Northwest corner of Route 132 (West Street Road) and Route 263 (York Road)
Closest Cross Street:	West Street Road
Site Access:	From West Street Road, which is south/west of the Site and York Road, which is east of the Site
Site Acreage:	0.527 acre
Type of Property:	Commercial (gas station and convenience store)
County Assessor Map Number, Block, and Lot:	49-009-046
Instrument Number:	2017021641
Current Owner:	*Sunoco Retail LLC*
Date Purchased:	April 11, 2017
Previous/Historic Use:	Possibly residential

e Phase, Inc. did not uncover any information in Bucks County Assessment records to indicate any environmental liens or deed restrictions (i.e., activity and use limitations, institutional and engineering controls, etc.) on the property. However, it should be noted that only limited information regarding property sales were available, and a known environmental covenant was recorded for the Site in October 2010. Online deed records only cover up to April 7, 2017 and the recorded last deed for the Site was on April 11, 2017.

2.2 Site and Vicinity General Characteristics

The Site consists of a 0.527-acre, irregularly-shaped parcel of land situated in the northwest corner of Route 132 (West Street Road) and Route 263 (York Road). The Site is located in a mixed-use residential, commercial, industrial, and institutional area of Warminster Township. The Site is designed and used for gasoline distribution and

convenience store purposes and is currently operated and occupied by *Sunoco*. Businesses near the Site include *Eagle Diner, Hatboro Federal Savings Bank, Wells Fargo Bank, Archbishop Wood High School, ZIPS Dry Cleaners,* various institutional (religious and educational) properties, and the *Center Point Shopping Center.* The area also has significant residential development.

e Phase, Inc. observed a dry cleaner property to the northwest and a gasoline station located to the west which are property uses that pose a material threat of release of hazardous substances or petroleum products.

2.3 Current Site Ownership and Use

Bucks County Assessor's Office records identify the current owner of the Site as *Sunoco Retail LLC*. The Site currently serves as a *Sunoco* gasoline station and convenience store. The subject property includes an approximate 1,800-square foot convenience store building, an approximate 1,750-square foot canopy covering two pump islands, an approximate 2,000-square foot canopy covering two pump islands, surface-level asphalt and concrete paving used for parking and access purposes, a tank field area, and grassed/landscaped areas. The interior of the Site building includes public accessible retail space, private office space, a walk-in cooler, a public bathroom, and a storage closet.

Based on the Site use as a gasoline station and the presence of groundwater monitoring wells, it is possible that tenant activities are adversely impacting environmental conditions at the Site.

2.4 On-Site Structures, Utilities, and Improvements

Table 2 provides a description of the Site structures and other improvements:

Table 2: Site Structures and Improvements

Number of Structures:	One
Number of Stories and Usage:	One-story retail
Construction Date:	1961 (according to county records) 1950-1958 (based on aerial photographs)
Building Materials:	Brick and block
Roofing Materials:	Flat rubber roofing
Basement Type:	None
Square Footage:	1,800-square feet (building only)
Percent Structures Cover Site:	6%
Paving Materials:	Asphalt (including canopy area)
Percent Paved Surfaces Cover Site:	79%
Pervious surfaces description:	Grassed lawn
Percent Pervious Surfaces Cover Site:	15%

Table 3 provides a listing of the Site infrastructure:

Table 3: Site Utilities

Utility	Source	Supplier
Heating:	Natural gas	*PECO*
Air Conditioning:	Electric roof-mounted AC units	*PECO*
Electric:	Aboveground lines	*PECO*
Water:	Public system	*Warminster Municipal Authority*
Sewer:	Public system	*Warminster Municipal Authority*

2.5 Current Uses of Adjoining Properties

Visual observations of adjoining/surrounding properties (from Site boundaries and readily accessible public areas) are summarized in Table 4.

Table 4: Adjoining/Surrounding Properties

Direction	Description
North	*Eagle Diner* and associated parking lot
South	West Street Road and York Road, beyond which are commercial properties
East	York Road, beyond which is *Hatboro Federal Savings Bank*
West	West Street Road, beyond which is *Wells Fargo Bank*

3.0 Physical Setting

3.1 Topography

The Site is at an elevation of approximately an average of 300 feet above the National Geodetic Vertical Datum of 1929 according to the USGS *Hatboro, PA Quadrangle*. The Site is essentially level. Land near the Site is essentially level.

3.2 Geology/Soils

e Phase, Inc. did not observe any bedrock outcrops at or in the immediate vicinity of the Site. According to the Pennsylvania Department of Conservation and Natural Resources website, the Site is underlain by Stockton Formation, within the Triassic lithotechtonic subdivision. The bedrock type locality is identified as arkosic sandstone. The Stockton Formation crops out in the Newark basin. It is composed of light-gray to buff, coarse-grained, arkosic sandstone and red to purplish-red sandstone, shale, siltstone, and mudstone. Its thin to flaggy beds are well developed and its maximum thickness is approximately 3,300 feet.

According to the Natural Resources Conservation Service websoil survey, the Site is underlain by soils classified as "Urban land" with zero to eight percent slopes. This mapping unit consists of areas where 75 percent or more of the land is covered with impervious surfaces, such as buildings, pavement, and other artificially covered areas.

3.3 Surface Water

The Site is in the Pennypack Creek Regional Basin of the Delaware Drainage Basin, with the Pennypack Creek located 12,000 feet to the south. Surface runoff drains to the Westminster Township stormsewer system and would be to the south, towards the Pennypack Creek, if unimpeded.

3.4 Flood Zone

The Federal Emergency Management Agency *Flood Insurance Rate Map* for the vicinity indicates the Site is in Zone X. A community flood insurance study has identified such zones to be areas of moderate or minimal hazard from the area's principal source of

flooding. However, severe, concentrated rainfall, coupled with inadequate local drainage systems, could flood buildings in this zone.

3.5 Wetlands

e Phase, Inc. did not observe any obvious wetland-type vegetation at the Site. Moreover, according to the *National Wetlands Inventory* map of the *Hatboro, PA Quadrangle*, wetlands are not mapped for the subject property.

3.6 Hydrogeology

Depth to groundwater at the Site is likely deep. At least 14 groundwater monitoring well caps were observed at the Site. It was not clear if all the monitoring wells were still operational. Based upon previous groundwater monitoring activities conducted at the Site, the groundwater flow direction is known to vary seasonally; however, it is most often flowing toward the north or west in the shallow aquifer and northerly in the deeper aquifer. However, in the most recent groundwater sampling conducted in January 2017, *GES* determined the flow to be toward the southwest.

4.0 User-Provided Information

Pursuant to ASTM E 1527-13, *e Phase, Inc.* requested Site information from Mr. Ijmal Ali, owner of Finch Petroleum, operator and buyer of the Site. The User Questionnaire completed by Mr. Ali is provided in Appendix F. Table 5 provides a summary of this information.

Table 5: User Provided Information

User Provided Information	Information Provided to e Phase, Inc. (Y/N)	Details
Title Records	N	Title records were not provided to *e Phase, Inc.* by the Client. However, *e Phase, Inc.* reviewed the Bucks County Assessment online records which did not indicate any environmental liens or deed restrictions (i.e., activity and use limitations, institutional and engineering controls, etc.) on the property. However, it should be noted that only limited information regarding property sales were available and a known environmental covenant was recorded for the Site in October 2010. Online deed records only cover up to April 7, 2017 and the recorded last deed for the Site was on April 11, 2017.
Environmental Liens and Activity Use Limitations	Y	The operator did not have any knowledge of any environmental cleanup liens or of any engineering controls, land use restrictions, or institutional controls on the Site which would affect the activity and use of the property.
Specialized Knowledge	Y	The operator had specialized knowledge or experience relating to the environmental condition of the Site or nearby properties.
Value Reduction for Environmental Issues	Y	The operator was not aware of any environmental issues with regards to the Site that would result in a valuation reduction.
Commonly Known or Reasonable Ascertainable Information	Y	The operator did not report any commonly known or reasonably ascertainable information about the property that is material to recognized environmental conditions in connection with the property.
Indicators that point to the presence or likely presence of contamination at the property.	Y	The operator did not report any indicators that point to the presence of likely presence of contamination at the property.
Prior environmental work	Y	The operator was unaware of any previous environmental work
Reason for performing the Phase I ESA	Y	The operator informed *e Phase, Inc.* that the reason for this ESA Site evaluation was to qualify for the innocent landowner defense.
Other	N	NA

5.0 Records Review

5.1 Federal & State Environmental Database Records

e Phase, Inc. contracted database searches of Federal and state environmental records on June 13, 2017. Federal- and state-listed sites identified within the radii specified by ASTM E 1527-13 are discussed in detail in this section below. Refer to Appendix E for a complete copy of the database search report. Table 6 summarizes these results.

Table 6: Database Search Results

Database	Search Radius	Site	0-⅛ miles	⅛-¼ miles	¼-½ miles	½-1 miles	ZIP
NPL	1 mile	No	0	0	0	1	0
Delisted NPL	½ mile	No	0	0	0		0
CERCLIS	½ mile	No	0	0	0		0
CERCLIS NFRAP	½ mile	No	0	0	0		1
RCRA Generator	¼ mile	Yes	3	3			0
RCRA NLR	¼ mile	No	1	1			0
RCRA CORRACTS	1 mile	No	0	0	0	1	0
RCRA TSD	½ mile	No	0	0	0		0
ERNS	Site	No					0
Tribal Land	1 mile	No	0	0	0	0	0
State/Tribal Sites	1 mile	No	0	0	0	0	0
State/Tribal SWL	½ mile	No	0	0	0		0
State/Tribal UST/AST	¼ mile	Yes	0	2			0
State/Tribal LUSTs	½ mile	Yes	0	2	3		1
Federal/State/Tribal Brownfield	½ mile	No	0	0	0		0
State/Tribal IC/EC	Site	No					0
State/Tribal VCP	½ mile	No	0	0	2		0
FINDS	Site	Yes					
Exclusive Recovered Govt. Archives	Site	Yes (3)					0

Shading represents areas outside ASTM E1527-13 search radius

5.1.1 National Priority List (NPL) Sites

NPL is the EPA's list of Superfund sites and represents the worst of all unidentified, uncontrolled, and/or abandoned hazardous waste sites.

The search did not identify the Site but did identify one site within a one-mile radius of the Site as a NPL site. *Naval Air Devel Ctr* at St. Jacksonville Rd. (EPA ID: PA6170024545; 0.96 mile/east-southeast) was identified as a NPL site. This site is currently on the Final NPL for contamination of the surface and groundwater pathways involving chromium, zinc, cadmium and compounds. Based on distance and contaminants of concern, it is not anticipated that this specific groundwater issue is impacting the subsurface of the Site.

It should be noted that the groundwater in *Warminster Township* is known to contain potentially high levels of perfluorinated compounds (PFCs) due to the operations at the *Former Naval Air Station Joint Reserve Base* in Horsham, along with the active *Horsham Air Guard Station*. Based on the general vicinity around the Site, it is possible the groundwater is impacted with PFCs.

5.1.2 Delisted NPL Sites

Delisted NPL sites are sites that have been deleted from the NPL where no further response is appropriate.

The search did not identify the Site or any sites within a ½-mile radius of the Site as delisted NPL sites.

5.1.3 CERCLIS Listings

A CERCLIS listing is a potential Superfund site currently or previously investigated for a release or threatened release of hazardous waste materials.

The search did not identify the Site or any sites within a ½-mile radius of the Site as CERCLIS listings.

5.1.4 CERCLIS NFRAP Listings

A CERCLIS "No Further Remedial Action Planned" (NFRAP) facility is a property where, to the best of the EPA's knowledge, assessment at the facility has been completed and the EPA has determined that no further steps will be taken to list this property on the NPL. This decision does not necessarily imply that there is no hazard associated with a given site; it only implies that, based upon the available information, the location is not judged to be a potential NPL site.

Possible reasons include no contamination was found, contamination was removed quickly, contamination was not serious enough to require Federal Superfund action or NPL consideration, etc.

The search did not identify the Site or any sites within a ½-mile radius of the Site as CERCLIS NFRAP listings.

5.1.5 RCRA Generator Facilities

A RCRA generator facility is a facility that generates or transports hazardous waste or meets other RCRA requirements.

The search identified the Site and six nearby sites within a ¼-mile radius of the Site as RCRA hazardous waste generator facilities. Table 7 summarizes these facilities.

Table 7: Summary of RCRA Generator Facilities

Name/Address	EPA ID#	Distance/Direction	Facility Type
Sunoco SVC Sta 610 Old York Rd.	PAD987348182	Target Site	VGN Violation Status: No violations found
Button Men LLC DBA Zips Dry Cleaners 618 York Rd.	PAR000528836	0.03 mile/north-northeast	VGN Violation Status: No violations found
Rite Aid No 293 599 York Rd.	PAR000536250	0.10 mile/south-southeast	VGN Violation Status: No violations found
Archbishop Wood High School 655 York Rd.	PAR000525683	0.12 mile/north-northeast	SQG Violation Status: No violations found
Frankford Cleaners 756 Street Rd.	PAD987384179	0.14 mile/west-northwest	VGN Violation Status: No violations found
Collisionmax Warminster an Abra Co. 565 W. Street Rd.	PAR000552307	0.20 mile/southeast	VGN Violation Status: No violations found
Lafferty Chevrolet/Warminster 829 W. Street Rd.	PAD015070055	0.23 mile/northwest	SQG Violation Status: No violations found

SQG = Small quantity generator (of 100-1,000 Kg hazardous waste per month)
VGN = Conditionally exempt generator (of <100 Kg hazardous waste per month)

No violations or enforcement notices were noted within the database search information, as such, the concern associated with these properties is minimized accordingly.

5.1.6 RCRA NLR Facilities

A RCRA NLR facility is a facility not currently classified by the EPA but is still included in the RCRAInfo database.

The search did not identify the Site but did identify two sites within a ¼-mile radius of the Site as RCRA NLR facilities. Table 8 summarizes these facilities.

Table 8: Summary of RCRA NLR Facilities

Name/Address	EPA ID#	Distance/Direction	Facility Type
Heritage Cleaners 614 York Rd.	PAD047324009	0.01 mile/northeast	SQG Violation Status: No violations found
Jiffy Lube 262 600 W. Street Rd.	PAD982363467	0.16 mile/southeast	VGN Violation Status: No violations found

SQG = Small quantity generator (of 100-1,000 Kg hazardous waste per month)
VGN = Conditionally exempt generator (of <100 Kg hazardous waste per month)

No violations or enforcement notices were noted within the database search information. Since these properties are no longer generating hazardous wastes, the concern associated with these listings is minimized accordingly.

5.1.7 RCRA CORRACTS Facilities

A RCRA CORRACTS facility is a hazardous waste handler with reported violations and corrective action activity.

The search did not identify the Site but did identify one site within a one-mile radius of the Site as a RCRA CORRACTS facility. *Naval Air Devel Ctr* at St. Jacksonville Rd. (EPA ID: PA6170024545; 0.96 mile/east-southeast) was identified as a RCRA CORRACTS site. On 9/30/1990, the entire facility was assigned CA210SF – CA Responsibility referred to a non-RCRA Federal Authority, corrective action at the facility referred to CERCLA. On 12/1/1991, the entire facility was assigned CA075HI – CA Prioritization, a high corrective action priority. On 8/24/1998 the entire facility was assigned RFI Imposition. Due to limited information provided it is unclear if this Site is impacting the Site subsurface and will be considered part of the area-wide groundwater impact noted in Section 5.3.1.

