APPENDIX C

2011 On-Site Work Plan

On-Site Environmental

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INTERUM REMEDIAL ACTION WORK PLAN

Jersey Fuel
AKA Lawrence Fuel LLC
AKA North Brunswick Gulf
1696 Georges Road Rt 130
North Brunswick, NJ 08902
NJDEP CASE #:
01-08-30-1546-07
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PI # 010180

Prepared for:

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1.0 INTRODUCTION

This is an Interim Remedial Action Work Plan (RAWP) for the Jersey Oil (formerly Lawrence Fuel LLC AKA North Brunswick Gulf) site located at 1696 Georges Road RT 130, in North Brunswick, New Jersey **(Figure 1)**. This interim RAWP addresses the soil contamination in the drainage ditch and behind the onsite building that can erode to the drainage ditch that was described in the Remedial Investigation Report (RIR) dated October 2019 that was submitted to the New Jersey Department of Environmental Protection (NJDEP) on November 19, 2019. The main objective of this interim plan is to prevent the erosion of impacted soil from migrating off-site to the local storm drain system and to remove some hot spots in back of the station and along the drainage ditch.

2.0 BACK GROUND

The site has been operated as a retail gasoline and automobile service station for over 50 years. During that time inadvertent releases of gasoline, hydraulic fuels and waste oils occurred and impacted the site soils and groundwater. The releases were from regulated underground storage tanks (USTs) systems, an UST that stored hydraulic oil, a former septic system and spillage to the surface near a waist oil above ground storage tank (AST).

3.0 AREAS OF CONCERN

There are fourteen (14) areas of concern (AOCs) at the Site, which are shown on **Figure 2**. A brief description of each AOC follows:

- AOC 1: Historic & current USTs locations.
- AOC 2: Former gasoline pump island
- AOC 3: Area behind station where a high level of lead was detected.
- AOC 4: Unregulated heating oil UST that is closed-in-place.
- AOC 5: Unregulated heating oil above ground storage tank (AST).
- AOC 6: Waste oil & heating oil ASTs on concrete pad.
- AOC 7: Storm drains behind station.
- AOC 8: Swale/drainage ditch that receives outfall from the storm drains.
- AOC 9: Two former floor drains in service area.
- AOC 10: Three former hydraulic lifts in service area.
- AOC 11: Former septic system.
- AOC 12: Former parts cleaning basin
- AOC 13: Groundwater media

- AOC 14: Soil media

AOC 1: AOC 1 is the area where historic and the current USTs are located. The first generation of UST reportedly consisted of three gasoline USTs and were installed in 1957 and removed in 1976 by the Gulf Oil Corporation when they sold the site to Mr. Lapp Sr. and Jathina Lapp . The second generation of USTs were reportedly installed in 1976 in the same location as the first generation USTs and consisted of four 6,000 gallon tanks used to store gasoline. Those USTs were removed in December 2001 after one of the tanks was damaged during a Phase II investigation. A closure report was reportedly submitted to the NJDEP for the 2nd generation USTs. The third generation of USTs were installed in June 2003 in the same location as the former USTs and consist of one 12,000 gallon UST used to store gasoline and two 6,000 gallon USTS (one stores gasoline and the other stores diesel). When the 3rd generation of USTs was installed new lines were installed to the existing dispensers and a diesel dispenser was installed in a separate location. The 3rd generation of USTs is currently in operation. Impacts to the soil and groundwater have been detected at this AOC and they appear to be comingled with impacts from AOC 2.

AOC 2: AOC 2 is the area where an old pump island was located. The pump island and associated piping was reportedly removed in 1998 when the 2nd generation USTs underwent modifications to comply with the USTs regulations. No documentation was available relative to the closure of the old pump island. Impacts to the soil and groundwater have been detected at this AOC and appear to be comingled with impacts from AOC 1.

AOC 3: This is an area where a high concentrations of lead was detected behind the on-site building at a depth of 3 to 4 feet below grade. The source of the lead impacts is unknown but the extent is limited.

AOC 4: This AOC is where a 550 gallon unregulated UST that was used to store heating oil for onsite consumption was reportedly closed-in-place in the late 1990s. It is located east of the onsite building. No impacts above standards to the soil or groundwater from this AOC have been detected.

AOC 5: This AOC is where a 275 gallon unregulated heating oil AST is located. Although surface staining was observed at this AOC in 2010 this AOC does not appear to be associated with a release that impacted the soil or groundwater above the standards.

AOC 6: This AOC is where one 275 gallon waste oil AST and one 275 gallon heating oil AST are located on a concrete pad located to the rear of the on-site building. Signs of staining were observed at this AOC in 2010. Impacts above the soil and groundwater standards have been detected in the vicinity of this AOC, which indicates surface spillage occurred in the vicinity of this AOC.

AOC 7: This AOC involves two storm drains located behind the on-site building. The drains are approximately 2 by 4 feet in length and approximately 2 feet deep and connected by a pipe that outfall

to a swale/drainage ditch at the southwest end of the site. The drainage ditch outfalls to the local storm drain system, which drains to Farrington Lake, located approximately 1,300 feet from the site. One of the drains is located down gradient of the waste oil AST. Impacts above the standards have been detected in the storm drains.

AOC 8: This AOC is where the swale/drainage ditch at the southwest end of the site is located. The ditch is approximately 78 feet long and 8 feet at its widest point. It is lined with rip rap and in an area where brush and deciduous trees are located. No signs of stressed vegetation have ever been reported in the swale. There is a buried storm drain pipe between the ditch and the township owned storm drain on Washington Place, which is approximately 20 feet long. Impacts above the standards have been detected in the swale/drainage ditch.

AOC 9: This AOC is where two 4-inch floor drains were located inside the building. The floor drains are currently sealed with concrete. The floor drain in the center bay area was reportedly connected to an onsite septic system until approximately 1973 when the floor drain was connected to the local sanitary system. The floor drain in the western most bay has always been connected to the local sanitary system. The floor drains do not appear to be a source of subsurface contamination.

AOC 10: This AOC is where three hydraulic lifts were located. Two were reportedly center post lifts and one was a dual post lift. The center post lifts which held the oil were reportedly removed and only the sleeves and safety rods were left in the ground. The dual post lift along with the UST that held the oil was reportedly removed approximately during May 2001 with no apparent discharge reported. Impacts above the standards have been detected where the former dual post lift was located (western most service bay), which indicates a release occurred at that location.

AOC 11: This AOC is where the former septic system is located. The septic tank was reportedly removed when the site was connected to the municipal sanitary system in 1973 but the location of the former tank is unknown. During subsurface investigation the location of a stoned filled pit with a sewage odor was discovered, which is believed to be the former septic system. Impacts to the soil and groundwater in the vicinity of the stone filled pit indicate a release to the environment occurred from the former septic system.

AOC 12: This AOC was where a former Safety Kleen parts cleaning basin was located inside the building. No cracks were detected in the concrete floor at that area and a release to the environment does not appear to have occurred at that location.

AOC 13: This AOC is related to an environmental media (groundwater). Investigation have indicated that the groundwater has been impacted with volatile organic and semi volatile organic compounds above the Class IIA groundwater quality standards from releases from AOC 1, AOC 2, AOC 6, and AOC 11.

AOC 14: This AOC is related to an environmental media (soil). Investigations have indicated that the soil has been impacted with volatile organics, semi volatile organics and metals.

4.0 SUMMARY of FINDINGS in the REMEDIAL INVESTIGATION REPORT

The following comments highlights the results of the remedial investigations conducted at the North Brunswick Gulf site located at 1696 Georges Road RT 130 in North Brunswick, NJ that only deals with impacts to the soil to the rear of the onsite building and the drainage ditch located at the southwest end of the site.

- Release of petroleum products to the surface occurred near the above ground waste oil tank and migrated to the drainage ditch located at the southwest corner of the site
- A release of gasoline also occurred possibly from the former septic system located at the rear of the onsite building.
- Surface run off in back of the station flows to two onsite storm drains that discharge to a drainage ditch at the southwest end on the site that discharges to the local storm drain system that ultimately outfalls to Farrington Lake located approximately 1,300 feet to the south.
- An ecological evaluation indicated no further ecological investigation was warranted but that the soil in the drainage ditch should be maintained.
- The compounds above the standards include VOCs, PAHs, metals and EPH.
- The soil in back of the station should be capped to eliminate the direct contact exposure pathway and mitigate further erosion of surface soils to the drainage ditch. See **Table 1** for the compounds above the standards in soil located in back of the onsite building.
- The drainage ditch has concentrations of benzo(a)pryene above the Residential Direct Contact Standard (RDCSRS), the Non-Residential Direct Contact Standards (NRDCSRS), the background Impact to Groundwater Soil Screening Levels (IGWSSL) , and the Ecological Soil Screening Levels (ESSL), benzo(a)anthracene and mercury above the background IGWSSL, Extractable Petroleum Hydrocarbons (EPH) above the ESSL and several metals above the ESSL (See **Table 1** for specific compounds above the standards in the drainage ditch).

- There are concentrations of benzene, ethylbenzene, xylenes, naphthalene and several metals (cadmium, mercury, nickel & zinc) above the standards in the grassy area along the north side of the drainage ditch that are above the standards. See T**able 1** for specific compounds that exceed a standard in the grassy area.
- The average depth to water in back of the station is 4.39 feet below grade based on groundwater levels secured from monitoring wells.
- The average depth to water in the grassy area to the north west of the drainage ditch is 2.5 feet below grade based on groundwater levels secured from monitoring wells.

5.0 SOIL SAMPLES - MAY 21, 2020

Initial remedial plans involved capping the soil in the back of the station including the propane tank area and the grassy area to the north of the swale. However, after the RIR was submitted it was determined that the zoning board restricted the amount of land that a commercial property like the North Brunswick Gulf site could have as impervious (80%). **Figure 3** shows the impervious areas at the site and the initial proposed areas to be capped. That figure indicates that if only the area in the back of the station is capped the impervious area would equal 79.9%. Therefore the areas including the propane tank area in back of the station and the grassy area to the north of the drainage ditch cannot be capped.

To evaluate alternative remedial measures for the propane tank area and the grassy area to the north of the swale additional soil samples were collected on May 21, 2020. Specifically, four boring were installed near the propane tank area (P121 to P 124) and six were installed in the grassy area north of the swale (P125 to P 130). Eight samples were collected from the four boring by the propane tank. Four of those samples were analyzed for PAHs and four were analyzed for beryllium, which were compounds that exceeded the default IGWSSL in that area. The samples were analyzed for total and SPLP analysis. Ten samples were also collected from the borings in the grassy area to the north of the swale. Eight of those samples were analyzed for VOCs+15, TBA, naphthalene and 1,2,4-TMB and two were analyzed for lead. The sample locations are shown on **Figure 2**.

5.1 USABILTY OF SAMPLES COLLECTED ON MAY 21, 2020

On-Site contracted de maximus Data Management Solutions, INC (ddms) to qualify the analytical data of the samples collected in May 2020 and fill out the NJDEP Data Quality Assessment Worksheet and the NJDEP Data Usability Evaluation Worksheet **(Appendix A)**.

Some data was not usable due to a laboratory QC issue. However, the laboratory had sufficient sample to run the analysis again. The results of the reanalysis of the samples were acceptable.

5.2 SAMPLES BY PROPANE TANK

The analytical results of the total PAHs and Beryllium analysis are summarized on **Table 2** and indicate:

- Benzo(a)anthracene and Benzo(a)pryene in samples from P 121: 0-0.5', P 122: 0-0.5' and P 123: 0-0.5' exceeded the default impact to groundwater soil screening levels. Benzo(b)fluroanthene exceeded the default impact to groundwater soil screening level in P 122: 0-0.5' and P 123: 0-0.5'. Benzo(a)pryene in sample P122 also exceed the non-residential direct contact standard of 2 mg/kg and the proposed non-residential ingestion standard of 2.3 mg/kg. Dibenzo(a,h)anthracene slightly exceeds the residential direct contact standard of 0.5 mg/kg in P 122:0-0.5' (0.52 mg/kg) but not the non-residential direct contact standard of 2 mg/kg or the proposed ingestion standard of 2.3 mg/kg.
- The concentration of beryllium in P 123:1-2' (0.729 mg/kg) slightly exceeded the default IGWSL of 0.7 mg/kg but did not exceed the concentration detected in background samples (1.0 mg/kg) collected in previous samples.

The samples analyzed by the Synthetic Precipitation Leaching Procedure (SPLP) for PAHs and Beryllium are summarized on **Table 2A** and indicate:

- None of the leachate concentrations exceeded the leachate criteria.

To evaluate the SPLP results the NJDEP SPLP spreadsheet calculator was used. Printouts of the SPLP spreadsheet are attached **(Appendix B)** and indicate that:

- The remediation standard for benzo(a)anthracene in the propane tank area is 3.3 mg/kg, which is higher than the default IGWSSl of 0.8 mg/kg and equal to the highest concentration detected in the propane tank area **(Figure 4)**.
- The remediation standard for benzo(a)pryene in the propane tank area is 3.7 mg/kg, which is higher than the default IGWSSl of 0.2 mg/kg and equal to the highest concentration detected in the propane tank area **(Figure 5)**.
- The remediation standard for benzo(b)fluoranthene in the propane tank area is 4.6 mg/kg, which is higher than the default IGWSSL of 2 mg/kg and equal to the highest concentration detected in the propane tank area **(Figure 6)**.
- The remediation standard for beryllium in the propane tank area is 0.729 mg/kg, which is slightly higher than the default IGWSSl of 0.7 mg/kg but is not higher than the highest concentration detected at the propane tank area (1.3 mg/kg) **(Figure 7)**.

In summary, the concentrations of PAHs in soil at the propane area do not exceed the area specific IGW soil remediation standards developed by the SPLP method and therefore the soil at the propane tank area would not have to be remediated in that area due to the concentrations of PAH in the soil that are above the default IGW standard. However, the concentration of benzo(a)pryrene detected in P 122 (3.7 mg/kg: 0-0.5ft) is higher than the non-residential direct contact standards (2 mg/kg) and the proposed non-residential ingestion standard of 2.3 mg/kg, therefore the soil at that location should be remediated.

In addition, since the highest concentration of beryllium (0.729 mg/kg) in the samples collected in May 2020 was less than the highest concentration in previous samples (P102:1-2': 1.3 mg/kg) the SPLP analysis was not useful to develop a soil leachate concentration/remediation standard higher than the highest concentration detected in previous samples. Also analyzing the data using the 95% UCL statistical approach did not produce a result lower than the standard. Therefore the soil at the propane tank area will have to be remediated due to the concentrations of beryllium in soil at that area that exceed 0.729 mg/kg and the concentrations of benzo(a)pryene that exceed the NRDCSRS at P 122 (and exceed the ESSL at P 84 & P 123 because that soil could potentially migrate to the storm drain at the site. **Figure 7** shows the area that will need to be remediated/excavated at the propane tank area. Note that the recommended

excavation includes an area slightly larger than the extent of the propane tank area to ensure the future planned paved area will not cause the 80% impervious limit to be exceeded.

5.3 SAMPLES IN GRASSY AREA NORTH OF SWALE

The goal in this area was to collect data to limit the size of an excavation since this area could not be capped. Previous data indicated the concentrations of naphthalene in boring P 51**(Figure 10)**, benzene in P43 & P70 **(Figure 8)** exceeded the non-residential direct contact standard and several metals (cadmium, mercury, nickel and zinc - **Figures 16, 17, 18 & 19**) exceeded the ecological soil screening levels in other borings in that area. Benzene, ethylbenzene and xylenes also exceeded the default IGWSSL and the ESSL in P43 and P 70 **(Figures 11, 14 & 15)**.

The borings installed in this area in May 2020 included: P 125, P 126, P 126B, P 127; P 128, P 129 & P 130 **(Figure 2)**. The samples were analyzed for VOCs+10, TBA, naphthalene and 1,2,4-TMB. The exception was the samples from P 130 were only analyzed for lead.

The analytical results of the samples collected in the grassy are summarized on **Table 3** and indicate**:**

- Note that this table shows the current standards and proposed standards that will likely become effective in the near future.
- 1,2-Dibromo-3-chloropropane (0.24 mg/kg) in P 128 slightly exceeded the non-residential direct contact soil standard of 0.2 mg/kg. This compound was used as a soil fumigant is not a compound of concern at the site. In addition, compliance averaging using the arithmetic mean of the samples resulted in a value of 0.03 mg/kg, which is lower than the proposed inhalation standard of 0.12 mg/kg. Therefore this compound is in compliance with the proposed standards.
- Although 1,2-Dibromomethane (also known as EDB was used in leaded gasoline) was not detected the reporting limit for that compound was higher than the non-residential direct contact standard in sample P 125: 3.5-4' and P 128: 4-4.5'. However, the reporting limit was not higher than the proposed non-residential standards, which is expected to become the standard in the near future.

- Lead exceeded the default IGWSSL of 90 mg/kg in sample P 130: 1' (109 mg/kg) but it did not exceed the concentration detected in previous background samples (233 mg/kg).

To confirm remedial work in the grassy area and drainage ditch would address all impacts above a standard in those areas all the iso-con maps presented in the RIR that indicated exceedance were in those areas that were not presented above was updated with the analytical data collected from the samples collected in May 2020. Those maps are presented as **Figures 8 through 27** and show the inferred extent above the current standards and if applicable show a contour or comment based on the proposed standards. Note that **Figures 16, 18, 20, 21, 22 & 24** presented in the RIR were edited to more accurately reflect the concentrations of metal that could actually potentially migrate to the swale based on the topographic slope of the land. Based on a review of those figures the following was noted:

- The concentration of benzene above the proposed non-residential inhalation standard of 11 mg/kg is limited to the area where boring P 70 was installed (north side of ditch) - **Figure 8**.
- The concentrations of lead in P 130: 1', P 26: 3.5', P 65: 1' **(Figure 9)** do not appear to be related to background concentrations because the source is likely related to concentrations in P 93: 2.5-3', which is and has been covered with asphalt for some time and not exposed to automobile emissions. Therefore that soil needs to be remediated. The planned remedial excavation at this area is shown on **Figure 9 and 2A**.
- Naphthalene above the proposed non-residential standard of 27 mg/kg has the greatest areal extent and needs to be remediated **(Figure 10)**. The planned excavation in the grassy area is shown on **Figure 2A**.
- There are concentrations of benzene, toluene, ethylbenzene, xylenes and naphthalene above the proposed migration to groundwater standard in soil along the north side of the drainage ditch **(Figures 11, 12, 13, 14 & 15)** that need to be remediated. **Figure 2 A** shows the planned excavation in this area to address the compounds above the standards mentioned above.

- There are concentrations of cadmium, mercury, nickel and zinc in the grassy area above the ecological soil screening levels that could migrate to the drainage ditch that should be remediated **(Figure 16, 17, 18 & 19)**.
- Benzo(a)pryene, **(Figure 5),** EPH **(Figure 25)** and a number of metals (cadmium, mercury, nickel, zinc, chromium, cobalt, copper, manganese, vanadium (**Figures 16 through 24)** are above the ecological soil screening levels in the ditch and need to be remediated.

To address the impacts mentioned above the soil needs to be excavation. The recommended excavations are shown on **Figure 2A.**

6.0 PLANNED REMEDIAL MEASURES IN BACK OF STATION

Table 1 highlights the exceedance in soil samples collected in back of the station. All the iso-con maps presented in the RIR that indicated exceedance in that area that were not presented above are presented as **Figures 28 through 41**.

The main objectives in the back of the station are to:

- Prevent soil erosion to the onsite storm drains and the down gradient drainage ditch.
- Remove the soil that has EPH concentrations above the non-residential default product limit of 8,000 mg/kg **(Figure 25)**.
- Remove the soil where xylenes exceeded the soil saturation limit **(Figure 15)**.
- Perform a limited excavation where some of the highest concentrations of benzene were detected above the non-residential direct contact standard **(Figure 8)**, which is the same location where xylenes exceeded the soil saturation limit.
- Remove the soil where benzene, PAHs, lead and manganese exceeded the non-residential direct contact standards.

Figure 2A shows the excavations planned in back of the station. If soil exceeds the residential standards after the excavation is performed a deed notice and a soil permit will eventually have to be secured. An engineering control (asphalt cap) will also be required if concentrations above the non-residential soil standards remain. In addition, a ground water permit will also eventually

need to be secured if all soil above the default impact to groundwater soil screening level and or the proposed migration to groundwater standard will not be remediated. In addition, an engineering control such as an asphalt cap will be required.

To address the impact to groundwater pathway the regulations allow soil with exceedance of the default impact to groundwater screening level to be capped with an impermeable material such as asphalt, which would act as an engineering control. However, two years of consecutive quarterly groundwater samples must be collected after the cap is installed and the concentrations need to demonstrate a decreasing trend. If a decreasing trend is not demonstrated source removal or treatment will be required. Since a significant amount of soil at the site exceeds the default impact to groundwater screening level the capping approach is recommended for the site in an effort to demonstrate compliance. However, there is no guarantee this approach will achieve compliance but it is the least expensive approach.

7.0 DESCRIBTION OF THE INTERIM REMEDIAL ACTIONS - SOIL

7.1 AREA BEHIND ON-SITE BUILDING

The recommended remedial action includes excavation, capping and capturing groundwater for off-site disposal as described below and shown on **Figure 2A**:

- The soil in the propane tank area where beryllium is above the above the site specific impact to groundwater soil remediation standard developed by the SPLP approach of 0.729 mg/kg **(Figures 7 & 2A)** will be excavated to a depth of 3 feet, live loaded and disposed at an approved facility. After removing the soil it will be backfilled with clean fill to in within 1 foot of the surface and at the end of all work in the back of the station it will be covered with 1 foot of certified clean topsoil and seeded and mulched. One foot of soil will also be excavated between the propane tank excavation and the rear fence and backfilled with 1 foot of certified clean topsoil, seeded and mulched.
- To recover as much groundwater as possible in the area where xylenes exceed the soil saturation limit and high levels of benzene were detected it will be excavated to 10 feet and live loaded and disposed of at an approved facility **(Figure 15 and 2A)**. A sump will be installed in the excavation and left in place before backfilling to capture groundwater

until all work in the back of the station is nearly completed. The excavation will be backfilled and compacted with certified clean fill to within 1 foot from the previous grade.

- The area where EPH exceeded the default residual product level will be excavated to a depth of 8 feet, live loaded and disposed of at an approved facility **(Figure 25 & 2A)**. The area will be backfilled and compacted with certified clean fill to within 1 foot from original grade.
- The area where lead exceeded the non-residential direct contact standard **(Figure 28: F 24)** will be excavated to a depth of 5 feet and disposed of at an approved facility. The excavation will be backfilled and compacted with certified clean fill to within 1 foot from the previous grade.
- The remaining area in the back except where a shed on a concrete pad is located will be excavated to a depth of 1 foot, live loaded and disposed of an approved facility.
- The entire area in the back of the station except where the excavation was in the propane tank area and the area between the excavation at the propane tank area and the south fence will be backfilled with approximately 8-inches of crush and run (modified fill) and compacted to act as a sub base for an asphalt cap. The asphalt cap will include 2-inches of base coat and a 2-inch top coat. The sub base and the asphalt will be graded to drain toward the two storm drains and the drainage ditch at the west end of the site. The asphalt will also be sealed with a bituminous material.

7.2 DRAINAGE DITCH & GRASSEY AREA AT WEST END OF SITE

The recommended remedial action in this area includes excavation, capping and capturing groundwater for off-site disposal if encountered. Specifically the area where the drainage ditch is located will be excavated to a depth of 3 feet and the area adjacent to the north side of the ditch will be excavated to a depth of six (6) feet as shown on **Figure 2A**. Also a smaller area where lead exceeded the standards will be excavated to a depth of 3.5 feet **(Figure 2A)**. Soil in the remaining grassy area will be removed to a depth of 1 foot as shown on **Figure 2A**.

The excavation in the 6 foot excavation will be backfill with certified clean fill and compacted to within 1 foot of the pre excavation grade. Before backfilling the north wall of the 6 foot

excavation will be lined with a permeable woven geotextile fabric to allow water and air to pass through while preventing impacted soil to the north from entering (functioning as a soil filter).

The excavation in the drainage ditch will also be backfilled with certified clean fill and compacted to within 1 foot of the pre excavation grade and covered with a permeable woven geotextile fabric. Rip rap will be placed above the fabric in the drainage ditch as before to prevent erosion. The remaining disturbed areas will be backfilled with certified clean topsoil to original grade, seeded and mulched.

8.0 VOLUME OF CONTAMINATION TO BE REMOVED

The approximate volume of soil that will be remediated is estimated at approximately 1,700 tons. The volume of contaminated ground water is estimated at approximately 10,000 gallons based on an effective porosity of 25%. The estimated soil volume assumes hole collapse is not significant and will not result in an increase to the estimated volume.

9.0 IDENTIFICATION OF REMEDIAL STANDARDS

The remedial standards that post excavation soil and ground water samples will be compared to are listed below.

Soil Standards: Back of Station		
Compound	**Limits to be Achieved**	**Standard (mg/kg)**
EPH	Less than Residual Product Limit	Less than 8,000
Lead	Less than NRDCSRS	800
Xylenes	Less than Soil Saturation Limit	168
Beryllium	Site specific IGWSRS developed by SPLP approach	0.729
VOCs including naphthalene	NRDCSRS	Compound specific
Benzo(a)pryene in propane tank area	NRDCSRS	2
PAHs in back of station	NRDCSRS	Compound specific
Manganese	NRDCSRS	5,900 mg/kg

Soil Standards: Drainage Ditch & Grassy Area		
Compound	**Standard to be Achieved**	**Standard (mg/kg)**
Mercury	Default IGWSSL	0.1
Lead	Default IGWSSl	90
VOCs	Default IGWSSL in unsaturated soil & NRDCSRS in unsaturated and saturated soil	Compound specific
PAHs	Default IGWSSL in unsaturated soil and NRDCSRS in unsaturated and saturated soil	Compound specific

10.0 PRE REMEDIAL ACTION ACTIVITIES

Before the remedial work is performed the following activities will be performed:

- A soil and sediment control plan application will be submitted to the Freehold Conservation District. Note that a plan was already submitted and approved by the Freehold Conservation District **(Appendix C)**.
- Waste class samples will be secured per the requirements of the disposal facility.
- Propane tank will be removed by Surburban propane. Note tank has already been removed.
- Heating oil AST will be relocated by property owner.
- Telephone pole near drainage ditch in the grassy area will be removed by PS&G. Note telephone pole has already been removed by PS&G.
- Monitoring well MW 8 and MW 19 will be closed by a NJ licensed well driller.
- The LSRP will photo document the condition of the site before any field work is conducted. In addition, the LSRP will identify the area for excavation by marking the areas with orange spray paint.
- The LSRP will also require subcontractors to submit a Health & Safety Plan before work begins.

- The excavation contractor will secure ground elevation data to ensure pre excavation grade will be maintained.
- An engineering permit will be submitted to the township by the LSRP.

11.0 PLAN TO EVALUATE THE EFFECTIVNESS OF THE REMEDIAL ACTION

The LSRP will be onsite every day soil is being excavated to oversee the extent of the excavations. Although the LSRP will monitor the excavations in the back of the station with a photo-ionization detector (PID), the PID readings will not be used to guide the extent of the excavations in the back of the station, since the remedial objective is mainly to remove hot spot areas, such as the area where EPH exceeds the residual product level, xylenes exceed the soil saturation limit, where beryllium exceeds the default impact to groundwater standard and where PAHs, lead and manganese exceeds the non-residential direct contact standard.

Soil samples will however be collected to confirm those contaminants are below the limits mentioned above and collected according to the sampling plan in the Quality Assurance Project Plan **(Appendix D)**. Matrix spike and matrix spike duplicate samples will also be collected for each sample shipment to the laboratory.

Samples will be collected from each sidewall and from the bottom of each excavation. Sidewall samples shall not be more than 30 feet apart. For shallow excavation (i.e. less than 5 feet deep) only 1 sample will be collected from each sidewall. Two samples will be collected from each sidewall if the excavation is greater than 5 feet deep. One bottom sample will be collected from each excavation if the excavation is less than 900 square feet. If an excavation is greater than 900 square feet two (2) bottom samples will be collected. Sample depths are specified in the QAPP.

PID monitoring in the drainage ditch and grassy area will be used to guide the extent of the excavations, since those areas cannot be capped to demonstrate compliance.

Before any area is backfill the LSRP will monitor the sidewall of the excavation with a calibrated PID and collect up to two (2) soil samples from each 30 feet of sidewall for laboratory analysis. A floor sample will also be collected for every 900 square feet of bottom area. Matrix spike and

matrix spike duplicate samples will also be collected each day samples are collected. The number of samples collected will be in accordance with the NJDEP "Technical Guidance for Site Investigation of Soil, Remedial Investigation of Soil, and Remedial Action Verification Sampling of Soil" dated March 2015.

A total of 123 samples will be collected and analyzed for various analyses in accordance with the Sampling Plan presented in the Quality Assurance Project Plan **(Appendix D)** not including matrix spike and matrix spike duplicate samples.

To evaluate if the post excavation soil samples are compliant to the standards single point compliance will be used. If applicable the 95% UCL statistical approach or the 75/10X ad hoc rule will be used. In summary, this rule states if 75% of the samples are below the standard and no sample is above 10 times the standard the soil would be compliant to the standard.

The remedial excavation including back filling is estimated to take 18 work days to complete.

12.0 BACKFILLING & RESTORATION

The excavation will be back filled and compacted as the excavation proceeds. Backfilled material brought from offsite will be certified clean fill from a NJDEP licensed quarry. A clean fill certification from the source quarry will be secured. Approximately 8-inches of quarry process (aka modified stone) will be placed and compacted over the certified clean fill in the back of the station. The areas excavated in the back of the station (except for the area where the propane tank excavation was and the area south of the propane tank excavation) will be sealed with asphalt (2-inch of base coat and 2-inch top and sealed with a bituminous sealant).

The excavation where the propane tank was and the area south of the propane tank excavation to the southern chain link fence will be covered with 1 foot of certified clean topsoil, seeded and mulched. The topsoil will be certified to meet the NJDEP residential direct contact soil standards and the default impact to groundwater soil screening levels (IGWSSL).

The drainage ditch excavation will be backfilled with certified clean fill from a NJDEP licensed quarry, covered with a woven geotextile geofabric installed to the top of the drainage ditch (to

allow water to penetrate but not soil or sediment) and covered with rip rap to the pre excavation grade.

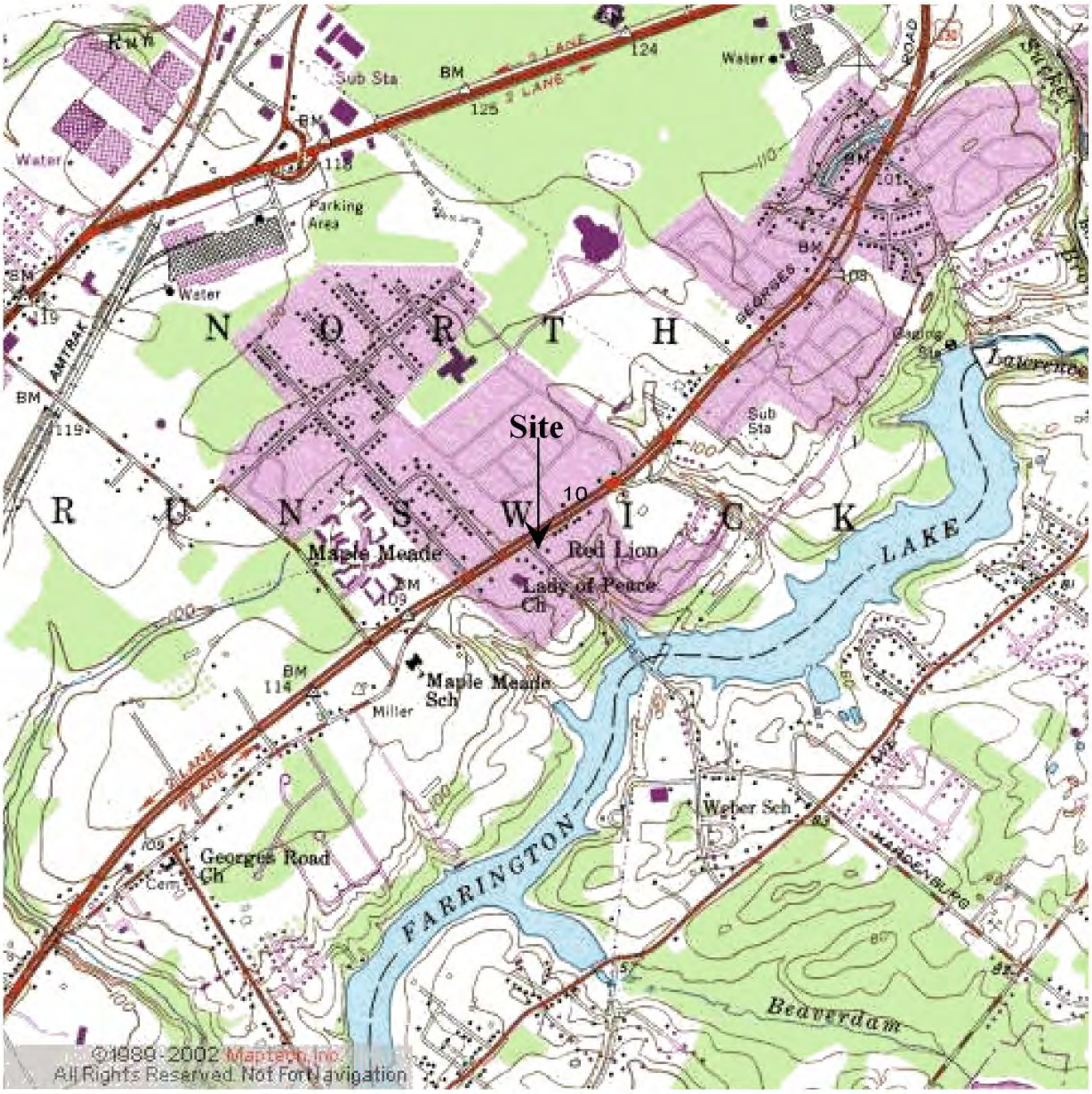
The excavation to the north of the drainage ditch also referred to the grassy area in this plan will be backfilled with certified clean fill from a NJDEP licensed quarry and covered with 1 foot of certified clean topsoil as mentioned above, seeded and mulched. Since the topsoil is not certified to meet the ecological soil screening levels the permeable geotextile fabric placed in the drainage ditch will extend to the top of the topsoil to prevent erosion of the topsoil to the drainage ditch. No other restoration is included.

13.0 GROUND WATER MONITORING WELLS

MW 8 will not be replace since there are two other wells (MW 10 & MW 12) further down gradient from MW 8 that will be used to monitor the groundwater. However, MW 19 will be replaced with a new well constructed in the vicinity of MW 19. The new well will be installed after additional remediation is conducted at the site to minimize drilling mob & demob charges since other wells will need to be abandon and reinstalled when the additional work will be preformed. The cost to install a new well near MW 19 is not included in the estimate.

14.0 REMEDIAL ACTION REPORT

The interim remedial measures will be documented in a Remedial Action Report (RAR) which will be prepared after additional remedial actions are conducted at the site.



North Brunswick Quadrangle

N

0' 2030'

(approximate scale in feet)

Contour Interval: 10 feet
Photo Revised: 1981

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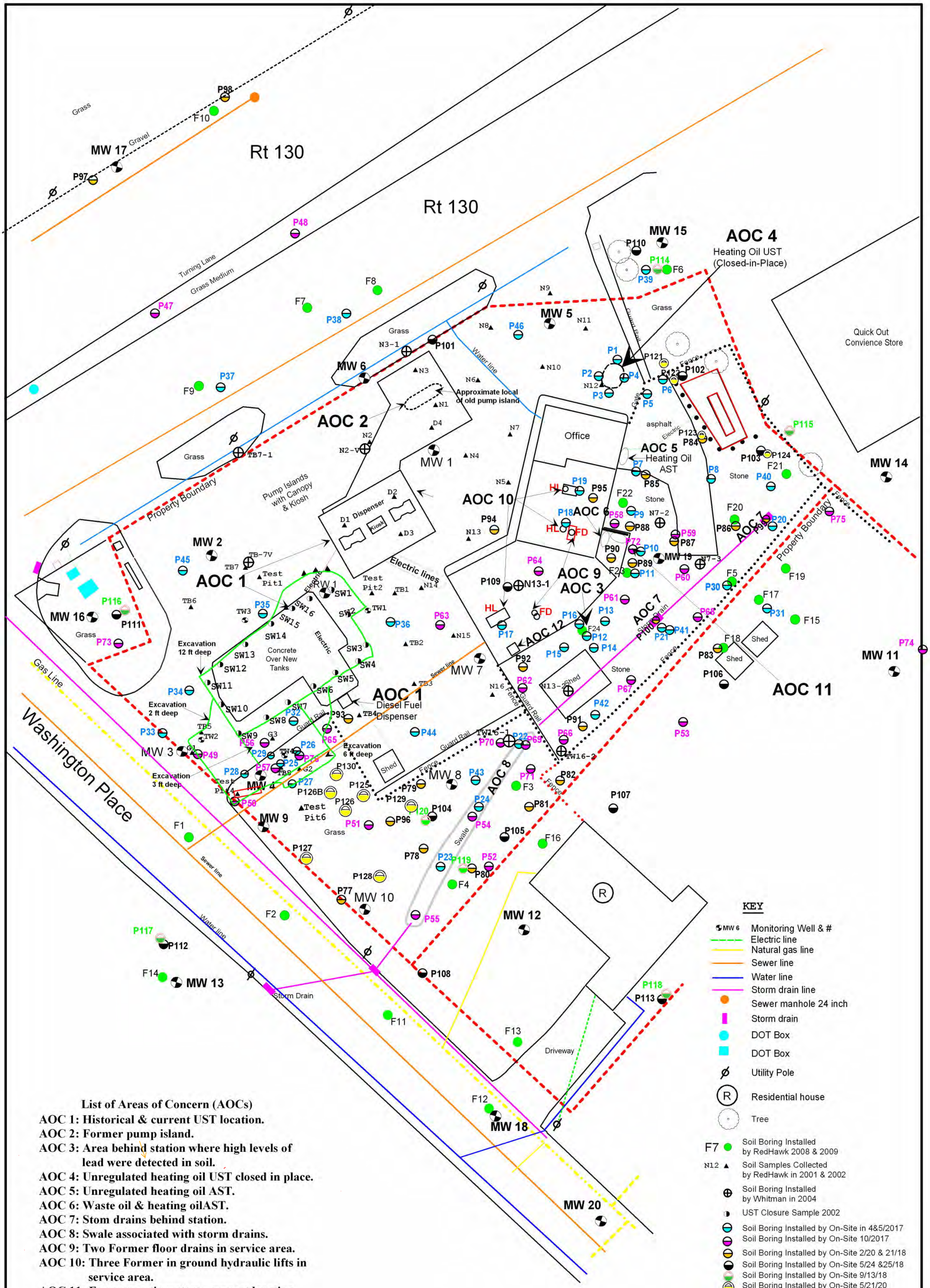
Drawing #:
File : Topo 10

Date
8/12/16

Figure 1 Site Location

North Bruswick Gulf
1696 Georges Road Rt 130
North Brunswick,New Jersey



List of Areas of Concern (AOCs)

AOC 1: Historical & current UST location.
AOC 2: Former pump island.
AOC 3: Area behind station where high levels of lead were detected in soil.
AOC 4: Unregulated heating oil UST closed in place.
AOC 5: Unregulated heating oil AST.
AOC 6: Waste oil & heating oilAST.
AOC 7: Stom drains behind station.
AOC 8: Swale associated with storm drains.
AOC 9: Two Former floor drains in service area.
AOC 10: Three Former in ground hydraulic lifts in service area.
AOC 11: Former septic system - suspect location
AOC 12: Former Parts Cleaning Basin
AOC 13: Ground water media.
AOC 14 : Soil media

KEY

- MW 6 Monitoring Well & #
- Electric line
- Natural gas line
- Sewer line
- Water line
- Storm drain line
- Sewer manhole 24 inch
- Storm drain
- DOT Box
- DOT Box
- Utility Pole
- R Residential house
- Tree
- F7 Soil Boring Installed by RedHawk 2008 & 2009
- N12 Soil Samples Collected by RedHawk in 2001 & 2002
- Soil Boring Installed by Whitman in 2004
- UST Closure Sample 2002
- Soil Boring Installed by On-Site in 4&5/2017
- Soil Boring Installed by On-Site 10/2017
- Soil Boring Installed by On-Site 2/20 & 21/18
- Soil Boring Installed by On-Site 5/24 &25/18
- Soil Boring Installed by On-Site 9/13/18
- Soil Boring Installed by On-Site 5/21/20
- Extent of Excavation in 2001/2002
- FD Floor Drain: sealed
- HL Hydraulic Lift: removed
- Pump Island with dispenser

N

0' 30'

Approximate scale in feet

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Drawing #: File : Base map

Date 1/2018

Figure 2 Base Map

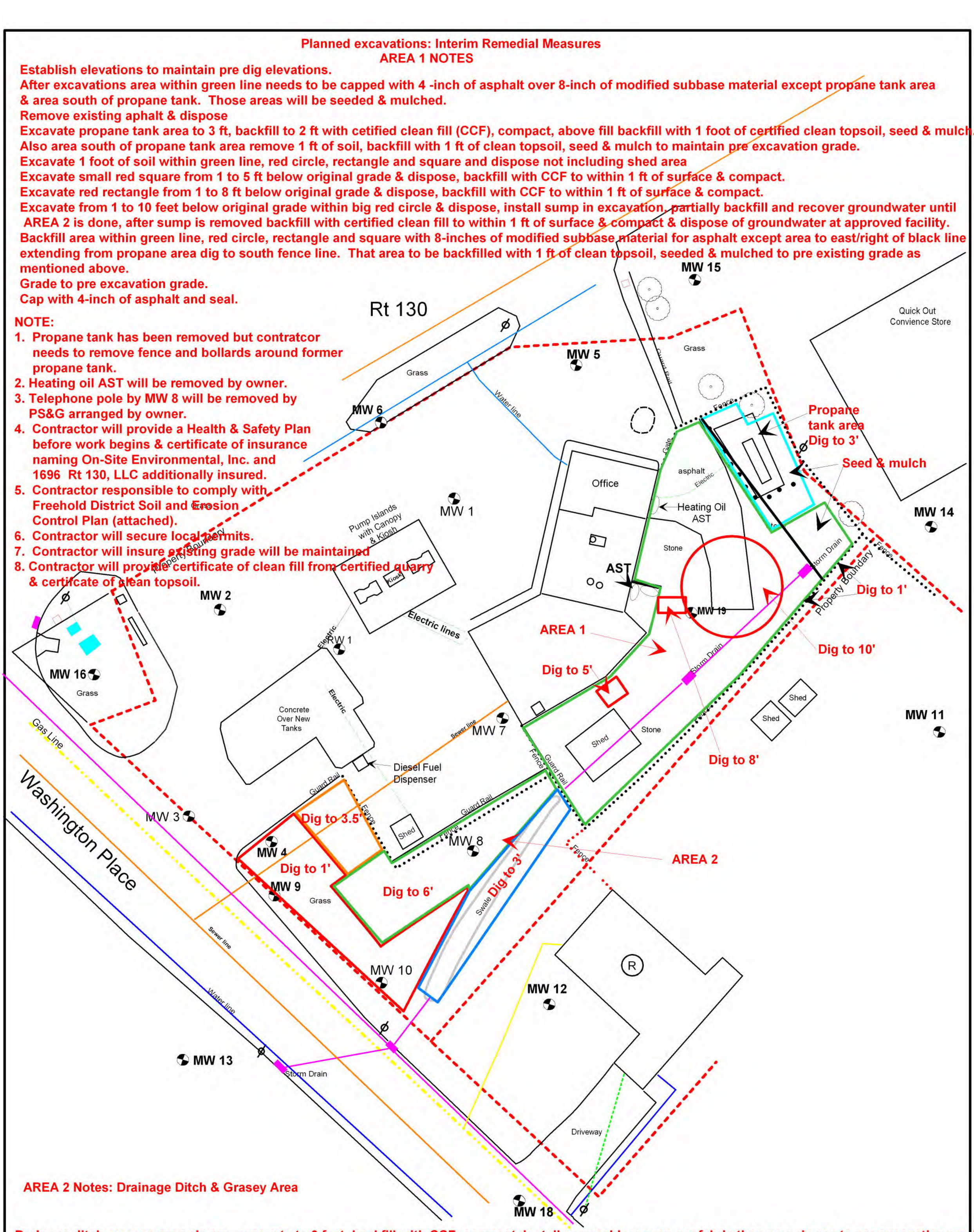
North Brunswick Gulf
1696 Georges Road RT 130
Middlesex County
North Brunswick, New Jersey 08902

Planned excavations: Interim Remedial Measures
AREA 1 NOTES

Establish elevations to maintain pre dig elevations.
After excavations area within green line needs to be capped with 4 -inch of asphalt over 8-inch of modified subbase material except propane tank area & area south of propane tank. Those areas will be seeded & mulched.
Remove existing aphalt & dispose
Excavate propane tank area to 3 ft, backfill to 2 ft with cetified clean fill (CCF), compact, above fill backfill with 1 foot of certified clean topsoil, seed & mulch.
Also area south of propane tank area remove 1 ft of soil, backfill with 1 ft of clean topsoil, seed & mulch to maintain pre excavation grade.
Excavate 1 foot of soil within green line, red circle, rectangle and square and dispose not including shed area
Excavate small red square from 1 to 5 ft below original grade & dispose, backfill with CCF to within 1 ft of surface & compact.
Excavate red rectangle from 1 to 8 ft below original grade & dispose, backfill with CCF to within 1 ft of surface & compact.
Excavate from 1 to 10 feet below original grade within big red circle & dispose, install sump in excavation, partially backfill and recover groundwater until AREA 2 is done, after sump is removed backfill with certified clean fill to within 1 ft of surface & compact & dispose of groundwater at approved facility.
Backfill area within green line, red circle, rectangle and square with 8-inches of modified subbase material for asphalt except area to east/right of black line extending from propane area dig to south fence line. That area to be backfilled with 1 ft of clean topsoil, seeded & mulched to pre existing grade as mentioned above.
Grade to pre excavation grade.
Cap with 4-inch of asphalt and seal.

NOTE:

1. Propane tank has been removed but contratcor needs to remove fence and bollards around former propane tank.
2. Heating oil AST will be removed by owner.
3. Telephone pole by MW 8 will be removed by PS&G arranged by owner.
4. Contractor will provide a Health & Safety Plan before work begins & certificate of insurance naming On-Site Environmental, Inc. and 1696 Rt 130, LLC additionally insured.
5. Contractor responsible to comply with Freehold District Soil and Erosion Control Plan (attached).
6. Contractor will secure local permits.
7. Contractor will insure existing grade will be maintained
8. Contractor will provide certificate of clean fill from certified quarry & certificate of clean topsoil.



AREA 2 Notes: Drainage Ditch & Grasey Area

Drainage ditch area: remove rip rap, excavate to 3 feet, backfill with CCF, compact, install permeable woven geofabric then new rip rap to pre excavation grade.

Area within green line: excavated to 6 ft, line north wall with permeable woven geofabric and backilled with CCF to 1 ft from surface, compact & covered with 1 ft of certified clean topsoil, seed and mulch.

Area within orange line: excavate to 3.5 ft, line east wall with permeable woven geofabric, backfill to 1 ft from surface & cover with 1 ft of certified clean topsoil, seed & mulch.

Area within red line excavate to 1 ft and backfill with certified clean topsoil, seed and mulch to prevent erosion to drainage ditch..

N

0' 30'

Approximate scale in feet

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Drawing #: File :Fig 2A for contractors

Date 10/15/20

Figure 2A Planned Scope of Work

North Brunswick Gulf
1696 Georges Road RT 130
Middlesex County
North Brunswick, New Jersey 08902

SQUARE FOOTAGE		
32493	SITE AREA	
8065	GRASS/BRUSH	PERMEABLE
2450	CONCRETE	IMPERVIOUS
15109	ASPHALT	IMPERVIOUS
3121	BUILDING	IMPERVIOUS
4198	GRAVEL	PERMEABLE
5286	5286	PROPOSED NORTH
3451	3451	PROPOSED SOUTH
32943		
PERMISSIBLE	26354	
2450	CONCRETE	IMPERVIOUS
15109	ASPHALT	IMPERVIOUS
3121	BUILDING	IMPERVIOUS
20680 63.64%		
REMAINING	**5674**	

32493

GRASS/BRUSH 8065

CONCRETE 2450

ASPHALT 15109

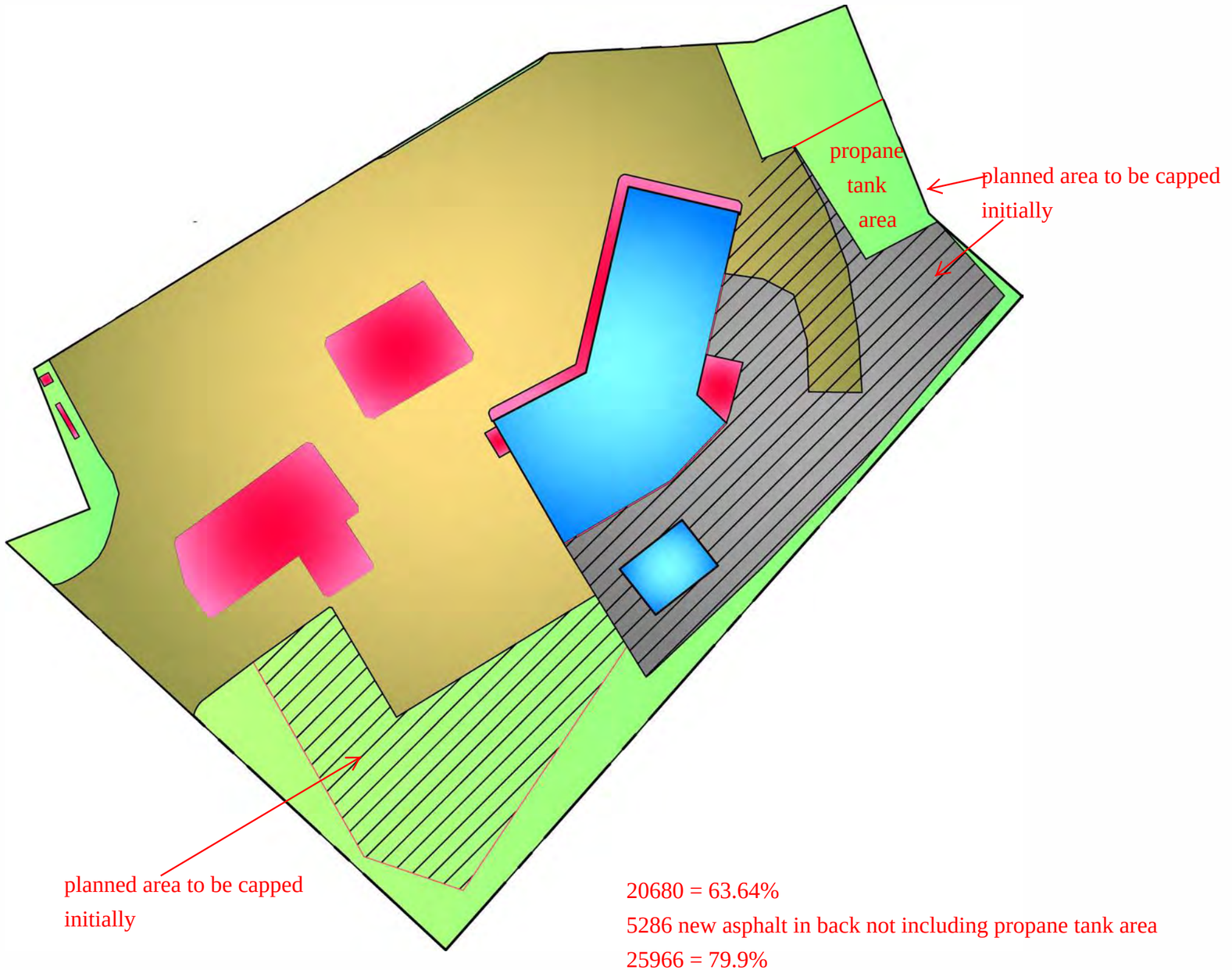
BUILDING 3121

GRAVEL 4198

PROPOSED NORTH 5286

PROPOSED SOUTH 3451

Figure 3: Initial Impervious Area



20680 = 63.64%

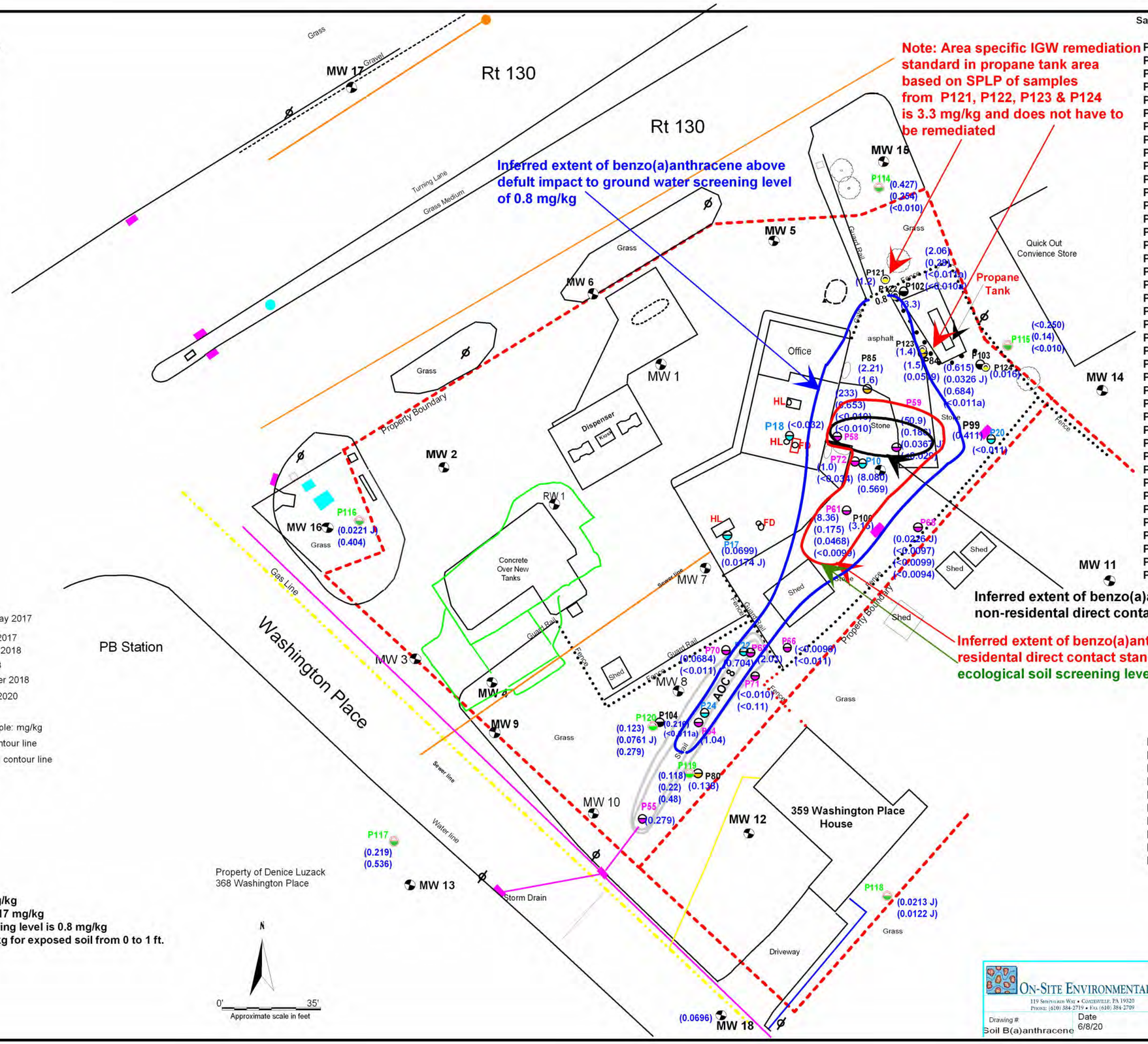
5286 new asphalt in back not including propane tank area

25966 = 79.9%

therefore can not cap propane area and grassy area

Township zoning allows 80% of property to be impervious

Sample ID	Benzo (a)anthracene (mg/kg)	Depth (ft)
P 114	0.427	0-0.5'
P 114	0.254	0.5-1'
P 114	<0.010	6-6.5'
P 115	<0.250	0-0.5'
P 115	0.14	0.5-1'
P 115	<0.010	6-6.5'
P 116	0.0221 J	0-0.5'
P 116	0.404	0.5-1'
P 117	0.219	0-0.5'
P 117	0.536	0.5-1'
P 118	0.0213 J	0-0.5'
P 118	0.0122 J	0.5-1'
P 119	0.118	0-0.5'
P 119	0.22	0.5-1'
P 119	0.48	1.5-2'
P 120	0.123	0-0.5'
P 120	0.0761 J	0.5-1'
P 120	0.279	1.5-2'
P 121	1.2	0-0.5'
P 122	3.3	0-0.5'
P 123	1.4	0-0.5'
P 124	0.016	3-4'
MW 18	0.0696	5-5.5'



Sample ID	Benzo (a)anthracene (mg/kg)	Depth (ft)
P 10	8.080	0-1'
P 10	0.569	3'
P 17	0.0699	4'
P 17	0.0174 J	9'
P 18	<0.032	4-4.5'
P 20	<0.011	5'
P 22	0.704	0-6"
P 54	1.04	0.5-1'
P 55	0.279	0-4"
P 58	233	0-0.5'
P 58	0.653	1.5-2'
P 58	<0.010	6-6.5'
P 58	<0.010	18-18.5'
P 59	50.9	0-0.5'
P 59	0.186	1.5-2'
P 59	0.0367 J	4.5-5'
P 59	<0.029	9.5-10'
P 61	8.36	0-0.5'
P 61	0.175	1.5-2'
P 61	0.0468	4-4.5'
P 61	<0.0099	12.5-13'
P 66	<0.0096	6-6.5'
P 66	<0.011	13.5-14'
P 68	0.0226 J	0-0.5'
P 68	<0.0097	1.5-2'
P 68	<0.0099	6-6.5'
P 68	<0.0094	7.5-8'
P 69	2.03	1-1.5'
P 70	0.0684	3.5-4'
P 70	<0.011	6.5-7'
P 71	<0.010	6-6.5'
P 71	<0.011	9-9.5'
P 72	1.0	3.5-4'
P 72	<0.034	6.5-7'
P 80	0.138	0-0.5'
P 84	1.5	0-0.5'
P 84	0.0519	0.5-1'
P 85	2.21	0-0.5'
P 85	1.6	1.5-2'
P 99	0.411	Storm Drain
P 100	3.16	Storm Drain

Inferred extent of benzo(a)anthracene above non-residental direct contact standard of 17 mg/kg.

Inferred extent of benzo(a)anthracene above residental direct contact standard of 5 mg/kg & ecological soil screening level of 5.21 mg/kg.

P 102	2.06	0-0.5'
P 102	0.28	1-2'
P 102	<0.011 a	5-6'
P 102	<0.010 a	10-11'
P 103	0.615	0-0.5'
P 103	0.0326 J	1-2'
P 103	0.684	3-4'
P 103	<0.011 a	13.5-14'
P 104	0.216	1-2'
P 104	<0.011a	6.5-7.5'

Residential direct contact standard is 5 mg/kg
Non-residential direct contact standard is 17 mg/kg
Default impact to ground water soil screening level is 0.8 mg/kg
Ecological soil screening level is 5.21 mg/kg for exposed soil from 0 to 1 ft.

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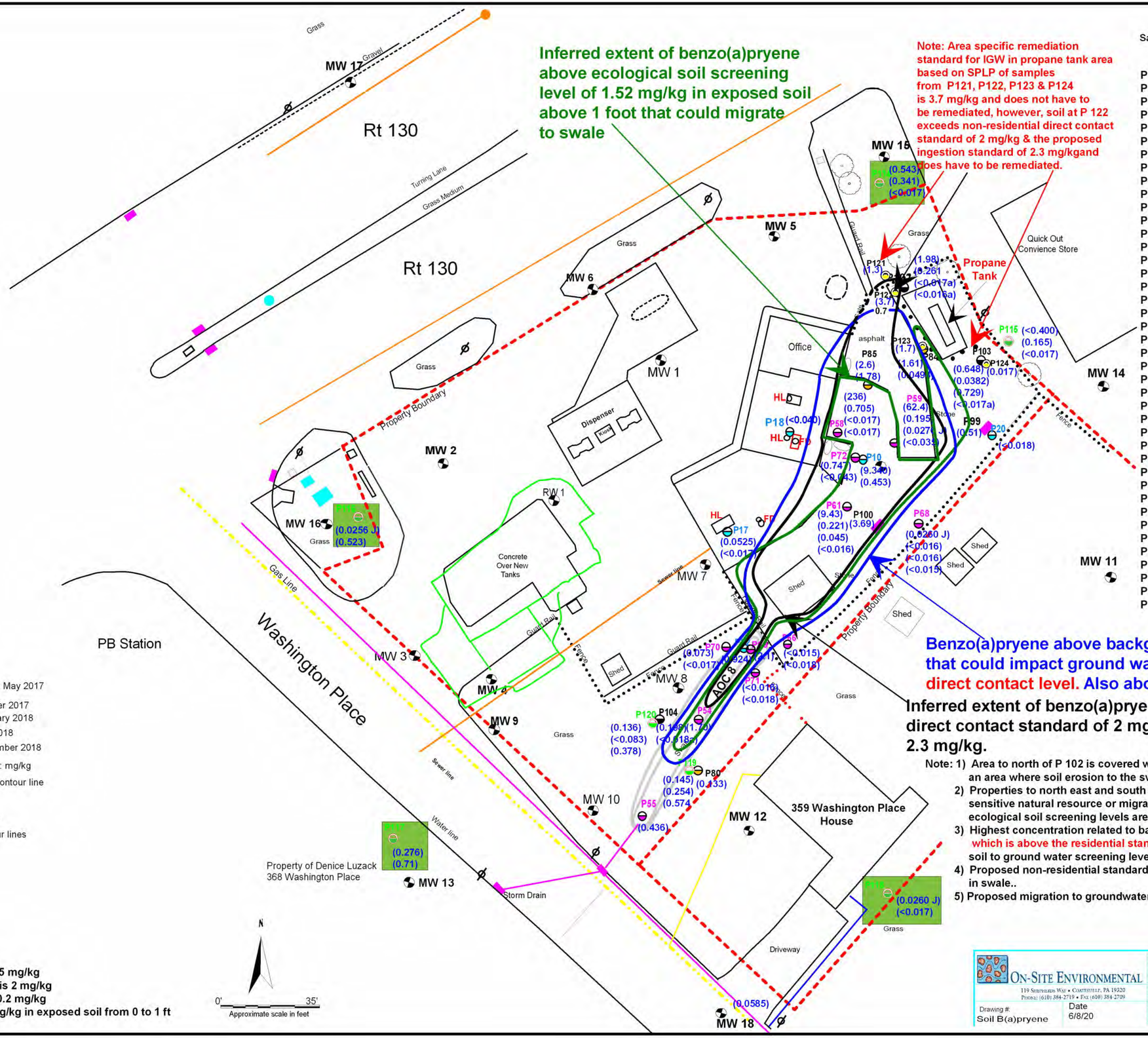
Drawing # Soil B(a)anthracene

Date 6/8/20

Figure 4 Benzo(a)anthracene in Soil Above Residential & Non-Residential Direct Contact, Default Impact to Groundwater & Ecological Soil Screening Levels

SOIL SAMPLES

Sample ID	Benzo (a)pryene (mg/kg)	Depth (ft)
P 102	1.98	0-0.5'
P 102	0.261	1-2'
P 102	<0.017	5-6'
P 102	<0.016	10-11'
P 103	0.648	0-0.5'
P 103	0.0382	1-2'
P 103	0.729	3-4'
P 103	<0.017	13.5-14'
P 104	0.198	1-2'
P 104	<0.018	6.5-7.5'
P 114	0.543	0-0.5'
P 114	0.341	0.5-1'
P 114	<0.017	6-6.5'
P 115	<0.400	0-0.5'
P 115	0.165	0.5-1'
P 115	<0.017	6-6.5'
P 116	0.0256 J	0-0.5'
P 116	0.523	0.5-1'
P 117	0.276	0-0.5'
P 117	0.71	0.5-1'
P 118	0.0260 J	0-0.5'
P 118	<0.017	0.5-1'
P 119	0.145	0-0.5'
P 119	0.254	0.5-1'
P 119	0.574	1.5-2'
P 120	0.136	0-0.5'
P 120	<0.083	0.5-1'
P 120	0.378	1.5-2'
P 121	1.3	0-0.5'
P 122	3.7	0-0.5'
P 123	1.7	0-0.5'
P 124	0.017	3-4'
MW 18	0.0585	5-5.5'



SOIL SAMPLES

Sample ID	Benzo (a)pryene (mg/kg)	Depth (ft)
P 10	9.340	0-1'
P 10	0.453	3'
P 17	0.0525	4'
P 17	<0.017	9'
P 18	<0.040	4-4.5'
P 20	<0.018	5'
P 22	0.924	0-6"
P 54	1.70	0.5-1'
P 55	0.436	0-4"
P 58	236	0-0.5'
P 58	0.705	1.5-2'
P 58	<0.017	6-6.5'
P 58	<0.017	18-18.5'
P 59	62.4	0-0.5'
P 59	0.195	1.5-2'
P 59	0.0276 J	4.5-5'
P 59	<0.035	9.5-10'
P 61	9.43	0-0.5'
P 61	0.221	1.5-2'
P 61	0.045	4-4.5'
P 61	<0.016	12.5-13'
P 66	<0.015	6-6.5'
P 66	<0.018	13.5-14'
P 68	0.0260 J	0-0.5'
P 68	<0.016	1.5-2'
P 68	<0.016	6-6.5'
P 68	<0.015	7.5-8'
P 69	2.1	1-1.5'
P 70	0.073	3.5-4'
P 70	<0.017	6.5-7'
P 71	<0.016	6-6.5'
P 71	<0.018)	9-9.5'
P 72	0.747	3.5-4'
P 72	<0.043	6.5-7'
P 80	0.133	0-0.5'
P 84	1.61	0-0.5'
P 84	0.0494	0.5-1'
P 85	2.6	0-0.5'
P 85	1.78	1.5-2'
P 99	0.51	Storm drain
P 100	3.69	Storm drain

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Drawing #: Soil B(a)pryene

Date: 6/8/20

Figure 5 Benzo(a)pryene in Soil Above Residential & Non-Residential Direct Contact, Ecological Soil Screening Levels & Concentrations Higher than Background Level that Could Impact Ground Water

SOIL SAMPLES

Sample ID	Benzo(b)fluorthene (mg/kg)	Depth (ft)
P 114	0.686	0-0.5'
P 114	0.424	0.5-1'
P 114	<0.016	6-6.5'
P 115	<0.390	0-0.5'
P 115	0.203	0.5-1'
P 115	<0.016	6-6.5'
P 116	0.0338 J	0-0.5'
P 116	0.638	0.5-1'
P 117	0.371	0-0.5'
P 117	0.941	0.5-1'
P 118	0.0275 J	0-0.5'
P 118	<0.016	0.5-1'
P 119	0.185	0-0.5'
P 119	0.328	0.5-1'
P 119	0.725	1.5-2'
P 120	0.166	0-0.5'
P 120	0.0.0820 J	0.5-1'
P 120	0.459	1.5-2'
P 121	1.6	0-0.5'
P 122	4.6	0-0.5'
P 123	2.2	0-0.5'
P 124	0.023	3-4'
MW 18	0.0536	5-5.5'

Benzo(b)fluroanthene above default impact to groundwater soil screening level of 2 mg/kg

Note: Area specific remediation standard for IGW in propane tank area based on SPLP of samples from P121, P122, P123 & P124 is 4.6 mg/kg and does not have to be remediated.

Inferred extent of benzo(b)fluroanthene above non-residential direct contact standard of 17 mg/kg & proposed standard of 23 mg/kg

Inferred extent of benzo(b)fluroanthene above ecological soil screening level of 59.8 mg/kg

Inferred extent of benzo(b)fluroanthene above residential direct contact standard of 5 mg/kg

Note: Proposed migration to groundwater standard not applicable

Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- (1.32) Benzo(b)fluoranthene concentration in sample: mg/kg
- 2 — 2 ppm default impact to groundwater contour line
- 5 — 5 ppm residential direct contour line
- 17 — 17 ppm non-residential direct contour line
- 60 — 60 ppm ecological soil screening contour lines
- Tree
- Extent of Excavation in 2001/2002
- HL — Former hydraulic lift
- FD — Former floor drain

Residential direct contact standard is 5 mg/kg
Non-residential direct contact standard is 17 mg/kg
Default impact to ground water level is 2 mg/kg
Ecological soil screening level is 59.8 mg/kg for exposed soil from 0 to 1 ft.

N

0' 35'

Approximate scale in feet

SOIL SAMPLES

Sample ID	Benzo(b)fluorthene (mg/kg)	Depth (ft)
P 10	11.300	0-1'
P 10	0.600	3'
P 17	0.0697	4'
P 17	0.0169 J	9'
P 18	<0.049	4-4.5'
P 20	<0.017	5'
P 22	1.32	0-6"
P 54	1.870	0.5-1'
P 55	0.488	0-4"
P 58	281	0-0.5'
P 58	0.689	1.5-2'
P 58	<0.016	6-6.5'
P 58	<0.016	18-18.5'
P 59	76.1	0-0.5'
P 59	0.221	1.5-2'
P 59	0.0301 J	4.5-5'
P 59	<0.044	9.5-10'
P 61	12.1	0-0.5'
P 61	0.367	1.5-2'
P 61	0.0628	4-4.5'
P 61	<0.015	12.5-13'
P 66	<0.015	6-6.5'
P 66	<0.017	13.5-14'
P 68	0.0349	0-0.5'
P 68	<0.015	1.5-2'
P 68	<0.015	6-6.5'
P 68	<0.015	7.5-8'
P 69	2.44	1-1.5'
P 70	0.0732	3.5-4'
P 70	<0.017	6.5-7'
P 71	<0.016	6-6.5'
P 71	<0.017	9-9.5'
P 72	1.0	3.5-4'
P 72	<0.052	6.5-7
P 80	0.185	0-0.5'
P 84	2.15	0-0.5'
P 84	0.07	0.5-1'
P 85	3.1	0-0.5'
P 85	1.89	1.5-2'
P 99	0.611	Storm Drain
P 100	4.56	Storm Drain

P 102	2.64	0-0.5'
P 102	0.314	1-2'
P 102	<0.017	5-6'
P 102	<0.016	10-11'
P 103	0.914	0-0.5'
P 103	0.0426	1-2'
P 103	0.811	3-4'
P 103	<0.017	13.5-14'
P 104	0.307	1-2'
P 104	<0.017	6.5-7.5'

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Drawing # Soil B(b)fluoranthene
Date 6/8/20

Figure 6 Benzo(b)fluoranthene in Soil Above Residential & Non-residential Direct Contact Standards, Default Impact to Groundwater & Ecological Soil Screening Levels

SOIL SAMPLES

Sample ID	Beryllium (mg/kg)	Depth (ft)
P 114	0.52	0-0.5'
P 114	0.65	0.5-1'
P 114	1	6-6.5'
P 115	0.56	0-0.5'
P 115	0.51	0.5-1'
P 115	0.98	6-6.5'
P 116	0.41	0-0.5'
P 116	1	0.5-1'
P 117	0.61	0-0.5'
P 117	0.99	0.5-1'
P 118	0.38	0-0.5'
P 118	0.46	0.5-1'
P 119	0.43	0-0.5'
P 119	0.51	0.5-1'
P 119	0.45	1.5-2'
P 120	0.75	0-0.5'
P 120	0.57	0.5-1'
P 120	0.49	1.5-2'
P 121	0.219	1-2'
P 122	0.613	1-2'
P 123	0.729	1-2'
P 124	0.7	1-2'
MW 18	<0.21	5-5.5'

SOIL SAMPLES

Sample ID	Beryllium (mg/kg)	Depth (ft)
P 10	0.33	0-1'
P 10	0.62	3'
P 17	0.88	4'
P 17	0.39	9'
P 20	0.59	5'
P 22	0.27	0-6"
P 54	0.38	0-0.5'
P 54	0.54	0.5-1'
P 55	0.74	0-4"
P 59	0.36	0-0.5'
P 59	1.3	1.5-2'
P 61	0.21	0-0.5'
P 61	0.25	1.5-2'
P 62	0.35	5.5-6'
P 63	0.46	3-3.5'
P 64	0.38	5.5-6'
P 66	0.39	0-0.5'
P 66	1	1.5-2'
P 68	0.37	0-0.5'
P 68	0.26	1.5-2'
P 68	0.23	6-6.5'
P 69	0.44	0.5-1'
P 69	0.57	1-1.5'
P 73	0.43	3'
P 74	0.67	6-6.5'
P 82	0.56	0-0.5'
P 82	0.33	1.5-2'
P 82	0.39	5.5-6'
P 85	1.9	0-0.5'
P 85	1.2	1.5-2'
P 85	1	3.5-4'
P 92	0.38	0-0.5'
P 92	0.31	1.5-2'
P 92	0.56	6-6.5'
P 94	0.3	4-4.5'
P 99	0.48	Storm Drain
P 100	0.34	Storm Drain
P 102	0.41	0-0.5'
P 102	1.3	1-2'
P 102	0.45	5-6'
P 103	0.37	0-0.5'
P 103	0.83	1-2'
P 106	0.3	0-0.5'
P 106	<0.22	1.5-2'

Rt 130

Rt 130

MW 17

MW 15

MW 5

MW 6

MW 1

MW 2

MW 16

MW 7

MW 3

MW 8

MW 9

MW 10

MW 12

MW 13

MW 14

MW 11

MW 18

RW 1

Grass

Gravel

Turning Lane

Grass Medium

Guard Rail

Quick Out Convience Store

Office

asphalt

Stone

Dispenser

Concrete Over New Tanks

Shed

Fence

Sewer line

Gas Line

Water line

Storm Drain

Property Boundary

PB Station

Washington Place

359 Washington Place House

Driveway

Property of Denice Luzack
368 Washington Place

P114 (0.52) (0.65) (1)

P115 (0.56) (0.51) (0.98)

P116 (0.41) (1)

P117 (0.61) (0.99)

P118 (0.38) (0.46)

P119 (0.43) (0.51) (0.45)

P120 (0.75) (0.57) (0.49)

P121 (0.219)

P122 (0.613)

P123 (0.729)

P124 (0.7)

P121 P122 (0.4) (1.3) (0.45)

P103 (0.37) (0.83)

P99 (0.48)

P20 (0.59)

P85 (1.9) (1.2) (1)

P59 (0.36) (1.3)

P72 P18 (0.33) (0.62)

P94 (0.3)

P64 (0.38)

P61 (0.21) P100 (0.25) (0.34)

P58 (0.37) (0.26) (0.23)

P106 (0.3) (<0.22)

P74 (0.67)

P63 (0.46)

HL P17 (0.88) (0.39)

FD

P92 (0.38) (0.31) (0.56)

P62 (0.38)

P22 P69 (0.27) (0.44) (0.57)

P66 (0.39) (.7)

P82 (0.56) (0.33) (0.39)

P51

P120 P104 (0.75) (0.57) (0.49)

P54 (0.38) (0.54)

P119 P80 (0.43) (0.51) (0.45)

P55

P117 (0.61) (0.99)

(<0.21)

Proposed extent of excavation to address beryllium and limit area of impervious surfaces at site

Inferred extent of beryllium above background level of 1 mg/kg which can impact ground water

Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Soil boring installed by On-Site in May 21, 2020
- (0.33) Beryllium concentration in 2017 samples: mg/kg
- 1 — 1 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain
- (0.41) (1) Concentration related to Background

Residential direct contact standard is 16 mg/kg
Non-residential direct contact standard is 140 mg/kg
Default impact to ground water level is 0.7 mg/kg
Ecological soil screening level is 10 mg/kg.

N

0' 35'

Approximate scale in feet

Note: Default IGWSSI is 0.7 mg/kg & proposed migration to groundwater standard is 0.70 mg/kg
SPLP site specific impact to grounwater standard is 0.729 mg/kg developed by SPLP approach.

ON-SITE ENVIRONMENTAL
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Drawing #: Soil Beryllium
Date: 6/8/20

Figure 7 Beryllium in Soil
Above Background Level of 1 mg/kg
Which Can Impact Ground Water

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

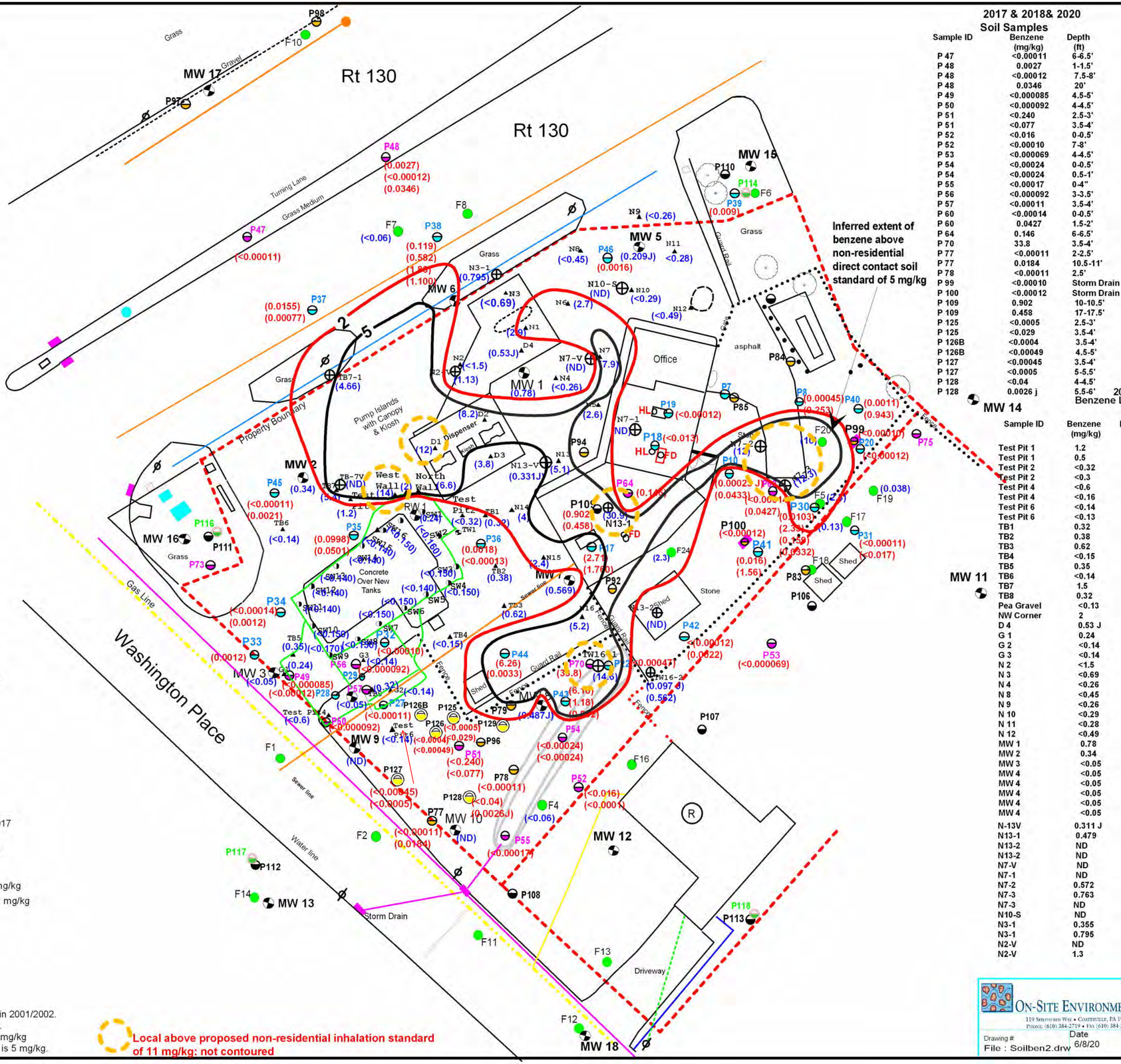
2017 SOIL SAMPLES

Sample ID	Benzene (mg/kg)	Depth (ft)
P 8	0.00045	6'
P 8	0.253	12'
P10	0.00023 J	0-1'
P 10	0.0433	3'
P 17	2.71	4'
P 17	1.760	9'
P 18	<0.013	4-4.5'
P 19	<0.00012	5'
P 20	<0.00012	5'
P 22	<0.00047	0-6"
P 28	<0.00012	3.5'
p 30	0.0103	6.5-7'
p 30	2.33	8'
P 30	0.159	17-18'
P 30	0.0332	21'
P 31	<0.00011	6.5'
P 31	<0.017	9'
P 32	<0.000095	4.5'
P 32	<0.00010	15'
P 33	<0.00014	4.5'
P 33	0.0012	15'
P 34	0.0022	16'
P 35	0.0998	5.5-6'
P 35	0.0501	7-7.5'
P 36	0.0018	6'
P 36	<0.00013	12'
P 37	0.0155	3'
P 37	0.00077	7'
P 38	0.119	3'
P 38	0.582	8'
P 38	1.860	13
P 38	1.100	18
P 39	0.009	15'
P 40	0.0011	6'
P 40	0.943	15'
P 41	0.016	5'
P 41	1.56	10'
P 42	<0.00012	6'
P 42	0.0022	8'
P 43	6.160	1'
P 43	1.180	2'
P 43	0.892	6'
P 44	6.26	3'
P 44	0.0033	7-7.5'
P 45	<0.00011	5.5-6'
P 45	0.0021	12-12.5'
P 46	0.0016	6-6.5'

Key

- Existing Groundwater Monitoring Well
- F7 ● Soil Boring Installed by RedHawk 2008 & 2009
- N12▲ Soil Boring Installed by RedHawk in 2001 & 2002
- ⊕ Soil Boring Installed by Whitman in 2004
- UST Closure Sample 2002
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in May 2020
- (530) Benzene concentration in 2001/2009 samples: mg/kg
- (6.16) Benzene concentration in 2017 & 2018 samples: mg/kg
- 2 ppm contour line
- 5 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) Contamination detected at TB8, SW 1, SW 15 and SW 16 was removed by excavation in 2001/2002.
2) Pea gravel sample collectd between D 1 and D 2.
3) Benzene residential direct contact standard is 2 mg/kg
4) Benzene non-residential direct contact standard is 5 mg/kg.



2017 & 2018& 2020 Soil Samples

Sample ID	Benzene (mg/kg)	Depth (ft)
P 47	<0.00011	6-6.5'
P 48	0.0027	1-1.5'
P 48	<0.00012	7.5-8'
P 48	0.0346	20'
P 49	<0.000085	4.5-5'
P 50	<0.000092	4-4.5'
P 51	<0.240	2.5-3'
P 51	<0.077	3.5-4'
P 52	<0.016	0-0.5'
P 52	<0.00010	7-8'
P 53	<0.000069	4-4.5'
P 54	<0.00024	0-0.5'
P 54	<0.00024	0.5-1'
P 55	<0.00017	0-4"
P 56	<0.000092	3-3.5'
P 57	<0.00011	3.5-4'
P 60	<0.00014	0-0.5'
P 60	0.0427	1.5-2'
P 64	0.146	6-6.5'
P 70	33.8	3.5-4'
P 77	<0.00011	2-2.5'
P 77	0.0184	10.5-11'
P 78	<0.00011	2.5'
P 99	<0.00010	Storm Drain
P 100	<0.00012	Storm Drain
P 109	0.902	10-10.5'
P 109	0.458	17-17.5'
P 125	<0.0005	2.5-3'
P 125	<0.029	3.5-4'
P 126B	<0.0004	3.5-4'
P 126B	<0.00049	4.5-5'
P 127	<0.00045	3.5-4'
P 127	<0.0005	5-5.5'
P 128	<0.04	4-4.5'
P 128	0.0026 j	5.5-6'

2001 - 2009 Samples Benzene Above Residential Direct Contact

Sample ID	Benzene (mg/kg)	Depth (ft)
TB 7	5.4	10-11'
North Wall	6.6	4.5'
West Wall	14	4'
D1	12	2.5-3.5'
D2	8.2	2.5-4'
D3	3.8	3.5-4.5'
N1	2.9	8-9.5'
N5	2.6	4-5'
N6	2.7	8-9'
N7	7.9	8-9'
N13	5.1	9-10'
N14	4	8-9'
N15	2.4	2-3'
N16	5.2	4 - 7'
N 13-1	30.9	3.5 - 4'
N13-1	23.1	7.5-8'
N13-1	12.5	9.5-10'
N7-2	12	6.5-7'
N7-3	12.3	6.5-7'
TB7-1	4.66	7.5-8'
TW16-1	14.6	5-5.5'
F 5	2.3	19-20'
F 20	10	5-6'
F 24	2.3	3 - 4'

2001 - 2009 Samples Benzene Less Than Residential Direct Contact

Sample ID	Benzene (mg/kg)	Depth (ft)
Test Pit 1	1.2	2'
Test Pit 1	0.5	8'
Test Pit 2	<0.32	2'
Test Pit 2	<0.3	7'
Test Pit 4	<0.6	2.5'
Test Pit 4	<0.16	6.5'
Test Pit 6	<0.14	5'
Test Pit 6	<0.13	14-15'
TB1	0.32	8-9'
TB2	0.38	6-7'
TB3	0.62	3.4'
TB4	<0.15	13-14'
TB5	0.35	2-2.5'
TB6	<0.14	10-11'
TB7	1.5	4-5'
TB8	0.32	3-4'
Pea Gravel	<0.13	3'
NW Corner	2	5'
D 4	0.53 J	3.5-4.5'
G 1	0.24	2'
G 2	<0.14	6'
G 3	<0.14	3.5'
N 2	<1.5	8-9'
N 3	<0.69	4-5.5'
N 4	<0.26	10-12'
N 8	<0.45	8-9.5'
N 9	<0.26	11-12'
N 10	<0.29	8-10'
N 11	<0.28	10-12'
N 12	<0.49	6-8'
MW 1	0.78	8-9'
MW 2	0.34	6-7'
MW 3	<0.05	12-13'
MW 4	<0.05	2-4'
MW 4	<0.05	9-10'
MW 4	<0.05	12-13'
MW 4	<0.05	14-15'
MW 4	<0.05	16-18'
N-13V	0.311 J	12-12.5'
N13-1	0.479	15-15.5'
N13-2	ND	5-5.5'
N13-2	ND	9.5-10'
N7-V	ND	11.5-12'
N7-1	ND	8.5-9'
N7-2	0.572	15-15.5'
N7-3	0.763	10.5-11'
N7-3	ND	15-15.5'
N10-S	ND	4.5-5'
N3-1	0.355	7.5-8'
N3-1	0.795	15-15.5'
N2-V	ND	5.5-6'
N2-V	1.3	11.5-12'
TB-7V	ND	14-14.5'
TB7-1	0.648	15.5-16'
TW16-1	0.714	9.5-10'
TW16-1	ND	14-14.5'
TW16-2	0.097 J	6.5-7'
TW16-2	0.562	9.5-10'
MW 5	0.209 J	9.5-10'
MW 5	ND	13.5-14'
MW 5	ND	18-18.5'
MW 5	ND	22.5-23'
MW 7	0.569	11-11.5'
MW 8	0.487 J	2.5-3'
MW 8	ND	9.5-10'
MW 9	ND	2.5-3'
MW 10	ND	2.5-3'
F 1	<0.06	9-9.5'
F 2	<0.06	9-9.5'
F 2	<0.06	12-12.5'
F 3	<0.06	8.5-9'
F 4	<0.06	6.5-7'
F 4	<0.06	9-9.5'
F 5	0.66	8-9'
F 5	2	11-12'
F 5	0.73	13-14'
F 5	1.1	15-16'
F 5	0.91	16-17'
F 5	2	18-19'
F 7	<0.06	1-2'
F 7	<0.06	2-3'
F 7	<0.03	6-7'
F 7	<0.06	7.5-8'
F 8	<0.12	7-8'
F 8	<0.12	8-9'
F 8	<0.15	9-10'
F 9	<0.3	6-7'
F 9	<0.6	9-10'
F 9	<0.3	13-14'
F 17	0.13	4-5'
F 17	<0.03	13-14'
F 18	<0.03	10-11'
F 19	0.038	10-12'
F 20	0.73	10-11'
F 23	<0.3	9-10'
F 23	0.41	13-14'
F 24	0.03	9-10'

SW 1, SW 2, SW 3, SW 5, SW 6, SW 14, SW 5 & SW 16 collected at depth of 11.5-12'.
SW 4, SW 7, SW 8, SW9, SW 10, SW 11, SW 12 & SW 13 collected at depth of 10.5-11'.

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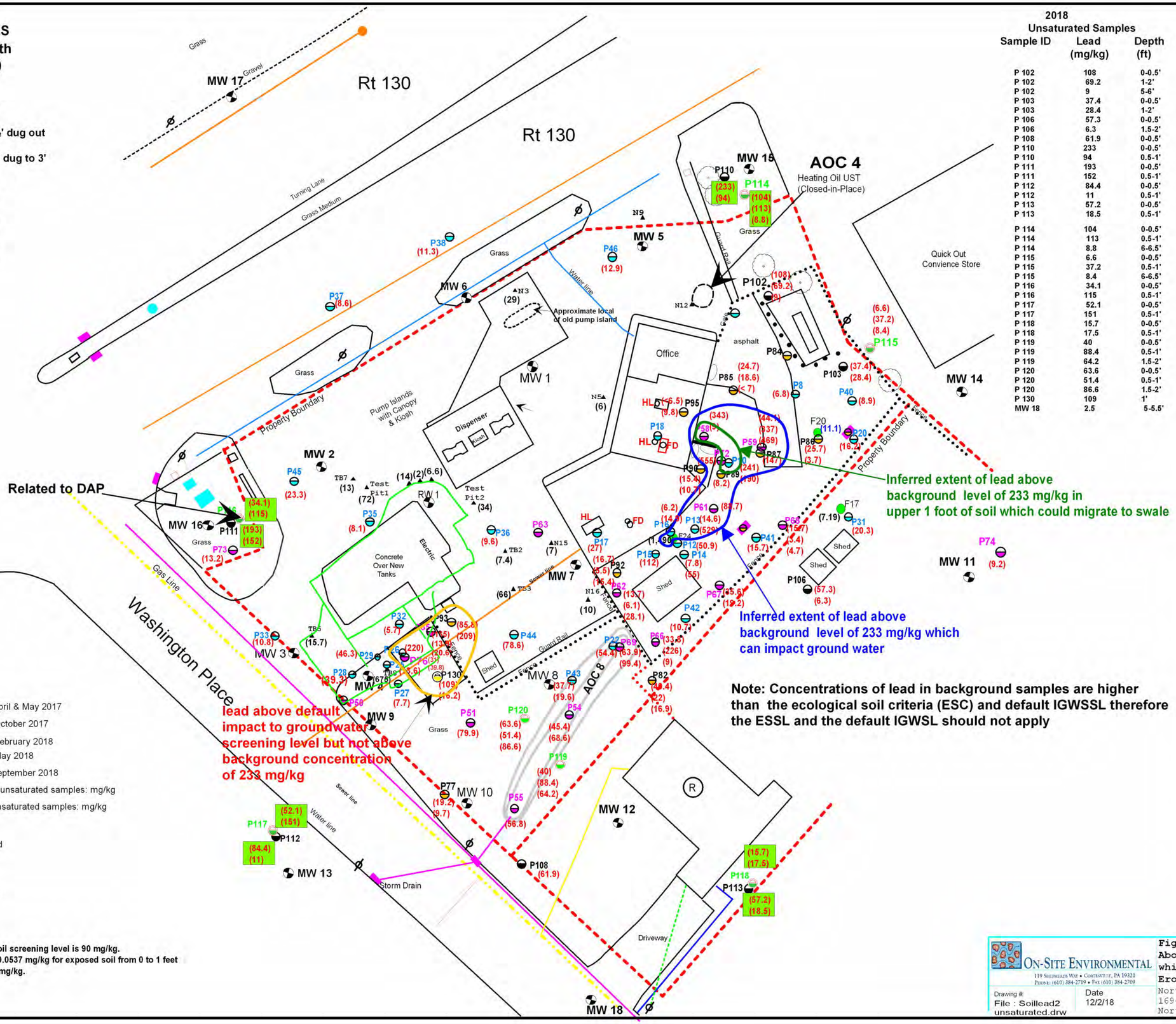
Drawing # File : Soilben2.drw
Date 6/8/20

Figure 8 Benzene in Soil Above Residential & Non-Residential Direct Contact Standard

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

2001 - 2009 UNSATURATED SOIL SAMPLES

Sample ID	Lead (mg/kg)	Depth (ft)
Test pit 1	72	2'
Test pit 2	34	2'
TB 2	7.4	6-7'
TB 3	66	3-4'
TB 5	15.7	2-2½' dug out
TB 7	13	4-5'
TB 8	675	3-4' dug to 3'
N 3	29	4-5'
N 5	6	4-5'
N 12	3	6-8'
N 15	7	2-3'
N 16	10	4-7'
F 17	6.97	4-5'
F 20	11.1	5-6'
F 24	1,490	3-4'



Key

- Existing Groundwater Monitoring Well
- F7 ● Soil Boring Installed by RedHawk 2008 & 2009
- N12 ▲ Soil Boring Installed by RedHawk in 2001 & 2002
- Soil Boring Installed by On-Site in April & May 2017
- Soil Boring Installed by On-Site in October 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- (37.7) Lead concentration in 2017 & 2018 unsaturated samples: mg/kg
- (7.4) Lead concentration in 2001/2009 unsaturated samples: mg/kg
- 233 233 ppm contour line
- (233) (94) Concentration related to background
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) Lead default impact soil to ground water soil screening level is 90 mg/kg.
2) Ecological soil screening level for lead is 0.0537 mg/kg for exposed soil from 0 to 1 feet
3) Ecological sediment screening level is 31 mg/kg.
4) C: Elevated detection level

Note: Concentrations of lead in background samples are higher than the ecological soil criteria (ESC) and default IGWSSL therefore the ESSL and the default IGWSL should not apply

2018 Unsaturated Samples

Sample ID	Lead (mg/kg)	Depth (ft)
P 102	108	0-0.5'
P 102	69.2	1-2'
P 102	9	5-6'
P 103	37.4	0-0.5'
P 103	28.4	1-2'
P 106	57.3	0-0.5'
P 106	6.3	1.5-2'
P 108	61.9	0-0.5'
P 110	233	0-0.5'
P 110	94	0.5-1'
P 111	193	0-0.5'
P 111	152	0.5-1'
P 112	84.4	0-0.5'
P 112	11	0.5-1'
P 113	57.2	0-0.5'
P 113	18.5	0.5-1'
P 114	104	0-0.5'
P 114	113	0.5-1'
P 114	8.8	6-6.5'
P 115	6.6	0-0.5'
P 115	37.2	0.5-1'
P 115	8.4	6-6.5'
P 116	34.1	0-0.5'
P 116	115	0.5-1'
P 117	52.1	0-0.5'
P 117	151	0.5-1'
P 118	15.7	0-0.5'
P 118	17.5	0.5-1'
P 119	40	0-0.5'
P 119	88.4	0.5-1'
P 119	64.2	1.5-2'
P 120	63.6	0-0.5'
P 120	51.4	0.5-1'
P 120	86.6	1.5-2'
P 130	109	1'
MW 18	2.5	5-5.5'

2017 & 2018 Unsaturated Samples

Sample ID	Lead (mg/kg)	Depth (ft)
P 8	6.8	6'
P 10	241	0-1'
P 10	190	3'
P 12	50.9	0-6"
P 12	25.5	5'
P 13	14.6	0-6"
P 13	529	4'
P 13	49.9	6'
P 14	7.8	0-6"
P 14	55	5'
P 15	112	0-6"
P 15	11.2	5'
P 16	6.2	0-6"
P 16	14.9	4'
P 17	27	4'
P 20	16.2	5'
P 22	54.4	0-6"
P 25	13.6	3.5'
P 26	220	3.5'
P 27	7.7	3.5'
P 28	39.3	3.5'
P 29	46.3	3.5'
P 31	20.3	6.5'
P 32	5.7	4.5'
P 33	10.8	4.5'
P 35	8.1	5.5-6'
P 36	9.6	6'
P 37	8.6	3'
P 38	11.3	3'
P 40	8.9	6'
P 41	15.7	5'
P 42	10.7	6'
P 43	37.7	1'
P 43	19.6	2'
P 44	78.6	3'
P 45	23.3	5.5-6'
P 46	12.9	6-6.5'
P 51	79.9	0-0.5'
P 54	45.4	0-0.5'
P 54	68.6	0.5-1'
P 55	56.8	0-4"
P 58	343	0-0.5'
P 58	9	6-6.5'
P 59	44.1	0-0.5'
P 59	337	1.5-2'
P 59	469	4.5-5'
P 61	88.7	1.5-2'
P 62	13.7	0-0.5'
P 62	6.1	1.5-2'
P 62	28.1	6-6.5'
P 65	165	1'
P 65	13.9	3.5'
P 65	20.6	6.5'
P 66	33.8	0-0.5'
P 66	226	1.5-2'
P 66	9	6-6.5'
P 67	35.6	0-0.5'
P 67	19.2'	1.5-2''
P 68	15.7	0-0.5'
P 68	3.4	1.5-2'
P 68	4.7	6-6.5'
P 69	63.9	0.5-1'
P 69	99.4	1-1.5'
P 72	555	3.5-4'
P 73	13.2	3'
P 74	9.2	6-6.5'
P 76	31	0-1'
P 76	39.8	4-4.5'
P 77	19.2	0-0.5'
P 77	9.7	1.5-2'
P 82	40.4	0-0.5'
P 82	22	1.5-2'
P 82	16.9	5.5-6'
P 85	24.7	0-0.5'
P 85	18.6C	1.5-2'
P 85	<7 C	3.4-4'
P 86	25.7 C	0-0.5'
P 86	3.7	1.5-2'
P 87	147	6-6.5'
P 89	8.2	3.5-4'
P 90	15.4	3.5-4'
P 90	10.7	5.5-6'
P 92	16.7	0-0.5'
P 92	5.5	1.5-2'
P 92	15.4	6-6.5'
P 93	85.8	1'
P 93	209	2.5-3'
P 95	<6.5 C	0.5-1'
P 95	9.8	5.5-6'

ON-SITE ENVIRONMENTAL
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Drawing #: File : Soillead2 unsaturated.drw
Date: 12/2/18

Figure 9 LEAD in Soil Above Background Level of 233 mg/kg which Can Impact Ground water and Erode to Swale

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

2001 - 2009 Samples

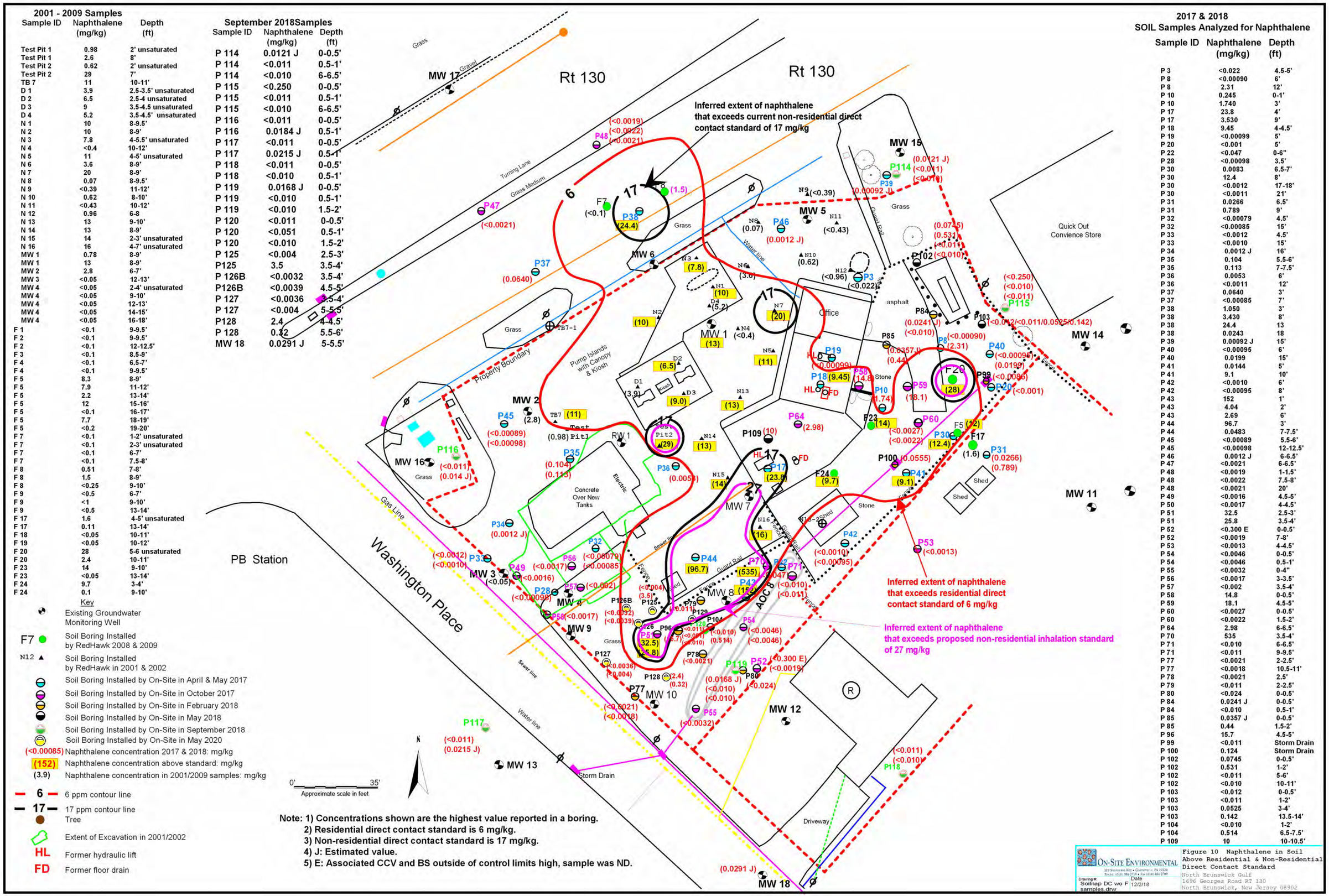
Sample ID	Naphthalene (mg/kg)	Depth (ft)
Test Pit 1	0.98	2' unsaturated
Test Pit 1	2.6	8'
Test Pit 2	0.62	2' unsaturated
Test Pit 2	29	7'
TB 7	11	10-11'
D 1	3.9	2.5-3.5' unsaturated
D 2	6.5	2.5-4 unsaturated
D 3	9	3.5-4.5 unsaturated
D 4	5.2	3.5-4.5' unsaturated
N 1	10	8-9.5'
N 2	10	8-9'
N 3	7.8	4-5.5' unsaturated
N 4	<0.4	10-12'
N 5	11	4-5' unsaturated
N 6	3.6	8-9'
N 7	20	8-9'
N 8	0.07	8-9.5'
N 9	<0.39	11-12'
N 10	0.62	8-10'
N 11	<0.43	10-12'
N 12	0.96	6-8
N 13	13	9-10'
N 14	13	8-9'
N 15	14	2-3' unsaturated
N 16	16	4-7' unsaturated
MW 1	0.78	8-9'
MW 1	13	8-9'
MW 2	2.8	6-7'
MW 3	<0.05	12-13'
MW 4	<0.05	2-4' unsaturated
MW 4	<0.05	9-10'
MW 4	<0.05	12-13'
MW 4	<0.05	14-15'
MW 4	<0.05	16-18'
F 1	<0.1	9-9.5'
F 2	<0.1	9-9.5'
F 2	<0.1	12-12.5'
F 3	<0.1	8.5-9'
F 4	<0.1	6.5-7'
F 4	<0.1	9-9.5'
F 5	8.3	8-9'
F 5	7.9	11-12'
F 5	2.2	13-14'
F 5	12	15-16'
F 5	<0.1	16-17'
F 5	7.7	18-19'
F 5	<0.2	19-20'
F 7	<0.1	1-2' unsaturated
F 7	<0.1	2-3' unsaturated
F 7	<0.1	6-7'
F 7	<0.1	7.5-8'
F 8	0.51	7-8'
F 8	1.5	8-9'
F 8	<0.25	9-10'
F 9	<0.5	6-7'
F 9	<1	9-10'
F 9	<0.5	13-14'
F 17	1.6	4-5' unsaturated
F 17	0.11	13-14'
F 18	<0.05	10-11'
F 19	<0.05	10-12'
F 20	28	5-6 unsaturated
F 20	2.4	10-11'
F 23	14	9-10'
F 23	<0.05	13-14'
F 24	9.7	3-4'
F 24	0.1	9-10'

September 2018Samples

Sample ID	Naphthalene (mg/kg)	Depth (ft)
P 114	0.0121 J	0-0.5'
P 114	<0.011	0.5-1'
P 114	<0.010	6-6.5'
P 115	<0.250	0-0.5'
P 115	<0.011	0.5-1'
P 115	<0.010	6-6.5'
P 116	<0.011	0-0.5'
P 116	0.0184 J	0.5-1'
P 117	<0.011	0-0.5'
P 117	0.0215 J	0.5-1'
P 118	<0.011	0-0.5'
P 118	<0.010	0.5-1'
P 119	0.0168 J	0-0.5'
P 119	<0.010	0.5-1'
P 119	<0.010	1.5-2'
P 120	<0.011	0-0.5'
P 120	<0.051	0.5-1'
P 120	<0.010	1.5-2'
P 125	<0.004	2.5-3'
P125	3.5	3.5-4'
P 126B	<0.0032	3.5-4'
P126B	<0.0039	4.5-5'
P 127	<0.0036	3.5-4'
P 127	<0.004	5-5.5'
P128	2.4	4-4.5'
P 128	0.32	5.5-6'
MW 18	0.0291 J	5-5.5'

2017 & 2018 SOIL Samples Analyzed for Naphthalene

Sample ID	Naphthalene (mg/kg)	Depth (ft)
P 3	<0.022	4.5-5'
P 8	<0.00090	6'
P 8	2.31	12'
P 10	0.245	0-1'
P 10	1.740	3'
P 17	23.8	4'
P 17	3.530	9'
P 18	9.45	4-4.5'
P 19	<0.00099	5'
P 20	<0.001	5'
P 22	<0.047	0-6"
P 28	<0.00098	3.5'
P 30	0.0083	6.5-7'
P 30	12.4	8'
P 30	<0.0012	17-18'
P 30	<0.0011	21'
P 31	0.0266	6.5'
P 31	0.789	9'
P 32	<0.00079	4.5'
P 32	<0.00085	15'
P 33	<0.0012	4.5'
P 33	<0.0010	15'
P 34	0.0012 J	16'
P 35	0.104	5.5-6'
P 35	0.113	7-7.5'
P 36	0.0053	6'
P 36	<0.0011	12'
P 37	0.0640	3'
P 37	<0.00085	7'
P 38	1.050	3'
P 38	3.430	8'
P 38	24.4	13
P 38	0.0243	18
P 39	0.00092 J	15'
P 40	<0.00095	6'
P 40	0.0199	15'
P 41	0.0144	5'
P 41	9.1	10'
P 42	<0.0010	6'
P 42	<0.00095	8'
P 43	152	1'
P 43	4.04	2'
P 43	2.69	6'
P 44	96.7	3'
P 44	0.0483	7-7.5'
P 45	<0.00089	5.5-6'
P 45	<0.00098	12-12.5'
P 46	0.0012 J	6-6.5'
P 47	<0.0021	6-6.5'
P 48	<0.0019	1-1.5'
P 48	<0.0022	7.5-8'
P 48	<0.0021	20'
P 49	<0.0016	4.5-5'
P 50	<0.0017	4-4.5'
P 51	32.5	2.5-3'
P 51	25.8	3.5-4'
P 52	<0.300 E	0-0.5'
P 52	<0.0019	7-8'
P 53	<0.0013	4-4.5'
P 54	<0.0046	0-0.5'
P 54	<0.0046	0.5-1'
P 55	<0.0032	0-4"
P 56	<0.0017	3-3.5'
P 57	<0.002	3.5-4'
P 58	14.8	0-0.5'
P 59	18.1	4.5-5'
P 60	<0.0027	0-0.5'
P 60	<0.0022	1.5-2'
P 64	2.98	6-6.5'
P 70	535	3.5-4'
P 71	<0.010	6-6.5'
P 71	<0.011	9-9.5'
P 77	<0.0021	2-2.5'
P 77	<0.0018	10.5-11'
P 78	<0.0021	2.5'
P 79	<0.011	2-2.5'
P 80	<0.024	0-0.5'
P 84	0.0241 J	0-0.5'
P 84	<0.010	0.5-1'
P 85	0.0357 J	0-0.5'
P 85	0.44	1.5-2'
P 96	15.7	4.5-5'
P 99	<0.011	Storm Drain
P 100	0.124	Storm Drain
P 102	0.0745	0-0.5'
P 102	0.531	1-2'
P 102	<0.011	5-6'
P 102	<0.010	10-11'
P 103	<0.012	0-0.5'
P 103	<0.011	1-2'
P 103	0.0525	3-4'
P 103	0.142	13.5-14'
P 104	<0.010	1-2'
P 104	0.514	6.5-7.5'
P 109	10	10-10.5'



Key

- Existing Groundwater Monitoring Well
- F7 ● Soil Boring Installed by RedHawk 2008 & 2009
- N12 ▲ Soil Boring Installed by RedHawk in 2001 & 2002
- Soil Boring Installed by On-Site in April & May 2017
- Soil Boring Installed by On-Site in October 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- Soil Boring Installed by On-Site in September 2018
- Soil Boring Installed by On-Site in May 2020
- (<0.00085) Naphthalene concentration 2017 & 2018: mg/kg
- (152) Naphthalene concentration above standard: mg/kg
- (3.9) Naphthalene concentration in 2001/2009 samples: mg/kg
- 6 — 6 ppm contour line
- 17 — 17 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) Concentrations shown are the highest value reported in a boring.
2) Residential direct contact standard is 6 mg/kg.
3) Non-residential direct contact standard is 17 mg/kg.
4) J: Estimated value.
5) E: Associated CCV and BS outside of control limits high, sample was ND.