5.1.8 RCRA TSD Facilities

A RCRA TSD facility is a facility licensed to store, treat, and dispose of hazardous waste materials.

The search did not identify the Site or any sites within a ½-mile radius of the Site as RCRA non-CORRACTS TSD facilities.

5.1.9 ERNS Sites

ERNS is a database of emergency response actions.

The search did not identify the Site as an ERNS site.

5.1.10 Tribal Land

Tribal land sites are sites with boundaries established by treaty, statute, and/or executive or court order recognized by the Federal Government as territory in which American Indian tribes have primary governmental authority.

The search did not identify the Site or any sites within a one-mile radius of the Site as tribal land sites.

5.1.11 State/Tribal Sites

The State/Tribal Sites database is a database of sites within the PADEP's Hazardous Sites Cleanup Program.

The search did not identify the Site or any sites within a one-mile radius of the Site as State/Tribal sites.

5.1.12 State/Tribal SWL Sites

State/Tribal SWL sites are permitted solid waste landfills.

The search did not identify the Site or any sites within a ½-mile radius of the Site as State/Tribal SWL sites.

5.1.13 State/Tribal USTs and ASTs

The State/Tribal UST/AST database is the state list of registered underground and aboveground storage tanks.

The search identified the Site and two sites within a ¼-mile radius of the Site as containing registered USTs or ASTs. Table 9 summarizes these UST/AST sites.

Table 9: Summary of State Registered USTs/ASTs

Name/Address	# of Tanks	Distance/Direction	Description
Sunoco 0363 5430 610 York Rd.	3 USTs	Target Site	3- 12,000-gal USTs containing gasoline, currently in use
Jiffy Lube 262 600 W. Street Rd.	1 AST	0.16 mile/southeast	1- 275-gal AST containing "other" substance, currently in use
Giant Food Store 6257 800 W. Street Rd.	2	0.17 mile/west-northwest	1- 20,000-gal UST containing gasoline, currently in use 1- 10,000-gal UST containing gasoline, currently in use

USTs and ASTs may pose a threat to the Site if tanks subsequently rupture or leak. The database search identified the Target Site and *Jiffy Lube 262* site within the leaking UST database. Additional information regarding impact to Site subsurface can be found in Section 5.1.14. The *Giant Food Store 6257* site was not identified within the leaking UST database; therefore, it is not likely impacting Site subsurface conditions.

5.1.14 State/Tribal LUSTs

The State/Tribal LUST database is the state list of USTs which have been reported as leaking.

The search identified the Site and five additional sites within a ½-mile radius of the Site as State/Tribal LUST sites. Table 10 summarizes these LUST sites.

Table 10: Summary of LUST Sites

Name/Address	DEP ID#	Distance/Direction	Description
Sunoco 0363 5430 610 York Rd.	582593	Target Site	Facility Type: Underground Storage Tank Containing Petroleum Substance: Leaded Gasoline & Fuel Oil No 4 Impact Desc: Ground Water & Soil Facility Status: Cleanup Completed
Jiffy Lube 262 600 W. Street Rd.	442695	0.16 mile/southeast	Facility Type: Underground Storage Tank Containing Petroleum Substance: New Motor Oil Impact Desc: Soil Facility Status: Cleanup Completed
Lafferty Chevrolet/Warminster 829 W. Street Rd.	582507	0.23 mile/northwest	Facility Type: Underground Storage Tank Containing Petroleum Substance: Used Motor Oil Impact Desc: Soil Facility Status: Cleanup Completed
Cumberland Gulf 143833 455 W. Street Rd.	582126	0.42 mile/southeast	Facility Type: Underground Storage Tank Containing Petroleum Substance: Gasoline, Fuel Oil No 2 & Used Motor Oil Impact Desc: Ground Water & Soil Facility Status: Cleanup Completed

Amoco 4343 Tanks 440 W. Street Rd. Tanks	582123	0.48 mile/southeast	Facility Type: Underground Storage Tank Containing Petroleum Substance: Unleaded Gasoline Impact Desc: Soil & Ground Water Facility Status: Cleanup Completed as of 10/13/2010 status
BAFCO 717 Mearns Rd.	582514	0.49 mile/east-southeast	Facility Type: Underground Storage Tank Containing Petroleum Substance: Gasoline Impact Desc: Soil Facility Status: Cleanup Completed

Based upon their regulatory statuses, distances, and/or cross or downgradient locations, the above-mentioned LUST Sites are unlikely to be impacting Site subsurface conditions.

5.1.15 Federal/State/Tribal Brownfield Sites

The Federal Brownfield is a list of EPA Brownfield sites and Superfund sites that have either an institutional or engineering control. State/Tribal Brownfield sites are the PADEP's Land Recycling Program Act II sites, and sites listed on the PA Sitefinder website.

The search did not identify the Site or any sites within a ½-mile radius of the subject property as Federal/State/Tribal Brownfield sites.

5.1.16 State/Tribal IC/EC

State/Tribal IC/EC sites are sites with institutional or engineering controls in place as part of a response action. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Engineering controls

include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or affect human health.

The search did not identify the Site as a State/Tribal IC/EC site.

5.1.17 State/Tribal VCP

The State/Tribal Voluntary Cleanup Program (VCP) provides an incentive to remediate oil- and gas- related pollution by participants as long as they did not cause or contribute to the contamination. Applicants to the program receive a release of liability to the state in exchange for a successful cleanup.

The search did not identify the Site but did identify two sites within a ½-mile radius of the Site as VCP sites. Table 11 summarizes these sites.

Table 11: Summary of VCP Sites

Name/Address	DEP ID#	Distance/Direction	Description
Delgado Res 545 Lemon St	*778928*	0.37 mile/south-southeast	Category Desc: Fuel Oil No 2 Media: Soil Remediation: Statewide Health Standard
Tomlinson Res 725 Phillips Rd	*620245*	0.43 mile/east	Category Desc: Unleaded Gasoline & PAH Media: Soil Remediation: Statewide Health Standard

Based upon their regulatory statuses, chosen remediation standards, and distances, the above-mentioned VCP properties are unlikely to be impacting Site subsurface conditions.

5.1.18 Database Search Unmappable Properties

Unmappable properties are located in the general vicinity of the Site. However, due to inaccurate or missing information provided by the appropriate governmental agency, the database search contractor was unable to definitively plot these sites.

e Phase, Inc. reviewed the unmappable sites list in an attempt to definitively locate these properties. If we were able to locate such a property within a respective ASTM search radius, it was included above in the appropriate database sections of this ESA. *e Phase, Inc.* also determined that neither the Site nor any adjacent properties were identified on the list of unmappable sites. Refer to Appendix E for information on the two unmappable properties located on streets within the applicable ASTM search radii from the Site.

5.1.19 Vapor Encroachment Screen

e Phase, Inc. has conducted a *Tier 1 VES* in general conformance with *ASTM Standard E 2600-15*. The findings of the *Tier 1 VES* could not rule out a VEC in connection with the Site. *e Phase, Inc.* identified soil sample boring locations, groundwater wells, and gasoline USTs at the Site. However, based on the analytical results from a January 2017 soil and groundwater sampling event performed by *GES*, it is not likely that known soil or groundwater impact is causing a VEC to the subject property. Based upon the findings of this *Tier 1 VES*, the VES process is considered complete in accordance with *ASTM E 2600-15* Guide and vapor intrusion is possible in connection with the Site.

5.1.20 FINDS

FINDS sites are listed in the PA-EFACTS (Pennsylvania – Environmental Facility Application Compliance Tracking System) which is a Department-wide database that provides a holistic view of clients and sites that the DEP regulates.

The search identified the Site as a FINDS site. *Sunoco Svc Sta* at 610 Old York Rd. (Registry ID: 110001047126 & 110059996580; Target Site) was identified as a FINDS site for the RCRA program and in the PA-EFACTS (Pennsylvania – Environmental Facility Application Compliance Tracking System). This FINDS

records is likely associated with the previously discussed RCRA-CESQG and UST/LUST records.

5.2 State Records

5.2.1 Pennsylvania Department of Environmental Protection (PADEP)

e Phase, Inc. conducted a file review for the Site at PADEP on June 26, 2017. This review contained all of the files provided by the Client (as summarized in 6.1) in addition to the following (as summarized below):

1. UST Operation Inspection reports from 2011 and 2014 – all tank systems were in compliance.
2. September 19, 2012 – Notification of Suspect Release and Close Out incident. This incident stems from a release of less than 12 gallons from an overflow of gas from a vehicle. The appropriate measures were taken for cleanup and an investigation of all storm drains was completed. PADEP considers the cleanup of the incident to be completed.
3. December 7, 2009 – Closure report for four product dispensers with no obvious contamination. PADEP approved of the closure report on February 26, 2010.
4. November 18, 2009 – UST Modification Report.
5. Remedial Action Progress Reports from 2006 to 2009.
6. 1996 – UST Closure Report for seven removed tanks.
7. 1996 – Site Characterization Report.
8. 1993 – Two abandoned tanks removed from Site.

Facility details presented on the PADEP eFacts database indicate that three tanks were registered at the Site in August 1989, October 2011, and June 2016. The *Sunoco* gasoline station is identified with Site ID 515769 and exists in the Environmental Cleanup & Brownfields program and the Waste Management Program. There have been 19 inspections at the Site since December 1996 with three air violations (State II Gasoline Vapor Recovery Equipment) and one violation in 2008 regarding "failure to meet performance standards for

new/upgraded tanks." Within the inspection list there is a July 2012 inspection type noted as "Incident – Response to Accident or Event" with a pending result. There is no additional information provided for this line entry; however, based on the file review information, the PADEP considers the cleanup of the incident to be completed.

When engineering or institutional controls are necessary to demonstrate attainment or assure maintenance of an Act 2 remediation standard the PADEP requires the use of environmental covenants. The PADEP is obligated under the Uniform Environmental Covenant Act (UECA) to maintain a registry for the public display of covenants received. *e Phase, Inc.* conducted a search of the PADEP's online Activity and Use Limitations (PA AUL) Registry. According to the search results, the Site has a covenant on file that matches the covenant detailed in Section 6.1 of this report. The mapping function of the AUL search identified this covenant as existing for a property located approximately 0.2 miles to the north of the Site. There are three sites within a one mile radius of the Site that have environmental covenants.

1. *Exide* site (Facility ID 620962) located approximately 0.45 mile southeast of the Site contains files for a Site in Allentown, Pennsylvania; therefore, the information provided was not useful for determining if the *Exide* site would impact the subsurface of the Site. This Site was not identified in the eFacts database; therefore, it is assumed to be a misplaced Site on within the PA AUL registry.

2. *Warminster Express* (Facility ID 09-08612) located approximately 0.45 mile southeast of the Site was a former *BP Station*. Based on the information provided and its distance from the Site, the *Warminster Express* site is not likely to impact the subsurface of the Site. This site is known as *Amoco 4343 Tanks* within Section 5.1 above.

3. *400 West Street* Road site was a former *Shell Service Station* located at 400 West Street Road, Warminster, PA approximately 0.5 mile to the southwest of the Site. Based on the area of the groundwater plume provided and its distance from the Site, the *400 West Street Road* site is not impacting the subsurface of the Site.

5.3 Local Records

5.3.1 Warminster Township Records

e Phase, Inc. contacted Warminster Township on June 13, 2017 and requested access to any records (i.e., building permits, tank permits, use and occupancy permits, notices of violation, etc.) they may have on file for the Site. However, as of the issuance of this report, a response to our request has not been received. If information of environmental significance is subsequently uncovered in records retained for the Site by Warminster Township, a summary of this information will be submitted as an addendum to this report.

Based on the *Warminster Municipal Authority* website and the *Bucks County Courier Times,* the groundwater in Warminster Township is known to contain potentially high levels of perfluorinated compounds (PFCs) due to the operations at the Former Naval Air Station Joint Reserve Base in Horsham, along with the active Horsham Air Guard Station. A known area of impact is provided by the *Bucks County Courier Times* and is included as an Appendix. Based on the general vicinity around the Site, it is possible the groundwater is impacted with PFCs; however, there are areas below and areas above the health advisory level. Therefore, it will be considered a regional groundwater issue within the entire township likely impacting the Site.

5.3.2 Assessor's Office Records

Bucks County Assessor's Office records indicate the Site building was constructed in 1961 with asphalt paving and canopy additions in 1996. The land use description provided by Bucks County is "gas station/mini mart" with a classification of commercial.

e Phase, Inc. did not find any information in Assessor's Office records to indicate any environmental liens or activity and use limitations (institutional and engineering controls) on the property. However, a known environmental covenant was recorded for the Site in October 2010.

5.3.4 Fire Department Records

e Phase, Inc. contacted the Hartsville Fire Department on June 12, 2017 and requested access to any records (i.e., tank permits, hazardous materials

incidents, etc.) they may have on file for the Site. However, as of the issuance of this report, a response to our request has not been received. If information of environmental significance is subsequently uncovered in records retained for the Site by the Hartsville Fire Department, the Client will be notified.

5.4 Environmental Permits and/or Violations

e Phase, Inc. identified UST permits and RCRA-CESQG (no violations) for the Site during the preparation of this ESA.

6.0 Historical Use Information

6.1 Previous Environmental Reports

e Phase, Inc. reviewed a January 6, 2006 "Additional Site Characterization Report/Remedial Action Plan" by *Groundwater & Environmental Services, Inc. (GES), a* October 1, 2009 "Site Characterization Report Addendum/Remedial Action Completion Report" by *GES,* a April 8, 2010 "Site Characterization Report Addendum/Remedial Action Completion Report Addendum" by *GES,* a July 20, 2010 "Supplemental Information for Site Characterization Report Addendum/Remedial Action Completion Report Addendum" by *GES,* a October 13, 2010 "Remedial Action Completion Report Approval" by PADEP, a November 15, 2010 "Executed Covenant" by *GES*, a November 15, a February 2, 2017 "Phase II Environmental Site Assessment Report" by *GES,* and a June 14, 2017 "Phase I Environmental Site Assessment" by *GES.* The following summarizes the information contained in these reports. Refer to Appendix F for copies of the recent Phase I ESA and Phase II from 2017.

January 6, 2006 "Additional Site Characterization Report/Remedial Action Plan" by *Groundwater & Environmental Services, Inc. (GES);*

- *Sunoco* Station #0363-5430, PADEP Facility ID 09-30778.
- Currently at the Site: three 12,000-gallon unleaded gasoline USTs, four unleaded gasoline dispenser islands and associated piping.
- In 1996, localized adsorbed-phase hydrocarbons were observed during the removal of the former dispenser islands and the four formerly closed-in-place USTs. The investigation revealed that benzene exceeded the PADEP SHS within the excavation.
    - In 1995/1996, *GES* oversaw the removal of six unleaded gasoline dispenser islands and two 550-gallon gasoline steel USTs containing fuel oil and waste oil. They also oversaw the removal of the former *Atlantic* two-bay automobile service station, which was replaced with the current *Sunoco* convenience store.
    - During the 1995/1996 activities, three steel 3,000-gallon and one steel 4,000-gallon unleaded gasoline closed-in-place USTs were discovered. These tanks were pre-Act 2 USTs.
    - Obvious localized soil contamination was observed in the UST excavations beneath the eastern dispenser islands. Samples were collected from the eastern dispenser island but not the western dispenser island due to inability to access the excavation.

- The PADEP was notified on February 28, 1996.

- Monitoring wells MW-1 though MW-3 were installed in March 1996. Wells were installed to 25 feet below ground surface consisting of 20 feet of screen and 5 feet of solid PVC. MW-4 was installed in October 1997 with the same construction details as the previously installed wells.
- MW-5 and MW-6 were installed by GES in October 2004 to 50 and 47 feet below ground surface, respectively. MW-7 was installed by GES in November 2004 to a depth of 100 feet below ground surface.
- Groundwater flow is generally to the west/southwest.
- Groundwater quality data indicates that the most significant concentrations exist in the vicinity of the former dispenser islands located at the eastern property boundary. Benzene, ethylbenzene, methyl tert butyl ether (MTBE), and/or naphthalene have been detected in each of the monitoring wells, except MW-6, above the PADEP SHS. No off-Site impact was modeled.
- A chemical oxidation event using peroxide was conducted on April 25, 2005.
- Remedial Actions proposed in this report were:
  - Continue groundwater monitoring and use active remediation if trends continue to increase; and,
  - A fuel inventory check and UST system tightness test shall be conducted by *Sunoco* to make sure the increase in groundwater concentrations are not from a recent release.
- Additional Site Characterization recommendations in this report were:
  - Conduct a soil boring investigation in the vicinity of both set of dispenser islands to further delineate the horizontal and vertical extents of hydrocarbons at the Site;
  - Add an additional monitoring well north of the former dispenser islands along the eastern property boundary; and,
  - Conduct at least two soil gas surveys.

October 1, 2009 "Site Characterization Report Addendum/Remedial Action Completion Report" by *GES;*

- The PADEP required the installation of a second deep monitoring well after the submittal of the 2006 SCR/RAP. Two deep monitoring wells (MW-8 and MW-9) and one shallow monitoring well (MW-10) were installed at the Site in February 2007. A total of ten groundwater monitoring wells are at the Site by this time.
- Soil gas investigations occurred between February and December 2007. Three soil gas points were sampled for MTBE, BTEX, and cumene (the PADEP's unleaded gasoline parameters in 2007). None of the target parameters were detected in the samples at concentrations above the PADEP residential indoor air criteria.
- Groundwater flow direction varies seasonally and has been to the southwest, west/southwest, west/northwest, and east/northeast. The last eight quarters the

groundwater flow was predominantly in the north/west direction in the shallow aquifer and north in the deep aquifer.

- *GES* concluded that based on soil analytical results, soil contamination was localized in the immediate vicinity of the former pre-Act 2 USTs and the former dispensers. Benzene was the only unleaded gasoline parameter analyzed that exceeded the PADEP SHS.
- Groundwater monitoring occurred at the Site since March 1996. Historic groundwater indicates that benzene, ethylbenzene, MTBE, and naphthalene were detected at concentrations above the PADEP SHS. Attainment groundwater monitoring was initiated on October 4, 2007. Since that time benzene was detected above the PADEP SHS in two out of the eight sampling events in MW-2. The other unleaded gasoline parameters were either not detected or detected below the PADEP SHS. Groundwater trends provided in this report indicate decreasing or stable trends.
- Attainment demonstration:
    - Soil standard used was "non-residential used aquifer" for toluene, ethylbenzene, xylenes, MTBE, cumene and naphthalene. Pathway elimination, instead of a calculated numeric site-specific standard, was used for the benzene that was detected above standard in Site soils.
    - Groundwater standard used was "non-residential used aquifer" with total dissolved solids less than or equal to 2,500 for toluene, ethylbenzene, xylenes, cumene and naphthalene. MTBE and benzene were not predicted to migrate beyond the property boundary. Pathway elimination was also used for benzene and MTBE instead of a calculated numeric site-specific standard.

<u>April 8, 2010 "Site Characterization Report Addendum/Remedial Action Completion Report Addendum" by *GES*:</u>

- This letter addendum includes the draft Environmental Covenant text. The text included a modeling activity which supported their conclusion that maintenance of an impervious cap will not need to be necessary as an activity and use limitation.
- The covenant included the following activity and use limitations:
    - The groundwater at or under the property shall not be used for drinking or agricultural purposes.
    - The owner shall prohibit residential use of the Site without first obtaining written approval from the Department.
- The covenant requires the following compliance reporting with the Department:
    - "The owner and each subsequent owner of the Property shall submit to the Department written documentation confirming that the activity and use limitations in the Environmental Covenant are being complied with following transfer of the Property."

- The "Property" as defined by the Site Map attached to the Environmental Covenant includes only a portion of the property in the southeast corner of the property.

July 20, 2010 "Supplemental Information for Site Characterization Report Addendum/Remedial Action Completion Report Addendum" by *GES*:

- Additional modeling activities were conducted and submitted to address the PADEP's concerns regarding the April 2010 modeling efforts. The recharge rate, soil bulk density, and porosity were revised as requested.
- *GES* still concluded that the maintenance of the impervious cap would not be necessary to protect the groundwater in the area of the soil benzene exceedance.

October 13, 2010 "Remedial Action Completion Report Approval" by PADEP:

- The approval covers the release that was confirmed on March 1, 1996 with RACR and RACR Addendums dated October 1, 2009, April 8, and July 20, 2010. The RACR was approved with the condition that the Environmental Covenant be recorded in the property county with proof provided to the PADEP within the required timeframes.
- PADEP Confirmed:
    - Groundwater attainment was confirmed under the residential statewide health standard for toluene, ethylbenzene, xylenes, MTBE, cumene, and naphthalene. Attainment of a site-specific standard for benzene was demonstrated through pathway elimination.
    - Five AOCs were identified by PADEP:
        - AOC-1: Dispensers parallel to York Road removed and replaced in 1996.
            - Residential SHS for soil for toluene, ethylbenzene, and xylenes.
            - Residential SSS for benzene through pathway elimination.
            - No impervious cap needed to maintain groundwater quality below AOC-1.
        - AOC-2: Former pre-Act 2 UST field where closed in place tanks were removed in 1996.
            - Residential SHS for soil for toluene, ethylbenzene, and xylenes.
            - Residential SSS for benzene through pathway elimination.
            - No impervious cap needed to maintain groundwater quality below AOC-1.
        - AOC-3: Two former 1,000-gallon gasoline USTs were removed in October 1993.
            - Residential SHS for soil for benzene, toluene, ethylbenzene, and xylenes.

- AOC-4: Two former 550-gallon USTs were removed in November 1995.
  - Residential SHS for soil for benzene, toluene, ethylbenzene, and xylenes.
- Two Not Numbered AOCs:
  - Soil quality from beneath the Street Road dispensers was not evaluated due to restricted access caused by the canopy footer.
  - Soil from beneath the former 550-gallon fuel oil UST was evaluated for TPH only.
  - Releases of liability will not be issued for these two AOCs.

November 15, 2010 "Executed Covenant" by *GES*;

- Environmental Covenant was recorded on October 29, 2010.
- The covenant included the following activity and use limitations:
  - The groundwater at or under the property shall not be used.
  - The owner shall prohibit residential use of the Site.
- The covenant requires the following compliance reporting with the Department:
- "The owner and each subsequent owner of the Property shall submit to the Department written documentation confirming that the activity and use limitations in the Environmental Covenant are being complied with following transfer of the Property."
- The "Property" as defined by the Site Map attached to the Environmental Covenant includes only a portion of the property in the southeast corner of the property.

March 31, 2017 "Certificate of Storage Tank System Testing" by *Crompco*;

- Underground Storage Tank Facility Operations Inspection completed on PADEP form and conducted by *Crompco*.
  - No suspected or confirmed contamination observed.
  - No known improperly closed or unregistered tanks present.
  - The three USTs were compliant with all aspects inspected.
  - The three USTs were noted to be 12,000-gallon gasoline tanks installed in December 1983.
  - Veeder Root system is noted to be connected to all three tanks. No indications of a release over the last 12 months of data.
  - The last piping and leak detector test was conducted by *Crompco* on August 1, 2016. All passed.
  - No water was measured in tanks.

February 2, 2017 "Phase II Environmental Site Assessment Report" by *GES*

- A limited Phase II Site Assessment with four soil borings/samples and four groundwater samples was conducted on January 11 and 12, 2017.
- The *GES* report has a contradictory note regarding groundwater flow during the January 2017 sampling event. It notes that it was to the southwest in one section and "generally toward the north and west" in another section. Four existing monitoring wells (MW-3, MW-4, MW-5, and MW-10) ranging in depths from 25-50 feet were sampled for BTEX, MTBE, cumene, naphthalene, 1,2,4-Trimethylbenzene (TMB), and 1,3,5-TMB, which is the current PADEP short list for unleaded gasoline constituents. Groundwater results indicate that the groundwater does not exceed the 2010 PADEP approved site-specific standard for non-residential, used aquifer for benzene. The groundwater sample collected from MW-3 showed that benzene does exist above the PADEP statewide health standard for non-residential used aquifer but was below the 2010 approved benzene standard for the Site.
- Soil borings, SB-1 through SB-4, were collected between 10 and 14 feet below ground surface near the center of the Site. The soil samples were analyzed for the current PADEP short list for unleaded gasoline constituents. The soil analytical results indicate that soils do not exceed the PADEP statewide health standards for non-residential, used aquifer.

June 14, 2017 "Phase I Environmental Site Assessment" by *GES*

- The Phase I Site visit was conducted on April 26, 2017.
- *GES* concluded there was one REC and one CREC.
    - REC: Underground storage tanks and associated piping are considered potential environmental concerns due to the hazardous nature of their contents, their underground location, the inability to visually observe their condition, and the historical likelihood of a release. USTs have a typical estimated useful life of 30-40 years, depending on various factors such as the type of tank, the quality of installation, the level of maintenance, and the sub-surface conditions.
    - CREC: The review of the regulatory database identified that a release (Facility No. 582593) was reported for the Site in 1996 during the removal of the former USTs. The release was reportedly closed in 2010 with a Cleanup Completed status. The status indicates that the groundwater and soil contamination, if any, has been investigated and/or remediated in accordance with the regulatory standards accepted at the time closure. The review of the records for the Site indicates that residual contamination may remain in the soil and/or groundwater at the Site and an activity and use limitation was implemented for the Site. It is recommended that PADEP be contacted in order to obtain the AUL and to evaluate its contents. Based on this information, the release from the Site represents a *controlled recognized environmental condition*.

- The regulatory database results included an UNREG TANK result which included "tank facilities not currently registered". The tanks provided in this database are tanks that have been removed, permanently closed in place, closed without a permit, or under other circumstances. The Site had the following tanks noted at the Site, none of which are noted with a date of removal:
    - Tank 004: 550-gallon used oil UST installed in 1962
    - Tank 005: 1,000-gallon heating oil tank installed in 1962
    - Tank 006: 1,000-gallon tank with unknown content and unknown installation date
    - Tank 007: 550-gallon heating oil tank installed in 1962
    - These sizes/types of tanks were not noted to have been closed during the 1995/1996 tank removal activities in any of the documentation provided by the client, owner, or the PADEP. Additional information should be provided by *Sunoco* to confirm they were removed from the Site and not closed in place.

6.2 Interviews

Information provided by persons knowledgeable of the Site regarding the historical uses of the Site (and vicinity/adjoining properties) is summarized below in Table 12.

Table 12: Historical Use Interviews

Person Interviewed	Historical Uses
Doug Barnard, Area Manager for *Sunoco, Inc.*	Mr. Bernard was not able to provide a detailed history of the Site. He was aware that the property was a gasoline station prior to *Sunoco*'s purchase of the property. Mr. Bernard also stated that recent environmental work had been conducted but could not provide details regarding purpose, media sampled, or results.

6.3 Historical Research

Table 13 provides a listing of the historical sources consulted for the Site and adjoining properties on June 26, 2017.

Table 13: Historical Sources Consulted

Record	Source/Location	Date(s)
Historic Atlases	Historicmapworks.com	1876
City Directories	None readily available	NA
Aerial Photographs	Googleearth.com	1992, 1999, 2002, 2003, 2004, 2005, 2008, 2010, 2011, and 2016
	Pennpilot.psu.edu	1938, 1958, and 1971
	Philageohistory.org	1965, 1970, 1975, 1980, 1985, 1990, and 1995
	Historicaerials.com	1948, 1950, 1958, 1965, 1967, 1971, 1992, 1999, 2002, 2004, 2008, 2010, and 2013
Sanborn Fire Insurance Rate Maps	None readily available	NA
Historic Topographic Maps	Historicaerials.com	1893, 1896, 1899, 1902, 1906, 1908, 1912, 1924, 1930, 1941, 1946, 1953, 1961, 1968, 1974, 1983, and 2001
Property Tax Records	Bucks County Assessment Records	Undated

6.4 Historical Uses of Site and Adjoining Properties

Table 14 represents a collective summary of the historical use information for the Site and adjoining properties.

Table 14: Historical Uses of Site and Adjoining Properties

Property	Description of Historic Uses	Items of Environmental Interest
Site	The current gasoline station building was built sometime between 1950 and 1958 with renovations occurring at least when *Sunoco* took over around 1996. Pump dispenser locations have been located along the south and eastern edges of the property since development as a gasoline station. The current pump, tank field, building structure, and parking lot/grassy area was in place around 1992. Prior to obvious use as a gasoline station the Site consisted of two buildings as far back as at least 1938. One rectangular building was located within the southeastern corner of the property and extended toward the north end of the property. The second building was located in the northwest corner of the Site. Use of these buildings is unclear but may have been residential or agricultural related.	Historic and current use as a gasoline station is of environmental interest.
Adjoining to North	The parking lot for the diner to the west is located to the north of the Site. The parking lot was constructed at the same time as the diner; between 1985 and 1990. Prior to use as parking lot it was undeveloped land possibly associated with agricultural use.	None.
Adjoining to South	The current shopping plaza property with accessory commercial building and parking lot was constructed sometime between 1985 and 1990. The land to the south was used for agricultural purposes as far back as at least 1938 and contained a small square structure which was likely a farm house or barn. Sometime between 1958 and 1965 the structure was demolished and the land was vacant and potentially farmed until the large shopping plaza was constructed.	None.
Adjoining to East	Sometime between 1950 and 1958, a commercial building was constructed within the corner of West Street Road and York Road (across York Road from the Site). A second commercial building located to the east was constructed between 1958 and 1965. Based on aerial photographs it appears that the first commercial structure may have had a UST located along York Road before the removal of the building between 1971 and 1975. Prior to development with commercial buildings the land to the east was used for agricultural purposes as far back as at least 1938.	The possible presence of a UST to the east across York Road is of environmental interest. According to groundwater investigations conducted at the Site, this property would potentially be located up- or crossgradient.

Property	Description of Historic Uses	Items of Environmental Interest
Adjoining to West	The current diner with building and parking lot footprint was constructed sometime between 1985 and 1990. Prior to development with diner building, the land to the west was used as agricultural use with a barn or house on the property between 1985 and 1971. A small orchard to the north of the structure was observed in the 1958 aerial. Prior to 1958, the land to the west was used as farm fields with no structures. Sometime between 1958 and 1965 the large shopping plaza to the west was constructed.	None.