On-Site Environmental
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Figure 10 Naphthalene in Soil Above Residential & Non-Residential Direct Contact Standard

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

Drawing #: Soilnap DC wo F samples.drw
Date: 12/2/18

October 2017
UNSATURATED SOIL SAMPLES

Sample ID	Benzene (mg/kg)	Depth (ft)
P 47	<0.00011	6-6.5'
P 48	0.0027	1-1.5'
P 49	<0.000085	4.5-5'
P 50	<0.000092	4-4.5'
P 52	<0.016	0-0.5'
P 53	<0.000069	4-4.5'
P 54	<0.00024	0-0.5'
P 54	<0.00024	0.5-1'
P 55	<0.00017	0-4"
P 56	<0.000092	3-3.5'
P 57	<0.00011	3.5-4'
P 60	<0.00014	0-0.5'
P 60	0.0427	1.5-2'
P 64	0.146	6-6.5'
P 70	33.8	3.5-4'

February 2018
UNSATURATED SOIL SAMPLES

Sample ID	Benzene (mg/kg)	Depth (ft)
P 77	<0.00011	2-2.5'
P 78	<0.00011	2.5'
P 99 Storm drain	<0.00010	
P 100 Storm drain	< 0.00012	

May 2020
UNSATURATED SOIL SAMPLES

P 125	<0.0005	2.5-3'

April & May 2017
UNSATURATED SOIL SAMPLES

Sample ID	Benzene (mg/kg)	Depth (ft)
P 8	0.00045	6'
P 10	0.00023 J	0-1'
P 10	0.0433	3'
P 17	2.710	4'
P 18	<0.013	4-4.5'
P 19	<0.00012	5'
P 20	<0.00012	5'
P 22	<0.00047	0-6"
P 28	<0.00012	3.5'
P 31	<0.00011	6.5'
P 32	<0.000095	4.5'
P 33	<0.00014	4.5'
P 35	0.0998	5.5-6'
P 36	0.0018	6'
P 37	0.0155	3'
P 38	0.119	3'
P 40	0.0011	6'
P 41	0.016	5'
P 42	<0.00012	6'
P 43	6.160	1'
P 43	1.180	2'
P 44	6.260	3'
P 45	<0.00011	5.5-6'
P 46	0.0016	6-6.5'

2001 - 2009
UNSATURATED SOIL SAMPLES

Sample ID	Benzene (mg/kg)	Depth (ft)
Test Pit 1	1.2	2'
Test Pit 2	<0.32	2'
Test Pit 4	<0.6	2.5' excavated to 3 ft
TB3	0.62	3-4'
TB5	0.35	2-2.5' excavated to 3 ft
TB7	1.5	4-5'
TB8	0.32	3-4' excavated to 3 ft
Pea Gravel	<0.13	3'
North Wall	6.6	4.5'
West Wall	14	4'
NW Corner	2	5' excavated
South Dispenser	0.46	3'
D1	12	2.5 - 3.5'
D 2	8.2	2.5 - 4
D 3	3.8	3.5 - 4.5'
D4	0.53J	3.5 - 4.5'
G1	0.24	2 excavted to 2 ft
G3	<0.14	3.5' excavated to 3 ft
N2-V	ND	5.5-6'
N3	<0.69	4 - 5.5'
N 5	2.6	4 - 5'
N10-S	ND	4.5-5'
N 15	2.3	2 - 3'
N 16	5.2	4 - 7'
N 13-1	30.9	3.5 - 4'
N13-2	ND	5-5.5'
F17	0.13	4-5'
F20	10	5-6'
F 24	2.3	3 - 4'

Inferred extent of benzene above default impact to groundwater soil screening level of 0.005 mg/kg & above proposed standard of 0.0094 mg/kg

Inferred extent of benzene above ecological soil screening level of 0.255 mg/kg in exposed soil from 0 to 1 foot

Key

- Existing Groundwater Monitoring Well
- F7 — Soil Boring Installed by RedHawk 2008 & 2009
- N12 — Soil Boring Installed by RedHawk in 2001 & 2002
- Soil Boring Installed by Whitman in 2004
- Soil Boring Installed by On-Site in april & May 2017
- Soil Boring Installed by On-Site in October 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- Soil Boring Installed by On-Site in May 2020
- (8.2) Benzene concentration in 2017 & 2018 unsaturated samples: mg/kg
- (2.3) Benzene concentration in 2001/2009 unsaturated samples: mg/kg
- 0.005 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) Sample depths at TB 5, TB8, Test pit 4, and NW Corner were removed by excavations in 2001/2002.
2) Concentrations shown are the highest value reported in a boring in unsaturated zone.
3) Pea gravel sample collectd between D 1 and D 2.
4) Benzene default impact to ground water soil screening level is 0.005 mg/kg.
5) Ecological soil screening level is 0.255 mg/kg & applies to soil from 0 to 1 ft and exposed.

ON-SITE ENVIRONMENTAL
119 Shipwright Way • Coatesville, PA 19320
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Drawing # File:Soilben3unsat

Date 6/8/20

Figure 11 Benzene in Soil Above Default Impact to Groundwater & Ecological Soil Screening Levels

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

2017 UNSATURATED SOIL SAMPLES

Sample ID	Naphthalene (mg/kg)	Depth (ft)
P 3	<0.022	4.5-5'
P 8	<0.00090	6'
P 10	0.245	0-1'
P 10	1.740	3'
P 17	23.3	4'
P 18	9.45	4-4.5'
P 19	<0.00099	5'
P 20	<0.001	5'
P 22	0.0203 C	0-6"
P 28	<0.00098	3.5'
p 30	0.0083	6.5-7'
P 31	0.0266	6.5'
P 32	<0.00079	4.5'
P 33	<0.0012	4.5'
P 35	0.104	5.5-6'
P 36	0.0053	6'
P 37	0.0640	3'
P 38	1.050	3'
P 40	<0.00095	6'
P 41	0.0144	5'
P 42	<0.0010	6'
P 43	152	1'
P 43	4.04	2'
P 44	96.7	3'
P 45	<0.00089	5.5-6'
P 46	0.0012 J	6-6.5'

2018 UNSATURATED SOIL SAMPLES

Sample ID	Naphthalene (mg/kg)	Depth (ft)
P 114	0.0121 J	0-0.5'
P 114	<0.011	0.5-1'
P 114	<0.010	6-6.5'
P 115	<0.250	0-0.5'
P 115	<0.011	0.5-1'
P 115	<0.010	6-6.5'
P 116	<0.011	0-0.5'
P 116	0.0184 J	0.5-1'
P 117	<0.011	0-0.5'
P 117	0.0215 J	0.5-1'
P 118	<0.011	0-0.5'
P 118	<0.010	0.5-1'
P 119	0.0168 J	0-0.5'
P 119	<0.010	0.5-1'
P 119	<0.010	1.5-2'
P 120	<0.011	0-0.5'
P 120	<0.051	0.5-1'
P 120	<0.010	1.5-2'
P 130	<0.004	2.5-3'
MW 18	0.0291 J	5-5.5'

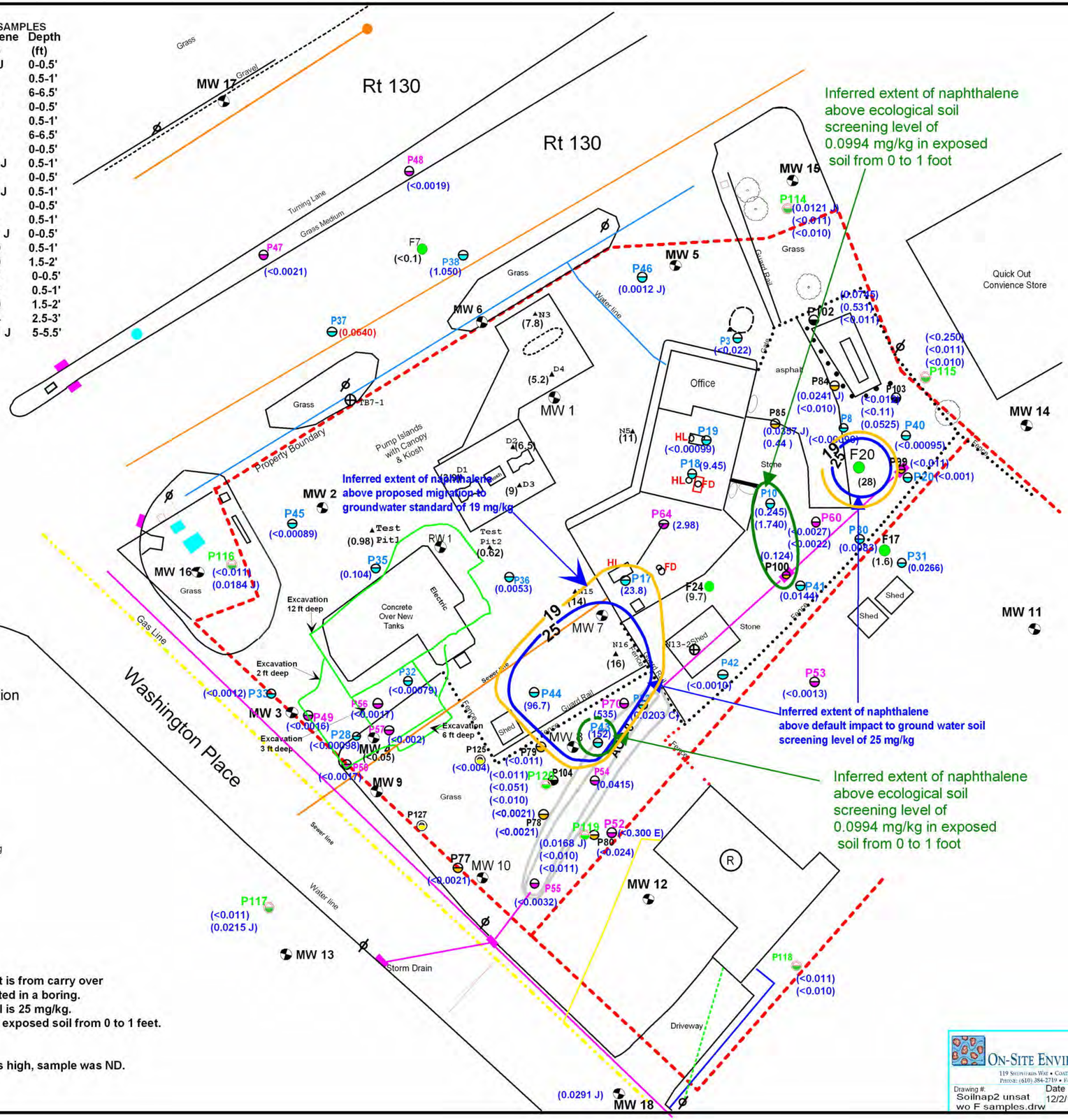
2018 UNSATURATED SOIL SAMPLES

Sample ID	Naphthalene (mg/kg)	Depth (ft)
P 77	<0.0021	2-2.5'
P 78	<0.0021	2.5'
P 79	<0.011	2-2.5'
P 80	<0.024	0-0.5'
P 84	0.0241 J	0-0.5'
P 84	<0.010	0.5-1'
P 85	0.0357 J	0-0.5'
P 85	0.44	1.5-2'
P 99 Storm drain	< 0.011	
P 100 Storm drain	0.124	
P 102	0.0745	0-0.5'
P 102	0.531	1-2'
P 102	<0.011	5-6'
P 103	<0.012	0-0.5'
P 103	<0.011	1-2'
P 103	0.0525	3-4'

Key

- Existing Groundwater Monitoring Well
- F7 — Soil Boring Installed by RedHawk 2008 & 2009
- N12 ▲ — Soil Boring Installed by RedHawk in 2001 & 2002
- Soil Boring Installed by On-Site in April & May 2017
- Soil Boring Installed by On-Site in October 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- Soil Boring Installed by On-Site in September 2018
- Soil Boring Installed by On-Site in may 2020
- (152) Naphthalene concentration in 2017 & 2018 samples: mg/kg
- (14) Naphthalene concentration in 2001/2009 samples: mg/kg
- 25 — 25 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) Data from P 22 not used to develop contour: result is from carry over
2) Concentrations shown are the highest value reported in a boring.
3) Default impact to ground water soil screening level is 25 mg/kg.
4) Ecological soil screening level is 0.0994 mg/kg for exposed soil from 0 to 1 feet.
5) J: Estimated value.
6) C: Result is from carry over.
7) E: Associated CCV and BS outside of control limits high, sample was ND.



2001 - 2009

Sample ID	Naphthalene (mg/kg)	Depth (ft)
Test Pit 1	0.98	2' unsaturated
Test Pit 1	2.6	8'
Test Pit 2	0.62	2' unsaturated
Test Pit 2	29	7'
TB 7	11	10-11'
D 1	3.9	2.5-3.5' unsaturated
D 2	6.5	2.5-4 unsaturated
D 3	9	3.5-4.5 unsaturated
D 4	5.2	3.5-4.5' unsaturated
N 1	10	8-9.5'
N 2	10	8-9'
N 3	7.8	4-5.5' unsaturated
N 4	<0.4	10-12'
N 5	11	4-5' unsaturated
N 6	3.6	8-9'
N 7	20	8-9'
N 8	0.07	8-9.5'
N 9	<0.39	11-12'
N 10	0.62	8-10'
N 11	<0.43	10-12'
N 12	0.96	6-8
N 13	13	9-10'
N 14	13	8-9'
N 15	14	2-3' unsaturated
N 16	16	4-7' unsaturated
MW 1	0.78	8-9'
MW 1	13	8-9'
MW 2	2.8	6-7'
MW 3	<0.05	12-13'
MW 4	<0.05	2-4' unsaturated
MW 4	<0.05	9-10'
MW 4	<0.05	12-13'
MW 4	<0.05	14-15'
MW 4	<0.05	16-18'
F 1	<0.1	9-9.5'
F 2	<0.1	9-9.5'
F 2	<0.1	12-12.5'
F 3	<0.1	8.5-9'
F 4	<0.1	6.5-7'
F 4	<0.1	9-9.5'
F 5	8.3	8-9'
F 5	7.9	11-12'
F 5	2.2	13-14'
F 5	12	15-16'
F 5	<0.1	16-17'
F 5	7.7	18-19'
F 5	<0.2	19-20'
F 7	<0.1	1-2' unsaturated
F 7	<0.1	2-3' unsaturated
F 7	<0.1	6-7'
F 7	<0.1	7.5-8'
F 8	0.51	7-8'
F 8	1.5	8-9'
F 8	<0.25	9-10'
F 9	<0.5	6-7'
F 9	<1	9-10'
F 9	<0.5	13-14'
F 17	1.6	4-5' unsaturated
F 17	0.11	13-14'
F 18	<0.05	10-11'
F 19	<0.05	10-12'
F 20	28	5-6 unsaturated
F 20	2.4	10-11'
F 23	14	9-10'
F 23	<0.05	13-14'
F 24	9.7	3-4'
F 24	0.1	9-10'

October 2017 UNSATURATED SOIL SAMPLES

Sample ID	Naphthalene (mg/kg)	Depth (ft)
P 47	<0.0021	6-6.5'
P 48	<0.0019	1-1.5'
P 49	<0.0016	4.5-5'
P 50	<0.0017	4-4.5'
P 52	<0.300 E	0-0.5'
P 53	<0.0013	4-4.5'
P 54	<0.0046	0-0.5'
P 54	0.0415	0.5-1'
P 55	<0.0032	0-4"
P 56	<0.0017	3-3.5'
P 57	<0.002	3.5-4'
P 60	<0.0027	0-0.5'
P 60	<0.0022	1.5-2'
P 64	2.98	6-6.5'
P 70	535	3.5-4'

ON-SITE ENVIRONMENTAL
119 Shoemaker Way • Coatesville, PA 19320
Phone: (610) 384-2719 • Fax (610) 384-2709

Drawing #: Soilnap2 unsat wo F samples.drw
Date 12/2/18

Figure 12 Naphthalene in Soil Above Default Impact to Ground Water & Ecological Soil Screening Levels
North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

October 2017
UNSATURATED SOIL SAMPLES

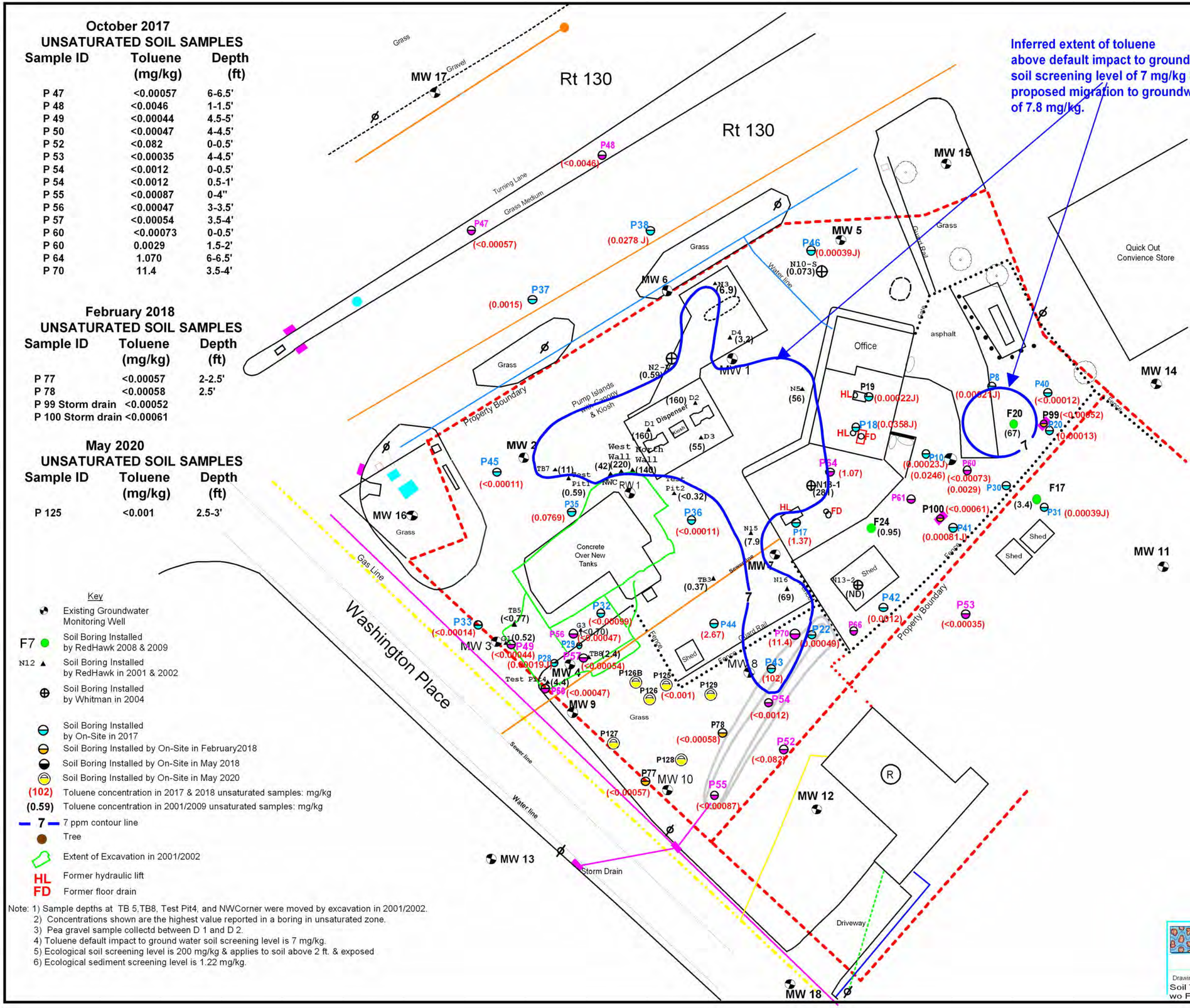
Sample ID	Toluene (mg/kg)	Depth (ft)
P 47	<0.00057	6-6.5'
P 48	<0.0046	1-1.5'
P 49	<0.00044	4.5-5'
P 50	<0.00047	4-4.5'
P 52	<0.082	0-0.5'
P 53	<0.00035	4-4.5'
P 54	<0.0012	0-0.5'
P 54	<0.0012	0.5-1'
P 55	<0.00087	0-4"
P 56	<0.00047	3-3.5'
P 57	<0.00054	3.5-4'
P 60	<0.00073	0-0.5'
P 60	0.0029	1.5-2'
P 64	1.070	6-6.5'
P 70	11.4	3.5-4'

February 2018
UNSATURATED SOIL SAMPLES

Sample ID	Toluene (mg/kg)	Depth (ft)
P 77	<0.00057	2-2.5'
P 78	<0.00058	2.5'
P 99 Storm drain	<0.00052	
P 100 Storm drain	<0.00061	

May 2020
UNSATURATED SOIL SAMPLES

Sample ID	Toluene (mg/kg)	Depth (ft)
P 125	<0.001	2.5-3'



Note: 1) Sample depths at TB 5,TB8, Test Pit4, and NWCorner were moved by excavation in 2001/2002.
2) Concentrations shown are the highest value reported in a boring in unsaturated zone.
3) Pea gravel sample collectd between D 1 and D 2.
4) Toluene default impact to ground water soil screening level is 7 mg/kg.
5) Ecological soil screening level is 200 mg/kg & applies to soil above 2 ft. & exposed
6) Ecological sediment screening level is 1.22 mg/kg.

2017
UNSATURATED SOIL SAMPLES

Sample ID	Toluene (mg/kg)	Depth (ft)
P 8	0.00021 J	6'
P 10	0.00023 J	0-1'
P 10	0.0246	3'
P 17	1.370	4'
P 18	0.0358 J	4-4.5'
P 19	0.00022 J	5'
P 20	<0.00013	5'
P 22	<0.00049	0-6"
P 28	0.00019 J	3.5'
P 31	0.00039 J	6.5'
P 32	<0.00099	4.5'
P 33	<0.00014	4.5'
P 35	0.0769	5.5-6'
P 36	0.00011	6'
P 37	0.0015	3'
P 38	0.0278 J	3'
P 40	<0.00012	6'
P 41	0.00081 J	5'
P 42	0.0012	6'
P 43	102	1'
P 43	0.361	2'
P 44	2.670	3'
P 45	<0.00011	5.5-6'
P 46	0.00039 J	6-6.5'

2001 - 2009
UNSATURATED SOIL SAMPLES

Sample ID	Toluene (mg/kg)	Depth (ft)
Test Pit 1	0.59	2'
Test Pit 2	<0.32	2'
Test Pit 4	4.4	2.5' excavated to 3'
TB3	0.37	3-4'
TB5	<0.77	2-2.5' excavated to 3'
TB7	11	4-5'
TB8	2.4	3-4'excavated to 3'
Pea Gravel	<0.66	3'
North Wall	140	4.5'
West Wall	220	4'
NW Corner	42	5' excavated
South Dispenser	<0.66	3'
D1	160	2.5 - 3.5'
D 2	160	2.5 - 4
D 3	55	3.5 - 4.5'
D4	3.2	3.5 - 4.5'
G1	0.52	2 excavated to 2'
G3	<0.70	3.5' excavated to 3'
N2-V	0.59	5.5-6'
N3	6.9	4 - 5.5'
N 5	56	4 - 5'
N10-S	0.073	4.5-5'
N 15	7.9	2 - 3'
N 16	69	4 - 7'
N 13-1	281	3.5 - 4'
N13-2	ND	5-5.5'
F17	3.4	4-5'
F20	67	5-6'
F 24	0.95	3 - 4'

ON-SITE ENVIRONMENTAL
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Drawing #: Soil Toluene2unsat wo F samples
Date 12/5/18

Figure 13 Toluene in Soil Above Default Impact to Groundwater Soil Screening Level

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

October 2017
UNSATURATED SOIL SAMPLES

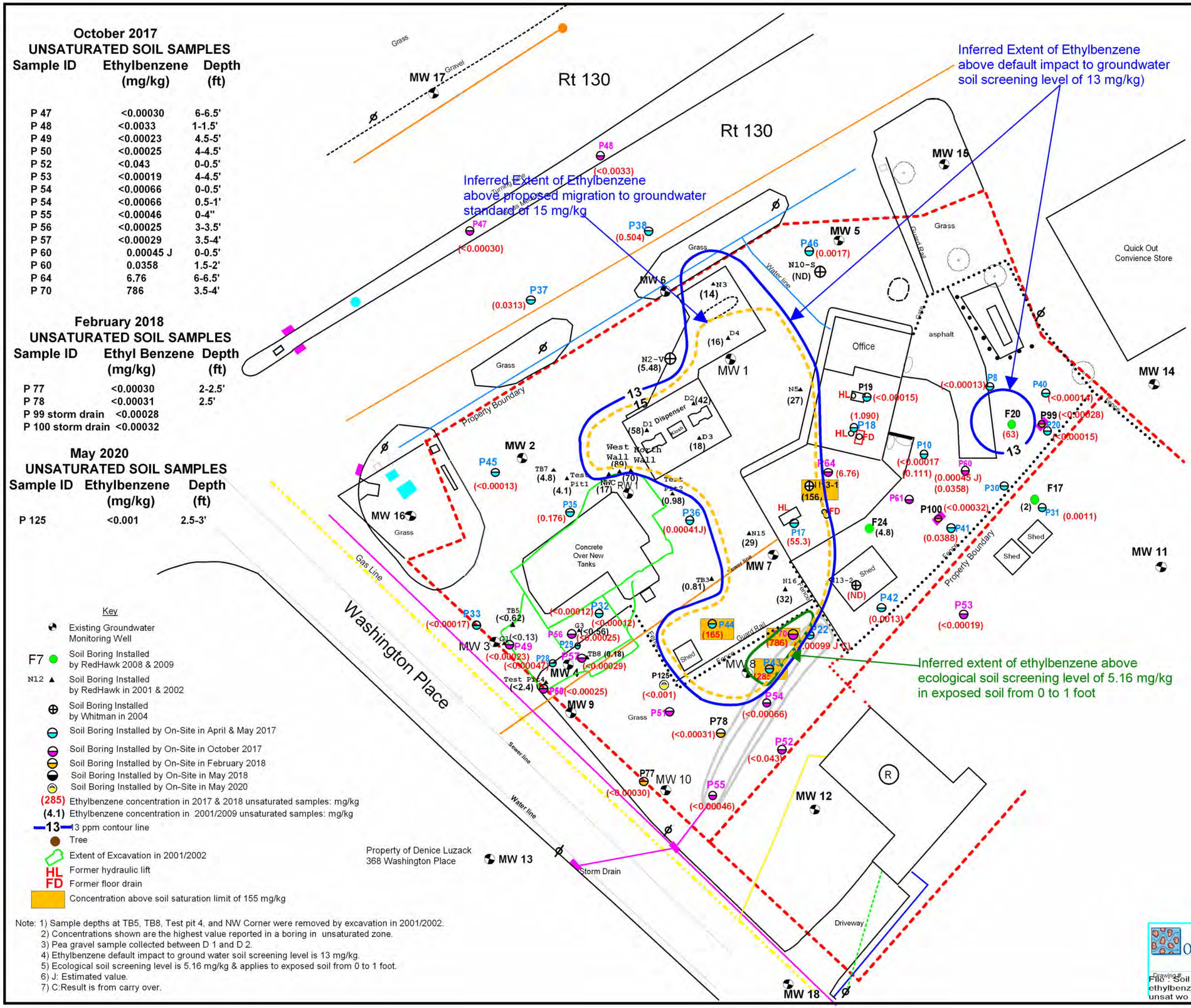
Sample ID	Ethylbenzene (mg/kg)	Depth (ft)
P 47	<0.00030	6-6.5'
P 48	<0.0033	1-1.5'
P 49	<0.00023	4.5-5'
P 50	<0.00025	4-4.5'
P 52	<0.043	0-0.5'
P 53	<0.00019	4-4.5'
P 54	<0.00066	0-0.5'
P 54	<0.00066	0.5-1'
P 55	<0.00046	0-4"
P 56	<0.00025	3-3.5'
P 57	<0.00029	3.5-4'
P 60	0.00045 J	0-0.5'
P 60	0.0358	1.5-2'
P 64	6.76	6-6.5'
P 70	786	3.5-4'

February 2018
UNSATURATED SOIL SAMPLES

Sample ID	Ethyl Benzene (mg/kg)	Depth (ft)
P 77	<0.00030	2-2.5'
P 78	<0.00031	2.5'
P 99 storm drain	<0.00028	
P 100 storm drain	<0.00032	

May 2020
UNSATURATED SOIL SAMPLES

Sample ID	Ethylbenzene (mg/kg)	Depth (ft)
P 125	<0.001	2.5-3'



Key

- Existing Groundwater Monitoring Well
- F7 Soil Boring Installed by RedHawk 2008 & 2009
- N12 Soil Boring Installed by RedHawk in 2001 & 2002
- Soil Boring Installed by Whitman in 2004
- Soil Boring Installed by On-Site in April & May 2017
- Soil Boring Installed by On-Site in October 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- Soil Boring Installed by On-Site in May 2020
- (285) Ethylbenzene concentration in 2017 & 2018 unsaturated samples: mg/kg
- (4.1) Ethylbenzene concentration in 2001/2009 unsaturated samples: mg/kg
- 13 13 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain
- Concentration above soil saturation limit of 155 mg/kg

Note: 1) Sample depths at TB5, TB8, Test pit 4, and NW Corner were removed by excavation in 2001/2002.
2) Concentrations shown are the highest value reported in a boring in unsaturated zone.
3) Pea gravel sample collected between D 1 and D 2.
4) Ethylbenzene default impact to ground water soil screening level is 13 mg/kg.
5) Ecological soil screening level is 5.16 mg/kg & applies to exposed soil from 0 to 1 foot.
6) J: Estimated value.
7) C:Result is from carry over.

2017
UNSATURATED SOIL SAMPLES

Sample ID	Ethylbenzene (mg/kg)	Depth (ft)
P 8	<0.00013	6'
P 10	<0.00017	0-1'
P 10	0.111	3'
P 17	55.3	4'
P 18	1.090	4-4.5'
P 19	<0.00015	5'
P 20	<0.00015	5'
P 22	0.00099 C	0-6"
P 28	<0.00047	3.5'
P 31	0.0011	6.5'
P 32	<0.00012	4.5'
P 33	<0.00017	4.5'
P 35	0.176	5.5-6'
P 36	0.00041 J	6'
P 37	0.0313	3'
P 38	0.504	3'
P 40	<0.00014	6'
P 41	0.0388	5'
P 42	0.0013	6'
P 43	285	1'
P 43	8	2'
P 44	165	3'
P 45	<0.00013	5.5-6'
P 46	0.0017	6-6.5'

2001 - 2009
UNSATURATED SOIL SAMPLES

Sample ID	Ethylbenzene (mg/kg)	Depth (ft)
Test Pit 1	4.1	2'
Test Pit 2	9.8	2'
Test Pit 4	<2.4	2.5' excavated to 3'
TB3	0.81	3-4'
TB5	<0.62	2-2.5' excavated to 3'
TB7	4.8	4-5'
TB8	0.18	3-4' excavated to 3'
Pea Gravel	<0.52	3'
North Wall	70	4.5'
West Wall	89	4'
NW Corner	17	5' excavated
South Dispenser	4.2	3'
D1	58	2.5 - 3.5'
D 2	42	2.5 - 4
D 3	18	3.5 - 4.5'
D4	16	3.5 - 4.5'
G1	<0.13	2 excavated to 2'
G3	<0.56	3.5' excavated to 3'
N2-V	5.48	5.5-6'
N3	15	4 - 5.5'
N 5	27	4 - 5'
N10-S	ND	4.5-5'
N 15	29	2 - 3'
N 16	32	4 - 7'
N 13-1	156	3.5 - 4'
N13-2	ND	5-5.5'
F17	2	4-5'
F20	63	5-6'
F 24	4.8	3 - 4'

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Drawing#
File : Soil ethylbenzene2 unsat wo F samples

Date 6/8/20

Figure 14 Ethylbenzene in Soil Above Default Impact to Groundwater & Ecological Soil Screening Levels & Soil Saturation Limit

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

October 2017
UNSATURATED SOIL SAMPLES

Sample ID	Xylenes (mg/kg)	Depth (ft)
P 47	<0.00026	6-6.5'
P 48	0.0145	1-1.5'
P 49	<0.00020	4.5-5'
P 50	<0.00022	4-4.5'
P 52	<0.038	0-0.5'
P 53	<0.00016	4-4.5'
P 54	<0.00057	0-0.5'
P 54	<0.00057	0.5-1'
P 55	<0.00040	0-4"
P 56	<0.00022	3-3.5'
P 57	<0.00025	3.5-4'
P 60	0.0011 J	0-0.5'
P 60	0.157	1.5-2'
P 64	38	6-6.5'
P 70	3,140	3.5-4'

February 2018
UNSATURATED SOIL SAMPLES

Sample ID	Xylenes (mg/kg)	Depth (ft)
P 77	<0.00026	2-2.5'
P 78	<0.00027	2.5'
P 99 Storm drain	<0.00024	
P 100 Storm drain	< 0.00028	

May 2020
UNSATURATED SOIL SAMPLES

Sample ID	Xylenes (mg/kg)	Depth (ft)
P 125	<0.001	2.5-3'

Inferred extent of xylene above default impact to groundwater soil screening level of 19 mg/kg & proposed migration to groundwater standard of 19 mg/kg

Inferred extent of xylenes above ecological soil screening level of 10 mg/kg in exposed soil from 0 to 1 foot

Key

- Existing Groundwater Monitoring Well
- F7 Soil Boring Installed by RedHawk 2008 & 2009
- N12 Soil Boring Installed by RedHawk in 2001 & 2002
- Soil Boring Installed by Whitman in 2004
- Soil Boring Installed by On-Site in 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- Soil Boring Installed by On-Site in May 2020
- (2,790) Xylene concentration in 2017 & 2018 unsaturated samples: mg/kg
- (32) Xylene concentration in 2001/2009 unsaturated samples: mg/kg
- 19 19 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain
- Concentration above soil saturation limit of 168 mg/kg

Note: 1) Sample depths at TB5, TB8, Test pit4, and NW Corner were removed by excavation in 2001/2002.
2) Concentrations shown are the highest value reported in a boring in unsaturated zone.
3) Pea gravel sample collected between D 1 and D 2.
4) Xylene default impact to ground water soil screening level is 19 mg/kg.
5) Xylene ecological soil screening level is 10 mg/kg for exposed soil from 0 to 1 foot.
6) J: Estimated value

Property of Denice Luzack
368 Washington Place

2017
UNSATURATED SOIL SAMPLES

Sample ID	Xylenes (mg/kg)	Depth (ft)
P 8	0.0032	6'
P 10	0.0015	0-1'
P 10	0.415	3'
P 17	316	4'
P 18	3.170	4-4.5'
P 19	0.00049 J	5'
P 20	<0.0020	5'
P 22	0.0033 J	0-6"
P 28	<0.00020	3.5'
P 31	0.0453	6.5'
P 32	<0.00016	4.5'
P 33	0.00033 J	4.5'
P 35	1.260	5.5-6'
P 36	0.00071 J	6'
P 37	0.0148	3'
P 38	0.213	3'
P 40	0.00050 J	6'
P 41	0.0231	5'
P 42	0.0072	6'
P 43	2,790	1'
P 43	42.8	2'
P 44	948	3'
P 45	0.00021 J	5.5-6'
P 46	0.022	6-6.5'

2001 - 2009
UNSATURATED SOIL SAMPLES

Sample ID	Xylenes (mg/kg)	Depth (ft)
Test Pit 1	11.37	2'
Test Pit 2	18	2'
Test Pit 4	22	2.5' excavated to 3'
TB3	1.8	3-4'
TB5	0.15	2-2.5' excavated to 3'
TB7	32	4-5'
TB8	3.7	3-4' excavated to 3'
Pea Gravel	<0.66	3'
North Wall	480	4.5'
West Wall	590	4'
NW Corner	110	5' excavated
South Dispenser	0.97	3'
D1	380	2.5 - 3.5'
D 2	290	2.5 - 4
D 3	130	3.5 - 4.5'
D4	96	3.5 - 4.5'
G1	0.53	2 excavated to 2'
G3	<0.70	3.5' excavated to 3'
N2-V	35.3	5.5-6'
N3	69	4 - 5.5'
N 5	195	4 - 5'
N10-S	ND	4.5-5'
N 15	235	2 - 3'
N 16	193	4 - 7'
N 7-2	766	6.5-7'
N 13-1	1,100	3.5 - 4'
N13-2	ND	5-5.5'
F17	16	4-5'
F20	430	5-6'
F 24	17.3	3 - 4'

ON-SITE ENVIRONMENTAL
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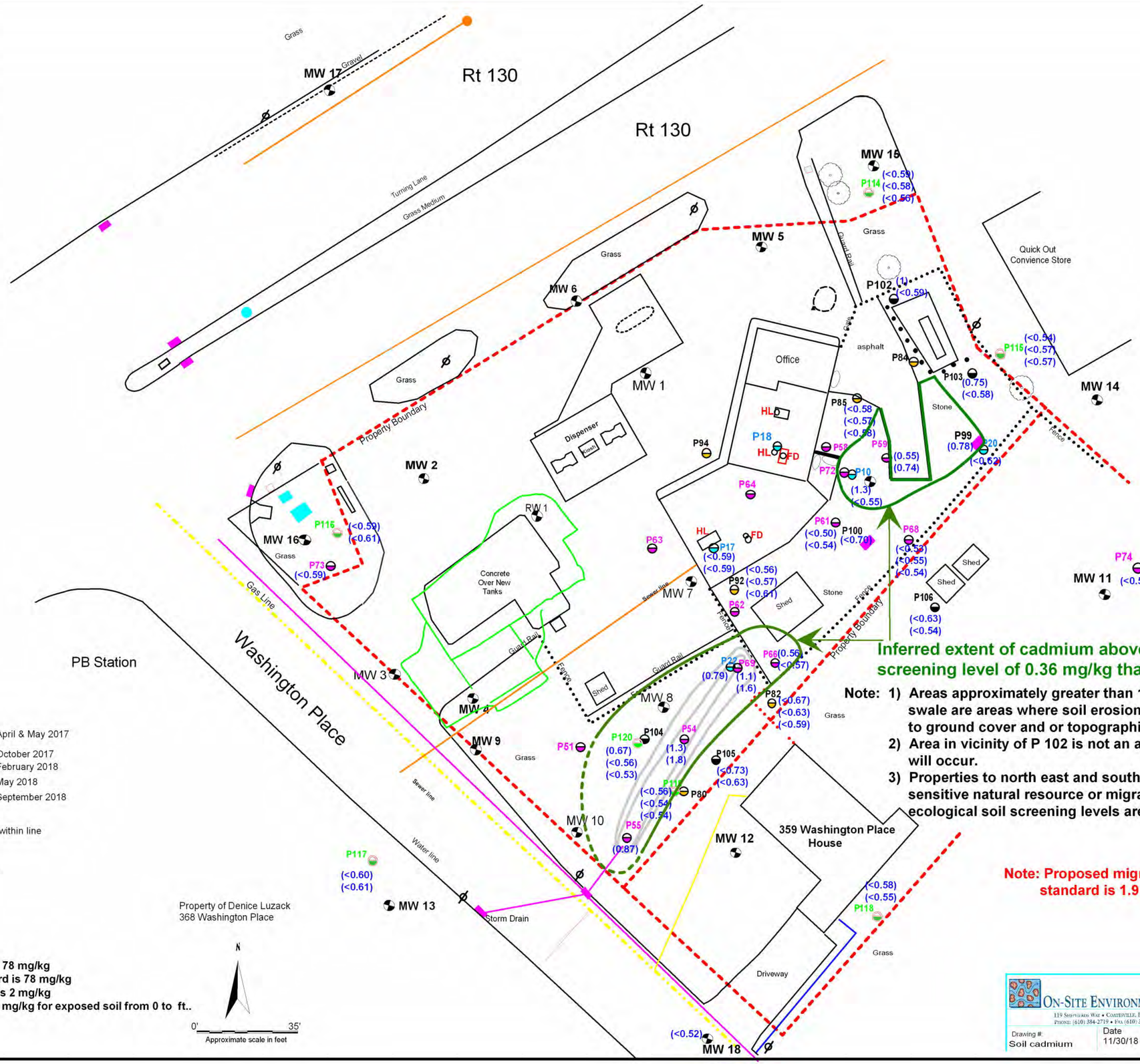
Drawing #: Soilxyleneunsat3 wo F samples
Date: 6/8/20

Figure 15 Xylenes in Soil Above Default Impact to Groundwater & Ecological Soil Screening Levels & Soil Saturation Limit
North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

SOIL SAMPLES

Sample ID	Cadmium (mg/kg)	Depth (ft)
P 114	<0.59	0-0.5'
P 114	<0.58	0.5-1'
P 114	<0.56	6-6.5'
P 115	<0.54	0-0.5'
P 115	<0.57	0.5-1'
P 115	<0.57	6-6.5'
P 116	<0.59	0-0.5'
P 116	<0.61	0.5-1'
P 117	<0.60	0-0.5'
P 117	<0.61	0.5-1'
P 118	<0.58	0-0.5'
P 118	<0.55	0.5-1'
P 119	<0.56	0-0.5'
P 119	<0.54	0.5-1'
P 119	<0.54	1.5-2'
P 120	0.67	0-0.5'
P 120	<0.56	0.5-1'
P 120	<0.53	1.5-2'
MW 18	<0.52	5-5.5'



SOIL SAMPLES

Sample ID	Cadmium (mg/kg)	Depth (ft)
P 10	1.3	0-1'
P 10	<0.55	3'
P 17	<0.59	4'
P 17	<0.59	9'
P 20	<0.62	5'
P 22	0.79	0-6"
P 54	1.3	0-0.5'
P 54	1.8	0.5-1'
P 55	0.87	0-4"
P 59	0.55	0-0.5'
P 59	0.74	1.5-2'
P 61	<0.50	0-0.5'
P 61	<0.54	1.5-2'
P 66	0.56	0-0.5'
P 66	<0.57	1.5-2'
P 68	<0.53	0-0.5'
P 68	<0.55	1.5-2'
P 68	<0.54	6-6.5'
P 69	1.1	0.5-1'
P 69	1.6	1-1.5'
P 73	<0.59	3'
P 74	<0.56	6-6.5'
P 82	<0.67	0-0.5'
P 82	<0.63	1.5-2'
P 82	<0.59	5.5-6'
P 85	<0.58	0-0.5'
P 85	<0.57	1.5-2'
P 85	<0.58	3.5-4'
P 92	<0.56	0-0.5'
P 92	<0.57	1.5-2'
P 92	<0.61	6-6.5'
P 99	0.78	Storm Drain
P 100	<0.70	Storm Drain
P 102	1	0-0.5'
P 102	<0.59	1-2'
P 103	0.75	0-0.5'
P 103	<0.58	1-2'
P 105	<0.73	0-0.5'
P 105	<0.63	1.5-2'
P 106	<0.63	0-0.5'
P 106	<0.54	1.5-2'

Inferred extent of cadmium above ecological soil screening level of 0.36 mg/kg that could migrate to swale

Note:
1) **Areas approximately greater than 10 feet to the east and west of the swale are areas where soil erosion to the swale will not occur due to ground cover and or topographic gradient.**
2) **Area in vicinity of P 102 is not an area where soil erosion to the swale will occur.**
3) **Properties to north east and south of site do not have environmentally sensitive natural resource or migration pathway to ENSR therefore ecological soil screening levels are not applicable at those properties.**

Note: Proposed migration to groundwater standard is 1.9 mg/kg

Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- (1.3) Cadmium concentration: mg/kg
- 0.36 Concentration above back ground within line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Property of Denice Luzack
368 Washington Place

N

0' 35'
Approximate scale in feet

Residential direct contact standard is 78 mg/kg
Non-residential direct contact standard is 78 mg/kg
Default impact to ground water level is 2 mg/kg
Ecological soil screening level is 0.36 mg/kg for exposed soil from 0 to ft..

On-Site Environmental
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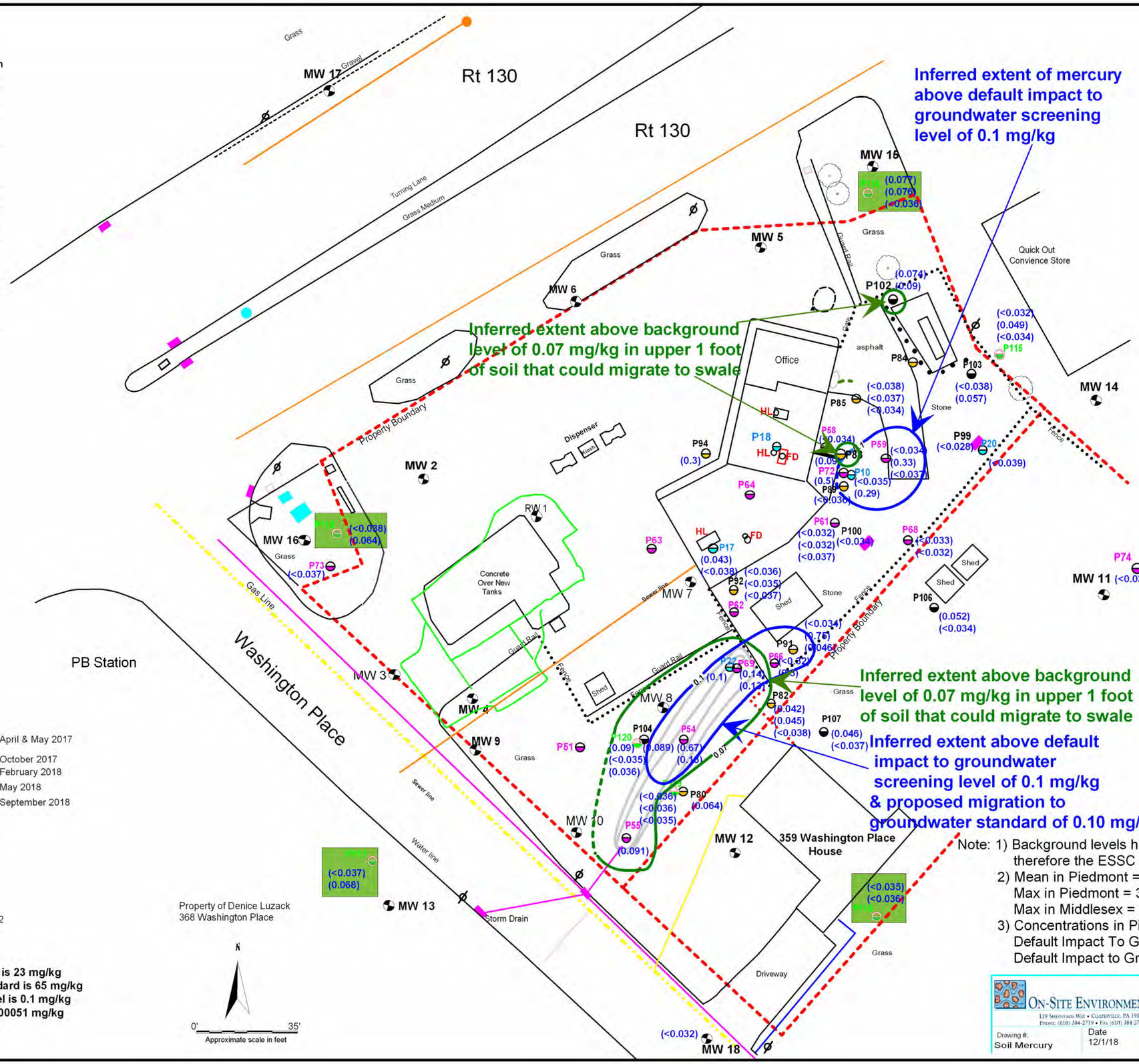
Drawing #: Soil cadmium
Date: 11/30/18

Figure 16 Cadmium in Soil Above Ecological Soil Screening Level that Could Migrate to Swale
North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

SOIL SAMPLES

Sample ID	Mercury (mg/kg)	Depth (ft)
P 114	0.077	0-0.5'
P 114	0.076	0.5-1'
P 114	<0.036	6-6.5'
P 115	<0.032	0-0.5'
P 115	0.049	0.5-1'
P 115	<0.034	6-6.5'
P 116	<0.038	0-0.5'
P 116	0.064	0.5-1'
P 117	<0.037	0-0.5'
P 117	0.068	0.5-1'
P 118	<0.035	0-0.5'
P 118	<0.036	0.5-1'
P 119	<0.036	0-0.5'
P 119	<0.035	0.5-1'
P 119	0.038	1.5-2'
P 120	0.09	0-0.5'
P 120	<0.035	0.5-1'
P 120	0.036	1.5-2'
MW 18	<0.032	5-5.5'



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- (0.29) Mercury concentration : mg/kg
- 0.1 — 0.1 ppm contour line
- 0.1 — 0.07 ppm contour line
- Background concentration
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Residential direct contact standard is 23 mg/kg
Non-residential direct contact standard is 65 mg/kg
Default impact to ground water level is 0.1 mg/kg
Ecological soil screening level is 0.00051 mg/kg

SOIL SAMPLES

Sample ID	Mercury (mg/kg)	Depth (ft)
P 10	<0.035	0-1'
P 10	0.29	3'
P 17	0.043	4'
P 17	<0.038	9'
P 20	<0.039	5'
P 22	0.1	0-6"
P 54	0.67	0-0.5'
P 54	0.13	0.5-1'
P 55	0.091	0-4"
P 58	<0.034	6-6.5'
P 59	<0.034	0-0.5'
P 59	0.33	1.5-2'
P 59	<0.037	4.5-5'
P 61	<0.032	0-0.5'
P 61	<0.032	1.5-2'
P 61	<0.037	4-4.5'
P 66	<0.032	0-0.5'
P 66	0.3	1.5-2'
P 68	<0.033	0-0.5'
P 68	<0.032	1.5-2'
P 68	<0.033	6-6.5'
P 69	0.14	0.5-1'
P 69	0.13	1-1.5'
P 72	0.5	1-2'
P 73	<0.037	3'
P 74	<0.036	6-6.5'
P 80	0.064	0-0.5'
P 82	0.042	0-0.5'
P 82	0.045	1.5-2'
P 82	<0.038	5.5-6'
P 85	<0.038	0-0.5'
P 85	<0.037	1.5-2'
P 85	<0.034	3.5-4'
P 88	0.093	0-0.5'
P 88	<0.030	1.5-2'
P 88	<0.034	3-3.5'
P 89	<0.036	3.5-4'
P 91	<0.034	0-0.5'
P 91	0.75	1.5-2'
P 91	0.046	5-5.5'
P 92	<0.036	0-0.5'
P 92	<0.035	1.5-2'
P 92	<0.037	6-6.5'
P 99	<0.028	Storm Drain
P 100	<0.034	Storm Drain
P 102	0.074	0-0.5'
P 102	0.09	1-2'
P 103	<0.038	0-0.5'
P 103	0.057	1-2'
P 104	0.089	0-0.5'
P 106	0.052	0-0.5'
P 106	<0.034	1.5-2'
P 107	0.046	0-0.5'
P 107	<0.037	1-1.5'

Note: 1) Background levels higher than ecological soil screening criteria therefore the ESSC should not be applicable.
2) Mean in Piedmont = 0.33
Max in Piedmont = 3.0
Max in Middlesex = 0.2
3) Concentrations in Piedmont & Middlesex County higher than Default Impact To Groundwater Screening Level therefore Default Impact to Groundwater should not apply

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Drawing #: Soil Mercury
Date 12/1/18

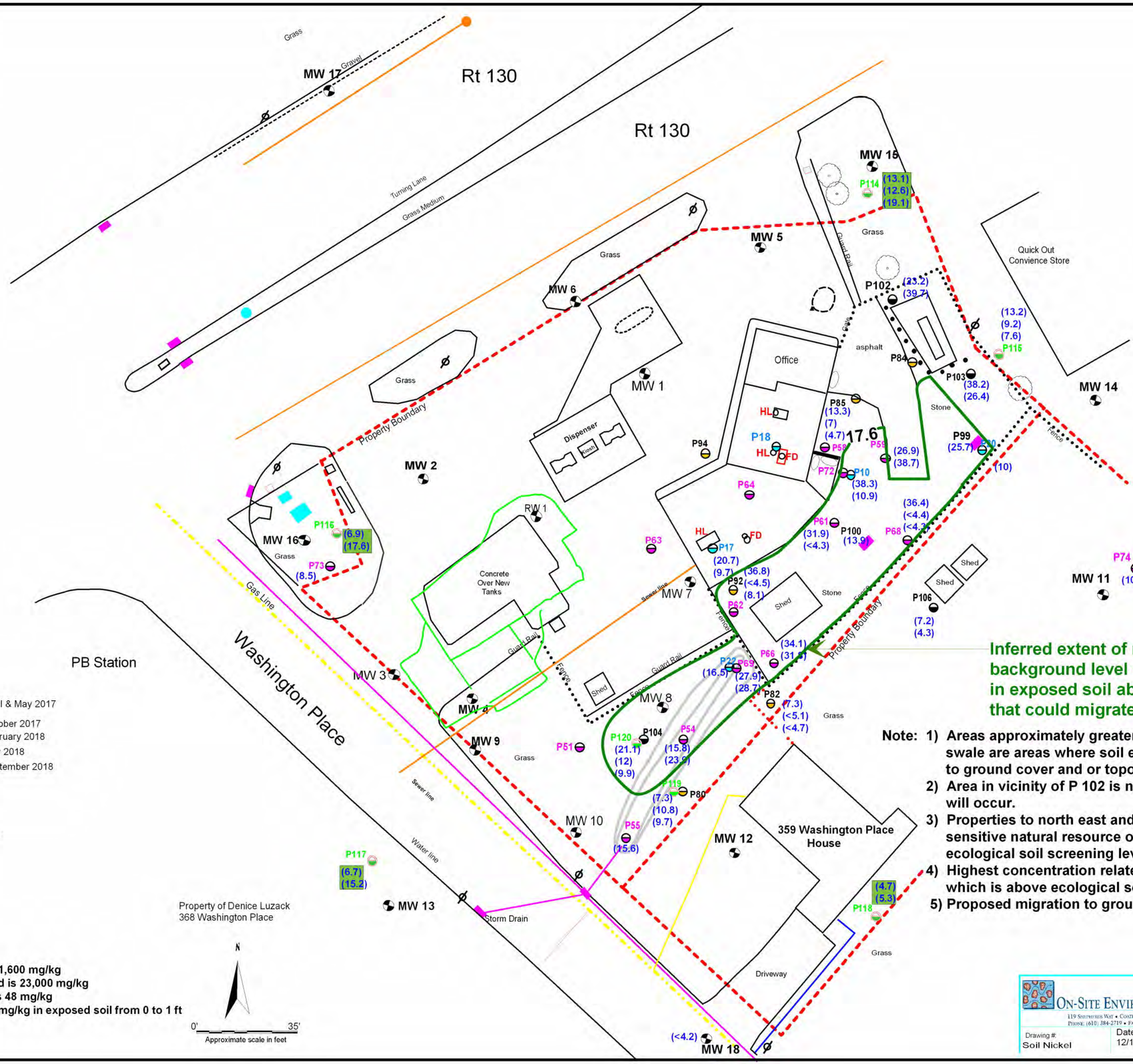
Figure 17 Mercury in Soil Above Default Impact to Groundwater Soil Screening Level & Concentrations Higher than the Background Level that could Migrate to Swale

SOIL SAMPLES

Sample ID	Nickel (mg/kg)	Depth (ft)
P 114	13.1	0-0.5'
P 114	12.6	0.5-1'
P 114	19.1	6-6.5'
P 115	13.2	0-0.5'
P 115	9.2	0.5-1'
P 115	7.6	6-6.5'
P 116	6.9	0-0.5'
P 116	17.6	0.5-1'
P 117	6.7	0-0.5'
P 117	15.2	0.5-1'
P 118	4.7	0-0.5'
P 118	5.3	0.5-1'
P 119	7.3	0-0.5'
P 119	10.8	0.5-1'
P 119	9.7	1.5-2'
P 120	21.1	0-0.5'
P 120	12	0.5-1'
P 120	9.9	1.5-2'
MW 18	<4.2	5-5.5'

SOIL SAMPLES

Sample ID	Nickel (mg/kg)	Depth (ft)
P 10	38.3	0-1'
P 10	10.9	3'
P 17	20.7	4'
P 17	9.7	9'
P 20	10	5'
P 22	16.5	0-6"
P 54	15.8	0-0.5'
P 54	23.9	0.5-1'
P 55	15.6	0-4"
P 59	26.9	0-0.5'
P 59	38.7	1.5-2'
P 61	31.9	0-0.5'
P 61	<4.3	1.5-2'
P 66	34.1	0-0.5'
P 66	31.8	1.5-2'
P 68	36.4	0-0.5'
P 68	<4.4	1.5-2'
P 68	<4.3	6-6.5'
P 69	27.9	0.5-1'
P 69	28.7	1-1.5'
P 73	8.5	3'
P 74	10.6	6-6.5'
P 82	7.3	0-0.5'
P 82	<5.1	1.5-2'
P 82	<4.7	5.5-6'
P 85	13.3	0-0.5'
P 85	7	1.5-2'
P 85	4.7	3.5-4'
P 92	36.8	0-0.5'
P 92	<4.5	1.5-2'
P 92	8.1	6-6.5'
P 99	25.7	Storm Drain
P 100	13.9	Storm Drain
P 102	23.2	0-0.5'
P 102	39.7	1-2'
P 103	38.2	0-0.5'
P 103	26.4	1-2'
P 106	7.2	0-0.5'
P 106	4.3	1.5-2'



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- (38.3) Nickel concentration: mg/kg
- 13 — 13 ppm contour line
- (6.9) (17.6) Concentration related to Background
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Residential direct contact standard is 1,600 mg/kg
Non-residential direct contact standard is 23,000 mg/kg
Default impact to ground water level is 48 mg/kg
Ecological soil screening level is 13.6 mg/kg in exposed soil from 0 to 1 ft

Inferred extent of nickel above background level of 17.6 mg/kg in exposed soil above 1 foot that could migrate to swale

Note:
1) **Areas approximately greater than 10 feet to the east and west of the swale are areas where soil erosion to the swale will not occur due to ground cover and or topographic gradient.**
2) **Area in vicinity of P 102 is not an area where soil erosion to the swale will occur.**
3) **Properties to north east and south of site do not have environmentally sensitive natural resource or migration pathway to ENSR therefore ecological soil screening levels are not applicable at those properties.**
4) **Highest concentration related to background was 17.6 mg/kg in P 116 which is above ecological soil screening level of 13.6 mg/kg.**
5) **Proposed migration to groundwater standard is 48 mg/kg.**

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Drawing # Soil Nickel

Date 12/1/18

Figure 18 Nickel Above Background Level of 17.6 mg/kg that Could Migrate to Swale

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

SOIL SAMPLES

Sample ID	Zinc (mg/kg)	Depth (ft)
P 82	54.9	0-0.5'
P 82	23.5	1.5-2'
P 82	10.1	5.5-6'
P 85	92.2	0-0.5'
P 85	71.6	1.5-2'
P 85	29.7	3.5-4'
p 87	58.5	4.5-5'
P 92	77.9	0-0.5'
P 92	8.9	1.5-2'
P 92	27	6-6.5'
P 99	82	Storm Drain
P 100	132	Storm Drain
P 102	357	0-0.5'
P 102	99.8	1-2'
P 103	104	0-0.5'
P 103	65.3	1-2'
P 105	79.1	0-0.5'
P 106	60.7	0-0.5'
P 106	10.1	1.5-2'
P 114	70.3	0-0.5'
P 114	74.8	0.5-1'
P 114	27.3	6-6.5'
P 115	27.7	0-0.5'
P 115	40.3	0.5-1'
P 115	15.6	6-6.5'
P 116	42.6	0-0.5'
P 116	106	0.5-1'
P 117	39.1	0-0.5'
P 117	122	0.5-1'
P 118	18.4	0-0.5'
P 118	19.4	0.5-1'
P 119	30.7	0-0.5'
P 119	46.4	0.5-1'
P 119	44.8	1.5-2'
P 120	160	0-0.5'
P 120	93.1	0.5-1'
P 120	85.8	1.5-2'
MW 18	6.3	5-5.5'

SOIL SAMPLES

Sample ID	Zinc (mg/kg)	Depth (ft)
P 10	572	0-1'
P 10	65.3	3'
P 17	59.2	4'
P 17	35.5	9'
P 20	37.6	5'
P 22	241	0-6"
P 54	190	0-0.5'
P 54	266	0.5-1'
P 55	184	0-4"
P 59	228	0-0.5'
P 59	1,280	1.5-2'
P 61	109	0-0.5'
P 61	22.2	1.5-2'
P 66	139	0-0.5'
P 66	597	1.5-2'
P 68	63.2	0-0.5'
P 68	<11	1.5-2'
P 68	<11	6-6.5'
P 69	348	0.5-1'
P 69	440	1-1.5'
P 73	31.3	3'
P 74	40.3	6-6.5'

Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- (65.3) Zinc concentration: mg/kg
- 122 122 ppm contour line
- 930 930 ppm contour line
- (39.1) (122) Concentration related to Background
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Residential direct contact standard is 23,000 mg/kg
Non-residential direct contact standard is 110,000 mg/kg
Default impact to ground water level is 930 mg/kg
Ecological soil screening level is 6.62 mg/kg

Inferred extent of zinc above background level of 122 mg/kg in exposed soil above 1 foot that could erode to swale

Note:
1) Areas approximately greater than 15 feet to the east and west of the swale are areas where soil erosion to the swale will not occur due to ground cover and or topographic gradient.
2) Area by P 102 is not an area where soil can erode to swale.
3) Properties to north east and south of site do not have environmentally sensitive natural resource or migration pathway to ENSR therefore ecological soil screening level of 6.62 mg/kg is not applicable at those properties.
4)Proposed migration to groundwater standard is 930 mg/kg.

Property of Denice Luzack
368 Washington Place

N

0' 35'
Approximate scale in feet

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Drawing #: Soil Zinc
Date 12/1/18

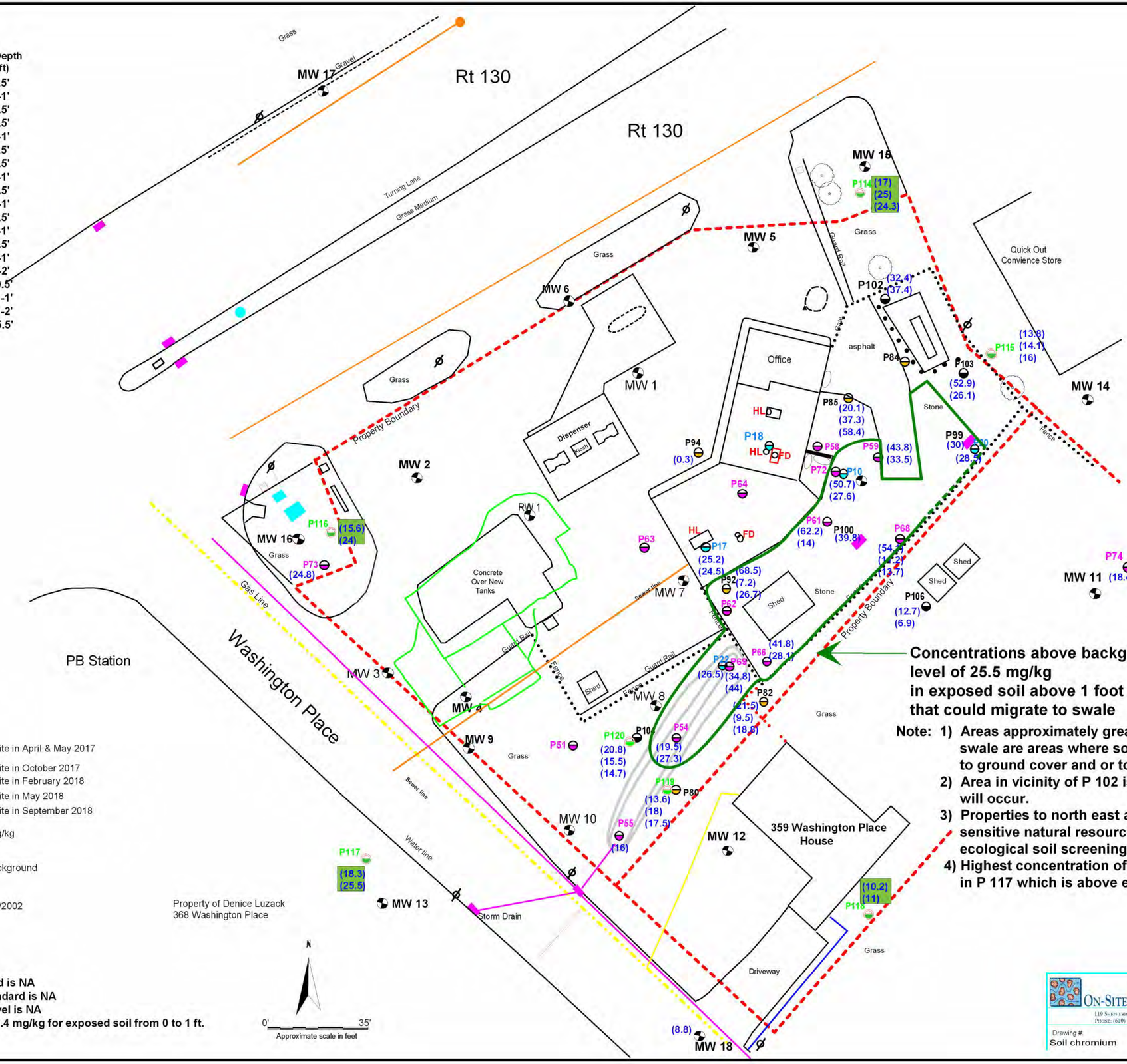
Figure 19 Zinc Above Background Level of 122 mg/kg that Could Migrate to Swale

SOIL SAMPLES

Sample ID	Chromium (mg/kg)	Depth (ft)
P 114	17	0-0.5'
P 114	25	0.5-1'
P 114	24.3	6-6.5'
P 115	13.8	0-0.5'
P 115	14.1	0.5-1'
P 115	16	6-6.5'
P 116	15.6	0-0.5'
P 116	24	0.5-1'
P 117	18.3	0-0.5'
P 117	25.5	0.5-1'
P 118	10.2	0-0.5'
P 118	11	0.5-1'
P 119	13.6	0-0.5'
P 119	18	0.5-1'
P 119	17.5	1.5-2'
P 120	20.8	0-0.5'
P 120	15.5	0.5-1'
P 120	14.7	1.5-2'
MW 18	8.8	5-5.5'

SOIL SAMPLES

Sample ID	Chromium (mg/kg)	Depth (ft)
P 10	50.7	0-1'
P 10	27.6	3'
P 17	25.2	4'
P 17	24.5	9'
P 20	28.5	5'
P 22	26.5	0-6''
P 54	19.5	0-0.5'
P 54	27.3	0.5-1'
P 55	16	0-4'''
P 59	43.8	0-0.5'
P 59	33.5	1.5-2'
P 61	62.2	0-0.5'
P 61	14	1.5-2'
P 66	41.8	0-0.5'
P 66	28.1	1.5-2'
P 68	54.1	0-0.5'
P 68	11.2 T	1.5-2'
P 68	13.7 T	6-6.5'
P 69	34.8	0.5-1'
P 69	44	1-1.5'
P 73	24.8	3'
P 74	18.4	6-6.5'
P 82	21.5	0-0.5'
P 82	9.5	1.5-2'
P 82	18.8	5.5-6'
P 85	20.1 C	0-0.5'
P 85	37.3	1.5-2'
P 85	58.4	3.5-4'
P 92	68.5	0-0.5'
P 92	7.2	1.5-2'
P 92	26.7	6-6.5'
P 99	30	Storm Drain
P 100	39.8	Storm Drain
P 102	32.4	0-0.5'
P 102	37.4	1-2'
P 103	52.9	0-0.5'
P 103	26.1	1-2'
P 106	12.7	0-0.5'
P 106	6.9	1.5-2'



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- (16) Chromium concentration: mg/kg
- 24.8 0.4 mg/kg contour line
- (18.3) (25.5) Concentration related to background
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Concentrations above background level of 25.5 mg/kg in exposed soil above 1 foot that could migrate to swale

Note:

1) Areas approximately greater than 15 feet to the east and west of the swale are areas where soil erosion to the swale will not occur due to ground cover and or topographic gradient.
2) Area in vicinity of P 102 is not an area where soil erosion to the swale will occur.
3) Properties to north east and south of site do not have environmentally sensitive natural resource or migration pathway to ENSR therefore ecological soil screening levels are not applicable at those properties.
4) Highest concentration of chromium related to background was 25.5 mg/kg in P 117 which is above ecological soil screening level of 0.4 mg/kg.

Residential direct contact standard is NA
Non-residential direct contact standard is NA
Default impact to ground water level is NA
Ecological soil screening level is 0.4 mg/kg for exposed soil from 0 to 1 ft.

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Drawing #: Soil chromium
Date: 11/30/18

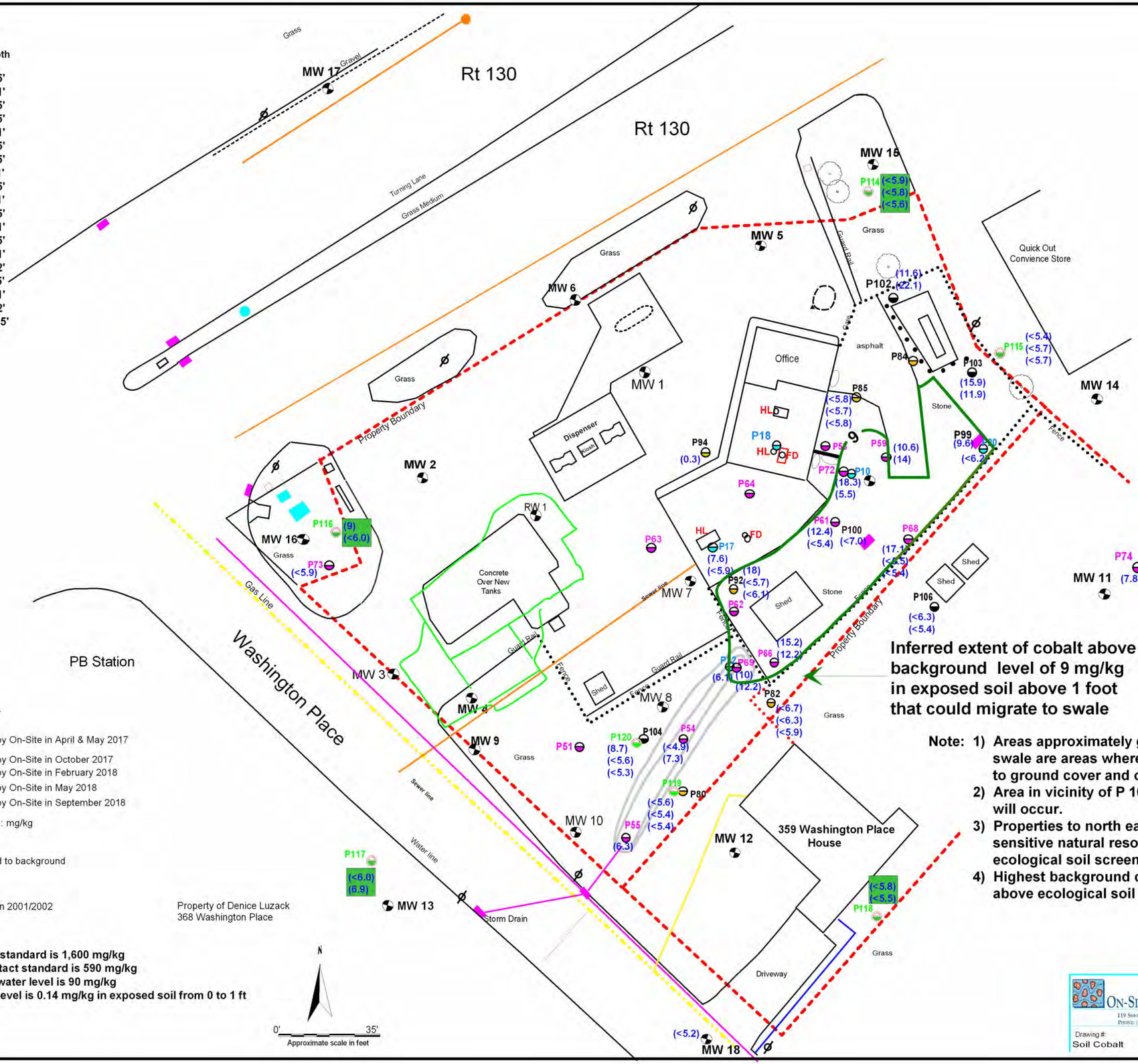
Figure 20 Chromium in Exposed Soil Above Background Level of 25.5 mg/kg that Could Migrate to Swale
North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

SOIL SAMPLES

Sample ID	Cobalt (mg/kg)	Depth (ft)
P 114	<5.9	0-0.5'
P 114	<5.8	0.5-1'
P 114	<5.6	6-6.5'
P 115	<5.4	0-0.5'
P 115	<5.7	0.5-1'
P 115	<5.7	6-6.5'
P 116	<5.9	0-0.5'
P 116	9	0.5-1'
P 117	<6.0	0-0.5'
P 117	6.9	0.5-1'
P 118	<5.8	0-0.5'
P 118	<5.5	0.5-1'
P 119	<5.6	0-0.5'
P 119	<5.4	0.5-1'
P 119	<5.4	1.5-2'
P 120	8.7	0-0.5'
P 120	<5.6	0.5-1'
P 120	<5.3	1.5-2'
MW 18	<5.2	5-5.5'

SOIL SAMPLES

Sample ID	Cobalt (mg/kg)	Depth (ft)
P 10	18.3	0-1'
P 10	5.5	3'
P 17	7.6	4'
P 17	<5.9	9'
P 20	<6.2	5'
P 22	6.1	0-6"
P 54	<4.9	0-0.5'
P 54	7.3	0.5-1'
P 55	6.3	0-4"
P 59	10.6	0-0.5'
P 59	14	1.5-2'
P 61	12.4	0-0.5'
P 61	<5.4	1.5-2'
P 66	15.2	0-0.5'
P 66	12.2	1.5-2'
P 68	17.1	0-0.5'
P 68	<5.5	1.5-2'
P 68	<5.4	6-6.5'
P 69	10	0.5-1'
P 69	12.2	1-1.5'
P 73	<5.9	3'
P 74	7.8	6-6.5'
P 82	<6.7	0-0.5'
P 82	<6.3	1.5-2'
P 82	<5.9	5.5-6'
P 85	<5.6	0-0.5'
P 85	<5.7	1.5-2'
P 85	<5.8	3.5-4'
P 92	18	0-0.5'
P 92	<5.7	1.5-2'
P 92	<6.1	6-6.5'
P 99	9.6	Storm Drain
P 100	<7.0	Storm Drain
P 102	11.6	0-0.5'
P 102	22.1	1-2'
P 103	15.9	0-0.5'
P 103	11.9	1-2'
P 106	<6.3	0-0.5'
P 106	<5.4	1.5-2'



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- (18.3) Cobalt concentration: mg/kg
- 9 — 9 ppm contour line
- (9) (<6.0) Concentration related to background
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Residential direct contact standard is 1,600 mg/kg
Non-residential direct contact standard is 590 mg/kg
Default impact to ground water level is 90 mg/kg
Ecological soil screening level is 0.14 mg/kg in exposed soil from 0 to 1 ft

Inferred extent of cobalt above background level of 9 mg/kg in exposed soil above 1 foot that could migrate to swale

Note:
1) **Areas approximately greater than 10 feet to the east and west of the swale are areas where soil erosion to the swale will not occur due to ground cover and or topographic gradient.**
2) **Area in vicinity of P 102 is not an area where soil erosion to the swale will occur.**
3) **Properties to north east and south of site do not have environmentally sensitive natural resource or migration pathway to ENSR therefore ecological soil screening levels are not applicable at those properties.**
4) **Highest background concentration was 9 mg/kg in P 116 which is above ecological soil screeening level of 0.14 mg/kg.**

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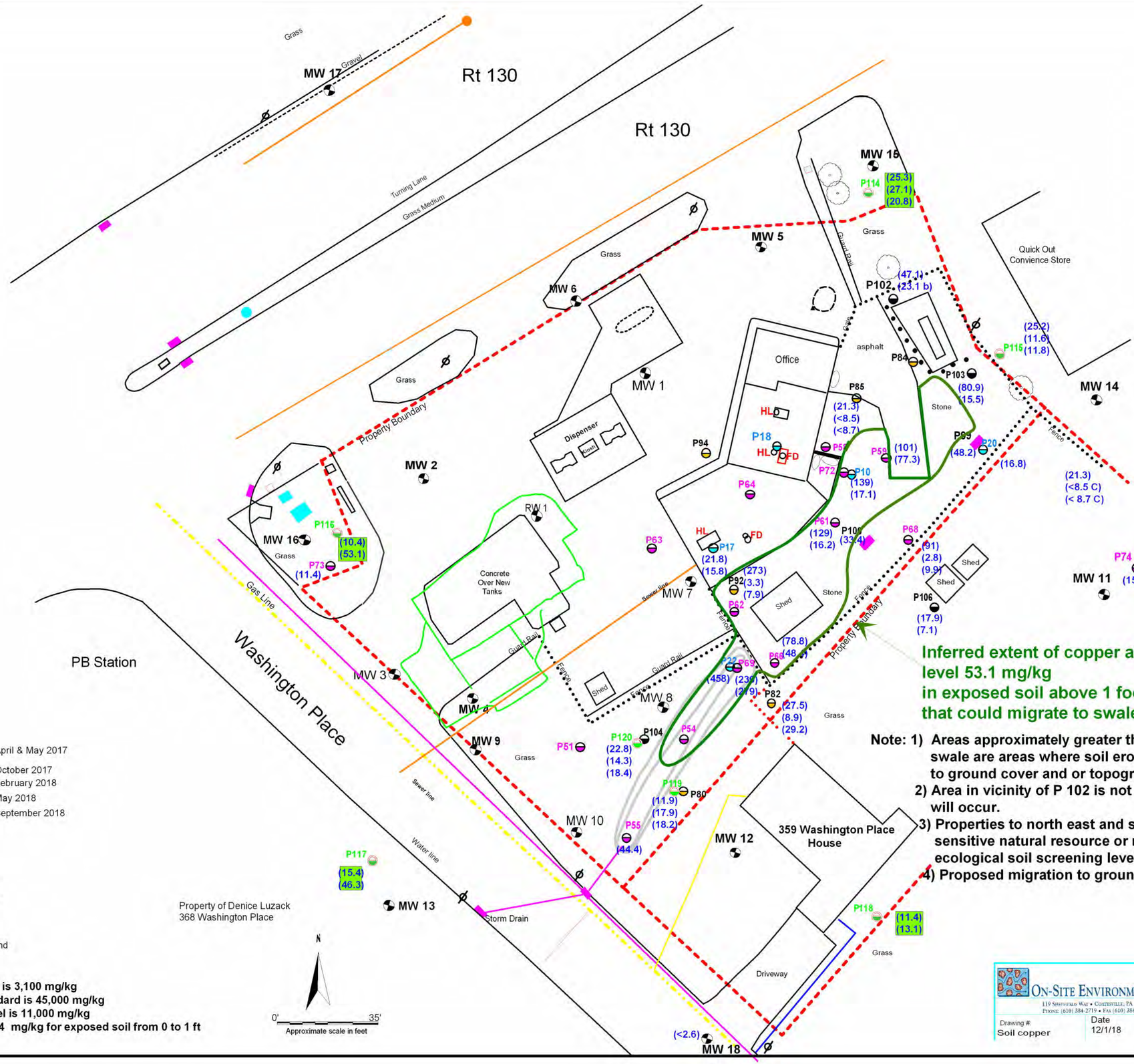
Drawing #: Soil Cobalt
Date: 11/30/18

Figure 21 Cobalt Above Background Level of 9 mg/kg that Could Migrate to Swale

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

SOIL SAMPLES

Sample ID	Copper (mg/kg)	Depth (ft)
P 114	25.3	0-0.5'
P 114	27.1	0.5-1'
P 114	20.8	6-6.5'
P 115	25.2	0-0.5'
P 115	11.6	0.5-1'
P 115	11.8	6-6.5'
P 116	10.4	0-0.5'
P 116	53.1	0.5-1'
P 117	15.4	0-0.5'
P 117	46.3	0.5-1'
P 118	11.4	0-0.5'
P 118	13.1	0.5-1'
P 119	11.9	0-0.5'
P 119	17.9	0.5-1'
P 119	18.2	1.5-2'
P 120	22.8	0-0.5'
P 120	14.3	0.5-1'
P 120	18.4	1.5-2'
MW 18	<2.6	5-5.5'



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- (139) Copper concentration: mg/kg
- 53 53 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain
- (10.4) (53.1) Concentration related to background

Residential direct contact standard is 3,100 mg/kg
Non-residential direct contact standard is 45,000 mg/kg
Default impact to ground water level is 11,000 mg/kg
Ecological soil screening level is 5.4 mg/kg for exposed soil from 0 to 1 ft

Note: 1) Areas approximately greater than 15 feet to the east and west of the swale are areas where soil erosion to the swale will not occur due to ground cover and or topographic gradient.
2) Area in vicinity of P 102 is not an area where soil erosion to the swale will occur.
3) Properties to north east and south of site do not have environmentally sensitive natural resource or migration pathway to ENSR therefore ecological soil screening levels are not applicable at those properties.
4) Proposed migration to groundwater standard is 90 mg/kg.

SOIL SAMPLES

Sample ID	Copper (mg/kg)	Depth (ft)
P 10	139	0-1'
P 10	17.1	3'
P 17	21.8	4'
P 17	15.8	9'
P 20	16.8	5'
P 22	458	0-6"
P 54	59.7	0-0.5'
P 54	86.6	0.5-1'
P 55	44.4	0-4"
P 59	101	0-0.5'
P 59	77.3	1.5-2'
P 61	129	0-0.5'
P 61	16.2	1.5-2'
P 66	78.8	0-0.5'
P 66	48.4	1.5-2'
P 68	91	0-0.5'
P 68	2.8	1.5-2'
P 68	9.9	6-6.5'
P 69	239	0.5-1'
P 69	279	1-1.5'
P 73	31.3	3'
P 74	15.2	6-6.5'
P 82	27.5	0-0.5'
P 82	8.9	1.5-2'
P 82	29.2	5.5-6'
P 85	21.3	0-0.5'
P 85	<8.5 C	1.5-2'
P 85	<8.7 C	3.5-4'
P 92	273	0-0.5'
P 92	3.2	1.5-2'
P 92	7.9	6-6.5'
P 99	48.2	Storm Drain
P 100	33.4	Storm Drain
P 102	47.1	0-0.5'
P 102	23.1 b	1-2'
P 103	80.9	0-0.5'
P 103	15.5	1-2'
P 106	17.9	0-0.5'
P 106	7.1	1.5-2'

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Drawing # Soil copper
Date 12/1/18

Figure 22 Copper Above Background Level of 53 mg/kg that Could Migrate to Swale

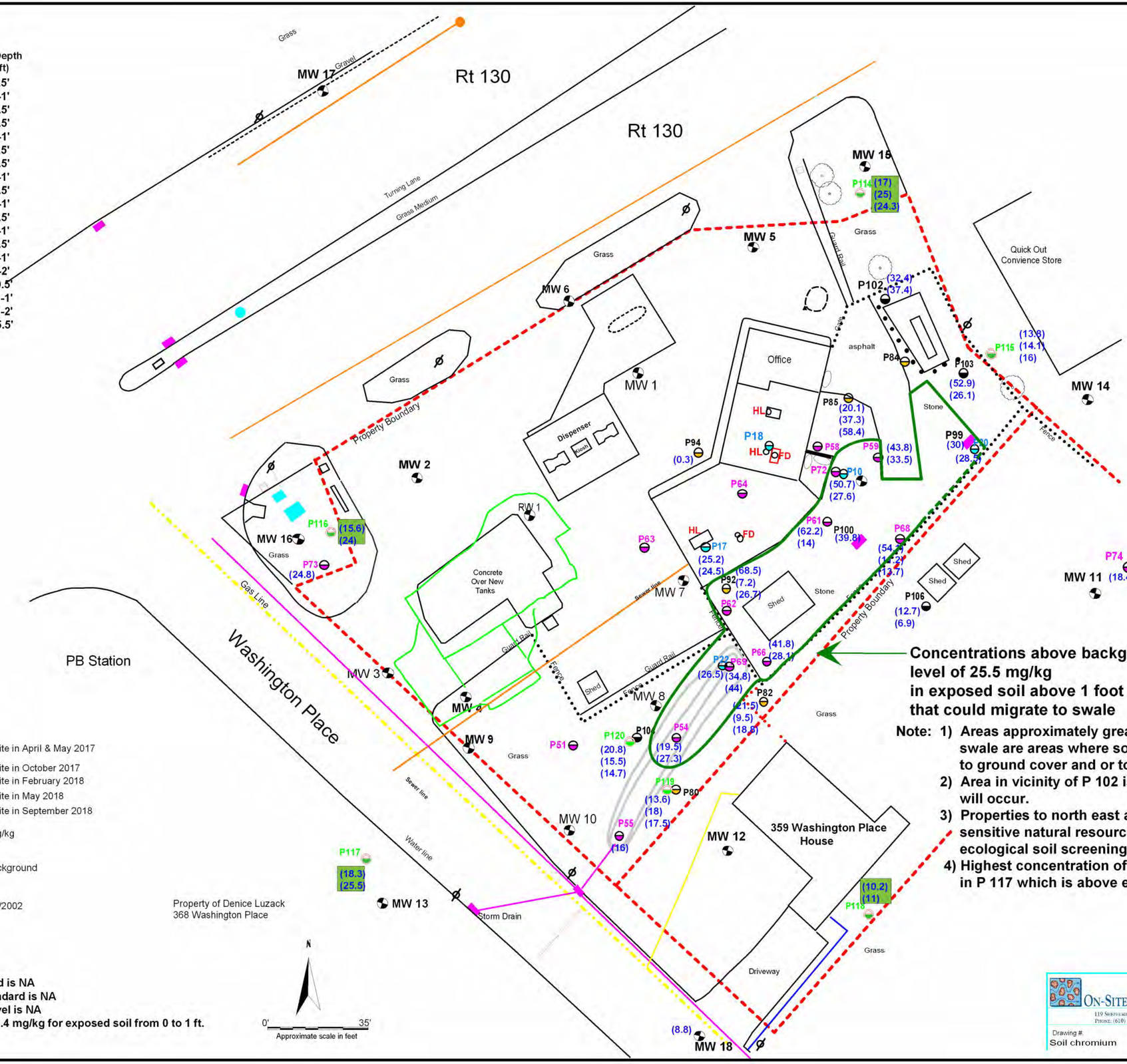
North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

SOIL SAMPLES

Sample ID	Chromium (mg/kg)	Depth (ft)
P 114	17	0-0.5'
P 114	25	0.5-1'
P 114	24.3	6-6.5'
P 115	13.8	0-0.5'
P 115	14.1	0.5-1'
P 115	16	6-6.5'
P 116	15.6	0-0.5'
P 116	24	0.5-1'
P 117	18.3	0-0.5'
P 117	25.5	0.5-1'
P 118	10.2	0-0.5'
P 118	11	0.5-1'
P 119	13.6	0-0.5'
P 119	18	0.5-1'
P 119	17.5	1.5-2'
P 120	20.8	0-0.5'
P 120	15.5	0.5-1'
P 120	14.7	1.5-2'
MW 18	8.8	5-5.5'

SOIL SAMPLES

Sample ID	Chromium (mg/kg)	Depth (ft)
P 10	50.7	0-1'
P 10	27.6	3'
P 17	25.2	4'
P 17	24.5	9'
P 20	28.5	5'
P 22	26.5	0-6''
P 54	19.5	0-0.5'
P 54	27.3	0.5-1'
P 55	16	0-4'''
P 59	43.8	0-0.5'
P 59	33.5	1.5-2'
P 61	62.2	0-0.5'
P 61	14	1.5-2'
P 66	41.8	0-0.5'
P 66	28.1	1.5-2'
P 68	54.1	0-0.5'
P 68	11.2 T	1.5-2'
P 68	13.7 T	6-6.5'
P 69	34.8	0.5-1'
P 69	44	1-1.5'
P 73	24.8	3'
P 74	18.4	6-6.5'
P 82	21.5	0-0.5'
P 82	9.5	1.5-2'
P 82	18.8	5.5-6'
P 85	20.1 C	0-0.5'
P 85	37.3	1.5-2'
P 85	58.4	3.5-4'
P 92	68.5	0-0.5'
P 92	7.2	1.5-2'
P 92	26.7	6-6.5'
P 99	30	Storm Drain
P 100	39.8	Storm Drain
P 102	32.4	0-0.5'
P 102	37.4	1-2'
P 103	52.9	0-0.5'
P 103	26.1	1-2'
P 106	12.7	0-0.5'
P 106	6.9	1.5-2'



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- (16) Chromium concentration: mg/kg
- 24.8 0.4 mg/kg contour line
- (18.3) (25.5) Concentration related to background
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Concentrations above background level of 25.5 mg/kg in exposed soil above 1 foot that could migrate to swale

Note:

1) Areas approximately greater than 15 feet to the east and west of the swale are areas where soil erosion to the swale will not occur due to ground cover and or topographic gradient.
2) Area in vicinity of P 102 is not an area where soil erosion to the swale will occur.
3) Properties to north east and south of site do not have environmentally sensitive natural resource or migration pathway to ENSR therefore ecological soil screening levels are not applicable at those properties.
4) Highest concentration of chromium related to background was 25.5 mg/kg in P 117 which is above ecological soil screening level of 0.4 mg/kg.

Residential direct contact standard is NA
Non-residential direct contact standard is NA
Default impact to ground water level is NA
Ecological soil screening level is 0.4 mg/kg for exposed soil from 0 to 1 ft.

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Drawing #: Soil chromium
Date: 11/30/18

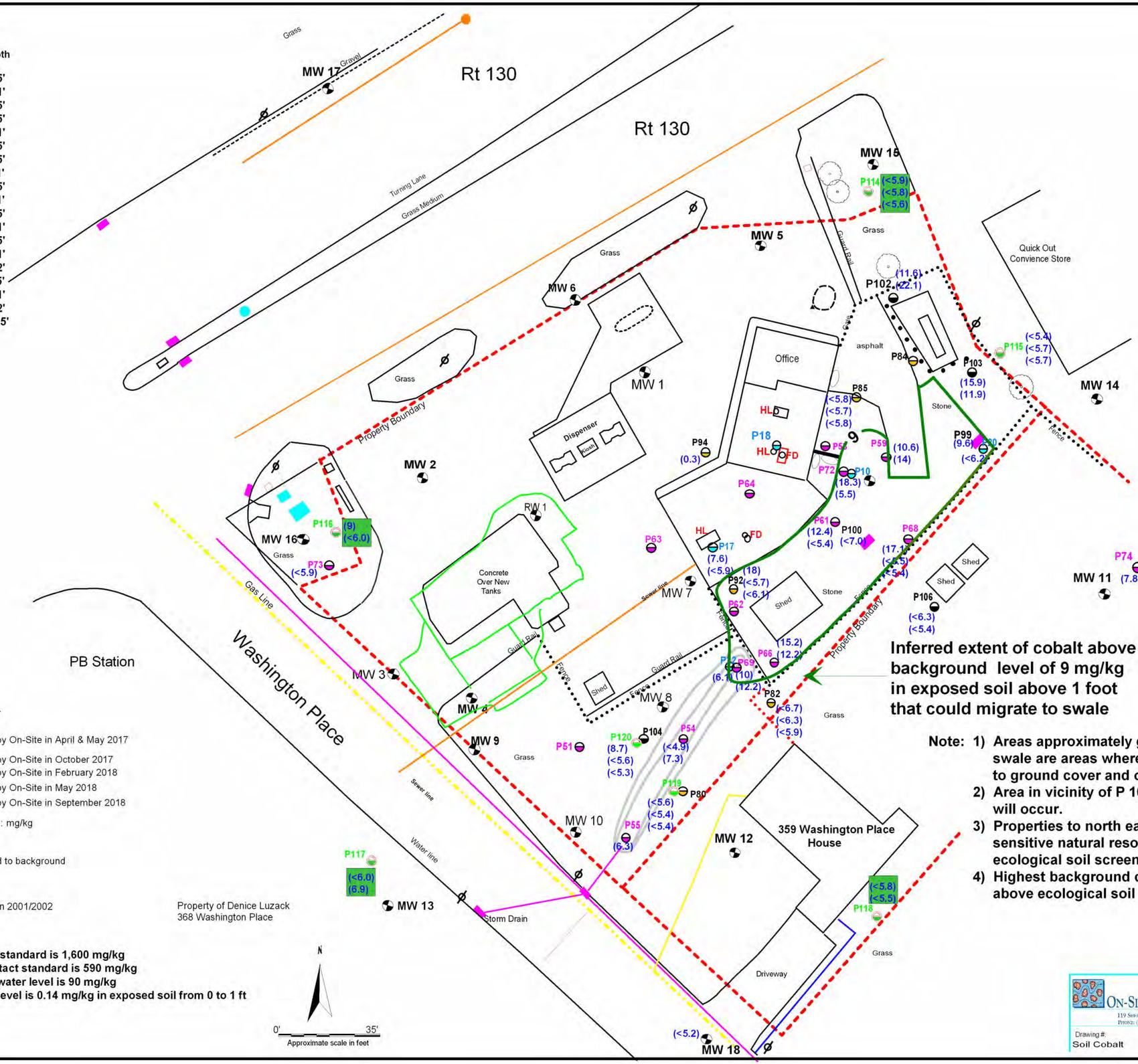
Figure 20 Chromium in Exposed Soil Above Background Level of 25.5 mg/kg that Could Migrate to Swale
North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

SOIL SAMPLES

Sample ID	Cobalt (mg/kg)	Depth (ft)
P 114	<5.9	0-0.5'
P 114	<5.8	0.5-1'
P 114	<5.6	6-6.5'
P 115	<5.4	0-0.5'
P 115	<5.7	0.5-1'
P 115	<5.7	6-6.5'
P 116	<5.9	0-0.5'
P 116	9	0.5-1'
P 117	<6.0	0-0.5'
P 117	6.9	0.5-1'
P 118	<5.8	0-0.5'
P 118	<5.5	0.5-1'
P 119	<5.6	0-0.5'
P 119	<5.4	0.5-1'
P 119	<5.4	1.5-2'
P 120	8.7	0-0.5'
P 120	<5.6	0.5-1'
P 120	<5.3	1.5-2'
MW 18	<5.2	5-5.5'

SOIL SAMPLES

Sample ID	Cobalt (mg/kg)	Depth (ft)
P 10	18.3	0-1'
P 10	5.5	3'
P 17	7.6	4'
P 17	<5.9	9'
P 20	<6.2	5'
P 22	6.1	0-6"
P 54	<4.9	0-0.5'
P 54	7.3	0.5-1'
P 55	6.3	0-4"
P 59	10.6	0-0.5'
P 59	14	1.5-2'
P 61	12.4	0-0.5'
P 61	<5.4	1.5-2'
P 66	15.2	0-0.5'
P 66	12.2	1.5-2'
P 68	17.1	0-0.5'
P 68	<5.5	1.5-2'
P 68	<5.4	6-6.5'
P 69	10	0.5-1'
P 69	12.2	1-1.5'
P 73	<5.9	3'
P 74	7.8	6-6.5'
P 82	<6.7	0-0.5'
P 82	<6.3	1.5-2'
P 82	<5.9	5.5-6'
P 85	<5.6	0-0.5'
P 85	<5.7	1.5-2'
P 85	<5.8	3.5-4'
P 92	18	0-0.5'
P 92	<5.7	1.5-2'
P 92	<6.1	6-6.5'
P 99	9.6	Storm Drain
P 100	<7.0	Storm Drain
P 102	11.6	0-0.5'
P 102	22.1	1-2'
P 103	15.9	0-0.5'
P 103	11.9	1-2'
P 106	<6.3	0-0.5'
P 106	<5.4	1.5-2'



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- (18.3) Cobalt concentration: mg/kg
- 9 — 9 ppm contour line
- (9) (<6.0) Concentration related to background
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Residential direct contact standard is 1,600 mg/kg
Non-residential direct contact standard is 590 mg/kg
Default impact to ground water level is 90 mg/kg
Ecological soil screening level is 0.14 mg/kg in exposed soil from 0 to 1 ft

Inferred extent of cobalt above background level of 9 mg/kg in exposed soil above 1 foot that could migrate to swale

Note:
1) **Areas approximately greater than 10 feet to the east and west of the swale are areas where soil erosion to the swale will not occur due to ground cover and or topographic gradient.**
2) **Area in vicinity of P 102 is not an area where soil erosion to the swale will occur.**
3) **Properties to north east and south of site do not have environmentally sensitive natural resource or migration pathway to ENSR therefore ecological soil screening levels are not applicable at those properties.**
4) **Highest background concentration was 9 mg/kg in P 116 which is above ecological soil screeening level of 0.14 mg/kg.**

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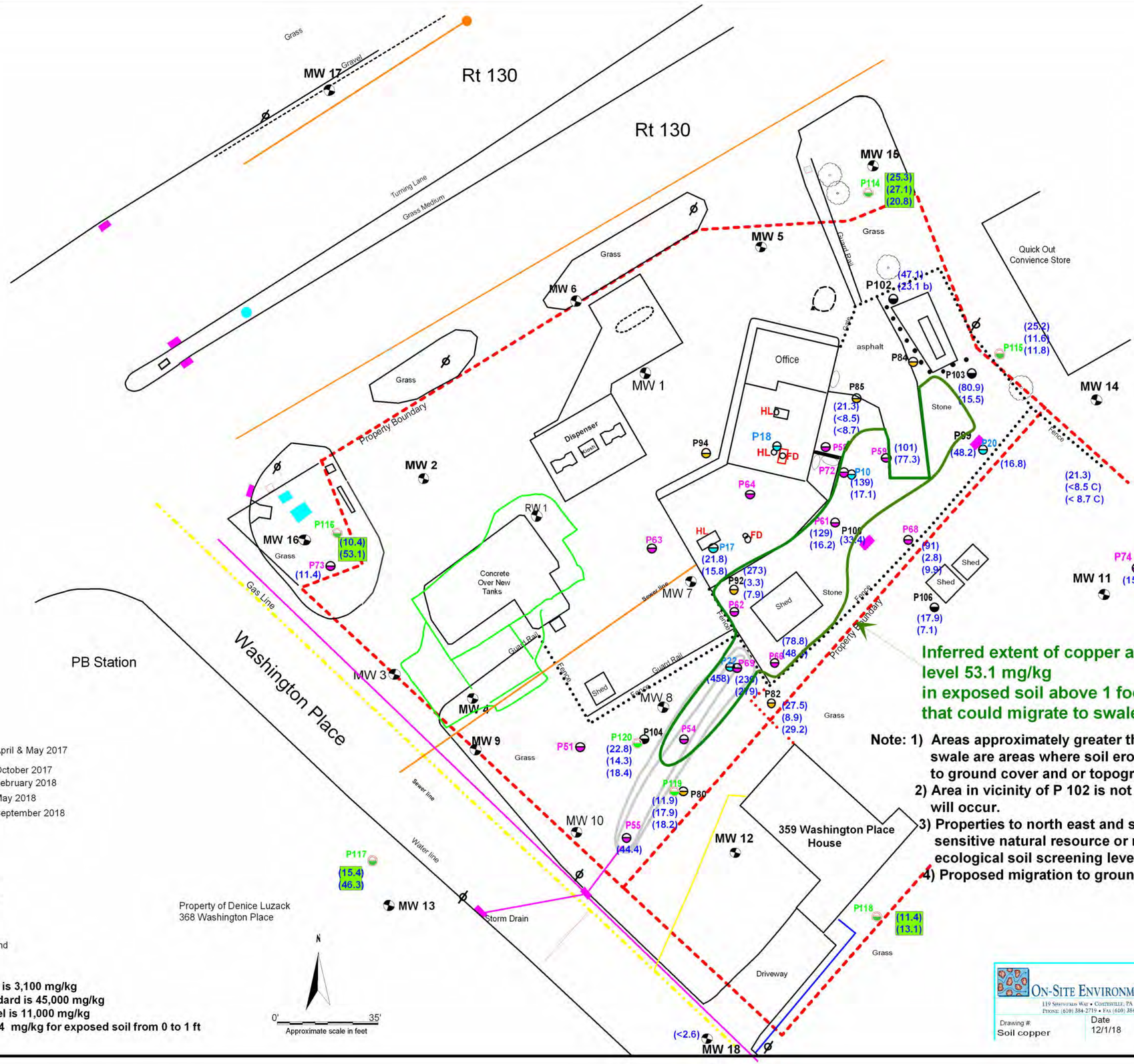
Drawing #: Soil Cobalt
Date: 11/30/18

Figure 21 Cobalt Above Background Level of 9 mg/kg that Could Migrate to Swale

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

SOIL SAMPLES

Sample ID	Copper (mg/kg)	Depth (ft)
P 114	25.3	0-0.5'
P 114	27.1	0.5-1'
P 114	20.8	6-6.5'
P 115	25.2	0-0.5'
P 115	11.6	0.5-1'
P 115	11.8	6-6.5'
P 116	10.4	0-0.5'
P 116	53.1	0.5-1'
P 117	15.4	0-0.5'
P 117	46.3	0.5-1'
P 118	11.4	0-0.5'
P 118	13.1	0.5-1'
P 119	11.9	0-0.5'
P 119	17.9	0.5-1'
P 119	18.2	1.5-2'
P 120	22.8	0-0.5'
P 120	14.3	0.5-1'
P 120	18.4	1.5-2'
MW 18	<2.6	5-5.5'



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- (139) Copper concentration: mg/kg
- 53 53 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain
- (10.4) (53.1) Concentration related to background

Residential direct contact standard is 3,100 mg/kg
Non-residential direct contact standard is 45,000 mg/kg
Default impact to ground water level is 11,000 mg/kg
Ecological soil screening level is 5.4 mg/kg for exposed soil from 0 to 1 ft

Note: 1) Areas approximately greater than 15 feet to the east and west of the swale are areas where soil erosion to the swale will not occur due to ground cover and or topographic gradient.
2) Area in vicinity of P 102 is not an area where soil erosion to the swale will occur.
3) Properties to north east and south of site do not have environmentally sensitive natural resource or migration pathway to ENSR therefore ecological soil screening levels are not applicable at those properties.
4) Proposed migration to groundwater standard is 90 mg/kg.

SOIL SAMPLES

Sample ID	Copper (mg/kg)	Depth (ft)
P 10	139	0-1'
P 10	17.1	3'
P 17	21.8	4'
P 17	15.8	9'
P 20	16.8	5'
P 22	458	0-6"
P 54	59.7	0-0.5'
P 54	86.6	0.5-1'
P 55	44.4	0-4"
P 59	101	0-0.5'
P 59	77.3	1.5-2'
P 61	129	0-0.5'
P 61	16.2	1.5-2'
P 66	78.8	0-0.5'
P 66	48.4	1.5-2'
P 68	91	0-0.5'
P 68	2.8	1.5-2'
P 68	9.9	6-6.5'
P 69	239	0.5-1'
P 69	279	1-1.5'
P 73	31.3	3'
P 74	15.2	6-6.5'
P 82	27.5	0-0.5'
P 82	8.9	1.5-2'
P 82	29.2	5.5-6'
P 85	21.3	0-0.5'
P 85	<8.5 C	1.5-2'
P 85	<8.7 C	3.5-4'
P 92	273	0-0.5'
P 92	3.2	1.5-2'
P 92	7.9	6-6.5'
P 99	48.2	Storm Drain
P 100	33.4	Storm Drain
P 102	47.1	0-0.5'
P 102	23.1 b	1-2'
P 103	80.9	0-0.5'
P 103	15.5	1-2'
P 106	17.9	0-0.5'
P 106	7.1	1.5-2'

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Drawing # Soil copper
Date 12/1/18

Figure 22 Copper Above Background Level of 53 mg/kg that Could Migrate to Swale

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

Sample ID	SOIL SAMPLES Manganese (mg/kg)	Depth (ft)
P 114	114	0-0.5'
P 114	110	0.5-1'
P 114	51.4	6-6.5'
P 115	74.2	0-0.5'
P 115	38.8	0.5-1'
P 115	64.3	6-6.5'
P 116	32.6	0-0.5'
P 116	617 C	0.5-1'
P 117	30.9	0-0.5'
P 117	429 C	0.5-1'
P 118	29	0-0.5'
P 118	37.9	0.5-1'
P 119	32.8	0-0.5'
P 119	55.5	0.5-1'
P 119	61.4	1.5-2'
P 120	641	0-0.5'
P 120	232	0.5-1'
P 120	90.6	1.5-2'
MW 18	3.9	5-5.5'

Sample ID	SOIL SAMPLES Manganese (mg/kg)	Depth (ft)
P 10	393	0-1'
P 10	63.9	3'
P 17	72.7	4'
P 17	42.1	9'
P 20	27.3	5'
P 22	242	0-6"
P 51	256	2.5-3'
P 53	17	4-4.5'
P 54	90.1	0-0.5'
P 54	162	0.5-1'
P 55	168	0-4"
P 59	351	0-0.5'
P 59	372	1.5-2'
P 59	40.4	4.5-5'
P 61	277	0-0.5'
P 61	17.6	1.5-2'
P 63	395	3-3.5'
P 64	74.7	5.5-6'
P 66	381	0-0.5'
P 66	1,380	1.5-2'
P 68	415	0-0.5'
P 68	31.9	1.5-2'
P 68	6.6	6-6.5'
P 69	508	0.5-1'
P 69	650	1-1.5'
P 73	34.8	3'
P 74	36.4	6-6.5'
P 77	18.9	2-2.5'
P 80	29.8	0-0.5'
P 82	55.6	0-0.5'
P 82	16.6	1.5-2'
P 82	12.7	5.5-6'
P 85	2040	0-0.5'
P 85	56.9	1.5-2'
P 85	18.2	3.5-4'
P 92	12500	0-0.5'
P 92	<570	1.5-2'
P 92	1330	6-6.5'
P 94	38	4-4.5'
P 99	301	Storm Drain
P 100	260	Storm Drain
P 101	23.5	3-4'
P 102	319	0-0.5'
P 102	980	1-2'
P 102	38.4	5-6'
P 103	392	0-0.5'
P 103	438	1-2'
P 106	35	0-0.5'
P 106	18.4	1.5-2'
P 108	17.5	1-1.5'

Rt 130

Rt 130

Grass

Gravel

MW 17

Turning Lane

Grass Medium

MW 15

P114 (114) (110) (51.4)

Grass

Guard Rail

Quick Out Convience Store

MW 5

Grass

P101 (23.5)

MW 6

P102 (319) (980) (38.4)

Concentration above background level of 617 mg/kg in exposed soil above 1 foot that could migrate to swale

Property Boundary

Fence

asphalt

Office

P84

P103 (392) (438)

(74.2) (38.8) (64.3) P115

MW 14

Concentration above residential & non-residential direct contact standard

MW 1

P85 (2040) (56.9) (18.2)

Stone

HLD

P18

HLD FD

P58

P59 (351) (372) (40.4)

P99 (301) P120 (27.3)

Dispenser

Island

P94 (38)

P72

P10 (393) (63.9)

P64

MW 2

RW 1

P61 (277) (17.6)

P100 (260)

P68 (415) (31.9) (6.6)

Shed

Shed

P74

MW 11 (36.4)

P115 (32.6) (617)

MW 16

Grass

P73 (34.8)

P63 (395)

MW 7

HL

FD

P17 (72.7) (12.1)

Concrete Over New Tanks

Sewer line

P92 (12,500) (570) (1,330)

Shed

Stone

Fence

P106 (35) (18.4)

Gas Line

Guard Rail

Fence

Property Boundary

P53 (17)

PB Station

Washington Place

MW 3

MW 4

Shed

Fence

P66 (381) (1,380)

P22 P69 (242) (508) (650)

MW 8

P82 (55.6) (16.6) (12.7)

Grass

MW 9

Grass

P51 (256)

P120 (614) (232) (90.6)

P104

P54 (90.1) (162)

Sewer line

P119 (32.8) (55.5) (61.4)

P80 (29.8)

P77 (18.9)

MW 10

P55 (168)

MW 12

359 Washington Place House

Water line

P117 (30.9) (429)

MW 13

Storm Drain

P108 (17.5)

(29) (37.9)

P118

Grass

Driveway

(3.9)

MW 18

Property of Denice Luzack
368 Washington Place

Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- (393) Manganese concentration in 2017 samples: mg/kg
- 617 617 pm contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain
- (32.6) (617) Concentration related to background

Note:
1) Areas approximately greater than 10 feet to the east and west of the swale are areas where soil erosion to the swale will not occur due to ground cover and or topographic gradient.
2) Area to north of P 102 is covered with grass and is not an area where soil erosion to the swale will occur.
3) Properties to north east and south of site do not have environmentally sensitive natural resource or migration pathway to ENSR therefore ecological soil screening levels are not applicable at those properties.
4) Highest background concentration of manganese was 617 mg/kg which is higher than ecological soil screening level of 220 mg/kg.

Residential direct contact standard is 11,000,mg/kg
Non-residential direct contact standard is 5,900 mg/kg
Default impact to ground water level is 65 mg/kg not a concern per NJDEP is not a concern per NJDEP since it is a secondary contaminant
Eological soil screening level is 220 mg/kg

N

0' 35'

Approximate scale in feet

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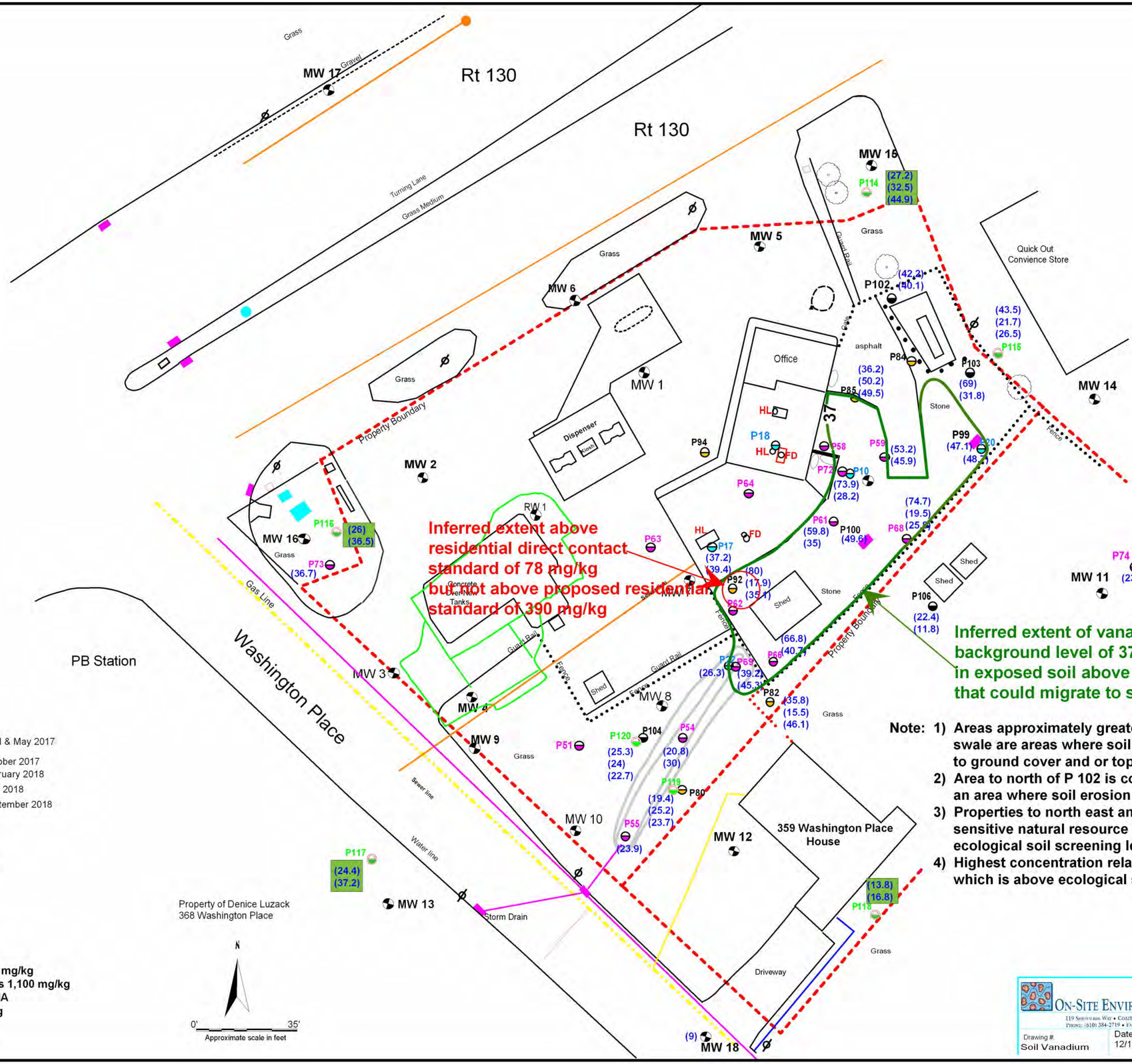
Drawing #: Soil Manganese

Date 12/1/18

Figure 23 Manganese in Soil Above Residential & Non-Residential Direct Contact Standard,and Background ESC Level of 617 mg/kg Which Can Migrate to Swale

SOIL SAMPLES

Sample ID	Vanadium (mg/kg)	Depth (ft)
P 114	27.2	0-0.5'
P 114	32.5	0.5-1'
P 114	44.9	6-6.5'
P 115	43.5	0-0.5'
P 115	21.7	0.5-1'
P 115	26.5	6-6.5'
P 116	26	0-0.5'
P 116	36.5	0.5-1'
P 117	24.4	0-0.5'
P 117	37.2	0.5-1'
P 118	13.8	0-0.5'
P 118	16.8	0.5-1'
P 119	19.4	0-0.5'
P 119	25.2	0.5-1'
P 119	23.7	1.5-2'
P 120	25.3	0-0.5'
P 120	24	0.5-1'
P 120	22.7	1.5-2'
MW 18	9	5-5.5'



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- (40.7) Vanadium concentration: mg/kg
- 36.7 2 ppm contour line
- (24.4) (37.2) Concentration related to background
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Residential direct contact standard is 78 mg/kg
Non-residential direct contact standard is 1,100 mg/kg
Default impact to ground water level is NA
Ecological soil screening level is 2 mg/kg

SOIL SAMPLES

Sample ID	Vanadium (mg/kg)	Depth (ft)
P 10	73.9	0-1'
P 10	28.2	3'
P 17	37.2	4'
P 17	39.4	9'
P 20	48.7	5'
P 22	26.3	0-6"
P 54	20.8	0-0.5'
P 54	30	0.5-1'
P 55	23.9	0-4"
P 59	53.2	0-0.5'
P 59	45.9	1.5-2'
P 61	59.8	0-0.5'
P 61	35	1.5-2'
P 66	66.8	0-0.5'
P 66	40.7	1.5-2'
P 68	74.7	0-0.5'
P 68	19.5	1.5-2'
P 68	25.8	6-6.5'
P 69	39.2	0.5-1'
P 69	45.3	1-1.5'
P 73	36.7	3'
P 74	23.5	6-6.5'
P 82	35.8	0-0.5'
P 82	15.5	1.5-2'
P 82	46.1	5.5-6'
P 85	36.2	0-0.5'
P 85	50.2	1.5-2'
P 85	49.5	3.5-4'
P 92	80	0-0.5'
P 92	17.9	1.5-2'
P 92	35.1	6-6.5'
P 99	47.1	Storm Drain
P 100	49.6	Storm Drain
P 102	42.2	0-0.5'
P 102	40.1	1-2'
P 103	69	0-0.5'
P 103	31.8	1-2'
P 106	22.4	0-0.5'
P 106	11.8	1.5-2'

Note:
1) **Areas approximately greater than 10 feet to the east and west of the swale are areas where soil erosion to the swale will not occur due to ground cover and or topographic gradient.**
2) **Area to north of P 102 is covered with grass and is not an area where soil erosion to the swale will occur.**
3) **Properties to north east and south of site do not have environmentally sensitive natural resource or migration pathway to ENSR therefore ecological soil screening levels are not applicable at those properties.**
4) **Highest concentration related to background was 37.2 mg/kg in P 117 which is above ecological soil screening level of 2 mg/kg**

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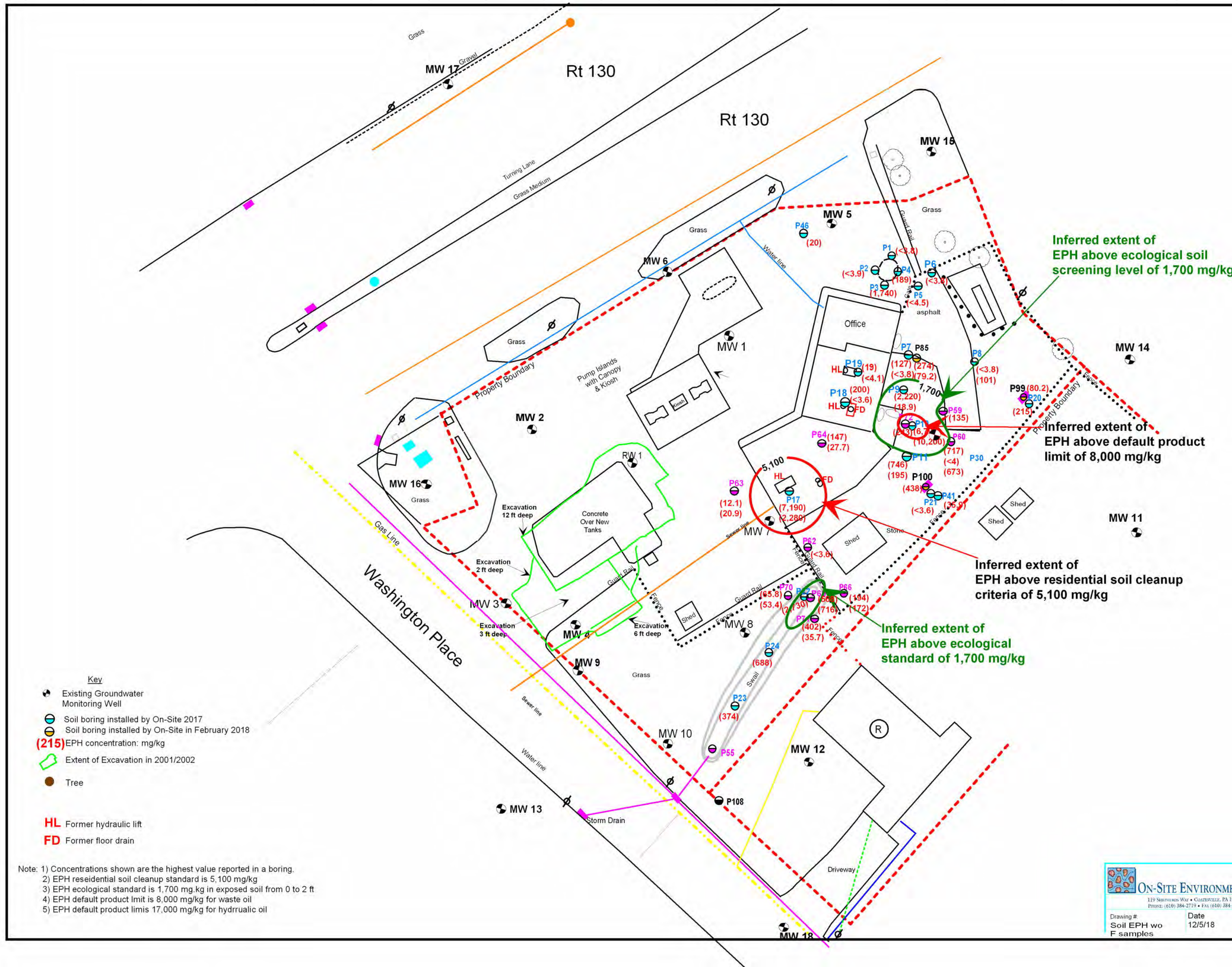
Drawing # Soil Vanadium

Date 12/1/18

Figure 24 Vanadium Above Residential Direct Contact& Concentrations in Background Samples that were Higher than the ESC That Can Migrate to Swale

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site 2017
- Soil boring installed by On-Site in February 2018
- (215) EPH concentration: mg/kg
- Extent of Excavation in 2001/2002
- Tree
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) Concentrations shown are the highest value reported in a boring.
2) EPH reseidential soil cleanup standard is 5,100 mg/kg
3) EPH ecological standard is 1,700 mg.kg in exposed soil from 0 to 2 ft
4) EPH default product lmit is 8,000 mg/kg for waste oil
5) EPH default product limis 17,000 mg/kg for hydrrualic oil

Soil Samples Analyzed for EPH

Sample ID	EPH (mg/kg)	Depth (ft)
P1	<3.8	7-7.5'
P 2	<3.9	4-.5-5'
P 2	<3.8	9-10'
P 3	1,740	4.5-5'
P 3	<3.6	15.5-16'
P 4	189	8-8.5'
P 4	<3.8	14-14.5'
P 5	<4.5	10'
P 6	<3.8	10'
P 7	127	0-6"
P 7	<3.8	9'
P 8	<3.8	6'
P 8	101	12'
P 9	2,220	0-1'
P 9	18.9	6'
P 10	6,790	0-1'
P 10	10,200	3'
P 11	746	0-1'
P 11	195	8'
P 17	7,190	4'
P 17	2,280	9'
P 18	200	4-4.5'
P 18	<3.6	6-7'
P 19	19	5'
P 19	<4.1	16'
P 20	215	5'
P 21	<3.6	5'
P 22	2,730	0-6"
P 23	374	0-6"
P 24	688	0-6"
P 41	35.9	5'
P 46	20.0	6-6.5'
P 59	135	9.5-10'
P 60	717	0-0.5'
P 60	<4	1.5-2'
P 60	673	7.5-8'
P 62	<3.6	8-8.5'
P 63	12.1	3-3.5'
P 63	20.9	7-7.5'
P 64	147	6'
P 64	27.7	8'
P 66	194	0-0.5'
P 66	172	1.5-2'
P 69	568	0.5-1'
P 69	716	1-1.5'
P 70	65.8	0-0.5'
P 70	53.4	1.5-2'
P 71	402	0-0.5'
P 71	35.7	1.5-2'
P 72	243	6.5-7'
P 85	274	0-0.5'
P 85	79.2	1.5-2'
P 99	80.2	Storm Drain
P 100	438	Storm Drain

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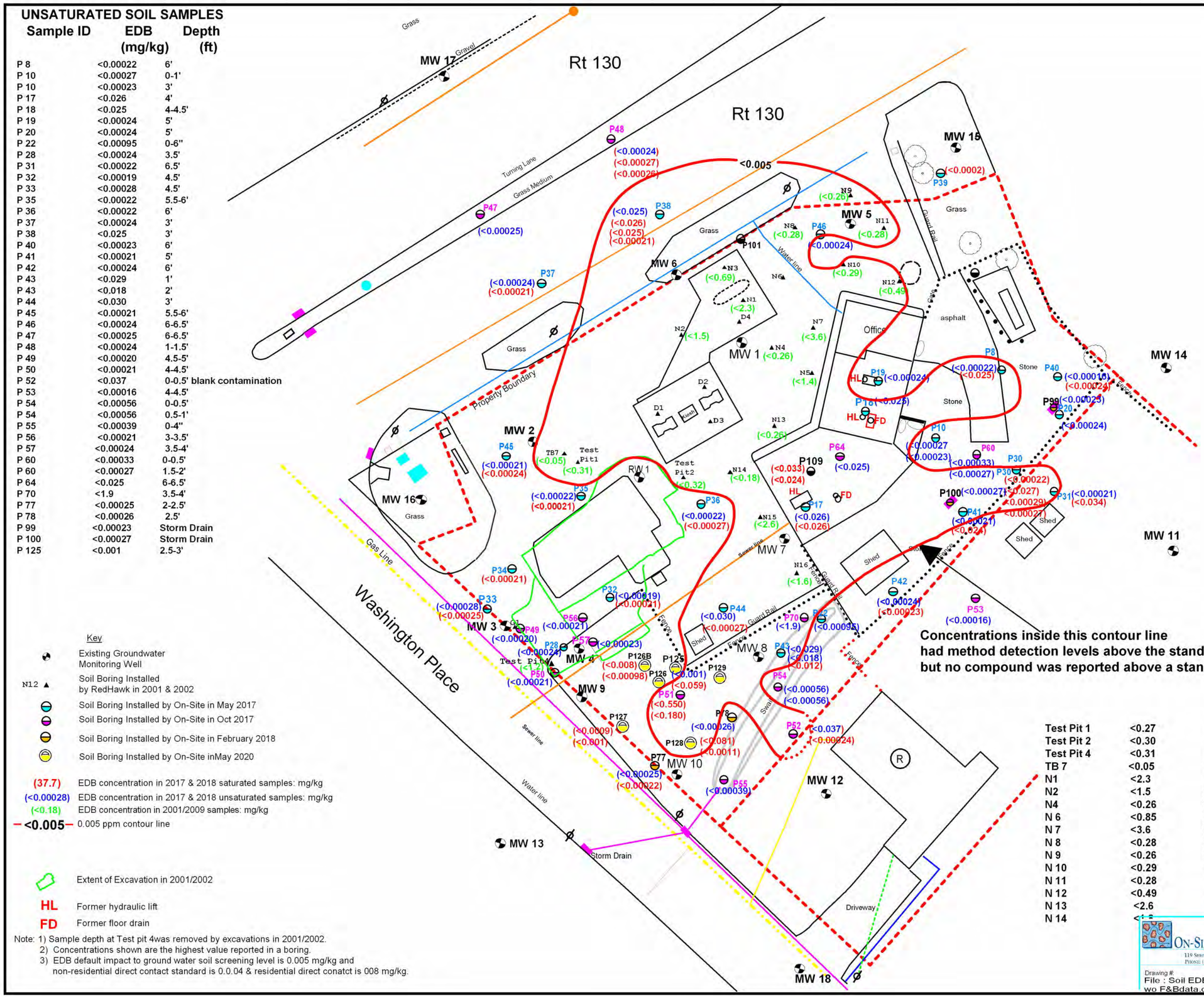
Drawing #: Soil EPH wo F samples
Date: 12/5/18

Figure 25 EPH in Soil Above Default Product Limit & Residential Cleanup criteria & Ecological Soil Sreening Level

UNSATURATED SOIL SAMPLES

Sample ID	EDB (mg/kg)	Depth (ft)
P 8	<0.00022	6'
P 10	<0.00027	0-1'
P 10	<0.00023	3'
P 17	<0.026	4'
P 18	<0.025	4-4.5'
P 19	<0.00024	5'
P 20	<0.00024	5'
P 22	<0.00095	0-6"
P 28	<0.00024	3.5'
P 31	<0.00022	6.5'
P 32	<0.00019	4.5'
P 33	<0.00028	4.5'
P 35	<0.00022	5.5-6'
P 36	<0.00022	6'
P 37	<0.00024	3'
P 38	<0.025	3'
P 40	<0.00023	6'
P 41	<0.00021	5'
P 42	<0.00024	6'
P 43	<0.029	1'
P 43	<0.018	2'
P 44	<0.030	3'
P 45	<0.00021	5.5-6'
P 46	<0.00024	6-6.5'
P 47	<0.00025	6-6.5'
P 48	<0.00024	1-1.5'
P 49	<0.00020	4.5-5'
P 50	<0.00021	4-4.5'
P 52	<0.037	0-0.5' blank contamination
P 53	<0.00016	4-4.5'
P 54	<0.00056	0-0.5'
P 54	<0.00056	0.5-1'
P 55	<0.00039	0-4"
P 56	<0.00021	3-3.5'
P 57	<0.00024	3.5-4'
P 60	<0.00033	0-0.5'
P 60	<0.00027	1.5-2'
P 64	<0.025	6-6.5'
P 70	<1.9	3.5-4'
P 77	<0.00025	2-2.5'
P 78	<0.00026	2.5'
P 99	<0.00023	Storm Drain
P 100	<0.00027	Storm Drain
P 125	<0.001	2.5-3'



Concentrations inside this contour line had method detection levels above the standards but no compound was reported above a standard

Key

- Existing Groundwater Monitoring Well
- N12 ▲ Soil Boring Installed by RedHawk in 2001 & 2002
- Soil Boring Installed by On-Site in May 2017
- Soil Boring Installed by On-Site in Oct 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site inMay 2020
- (37.7) EDB concentration in 2017 & 2018 saturated samples: mg/kg
- (<0.00028) EDB concentration in 2017 & 2018 unsaturated samples: mg/kg
- (<0.18) EDB concentration in 2001/2009 samples: mg/kg
- <0.005 0.005 ppm contour line
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) Sample depth at Test pit 4was removed by excavations in 2001/2002.
2) Concentrations shown are the highest value reported in a boring.
3) EDB default impact to ground water soil screening level is 0.005 mg/kg and non-residential direct contact standard is 0.0.04 & residential direct conatct is 008 mg/kg.

2001 - 2009 UNSATURATED SOIL SAMPLES

Sample ID	EDB (mg/kg)	Depth (ft)
Test Pit 1	<0.31	2'
Test Pit 2	<0.32	2'
Test Pit 4	<1.2	2.5'
N3	<0.690	4 - 5.5'
N 5	<1.4	4 - 5'
N 15	<2.6	2 - 3'
N 16	<1.6	4 - 7'

SATURATED SOIL SAMPLES

Sample ID	EDB (mg/kg)	Depth (ft)
P 8	<0.025	12'
P 17	<0.026	9'
P 30	<0.00022	6.5-7'
P 30	<0.027	8'
P 30	<0.00029	17-18'
P 30	<0.00027	21'
P 31	<0.034	9'
P 32	<0.00021	15'
P 33	<0.00025	15'
P 34	<0.00021	16'
P 35	<0.00021	7-7.5'
P 36	<0.00027	12'
P 37	<0.00021	7'
P 38	<0.026	8'
P 38	<0.025	13'
P 38	<0.00021	18'
P 39	<0.00020	15'
P 40	<0.00024	15'
P 41	<0.024	10'
P 42	<0.00023	8'
P 43	<0.012	6'
P 44	<0.00027	7-7.5'
P 45	<0.00024	12-12.5'
P 48	<0.00027	7.5-8'
P 48	<0.00026	20'
P 51	<0.550	2.5-3'
P 51	<0.180	3.5-4'
P 52	<0.00024	7-8'
P 77	<0.00022	10.5-11'
P 109	<0.033	10-10.5'
P 109	<0.024	17-17.5'
P 125	<0.059	3.5-4'
P 126B	<0.0008	3.5-5'
P 126B	<0.00098	4.5-5'
P 127	<0.0009	3.5-4'
P 127	<0.001	5-5.5'
P 128	<0.081	4-4.5'
P 128	<0.0011	5.5-6'

Test Pit 1	<0.27	8'
Test Pit 2	<0.30	7'
Test Pit 4	<0.31	6.5'
TB 7	<0.05	10 - 11'
N1	<2.3	8 - 9.5'
N2	<1.5	8 - 9'
N4	<0.26	10 - 12'
N 6	<0.85	8 - 9'
N 7	<3.6	8 - 9'
N 8	<0.28	8 - 9.5'
N 9	<0.26	11 - 12'
N 10	<0.29	8 - 10'
N 11	<0.28	10 - 12'
N 12	<0.49	6 - 8'
N 13	<2.6	9 - 10'
N 14	<1.6	8 - 9'

Note: Proposed non-residential standard is 0.41 mg/kg & proposed migration to groundwater standard is 0.0050 mg/kg

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Drawing #: File : Soil EDB 2 wo F&Bdata.drw
Date: 12/5/18

Figure 26 Soil Samples Analyzed for EDB

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

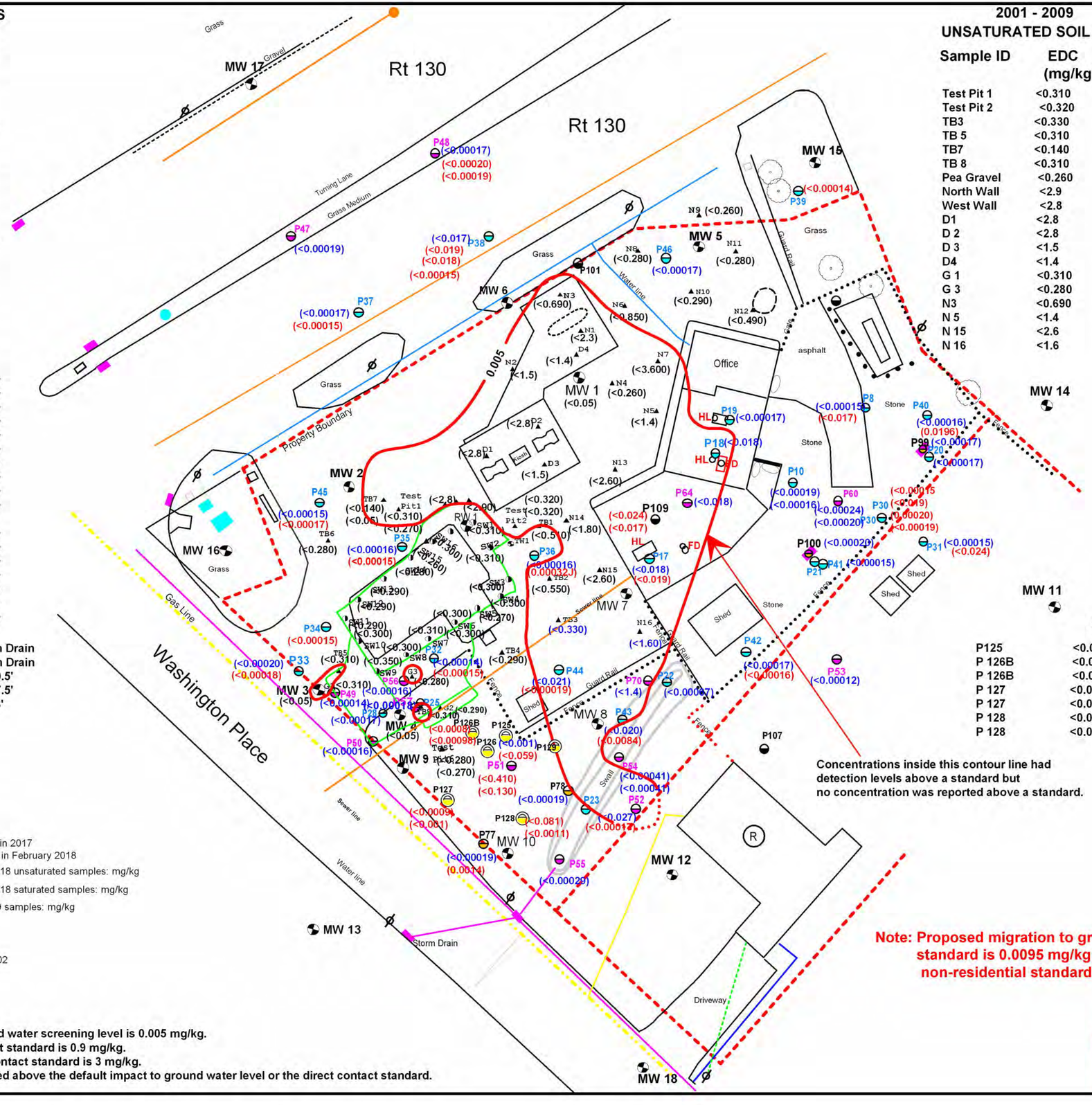
UNSATURATED SOIL SAMPLES

Sample ID	EDC (mg/kg)	Depth (ft)
P 8	<0.00015	6'
P 10	<0.00019	0-1'
P 10	<0.00016	3'
P 17	<0.018	4'
P 18	<0.018	4-4.5'
P 19	<0.00017	5'
P 20	<0.00017	5'
P 22	<0.00067	0-6"
P 28	<0.00017	3.5'
P 31	<0.00015	6.5'
P 32	<0.00014	4.5'
P 33	<0.00020	4.5'
P 35	<0.00016	5.5-6'
P 36	<0.00016	6'
P 37	<0.00017	3'
P 38	<0.017	3'
P 40	<0.00016	6'
P 41	<0.00015	5'
P 42	<0.00017	6'
P 43	<0.020	1'
P 43	<0.012	2'
P 44	<0.021	3'
P 45	<0.00015	5.5-6'
P 46	<0.00017	6-6.5'
P 47	<0.00019	6-6.5'
P 48	<0.00017	1-1.5'
P 49	<0.00014	4.5-5'
P 50	<0.00016	4-4.5'
P 52	<0.027	0-0.5'
P 53	<0.00012	4-4.5'
P 54	<0.00041	0-0.5'
P 54	<0.00041	0.5-1'
P 55	<0.00029	0-4"
P 56	<0.00016	3-3.5'
P 57	<0.00018	3.5-4'
P 60	<0.00024	0-0.5'
P 60	<0.00020	1.5-2'
P 64	<0.018	6-6.5'
P 70	<1.4	3.5-4'
P 77	<0.00019	2-2.5'
P 78	<0.00019	2.5'
P 99	<0.00017	Storm Drain
P 100	<0.00020	Storm Drain
P 109	<0.024	10-10.5'
P 109	<0.017	17-17.5'
P 125	<0.001	2.5-3'

Key

- Existing Groundwater Monitoring Well
- N12 ▲ Soil Boring Installed by RedHawk in 2001 & 2002
- ⊕ Soil Boring Installed by Whitman in 2004
- ◑ UST Closure Sample 2002
- Soil Boring Installed by On-Site in 2017
- Soil Boring Installed by On-Site in February 2018
- (<0.00020) EDC concentration in 2017 & 2018 unsaturated samples: mg/kg
- (<0.0.21) EDC concentration in 2017 & 2018 saturated samples: mg/kg
- (<0.290) EDC concentration in 2001/2009 samples: mg/kg
- —0.005— 0.005 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) EDC default impact to ground water screening level is 0.005 mg/kg.
2) EDC residential direct contact standard is 0.9 mg/kg.
3) EDC non-residential direct contact standard is 3 mg/kg.
4) No concentration was reported above the default impact to ground water level or the direct contact standard.



2001 - 2009 UNSATURATED SOIL SAMPLES

Sample ID	EDC (mg/kg)	Depth (ft)
Test Pit 1	<0.310	2'
Test Pit 2	<0.320	2'
TB3	<0.330	3-4'
TB 5	<0.310	2 - 2.5'
TB7	<0.140	4-5'
TB 8	<0.310	3 - 4'
Pea Gravel	<0.260	3'
North Wall	<2.9	4.5'
West Wall	<2.8	4'
D1	<2.8	2.5 - 3.5'
D 2	<2.8	2.5 - 4
D 3	<1.5	3.5 - 4.5'
D4	<1.4	3.5 - 4.5'
G 1	<0.310	2'
G 3	<0.280	3.5'
N3	<0.690	4 - 5.5'
N 5	<1.4	4 - 5'
N 15	<2.6	2 - 3'
N 16	<1.6	4 - 7'

2001 - 2009 SATURATED SOIL SAMPLES

Sample ID	EDC (mg/kg)	Depth (ft)
Test Pit 1	<0.270	8'
Test Pit 2	<0.320	7'
Test Pit 6	<0.280	5'
Test Pit 6	<0.270	14 - 15'
TB 1	<0.510	8 - 9'
TB 2	<0.550	6 - 7'
TB 4	<0.290	13- 14'
TB 6	<0.280	10 - 11'
TB7	<0.05	10 - 11'
SW 1	<0.310	11.5 - 12'
SW 2	<0.310	11.5 - 12'
SW 3	<0.300	11.5 - 12'
SW 4	< 0.300	10.5 - 11'
SW 5	<0.270	11.5 - 12'
SW 6	<0.300	11.5 - 12'
SW 7	<0.310	10.5 - 11'
SW 8	<0.300	10.5 - 11'
SW 9	<0.350	10.5 - 11'
SW 10	<0.300	10.5 - 11'
SW 11	<0.290	10.5 - 11'
SW 12	<0.290	10.5 - 11'
SW 13	<0.290	10.5 - 11'
SW 14	<0.280	11 - 11.5'
SW 15	<0.260	11 - 11.5'
SW 16	<0.300	11 - 11.5'
G 2	<0.290	6'
N 1	<2.3	8 - 8.5'
N 2	<1.5	8 - 9'
N 4	<0.260	10 - 12'
N 6	<0.85	8 - 9'
N 7	<3.6	8 - 9'
N 8	<0.28	8 - 9.5'
N 9	<0.26	11 -12'
N 10	<0.290	8 - 10'
N 11	<0.280	10 - 12'
N 12	<0.490	6 - 8'
N 13	<2.6	9 - 10'
N 14	<1.8	8 - 9'
MW 3	<0.05	12-13'

SATURATED SOIL SAMPLES

P125	<0.059	3.5-4'
P 126B	<0.008	3.5-4'
P 126B	<0.00098	4.5-5'
P 127	<0.0009	3.5-4'
P 127	<0.001	5-5.5'
P 128	<0.081	4-4.5'
P 128	<0.0011	5.5-6'
P 8	<0.017	12'
P 30	<0.00015	6.5-7'
P 30	<0.019	8'
P 30	<0.00020	17-18'
P 30	<0.00019	21'
P 31	<0.024	9'
P 32	<0.00015	15'
P 33	<0.00018	15'
P 34	<0.00015	16'
P 35	<0.00015	7-7.5'
P 36	0.00032 J	12'
P 37	<0.00015	7'
P 38	<0.019	8'
P 38	<0.018	13'
P 38	<0.00015	18'
P 39	<0.00014	15'
P 40	0.0196	15'
P 41	<0.017	10'
P 42	<0.00016	8'
P 43	<0.0084	6'
P 44	<0.00019	7-7.5'
P 45	<0.00017	12-12.5'
P 48	<0.00020	7.5-8'
P 48	<0.00019	20'
P 51	<0.410	2.5-3'
P 51	<0.130	3.5-4'
P 52	<0.00017	7-8'
P 77	0.0014	10.5-11'

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Drawing #: File : Soil EDC wo F&B data.drw
Date 12/5/18

Figure 27 Soil Samples Analyzed for EDC

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

2001 - 2009 Samples

Sample ID	Concentration (mg/kg)	Depth (ft)
Test pit 1	72	2'
	5	8'
Test pit 2	34	2'
	8	7'
TB 1	21.2	8-9'
TB 2	7.4	6-7'
TB 3	66	3-4'
TB 4	12.9	13-14'
TB 5	15.7	2-2½' dug out
TB 6	6.3	10-11'
TB 7	13	4-5'
TB 7	7	10-11'
TB 8	675	3-4' dug to 3'
N 1	13	8-9½'
N 2	14	8-9'
N 3	29	4-5'
N 4	7	10-12'
N 5	6	4-5'
N 6	9	8-9'
N 7	2	8-9'
N 8	9	8-9½'
N 9	3	11-12'
N 10	2	8-10'
N 11	<1	10-12'
N 12	3	6-8'
N 13	8	9-10'
N 14	19	8-9'
N 15	7	2-3'
N 16	10	4-7'
F 17	6.97	4-5'
F 17	7.19	13-14'
F 18	2.87	10-11'
F 19	1.34	10-12'
F 20	11.1	5-6'
F 20	3.97	10-11'
F 23	5.83	9-10'
F 23	16.8	13-14'
F 24	1,490	3-4'
	5.42	9-10'

2018 Samples Analyzed for Lead

Sample ID	Concentration (mg/kg)	Depth (ft)
P 77	19.2	0-0.5'
P 77	9.7	1.5-2'
P 82	40.4	0-0.5'
P 82	22	1.5-2'
P 82	16.9	5.5-6'
P 85	24.7	0-0.5'
P 85	18.6	1.5-2'
P 85	<7	3.4-4'
P 86	25.7	0-0.5'
P 86	3.7	1.5-2'
P 87	147	6-6.5'
P 89	8.2	3.5-4'
P 90	15.4	3.5-4'
P 90	10.7	5.5-6'
P 90	5.3	10-10.5'
P 92	16.7	0-0.5'
P 92	5.5	1.5-2'
P 92	15.4	6-6.5'
P 93	85.8	1'
P 93	209	2.5-3'
P 95	<6.5	0.5-1'
P 95	9.8	5.5-6'
P 99	17.5	Storm Drain
P 100	20.1	Storm Drain
P 102	108	0-0.5'
P 102	69.2	1-2'
P 102	9	5-6'
P 103	37.4	0-0.5'
P 103	28.4	1-2'
P 106	57.3	0-0.5'
P 106	6.3	1.5-2'
P 108	61.9	0-0.5'
P 110	233	0-0.5'
P 110	94	0.5-1'
P 111	193	0-0.5'
P 111	152	0.5-1'
P 112	84.4	0-0.5'
P 112	11	0.5-1'
P 113	57.2	0-0.5'
P 113	18.5	0.5-1'

2017 Samples Analyzed for Lead

Sample ID	Concentration (mg/kg)	Depth (ft)
P 8	6.8	6'
P 8	10.5	12'
P 10	241	0-1'
P 10	190	3'
P 12	50.9	0-6"
P 12	25.5	5'
P 12	9.5	6.5'
P 13	14.6	0-6"
P 13	529	4'
P 13	49.9	6'
P 14	7.8	0-6"
P 14	55	5'
P 15	112	0-6"
P 15	11.2	5'
P 16	6.2	0-6"
P 16	14.9	4'
P 17	27	4'
P 17	11.7	9'
P 20	16.2	5'
P 22	54.4	0-6"
P 25	13.6	5-5.5'
P 26	220	3.5'
P 27	7.7	3.5'
P 28	39.3	3.5'
P 29	46.3	3.5'
P 30	11.5	6.5-7'
P 30	8	8'
P 30	36.8	17-18'
P 30	18.9	21'
P 31	20.3	6.5'
P 31	10.7	9'
P 32	5.7	4.5'
P 32	2.5	15'
P 33	10.8	4.5'
P 33	32	15'
P 34	15.1	16'
P 35	8.1	5.5-6'
P 35	5.8	7-7.5'
P 36	9.6	6'
P 36	8.9	12'
P 37	8.6	3'
P 37	3	7'
P 38	11.3	3'
P 38	14.2	8'
P 38	13.7	13'
P 38	19.8	18'
P 39	2.3	15'
P 40	8.9	6'
p 40	5.5	15
P 41	15.7	5'
P 41	9.3	10'
P 42	10.7	6'
P 42	5.2	8'
P 43	37.7	1'
P 43	19.6	2'
P 43	8.8	6'
P 44	78.6	3'
P 44	6.6	7-7.5'
P 45	23.3	5.5-6'
P 45	12.3	12-12.5'
P 46	12.9	6-6.5'
P 54	45.4	0-0.5'
P 54	68.6	0.5-1'
P 55	56.8	0-4"
P 58	343	0-0.5'
P 58	9	6-6.5'
P 59	44.1	0-0.5'
P 59	337	1.5-2'
P 59	469	4.5-5'
P 61	79.9	0-0.5'
P 61	88.7	1.5-2'
P 62	13.7	0-0.5'
P 65	165	1'
P 65	13.9	3.5'
P 65	20.6	6.5'
P 66	33.8	0-0.5'
P 66	226	1.5-2'
P 66	9	6-6.5'
P 67	35.6	0-0.5'
P 67	19.2	1.5-2'
P 68	15.7	0-0.5'
P 69	63.9	0.5-1'
P 69	99.4	1-1.5'
P 72	555	3.5-4'
P 73	13.2	3'
P 74	9.2	6-6.5'
P 76	31	0-1'
P 76	39.8	4-4.5'

2018 Samples Analyzed for Lead

Sample ID	Concentration (mg/kg)	Depth (ft)
P 114	104	0-0.5'
P 114	113	0.5-1'
P 114	8.8	6-6.5'
P 115	6.6	0-0.5'
P 115	37.2	0.5-1'
P 115	8.4	6-6.5'
P 116	34.1	0-0.5'
P 116	115	0.5-1'
P 117	52.1	0-0.5'
P 117	151	0.5-1'
P 118	15.7	0-0.5'
P 118	17.5	0.5-1'
P 119	40	0-0.5'
P 119	88.4	0.5-1'
P 119	64.2	1.5-2'
P 120	63.6	0-0.5'
P 120	51.4	0.5-1'
P 120	86.6	1.5-2'
P 130	109	1'
P 130	16.2	3.5'
MW 18	2.5	5-5.5'

Key

- Existing Groundwater Monitoring Well
- F24 ● Soil Boring Installed by RedHawk 2008 & 2009
- N12 ▲ Soil Boring Installed by RedHawk in 2001 & 2002
- UST Closure Sample 2002
- Soil Boring Installed by On-Site in April & May 2017
- Soil Boring Installed by On-Site in October 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Soil boring installed by On-Site in May 21, 2020
- (37.7) Lead concentration in 2017 & 2018 samples: mg/kg
- (66) Lead concentration in 2001/2009 samples: mg/kg/
- 400 400 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) Sample depths at TB 5, TB8, Test pit 4, and NW Corner were removed by excations in 2001/2002.
2) Concentrations shown are the highest value reported in a boring.
3) Lead residential direct contact stanadrd is 400 mg/kg.
4) Lead non-residential direct contact standard is 800 mg/kg.

Inferred extent of lead that exceeds residential direct contact standard of 400 mg/kg

Inferred extent of lead that exceeds non-residential direct contact standard of 800 mg/kg @ F24

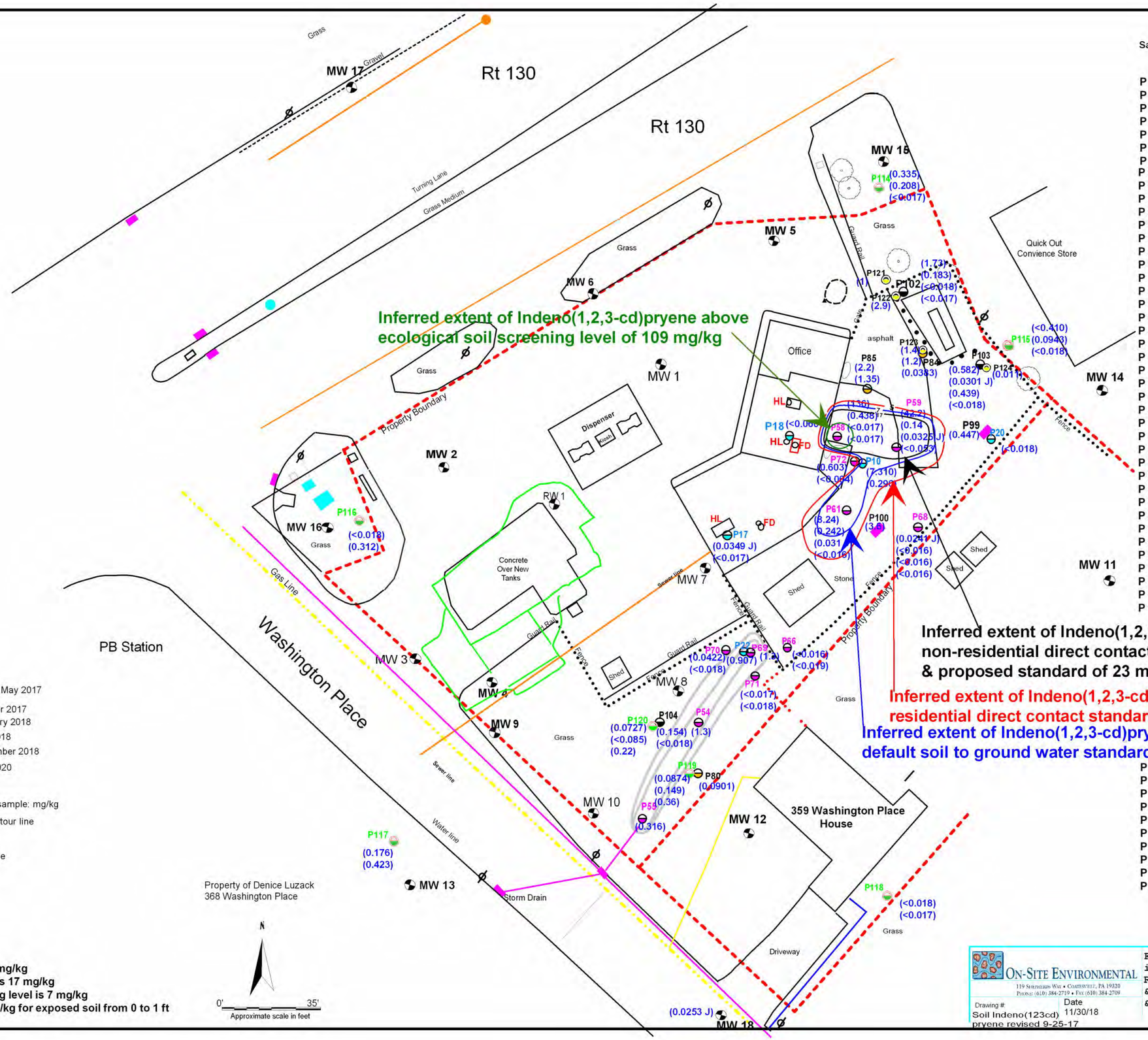
Figure 28 LEAD in Soil
Above Residential &
Non-Residential DirectContact
North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

On-Site Environmental
119 Silverman Way • Coatesville, PA 19320
Phone: (610) 384-2715 • Fax (610) 384-2709

Drawing #: File : Soillead2.drw
Date 6/8/20

SOIL SAMPLES

Sample ID	Indeno(1,2,3-cd)pryene (mg/kg)	Depth (ft)
P 114	0.335	0-0.5'
P 114	0.208	0.5-1'
P 114	<0.017	6-6.5'
P 115	<0.410	0-0.5'
P 115	0.0943	0.5-1'
P 115	<0.017	6-6.5'
P 116	<0.018	0-0.5'
P 116	0.312	0.5-1'
P 117	0.176	0-0.5'
P 117	0.423	0.5-1'
P 118	<0.018	0-0.5'
P 118	<0.017	0.5-1'
P 119	0.0874	0-0.5'
P 119	0.149	0.5-1'
P 119	0.36	1.5-2'
P 120	0.0727	0-0.5'
P 120	<0.085	0.5-1'
P 120	0.22	1.5-2'
p 121	1	0-0.5'
P 122	2.9	0-0.5'
P 123	1.4	0-0.5'
P 124	0.011	3-4'
MW 18	0.0253 J	5-5.5'



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Soil boring installed by On-Site in May 2020

(7.310) Indeno(1,2,3-cd)pryene concentration in sample: mg/kg

7 — 7 ppm default impact to groundwater contour line

5 — 5 ppm residential direct contour line

17 — 17 ppm non-residential direct contour line

ecological screening level contour line

Tree

Extent of Excavation in 2001/2002

HL Former hydraulic lift

FD Former floor drain

Residential direct contact standard is 5 mg/kg
Non-residential direct contact standard is 17 mg/kg
Default impact to ground water screening level is 7 mg/kg
Ecological soil screening level is 109 mg/kg for exposed soil from 0 to 1 ft

SOIL SAMPLES

Sample ID	Indeno(1,2,3-cd)pryene (mg/kg)	Depth (ft)
P 10	7.310	0-1'
P 10	0.296	3'
P 17	0.0349 J	4'
P 17	<0.017	9'
P 18	<0.060	4-4.5'
P 20	<0.018	5'
P 22	0.907	0-6"
P 54	1.3	0.5-1'
P 55	0.316	0-4"
P 58	136	0-0.5'
P 58	0.438	1.5-2'
P 58	<0.017	6-6.5'
P 58	<0.017	18-18.5'
P 59	42.2	0-0.5'
P 59	0.14	1.5-2'
P 59	0.0325 J	4.5-5'
P 59	<0.053	9.5-10'
P 61	8.24	0-0.5'
P 61	0.242	1.5-2'
P 61	0.0310 J	4-4.5'
P 61	<0.016	12.5-13'
P 66	<0.016	6-6.5'
P 66	<0.019	13.5-14'
P 68	0.0241 J	0-0.5'
P 68	<0.016	1.5-2'
P 68	<0.016	6-6.5'
P 68	<0.016	7.5-8'
P 69	1.3	1-1.5'
P 70	0.0422	3.5-4'
P 70	<0.018	6.5-7'
P 71	<0.017	6-6.5'
P 71	<0.018	9-9.5'
P 72	0.603	3.5-4'
P 72	<0.064	6.5-7
P 80	0.0901	0-0.5'
P 84	1.2	0-0.5'
P 84	0.0383	0.5-1'
P 85	2.2	0-0.5'
P 85	1.35	1.5-2'
P 99	0.47	Storm Drain
P 100	3.6	Storm Drain

Inferred extent of Indeno(1,2,3-cd)pryene above non-residential direct contact standard of 17 mg/kg & proposed standard of 23 mg/kg

Inferred extent of Indeno(1,2,3-cd)pryene above residential direct contact standard of 5 mg/kg

Inferred extent of Indeno(1,2,3-cd)pryene above default soil to ground water standard of 7 mg/kg

P 102	1.73	0-0.5'
P 102	0.183	1-2'
P 102	<0.018	5-6'
P 102	<0.017	10-11'
P 103	0.582	0-0.5'
P 103	0.0301 J	1-2'
P 103	0.439	3-4'
P 103	<0.018	13.5-14'
P 104	0.154	1-2'
P 104	<0.018	6.5-7.5'

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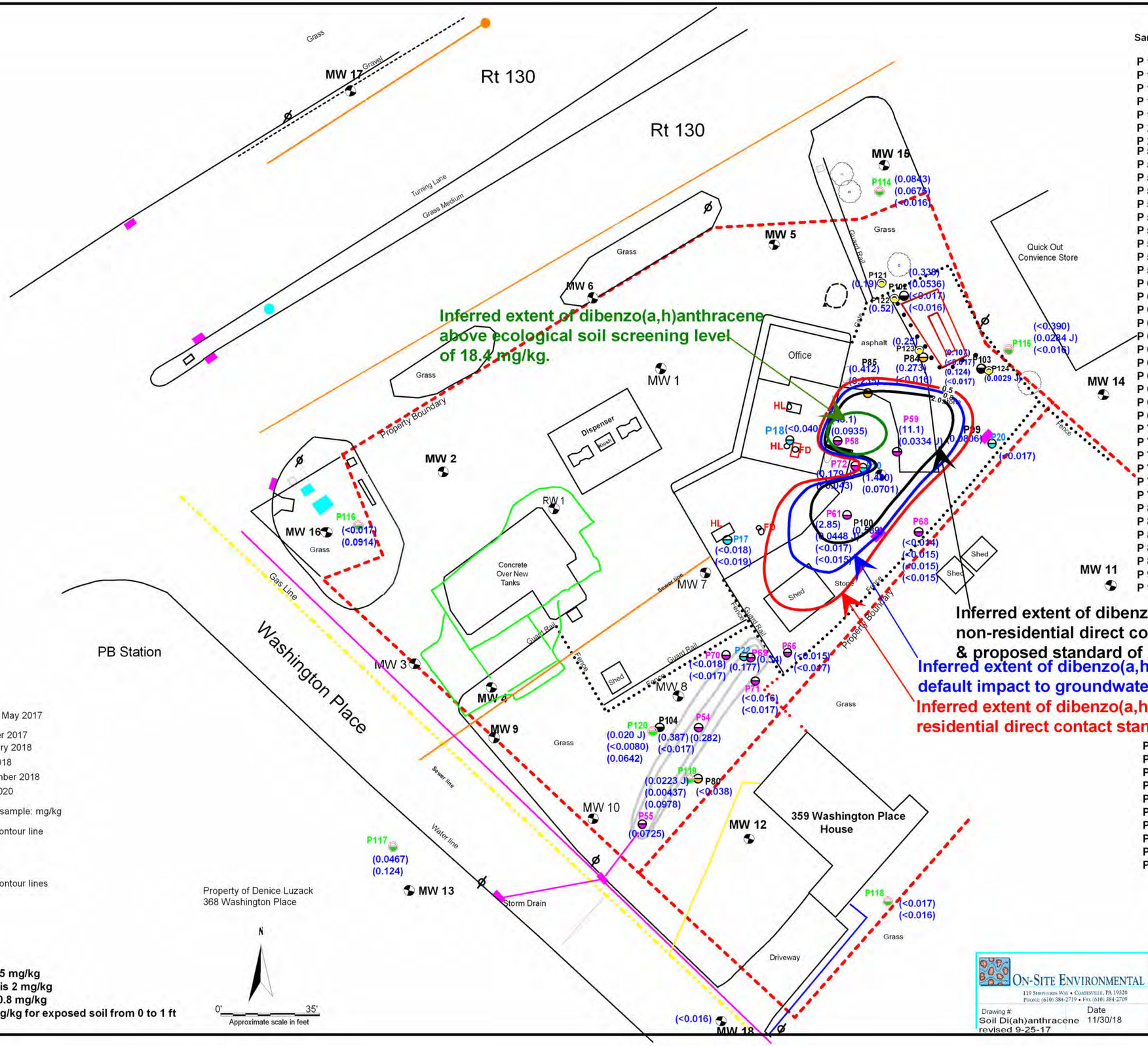
Drawing # Soil Indeno(123cd) pryene revised 9-25-17

Date 11/30/18

Figure 29 Indeno(1,2,3-cd)Pryene in Soil Above Residential & Non-Residential Direct Contact Standard & Default Impact to Groundwater & Ecological Soil Screening Levels

SOIL SAMPLES

Sample ID	Dibenzo(a,h)anthracene (mg/kg)	Depth (ft)
P 114	0.0843	0-0.5'
P 114	0.0676	0.5-1'
P 114	<0.016	6-6.5'
P 115	<0.390	0-0.5'
P 115	0.0284 J	0.5-1'
P 115	<0.016	6-6.5'
P 116	<0.017	0-0.5'
P 116	0.0914	0.5-1'
P 117	0.0467	0-0.5'
P 117	0.124	0.5-1'
P 118	<0.017	0-0.5'
P 118	<0.016	0.5-1'
P 119	0.0223 J	0-0.5'
P 119	0.0437	0.5-1'
P 119	0.0978	0-0.5'
P 120	0.020 J	0.5-1'
P 120	<0.080	0.5-1'
P 120	0.0642	1.5-2'
P 121	0.19	0-0.5'
P 122	0.52	0-0.5'
P 123	0.25	0-0.5'
P 124	0.0029	3-4'
MW 18	<0.016	5-5.5'



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Soil boring installed by On-Site in May 2020
- (1.480) Dibenzo(ah)anthracene concentration in sample: mg/kg
- 0.8 — 0.2 ppm default impact to groundwater contour line
- 0.5 — 0.5 ppm residential direct contour line
- 2.0 — 2 ppm non-residential direct contour line
- ecological soil and sediment screening contour lines
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Residential direct contact standard is 0.5 mg/kg
Non-residential direct contact standard is 2 mg/kg
Default impact to ground water level is 0.8 mg/kg
Ecological soil screening level is 18.4 mg/kg for exposed soil from 0 to 1 ft

SOIL SAMPLES

Sample ID	Dibenzo(a,h)anthracene (mg/kg)	Depth (ft)
P 10	1.480	0-1'
P 10	0.0701	3'
P 17	<0.018	4'
P 17	<0.019	9'
P 18	<0.040	4-4.5'
P 20	<0.017	5'
P 22	0.177	0-6"
P 54	0.282	0.5-1'
P 55	0.0725	0-4"
P 58	48.1	0-0.5'
P 58	0.0935	1.5-2'
P 58	<0.016	6-6.5'
P 58	<0.016	18-18.5'
P 59	11.1	0-0.5'
P 59	0.0334 J	1.5-2'
P 59	<0.017	4.5-5'
P 59	<0.035	9.5-10'
P 61	2.85	0-0.5'
P 61	0.0448 J	1.5-2'
P 61	<0.017	4-4.5'
P 61	<0.015	12.5-13'
P 66	<0.015	6-6.5'
P 66	<0.017	13.5-14'
P 68	<0.014	0-0.5'
P 68	<0.015	1.5-2'
P 68	<0.015	6-6.5'
P 68	<0.015	7.5-8'
P 69	0.34	1-1.5'
P 70	<0.018	3.5-4'
P 70	<0.017	6.5-7'
P 71	<0.016	6-6.5'
P 71	<0.017	9-9.5'
P 72	0.179 J	3.5-4'
P 72	<0.043	6.5-7
P 80	<0.038	0-0.5'
P 84	0.273	0-0.5'
P 84	<0.016	0.5-1'
P 85	0.412	0-0.5'
P 85	0.235	1.5-2'
P 99	0.0806	Storm Drain
P 100	0.589	Storm Drain

Inferred extent of dibenzo(a,h)anthracene above non-residential direct contact standard of 2 mg/kg & proposed standard of 2.3 mg/kg.

Inferred extent of dibenzo(a,h)anthracene above default impact to groundwater screening level of 0.8 mg/kg

Inferred extent of dibenzo(a,h)anthracene above residential direct contact standard of 0.5 mg/kg

P 102	0.338	0-0.5'
P 102	0.0536	1-2'
P 102	<0.017	5-6'
P 102	<0.016	10-11'
P 103	0.107	0-0.5'
P 103	<0.017	1-2'
P 103	0.124	3-4'
P 103	<0.017	13.5-14'
P 104	0.0387	1-2'
P 104	<0.017	6.5-7.5'

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Drawing # Soil Di(ah)anthracene revised 9-25-17

Date 11/30/18

Figure 30 Dibenzo(a,h)anthracene in Soil Above Residential & Non-Residential Direct Contact Standard, Default Impact to Groundwater & Ecological Soil Screening Levels

SOIL SAMPLES

Sample ID	Benzo(k)fluoranthene (mg/kg)	Depth (ft)
P 114	0.369	0-0.5'
P 114	0.22	0.5-1'
P 114	<0.017	6-6.5'
P 115	<0.410	0-0.5'
P 115	0.0843	0.5-1'
P 115	<0.017	6-6.5'
P 116	<0.018	0-0.5'
P 116	0.323	0.5-1'
P 117	0.158	0-0.5'
P 117	0.402	0.5-1'
P 118	0.0188 J	0-0.5'
P 118	<0.017	0.5-1'
P 119	0.0771	0-0.5'
P 119	0.138	0.5-1'
P 119	0.359	1.5-2'
P 120	0.873	0-0.5'
P 120	<0.085	0.5-1'
P 120	0.226	1.5-2'
p 121	0.6	0-0.5'
P 122	1.6	0-0.5'
P 123	0.67	0-0.5'
P 124	0.0072	3-4'
MW 18	0.0345	5-5.5'

Gas line approximate location
Grass
Gravel
Paved Shoulder
Turf Grass Median
MW 17
Rt 130
Shoulder of Road
MW 6
Grass
P101
MW 5
Grass
MW 15
P110
P114
(0.369)
(0.22)
(<0.017)
Concrete
Curb
Benzo(k)fluroanthene above default impact to groundwater soil screening level of 25 mg/kg
Propane Tank Area
P121 (0.6)
P122 (1.6)
P102 (1.09) (0.13) (<0.018) (<0.017)
asphalt
P123 (0.67)
P84 (0.586) (0.0203 J)
P103 (0.316) (<0.018) (0.329) (<0.018)
P124 (0.0072)
P115 (<0.410) (0.0843) (<0.017)
MW 14
MW 1
North Brunswick Gulf Station
(1.11) (0.599)
HL
P85
P59 (28.1) (0.0967) (<0.017) (<0.044)
P99 (0.222)
P20 (<0.018)
Traffic Light
Pump Islands with Canopy
P94
(<0.049) P18
HL FD
25
45
P58 (65.3) (0.269) (<0.017)
One Story Masonary Building
P19 (0378) (<0.052)
P48 (3.222) (0.11)
MW 19
MW 2
RW 1
(<0.018) (0.323)
P116
MW 16
P111
Grass
P109
HL
FD
P17 (0.0204) (<0.017)
P61 (4.5) (0.111) (0.0222) (<0.016)
P100 (1.46)
Storm Drain
P68 (<0.015) (<0.016) (<0.016) (<0.016)
Shed
Shed
Stone
shed
Fence
MW 7
Concrete over New Tanks
Diesel Fuel Dispenser
Sewer Line
Water Line
Gas Line
PB Station
Washington Place
Fence
Guard Rail
Shed
MW 3
MW 4
MW 8
P66 (<0.016) (<0.018)
P106
Property Boundary
P107
Inferred extent of benzo(k)fluroanthene above residential direct contact standard of 45 mg/kg
P108 (0.0333) (<0.018)
P22
P69 (0.742)
P70 (0.449)
P71 (<0.017) (<0.018)
Fence
MW 9
(0.873) (<0.085) (0.226)
P120
P104 (0.0976) (<0.018)
P54 (0.717)
P105
Grass
P119 (0.0771) (0.138) (0.359)
P80 (0.0743)
MW 10
P55 (0.198)
MW 12
359 Washington Place House
Storm Drain
P108
Driveway
(0.158) (0.402)
P117
P112
Property of Denice Luzack 368 Washington Place
MW 13
House
(0.0188 J) (<0.017)
P118
P113
MW 18 (0.0345)
N
0' 35'
Approximate scale in feet

Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Soil boring installed by On-Site inMay 2020
- (4.5) Benzo(k)fluoranthene concentration in sample: mg/kg
- 25 25 ppm default impact to groundwater contour line
- 45 45 ppm residential direct contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Residential direct contact standard is 45 mg/kg
Non-residential direct contact standard is 170 mg/kg
Default impact to ground water level is 25 mg/kg
Ecological soil screening level is 148 mg/kg for exposed soil from 0 to 1 ft.

SOIL SAMPLES

Sample ID	Benzo(k)fluorthene (mg/kg)	Depth (ft)
P 10	3.222 e	0-1'
P 10	0.190 e	3'
P 17	0.0204 J	4'
P 17	<0.017	9'
P 18	<0.049	4-4.5'
P 20	<0.018 e	5'
P 22	0.449 F	0-6"
P 54	0.717	0.5-1'
P 55	0.198	0-4"
P 58	65.3	0-0.5'
P 58	0.269	1.5-2'
P 58	<0.017	6-6.5'
P 58	<0.017	18-18.5'
P 59	28.1	0-0.5'
P 59	0.0967	1.5-2'
P 59	<0.018	4.5-5'
P 59	<0.044	9.5-10'
P 61	4.5	0-0.5'
P 61	0.111	1.5-2'
P 61	0.0222 J	4-4.5'
P 61	<0.016	12.5-13'
P 66	<0.016	6-6.5'
P 66	<0.018	13.5-14'
P 68	<0.015	0-0.5'
P 68	<0.016	1.5-2'
P 68	<0.016	6-6.5'
P 68	<0.016	7.5-8'
P 69	0.742	1-1.5'
P 70	0.0333 J	3.5-4'
P 70	<0.018	6.5-7'
P 71	<0.017	6-6.5'
P 71	<0.018	9-9.5'
P 72	0.378	3.5-4'
P 72	<0.052	6.5-7
P 80	0.0743	0-0.5'
P 84	0.586	0-0.5'
P 84	0.0203 J	0.5-1'
P 85	1.11	0-0.5'
P 85	0.599	1.5-2'
P 99	0.222	Storm Drain
P 100	1.46	Srorm Drain

Note: Proposed migration to groundwater standard not spplicable

P 102	1.09	0-0.5'
P 102	0.13	1-2'
P 102	<0.018	5-6'
P 102	<0.017	10-11'
P 103	0.316	0-0.5'
P 103	<0.018	1-2'
P 103	0.329	3-4'
P 103	<0.018	13.5-14'
P 104	0.0976	1-2'
P 104	<0.018	6.5-7.5'

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Drawing #: Soil B(k)fluoranthene
Date 10/16/18

Figure 31 Benzo(k)fluoranthene in Soil Above Residential Direct Contact Standard & Default Impact to Groundwater Soil Screening Level

Rt 130

Rt 130

MW 17

Grass

Gravel

Turning Lane

Grass Medium

MW 15

(6.8)
(7.6)
(2.7)

P114

Grass

Guard Rail

Quick Out
Convience Store

MW 5

P101

Grass

MW 6

Property Boundary

P102

(3)
(7.4)

Fence

asphalt

P84

P116

(2.1)
(3.3)
(5.1)

P103

(2.8)
(3.5)

MW 14

Office

MW 1

P85

(<2.3)
(16)
(11.4)

HL

Stone

P99

(4)

P320

Fence

Dispenser

Kinah

P94

P18

HL

FD

P58

P59

(2.4)
(6.4)

P72

P10

P64

MW 2

RW 1

P61

(2.3)
(6.3)

P100

(<2.8)

P68

(<2.1)
(<2.2)
(<2.2)

Shed

Shed

P74

MW 11

(3.7)

P116

(4.4)
(8.7)

MW 16

Grass

P73

(8.3)

P63

HL

P17

FD

MW 7

Concrete
Over New
Tanks

Gas Line

Sewer line

Guard Rail

Fence

P92

(2.6)
(3.5
(12.7))

Shed

Stone

Fence

P106

(4.7)
(<2.2)

Property Boundary

PB Station

Washington Place

MW 3

MW 4

Guard Rail

Fence

P22

P69

(3.3)
(4.7)

P66

(2.5)
(7.6)

P53

P82

(8.1)
(3)
(20.5)

Grass

MW 8

Concentration above
residential & non-residential
direct contact
standard

MW 9

Grass

P51

P120

(4.9)
(3.7)
(4)

P104

P54

(2.8)
(3)

Sewer line

P119

(2.8)
(2.8)
(3.8)

P80

P77

MW 10

P55

(3.8)

MW 12

359 Washington Place
House

Water line

P117

(5.1)
(9.3)

MW 13

Storm Drain

P108

P118

(<2.3)
(2.8)

Grass

Driveway

(<2.1)

MW 18

Property of Denice Luzack
368 Washington Place

N

0'

35'

Approximate scale in feet

Key

Existing Groundwater
Monitoring Well

Soil boring installed by On-Site in April & May 2017

Soil boring installed by On-Site in October 2017

Soil boring installed by On-Site in February 2018

Soil boring installed by On-Site in May 2018

Soil boring installed by On-Site in September 2018

(4.9) Arsenic concentration in samples: mg/kg

Tree

Extent of Excavation in 2001/2002

HL Former hydraulic lift

FD Former floor drain

(5.1)
(9.3) Concentration related to background

Residential direct contact standard is 19 mg/kg
Non-residential direct contact standard is 19 mg/kg
Default impact to ground water level is 19 mg/kg
Ecological soil screening level is 9.9 mg/kg

Note: Compliance averaging indicated arsenic at 2 feet and deeper was compliant to the residential & non-residential standards.

SOIL SAMPLES

Sample ID	Arsenic (mg/kg)	Depth (ft)
P 54	2.8	0-.5'
P 54	3	0.5-1'
P 55	3.8	0-4 inch
P 59	2.4	0-0.5'
P 59	6.4	1.5-2'
P 61	2.3	0-0.5'
P 61	6.3	1.5-2'
P 66	2.5	0-0.5'
P 66	7.6	1.5-2'
P 68	<2.1	0-0.5'
P 68	<2.2	1.5-2'
P 68	<2.2	6-6.5'
P 69	3.3	0.5-1'
P 69	4.7	1-1.5'
P 73	8.3	3'
P 74	3.7	6-6.5'
P 82	8.1	0-0.5'
P 82	3	1.5-2'
P 82	20.5	5.5-6'
P 85	<2.3	0-0.5'
P 85	16	1.5-2'
P 85	11.4	3.5-4'
P 92	2.6	0-0.5'
P 92	3.5	1.5-2'
P 92	3.7	6-6.5'
P 99	4	storm drain
P 100	<2.8	storm drain
P 102	3	0-0.5'
P 102	7.4	1-2'
P 103	2.8	0-0.5'
P 103	3.5	1-2'
P 106	4.7	0-0.5'
P 106	<2.2	1.5-2'
P 114	6.8	0-0.5'
P 114	7.6	0.5-1'
P 114	2.7	6-6.5'
P 115	2.1	0-0.5'
P 115	3.3	0.5-1'
P 115	5.1	6-6.5'
P 116	4.4	0-0.5'
P 116	8.7	0.5-1'
P 117	5.1	0-0.5'
P 117	9.3	0.5-1'
P 118	<2.3	0-0.5'
P 118	2.8	0.5-1'
P 119	2.8	0-0.5'
P 119	2.8	0.5-1'
P 119	3.8	1.5-2'
P 120	4.9	0-0.5'
P 120	3.7	0.5-1'
P 120	4	1.5-2'
MW 18	<2.1	5-5.5'

ON-SITE ENVIRONMENTAL
119 Shepherds Way • Coatesville, PA 19320
Phone: (610) 384-2719 • Fax (610) 384-2709

Drawing #: Soil Arsenic

Date 12/1/18

Figure 32 Arsenic in Soil
Above Resiential & Non-Residential
Direct Contact standard

October 2017
UNSATURATED SOIL SAMPLES

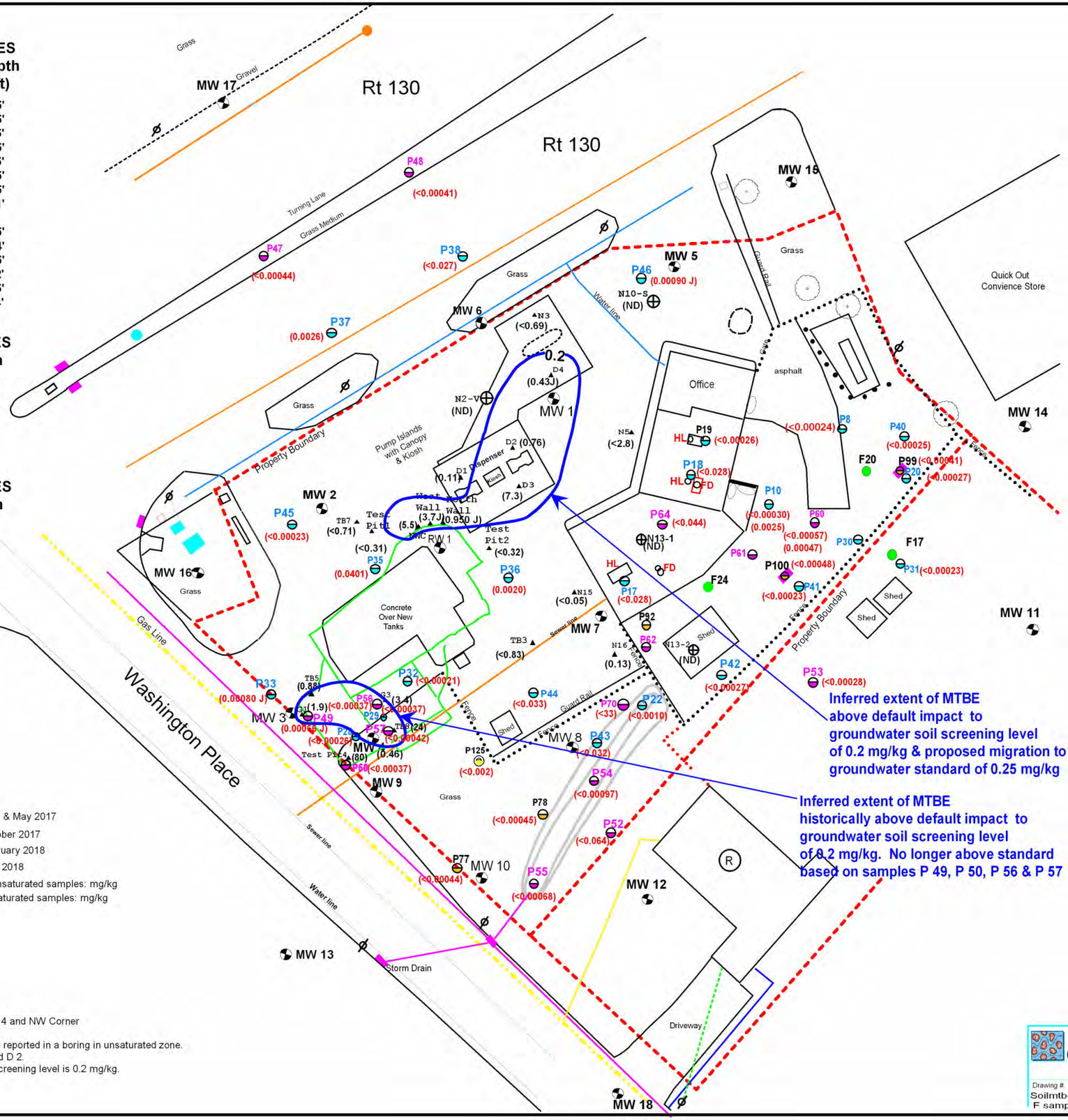
Sample ID	MTBE (mg/kg)	Depth (ft)
P 47	<0.00044	6-6.5'
P 48	<0.00041	1-1.5'
P 49	0.00066 J	4.5-5'
P 50	<0.00037	4-4.5'
P 52	<0.064	0-0.5'
P 53	<0.00028	4-4.5'
P 54	<0.00097	0-0.5'
P 54	<0.00097	0.5-1'
P 55	<0.00068	0-4"
P 56	<0.00037	3-3.5'
P 57	<0.00042	3.5-4'
P 60	<0.00057	0-0.5'
P 60	0.00047	1.5-2'
P 64	<0.044	6-6.5'
P 70	<33	3.5-4'

February 2018
UNSATURATED SOIL SAMPLES

Sample ID	MTBE (mg/kg)	Depth (ft)
P 77	<0.00044	2-2.5'
P 78	<0.00045	2.5'
P 99 Storm drain	<0.00041	
P 100 Storm drain	<0.00048	

May 2020
UNSATURATED SOIL SAMPLES

Sample ID	MTBE (mg/kg)	Depth (ft)
P 125	<0.002	2.5-3



Key

- Existing Groundwater Monitoring Well
- F7 ● Soil Boring Installed by RedHawk 2008 & 2009
- N12 ▲ Soil Boring Installed by RedHawk in 2001 & 2002
- ⊕ Soil Boring Installed by Whitman in 2004
- Soil Boring Installed by On-Site in April & May 2017
- Soil Boring Installed by On-Site in October 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- (<0.032) MTBE concentration in 2017 & 2018 unsaturated samples: mg/kg
- (3.7J) MTBE concentration in 2001/2009 unsaturated samples: mg/kg
- 0.2 0.2 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) Sample depths at TB 5, TB8, Test pit 4, MW 4 and NW Corner were removed by excavations in 2001/2002.
2) Concentrations shown are the highest value reported in a boring in unsaturated zone.
3) Pea gravel sample collectd between D 1 and D 2.
4) MTBE default impact to ground water soil screening level is 0.2 mg/kg.
5) No ecological soil screening level.

2017
UNSATURATED SOIL SAMPLES

Sample ID	MTBE (mg/kg)	Depth (ft)
P 8	<0.00024	6'
P 10	<0.00030	0-1'
P 10	0.0025	3'
P 17	<0.028	4'
P 18	<0.028	4-4.5'
P 19	<0.00026	5'
P 20	<0.00027	5'
P 22	<0.0010	0-6"
P 28	<0.00026	3.5'
P 31	<0.00023	6.5'
P 32	<0.00021	4.5'
P 33	0.00080 J	4.5'
P 35	0.0401	5.5-6'
P 36	0.0020	6'
P 37	0.0026	3'
P 38	<0.027	3'
P 40	<0.00025	6'
P 41	<0.00023	5'
P 42	<0.00027	6'
P 43	<0.032	1'
P 43	<0.019	2'
P 44	<0.033	3'
P 45	0.00023	5.5-6'
P 46	0.00090 J	6-6.5'

2001 - 2009
UNSATURATED SOIL SAMPLES

Sample ID	MTBE (mg/kg)	Depth (ft)
Test Pit 1	<0.31	2'
Test Pit 2	<0.32	2'
Test Pit 4	80	2.5' excavated to 3 ft
TB3	<0.83	3-4'
TB5	0.88	2-2.5' excavated to 3 ft
TB7	<0.71	4-5'
TB8	24	3-4' excavated to 3ft
Pea Gravel	<0.66	3'
North Wall	0.95	4.5'
West Wall	3.7	4'
NW Corner	5.5	5' excavated
MW 4	0.46	2-4' excavated
D1	<7.1	2.5 - 3.5'
D 2	0.76	2.5 - 4
D 3	7.3	3.5 - 4.5'
D4	0.43	3.5 - 4.5'
G1	1.9	2 excavated to 2'
G3	3.4	3.5' excavated to 3'
N2-V	ND	5.5-6'
N3	<0.69	4 - 5.5'
N 5	<1.4	4 - 5'
N10-S	ND	4.5-5'
N 15	<2.8	2 - 3'
N 16	0.13	4 - 7'
N 13-1	ND	3.5 - 4'
N13-2	ND	5-5.5'
F17	<0.05	4-5'
F20	<0.5	5-6'
F 24	<0.05	3 - 4'

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Drawing #: Soilmtbeunsat 2wo F samples
Date: 12/5/18

Figure 33 MTBE in Soil Above the Default Impact to Groundwater Soil Screening Level

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

October 2017
UNSATURATED SOIL SAMPLES

Sample ID	TBA (mg/kg)	Depth (ft)
P 47	<0.0060	6-6.5'
P 48	<0.0056	1-1.5'
P 49	<0.0046	4.5-5'
P 50	<0.0050	4-4.5'
P 52	<0.870	0-0.5'
P 53	<0.0037	4-4.5'
P 54	<0.013	0-0.5'
P 54	<0.013	0.5-1'
P 55	<0.0092	0-4''
P 56	0.0087 J	3-3.5'
P 57	<0.0057	3.5-4'
P 60	<0.0077	0-0.5'
P 60	<0.0063	1.5-2'
P 64	<0.590	6-6.5'
P 70	<45	3.5-4'

February 2018
UNSATURATED SOIL SAMPLES

Sample ID	TBA (mg/kg)	Depth (ft)
P 77	<0.0060	2-2.5'
P 78	<0.0061	2.5'
P 99 Storm drain	<0.0055	
P 100 Storm drain	<0.0064	

May 202
UNSATURATED SOIL SAMPLES

Sample ID	TBA (mg/kg)	Depth (ft)
P 125	<0.02	2.5-3'

2017
UNSATURATED SOIL SAMPLES

Sample ID	TBA (mg/kg)	Depth (ft)
P 8	<0.0027	6'
P 10	<0.0034	0-1'
P 10	<0.0029	3'
P 17	<0.320	4'
P 18	<0.320	4-4.5'
P 19	<0.003	5'
P 20	<0.0031	5'
P 22	<0.012	0-6''
P 28	<0.0030	3.5'
P 31	<0.0027	6.5'
P 32	<0.0024	4.5'
P 33	0.0728	4.5'
P 35	0.0504	5.5-6'
P 36	0.0315	6'
P 37	0.0944	3'
P 38	<0.310	3'
P 40	<0.0029	6'
P 41	<0.0026	5'
P 42	<0.0031	6'
P 43	<0.360	1'
P 43	<0.220	2'
P 44	<0.380	3'
P 45	<0.0027	5.5-6'
P 46	0.0086 J	6-6.5'

2001 - 2009
UNSATURATED SOIL SAMPLES

Sample ID	TBA (mg/kg)	Depth (ft)
Test Pit 1	<3.1	2'
Test Pit 2	<3.2	2'
Test Pit 4	<60	2.5' excavated to 3'
TB3	<16	3-4'
TB5	<15	2-2.5' excavated to 3'
TB7	<14	4-5'
TB8	28	3-4' excavated to 3'
Pea Gravel	<13	3'
North Wall	<140	4.5'
West Wall	<140	4'
NW Corner	<71	5' excavated
South Dispenser	NA	3'
D1	<140	2.5 - 3.5'
D 2	<140	2.5 - 4
D 3	<77	3.5 - 4.5'
D4	<72	3.5 - 4.5'
G1	<10	2 excavated to 2'
G3	4.7	3.5' excavated to 3'
N2-V	ND	5.5-6'
N3	<6.9	4 - 5.5'
N 5	<14	4 - 5'
N10-S	ND	4.5-5'
N 15	<26	2 - 3'
N 16	<10	4 - 7'
N 13-1	ND	3.5 - 4'
N13-2	ND	5-5.5'
F17	<3	4-5'
F20	<30	5-6'
F 24	<3	3 - 4'

Key

- Existing Groundwater Monitoring Well
- F7 Soil Boring Installed by RedHawk 2008 & 2009
- N12 Soil Boring Installed by RedHawk in 2001 & 2002
- Soil Boring Installed by Whitman in 2004
- Soil Boring Installed by On-Site in April & May 2017
- Soil Boring Installed by On-Site in October 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- Soil Boring Installed by On-Site in May 2020
- (<0.360) TBA concentration in 2017 & 2018 unsaturated samles: mg/kg
- (<14) TBA concentration in 2001/2009 unsaturated samles: mg/kg
- 0.3 0.3 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Inferred extent of TBA historically above default impactl to groundwater soil screening level of 0.3 mg/kg. No longer above standard based on samples P 56 & P 57)

Note: 1) Sample depths at TB 5, TB8, Test pit 4, and NW Corner were removed by excavations in 2001/2002.
2) Concentrations shown are the highest value reported in a boring in unsaturated zone.
3) Pea gravel sample collectd between D 1 and D 2.
4) TBA default impact to ground water soil screening level is 0.3 mg/kg.
5) No ecological standards for TBA.

Note: Proposed migration to groundwater standard is 0.32 mg/kg

ON-SITE ENVIRONMENTAL
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Drawing #: SoilTBAunsat wo F samples
Date: 12/5/18

Figure 34 TBA in Soil Above Default Impact to Groundwater Soil Screening Level

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

SOIL SAMPLES

Sample ID	Chrysene (mg/kg)	Depth (ft)
P 114	0.614	0-0.5'
P 114	0.396	0.5-1'
P 114	<0.012	6-6.5'
P 115	<0.280	0-0.5'
P 115	0.19	0.5-1'
P 115	<0.011	6-6.5'
P 116	0.0299 J	0-0.5'
P 116	0.576	0.5-1'
P 117	0.323	0-0.5'
P 117	0.801	0.5-1'
P 118	0.0286 J	0-0.5'
P 118	<0.012	0.5-1'
P 119	0.15	0-0.5'
P 119	0.294	0.5-1'
P 119	0.631	1.5-2'
P 120	0.153	0-0.5'
P 120	0.0789 J	0.5-1'
P 120	0.406	1.5-2'
P 121	1.2	0-0.5'
P 122	3.3	0-0.5'
P 123	1.4	0-0.5'
P 124	0.017	3-4'
MW 18	0.0722	5-5.5'

SOIL SAMPLES

Sample ID	Chrysene (mg/kg)	Depth (ft)
P 10	8.130	0-1'
P 10	0.598	3'
P 17	0.0643	4'
P 17	<0.012	9'
P 18	<0.034	4-4.5'
P 20	<0.012	5'
P 22	0.904	0-6"
P 54	1.3	0.5-1'
P 55	0.356	0-4"
P 58	249	0-0.5'
P 58	0.651	1.5-2'
P 58	<0.012	6-6.5'
P 58	<0.011	18-18.5'
P 59	53.1	0-0.5'
P 59	0.211	1.5-2'
P 59	0.0499	4.5-5'
P 59	<0.030	9.5-10'
P 61	9.28	0-0.5'
P 61	0.246	1.5-2'
P 61	0.0617	4-4.5'
P 61	<0.011	12.5-13'
P 66	<0.011	6-6.5'
P 66	<0.012	13.5-14'
P 68	0.0243 J	0-0.5'
P 68	<0.011	1.5-2'
P 68	<0.011	6-6.5'
P 68	<0.010	7.5-8'
P 69	2.22	1-1.5'
P 70	0.0727	3.5-4'
P 70	<0.012	6.5-7'
P 71	<0.011	6-6.5'
P 71	<0.012	9-9.5'
P 72	1.06 J	3.5-4'
P 72	<0.036	6.5-7
P 80	0.15	0-0.5'
P 84	1.53	0-0.5'
P 84	0.0525	0.5-1'
P 85	2.11	0-0.5'
P 85	1.38	1.5-2'
P 99	0.457	Storm Drain
P 100	3.4	Storm Drain
P 102	2.23	0-0.5'
P 102	0.304	1-2'
P 102	<0.012	5-6'
P 102	<0.011	10-11'
P 103	0.696	0-0.5'
P 103	0.0311 J	1-2'
P 103	0.689	3-4'
P 103	<0.012	13.5-14'
P 104	0.265	1-2'
P 104	<0.012	6.5-7.5'

Inferred extent of chrysene above default soil to groundwater screening level of 80 mg/kg

Inferred extent of chrysene above ecological soil screening level of 4.73 mg/kg

Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- (9.340) Benzo(a)pryene concentration in sample: mg/kg
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain
- 80 80 ppm default impact to groundwater contour line
- 4.73 4.73 ppm ecological soil screening level contour line

Residential direct contact standard is 450 mg/kg
Non-residential direct contact standard is 1,700 mg/kg
Default impact to ground water screening level is 80 mg/kg
Ecological soil screening level is 4.73 mg/kg for exposed soil from 0 to 1 ft

Approximate scale in feet 0' 35'

Note: Proposed ingestion standard is 2,300 mg/kg & proposed migration to groundwater standard is not applicable

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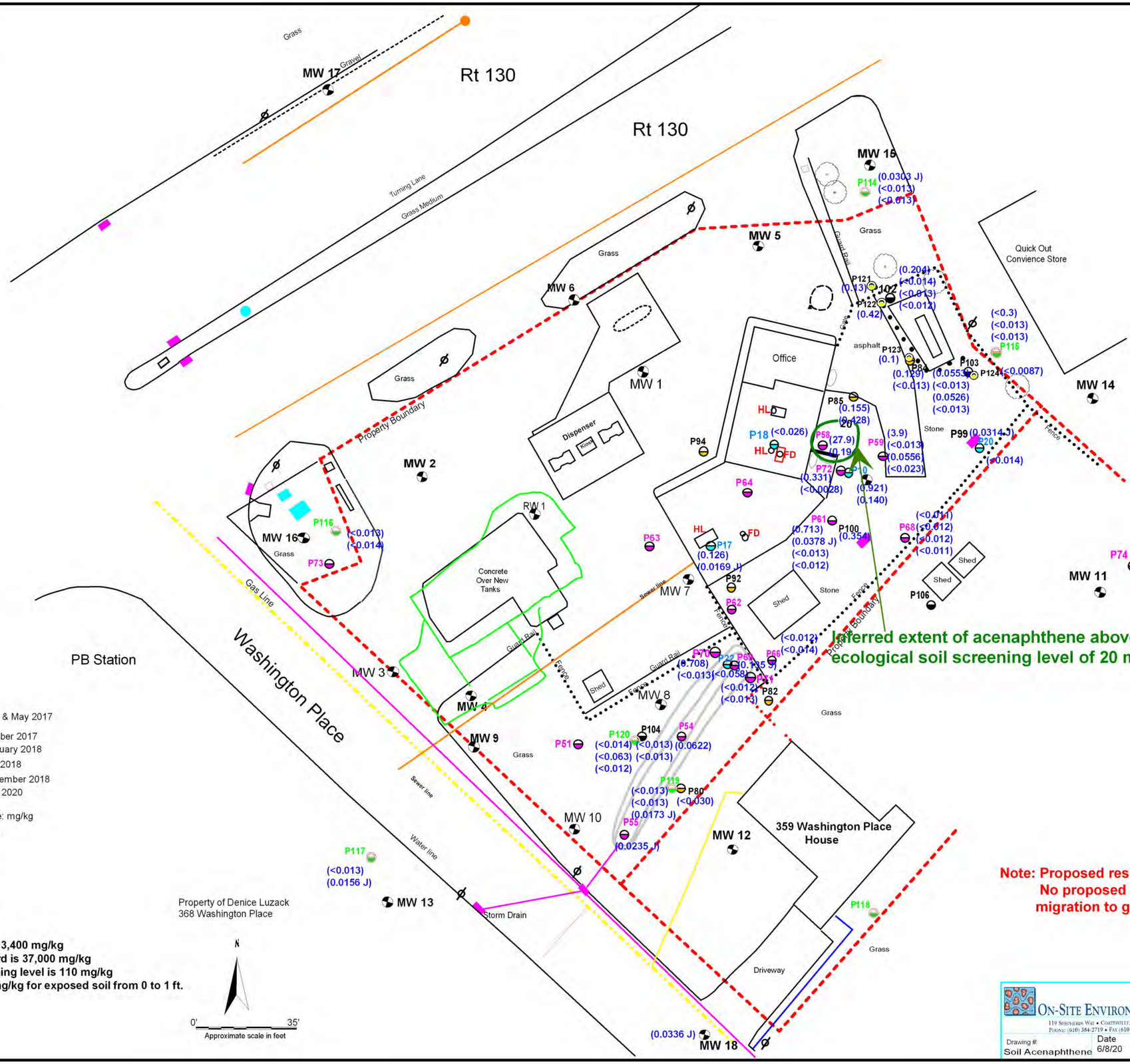
Drawing #: Soil Chrysene revised 9-25-17
Date 11/30/18

Figure 35 Chrysene in Soil Above Default Impact to Groundwater & Ecological Soil Screening Levels
North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

SOIL SAMPLES

Sample ID	Acenaphthene (mg/kg)	Depth (ft)
P 114	0.0303 J	0-0.5'
P 114	<0.013	0.5-1'
P 114	<0.013	6-6.5'
P 115	<0.3	0-0.5'
P 115	<0.013	0.5-1'
P 115	<0.013	6-6.5'
P 116	<0.013	0-0.5'
P 116	<0.014	0.5-1'
P 117	<0.013	0-0.5'
P 117	0.0156 J	0.5-1'
P 118	<0.013	0-0.5'
P 118	<0.013	0.5-1'
P 119	<0.013	0-0.5'
P 119	<0.013	0.5-1'
P 119	0.0173 J	1.5-2'
P 120	<0.014	0-0.5'
P 120	<0.063	0.5-1'
P 120	<0.012	1.5-2'
P 121	0.13	0-0.5'
P 122	0.42	0-0.5'
P 123	0.1	0-0.5'
P 124	<0.0087	3-4'
MW 18	0.0336 J	5-5.5'



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Soil boring installed by On-Site in May 2020
- (27.9) Acenaphthene concentration in sample: mg/kg
- 20 Ecological screening level contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Residential direct contact standard is 3,400 mg/kg
Non-residential direct contact standard is 37,000 mg/kg
Default impact to groundwater screening level is 110 mg/kg
Ecological soil screening level is 20 mg/kg for exposed soil from 0 to 1 ft.