6.5 Data Gaps and Data Failures

ASTM E 1527-13 defines a data failure as a failure to achieve the historical research objectives of AAI even after reviewing the standard historical sources that are reasonably ascertainable and likely to be useful. Specifically, the historical research objectives include identifying previous uses and ownership of the property since the property was first developed with structures or was placed into use of some form (i.e., residential, agricultural, commercial, industrial, or governmental uses), or back to 1940, whichever is earlier.

Usage of the Site was identified back to 1938, at which time the subject property appears developed with at least two buildings and the surrounding properties appear sparsely developed with residential/agricultural buildings or farm fields. Historical sources prior to 1938 were uncovered; however, no clear land use was able to be identified, as such, a data failure is indicated, which is a type of data gap. However, since the subject property was likely residential or agricultural related in 1938, it is likely the Site was undeveloped prior to this time and was first used for agricultural purposes. As such, this data gap does not appear to be significant and is unlikely to affect the conclusions of this report.

7.0 Site Reconnaissance

7.1 Methodology

The objective of the site reconnaissance was to identify *recognized environmental conditions, historical recognized environmental conditions* and *controlled recognized environmental conditions* at or in the immediate vicinity of the Site by means of a visual, surficial review. In addition, during the regular course of the site reconnaissance, *e Phase, Inc.* also conducted an evaluation of surficial conditions at and in the immediate vicinity of the Site for evidence of significant environmental concerns, moderate environmental concerns, and *de minimis* conditions. Angela Price of *e Phase, Inc.* conducted this visual reconnaissance of interior and exterior portions of the Site on June 23, 2017 in the presence of Mr. Doug Bernard. *e Phase, Inc.*'s reconnaissance consisted of a systematic traverse of the Site to provide a view of Site improvements, facilities, and grounds under the limiting conditions noted in Section 1.4. *e Phase, Inc.* also attempted to visually review exterior portions of adjacent properties observable from within the boundaries of the Site or other vantage point.

A Site plan is included in Appendix C. Photographs taken during the Site inspection are included in Appendix D.

The passage of time may result in a change in the environmental characteristics at the Site and the surrounding properties. *e Phase, Inc.* does not render any opinion as to the environmental conditions at the Site after the date of the site reconnaissance. *e Phase, Inc.* does not undertake to update the conclusions or recommendations of this ESA. *e Phase, Inc.* renders no opinion as to the environmental conditions at locations not reviewed or visually obstructed portions of the Site.

7.2 Site Setting & Interior/Exterior Observations

At the time of the Site reconnaissance, the Site was being utilized by *Sunoco* as a gasoline station and convenience store. The only limiting condition was that Mr. Bernard has only been with *Sunoco* since 2014 and was not entirely familiar with the Site history. Table 15 provides descriptions of environmental items observed on the interior and exterior of the Site during the Site reconnaissance.

Table 15: Summary of Interior/Exterior Observations

Item	Description	Discussion
Underground storage tanks	Three 12,000-gallon gasoline UST located in a tank field within the southern corner of the property. There were two canopies at the site; each with two dispenser islands underneath. One located along the eastern edge of the property and one located along the southern edge of the property. According to Mr. Bernard there are no diesel or kerosene USTs located at the Site. Mr. Bernard provided a certificate of storage tank system testing from March 2017 stating there were no indications of a release over the last 12 months. Mr. Bernard stated that recent subsurface work was conducted by an environmental firm; however, he was not able to provide any additional information at the time of the Site visit. The Phase II report was provided at a later date.	The recent Phase II completed at the Site did not indicate any levels in the soil above the Statewide Health Standard or groundwater above the Site-Specific Standard established for the Site.
Aboveground storage tanks	Not observed.	NA
Containers of hazardous substances and petroleum products	Standard automotive fuels, cleaners, and maintenance materials were stored neatly on shelves in the retail portion of the convenience store. Cleaning chemicals were neatly stored in the storage/office area of the building.	
Containers of hazardous and petroleum wastes	Not observed.	NA
Evidence of electrical, hydraulic, or heat-transfer equipment that might contain PCBs.	Not observed.	NA
Solid Waste Disposal	Two dumpsters were located along the northern edge of the property. No illegal dumping was observed.	No current issues of concern.
Distressed Surfaces or Vegetation	*e Phase, Inc.* did not observe any stressed vegetation at the Site that might suggest the presence of hazardous substances, petroleum, or petroleum products. We observed minor oil discharges on the parking area; however, the discharges are incidental in nature and corrective action is neither practical nor warranted.	NA

Septic Systems and Cesspools	There is a cement pad with two metal covers and one small metal cover. Mr. Bernard assumed this this was formerly used as a septic pit and is no longer in use. *e Phase, Inc.* requested additional information regarding this subsurface structure. According to William Brochu, of *Sunoco*, this structure is associated with a grease trap. Due to the historic use of this property as an auto repair shop (prior to *Sunoco*'s ownership), this grease trap is assumed to be an oil/water separator. Mr. Brochu and Mr. Bernard could not provide any details regarding the structure, contents, tightness testing, discharge location, and/or age of the "grease trap".	Based on the historic use of the Site as an auto repair shop, the presence of this grease trap is a REC.
Wells and Cisterns	At least 14 groundwater monitoring wells were observed across the Site. According to the 2017 Phase II there were 17 groundwater wells at the Site. According to the 2017 groundwater results there is residual benzene contamination in groundwater above the PADEP statewide health standards for non-residential use but below the 2010 PADEP approved benzene Site Specific Standard.	Closure of un-used groundwater monitoring wells should be conducted within local, state, and federal requirements.
Waste Pits, Landfills, Lagoons, ponds, Basins, and Impoundments	Not observed.	NA
Aboveground and Underground Piping	Not observed.	NA
Floor Drains, Storm Drains, and Sumps	Storm drains were observed within the parking lot and access areas of the Site.	No current issues of concern.
Elevators and Hydraulic Lifts	Not observed.	NA
Additional Underground Structures	Three large manholes were observed within the western portion of the Site; two within the West Street Road entrance and one near the air/vacuum equipment. The purpose of these manholes is unclear at this time. As of the date of this report, *Sunoco* was still attempting to determine the purpose of these metal covers.	Based on the historic use of the Site as an auto repair shop, the presence of these unknown underground structures is a REC.
Wastewater Discharges	Not observed.	NA

Asbestos-Containing Building Materials (ACBM)	*e Phase, Inc.* did not observe any suspect damaged or friable ACBM during the site reconnaissance. The 1973 National Emission Standards for Hazardous Air Pollutants partially banned the use of spray-applied ACBM in new buildings. The government expanded these regulations in 1975 and 1978 to ban the use of all types of ACBM in new buildings. The original structure of the Site building was constructed before 1978; however, the internal portion was renovated when *Sunoco* took over around 1996. Based upon the renovation date, sit is unlikely that building materials such as vinyl floor tiling and mastics, acoustical ceiling tiles, roofing materials, plaster, wallboard assemblies, flexible fabric ductwork connectors, fire doors, and electrical cable coverings may contain ACBM unless collected for laboratory analysis and proven otherwise. As long as these materials are intact and in good condition, they do not pose an unacceptable health risk to Site occupants.	*e Phase, Inc.* did not observe any of these materials to be in damaged or friable condition.
Lead-Based Paint (LBP)	*e Phase, Inc.* did not observe any flaking, chipping, and/or peeling paint within the Site buildings. The original structure of the Site building was constructed before 1978; however, the internal portion was renovated when *Sunoco* took over around 1996. Based on the renovation date, it is unlikely that there is lead-based paint present in the Site buildings. However, only laboratory analysis of samples can confirm the presence or absence of LBP.	NA
Lead in Drinking Water	*e Phase, Inc.* did not conduct laboratory analysis for lead or other potential contaminants in drinking water since such testing is beyond the scope of this ESA.	NA
Radon	According to the database report, radon concentrations in the vicinity of the Site average 5.7 picocuries per liter (pCi/L), which is above the EPA's recommended action level of 4.0 pCi/L. According to the EPA's radon zone map, the Site is in Zone One, an area of high radon propensity. Thus, it appears possible that the Site has elevated radon levels. However, only laboratory analysis of samples can confirm the presence or absence of elevated radon levels.	It is possible the Site contains elevated radon levels.
Mold	*e Phase, Inc.* did not conduct an evaluation for visual indications of mold because such evaluation us beyond the scope of this ESA.	NA

8.0 Interviews

Table 16: Key Interviews

Name of Peron interviewed	Affiliation	Date interviewed	Comments
Mr. Doug Bernard	*Sunoco, Inc.* Area Manager	June 23, 2017	Information provided by Mr. Bernard regarding the Site was provided in previous sections.
Mr. William Brochu	*Sunoco, Inc.*	June 30- July 1, 2017	Information provided by Mr. Brochu regarding the Site was provided in previous sections.

According to ASTM 1527-13, if the subject property is abandoned and there is evidence of potential unauthorized uses of the *abandoned property* or evidence of uncontrolled access to the *abandoned property*, an interview with one or more owners or occupants of neighboring or nearby properties must be conducted.

Because the subject property is not categorized as an *abandoned property*, interviews with owners or occupants of neighboring or nearby properties were not conducted.

9.0 Findings and Opinions

e Phase, Inc. has identified the following evidence of *RECs*, *HRECs*, *CRECs* and other environmental findings in connection with the subject property and/or vicinity:

Recognized Environmental Conditions

1. A cement pad with two metal covers and one small metal cover was located to the north of the building. According to William Brochu of *Sunoco* this structure is associated with a grease trap. Due to the historic use of this property as an auto repair shop (prior to *Sunoco*'s ownership) this grease trap is assumed to be an oil/water separator. Mr. Brochu and Mr. Bernard could not provide any details regarding the structure, contents, tightness testing, discharge location, and/or age of the "grease trap". Oil/water separators can become a conduit for subsurface contamination if hazardous substances or petroleum products are improperly disposed of in them. Moreover, given the historic use of the Site for auto repair purposes, the presence of an on-Site oil/water separator is currently believed to be a *recognized environmental condition*.

2. *e Phase, Inc.* observed three metal covers within the parking lot of the Site. Their use is unknown at this time but could be of *de minimis* concern if related to utility access. However, should the use of these metal covers be identified as non-utility related underground structures such as access covers to USTs, there would need to be further investigation into their contents, age, and tightness.

3. Based on the *Warminster Municipal Authority* website and the *Bucks County Courier Times,* the groundwater in *Warminster Township* is known to contain potentially high levels of perfluorinated compounds (PFCs) due to the operations at the *Former Naval Air Station Joint Reserve Base* in Horsham, along with the active *Horsham Air Guard Station*. A known area of impact is provided by the *Bucks County Courier Times* and is included as an Appendix. Based on the general vicinity around the Site, it is possible the groundwater is impacted with PFCs; however, there are areas below and areas above the health advisory level. Therefore, it will be considered a regional groundwater issue within the entire township likely impacting the Site. Since this compound is not a compound of interest for gasoline stations it may be present but unknown despite the significant amount of groundwater sampling previously conducted.

4. The Site was identified in the UNREG TANK database which includes unregistered tanks that have been removed, permanently closed in place, closed without a permit, or under other circumstances. The Site had the following tanks noted at the Site, none of which are noted with a date of removal:

a. Tank 004: 550-gallon used oil UST installed in 1962
b. Tank 005: 1,000-gallon heating oil tank installed in 1962
c. Tank 006: 1,000-gallon tank with unknown content and unknown installation date
d. Tank 007: 550-gallon heating oil tank installed in 1962

Two of these tanks (the 550 gallon USTs) may have been closed during the 1995/1996 tank removal activities, however, this could not be confirmed as part of the scope of this ESA. However, the other sizes/types of tanks were not noted to have been closed during the 1995/1996 tank removal activities. Additional information should be provided by *Sunoco* to confirm they were removed from the Site and not closed in place.

Historical Recognized Environmental Conditions

1. In 2012, a release of less than 12 gallons occurred at the Site due to an overflow of gas from a vehicle. The appropriate measures were taken for cleanup and an investigation of all storm drains was completed. PADEP considers the cleanup of the incident to be completed.

Controlled Recognized Environmental Conditions

1. Groundwater and soil impact was reported in 1995/1996 during tank and dispenser island removal activities. The tank removal investigation revealed that benzene exceeded the PADEP SHS within the excavation. According to the reports provided benzene, ethylbenzene, methyl tert butyl ether (MTBE), and/or naphthalene have been detected in each of the groundwater monitoring wells, except MW-6, above the PADEP SHS. Attainment of a non-residential statewide health standard was achieved and approved by the PADEP in October 2010 for toluene, ethylbenzene, xylenes, MTBE, cumene, and naphthalene in soils and for toluene, ethylbenzene, xylenes, cumene, and naphthalene in groundwater. Pathway elimination was utilized for attainment of benzene in soils and groundwater and MTBE in groundwater. A covenant was recorded in October 2010 for the property which included activity and use limitations restricting groundwater use and residential use.

Significant Environmental Concerns

None.

Moderate Environmental Concerns

1. The possible historic presence of a UST to the east across York Road is of environmental interest. According to groundwater investigations conducted at the Site, this property would potentially be located up- or crossgradient. The Site has already conducted numerous soil and groundwater investigations at the Site;

therefore, any concerns regarding this potential UST would likely have been identified.

2. It is possible that portions of the Site building contain ACBM and/or LBP based on its pre-1978 construction date.

3. According to the database report, radon concentrations in the vicinity of the Site average 5.7 picocuries per liter (pCi/L), which is above the EPA's recommended action level of 4.0 pCi/L. Radon poses a potential health risk to Site occupants and workers who breathe ambient air.

de minimis **Conditions**

1. The database search identified numerous off-Site facilities within the prescribed search radii. Based upon groundwater flow direction, their regulatory statuses and/or distances, the properties identified by the database search are unlikely to be impacting Site subsurface conditions.

2. Due to the pre-1984 construction date of portions of the Site building, it is possible that Site fluorescent light ballasts contain PCBs. However, since no evidence of releases was observed in the vicinity of inspected fluorescent lights, they are currently believed to be of minimal environmental concern.

10.0 Conclusions and Recommendations

e Phase, Inc. has performed this ESA in general conformance with the scope and limitations of ASTM Standard E 1527-13 of *Sunoco* Gasoline Station, tax parcel 49-009-046, located at 610 York Road, Warminster Township, Bucks County, Pennsylvania, the Site. Any exceptions to, or deletions from, this practice and any site-specific limiting conditions and/or data gaps are described in Sections 1.4 and 11.0 of this report. Any additional services requested by the Client which were conducted beyond the scope of this practice are described in Section 12.0 of this report. This assessment has revealed four *recognized environmental conditions*, one *historical recognized environmental condition*, one *controlled recognized environmental conditions* and five other environmental findings in connection with the subject property and/or vicinity.

Recognized Environmental Conditions

1. *e Phase, Inc.* observed two metal covers related to a grease trap or oil/water separator. Given the historic use of the Site for auto repair purposes, the presence of an on-Site grease trap or oil water separator is currently believed to be a *recognized environmental condition.*

2. *e Phase, Inc.* observed at least four metal covers within the parking lot of the Site all with unknown purposes. These unknown underground structures are currently believed to be a *recognized environmental condition.*

3. Potentially high levels of perfluorinated compounds (PFCs) may be present in groundwater at the Site due a regional groundwater issue within the entire township. The regional groundwater impact is considered a *recognized environmental condition.*

4. Four unregulated tanks were noted to have been closed at the Site; however, several of them may not have been not included in the summary of the 1995/1996 tank removal activities. Additional information should be provided by *Sunoco* to confirm they were removed from the Site and not closed in place.