SOIL SAMPLES

Sample ID	Acenaphthene (mg/kg)	Depth (ft)
P 10	0.921e	0-1'
P 10	0.140 e	3'
P 17	0.126	4'
P 17	0.0169J	9'
P 18	<0.026	4-4.5'
P 20	<0.014 e	5'
P 22	<0.058F	0-6"
P 54	0.0622	0.5-1'
P 55	0.0234 J	0-4"
P 58	27.9	0-0.5'
P 58	0.194	1.5-2'
P 58	<0.013	6-6.5'
P 58	<0.013	18-18.5'
P 59	3.9	0-0.5'
P 59	<0.013	1.5-2'
P 59	0.0556	4.5-5'
P 59	<0.023	9.5-10'
P 61	0.713	0-0.5'
P 61	0.0378 J	1.5-2'
P 61	<0.013	4-4.5'
P 61	<0.012	12.5-13'
P 66	<0.012	6-6.5'
P 66	<0.014	13.5-14'
P 68	<0.011	0-0.5'
P 68	<0.012	1.5-2'
P 68	<0.012	6-6.5'
P 68	<0.011	7.5-8'
P 69	0.135 J	1-1.5'
P 70	0.0708	3.5-4'
P 70	<0.013	6.5-7'
P 71	<0.012	6-6.5'
P 71	<0.013	9-9.5'
P 72	0.331	3.5-4'
P 72	<0.0028	6.5-7
P 80	<0.030	0-0.5'
P 84	0.129	0-0.5'
P 84	<0.013	0.5-1'
P 85	0.1555	0-0.5'
P 85	0.428	1.5-2'
P 99	0.0314 J	Storm Drain
P 100	0.354	Storm Drain
P 102	0.204	0-0.5'
P 102	<0.014	1-2'
P 102	<0.013	5-6'
P 102	<0.012	10-11'
P 103	0.0553	0-0.5'
P 103	<0.013	1-2'
P 103	0.0526	3-4'
P 103	<0.013	13.5-14'
P 104	<0.013	1-2'
P 104	<0.013	6.5-7.5'

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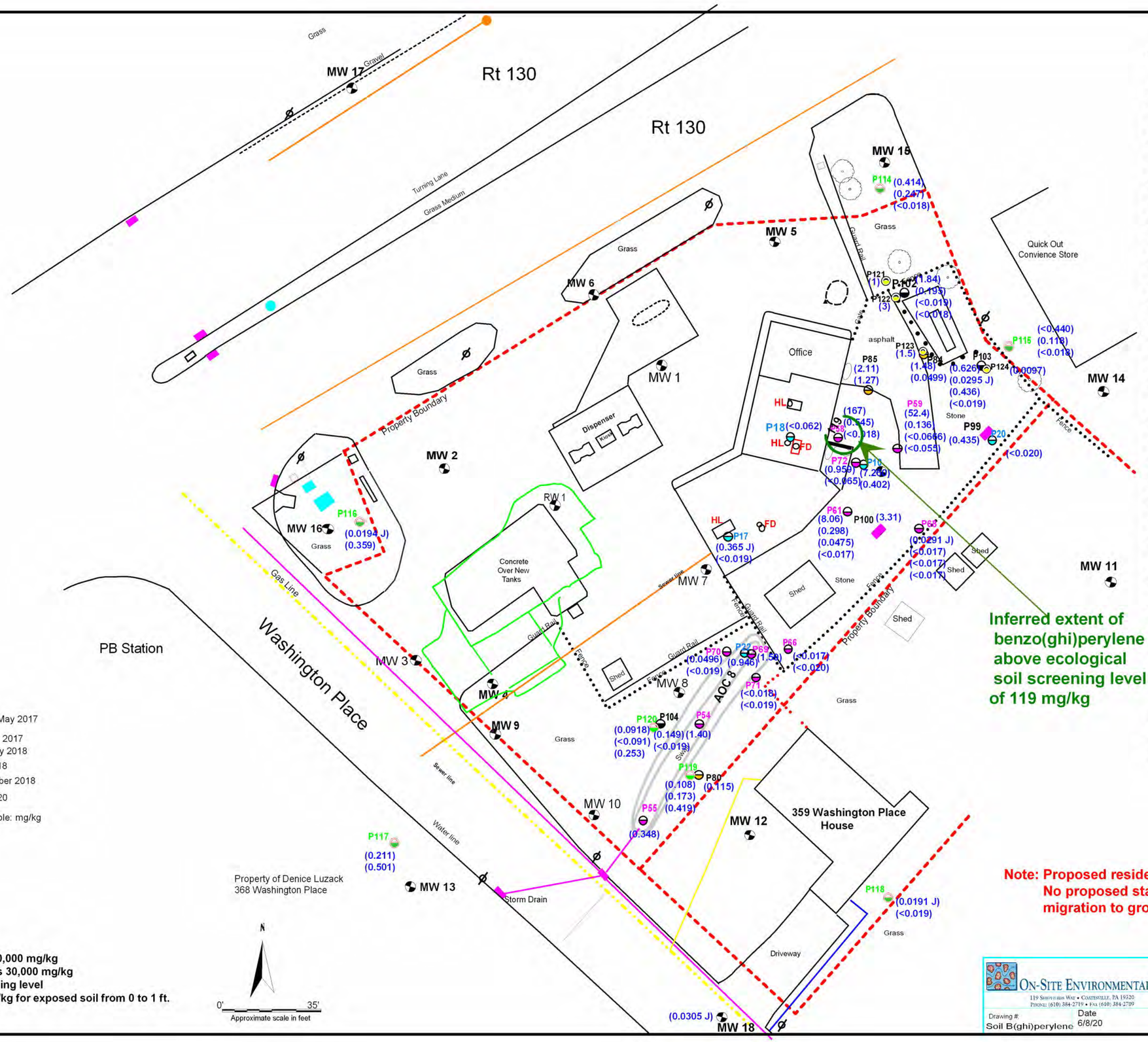
Drawing #: Soil Acenaphthene

Date 6/8/20

Figure 36 Acenaphthene in Soil Above Ecological Soil Screening Level

SOIL SAMPLES

Sample ID	Benzo(ghi)perylene (mg/kg)	Depth (ft)
P 114	0.414	0-0.5'
P 114	0.247	0.5-1'
P 114	<0.018	6-6.5'
P 115	<0.440	0-0.5'
P 115	0.118	0.5-1'
P 115	<0.018	6-6.5'
P 116	0.0194 J	0-0.5'
P 116	0.359	0.5-1'
P 117	0.211	0-0.5'
P 117	0.501	0.5-1'
P 118	0.0191 J	0-0.5'
P 118	<0.019	0.5-1'
P 119	0.108	0-0.5'
P 119	0.173	0.5-1'
P 119	0.419	1.5-2'
P 120	0.0918	0-0.5'
P 120	<0.091	0.5-1'
P 120	0.253	1.5-2'
P 121	1	0-0.5'
P 122	3	0-0.5'
P 123	1.5	0-0.5'
P 124	0.0097	3-4'
MW 18	0.0305 J	5-5.5'



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Soil boring installed by On-Site in May 2020
- (167) Benzo(ghi)perylene concentration in sample: mg/kg
- 119 119 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Residential direct contact standard is 380,000 mg/kg
Non-residential direct contact standard is 30,000 mg/kg
No default impact to groundwater screening level
Ecological soil screening level is 119 mg/kg for exposed soil from 0 to 1 ft.

Inferred extent of benzo(ghi)perylene above ecological soil screening level of 119 mg/kg

Note: Proposed residential standard is 38000 mg/kg. No proposed standard for non-residential or migration to groundwater.

SOIL SAMPLES

Sample ID	Benzo(ghi)perylene (mg/kg)	Depth (ft)
P 10	7.260 b e	0-1'
P 10	0.402 e	3'
P 17	0.365 J	4'
P 17	<0.019	9'
P 18	<0.062	4-4.5'
P 20	<0.020 e	5'
P 22	0.946 F	0-6"
P 54	1.400	0.5-1'
P 55	0.348	0-4"
P 58	167	0-0.5'
P 58	0.545	1.5-2'
P 58	<0.018	6-6.5'
P 58	<0.018	18-18.5'
P 59	52.4	0-0.5'
P 59	0.136	1.5-2'
P 59	<0.0666	4.5-5'
P 59	<0.055	9.5-10'
P 61	8.06	0-0.5'
P 61	0.298	1.5-2'
P 61	0.0475	4-4.5'
P 61	<0.017	12.5-13'
P 66	<0.017	6-6.5'
P 66	<0.020	13.5-14'
P 68	0.0291 J	0-0.5'
P 68	<0.017	1.5-2'
P 68	<0.017	6-6.5'
P 68	<0.017	7.5-8'
P 69	1.59	1-1.5'
P 70	0.0496	3.5-4'
P 70	<0.019	6.5-7'
P 71	<0.018	6-6.5'
P 71	<0.019	9-9.5'
P 72	0.959	3.5-4'
P 72	<0.065	6.5-7
P 80	0.115	0-0.5'
P 84	1.48	0-0.5'
P 84	0.0499	0.5-1'
P 85	2.11	0-0.5
P 85	1.27	1.5-2'
P 99	0.435	Storm Drain
P 100	3.31	Storm Drain
P 102	1.84	0-0.5'
P 102	0.195	1-2'
P 102	<0.019	5-6'
P 102	<0.018	10-11'
P 103	0.626	0-0.5'
P 103	0.0295 J	1-2'
P 103	0.436	3-4'
P 103	<0.019	13.5-14'
P 104	0.149	1-2'
P 104	<0.019	6.5-7.5'

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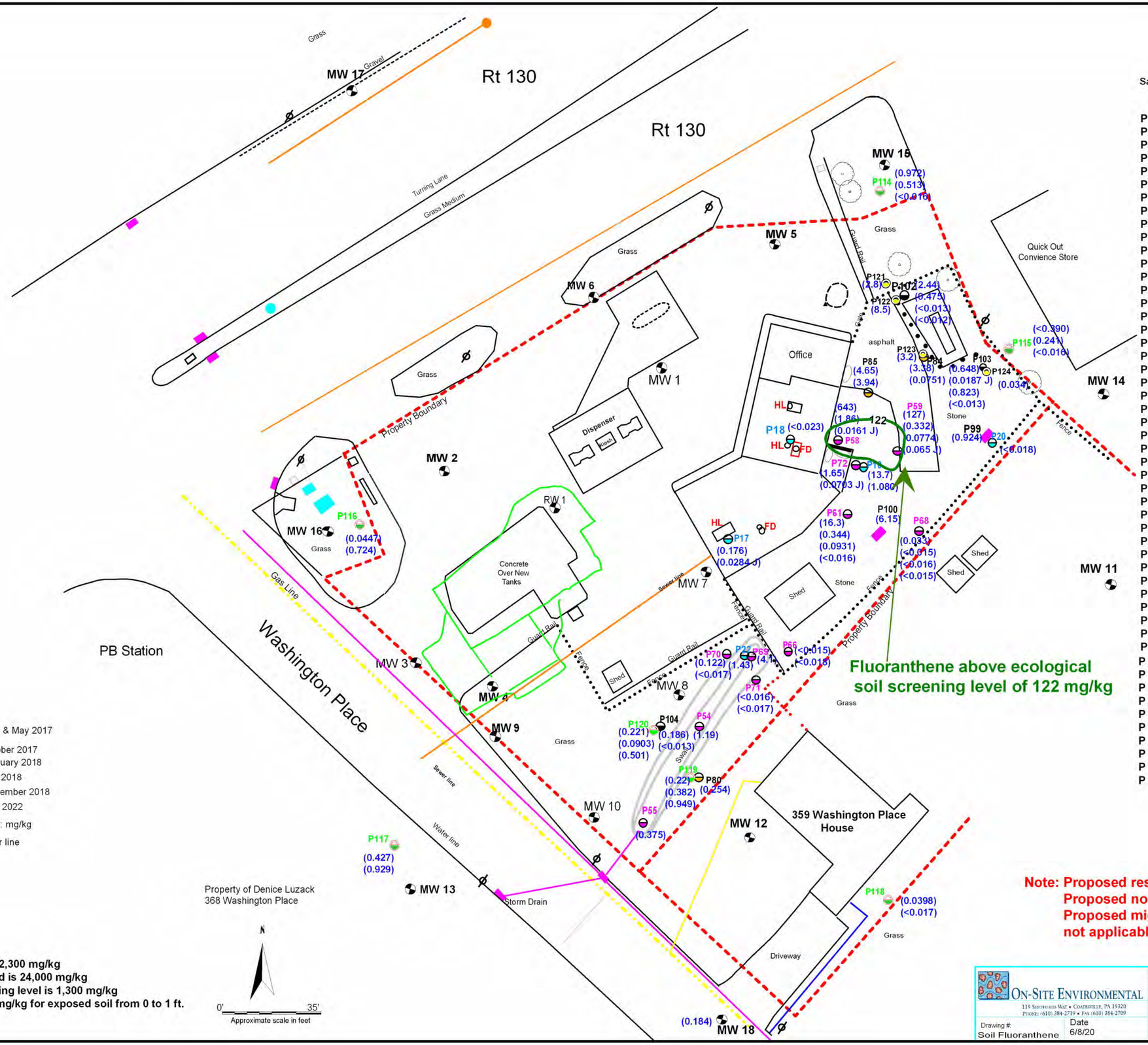
Drawing # Soil B(ghi)perylene
Date 6/8/20

Figure 37 Benzo(ghi)perylene in Soil Above Ecological Soil Screening Level

SOIL SAMPLES

Sample ID	Fluoranthene (mg/kg)	Depth (ft)
P 114	0.972	0-0.5'
P 114	0.513	0.5-1'
P 114	<0.016	6-6.5'
P 115	<0.390	0-0.5'
P 115	0.241	0.5-1'
P 115	<0.016	6-6.5'
P 116	0.0447	0-0.5'
P 116	0.724	0.5-1'
P 117	0.427	0-0.5'
P 117	0.929	0.5-1'
P 118	0.0398	0-0.5'
P 118	<0.017	0.5-1'
P 119	0.22	0-0.5'
P 119	0.382	0.5-1'
P 119	0.949	1.5-2'
P 120	0.221	0-0.5'
P 120	0.0903 J	0.5-1'
P 120	0.501	1.5-2'
P 121	2.8	0-0.5'
P 122	8.5	0-0.5'
P 123	3.2	0-0.5'
P 124	0.34	3-4'
MW 18	0.184	5-5.5'



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Soil boring installed by On-Site in may 2022
- (127) Fluoranthene concentration in sample: mg/kg
- 122 Ecological soil screening level contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Residential direct contact standard is 2,300 mg/kg
Non-residential direct contact standard is 24,000 mg/kg
Default impact to groundwater screening level is 1,300 mg/kg
Ecological soil screening level is 122 mg/kg for exposed soil from 0 to 1 ft.

SOIL SAMPLES

Sample ID	Fluoranthene (mg/kg)	Depth (ft)
P 10	13.7 b e	0-1'
P 10	1.080 e	3'
P 17	0.176	4'
P 17	0.0284 J	9'
P 18	<0.023	4-4.5'
P 20	<0.018 e	5'
P 22	1.43 F	0-6"
P 54	1.19	0.5-1'
P 55	0.375	0-4"
P 58	643	0-0.5'
P 58	1.86	1.5-2'
P 58	0.0161 J	6-6.5'
P 58	<0.016	18-18.5'
P 59	127	0-0.5'
P 59	0.332	1.5-2'
P 59	0.0774	4.5-5'
P 59	0.065 J	9.5-10'
P 61	16.3	0-0.5'
P 61	0.344	1.5-2'
P 61	0.0931	4-4.5'
P 61	<0.016	12.5-13'
P 66	<0.015	6-6.5'
P 66	<0.018	13.5-14'
P 68	0.033	0-0.5'
P 68	<0.015	1.5-2'
P 68	<0.016	6-6.5'
P 68	<0.015	7.5-8'
P 69	4.1	1-1.5'
P 70	0.122	3.5-4'
P 70	<0.017	6.5-7'
P 71	<0.016	6-6.5'
P 71	<0.017	9-9.5'
P 72	1.65	3.5-4'
P 72	0.0703 J	6.5-7
P 80	0.254	0-0.5'
P 84	3.38	0-0.5'
P 84	0.0751	0.5-1'
P 85	4.65	0-0.5'
P 85	3.94	1.5-2'
P 99	0.924	Storm Drain
P 100	6.15	Storm Drain
P 102	4.99	0-0.5'
P 102	0.517	1-2'
P 102	<0.017 a	5-6'
P 102	<0.016 a	10-11'
P 103	1.32	0-0.5'
P 103	0.0464	1-2'
P 103	1.09	3-4'
P 103	<0.017 a	13.5-14'
P 104	0.425	1-2'
P 104	<0.017 a	6.5-7.5'

Note: Proposed residential is 2400 mg/kg
Proposed non-residential is 33,000 mg/kg
Proposed migration to groundwater is not applicable

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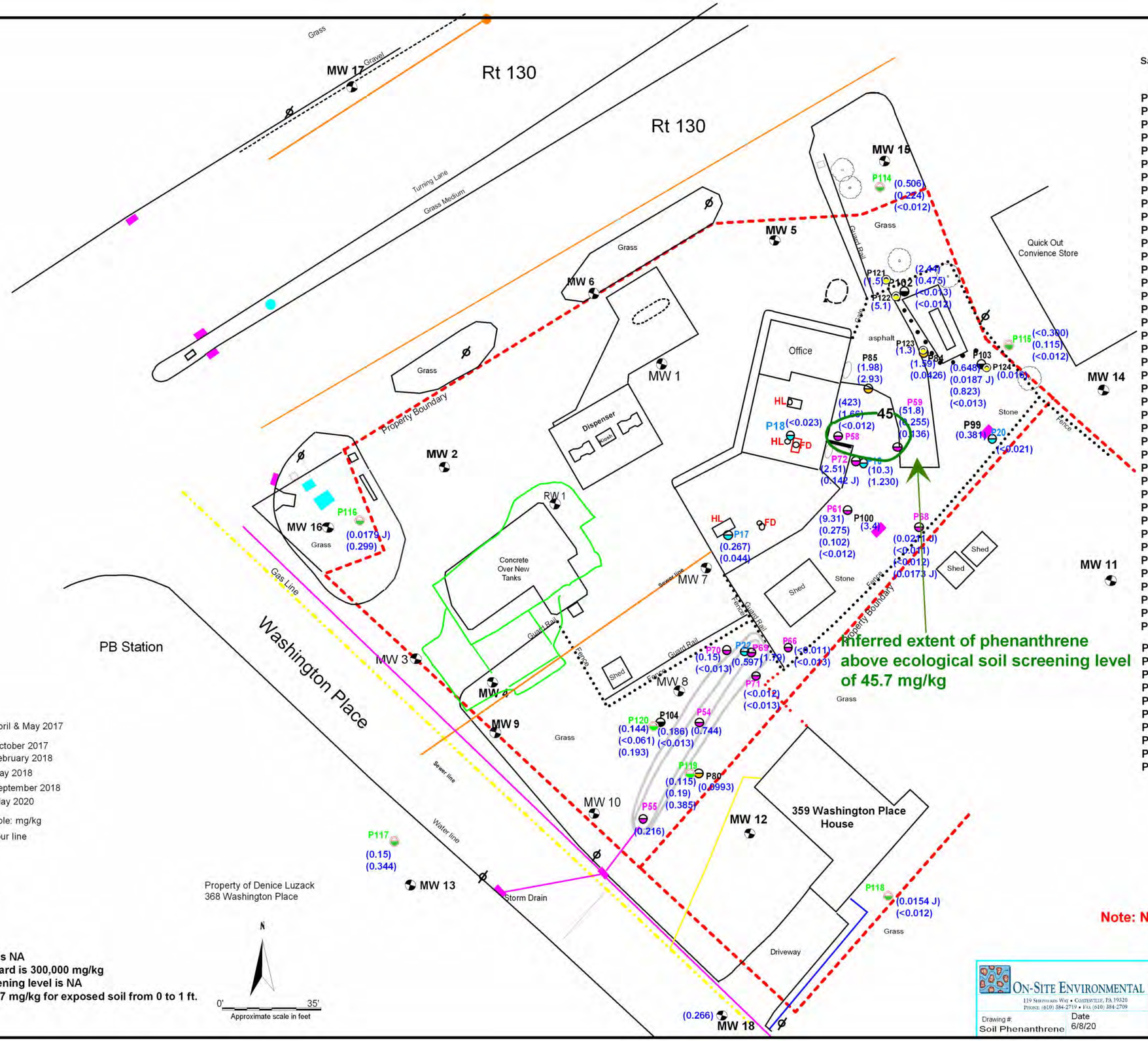
Drawing #: Soil Fluoranthene
Date: 6/8/20

Figure 38 Fluoranthene in Soil Above Ecological Soil Screening Level

SOIL SAMPLES

Sample ID	Phenanthrene (mg/kg)	Depth (ft)
P 114	0.506	0-0.5'
P 114	0.224	0.5-1'
P 114	<0.012	6-6.5'
P 115	<0.300	0-0.5'
P 115	0.115	0.5-1'
P 115	<0.012	6-6.5'
P 116	0.0179 J	0-0.5'
P 116	0.299	0.5-1'
P 117	0.15	0-0.5'
P 117	0.344	0.5-1'
P 118	0.0154 J	0-0.5'
P 118	<0.012	0.5-1'
P 119	0.115	0-0.5'
P 119	0.19	0.5-1'
P 119	0.385	1.5-2'
P 120	0.144	0-0.5'
P 120	<0.061	0.5-1'
P 120	0.193	1.5-2'
P 121	1.5	0-0.5'
P 122	5.1	0-0.5'
P 123	1.3	0-0.5'
P 124	0.016	3-4'
MW 18	0.266	5-5.5'



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Soil boring installed by On-Site in May 2020
- (423) Phenanthrene concentration in sample: mg/kg
- —45— Ecological soil screening level contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Residential direct contact standard is NA
Non-residential direct contact standard is 300,000 mg/kg
Default impact to groundwater screening level is NA
Ecological soil screening level is 45.7 mg/kg for exposed soil from 0 to 1 ft.

Property of Denice Luzack
368 Washington Place

N
0' 35'
Approximate scale in feet

SOIL SAMPLES

Sample ID	Phenanthrene (mg/kg)	Depth (ft)
P 10	10.3 b e	0-1'
P 10	1.230 e	3'
P 17	0.267	4'
P 17	0.044	9'
P 18	<0.023	4-4.5'
P 20	<0.021 e	5'
P 22	0.597	0-6''
P 54	0.744	0.5-1'
P 55	0.216	0-4''
P 58	423	0-0.5'
P 58	1.66	1.5-2'
P 58	<0.012	6-6.5'
P 58	<0.012	18-18.5'
P 59	51.8	0-0.5'
P 59	0.225	1.5-2'
P 59	0.136	4.5-5'
P 59	<0.020	9.5-10'
P 61	9.31	0-0.5'
P 61	0.275	1.5-2'
P 61	0.102	4-4.5'
P 61	<0.012	12.5-13'
P 66	<0.011	6-6.5'
P 66	<0.013	13.5-14'
P 68	0.0211 J	0-0.5'
P 68	<0.011	1.5-2'
P 68	<0.012	6-6.5'
P 68	0.0173 J	7.5-8'
P 69	1.79	1-1.5'
P 70	0.15	3.5-4'
P 70	<0.013	6.5-7'
P 71	<0.012	6-6.5'
P 71	<0.013	9-9.5'
P 72	2.51	3.5-4'
P 72	0.142 J	6.5-7
P 80	0.0993	0-0.5'
P 84	1.59	0-0.5'
P 84	0.0426	0.5-1'
P 85	1.98	0-0.5'
P 85	2.93	1.5-2'
P 99	0.381	Storm Drain
P 100	3.4	Storm Drain
P 102	2.44	0-0.5'
P 102	0.475	1-2'
P 102	<0.013	5-6'
P 102	<0.012	10-11'
P 103	0.648	0-0.5'
P 103	0.0187 J	1-2'
P 103	0.823	3-4'
P 103	<0.013	13.5-14'
P 104	0.186	1-2'
P 104	<0.013	6.5-7.5'

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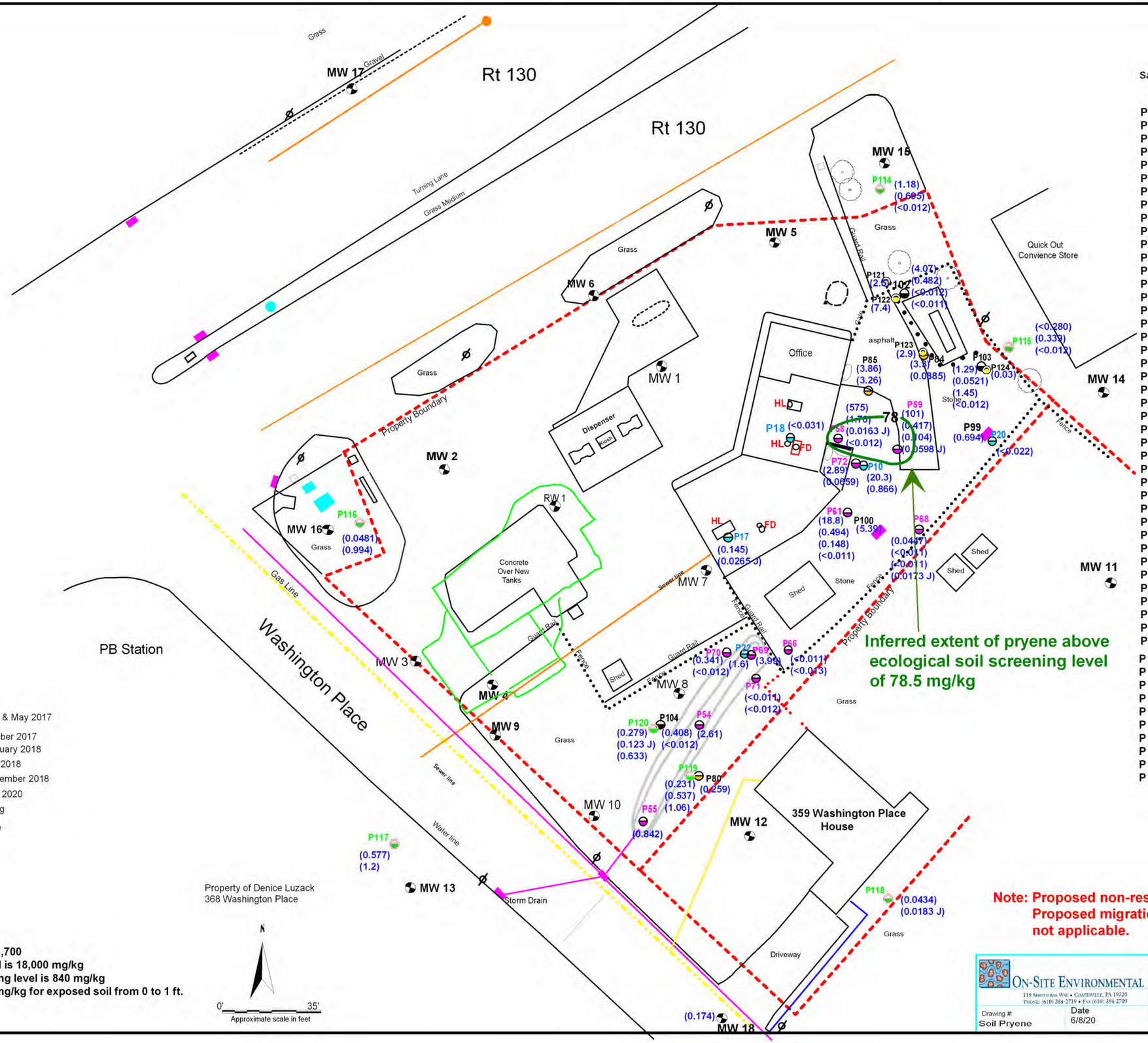
Drawing #: Soil Phenanthrene
Date 6/8/20

Figure 39 Phenanthrene in Soil Above Ecological Soil Screening Level

SOIL SAMPLES

Sample ID	Pryene (mg/kg)	Depth (ft)
P 114	1.18	0-0.5'
P 114	0.695	0.5-1'
P 114	<0.012	6-6.5'
P 115	<0.280	0-0.5'
P 115	0.339	0.5-1'
P 115	<0.012	6-6.5'
P 116	0.0481	0-0.5'
P 116	0.994	0.5-1'
P 117	0.577	0-0.5'
P 117	1.2	0.5-1'
P 118	0.0434	0-0.5'
P 118	0.0186 J	0.5-1'
P 119	0.231	0-0.5'
P 119	0.537	0.5-1'
P 119	1.06	1.5-2'
P 120	0.279	0-0.5'
P 120	0.123 J	0.5-1'
P 120	0.633	1.5-2'
P 121	2.5	0-0.5'
P 122	7.4	0-0.5'
P 123	2.9	0-0.5'
P 124	0.03	3-4'
MW 18	0.174	5-5.5'



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Soil boring installed by On-Site in May 2020
- (3.99) Pryene concentration in sample: mg/kg
- 78 Ecological screening level contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Residential direct contact standard is 1,700
Non-residential direct contact standard is 18,000 mg/kg
Default impact to groundwater screening level is 840 mg/kg
Ecological soil screening level is 78.5 mg/kg for exposed soil from 0 to 1 ft.

N

0' 35'

Approximate scale in feet

SOIL SAMPLES

Sample ID	Pryene (mg/kg)	Depth (ft)
P 10	20.3 b e	0-1'
P 10	0.866 e	3'
P 17	0.145	4'
P 17	0.0265 J	9'
P 18	<0.031	4-4.5'
P 20	<0.022	5'
P 22	1.6	0-6"
P 54	2.61	0.5-1'
P 55	0.842	0-4"
P 58	575	0-0.5'
P 58	1.76	1.5-2'
P 58	0.0163 J	6-6.5'
P 58	<0.012	18-18.5'
P 59	101	0-0.5'
P 59	0.417	1.5-2'
P 59	0.104	4.5-5'
P 59	0.0598 J	9.5-10'
P 61	18.8	0-0.5'
P 61	0.494	1.5-2'
P 61	0.148	4-4.5'
P 61	<0.011	12.5-13'
P 66	<0.011	6-6.5'
P 66	<0.013	13.5-14'
P 68	0.0447	0-0.5'
P 68	<0.011	1.5-2'
P 68	<0.011	6-6.5'
P 68	0.0173 J	7.5-8'
P 69	3.99	1-1.5'
P 70	0.341	3.5-4'
P 70	<0.012	6.5-7'
P 71	<0.011	6-6.5'
P 71	<0.012	9-9.5'
P 72	2.89	3.5-4'
P 72	0.0659	6.5-7
P 80	0.259	0-0.5'
P 84	3.3	0-0.5'
P 84	0.0885	0.5-1'
P 85	3.86	0-0.5'
P 85	3.26	1.5-2'
P 99	0.694	Storm Drain
P 100	5.39	Storm Drain
P 102	4.07	0-0.5'
P 102	0.482	1-2'
P 102	<0.012	5-6'
P 102	<0.011	10-11'
P 103	1.29	0-0.5'
P 103	0.0521	1-2'
P 103	1.45	3-4'
P 103	<0.012	13.5-14'
P 104	0.408	1-2'
P 104	<0.012	6.5-7.5'

Note: Proposed non-resiential standard is 25,000 mg/kg
Proposed migration to groundwater standard is not applicable.

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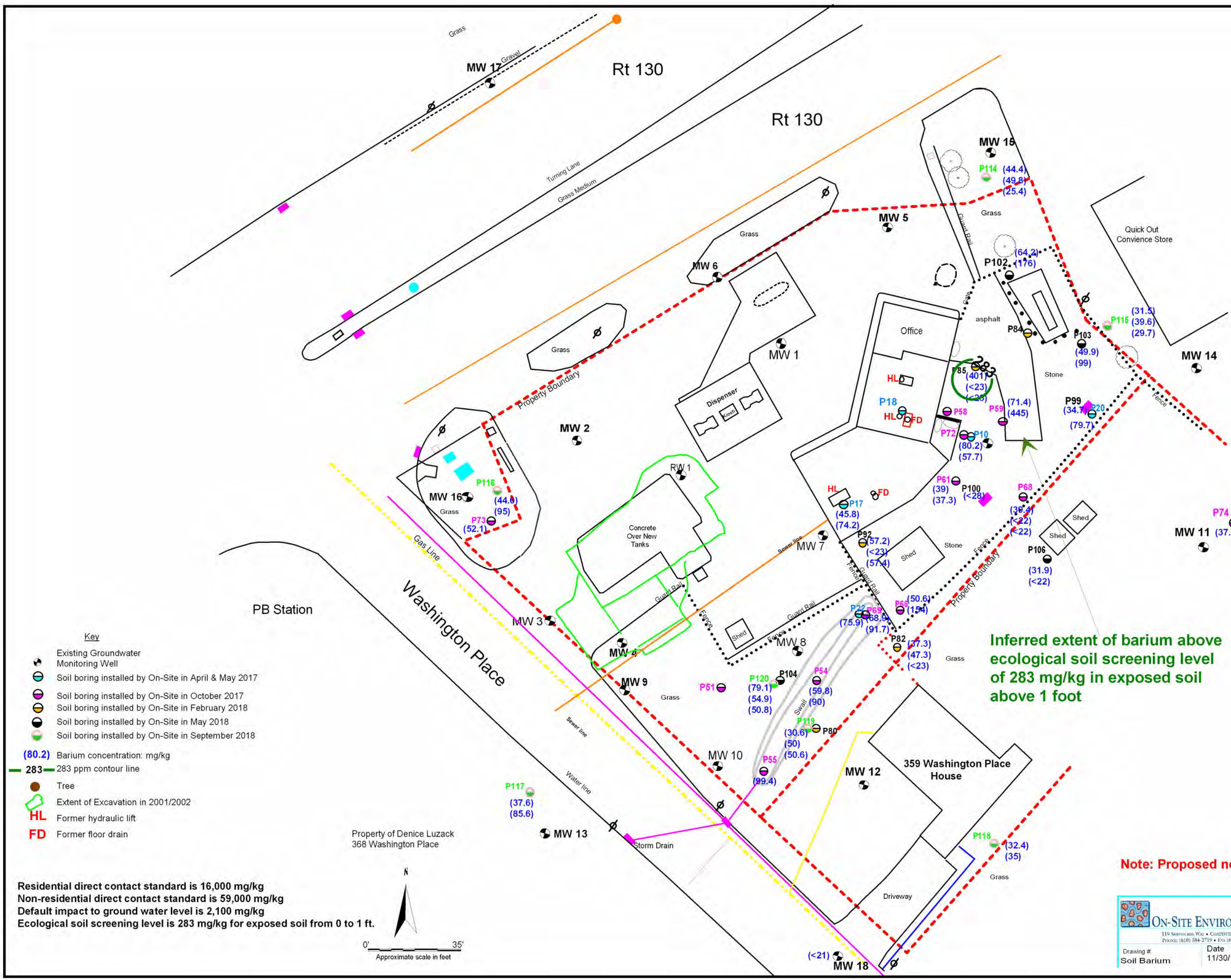
Drawing #: Soil Pryene

Date: 6/8/20

Figure 40 Pryene in Soil Above Ecological Soil Screening Level



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- (80.2) Barium concentration: mg/kg
- 283 283 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Residential direct contact standard is 16,000 mg/kg
Non-residential direct contact standard is 59,000 mg/kg
Default impact to ground water level is 2,100 mg/kg
Ecological soil screening level is 283 mg/kg for exposed soil from 0 to 1 ft.

SOIL SAMPLES

Sample ID	Barium (mg/kg)	Depth (ft)
P 10	80.2	0-1'
P 10	57.7	3'
P 17	45.8	4'
P 17	74.2	9'
P 20	79.7	5'
P 22	75.9	0-6"
P 54	59.8	0-0.5'
P 54	90	0.5-1'
P 55	99.4	0-4"
P 59	71.4	0-0.5'
P 59	445	1.5-2'
P 61	39	0-0.5'
P 61	37.3	1.5-2'
P 66	50.6	0-0.5'
P 66	154	1.5-2'
P 68	39.4	0-0.5'
P 68	<22	1.5-2'
P 68	<22	6-6.5'
P 69	68.9	0.5-1'
P 69	91.7	1-1.5'
P 73	52.1	3'
P 74	37.5	6-6.5'
P 82	37.3	0-0.5'
P 82	47.3	1.5-2'
P 82	<23	5.5-6'
P 85	401	0-0.5'
P 85	<23	1.5-2'
P 85	<23	3.5-4'
P 92	57.2	0-0.5'
P 92	<23	1.5-2'
P 92	57.4	6-6.5'
P 99	34.7	Storm Drain
P 100	<28	Storm Drain
P 102	64.2	0-0.5'
P 102	176	1-2'
P 103	49.9	0-0.5'
P 103	99	1-2'
P 106	31.9	0-0.5'
P 106	<22	1.5-2'
P 114	44.4	0-0.5'
P 114	49.8	0.5-1'
P 114	25.4	6-6.5'
P 115	31.5	0-0.5'
P 115	39.6	0.5-1'
P 115	29.7	6-6.5'
P 116	44.6	0-0.5'
P 116	95	0.5-1'
P 117	37.6	0-0.5'
P 117	85.6	0.5-1'
P 118	32.4	0-0.5'
P 118	35	0.5-1'
P 119	30.6	0-0.5'
P 119	50	0.5-1'
P 119	50.6	1.5-2'
P 120	79.1	0-0.5'
P 120	54.9	0.5-1'
P 120	50.8	1.5-2'
MW 18	<21	5-5.5'

Note: Proposed non-residential standard is 260,000 mg/kg.

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Figure 41 Barium Above Ecological Soil Screening Level

Drawing # Soil Barium

Date 11/30/18

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

TABLES

Table 1: Compounds Above Standards in Back of Station & Drainage Ditch Area														
	Soil in Back of Station					**Soil in Drainage Ditch**					**Soil in Grassey Area at South West end of Site**			
Compound	Greater than RDCSRS	Greater than NRDCSRS	Greater than Backgound IGWSRSL	Greater than ESSL		Greater than RDCSRS	Greater than NRDCSRS	Greater than Default or Backgound IGWSRSL	Greater than ESSL		Greater than RDCSRS	Greater than NRDCSRS	Greater than Backgound IGWSRSL	Greater than ESSL
Benzene	yes	yes	yes	no		no	no	no	no		yes	yes	yes	yes
Toluene	no	no	yes	no		no	no	no	no		no	no	yes	no
Ethyl benzene	no	no	yes	no		no	no	no	no		no	no	yes	yes
Xylenes	no	no	yes	no		no	no	no	no		no	no	yes	yes
Lead	yes	yes	yes	yes		no	no	no	no		no	no	no	no
Naphthalene	yes	yes	yes	yes		no	no	no	no		yes	yes	yes	yes
Benzo(a)pryene	yes	yes	yes	yes		yes	yes	yes	yes		no	no	no	no
Benzo(a)anthracene	yes	yes	yes	yes		no	no	yes	no		no	no	no	no
Benzo(b)fluoanthene	yes	yes	yes	yes		no	no	no	no		no	no	no	no
Benzo(k)fluoranathene	yes	no	yes	no		no	no	no	no		no	no	no	no
Chrysene	no	no	yes	yes		no	no	no	no		no	no	no	no
Dibenzo(a,h)anthracen	yes	yes	yes	yes		no	no	no	no		no	no	no	no
Indeno(1,2,3)pryene	yes	yes	yes	yes		no	no	no	no		no	no	no	no
Acenaphthalene	no	no	no	yes		no	no	no	no		no	no	no	no
Benzo(ghi)perylene	no	no	no	yes		no	no	no	no		no	no	no	no
Fluoranthene	no	no	no	yes		no	no	no	no		no	no	no	no
Phenanthrene	no	no	no	yes		no	no	no	no		no	no	no	no
Pryene	no	no	no	yes		no	no	no	no		no	no	no	no
Aluminum	no	no	NAC	yes		no	no	NAC	no		no	no	NAC	no
Arsenic	yes	yes	no	no		no	no	no	no		no	no	no	no
Beryllium	no	no	yes	no		no	no	no	no		no	no	no	no
Barium	no	no	no	yes		no	no	no	no		no	no	no	no
Cadmium	no	no	no	yes		no	no	no	yes		no	no	no	yes
Chromium	no	no	no	yes		no	no	no	yes		no	no	no	no
Cobalt	no	no	no	yes		no	no	no	yes		no	no	no	no
Copper	no	no	no	yes		no	no	no	yes		no	no	no	no
Manganese	yes	yes	NAC	yes		no	no	NAC	yes		no	no	NAC	no
Mercury	no	no	yes	yes		no	no	yes	yes		no	no	no	yes
Nickel	no	no	no	yes		no	no	no	yes		no	no	no	yes
Vanadium	yes	no	no	yes		no	no	no	yes		no	no	no	no
Zinc	no	no	no	yes		no	no	no	yes		no	no	no	yes
EPH				yes					yes					no
Key														
RDCSRS: Residential direct contact soil remediation standard														
NRDCSRS: Non-residential direct contact soil remediation standard														
IGWSSL: Default impact to groundwater soil screening level														
ESSL: Ecological soil screening level														

Table 2: Summary of Analytical Results of Soil Samples Collected by Propane Tank

Result may be biased high																			
Result qualified as not detected due to blank contamination; may not be true sample component		**SAMPLE ID:**		**P121:0-1/2'**				**P121:1-2'**				**P122:0-1/2'**				**P122:1-2'**			
Result may be biased low or the RL may be higher than reported or possible false negative		**LAB ID:**		**L2021390-01 R1**				**L2021390-02**				**L2021390-03 R2**				**L2021390-04**			
Indeterminate bias		**COLLECTION DATE:**		**5/21/2020**				**5/21/2020**				**5/21/2020**				**5/21/2020**			
RLs do not meet IGWSSL		**SAMPLE MATRIX:**		**SOIL**				**SOIL**				**SOIL**				**SOIL**			
Concentration above current IGWSSL																			
ANALYTE	**CAS**	**IGWSSI (mg/kg)**	**Proposed Migration to Groundwater Standard (mg/kg)**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**
PAHS BY GC/MS-SIM																			
Acenaphthene	83-32-9	110	NA	0.13		0.038	0.008	-		-	-	0.42		0.15	0.032	-		-	-
Fluoranthene	206-44-0	1300	NA	2.8		0.038	0.0027	-		-	-	8.5		0.15	0.01	-		-	-
Naphthalene	91-20-3	25	19	0.078		0.038	0.0068	-		-	-	0.17		0.15	0.027	-		-	-
2-Methylnaphthalene	91-57-6	8	3.1	0.027	J	0.038	0.011	-		-	-	0.086	J	0.15	0.043	-		-	-
Benzo(a)anthracene	56-55-3	0.8	0.71	1.2		0.038	0.0036	-		-	-	3.3		0.15	0.014	-		-	-
Benzo(a)pyrene	50-32-8	0.2	NA	1.3		0.038	0.0046	-		-	-	3.7		0.15	0.018	-		-	-
Benzo(b)fluoranthene	205-99-2	2	NA	1.6		0.038	0.0036	-		-	-	4.6		0.15	0.014	-		-	-
Benzo(k)fluoranthene	207-08-9	25	NA	0.6		0.038	0.0034	-		-	-	1.6		0.15	0.014	-		-	-
Chrysene	218-01-9	80	NA	1.2		0.038	0.0028	-		-	-	3.3		0.15	0.011	-		-	-
Acenaphthylene	208-96-8			0.078		0.038	0.0048	-		-	-	0.042	J	0.15	0.019	-		-	-
Anthracene	120-12-7	2400	NA	0.38		0.038	0.003	-		-	-	1.2		0.15	0.012	-		-	-
Benzo(ghi)perylene	191-24-2			1		0.038	0.0032	-		-	-	3		0.15	0.013	-		-	-
Fluorene	86-73-7	170	NA	0.11		0.038	0.0046	-		-	-	0.36		0.15	0.018	-		-	-
Phenanthrene	85-01-8			1.5		0.038	0.0032	-		-	-	5.1		0.15	0.013	-		-	-
Dibenzo(a,h)anthracene	53-70-3	0.8	NA	0.19		0.038	0.0038	-		-	-	0.52		0.15	0.015	-		-	-
Indeno(1,2,3-cd)pyrene	193-39-5	7	NA	1		0.038	0.0046	-		-	-	2.9		0.15	0.018	-		-	-
Pyrene	129-00-0	840	NA	2.5		0.038	0.0027	-		-	-	7.4		0.15	0.01	-		-	-
2-Chloronaphthalene	91-58-7		NA	ND		0.038	0.0049	-		-	-	ND		0.15	0.02	-		-	-
TOTAL METALS																			
Beryllium, Total	7440-41-7	0.7	0.70	-		-	-	0.219	J	0.224	0.015	-		-	-	0.613		0.23	0.015
Lead, Total	7439-92-1	90	90	-		-	-	-		-	-	-		-	-	-		-	-
GENERAL CHEMISTRY																			
Solids, Total	NONE			87.3		0.1	NA	86.1		0.1	NA	86.5		0.1	NA	84.1		0.1	NA
Comment																			
Sample collected in unsaturate zone				yes				yes				yes				yes			

SAMPLE ID:	**P123:0-1/2'**				**P123:1-2'**				**P124:1-2'**				**P124:3-4'**			
LAB ID:	**L2021390-05 R2**				**L2021390-06**				**L2021390-07**				**L2021390-08 R1**			
COLLECTION DATE:	**5/21/2020**				**5/21/2020**				**5/21/2020**				**5/21/2020**			
SAMPLE MATRIX:	**SOIL**				**SOIL**				**SOIL**				**SOIL**			
ANALYTE	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**
PAHS BY GC/MS-SIM																
Acenaphthene	0.1		0.071	0.015	-		-	-	-		-	-	ND		0.0087	0.0018
Fluoranthene	3.2		0.071	0.005	-		-	-	-		-	-	0.034		0.0087	0.00061
Naphthalene	0.036	J	0.071	0.013	-		-	-	-		-	-	ND		0.0087	0.0016
2-Methylnaphthalene	ND		0.071	0.02	-		-	-	-		-	-	ND		0.0087	0.0025
Benzo(a)anthracene	1.4		0.071	0.0068	-		-	-	-		-	-	0.016		0.0087	0.00083
Benzo(a)pyrene	1.7		0.071	0.0085	-		-	-	-		-	-	0.017		0.0087	0.001
Benzo(b)fluoranthene	2.2		0.071	0.0068	-		-	-	-		-	-	0.023		0.0087	0.00083
Benzo(k)fluoranthene	0.67		0.071	0.0064	-		-	-	-		-	-	0.0072	J	0.0087	0.00079
Chrysene	1.4		0.071	0.0053	-		-	-	-		-	-	0.017		0.0087	0.00066
Acenaphthylene	0.029	J	0.071	0.0089	-		-	-	-		-	-	0.0028	J	0.0087	0.0011
Anthracene	0.28		0.071	0.0057	-		-	-	-		-	-	0.0037	J	0.0087	0.0007
Benzo(ghi)perylene	1.5		0.071	0.006	-		-	-	-		-	-	0.0097		0.0087	0.00074
Fluorene	0.065	J	0.071	0.0085	-		-	-	-		-	-	0.0016	J	0.0087	0.001
Phenanthrene	1.3		0.071	0.006	-		-	-	-		-	-	0.016		0.0087	0.00074
Dibenzo(a,h)anthracene	0.25		0.071	0.0071	-		-	-	-		-	-	0.0029	J	0.0087	0.00087
Indeno(1,2,3-cd)pyrene	1.4		0.071	0.0085	-		-	-	-		-	-	0.011		0.0087	0.001
Pyrene	2.9		0.071	0.005	-		-	-	-		-	-	0.03		0.0087	0.00061
2-Chloronaphthalene	ND		0.071	0.0092	-		-	-	-		-	-	0.0028	J	0.0087	0.0011
TOTAL METALS																
Beryllium, Total	-		-	-	0.729		0.23	0.015	0.7		0.22	0.015	-	-	-	-
Lead, Total	-		-	-	-		-	-	-		-	-	-		-	-
GENERAL CHEMISTRY																
Solids, Total	93.1		0.1	NA	85.4		0.1	NA	87		0.1	NA	75.2		0.1	NA
Comment																
Sample collected in unsaturate zone	yes				yes				yes				yes			

J: Estimated value

NJ-IGWS: NJ - New Jersey Impact to Groundwater Soil Screening Levels (IGWSSL) Criteria per November 2013 Guidance Regulation (Version 2.0).

Note: Benzo(a)pryene also exceeds residential direct contact standard of 0.5 mg/kg in P 121, P 122 & P 123:0-0.5'.

Note: Benzo(a) pryene exceedes non-residential direct contact standard of 2 mg/kg in P 122 & the proposed non-residential ingestion standard of 2.3 mg/kg.

Dibenzo(a,h)anthracene exceeded the residential direct contact standard of 0.5 mg/kg in P 122 (0.52 mg/kg) but not the non-residential direct contact standard of 2 mg/kg or the proposed ingestion standard of 2.3 mg/kg.or the .

Table 2A: Summary of SPLP Analytical Results of Soil Samples Collected in Propane Area

Result may be biased high																			
Result qualified as not detected due to blank contamination; may not be true sample component		**SAMPLE ID:**		**P121:0-1/2'**				**P121:1-2'**				**P122:0-1/2'**				**P122:1-2'**			
Result may be biased low or the RL may be higher than reported or possible false negative		**LAB ID:**		**L2021390-01 R1**				**L2021390-02**				**L2021390-03 R1**				**L2021390-04**			
Indeterminate bias		**COLLECTION DATE:**		**5/21/2020**				**5/21/2020**				**5/21/2020**				**5/21/2020**			
RLs do not meet Soil Leachate Criteria		**SAMPLE MATRIX:**		**SOIL**				**SOIL**				**SOIL**				**SOIL**			
Concentration above current Leachate Criteria																			
ANALYTE	**CAS**	**NJ-IGW Soil Leachate Criteria (ug/l)**	**Proposed Soil Lechate Standard (ug/l)**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**
SPLP PAH SIM BY EPA 1312																			
Acenaphthene	83-32-9	4200	NA	ND		0.1	0.04	-		-	-	ND		0.1	0.04	-		-	-
2-Chloronaphthalene	91-58-7		NA	ND		0.2	0.03	-		-	-	ND		0.2	0.03	-		-	-
Fluoranthene	206-44-0	210	NA	0.36		0.1	0.01	-		-	-	0.15		0.1	0.01	-		-	-
Naphthalene	91-20-3	6000	6000	ND		0.1	0.04	-		-	-	0.04	J	0.1	0.04	-		-	-
2-Methylnaphthalene	91-57-6	600	600	ND		0.1	0.06	-		-	-	ND		0.1	0.06	-		-	-
Benzo(a)anthracene	56-55-3	1	2.0	0.15		0.1	0.02	-		-	-	0.06	J	0.1	0.02	-		-	-
Benzo(a)pyrene	50-32-8	0.1	NA	0.03	J	0.1	0.02	-		-	-	ND		0.1	0.02	-		-	-
Benzo(b)fluoranthene	205-99-2	1	NA	0.04	J	0.1	0.02	-		-	-	0.02	J	0.1	0.02	-		-	-
Benzo(k)fluoranthene	207-08-9	0.8	NA	0.02	J	0.1	0.02	-		-	-	ND		0.1	0.02	-		-	-
Chrysene	218-01-9	2	NA	0.17		0.1	0.02	-		-	-	0.06	J	0.1	0.02	-		-	-
Acenaphthylene	208-96-8			ND		0.1	0.03	-		-	-	ND		0.1	0.03	-		-	-
Anthracene	120-12-7	43	NA	0.08	J	0.1	0.02	-		-	-	0.03	J	0.1	0.02	-		-	-
Benzo(ghi)perylene	191-24-2			0.02	J	0.1	0.02	-		-	-	ND		0.1	0.02	-		-	-
Fluorene	86-73-7	2000	NA	ND		0.1	0.02	-		-	-	ND		0.1	0.02	-		-	-
Phenanthrene	85-01-8			0.29		0.1	0.02	-		-	-	0.16		0.1	0.02	-		-	-
Dibenzo(a,h)anthracene	53-70-3	0.3	NA	ND		0.1	0.02	-		-	-	ND		0.1	0.02	-		-	-
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	NA	ND		0.1	0.02	-		-	-	ND		0.1	0.02	-		-	-
Pyrene	129-00-0	140	NA	0.44		0.1	0.01	-		-	-	0.17		0.1	0.01	-		-	-
SPLP METALS BY EPA 1312																			
Beryllium, SPLP	7440-41-7	20	20	-		-		ND		5	1.07	-		-		ND		5	1.07
SPLP EXTRACTION DATA BY EPA 1312																			
Sample Weight	NONE			0.1		0		0.1		0	NA	0.1		0		0.1		0	NA
Leachate Volume	NONE			2		0		2		0	NA	2		0		2		0	NA
pH, Extraction Post-Filtration	NONE			9.77		0		3.44		0	NA	9.35		0		10.3		0	NA

SAMPLE ID:	**P123:0-1/2'**				**P123:1-2'**				**P124:1-2'**				**P124:3-4'**			
LAB ID:	**L2021390-05 R1**				**L2021390-06**				**L2021390-07**				**L2021390-08 R1**			
COLLECTION DATE:	**5/21/2020**				**5/21/2020**				**5/21/2020**				**5/21/2020**			
SAMPLE MATRIX:	**SOIL**				**SOIL**				**SOIL**				**SOIL**			
ANALYTE	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**
SPLP PAH SIM BY EPA 1312																
Acenaphthene	ND		0.1	0.04	-		-	-	-		-	-	ND		0.1	0.04
2-Chloronaphthalene	ND		0.2	0.03	-		-	-	-		-	-	ND		0.2	0.03
Fluoranthene	0.13		0.1	0.01	-		-	-	-		-	-	0.12		0.1	0.01
Naphthalene	ND		0.1	0.04	-		-	-	-		-	-	ND		0.1	0.04
2-Methylnaphthalene	ND		0.1	0.06	-		-	-	-		-	-	ND		0.1	0.06
Benzo(a)anthracene	0.06	J	0.1	0.02	-		-	-	-		-	-	0.07	J	0.1	0.02
Benzo(a)pyrene	ND		0.1	0.02	-		-	-	-		-	-	ND		0.1	0.02
Benzo(b)fluoranthene	ND		0.1	0.02	-		-	-	-		-	-	0.03	J	0.1	0.02
Benzo(k)fluoranthene	ND		0.1	0.02	-		-	-	-		-	-	ND		0.1	0.02
Chrysene	0.06	J	0.1	0.02	-		-	-	-		-	-	0.07	J	0.1	0.02
Acenaphthylene	ND		0.1	0.03	-		-	-	-		-	-	ND		0.1	0.03
Anthracene	0.02	J	0.1	0.02	-		-	-	-		-	-	0.02	J	0.1	0.02
Benzo(ghi)perylene	ND		0.1	0.02	-		-	-	-		-	-	ND		0.1	0.02
Fluorene	ND		0.1	0.02	-		-	-	-		-	-	ND		0.1	0.02
Phenanthrene	0.11		0.1	0.02	-		-	-	-		-	-	0.08	J	0.1	0.02
Dibenzo(a,h)anthracene	ND		0.1	0.02	-		-	-	-		-	-	ND		0.1	0.02
Indeno(1,2,3-cd)pyrene	ND		0.1	0.02	-		-	-	-		-	-	ND		0.1	0.02
Pyrene	0.16		0.1	0.01	-		-	-	-		-	-	0.15		0.1	0.01
SPLP METALS BY EPA 1312																
Beryllium, SPLP	-		-		ND		5	1.07	ND		5	1.07	-	-	-	
SPLP EXTRACTION DATA BY EPA 1312																
Sample Weight	0.1		0		0.1		0	NA	0.1		0	NA	0.2		0	
Leachate Volume	2		0		2		0	NA	2		0	NA	4		0	
pH, Extraction Post-Filtration	8.08		0		8.53		0	NA	10.3		0	NA	10.4		0	

J: Estimated value

ND: Not detected at method dection limit

NJ-IGW: NJ - New Jersey Impact to Groundwater Leachate Criteria Current as of November 2013 Guidance Regulation (Version 3.0).

Table 3: Summary of Analytical Results of Soil Samples Collected in Grassy Area North of Drainage Ditch

Do not use result

Result may be biased high

Result qualified as not detected due to blank contamination; may not be true sample component

Result may be biased low or the RL may be higher than reported or possible false negative

Concentration or RL above current NRDC SRS

Concentration or RL above current IGW

ANALYTE	CAS	NJ IGW2 (mg/kg)	Proposed Migration to Groundwater Standard (mg/kg)	NJ-NRDCSRS (mg/kg)	NJ-RDCSRS (mg/kg)	Proposed Non-Residential Ingestion Standard (mg/kg)	Proposed Non-Residential Inhalation Standard (mg/kg)	SAMPLE ID	P125-2 1/2-2'				P125-3 1/2-4'				P125-3 1/2-4'				P126B-3 1/2-4'				P126B-4 1/2-5'				P127-3 1/2-4'				P127-5-5 1/2				P128-4-4 1/2'				P128-5 1/2-6'				P128-5 1/2-6'				P130-1'				P130-2 1/2'			
								LAB ID	L2021396-09				L2021396-10				L2021396-10 R1				L2021396-11				L2021396-12				L2021396-13				L2021396-14				L2021396-15				L2021396-16				L2021396-16				L2021396-17				L2021396-18			
								COLLECTION DATE	5/21/2020				5/21/2020				5/21/2020				5/21/2020				5/21/2020				5/21/2020				5/21/2020				5/21/2020				5/21/2020				5/21/2020				5/21/2020				5/21/2020			
								SAMPLE MATRIX	SOIL				SOIL				SOIL				SOIL				SOIL				SOIL				SOIL				SOIL				SOIL				SOIL				SOIL				SOIL			
									Low Level				High Level				High 4X				Low Level				Low Level				Low level				Low level				High Level				Low Level				HIGH Level				Low Level			
									Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANICS BY EPA 5035																																																					
1,2-Dibromo-3-chloropropane	96-12-8	0.005	0.0050	0.2	0.08	4.5	0.12		ND		0.003		ND		0.18		-	-	-	-	ND		0.0024		ND		0.0029		ND		0.0027		ND		0.003		ND	U	0.6		ND		0.0035								-	-	-	-
1,4-Dioxane	123-91-1		0.097			35	210		ND		0.08		ND		4.7		-	-	-	-	ND		0.064		ND		0.078		ND		0.072		ND		0.08		ND	U	6.5		ND		0.089								-	-	-	-
2,2-Dichloropropane (EDB)	106-93-4	0.005	0.0050	0.04	0.008	1.8	0.41		ND		0.001		ND		0.059		-	-	-	-	ND		0.0008		ND		0.00098		ND		0.0009		ND		0.001		ND	U	0.08		ND		0.0011								-	-	-	-
Methylene chloride	75-09-2	0.01	0.013	230	46	200			ND		0.001		ND		0.29		-	-	-	-	ND		0.004		ND		0.00048		ND		0.0004		ND		0.005		ND		0.4		ND		0.0056								-	-	-	-
1,1-Dichloroethane	75-34-3	0.2	0.24	24	8	640		NA	ND		0.001		ND		0.059		-	-	-	-	ND		0.0008		ND		0.00098		ND		0.0009		ND		0.001		ND		0.081		ND		0.0011								-	-	-	-
Chloroform	67-66-3	0.4	0.33	2	0.6	13,000		NA	ND		0.001		ND		0.059		-	-	-	-	ND		0.0012		ND		0.0015		ND		0.0013		ND		0.0015		ND		0.12		ND		0.0017								-	-	-	-
Carbon tetrachloride	56-23-5	0.005	0.0075	4	2	40	6.9		ND		0.001		ND		0.059		-	-	-	-	ND		0.0008		ND		0.00098		ND		0.0009		ND		0.001		ND		0.081		ND		0.0011								-	-	-	-
1,2-Dichloropropane	78-87-5	0.005	0.0058	5	2	88	27		ND		0.001		ND		0.059		-	-	-	-	ND		0.0008		ND		0.00098		ND		0.0009		ND		0.001		ND		0.081		ND		0.0011								-	-	-	-
Dibromochloromethane	124-48-1	0.005	0.0050	8	3	43	NA		ND		0.001		ND		0.059		-	-	-	-	ND		0.0008		ND		0.00098		ND		0.0009		ND		0.001		ND		0.081		ND		0.0011								-	-	-	-
1,1,2-Trichloroethane	79-00-5	0.02	0.017	6	2	64	NA		ND		0.001		ND		0.059		-	-	-	-	ND		0.0008		ND		0.00098		ND		0.0009		ND		0.001		ND		0.081		ND		0.0011								-	-	-	-
Tetrachloroethene	127-18-4	0.005	0.0088	1500	43	1,700	NA		ND		0.0005		ND		0.029		-	-	-	-	ND		0.0004		ND		0.00049		ND		0.0004		ND		0.0005		ND		0.04		ND		0.00056								-	-	-	-
Chlorobenzene	108-90-7	0.6	0.64	7400	510	8,400	NA		ND		0.001		ND		0.059		-	-	-	-	ND		0.0008		ND		0.00098		ND		0.0009		ND		0.001		ND		0.081		ND		0.0011								-	-	-	-
Dichlorodifluoromethane	75-68-4	34	55	340000	23000	360,000	NA		ND	U	0.004		ND	U	0.24		-	-	-	-	ND	U	0.0032		ND	U	0.0039		ND	U	0.0036		ND	U	0.004		ND	U	0.32		ND	U	0.0046								-	-	-	-
1,3-Dichloropropene, (EDC)	10061-02-6	0.005	0.0055	3	0.8	30	320		ND		0.001		ND		0.059		-	-	-	-	ND		0.0008		ND		0.00098		ND		0.0009		ND		0.001		ND		0.081		ND		0.0011								-	-	-	-
1,1,1-Trichloroethane	71-55-6	0.3	0.20		160000		NA		ND		0.001		ND		0.059		-	-	-	-	ND		0.0004		ND		0.00049		ND		0.0004		ND		0.0005		ND		0.04		ND		0.00056								-	-	-	-
Bromodichloromethane	75-27-4	0.005	0.0032	3	1	59	NA		ND		0.001		ND		0.059		-	-	-	-	ND		0.0008		ND		0.00098		ND		0.0009		ND		0.001		ND		0.081		ND		0.0011								-	-	-	-
trans-1,3-Dichloropropene	10061-02-6	0.005		7	2	?	?		ND		0.001		ND		0.059		-	-	-	-	ND		0.0008		ND		0.00098		ND		0.0009		ND		0.001		ND		0.081		ND		0.0011								-	-	-	-
cis-1,3-Dichloropropene	10061-01-5	0.005		7	2	?	?		ND		0.001		ND		0.059		-	-	-	-	ND		0.0008		ND		0.00098		ND		0.0009		ND		0.001		ND		0.081		ND		0.0011								-	-	-	-
1,3-Dichloropropene, Total	542-75-6	0.005	0.0063			36	23		ND		0.001		ND		0.059		-	-	-	-	ND		0.0004		ND		0.00049		ND		0.0004		ND		0.0005		ND		0.04		ND		0.00056								-	-	-	-
Bromoform	75-25-2	0.03	0.018	260	81	460	NA		ND		0.001		ND		0.059		-	-	-	-	ND		0.0012		ND		0.0015		ND		0.0013		ND		0.0015		ND		0.12		ND		0.0017								-	-	-	-
1,1,2,2-Tetrachloroethane	79-34-5	0.007	0.0069	3	1	18	NA		ND		0.0005		ND		0.029		-	-	-	-	ND		0.0004		ND		0.00049		ND		0.0004		ND		0.0005		ND		0.04		NC		0.00056								-	-	-	-
Benzene	71-43-2	0.005	0.0094	5	2	16	11		ND		0.0005		ND		0.029		-	-	-	-	ND		0.0004		ND		0.00049		ND		0.0004		ND		0.0005		ND		0.04		0.0028	J	0.0056								-	-	-	-
Toluene	108-88-3	7	7.8	91000	6300	100,000	NA		ND		0.001		0.13	J	0.059		-	-	-	-	ND		0.0008		ND		0.00098		ND		0.0009		ND		0.001		ND		0.081		0.0044	J	0.0011								-	-	-	-
Ethylbenzene	100-41-4	13	15	110000	7900	130,000	46		ND		0.001		1.2		0.059		-	-	-	-	ND		0.0008		ND		0.00098		ND		0.0009		0.00024	J	0.001		1.2		0.081		1.3		0.0011								-	-	-	-
Chloromethane	74-87-3		NA	12	4	NA	1,200		ND	U	0.004		ND	U	0.24		-	-	-	-	ND	U	0.0032		ND	U	0.0039		ND	U	0.0036		ND	U	0.004		ND	U	0.32		ND	U	0.0046								-	-	-	-
Bromomethane	74-83-9	0.04	0.043	39	25	1,800	82		ND	U	0.002		ND	U	0.12		-	-	-	-	ND	U	0.0016		ND	U	0.002		ND	U	0.0018		ND	U	0.002		ND	U	0.16		ND	U	0.0023								-	-	-	-
Vinyl chloride	75-01-4	0.005	0.0067	2	0.7	5	6.4		ND	U	0.001		ND	U	0.059		-	-	-	-	ND	U	0.0008		ND	U	0.00098		ND	U	0.0009		ND	U	0.001		ND	U	0.081		ND	U	0.0011								-	-	-	-
Chloroethane	75-00-3		NA	1100	220	NA	NA		ND	U	0.002		ND	U	0.12		-	-	-	-	ND	U	0.0016		ND	U	0.002		ND	U	0.0018		ND	U	0.002		ND	U	0.16		ND	U	0.0023								-	-	-	-
1,1-Dichloroethene	75-35-4	0.008	0.24	150	11	640	NA		ND		0.001		ND		0.059		-	-	-	-	ND		0.0008		ND		0.00098		ND		0.0009		ND		0.001		ND		0.081		ND		0.0011								-	-	-	-
trans-1,2-Dichloroethene	156-60-5	0.6	0.58	720	300	22,000	NA		ND		0.001		ND		0.059		-	-	-	-	ND		0.0012		ND		0.0015		ND		0.0013		ND		0.0015		ND		0.12		ND		0.0017								-	-	-	-
Trichloroethene	79-01-6	0.01	0.0065	10	3	79	14		ND		0.0005		ND		0.029		-	-	-	-	ND		0.0004		ND		0.00049		ND		0.0004		ND		0.0005		ND		0.04		ND		0.00056								-	-	-	-
1,2-Dichlorobenzene	95-50-1	17	11	59000	5300	110,000	NA		ND		0.002		ND		0.12		-	-	-	-	ND		0.0016		ND		0.002		ND		0.0018		ND		0.002		ND		0.16		ND		0.0023								-	-	-	-
1,3-Dichlorobenzene	541-73-1	19	11	59000	5300	110,000	NA		ND		0.002		ND		0.12		-	-	-	-	ND		0.0016		ND		0.002		ND		0.0018		ND		0.002		ND		0.16		ND		0.0023								-	-	-	-
1,4-Dichlorobenzene	106-46-7	3	1.8	13	5	13,000	NA		ND		0.002		ND		0.12		-	-	-	-	ND		0.0016		ND		0.002		ND		0.0018		ND		0.002		ND		0.16		ND		0.0023								-	-	-	-
Methyl tert butyl ether	1634-04-4	0.2	0.25	430	110	13,000	856		ND		0.002		ND		0.12		-	-	-	-	ND		0.0016		ND		0.002		ND		0.0018		ND		0.002		ND		0.16		0.00074	J	0.0023								-	-	-	-
m,p-Xylene	179601-23-1	19		110000	10000	160,000			ND		0.001		3.2		0.12		-	-	-	-	ND		0.0016		ND		0.002		ND		0.0018		ND		0.002		7.3		0.16		0.72		0.23								-	-	-	-
o-Xylene	95-47-6	19		110000	10000	160,000			ND		0.001		0.11	J	0.059		-	-	-	-	ND		0.0008		ND		0.00098		ND		0.0009		ND		0.001		1.8		0.081		0.54		0.0011								-	-	-	-
Xylenes, Total	1330-20-7	19	19	110000	10000	160,000	NA		ND		0.001		3.3	J	0.059		-	-	-	-	ND		0.0008		ND		0.00098		ND		0.0009		ND		0.001		9.1		0.081		2.7		0.1								-	-	-	-
cis-1,2-Dichloroethene	156-59-2	0.3	0.35	360	230	13,000	NA		ND		0.001		ND		0.059		-	-	-	-	ND		0.0008		ND		0.00098		ND		0.0009		ND		0.001		ND		0.081		ND		0.0011								-	-	-	-
1,2-Dichloroethene, Total	540-59-0		1						ND		0.001		ND		0.059		-	-	-	-	ND		0.0008		ND		0.00098		ND		0.0009		ND		0.001		ND		0.081		ND		0.0011								-	-	-	-
Dioxins	160-62-5	3	1.1	660	80	260,000	NA		ND		0.001		ND		0.059		-	-	-	-	ND		0.0008		ND		0.00098		0.0021	J	0.0009		ND		0.001		ND		0.081		ND		0.0011								-	-	-	-
Dichlorofluoromethane	75-71-8	39	58	250000	490	360,000	NA		ND	U	0.01		ND	U	0.59		-	-	-	-	ND	U	0.008		ND	U	0.0098		ND	U	0.009		ND	U	0.01		ND	U	0.81		ND	U	0.011								-	-	-	-
Acetone	67-64-1	19	19		70000		NA		0.041	J	0.025		ND	U	0.59		-	-	-	-	0.029	J	0.004		0.018	J	0.0098		0.025		0.009		ND	U	0.01		0.018	J	0.81		0.018	J	0.011								-	-	-	-
Carbon disulfide	75-15-0	8	2.7	110000	7800	NA	NA		ND	U	0.005		ND	U	0.29		-	-	-	-	ND	U	0.0038		ND	U	0.0049		ND	U	0.0044		ND	U	0.005		ND	U	0.4		ND	U	0.0056								-	-	-	-
Freon-113	76-13-1	0.3	0.88	44000	3100	780,000	NA		ND	U	0.01		ND	U	0.59		-	-	-	-	ND	U	0.0038		ND	U	0.0049		ND	U	0.0044		ND	U	0.005		ND	U	0.4		ND	U	0.0056								-	-	-	-
4-Methyl-2-pentanone	108-10-1		NA			100,000	NA		ND		0.01		ND		0.59		-	-	-	-	ND		0.0038		ND		0.0049		ND		0.0044		ND		0.005		ND		0.4		ND		0.0056								-	-	-	-
2-Hexanone	591-78-6		0.15			6,300	NA		ND	U	0.01		ND	U	0.59		-	-	-	-	ND	U	0.0038		ND	U	0.0049		ND	U	0.0044		ND	U	0.005		ND	U	0.4		ND	U	0.0056								-	-	-	-
Bromochloromethane	74-97-5					NA			ND		0.002		ND		0.12		-	-	-	-	ND		0.0016		ND		0.002		ND		0.0018		ND		0.002		ND		0.16		ND		0.0023								-	-	-	-
Bromobenzene	108-86-1		22			130,000	NA		ND		0.002		ND		0.12		-	-	-	-	ND		0.0016		ND		0.002		ND		0.0018		0.0023	J	0.002		ND		0.16		ND		0.0023								-	-	-	-
Naphthalene	91-20-3	25	19	17	8	34,000	27		ND		0.004		1.3		0.24		-	-	-	-	ND		0.0032		ND		0.0039		2.4		0.32		0.33		0.004		2.6		0.32		0.33		0.0044								-	-	-	-
1,2,3-Trichlorobenzene	87-61-6					NA			ND		0.002		ND		0.12		-	-	-	-	ND		0.0016		ND		0.002		ND		0.0018		ND		0.002		ND		0.16		ND		0.0023								-	-	-	-
1,2,4-Trichlorobenzene	120-82-1	0.7	0.53	820	73	9,100	NA		ND		0.002		ND		0.12		-	-	-	-	ND		0.0016		ND		0.002		ND		0.0018		ND		0.002		ND		0.16		ND		0.0023								-	-	-	-
1,2,4-Trimethylbenzene	95-63-6		59						19		0.01	0.47	1.6		0.12		-	-	-	-	ND		0.0016		ND		0.002		0.00043	J	0.0018		ND		0.002		0.8	J	0.16		0.8	J	0.23								-	-	-	-
Diethyl Acetate	79-20-9	22	22		78000	NA	NA		ND	U	0.004		ND	U	0.24		-	-	-	-	ND	U	0.0032		ND	U	0.0039		ND	U	0.0036		ND	U	0.004		0.4	J	0.32		ND	U	0.0044								-	-	-	-
Cyclohexane	110-82-7		NA			NA	NA		ND	U	0.01		ND	U	0.59		-	-	-	-	ND	U	0.0038		ND	U	0.0049		ND	U	0.0044		ND	U	0.005		0.6	J	0.4		0.057	J	0.0056								-	-	-	-
tert-Butyl Alcohol	75-65-0	0.3	0.32	11000	1400	23,000	NA		ND	U	0.02		ND	U	1.2		-	-	-	-	ND	U	0.02		ND	U	0.02		ND	U	0.018		ND	U	0.02		1.6		1.6		ND	U	0.022								-	-	-	-
Methylcyclohexane	108-87-2					?	?		ND		0.004		0.3	J	0.24		-	-	-	-	ND		0.0032		ND		0.0039		ND		0.0036		ND		0.004		0.7	J	0.32		0.051	J	0.0044								-	-	-	-
Freon-113	76-13-1					?	?		ND		0.004		ND		0.24		-	-	-	-	ND		0.0032		ND		0.0039		ND		0.0036		ND		0.004		ND		0.32		ND		0.0044								-	-	-	-
Total VOCs									0.04118		-	-	34.386		-	-	-	-	-	-	0.0419		-	-	0.232		-	-	0.231		-	-	0.804		-	-	21.26		-	-	3.9148		-	-							-	-	-	-
VOLATILE ORGANICS BY EPA 5035-TIC																																																			
Total TIC Compounds									92.4	J	6		6	J	6		-	-	-	-	-	-	-	-	-	-	-	-	0.231	J	0		0.804	J	6		21	J	6		9.184	J	6								-	-	-	-
VOLATILE ORGANICS BY EPA 5035 HIGH-TIC																																																			
Total TIC Compounds									-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.65	J	0		-	-	-	-
TOTAL METALS									-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				-	-	-	-
Lead, Total	7439-92-1	90	80	800	400	800	NA																																												
GENERAL CHEMISTRY																																																		
Solids, Total	NONE								81.8		0.1		83.5		0.1		-	-	-	-	84.3		0.1		81.2		0.1		90.2		0.1		81.8		0.1		69.9		0.1		64.0		0.1		84.9		0.1		84.3		0.1		86.2		0.1	
Comment									Sample collected in groundwater zone																																															

J - Estimated value

ND: Not detected at MDL

JL: Estimated value. Exceeded the calibration on the initial low level analysis.

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 -
www.alphalab.com

APPENDIX A

Data Usability Report
May 21, 2020 Samples

June 5, 2020

Mr. Frank Jasiulewicz, PG, SSE, LSRP
On-Site Environmental, Inc.
119 Shepherds Way
Coatesville, PA 19320

RE: Data Review for North Brunswick Gulf Site.

Dear Mr. Jasiulewicz :

The evaluation of the organic and inorganic data prepared by Alpha Analytical Laboratories for 18 soil samples from the North Brunswick Gulf Site, which were reported in one data package under Sample Delivery Group (SDG) No. L2021390, has been completed. The electronic data package was received by ddms, inc. (ddms) for review, and the following samples were reported:

P121:0-1/2'	P121:1-2'	P122:0-1/2'
P122:1-2'	P123:0-1/2'	P123:1-2'
P124:1-2'	P124:3-4'	P125:2 1/2-3'
P125:3 1/2-4'	P126B:3 1/2-4'	P126B:4 1/2-5'
P127:3 1/2-4'	P127:5-5 1/2	P128:4-4 1/2'
P128:5 1/2-6'	P130:1'	P130:3 1/2'

The data quality assessment was performed in accordance with New Jersey Department of Environmental Protection (NJDEP) Site Remediation Program, Data of Known Quality Protocols and Data Quality Assessment and Data Usability Evaluation Technical Guidance documents. Professional judgment was applied as necessary and appropriate.

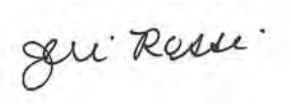
The following components were reviewed, where applicable:

- Chain of Custody
- Receiving conditions
- Holding times
- Preservation
- Analyte lists
- Reporting limits
- Requested methods
- Units, and
- Sample related quality control data:
    - Method blanks
    - Field blanks
    - Trip Blanks (volatiles only)
    - Surrogate recoveries
    - LCS/LCSD recoveries
    - MS/MSD recoveries

- Internal standards (organics, metals)
- Interference check standards

Please feel free to contact me with any questions you may have regarding this report.

Sincerely,



Jeri L. Rossi
Sr. Environmental Chemist

Modified NJDEP DATA QUALITY ASSESSMENT WORKSHEET

Date: June 4, 2020

Project: North Brunswick Gulf

Laboratory Work Order: L2021390

Analytical Methods: SW846 8260C, 8270D SIM, 6010D,6020B

Reviewer: Jeri L. Rossi, ddms inc.

The tables below document only the Quality Control (QC) excursions that impacted sample results. QC excursions that had no impact to sample results are not listed.

VOLATILE ORGANICS

Method Blanks

Blanks	Analyte	Conc.	Affected Samples	Comments
Method Blank 5/30/2020 (low level)	Chloroform	0.00018 mg/kg	P125:2 1/2-3' P126B:3 1/2-4' P127:3 1/2-4' P127:5-5 1/2	Results were qualified as not detected (U) at the reporting limit (RL) because the sample concentration was less than five times the concentration in the associated blank.
Method Blank 5/30/2020 (high level)	Chloroform	0.0092 mg/kg	P125:3 1/2-4'	

Laboratory Control Sample (LCS) / LCSD Duplicates

LCS/LCSD Recovery	Analyte	LCS %R	LCSD %R	LCS/LCSD RPD	Affected Sample(s)	High/Low or Indeterminate Bias	Comments
WG1376286 / WG1376286 LCS/LCSD	Trichlorofluoromethane	63	68	a	P125:2 1/2-3' P126B:3 1/2-4' P126B:4 1/2-5' P127:3 1/2-4' P127:5-5 ½ P125:3 1/2-4' P128:5 1/2-6'	Low	Results were qualified estimated (J, UJ) due to low LCS/ LCSD recovery (acceptance limits 70-130%R, 30% relative percent difference [RPD]).
	Chloromethane	65	64	a			
	Bromomethane	56	60	a			
	Chloroethane	62	68	a			
	2-Butanone	67	66	a			
	Methyl acetate	67	66	a			

a-acceptable

Matrix Spike (MS / MS Duplicate)

MS/MSD Recovery	Analyte	MS %R	MSD %R	MS/MSD RPD	Affected Sample(s)	High/Low or Indeterminate Bias	Comments
P128:4-4 1/2' MS/MSD (high level)	Toluene	135	150	a	P125:3 1/2-4'	High	Results were qualified estimated (J) due to high MS/ MSD recovery (acceptance limits 70-130%R, 30% relative percent difference [RPD]).
	Benzene	141	144	a	P128:5 1/2-6'		
	Cyclohexane	181	184	a	P125:3 1/2-4'		
	Methyl cyclohexane	153	151	a	P125:3 1/2-4' P128:4-4 1/2'		
	1,2,4-Trimethylbenzene	0	0	n/a	P125:3 1/2-4' P127:5-5 1/2 P128:5 1/2-6'	Low	Results were qualified as estimated (J) due to no recovery in the MS/MSD.

a-acceptable
n/a-not applicable

Continuing Calibration Verification (CCV) Standards

Continuing Calibration	Analyte	%D	Affected Sample(s)	High/Low or Indeterminate Bias	Comments
VOA117 5/30/3030	Dichlorodifluoromethane	29.3	P125:2 1/2-3' P126B:3 1/2-4' P126B:4 1/2-5' P127:3 1/2-4' P127:5-5 ½ P125:3 1/2-4' P128:5 1/2-6'	Low	Result qualified estimated (UJ) due to low response in the CCV.
	Chloromethane	34.8			
	Vinyl chloride	30.4			
	Bromomethane	43.8			
	Chloroethane	37.6			
	Trichlorofluoromethane	37.1			
	Carbon disulfide	24.8			
	Methyl acetate	32.1			
	2-Butanone	33.3			
	2-Hexanone	24.6			
VOA127 5/31/2020	1,4-Dioxane	24.9	P128:4-4 1/2'		Result qualified estimated (J, UJ) due to low response in the CCV.
	1,2-Dibromo-3-chloropropane	26.6			
	Acetone	20.2			

Sem-Volatile Organics (PAHs)

Surrogates

Sample	NBZ %R	FBP %R	TPH%R	Comments
P121:0-1/2' (SPLP)	39	36	34	Sample results for all compounds were qualified as estimated due to low surrogate recoveries and high internal standard area counts.
P122:0-1/2' (SPLP)	43	49	57	
P123:0-1/2' (SPLP)	50	47	47	
P124:3-4' (SPLP)	45	46	455	

Metals

Matrix Spike (MS) / MS Duplicates

MS/MSD Recovery	Analyte	MS %R	MSD %R	Affected Sample(s)	High/Low or Indeterminate Bias	Comments
P124:1-2'MS/MSD	Lead (total)	32	36	P130:1' P130:3 1/2'	Low	Results were qualified as estimated (J) due to low MSD recovery.

DATA USABILITY SUMMARY

Date: June 4, 2020

Project: North Brunswick Gulf

Laboratory Work Order: L2021390

The data usability assessment was performed in accordance with New Jersey Department of Environmental Protection (NJDEP) Site Remediation Program, Data of Known Quality Protocols and Data Quality Assessment and Data Usability Evaluation Technical Guidance documents. Professional judgment was applied as necessary and appropriate. The data quality assessment and subsequent data usability evaluation is based on sample-related QC excursions as well as the review of instrument related QC, including tunes and calibrations, sample chromatograms and spectra. Sample calculations were not performed.

It should be noted that this data usability summary does not address how the data are to be used, whether Data Quality Objectives (DQOs) have been met or applicability to the Conceptual Site Model (CSM), all of which are outside the purview of this effort.

Sample results were determined to be valid as reported, with the following qualifications made to sample results. Only those findings that have impact to the data quality are summarized below:

- Volatile Organics:

    - The results for chloroform in the following samples were qualified as not detected (U) at the reporting limit (RL) because the sample concentrations were five times or less than the concentration in the method blanks:
        - P125:2 1/2-3'
        - P126B:3 1/2-4'
        - P127:3 1/2-4'
        - P127:5-5 1/2
        - P125:3 1/2-4'

    - The results for trichlorofluoromethane, chloromethane, bromomethane, chloroethane, 2-butanone and methyl acetate in the following samples were qualified as estimated (J, UJ) due to low recoveries in the laboratory control sample (LCS) and LCSD Duplicate (LCSD). Where the recoveries are low, the concentration of detected compounds may be biased low and non-detected compounds may be false negatives.
        - P125:2 1/2-3'
        - P126B:3 1/2-4'
        - P126B:4 1/2-5'
        - P127:3 1/2-4'
        - P127:5-5 ½
        - P125:3 1/2-4'

- P128:5 1/2-6'

  - The results for toluene, cyclohexane and methyl cyclohexane in P125:3 1/2-4' and methyl cyclohexane in P128:4-4 1/2' were qualified as estimated (J) due to high recoveries in the (methanol prepared) matrix spike (MS) and MS duplicate (MSD). Results may be biased high.

  - The results for 1,2,4-trimethylbenzene in P125:3 1/2-4', P127:5-5 1/2 and P128:5 1/2-6' were qualified as estimated (J) because this compound did not recover in the MS and MSD. Results may be biased low.

  - Sample results were qualified as estimated (J, UJ) due to low response in the continuing calibration verification (CCV) standard. Detected compounds may be biased low and the RL for non-detected compounds may higher or there may be false negatives. Please refer to the DQA Worksheet for detailed information.

  - P125:3 1/2-4' – the laboratory analyzed the methanol prepared sample due to high concentrations of target and non-target compounds. The methanol prepared sample was also analyzed at an additional 4X analysis because the concentration of 1,2,4-trimethylbenzene was outside the calibration range of the instrument. The results from the 4X dilution for 1,2,4-trimethylbenzene should be used.

  - P128:5 1/2-6' – the laboratory analyzed the both the low level, water prepared sample and the methanol prepared sample. The results from the low level analysis should be used, with the exception of the results for ethylbenzene, m,p-xylene and 1,2,4-trimethylbenzene. The concentrations in the low level analysis were outside the calibration range of the instrument. The results from the methanol prepared sample analysis should be used for ethylbenzene, m,p-xylene and 1,2,4-trimethylbenzene.

  - Tentatively Identified Compounds (TICs) were reported in samples P125:3 1/2-4', P128:5 1/2-6' and P128:4-4 1/2'. Based on the review of the TIC spectra and sample chromatograms, the TICs reported in these samples are indicative of gasoline.

- Polyaromatic Hydrocarbons (PAHs) – Total Analysis

  - The surrogate and spiked compound recoveries in the LCS/LCSD and MS/MSD (performed on P124:3-4') exhibited low recoveries (50-60%R) for most compounds. Although the internal standard (IS) area responses for these quality control (QC) samples are within the method acceptance limits (-50% - +100% of most recent CCV), all six internal standards responses in the LCS/LCSD and MSD/MSD are approximately 70% higher than the CCV. The internal standard responses for the field samples did not exhibit high response and as a result, the surrogate recoveries are acceptable. Furthermore, the laboratory performed a duplicate analysis on P124:3-4'. The sample internal standards, as previously stated, did not exhibit high responses, however, the duplicate sample did. The relative

percent differences (RPDs) between the sample and duplicate analysis were outside acceptance limits. This is again attributed to the differences in the internal standard responses. Based on professional judgement, no sample results were qualified based on low MS/MSD, LCS/LCSD recoveries or on sample duplicate analyses, because the low recoveries are attributed to a laboratory error when spiking the QC samples with internal standards.

- It should be noted that the laboratory reported zero percent (0%R) recoveries for the surrogates in P122:0-1/2'. This is attributed to the high dilution factor and no sample results were qualified on this basis.

- PAHs – SPLP

  - The internal standard responses for the SPLP analyses exhibited the same high responses as discussed above. The internal standard responses were high in both the QC samples and field samples. For the reasons stated above, no sample results were qualified based on low MS/MSD or LCS/LCSD recoveries. However, since the internal standard responses in the SPLP PAH field samples were high and are used to calculate sample concentrations and because surrogate recoveries were low, the results for all SPLP PAHs in the followings samples were qualified as estimated (J, UJ) and may be biased low:
    - P121:0-1/2'
    - P122:0-1/2'
    - P123:0-1/2'
    - P124:3-4'

- Metals (Total)

  - The results for lead in the following samples were qualified as estimated (J) due to low MS/MSD recoveries. Results may be biased low.
    - P130:1'
    - P130:3 1/2'

- Metals (SPLP)

  - Sample results were determined to be valid as reported, with no qualifications to sample results.

DATA QUALIFIERS AND DEFINITIONS

U	The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

DATA USABILITY SUMMARY - ADDENDUM

Date: June 22, 2020

Project: North Brunswick Gulf

Laboratory Work Order: L2021390

Subsequent to the release of the validation report dated June 5, 2020, the laboratory was contacted regarding the quality control (QC) issues associated with the SPLP PAH and total PAH analyses. The laboratory agreed with the validation findings and determined that the cause of the high internal standard (IS) area responses was due to evaporation of the IS standard. The laboratory's standard procedure following extraction and prior to the addition of IS is to split the extract into two portions. One aliquot is spike with IS and analyzed and the other aliquot is stored for additional analyses. Therefore, the laboratory was able to spike the unused sample aliquot with a freshly prepared IS standard and reanalyze both the total and SPLP PAH field and QC samples for this project.

The results of the reanalyses confirmed the validation findings and the recoveries of the QC samples in both the total and SPLP analyses, as well as the surrogate recoveries associated with the SPLP sample analyses all were higher and well within acceptance limits. The SPLP sample results were originally qualified as estimated (J,UJ) due to the high IS responses. Because the IS in the SPLP reanalysis of the samples was acceptable, the results of the reanalysis for the SPLP sample should be used.

DATA USABILITY EVALUATION WORKSHEET

Project Name: North Brunswick Gulf
Laboratory: Alpha Analytical Laboratories
Sample Delivery Group(s): L2021390

Date(s) Samples Collected: 5/21/2020

Reviewer: Jeri L Rossi, ddms, inc.

Describe the intended use of the data:

Nonconformance DQA Review Elements	Briefly Summarize DQA Non-conformances
Laboratory Report Inspection	
Reasonable Confidence Evaluation	
Chain of Custody Evaluation	
Sample Result Evaluation	
Sample Preservation and Holding Time Evaluation	
Blank Evaluation	The results for chloroform in P125:2 1/2-3', P126B:3 1/2-4', P127:3 1/2-4', P127:5-5 1/2, P125:3 1/2-4' and P128:5 1/2-6' were qualified as not detected (U) at the reporting limit (RL) due to method blank contamination.
Laboratory Control Samples	Volatile organic sample results were qualified as estimated (J, UJ) due to low recovery in LCS/LCSD. Please refer to DQA Worksheet.
Surrogates	SPLP PAH results for all compounds in P121:0-1/2', P122:0-1/2', P123:0-1/2' and P124:3-4' were qualified as estimated (J, UJ) due to low surrogate recoveries.
Site Specific Matrix Spikes and Matrix Spike Duplicates	Volatile organic and metals (total) sample results were qualified as estimated (J, UJ) due to low or high recoveries in the MS/MSD. Please refer to DQA Worksheet.
Tentatively Identified Compounds	Tentatively Identified Compounds (TICs) were reported in P125:3 1/2-4', P128:5 1/2-6' and P128:4-4 1/2' in the volatile organic analyses. Based on the review of the TIC spectra and sample chromatograms, the TICs reported in the samples are indicative of gasoline.
Other QC data	Volatile organic results were qualified as estimated (J, UJ) due to low responses in the CCV. Please refer to DQA Worksheet.

Appendix B

SPLP Printouts

NJDEP SPLP Spreadsheet, V3.1, November 2013

Case name/area of concern:	*North Brunswick Gulf*
Case number:	*01-08-30-1546-07*
Sampling date:	*5/21/2020*
Contaminant:	*Benzo(a)anthracene (1,2-Benzanth*
CAS No:	*56-55-3*
Water solubility (mg/L)	*9.40E-03*
Aqueous reporting limit (µg/L):	*1.00E-01*
Soil reporting limit (mg/kg):	*2.00E-01*
Health-based GWQC (µg/L)	*5.00E-02*
DAF (20, or site-specific if approved):	**20**
Leachate Criterion (µg/L):	*1.00E+00*
Henry's law constant (dimensionless):	*1.37E-04*

CALCULATE SITE SPECIFIC IGW STANDARD | *Reset Spreadsheet* | *Print Results* | *Instructions*

CLICK HERE if chemical is not on drop-down list, or to enter alternate GWQC | *Print to file* | *Exit*

NOTE:
USE ONE PAGE PER CONTAMINANT, do not leave empty rows between samples
Do not enter samples with soil concentrations at or below the reporting limit
When leachate concentration is non-detect, enter the aqueous reporting limit
Enter site-specific dilution-attenuation factor (DAF) if desired
Data entry cells (do not skip rows)
Optional data entry
Calculated or locked cells
Indicates that Alternative Remediation Standard needs to be recalculated

Sample ID	Soil sample weight (kg)	Leachate Volume (L)	Total Soil Concentration (mg/kg)	SPLP Leachate Concentration (µg/L)	Final pH of Leachate (except VOCs)	Optional data				Kd (L/kg)	% Contaminant in Leachate	Field leachate concentration (µg/L)	Pass or fail?
						Sampling Depth (ft)	Soil Type	Organic Carbon (mg/kg)	Organic Carbon (%)				
P 123: 0-0.5'	*0.1*	*2*	*1.8*	*0.06*	*8.08*	*0-0.5*				*29980.0*	*0.07*	*0.06*	*PASS*
P 122:0-0.5'	*0.1*	*2*	*3.3*	*0.06*	*9.35*	*0-0.5*				*54980.0*	*0.04*	*0.06*	*PASS*
P 124: 3-4'	*0.2*	*4*	*0.018*	*0.07*	*10.4*	*4-Mar*				*237.1*	*7.78*	*0.07*	*PASS*
P 121:0-0.5'	*0.1*	*2*	*1.2*	*0.15*	*9.77*	*0-0.5*				*7980.0*	*0.25*	*0.15*	*PASS*

SPLP RESULTS for

OPTION 1a: All adjusted leachate concentrations are below the leachate criterion
REMEDIATION STANDARD = 3.3 mg/kg

OPTION 1b: Simple inspection of tabulated results to find highest acceptable standard
EVERYTHING PASSED, OPTION 1b NOT VALID

OPTION 2: Remediation standard using site-specific Kd value
Kd ratio = 231.84, USE MINIMUM Kd
Kd USED FOR CALCULATING STANDARD = 237.14 L/kg
result before rounding = 0.2373 mg/kg
REMEDIATION STANDARD = 0.2 mg/kg

OPTION 3: Remediation standard using linear regression
Number of points = 1
(points were eliminated because leachate concentrations were not above the aqueous reporting limit)
Less than three points with leachate concentrations above the aqueous reporting limit
LINEAR REGRESSION CANNOT BE CONDUCTED

NJDEP SPLP Spreadsheet, V3.1, November 2013

Case name/area of concern:	North Brunswick Gulf
Case number:	01-08-30-1546-07
Sampling date:	5/21/2020
Contaminant:	Benzo(a)pyrene
CAS No:	50-32-8
Water solubility (mg/L)	1.62E-03
Aqueous reporting limit (µg/L):	1.00E-01
Soil reporting limit (mg/kg):	2.00E-01
Health-based GWQC (µg/L)	5.00E-03
DAF (20, or site-specific if approved) :	20
Leachate Criterion (µg/L):	1.00E-01
Henry's law constant (dimensionless):	4.63E-05

CALCULATE SITE SPECIFIC IGW STANDARD | Reset Spreadsheet | Print Results | Instructions | CLICK HERE if chemical is not on drop-down list, or to enter alternate GWQC | Print to file | Exit

NOTE:
USE ONE PAGE PER CONTAMINANT, do not leave empty rows between samples
Do not enter samples with soil concentrations at or below the reporting limit
When leachate concentration is non-detect, enter the aqueous reporting limit
Enter site-specific dilution-attenuation factor (DAF) if desired
Data entry cells (do not skip rows)
Optional data entry
Calculated or locked cells
Indicates that Alternative Remediation Standard needs to be recalculated

Sample ID	Soil sample weight (kg)	Leachate Volume (L)	Total Soil Concentration (mg/kg)	SPLP Leachate Concentration (µg/L)	Final pH of Leachate (except VOCs)	Optional data: Sampling Depth (ft)	Optional data: Soil Type	Optional data: Organic Carbon (mg/kg)	Optional data: Organic Carbon (%)	Kd (L/kg)	% Contaminant in Leachate	Field leachate concentration (µg/L)	Pass or fail?
B 121: 0-0.5'	0.1	2	1.3	0.03	9.77	0-0.5				43313.3	0.05	0.03	PASS
B 124: 3-4'	0.2	4	0.017	0.1	10.4	4-Mar				150.0	11.76	0.10	PASS
B 123: 0-0.5'	0.1	2	1.7	0.1	8.08	0-0.5				16980.0	0.12	0.10	PASS
B 122: 0-0.5'	0.1	2	3.7	0.1	9.35	0-0.5				36980.0	0.05	0.10	PASS

SPLP RESULTS for

OPTION 1a: All adjusted leachate concentrations are below the leachate criterion

REMEDIATION STANDARD = 3.7 mg/kg

OPTION 1b: Simple inspection of tabulated results to find highest acceptable standard
EVERYTHING PASSED, OPTION 1b NOT VALID

OPTION 2: Remediation standard using site-specific Kd value
Kd ratio = 288.76, USE MINIMUM Kd
Kd USED FOR CALCULATING STANDARD = 150. L/kg
result before rounding = 0.015 mg/kg
REMEDIATION STANDARD = 0.2 mg/kg (controlled by soil PQL)

OPTION 3: Remediation standard using linear regression
Number of points = 1
(points were eliminated because leachate concentrations were not above the aqueous reporting limit)
Less than three points with leachate concentrations above the aqueous reporting limit
LINEAR REGRESSION CANNOT BE CONDUCTED

NJDEP SPLP Spreadsheet, V3.1, November 2013

Case name/area of concern:	*North Brunswick Gulf*
Case number:	*01-08-30-1546-07*
Sampling date:	*5/21/2020*
Contaminant:	*Benzo(b)fluoranthene (3,4-Benzofl*
CAS No:	*205-99-2*
Water solubility (mg/L)	*1.50E-03*
Aqueous reporting limit (µg/L):	*2.00E-01*
Soil reporting limit (mg/kg):	*2.00E-01*
Health-based GWQC (µg/L)	*5.00E-02*
DAF (20, or site-specific if approved):	**20**
Leachate Criterion (µg/L):	*1.00E+00*
Henry's law constant (dimensionless):	*4.55E-03*

CALCULATE SITE SPECIFIC IGW STANDARD

Reset Spreadsheet | *Print Results* | *Instructions*

CLICK HERE if chemical is not on drop-down list, or to enter alternate GWQC | *Print to file* | *Exit*

NOTE:
USE ONE PAGE PER CONTAMINANT, do not leave empty rows between samples
Do not enter samples with soil concentrations at or below the reporting limit
When leachate concentration is non-detect, enter the aqueous reporting limit
Enter site-specific dilution-attenuation factor (DAF) if desired

Data entry cells (do not skip rows)
Optional data entry
Calculated or locked cells
Indicates that Alternative Remediation Standard needs to be recalculated

Sample ID	Soil sample weight (kg)	Leachate Volume (L)	Total Soil Concentration (mg/kg)	SPLP Leachate Concentration (µg/L)	Final pH of Leachate (except VOCs)	Optional data				Kd (L/kg)	% Contaminant in Leachate	Field leachate concentration (µg/L)	Pass or fail?
						Sampling Depth (ft)	Soil Type	Organic Carbon (mg/kg)	Organic Carbon (%)				
P 122: 0-0.5'	*0.1*	*2*	*4.6*	*0.02*	*9.35*	*0-0.5*				*229980.0*	*0.01*	*0.02*	*PASS*
P 124: 3-4'	*0.2*	*4*	*0.023*	*0.03*	*10.4*	*4-Mar*				*746.7*	*2.61*	*0.03*	*PASS*
P 121: 0-0.5'	*0.1*	*2*	*1.5*	*0.04*	*9.77*	*0-0.5*				*37480.0*	*0.05*	*0.04*	*PASS*
P 123: 0-0.5'	*0.1*	*2*	*2.2*	*0.1*	*8.08*	*0-0.5*				*21980.0*	*0.09*	*0.10*	*PASS*

SPLP RESULTS for

OPTION 1a: All adjusted leachate concentrations are below the leachate criterion

REMEDIATION STANDARD = 4.6 mg/kg

OPTION 1b: Simple inspection of tabulated results to find highest acceptable standard
EVERYTHING PASSED, OPTION 1b NOT VALID

OPTION 2: Remediation standard using site-specific Kd value
Kd ratio = 308.01, USE MINIMUM Kd
Kd USED FOR CALCULATING STANDARD = 746.67 L/kg
result before rounding = 0.7468 mg/kg
REMEDIATION STANDARD = 0.7 mg/kg

OPTION 3: Remediation standard using linear regression
Number of points = 1
(points were eliminated because leachate concentrations were not above the aqueous reporting limit)
Less than three points with leachate concentrations above the aqueous reporting limit
LINEAR REGRESSION CANNOT BE CONDUCTED

NJDEP SPLP Spreadsheet, V3.1, November 2013

Case name/area of concern:	*North Brunswick Gulf*
Case number:	*01-08-30-1546-07*
Sampling date:	*5/21/2020*
Contaminant:	*Beryllium*
CAS No:	*7440-41-7*
Water solubility (mg/L)	*NA*
Aqueous reporting limit (µg/L):	*1.00E+00*
Soil reporting limit (mg/kg):	*5.00E-01*
Health-based GWQC (µg/L)	*1.00E+00*
DAF (20, or site-specific if approved):	**20**
Leachate Criterion (µg/L):	*2.00E+01*
Henry's law constant (dimensionless):	*0.00E+00*

NOTE:
USE ONE PAGE PER CONTAMINANT, do not leave empty rows between samples
Do not enter samples with soil concentrations at or below the reporting limit
When leachate concentration is non-detect, enter the aqueous reporting limit
Enter site-specific dilution-attenuation factor (DAF) if desired
Data entry cells (do not skip rows)
Optional data entry
Calculated or locked cells
Indicates that Alternative Remediation Standard needs to be recalculated

Sample ID	Soil sample weight (kg)	Leachate Volume (L)	Total Soil Concentration (mg/kg)	SPLP Leachate Concentration (µg/L)	Final pH of Leachate (except VOCs)	Optional data				Kd (L/kg)	% Contaminant in Leachate	Field leachate concentration (µg/L)	Pass or fail?
						Sampling Depth (ft)	Soil Type	Organic Carbon (mg/kg)	Organic Carbon (%)				
P123:1-2'	*0.1*	*2*	*0.729*	*5*	*8.53*	*1-2'*				*125.8*	*13.72*	*5.79*	*PASS*
P124:1-2'	*0.1*	*2*	*0.7*	*5*	*10.3*	*1-2'*				*120.0*	*14.29*	*5.83*	*PASS*
P122:1-2'	*0.1*	*2*	*0.613*	*5*	*10.3*	*1-2'*				*102.6*	*16.31*	*5.97*	*PASS*
P121:1-2'	*0.1*	*2*	*0.219*	*5*	*3.44*	*1-2'*				*23.8*	*45.66*	*9.14*	*PASS*

SPLP RESULTS for

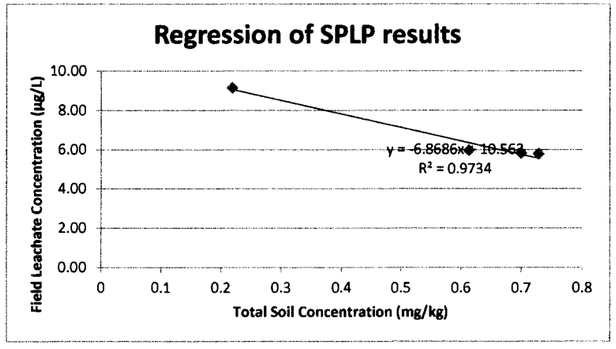
OPTION 1a: All adjusted leachate concentrations are below the leachate criterion

REMEDIATION STANDARD = 0.729 mg/kg

OPTION 1b: Simple inspection of tabulated results to find highest acceptable standard
EVERYTHING PASSED, OPTION 1b NOT VALID

OPTION 2: Remediation standard using site-specific Kd value
Kd ratio = 5.29, AVERAGING Kds OK
Kd USED FOR CALCULATING STANDARD = 93.05 L/kg
result before rounding = 1.8641 mg/kg
REMEDIATION STANDARD = 0.7 mg/kg (controlled by maximum soil concentration)

OPTION 3: Remediation standard using linear regression
Number of points = 4
Soil concentration midrange = .47
Number of points above midrange = 3
Enough points above midrange? YES
R-Square high enough? YES
Leachate criterion within range of leachate concentrations? NO
OPTION 3 NOT VALID



Appendix C

Soil & Sediment Erosion Control Plan

#20-03

FREEHOLD SOIL CONSERVATION DISTRICT
(Serving Middlesex and Monmouth Counties)

4000 Kozloski Road, P.O. Box 5033
Freehold, New Jersey 07728-5033
Tel: (732) 683-8500
Fax: (732) 683-9140
E-mail: info@freeholdscd.org
Website: www.freeholdsoil.org

10/5/20

1696 RT 130 LLC
ATTN: MR. WALTER LAPP
555 GEORGES ROAD
DAYTON NJ 08810

Ref.#: 2020-0513
Proj.: GAS STATION 1696 ROUTE 130
Twp. : NORTH BRUNSWICK
Block: 282
Lots : 1

CERTIFICATION LETTER

Pursuant to the New Jersey Soil Erosion and Sediment Control Act; N.J.S.A. 4:24-39 et. seq., Chapter 251, P.L. 1975 and as amended by C. 264, P.L. 77 and C. 459, P.L. 79, the Freehold Soil Conservation District hereby grants certification of the soil erosion and sediment control plan for the above referenced project, subject to the following:

1. That the applicant carries out all land disturbance activities in accordance with the Standards for Soil Erosion and Sediment Control in New Jersey, promulgated by the State Soil Conservation Committee.

2. The owner/applicant must obtain a District issued Report of Compliance prior to the issuance of any Certificates of Occupancy by the municipality.

3. Changes in the certified plan relating to, or that will affect land disturbance on the site, must be submitted to the District office for certification.

4. The owner / applicant must notify the District forty-eight (48) hours prior to any land disturbing activity.

A copy of the certified plan must be kept on the job site at all times.

This plan certification is valid for 3 ½ years (**valid until 4/5/2024**), and is limited to the controls specified in this plan. It is not authorization to engage in proposed land use unless the municipality or other controlling agency has previously approved such use. Failure to comply with the above conditions may result in the issuance of a **STOP CONSTRUCTION ORDER.**

Sincerely,

Ines Zimmerman/gd

Ines M. Zimmerman
District Manager

cc: Planning Board
Construction Official
Municipal Engineer
Applicant's Engineer

AMERTECH ENGINEERING, INC.
ENGINEERS, SURVEYORS AND PLANNERS

757 RIDGEWOOD AVENUE
NORTH BRUNSWICK, NJ 08902
PH (732) 828-3535 ● FAX (732) 249-0859 ● E-MAIL main@amertechengineering.com

September 8, 2020

Timothy P. Thomas
Resource Conservationist
Freehold Soil Conservation District
4000 Kosloski Road
Freehold, NJ 07728

RE: **1696 Rt. 130 Gas Station**
Block 282, Lot 1
North Brunswick
Middlesex County, New Jersey
Our File No. #20-039

Dear Mr. Thomas,

The following revisions have been made to address your comments:

1) One (1) copy of Drainage Narrative is provided within this package.

2) The storm rip-rap swale is already existing and functions properly and will have no additional runoff increase as stated in the report.

Enclosed please find the following revised plans & report in response to your review letter dated 8/25/2020:

1. One (1) copy of the Drainage Narrative dated September 1, 2020.

2. Three (3) copies of Soil Erosion & Sediment Control plans dated 6/29/2020 and last revised 9/1/2020.

If you have any questions or require additional information feel free to contact me.

Very truly yours,
AMERTECH ENGINEERING, INC.

Jaser Aly

Cc: 1696 RT130, LLC
Attn: Walter Lapp
Email: onsitefj@aol.com

STORMWATER NARRATIVE

FOR

EXISTING GAS STATION

Lot 1, Block 282

North Brunswick, NJ

Middlesex County, New Jersey

BY

AMERTECH ENGINEERING, INC.
ENGINEERS, SURVEYORS AND PLANNERS
757 RIDGEWOOD AVENUE, NORTH BRUNSWICK, N.J. 08902
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September 1, 2020

PROJECT NO. 20-039

SHARIF H. ALY, P.E., PP, CME
NJ Professional Engineer Lic. No. 34669

FOR THE FIRM

PROJECT LOCATION AND SITE DESCRIPTION:

The existing gas station site consists of approximately 0.75± acres located south side of RT130 in North Brunswick, Middlesex County, New Jersey. Only 0.27± acres will be disturbed on site out of the 0.75 ± acres.

Property is also known as lot 1, in block 282, as per tax map sheet #78 in the North Brunswick.

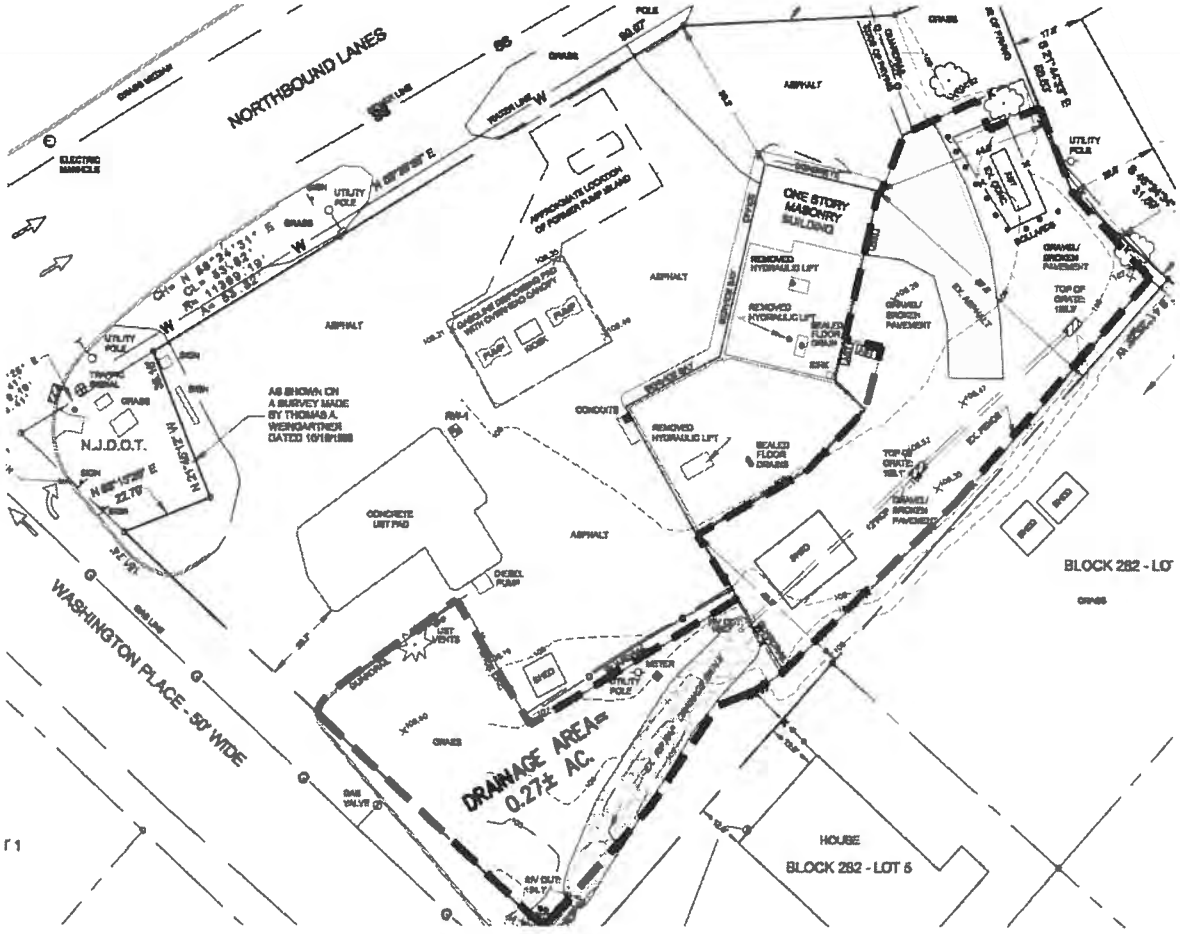
On-Site Environmental, Inc. is performing a site remedial excavation which will disturb more than 5,000 SF. See Soil Erosion & Sediment Control Plan for the sequence of operations for this work.

DRAINAGE ANALYSIS:

Presently, the site is occupied by an existing gas station and automotive mechanic shop. Based on the sites topography, the site drains via sheet flow & towards a series of inlets towards the existing rip rap swale on the south western side of the site.

PRE-DEVELOPMENT CONDITION:

The drainage area considered in this narrative shall correspond to the disturbed area as shown below, which drains towards the existing rip rap swale located on the south western side of the disturbed site. The drainage area is approximately 0.27± acres.



PRE-DEVELOPMENT
DRAINAGE AREA

Pre-Area=Drainage area in acres = ±0.27 Acres (NktB "C", Nixon Variant-Urban Land)

Land use/Cover:
Grass & Rip Rap Channel= ±0.13 Acres (NktB "C", C=0.51)
Broken Pavement/Pavement/Concrete= ±0.14 Acres (NktB "C", C=0.99)
Ccomp= 0.76

Time of Concentration "Tc"= 10 minutes

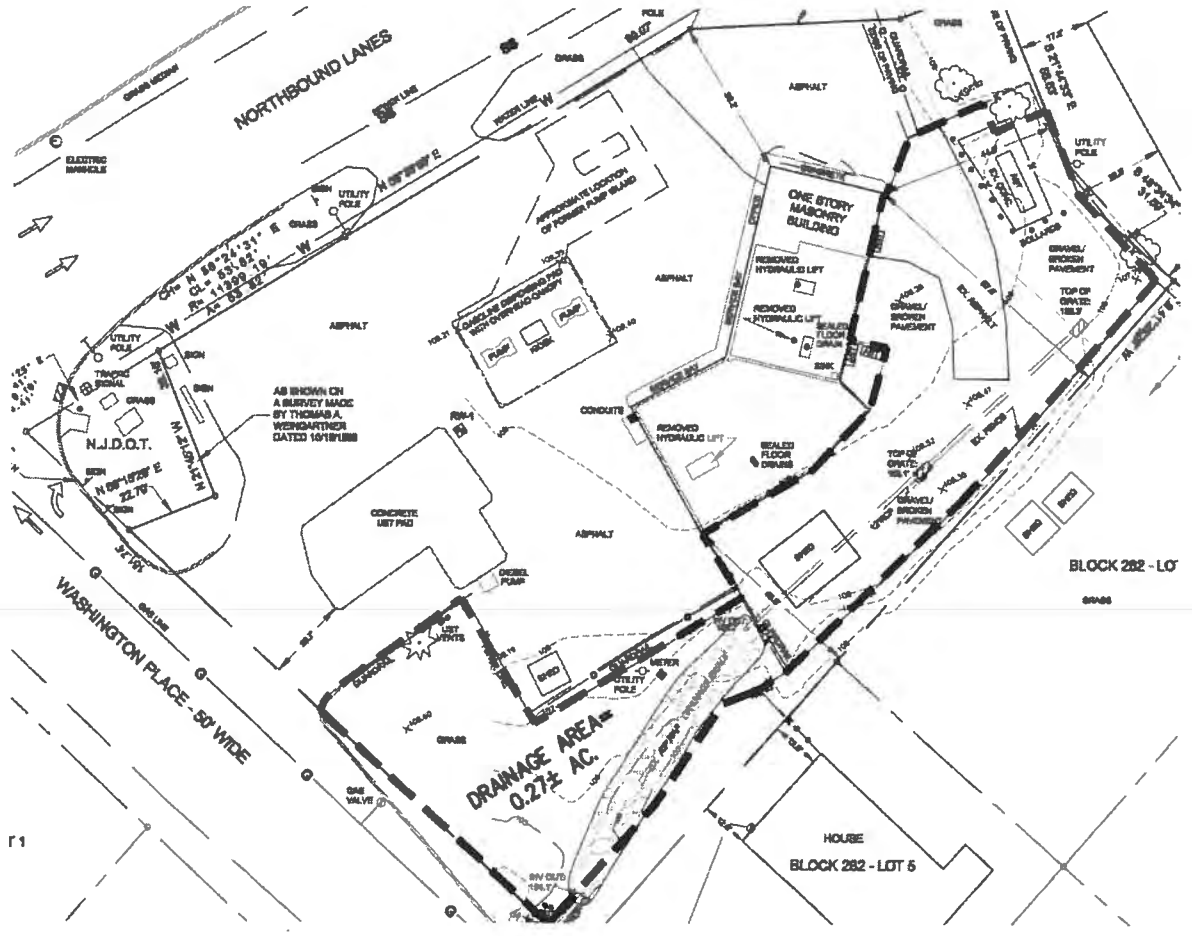
The rational method shall be utilized to calculate the site peak runoff. The following table summarizes the Pre-DevelopmentSitePeak runoff:

TABLE-1
PRE-DEVELOPMENT SITE PEAK RUNOFFAREA

Storm Frequency	Site Peak Runoff "CFS"
2	0.946
10	1.240

POST-DEVELOPMENT CONDITION:

The drainage area considered in this narrative shall correspond to the disturbed area as shown below, which drains towards the existing rip rap swale located on the south western side of the disturbed site. The drainage area is approximately 0.27± acres.



POST-DEVELOPMENT DRAINAGE AREAS

Post-Area =Drainage area in acres =	±0.27 Acres (NktB "C", Nixon Variant-Urban Land)
Land use/Cover:	
Broken Pavement/Pavement/Concrete=	±0.14 Acres (NktB "C", C=0.99)
Grass=	±0.13 Acres (NktB "C", C=0.51)
Ccomp=	0.76
Time of Concentration "Tc"=	10.00 minutes

The rational method shall be utilized to calculate the site peak runoff. The following table summarizes the Post-development Site Peak runoff.

TABLE-2
POST-DEVELOPMENT SITE PEAK RUNOFF AREA

Storm Frequency	SitePeak Runoff "CFS"
2	0.921
10	1.207

A comparison between Pre and Post-development site runoff area are summarized in Table-3:

TABLE-3
COMPARISON
PRE-DEVELOPMENT AREA VS. POST-DEVELOPMENT SITE PEAK RUNOFF

Storm Frequency	Pre-Site Peak Runoff "CFS"	Post-Site Peak Runoff "CFS"
2	0.759	0.921
10	0.995	1.207

CONCLUSION:

From the above calculations we conclude that Post-development site peak runoff has no insignificant changes in runoff in comparison to the Pre-Development.

Pre-Development
Site Peak Runoff

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.01

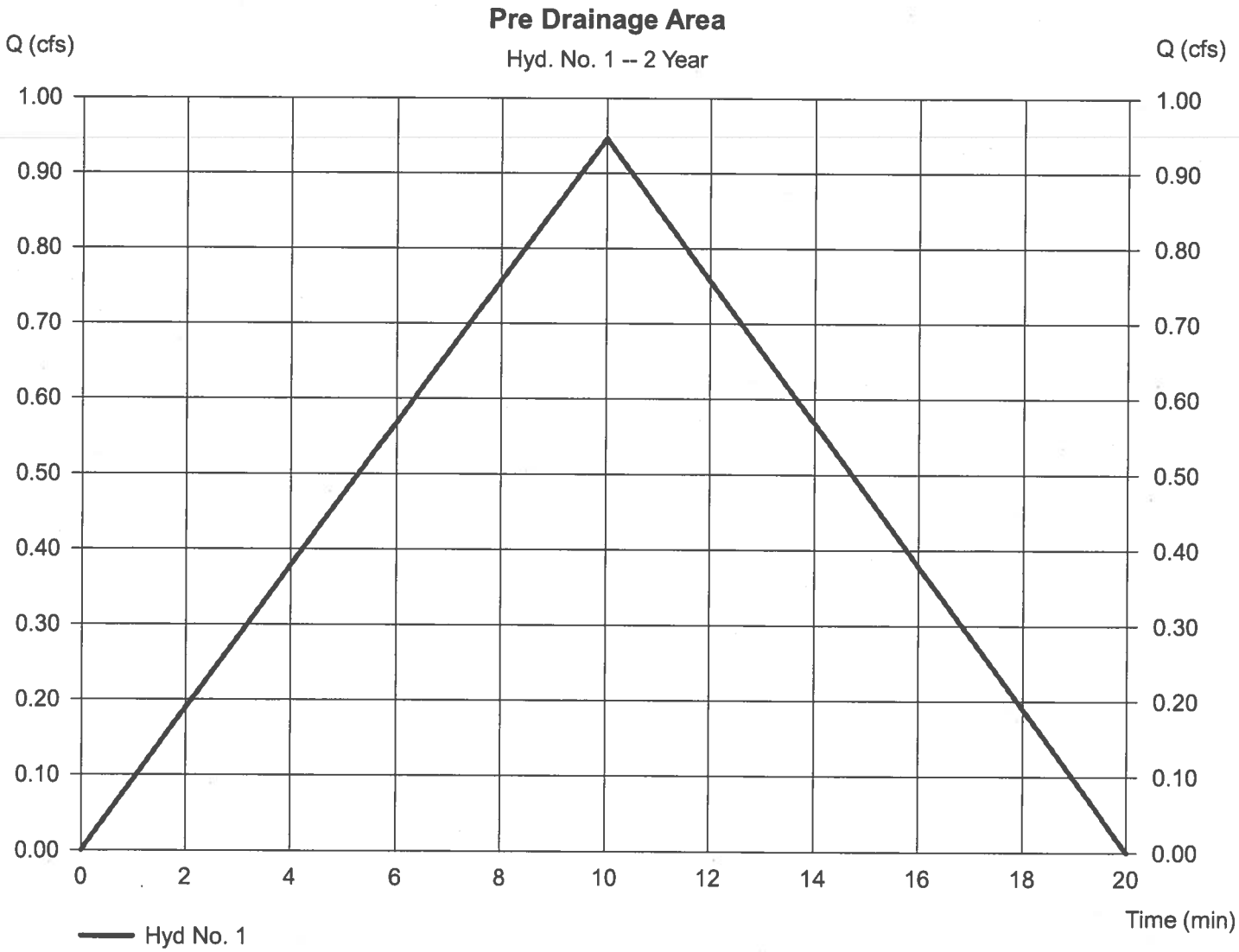
Wednesday, Sep 2, 2020

Hyd. No. 1

Pre Drainage Area

Hydrograph type	= Rational	Peak discharge	= 0.946 cfs
Storm frequency	= 2 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 567 cuft
Drainage area	= 0.270 ac	Runoff coeff.	= 0.76*
Intensity	= 4.609 in/hr	Tc by User	= 10.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.130 x 0.51) + (0.140 x 0.99)] / 0.270



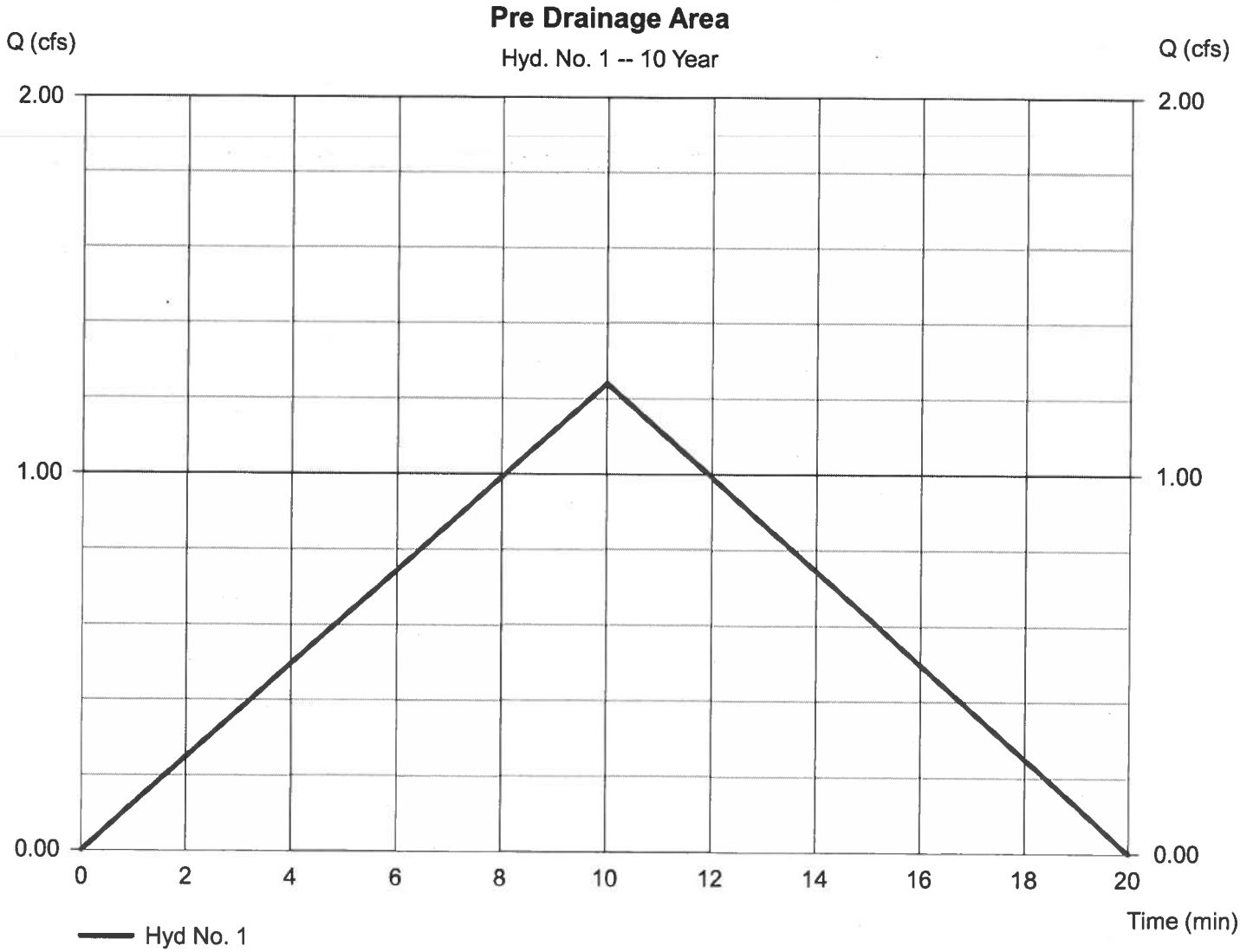
Hydrograph Report

Hyd. No. 1

Pre Drainage Area

Hydrograph type	= Rational	Peak discharge	= 1.240 cfs
Storm frequency	= 10 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 744 cuft
Drainage area	= 0.270 ac	Runoff coeff.	= 0.76*
Intensity	= 6.042 in/hr	Tc by User	= 10.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.130 x 0.51) + (0.140 x 0.99)] / 0.270



Post-development
Site Peak Runoff

Hydrograph Report

Hydraflow Hydrographs by Intelisolve v9.01

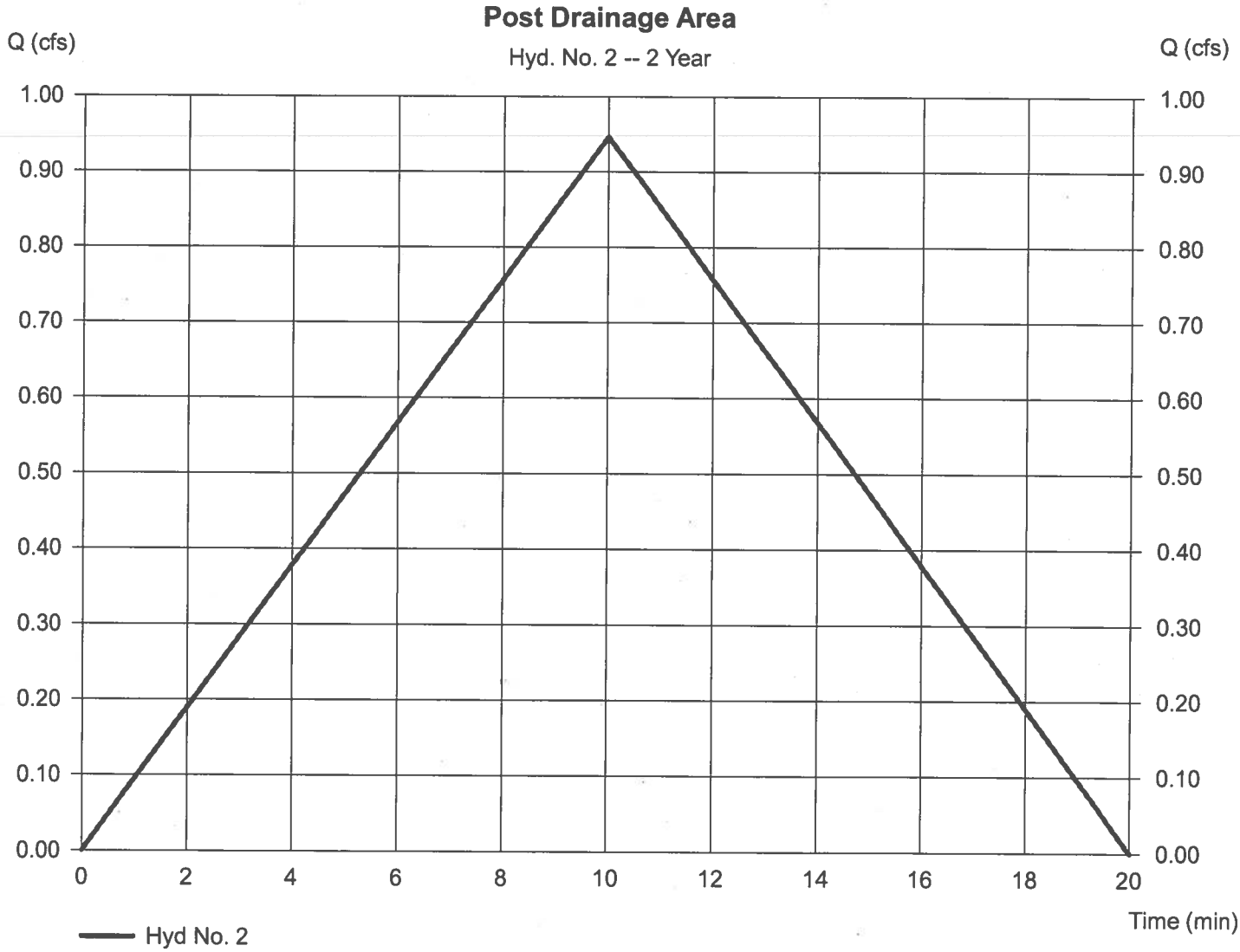
Wednesday, Sep 2, 2020

Hyd. No. 2

Post Drainage Area

Hydrograph type	= Rational	Peak discharge	= 0.946 cfs
Storm frequency	= 2 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 567 cuft
Drainage area	= 0.270 ac	Runoff coeff.	= 0.76*
Intensity	= 4.609 in/hr	Tc by User	= 10.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.140 x 0.99) + (0.130 x 0.51)] / 0.270



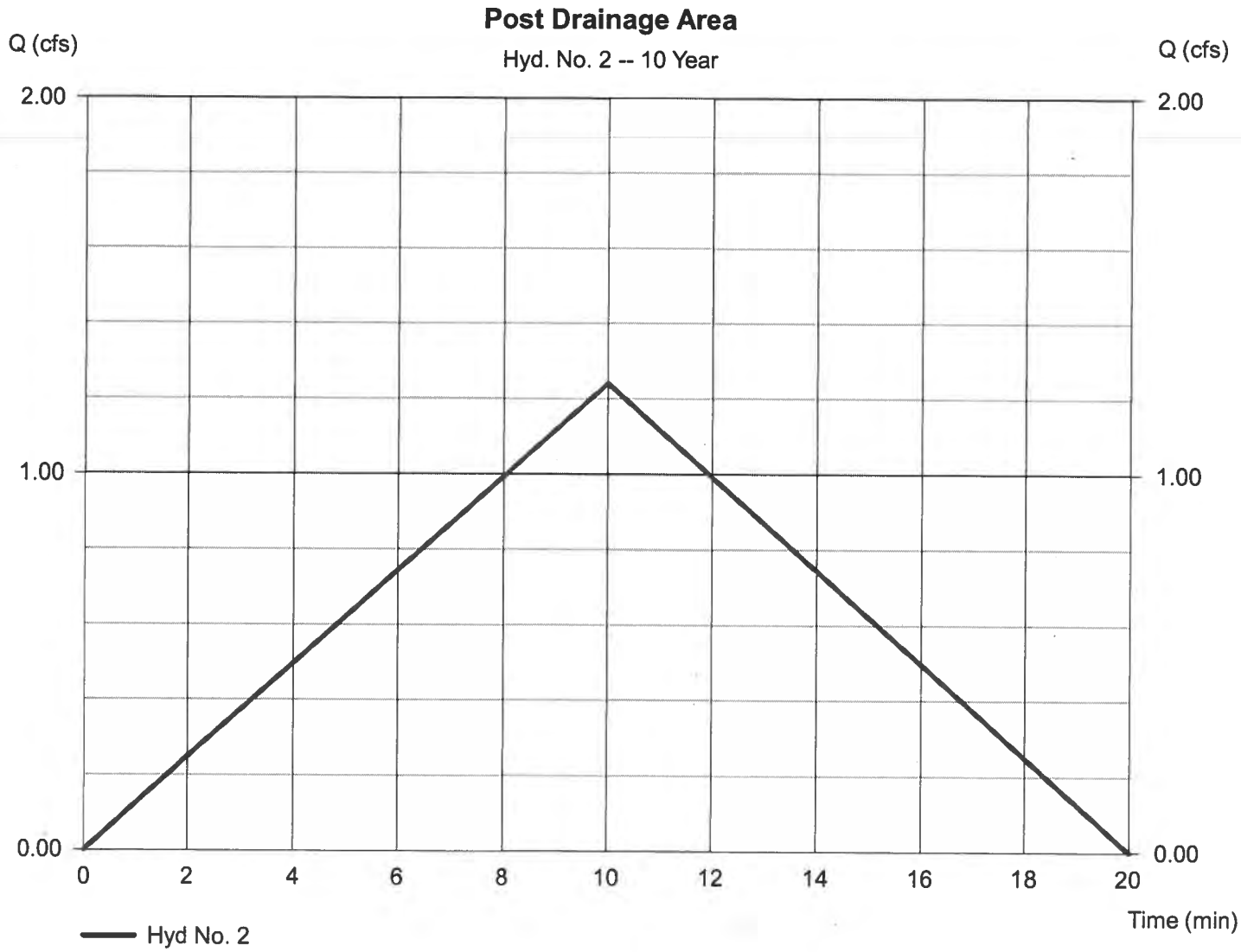
Hydrograph Report

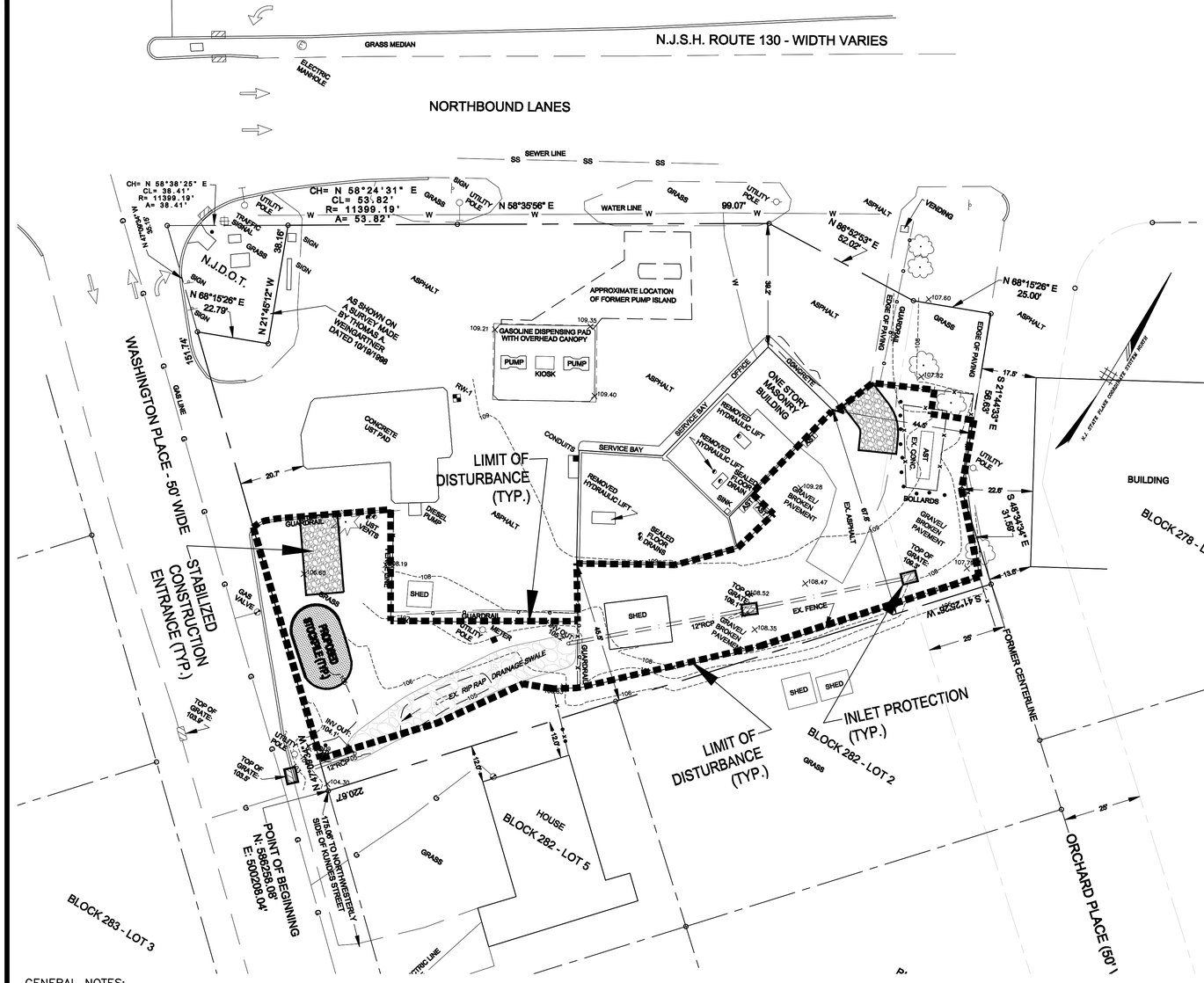
Hyd. No. 2

Post Drainage Area

Hydrograph type	= Rational	Peak discharge	= 1.240 cfs
Storm frequency	= 10 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 744 cuft
Drainage area	= 0.270 ac	Runoff coeff.	= 0.76*
Intensity	= 6.042 in/hr	Tc by User	= 10.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.140 x 0.99) + (0.130 x 0.51)] / 0.270

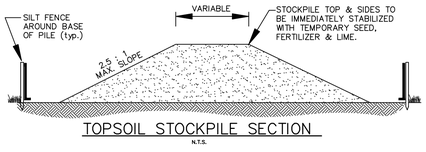




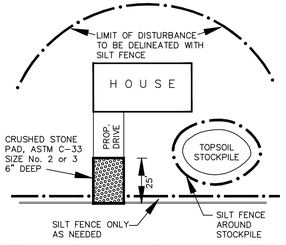
GENERAL NOTES:

1. BEING KNOWN AS LOT 1 IN BLOCK 282 ON A CERTAIN A PLAN TITLED "BOUNDARY SURVEY – 0.7562773 ACRES. 1696 ROUTE 130, LLC. DEED BOOK 06846 – PAGE 0782, TAX BLOCK 282, LOT 1" WHICH WAS PROVIDED TO US IN AUTOCAD .DWG FORMAT BY FRANK JASIULEWICZ, PG, SSE, LSRP OF ON-SITE ENGINEERING, INC LOCATED AT 119 SHEPERDS WAY, COATESVILLE, PA 19320.

2. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED ON A FIELD SURVEY COMPLETED BY AMERTECH ENGINEERING, INC. ON JUNE 25, 2020 USING THE NAD 1983 AND NGVD 1988 DATUMS ESTABLISHED VIA GPS OBSERVATIONS.



TOPSOIL STOCKPILE SECTION
N.T.S.



SOIL EROSION & SEDIMENT CONTROL TYPICAL LOT DETAIL
N.T.S.

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. The Freehold Soil Conservation District shall be notified forty-eight (48) hours in advance of any land disturbance activity.
2. All Soil Erosion and Sediment Control practices are to be installed prior to soil disturbance, or in their proper sequence, and maintained until permanent protection is established.
3. Any changes to the Certified Soil Erosion and Sediment Control Plans will require the submission of revised Soil Erosion and Sediment Control Plans to the District for Recertification. The revised plans must meet all current State Soil Erosion and Sediment Control Standards.
4. NJSA 4:24–39 et. Seq. requires that no Certificates of occupancy be issued before the District determines that a project or portion thereof is in full compliance with the Certified Plan and Standards for Soil Erosion and Sediment Control in New Jersey and a Report of Compliance has been issued. Upon written request from the applicant, the District may issue a Report of Compliance with conditions on a lot-by-lot or section-by-section basis, provided that the project or portion thereof is in satisfactory compliance with the sequence of development and temporary measures for soil erosion and sediment control have been implemented including provisions for stabilization and site work.
5. Any disturbed areas that will be left exposed more than sixty (60) days, and not subject to construction traffic, will immediately receive a temporary seeding. If the season prevents the establishment of temporary cover, the disturbed areas will be mulched with straw, or equivalent material, at a rate of 2 to 2 1/2 tons per acre, according to the Standard for Stabilization with Mulch Only.
6. Immediately following initial disturbance or rough grading, all critical areas subject to erosion, (ie. soil stockpiles, steep slopes and roadway embankments) will receive temporary seeding in combination with straw mulch or a suitable equivalent, and a mulch anchor, in accordance with State Standards.
7. A sub-base course will be applied immediately following rough grading and installation of improvements to stabilize streets, roads, driveways and parking areas. In areas where no utilities are present, the sub-base shall be installed within fifteen (15) days of the preliminary grading.
8. The Standard for Stabilized Construction Access requires the installation of a pad of clean crushed stone at points where traffic will be accessing the construction site. After interior roadways are paved, individual lots require a stabilized construction entrance consisting of one inch to two inch (1" to 2") stone for a minimum length of ten feet 10' equal to the lot entrance width. All other access points shall be blocked off.
9. All soil washed, dropped, spilled or tracked outside the limit of disturbance or onto public right-of-ways will be removed immediately.
10. Permanent vegetation is to be seeded or sodded on all exposed areas within ten (10 days) after final grading.
11. At the time the site preparation for permanent vegetative stabilization is going to be accomplished, any soil that will not provide a suitable environment to support adequate vegetative ground cover shall be removed or treated in such a way that it will permanently adjust the soil conditions and render it suitable for vegetative ground cover. If the removal or treatment of the soil will not provide suitable conditions, non-vegetative means of permanent ground stabilization will have to be employed.
12. In accordance with the Standard for Management of High Acid Producing Soils, any soil having a pH of 4 or less or containing iron sulfides shall be ultimately placed or buried with limestone applied at the rate of 10 tons/acre, (or 450lbs/1,000 sq ft of surface area) and covered with a minimum of twelve (12) inches of settled soil with a pH of 5 or more or twenty-four (24) inches where trees or shrubs are to be planted.
13. Conduit Outlet Protection must be installed at all required outfalls prior to the drainage system becoming operational.
14. Unfiltered dewatering is not permitted. Necessary precautions must be taken during all dewatering operations to minimize sediment transfer. Any dewatering methods used must be in accordance with the Standard for Dewatering.
15. Should the control of dust at the site be necessary, the site will be sprinkled until the surface is wet, temporary vegetative cover shall be established, or mulch shall be applied as required by the Standard for Dust Control.
16. Stockpile and staging locations established in the field shall be placed within the limit of disturbance according to the certified plan. Staging and stockpiles not located within the limit of disturbance will require certification of a revised Soil Erosion and Sediment Control Plan. Certification of a new Soil Erosion and Sediment Control Plan may be required for these activities if an area greater than 5,000 square feet is disturbed.
17. All soil stockpiles are to be temporarily stabilized in accordance with Soil Erosion and Sediment Control note #6.
18. The property owner shall be responsible for any erosion or sedimentation that may occur below stormwater outfalls or offsite as a result of construction of the project.
19. All soil erosion and sediment constrol methods and materials shall be in accordance with the requirements and recommendations within "The Standards for Soil Erosion and Sediment Control in New Jersey".

SLOPE STABILIZATION STANDARDS

1. Grade slopes as per plan.
2. Apply Limestone at a rate of approximately 2 tons/acre and fertilizer at approximately 500 pounds/acre (10–20–10 or equal).
3. Work lime and fertilizer into soil to a depth of 4 inches.
4. Apply seed 40 lb/acre by hand, cyclone seeder or hydroseeder.
5. Roll seed bed to a uniform compaction.
6. Mulch and stabilize as per mulching and tacking specifications on this sheet.
7. Steep slopes to be stabilized with jute matting or equivalent approved slope stabilization blanket (4:1 or steeper).
8. Basins steep slopes to be stabilized w/jute matting or equivalent approved slope stabilization and a water tolerant seeding mix (SCD MIX #18) consisting of Rough Bluegrass @ 2.0 lbs/1000sf and Strong Creeping Red Fescue @ 1.2 lbs/1000sf..

SEEDING SCHEDULE

1. Temporary seeding shall consist of Spring Oats applied at a rate of 2.0lbs per 1,000sf (86lbs/Acre) or Perennial Ryegrass at a rate of 1.0lbs per 1,000 sf (100lbs/Acre). Apply ground limestone and fertilizer according to soil test recommendations. Fertilizer shall be applied at the rate of 500 pounds per acre or 11 pounds per 1,000 square feet of 10–20–10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise. Temporary seeding to be maintained until disturbed areas are permanently stabilized with permanent seeding. Mulch seeded area with a mulch as indicated under Mulching & Tacking Specifications this sheet.
2. Permanent Seeding shall consist of the following mixture or approved equal (Refer to Standards for Soil Erosion & Sediment Control in New Jersey for Optimum and Acceptable Seeding Dates):

EXCESSIVELY DRAINED LOTS (MIXTURE #10):
Tall Fescue (turf–type) @ 265lbs/Ac. (6lbs/1000 sf)
Perennial Ryegrass @ 20lbs/Ac. (5lbs/1000 sf)

WELL TO MODERATELY WELL DRAINED LOTS (MIXTURE #6):
Fine Fescue (Blend) @ 130 lbs/Ac. (3lbs/1000sf)
– Hard Fescue @ 20 lbs/Ac. (0.5lbs/1000sf)
– Chewings Fescue @ 5 lbs/Ac. (0.10lbs/1000sf)
– Strong Creeping Red Fescue @ 5 lbs/Ac. (0.10lbs/1000sf)
Kentucky Bluegrass @ 45lbs/Ac (1lb/1000sf)
Perennial Ryegrass @ 20lbs/Ac (0.5lbs/1000sf)
White Clover @ 5lbs/Ac (0.10lbs/1000sf)
(White Clover can be eliminated when used to establish lawns)

POORLY DRAINED LOTS & DETENTION BASINS (MIXTURE #16):
Rough Bluegrass @ 90lbs/Ac (2.0lbs/1000 sf)
Strong Creeping Red Fescue @ 130lbs/Ac (3lbs/1000sf)

3. Immediatley prior to seeding , the surface should be scarified 4" to 12" where there has been soil compaction.
4. Conventional Seeding is performed by applying seed uniformly by hand, cyclone (centrifugal) seeder, drop seeder, drill or cultipacker seeder. Except for drilled, hydroseeded or cultipacked seedings, seed shall be incorporated into the soil within 24 hours of seedbed preparation to a depth of 1/4 to 1/2 inch, by raking or dragging. Depth of seed placement may be 1/4 inch deeper on coarse–textured soil.
5. After seeding, firming the soil with a corrugated roller will assure good seed–to–soil contact, restore capillarity, and improve seedling emergence. This is the preferred method. When performed on the contour, sheet erosion will be minimized and water conservation on site will be maximized.
7. Mulching is required on all seeding. Stabilize all seeded areas with mulch as indicated in Mulching & Tacking Notes.
8. If season prevents the establishment of temporary or permanent seeding, exposed area to be stabilized with mulch as indicated in note 7.
9. Mulch used for exposed areas where season prevents the establishment of permanent or temporary cover to consist of small grain straw or salt hay anchored with a wood and fiber mulch binder or an approved equal. Mulch will spread at rates of 90 to 115 lbs/1000 sf and anchored with a crimping anchoring tool or liquid mulch binder. For mulch application with seeding see the Mulching and Tacking Specifications this sheet.
10. For Permanent Seeding; Soil shall be tested for liming requirements at the time of seedbed preparation. Uniformly apply ground limestone and fertilizer to topsoil which has been spread and firmed, according to soil test recommendations such as offered by Rutgers Co–op Extension offices. Fertilizer shall be applied at the rate of 500lbs per acre or 11lbs/1,000sf of 10–10–10 or equivalent with 50% water insoluble nitrogen unless a soil test indicates otherwise and incorporated into the soil to a depth of 4 inches with a disc, springtooth harrow or other suitable equipment. The final harrowing or disching operation should be on the general contour. Continue tillage until a reasonably uniform, fine seedbed is prepared. All but clay or silty soils and coarse sands should be rolled to firm the seedbed wherever feasible.
11. Where sod is used for permanent vegetative stabilization all requirements and recommendations contained within the "Standard for Permanent Stabilization with Sod" in the current Soil Erosion and Sediment Control Standards in New Jersey.
12. The quality of permanent vegetation rests with the contractor. The timing of seeding, preparing the seedbed, applying nutrients, mulch and other management are essential. The seed application rates are required when a Report of Compliance is requested prior to actual establishment of permanent vegetation. Up to 50% reduction in application rates may be used when permanent vegetation is established prior to requesting a Report of Compliance from the district. These rates apply to all methods of seeding. Establishing permanent vegetation means 80% vegetative cover (of the seeded species) and mowed once. Note this designation of mowed once does not guarantee the permanency of the turf should other maintenance factors be neglected or otherwise mismanaged.

VEGETATIVE COVER MAINTENANCE NOTES:

1. Maintenance should occur on a regular basis, consistent with favorable plant growth, soil and climatic conditions. This involves regular seasonal work for mowing, fertilizing, liming, water, pruning, fire control, weed and pest control, reseeding and timely repairs.
2. Mowing on improved areas, such as lawns, certain recreation fields and picnic areas shall be frequent. On semi–improved areas, mowing will be infrequent. Unimproved areas may be left unmowed to permit natural succession.
3. Fertilizer should be applied as needed to maintain a dense stand of desirable species. Frequently mowed areas and those on sandy soils will require more fertilization.
4. Lime requirement should be determined by soil testing to be done every 2 or 3 years. Fertilization will increase the need for liming.
5. Weed invasion may result from abusive mowing and inadequate fertilization and liming. Brush invasion is a common consequence of lack of mowing. Control of weeds or brush shall be accomplished by using herbicides or mechanical methods.
6. The Property Owner (or tenant by contract) shall be responsible for maintenance during and after construction.

MULCHING & TACKING SPECIFICATIONS:

1. Mulching shall be applied to all disturbed areas immediately after construction and following the application of temporary and/or permanent seeding in accordance with the "Standards for Soil Erosion and Sediment Control in New Jersey". Mulching to consist of the following:
   a) Straw or Hay. Unrotted small grain straw, hay free of seeds, applied at the rate of 1–1/2 to 2 tons per acre (70 to 90lbs/1,000sf), except that where a crimper is used instead of a liquid mulch binder (tackifying or adhesive agent), the rate of application is 3 tons per acre.
   b) Wood–fiber or paper–fiber mulch applied at a rate of 1,500lbs per acre (or as recommended by the product manufacturer) and may be applied by a hydroseeder.
   c) Pelletized mulch applied at a rate of 60–75lbs/1,000sf and activated with 0.2 to 0.4 inches of water.
2. Mulching shall be anchored in accordance with the "Standards for Soil Erosion and Sediment Control in New Jersey". Anchoring for proposed Mulch shall be accomplished using one of the following methods:
   a) Peg & Twine.
   b) Mulch Nettings.
   c) Crimper (mulch anchoring tool).
   d) Liquid Mulch Binders. (May be used to anchor hay or straw mulch)

DUST CONTROL

The following methods should be considered for controlling dust:
Mulches – See Standards for Stabilization with Mulches Only (p.5–1).*
Vegetative Cover – See Standards for: Temporary Vegetative Cover (p. 7–1)*, Permanent Vegetative Cover (p. 4–1)*, and Permanent Stabilization with Sod (p.6–1)*.
Spray–On Adhesives – On mineral soils (not effective on muck soils).
Keep traffic off these areas.

MATERIAL	Water Dilution	Type of Nozzle	Gal/Ac.
Anionic Asphalt Emulsion	7:1	Coarse Spray	1,200
Latex Emulsion	12.5:1	Fine Spray	235
Resin In Water	4:1	Fine Spray	300
Polyacrylamide (PAM) – spray on Polyacrylamide (PAM) – dry spread	Apply according to manufacturer's instructions. May also be used as an additive to sediment basins to flocculate and precipitate suspended colloids. See Sediment Basin standard, p. 26–1		
Articulated Soy Been Soap Stick	None	Coarse Spray	1200

Tillage – To roughen surface and bring clods to the surface. This is a temporary emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel–type plows spaced about 12 inches apart, and spring–toothed harrows are examples of equipment which may produce the desired effect.

Sprinkling – site is sprinkled until the surface is wet.

Barriers – Solid board fences, snow fences, burlap fences, crate walls, bales of hay, and similar material can be used to control air currents and soil blowing.

Calcium Chloride – Shall be in the form of loose, dry granules or flakes fine enough to feed through commonly used spreaders at a rate that will keep surface moist but not cause pollution or plantdamage. If used on steeper slopes, then use other practices to prevent washing into streams or accumulation around plants.

Stone – Cover surface with crushed stone or coarse gravel.

* Standards for Soil Erosion and Sediment Control in New Jersey, Jan., 2014.

STOCKPILE NOTES:

1. Stockpiles should be situated so as not to obstruct natural drainage or cause off–site environmental damage.
2. Stockpiles should be vegetated in accordance with standards described with the Seeding Schedule hereon for Permanent or Temporary Vegetative Cover for Soil Stabilization. Weeds should not be allowed to grow on stockpiles.

SEQUENCE OF OPERATIONS

1. Silt fence to be installed immediately before land disturbance. Install stabilized construction entrances and inlet protection as noted.
   ONE DAY
2. Environmental activity construction for environmental soil remediation activities. All exposed surfaces will be stabilized as defined in Soil Erosion and Sediment Control notes 1 and 2.
   FOURTEEN DAYS
3. All disturbed areas will receive appropriate temporary and permanent stabilization as defined in soil erosion and sediment control notes 1 and 2.
   VARIABLE
4. Remove silt fence after all disturbed areas have been stabilized.
   ONE DAY

Standard for Topsoiling

1. Materials

A. Topsoil should be friables, loamys, free of debris, objectionable weeds and stones, and contain no toxic substance or adverse chemical or physical condition that may be harmful to plant growth. Soluble salts should not be excessive (conductivity less than 0.5 millimhos per centimeter. More than 0.5 millimhos may deliocate seedings and adversely impact growth). Imported topsoil shall have a minimum organic matter content of 2.75 percent. Organic matter content may be raised by additives.

B. Topsoil substitute is a soil material which may have been amended with sand, silt, clay, organic matter, fertilizer or lime and has the appearance of topsoil. Topsoil substitutes may be utilized on sites with insufficient topsoil for establishing permanent vegetation. All topsoil substitute materials shall meet the requirements of topsoil notes above. Soil tests shall be performed to determine the components of sand, silt, clay, organic matter, soluble salts and pH level.

2. Stripping and Stockpiling

A. Field exploration should be made to determine whether quantity and or quality of surface soil justifies stripping.

B. Stripping shall be confined to the immediate construction area.

C. Where feasible, lime may be applied before stripping at a rate determined by soil tests to bring the soil pH to approximately 6.5.

D. A 4–6 inch stripping depth is common, but may vary depending on the particular soil.

E. Stockpiles of topsoil should be situated so as not to obstruct natural drainage or cause off–site, environmental damage.

F. Stockpiles should be vegetated in accordance with standards of Permanent or Temporary Vegetative Cover for Soil Stabilization. Weeds should not be allowed to grow on stockpiles.

3. Site Preparation

A. Grade at the onset of the optimal seeding period so as to minimize the duration and area of exposure of disturbed soil to erosion. Immediately proceed to establish vegetative cover in accordance with the specified seed application is 3 tons per acre.

B. Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application and anchoring, and maintenance.

C. As guidance for ideal conditions, subsoil should be tested for lime requirement. Limestone, if needed, should be applied to bring soil to a pH of approximately 6.5. Organic matter in the soil as nearly as practical to a depth of 4 inches.

D. Prior to topsoiling, the subsoil shall be in compliance with the Standard for Land Grading.

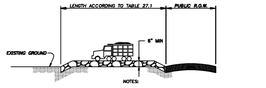
E. Employ needed erosion control practices such as diversions, grade stabilization structures, channel stabilization measures, sedimentation basins, and waterways.

4. Applying Topsoil

A. Topsoil should be handled only when it is dry enough to work without damaging soil structure; i.e., less than field capacity.

B. A uniform application to an average depth of 5.0 inches, minimum of 4 inches, firmed in place is required. Alternative depths may be considered where special regulatory and/or industry design standards are appropriate such as on golf courses, athletic fields, landfill capping, etc. Soils with a pH of 6.0 or less or containing iron sulfide shall be covered with a minimum depth of 12 inches of soil having a pH of 5.0 or more, in accordance with the Standard for Management of High Acid Producing Soil.

C. Pursuant to the requirements in Section 7 of the Standard for Permanent Vegetative Stabilization, the contractor is responsible to ensure that permanent vegetative cover becomes established on at least 80% of the soils to be stabilized with vegetation. Failure to achieve the minimum coverage may require additional work to be performed by the contractor to include some or all of the following: reseeding, soil amendments such as lime and fertilizers, and/or the addition of organic matter (i.e. compost) as a top dressing. Such additional measures shall be based on soil tests such as those offered by Rutgers Cooperative Extension Service or other approved laboratory facilities qualified to test soil samples for agronomic properties.



NOTES:

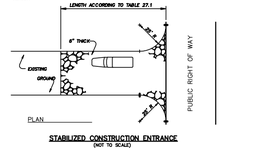
TABLE 27-1
LENGTHS OF CONSTRUCTION EXITS ON SLOPING ROADWAYS

PERCENT SLOPE OF ROADWAY	PERCENT SLOPE OF ROADWAY	
	COARSE GRAINED SOILS	FINE GRAINED SOILS
0 TO 2%	50 FT	100 FT
2 TO 5%	100 FT	
>5%	ENTIRE SURFACE STABILIZED WITH HOT MIX ASPHALT BASE COURSE, MIN N=2	

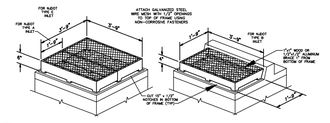
PROVIDE APPROPRIATE TRANSITION BETWEEN STABILIZED CONSTRUCTION ENTRANCE AND PUBLIC R.O.W.

STONE SIZE – USE ARM C–33, SIZE No. 1 OR 2 OR NJDOT No. 3 OR 1"–3" STONE

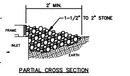
STABILIZED CONSTRUCTION ENTRANCE TO BE IN ACCORDANCE WITH SECTION 21.01 IN ACCORDANCE WITH SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY.



STABILIZED CONSTRUCTION ENTRANCE
(NOT TO SCALE)



NOTES:
1. FRAMES ARE TO BE CONSTRUCTED FROM WOOD OR ALUMINUM MATERIAL.
2. FRAME THICKNESS WILL BE 1" FOR WOOD OR 1/2" FOR ALUMINUM.
3. WOOD FRAMES WILL BE ASSEMBLED USING GALVANIZED SCREWS.
4. ALUMINUM FRAMES WILL BE WELDED ALL AROUND.
5. PLACE 1–1/2" TO 2" STONE AROUND OUTSIDE OF FRAME FROM TOP OF FRAME TO A MINIMUM OF 2 FEET FROM THE FRAME.
6. NO STONE SHALL BE PLACED UPON THE WIRE MESH.
7. STONE THICKNESS SHALL BE AS REQUIRED TO REACH TOP OF FRAME.



INLET PROTECTION DETAIL
N.T.S.

All soil erosion and sediment control methods and materials shall be in accordance with the requirements and recommendations within "The Standards for Soil Erosion and Sediment Control in New Jersey".

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

OWNER/APPLICANT
1696 RT 130 LLC
ATTN: WALTER LAPP
555 GEORGES RD
DAYTON, NJ 08810

NO.	REVISION	DATE	Dr/Ck
1	FSCD REVIEW LETTER DATED 8/25/2020	9/1/2020	JA/SA

CAD#: 20-039 SCD.DWG	DESIGN BY: SA	DATE: 6/29/2020
PB#: –	DRAWN BY: JA	SCALE: 1"=20'
BOOK#: –	Checked by: SA	FILE NO.: 20-039

AMERTECH ENGINEERING, INC.
ENGINEERS, SURVEYORS AND PLANNERS
757 RIDGEWOOD AVENUE, NORTH BRUNSWICK, N.J. 08902
(732)828–3535 * (732)249–2215 FAX (732)249–0859
E–MAIL: mail@AMERTECHENGINEERING.com
CORPORATE CERTIFICATE OF AUTHORIZATION NO. 24GA27990400
SHARIF H. ALY
NEW JERSEY PROFESSIONAL ENGINEER LICENSE. NO. 34669

LOT 1 , BLOCK 282
NORTH BRUNSWICK
MIDDLESEX COUNTY, NEW JERSEY
TAX MAP SHEET 78

#1696 RT. 130 GAS STATION SOIL EROSION AND SEDIMENT CONTROL PLAN

JOB #: 20–039

1 / 1

P:\2020 Projects\20-039 North Brunswick Gas Station\Engineering\DWG\20-039 Soil Erosion & Sediment Control Plan.dwg, 1:1

APPENDIX D

Quality Assurance Project Plan
For
Interim Remedial Measures

TABLE OF CONTENTS

TABLES

1.0 Problem Definition:

The North Brunswick Gulf (NBG) site been operated as a gasoline service station for over 50 years and impacts to the soil and groundwater from facility operations have been documented in a Remedial Investigation Report (RIR). This Quality Assurance Project Plan (QAPP) only address interim remedial actions recommended in the Interim Remedial Action Work Plan, which includes:

- Preventing soil erosion to the onsite storm drains and the down gradient drainage ditch that have concentrations above the ecological soil screening levels.
- Removing the soil in back of the station that has EPH concentrations above the non-residential default product limit of 8,000 mg/kg.
- Removing the soil in back of the station where xylenes exceeds the soil saturation limit.
- Performing a limited excavation where some of the highest concentrations of benzene were detected in soil above the non-residential direct contact standard, which is also the same area where xylenes exceed the soil saturation limit.
- Removing the subsurface soil where concentrations of lead exceeded the non-residential direct contact soil standards.
- Removing soil at the site that exceeds the default impact to groundwater screening levels that will not be capped due to zoning restrictions.

In summary, impacts including benzo(a)pryene, EPH and metals have been detected above the ecological screening levels in an onsite drainage ditch that outfalls to the local storm drain system that ultimately outfalls to Farrington Lake located approximately 1,300 feet to the south, which is an environmentally sensitive area. The soil impacts appear to have been related to spillage of waste oil at a waste oil above ground storage tank (AST) located on a concrete pad at the rear of the onsite building. Over time the spilled oil likely eroded to the drainage ditch by surface flow during rain events and to two onsite storm drains located down gradient of the AST that discharge to the drainage ditch located at the southwest end of the site that discharge to the local storm drain system. Although an ecological evaluation performed by TRC Environmental Solutions concluded no further ecological evaluation needs to be performed they did recommend that the soil in the drainage ditch should be maintained. Therefore, the surface soil with concentrations of PAHs, EPH and metals above the ecological soil screening levels that could migrate to the drainage ditch should be remediated to prevent future erosion to the drainage ditch.

Since there is extensive soil impacts throughout the site a soil permit and possibly an engineering control will likely be the final remedial approach to address the soil impacts. However, to secure the soil permit the regulations require that soil with EPH concentrations above the non-residential default product limit, and concentrations of compounds above the soil saturation limit need to be remediated before a soil permit can be secured. There are concentrations of EPH above default product limit and concentrations of xylenes above the soil saturation limit at the site, some of which are located to the rear of the onsite building where the waste oil impacts have been detected. Therefore that soil needs to be remediated.

Since there is also extensive groundwater contamination at the site Monitoring Natural Attenuation will likely be the approach to address the groundwater impacts. However, to demonstrate that MNA is applicable 8 consecutive quarterly groundwater samples need to show a downward decreasing trend and the samples need to be collected after the impacted unsaturated soil is capped. Therefore a limited excavation and recovery of impacted groundwater is planned in back of the station where some of the highest concentrations of benzene and xylenes have been detected in the soil in an effort to hopefully obtain groundwater samples that show a decreasing trend.

There is also a small area in back of the station where lead was detected above the non-residential direct contact standard. Since lead will never degrade to acceptable levels that soil should be excavated.

2.0 Conceptual Site Model Related to Soil Impacts in Back of Station & in Vicinity of Drainage Ditch

The NBG site is situated in a mixed use area of North Brunswick Township that includes commercial and residential properties and one (1) undeveloped lot and the area is serviced by a public water system. There are no potable or irrigation wells or surface water located within 1,000 feet of the site and there are no environmentally sensitive resources located on or adjacent to the site. However, there is a potential migration pathway (swale/drainage ditch) located on the site that outfalls to the local storm drain system that ultimately outfalls to a sensitive natural resource (Farrington Lake) located approximately 1,300 feet from the site.

The majority of the site is paved with macadam except for the area behind the one story building, which is mainly stoned and to the southwest of the onsite building, which is grass. The stoned area behind the building is enclosed by a chain link fence and is used to store automobiles needing repair work.

Two (2) small storm drains are located behind the building in a stoned area that discharges to a drainage ditch at the southwest end of the site. The ditch terminates at a pipe that is connected to the local storm drain system, which ultimately drains to Farrington Lake, a Natural Heritage Program site. Surface staining was observed up-gradient of the onsite storm drains near AOC 6 (waste oil AST). Compounds in surface soils near the waste oil AST that are above the non-residential direct contact standards, default soil to groundwater and ecological soil screening levels include PAHs and metals. Those impacted soil can migrated to the onsite storm drains and the drainage ditch at the southwest end of the site by soil erosion.

Elevated concentrations of EPH and VOCs have also been detected in subsurface soil in back of the station, which was most likely a result of discharges from the former septic system. Over time the VOCs migrated downward and impacted groundwater. In addition, elevated concentrations of VOCs have been detected in subsurface soil along the north side of the drainage ditch but have not been detected in the drainage ditch most likely related to the clayey nature of the soil at the NBG site. The groundwater near the drainage ditch is not currently above the groundwater standards and the soil impacts behind the building and in the vicinity of the drainage ditch are limited to the North Brunswick Gulf site.

The receptors related to the soil impacts in the back of the station and in the vicinity of the drainage ditch include:

- The groundwater.
- Occupants in structures that are within the 30 foot VI groundwater trigger distance.
- The swale/drainage ditch that eventually outfalls to Farrington Lake.
- Onsite workers that could be exposed to impacted soil that is above the non-residential direct contact standard.

Potential pathways associated with the soil impacts included:

- Direct contact to impacted soil.
- Inhalation
- Erosion of impacted soil to the drainage ditch and transport by storm water to Farrington Lake.

There are concentrations of benzene and ethylbenzene in groundwater that are above the groundwater screening levels for vapor intrusion. Buildings within the 30 foot vapor intrusion trigger distance include the onsite building, a residence to the south of the site and a convenience store located to the northeast of the site **(Figure 2 in Interim RAWP)**. Vapor intrusion investigations have been conducted at the residence and the convenience store and indicated that vapor intrusion at those locations are not a concern. The onsite building is also within the trigger distance but vapor intrusions have not been conducted at that structure since the site is an active gasoline station. Vapor intrusion concerns at that building will likely to addressed by a deed notice.

3.0 Data Quality Objectives: The DQOs are:

1. To remove the surface soil that have concentrations above the ecological screening levels that are in the drainage ditch and those that can potentially migrate to the drainage ditch.

2. To remove soil in back of the station that have concentrations of:

- xylenes above the soil saturation limit

- EPH above the non-residential default product limit

- lead above the non-residential direct contact standard,

- contaminants above the default impact to groundwater standard that will not be capped with asphalt.

3. Collect post excavation soil samples and have the samples analyzed by a NJDEP certified laboratory to evaluate the effectiveness of the remedial excavations.

Analysis to be performed on soil samples will be in accordance with the parameters specified in the sampling plan **(attached)**.

The analytical results of soil samples will be compared to the NJDEP Soil Remediation Direct Contact standards, the soil saturation limits, the default Impact to groundwater soil screening levels and the EPH non-residential residual product level.

Since all impacted surface soil that can potentially migrate to the storm drains and drainage ditch will be removed no surface samples will be collected.

4.0 Rational Where Samples Will Be Taken:

Soil sample locations and the rational where soil samples will be collected are specified in the attached sampling plan.

Specifically soil samples will be collected from the sidewall of the excavation for every 30 linear feet of sidewall to demonstrate horizontal compliance with the remediation standards. Samples will be collected at the top and bottom of each sidewall sample location to demonstrate vertical compliance with the remediation standards. Samples will be collected where the highest PID readings are detected or where visual inspection identifies impacts such as soil staining.

Soil samples will also be taken for every 900 square feet of bottom area where the highest concentrations based on field screening and or data from the Remedial Investigation indicated exceedances at depth were detected.

5.0 Data Of Known Quality Protocols (DKQP)

To comply with the NJDEP a NJDEP certified laboratory will be used to analyze the samples. To ensure project analytical requirements are met the LSRP will email the laboratory with the following information each time a bottle order is placed:

- Number of samples required per media

- Analysis and method required

- Quality control requirements

- NJDEP criteria required

- Data deliverable requirements

- Delivery and pick up dates

- Project name & location

6.0 Record Keeping

All measurements taken in the field will be recorded in a field log book or on sampling forms.

7.0 Data Assessment and Usability Evaluation

The LSRP will do the initial review of the laboratory reports and non-conformance summaries and evaluate data usability. If the LSRP identifies data concern the LSRP will have a third part evaluate the analytical results and complete the NJDEP Data Quality Assessment Worksheet and the NJDEP Data Usability Evaluation Worksheet.

8.0 QAQC Samples

8.1 Trip Blanks

Since no aqueous sampling will be conducted no trip blank will be collected for analysis.

8.2 **Field Rinsate Blanks & Field Blanks**

One rinsate blank will be analyzed each day for non-aqueous sampling events if re-useable sampling equipment is used and will be analyzed for VOCs and EDB. The rinsate blank consist of two sets of containers: one empty and one filled with analyte free water. The water will be transferred from the full bottles over all the sampling devices that will be used in the sampling event and into the empty set.

If no reusable sampling equipment is used in a non-aqueous sampling event and known sources of contamination are in close proximity or monitoring equipment indicate the presence of contamination above background levels, a field blank will be collected each day samples are collected for VOCs and the field blank will be analyzed for VOCs and EDB. The field blank consist of two sets of containers: one empty and one filled with analyte free water. The water will be transferred from the full bottles into the empty set in a contaminated area.

8.3 Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Samples

One MS and one MSD sample will be collected for each set of soil samples sent to the laboratory for analysis. They will be analyzed for the same parameters as the soil samples collected.

9.0 Analytical Methodology Non-Aqueous Samples

Analytical methodologies, sample preservation, containers, holding times and sample container preparation will in accordance with the following:

Parameter	**Container**	**Preservation**	**Holding Time**	**Analytical Method**
Volatile Organics (VOC+15)	Field Methanol Kits 1-VOA with methanol 2- VOA with DI water 1-4 oz amber (moisture)	Cool, 4 deg. C. methanol HCL None for moisture	14 days if frozen in lab within 48 hour 14 days moisture	8260D/5035 High & Low NJ TCL SM2540G moisture
EPH Category 2 Fractionation	4 oz amber glass teflon lined	Cool, 4 deg. C. None	14 days extraction	NJDEP EPH rev 3
Beryllium, lead, manganese	4 oz amber glass	Cool, 4 deg. C. None	6 months	6020B ICPMS to meet eco standards
Mercury	4 oz amber glass	Cool, 4 deg. C.	28 days	7471B,7474
PAH	4 oz amber glass teflon lined	Cool, 4 deg. C. None	14 day extraction	8270D SIM

10.0 Procedure to Collect Post Excavation Soil Samples

Set up sampling station and calibrate PID at site each morning and periodically throughout day if meter appears unstable. Post excavation soil samples will be collected before backfilling the excavation. Samples should be taken as soon as possible after the soil is exposed. Assuming the excavation sidewalls are stabile and the floor is relatively dry, the investigator will enter the excavation and look for signs of visual degradation and monitor the sidewalls and floor with a calibrated PID. A disposable wooden tongue depressor will be used to expose fresh soil if needed. Before each sample is collected the sampler will put on new disposable gloves and collect the samples without using reusable sampling equipment. If excavation sidewalls are unstable or ground water is at the base of the excavation a back hoe bucket will be used to collect the samples and the sampler will collect the samples directly from the back hoe bucket in an area where the sample material is not in contact with the bucket. The sample would be collected from the bucket following appropriate collection techniques for each analytical parameter to be analyzed

Samples for VOCs will be collected directly from the sidewalls and floor as specified in the sampling plan using Terra Core Kits supplied by the laboratory unless samples are to be collected for SPLP analysis (if samples for SPLP analysis is required see Section below for procedures to follow). For each VOC sample collected use 1 terra core + 1 10 ml methanol preserved bottle + 2 5ml DI water bottles. Push the terra core into the soil until the chamber is filled. Using the plunger, deliver the soil into one of the three vials. Repeat the process 2 mode times, adding 5 grams of soil to each of the three vials provided in the kit. Do not affix labels to or write on the field preserved soil sample vials. Place vials in plastic bag

supplied by laboratory and seal & use water proof pen to identify sample ID, depth, time sample was collected, samplers initials and job name on bag. A separate bottle must accompany each field preserved Terra Core sample for % solids.

Samples for EPH, metals and PAHs will be collected at locations and depths specified in the sampling plan. The samples will be collected from the specified location by the investigator wearing disposable gloves and will be placed directly into the sample bottle supplied by the laboratory. Container will be labeled to identify sample ID, depth, time sample was collected, samplers initials, job name and analysis required. After the sample is collected place sample containers on ice in cooler immediately after collection.

After the samples are collected a chain-of-custody will be completed for the samples and the analyzing laboratory will be contacted to pick up the samples.

10.1 Equipment

1. Photo-ionization detector (PID) and calibration gas & regulator
2. Log book & pens
3. Disposal sampling gloves
4. Sample cooler & ice
5. Sample bottles
6. Terra kits with disposable syringes if sampling for VOCs - non SPLP
7. Paper towels
8. Plastic pails
9. Safety cones
10. Health & Safety Plan
11. Watch
12. Portable table
13. Decon water & sprayer
14. Alconox
15. DI water
16. Plastic sheeting
17. Camera
18. Tape measures.
19. Phone
20. Wooden tongue depressors

10.2 Personnel

New Jersey Subsurface Evaluator or LSRP
Technician if sampling support is needed

11.0 Decontamination of Reusable Sampling Equipment

Sine no reusable sampling equipment is planned for the soil sampling no decontamination should be required. If reusable sampling equipment is used field decontamination will be conducted on all non-dedicated, reusable sampling equipment used during implementation of the soil sampling program as follows:

Washing with an alconox water solution by scrubbing, followed by a tap water rinse then a rinse with distilled water. Wiping with a paper towel and allowing the equipment to air dry on clean plastic.

12.0 Equipment calibration:

PIDs will be calibrated daily at the site according to manufacturer's specifications using ambient air and 100 ppm isobutylene.

APPENDIX D

2/4/23 On-Site Letter Report

On-Site Environmental, Inc.

Consulting Assessment Remediation

February 24, 2023 Sent Via US mail

Ms. Ruth Frey
528 S. Waterloo Road
Devon, Pa. 19333

RE: Interim Remedial Measures
North Brunswick Gulf Station
1696 Georges Rd RT 130
North Brunswick, NJ 08902

Ms. Frey:

The following describes the activities conducted relative to the Interim Remedial Measures conducted in 2021 at the North Brunswick Gulf Station.

PRE REMEDIAL ACTIVITIES

Soil and Sediment Control Plan and Township Permit

A soil and sediment control plan application was submitted to the Freehold Soil Conservation District before the remedial excavations were conducted. The plan was approved by the Freehold Conservation District. After the excavation the Freehold District inspected the site and issued a Report of Compliance. The Plan, Approval Letter and Report of Compliance are presented in **Appendix A**.

In addition, before the remedial excavations were conducted an Engineering Permit Application was submitted to the North Brunswick Township and was approved. A copy of the application and approval is presented in **Appendix A**.

Waste Class Sampling - 5/26/21

Since Environmental Waste Management Inc. (EWMI) was the successful contractor to perform the interim remedial measures and they planned to dispose of the impacted soil at Bayshore Soil Management. LLC, On-Site collected soil samples for waste class analysis per Bayshore's

requirements. To collect the samples On-Site contracted Environmental Probing Investigations, Inc. (EPI) to install five borings using a GeoProbe drill rig **(Figure 1: X 1 through X5)**. Three composite soil samples were analyzed for EPH and GRO, two discrete soil samples were analyzed for VOCs and two composite soil samples were analyzed for TAL metals, paint filter, VOCs, PCBs and Pesticide analysis.

In addition, since EWMI planned to dispose of recovered groundwater at Clean Water of New York, Inc. On-Site collected a sample of the groundwater from MW 19. The samples were analyzed for VOCs, SVOCs, flash point, PCBs, 8 RCRA metals plus copper, nickel, zinc, cobalt, tin aluminum and iron. Ph was determined in the lab and by On-Site in the field.

The samples were analyzed by Alpha Analytical. The results are provided in **Appendix B** Boring logs are also presented in **Appendix B**.

Well Abandonment - 5/25/21

On May 23, 2021, Environmental Probing Investigations (EPI) closed two well that were in the planned excavation area **(Figure 1: MW 8 and MW 19)**. The well abandonment forms are in **Appendix C**.

INTERIM REMEDIAL ACTION - 8/23/21 TO 9/28/21

Environmental Waste Management Inc. (EWMI) was selected as the successful contractor to perform the interim remedial action. EWMI mobilized to the site on 8/23/21 and started preparing the site for the excavation behind the onsite building by building a construction entrance, installing erosion control materials, removing asphalt, tree stumps, concrete bollards and fencing and relocating a heating oil AST in Area 1 **(Figure 2)**. Recyclable material such as asphalt, concrete and tree stumps were disposed of at Evergreen Recycling Solutions, LLC. Bill of Ladings for the disposal of the recyclable material is presented in **Appendix D**.

The excavations started in Area 1 (behind the station) by removing the upper foot of soil from the entire area behind the station except where the shed and waste oil above ground storage tanks were located. In addition, four other areas in Area 1 were excavated, which included a three foot deep excavation where beryllium exceeded the background level/migration to groundwater standard, a five foot deep excavation where high levels of lead were detected at AOC 3, an eight foot excavation where EPH exceeded the residual product level (AOC 11) and a 10 foot deep excavation where xylenes exceeded the soil saturation limit. The excavations performed in Area 1 and the depth of the excavations in Area 1 are show on **Figure 2**. The depth of the excavations ranged from 1 to 10 feet below surface grade.

During the 10 foot deep excavation a stone filled trench with perforated piping was encountered and removed except for a section that was discovered at the south end of the excavation that was beyond the limits of the planned excavation. The top of the stone filled trench was approximately 4 feet below grade (BG) and the bottom of the trench was approximately 7 ft BG that was left in place. The piping and stone filled trench was very close to the location of a former well (MW 19).

Since no groundwater was encountered in the 10 foot excavation the excavator dug a pit where MW 19 was formerly located to a depth of 14.5 feet below grade. The test pit was left open over night and no groundwater was observed in the test pit the next morning. On 9/1/21 the excavations in Area 1 were complete but in the evening hurricane IDA started. The next morning there was approximately 2 feet of rain water in the 10 foot excavation. The water was pumped into a 4,900 gallon frac tank and a sample of the water in the frac tank was secured by On-Site and taken to Accutest Laboratories for disposal analysis. The samples were analyzed for VOCS, PCBs, 15 metals, ignitability, total dissolved solids, total organic halides and ph. The analytical results are presented in **Appendix E** Also another 10,000 gallon frac tank was brought to the site to store the remaining rain water in the excavation.

The rain water in the excavation was removed with a centrifugal pump and was disposed of at Clean Water of New York. The volume of water disposed of was 13,386 gallons and disposal manifest is

presented in **Appendix D**. No rain water collected in the three and five foot excavation because those excavations were already sampled and back filled before the hurricane started.

After the water was removed in the 10 foot excavation On-Site collected soil samples from the sidewalls and the floor of the excavation. A total of 1,134.32 tons of soil was removed from Area 1. Disposal manifest are presented in **Appendix D**.

A total of 43 soil samples were collected from the excavations in Area 1 for various analyses. The analysis performed on each sample is presented in **Table 1** and the sample locations are shown on **Figure 2**. **Figure 2** also highlights the compounds that were above the standards.

The excavations in AREA 1 were backfilled with dense graded aggregate (DGA) provided by Stavola Construction Materials Bound Brook Quarry (Stavola). A certificate of clean fill is provided in **Appendix F**. The 1, 5, 8 and 10 foot excavations were backfilled to within 4-inches of final grade with DGA and capped with 4-inches of asphalt to act as an impermeable cap. The asphalt was graded in a manner so that surface runoff from precipitation event would drain to the two storm drains located in the back of the station. The 3 foot excavation along the east end of AREA 1 was backfilled with DGA to within 1-foot from the surface. The 3 foot excavation and the area to the south of the 3 foot excavation were covered with 1-foot of clean stone provided by Stovola to ensure the township's impermeable cover limit was not exceeded per the request of the property owner. Bill of Ladings for the DGA and clean stone is presented in **Appendix D**.

On 9/2/21 the excavation in AREA 2 (area at south west end of site where the grassy area and swale were located) started by building a construction entrance and lowering the well casing on MW 4 and a sewer cleanout in the construction entrance area, which were latter extended back to final grade after the excavation in AREA 2 was complete. Also the fencing and guard rail along the northern end of the planned excavation was removed. In addition, the rip rap in the swale was removed and recycled at Evergreen Recycling Solutions, LLC. Bill of Ladings for the recycled material is presented in **Appendix D**.

The depth of the excavations in AREA 2 ranged from 3.5 to 9 feet deep and is shown on **Figure 2**. During the excavations in AREA 2 four stone filled trenches and one stone filled trench with a perforated pipe were discovered and removed up to the limit of the planned excavations. Also a 55 gallon drum with drilled holes was discovered and removed. The stone filled trenches were discovered along the northern wall of the excavation and appeared to terminate near/at the northern end of the excavation, i.e. they were not observed in the excavation except for the one located by the construction entrance in Area 2. The location and depths of the stoned filled trenches, drum and piping are shown on **Figure 2**. Some water was detected seeping from the stone filled trenches and some groundwater was encountered at a depth of 7 feet BG in the northeast corner of Area 2. The stone filled trenches and piping were possibly connected to the former floor drains but that was not confirmed during the interim measures.

During the excavation in Area 2 the storm drain pipe that was connected to the two storm drains in AREA 1 was cleaned by pressure washing conducted by ALL Jersey Plumbing and Sewer, LLC. The two storm drains in AREA 1 were also cleaned by ALL Jersey Plumbing and Sewer, LLC by pressure washing. A total of 1,089.93 tons of soil was removed from Area 2. Disposal manifest are presented in **Appendix D**.

After the excavations in AREA 2 were complete On-Site collected 28 soil samples for various analyses. The analysis performed on each sample is presented in **Table 1** and the sample locations are shown on **Figure 2**. **Figure 2** also highlights the compounds that were above the standards.

After the samples were collected in AREA 2 the sidewalls where the chain link fencing was located was lined with a permeable woven geotextile fabric from the base of the sidewall to within a few inches from the surface before backfilling with DGA provided by Stovola to within 1 foot from the surface. As backfilling preceded the guard rail that was removed was replaced. The DGA was covered with 1-foot of topsoil provided by RER Supply and the topsoil was seeded, fertilized and mulched. A certificate of clean fill for the topsoil from RER Supply and the DGA provided by Stovola are provided in **Appendix F**.

The area were the swale was located was backfilled with DGA to within 1-foot of original grade and then base and sidewalls of the swale were lined with the permeable woven geotextile fabric and covered with RIP RAP stone provided by Stovola. The site restoration at AREA 1 and 2 were completed by September 22, 2021.

Tables 2 through 8 summarize the analytical results of the soil samples collected at Area 1 and 2. The laboratory reports are presented in **Appendix G**. Photographs of the excavations are presented in **Appendix H**.

Regards,
On-Site Environmental, Inc.

Frank Jasiulewicz, PG, SSE, LSRP
President
Cc:
Tracey Chierepko: via CD
Jennifer Galoski: via CD

APPENDIX E

6/17/22 On-Site Letter Report

On-Site Environmental, Inc.

Consulting Assessment Remediation

June 17, 2022 Sent Via email

Ms. Judy Lapp, Jr.
555Georges Rd
Dayton, NJ 08810

Ms. Ruth Frey
43 Overlook Circle
Berwyn, Pa. 19312

RE: North Brunswick Gulf - Update figures .
1696 Georges Road/RT 130
North Brunswick, NJ
NJDEP PI #: 010180
NJDEP Case #: 01-08-301546-07

Dear Ms. Lapp & Ms. Frey:

On-Site summarized the analytical results of the soil samples collected during the interum remedial measures that were conducted during August and September 2021. **Tables 1 through 7** summarize the analytical results. The data on the tables indicate the following samples had concentrations above the standards:

- PE7: 0-0.5' : Benzo(a)pryene was above than the Residential Ingestion Dermal Standard (RIDS) of 0.51 mg/kg. The concentration was 1.2 mg/kg.
- PE10: 1-1.5: Benzo(a)anthracene was above the Migration to Groundwater Standard (MGWS) of 0.71 mg/kg. The concentration was 1 mg/kg.
- PE10: 1-1.5': Benzo(a)pryene was above the RIDS of 0.51 mg/kg. The concentration was 0.86 mg/kg
- PE28: 1-1.5': Benzo(a)pryene was above the RIDS of 0.51 mg/kg. The concentration was 0.53 mg/kg but this sample was eventually excavated.
- PE29: 1-1.5': Benzo(a)anthracene was above the MGWS of 0.71 mg/kg. The concentration was 1.1 mg/kg but this sample was eventually excavated.
- PE 29: 1-1.5': Benzo(a)pryene was above the RIDS of 1.51 mg/kg. The concentration was 0.66 mg/kg but this sample was eventually excavated.
- PE29: 1-1.5': 2-methylnalhthalene was above the MGS of 3.1 mg/kg. The concentration was 3.2 mg/kg but this sample was eventually excavated.
- PE30: 1-1.5': Benzo(a)pryene was above the RIDS of 0.51 mg/kg. The concentration was 0.84 mg/kg.
- PE33: 10': Benzene was above the Residential Inhalation Standard (RIS) of 2.2 mg/kg. The concentration was 2.7 mg/kg.
- PE33: 10': Ethylbenzene was above the RIS of 10 mg/kg. The concentration was 13 mg/kg.
- PE33: 10': Naphthalene was above the RIS of 5.7 mg/kg. The concentration was 8.4 mg/kg.
- PE36: 5': Benzene was above the MGWS of 0.0094 mg/kg. The concentration was 0.61 mg/kg.
- PE36: 5': Toluene was above the MGWS of 7.8 mg/kg. The concentrations was 31 mg/kg.

- PE36: 5': Ethylbenzene was above the MGWS of 15and above the Non-Residential Inhalation Standard (NRIS) of 48 mg/kg. The concentration was 65 mg/kg.
- PE36: 5': Xylenes were above the MGWS of 19 mg/kg. The concentrations was 610 mg/kg.
- PE36: 5': Naphthalene was above the MGWS of 19 mg/kg and above the NRIS of 27 mg/kg. The concentration was 48 mg/kg.
- PE38: 7': Benzene was above the RIS of 2.2 mg/kg. The concentration was 2.5 mg/kg..
- PE38: 7': Ethylbenzene was above the RIS of 10 and above the NRIS of 48 mg/kg. The concentration was 69 mg/kg..
- PE38: 7': Naphthalene was above the RIS of 5.7 mg/kg. The concentration was 26 mg/kg..
- PE 50: 4': Benzene was above the MGWS of 0.0094 mg/kg. The concentration was 0.2 mg/kg.
- PE52: 5': Benzene was above the MGWS of 0.0094 mg/kg and above the RIS of 2.2 mg/kg. The concentration was 2.4 mg/kg.
- PE52: 5': Ethylbenzene was above the MGWS of 15 mg/kg and above the RIS of 10 mg/kg. The concentration was 25 mg/kg.
- PE52: 5': Xylenes were above the MGWS of 19 mg/kg. The concentration was 48 mg/kg.
- PE52: 5': Naphthalene was above the RIS of 5.7 mg/kg. The concentration was 12 mg/kg.
- PE65: 1-1.5': Lead was above the MGWS of 90 mg/kg. The concentration was 117 mg/kg.
- PE70: 1-1.5': Benzo(a)pryene was above the RIDS of 0.1mg/kg and above the NRIDS of 2.3 mg/kg. The concentration was 2.8 mg/kg.
- PE70: 1-1.5': Benzo(a)anthracene was above the MGWS of 0.71 mg/kg. The concentration was 3.2 mg/kg.
- PE71: 1-1.5': Benzo(a)anthracene was above the MGWS of 0.71 mg/kg and above the RIDS of 5.1 mg/kg. The concentration was 16 mg/kg.
- PE71: 1-1.5': Benzo(a)pryene was above the RIDS of 0.51 mg/kg and above the NRIDS of 2.3 mg/kg. The concentration was 15 mg/kg.
- PE71: 1-1.5': Benzo(b)fluoranthene was above the RDS of 0.51 mg/kg. The concentration was 20 mg/kg.
- PE71: 1-1.5': Dibenzo(a,h)anthracene was above the RIDS of 0.51 mg/kg. The concentration was 2.1 mg/kg.
- PE71: 1-1.5': Indeno(1,2,3-cd)pryene was above the RIDS of 5.1 mg/kg. The concentration was 13 mg/kg.

The sample locations where the exceedances were detected are shown on **Figure 1**.

Figures 2 through 28 shows the inferred distribution of contaminants in soil after the interum remedial measure were implemented. Note that contaminants that were above the ecological standards before the interum remedial measure were implemented are no longer a concern and iso-concentration maps related to those contaminants are not included here-in.

- **Figure 2** shows the inferred distribution of benzene above the RIDS and the NRIDS.
- **Figure 3** shows the inferred distribution of benzene above the MGWS. This figure has the greatest aerial extent of all the figures.

- **Figure 4** shows the inferred distribution of toluene above the MGWS.
- **Figure 5** shows the inferred distribution of ethylbenzene above the RIS, the NRIS and the MGWS.
- **Figure 6** shows the inferred distribution of xylenes above the MGWS.
- **Figure 7** shows the inferred distribution of MTBE above the MGWS.
- **Figure 8** shows the inferred distribution of TBA above the MGWS.
- **Figure 9** shows the location where the reporting limit of EDC were above the MGWS. Note that no concentration was reported above the standard.
- **Figure 10** shows the location where the reporting limit of EDB were above the MGWS. Note that no concentration was reported above the standard.
- **Figure 11** shows the inferred distribution of naphthalene above the RIS and the NRIS.
- **Figure 12** shows the inferred distribution of naphthalene above the MGWS.
- **Figure 13** shows the inferred distribution of lead above the RIDS.
- **Figure 14** shows the inferred distribution of lead above the MGWS.
- **Figure 15** shows the inferred distribution of EPH above the residential soil cleanup criteria.
- **Figure 16** shows the inferred distribution of benzo(a)anthracene above the RIDS and site specific MGWS.
- **Figure 17** shows the inferred distribution of benzo(a)pryene above the RIDS and the NRIDS.
- **Figure 18** shows the inferred distribution of benzo(b)fluoranthene above the RIDS.
- **Figure 19** shows the inferred distribution of indeno(1,2,3-cd)pryene above the RIDS.
- **Figure 20** shows the inferred distribution of dibenzo(a,h)anthracene above the RIDS.
- **Figure 21** shows the concentration of benzo(k)fluoranthene after the excavation and that this compound is no longer above the RIDS.
- **Figure 22** shows the inferred distribution of 2-methylnaphthalene above the MGWS.
- **Figure 23** shows the inferred distribution of arsenic above the RIDS, the NRIDS and the MGWS. It also notes that compliance averaging indicated arsenic was compliant to the RIDS, the NRIDS and the MWGS.
- **Figure 24** shows the inferred distribution of beryllium above the background concentration of 1 mg/kg, which could impact groundwater.
- **Figure 25** shows the inferred distribution of mercury above the MGWS.
- **Figure 26** shows the concentrations of manganese remaining after the excavation and that the remaining concentration are no longer above the RIDS.
- **Figure 27** shows the concentrations of zinc remaining after the excavation and that the remaining concentration are no longer above the MGWS.
- **Figure 28** shows the inferred distribution of cumene above the MGWS.

Comments:

- Any time you leave contamination at a non-residential site above the non-residential soil standards a deed notice, a 30 year soil permit, an engineering control (such as a cap) and biennial certification are required. There are application and annual fees associated with soil permit. There are still contaminants that exceed the NRIDS or the NRIS in back of the station therefore the asphalt cap will need to act as an engineering control. Also after the soil permit

is issued and approved biennial certification will need to be submitted to the NJDEP by the LSRP and yearly inspections of the cap will be required to ensure the cap remain protective of public health and the environment. The compounds that remain above the NRIDS or the NRIS in back of the station include: ethylbenzene, naphthalene and benzo(a)pryene.

- There are still concentration in back of the station above the MGWS. The recommended remedial approach to address the contamination above the MGWS involves installing two wells in back of the station and collecting eight consecutive quarterly groundwater samples from all the monitoring well at the site. If the concentrations in groundwater demonstrate a decreasing trend then a soil permit application can be submitted to the NJDEP. If a decreasing trend does not occurr then additional remediation would be required. Compounds above the MGWS in back of the station include: benzene, toluene, ethylbenzene, xylenes, lead, benzo(a)anthracene, beryllium, mercury.

- Lead was reported above the MGWS in sample PE65, which is located in an area that could not be capped due to zoning requirements. However, compliance averaging using the arithmetic mean approach indicated the arithmetic mean of the samples was 42.4 mg/kg, which indicates the concentrations of lead detected in the samples were complaint to the standard because the arithmetic mean was less than the MGWS.

- The NJDEP approved the Classified Exemption Area (CEA) in their email dated 12/3/21 for the volatile and semi volatile organics detected in the groundwater that was above the groundwater standards. However, they did not include the metals (arsenic, beryllium, cobalt, lead & nickel) On-Site had listed in the CEA, which On-Site believed and indicated were related to natural background conditions and not the fill. In an email from the NJDEP dated 11/30/21 William Reilly with the NJDEP indicated he reviewed the CEA application and noticed there were historic fill (metal) type contaminants in the groundwater and indicated that we should submit a historic fill CEA. In the Remedial Investigation Report, On-Site concluded that the concentration of metals in the groundwater that were above the groundwater standards were believed to be related to natural background conditions and not the historic fill based on the contaminant distribution in groundwater. However, to address Mr. Reilly's suggestion On-Site recommends collected three (3) additional soil samples of the historic fill and analyzing the samples for Target Analyte List (TAL) metals and polynuclear aromatic hydrocrbons (PAHs). In addition, one (1) sample should be analyzed for complete TCL/TAL analysis and extractable petroleum hydrocarbons (EPH) per the NJDEP historic fill Guidance. In addition, analysis by the Soil Precipitation Leaching Procedure (SPLP) should be conducted on the three samples for PAH and metals if a PAH or metal concentration exceeds the MGWS. The samples would be collected between the rear fence and the Csepes property where the historic fill was likely not impacted by the onsite discharges. **Figure 29** shows the recommended soil sample locations and the locations where fill was detected in borings. If the fill is contaminated above the residential soil standards then it should be remediated/removed or capped because the fill extends beyond the fenced in area of the site and the public can be exposed to the fill. If removed a soil permit would not be required. If capped a soil permit would be required but could be incorporated into the soil permit for the

onsite impacts. There is another option regarding historic fill. The NJDEP allows one to assume the fill is contaminated. In those cases an undetermined duration CEA needs to be established and an engineering control/cap and soil permit is required, which can be incorporated in the site soil permit mentioned above. A few photographs of where the fill is located are presented below.

Fill

- **Figure 30** shows the locations where additional excavations are recommended to achieve a decreasing trend in the groundwater concentrations. That figure also shows the extent of benzene above the MGWS. Note that the recommended excavations do not encompass the entire area where the MGWS is exceeded and that is risk that a decreasing trend may not be achieved and additional remediation may be required. Also note that a Notice in Lieu of Deed Notice (NLDN) will have to be established with the Department of Transportation assumed to be the owner of the road since the impacts extend beneath RT 130. A NLDN is similar to a deed notice but it is used by the NJDEP for property that does not have a Block and Lot number. A separate soil permit will also be required for the impacts beneath the road because the permittee will be the owner of the road (co-permittee will be NBG).
- The depth of the excavations will be to 8 feet surface grade. Tonnage that would be excavated is estimated at 2,300 tons.
- On-Site will need to meet 3 contractors at the site to secure estimates to conduct the excavations. During one of those site meeting On-Site recommends collecting the 3 soil samples of the fill as discussed above.

- After the samples collected in the fill are evaluated On-Site will need to prepare a Remedial Action Work Plan for submittal to the NJDEP.
- The estimated cost to collect the soil samples and meet 3 contractors at the site is estimated at 7,405.00. On-Site will await you and your insurance carrier's approval before scheduling the work. Note that the cost to prepare the Work Plan is not included in this estimate. An estimate is attached.

If you have any questions please feel free to contact me.

Sincerely,
On-Site Environmental, Inc.