Historical Recognized Environmental Conditions

1. The PADEP considers the cleanup of the 2012 gasoline release incident to be completed.

Controlled Recognized Environmental Conditions

1. Groundwater and soil contamination was identified during tank and dispenser removal activities in 1995/1996. PADEP issued a closure approval letter for this release in 2010 approving the requested non-residential statewide health standards and pathway elimination. A covenant has been recorded for the property prohibiting groundwater use and use of the site as residential.

Significant Environmental Concerns

None.

Moderate Environmental Concerns

1. The possible historic presence of a UST to the east across York Road is of environmental interest.

2. It is possible the Site building contains ACBM and/or LBP based on its pre-1978 construction date.

3. It is possible the Site contains elevated radon levels.

de minimis **Conditions**

1. Based on their regulatory statuses, topographically downgradient locations, and/or distances, the properties identified by the database search do not appear to pose a material threat of release of hazardous substances or petroleum products to the Site.

2. It is possible that Site fluorescent light ballasts contain PCBs.

Recommendations

e Phase, Inc. has identified the following evidence of *recognized environmental conditions* in connection with the subject property and/or vicinity which suggest the need for additional investigation:

1. Given the historic use of the Site for auto repair purposes, the presence of an on-Site grease trap or oil water separator is currently believed to be a *recognized environmental condition.* Information regarding the structure, purpose, discharge location, and potential contents should be further determined. A subsurface investigation should be conducted to confirm that the soil and/or groundwater has not been impacted by the historic use of the Site and the oil/water separator.

2. *e Phase, Inc.* observed at least three metal covers within the parking lot of the Site all with unknown purposes. These unknown underground structures are currently believed to be a *recognized environmental condition.* As of the date of

this report, *Sunoco* was still attempting to determine the purpose of these metal covers. *Sunoco* should provide the actual purpose of these underground structures.

3. Potentially high levels of perfluorinated compounds (PFCs) should be investigated by collecting groundwater samples from the existing groundwater wells. These samples would be used to evaluate if the Site falls within the PFC areawide impacted groundwater. They would also be used to determine if an indoor vapor intrusion issue exists from any potential levels of PFCs.

4. Four unregulated tanks were noted to have been closed at the Site; however, several of them were not included in the summary of the 1995/1996 tank removal activities. Additional information should be provided by *Sunoco* to confirm they were removed from the Site and not closed in place.

e Phase, Inc. also recommends the following:

1. Closure of un-used groundwater monitoring wells should be conducted within local, state, and federal requirements.

2. A comprehensive asbestos and LBP survey should be conducted of the Site building prior to renovation/demolition activities.

3. Fluorescent light ballasts known or suspected of containing PCBs should be properly disposed by a qualified recycler.

11.0 Deviations

e Phase, Inc. performed a Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM Standard E 1527-13, except for any additional limitations, data gaps, and exceptions detailed in Section 1.4. *e Phase, Inc.* also conducted an evaluation of the surficial conditions of the Site for other environmental findings, namely significant environmental concerns, moderate environmental concerns, and *de minimis* conditions, as a supplement to the standard ASTM requirements.

Notice of Contamination

Trammel Testing - September 12, 2018

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

☒ Initial
☐ Follow-Up

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

NOTIFICATION OF REPORTABLE RELEASE *(Owners and Operators)*

The Storage Tank Program's Corrective Action Process (CAP) regulations establish release reporting requirements for owners and operators of storage tanks and storage tank facilities.

Subsection 245.305(a) of the regulations requires owners or operators to notify the appropriate regional office of the Department as soon as practicable, but no later than 24 hours after the confirmation of a reportable release.

Subsection 245.305(d) requires owners or operators to provide an initial written notification to the Department, each municipality in which the reportable release occurred, and each municipality where that release has impacted environmental media or water supplies, buildings, or sewer or other utility lines, within 15 days of the notice required by subsection 245.305(a).

Subsection 245.305(e) requires owners or operators to provide follow-up written notification to the Department and to each impacted municipality of new impacts to environmental media or water supplies, buildings, or sewer or other utility lines discovered after the initial written notification required by subsection 245.305(d). Written notification is to be made within 15 days of the discovery of the new impact.

This form may be used to comply with subsections 245.305(d) and (e).

OWNERS AND OPERATORS (O/O)
INDICATE IF THIS IS AN INITIAL OR FOLLOW-UP NOTIFICATION BY MARKING THE APPROPRIATE BOX FOUND IN THE TOP RIGHT-HAND CORNER OF THIS FORM. PLEASE COMPLETE ALL INFORMATION IN SECTIONS I, II, IIIA, IIIB, IV, V, VII and VIII.

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

The Storage Tank Program's Certification regulations establish standards of performance for certified installers and inspectors of storage tanks and storage tank facilities.

Subsection 245.132(a)(4) of the regulations requires certified installers and inspectors to report to the Department a release of a regulated substance or confirmed or suspected contamination of soil, surface or groundwater from regulated substances observed while performing services as a certified installer or inspector.

This form may be used to comply with subsection 245.132(a)(4). Subsection 245.132(a)(4) requires submission of the form within 48 hours of observing suspected or confirmed contamination. Where there is a reportable release, the form may be submitted jointly by the owner, operator, certified installer and certified inspector. In this instance, the form must be received by the appropriate regional office within 15 days of the notice required by subsection 245.305(a).

CERTIFIED INSTALLERS AND INSPECTORS (I/I)
PLEASE COMPLETE ALL INFORMATION IN SECTIONS I, II, IIIA, IIIC, VI, VII and VIII.

INSTRUCTIONS

I. FACILITY INFORMATION - Record the name, I.D. number and physical location (not P.O. Box) of the facility at which a reportable release has been confirmed or at which suspected or confirmed contamination has been observed. Include the name and phone number of a person to contact at the facility.

II. OWNER/OPERATOR INFORMATION - Record the name, business address and telephone number of the owner of the facility identified in Section I. Also, record the name and telephone number of the operator of the facility.

III. REGULATED SUBSTANCE INFORMATION - Indicate to the best of your knowledge: A) the type of product or products involved; B) the quantity of product or products released; and C) whether the contamination is suspected or confirmed.

IV. REPORTABLE RELEASE INFORMATION - Record the date of confirmation of the reportable release, e.g., "9/18/01"; the date and regional office notified; and the date the local municipality(ies) [provide name of municipality(ies)] was/were sent a copy of this form. Indicate to the best of your knowledge the source/cause of the release, how the release was discovered and the environmental media affected and impacts.

V. INTERIM REMEDIAL ACTIONS - Indicate the interim remedial actions planned, initiated or completed.

VI. SUSPECTED/CONFIRMED CONTAMINATION INFORMATION - Record the date of observation of the suspected or confirmed contamination, e.g., "11/24/01". Indicate to the best of your knowledge the indications of a suspected release or extent of confirmed contamination resulting from the release of the regulated substance.

VII. ADDITIONAL INFORMATION - Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include in this section specific details or problems about the release. For example, if the piping was the source of the release and the cause was corrosion of a metal connector or flexible connector, it is important to include that information here. Use additional 8½" x 11" sheets of paper, if necessary.

VIII. CERTIFICATION - Please print your name, and provide your signature and date of signature. If a certified installer/inspector, provide certification number and company certification number.

IX. ATTACHMENT - If a certified installer/inspector, provide a copy of failed valid tightness test(s), if applicable.

PLEASE SEND COMPLETED ORIGINAL FORM TO:
PA Department of Environmental Protection
Environmental Cleanup and Brownfields Program
Storage Tank Section
(and the appropriate address below,
depending on where the FACILITY is located)

Southeast Region	Northeast Region	South-central Region	North-central Region	Southwest Region	Northwest Region
2 East Main Street Norristown, PA 19401 PHONE: 484-250-5900 FAX: 484-250-5961	2 Public Square Wilkes-Barre, PA 18711-1915 PHONE: 570-826-2511 FAX: 570-820-4907	909 Elmerton Avenue Harrisburg, PA 17110 PHONE: 866-825-0208 FAX: 717-705-4830	208 W. Third Street, Suite 101 Williamsport, PA 17701 PHONE: 570-321-6525/327-3636 FAX: 570-327-3420	400 Waterfront Drive Pittsburgh, PA 15222 PHONE: 412-442-4091/4000 FAX: 412-442-4328	230 Chestnut Street Meadville, PA 16335-3481 PHONE: 814-332-6945 800-373-3398 FAX: 814-332-6121
Counties Bucks, Chester, Delaware, Montgomery, Philadelphia	**Counties** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming	**Counties** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties** Bradford, Cameron, Centre, Clinton, Clearfield, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties** Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland	**Counties** Butler, Clarion, Crawford, Elk, Erie, Forest, Jefferson, Lawrence, McKean, Mercer, Venango, Warren

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: Finch Petro
Facility I.D. Number: 09-30778
Street Address (P.O. Box not acceptable): 610 York Road
City: Warminster
State: PA
Zip Code: 18974 - 2002
County: Bucks
Municipality: Warminster Twp.
Contact Person: Ali Ijmal
Telephone Number: (484) 678 - 5693

II. OWNER/OPERATOR INFORMATION (Both O/O and I/I)

Owner Name: Finch Petro LLC
Address: 610 York Road
City: Warminster
State: PA
Zip Code: 18974 - 2002
Telephone Number: (484) 678 - 2002
Operator Name: Ali Ijmal
Telephone Number: (484) 678 - 5693

III. REGULATED SUBSTANCE INFORMATION

A. Type of Product(s) Involved (Mark All That Apply ☒): Both O/O and I/I		B. Quantity (Gallons) of Product(s) Released: O/O Only	C. Contamination Suspected [S] or Confirmed [C] (Mark All That Apply ☒): I/I Only	
Leaded Gasoline	☐	___ ___, ___ ___ ___, ___ ___ ___	☐ [S]	☐ [C]
Unleaded Gasoline	☒	___ ___, ___ ___ ___, ___ ___ ___	☐ [S]	☒ [C]
Aviation Gasoline	☐	___ ___, ___ ___ ___, ___ ___ ___	☐ [S]	☐ [C]
Kerosene	☐	___ ___, ___ ___ ___, ___ ___ ___	☐ [S]	☐ [C]
Jet Fuel	☐	___ ___, ___ ___ ___, ___ ___ ___	☐ [S]	☐ [C]
Diesel Fuel	☐	___ ___, ___ ___ ___, ___ ___ ___	☐ [S]	☐ [C]
New Motor Oil	☐	___ ___, ___ ___ ___, ___ ___ ___	☐ [S]	☐ [C]
Used Motor Oil	☐	___ ___, ___ ___ ___, ___ ___ ___	☐ [S]	☐ [C]
Fuel Oil No. 1	☐	___ ___, ___ ___ ___, ___ ___ ___	☐ [S]	☐ [C]
Fuel Oil No. 2	☐	___ ___, ___ ___ ___, ___ ___ ___	☐ [S]	☐ [C]
Fuel Oil No. 4	☐	___ ___, ___ ___ ___, ___ ___ ___	☐ [S]	☐ [C]
Fuel Oil No. 5	☐	___ ___, ___ ___ ___, ___ ___ ___	☐ [S]	☐ [C]
Fuel Oil No. 6	☐	___ ___, ___ ___ ___, ___ ___ ___	☐ [S]	☐ [C]
Other (Specify) _____	☐	___ ___, ___ ___ ___, ___ ___ ___	☐ [S]	☐ [C]
Unknown	☐	___ ___, ___ ___ ___, ___ ___ ___	☐ [S]	☐ [C]

IV. REPORTABLE RELEASE INFORMATION (O/O Only)

Date Reportable Release was Confirmed: ___ / ___ / ___ (m / d / y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Reportable Release and Office Notified:
Date: ___ / ___ / ___ (m / d / y) Office _____

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality(ies) and Name of Municipality(ies) Notified:
Date: ___ / ___ / ___ (m / d / y) Municipality _____
Date: ___ / ___ / ___ (m / d / y) Municipality _____

Source (Mark All That Apply ☒):		How Discovered (Mark All That Apply ☒):		Environmental Media Affected and Impacts (Mark All That Apply ☒):	
Tank (DEP Assigned Nos. 001)	☒	During Closure	☐	Soil	☐
Piping System (Aboveground Regulated)	☐	Lining Installation	☐	Sediment	☐
Piping System (Underground Regulated)	☐	Routine Leak Detection	☐	Surface Water	☐
Piping System (Non-Regulated)	☐	Third Party Inspection	☐	Ground Water	☐
Dispenser/Dispensing Equipment	☐	Tightness Testing Activities	☐	Bedrock	☐
Spill Catchment Basin	☐	Visible Product or Odor Reports	☐	Water Supplies	☐
Accident/Natural Disaster	☐	Water in Tank	☐	Vapors/Product in Buildings	☐
Submersible Turbine Pump Head/Fittings	☐	Construction	☐	Vapors/Product in Sewer/Utility Lines	☐
Containment/Sump Failure	☐	Upgrade/Repair	☐	Ecological Receptors	☐
Other (Specify) _____	☐	Supply Well Sample Results	☐		
Unknown	☐	Monitoring Well Sample Results	☐		
Cause (Mark All That Apply ☒):		Property Transfer	☐		
Faulty Installation	☐	Other (Specify) _____	☐		
Corrosion	☐	Unknown	☐		
Physical/Mechanical Failure	☐				
Spill During Delivery	☐				
Overfill at Delivery	☐				
Vehicle Gas Tank Overfill	☐				
Product Delivery Hose Rupture	☐				
Other (Specify) _____	☐				
Unknown	☐				

V. INTERIM REMEDIAL ACTIONS (O/O Only)

(Mark All That Apply ☒):

	Planned	Initiated	Completed	Not Applicable
Regulated Substance Removed from Storage Tanks	☐	☐	☐	☐
Fire, Explosion and Safety Hazards Mitigated	☐	☐	☐	☐
Contaminated Soil Excavated	☐	☐	☐	☐
Free Product Recovered	☐	☐	☐	☐
Water Supplies Identified and Sampled	☐	☐	☐	☐
Temporary Water Supplies Provided	☐	☐	☐	☐
Other (Specify) _____	☐	☐	☐	☐

VI. SUSPECTED / CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date of Observation of Suspected/Confirmed Contamination: 09 (m) / 12 (d) / 2018 (y)

Indication of Suspected Contamination (Mark All That Apply ☒):

- Unusual Level of Vapors ☐
- Erratic Behavior of Product Dispensing Equipment ☐
- Release Detection Results Indicate a Release ☐
- Discovery of Holes in the Storage Tank ☐
- Other (Specify) _____ ☐

Extent of Confirmed Contamination (Mark All That Apply ☒):

- Product Stained or Product Saturated Soil or Backfill ☐
- Ponded Product ☐
- Free Product or Sheen on Ponded Water ☐
- Free Product or Sheen on the Ground Water Surface ☐
- Free Product or Sheen on Surface Water ☐
- Other (Specify) Failed tightness test ☒

VII. ADDITIONAL INFORMATION (Both O/O and I/I)

Provide any additional, relevant, available information concerning the reportable release or suspected or confirmed contamination. Include specific details or problems about the release. For example, if the piping was the source of the release and the cause was corrosion of a metal connector or flexible connector, it is important to include that information here. Provide DEP-assigned and owner/operator-assigned tank number(s), where applicable. Use additional 8½" x 11" sheets of paper, if necessary.