Frank Jasiulewicz, PG, SSE, LSRP
President

Cc: Tracey Chierepko: Resolute Management
Jennifer L. Galoski: Resolute Management

PE 71: 1-1.5'
Benzo(a)anthracene = 16 mg/kg
Benzo(a)pryene = 15 mg/kg
Benzo(b)fluoranthene = 20 mg/kg
Dibenzo(a,h)anthracene = 2.1
Indeno(1,2,3-cd)pryene = 13 mg/kg

PE 7: 0-0.5'
Benzo(a)pryene = 1.2 mg/kg

PE 52: 5'
Benzene = 2.5 mg/kg
Ethylbenzene = 25 mg/kg
Xylenes = 48 mg/kg
Naphthalene = 12 mg/kg

PE 50: 4'
Benzene = 0.2 mg/kg

Rt 130

MW 15

Quick Out
Convience Store

MW 5

Grass

Guard Rail

PE 3

Fence

PE 33: 10'
Benzene = 2.7 mg/kg
Ethylbenzene = 13 mg/kg
Naphthalene = 8.4 mg/kg

MW 6

Water line

PE4
PE 5
PE 6
PE8
PE9

3' deep
excavation

1' deep
excavation

Office

Rest
Room

asphalt

MW 1

Heating Oil
AST

PE 71

PE2

MW 14

PE33
PE34
PE31
PE32
10' DEEP
Excavation
PE 69

Pump Islands
with Canopy
& Kiosk

Dispenser

Kiosk

Property Boundary

asphalt

8' Deep
excavation

PE1
PE22
PE23
PE40
F20

Storm Drain

Fence

PE 70: 1-1.5'
Benzo(a)anthracene = 3.2mg/kg
Benzo(a)pryene = 2.8mg/kg

MW 2

PE29
PE18
PE19
PE39

Sink
PE24
PE25
PE26

MW 19

PE35
PE36

PE 36: 5'
Benzene = 0.61 mg/kg
Toluene = 31 mg/kg
Ethyl Benzene = 65 mg/kg
Ethylbenzene = 65 mg/kg
Xylenes = 610 mg/kg
Naphthalene = 48 mg/kg
Naphthalene = 48 mg/kg

PE20
PE 21
PE30
PE28
PE37
PE38
7' deep

Electric lines

Electric

RW 1

5' Deep
Excavation

Sewer
Clean
Out

PE17

MW 16

Grass

PE15
PE11
PE12
PE13
PE14

Storm Drain

PE16

Shed

Shed

Gas Line

Concrete
Over New
Tanks

Electric

asphalt

MW 7

Diesel Fuel
Dispenser

Sewer line

5½ to 6½'
BG

6 to 8'
BG

1' deep

Shed

Stone

Fence

MW 11

Guard Rail
removed
during
excavation

PE10

PE50
PE51
PE41

PE 30: 1-1.5'
Benzo(a)pryene = 0.84 mg/kg

PE 38: 7'
Benzene = 2.5 mg/kg
Ethylbenzene = 69 mg/kg
Naphthalene = 26 mg/kg

Washington Place

4' deep
excavation
at PE68

MW 3

Guard Rail

VENT

PE62
PE63

PE 66

grass

PE68
P26

4' Deep

Fence

4' BG

55 gal. drum
with drilled
holes removed

5' BG

PE52
PE53

PE54

8' DEEP

7' DEEP

PE49:3'
PE42:7'

PE44
PE43

asphalt

MW 4

PE67

3.5' Deep

PE64

Shed

4' BG

MW 8

8' DEEP

Grass

PE65

8'DEEP

Construction
Entrance

PE61

9'DEEP

1½' BG

PE60

3½'
BG

PE57

PE56

MW 9

8' DEEP

PE45

PE46

7' DEEP

Grass

Swale

4'DEEP

Grass

PE58
PE59

7'DEEP

PE55

MW 10

PE47

PE48

Property Boundary

Fence

PE10: 1-1.5'
Benzo(a)anthracene = 1mg/kg
Benzo(a)pryene = 0.86 mg/kg

Sewer line

Water line

PE 65: 1-1.5'
Lead = 117 mg/kg

MW 12

R

MW 13

Storm Drain

Driveway

MW 18

Key

- Drain pipe in stone filled trench still in place
- Stone filled trench still in place
- Drain pipe in stone filled trench removed
- Sewer line piping
- Extent of excavation in 2021
- 2021 Post excavation soil sample location

Red text & red number: Exceeds Non-Residential ingestion or inhalation standard.: ex = Benzo(a)pryene = 2.8 mg/kg.

Black text & red number: Exceeds Residential ingestion or inhalation standard : ex Benzene = 2.5 mg/kg.

Blue text & red number: Exceds migration to groundwater standard & residential ingestion or inhalation standard: ex Benzene = 2.5 mg/kg.

Blue text & blue number: Exceeds migration to groundwater standard : ex. Benzene (a)anthraceme = 3.2 mg/kg.

Note: Areas within green lines where excavated to various depths noted
Note: Only compounds above a standard are shown.
Note: PE 28 & PE 29 had exceedance but they were eventually excavated.

N

0' 30'

Approximate scale in feet

ON-SITE ENVIRONMENTAL
119 Shepherds Way • Coatesville, PA 19320
Phone: (610) 384-2719 • Fax (610) 384-2709

Drawing #
File :post x sample 9/10/21

Date
10/5/21
3/2/22

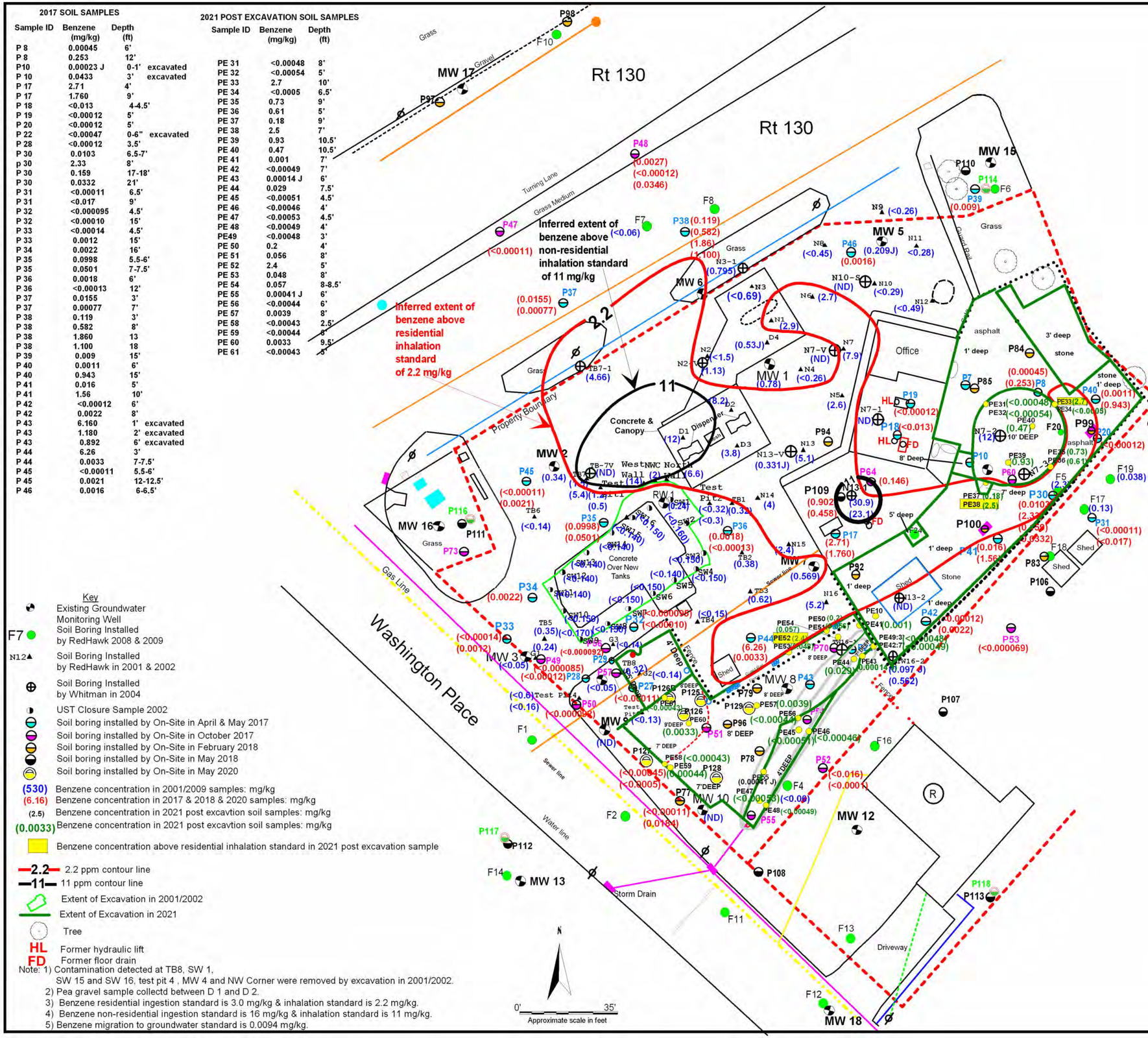
Figure 1 Exceedance in Post Excavation Soil Samples
North Brunswick Gulf
1696 Georges Road RT 130
Middlesex County
North Brunswick, New Jersey 08902

2017 SOIL SAMPLES

Sample ID	Benzene (mg/kg)	Depth (ft)	
P 8	0.00045	6'	
P 8	0.253	12'	
P10	0.00023 J	0-1'	excavated
P 10	0.0433	3'	excavated
P 17	2.71	4'	
P 17	1.760	9'	
P 18	<0.013	4-4.5'	
P 19	<0.00012	5'	
P 20	<0.00012	5'	
P 22	<0.00047	0-6"	excavated
P 28	<0.00012	3.5'	
P 30	0.0103	6.5-7'	
p 30	2.33	8'	
P 30	0.159	17-18'	
P 30	0.0332	21'	
P 31	<0.00011	6.5'	
P 31	<0.017	9'	
P 32	<0.000095	4.5'	
P 32	<0.00010	15'	
P 33	<0.00014	4.5'	
P 33	0.0012	15'	
P 34	0.0022	16'	
P 35	0.0998	5.5-6'	
P 35	0.0501	7-7.5'	
P 36	0.0018	6'	
P 36	<0.00013	12'	
P 37	0.0155	3'	
P 37	0.00077	7'	
P 38	0.119	3'	
P 38	0.582	8'	
P 38	1.860	13	
P 38	1.100	18	
P 39	0.009	15'	
P 40	0.0011	6'	
P 40	0.943	15'	
P 41	0.016	5'	
P 41	1.56	10'	
P 42	<0.00012	6'	
P 42	0.0022	8'	
P 43	6.160	1'	excavated
P 43	1.180	2'	excavated
P 43	0.892	6'	excavated
P 44	6.26	3'	
P 44	0.0033	7-7.5'	
P 45	<0.00011	5.5-6'	
P 45	0.0021	12-12.5'	
P 46	0.0016	6-6.5'	

2021 POST EXCAVATION SOIL SAMPLES

Sample ID	Benzene (mg/kg)	Depth (ft)
PE 31	<0.00048	8'
PE 32	<0.00054	5'
PE 33	2.7	10'
PE 34	<0.0005	6.5'
PE 35	0.73	9'
PE 36	0.61	5'
PE 37	0.18	9'
PE 38	2.5	7'
PE 39	0.93	10.5'
PE 40	0.47	10.5'
PE 41	0.001	7'
PE 42	<0.00049	7'
PE 43	0.00014 J	6'
PE 44	0.029	7.5'
PE 45	<0.00051	4.5'
PE 46	<0.00046	4'
PE 47	<0.00053	4.5'
PE 48	<0.00049	4'
PE49	<0.00048	3'
PE 50	0.2	4'
PE 51	0.056	8'
PE 52	2.4	5'
PE 53	0.048	8'
PE 54	0.057	8-8.5'
PE 55	0.00041 J	6'
PE 56	<0.00044	6'
PE 57	0.0039	8'
PE 58	<0.00043	2.5'
PE 59	<0.00044	8'
PE 60	0.0033	9.5'
PE 61	<0.00043	5'



2017 & 2018& 2020 Soil Samples

Sample ID	Benzene (mg/kg)	Depth (ft)	
P 47	<0.00011	6-6.5'	
P 48	0.0027	1-1.5'	
P 48	<0.00012	7.5-8'	
P 48	0.0346	20'	
P 49	<0.000085	4.5-5'	
P 50	<0.000092	4-4.5'	
P 51	<0.240	2.5-3'	excavated
P 51	<0.077	3.5-4'	excavated
P 52	<0.016	0-0.5'	
P 52	<0.00010	7-8'	
P 53	<0.000069	4-4.5'	
P 54	<0.00024	0-0.5'	excavted
P 54	<0.00024	0.5-1'	excavated
P 55	<0.00017	0-4"	excavated
P 56	<0.000092	3-3.5'	
P 57	<0.00011	3.5-4'	
P 60	<0.00014	0-0.5'	excavated
P 60	0.0427	1.5-2'	excavated
P 64	0.146	6-6.5'	
P 70	33.8	3.5-4'	excavated
P 77	<0.00011	2-2.5'	
P 77	0.0184	10.5-11'	
P 78	<0.00011	2.5'	excavated
P 99	<0.00010	Storm Drain cleaned	
P 100	<0.00012	Storm Drain cleaned	
P 109	0.902	10-10.5'	
P 109	0.458	17-17.5'	
P 125	<0.0005	2.5-3'	excavated
P 125	<0.029	3.5-4'	excavated
P 126B	<0.0004	3.5-4'	excavated
P 126B	<0.00049	4.5-5'	excavated
P 127	<0.00045	3.5-4'	
P 127	<0.0005	5-5.5'	
P 128	<0.04	4-4.5'	excavated
P 128	0.0026 j	5.5-6'	excavated

2001 - 2009 Samples Benzene Above Residential Inhalation Standard

Sample ID	Benzene (mg/kg)	Depth (ft)
TB 7	5.4	10-11'
North Wall	6.6	4.5'
West Wall	14	4'
D1	12	2.5-3.5'
D2	8.2	2.5-4'
D3	3.8	3.5-4.5'
N1	2.9	8-9.5'
N5	2.6	4-5'
N6	2.7	8-9'
N7	7.9	8-9'
N13	5.1	9-10'
N14	4	8-9'
N15	2.4	2-3'
N16	5.2	4 - 7'
N 13-1	30.9	3.5 - 4'
N13-1	23.1	7.5-8'
N13-1	12.5	9.5-10'
N7-2	12	6.5-7' excavated
N7-3	12.3	6.5-7' excavated
TB7-1	4.66	7.5-8'
TW16-1	14.6	5-5.5' excavated
F 5	2.3	19-20'
F 20	10	5-6' excavated
F 24	2.3	3 - 4' excavated

2001 - 2009 Samples Benzene Less Than Residential Inhalation Standard of 2.2 mg/kg

Sample ID	Benzene (mg/kg)	Depth (ft)
Test Pit 1	1.2	2'
Test Pit 1	0.5	8'
Test Pit 2	<0.32	2'
Test Pit 2	<0.3	7'
Test Pit 4	<0.6	2.5' excavated
Test Pit 4	<0.16	6.5' excavated
Test Pit 6	<0.14	5' excavated
Test Pit 6	<0.13	14-15'
TB1	0.32	8-9'
TB2	0.38	6-7'
TB3	0.62	3.4'
TB4	<0.15	13-14'
TB5	0.35	2-2.5'
TB6	<0.14	10-11'
TB7	1.5	4-5'
TB8	0.32	3-4'
Pea Gravel	<0.13	3'
NW Corner	2	5'
D 4	0.53 J	3.5-4.5'
G 1	0.24	2'
G 2	<0.14	6'
G 3	<0.14	3.5'
N 2	<1.5	8-9'
N 3	<0.69	4-5.5'
N 4	<0.26	10-12'
N 8	<0.45	8-9.5'
N 9	<0.26	11-12'
N 10	<0.29	8-10'
N 11	<0.28	10-12'
N 12	<0.49	6-8'
MW 1	0.78	8-9'
MW 2	0.34	6-7'
MW 3	<0.05	12-13'
MW 4	<0.05	2-4'
MW 4	<0.05	9-10'
MW 4	<0.05	12-13'
MW 4	<0.05	14-15'
MW 4	<0.05	16-18'
N-13V	0.311 J	12-12.5'
N13-1	0.479	15-15.5'
N13-2	ND	5-5.5'
N13-2	ND	9.5-10'
N7-V	ND	11.5-12'
N7-1	ND	8.5-9'
N7-2	0.572	15-15.5'
N7-3	0.763	10.5-11'
N7-3	ND	15-15.5'
N10-S	ND	4.5-5'
N3-1	0.355	7.5-8'
N3-1	0.795	15-15.5'
N2-V	ND	5.5-6'
N2-V	1.3	11.5-12'
TB-7V	ND	14-14.5'
TB7-1	0.648	15.5-16'
TW16-1	0.714	9.5-10'
TW16-1	ND	14-14.5'
TW16-2	0.097 J	6.5-7'
TW16-2	0.562	9.5-10'
MW 5	0.209 J	9.5-10'
MW 5	ND	13.5-14'
MW 5	ND	18-18.5'
MW 5	ND	22.5-23'
MW 7	0.569	11-11.5'
MW 8	0.487 J	2.5-3' excavated
MW 8	ND	9.5-10'
MW 9	ND	2.5-3'
MW 10	ND	2.5-3'
F 1	<0.06	9-9.5'
F 2	<0.06	9-9.5'
F 2	<0.06	12-12.5'
F 3	<0.06	8.5-9'
F 4	<0.06	6.5-7'
F 4	<0.06	9-9.5'
F 5	0.66	8-9'
F 5	2	11-12'
F 5	0.73	13-14'
F 5	1.1	15-16'
F 5	0.91	16-17'
F 5	2	18-19'
F 7	<0.06	1-2'
F 7	<0.06	2-3'
F 7	<0.03	6-7'
F 7	<0.06	7.5-8'
F 8	<0.12	7-8'
F 8	<0.12	8-9'
F 8	<0.15	9-10'
F 9	<0.3	6-7'
F 9	<0.6	9-10'
F 9	<0.3	13-14'
F 17	0.13	4-5'
F 17	<0.03	13-14'
F 18	<0.03	10-11'
F 19	0.038	10-12'
F 20	0.73	10-11'
F 23	<0.3	9-10'
F 23	0.41	13-14'
F 24	0.03	9-10'

SW 1, SW 2, SW 3, SW 5, SW 6, SW 14, SW 5 & SW 16 collected at depth of 11.5-12'.
SW 4, SW 7, SW 8, SW9, SW 10, SW 11, SW 12 & SW 13 collected at depth of 10.5-11'.

Key

- Existing Groundwater Monitoring Well
- F7 Soil Boring Installed by RedHawk 2008 & 2009
- N12▲ Soil Boring Installed by RedHawk in 2001 & 2002
- Soil Boring Installed by Whitman in 2004
- UST Closure Sample 2002
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in May 2020
- (530) Benzene concentration in 2001/2009 samples: mg/kg
- (6.16) Benzene concentration in 2017 & 2018 & 2020 samples: mg/kg
- (2.5) Benzene concentration in 2021 post excavtion soil samples: mg/kg
- (0.0033) Benzene concentration in 2021 post excavtion soil samples: mg/kg
- Benzene concentration above residential inhalation standard in 2021 post excavation sample
- —2.2— 2.2 ppm contour line
- —11— 11 ppm contour line
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- Tree
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) Contamination detected at TB8, SW 1, SW 15 and SW 16, test pit 4 , MW 4 and NW Corner were removed by excavation in 2001/2002.
2) Pea gravel sample collectd between D 1 and D 2.
3) Benzene residential ingestion standard is 3.0 mg/kg & inhalation standard is 2.2 mg/kg.
4) Benzene non-residential ingestion standard is 16 mg/kg & inhalation standard is 11 mg/kg.
5) Benzene migration to groundwater standard is 0.0094 mg/kg.

On-Site Environmental
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Drawing # File : Soilben2.drw

Date 10/6/21 3/3/22

Figure 2 Benzene in Soil Above Residential & Non-Residential Inhalation Standards

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

October 2017
UNSATURATED SOIL SAMPLES

Sample ID	Benzene (mg/kg)	Depth (ft)	
P 47	<0.00011	6-6.5'	
P 48	0.0027	1-1.5'	
P 49	<0.000085	4.5-5'	
P 50	<0.000092	4-4.5'	
P 51	<0.240	2.5-3'	excavated
P 51	<0.077	3.5-4'	excavated
P 52	<0.016	0-0.5'	
P 53	<0.000069	4-4.5'	
P 54	<0.00024	0-0.5'	excavated
P 54	<0.00024	0.5-1'	excavated
P 55	<0.00017	0-4"	excavated
P 56	<0.000092	3-3.5'	
P 57	<0.00011	3.5-4'	
P 60	<0.00014	0-0.5'	excavated
P 60	0.0427	1.5-2'	excavated
P 64	0.146	6-6.5'	
P 70	33.8	3.5-4'	excavated

February 2018
UNSATURATED SOIL SAMPLES

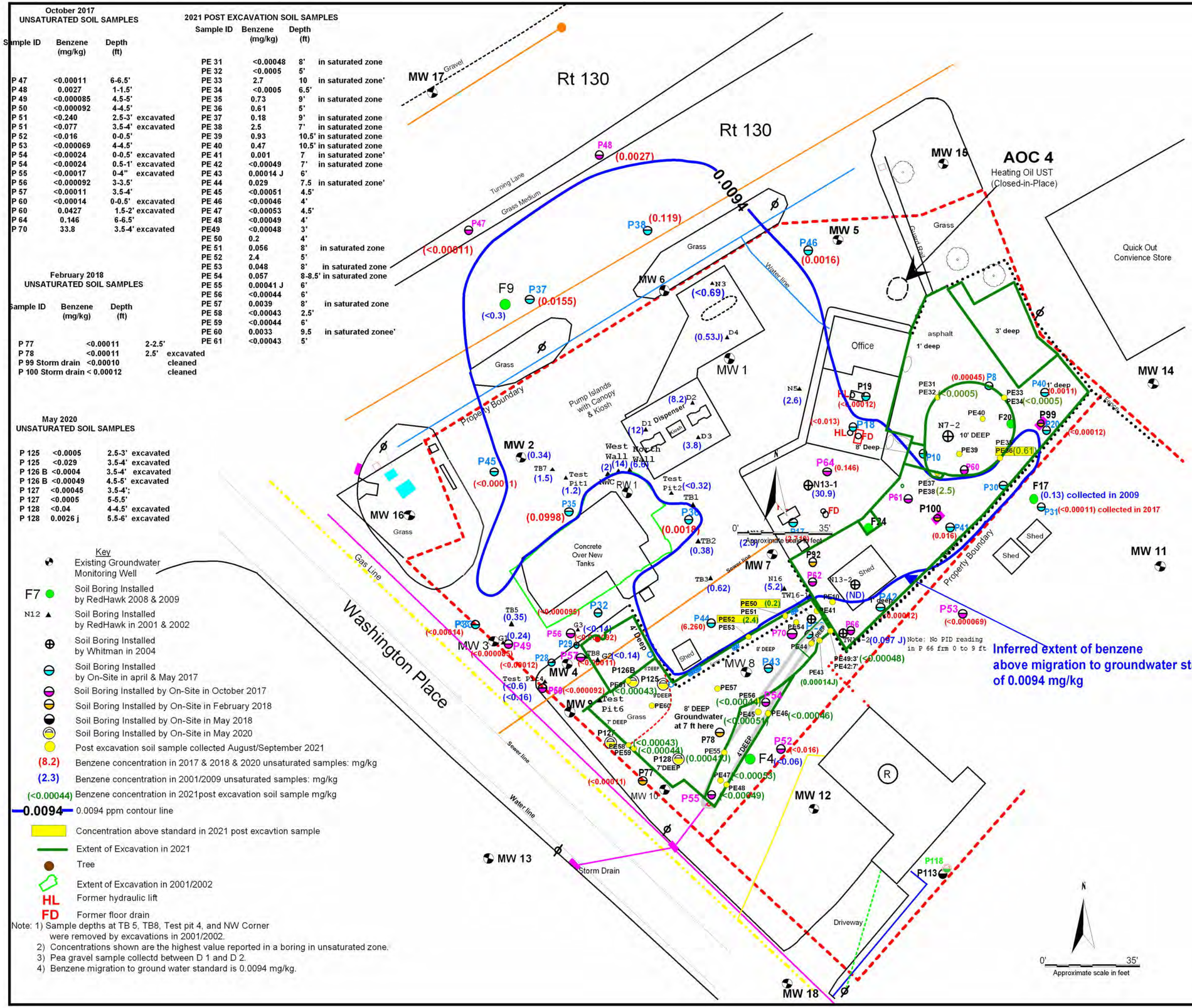
Sample ID	Benzene (mg/kg)	Depth (ft)	
P 77	<0.00011	2-2.5'	
P 78	<0.00011	2.5'	excavated
P 99 Storm drain	<0.00010		cleaned
P 100 Storm drain	< 0.00012		cleaned

May 2020
UNSATURATED SOIL SAMPLES

P 125	<0.0005	2.5-3'	excavated
P 125	<0.029	3.5-4'	excavated
P 126 B	<0.0004	3.5-4'	excavated
P 126 B	<0.00049	4.5-5'	excavated
P 127	<0.00045	3.5-4';	
P 127	<0.0005	5-5.5'	
P 128	<0.04	4-4.5'	excavated
P 128	0.0026 j	5.5-6'	excavated

2021 POST EXCAVATION SOIL SAMPLES

Sample ID	Benzene (mg/kg)	Depth (ft)	
PE 31	<0.00048	8'	in saturated zone
PE 32	<0.0005	5'	
PE 33	2.7	10	in saturated zone'
PE 34	<0.0005	6.5'	
PE 35	0.73	9'	in saturated zone
PE 36	0.61	5'	
PE 37	0.18	9'	in saturated zone
PE 38	2.5	7'	in saturated zone
PE 39	0.93	10.5'	in saturated zone
PE 40	0.47	10.5'	in saturated zone
PE 41	0.001	7	in saturated zone'
PE 42	<0.00049	7'	in saturated zone
PE 43	0.00014 J	6'	
PE 44	0.029	7.5	in saturated zone'
PE 45	<0.00051	4.5'	
PE 46	<0.00046	4'	
PE 47	<0.00053	4.5'	
PE 48	<0.00049	4'	
PE49	<0.00048	3'	
PE 50	0.2	4'	
PE 51	0.056	8'	in saturated zone
PE 52	2.4	5'	
PE 53	0.048	8'	in saturated zone
PE 54	0.057	8-8.5'	in saturated zone
PE 55	0.00041 J	6'	
PE 56	<0.00044	6'	
PE 57	0.0039	8'	in saturated zone
PE 58	<0.00043	2.5'	
PE 59	<0.00044	6'	
PE 60	0.0033	9.5	in saturated zonee'
PE 61	<0.00043	5'	



Key

- Existing Groundwater Monitoring Well
- F7 — Soil Boring Installed by RedHawk 2008 & 2009
- N12 ▲ — Soil Boring Installed by RedHawk in 2001 & 2002
- Soil Boring Installed by Whitman in 2004
- Soil Boring Installed by On-Site in april & May 2017
- Soil Boring Installed by On-Site in October 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- Soil Boring Installed by On-Site in May 2020
- Post excavation soil sample collected August/September 2021
- (8.2) Benzene concentration in 2017 & 2018 & 2020 unsaturated samples: mg/kg
- (2.3) Benzene concentration in 2001/2009 unsaturated samples: mg/kg
- (<0.00044) Benzene concentration in 2021post excavation soil sample mg/kg
- 0.0094 — 0.0094 ppm contour line
- Concentration above standard in 2021 post excavtion sample
- Extent of Excavation in 2021
- Tree
- Extent of Excavation in 2001/2002
- HL — Former hydraulic lift
- FD — Former floor drain

Note: 1) Sample depths at TB 5, TB8, Test pit 4, and NW Corner were removed by excavations in 2001/2002.
2) Concentrations shown are the highest value reported in a boring in unsaturated zone.
3) Pea gravel sample collectd between D 1 and D 2.
4) Benzene migration to ground water standard is 0.0094 mg/kg.

April & May 2017
UNSATURATED SOIL SAMPLES

Sample ID	Benzene (mg/kg)	Depth (ft)
P 8	0.00045	6'
P 10	0.00023 J	0-1' excavated
P 10	0.0433	3' excavated
P 17	2.710	4'
P 18	<0.013	4-4.5'
P 18		
P 19	<0.00012	5'
P 20	<0.00012	5'
P 22	<0.00047	0-6" excavated
P 28	<0.00012	3.5'
P 30	0.0103	6.5-7'
P 31	<0.00011	6.5'
P 32	<0.000095	4.5'
P 33	<0.00014	4.5'
P 35	0.0998	5.5-6'
P 36	0.0018	6'
P 37	0.0155	3'
P 38	0.119	3'
P 40	0.0011	6'
P 41	0.016	5'
P 42	<0.00012	6'
P 43	6.160	1' excavated
P 43	1.180	2' excavated
P 43	0.892	6' excavated
P 44	6.260	3'
P 45	<0.00011	5.5-6'
P 46	0.0016	6-6.5'

2001 - 2009
UNSATURATED SOIL SAMPLES

Sample ID	Benzene (mg/kg)	Depth (ft)
Test Pit 1	1.2	2'
Test Pit 2	<0.32	2'
Test Pit 4	<0.6	2.5' excavated to 3 ft
Test Pit 4	<0.16	6.5'
Test Pit 6	0.14	5' excavated
TB 2	0.38	6-7'
TB3	0.62	3-4'
TB5	0.35	2-2.5' excavated to 3 ft in 2001
TB7	1.5	4-5'
TB8	0.32	3-4' excavated to 3 ft
Pea Gravel	<0.13	3'
North Wall	6.6	4.5'
West Wall	14	4'
NW Corner	2	5' excavated in 2001
South Dispenser	0.46	3'
D1	12	2.5 - 3.5'
D 2	8.2	2.5 - 4
D 3	3.8	3.5 - 4.5'
D4	0.53J	3.5 - 4.5'
G1	0.24	2 excavted to 2 ft
G 2	<0.14	6'
G3	<0.14	3.5' excavated to 3 ft
MW 2	0.34	6-7'
MW 4	<0.05	2-4' excavated in 2001
MW 8	0.487 J	2.5-3' excavated
MW 9	ND	2.5-3'
MW 10	ND	2.5-3'
N2-V	ND	5.5-6'
N3	<0.69	4 - 5.5'
N 5	2.6	4 - 5'
N 7-2	12	6.5-7' excavated
N10-S	ND	4.5-5'
N 15	2.3	2 - 3'
N 16	5.2	4 - 7'
N 13-1	30.9	3.5 - 4'
N13-2	ND	5-5.5
TW 16-1	14.6	5-5.5' excavated
TW 16-2	0.097 J	6.5-7'
F 4	<0.06	6.5-7'
F 7	<0.03	6-7'
F 9	<0.3	6-7'
F17	0.13	4-5'
F20	10	5-6' excavated
F 24	2.3	3 - 4' excavted

ON-SITE ENVIRONMENTAL
119 Spitzenberg Way • Glassboro, PA 08028
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Figure 3 Benzene in Soil Above Migration to Groundwater Standard after Excavation in 2021

Drawing #: File:Soilben3unsat
Date 10/6/21

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

October 2017 UNSATURATED SOIL SAMPLES

Sample ID	Toluene (mg/kg)	Depth (ft)	
P 47	<0.00057	6-6.5'	
P 48	<0.0046	1-1.5'	
P 49	<0.00044	4.5-5'	
P 50	<0.00047	4-4.5'	
P 52	<0.082	0-0.5'	
P 53	<0.00035	4-4.5'	
P 54	<0.0012	0-0.5'	excavated
P 54	<0.0012	0.5-1'	excavated
P 55	<0.00087	0-4"	excavated
P 56	<0.00047	3-3.5'	
P 57	<0.00054	3.5-4'	
P 60	<0.00073	0-0.5'	excavated
P 60	0.0029	1.5-2'	excavated
P 64	1.070	6-6.5'	
P 70	11.4	3.5-4'	excavated

February 2018 UNSATURATED SOIL SAMPLES

Sample ID	Toluene (mg/kg)	Depth (ft)
P 77	<0.00057	2-2.5'
P 78	<0.00058	2.5'
P 99 Storm drain	<0.00052	
P 100 Storm drain	<0.00061	

May 2020 UNSATURATED SOIL SAMPLES

Sample ID	Toluene (mg/kg)	Depth (ft)	
P 125	0.001	2.5-3'	excavated
P 125	0.13	3.5-4'	excavated
P 126B	<0.0008	3.5-4'	excavated
P 126B	<0.00098	4.5-5'	excavated
P 127	<0.0009	3.5-4'	
P 127	<0.001	5-5.5'	
P 128	<0.081	4-4.5'	excavated
P 128	0.0044	5.5-6'	excavated

2021 POST EXCAVATION SOIL SAMPLES

Sample ID	Toluene (mg/kg)	Depth (ft)	
PE 31	<0.00095	8'	in saturated zone
PE 32	<0.0011	5'	
PE 33	18	10'	in saturated zone
PE 34	<0.00099	6.5'	
PE 35	2.2	9'	in aturated zone
PE 36	31	5'	
PE 37	5.2	9'	in saturated zone
PE 38	4	7'	in saturtaed zone
PE 39	0.13	10.5'	in saturated zone
PE 40	7.9	10.5'	in saturated zone
PE 41	<0.001	7	in saturated zone'
PE 42	<0.00018	7'	in saturated zone
PE 43	<0.00082	6'	
PE 44	0.00082 J	7.5	in saturated zone'
PE 45	<0.001	4.5'	
PE 46	<0.00092	4'	
PE 47	<0.0011	4.5'	
PE 48	<0.00098	4'	
PE49	<0.00096	3'	
PE 50	0.051	4'	
PE 51	0.00064 J	8'	in saturated zone
PE 52	0.64	5'	
PE 53	0.00062 J	8'	in saturated zone
PE 54	0.00046 J	8-8.5'	in saturated zone
PE 55	<0.001	6'	
PE 56	<0.00088	6'	
PE 57	0.0037	8'	in saturated zone
PE 58	<0.00086	2.5'	
PE 59	<0.00088	6'	
PE 60	<0.0011	9.5	in saturated zonee'
PE 61	<0.00087	5'	

2017 UNSATURATED SOIL SAMPLES

Sample ID	Toluene (mg/kg)	Depth (ft)	
P 8	0.00021 J	6'	
P 10	0.00023 J	0-1'	excavated
P 10	0.0246	3'	excavated
P 17	1.370	4'	
P 18	0.0358 J	4-4.5'	
P 19	0.00022 J	5'	
P 20	<0.00013	5'	
P 22	<0.00049	0-6"	excavated
P 28	0.00019 J	3.5'	
P 30	0.00019 J	6.5-7'	
P 31	0.00039 J	6.5'	
P 32	<0.00099	4.5'	
P 33	<0.00014	4.5'	
P 35	0.0769	5.5-6'	
P 36	0.00011	6'	
P 37	0.0015	3'	
P 38	0.0278 J	3'	
P 40	<0.00012	6'	
P 41	0.00081 J	5'	
P 42	0.0012	6'	
P 43	102	1'	excavated
P 43	0.361	2'	excavated
P 43	0.0297	6'	excavated
P 44	2.670	3'	
P 45	<0.00011	5.5-6'	
P 46	0.00039 J	6-6.5'	
P 51	<1.2	2.5-3'	excavated
P 51	<0.400	3.5-4'	excavated

2001 - 2009 UNSATURATED SOIL SAMPLES

Sample ID	Toluene (mg/kg)	Depth (ft)	
Test Pit 1	0.59	2'	
Test Pit 2	<0.32	2'	
Test Pit 4	4.4	2.5'	excavated to 3'
Test Pit 4	<0.79	6.5'	
TB3	0.37	3-4'	
TB5	<0.77	2-2.5'	excavated to 3'
Test Pit 6	<0.69	5'	excavated
TB 2	<1.4	6-7'	
TB 5	<0.77	2-2.5'	
TB7	11	4-5'	
TB8	2.4	3-4'	excavated to 3'
Pea Gravel	<0.66	3'	
North Wall	140	4.5'	
West Wall	220	4'	
NW Corner	42	5'	excavated
South Dispenser	<0.66	3'	
D1	160	2.5 - 3.5'	
D 2	160	2.5 - 4	
D 3	55	3.5 - 4.5'	
D4	3.2	3.5 - 4.5'	
G1	0.52	2	excavated to 2'
G2	<0.73	6'	
G3	<0.70	3.5'	excavated to 3'
MW 2	5.8	6-7'	unsaturated
MW 4	<0.05	2-4'	
MW 8	2.76	2.5-3'	excavated
MW 9	ND	2.5-3'	
MW 10	0.137 J	2.5-3'	
F 4	<0.1	6-7'	
F 7	<0.05	6-7'	
F 9	<0.5	6-7'	
N2-V	0.59	5.5-6'	
N3	6.9	4 - 5.5'	
N 5	56	4 - 5'	
N10-S	0.073	4.5-5'	
N 15	7.9	2 - 3'	
N 16	69	4 - 7'	
N7-2	17.1	17.1	excavated
N 13-1	281	3.5 - 4'	
N13-2	ND	5-5.5'	
TW 16 -1	12.4	5-5.5'	excavated
TW 16-2	ND	6.5-7'	
F17	3.4	4-5'	
F20	67	5-6'	excavated
F 24	0.95	3 - 4'	excavated

Key

- Existing Groundwater Monitoring Well
- F7 Soil Boring Installed by RedHawk 2008 & 2009
- N12 Soil Boring Installed by RedHawk in 2001 & 2002
- Soil Boring Installed by Whitman in 2004
- Soil Boring Installed by On-Site in 2017
- Soil Boring Installed by On-Site in February2018
- Soil Boring Installed by On-Site in May 2018
- Soil Boring Installed by On-Site in May 2020
- Post excavation soil sample collected August/September 2021
- (102) Toluene concentration in 2017 & 2018 & 2020 unsaturated samples: mg/kg
- (0.59) Toluene concentration in 2001/2009 unsaturated samples: mg/kg
- (2.2) Toluene concentration in 2021post excavation soil sample
- 7.8 7.8 ppm contour line
- Concentration in 2021 post excavation soil sample above standard
- Tree
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) Sample depths at TB 5,TB8, Test Pit4, and NWCorner were moved by excavation in 2001/2002.
2) Concentrations shown are the highest value reported in a boring in unsaturated zone.
3) Pea gravel sample collectd between D 1 and D 2.
4) Toluene migration to ground water standard is 7.8 mg/kg.
5) Toluene residential ingestion standard is 6,300 mg/kg & inhalation standard is NA
6) Toluene non-residential ingestion standard is 100,000 mg/kg & inhalation standard is NA.

Inferred extent of toluene above migration to groundwater standard of 7.8 mg/kg

0' 35' Approximate scale in feet

ON-SITE ENVIRONMENTAL
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Drawing #: Soil Toluene2unsat wo F samples
Date 10/6/21 3/4/22

Figure 4 Toluene in Soil Above Migration to Groundwater Standard After Excavation in 2021

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

October 2017 UNSATURATED SOIL SAMPLES

Sample ID	Ethylbenzene (mg/kg)	Depth (ft)
P 47	<0.00030	6-6.5'
P 48	<0.0033	1-1.5'
P 49	<0.00023	4.5-5'
P 50	<0.00025	4-4.5'
P 51	32.6	2.5-3' excavated
p 51	22.1	3.5-4' excavated
P 52	<0.043	0-0.5'
P 53	<0.00019	4-4.5'
P 54	<0.00066	0-0.5' excavated
P 54	<0.00066	0.5-1' excavated
P 55	<0.00046	0-4" excavated
P 56	<0.00025	3-3.5'
P 57	<0.00029	3.5-4'
P 60	0.00045 J	0-0.5' excavated
P 60	0.0358	1.5-2' excavated
P 64	6.76	6-6.5'
P 70	786	3.5-4' excavated

February 2018 UNSATURATED SOIL SAMPLES

Sample ID	Ethyl Benzene (mg/kg)	Depth (ft)
P 77	<0.00030	2-2.5'
P 78	<0.00031	2.5' excvated
P 99 storm drain	<0.00028	cleaned
P 100 storm drain	<0.00032	cleaned

May 2020 SOIL SAMPLES

Sample ID	Ethylbenzene (mg/kg)	Depth (ft)
P 125	<0.001	2.5-3' excavated
P 125	1.5	3.5-4' excavated
P 126B	<0.0008	3.5-4' excavated
P 126B	<0.00098	4.5-5' excavated
P 127	<0.0009	3.5-4'
P 127	0.00024 J	5-5.5'
P 128	1.2	4-4.5' excavated
P 128	0.53	5.5-6' excavated

2021 POST EXCAVATION SOIL SAMPLES

Sample ID	EthylBenzene (mg/kg)	Depth (ft)	
PE 31	0.0017	8'	saturated zone
PE 32	<0.0011	5'	
PE 33	13	10'	saturated zone
PE 34	0.00099	6.5'	
PE 35	0.91	9'	saturated zone
PE 36	65	5'	
PE 37	7.3	9'	saturated zone
PE 38	69	7'	saturated zone
PE 39	0.83	10.5'	saturated zone
PE 40	3.3	10.5'	saturated zone
PE 41	0.00078 J	7'	saturated zone
PE 42	0.00018 J	7'	saturated zone
PE 43	0.00046 J	6'	
PE 44	0.06	7.5'	saturated zone
PE 45	<0.001	4.5'	
PE 46	<0.00092	4'	
PE 47	<0.0011	4.5'	
PE 48	<0.00098	4'	
PE49	<0.00096	3'	
PE 50	1.6	4'	
PE 51	0.013	8'	saturated zone
PE 52	25	5'	
PE 53	0.0063	8'	saturated zone
PE 54	0.00086	8-8.5'	saturated zone
PE 55	0.013	6'	
PE 56	<0.00088	6'	
PE 57	0.069	8'	saturated zone
PE 58	<0.00086	2.5'	
PE 59	<0.00088	6'	
PE 60	0.021	9.5	saturated zone'
PE 61	0.00031 J	5'	

SATURATED SOIL SAMPLES

Sample ID	Ethylbenzene (mg/kg)	Depth (ft)
P 8	2.410	12'
P 17	10.8	9'
P 30	24.1	8'
P 30	0.00029 J	17-18'
P 30	<0.00017	21'
P 31	0.207	9'
P 32	<0.00013	15'
P 33	<0.00015	15'
P 34	0.0012	16'
P 35	0.118	7-7.5'
P 36	<0.00017	12'
P 37	0.00027 J	7'
P 38	3.6	8'
P 38	31	13
P 38	0.0785	18
P 39	0.00017 J	15'
P 40	0.104	15'
P 41	27.20	10'
P 42	0.00073 J	8'
P 44	0.0519	7-7.5'
P 45	<0.00015	12-12.5'
P 48	<0.00031	7.5-8'
P 48	<0.00030	20'
P 52	<0.00028	7-8'
P 77	<0.00026	10.5-11'
P 109	35.9	10-10.5'
P 109	1.14	17-17.5'

2017 UNSATURATED SOIL SAMPLES

Sample ID	Ethylbenzene (mg/kg)	Depth (ft)
P 8	<0.00013	6'
P 10	<0.00017	0-1' excavated
P 10	0.111	3' excavated
P 17	55.3	4'
P 18	1.090	4-4.5'
P 19	<0.00015	5'
P 20	<0.00015	5'
P 22	0.00099 C	0-6" excavated
P 28	<0.00047	3.5'
P30	0.026	6.5-7'
P 31	0.0011	6.5'
P 32	<0.00012	4.5'
P 33	<0.00017	4.5'
P 35	0.176	5.5-6'
P 36	0.00041 J	6'
P 37	0.0313	3'
P 38	0.504	3'
P 40	<0.00014	6'
P 41	0.0388	5'
P 42	0.0013	6'
P 43	285	1' excavated
P 43	8	2' excavated
P 43	3.21	6' excavated
P 44	165	3'
P 45	<0.00013	5.5-6'
P 46	0.0017	6-6.5'

2001 - 2009 UNSATURATED SOIL SAMPLES

Sample ID	Ethylbenzene (mg/kg)	Depth (ft)
Test Pit 1	4.1	2'
Test Pit 2	0.93	2'
Test Pit 4	<2.4	2.5' excavated to 3'
TB3	0.81	3-4'
TB5	<0.62	2-2.5' excavated to 3'
TB7	4.8	4-5'
TB8	0.18	3-4' excavated to 3'
Pea Gravel	<0.52	3'
North Wall	70	4.5'
West Wall	89	4'
NW Corner	17	5' excavated
South Dispenser	4.2	3'
D1	58	2.5 - 3.5'
D 2	42	2.5 - 4
D 3	18	3.5 - 4.5'
D4	16	3.5 - 4.5'
G1	<0.13	2 excavated to 2'
G3	<0.56	3.5' excavated to 3'
N2-V	5.48	5.5-6'
N3	15	4 - 5.5'
N 5	27	4 - 5'
N10-S	ND	4.5-5'
N 15	29	2 - 3'
N 16	32	4 - 7'
N 13-1	156	3.5 - 4'
N13-2	ND	5-5.5'
MW 9	ND	2.5-3'
MW 10	ND	2.5-3'
F17	2	4-5'
TW16-1	134	5-5.5' excavated
F7	<0.1	1-2'
F 7	<0.1	2-3'
F20	63	5-6' excavated
F 24	4.8	3 - 4' excavated

2001 - 2009 Samples Ethybenzene Saturated & Unsaturated Samples

Sample ID	Benzene (mg/kg)	Depth (ft)
Test Pit 1	3.9	8'
Test Pit 2	46	7'
Test Pit 4	<0.63	6.5' unsaturated
Test Pit 6	<0.55	5' excavated
Test Pit 6	<0.54	14-15'
TB1	5.6	8-9'
TB2	0.99 J	6-7 unsaturated'
TB4	<0.98	13-14'
TB5	<0.62	2-2.5' unsaturated
TB6	<0.57	10-11'
TB7	25	10-11'
G 2	<0.14	6' unsaturated
N 1	30	8-9.5'
N 2	31	8-9'
N 4	<0.26	10-12'
N 6	17	8-9'
N 7	76	8-9'
N 8	0.52	8-9.5'
N 9	<0.26	11-12'
N 10	1.1	8-10'
N 11	<0.28	10-12'
N 12	1.50	6-8'
N 13	55	9-10'
N 14	41	8-9'
MW 1	25	8-9'
MW 2	4.6	6-7' unsaturated
MW 3	<0.05	12-13'
MW 4	<0.05	2-4' unsaturated
MW 4	<0.05	9-10'
MW 4	<0.05	12-13'
MW 4	<0.05	14-15'
MW 4	<0.05	16-18'
N-13V	0.302 J	12-12.5'
N13-1	180	7.5-8'
N13-1	78.2	9.5-10'
N13-2	ND	9.5-10'
N7-V	ND	11.5-12'
N7-1	ND	8.5-9'
N7-2	108	6.5-7' excavated
N7-2	0.886	10.5-11'
N&-2	ND	15-15.5'
N7-3	0.614	10.5-11'
N7-3	ND	15-15.5'
N3-1	18.4	7.5-8'
N3-1	0.236 J	15-15.5'
N2-V	0.11 J	11.5-12'
TB-7V	ND	14-14.5'
TB7-1	27.8	7.5-8'
TB7-1	ND	15.5-16'
TW16-1	ND	9.5-10'
TW16-1	ND	14-14.5'
TW16-2	0.243 J	6.5-7' unsaturated
TW16-2	ND	9.5-10'
MW 5	3.81	9.5-10'
MW 5	ND	13.5-14'
MW 5	ND	18-18.5'
MW 5	0.317 J	22.5-23'
MW 7	0.209 J	11-11.5'
MW 8	86.7	2.5-3' excavated
MW 8	ND	9.5-10'
MW 9	ND	2.5-3' unsaturated
MW 10	ND	2.5-3' unsaturated
F 1	<0.1	9-9.5'
F 2	<0.1	9-9.5'
F 2	<0.1	12-12.5'
F 3	<0.1	8.5-9'
F 4	<0.1	6.5-7' unsaturated
F 4	<0.1	9-9.5'
F 5	13	8-9'
F 5	16	11-12'
F 5	1.60	13-14'
F 5	21	15-16'
F 5	<0.1	16-17'
F 5	19	18-19'
F 7	<0.05	6-7' unsaturated
F 7	<0.1	7.5-8'
F 8	0.3	7-8'
F 8	0.9	8-9'
F 8	<0.25	9-10'
F 9	<0.5	6-7' unsaturated
F 9	<1	9-10'
F 9	<0.5	13-14'
F 17	0.16	13-14'
F 18	<0.05	10-11'
F 19	<0.05	10-12'
F 20	6.8	10-11'
F 23	38	9-10'
F 23	<0.05	13-14'
F 24	4.8	9-10'

Inferred Extent of Ethylbenzene above residential inhalation standard of 10 mg/kg

Inferred Extent of Ethylbenzene above migration to to groundwater standard of 15 mg/kg

Inferred Extent of Ethylbenzene above non- residential inhalation standard of 48 mg/kg

Key

- Existing Groundwater Monitoring Well
- F7 Soil Boring Installed by RedHawk 2008 & 2009
- N12 Soil Boring Installed by RedHawk in 2001 & 2002
- Soil Boring Installed by Whitman in 2004
- Soil Boring Installed by On-Site in April & May 2017
- Soil Boring Installed by On-Site in October 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- Soil Boring Installed by On-Site in May 2020
- Post excavation soil sample collected August/September 2021
- (285) Ethylbenzene concentration in 2017 & 2018 & 2020 unsaturated samples: mg/kg
- (4.1) Ethylbenzene concentration in 2001/2009 unsaturated samples: mg/kg
- (<0.00012) Ethylbenzene concentration in saturated samples: mg/kg
- (13) Ethylbenzene concentration in 2021 post excavation samples: mg/kg
- 10 ppm contour line
- 15 ppm contour line in unsaturated zone
- 48 ppm contour line
- Extent of excavation in 2021
- Tree
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain
- 2021 post excavation soil sample above standard

Note: 1) Ethylbenzene residential ingestion standard is 7,800 mg/kg & inhalation standard is 10 mg/kg.
2) Ethylbenzene non- residential ingestion standard is 130,000 mg/kg & inhalation standard is 48 mg/kg.
4) Ethylbenzene migration to groundwater standard is 15 mg/kg.
5) Ecological soil screening level is 5.16 mg/kg & applies to exposed soil from 0 to 1 foot.
6) J: Estimated value.
7) C:Result is from carry over.

Property of Denice Luzack
368 Washington Place

Approximate scale in feet

ON-SITE ENVIRONMENTAL
119 Shepherds Way • Coatesville, PA 19320
Phone: (610) 384-2719 • Fax (610) 384-2709

Drawing #: File 5 Soil ethylbenzene2 unsat wo F samples
Date: 10/6/21

Figure 5 Ethylbenzene in Soil Above Migration to Groundwater Standard & Residential & Non-Residential Inhalation Standards

October 2017
UNSATURATED SOIL SAMPLES

Sample ID	Xylenes (mg/kg)	Depth (ft)
P 47	<0.00026	6-6.5'
P 48	0.0145	1-1.5'
P 49	<0.00020	4.5-5'
P 50	<0.00022	4-4.5'
P 52	<0.038	0-0.5'
P 53	<0.00016	4-4.5'
P 54	<0.00057	0-0.5' excavated
P 54	<0.00057	0.5-1' excavated
P 55	<0.00040	0-4" excavated
P 56	<0.00022	3-3.5'
P 57	<0.00025	3.5-4'
P 60	0.0011 J	0-0.5' excavated
P 60	0.157	1.5-2' excavated
P 64	38	6-6.5'
P 70	3,140	3.5-4' excavated

February 2018
UNSATURATED SOIL SAMPLES

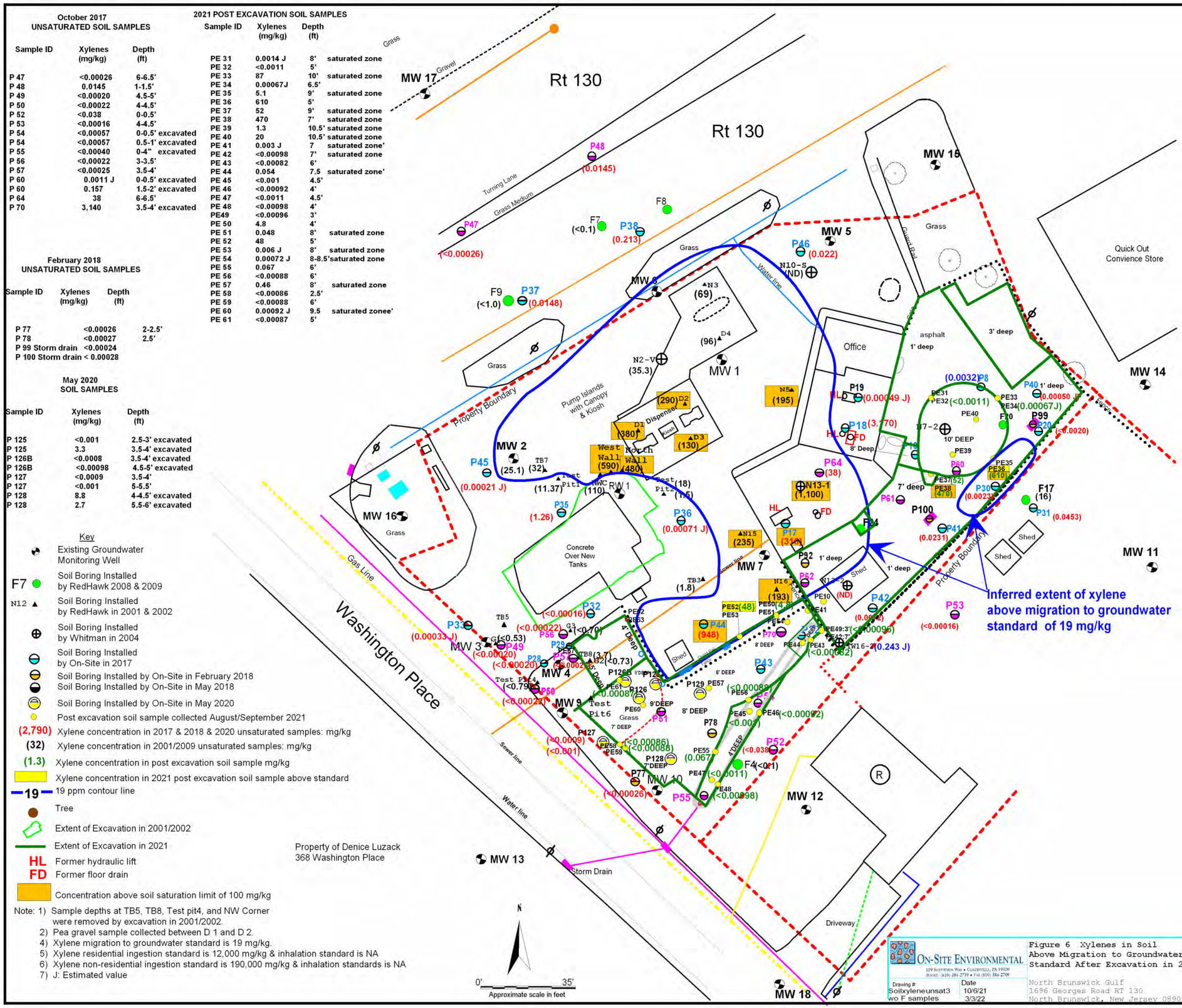
Sample ID	Xylenes (mg/kg)	Depth (ft)
P 77	<0.00026	2-2.5'
P 78	<0.00027	2.5'
P 99 Storm drain	<0.00024	
P 100 Storm drain	< 0.00028	

May 2020
SOIL SAMPLES

Sample ID	Xylenes (mg/kg)	Depth (ft)
P 125	<0.001	2.5-3' excavated
P 125	3.3	3.5-4' excavated
P 126B	<0.0008	3.5-4' excavated
P 126B	<0.00098	4.5-5' excavated
P 127	<0.0009	3.5-4'
P 127	<0.001	5-5.5'
P 128	8.8	4-4.5' excavated
P 128	2.7	5.5-6' excavated

2021 POST EXCAVATION SOIL SAMPLES

Sample ID	Xylenes (mg/kg)	Depth (ft)	
PE 31	0.0014 J	8'	saturated zone
PE 32	<0.0011	5'	
PE 33	87	10'	saturated zone
PE 34	0.00067J	6.5'	
PE 35	5.1	9'	saturated zone
PE 36	610	5'	
PE 37	52	9'	saturated zone
PE 38	470	7'	saturated zone
PE 39	1.3	10.5'	saturated zone
PE 40	20	10.5'	saturated zone
PE 41	0.003 J	7	saturated zone'
PE 42	<0.00098	7'	saturated zone
PE 43	<0.00082	6'	
PE 44	0.054	7.5	saturated zone'
PE 45	<0.001	4.5'	
PE 46	<0.00092	4'	
PE 47	<0.0011	4.5'	
PE 48	<0.00098	4'	
PE49	<0.00096	3'	
PE 50	4.8	4'	
PE 51	0.048	8'	saturated zone
PE 52	48	5'	
PE 53	0.006 J	8'	saturated zone
PE 54	0.00072 J	8-8.5'	saturated zone
PE 55	0.067	6'	
PE 56	<0.00088	6'	
PE 57	0.46	8'	saturated zone
PE 58	<0.00086	2.5'	
PE 59	<0.00088	6'	
PE 60	0.00092 J	9.5	saturated zonee'
PE 61	<0.00087	5'	



2017
UNSATURATED SOIL SAMPLES

Sample ID	Xylenes (mg/kg)	Depth (ft)	
P 8	0.0032	6'	
P 10	0.0015	0-1'	excavated
P 10	0.415	3'	excavated
P 17	316	4'	
P 18	3.170	4-4.5'	
P 19	0.00049 J	5'	
P 20	<0.0020	5'	
P 22	0.0033 J	0-6"	excavated
P 28	<0.00020	3.5'	
P 30	0.0023	6.5-7'	
P 31	0.0453	6.5'	
P 32	<0.00016	4.5'	
P 33	0.00033 J	4.5'	
P 35	1.260	5.5-6'	
P 36	0.00071 J	6'	
P 37	0.0148	3'	
P 38	0.213	3'	
P 40	0.00050 J	6'	
P 41	0.0231	5'	
P 42	0.0072	6'	
P 43	2,790	1'	excavated
P 43	42.8	2'	excavated
P 43	2.75	6'	excavated
P 44	948	3'	
P 45	0.00021 J	5.5-6'	
P 46	0.022	6-6.5'	
P 51	617	2.5-3'	excavated
P 51	187	3.5-4'	excavated

2001 - 2009
UNSATURATED SOIL SAMPLES

Sample ID	Xylenes (mg/kg)	Depth (ft)	
Test Pit 1	11.37	2'	
Test Pit 2	18	2'	
Test Pit 4	22	2.5'	excavated to 3'
Test Pit 4	<0.79	6.5'	
Test Pit 6	<0.69	5'	excavated
TB 2	1.5	6-7'	
TB3	1.8	3-4'	
TB5	0.15 J	2-2.5'	excavated to 3'
TB7	32	4-5'	
TB8	3.7	3-4'	excavated to 3'
Pea Gravel	<0.66	3'	
North Wall	480	4.5'	
West Wall	590	4'	
NW Corner	110	5'	excavated
South Dispenser	0.97	3'	
D1	380	2.5 - 3.5'	
D 2	290	2.5 - 4	
D 3	130	3.5 - 4.5'	
D4	96	3.5 - 4.5'	
G1	0.53	2	excavated to 2'
G 2	<0.73	6'	
G3	<0.70	3.5'	excavated to 3'
MW 2	25.1	6-7'	
MW 4	<0.05	2-4'	
MW 8	681	2.5-3'	excavated
MW 9	ND	2.53'	
MW 10	0.152 J	2.5-3'	
F 4	<0.1	6.5-7'	
F 7	<0.1	6-7'	
F 9	<1.0	6-7'	
N2-V	35.3	5.5-6'	
N3	69	4 - 5.5'	
N 5	195	4 - 5'	
N10-S	ND	4.5-5'	
N 15	235	2 - 3'	
N 16	193	4 - 7'	
N 7-2	766	6.5-7'	
N 13-1	1,100	3.5 - 4'	
N13-2	ND	5-5.5'	
F17	16	4-5'	
F20	430	5-6'	excavated
F 24	17.3	3 - 4'	excavated
TW16-1	835	5-5.5'	excavated
TW16-2	0.298 J	6.5-7'	

Key

- Existing Groundwater Monitoring Well
- F7 — Soil Boring Installed by RedHawk 2008 & 2009
- N12 — Soil Boring Installed by RedHawk in 2001 & 2002
- Soil Boring Installed by Whitman in 2004
- Soil Boring Installed by On-Site in 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- Soil Boring Installed by On-Site in May 2020
- Post excavation soil sample collected August/September 2021
- (2,790) Xylene concentration in 2017 & 2018 & 2020 unsaturated samples: mg/kg
- (32) Xylene concentration in 2001/2009 unsaturated samples: mg/kg
- (1.3) Xylene concentration in post excavation soil sample mg/kg
- Xylene concentration in 2021 post excavation soil sample above standard
- 19 — 19 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- HL — Former hydraulic lift
- FD — Former floor drain
- Concentration above soil saturation limit of 100 mg/kg

Note:
1) Sample depths at TB5, TB8, Test pit4, and NW Corner were removed by excavation in 2001/2002.
2) Pea gravel sample collected between D 1 and D 2.
4) Xylene migration to groundwater standard is 19 mg/kg.
5) Xylene residential ingestion standard is 12,000 mg/kg & inhalation standard is NA
6) Xylene non-residential ingestion standard is 190,000 mg/kg & inhalation standards is NA
7) J: Estimated value

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Figure 6 Xylenes in Soil Above Migration to Groundwater Standard After Excavation in 2021

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

Drawing #: Soilxyleneunsat3 wo F samples
Date: 10/6/21 3/3/22

October 2017
UNSATURATED SOIL SAMPLES

Sample ID	MTBE (mg/kg)	Depth (ft)	
P 47	<0.00044	6-6.5'	
P 48	<0.00041	1-1.5'	
P 49	0.00066 J	4.5-5'	
P 50	<0.00037	4-4.5'	
P 52	<0.064	0-0.5'	
P 53	<0.00028	4-4.5'	
P 54	<0.00097	0-0.5'	excavated
P 54	<0.00097	0.5-1'	excavated
P 55	<0.00068	0-4"	excavated
P 56	<0.00037	3-3.5'	
P 57	<0.00042	3.5-4'	
P 60	<0.00057	0-0.5'	excavated
P 60	0.00047	1.5-2'	excavated
P 64	<0.044	6-6.5'	
P 70	<33	3.5-4'	excavated

February 2018
UNSATURATED SOIL SAMPLES

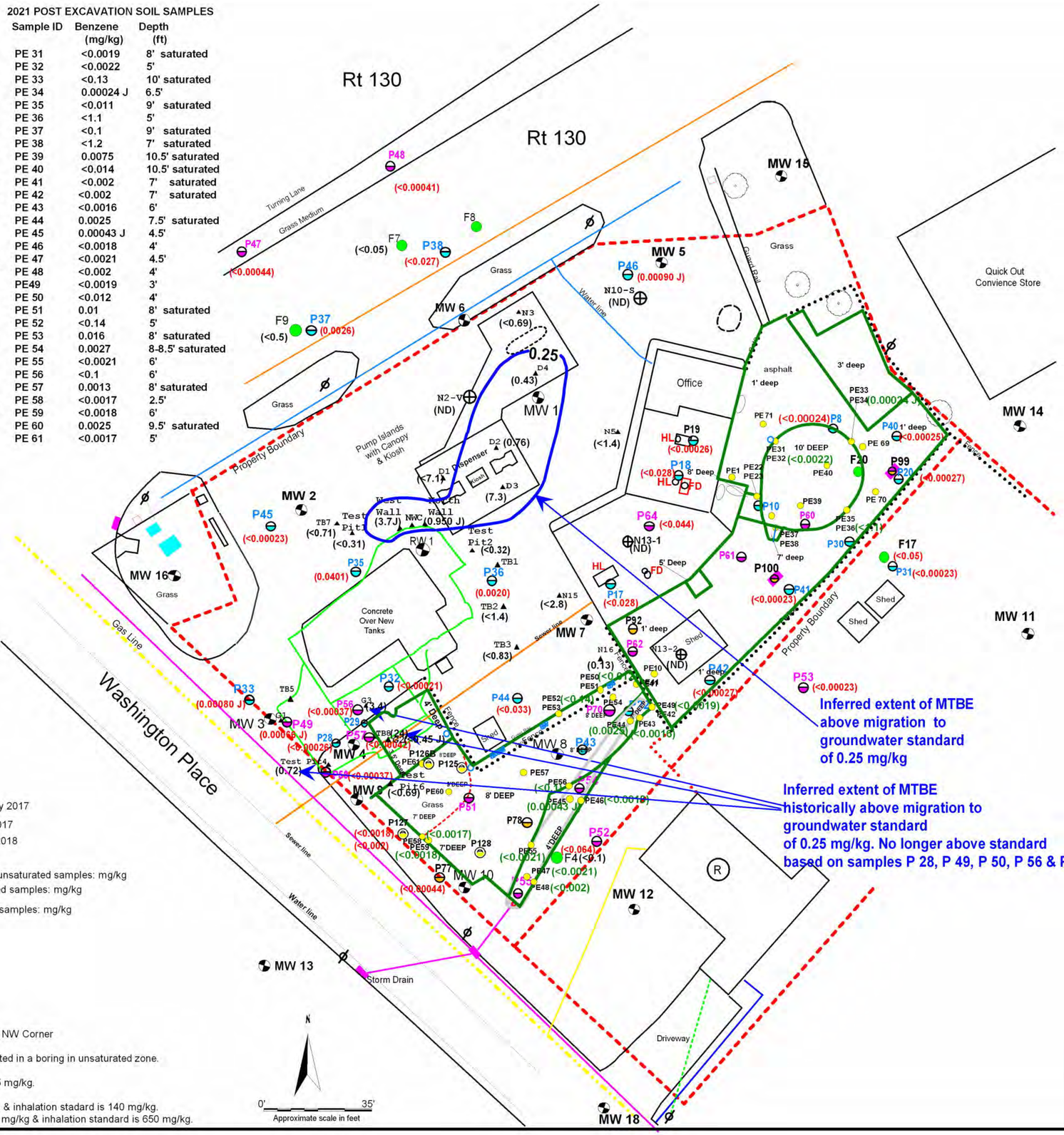
Sample ID	MTBE (mg/kg)	Depth (ft)	
P 77	<0.00044	2-2.5'	
P 78	<0.00045	2.5'	excavated
P 99 Storm drain	<0.00041		cleaned
P 100 Storm drain	<0.00048		cleaned

May 2020
UNSATURATED SOIL SAMPLES

Sample ID	MTBE (mg/kg)	Depth (ft)	
P 125	<0.002	2.5-3'	excavated
P 125	<0.12	3.5-4'	excavated
P 126 B	<0.0016	3.5-4'	e xcavated
P 126 B	<0.002	4.5-5'	excavated
P 127	<0.0018	3.5-4';	
P 127	<0.002	5-5.5'	
P 128	<0.16	4-4.5'	excavated
P 128	0.00029 J	5.5-6'	excavated

2021 POST EXCAVATION SOIL SAMPLES

Sample ID	Benzene (mg/kg)	Depth (ft)	
PE 31	<0.0019	8'	saturated
PE 32	<0.0022	5'	
PE 33	<0.13	10'	saturated
PE 34	0.00024 J	6.5'	
PE 35	<0.011	9'	saturated
PE 36	<1.1	5'	
PE 37	<0.1	9'	saturated
PE 38	<1.2	7'	saturated
PE 39	0.0075	10.5'	saturated
PE 40	<0.014	10.5'	saturated
PE 41	<0.002	7'	saturated
PE 42	<0.002	7'	saturated
PE 43	<0.0016	6'	
PE 44	0.0025	7.5'	saturated
PE 45	0.00043 J	4.5'	
PE 46	<0.0018	4'	
PE 47	<0.0021	4.5'	
PE 48	<0.002	4'	
PE49	<0.0019	3'	
PE 50	<0.012	4'	
PE 51	0.01	8'	saturated
PE 52	<0.14	5'	
PE 53	0.016	8'	saturated
PE 54	0.0027	8-8.5'	saturated
PE 55	<0.0021	6'	
PE 56	<0.1	6'	
PE 57	0.0013	8'	saturated
PE 58	<0.0017	2.5'	
PE 59	<0.0018	6'	
PE 60	0.0025	9.5'	saturated
PE 61	<0.0017	5'	



Key

- Existing Groundwater Monitoring Well
- F7 ● Soil Boring Installed by RedHawk 2008 & 2009
- N12 ▲ Soil Boring Installed by RedHawk in 2001 & 2002
- ⊕ Soil Boring Installed by Whitman in 2004
- Soil Boring Installed by On-Site in April & May 2017
- Soil Boring Installed by On-Site in October 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- (<0.032) MTBE concentration in 2017 & 2018 & 2020 unsaturated samples: mg/kg
- (3.7J) MTBE concentration in 2001/2009 unsaturated samples: mg/kg
- (<0.0019) MTBE concentration in 2021 post excavation samples: mg/kg
- 0.25 0.25 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) Sample depths at TB 5, TB8, Test pit 4, MW 4 and NW Corner were removed by excavations in 2001/2002.
2) Concentrations shown are the highest value reported in a boring in unsaturated zone.
3) Pea gravel sample collectd between D 1 and D 2
4) MTBE migration to ground water standard is 0.25 mg/kg.
5) No ecological soil screening level.
6) MTBE residential ingestion standard is 780 mg/kg & inhalation stadard is 140 mg/kg.
7) MTBE non-residential ingestion standar is 13,000 mg/kg & inhalation standard is 650 mg/kg.

N

0' 35'
Approximate scale in feet

2017
UNSATURATED SOIL SAMPLES

Sample ID	MTBE (mg/kg)	Depth (ft)	
P 8	<0.00024	6'	
P 10	<0.00030	0-1'	excavated
P 10	0.0025	3'	excavated
P 17	<0.028	4'	
P 18	<0.028	4-4.5'	
P 19	<0.00026	5'	
P 20	<0.00027	5'	
P 22	<0.0010	0-6"	excavated
P 28	<0.00026	3.5'	
P 31	<0.00023	6.5'	
P 32	<0.00021	4.5'	
P 33	0.00080 J	4.5'	
P 35	0.0401	5.5-6'	
P 36	0.0020	6'	
P 37	0.0026	3'	
P 38	<0.027	3'	
P 40	<0.00025	6'	
P 41	<0.00023	5'	
P 42	<0.00027	6'	
P 43	<0.032	1'	excavated
P 43	<0.019	2'	excavated
P 43	<0.013	6'	excavated
P 44	<0.033	3'	
P 45	0.00023	5.5-6'	
P 46	0.00090 J	6-6.5'	
P 51	<0.960	2.5-3'	excavted
P 51	<0.310	3.5-4'	excavated

2001 - 2009
UNSATURATED SOIL SAMPLES

Sample ID	MTBE (mg/kg)	Depth (ft)	
Test Pit 1	<0.31	2'	
Test Pit 2	<0.32	2'	
Test Pit 4	80	2.5'	excavated to 3 ft
Test Pit 4	0.72 J	6.5'	
Test Pit 6	<0.69	5'	
TB 2	<1.4	6-7'	
TB3	<0.83	3-4'	
TB5	0.88	2-2.5'	excavated to 3 ft
TB7	<0.71	4-5'	
TB8	24	3-4'	excavated to 3ft
Pea Gravel	<0.66	3'	
North Wall	0.95	4.5'	
West Wall	3.7	4'	
NW Corner	5.5	5'	excavated
MW 4	0.46	2-4'	excavated
MW 8	ND	2.5-3'	excavated
MW 9	ND	2.5-3'	
MW 10	ND	2.5-3'	
D1	<7.1	2.5 - 3.5'	
D 2	0.76	2.5 - 4	
D 3	7.3	3.5 - 4.5'	
D4	0.43	3.5 - 4.5'	
G1	1.9	2	excavated to 2'
G 2	<0.45	6'	
G3	3.4	3.5'	excavated to 3'
TW 16-2	ND	6.5-7'	
N2-V	ND	5.5-6'	
N3	<0.69	4 - 5.5'	
N 5	<1.4	4 - 5'	
N10-S	ND	4.5-5'	
N 15	<2.8	2 - 3'	
N 16	0.13	4 - 7'	
N 13-1	ND	3.5 - 4'	
N13-2	ND	5-5.5'	
F 4	<0.1	6.5-7'	
F 7	<0.05	6-7'	
F 9	<0.5	6-7'	
F17	<0.05	4-5'	
F20	<0.5	5-6'	excavated
F 24	<0.05	3 - 4'	excavated

ON-SITE ENVIRONMENTAL
119 Silvermans Way • Coatesville, PA 19320
Phone: (610) 384-2719 • Fax (610) 384-2709

Drawing #: Soilmtbeunsat 2wo F samples
Date 6/22/21 3/17/22

Figure 7 MTBE in Soil Above Migration to Groundwater Standard After Excavation in 2021

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

October 2017
UNSATURATED SOIL SAMPLES

Sample ID	TBA (mg/kg)	Depth (ft)	
P 47	<0.0060	6-6.5'	
P 48	<0.0056	1-1.5'	
P 49	<0.0046	4.5-5'	
P 50	<0.0050	4-4.5'	
P 52	<0.870	0-0.5'	
P 53	<0.0037	4-4.5'	
P 54	<0.013	0-0.5'	excavated
P 54	<0.013	0.5-1'	excavated
P 55	<0.0092	0-4"	excavtaed
P 56	0.0087 J	3-3.5'	
P 57	<0.0057	3.5-4'	
P 60	<0.0077	0-0.5'	excavated
P 60	<0.0063	1.5-2'	excavated
P 64	<0.590	6-6.5'	
P 70	<45	3.5-4'	excavated

February 2018
UNSATURATED SOIL SAMPLES

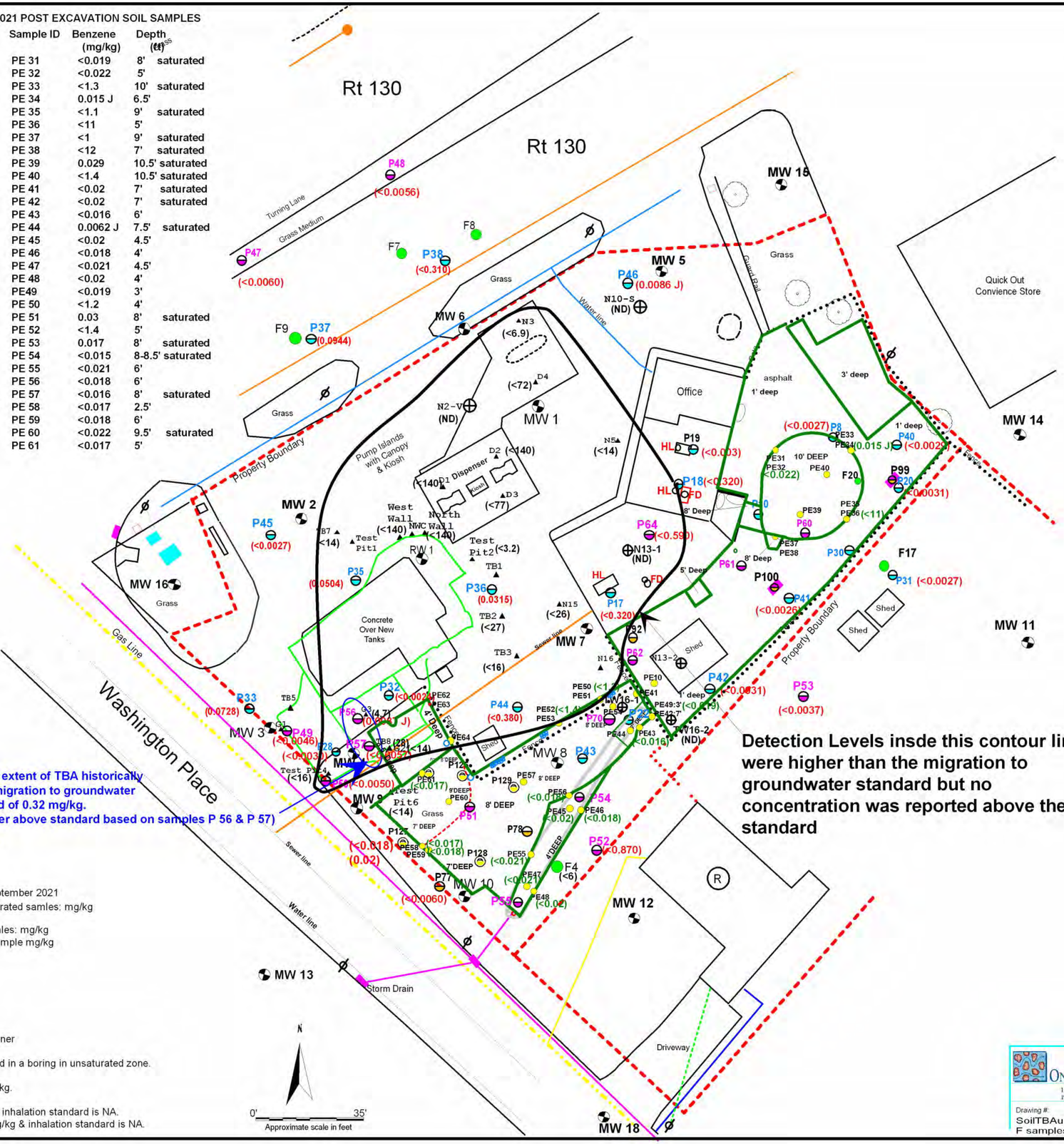
Sample ID	TBA (mg/kg)	Depth (ft)	
P 77	<0.0060	2-2.5'	
P 78	<0.0061	2.5'	excavated
P 99 Storm drain	<0.0055		cleaned
P 100 Storm drain	<0.0064		cleaned

May 2020
UNSATURATED SOIL SAMPLES

Sample ID	TBA (mg/kg)	Depth (ft)	
P 125	<0.02	2.5-3'	excavated
P 125	<1.2	3.5-4'	excavated
P 126 B	<0.016	3.5-4'	e xcavated
P 126 B	<0.02	4.5-5'	excavated
P 127	<0.018	3.5-4';	
P 127	<0.02	5-5.5'	
P 128	<1.6	4-4.5'	excavated
P 128	<0.022	5.5-6'	excavated

2021 POST EXCAVATION SOIL SAMPLES

Sample ID	Benzene (mg/kg)	Depth (ft)	
PE 31	<0.019	8'	saturated
PE 32	<0.022	5'	
PE 33	<1.3	10'	saturated
PE 34	0.015 J	6.5'	
PE 35	<1.1	9'	saturated
PE 36	<11	5'	
PE 37	<1	9'	saturated
PE 38	<12	7'	saturated
PE 39	0.029	10.5'	saturated
PE 40	<1.4	10.5'	saturated
PE 41	<0.02	7'	saturated
PE 42	<0.02	7'	saturated
PE 43	<0.016	6'	
PE 44	0.0062 J	7.5'	saturated
PE 45	<0.02	4.5'	
PE 46	<0.018	4'	
PE 47	<0.021	4.5'	
PE 48	<0.02	4'	
PE49	<0.019	3'	
PE 50	<1.2	4'	
PE 51	0.03	8'	saturated
PE 52	<1.4	5'	
PE 53	0.017	8'	saturated
PE 54	<0.015	8-8.5'	saturated
PE 55	<0.021	6'	
PE 56	<0.018	6'	
PE 57	<0.016	8'	saturated
PE 58	<0.017	2.5'	
PE 59	<0.018	6'	
PE 60	<0.022	9.5'	saturated
PE 61	<0.017	5'	



Key

- Existing Groundwater Monitoring Well
- F7 ● Soil Boring Installed by RedHawk 2008 & 2009
- N12 ▲ Soil Boring Installed by RedHawk in 2001 & 2002
- Soil Boring Installed by Whitman in 2004
- Soil Boring Installed by On-Site in April & May 2017
- Soil Boring Installed by On-Site in October 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- Soil Boring Installed by On-Site in May 2020
- Post excavation soil sample collected August/September 2021
- (<0.360) TBA concentration in 2017 & 2018 & 2020 unsaturated samles: mg/kg
- (<14) TBA concentration in 2001/2009 unsaturated samles: mg/kg
- (<0.022) TBA concentration in 2021post excavation soil sample mg/kg
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) Sample depths at TB 5, TB8, Test pit 4, and NW Corner were removed by excavations in 2001/2002.
2) Concentrations shown are the highest value reported in a boring in unsaturated zone.
3) Pea gravel sample collectd between D 1 and D 2.
4) TBA migration to ground water standard is 0.32 mg/kg.
5) No ecological standards for TBA.
6) TBA residential ingestion standard is 1,400 mg/kg & inhalation standard is NA.
7) TBA non-residential ingestion standard is 23,000 mg/kg & inhalation standard is NA.

2017
UNSATURATED SOIL SAMPLES

Sample ID	TBA (mg/kg)	Depth (ft)	
P 8	<0.0027	6'	
P 10	<0.0034	0-1'	excavated
P 10	<0.0029	3'	excavated
P 17	<0.320	4'	
P 18	<0.320	4-4.5'	
P 19	<0.003	5'	
P 20	<0.0031	5'	
P 22	<0.012	0-6"	excavated
P 28	<0.0030	3.5'	
P 31	<0.0027	6.5'	
P 32	<0.0024	4.5'	
P 33	0.0728	4.5'	
P 35	0.0504	5.5-6'	
P 36	0.0315	6'	
P 37	0.0944	3'	
P 38	<0.310	3'	
P 40	<0.0029	6'	
P 41	<0.0026	5'	
P 42	<0.0031	6'	
P 43	<0.360	1'	excavated
P 43	<0.220	2'	excavated
P 43	<0.150	6'	excavated
P 44	<0.380	3'	
P 45	<0.0027	5.5-6'	
P 46	0.0086 J	6-6.5'	
P 51	<13	2.5-3'	excavated
P 51	<4.2	3.5-4'	excavated

2001 - 2009
UNSATURATED SOIL SAMPLES

Sample ID	TBA (mg/kg)	Depth (ft)	
Test Pit 1	<3.1	2'	
Test Pit 2	<3.2	2'	
Test Pit 4	<60	2.5'	excavated to 3'
Test Pit 4	<16	6.5'	
Test Pit 6	<14	5'	
TB 2	<27	6-7'	
TB3	<16	3-4'	
TB5	<15	2-2.5'	excavated to 3'
TB7	<14	4-5'	
TB8	28	3-4'	excavated to 3'
Pea Gravel	<13	3'	
North Wall	<140	4.5'	
West Wall	<140	4'	
NW Corner	<71	5'	excavated in 2001
MW 4	<10	2-4'	excavated in 2001
MW 8	ND	2.5-3'	excavated
MW 9	ND	2.5-3'	
MW 10	ND	2.5-3'	
D1	<140	2.5 - 3.5'	
D 2	<140	2.5 - 4	
D 3	<77	3.5 - 4.5'	
D4	<72	3.5 - 4.5'	
G1	<10	2	excavated to 2'
G 2	<14	6'	
G3	4.7	3.5'	excavated to 3'
TW16-1	ND	5-5.6'	excavated
TW16-2	ND	6.5-7'	
N2-V	ND	5.5-6'	
N3	<6.9	4 - 5.5'	
N 5	<14	4 - 5'	
N10-S	ND	4.5-5'	
N 15	<26	2 - 3'	
N 16	<10	4 - 7'	
N 13-1	ND	3.5 - 4'	
N13-2	ND	5-5.5'	
F 4	<6	6.5-7'	
F 7	<3	6-7'	
F 9	<30	6-7'	
F17	<3	4-5'	
F20	<30	5-6'	
F 24	<3	3 - 4'	

ON-SITE ENVIRONMENTAL
119 Shoffstahl Way • Coatesville, PA 19320
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Drawing #: SoilTBAunsat wo F samples
Date: 6/22/21, 3/18/22

Figure 8 TBA in Soil Above Migration to Groundwater Standard After Excavation in 2021

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

UNSATURATED SOIL SAMPLES

Sample ID	EDC (mg/kg)	Depth (ft)	
P 8	<0.00015	6'	
P 10	<0.00019	0-1'	excavated
P 10	<0.00016	3'	excavated
P 17	<0.018	4'	
P 18	<0.018	4-4.5'	
P 19	<0.00017	5'	
P 20	<0.00017	5'	
P 22	<0.00067	0-6"	excavated
P 28	<0.00017	3.5'	
P 31	<0.00015	6.5'	
P 32	<0.00014	4.5'	
P 33	<0.00020	4.5'	
P 35	<0.00016	5.5-6'	
P 36	<0.00016	6'	
P 37	<0.00017	3'	
P 38	<0.017	3'	
P 40	<0.00016	6'	
P 41	<0.00015	5'	
P 42	<0.00017	6'	
P 43	<0.020	1'	excavated
P 43	<0.012	2'	excavated
P 43	<0.0084	6'	excavated
P 44	<0.021	3'	
P 45	<0.00015	5.5-6'	
P 46	<0.00017	6-6.5'	
P 47	<0.00019	6-6.5'	
P 48	<0.00017	1-1.5'	
P 49	<0.00014	4.5-5'	
P 50	<0.00016	4-4.5'	
P 51	<0.410	2.5-3'	excavated
P 51	<0.130	3.5-4'	excavated
P 52	<0.027	0-0.5'	
P 53	<0.00012	4-4.5'	
P 54	<0.00041	0-0.5'	excavated
P 54	<0.00041	0.5-1'	excavated
P 55	<0.00029	0-4"	excavated
P 56	<0.00016	3-3.5'	
P 57	<0.00018	3.5-4'	
P 60	<0.00024	0-0.5'	excavated
P 60	<0.00020	1.5-2'	excavated
P 64	<0.018	6-6.5'	
P 70	<1.4	3.5-4'	excavated
P 77	<0.00019	2-2.5'	
P 78	<0.00019	2.5'	excavated
P 99	<0.00017	Storm Drain	cleaned
P 100	<0.00020	Storm Drain	cleaned
P 109	<0.024	10-10.5'	
P 109	<0.017	17-17.5'	
P 125	<0.001	2.5-3'	excavated
P 125	<0.059	3.5-4'	excavated
P 126B	<0.008	3.5-4'	excavted
P 126B	<0.00098	4.5-5'	excavated
P 127	<0.0009	3.5-4'	
P 127	<0.001	5-5.5'	
P 128	<0.081	4-4.5'	excavted
P 128	<0.0011	5.5-6'	excavated

2021 POST EXCAVATION SOIL SAMPLES

Sample ID	EDC (mg/kg)	Depth (ft)	
PE 31	<0.00095	8'	saturated
PE 32	<0.0011	5'	
PE 33	<0.064	10'	saturated
PE 34	<0.00099	6.5'	
PE 35	<0.056	9'	saturated
PE 36	<0.56	5'	
PE 37	<0.052	9'	saturated
PE 38	<0.58	7'	saturated
PE 39	<0.0011	10.5'	saturated
PE 40	<0.069	10.5'	saturated
PE 41	<0.01	7'	saturated
PE 42	<0.00098	7'	saturated
PE 43	<0.00082	6'	
PE 44	<0.0009	7.5'	saturated
PE 45	<0.001	4.5'	
PE 46	<0.00092	4'	
PE 47	<0.0011	4.5'	
PE 48	<0.00098	4'	
PE49	<0.00096	3'	
PE 50	<0.062	4'	
PE 51	<0.00097	8'	saturated
PE 52	<0.068	5'	
PE 53	<0.00085	8'	saturated
PE 54	<0.00076	8-8.5'	saturated
PE 55	<0.001	6'	
PE 56	<0.00088	6'	
PE 57	<0.00081	8'	saturated
PE 58	<0.00086	2.5'	
PE 59	<0.00088	6'	
PE 60	<0.0011	9.5'	saturated
PE 61	<0.00087	5'	

2001 - 2009 UNSATURATED SOIL SAMPLES

Sample ID	EDC (mg/kg)	Depth (ft)	
Test Pit 1	<0.310	2'	
Test Pit 2	<0.320	2'	
Test Pit 6	<0.280	5'	
TB3	<0.330	3-4'	
TB 5	<0.310	2 - 2.5'	excavated to 3'
TB7	<0.140	4-5'	
TB 8	<0.310	3 - 4'	excavated to 3'
Pea Gravel	<0.260	3'	
North Wall	<2.9	4.5'	
West Wall	<2.8	4'	
D1	<2.8	2.5 - 3.5'	
D 2	<2.8	2.5 - 4	
D 3	<1.5	3.5 - 4.5'	
D4	<1.4	3.5 - 4.5'	
G 1	<0.310	2'	excavated to 2'
G 2	<0.290	6'	
G 3	<0.280	3.5'	excavated to 3'
N3	<0.690	4 - 5.5'	
N 5	<1.4	4 - 5'	
N 15	<2.6	2 - 3'	
N 16	<1.6	4 - 7'	

2001 - 2009 SATURATED SOIL SAMPLES

Sample ID	EDC (mg/kg)	Depth (ft)
Test Pit 1	<0.270	8'
Test Pit 2	<0.320	7'
Test Pit 6	<0.270	14 - 15'
TB 1	<0.510	8 - 9'
TB 2	<0.550	6 - 7'
TB 4	<0.290	13- 14'
TB 6	<0.280	10 - 11'
TB7	<0.05	10 - 11'
SW 1	<0.310	11.5 - 12'
SW 2	<0.310	11.5 - 12'
SW 3	<0.300	11.5 - 12'
SW 4	< 0.300	10.5 - 11'
SW 5	<0.270	11.5 - 12'
SW 6	<0.300	11.5 - 12'
SW 7	<0.310	10.5 - 11'
SW 8	<0.300	10.5 - 11'
SW 9	<0.350	10.5 - 11'
SW 10	<0.300	10.5 - 11'
SW 11	<0.290	10.5 - 11'
SW 12	<0.290	10.5 - 11'
SW 13	<0.290	10.5 - 11'
SW 14	<0.280	11 - 11.5'
SW 15	<0.260	11 - 11.5'
SW 16	<0.300	11 - 11.5'
N 1	<2.3	8 - 8.5'
N 2	<1.5	8 - 9'
N 4	<0.260	10 - 12'
N 6	<0.85	8 - 9'
N 7	<3.6	8 - 9'
N 8	<0.28	8 - 9.5'
N 9	<0.26	11 -12'
N 10	<0.290	8 - 10'
N 11	<0.280	10 - 12'
N 12	<0.490	6 - 8'
N 13	<2.6	9 - 10'
N 14	<1.8	8 - 9'
MW 3	<0.05	12-13'

SATURATED SOIL SAMPLES

P 8	<0.017	12'
P 30	<0.00015	6.5-7'
P 30	<0.019	8'
P 30	<0.00020	17-18'
P 30	<0.00019	21'
P 31	<0.024	9'
P 32	<0.00015	15'
P 33	<0.00018	15'
P 34	<0.00015	16'
P 35	<0.00015	7-7.5'
P 36	0.00032 J	12'
P 37	<0.00015	7'
P 38	<0.019	8'
P 38	<0.018	13'
P 38	<0.00015	18'
P 39	<0.00014	15'
P 40	0.0196	15'
P 41	<0.017	10'
P 42	<0.00016	8'
P 43	<0.0084	6'
P 44	<0.00019	7-7.5'
P 45	<0.00017	12-12.5'
P 48	<0.00020	7.5-8'
P 48	<0.00019	20'
P 51	<0.410	2.5-3'
P 51	<0.130	3.5-4'
P 52	<0.00017	7-8'
P 77	0.0014	10.5-11'

Detection levels inside red contour lines were above the migration to groundwater standard but no concentration was reported above the standard.

May 2020 UNSATURATED SOIL SAMPLES

Sample ID	TBA (mg/kg)	Depth (ft)	
P 125	<0.001	2.5-3'	excavated
P 125	<0.059	3.5-4'	excavated
P 126 B	<0.0008	3.5-4'	e xcavated
P 126 B	<0.00098	4.5-5'	excavated
P 127	<0.0009	3.5-4';	
P 127	<0.001	5-5.5'	
P 128	<0.081	4-4.5'	excavated
P 128	<0.0011	5.5-6'	excavated

Key

- Existing Groundwater Monitoring Well
- N12 ▲ Soil Boring Installed by RedHawk in 2001 & 2002
- ⊕ Soil Boring Installed by Whitman in 2004
- ◑ UST Closure Sample 2002
- Soil Boring Installed by On-Site in 2017
- Soil Boring Installed by On-Site in February 2018
- (<0.00020) EDC concentration in 2017 & 2018 & 2020 unsaturated samples: mg/kg
- (<0.0.21) EDC concentration in 2017 & 2018 saturated samples: mg/kg
- (<0.290) EDC concentration in 2001/2009 samples: mg/kg
- (<0.001) EDC concentration in 2021post excavation soil sample mg/kg
- —0.0095— 0.0095 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) EDC migration to ground water standard is 0.0095 mg/kg.
2) EDC residential ingestion standard is 5.8 mg/kg & inhalation standard is 71 mg/kg.
3) EDC non-residential ingestion standard is 30 mg/kg & inhalation standard is 320 mg/kg.

Approximate scale in feet 0' 35'

ON-SITE ENVIRONMENTAL
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Drawing #: File : Soil EDC wo E&B data.drw
Date 8/2/21 3/18/22

Figure 9 Soil Samples Analyzed for EDC

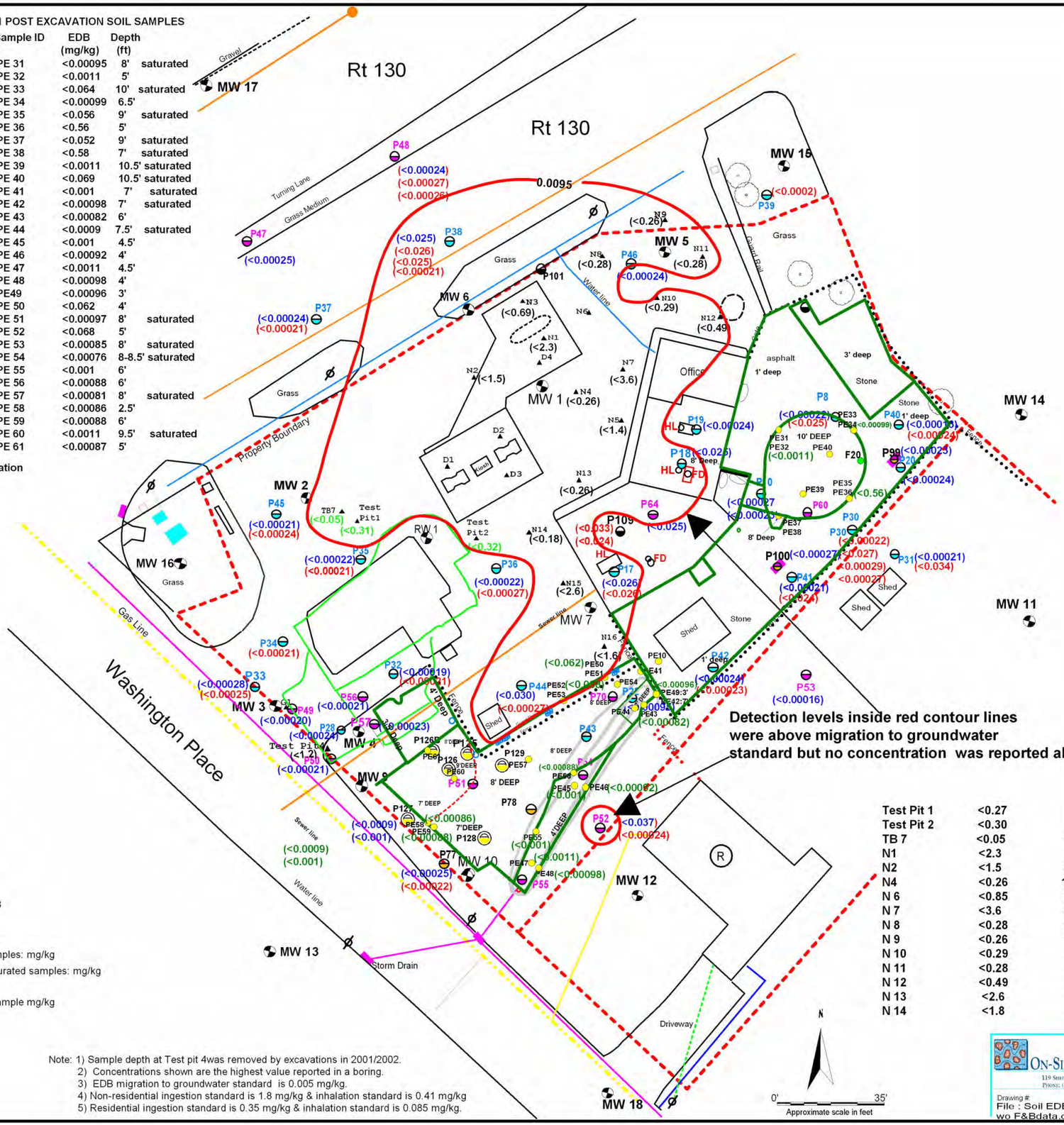
North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

UNSATURATED SOIL SAMPLES

Sample ID	EDB (mg/kg)	Depth (ft)	
P 8	<0.00022	6'	
P 10	<0.00027	0-1'	excavated
P 10	<0.00023	3'	excavated
P 17	<0.026	4'	
P 18	<0.025	4-4.5'	
P 19	<0.00024	5'	
P 20	<0.00024	5'	
P 22	<0.00095	0-6"	excavated
P 28	<0.00024	3.5'	
P 31	<0.00022	6.5'	
P 32	<0.00019	4.5'	
P 33	<0.00028	4.5'	
P 35	<0.00022	5.5-6'	
P 36	<0.00022	6'	
P 37	<0.00024	3'	
P 38	<0.025	3'	
P 40	<0.00023	6'	
P 41	<0.00021	5'	
P 42	<0.00024	6'	
P 43	<0.029	1'	excavated
P 43	<0.018	2'	excavated
P 43	<0.012	6'	excavated
P 44	<0.030	3'	
P 45	<0.00021	5.5-6'	
P 46	<0.00024	6-6.5'	
P 47	<0.00025	6-6.5'	
P 48	<0.00024	1-1.5'	
P 49	<0.00020	4.5-5'	
P 50	<0.00021	4-4.5'	
P 51	<0.550	2.5-3'	excavated
P 51	<0.180	3.5-4'	excavated
P 52	<0.037	0-0.5'	blank contamination
P 53	<0.00016	4-4.5'	
P 54	<0.00056	0-0.5'	excavated
P 54	<0.00056	0.5-1'	excavated
P 55	<0.00039	0-4"	excavated
P 56	<0.00021	3-3.5'	
P 57	<0.00024	3.5-4'	
P 60	<0.00033	0-0.5'	excavated
P 60	<0.00027	1.5-2'	excavated
P 64	<0.025	6-6.5'	
P 70	<1.9	3.5-4'	excavated
P 77	<0.00025	2-2.5'	
P 78	<0.00026	2.5'	excavated
P 99	<0.00023	Storm Drain	cleaned
P 100	<0.00027	Storm Drain	cleaned
P 125	<0.001	2.5-3'	excavated
P 125	<0.059	3.5-4'	excavated
P 126 B	<0.0008	3.5-5'	excavated
P 126 B	<0.00098	4.5-5'	excavated
P 127	<0.0009	3.5-4'	
P 127	<0.001	5-5.5'	
P 128	<0.081	4-4.5'	excavated
P 128	<0.0011	5.5-6'	excavated

2021 POST EXCAVATION SOIL SAMPLES

Sample ID	EDB (mg/kg)	Depth (ft)	
PE 31	<0.00095	8'	saturated
PE 32	<0.0011	5'	
PE 33	<0.064	10'	saturated
PE 34	<0.00099	6.5'	
PE 35	<0.056	9'	saturated
PE 36	<0.56	5'	
PE 37	<0.052	9'	saturated
PE 38	<0.58	7'	saturated
PE 39	<0.0011	10.5'	saturated
PE 40	<0.069	10.5'	saturated
PE 41	<0.001	7'	saturated
PE 42	<0.00098	7'	saturated
PE 43	<0.00082	6'	
PE 44	<0.0009	7.5'	saturated
PE 45	<0.001	4.5'	
PE 46	<0.00092	4'	
PE 47	<0.0011	4.5'	
PE 48	<0.00098	4'	
PE49	<0.00096	3'	
PE 50	<0.062	4'	
PE 51	<0.00097	8'	saturated
PE 52	<0.068	5'	
PE 53	<0.00085	8'	saturated
PE 54	<0.00076	8-8.5'	saturated
PE 55	<0.001	6'	
PE 56	<0.00088	6'	
PE 57	<0.00081	8'	saturated
PE 58	<0.00086	2.5'	
PE 59	<0.00088	6'	
PE 60	<0.0011	9.5'	saturated
PE 61	<0.00087	5'	



Key

- Existing Groundwater Monitoring Well
- N12 ▲ Soil Boring Installed by RedHawk in 2001 & 2002
- Soil Boring Installed by On-Site in May 2017
- Soil Boring Installed by On-Site in Oct 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site inMay 2020
- (37.7) EDB concentration in 2017 & 2018 saturated samples: mg/kg
- (<0.00028) EDB concentration in 2017 & 2018 & 2020 unsaturated samples: mg/kg
- (<0.18) EDB concentration in 2001/2009 samples: mg/kg
- (<0.001) EDB concentration in 2021post excavation soil sample mg/kg
- Extent of Excavation in 2021
- Extent of Excavation in 2001/2002
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) Sample depth at Test pit 4was removed by excavations in 2001/2002.
2) Concentrations shown are the highest value reported in a boring.
3) EDB migration to groundwater standard is 0.005 mg/kg.
4) Non-residential ingestion standard is 1.8 mg/kg & inhalation standard is 0.41 mg/kg
5) Residential ingestion standard is 0.35 mg/kg & inhalation standard is 0.085 mg/kg.

0' 35'
Approximate scale in feet

2001 - 2009 UNSATURATED SOIL SAMPLES

Sample ID	EDB (mg/kg)	Depth (ft)
Test Pit 1	<0.31	2'
Test Pit 2	<0.32	2'
Test Pit 4	<1.2	2.5'
Test Pit 4	<031	6.5'
N3	<0.690	4 - 5.5'
N 5	<1.4	4 - 5'
N 15	<2.6	2 - 3'
N 16	<1.6	4 - 7'

SATURATED SOIL SAMPLES

Sample ID	EDB (mg/kg)	Depth (ft)
P 8	<0.025	12'
P 17	<0.026	9'
P 30	<0.00022	6.5-7'
P 30	<0.027	8'
P 30	<0.00029	17-18'
P 30	<0.00027	21'
P 31	<0.034	9'
P 32	<0.00021	15'
P 33	<0.00025	15'
P 34	<0.00021	16'
P 35	<0.00021	7-7.5'
P 36	<0.00027	12'
P 37	<0.00021	7'
P 38	<0.026	8'
P 38	<0.025	13'
P 38	<0.00021	18'
P 39	<0.00020	15'
P 40	<0.00024	15'
P 41	<0.024	10'
P 42	<0.00023	8'
P 43	<0.012	6'
P 44	<0.00027	7-7.5'
P 45	<0.00024	12-12.5'
P 48	<0.00027	7.5-8'
P 48	<0.00026	20'
P 52	<0.00024	7-8'
P 77	<0.00022	10.5-11'
P 109	<0.033	10-10.5'
P 109	<0.024	17-17.5'

Test Pit 1	<0.27	8'
Test Pit 2	<0.30	7'
TB 7	<0.05	10 - 11'
N1	<2.3	8 - 9.5'
N2	<1.5	8 - 9'
N4	<0.26	10 - 12'
N 6	<0.85	8 - 9'
N 7	<3.6	8 - 9'
N 8	<0.28	8 - 9.5'
N 9	<0.26	11 - 12'
N 10	<0.29	8 - 10'
N 11	<0.28	10 - 12'
N 12	<0.49	6 - 8'
N 13	<2.6	9 - 10'
N 14	<1.8	8 - 9'

ON-SITE ENVIRONMENTAL
119 Sheffields Way • Coatesville, PA 19320
Phone: (610) 384-2719 • Fax (610) 384-2709

Drawing # File : Soil EDB 2 wo F&Bdata.drw
Date 8/2/21

Figure 10 Soil Samples Analyzed for EDB

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

2001 - 2009 Samples

Sample ID	Naphthalene (mg/kg)	Depth (ft)
Test Pit 1	0.98	2' unsaturated
Test Pit 1	2.6	8'
Test Pit 2	0.62	2' unsaturated
Test Pit 2	29	7'
TB 7	11	10-11'
D 1	3.9	2.5-3.5' unsaturated
D 2	6.5	2.5-4 unsaturated
D 3	9	3.5-4.5 unsaturated
D 4	5.2	3.5-4.5' unsaturated
N 1	10	8-9.5'
N 2	10	8-9'
N 3	7.8	4-5.5' unsaturated
N 4	<0.4	10-12'
N 5	11	4-5' unsaturated
N 6	3.6	8-9'
N 7	20	8-9'
N 8	0.07	8-9.5'
N 9	<0.39	11-12'
N 10	0.62	8-10'
N 11	<0.43	10-12'
N 12	0.96	6-8
N 13	13	9-10'
N 14	13	8-9'
N 15	14	2-3' unsaturated
N 16	16	4-7' unsaturated
MW 1	0.78	8-9'
MW 1	13	8-9'
MW 2	2.8	6-7'
MW 3	<0.05	12-13'
MW 4	<0.05	2-4' unsaturated
MW 4	<0.05	9-10'
MW 4	<0.05	12-13'
MW 4	<0.05	14-15'
MW 4	<0.05	16-18'
F 1	<0.1	9-9.5'
F 2	<0.1	9-9.5'
F 2	<0.1	12-12.5'
F 3	<0.1	8.5-9'
F 4	<0.1	6.5-7'
F 4	<0.1	9-9.5'
F 5	8.3	8-9'
F 5	7.9	11-12'
F 5	2.2	13-14'
F 5	12	15-16'
F 5	<0.1	16-17'
F 5	7.7	18-19'
F 5	<0.2	19-20'
F 7	<0.1	1-2' unsaturated
F 7	<0.1	2-3' unsaturated
F 7	<0.1	6-7'
F 7	<0.1	7.5-8'
F 8	0.51	7-8'
F 8	1.5	8-9'
F 8	<0.25	9-10'
F 9	<0.5	6-7'
F 9	<1	9-10'
F 9	<0.5	13-14'
F 17	1.6	4-5' unsaturated
F 17	0.11	13-14'
F 18	<0.05	10-11'
F 19	<0.05	10-12'
F 20	28	5-6 excavated
F 20	2.4	10-11'
F 23	14	9-10'
F 23	<0.05	13-14'
F 24	9.7	3-4' excavated
F 24	0.1	9-10'

September 2018Samples & May 2020 Samples

Sample ID	Naphthalene (mg/kg)	Depth (ft)
P 114	0.0121 J	0-0.5'
P 114	<0.011	0.5-1'
P 114	<0.010	6-6.5'
P 115	<0.250	0-0.5'
P 115	<0.011	0.5-1'
P 115	<0.010	6-6.5'
P 116	<0.011	0-0.5'
P 116	0.0184 J	0.5-1'
P 117	<0.011	0-0.5'
P 117	0.0215 J	0.5-1'
P 118	<0.011	0-0.5'
P 118	<0.010	0.5-1'
P 119	0.0168 J	0-0.5'
P 119	<0.010	0.5-1'
P 119	<0.010	1.5-2'
P 120	<0.011	0-0.5' excavated
P 120	<0.051	0.5-1' excavated
P 120	<0.010	1.5-2' excavated
P 121	0.078	0-0.5'
P 122	0.17	0-0.5' excavated
P 123	0.036 J	0-0.5' excavated
P 124	<0.0087	3-4'
P 125	<0.004	2.5-3' excavated
P125	3.5	3.5-4' excavated
P 126B	<0.0032	3.5-4' excavated
P126 B	<0.0039	4.5-5' excavated
P 127	<0.0036	3.5-4'
P 127	<0.004	5-5.5'
P128	2.4	4-4.5' excavated
P 128	0.32	5.5-6' excavated
MW 18	0.0291 J	5-5.5'

2021 Post Excavation Samples

PE 1	0.0017 J	1-1.5'
PE 10	0.051	1-1.5'
PE 16	<0.19	1-1.5'
PE 17	<0.19	1-1.5'
PE 28	0.12 J	1-1.5' excavated
PE 29	1.2	1 -1.5' excavated
PE 30	0.84 J	1-1.5'
PE 31	0.00074 J	8'
PE 32	<0.0044	5'
PE 33	8.4	10'
PE 34	<0.004	6.5'
PE 35	0.84	9'
PE 36	48	5'
PE 37	3.2	9'
PE 38	26	7'
PE 39	0.36	10.5'
PE 40	2.2	10.5'
PE 41	0.0054	7'
PE 42	<0.0039	7'
PE 43	<0.0033	6'
PE 44	0.12	7.5'
PE 45	<0.0041	4.5'
PE 46	<0.0037	4'
PE 47	<0.0042	4.5'
PE 48	<0.0039	4'
PE 49	<0.0038	3'
PE50	2.5	4'
PE 51	0.0089	8'
PE 52	12	5'
PE 53	0.072	8'
PE 54	0.047	8-8.5'
PE 55	1.4	6'
PE 56	0.0016J	6'
PE 57	0.075	8-8.5'
PE 58	<0.0034	2.5'
PE 59	<0,0035	6'
PE 60	0.15	9-9.5'
PE 61	0.014	5'
PE 69	0.066J	1-1.5'
PE 70	0.2	1-1.5'
PE 71	1.4J	1-1.5'

2017 & 2018 SOIL Samples Analyzed for Naphthalene

Sample ID	Naphthalene (mg/kg)	Depth (ft)
P 3	<0.022	4.5-5'
P 8	<0.00090	6'
P 8	2.31	12'
P 10	0.245	0-1' excavated
P 10	1.740	3' excavated
P 17	23.8	4'
P 17	3.530	9'
P 18	9.45	4-4.5'
P 19	<0.00099	5'
P 20	<0.001	5'
P 22	<0.047	0-6" excavated
P 28	<0.00098	3.5'
P 30	0.0083	6.5-7'
P 30	12.4	8'
P 30	<0.0012	17-18'
P 30	<0.0011	21'
P 31	0.0266	6.5'
P 31	0.789	9'
P 32	<0.00079	4.5'
P 32	<0.00085	15'
P 33	<0.0012	4.5'
P 33	<0.0010	15'
P 34	0.0012 J	16'
P 35	0.104	5.5-6'
P 35	0.113	7-7.5'
P 36	0.0053	6'
P 36	<0.0011	12'
P 37	0.0640	3'
P 37	<0.00085	7'
P 38	1.050	3'
P 38	3.430	8'
P 38	24.4	13
P 38	0.0243	18
P 39	0.00092 J	15'
P 40	<0.00095	6'
P 40	0.0199	15'
P 41	0.0144	5'
P 41	9.1	10'
P 42	<0.0010	6'
P 42	<0.00095	8'
P 43	152	1' excavated
P 43	4.04	2' excavated
P 43	2.69	6' excavated
P 44	96.7	3'
P 44	0.0483	7-7.5'
P 45	<0.00089	5.5-6'
P 45	<0.00098	12-12.5'
P 46	0.0012 J	6-6.5'
P 47	<0.0021	6-6.5'
P 48	<0.0019	1-1.5'
P 48	<0.0022	7.5-8'
P 48	<0.0021	20'
P 49	<0.0016	4.5-5'
P 50	<0.0017	4-4.5'
P 51	32.5	2.5-3' excavated
P 51	25.8	3.5-4' excavated
P 52	<0.300 E	0-0.5'
P 52	<0.0019	7-8'
P 53	<0.0013	4-4.5'
P 54	<0.0046	0-0.5' excavated
P 54	<0.0046	0.5-1' excavated
P 55	<0.0032	0-4" excavated
P 56	<0.0017	3-3.5'
P 57	<0.002	3.5-4'
P 58	14.8	0-0.5' excavated
P 59	18.1	4.5-5' excavated
P 60	<0.0027	0-0.5' excavated
P 60	<0.0022	1.5-2' excavated
P 64	2.98	6-6.5'
P 70	535	3.5-4' excavated
P 71	<0.010	6-6.5'
P 71	<0.011	9-9.5'
P 77	<0.0021	2-2.5'
P 77	<0.0018	10.5-11'
P 78	<0.0021	2.5' excavated
P 79	<0.011	2-2.5' excavated
P 80	<0.024	0-0.5'
P 84	0.0241 J	0-0.5' excavated
P 84	<0.010	0.5-1' excavated
P 85	0.0357 J	0-0.5' excavated
P 85	0.44	1.5-2'
P 96	15.7	4.5-5' excavated
P 99	<0.011	Storm Drain cleaned
P 100	0.124	Storm Drain cleaned
P 102	0.0745	0-0.5' excavated
P 102	0.531	1-2' excavated
P 102	<0.011	5-6'
P 102	<0.010	10-11'
P 103	<0.012	0-0.5' excavated
P 103	<0.011	1-2' excavated
P 103	0.0525	3-4'
P 103	0.142	13.5-14'
P 104	<0.010	1-2' excavated
P 104	0.514	6.5-7.5' excavated
P 109	10	10-10.5'

Key

- Existing Groundwater Monitoring Well
- F7 ● Soil Boring Installed by RedHawk 2008 & 2009
- N12 ▲ Soil Boring Installed by RedHawk in 2001 & 2002
- Soil Boring Installed by On-Site in April & May 2017
- Soil Boring Installed by On-Site in October 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- Soil Boring Installed by On-Site in September 2018
- Soil Boring Installed by On-Site in May 2020
- Post excavation soil sample collected August/September 2021
- (<0.00085) Naphthalene concentration 2017 & 2018:& 2020 mg/kg
- (152) Naphthalene concentration above standard: mg/kg
- (3.9) Naphthalene concentration in 2001/2009 samples: mg/kg
- (<0.0035) Naphthalene concentration in 2021 post excavation samples: mg/kg
- 5.7 5.7 ppm contour line
- 27 27 ppm contour line
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- HL Former hydraulic lift
- FD Former floor drain

Inferred extent of naphthalene that exceeds residential inhalation standard of 5.7 mg/kg

Inferred extent of naphthalene that exceeds non-residential inhalation standard of 27 mg/kg

Note: 1) Residential inhalation standard is 5.7 mg/kg.
2) Non-residential inhalation standard is 27 mg/kg.
3) J: Estimated value.
4) Concentrations shown are the highest value reported in a boring

N

0' 35'

Approximate scale in feet

ON-SITE ENVIRONMENTAL

Drawing #: Solnap DC wo F samples.drw

Date 6/18/21 3/10/22

Figure 11 Naphthalene in Soil Above Residential & Non-Residential Inhalation Standards Ater Excavation in 2021

2017
UNSATURATED SOIL SAMPLES

Sample ID	Naphthalene (mg/kg)	Depth (ft)	
P 3	<0.022	4.5-5'	
P 8	<0.00090	6'	
P 10	0.245	0-1'	excavated
P 10	1.740	3'	excavated
P 17	23.3	4'	
P 18	9.45	4-4.5'	
P 19	<0.00099	5'	
P 20	<0.001	5'	
P 22	0.0203 C	0-6"	excavated
P 28	<0.00098	3.5'	
P 30	0.0083	6.5-7'	
P 31	0.0266	6.5'	
P 32	<0.00079	4.5'	
P 33	<0.0012	4.5'	
P 35	0.104	5.5-6'	
P 36	0.0053	6'	
P 37	0.0640	3'	
P 38	1.050	3'	
P 40	<0.00095	6'	
P 41	0.0144	5'	
P 42	<0.0010	6'	
P 43	152	1'	excavated
P 43	4.04	2'	excavated
P 43	2.69	6'	excavated
P 44	96.7	3'	
P 45	<0.00089	5.5-6'	
P 46	0.0012 J	6-6.5'	

2018
UNSATURATED SOIL SAMPLES

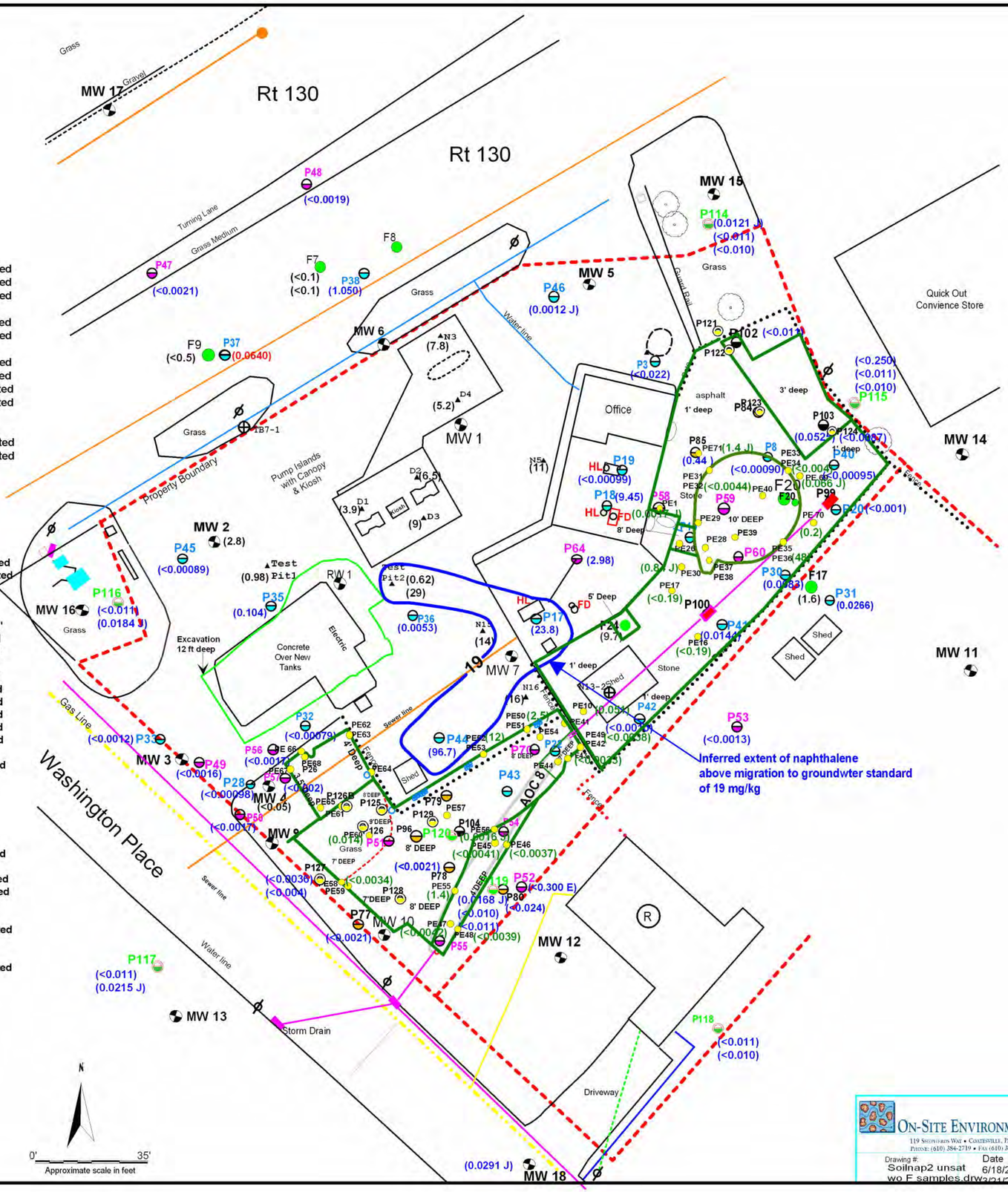
Sample ID	Naphthalene (mg/kg)	Depth (ft)
P 77	<0.0021	2-2.5'
P 78	<0.0021	2.5' excavated
P 79	<0.011	2-2.5' excavated
P 80	<0.024	0-0.5'
P 84	0.0241 J	0-0.5' excavated
P 84	<0.010	0.5-1' excavated
P 85	0.0357 J	0-0.5' excavated
P 85	0.44	1.5-2'
P 96	15.7	4.5-5' excavated
P 99	< 0.011	Storm Drain cleaned
P 100	0.124	Storm Drain cleaned
P 102	0.0745	0-0.5' excavated
P 102	0.531	1-2' excavated
P 102	<0.011	5-6'
P 103	<0.012	0-0.5' excavated
P 103	<0.011	1-2' excavated
P 103	0.0525	3-4'
P 104	<0.010	1-2' excavated
P 104	0.514	6.5-7.5' excavated

2018 & 2020
UNSATURATED SOIL SAMPLES

Sample ID	Naphthalene (mg/kg)	Depth (ft)	
P 114	0.0121 J	0-0.5'	
P 114	<0.011	0.5-1'	
P 114	<0.010	6-6.5'	
P 115	<0.250	0-0.5'	
P 115	<0.011	0.5-1'	
P 115	<0.010	6-6.5'	
P 116	<0.011	0-0.5'	
P 116	0.0184 J	0.5-1'	
P 117	<0.011	0-0.5'	
P 117	0.0215 J	0.5-1'	
P 118	<0.011	0-0.5'	
P 118	<0.010	0.5-1'	
P 119	0.0168 J	0-0.5'	
P 119	<0.010	0.5-1'	
P 119	<0.010	1.5-2'	
P 120	<0.011	0-0.5'	excavated
P 120	<0.051	0.5-1'	excavated
P 120	<0.010	1.5-2'	excavated
P 121	0.078	0-0.5'	
P 122	0.17	0-0.5'	excavated
P 123	<0.071	0-0.5'	excavated
P 124	<0.0087	3-4'	
P 125	<0.004	2.5-3'	excavated
P 125	3.5	3.5-4'	excavated
P 126 B	<0.0032	3.5-4'	excavated
P 126 B	<0.0039	4.5-5'	excavated
P 127	<0.0036	3.5-4'	
P 127	<0.004	5-5.5'	
P 128	2.4	4-4.5'	excavated
P 128	0.32	5.5-6'	excavated
MW 18	0.0291 J	5-5.5'	

2021 Post Excavation Samples

PE 1	0.0017 J	1-1.5'	
PE 10	0.051	1-1.5'	
PE 16	<0.19	1-1.5'	
PE 17	<0.19	1-1.5'	
PE 28	0.12 J	1-1.5'	excavated
PE 29	1.2	1 -1.5'	excavated
PE 30	0.84 J	1-1.5'	
PE 31	0.00074 J	8'	saturated
PE 32	<0.0044	5'	
PE 33	8.4	10	saturated'
PE 34	<0.004	6.5'	saturated
PE 35	0.84	9'	saturated
PE 36	48	5'	
PE 37	3.2	9 '	saturated
PE 38	26	7'	saturated
PE 39	0.36	10.5'	saturated
PE 40	2.2	10.5'	saturated
PE 41	0.0054	7'	saturated
PE 42	<0.0039	7'	saturated
PE 43	<0.0033	6'	
PE 44	0.12	7.5'	saturated
PE 45	<0.0041	4.5'	
PE 46	<0.0037	4'	
PE 47	<0.0042	4.5'	
PE 48	<0.0039	4'	
PE 49	<0.0038	3'	
PE50	2.5	4'	
PE 51	0.0089	8'	saturated
PE 52	12	5'	
PE 53	0.072	8'	saturated
PE 54	0.047	8-8.5'	saturated
PE 55	1.4	6'	
PE 56	0.0016J	6'	
PE 57	0.075	8-8.5'	saturated
PE 58	<0.0034	2.5'	
PE 59	<0.0035	6'	
PE 60	0.15	9-9.5'	saturated
PE 61	0.014	5'	
PE 69	0.066J	1-1.5'	
PE 70	0.2	1-1.5'	
PE 71	1.4J	1-1.5'	



2001 - 2009

Sample ID	Naphthalene (mg/kg)	Depth (ft)
Test Pit 1	0.98	2' unsaturated
Test Pit 1	2.6	8'
Test Pit 2	0.62	2' unsaturated
Test Pit 2	29	7'
TB 7	11	10-11'
D 1	3.9	2.5-3.5' unsaturated
D 2	6.5	2.5-4 unsaturated
D 3	9	3.5-4.5 unsaturated
D 4	5.2	3.5-4.5' unsaturated
N 1	10	8-9.5'
N 2	10	8-9'
N 3	7.8	4-5.5' unsaturated
N 4	<0.4	10-12'
N 5	11	4-5' unsaturated
N 6	3.6	8-9'
N 7	20	8-9'
N 8	0.07	8-9.5'
N 9	<0.39	11-12'
N 10	0.62	8-10'
N 11	<0.43	10-12'
N 12	0.96	6-8
N 13	13	9-10'
N 14	13	8-9'
N 15	14	2-3' unsaturated
N 16	16	4-7' unsaturated
MW 1	0.78	8-9'
MW 1	13	8-9'
MW 2	2.8	6-7' unsaturated
MW 3	<0.05	12-13'
MW 4	<0.05	2-4' unsaturated
MW 4	<0.05	9-10'
MW 4	<0.05	12-13'
MW 4	<0.05	14-15'
MW 4	<0.05	16-18'
F 1	<0.1	9-9.5'
F 2	<0.1	9-9.5'
F 2	<0.1	12-12.5'
F 3	<0.1	8.5-9'
F 4	<0.1	6.5-7' unsaturated
F 4	<0.1	9-9.5'
F 5	8.3	8-9'
F 5	7.9	11-12'
F 5	2.2	13-14'
F 5	12	15-16'
F 5	<0.1	16-17'
F 5	7.7	18-19'
F 5	<0.2	19-20'
F 7	<0.1	1-2' unsaturated
F 7	<0.1	2-3' unsaturated
F 7	<0.1	6-7 unsaturated'
F 7	<0.1	7.5-8'
F 8	0.51	7-8'
F 8	1.5	8-9'
F 8	<0.25	9-10'
F 9	<0.5	6-7 unsaturated'
F 9	<1	9-10'
F 9	<0.5	13-14'
F 17	1.6	4-5' unsaturated
F 17	0.11	13-14'
F 18	<0.05	10-11'
F 19	<0.05	10-12'
F 20	28	5-6 excavated
F 20	2.4	10-11'
F 23	14	9-10'
F 23	<0.05	13-14'
F 24	9.7	3-4' excavated
F 24	0.1	9-10'

October 2017
UNSATURATED SOIL SAMPLES

Sample ID	Naphthalene (mg/kg)	Depth (ft)
P 47	<0.0021	6-6.5'
P 48	<0.0019	1-1.5'
P 49	<0.0016	4.5-5'
P 50	<0.0017	4-4.5'
P 51	32.5	2.5-3' excavated
P 51	25.8	3.5-4' excavated
P 52	<0.300 E	0-0.5'
P 53	<0.0013	4-4.5'
P 54	<0.0046	0-0.5' excavated
P 54	0.0415	0.5-1' excavated
P 55	<0.0032	0-4" excavated
P 56	<0.0017	3-3.5'
P 57	<0.002	3.5-4'
P 58	14.8	0-0.5' excavated
P 59	18.1	4.5-5' excavated
P 60	<0.0027	0-0.5' excavated
P 60	<0.0022	1.5-2' excavated
P 64	2.98	6-6.5'
P 70	535	3.5-4' excavated
P 71	<0.010	6-6.5'

Key

- Existing Groundwater Monitoring Well
- F7 Soil Boring Installed by RedHawk 2008 & 2009
- P12 Soil Boring Installed by RedHawk in 2001 & 2002
- Soil Boring Installed by On-Site in April & May 2017
- Soil Boring Installed by On-Site in October 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- Soil Boring Installed by On-Site in September 2018
- Soil Boring Installed by On-Site in may 2020
- Post excavation soil sample collected August/September 2021
- (152) Naphthalene concentration in 2017 & 2018 & 2020 samples: mg/kg
- (14) Naphthalene concentration in 2001/2009 samples: mg/kg
- (<0.0035) Naphthalene concentration in 2021 post excavation samples: mg/kg
- 19 19 ppm contour line
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021

Note: Migration to ground water stanadrd is 19 mg/kg.

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Drawing #: Soilnap2 unsat wo F samples.drw3/21/22
Date: 6/18/21

Figure 12 Naphthalene in Soil Above Migration to Ground Water Standard After Excavation in 2021

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

2001 - 2009 Samples

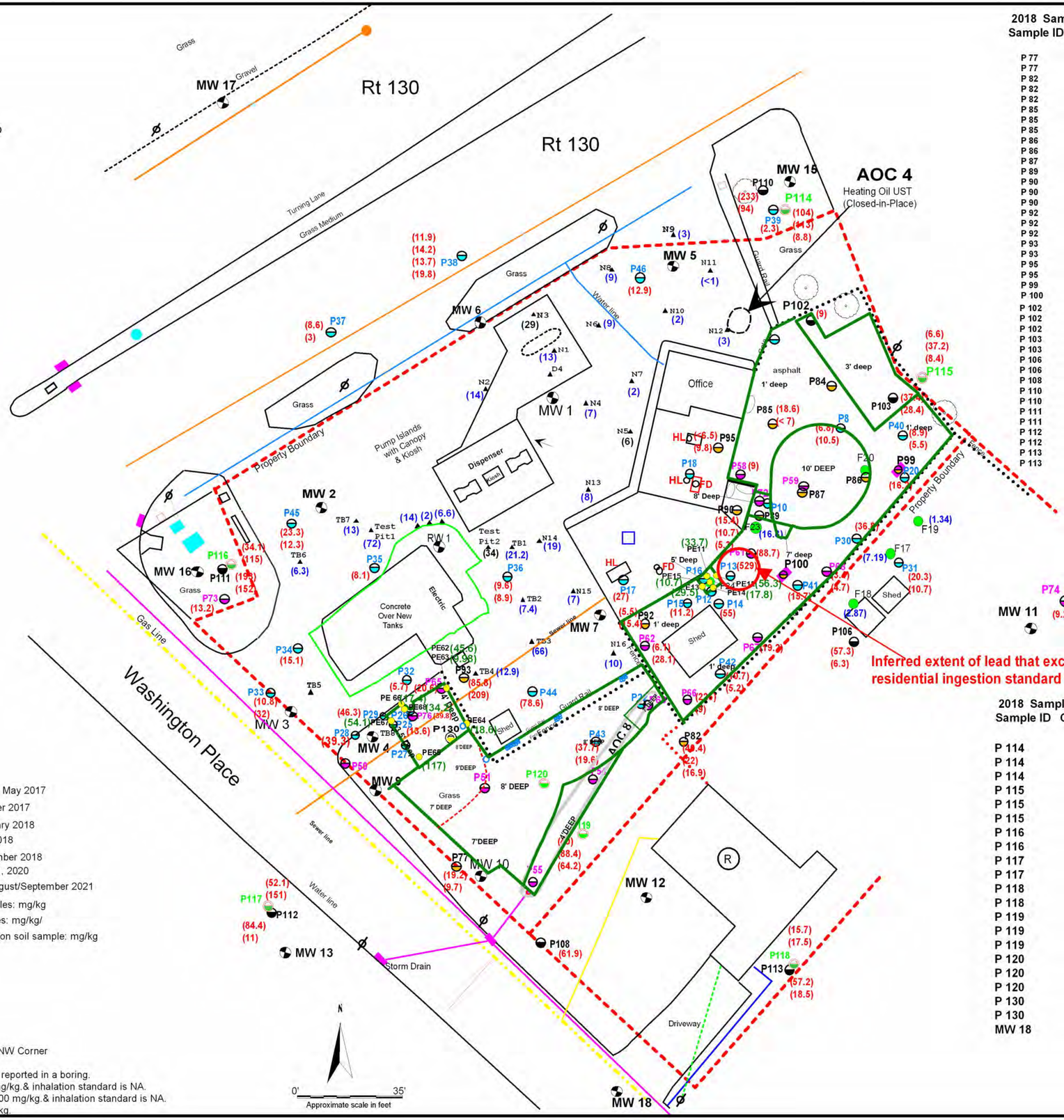
Sample ID	Concentration (mg/kg)	Depth (ft)	
Test pit 1	72	2'	
	5	8'	
Test pit 2	34	2'	
	8	7'	
TB 1	21.2	8-9'	
TB 2	7.4	6-7'	
TB 3	66	3-4'	
TB 4	12.9	13-14'	
TB 5	15.7	2-2½'	dug out in 2000
TB 6	6.3	10-11'	
TB 7	13	4-5'	
TB 7	7	10-11'	
TB 8	675	3-4'	excavated
N 1	13	8-9½'	
N 2	14	8-9'	
N 3	29	4-5'	
N 4	7	10-12'	
N 5	6	4-5'	
N 6	9	8-9'	
N 7	2	8-9'	
N 8	9	8-9½'	
N 9	3	11-12'	
N 10	2	8-10'	
N 11	<1	10-12'	
N 12	3	6-8'	
N 13	8	9-10'	
N 14	19	8-9'	
N 15	7	2-3'	
N 16	10	4-7'	
F 17	6.97	4-5'	
F 17	7.19	13-14'	
F 18	2.87	10-11'	
F 19	1.34	10-12'	
F 20	11.1	5-6'	excavated
F 20	3.97	10-11'	
F 23	5.83	9-10'	
F 23	16.8	13-14'	
F 24	1,490	3-4'	excavated
	5.42	9-10'	

Sample ID	Lead (mg/kg)	Depth (ft)
PE 11	33.7	3.5-4'
PE 12	56.3	3.5-4'
PE 13	29.5	3.5-4'
PE 14	17.8	3.5-4'
PE 15	10.7	5-5.5
PE 62	45.6	1-1.5'
PE 63	9.98	2.5-3'
PE 64	18.6	1-1.5'
PE 65	117	1-1.5'
PE 66	17.4	3-3.5'
PE 67	54.1	3-3.5'
PE 68	34.2	4'

Key

- Existing Groundwater Monitoring Well
- F24 ● Soil Boring Installed by RedHawk 2008 & 2009
- N12 ▲ Soil Boring Installed by RedHawk in 2001 & 2002
- UST Closure Sample 2002
- Soil Boring Installed by On-Site in April & May 2017
- Soil Boring Installed by On-Site in October 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Soil boring installed by On-Site in May 21, 2020
- Post excavation soil sample collected August/September 2021
- (37.7) Lead concentration in 2017 & 2018 samples: mg/kg
- (66) Lead concentration in 2001/2009 samples: mg/kg/
- (33.7) Lead concentration in 2021 post excavation soil sample: mg/kg
- 400 400 ppm contour line
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) Sample depths at TB 5, TB8, Test pit 4, and NW Corner were removed by excations in 2001/2002.
2) Concentrations shown are the highest value reported in a boring.
3) Lead residential ingestion standard is 400 mg/kg.& inhalation standard is NA.
4) Lead non-residential ingestion standard is 800 mg/kg.& inhalation standard is NA.
5) Migration to groundwater standard is 90 mg/kg.



2018 Samples Analyzed for Lead

Sample ID	Concentration (mg/kg)	Depth (ft)	
P 77	19.2	0-0.5'	
P 77	9.7	1.5-2'	
P 82	40.4	0-0.5'	
P 82	22	1.5-2'	
P 82	16.9	5.5-6'	
P 85	24.7	0-0.5'	excavated
P 85	18.6	1.5-2'	
P 85	<7	3.4-4'	
P 86	25.7	0-0.5'	excavated
P 86	3.7	1.5-2'	excavated
P 87	147	6-6.5'	excavated
P 89	8.2	3.5-4'	excavated
P 90	15.4	3.5-4'	
P 90	10.7	5.5-6'	
P 90	5.3	10-10.5'	
P 92	16.7	0-0.5'	excavated
P 92	5.5	1.5-2'	
P 92	15.4	6-6.5'	
P 93	85.8	1'	
P 93	209	2.5-3'	
P 95	<6.5	0.5-1'	
P 95	9.8	5.5-6'	
P 99	17.5	Storm Drain	cleaned
P 100	20.1	Storm Drain	cleaned
P 102	108	0-0.5'	excavated
P 102	69.2	1-2'	excavated
P 102	9	5-6'	
P 103	37.4	0-0.5'	
P 103	28.4	1-2'	
P 106	57.3	0-0.5'	
P 106	6.3	1.5-2'	
P 108	61.9	0-0.5'	
P 110	233	0-0.5'	
P 110	94	0.5-1'	
P 111	193	0-0.5'	
P 111	152	0.5-1'	
P 112	84.4	0-0.5'	
P 112	11	0.5-1'	
P 113	57.2	0-0.5'	
P 113	18.5	0.5-1'	

2017 Samples Analyzed for Lead

Sample ID	Concentration (mg/kg)	Depth (ft)	
P 8	6.8	6'	
P 8	10.5	12'	
P 10	241	0-1'	excavated
P 10	190	3'	excavated
P 12	50.9	0-6"	excavated
P 12	25.5	5'	
P 12	9.5	6.5'	
P 13	14.6	0-6"	excavated
P 13	529	4'	
P 13	49.9	6'	
P 14	7.8	0-6"	excavated
P 14	55	5'	
P 15	112	0-6"	excavated
P 15	11.2	5'	
P 16	6.2	0-6"	excavated
P 16	14.9	4'	excavated
P 17	27	4'	
P 17	11.7	9'	
P 20	16.2	5'	
P 22	54.4	0-6"	excavated
P 25	13.6	5-5.5'	
P 26	220	3.5'	excavated
P 27	7.7	3.5'	excavated
P 28	39.3	3.5'	
P 29	46.3	3.5'	
P 30	11.5	6.5-7'	
P 30	8	8'	
P 30	36.8	17-18'	
P 30	18.9	21'	
P 31	20.3	6.5'	
P 31	10.7	9'	
P 32	5.7	4.5'	
P 32	2.5	15'	
P 33	10.8	4.5'	
P 33	32	15'	
P 34	15.1	16'	
P 35	8.1	5.5-6'	
P 35	5.8	7-7.5'	
P 36	9.6	6'	
P 36	8.9	12'	
P 37	8.6	3'	
P 37	3	7'	
P 38	11.3	3'	
P 38	14.2	8'	
P 38	13.7	13'	
P 38	19.8	18'	
P 39	2.3	15'	
P 40	8.9	6'	
p 40	5.5	15	
P 41	15.7	5'	
P 41	9.3	10'	
P 42	10.7	6'	
P 42	5.2	8'	
P 43	37.7	1'	
P 43	19.6	2'	
P 43	8.8	6'	
P 44	78.6	3'	
P 44	6.6	7-7.5'	
P 45	23.3	5.5-6'	
P 45	12.3	12-12.5'	
P 46	12.9	6-6.5'	
P 51	79.9	0-0.5'	excavated
P 54	45.4	0-0.5'	excavated
P 54	68.6	0.5-1'	excavated
P 55	56.8	0-4"	excavated
P 58	343	0-0.5'	excavated
P 58	9	6-6.5'	
P 59	44.1	0-0.5'	excavated
P 59	337	1.5-2'	excavated
P 59	469	4.5-5'	excavated
P 61	79.9	0-0.5'	excavated
P 61	88.7	1.5-2'	
P 62	13.7	0-0.5'	excavated
P 65	165	1'	excavated
P 65	13.9	3.5'	excavated
P 65	20.6	6.5'	
P 66	33.8	0-0.5'	excavated
P 66	226	1.5-2'	
P 66	9	6-6.5'	
P 67	35.6	0-0.5'	excavated
P 67	19.2	1.5-2'	
P 68	15.7	0-0.5'	excavated
P 69	63.9	0.5-1'	excavated
P 69	99.4	1-1.5'	excavated
P 72	555	3.5-4'	excavated
P 73	13.2	3'	excavated
P 74	9.2	6-6.5'	
P 76	31	0-1'	excavated
P 76	39.8	4-4.5'	

2018 Samples Analyzed for Lead

Sample ID	Concentration (mg/kg)	Depth (ft)	
P 114	104	0-0.5'	
P 114	113	0.5-1'	
P 114	8.8	6-6.5'	
P 115	6.6	0-0.5'	
P 115	37.2	0.5-1'	
P 115	8.4	6-6.5'	
P 116	34.1	0-0.5'	
P 116	115	0.5-1'	
P 117	52.1	0-0.5'	
P 117	151	0.5-1'	
P 118	15.7	0-0.5'	
P 118	17.5	0.5-1'	
P 119	40	0-0.5'	
P 119	88.4	0.5-1'	
P 119	64.2	1.5-2'	
P 120	63.6	0-0.5'	excavated
P 120	51.4	0.5-1'	excavated
P 120	86.6	1.5-2'	excavated
P 130	109	1'	excavated
P 130	16.2	3.5'	excavated
MW 18	2.5	5-5.5'	

ON-SITE ENVIRONMENTAL
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Drawing #:
File : Soillead2.drw

Date
6/22/21
3/16/22

Figure 13 LEAD in Soil Above Residential Ingestion Standard After Excavation in 2021
North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

2001 - 2009 UNSATURATED SOIL SAMPLES

Sample ID	Lead (mg/kg)	Depth (ft)
Test pit 1	72	2'
Test pit 2	34	2'
TB 2	7.4	6-7'
TB 3	66	3-4'
TB 5	15.7	2-2½' dug out in 2000
TB 7	13	4-5'
TB 8	675	3-4' excavated
N 3	29	4-5'
N 5	6	4-5'
N 12	3	6-8'
N 15	7	2-3'
N 16	10	4-7'
F 17	6.97	4-5'
F 20	11.1	5-6' excavated
F 24	1,490	3-4' excavated
North Wall	8.7	4.5'
NW Wall	7.3	5'
West Wall	9.8	4'

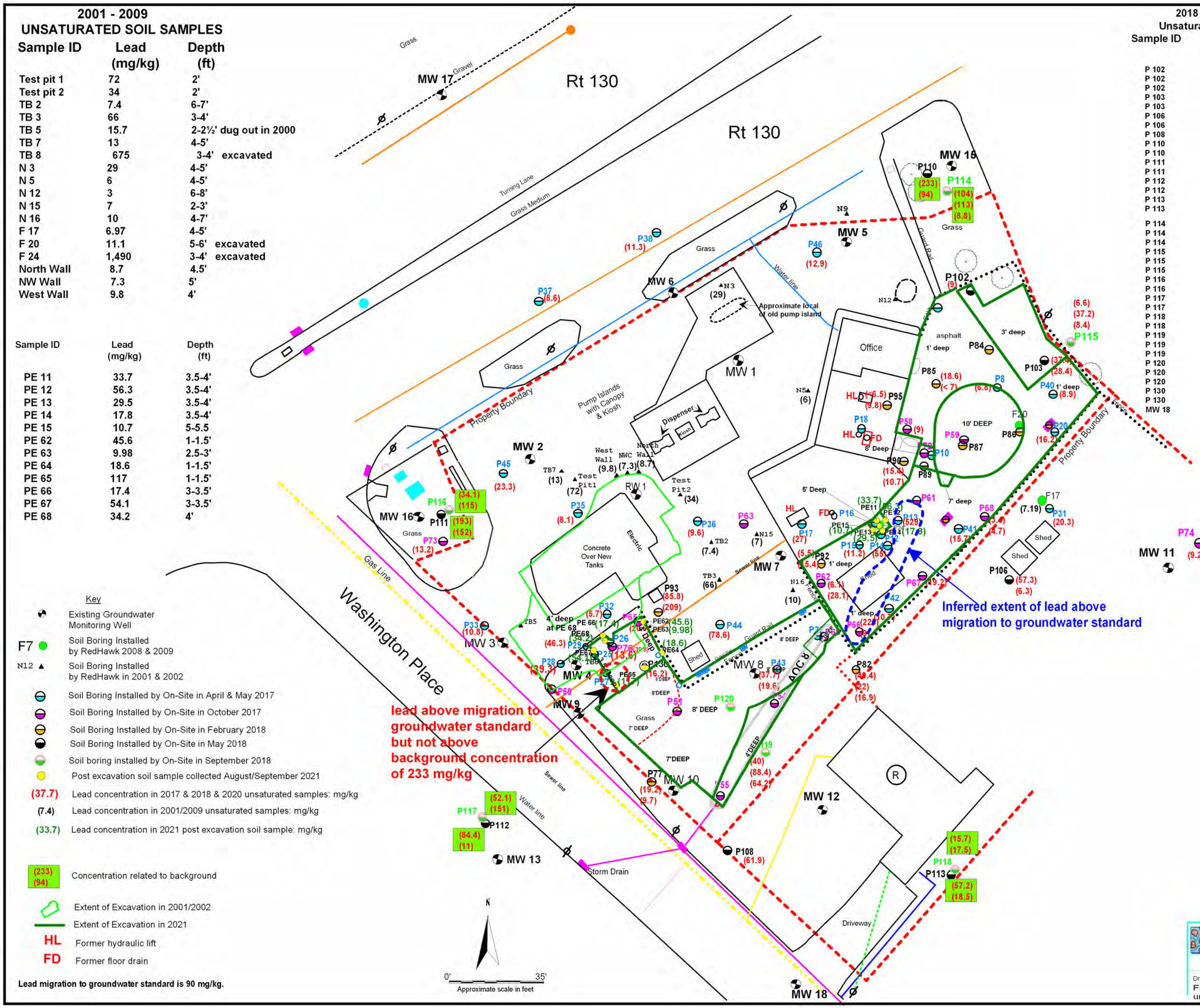
Sample ID	Lead (mg/kg)	Depth (ft)
PE 11	33.7	3.5-4'
PE 12	56.3	3.5-4'
PE 13	29.5	3.5-4'
PE 14	17.8	3.5-4'
PE 15	10.7	5-5.5
PE 62	45.6	1-1.5'
PE 63	9.98	2.5-3'
PE 64	18.6	1-1.5'
PE 65	117	1-1.5'
PE 66	17.4	3-3.5'
PE 67	54.1	3-3.5'
PE 68	34.2	4'

2018 Unsaturated Samples

Sample ID	Lead (mg/kg)	Depth (ft)
P 102	108	0-0.5' excavated
P 102	69.2	1-2' excavated
P 102	9	5-6'
P 103	37.4	0-0.5'
P 103	28.4	1-2'
P 106	57.3	0-0.5'
P 106	6.3	1.5-2'
P 108	61.9	0-0.5'
P 110	233	0-0.5'
P 110	94	0.5-1'
P 111	193	0-0.5'
P 111	152	0.5-1'
P 112	84.4	0-0.5'
P 112	11	0.5-1'
P 113	57.2	0-0.5'
P 113	18.5	0.5-1'
P 114	104	0-0.5'
P 114	113	0.5-1'
P 114	8.8	6-6.5'
P 115	6.6	0-0.5'
P 115	37.2	0.5-1'
P 115	8.4	6-6.5'
P 116	34.1	0-0.5'
P 116	115	0.5-1'
P 117	52.1	0-0.5'
P 117	151	0.5-1'
P 118	15.7	0-0.5'
P 118	17.5	0.5-1'
P 119	40	0-0.5'
P 119	88.4	0.5-1'
P 119	64.2	1.5-2'
P 120	63.6	0-0.5' excavated
P 120	51.4	0.5-1' excavated
P 120	86.6	1.5-2' excavated
P 130	109 J	1' excavated
P 130	16.2 J	3.5' excavated
MW 18	2.5	5-5.5'

2017 & 2018 Unsaturated Samples

Sample ID	Lead (mg/kg)	Depth (ft)
P 8	6.8	6'
P 10	241	0-1' excavated
P 10	190	3' excavated
P 12	50.9	0-6" excavated
P 12	25.5	5' excavated
P 13	14.6	0-6" excavated
P 13	529	4'
P 13	49.9	6'
P 14	7.8	0-6" excavated
P 14	55	5'
P 15	112	0-6" excavated
P 15	11.2	5'
P 16	6.2	0-6" excavated
P 16	14.9	4' excavated
P 17	27	4'
P 20	16.2	5'
P 22	54.4	0-6" excavated
P 25	13.6	5-5..5'
P 26	220	3.5' excavated
P 27	7.7	3.5' excavated
P 28	39.3	3.5'
P 29	46.3	3.5'
P 31	20.3	6.5'
P 32	5.7	4.5'
P 33	10.8	4.5'
P 35	8.1	5.5-6'
P 36	9.6	6'
P 37	8.6	3'
P 38	11.3	3'
P 40	8.9	6'
P 41	15.7	5'
P 42	10.7	6'
P 43	37.7	1'
P 44	19.6	2'
P 44	78.6	3'
P 45	23.3	5.5-6'
P 46	12.9	6-6.5'
P 51	79.9	0-0.5' excavated
P 54	45.4	0-0.5' excavated
P 54	68.6	0.5-1' excavated
P 55	56.8	0-4" excavated
P 58	343	0-0.5' excavated
P 58	9	6-6.5'
P 59	44.1	0-0.5' excavated
P 59	337	1.5-2' excavated
P 59	469	4.5-5' excavated
P 61	88.7	1.5-2' excavated
P 62	13.7	0-0.5' excavated
P 62	6.1	1.5-2'
P 62	28.1	6-6.5'
P 65	165	1' excavated
P 65	13.9	3.5' excavated
P 65	20.6	6.5'
P 66	33.8	0-0.5' excavated
P 66	226	1.5-2'
P 66	9	6-6.5'
P 67	35.6	0-0.5' excavated
P 67	19.2'	1.5-2''
P 68	15.7	0-0.5' excavated
P 68	3.4	1.5-2'
P 68	4.7	6-6.5'
P 69	63.9	0.5-1' excavated
P 69	99.4	1-1.5' excavated
P 72	555	3.5-4' excavated
P 73	13.2	3' excavated
P 74	9.2	6-6.5'
P 76	31	0-1' excavated
P 76	39.8	4-4.5'
P 77	19.2	0-0.5'
P 77	9.7	1.5-2'
P 82	40.4	0-0.5'
P 82	22	1.5-2'
P 82	16.9	5.5-6'
P 85	24.7	0-0.5' excavated
P 85	18.6C	1.5-2'
P 85	<7 C	3.4-4'
P 86	25.7 C	0-0.5' excavated
P 86	3.7	1.5-2' exacavted
P 87	147	6-6.5' excavated
P 89	8.2	3.5-4' excavated
P 90	15.4	3.5-4'
P 90	10.7	5.5-6'
P 92	16.7	0-0.5' excavated
P 92	5.5	1.5-2'
P 92	15.4	6-6.5'
P 93	85.8	1'
P 93	209	2.5-3'
P 95	<6.5 C	0.5-1'
P 95	9.8	5.5-6'



Key

- Existing Groundwater Monitoring Well
- F7 ● Soil Boring Installed by RedHawk 2008 & 2009
- N12 ▲ Soil Boring Installed by RedHawk in 2001 & 2002
- Soil Boring Installed by On-Site in April & May 2017
- Soil Boring Installed by On-Site in October 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Post excavation soil sample collected August/September 2021
- (37.7) Lead concentration in 2017 & 2018 & 2020 unsaturated samples: mg/kg
- (7.4) Lead concentration in 2001/2009 unsaturated samples: mg/kg
- (33.7) Lead concentration in 2021 post excavation soil sample: mg/kg
- (233) (94) Concentration related to background
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- HL Former hydraulic lift
- FD Former floor drain

Lead migration to groundwater standard is 90 mg/kg.

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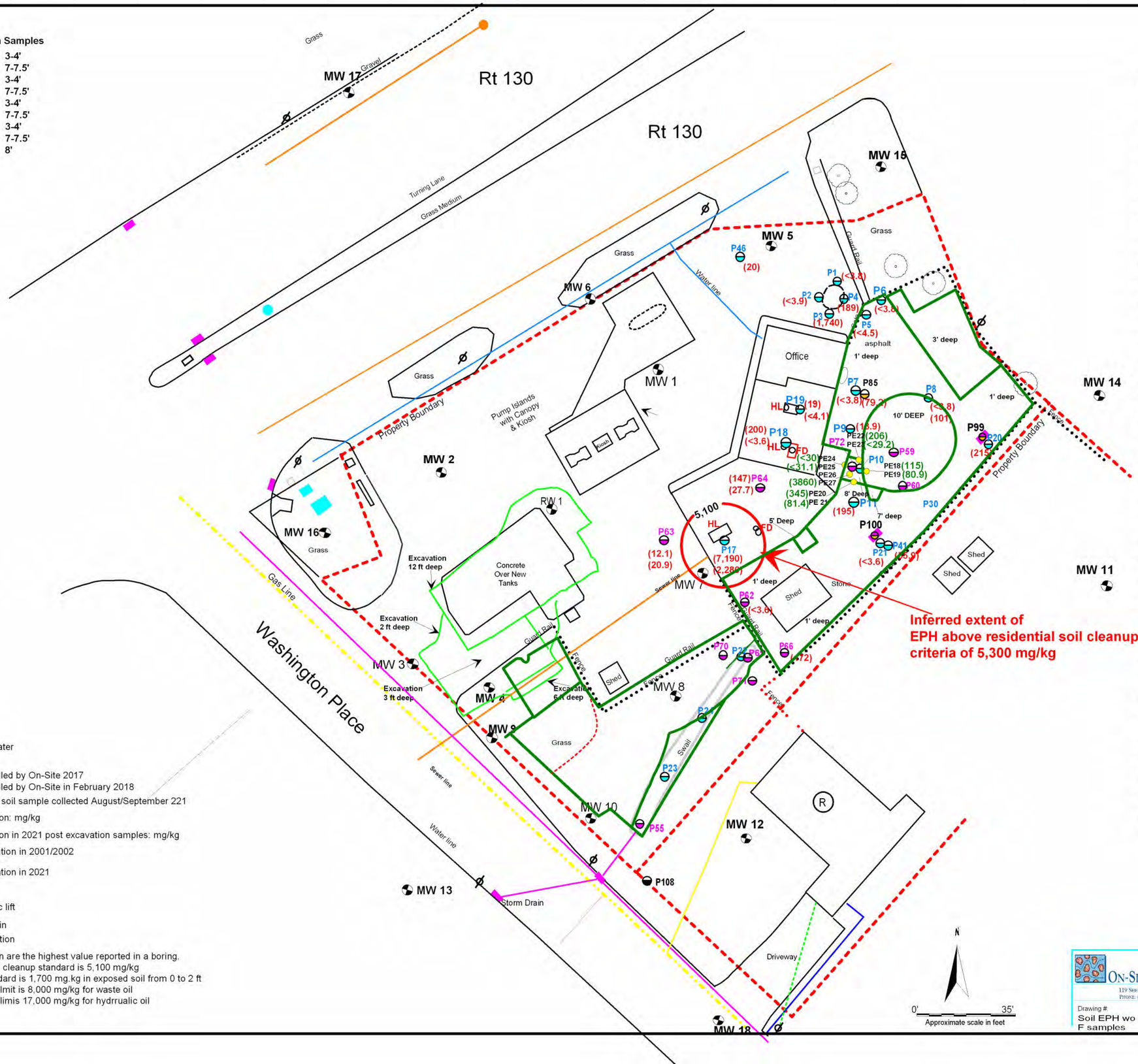
Drawing #	Date
File : Soillead2 unsaturated.drw	6/18/21 3/15/22

Figure 14 LEAD in Soil After 2021 Exavation Above Background Level of 233 mg/kg which Can Impact Ground water

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

2021 Post Excavation Samples

PE 18	115	3-4'
PE 19	80.9	7-7.5'
PE 20	345	3-4'
PE 21	81.4	7-7.5'
PE 22	206	3-4'
PE 23	<29.2	7-7.5'
PE 24	<30	3-4'
PE 25	<31.1	7-7.5'
PE 27	3860	8'



Soil Samples Analyzed for EPH

Sample ID	EPH (mg/kg)	Depth (ft)	
P1	<3.8	7-7.5'	
P 2	<3.9	4-.5-5'	
P 2	<3.8	9-10'	
P 3	1,740	4.5-5'	
P 3	<3.6	15.5-16'	
P 4	189	8-8.5'	
P 4	<3.8	14-14.5'	
P 5	<4.5	10'	
P 6	<3.8	10'	
P 7	127	0-6"	excavated
P 7	<3.8	9'	
P 8	<3.8	6'	
P 8	101	12'	
P 9	2,220	0-1'	excavated
P 9	18.9	6'	
P 10	6,790	0-1'	excavated
P 10	10,200	3'	excavated
P 11	746	0-1'	excavated
P 11	195	8'	
P 17	7,190	4'	
P 17	2,280	9'	
P 18	200	4-4.5'	
P 18	<3.6	6-7'	
P 19	19	5'	
P 19	<4.1	16'	
P 20	215	5'	
P 21	<3.6	5'	
P 22	2,730	0-6"	excavated
P 23	374	0-6"	excavaetd
P 24	688	0-6"	excavated
P 41	35.9	5'	
P 46	20.0	6-6.5'	
P 59	135	9.5-10'	excavated
P 60	717	0-0.5'	excavated
P 60	<4	1.5-2'	excavated
P 60	673	7.5-8'	excavated
P 62	<3.6	8-8.5'	
P 63	12.1	3-3.5'	
P 63	20.9	7-7.5'	
P 64	147	6'	
P 64	27.7	8'	
P 66	194	0-0.5'	excavated
P 66	172	1.5-2'	
P 69	568	0.5-1'	excavted
P 69	716	1-1.5'	excavated
P 70	65.8	0-0.5'	excavated
P 70	53.4	1.5-2'	excavated
P 71	402	0-0.5'	excavated
P 71	35.7	1.5-2'	excavated
P 72	243	6.5-7'	excavated
P 85	274	0-0.5'	excavated
P 85	79.2	1.5-2'	
P 99	80.2	Storm Drain cleaned	
P 100	438	Storm Drain cleaned	

Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site 2017
- Soil boring installed by On-Site in February 2018
- Post excavation soil sample collected August/September 221
- (215) EPH concentration: mg/kg
- (115) EPH concentration in 2021 post excavation samples: mg/kg
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- Tree
- HL Former hydraulic lift
- FD Former floor drain
- 1' Deep Depth of Excavation

Note: 1) Concentrations shown are the highest value reported in a boring.
2) EPH reseidential soil cleanup standard is 5,100 mg/kg
3) EPH ecological standard is 1,700 mg.kg in exposed soil from 0 to 2 ft
4) EPH default product lmit is 8,000 mg/kg for waste oil
5) EPH default product limis 17,000 mg/kg for hydrrualic oil

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Drawing #	Date
Soil EPH wo F samples	12/5/18 3/21/22

Figure 15 EPH in Soil Above Residential Cleanup Criteria After Excavation in 2021

North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

Sample ID	Benzo (a)anthracene (mg/kg)	Depth (ft)
P 114	0.427	0-0.5'
P 114	0.254	0.5-1'
P 114	<0.010	6-6.5'
P 115	<0.250	0-0.5'
P 115	0.14	0.5-1'
P 115	<0.010	6-6.5'
P 116	0.0221 J	0-0.5'
P 116	0.404	0.5-1'
P 117	0.219	0-0.5'
P 117	0.536	0.5-1'
P 118	0.0213 J	0-0.5'
P 118	0.0122 J	0.5-1'
P 119	0.118	0-0.5'
P 119	0.22	0.5-1'
P 119	0.48	1.5-2'
P 120	0.123	0-0.5' excavated
P 120	0.0761 J	0.5-1' excavated
P 120	0.279	1.5-2' excavated
P 121	1.2	0-0.5'
P 122	3.3	0-0.5' excavated
P 123	1.4	0-0.5' excavated
P 124	0.016	3-4'
MW 18	0.0696	5-5.5'

Soil Samples Collected After Excavation

Sample ID	Benzo(a)anthracene (mg/kg)	Depth (ft)
PE 1	0.093	1-1.5'
PE 10	1	1-1.5'
PE 16	0.19	1-1.5'
PE 17	<0.064	1-1.5'
PE 28	0.59	1-1.5' excavated
PE 29	1.1	1-1.5' excvated
PE 30	0.58	1-1.5'
PE 41	<0.069	7'
PE 42	<0.07	7'
PE 43	<0.065	6'
PE 44	<0.061	7.5'
PE 45	<0.067	4.5'
PE 46	<0.065	4'
PE 47	<0.069	4.5'
PE 48	<0.066	4'
PE 49	<0.066	3'
PE 69	0.17	1-1.5'
PE 70	3.2	1-1.5'
PE 71	16	1-1.5'

Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Soil boring installed by On-Site in May 21, 2020
- Post excavation soil sample collected in August/September 2021& analyzed for benzo(a)anthracene
- (8.080) Benzo(a)anthracene concentration in sample: mg/kg
- (16) Benzo(a)anthracene concentration in 2021 post excavation soil sample: mg/kg
- Concentration of Benzo(a)anthracene above migration to groundwater standard and or residential ingestion standard
- Tree
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- HL Former hydraulic lift
- FD Former floor drain
- 5.1 Inferred extent of 5.1 ppm residential ingestion contour line
- 0.71 Inferred extent of 0.71 ppm migration to groundwater contour line

Residential ingestion standard is 5.1 mg/kg
Residential inhalation standard is 78,000 mg/kg.
Non-residential ingestion standard is 23 mg/kg
Non-Residential inhalation standard is 370,000 mg/kg.
Migration to ground water standard is 0.71 mg/kg

Note: Area site specific MGW remediation standard in propane tank area based on SPLP of samples from P121, P122, P123 & P124 is 3.3 mg/kg and does not have to be remediated

Rt 130

PB Station

Washington Place

Property of Denice Luzack
368 Washington Place

359 Washington Place House

Quick Out Convience Store

Concrete Over New Tanks

Office

Dispenser

Driveway

Storm Drain

Gas Line

Sewer line

Water line

Property Boundary

Guard Rail

Fence

Shed

Grass

Gravel

Turning Lane

Grass Medium

asphalt

Stone

MW 1, MW 2, MW 3, MW 4, MW 5, MW 6, MW 7, MW 8, MW 9, MW 10, MW 11, MW 12, MW 13, MW 14, MW 15, MW 16, MW 17, MW 18, RW 1

P84 (1.6); P85 (1.6); P58 (0.65) (<0.010) (<0.010); P18 (<0.032); P116 (0.0221 J) (0.404); P117 (0.219) (0.536); P114 (0.427) (0.254) (<0.010); P102 (<0.011a) (<0.010a); P121 (1.2); P122 (5.1); P123 (3.3); P115 (<0.250) (0.14) (<0.010); P103 (0.684) (<0.011a); P124 (0.016); P99; P20 (<0.011); P59; P10; P61 (0.175) (0.0468); P17 (0.0699) (0.0174 J); P68 (<0.0097) (<0.0099) (<0.00094); P100; P16 (0.19); P66 (0.0098) (<0.011); P70; P71 (<0.010) (<0.11); P104; P80 (0.136); P118 (0.0213 J) (0.0122 J); P120; P119 (0.118) (0.48); P105 (0.0696)

PE 71 (16); PE 69 (0.17); PE 70 (3.2); PE1 (0.093); PE29; PE28; PE30 (0.58); PE17 (<0.064); PE41 (<0.069); PE10 (1); PE43 (<0.065); PE49 (<0.066); PE42 (<0.07); PE45 (<0.067); PE46 (<0.065); PE47 (<0.069); PE48 (<0.066)

10' DEEP; 8' Deep; 5' Deep; 7' Deep; 4' Deep; 3.5 Deep; 8' DEEP; 9'DEEP; 7' DEEP; 7'DEEP; 4'DEEP; 7' DEEP Excavation; 1' deep; 3' deep

Scale: 0' — 35' Approximate scale in feet

Sample ID	Benzo (a)anthracene (mg/kg)	Depth (ft)
P 10	8.080	0-1'excavated
P 10	0.569	3' excavated
P 17	0.0699	4'
P 17	0.0174 J	9'
P 18	<0.032	4-4.5'
P 20	<0.011	5'
P 22	0.704	0-6" excavated
P 54	1.04	0.5-1' excavated
P 55	0.279	0-4" excavated
P 58	233	0-0.5'excavated
P 58	0.653	1.5-2'
P 58	<0.010	6-6.5'
P 58	<0.010	18-18.5'
P 59	50.9	0-0.5' excavated
P 59	0.186	1.5-2' excavated
P 59	0.0367 J	4.5-5' excavated
P 59	<0.029	9.5-10'excavated
P 61	8.36	0-0.5' excavated
P 61	0.175	1.5-2'
P 61	0.0468	4-4.5'
P 61	<0.0099	12.5-13'
P 66	<0.0096	6-6.5'
P 66	<0.011	13.5-14'
P 68	0.0226 J	0-0.5' excavated
P 68	<0.0097	1.5-2'
P 68	<0.0099	6-6.5'
P 68	<0.0094	7.5-8'
P 69	2.03	1-1.5' excavated
P 70	0.0684	3.5-4' excavted
P 70	<0.011	6.5-7' excavated
P 71	<0.010	6-6.5'
P 71	<0.011	9-9.5'
P 72	1.0	3.5-4'excavated
P 72	<0.034	6.5-7'excavated
P 80	0.138	0-0.5'
P 84	1.5	0-0.5' excavated
P 84	0.0519	0.5-1' excavated
P 85	2.21	0-0.5' excavated
P 85	1.6	1.5-2'
MW 11 P 99	0.411	Storm Drain cleaned
MW 11 P 100	3.16	Storm Drain cleaned
P 102	2.06	0-0.5' excavated
P 102	0.28	1-2' excavated
P 102	<0.011 a	5-6'
P 102	<0.010 a	10-11'
P 103	0.615	0-0.5' excavated
P 103	0.0326 J	1-2' excavated
P 103	0.684	3-4'
P 103	<0.011 a	13.5-14'
P 104	0.216	1-2' excavated
P 104	<0.011a	6.5-7.5' excavated

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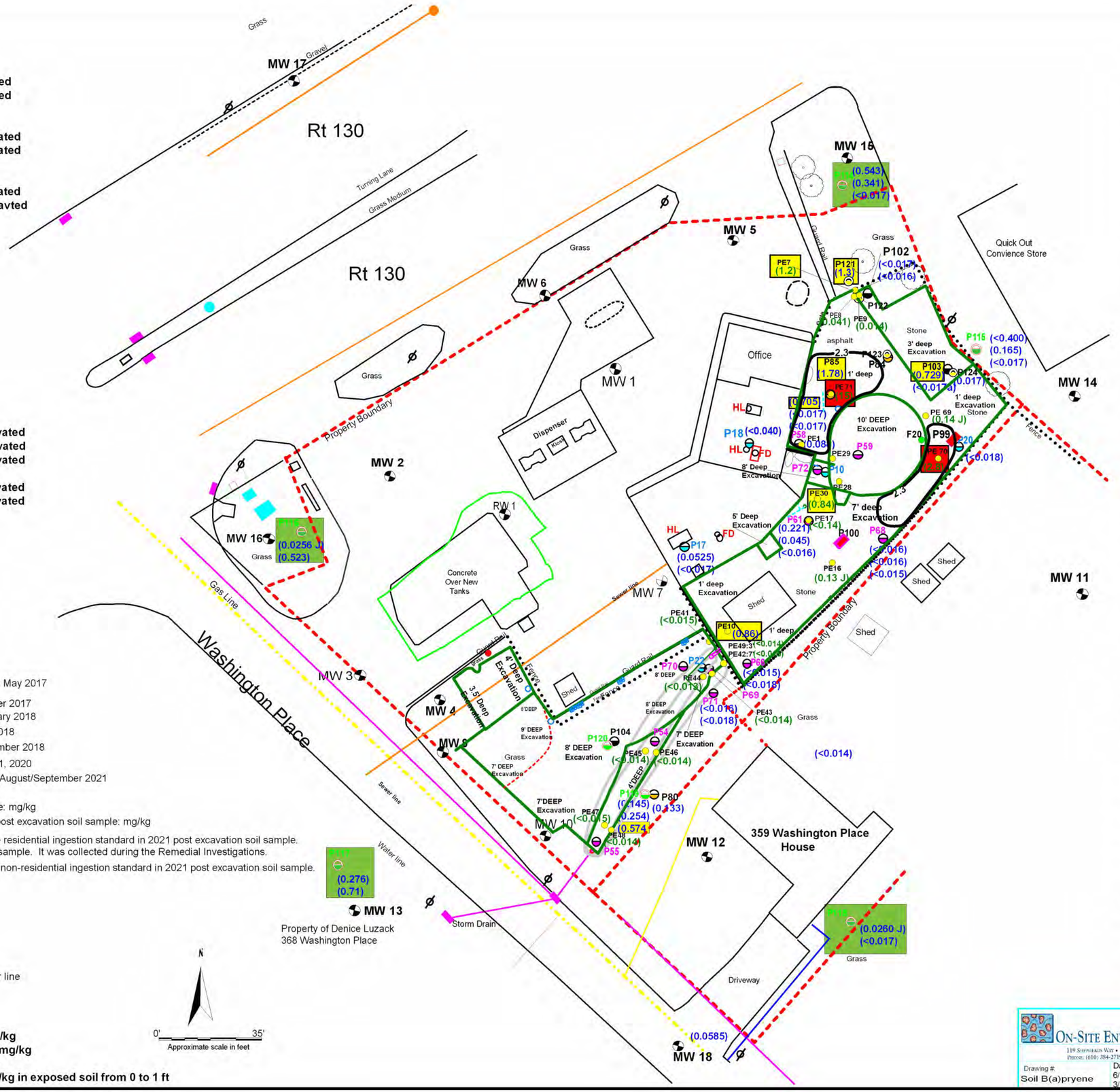
Drawing #: Soil B(a)anthracene
Date: 6/18/21, 3/3/22

Figure 16 Benzo(a)anthracene in Soil Above Residential Ingestion & Site Specific Migration to Groundwater Standard After Excavation in 2021

SOIL SAMPLES

Sample ID	Benzo (a)pryene (mg/kg)	Depth (ft)
P 102	1.98	0-0.5' excavted
P 102	0.261	1-2' excvated
P 102	<0.017	5-6'
P 102	<0.016	10-11'
P 103	0.648	0-0.5' excavated
P 103	0.0382	1-2' excavated
P 103	0.729	3-4'
P 103	<0.017	13.5-14'
P 104	0.198	1-2' excavated
P 104	<0.018	6.5-7.5' excavted
P 114	0.543	0-0.5'
P 114	0.341	0.5-1'
P 114	<0.017	6-6.5'
P 115	<0.400	0-0.5'
P 115	0.165	0.5-1'
P 115	<0.017	6-6.5'
P 116	0.0256 J	0-0.5'
P 116	0.523	0.5-1'
P 117	0.276	0-0.5'
P 117	0.71	0.5-1'
P 118	0.0260 J	0-0.5'
P 118	<0.017	0.5-1'
P 119	0.145	0-0.5'
P 119	0.254	0.5-1'
P 119	0.574	1.5-2'
P 120	0.136	0-0.5' excavated
P 120	<0.083	0.5-1' excavated
P 120	0.378	1.5-2' excavated
P 121	1.3	0-0.5'
P 122	3.7	0-0.5' excavated
P 123	1.7	0-0.5' excavated
P 124	0.017	3-4'
MW 18	0.0585	5-5.5'



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Soil boring installed by On-Site in May 21, 2020
- Post excavation soil sample collected in August/September 2021 analyzed for benzo(a)pryene
- (9.340) Benzo(a)pryene concentration in sample: mg/kg
- (0.014) Benzo(a)pryene concentration in 2021 post excavation soil sample: mg/kg
- Concentration of Benzo(a)pryene above residential ingestion standard in 2021 post excavation soil sample. Note: P 121 is not a post excavtion soil sample. It was collected during the Remedial Investigations.
- Concentration of Benzo(a)pryene above non-residential ingestion standard in 2021 post excavation soil sample.
- Background concentration
- Tree
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- 2.3 — 2.3 ppm non-residential ingestion contour line
- HL — Former hydraulic lift
- FD — Former floor drain

Residential ingestion standard is 0.51 mg/kg
Non-residential ingestion standard is 2.3 mg/kg
Migration to groundwater standard is NA
Ecological soil screening level is 1.52 mg/kg in exposed soil from 0 to 1 ft

SOIL SAMPLES

Sample ID	Benzo (a)pryene (mg/kg)	Depth (ft)
P 10	9.340	0-1' excavated
P 10	0.453	3' excavated
P 17	0.0525	4'
P 17	<0.017	9'
P 18	<0.040	4-4.5'
P 20	<0.018	5'
P 22	0.924	0-6" excavated
P 54	1.70	0.5-1'excavated
P 55	0.436	0-4" excavated
P 58	236	0-0.5' excavated
P 58	0.705	1.5-2'
P 58	<0.017	6-6.5'
P 58	<0.017	18-18.5'
P 59	62.4	0-0.5' excavated
P 59	0.195	1.5-2'excavated
P 59	0.0276 J	4.5-5'excavated
P 59	<0.035	9.5-10'excavated
P 61	9.43	0-0.5' excavated
P 61	0.221	1.5-2'
P 61	0.045	4-4.5'
P 61	<0.016	12.5-13'
P 66	<0.015	6-6.5'
P 66	<0.018	13.5-14'
P 68	0.0260 J	0-0.5' excavated
P 68	<0.016	1.5-2'
P 68	<0.016	6-6.5'
P 68	<0.015	7.5-8'
P 69	2.1	1-1.5' excavated
P 70	0.073	3.5-4' excavated
P 70	<0.017	6.5-7' excavated
P 71	<0.016	6-6.5'
P 71	<0.018)	9-9.5'
P 72	0.747	3.5-4' excavated
P 72	<0.043	6.5-7' excavated
P 80	0.133	0-0.5'
P 84	1.61	0-0.5' excavated
P 84	0.0494	0.5-1' excavated
P 85	2.6	0-0.5' excavated
P 85	1.78	1.5-2'
P 99	0.51	Storm drain cleaned
P 100	3.69	Storm drain cleaned

Sample ID	Benzo(a)pryene (mg/kg)	Depth (ft)
PE 1	0.088	1-1.5'
PE 7	1.2	3'
PE 8	0.041	1-1.5'
PE 9	0.014	3'
PE 10	0.86	1-1.5'
PE 16	0.13 J	1-1.5'
PE 17	<0.14	1-1.5'
PE 28	0.53	1-1.5' excavated
PE 29	0.66	1-1.5' excavated
PE 30	0.84 J	1-1.5'
PE 41	<0.015	7'
PE 42	<0.015	7'
PE 43	<0.014	6'
PE 44	<0.013	7.5'
PE 45	<0.014	4.5'
PE 46	<0.014	4'
PE 47	<0.015	4.5'
PE 48	<0.014	4'
PE 49	<0.014	3'
PE 69	0.14 J	1-1.5'
PE 70	2.8	1-1.5'
PE 71	15	1-1.5'

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Drawing # Soil B(a)pryene

Date 6/18/21 3/3/22

Figure 17 Benzo(a)pryene in Soil Above Residential & Non-Residential Ingestion Standards After Excavation in 2021

SOIL SAMPLES

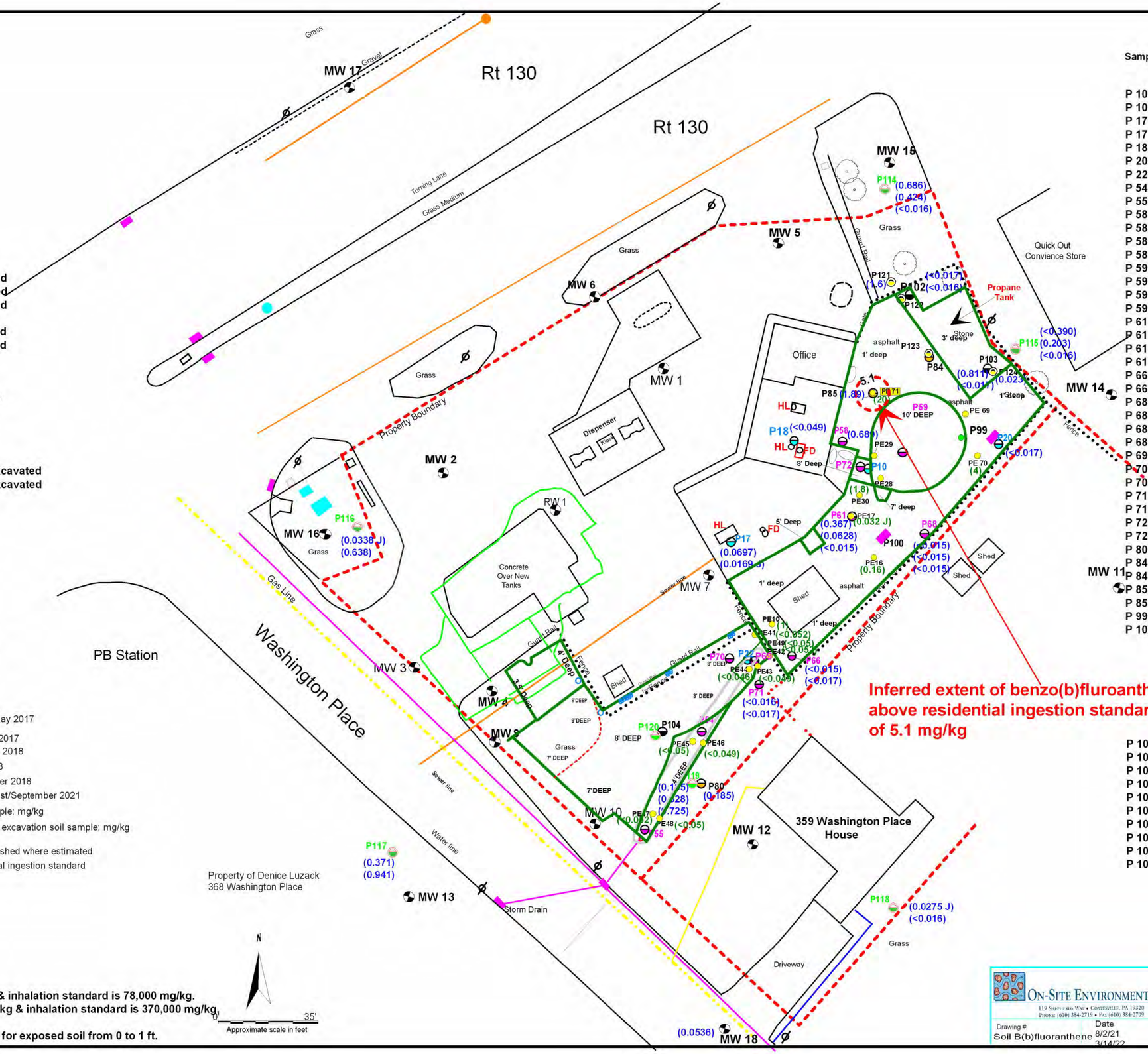
Sample ID	Benzo(b)fluoranthene (mg/kg)	Depth (ft)
P 114	0.686	0-0.5'
P 114	0.424	0.5-1'
P 114	<0.016	6-6.5'
P 115	<0.390	0-0.5'
P 115	0.203	0.5-1'
P 115	<0.016	6-6.5'
P 116	0.0338 J	0-0.5'
P 116	0.638	0.5-1'
P 117	0.371	0-0.5'
P 117	0.941	0.5-1'
P 118	0.0275 J	0-0.5'
P 118	<0.016	0.5-1'
P 119	0.185	0-0.5'
P 119	0.328	0.5-1'
P 119	0.725	1.5-2'
P 120	0.166	0-0.5' excavated
P 120	0.0.0820 J	0.5-1' excavated
P 120	0.459	1.5-2' excavated
P 121	1.6	0-0.5'
P 122	4.6	0-0.5' excavated
P 123	2.2	0-0.5' excavated
P 124	0.023	3-4'
MW 18	0.0536	5-5.5'

Sample ID	Benzo(b)Fluoranthene (mg/kg)	Depth (ft)
PE 10	1	1-1.5'
PE 16	0.16	1-1.5'
PE 17	0.032 J	1-1.5'
PE 28	0.7	1-1.5' excavated
PE 29	0.92	1-1.5' excavated
PE 30	1.8	1-1.5'
PE 41	<0.052	7'
PE 42	<0.052	7'
PE 43	<0.049	6'
PE 44	<0.046	7.5'
PE 45	<0.05	4.5'
PE 46	<0.049	4'
PE 47	<0.052	4.5'
PE 48	<0.05	4'
PE 49	<0.05	3'
PE 69	0.17	1-1.5'
PE 70	4	1-1.5'
PE 71	20	1-1.5'

Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Post excavation soil sample collected August/September 2021
- (1.32) Benzo(b)fluoranthene concentration in sample: mg/kg
- (0.014) Benzo(a)pryene concentration in 2021 post excavation soil sample: mg/kg
- —5.1— 5 ppm residential ingestion contour line: dashed where estimated
- Sample with concentration above residential ingestion standard
- Tree
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- HL Former hydraulic lift
- FD Former floor drain

Residential ingestion standard is 5.1 mg/kg & inhalation standard is 78,000 mg/kg.
Non-residential ingestion standard is 23 mg/kg & inhalation standard is 370,000 mg/kg.
Migration to ground water standard NA.
Ecological soil screening level is 59.8 mg/kg for exposed soil from 0 to 1 ft.



SOIL SAMPLES

Sample ID	Benzo(b)fluoranthene (mg/kg)	Depth (ft)
P 10	11.300	0-1' excavated
P 10	0.600	3' excavated
P 17	0.0697	4'
P 17	0.0169 J	9'
P 18	<0.049	4-4.5'
P 20	<0.017	5'
P 22	1.32	0-6" excavated
P 54	1.870	0.5-1' excavated
P 55	0.488	0-4" excavated
P 58	281	0-0.5' excavated
P 58	0.689	1.5-2'
P 58	<0.016	6-6.5'
P 58	<0.016	18-18.5'
P 59	76.1	0-0.5' excavated
P 59	0.221	1.5-2' excavated
P 59	0.0301 J	4.5-5' excavated
P 59	<0.044	9.5-10' excavated
P 61	12.1	0-0.5' excavated
P 61	0.367	1.5-2'
P 61	0.0628	4-4.5'
P 61	<0.015	12.5-13'
P 66	<0.015	6-6.5'
P 66	<0.017	13.5-14'
P 68	0.0349	0-0.5' excavated
P 68	<0.015	1.5-2'
P 68	<0.015	6-6.5'
P 68	<0.015	7.5-8'
P 69	2.44	1-1.5' excavated
P 70	0.0732	3.5-4' excavated
P 70	<0.017	6.5-7' excavated
P 71	<0.016	6-6.5'
P 71	<0.017	9-9.5'
P 72	1.0	3.5-4' excavated
P 72	<0.052	6.5-7 excavated
P 80	0.185	0-0.5'
P 84	2.15	0-0.5' excavated
P 84	0.07	0.5-1' excavated
P 85	3.1	0-0.5' excavated
P 85	1.89	1.5-2'
P 99	0.611	Storm Drain cleaned
P 100	4.56	Storm Drain cleaned
P 102	2.64	0-0.5' excavated
P 102	0.314	1-2' excavated
P 102	<0.017	5-6'
P 102	<0.016	10-11'
P 103	0.914	0-0.5' excavated
P 103	0.0426	1-2' excavated
P 103	0.811	3-4'
P 103	<0.017	13.5-14'
P 104	0.307	1-2' excavated
P 104	<0.017	6.5-7.5'excavated

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Drawing # Soil B(b)fluoranthene
Date 8/2/21 3/14/22

Figure 18 Benzo(b)fluoranthene in Soil Above Residential Ingestion Standard After Excavation in 2021

SOIL SAMPLES

Sample ID	Indeno(1,2,3-cd)pryene (mg/kg)	Depth (ft)	
P 114	0.335	0-0.5'	
P 114	0.208	0.5-1'	
P 114	<0.017	6-6.5'	
P 115	<0.410	0-0.5'	
P 115	0.0943	0.5-1'	
P 115	<0.017	6-6.5'	
P 116	<0.018	0-0.5'	
P 116	0.312	0.5-1'	
P 117	0.176	0-0.5'	
P 117	0.423	0.5-1'	
P 118	<0.018	0-0.5'	
P 118	<0.017	0.5-1'	
P 119	0.0874	0-0.5'	
P 119	0.149	0.5-1'	
P 119	0.36	1.5-2'	
P 120	0.0727	0-0.5'	excavated
P 120	<0.085	0.5-1'	excavated
P 120	0.22	1.5-2'	excavated
P 121	1	0-0.5'	
P 122	2.9	0-0.5'	excavated
P 123	1.4	0-0.5'	excavated
P 124	0.011	3-4'	
MW 18	0.0253 J	5-5.5'	

Sample ID	Indeno(1,2,3-cd)pryene (mg/kg)	Depth (ft)	
PE 10	0.54	1-1.5'	
PE 16	0.078 J	1-1.5'	
PE 17	<0.08	1-1.5'	
PE 28	0.3	1-1.5'	excavated
PE 29	0.37	1-1.5'	excavated
PE 30	1.1	1-1.5'	
PE 41	<0.086	7'	
PE 42	<0.087	7'	
PE 43	<0.082	6'	
PE 44	<0.077	7.5'	
PE 45	<0.084	4.5'	
PE 46	<0.081	4'	
PE 47	<0.087	4.5'	
PE 48	<0.083	4'	
PE 49	<0.083	3'	
PE 69	0.099	1-1.5'	
PE 70	2.5	1-1.5'	
PE 71	13	1-1.5'	

Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Soil boring installed by On-Site in May 2020

(7.310) Indeno(1,2,3-cd)pryene concentration in sample: mg/kg

(2.1) Indeno(1,2,3-c)pryene concentration in 2021 post excavation soil sample: mg/kg

5.1 5.1 ppm residential ingestion contour line

Tree

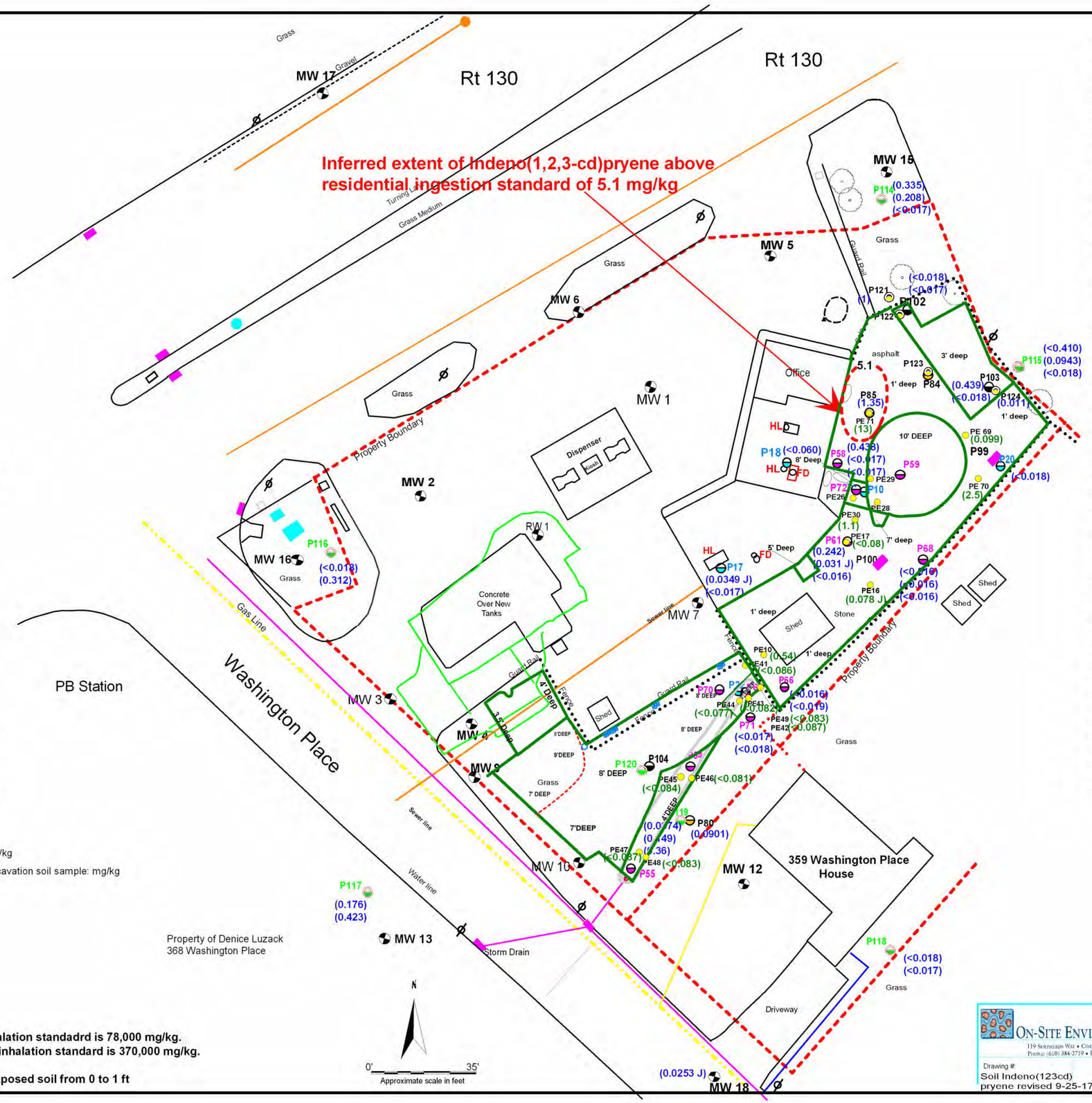
Extent of Excavation in 2001/2002

Extent of Excavation in 2021

HL Former hydraulic lift

FD Former floor drain

Residential ingestion standard is 5.1 mg/kg & inhalation standadrd is 78,000 mg/kg.
Non-residential ingestion standard is 23 mg/kg & inhalation standard is 370,000 mg/kg.
Migration to groundwater standard is NA.
Ecological soil screening level is 109 mg/kg for exposed soil from 0 to 1 ft



SOIL SAMPLES

Sample ID	Indeno(1,2,3-cd)pryene (mg/kg)	Depth (ft)	
P 10	7.310	0-1'	excavated
P 10	0.296	3'	excavated
P 17	0.0349 J	4'	
P 17	<0.017	9'	
P 18	<0.060	4-4.5'	
P 20	<0.018	5'	
P 22	0.907	0-6"	excavated
P 54	1.3	0.5-1'	excavated
P 55	0.316	0-4"	excavated
P 58	136	0-0.5'	excavated
P 58	0.438	1.5-2'	
P 58	<0.017	6-6.5'	
P 58	<0.017	18-18.5'	
P 59	42.2	0-0.5'	excavated
P 59	0.14	1.5-2'	excavated
P 59	0.0325 J	4.5-5'	excavated
P 59	<0.053	9.5-10'	excavated
P 61	8.24	0-0.5'	excavated
P 61	0.242	1.5-2'	
P 61	0.0310 J	4-4.5'	
P 61	<0.016	12.5-13'	
P 66	<0.016	6-6.5'	
P 66	<0.019	13.5-14'	
P 68	0.0241 J	0-0.5'	excavated
P 68	<0.016	1.5-2'	
P 68	<0.016	6-6.5'	
P 68	<0.016	7.5-8'	
P 69	1.3	1-1.5'	excavated
P 70	0.0422	3.5-4'	excavated
P 70	<0.018	6.5-7'	excavated
P 71	<0.017	6-6.5'	
P 71	<0.018	9-9.5'	
P 72	0.603	3.5-4'	excavated
P 72	<0.064	6.5-7	excavated
P 80	0.0901	0-0.5'	
P 84	1.2	0-0.5'	excavated
P 84	0.0383	0.5-1'	excavated
P 85	2.2	0-0.5'	excavated
P 85	1.35	1.5-2'	
P 99	0.47	Storm Drain cleand	
P 100	3.6	Storm Drain cleaned	
P 102	1.73	0-0.5'	excavated
P 102	0.183	1-2'	excavated
P 102	<0.018	5-6'	
P 102	<0.017	10-11'	
P 103	0.582	0-0.5'	excavated
P 103	0.0301 J	1-2'	excavated
P 103	0.439	3-4'	
P 103	<0.018	13.5-14'	
P 104	0.154	1-2'	excavated
P 104	<0.018	6.5-7.5'	excaated

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Drawing #	Date
Soil Indeno(123cd) pryene revised 9-25-17	6/22/21 3/15/22

Figure 19 Indeno(1,2,3-cd)Pryene in Soil Above Residential Ingestion Standard After excavation in 2021

SOIL SAMPLES

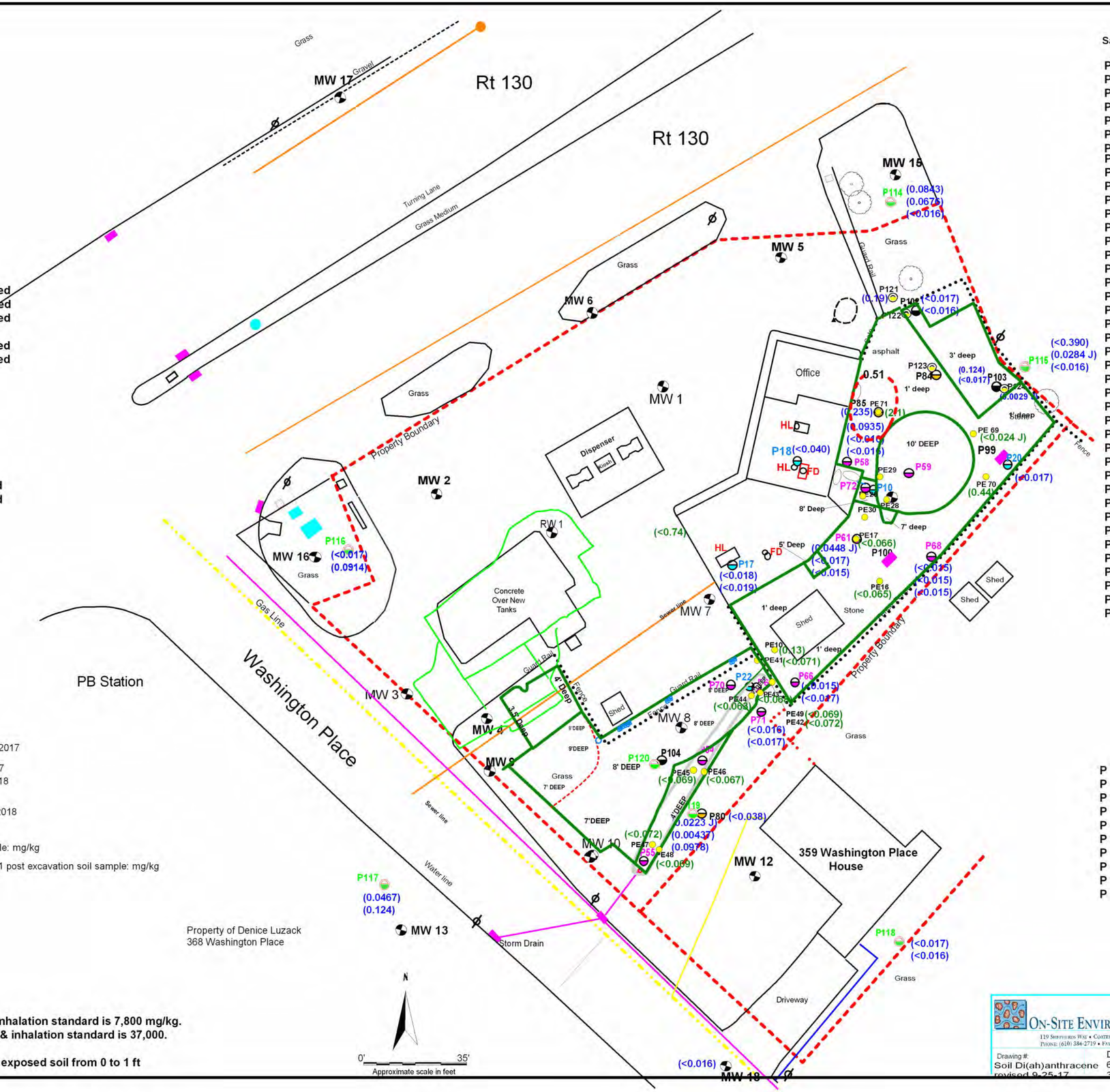
Sample ID	Dibenzo(a,h)anthracene (mg/kg)	Depth (ft)
P 114	0.0843	0-0.5'
P 114	0.0676	0.5-1'
P 114	<0.016	6-6.5'
P 115	<0.390	0-0.5'
P 115	0.0284 J	0.5-1'
P 115	<0.016	6-6.5'
P 116	<0.017	0-0.5'
P 116	0.0914	0.5-1'
P 117	0.0467	0-0.5'
P 117	0.124	0.5-1'
P 118	<0.017	0-0.5'
P 118	<0.016	0.5-1'
P 119	0.0223 J	0-0.5'
P 119	0.0437	0.5-1'
P 119	0.0978	0-0.5'
P 120	0.020 J	0.5-1' excavated
P 120	<0.080	0.5-1' excavated
P 120	0.0642	1.5-2' excavated
P 121	0.19	0-0.5'
P 122	0.52	0-0.5' excavated
P 123	0.25	0-0.5' excavated
P 124	0.0029	3-4'
MW 18	<0.016	5-5.5'

Sample ID	Dibenzo(a,h)anthracene (mg/kg)	Depth (ft)
PE 10	0.13	1-1.5'
PE 16	<0.065	1-1.5'
PE 17	<0.066	1-1.5'
PE 28	0.074	1-1.5' excavated
PE 29	<0.3	1-1.5' excavated
PE 30	<0.74	1-1.5'
PE 41	<0.071	7'
PE 42	<0.072	7'
PE 43	<0.068	6'
PE 44	<0.063	7.5'
PE 45	<0.069	4.5'
PE 46	<0.067	4'
PE 47	<0.072	4.5'
PE 48	<0.069	4'
PE 49	<0.069	3'
PE 69	0.024 J	1-1.5'
PE 70	0.44	1-1.5'
PE 71	2.1	1-1.5'

Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Soil boring installed by On-Site in May 2020
- (1.480) Dibenzo(ah)anthracene concentration in sample: mg/kg
- (0.13) Dibenzo(a,h,)anthracene concentration in 2021 post excavation soil sample: mg/kg
- 0.51 0.51 ppm residential ingestion contour line
- Tree
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- HL Former hydraulic lift
- FD Former floor drain

Residential ingestion standard is 0.51 mg/kg & inhalation standard is 7,800 mg/kg.
Non-residential ingestion standard is 2.3 mg/kg & inhalation standard is 37,000.
Migration to groundwater standard is NA.
Ecological soil screening level is 18.4 mg/kg for exposed soil from 0 to 1 ft



SOIL SAMPLES

Sample ID	Dibenzo(a,h)anthracene (mg/kg)	Depth (ft)
P 10	1.480	0-1' excavated
P 10	0.0701	3' excavated
P 17	<0.018	4'
P 17	<0.019	9'
P 18	<0.040	4-4.5'
P 20	<0.017	5'
P 22	0.177	0-6" excavated
P 54	0.282	0.5-1' excavated
P 55	0.0725	0-4" excavated
P 58	48.1	0-0.5' excavted
P 58	0.0935	1.5-2'
P 58	<0.016	6-6.5'
P 58	<0.016	18-18.5'
P 59	11.1	0-0.5' excavated
P 59	0.0334 J	1.5-2' excavated
P 59	<0.017	4.5-5' excavated
P 59	<0.035	9.5-10' excavated
P 61	2.85	0-0.5' excavated
P 61	0.0448 J	1.5-2'
P 61	<0.017	4-4.5'
P 61	<0.015	12.5-13'
P 66	<0.015	6-6.5'
P 66	<0.017	13.5-14'
P 68	<0.014	0-0.5' excavated
P 68	<0.015	1.5-2'
P 68	<0.015	6-6.5'
P 68	<0.015	7.5-8'
P 69	0.34	1-1.5' excavated
P 70	<0.018	3.5-4' excavated
P 70	<0.017	6.5-7' excavated
P 71	<0.016	6-6.5'
P 71	<0.017	9-9.5'
P 72	0.179 J	3.5-4' excavated
P 72	<0.043	6.5-7 excavated
P 80	<0.038	0-0.5'
P 84	0.273	0-0.5' excavated
P 84	<0.016	0.5-1' excavated
P 85	0.412	0-0.5' excavated
P 85	0.235	1.5-2'
P 99	0.0806	Storm Drain cleaned
P 100	0.589	Storm Drain cleaned
P 102	0.338	0-0.5' excavated
P 102	0.0536	1-2' excavated
P 102	<0.017	5-6'
P 102	<0.016	10-11'
P 103	0.107	0-0.5' excavated
P 103	<0.017	1-2' excavated
P 103	0.124	3-4'
P 103	<0.017	13.5-14'
P 104	0.0387	1-2' excavated
P 104	<0.017	6.5-7.5' excavated

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Drawing #: Soil Di(ah)anthracene revised 9-25-17
Date 6/22/21 3/14/22

Figure 20 Dibenzo(a,h)anthracene in Soil Above Residential Ingestion Demal Standard After Excavation in 2021

SOIL SAMPLES

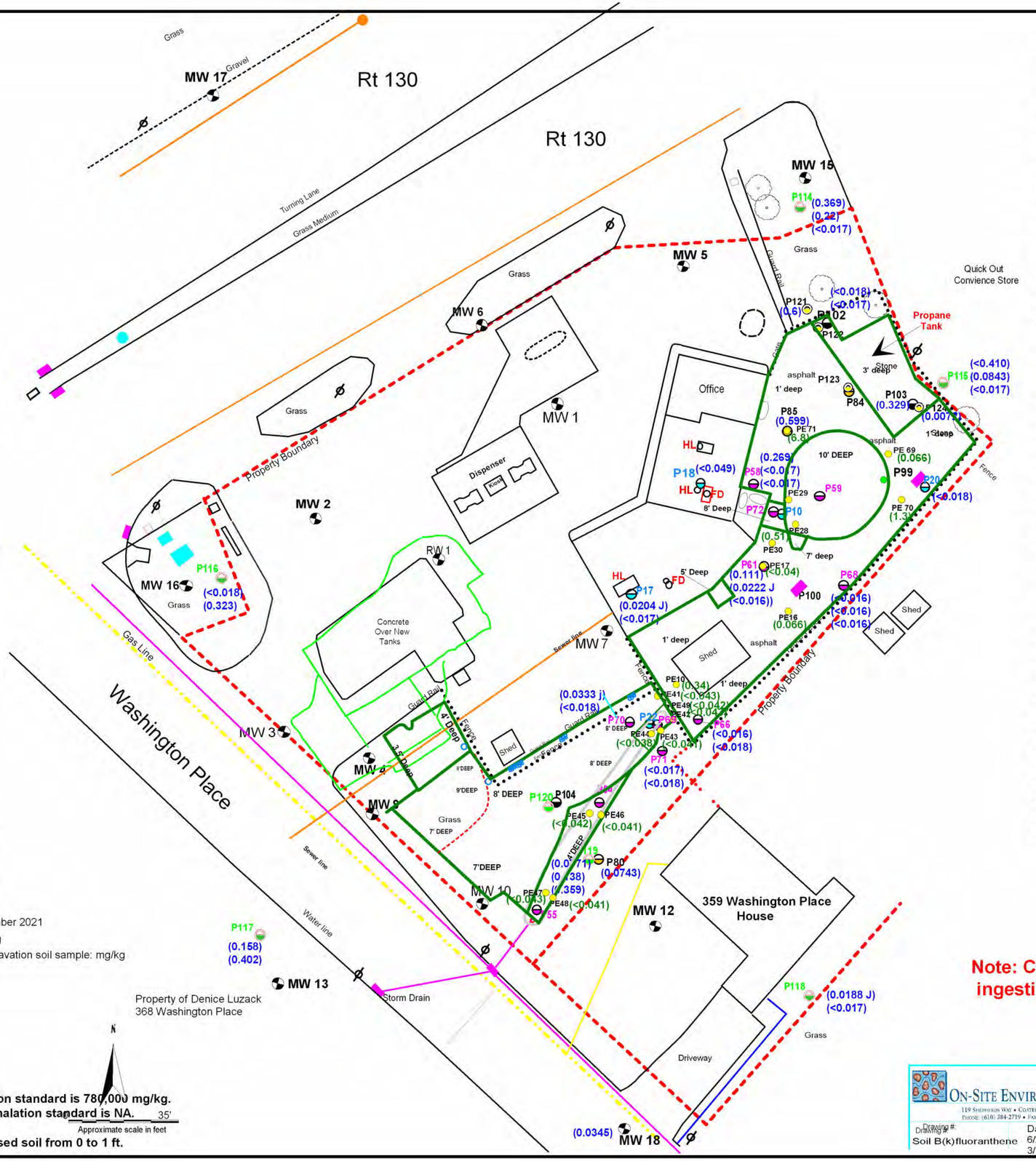
Sample ID	Benzo(k)fluoranthene (mg/kg)	Depth (ft)
P 114	0.369	0-0.5'
P 114	0.22	0.5-1'
P 114	<0.017	6-6.5'
P 115	<0.410	0-0.5'
P 115	0.0843	0.5-1'
P 115	<0.017	6-6.5'
P 116	<0.018	0-0.5'
P 116	0.323	0.5-1'
P 117	0.158	0-0.5'
P 117	0.402	0.5-1'
P 118	0.0188 J	0-0.5'
P 118	<0.017	0.5-1'
P 119	0.0771	0-0.5'
P 119	0.138	0.5-1'
P 119	0.359	1.5-2'
P 120	0.873	0-0.5' excavated
P 120	<0.085	0.5-1' excavated
P 120	0.226	1.5-2' excavated
p 121	0.6	0-0.5'
P 122	1.6	0-0.5' excavated
P 123	0.67	0-0.5' excavated
P 124	0.0072	3-4'
MW 18	0.0345	5-5.5'

Sample ID	Benzo(k)Fluoranthene (mg/kg)	Depth (ft)
PE 10	0.34	1-1.5'
PE 16	0.66	1-1.5'
PE 17	<0.04	1-1.5'
PE 28	0.25	1-1.5' excavated
PE 29	0.33	1-1.5' excavated
PE 30	0.51	1-1.5'
PE 41	<0.043	7'
PE 42	<0.043	7'
PE 43	<0.041	6'
PE 44	<0.038	7.5'
PE 45	<0.042	4.5'
PE 46	<0.041	4'
PE 47	<0.043	4.5'
PE 48	<0.041	4'
PE 49	<0.042	3'
PE 69	0.066	1-1.5'
PE 70	1.3	1-1.5'
PE 71	6.8	1-1.5'

Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Soil boring installed by On-Site inMay 2020
- Post excavation soil sample collected August/September 2021
- (4.5) Benzo(k)fluoranthene concentration in sample: mg/kg
- (6.8) Benzo(b)fluoranthene concentration in 2021 post excavation soil sample: mg/kg
- Tree
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- HL Former hydraulic lift
- FD Former floor drain

Residential ingestion standard is 51 mg/kg & inhalation standard is 780,000 mg/kg.
Non-residential ingestion standard is 230 mg/kg & inhalation standard is NA.
Migration to groundwater satnadrd is NA.
Ecological soil screening level is 148 mg/kg for exposed soil from 0 to 1 ft.