During a ficility operations inspection it was discovered that tank 001 - a 12,000 gallon ultra gasoline tank has been failing the CSLD tank leak tests. The monitor was serviced a few times to correct the problem with unsatisfactory results. The tank continued to fail the CSLD testing.

A tank tightness test was performed to determine if there is a problem with the tank. The tank test indication is an air leak above the liquid level of 27.5". The source of the leak could not be identified.

The owner was notified and has scheduled a follow up tightness test with Crompco to confirm if a problem exists.

VIII. CERTIFICATION (Both O/O and I/I)

I, _____, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the owner or operator of the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

_____ / / _____
Signature of Owner or Operator Date

I, _____, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified installer who performed tank handling activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

_____ / / _____
Signature of Certified Installer Date

_____ _____
Installer Certification Number Company Certification Number

I, Ed Guckin, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified inspector who performed inspection activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Ed Guckin 09 / 12 / 2018
Signature of Certified Inspector Date

2552 307
Inspector Certification Number Company Certification Number

2630-FM-BECB0501a Rev. 9/2012

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF ENVIRONMENTAL CLEANUP AND BROWNFIELDS
STORAGE TANK DIVISION

UNDERGROUND STORAGE TANK FACILITY OPERATIONS INSPECTION

FOR DEP USE ONLY
Reviewer _____
Date _____
Entered by _____
Date _____

FACILITY INFORMATION
ID Number 09 – 30778
Name Finch Petro
Location 610 York Rd
Address Warminster, PA 18974-2002
Municipality Warminster Twp

Representative Present During Inspection
Name Hamaadul Qamar
Phone 610-716-6116
☐ Owner ☐ Operator ☒ Employee ☐ None

CERTIFIED INSPECTOR
Name Les Trammel
ID No. 2551
Phone 215-674-1014
E-mail trammeltesting@msn.com

Date of First Site Visit (month/day/year)
9/12/2018

OWNER (must be a person)
Name

OPERATOR (if different than owner)
Name

Financial Responsibility discussed with owner Yes ☒ No ☐
- Provided by USTIF. Owner must have deductibles available as provided in Subchapter H of the regulations.
- Required of all UST owners except state agencies.

Suspected or confirmed contamination observed Yes ☐ (notify proper region within 48 hours) No ☒

Improperly closed or unregistered tanks present Yes ☐ (provide comment) No ☒

Written instructions/notification procedures are available/posted Yes ☒ No ☐

Amended registration form required for (check all that apply):
☐ Added tanks
☐ Closed tanks
☐ Change in tank size
☐ Change in substance stored
☐ Change of operational status (in or out of service)
☐ Change of owner

Inspection summary.
Indicate the compliance status of each item below using the following codes: N = Noncompliant C = Compliant

	Tank No. 001	Tank No. 002	Tank No. 003	Tank No.	Tank No.
Tank Construction and Corrosion Protection	C	C	C		
Piping Construction and Corrosion Protection	C	C	C		
Spill Prevention	C	C	C		
Overfill Prevention	C	C	C		
Registration Certificate Display	C	C	C		
Tank Release Detection	N	C	C		
Piping Release Detection	C	C	C		
Monthly sump checks	N	N	C		

I, the DEP Certified Inspector (IUM), have inspected the entire above referenced facility including examining manways, sumps, monitoring wells and dispensers. Based on my personal observation of the facility and documentation provided by the owner, I certify under penalty of law as provided in 18 PA C.S.A. Section 4904 (relating to unsworn falsification to authorities), that the information provided by me is true, accurate and complete to the best of my knowledge and belief.

Certified Inspector's Signature — Date: 9/12/2018

As the representative of the owner or operator, I have reviewed the completed inspection report. I certify under penalty of law as provided in 18 PA C.S.A. Section 4904 (relating to unsworn falsification to authorities), that the information provided by me is true, accurate and complete to the best of my knowledge and belief.

Signature — Title: Manager — Date: 9/12/2018

Original: Regional Office – Norristown, Wilkes Barre, Harrisburg, Williamsport, Pittsburgh, or Meadville
Copy: Owner
Copy: DEP, Division of Storage Tanks, P.O. Box 8763, Harrisburg, PA 17105-8763
Copy: Inspector

UNDERGROUND STORAGE TANK FACILITY OPERATIONS INSPECTION

Facility Name Finch Petro **Date** 9/12/2018 **Facility ID** 09 – 30778

I. TANK SYSTEM INFORMATION. For each tank, fill in the required information and codes from the following list. Where multiple codes are allowed and used for a specific tank component, describe the arrangement in the COMMENTS section. (See FOI form instructions for details.)

	Tank No. 001	Tank No. 002	Tank No. 003	Tank No. _____	Tank No. _____	*DEP Use*
1. Tank capacity (name plate gallons)	12000	12000	12000			
2. Substance currently stored	GAS	GAS	GAS			
3. Installation date (mm/yyyy)	12/1983	12/1983	12/1983			
4. This drone tank is manifolded to tank number	---	---	002			
5. Product level, in inches, at time of inspection	27.88	37.73	38.20			
6. Total secondary containment on this tank system	N	N	N			(18)
7. Tank construction and corrosion protection	E	E	E			(1)
8. Main piping construction and corrosion protection	J	J	J			(2)
9a. Number of tank top sumps ‡	1	1	1			
9b. Number of tank top sumps tested tight ‡	0	0	0			(21)
9c. Spill containment tested tight	N	N	N			(21)
10a. Number of transition sumps	0	0	0			
10b. Number of transition sumps tested tight	0	0	0			(21)
11a. Number of connected dispensers	4	4	0			
11b. Number of connected dispensers with pans	4	4	0			
11c. Number of dispenser pans tested tight	0	0	0			(22)
12a. Piping flexible joints/connectors construction at tank	I	I	I			(PFLX)
12b. Piping flexible joints/connectors construction at dispenser	I	I	I			(PFLX)
13. Pump (product dispensing) system	C	C	A			(4)
14. Spill protection	Y	Y	Y			(6)
15. Overfill type	S	S	S			(7)
16. Current registration certificate display	Y	Y	Y			(8)
17. Stage I vapor recovery	B	B	B			(19)
18. Stage II vapor recovery	B	B	B			(20)
Evaluate the tank system release detection methods carefully before filling in the following rows.						
19. Tank release detection	E	E	E			(12)
20. Piping small release detection (0.2 gph monthly or 0.1 gph annually)	B	B	I			(5)
21. Pressure (line 13 is C or D) piping line leak detector (LLD function)	A	A	H			(5)
22. LLD function includes a positive turbine pump shutoff	Y	Y	N			(23)

‡ at tank penetrations that have pipe that routinely contains or conveys product.

Site drawing / manifold schematic (not master-drone system):

See Attachment

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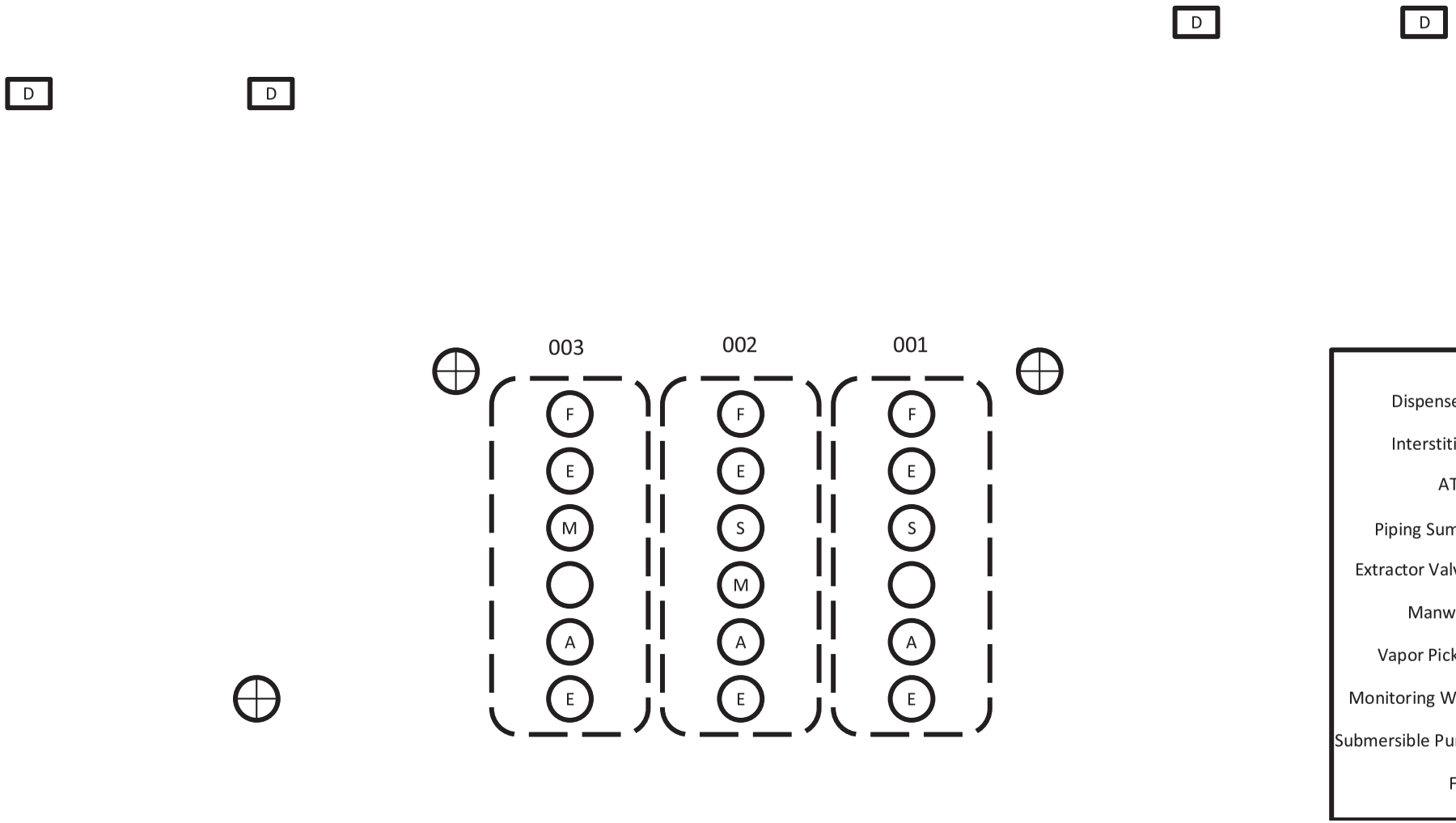
Copy: Owner
Copy: DEP, Division of Storage Tanks, P.O. Box 8763, Harrisburg, PA 17105-8763
Copy: Inspector

Finch Petro – Sunoco 610 York Road Warminster, PA 18974



Tank System Component Codes

6. Total secondary containment
- Y Yes
- N No

7. Tank construction
- A Single-wall steel, unprotected
- B Single-wall, galvanic anodes
- C Impressed current protection
- D Double-wall steel, unprotected
- E Single-wall fiberglass (FRP)
- F Double-wall fiberglass (FRP)
- G Steel with plastic or fiberglass jacket (includes double-wall Act 100)
- H Steel with FRP coating (Act 100 or equivalent)
- I Steel with lined interior
- J Concrete
- N Unknown
- O Double-wall, steel primary, galvanic anodes
- P Cathodically protected and lined
- 99 Other (must provide written comment)

8. Main piping construction
- A Bare steel (including only wrapped or coated)
- B Cathodically protected, metallic
- C Copper, unprotected
- D Fiberglass or rigid non-metallic
- E Single-wall, flexible non-metallic
- F Unknown
- G No dispensing piping (most used oil tanks)
- I Double-wall, metallic primary
- J Double-wall rigid (FRP) primary
- K Double-wall flexible primary
- 99 Other (must provide written comment)

9c. Spill containment tested tight
- Y Yes
- N No

12. Piping flexible joints/connectors
- A Unprotected metallic component(s) (including only wrapped or coated)
- B Cathodically protected, metallic
- C Flexible coupling with protected metallic ends
- F Unknown
- I Completely inside a containment sump, secondary pipe or liner
- M Completely jacketed with sealed boot
- N NO jacket, not in contact with the ground
- X None
- 99 Other (must provide written comment)

13. Pump (delivery) system
- A Suction, check valve at pump or siphon bar only
- B Suction, check valve at tank
- C Pressure
- D Gravity flow to dispenser/pump
- E None

14. Spill protection
- Y Spill containment
- E Filled in less than 25 gallon increments
- N None present or needs repair

15. Overfill type (if code S or B, ensure compatible with delivery method)
- S Drop tube shut off device
- A Overfill alarm (provide description and location in comment section)
- B Ball float valve
- E Filled in less than 25 gallon increments
- N None present or not usable

16. Current registration certificate display
- Y Properly displayed
- N Not displayed

17. Stage I vapor recovery
- A Coaxial
- B 2 port
- N Not complete or none

18. Stage II vapor recovery
- A Complete balance system
- B Complete assist system
- C UG piping only; not complete
- N None of the above

19. Tank release detection
- C Manual Tank Gauging (36 Hour) and Tank Tightness Testing (TTT) every 5 years
- D Statistical Inventory Reconciliation (SIR)
- E Certified Automatic Tank Gauge (0.2 gph Leak Test)
- F Manual Tank Gauging (36 Hour), no TTT
- G44 Manual Tank Gauging, 44 Hours
- G58 Manual Tank Gauging, 58 Hours
- H Interstitial Monitoring (2 Walls)
- J Groundwater Monitoring
- K Vapor Monitoring
- N None
- O Exempt (must provide written comment)

20. Piping small release detection (0.2/0.1 gph)
- B Annual Line Tightness Test (pressure)
- C Line Tightness Test - 3 years (suction)
- D Interstitial Monitoring (monthly – includes visual checking)
- E Groundwater Monitoring
- F Vapor Monitoring
- H None
- I Exempt (must provide written comment)
- J Statistical Inventory Reconciliation (SIR)
- K Electronic Line Leak Detector (0.1 or 0.2 gph test)

21. Piping line leak detection (3 gph within 1 hr.)
- A Mechanical Line Leak Detector (incl. test)
- H None
- K Electronic Line Leak Detector (3 gph test)
- L Continuous Interstitial Monitoring with alarm or pump shut off

22. Positive Turbine pump shutoff
- Y Yes – present and tested
- P Present
- N Not present

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Copy: Inspector

UNDERGROUND STORAGE TANK FACILITY
OPERATIONS INSPECTION

Facility Name Finch Petro **Date** 9/12/2018 **Facility ID** 09 – 30778

II. Release Detection Reference

- Records may be located at the facility or a readily available alternate site.
- The records include all of the information listed below for chosen release detection methods.
- The inspector has actually seen the records.
- A test with an inconclusive result or failure is an indication of a (suspected) product release.

Tank System	*Tank System*	*Tank System*	*Tank System*	*Tank System*
001	002	003		

Instructions: ***Check the box to indicate that a criterion has been met.***
Circle the box to indicate that a criterion has not been met.
Circle with "N/A" when a criterion is not applicable (provide comment).

Automatic Tank Gauging: (Tank only – code E)

ATG manufacturer: Veeder Root ATG model: TLS 350

Does the automatic tank gauge perform continuous in-tank release detection? ☒ Yes, ☐ No

☐	☒	☒	☐	☐
☒	☒	☒	☐	☐
☒	☒	☒	N/A	
☒	☒	☒	☐	☐
☒	☒	☒	☐	☐

valid monthly leak test conducted and documented
manufacturer's certification of ability to detect 0.2 gph release is available
probes and gauge software certified for manifolded tank systems
- when not specifically certified, the siphon must be broken to properly test

maintenance records, for the last year, including calibration, preventative and repair
equipment is operational

Manual Tank Gauging: (Tank only – code C, F, G44 or G58)

☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	N/A		
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐

tank capacity is 2,000 gallons or less
tank installed before 11/10/2007
performed weekly
1/8th inch accuracy stick readings
average 2 stick readings before and after test
test length appropriate for each tank
- 36 hours minimum
- 44 hours, 551-1000 gallons, 64" diameter
- 58 hours, 551-1000 gallons, 48" diameter

variation is within standard (both weekly and monthly)

Precision Tightness Test (TTT): (Tank only – code C)

method used (after 10/11/1994): EZY 3 Locator Plus

date of last test: 9/12/2018, result: Failed

☒	☐	☐	☐	☐
☒	☐	☐	☐	☐
☒	☐	N/A		
	☐	☐	☐	☐
	☐	☐	☐	☐

complete documentation of tightness test available
performed by UTT certified installer (after 9/28/1996)
manufacturer's certification of ability to detect 0.1 gph release is available

Interstitial Monitoring: (Tank code H; describe monitoring equipment in comments)

☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	N/A		
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐

interstitial area monitored monthly (required for tanks installed after 11/20/2007)
interstitial sensors properly placed (per manufacturer's instructions)
monitoring wells (secondary barrier) or ports are clearly marked and secured
maintenance records, for the last year, including preventative and repair
equipment manufacturer's performance claims are available
secondary barrier is compatible with and impermeable to the stored substance

Statistical Inventory Reconciliation: (Tank code D and/or Piping code J)

test vendor: version:

☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	N/A		
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐

manufacturer's certification of ability to detect 0.2 gph release is available
data is collected according to the test vendor's instructions
analysis completed monthly and valid results supplied to owner/operator within 20 days
- valid reports include calculated leak rate, minimum detectible leak rate, leak threshold, probability of detection and probability of false alarm

suspected releases properly investigated within 7 days of inconclusive or failed report to confirm or deny the occurrence of a release

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UNDERGROUND STORAGE TANK FACILITY
OPERATIONS INSPECTION

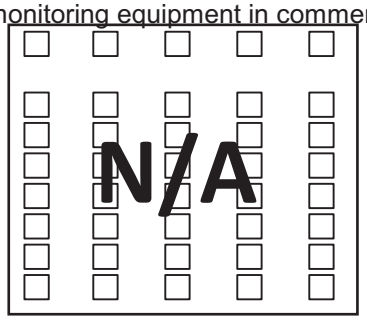
Facility Name Finch Petro **Date** 9/12/2018 **Facility ID** 9 – 30778

II. RELEASE DETECTION REFERENCE (continued)

Tank System	*Tank System*	*Tank System*	*Tank System*	*Tank System*
001	002	003	___	___

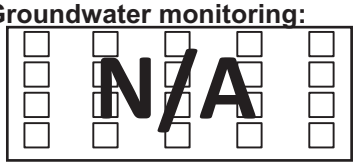
Instructions: ***Check the box to indicate that a criterion has been met.***
Circle the box to indicate that a criterion has not been met.
Circle with "N/A" when a criterion is not applicable (provide comment).

Groundwater or Vapor Monitoring: (Tank code J or K and/or Piping code E or F; describe well locations and monitoring equipment in comments**)**



wells are located according to site evaluation; attach page with evaluator authentication to the inspection report
wells are properly installed in accordance with site evaluation and regulations
wells are monitored and results recorded monthly in accordance with site evaluation
monitoring wells are marked and secured
fill material is sufficiently porous to allow expeditious detection at the monitoring wells
substance stored meets regulatory requirements for type of monitoring
equipment manufacturer's performance claims are available
equipment maintenance records, for the last year, including calibration, preventative and repair

Groundwater monitoring:

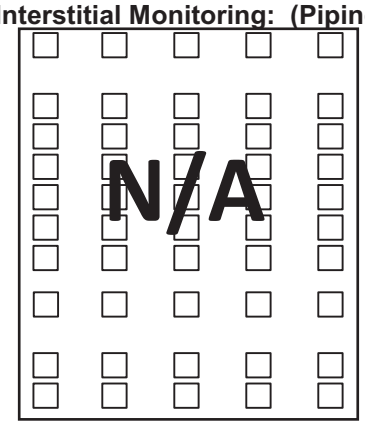


monitoring devices can detect 1/8 inch of product or less on water
groundwater is within 20 feet of surface grade
wells are sealed from ground surface to the top of the filter pack
casing is properly slotted: allows entry of product during all groundwater conditions

Vapor Monitoring:

the monitoring device is not rendered inoperative by moisture
background contamination will not interfere with vapor monitoring
vapor monitors will detect increases in concentrations of stored substance

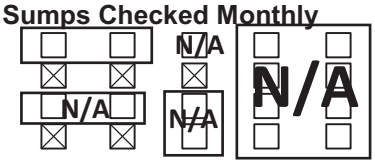
Interstitial Monitoring: (Piping code D and/or L; describe monitoring equipment in comments**)**



interstitial area monitored monthly (required for all totally-contained pressurized piping systems)
secondary enters sump and allows a release to be detected
interstitial sensors properly placed (per manufacturer's instructions)
monitoring wells or ports (when used) are clearly marked and secured
maintenance records, for the last year, including preventative and repair
equipment manufacturer's performance claims are available
secondary barrier (pipe) is compatible with and impermeable to the stored substance

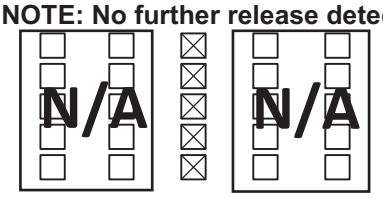
(Code L only) continuous monitoring used as line leak detector (gravity or pressurized piping) – capable of detecting 3.0 gph release within 1 hour
(Code L only) system tested for operability within the last year
(Code L only) monthly "sensor status" (or equivalent) records available

Sumps Checked Monthly



monthly sump checks for the last 12 months documented
tank top sumps dry and clean
transition sumps dry and clean
dispenser pans/sumps dry and clean

Exempt Suction System: (SUCTION piping only – code I)
NOTE: No further release detection required on piping meeting all these criteria.



the tank top is lower than the suction pump inlet
the below grade piping slopes uniformly back to the tank
there is no more than one check valve in the piping
the check valve is located close to or inside the suction pump
compliance with above specifications can be readily determined; describe in comments

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UNDERGROUND STORAGE TANK FACILITY
OPERATIONS INSPECTION

Facility Name Finch Petro **Date** 9/12/2018 **Facility ID** 09 – 30778

II. RELEASE DETECTION REFERENCE (continued)

Tank System 001	*Tank System* 002	*Tank System* 003	*Tank System*	*Tank System*

Instructions: ***Check the box to indicate that a criterion has been met.***
Circle the box to indicate that a criterion has not been met.
Circle with "N/A" when a criterion is not applicable (provide comment).

Piping Tightness (Line) Testing: (Piping only – code B or C)

test vendor: EZY CHEK version: PLT
date of last test: 9/12/2018, result: Passed

☒ ☒ ☐ ☐ ☐ test certification of ability to detect 0.1 gph release at 1.5 times operating pressure is available
☒ ☒ ☐ ☐ ☐ performed by UTT certified installer (after 11/10/2008)
☒ ☒ ☐ ☐ ☐ test conducted at proper frequency
- conducted annually for **pressurized** piping without monthly monitoring
- conducted every 3 years for **suction** piping not meeting code I requirements

☐N/A☐ ☐ ☐ ☐ if test device permanently installed, maintenance records, for the last year, including calibration, preventative and repair

N/A

Mechanical Line Leak Detector: (PRESSURIZED Piping only – code A)

manufacturer: FE Petro model: STP-MLD
date last tested: 9/12/2018, result: Passed

☒ ☒ ☐ ☐ ☐ certification of ability to detect a release of 3 gph at 10 psig within 1 hour is available
☒ ☒ ☐ ☐ ☐ operational test of leak detector according to manufacturer's instructions in last 12 months
☒ ☒ ☐ ☐ ☐ maintenance records, in addition to the annual test, for last year, including calibration, preventative and repair

N/A

Electronic Line Leak Detector: (PRESSURIZED Piping only – code K)

manufacturer: model:
date of last 3gph test: result:

☐ ☐ ☐ ☐ ☐ self checking or system tested for operability within the last year
☐ ☐ ☐ ☐ ☐ certification of ability to detect a release of 3 gph at 10 psig within 1 hour is available
☐ ☐ ☐ ☐ ☐ maintenance records, in addition to annual test, for last year, including calibration, preventative and repair
☐ ☐ ☐ ☐ ☐ continuously monitors piping

Is the electronic leak detector performing the "monthly" monitoring function? ☐ Yes, ☐ No If yes:
date of last 0.2gph test: , result:

☐ ☐ ☐ ☐ ☐ third-party certification of ability to detect 0.2 gph release is available
☐ ☐ ☐ ☐ ☐ documentation of monthly test available for last year

N/A

Is the electronic leak detector performing the "annual" monitoring function? ☐ Yes, ☐ No If yes:
date of last 0.1gph test: , result:

☐ ☐ ☐ ☐ ☐ third-party certification of ability to detect 0.1 gph release is available

IUM Release Detection Record Review: (All release detection codes)

- An empty tank (less than 1" of product/sludge) or a tank supplying an emergency generator only is not required to perform release detection. Indicate date emptied or that it is an emergency generator tank in comments.
- Recently installed tank systems must begin performing release detection immediately after receiving product. Indicate date of first product receipt in comments.

☐ ☒ ☒ ☐ ☐ tank release detection records for the last 12 months the system contained product are available
☐ ☒ ☒ ☐ ☐ tank release detection records are valid and passing
☒ ☒ ☐ ☐ ☐ piping release detection records for the last 12 months the system contained product are available
☒ ☒ ☐ ☐ ☐ piping release detection records are valid and passing

N/A

N/A

Original: Regional Office – Norristown, Wilkes Barre, Harrisburg, Williamsport, Pittsburgh, or Meadville
Copy: Owner
Copy: DEP, Division of Storage Tanks, P.O. Box 8763, Harrisburg, PA 17105-8763
Copy: Inspector

UNDERGROUND STORAGE TANK FACILITY
OPERATIONS INSPECTION

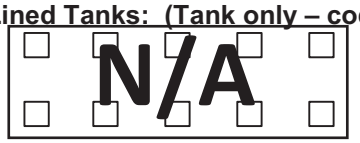
Facility Name Finch Petro **Date** 9/12/2018 **Facility ID** 09 – 30778

III. CORROSION PROTECTION COMPLIANCE CRITERIA

Tank System	*Tank System*	*Tank System*	*Tank System*	*Tank System*
001	002	003	___	___

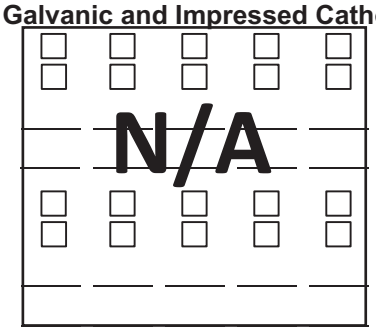
Instructions: ***Check the box to indicate that a criterion has been met.***
Circle the box to indicate that a criterion has not been met.
Circle with "N/A" when a criterion is not applicable (provide comment).

Lined Tanks: (Tank only – code I)



☐ tank inspected and lined according to national standard
date lined: _____
☐ tank initially inspected 10 years after lining and every 5 years thereafter
date(s) inspected: _____

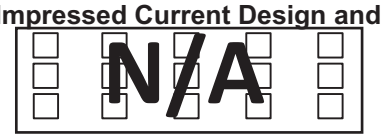
Galvanic and Impressed Cathodic Protection: (Tank code B, C, O or P and/or Piping)



☐ **tank** structure to soil potential greater than 0.85 volts, **or**
☐ meets other nationally recognized protection standard: specify: _____
potential on **tank** current monitoring (date) _____
potential on **tank** previously monitored (date) _____

☐ **pipe/flex** structure to soil potential greater than 0.85 volts, **or**
☐ meets other nationally recognized protection standard: specify: _____
potential on **pipe/flex** current monitoring (date) _____
potential on **pipe/flex** previously monitored (date) _____

Impressed Current Design and Rectifier Output: (Tank code C or P and/or Piping)



☐ system designed by a corrosion expert
☐ system is turned on and functioning within design limits
☐ documentation of last three amp (plus volt and runtime when meters available) readings, recorded at least once every 60 days:

most recent: volts: _____ amps: _____ runtime: _____ date: _____
60 days prior: volts: _____ amps: _____ runtime: _____ date: _____
120 days prior: volts: _____ amps: _____ runtime: _____ date: _____

If Cathodic Protection or supplemental anodes were added to an existing tank system, fill in the following (Information is Required for Compliance):

Date assessed: _____ Date installed: _____
Tank Shell Assessment Method: _____

IV. Operator Training

☒ list of trained operators designates a class A operator; includes their training certification
☒ list of trained operators designates a class B operator; includes their training certification
☒ list of trained operators designates class C operator(s); date of initial training or last refresher is within the previous 12 months
☒ written instructions and notification procedures are readily available for class C operators at retail facilities; are posted in a location visible to dispenser operators at other facilities

DESCRIBE INFORMAL TRAINING PROVIDED FOR OWNER, CLASS A AND/OR CLASS B OPERATORS – see instructions.

Jimal Ali is the A&B operator, training conducted by Ed Guckin on 7/28/2011. C operators are listed and emergency procedures are available.

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Copy: Inspector

UNDERGROUND STORAGE TANK FACILITY
OPERATIONS INSPECTION

Facility Name Finch Petro **Date** 9/12/2018 **Facility ID** 09 – 30778

☒ IUM checked for water in tank(s) and sump(s) – results below

V. COMMENTS INCLUDING ACTIONS TO BRING INTO COMPLIANCE (Attach additional sheets where necessary) See instructions

Water check - Tank 001 has 0.00", 002 has 0.00", 003 has 0.00" of water
Products:
Tank 001 - Ultra
Tank 002 - Regular
Tank 003 - Regular
Stick Readings:
Tank 001 – 27.75"
Tank 002 – 37.75"
Tank 003 – 38.0"

Tanks 002 and 003 have a manifold tank 002 is the master and tank 003 is the drone.

Tank 001, 002 and 003 are compliant for tank construction and corrosion protection. Tanks 001, 002 and 003 are single fiberglass tanks. The tanks were installed in December 1983.

Pipe 001, 002 and 003 are compliant for piping construction and corrosion protection. Tanks 001, and 002 are double wall fiberglass pipe. The metallic fittings for tanks 001 and 002 are inside tank top sumps and inside dispenser pans all with sensors. The main piping run for tank 003 (manifold) is double wall fiberglass pipe. The metallic fittings and copper tubing are inside a containment sump at tank 002.

Tank 00 001, 002 and 003 are compliant for spill prevention. Tanks 001, 002 and 003 have spill containments in place and in good condition.

Tank 001, 002 and 003 are compliant for overfill protection. Tanks 001, 002 and 003 have overfill drop-tubes with shutoff devices for overfill protection.

Tank 001, 002 and 003 are compliant for tank registration. A current registration is on site.

Tank 001 is non-compliant for tank release protection. They are performing .2 (CSLD) tests, the tank has not passed a CSLD since July 2nd 2018. They have had the ATG serviced twice to try and fix the problem but with no success. The tank was precision tested today 9/12/2018 but failed the tightness test. The owner contacted CROMPCO to retest the tank for confirmation of the results. A notice of contamination was filed, and a copy sent to the owner.
Tank 002 and 003 are compliant for tank release protection. They are performing .2 (CSLD) tests and have 12 months of valid leak detection records on site, tanks 002 and 003 are being tested as a manifolded pair.

Pipe 001, 002 and 003 are compliant for piping release detection. Pipe 001 and 002 are performing annual line and leak detector tests. The product lines and MLLDs were tested today 9/12/2018 both with passing results. Pipe 003 is a safe style manifold and exempt from current piping release detection requirements. The positive shutdown was also tested today 9/12/2018 with passing results. The operator will also begin printing out liquid status reports for all containment sumps.

Tank 001 and 002 are non-compliant for monthly sump checks. Tank 001 and 002 are double wall piping, the operator was unaware that he had to print liquid status reports or visually inspect the sumps and record it in a log book. The operator will begin printing out liquid status reports.
Tank 003 is compliant for monthly sump checks. Tank 003 is a safe style manifold and exempt from current monthly sump check regulations. All tank top sumps and dispenser pans are clean and dry.

Original: Regional Office – Norristown, Wilkes Barre, Harrisburg, Williamsport, Pittsburgh, or Meadville
Copy: Owner
Copy: DEP, Division of Storage Tanks, P.O. Box 8763, Harrisburg, PA 17105-8763
Copy: Inspector

Notice of Reportable Release

RT - July 24, 2019

RT Environmental Services, Inc.

July 24, 2019

Mr. Richard Staron, PG
Pennsylvania Department of Environmental Protection
Southeast Regional Office
2 E. Main St.
Norristown, PA 19401

RE: NOTIFICATION OF RELEASE
WARMINSTER SUNOCO
610 YORK RD.
WARMINSTER TOWNSHIP, BUCKS COUNTY, PA 1897
FACILITY ID NUMBER 09-30778
RT PROJECT # 73057-01

Dear Mr. Staron:

RT Environmental Services, Inc. (RT) is enclosing the Notification of Release Form signed by both the operator and certified installer for a release from a regulated unleaded gasoline underground storage tank, Tank 003 – ultra unleaded gasoline UST. The confirmed release was identified on July 16, 2019 during the removal of this regulated UST, at which time, the certified installer called the Department to make the appropriate notification.

Please contact me with any questions or concerns.

Respectfully Submitted,

RT ENVIRONMENTAL SERVICES, INC.

Craig Herr, PG

Enclosure

cc: Mr. Ali – Finch Petroleum
Mr. Spause – ECI, LLC
Warminster Township

Y:\RT Projects\73000 SERIES\73057-01\NOTIFICATION_OF_RELEASE_-_cov ltr.doc

215 West Church Road ■ King of Prussia, PA 19406 ■ (610) 265-1510 ■ Fax: (610) 265-0687
E-Mail RTENV@AOL.COM ■ Web Address http://www.RTENV.COM

NOTIFICATION OF RELEASE *(Owners and Operators)*

FACILITY I.D. NUMBER 09 - 30778

☒ Initial
☐ Follow-Up

NOTIFICATION OF CONTAMINATION *(Certified Installers and Inspectors)*

INFORMATION FOR OWNERS AND OPERATORS (O/O)

The Storage Tank Program's Corrective Action Process (CAP) regulations establish requirements for owners and operators of storage tank systems and storage tank facilities to report confirmed releases and, in certain cases, suspected releases.

Suspected Release Reporting: Upon the completion of a suspected release investigation from which it could not be determined whether a release has occurred, the owner or operator must, within 15 days of the indication of the suspected release, complete and submit this form to the appropriate regional office of the Department (Subsection 245.304(c)(2)).

Confirmed Release Reporting: The owner or operator must notify the appropriate regional office of the Department by telephone as soon as practicable, but no later than 24 hours, after the confirmation of a release (Subsections 245.305(a) and (b)). Within 15 days of that telephone notification, the owner or operator must complete and submit this form to the appropriate regional office of the Department, to each municipality in which the release occurred, and to each municipality where that release has impacted environmental media or water supplies, buildings, or sewer or other utility lines (Subsections 245.305(c) and (e)). And if new impacts to environmental media or water supplies, buildings, or sewer or other utility lines are discovered after that initial written notification, the owner or operator must, within 15 days of the discovery of the new impact, complete and submit this form to the Department and to each impacted municipality (Subsections 245.305(d) and (e)).

INFORMATION FOR CERTIFIED INSTALLERS AND INSPECTORS (I/I)

In accordance with the Storage Tank Program's certification regulations, certified installers and inspectors must complete and submit this form to the Department within 48 hours of observing any of the following while performing services as a certified installer or inspector: a release of a regulated substance; suspected or confirmed contamination of soil, surface or groundwater from regulated substances; or a regulated substance in a containment structure or facility (Subsections 245.132(a)(4) and 245.132(a)(6)).

INSTRUCTIONS

Record the storage tank facility I.D. number at the top right-hand corner of each page of this form.

Owners and Operators (O/O): Indicate if this is an initial or follow-up notification by marking the appropriate box found in the top right-hand corner of this page.

- To report a Suspected Release, complete all information in Sections I, II, IIIA, IIIC, VI, VIII and IX.
- To report a Confirmed Release, complete all information in Sections I, II, IIIA, IIIB, IIIC, IV, V, VIII and IX.

Certified Installers and Inspectors (I/I): Complete all information in Sections I, II, IIIA, IIIC, VI or VII, VIII, and IX. Attach a copy of the failed, valid tightness test results, if applicable.

PLEASE SEND COMPLETED ORIGINAL FORM TO:

PA Department of Environmental Protection
Environmental Cleanup and Brownfields Program
Storage Tank Section
(and the appropriate address below, depending on where the FACILITY is located)

Northwest Region	North-central Region	Northeast Region
230 Chestnut Street Meadville, PA 16335-3481 PHONE: 814-332-6945 / 800-373-3398 FAX: 814-332-6121	208 W. Third Street, Suite 101 Williamsport, PA 17701 PHONE: 570-327-3636 FAX: 570-327-3420	2 Public Square Wilkes-Barre, PA 18701-1915 PHONE: 570-826-2511 FAX: 570-820-4907
Counties: Armstrong, Butler, Clarion, Crawford, Elk, Erie, Forest, Indiana, Jefferson, Lawrence, McKean, Mercer, Venango, Warren	**Counties:** Bradford, Cameron, Centre, Clearfield, Clinton, Columbia, Lycoming, Montour, Northumberland, Potter, Snyder, Sullivan, Tioga, Union	**Counties:** Carbon, Lackawanna, Lehigh, Luzerne, Monroe, Northampton, Pike, Schuylkill, Susquehanna, Wayne, Wyoming
Southwest Region	**South-central Region**	**Southeast Region**
400 Waterfront Drive Pittsburgh, PA 15222 PHONE: 412-442-4000 FAX: 412-442-4194	909 Elmerton Avenue Harrisburg, PA 17110 PHONE: 717-705-4705 / 800-541-2050 FAX: 717-705-4830	2 East Main Street Norristown, PA 19401 PHONE: 484-250-5900 FAX: 484-250-5961
Counties: Allegheny, Beaver, Cambria, Fayette, Greene, Somerset, Washington, Westmoreland	**Counties:** Adams, Bedford, Berks, Blair, Cumberland, Dauphin, Franklin, Fulton, Huntingdon, Juniata, Lancaster, Lebanon, Mifflin, Perry, York	**Counties:** Bucks, Chester, Delaware, Montgomery, Philadelphia

I. FACILITY INFORMATION (Both O/O and I/I)

Facility Name: Finch Petroleum
Facility I.D. Number: 09-30778
Street Address (P.O. Box not acceptable): 610 York Road
City: Warminister
State: PA
Zip Code: 18974 -
County: Bucks County
Municipality: Warminister Township
Contact Person: Ijmal Ali
Telephone Number: (484) 678 - 5693

II. OWNER/OPERATOR INFORMATION (Both O/O and I/I)

Owner Name: Ijmal Ali
Address: 610 York Road
City: Warminister
State: PA
Zip Code: 18974 -
Telephone Number: (484) 678 - 5693
Operator Name: Finch Petroleum
Telephone Number: (484) 678 - 5693

III. REGULATED SUBSTANCE INFORMATION

A. Type of Product(s) Involved (Mark All That Apply ☒): Both O/O and I/I		B. Quantity (Gallons) of Product(s) Released: O/O Only	C. Contamination Suspected [S] or Confirmed [C] (Mark All That Apply ☒): Both O/O and I/I	
Leaded Gasoline	☐		☐ [S]	☐ [C]
Unleaded Gasoline	☒	unknown	☐ [S]	☒ [C]
Aviation Gasoline	☐		☐ [S]	☐ [C]
Kerosene	☐		☐ [S]	☐ [C]
Jet Fuel	☐		☐ [S]	☐ [C]
Diesel Fuel	☐		☐ [S]	☐ [C]
New Motor Oil	☐		☐ [S]	☐ [C]
Used Motor Oil	☐		☐ [S]	☐ [C]
Fuel Oil No. 1	☐		☐ [S]	☐ [C]
Fuel Oil No. 2	☐		☐ [S]	☐ [C]
Fuel Oil No. 4	☐		☐ [S]	☐ [C]
Fuel Oil No. 5	☐		☐ [S]	☐ [C]
Fuel Oil No. 6	☐		☐ [S]	☐ [C]
Other (Specify) _____	☐		☐ [S]	☐ [C]
Unknown	☐		☐ [S]	☐ [C]

IV. CONFIRMED RELEASE INFORMATION (O/O Only)

Date Release was Confirmed: 7 (m) / 16 (d) / 2019 (y)

Date Owner/Operator Verbally Notified Appropriate Regional Office of Confirmed Release and Office Notified:
Date: 7 (m) / 16 (d) / 2019 (y) Office Southeast

Date Owner/Operator Sent Copy of this Written Notification to Local Municipality(ies) and Name of Municipality(ies) Notified:
Date: 7 (m) / 24 (d) / 2019 (y) Municipality Warminister
Date: ____ (m) / ____ (d) / ____ (y) Municipality _____

Source (Mark All That Apply ☒):		How Discovered (Mark All That Apply ☒):		Environmental Media Affected and Impacts (Mark All That Apply ☒):	
Tank (DEP Assigned Nos. 003)	☒	During Closure	☐	Soil	☒
Piping System (Aboveground Regulated)	☐	Lining Installation	☐	Sediment	☐
Piping System (Underground Regulated)	☐	Routine Leak Detection	☐	Surface Water	☐
Piping System (Non-Regulated)	☐	Third Party Inspection	☐	Ground Water	☒
Dispenser/Dispensing Equipment	☐	Tightness Testing Activities	☒	Bedrock	☐
Spill Prevention Equipment	☐	Visible Product or Odor Reports	☐	Water Supplies	☐
Submersible Turbine Pump Head/Fittings	☐	Water in Tank	☐	Vapors/Product in Buildings	☐
Containment/Sump Failure	☐	Construction	☐	Vapors/Product in Sewer/Utility Lines	☐
Other (Specify) _____	☐	Upgrade/Repair	☐	Ecological Receptors	☐
Unknown	☐	Supply Well Sample Results	☐		
Cause (Mark All That Apply ☒):		Monitoring Well Sample Results	☐		
Faulty Installation	☐	Property Transfer	☐		
Corrosion	☐	Other (Specify) _____	☐		
Physical/Mechanical Failure	☐	Unknown	☐		
Spill During Delivery	☐				
Overfill at Delivery	☐				
Vehicle Gas Tank Overfill	☐				
Product Delivery Hose Rupture	☐				
Accident/Natural Disaster	☐				
Other (Specify) _____	☐				
Unknown	☒				

V. INTERIM REMEDIAL ACTIONS (O/O Only)

Indicate the Interim Remedial Actions Planned, Initiated or Completed (Mark All That Apply ☒):

	Planned	Initiated	Completed	Not Applicable
Regulated Substance Removed from Storage Tanks	☐	☐	☒	☐
Fire, Explosion and Safety Hazards Mitigated	☐	☐	☒	☐
Contaminated Soil Excavated	☐	☐	☒	☐
Free Product Recovered	☐	☐	☒	☐
Water Supplies Identified and Sampled	☒	☐	☐	☐
Temporary Water Supplies Provided	☐	☐	☐	☐
Other (Specify) _____	☐	☐	☐	☐

VI. SUSPECTED RELEASE / CONTAMINATION INFORMATION (Both O/O and I/I)

Date the Indication of a Suspected Release / Contamination was Observed: ___ / ___ / ___ (m / d / y)

Indication of Suspected Release / Contamination (Mark All That Apply ☒):

- ☐ Unusual Level of Vapors
- ☐ Erratic Behavior of Product Dispensing Equipment
- ☐ Release Detection Results Indicate a Release
- ☐ Discovery of Holes in the Storage Tank
- ☐ Containment Sump Test Failure
- ☐ Spill Prevention Equipment Test Failure
- ☐ Other (Specify) _____

VII. CONFIRMED CONTAMINATION INFORMATION (I/I Only)

Date the Confirmed Contamination was Observed: 7 / 16 / 19 (m / d / y)

Extent of Confirmed Contamination (Mark All That Apply ☒):

- ☒ Product Stained or Product Saturated Soil or Backfill
- ☒ Ponded Product
- ☒ Free Product or Sheen on Ponded Water
- ☒ Free Product or Sheen on the Ground Water Surface
- ☐ Free Product or Sheen on Surface Water
- ☐ Other (Specify) _____

VIII. ADDITIONAL INFORMATION (Both O/O and I/I)

Provide any additional, relevant, available information concerning the release or contamination. If reporting a confirmed release, include specific details about the source and cause of the release, the affected environmental media, and any impacts to water supplies, buildings, or sewer or other utility lines. Owners or Operators reporting a suspected release should describe what procedures were followed to investigate the indication(s) of the suspected release noted in Section VI. Provide both DEP-assigned and owner/operator-assigned tank number(s), where applicable. Use additional 8½" x 11" sheets of paper, if necessary.

Confirmed release identified during closure of Tank 003.

IX. CERTIFICATION (Both O/O and I/I)

OWNER OR OPERATOR CERTIFICATION

I, IJMAL ALI, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the owner or operator of the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Owner or Operator

July 24, 2019
Date

CERTIFIED INSTALLER CERTIFICATION

I, DAVID J Stacy, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified installer who performed tank handling activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Certified Installer

7 24 2019
Date

4598
Installer Certification Number

1655
Company Certification Number

CERTIFIED INSPECTOR CERTIFICATION

I, _____, hereby certify, under penalty of law as provided in 18 Pa.
(Print Name)

C.S.A. §4904 (relating to unsworn falsification to authorities) that I am the certified inspector who performed inspection activities at the above referenced storage tank facility and that the information provided by me in this notification is true, accurate and complete to the best of my knowledge and belief.

Signature of Certified Inspector

/ /
Date

Inspector Certification Number

Company Certification Number