SOIL SAMPLES

Sample ID	Benzo(k)fluorthene (mg/kg)	Depth (ft)
P 10	3.222 e	0-1' excavated
P 10	0.190 e	3' excavated
P 17	0.0204 J	4'
P 17	<0.017	9'
P 18	<0.049	4-4.5'
P 20	<0.018 e	5'
P 22	0.449 F	0-6'' excavated
P 54	0.717	0.5-1' excavated
P 55	0.198	0-4'' excavated
P 58	65.3	0-0.5' excavated
P 58	0.269	1.5-2'
P 58	<0.017	6-6.5'
P 58	<0.017	18-18.5'
P 59	28.1	0-0.5' excavated
P 59	0.0967	1.5-2' excavated
P 59	<0.018	4.5-5' excavated
P 59	<0.044	9.5-10' excavated
P 61	4.5	0-0.5' excavated
P 61	0.111	1.5-2'
P 61	0.0222 J	4-4.5'
P 61	<0.016	12.5-13'
P 66	<0.016	6-6.5'
P 66	<0.018	13.5-14'
P 68	<0.015	0-0.5' excavated
P 68	<0.016	1.5-2'
P 68	<0.016	6-6.5'
P 68	<0.016	7.5-8'
P 69	0.742	1-1.5' excavated
P 70	0.0333 J	3.5-4' excavated
P 70	<0.018	6.5-7' excavated
P 71	<0.017	6-6.5'
P 71	<0.018	9-9.5'
P 72	0.378	3.5-4' excavated
P 72	<0.052	6.5-7 excavated
P 80	0.0743	0-0.5'
P 84	0.586	0-0.5' excavated
P 84	0.0203 J	0.5-1' excavated
P 85	1.11	0-0.5' excavated
P 85	0.599	1.5-2'
P 99	0.222	Storm Drain cleaned
P 100	1.46	Srorm Drain cleaned
P 102	1.09	0-0.5 ' excavated
P 102	0.13	1-2' excavated
P 102	<0.018	5-6'
P 102	<0.017	10-11'
P 103	0.316	0-0.5' excavated
P 103	<0.018	1-2' excavated
P 103	0.329	3-4'
P 103	<0.018	13.5-14'
P 104	0.0976	1-2' excavated
P 104	<0.018	6.5-7.5' excavated

Note: Concentrations above the resiential ingestion dermal standard were excavated

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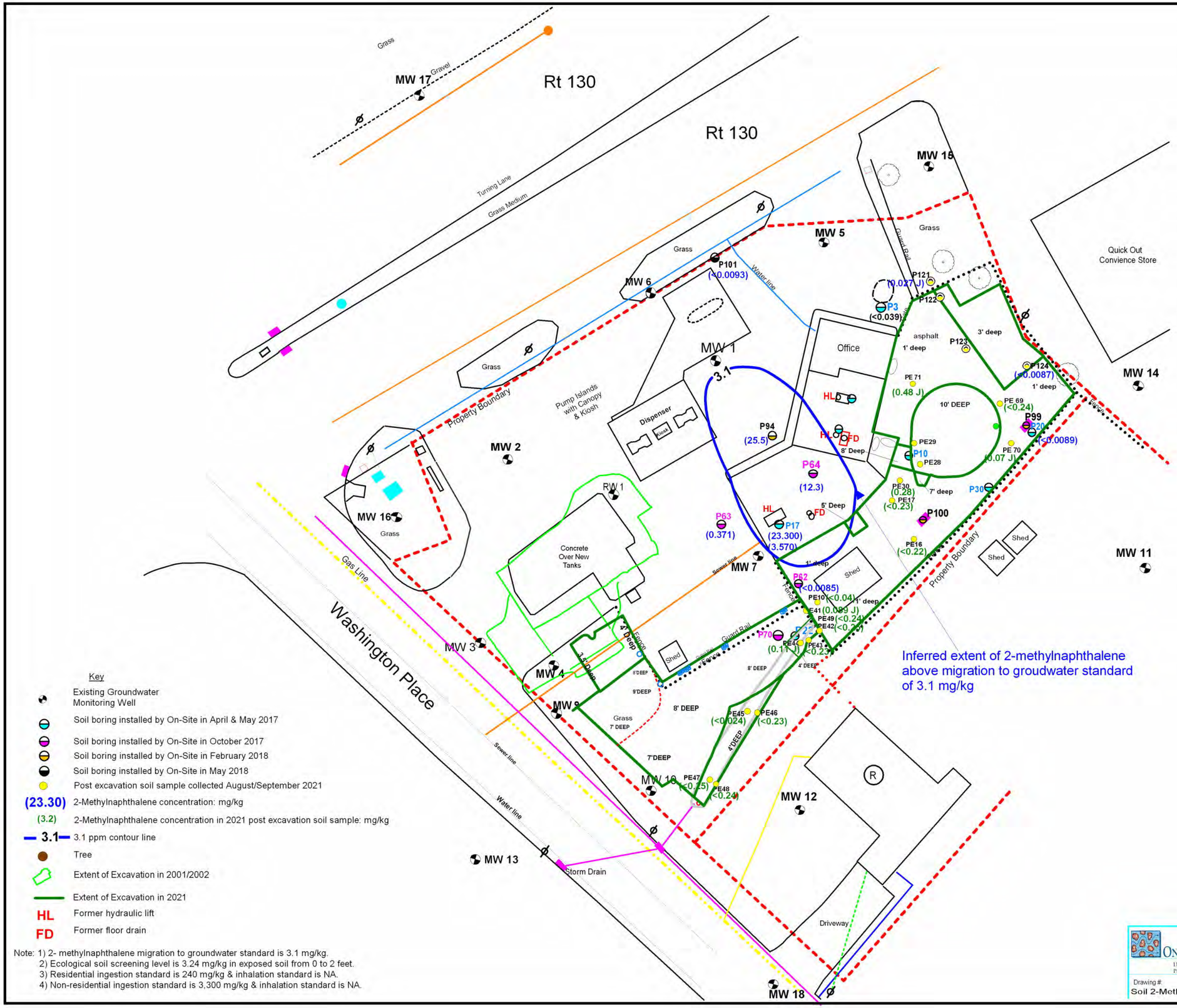
Drawing #: Soil B(k)fluoranthene
Date: 6/22/21, 3/14/22

Figure 21 Benzo(k)fluoranthene in Soil after Excavation in 2021



SOIL SAMPLES

Sample ID	2-Methylnaphthalene (mg/kg)	Depth (ft)	
P 3	<0.039	4.5-5'	
P 10	0.112	0-1'	excavated
P 10	4.040	3'	excavated
P 17	23.300	4'	
P 17	3.570	9'	saturated zone
P 20	<0.0089	5'	
P 22	<0.038	0-6"	excavated
P 62	<0.0085	5.5-6'	
P 63	0.371	3-3.5'	
P 64	12.3	1'	
P 70	3.58	3.5-4'	excavated
P 70	0.0189 J	6.5-7'	excavated
P 94	25.5	4-4.5'	
P 99	<0.0086	Storm drain	cleaned
P 100	0.0555	Storm drain	cleaned
P 101	<0.0093	3-4'	
P 121	0.027 J	0-0.5'	
P 122	0.086 J	0-0.5'	excavated
P 123	0.036 J	0-0.5'	excavated
P 124	<0.0087	3-4'	

Sample ID	2-Methylnaphthalene (mg/kg)	Depth (ft)	
PE 10	<0.04	1-1.5'	
PE 16	<0.22	1-1.5'	
PE 17	<0.23	1-1.5'	
PE 28	0.19 J	1-1.5'	excavated
PE 29	3.2	1-1.5'	excavated
PE 30	0.28	1-1.5'	
PE 41	0.089 J	7'	
PE 42	<0.25	7'	
PE 43	<0.23	6'	
PE 44	0.11 J	7.5'	
PE 45	<0.024	4.5'	
PE 46	<0.23	4'	
PE 47	<0.25	4.5'	
PE 48	<0.24	4'	
PE 49	<0.24	3'	
PE 69	<0.24	1-1.5'	
PE 70	0.07 J	1-1.5'	
PE 71	0.48 J	1-1.5'	

Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Post excavation soil sample collected August/September 2021
- (23.30) 2-Methylnaphthalene concentration: mg/kg
- (3.2) 2-Methylnaphthalene concentration in 2021 post excavation soil sample: mg/kg
- 3.1 3.1 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) 2- methylnaphthalene migration to groundwater standard is 3.1 mg/kg.
2) Ecological soil screening level is 3.24 mg/kg in exposed soil from 0 to 2 feet.
3) Residential ingestion standard is 240 mg/kg & inhalation standard is NA.
4) Non-residential ingestion standard is 3,300 mg/kg & inhalation standard is NA.

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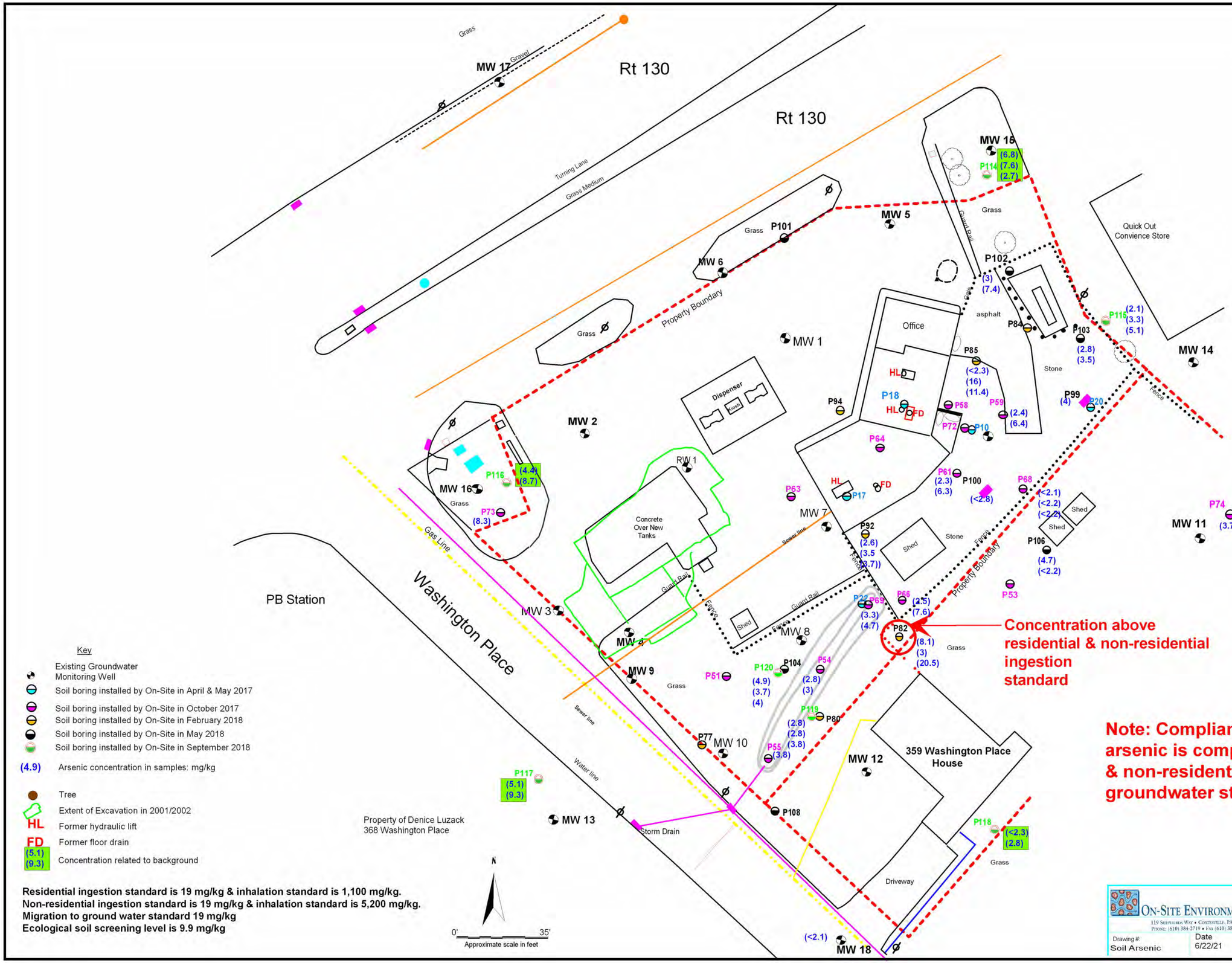
Drawing #: Soil 2-Methylnap
Date: 8/4/21

Figure 22 2-Methylnaphthalene in Soil Above Migration to Groundwater Standard After Excavation in 2021

North Brunswick Gulf
1696 Georges Road Rt 130
North Brunswick, NJ



SOIL SAMPLES

Sample ID	Arsenic (mg/kg)	Depth (ft)
P 54	2.8	0-.5'
P 54	3	0.5-1'
P 55	3.8	0-4 inch
P 59	2.4	0-0.5'
P 59	6.4	1.5-2'
P 61	2.3	0-0.5'
P 61	6.3	1.5-2'
P 66	2.5	0-0.5'
P 66	7.6	1.5-2'
P 68	<2.1	0-0.5'
P 68	<2.2	1.5-2'
P 68	<2.2	6-6.5'
P 69	3.3	0.5-1'
P 69	4.7	1-1.5'
P 73	8.3	3'
P 74	3.7	6-6.5'
P 82	8.1	0-0.5'
P 82	3	1.5-2'
P 82	20.5	5.5-6'
P 85	<2.3	0-0.5'
P 85	16	1.5-2'
P 85	11.4	3.5-4'
P 92	2.6	0-0.5'
P 92	3.5	1.5-2'
P 92	3.7	6-6.5'
P 99	4	storm drain
P 100	<2.8	storm drain
P 102	3	0-0.5'
P 102	7.4	1-2'
P 103	2.8	0-0.5'
P 103	3.5	1-2'
P 106	4.7	0-0.5'
P 106	<2.2	1.5-2'
P 114	6.8	0-0.5'
P 114	7.6	0.5-1'
P 114	2.7	6-6.5'
P 115	2.1	0-0.5'
P 115	3.3	0.5-1'
P 115	5.1	6-6.5'
P 116	4.4	0-0.5'
P 116	8.7	0.5-1'
P 117	5.1	0-0.5'
P 117	9.3	0.5-1'
P 118	<2.3	0-0.5'
P 118	2.8	0.5-1'
P 119	2.8	0-0.5'
P 119	2.8	0.5-1'
P 119	3.8	1.5-2'
P 120	4.9	0-0.5'
P 120	3.7	0.5-1'
P 120	4	1.5-2'
MW 18	<2.1	5-5.5'

Note: Compliance averaging indicated arsenic is compliant to the residential & non-residential and migration to groundwater standards.

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Drawing #: Soil Arsenic

Date 6/22/21

Figure 23 Arsenic in Soil
Above Resiential & Non-Residential
Ingestion Standard After
Excavtation in 2021

SOIL SAMPLES

Sample ID	Beryllium (mg/kg)	Depth (ft)
P 114	0.52	0-0.5'
P 114	0.65	0.5-1'
P 114	1	6-6.5'
P 115	0.56	0-0.5'
P 115	0.51	0.5-1'
P 115	0.98	6-6.5'
P 116	0.41	0-0.5'
P 116	1	0.5-1'
P 117	0.61	0-0.5'
P 117	0.99	0.5-1'
P 118	0.38	0-0.5'
P 118	0.46	0.5-1'
P 119	0.43	0-0.5'
P 119	0.51	0.5-1'
P 119	0.45	1.5-2'
P 120	0.75	0-0.5'excavated
P 120	0.57	0.5-1'excavated
P 120	0.49	1.5-2' excavated
P 121	0.219	1-2'
P 122	0.613	1-2'excavated
P 123	0.729	1-2'
P 124	0.7	1-2'excavated
MW 18	<0.21	5-5.5'

Soil Samples Collected After 2021 Excavation

Sample ID	Beryllium (mg/kg)	Depth (ft)
PE 2	0.274	3'
PE 3	0.355	1-1.5'
PE 4	0.134 J	3'
PE 5	0.066 J	1-1.5'
PE 6	0.246	3'

SOIL SAMPLES

Sample ID	Beryllium (mg/kg)	Depth (ft)
P 10	0.33	0-1' excavated
P 10	0.62	3' excavated
P 17	0.88	4'
P 17	0.39	9'
P 20	0.59	5'
P 22	0.27	0-6" excavtaed
P 54	0.38	0-0.5'excavated
P 54	0.54	0.5-1'excavated
P 55	0.74	0-4"excavated
P 59	0.36	0-0.5'excavated
P 59	1.3	1.5-2'excavted
P 61	0.21	0-0.5'excavated
P 61	0.25	1.5-2'
P 62	0.35	5.5-6'
P 63	0.46	3-3.5'
P 64	0.38	5.5-6'
P 66	0.39	0-0.5'excavated
P 66	1	1.5-2'
P 68	0.37	0-0.5'excavated
P 68	0.26	1.5-2'
P 68	0.23	6-6.5'
P 69	0.44	0.5-1'excavated
P 69	0.57	1-1.5'excavted
P 73	0.43	3'
P 74	0.67	6-6.5'
P 82	0.56	0-0.5'
P 82	0.33	1.5-2'
P 82	0.39	5.5-6'
P 85	1.9	0-0.5'excavated
P 85	1.2	1.5-2'
P 85	1	3.5-4'
P 92	0.38	0-0.5'excavated
P 92	0.31	1.5-2'
P 92	0.56	6-6.5'
P 94	0.3	4-4.5'
P 99	0.48	Storm Drain cleaned
P 100	0.34	Storm Drain cleaned
P 102	0.41	0-0.5'excavated
P 102	1.3	1-2'excavated
P 102	0.45	5-6'
P 103	0.37	0-0.5'excavated
P 103	0.83	1-2'excavated
P 106	0.3	0-0.5'
P 106	<0.22	1.5-2'

Inferred extent of beryllium above background level of 1 mg/kg which can impact ground water

Extent of excavation to address beryllium

Note: Migration to groundwater standard is 0.70 mg/kg
SPLP site specific migration to grounwater standard is 0.729 mg/kg developed by SPLP approach but background level is 1mg/kg.

Also beryllium concentrations increase with depth at P 92, P 114, P 115, P 116 & P 117.

NJDOT Project 6T at intersectiion of RT 1 and 130 demonstrated that beryllium increased with depth, which is 1.6 miles to northeast of NBG site.

Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Soil boring installed by On-Site in May 21, 2020
- Post excavation soil sample collected August/September 2021
- (0.33) Beryllium concentration in 2017 samples: mg/kg
- (0.246) Beryllium concentration in 2021 post excavation soil samples: mg/kg
- 1 — 1 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- HL Former hydraulic lift
- FD Former floor drain
- (0.41) (1) Concentration related to background
- Concentration exceeds background level

Residential ingestionstandard is 160 mg/kg
Non-residential ingestion standard is 2,600 mg/kg
Migration to ground water standard is 0.7 mg/kg
Ecological soil screening level is 10 mg/kg.

Property of Denice Luzack
368 Washington Place

N
0' 35'
Approximate scale in feet

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Figure 24 Beryllium in Soil
Above Background Level of 1 mg/kg
Which Can Impact Ground Water

Drawing #: Soil Beryllium
Date 6/18/21 3/10/22

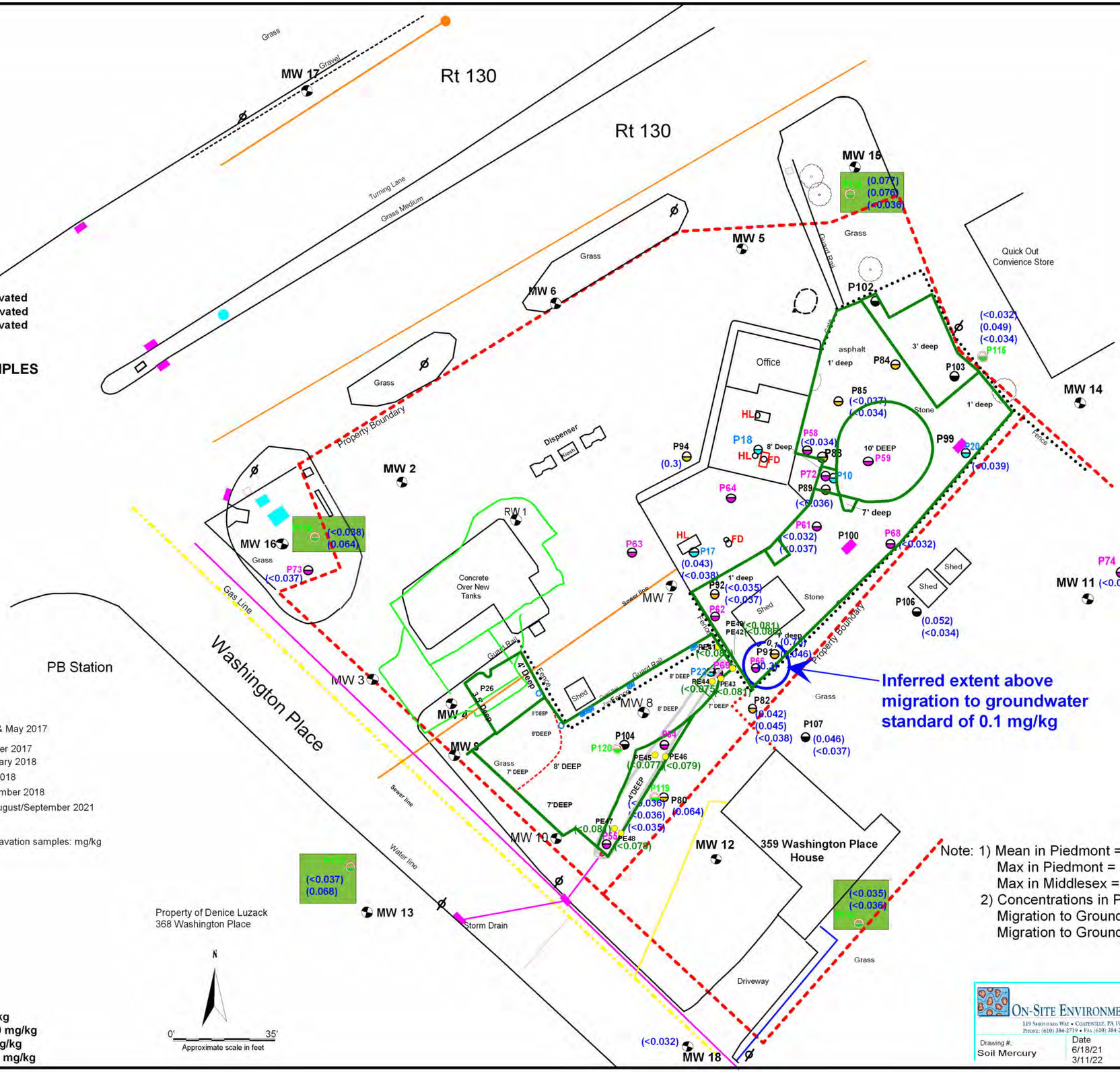
North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902

SOIL SAMPLES

Sample ID	Mercury (mg/kg)	Depth (ft)
P 114	0.077	0-0.5'
P 114	0.076	0.5-1'
P 114	<0.036	6-6.5'
P 115	<0.032	0-0.5'
P 115	0.049	0.5-1'
P 115	<0.034	6-6.5'
P 116	<0.038	0-0.5'
P 116	0.064	0.5-1'
P 117	<0.037	0-0.5'
P 117	0.068	0.5-1'
P 118	<0.035	0-0.5'
P 118	<0.036	0.5-1'
P 119	<0.036	0-0.5'
P 119	<0.035	0.5-1'
P 119	0.038	1.5-2'
P 120	0.09	0-0.5' excavated
P 120	<0.035	0.5-1' excavated
P 120	0.036	1.5-2' excavated
MW 18	<0.032	5-5.5'

2021 POST EXCAVATION SOIL SAMPLES

PE 41	<0.083	7'
PE 42	<0.086	7'
PE 43	<0.081	6'
PE 44	<0.075	7.5'
PE 45	<0.077	4.5'
PE 46	<0.079	4'
PE 47	<0.081	4.5'
PE 48	<0.078	4'
PE 49	<0.081	3'



Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- Post excavation soil sample collected August/September 2021
- (0.29) Mercury concentration : mg/kg
- (<0.083) Hercury concentration in 2021 post excavation samples: mg/kg
- 0.1 — 0.1 ppm contour line
- 0.1 — 0.07 ppm contour line
- Background concentration
- Tree
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- HL Former hydraulic lift
- FD Former floor drain

Residential ingestion standard is 23 mg/kg
Non-residential ingestion standard is 390 mg/kg
Migration to ground water level is 0.10 mg/kg
Ecological soil screening level is 0.00051 mg/kg

SOIL SAMPLES

Sample ID	Mercury (mg/kg)	Depth (ft)
P 10	<0.035	0-1' excavated
P 10	0.29	3' excavated
P 17	0.043	4'
P 17	<0.038	9'
P 20	<0.039	5'
P 22	0.1	0-6" excavated
P 54	0.67	0-0.5' excavated
P 54	0.13	0.5-1' excavated
P 55	0.091	0-4" excavated
P 58	<0.034	6-6.5'
P 59	<0.034	0-0.5' excavated
P 59	0.33	1.5-2' excavated
P 59	<0.037	4.5-5' excavated
P 61	<0.032	0-0.5' excavated
P 61	<0.032	1.5-2'
P 61	<0.037	4-4.5'
P 66	<0.032	0-0.5 ' excavated
P 66	0.3	1.5-2'
P 68	<0.033	0-0.5' excavated
P 68	<0.032	1.5-2'
P 68	<0.033	6-6.5'
P 69	0.14	0.5-1' excavated
P 69	0.13	1-1.5' excavated
P 72	0.5	1-2' excavated
P 73	<0.037	3'
P 74	<0.036	6-6.5'
P 80	0.064	0-0.5'
P 82	0.042	0-0.5'
P 82	0.045	1.5-2'
P 82	<0.038	5.5-6'
P 85	<0.038	0-0.5' excavated
P 85	<0.037	1.5-2'
P 85	<0.034	3.5-4'
P 88	0.093	0-0.5' excavated
P 88	<0.030	1.5-2'
P 88	<0.034	3-3.5'
P 89	<0.036	3.5-4'
P 91	<0.034	0-0.5' excavated
P 91	0.75	1.5-2'
P 91	0.046	5-5.5'
P 92	<0.036	0-0.5' excavated
P 92	<0.035	1.5-2'
P 92	<0.037	6-6.5'
P 99	<0.028	Storm Drain cleaned
P 100	<0.034	Storm Drain cleaned
P 102	0.074	0-0.5' excavated
P 102	0.09	1-2' excavated
P 103	<0.038	0-0.5' excavated
P 103	0.057	1-2' excavated
P 104	0.089	0-0.5' excavated
P 106	0.052	0-0.5'
P 106	<0.034	1.5-2'
P 107	0.046	0-0.5'
P 107	<0.037	1-1.5'

Note: 1) Mean in Piedmont = 0.33
Max in Piedmont = 3.0
Max in Middlesex = 0.2
2) Concentrations in Piedmont & Middlesex County higher than Migration to Groundwater Standard therefore Migration to Groundwater Standard should not apply

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Drawing #: Soil Mercury
Date: 6/18/21, 3/11/22

Figure 25 Mercury in Soil Above Migration to Groundwater Standard After Excavation in 2021

Sample ID	SOIL SAMPLES Manganese (mg/kg)	Depth (ft)
P 114	114	0-0.5'
P 114	110	0.5-1'
P 114	51.4	6-6.5'
P 115	74.2	0-0.5'
P 115	38.8	0.5-1'
P 115	64.3	6-6.5'
P 116	32.6	0-0.5'
P 116	617 C	0.5-1'
P 117	30.9	0-0.5'
P 117	429 C	0.5-1'
P 118	29	0-0.5'
P 118	37.9	0.5-1'
P 119	32.8	0-0.5'
P 119	55.5	0.5-1'
P 119	61.4	1.5-2'
P 120	641	0-0.5' excavted
P 120	232	0.5-1' excavated
P 120	90.6	1.5-2' excaavated
MW 18	3.9	5-5.5'

Sample ID	SOIL SAMPLES Manganese (mg/kg)	Depth (ft)
P 10	393	0-1' excavated
P 10	63.9	3' excavated
P 17	72.7	4'
P 17	42.1	9'
P 20	27.3	5'
P 22	242	0-6" excavated
P 51	256	2.5-3' excavated
P 53	17	4-4.5'
P 54	90.1	0-0.5' excavated
P 54	162	0.5-1' excavated
P 55	168	0-4" excavted
P 59	351	0-0.5' excavated
P 59	372	1.5-2 excavated
P 59	40.4	4.5-5' excavated
P 61	277	0-0.5' excavated
P 61	17.6	1.5-2'
P 63	395	3-3.5'
P 64	74.7	5.5-6'
P 66	381	0-0.5' excavated
P 66	1,380	1.5-2'
P 68	415	0-0.5' excavated
P 68	31.9	1.5-2'
P 68	6.6	6-6.5'
P 69	508	0.5-1' excavated
P 69	650	1-1.5' excavated
P 73	34.8	3'
P 74	36.4	6-6.5'
P 77	18.9	2-2.5'
P 80	29.8	0-0.5'
P 82	55.6	0-0.5'
P 82	16.6	1.5-2'
P 82	12.7	5.5-6'
P 85	2040	0-0.5' excavated
P 85	56.9	1.5-2'
P 85	18.2	3.5-4'
P 92	12500	0-0.5' excavated
P 92	<570	1.5-2'
P 92	1330	6-6.5'
P 94	38	4-4.5'
P 99	301	Storm Drain cleaned
P 100	260	Storm Drain cleaned
P 101	23.5	3-4'
P 102	319	0-0.5' excavated
P 102	980	1-2' excavated
P 102	38.4	5-6'
P 103	392	0-0.5' excavated
P 103	438	1-2' excavated
P 106	35	0-0.5'
P 106	18.4	1.5-2'
P 108	17.5	1-1.5'

Rt 130

Rt 130

Grass

Gravel

Turning Lane

Grass Medium

MW 17

MW 15

P114 (114) (110) (51.4)

Grass

Guard Rail

Quick Out Convience Store

MW 5

P101 (23.5)

MW 6

P102 (38.4)

Property Boundary

Grass

Office

asphalt

1' deep excavation

P84

3' deep excavation

(74.2) (38.8) (64.3)

P115

P103

Stone

1' deep excavation

MW 14

MW 1

P85 (56.9) (18.2)

HL

P18

HL FD

P94 (38)

Dispenser

Island

MW 2

P58

P59

10' DEEP Excavation

P99

P20 (27.3)

P72

P10

P64

8' Deep

7' Deep

5' Deep excavation

P61 (17.6)

P100

P68 (31.9) (6.6)

Fence

RW 1

MW 16

P116 (32.6) (617)

Grass

P73 (34.8)

HL

P17 (72.7) (42.1)

FD

P63 (395)

MW 7

Concrete Over New Tanks

Sewer line

P92 (<570) (1,330)

1' deep excavation

Asphalt 1' deep excavation

Shed

Shed

Shed

P106 (35) (18.4)

Gas Line

Guard Rail

Fence

Guard Rail

8' Deep excavation

P22

P69

P66 (1,380)

Property Boundary

P53 (17)

PB Station

Washington Place

MW 3

MW 4

MW 8

P82 (55.6) (16.6) (12.7)

Grass

MW 9

Grass

P51

P120

P104

P54

P119 (32.8) (55.5) (61.4)

P80 (29.8)

Sewer line

P77 (18.9)

MW 10

P55

MW 12

359 Washington Place House

Water line

P117 (30.9) (429)

Property of Denice Luzack
368 Washington Place

MW 13

P108 (17.5)

(29) (37.9)

P118

Storm Drain

Grass

Driveway

(3.9)

MW 18

P74

MW 11 (36.4)

Key

- Existing Groundwater Monitoring Well
- Soil boring installed by On-Site in April & May 2017
- Soil boring installed by On-Site in October 2017
- Soil boring installed by On-Site in February 2018
- Soil boring installed by On-Site in May 2018
- Soil boring installed by On-Site in September 2018
- (393) Manganese concentration in 2017 samples: mg/kg
- Tree
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- HL Former hydraulic lift
- FD Former floor drain
- (32.6) (617) Concentration related to background

Residential ingestion standard is 1,900,mg/kg & inhalation standard is 87,000 mg/kg.
Non-residential ingestion standard is 31,000 mg/kg & inhalation standard is 400,000 mg/kg.
Migration to ground water standard NA
Manganese it is a secondary contaminant
Eological soil screening level is 220 mg/kg

N

0' 35'

Approximate scale in feet

Note: Concentrations that were above the residential ingestion dermal standard were excavated.

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Drawing #: Soil Manganese

Date 6/18/21 3/11/22

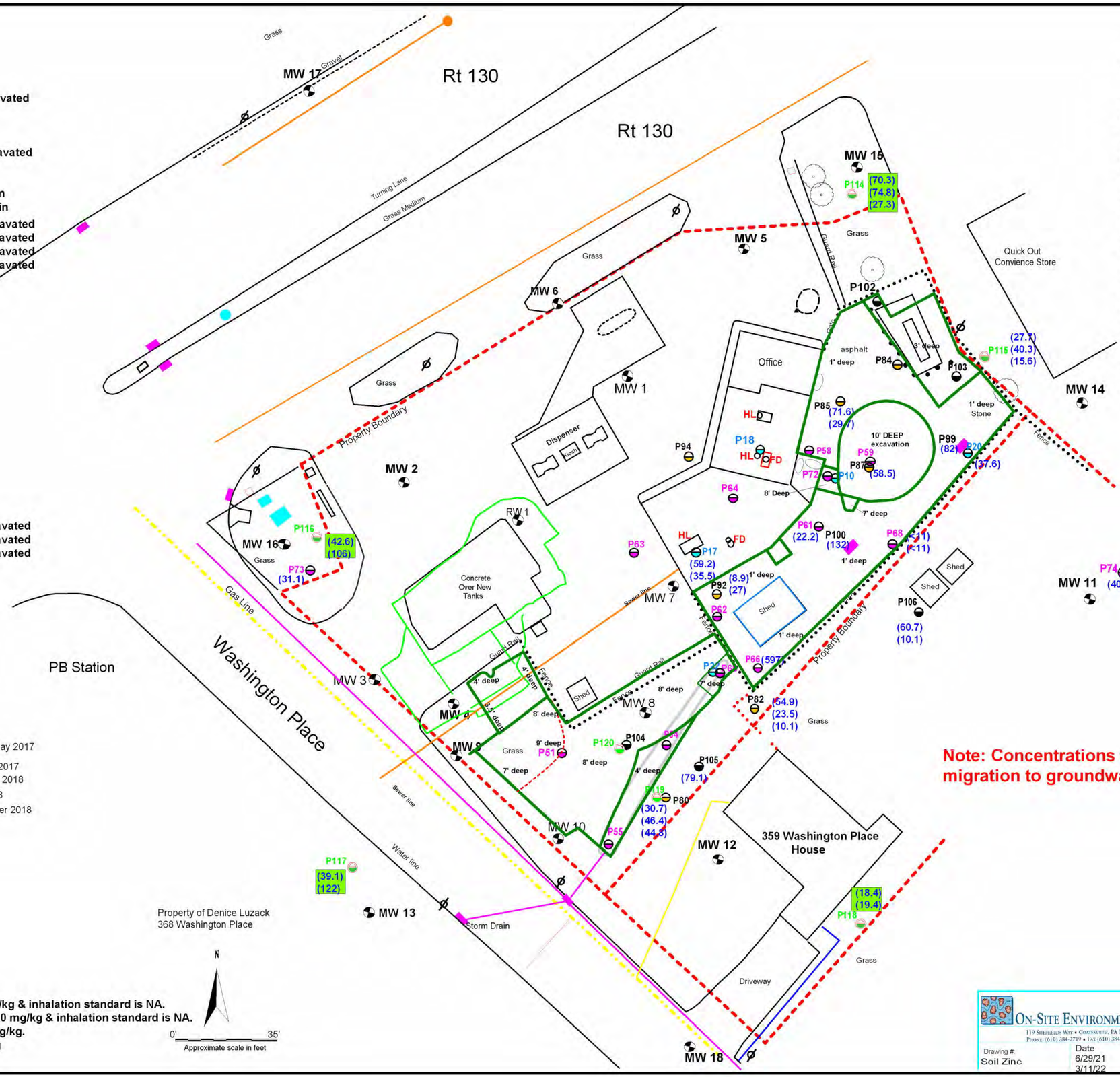
Figure 26 Manganese in Soil After 2021 Excavation

SOIL SAMPLES

Sample ID	Zinc (mg/kg)	Depth (ft)
P 82	54.9	0-0.5'
P 82	23.5	1.5-2'
P 82	10.1	5.5-6'
P 85	92.2	0-0.5' excavated
P 85	71.6	1.5-2'
P 85	29.7	3.5-4'
P 87	58.5	4.5-5'
P 92	77.9	0-0.5' excavated
P 92	8.9	1.5-2'
P 92	27	6-6.5'
P 99	82	Storm Drain
P 100	132	Storm Drain
P 102	357	0-0.5' excavated
P 102	99.8	1-2' excavated
P 103	104	0-0.5' excavated
P 103	65.3	1-2' excavated
P 105	79.1	0-0.5'
P 106	60.7	0-0.5'
P 106	10.1	1.5-2'
P 114	70.3	0-0.5'
P 114	74.8	0.5-1'
P 114	27.3	6-6.5'
P 115	27.7	0-0.5'
P 115	40.3	0.5-1'
P 115	15.6	6-6.5'
P 116	42.6	0-0.5'
P 116	106	0.5-1'
P 117	39.1	0-0.5'
P 117	122	0.5-1'
P 118	18.4	0-0.5'
P 118	19.4	0.5-1'
P 119	30.7	0-0.5'
P 119	46.4	0.5-1'
P 119	44.8	1.5-2'
P 120	160	0-0.5' excavated
P 120	93.1	0.5-1' excavated
P 120	85.8	1.5-2' excavated
MW 18	6.3	5-5.5'

SOIL SAMPLES

Sample ID	Zinc (mg/kg)	Depth (ft)	
P 10	572	0-1'	excavated
P 10	65.3	3'	excavated
P 17	59.2	4'	
P 17	35.5	9'	
P 20	37.6	5'	
P 22	241	0-6"	excavated
P 54	190	0-0.5'	excavated
P 54	266	0.5-1'	excavated
P 55	184	0-4"	excavated
P 59	228	0-0.5'	excavated
P 59	1,280	1.5-2'	excavated
P 61	109	0-0.5'	excavated
P 61	22.2	1.5-2'	
P 66	139	0-0.5'	excavated
P 66	597	1.5-2'	
P 68	63.2	0-0.5'	excavated
P 68	<11	1.5-2'	
P 68	<11	6-6.5'	
P 69	348	0.5-1'	excavated
P 69	440	1-1.5'	excavated
P 73	31.3	3'	
P 74	40.3	6-6.5'	



Residential ingestion standard is 23,000 mg/kg & inhalation standard is NA.
Non-residential ingestion standard is 390,000 mg/kg & inhalation standard is NA.
Migration to groundwater standard is 930 mg/kg.
Ecological soil screening level is 6.62 mg/kg

Note: Concentrations that were above the migration to groundwater standard were excavated.

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Drawing #: Soil Zinc

Date: 6/29/21, 3/11/22

Figure 27 Zinc in Soil After 2021 Excavation

October 2017
UNSATURATED SOIL SAMPLES

Sample ID	Benzene (mg/kg)	Depth (ft)	
P 47	<0.00026	6-6.5'	
P 48	<0.00024	1-1.5'	
P 49	<0.00020	4.5-5'	
P 50	<0.00021	4-4.5'	
P 52	0.759	0-0.5'	
P 53	<0.00016	4-4.5'	
P 54	<0.00056	0-0.5'	excavated
P 54	<0.00056	0.5-1'	excavated
P 55	0.0015 J	0-4"	excavated
P 56	<0.00021	3-3.5'	
P 57	<0.00025	3.5-4'	
P 60	<0.00033	0-0.5'	excavated
P 60	0.0034	1.5-2'	excavated
P 64	1.410	6-6.5'	
P 70	226	3.5-4'	excavated

2021 POST EXCAVATION SOIL SAMPLES

Sample ID	Cumene (mg/kg)	Depth (ft)	
PE 31	<0.00035 J	8'	in saturated zone
PE 32	<0.0011	5'	
PE 33	3.7	10	in saturated zone'
PE 34	<0.00099	6.5'	
PE 35	0.06	9'	in saturated zone
PE 36	19	5'	
PE 37	1.4	9'	in saturated zone
PE 38	9.7	7'	in saturated zone
PE 39	0.062 J	10.5'	in saturated zone
PE 40	0.3	10.5'	in saturated zone
PE 41	0.0024	7	in saturated zone'
PE 42	0.00022 J	7'	in saturated zone
PE 43	0.0037	6'	
PE 44	0.025	7.5	in saturated zone'
PE 45	<0.001	4.5'	
PE 46	<0.00092	4'	
PE 47	<0.0011	4.5'	
PE 48	<0.00098	4'	
PE 49	<0.00096	3'	
PE 50	0.56	4'	
PE 51	0.0068	8'	in saturated zone
PE 52	5.7	5'	
PE 53	0.035	8'	in saturated zone
PE 54	0.013	8-8.5'	in saturated zone
PE 55	0.21	6'	
PE 56	0.0049	6'	
PE 57	0.016	8'	in saturated zone
PE 58	<0.00086	2.5'	
PE 59	<0.00088	6'	
PE 60	0.053	9.5	in saturated zonee'
PE 61	<0.0015	5'	

February 2018
UNSATURATED SOIL SAMPLES

Sample ID	Benzene (mg/kg)	Depth (ft)
P 77	<0.00026	2-2.5'
P 78	<0.0021	2.5'
P 99 Storm drain	<0.00024	
P 100 Storm drain	< 0.00028	

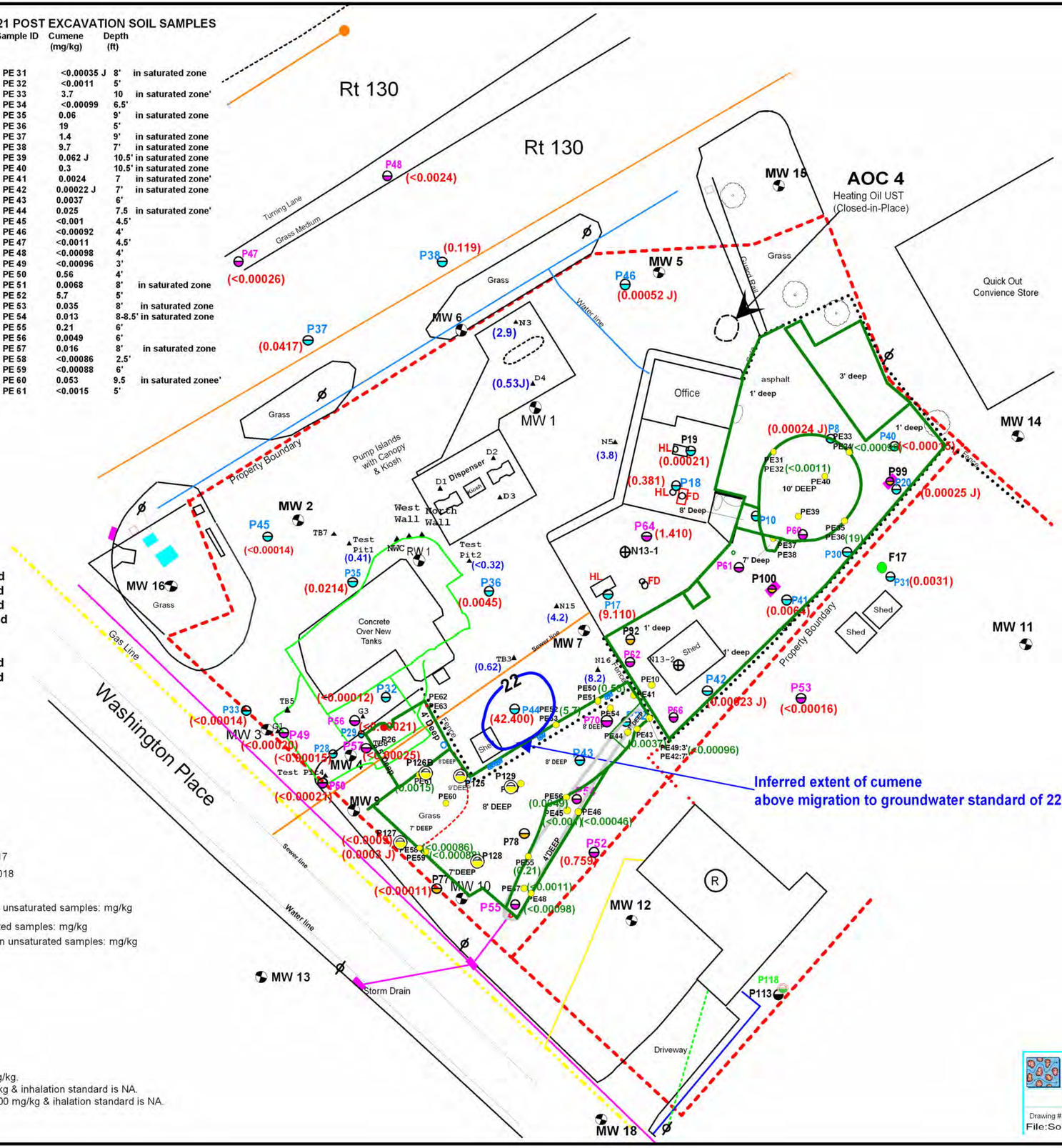
May 2020
SOIL SAMPLES

Sample ID	Cumene (mg/kg)	Depth (ft)	
P 125	<0.001	2.5-3'	excavated
P 125	0.52	3.5-4'	excavated
P 126B	<0.0008	3.5-4'	excavated
P 126B	<0.00098	4.5-5'	excavated
P 127	<0.0009	3.5-4'	
P 127	0.0003 J	5-5.5'	
P 128	0.65	4-4.5'	excavated
P 128	0.1	5.5-6'	excavated

Key

- Existing Groundwater Monitoring Well
- F7 ● Soil Boring Installed by RedHawk 2008 & 2009
- N12 ▲ Soil Boring Installed by RedHawk in 2001 & 2002
- ⊕ Soil Boring Installed by Whitman in 2004
- Soil Boring Installed by On-Site in april & May 2017
- Soil Boring Installed by On-Site in October 2017
- Soil Boring Installed by On-Site in February 2018
- Soil Boring Installed by On-Site in May 2018
- (56.1) Cumene concentration in 2017 & 2018 & 2020 unsaturated samples: mg/kg
- (4.2) Cumene concentration in 2001/2009 unsaturated samples: mg/kg
- (<0.00088) Cumene concentration in 2021 post excavation unsaturated samples: mg/kg
- 22 22 ppm contour line
- Tree
- Extent of Excavation in 2001/2002
- Extent of Excavation in 2021
- HL Former hydraulic lift
- FD Former floor drain

Note: 1) Cumene migration to groundwater standard of 22 mg/kg.
2) Cumene residential ingestion standard is 7,800 mg/kg & inhalation standard is NA.
3) Cumene non-residential ingestion standard is 130,000 mg/kg & ihalation standard is NA.
4) Ecological soil screening level is NA.



April & May 2017
UNSATURATED SOIL SAMPLES

Sample ID	Benzene (mg/kg)	Depth (ft)	
P 8	0.00024 J	6'	
P 10	<0.00017	0-1'	excavted
P 10	0.016	3'	excavated
P 17	9.110	4'	
P 18	0.381	4-4.5'	
P 19	0.00021	5'	
P 20	0.00025 J	5'	
P 22	<0.00061	0-6"	excavated
P 28	<0.00015	3.5'	
P 31	0.0031	6.5'	
P 32	<0.00012	4.5'	
P 33	<0.00014	4.5'	
P 35	0.0214	5.5-6'	
P 36	0.0045	6'	
P 37	0.0417	3'	
P 38	0.119	3'	
P 40	<0.00015	6'	
P 41	0.0064	5'	
P 42	0.00023 J	6'	
P 43	56.1	1'	excavated
P 43	1.13	2'	excavated
P 43	2.18	6'	excavated
P 44	42.400	3'	
P 45	<0.00014	5.5-6'	
P 46	0.00052 J	6-6.5'	
P 51	15.3	2.5-3'	excavated
P 51	12.3	3.5-4'	excavated

2001 - 2009
UNSATURATED SOIL SAMPLES

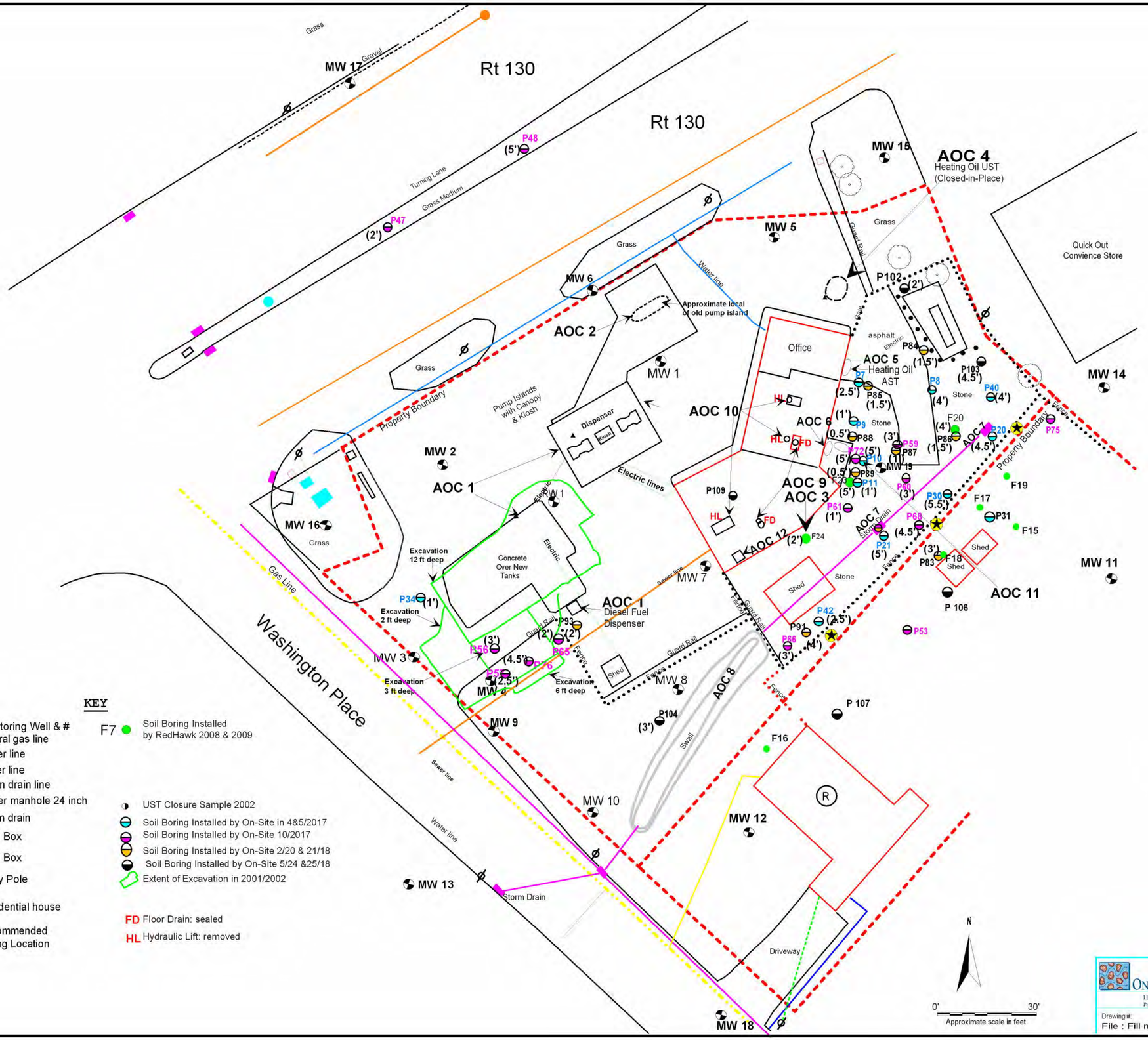
Sample ID	Benzene (mg/kg)	Depth (ft)
Test Pit 1	0.41	2'
Test Pit 2	<0.32	2'
TB3	0.62	3-4'
N3	2.9	4 - 5.5'
N 5	3.8	4 - 5'
N 15	4.2	2 - 3'
N 16	8.2	4 - 7'

ON-SITE ENVIRONMENTAL
119 Shipyard Way • Coatesville, PA 19320
Phone: (610) 384-2719 • Fax (610) 384-2709

Drawing # File:Soil cumene unsat

Date 8/4/21 3/11/22

Figure 28 Cumene in Soil
Above Migration to Groundwater
Standard After Excavation in 2021
North Brunswick Gulf
1696 Georges Road RT 130
North Brunswick, New Jersey 08902



Boring ID	Depth of Historic Fill at Rear of Site
P 7	0-2.5'
P 8	0-4'
P 9	0-1'
P 10	0-5'
P 11	0-1'
P 20	0-4.5'
P 21	0-5'
P30	0-5.5'
P 40	0-4'
P 42	0-2.5'
P 47	1-2'
P 48	1-5'
P 59	1.5-3'
P 60	1-3'
P 61	0-1'
P66	0-3'
P68	2.5-4.5'
P72	1-5'
P83	0-3'
P84	0.5-1.5'
P85	0.5-1.5'
P86	0.5-1.5'
P87	0.5-1'
P 88	0-0.5
P89	0-0.5'
P91	0-4'
P102	1-2'
P103	0.5-4.5'
P104	0.5-3'
F20	0.5-4'
F21	0-4'
F23	0-5'
F24	0-2'

KEY

- MW 6 — Monitoring Well & #
- Natural gas line
- Sewer line
- Water line
- Storm drain line
- Sewer manhole 24 inch
- Storm drain
- DOT Box
- DOT Box
- Utility Pole
- R — Residential house
- Recommended Boring Location
- F7 — Soil Boring Installed by RedHawk 2008 & 2009
- UST Closure Sample 2002
- Soil Boring Installed by On-Site in 4&5/2017
- Soil Boring Installed by On-Site 10/2017
- Soil Boring Installed by On-Site 2/20 & 21/18
- Soil Boring Installed by On-Site 5/24 &25/18
- Extent of Excavation in 2001/2002
- FD — Floor Drain: sealed
- HL — Hydraulic Lift: removed

Boring ID	Fill in Other Borings
P 34	1'
P 47	2'
P 48	5'
P 56	3'
P 57	2.5'
P 65	1-2'
P 76	4.5'
P 93	1-2'

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Drawing #: File : Fill map

Date 12/1/18 6/17/22

Figure 29 Fill Areas

North Brunswick Gulf
1696 Georges Road RT 130
Middlesex County
North Brunswick, New Jersey 08902

Grass

MW 17

Gravel

Rt 130

Rt 130

Turning Lane

Grass Medium

0.0094

MW 15

MW 5

Grass

Guard Rail

Quick Out
Convience Store

Fence

Water line

MW 6

Gate

asphalt

Office

Grass

MW 1

AREA 6

HL

Pump Islands
with Canopy
& Kiosh

Dispenser

Kiosk

MW 14

Property Boundary

MW 2

AREA 7

HL

FD

Electric lines

AREA 5

Electric

RW 1

HL

FD

MW 16

Grass

AREA 4

Storm Drain

Excavation
12 ft deep

Concrete
Over New
Tanks

Electric

Shed

Shed

Stone

MW 11

Gas Line

Sewer line

MW 7

TB3

Diesel Fuel
Dispenser

AREA 3

Guard Rail

Fence

Guard Rail

Excavation in 2021

Excavation
2 ft deep

MW 3

Excavation
3 ft deep

MW 4

Excavation
6 ft deep

Test
Pit6

MW 9

Grass

Shed

Fence

Fence

Washington Place

Swale

Sewer line

MW 10

R

MW 12

Water line

P117

P112

F14

MW 13

P108

P118

P113

Storm Drain

F11

F13

Driveway

F12

MW 18

MW 20

Area 3: 455 tons
Area 4: 262 tons
Area 5: 386 tons
Area 6: 1009 tons
Area 7: 180 tons
Total : 2292 tons

N

0' 30'

Approximate scale in feet

ON-SITE ENVIRONMENTAL
119 Shepherds Way • Coatesville, PA 19320
Phone: (610) 384-2719 • Fax (610) 384-2709

Drawing #:
File :recommended excavation

Date
6/16/22

Figure 30 Recommendd Excavation

North Brunswick Gulf
1696 Georges Road RT 130
Middlesex County
North Brunswick, New Jersey 08902

Table 1: Samples Collected in Former Propane Tank Area

		SAMPLE ID:						PE1:1-1 1/2'				PE2:3'				PE3:1-1 1/2'				PE4:3'				PE5:1-1 1/2'			
		LAB ID:						L2145769-01				L2145769-02				L2145769-03				L2145769-04				L2145769-05			
		COLLECTION DATE:						8/25/2021				8/25/2021				8/25/2021				8/25/2021				8/25/2021			
		SAMPLE DEPTH:																									
		SAMPLE MATRIX:						SOIL				SOIL				SOIL				SOIL				SOIL			
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ- NRID-SRS	NJ-NRI-SRS																					
ANALYTE	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL		
PAHS BY GC/MS-SIM																											
Acenaphthene	83-32-9		3,600	NA	50,000	NA	0.0058	J	0.0082	0.0017	-		-	-	-		-	-	-		-	-	-		-	-		
Fluoranthene	206-44-0		2,400	NA	33,000	NA	0.21		0.0082	0.00057	-		-	-	-		-	-	-		-	-	-		-	-		
Naphthalene	91-20-3	19	2,500	5.7	34,000	27	0.0017	J	0.0082	0.0015	-		-	-	-		-	-	-		-	-	-		-	-		
2-Methylnaphthalene	91-57-6	3.1	240	NA	3,300	NA	ND		0.0082	0.0023	-		-	-	-		-	-	-		-	-	-		-	-		
Benzo(a)anthracene	56-55-3	0.71	5.1	78,000	23	370,000	0.093		0.0082	0.00078	-		-	-	-		-	-	-		-	-	-		-	-		
Benzo(a)pyrene	50-32-8		0.51	3,500	2.3	16,000	0.088		0.0082	0.00098	-		-	-	-		-	-	-		-	-	-		-	-		
Benzo(b)fluoranthene	205-99-2		5.1	78,000	23	370,000	0.11		0.0082	0.00078	-		-	-	-		-	-	-		-	-	-		-	-		
Benzo(k)fluoranthene	207-08-9		51	780,000	230	NA	0.04		0.0082	0.00073	-		-	-	-		-	-	-		-	-	-		-	-		
Chrysene	218-01-9		510	NA	2,300	NA	0.082		0.0082	0.00061	-		-	-	-		-	-	-		-	-	-		-	-		
Acenaphthylene	208-96-8		-	-	-	-	0.0026	J	0.0082	0.001	-		-	-	-		-	-	-		-	-	-		-	-		
Anthracene	120-12-7		18,000	NA	250,000	NA	0.029		0.0082	0.00065	-		-	-	-		-	-	-		-	-	-		-	-		
Benzo(ghi)perylene	191-24-2		-	-	-	-	0.06		0.0082	0.00069	-		-	-	-		-	-	-		-	-	-		-	-		
Fluorene	86-73-7		2,400	NA	33,000	NA	0.0069	J	0.0082	0.00098	-		-	-	-		-	-	-		-	-	-		-	-		
Phenanthrene	85-01-8		-	-	-	-	0.1		0.0082	0.00069	-		-	-	-		-	-	-		-	-	-		-	-		
Dibenzo(a,h)anthracene	53-70-3		0.51	7,800	2.3	37,000	0.013		0.0082	0.00082	-		-	-	-		-	-	-		-	-	-		-	-		
Indeno(1,2,3-cd)pyrene	193-39-5		5.1	78,000	23	370000	0.065		0.0082	0.00098	-		-	-	-		-	-	-		-	-	-		-	-		
Pyrene	129-00-0		1,800	NA	25,000	NA	0.18		0.0082	0.00057	-		-	-	-		-	-	-		-	-	-		-	-		
2-Chloronaphthalene	91-58-7		4,800	NA	67,000	NA	ND		0.0082	0.0011	-		-	-	-		-	-	-		-	-	-		-	-		
TOTAL METALS																											
Beryllium, Total	7440-41-7	0.7	160	2,000	2,600	9,300	-		-	-	0.274		0.236	0.016	0.355		0.237	0.016	0.134	J	0.223	0.015	0.066	J	0.234	0.016		
GENERAL CHEMISTRY																											
Solids, Total	NONE						81.1		0.1	NA	82.4		0.1	NA	82.4		0.1	NA	88.6		0.1	NA	84		0.1	NA		
Comment																											
Sample collected in unsaturated zone								yes				yes				yes				yes				yes			

		SAMPLE ID:						PE6:3'				PE7:0-1/2'				PE8:1-1 1/2'				PE9:3'			
		LAB ID:						L2145769-06				L2145769-07				L2145769-08				L2145769-09			
		COLLECTION DATE:						8/25/2021				8/25/2021				8/25/2021				8/25/2021			
		SAMPLE DEPTH:																					
		SAMPLE MATRIX:						SOIL				SOIL				SOIL				SOIL			
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ- NRID-SRS	NJ-NRI-SRS																	
ANALYTE	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL		
PAHS BY GC/MS-SIM																							
Acenaphthene	83-32-9		3,600	NA	50,000	NA	-		-	-	-		-	-	-		-	-	-		-	-		
Fluoranthene	206-44-0		2,400	NA	33,000	NA	-		-	-	-		-	-	-		-	-	-		-	-		
Naphthalene	91-20-3	19	2,500	5.7	34,000	27	-		-	-	-		-	-	-		-	-	-		-	-		
2-Methylnaphthalene	91-57-6	3.1	240	NA	3,300	NA	-		-	-	-		-	-	-		-	-	-		-	-		
Benzo(a)anthracene	56-55-3	0.71	5.1	78,000	23	370,000	-		-	-	-		-	-	-		-	-	-		-	-		
Benzo(a)pyrene	50-32-8		0.51	3,500	2.3	16,000	-		-	-	1.2		0.016	0.0019	0.041		0.007	0.00084	0.014		0.0074	0.00089		
Benzo(b)fluoranthene	205-99-2		5.1	78,000	23	370,000	-		-	-	-		-	-	-		-	-	-		-	-		
Benzo(k)fluoranthene	207-08-9		51	780,000	230	NA	-		-	-	-		-	-	-		-	-	-		-	-		
Chrysene	218-01-9		510	NA	2,300	NA	-		-	-	-		-	-	-		-	-	-		-	-		
Acenaphthylene	208-96-8		-	-	-	-	-		-	-	-		-	-	-		-	-	-		-	-		
Anthracene	120-12-7		18,000	NA	250,000	NA	-		-	-	-		-	-	-		-	-	-		-	-		
Benzo(ghi)perylene	191-24-2		-	-	-	-	-		-	-	-		-	-	-		-	-	-		-	-		
Fluorene	86-73-7		2,400	NA	33,000	NA	-		-	-	-		-	-	-		-	-	-		-	-		
Phenanthrene	85-01-8		-	-	-	-	-		-	-	-		-	-	-		-	-	-		-	-		
Dibenzo(a,h)anthracene	53-70-3		0.51	7,800	2.3	37,000	-		-	-	-		-	-	-		-	-	-		-	-		
Indeno(1,2,3-cd)pyrene	193-39-5		5.1	78,000	23	370000	-		-	-	-		-	-	-		-	-	-		-	-		
Pyrene	129-00-0		1,800	NA	25,000	NA	-		-	-	-		-	-	-		-	-	-		-	-		
2-Chloronaphthalene	91-58-7		4,800	NA	67,000	NA	-		-	-	-		-	-	-		-	-	-		-	-		
TOTAL METALS																							
Beryllium, Total	7440-41-7	0.7	160	2,000	2,600	9,300	0.246		0.228	0.015	-	-	-	-	-	-	-	-	-	-	-	-		
GENERAL CHEMISTRY																							
Solids, Total	NONE						84		0.1	NA	84.8		0.1	NA	91.8		0.1	NA	87.1		0.1	NA		
Comment																							
Sample collected in unsaturated zone								yes				yes				yes				yes			

Note: Samples collected in saturated zone should not be compared to migration to groundwater standard.
Note: Samples collected in unsaturated zone should be compared to migration to groundwater standard.
1.2: Exceeds Residential ingestion or inhalation standard.
J: Estimated value.
ND: Detection level above method detection level (MDL).
NJ-MGW-SRS: NJ - New Jersey 2021 Migration to Groundwater Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-RID-SRS: NJ - New Jersey 2021 Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-RI-SRS: NJ - New Jersey 2021 Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-NRID-SRS: NJ - New Jersey 2021 Non-Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-NRI-SRS: NJ - New Jersey 2021 Non-Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

Table 2: Samples Collected Where Lead Exceeded Non-Residential Standard at AOC 3

		SAMPLE ID:					PE11: 3 1/2-4'				PE12: 3 1/2-4'				PE13: 3 1/2-4'				PE14: 3 1/2-4'				PE15: 5-5 1/2'			
		LAB ID:					L2146291-01				L2146291-02				L2146291-03				L2146291-04				L2146291-05			
		COLLECTION DATE:					8/27/2021				8/27/2021				8/27/2021				8/27/2021				8/27/2021			
		SAMPLE DEPTH:																								
		SAMPLE MATRIX:					SOIL				SOIL				SOIL				SOIL				SOIL			
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ- NRID-SRS	NJ-NRI-SRS																				
ANALYTE	**CAS**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**	**Conc**	**Q**	**RL**	**MDL**
TOTAL METALS																										
Lead, Total	7439-92-1	90	400	NA	800	NA	33.7		2.2	0.118	56.3		2.22	0.119	29.5		2.35	0.126	17.8		2.5	0.134	10.7		2.41	0.129
GENERAL CHEMISTRY																										
Solids, Total	NONE						88.1		0.1	NA	85.3		0.1	NA	82.6		0.1	NA	78.8		0.1	NA	79.1		0.1	NA
Comment																										
Sample collected in unsaturated zone							yes				yes				yes				yes				yes			

NJ-MGW-SRS: NJ - New Jersey 2021 Migration to Groundwater Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-RID-SRS: NJ - New Jersey 2021 Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-RI-SRS: NJ - New Jersey 2021 Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-NRID-SRS: NJ - New Jersey 2021 Non-Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-NRI-SRS: NJ - New Jersey 2021 Non-Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

Table 3: Samples Collected for PAHs Where PAHs Exceeded the Non-Residential Standard Behind Station

		SAMPLE ID:					PE10:1-1 1/2'				PE16: 1-1 1/2				PE17: 1-1 1/2				PE28: 1-1 1/2'				PE29: 1-1 1/2'			
		LAB ID:					L2145769-10				L2146291-06				L2146291-07				L2146679-11				L2146679-12			
		COLLECTION DATE:					8/25/2021				8/27/2021				8/27/2021				8/31/2021				8/31/2021			
		SAMPLE DEPTH:																								
		SAMPLE MATRIX:					SOIL				SOIL				SOIL				SOIL				SOIL			
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ- NRID-SRS	NJ-NRI-SRS																				
ANALYTE	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
SEMIVOLATILE ORGANICS BY GC/MS																										
Acenaphthene	83-32-9		3,600	NA	50,000	NA	0.15		0.04	0.0083	ND		0.15	0.016	ND		0.15	0.016	0.079	J	0.15	0.015	0.17	J	0.7	0.073
2-Chloronaphthalene	91-58-7		4,800	NA	67,000	NA	2		0.04	0.0028	ND		0.19	0.018	ND		0.19	0.018	ND		0.18	0.017	ND		0.87	0.083
Fluoranthene	206-44-0		2,400	NA	33,000	NA	0.072		0.04	0.0071	0.4		0.11	0.022	0.03	J	0.11	0.022	0.86		0.11	0.021	1.8		0.52	0.1
Naphthalene	91-20-3	19	2,500	5.7	34,000	27	0.051		0.04	0.011	ND		0.19	0.023	ND		0.19	0.023	0.12	J	0.18	0.022	1.2		0.87	0.11
Benzo(a)anthracene	56-55-3	0.71	5.1	78,000	23	370,000	1		0.04	0.0038	0.19		0.063	0.021	ND		0.064	0.022	0.59		0.062	0.021	1.1		0.29	0.098
Benzo(a)pyrene	50-32-8		0.51	3,500	2.3	16,000	0.86		0.04	0.0047	0.13	J	0.14	0.046	ND		0.14	0.047	0.53		0.13	0.045	0.66		0.64	0.21
Benzo(b)fluoranthene	205-99-2		5.1	78,000	23	370,000	1		0.04	0.0038	0.16		0.047	0.016	0.032	J	0.048	0.016	0.7		0.046	0.015	0.92		0.22	0.073
Benzo(k)fluoranthene	207-08-9		51	780,000	230	NA	0.34		0.04	0.0036	0.066		0.039	0.013	ND		0.04	0.013	0.25		0.038	0.013	0.33		0.18	0.061
Chrysene	218-01-9		510	NA	2,300	NA	0.91		0.04	0.003	0.16		0.11	0.019	ND		0.11	0.02	0.57		0.11	0.019	0.94		0.52	0.09
Acenaphthylene	208-96-8		-	-	-	-	0.048		0.04	0.0049	ND		0.15	0.021	ND		0.15	0.021	0.041	J	0.15	0.02	ND		0.7	0.098
Anthracene	120-12-7		18,000	NA	250,000	NA	0.48		0.04	0.0032	0.09	J	0.11	0.017	ND		0.11	0.017	0.15		0.11	0.016	0.4	J	0.52	0.078
Benzo(ghi)perylene	191-24-2		-	-	-	-	0.51		0.04	0.0034	0.068	J	0.15	0.022	ND		0.15	0.022	0.31		0.15	0.022	0.61	J	0.7	0.1
Fluorene	86-73-7		2,400	NA	33,000	NA	0.2		0.04	0.0047	0.026	J	0.19	0.018	ND		0.19	0.018	0.1	J	0.18	0.018	0.31	J	0.87	0.084
Phenanthrene	85-01-8		-	-	-	-	1.9		0.04	0.0034	0.34		0.11	0.013	0.017	J	0.11	0.014	0.6		0.11	0.013	2.1		0.52	0.063
Dibenzo(a,h)anthracene	53-70-3		0.51	7,800	2.3	37,000	0.13		0.04	0.004	ND		0.065	0.022	ND		0.066	0.022	0.074		0.064	0.021	ND		0.3	0.1
Indeno(1,2,3-cd)pyrene	193-39-5		5.1	78,000	23	370000	0.54		0.04	0.0047	0.078	J	0.079	0.026	ND		0.08	0.027	0.3		0.077	0.026	0.37		0.37	0.12
Pyrene	129-00-0		1,800	NA	25,000	NA	1.8		0.04	0.0028	0.33		0.11	0.016	0.028	J	0.11	0.016	0.95		0.11	0.016	2		0.52	0.076
2-Methylnaphthalene	91-57-6	3.1	240	NA	3,300	NA	ND		0.04	0.0051	ND		0.22	0.02	ND		0.23	0.02	0.19	J	0.22	0.019	3.2		1	0.092
Total SVOCs											2.038	-	-	-	0.107	-	-	-	6.414	-	-	-	16.11	-	-	-
GENERAL CHEMISTRY							-	-	-	-																
Solids, Total	NONE						82.9		0.1	NA	88.3		0.1	NA	86.5		0.1	NA	89		0.1	NA	92.9		0.1	NA
Comment																										
Sample collected in unsaturated zone							yes				yes				yes				yes				yes			

		SAMPLE ID:					PE30: 1-1 1/2'				PE69:1-1 1/2'				PE70:1-1 1/2'				PE71:1-1 1/2'							
		LAB ID:					L2146679-13				L2149659-01				L2149659-02				L2149659-03							
		COLLECTION DATE:					8/31/2021				9/14/2021				9/14/2021				9/14/2021							
		SAMPLE DEPTH:																								
		SAMPLE MATRIX:					SOIL				SOIL				SOIL				SOIL							
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ- NRID-SRS	NJ-NRI-SRS																				
ANALYTE	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL				
SEMIVOLATILE ORGANICS BY GC/MS																										
Acenaphthene	83-32-9		3,600	NA	50,000	NA	ND		1.7	0.18	ND		0.16	0.017	0.56		0.16	0.017	2.8		1.5	0.16				
2-Chloronaphthalene	91-58-7		4,800	NA	67,000	NA	ND		2.1	0.2	ND		0.2	0.019	ND		0.2	0.019	ND		1.9	0.18				
Fluoranthene	206-44-0		2,400	NA	33,000	NA	1.1	J	1.3	0.24	0.3		0.12	0.023	7.1		0.12	0.023	33		1.2	0.22				
Naphthalene	91-20-3	19	2,500	5.7	34,000	27	0.84	J	2.1	0.26	0.066	J	0.2	0.024	0.2		0.2	0.024	1.4	J	1.9	0.24				
Benzo(a)anthracene	56-55-3	0.71	5.1	78,000	23	370,000	0.58	J	0.72	0.24	0.17		0.068	0.023	3.2		0.068	0.023	16		0.65	0.22				
Benzo(a)pyrene	50-32-8		0.51	3,500	2.3	16,000	0.84	J	1.6	0.52	0.14	J	0.15	0.049	2.8 A		0.15	0.049	15 A		1.4	0.47				
Benzo(b)fluoranthene	205-99-2		5.1	78,000	23	370,000	1.8		0.54	0.18	0.17		0.051	0.017	4		0.051	0.017	20		0.49	0.16				
Benzo(k)fluoranthene	207-08-9		51	780,000	230	NA	0.51		0.45	0.15	0.066		0.042	0.014	1.3		0.042	0.014	6.8		0.4	0.14				
Chrysene	218-01-9		510	NA	2,300	NA	0.9	J	1.3	0.22	0.17		0.12	0.021	3.2		0.12	0.021	16		1.2	0.2				
Acenaphthylene	208-96-8		-	-	-	-	ND		1.7	0.24	ND		0.16	0.022	0.023	J	0.16	0.022	ND		1.5	0.22				
Anthracene	120-12-7		18,000	NA	250,000	NA	0.25	J	1.3	0.19	0.046	J	0.12	0.018	1		0.12	0.018	6		1.2	0.17				
Benzo(ghi)perylene	191-24-2		-	-	-	-	1.2	J	1.7	0.25	0.095	J	0.16	0.024	2.4		0.16	0.024	12		1.5	0.23				
Fluorene	86-73-7		2,400	NA	33,000	NA	ND		2.1	0.2	ND		0.2	0.019	0.38		0.2	0.019	2.3		1.9	0.18				
Phenanthrene	85-01-8		-	-	-	-	0.95	J	1.3	0.15	0.19		0.12	0.014	5.7		0.12	0.014	24		1.2	0.14				
Dibenzo(a,h)anthracene	53-70-3		0.51	7,800	2.3	37,000	ND		0.74	0.25	0.024	J	0.07	0.023	0.44		0.07	0.023	2.1		0.67	0.22				
Indeno(1,2,3-cd)pyrene	193-39-5		5.1	78,000	23	370000	1.1		0.9	0.3	0.099		0.084	0.028	2.5		0.084	0.028	13		0.81	0.27				
Pyrene	129-00-0		1,800	NA	25,000	NA	1	J	1.3	0.18	0.28		0.12	0.017	6.1		0.12	0.017	29		1.2	0.17				
2-Methylnaphthalene	91-57-6	3.1	240	NA	3,300	NA	0.28	J	2.6	0.23	ND		0.24	0.021	0.07	J	0.24	0.021	0.48	J	2.3	0.2				
Total SVOCs							11.35	-	-	-	1.816	-	-	-	40.973	-	-	-	199.88	-	-	-				
GENERAL CHEMISTRY																										
Solids, Total	NONE						76.8		0.1	NA	82.2		0.1	NA	82		0.1	NA	85.6		0.1	NA				
Comment																										
Sample collected in unsaturated zone							yes				yes				yes				yes							

Note: Samples collected in saturated zone should not be compared to migration to groundwater standard.
Note: Samples collected in unsaturated zone should be compared to migration to groundwater standard.
Note: Area where PE 28 and PE 29 were collected was eventually excavated

Note: PE 28 & PE 29 were eventually excavated

0.66: Exceeds Residential Ingestion or inhalation standard
A: Also exceeds non-residential ingestion standard
1.1 Exceeds migration to groundwater standard
Reporting level above standard

J: Estimated value
ND: Not detected at method detection level (MDL)
NJ-MGW-SRS: NJ - New Jersey 2021 Migration to Groundwater Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-RID-SRS: NJ - New Jersey 2021 Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-RI-SRS: NJ - New Jersey 2021 Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-NRID-SRS: NJ - New Jersey 2021 Non-Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-NRI-SRS: NJ - New Jersey 2021 Non-Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

Table 4: Samples Collected Where EPH Exceeded Residual Product Level at AOC 6: Waste Oil and Heating Oil AST on Concrete Pad

						SAMPLE ID:	PE18: 3-4'			PE19: 7-7 1/2'				PE20: 3-4'				PE21: 7-7 1/2'				PE22: 3-4'			
						LAB ID:	L2146679-01			L2146679-02				L2146679-03				L2146679-04				L2146679-05			
						COLLECTION DATE:	8/30/2021			8/30/2021				8/30/2021				8/30/2021				8/30/2021			
						SAMPLE DEPTH:																			
						SAMPLE MATRIX:	SOIL			SOIL				SOIL				SOIL				SOIL			
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ-NRID-SRS	NJ-NRI-SRS																			
ANALYTE	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
NJ EXTRACTABLE PETROLEUM HYDROCARBONS																									
C9-C12 Aliphatics	C9-C12-ALPHA-UJ						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
C12-C16 Aliphatics							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
C16-C21 Aliphatics							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
C21-C40 Aliphatics							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
C10-C12 Aromatics							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
C12-C16 Aromatics							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
C16-C21 Aromatics							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
C21-C36 Aromatics							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Total EPH	NONE		5,300		75000		-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
NJ EXTRACTABLE PETROLEUM HYDROCARBONS (TOTAL)																									
Total EPH	NONE		5,300		75000		115		24.9	24.9	80.9		26.4	26.4	345		29.2	29.2	81.4		28.5	28.5	206		26.1	26.1
GENERAL CHEMISTRY																									
Solids, Total	NONE						91.4		0.1	NA	88.6		0.1	NA	80		0.1	NA	81.5		0.1	NA	87		0.1	NA

						SAMPLE ID:	PE23: 7-7 1/2'			PE24: 3-4'				PE25: 7-7 1/2'				PE26: 8'				PE27: 8'			
						LAB ID:	L2146679-06			L2146679-07				L2146679-08				L2146679-09				L2146679-10			
						COLLECTION DATE:	8/30/2021			8/30/2021				8/30/2021				8/30/2021				8/30/2021			
						SAMPLE DEPTH:																			
						SAMPLE MATRIX:	SOIL			SOIL				SOIL				SOIL				SOIL			
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ-NRID-SRS	NJ-NRI-SRS																			
ANALYTE	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
NJ EXTRACTABLE PETROLEUM HYDROCARBONS																									
C9-C12 Aliphatics	C9-C12-ALPHA-UJ						-		-	-	-		-	-	-		-	-	349		18.9	18.9	-	-	-	-
C12-C16 Aliphatics							-		-	-	-		-	-	-		-	-	105		12.6	12.6	-	-	-	-
C16-C21 Aliphatics							-		-	-	-		-	-	-		-	-	265		18.9	18.9	-	-	-	-
C21-C40 Aliphatics							-		-	-	-		-	-	-		-	-	784		63.1	63.1	-	-	-	-
C10-C12 Aromatics							-		-	-	-		-	-	-		-	-	102		12.6	12.6	-	-	-	-
C12-C16 Aromatics							-		-	-	-		-	-	-		-	-	41.4		18.9	18.9	-	-	-	-
C16-C21 Aromatics							-		-	-	-		-	-	-		-	-	70.4		31.6	31.6	-	-	-	-
C21-C36 Aromatics							-		-	-	-		-	-	-		-	-	92.5		50.5	50.5	-	-	-	-
Total EPH	NONE		5,300		75000		-		-	-	-		-	-	-		-	-	1810		12.6	12.6	-	-	-	-
NJ EXTRACTABLE PETROLEUM HYDROCARBONS (TOTAL)																									
Total EPH	NONE		5,300		75000		ND		29.2	29.2	ND		30	30	ND		31.1	31.1	-	-	-	-	3860		27.7	13.9
GENERAL CHEMISTRY																									
Solids, Total	NONE						81.7		0.1	NA	77.6		0.1	NA	75.3		0.1	NA	81.8		0.1	NA	76.6		0.1	0.1

Note: Fingerprint analysis also conducted on PE 27: 8': Is duplicate sample of PE 26: 8'

Note: EPH residual product level is 8,000 mg/kg.

NJ-MGW-SRS: NJ - New Jersey 2021 Migration to Groundwater Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-RID-SRS: NJ - New Jersey 2021 Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-RI-SRS: NJ - New Jersey 2021 Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-NRID-SRS: NJ - New Jersey 2021 Non-Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-NRI-SRS: NJ - New Jersey 2021 Non-Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

Table 5: Samples Collected Behind Station Where Xylenes Exceeded the Soil Saturation Limit (Page 1)

						SAMPLE ID:																					
						LAB ID:																					
						COLLECTION DATE:																					
						SAMPLE DEPTH:																					
						SAMPLE MATRIX:																					
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ-NRID-SRS	NJ-NRI-SRS																					
ANALYTE	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	
VOLATILE ORGANICS BY EPA 5035																											
1,2-Dibromo-3-chloropropane	96-12-8	0.005	0.87	0.026	4.5	0.12	ND		0.0029	0.00095	ND		0.0033	0.0011	ND		0.19	0.064	-	-	-	-	ND		0.003	0.00099	
1,4-Dioxane	123-91-1	0.067	7	45	36	210	ND		0.076	0.033	ND		0.087	0.038	ND		5.1	2.2	-	-	-	-	ND		0.08	0.035	
1,2-Dibromoethane (EDB)	106-93-4	0.005	0.35	0.085	1.8	0.41	ND		0.00095	0.00027	ND		0.0011	0.0003	ND		0.064	0.018	-	-	-	-	ND		0.00099	0.00028	
Methylene chloride	75-09-2	0.013	50	1400	260		ND		0.0048	0.0022	ND		0.0054	0.0025	ND		0.32	0.15	-	-	-	-	ND		0.005	0.0023	
1,1-Dichloroethane	75-34-3	0.24	120		640		ND		0.00095	0.00014	ND		0.0011	0.00016	ND		0.064	0.0093	-	-	-	-	ND		0.00099	0.00014	
Chloroform	67-66-3	0.33	780	590	13000		ND		0.0014	0.00013	ND		0.0016	0.00015	ND		0.096	0.009	-	-	-	-	ND		0.0015	0.00014	
Carbon tetrachloride	56-23-5	0.0075	7.6	1.4	40	6.9	ND		0.00095	0.00022	ND		0.0011	0.00025	ND		0.064	0.015	-	-	-	-	ND		0.00099	0.00023	
1,2-Dichloropropane	78-87-5	0.0058	19	5.7	98	27	ND		0.00095	0.00012	ND		0.0011	0.00014	ND		0.064	0.008	-	-	-	-	ND		0.00099	0.00012	
Dibromochloromethane	124-48-1	0.005	8.3		43		ND		0.00095	0.00013	ND		0.0011	0.00015	ND		0.064	0.009	-	-	-	-	ND		0.00099	0.00014	
1,1,2-Trichloroethane	79-00-5	0.017	12		64		ND		0.00095	0.00025	ND		0.0011	0.00029	ND		0.064	0.017	-	-	-	-	ND		0.00099	0.00026	
Tetrachloroethene	127-18-4	0.0086	330	47	1700		ND		0.00048	0.00019	ND		0.00054	0.00021	ND		0.032	0.012	-	-	-	-	ND		0.0005	0.00019	
Chlorobenzene	108-90-7	0.64	510		8400		ND		0.00048	0.00012	ND		0.00054	0.00014	ND		0.032	0.0082	-	-	-	-	ND		0.0005	0.00013	
Trichlorofluoromethane	75-69-4	29	23000		390000		ND		0.0038	0.00066	ND		0.0044	0.00076	ND		0.26	0.045	-	-	-	-	ND		0.004	0.00069	
1,2-Dichloroethane (EDC)	107-06-2	0.0095	5.8	71	30	320	ND		0.00095	0.00024	ND		0.0011	0.00028	ND		0.064	0.016	-	-	-	-	ND		0.00099	0.00026	
1,1,1-Trichloroethane	71-55-6	0.2	160000				ND		0.00048	0.00016	ND		0.00054	0.00018	ND		0.032	0.011	-	-	-	-	ND		0.0005	0.00017	
Bromodichloromethane	75-27-4	0.005	11		59		ND		0.00048	0.0001	ND		0.00054	0.00012	ND		0.032	0.007	-	-	-	-	ND		0.0005	0.00011	
trans-1,3-Dichloropropene	10061-02-6	0.0063	7	4.8	36	23	ND		0.00095	0.00026	ND		0.0011	0.0003	ND		0.064	0.018	-	-	-	-	ND		0.00099	0.00027	
cis-1,3-Dichloropropene	10061-01-5	0.0063	7	4.8	36	23	ND		0.00048	0.00015	ND		0.00054	0.00017	ND		0.032	0.01	-	-	-	-	ND		0.0005	0.00016	
1,3-Dichloropropene, Total	542-75-6						ND		0.00048	0.00015	ND		0.00054	0.00017	ND		0.032	0.01	-	-	-	-	ND		0.0005	0.00016	
Bromoform	75-25-2	0.018	88		460		ND		0.0038	0.00023	ND		0.0044	0.00027	ND		0.26	0.016	-	-	-	-	ND		0.004	0.00024	
1,1,2,2-Tetrachloroethane	79-34-5	0.0069	3.5		18		ND		0.00048	0.00016	ND		0.00054	0.00018	ND		0.032	0.011	-	-	-	-	ND		0.0005	0.00016	
Benzene	71-43-2	0.0094	3	2.2	16	11	ND		0.00048	0.00016	ND		0.00054	0.00018	2.7		0.032	0.011	-		-	-	ND		0.0005	0.00016	
Toluene	108-88-3	7.8	6300		100000		ND		0.00095	0.00052	ND		0.0011	0.00059	18		0.064	0.035	-		-	-	ND		0.00099	0.00054	
Ethylbenzene	100-41-4	15	7800	10	130000	48	0.0017		0.00095	0.00013	ND		0.0011	0.00015	13		0.064	0.0091	-		-	-	ND		0.00099	0.00014	
Chloromethane	74-87-3			270		1200	ND		0.0038	0.00089	ND		0.0044	0.001	ND		0.26	0.06	-	-	-	-	ND		0.004	0.00093	
Bromomethane	74-83-9	0.043	110	18	1800	82	ND		0.0019	0.00055	ND		0.0022	0.00063	ND		0.13	0.037	-	-	-	-	ND		0.002	0.00058	
Vinyl chloride	75-01-4	0.0067	0.97	1.4	5	6.4	ND		0.00095	0.00032	ND		0.0011	0.00036	ND		0.064	0.022	-	-	-	-	ND		0.00099	0.00033	
Chloroethane	75-00-3						ND		0.0019	0.00043	ND		0.0022	0.00049	ND		0.13	0.029	-	-	-	-	ND		0.002	0.00045	
1,1-Dichloroethene	75-35-4	0.0069	11	52	180	240	ND		0.00095	0.00023	ND		0.0011	0.00026	ND		0.064	0.015	-	-	-	-	ND		0.00099	0.00024	
trans-1,2-Dichloroethene	156-60-5	0.56	1300		22000		ND		0.0014	0.00013	ND		0.0016	0.00015	ND		0.096	0.0088	-	-	-	-	ND		0.0015	0.00014	
Trichloroethene	79-01-6	0.0065	15	3	79	14	ND		0.00048	0.00013	ND		0.00054	0.00015	ND		0.032	0.0088	-	-	-	-	ND		0.0005	0.00014	
1,2-Dichlorobenzene	95-50-1	11	6700		110000		ND		0.0019	0.00014	ND		0.0022	0.00016	ND		0.13	0.0092	-	-	-	-	ND		0.002	0.00014	
1,3-Dichlorobenzene	541-73-1	11	6700		110000		ND		0.0019	0.00014	ND		0.0022	0.00016	ND		0.13	0.0095	-	-	-	-	ND		0.002	0.00015	
1,4-Dichlorobenzene	106-46-7	1.4	780		13000		ND		0.0019	0.00016	ND		0.0022	0.00019	ND		0.13	0.011	-	-	-	-	ND		0.002	0.00017	
Methyl tert butyl ether	1634-04-4	0.25	780	140	13000	650	ND		0.0019	0.00019	ND		0.0022	0.00022	ND		0.13	0.013	-	-	-	-	0.00024	J	0.002	0.0002	
p/m-Xylene	179601-23-1	19	12000		190000		0.0014	J	0.0019	0.00053	ND		0.0022	0.00061	67		0.64	0.18	60	E	0.13	0.036	ND		0.002	0.00056	
o-Xylene	95-47-6	19	12000		190000		ND		0.00095	0.00028	ND		0.0011	0.00032	20		0.064	0.019	-		-	-	0.00067	J	0.00099	0.00029	
Xylenes, Total	1330-20-7	19	12000		190000		0.0014	J	0.00095	0.00028	ND		0.0011	0.00032	87		0.064	0.019	-		-	-	0.00067	J	0.00099	0.00029	
cis-1,2-Dichloroethene	156-59-2	0.35	780		13000		ND		0.00095	0.00017	ND		0.0011	0.00019	ND		0.064	0.011	-	-	-	-	ND		0.00099	0.00017	
1,2-Dichloroethene, Total	540-59-0																										
Styrene	100-42-5	2.1	16000		260000		ND		0.00095	0.00019	ND		0.0011	0.00021	0.12		0.064	0.012	-		-	-	ND		0.00099	0.00019	
Dichlorodifluoromethane	75-71-8	38	16000		260000		ND		0.0095	0.00087	ND		0.011	0.001	ND		0.64	0.059	-	-	-	-	ND		0.0099	0.00091	
Acetone	67-64-1	19	70000				0.03		0.024	0.0095	0.041		0.027	0.011	ND		0.64	0.31	-	-	-	-	0.1		0.025	0.0099	
Carbon disulfide	75-15-0	3.7					ND		0.0095	0.0043	ND		0.011	0.005	ND		0.64	0.29	-	-	-	-	ND		0.0099	0.0045	
2-Butanone	78-93-3	0.98	47000		780000		0.0026	J	0.0095	0.0021	ND		0.011	0.0024	ND		0.64	0.14	-	-	-	-	0.012		0.0099	0.0022	
4-Methyl-2-pentanone	108-10-1						ND		0.0095	0.0012	ND		0.011	0.0014	ND		0.64	0.082	-	-	-	-	ND		0.0099	0.0013	
2-Hexanone	591-78-6	0.15	390	1000	6500		ND		0.0095	0.0011	ND		0.011	0.0013	ND		0.64	0.076	-	-	-	-	ND		0.0099	0.0012	
Bromochloromethane	74-97-5						ND		0.0019	0.0002	ND		0.0022	0.00022	ND		0.13	0.013	-	-	-	-	ND		0.002	0.0002	
Isopropylbenzene	98-82-8	22	7800		130000		0.00035	J	0.00095	0.0001	ND		0.0011	0.00012	3.7		0.064	0.007	-		-	-	ND		0.00099	0.00011	
Naphthalene	91-20-3	19	2500	5.7	34000	27	0.00074	J	0.0038	0.00062	ND		0.0044	0.00071	8.4		0.26	0.042	-		-	-	ND		0.004	0.00065	
1,2,3-Trichlorobenzene	87-61-6						ND		0.0019	0.00031	ND		0.0022	0.00035	ND		0.13	0.021	-	-	-	-	ND		0.002	0.00032	
1,2,4-Trichlorobenzene	120-82-1	0.52	780	94	13000		ND		0.0019	0.00026	ND		0.0022	0.0003	ND		0.13	0.017	-	-	-	-	ND		0.002	0.00027	
Methyl Acetate	79-20-9	22	78000				ND		0.0038	0.00091	ND		0.0044	0.001	ND		0.26	0.061	-	-	-	-	ND		0.004	0.00094	
Cyclohexane	110-82-7						0.00062	J	0.0095	0.00052	ND		0.011	0.00059	6.3		0.64	0.035	-		-	-	ND		0.0099	0.00054	
Tert-Butyl Alcohol	75-65-0	0.32	1,400		23,000		ND		0.019	0.0049	ND		0.022	0.0056	ND		1.3	0.33	-		-	-	0.015	J	0.02	0.0051	
Methyl cyclohexane	108-87-2						ND		0.0038	0.00058	ND		0.0044	0.00066	6.3		0.26	0.039	-		-	-	ND		0.004	0.0006	
Freon-113	76-13-1						ND		0.0038	0.00066	ND		0.0044	0.00076	ND		0.26	0.044	-	-	-	-	ND		0.004	0.00069	
Total VOCs							0.03741	-	-	-	0.041	-	-	-	67	-	-	-	138.52	-	-	-	0.11291	-	-	-	
Comment																											
Sample collected in unsaturated zone									No				yes				No				No				yes		

2.7: Exceeds Residential Ingestion or inhalation standard

0.61 Exceeds migration to groundwater standard

Reporting level and or MDL above applicable standard

J: Estimated value

A: Also exceeds Non-Residential standard

ND: Not detected at method detection level (MDL).

NJ-MGW-SRS: New Jersey 2021 Migration to Groundwater Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-NRI-SRS: New Jersey 2021 Non-Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-NRID-SRS: New Jersey 2021 Non-Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-RI-SRS: New Jersey 2021 Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-RID-SRS: New Jersey 2021 Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

Table 5: Samples Collected Behind Station Where Xylenes Exceeded the Soil Saturation Limit (continued: page 2)

						SAMPLE ID:	PE35:9'				PE36:5'				PE36:5'				PE37:9'				PE37:9'			
						LAB ID:	L2148004-05				L2148004-06				L2148004-06 R1				L2148004-07				L2148004-07 R1			
						COLLECTION DATE:	9/7/2021				9/7/2021				9/7/2021				9/7/2021				9/7/2021			
						SAMPLE DEPTH:	High Level DF = 1				high level DF = 10				High Level DF = 50				High Level DF = 1				High Level DF = 10			
						SAMPLE MATRIX:	SOIL				SOIL				SOIL				SOIL				SOIL			
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ-NRID-SRS	NJ-NRI-SRS																				
ANALYTE	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANICS BY EPA 5035																										
1,2-Dibromo-3-chloropropane	96-12-8	0.005	0.87	0.026	4.5	0.12	ND		0.17	0.056	ND		1.7	0.56	-		-	-	ND		0.15	0.051	-	-	-	-
1,4-Dioxane	123-91-1	0.067	7	45	36	210	ND		4.5	2	ND		45	20	-		-	-	ND		4.1	1.8	-	-	-	-
1,2-Dibromoethane (EDB)	106-93-4	0.005	0.35	0.085	1.8	0.41	ND		0.056	0.016	ND		0.56	0.16	-		-	-	ND		0.052	0.014	-	-	-	-
Methylene chloride	75-09-2	0.013	50	1400	260		ND		0.28	0.13	ND		2.8	1.3	-		-	-	ND		0.26	0.12	-	-	-	-
1,1-Dichloroethane	75-34-3	0.24	120		640		ND		0.056	0.0082	ND		0.56	0.082	-		-	-	ND		0.052	0.0075	-	-	-	-
Chloroform	67-66-3	0.33	780	590	13000		ND		0.084	0.0079	ND		0.84	0.079	-		-	-	ND		0.077	0.0072	-	-	-	-
Carbon tetrachloride	56-23-5	0.0075	7.6	1.4	40	6.9	ND		0.056	0.013	ND		0.56	0.13	-		-	-	ND		0.052	0.012	-	-	-	-
1,2-Dichloropropane	78-87-5	0.0058	19	5.7	98	27	ND		0.056	0.007	ND		0.56	0.07	-		-	-	ND		0.052	0.0064	-	-	-	-
Dibromochloromethane	124-48-1	0.005	8.3		43		ND		0.056	0.0079	ND		0.56	0.079	-		-	-	ND		0.052	0.0072	-	-	-	-
1,1,2-Trichloroethane	79-00-5	0.017	12		64		ND		0.056	0.015	ND		0.56	0.15	-		-	-	ND		0.052	0.014	-	-	-	-
Tetrachloroethene	127-18-4	0.0086	330	47	1700		ND		0.028	0.011	ND		0.28	0.11	-		-	-	ND		0.026	0.01	-	-	-	-
Chlorobenzene	108-90-7	0.64	510		8400		ND		0.028	0.0072	ND		0.28	0.071	-		-	-	ND		0.026	0.0066	-	-	-	-
Trichlorofluoromethane	75-69-4	29	23000		390000		ND		0.22	0.039	ND		2.2	0.39	-		-	-	ND		0.21	0.036	-	-	-	-
1,2-Dichloroethane (EDC)	107-06-2	0.0095	5.8	71	30	320	ND		0.056	0.014	ND		0.56	0.14	-		-	-	ND		0.052	0.013	-	-	-	-
1,1,1-Trichloroethane	71-55-6	0.2	160000				ND		0.028	0.0094	ND		0.28	0.094	-		-	-	ND		0.026	0.0086	-	-	-	-
Bromodichloromethane	75-27-4	0.005	11		59		ND		0.028	0.0061	ND		0.28	0.061	-		-	-	ND		0.026	0.0056	-	-	-	-
trans-1,3-Dichloropropene	10061-02-6	0.0063	7	4.8	36	23	ND		0.056	0.015	ND		0.56	0.15	-		-	-	ND		0.052	0.014	-	-	-	-
cis-1,3-Dichloropropene	10061-01-5	0.0063	7	4.8	36	23	ND		0.028	0.0089	ND		0.28	0.089	-		-	-	ND		0.026	0.0082	-	-	-	-
1,3-Dichloropropene, Total	542-75-6						ND		0.028	0.0089	ND		0.28	0.089	-		-	-	ND		0.026	0.0082	-	-	-	-
Bromoform	75-25-2	0.018	88		460		ND		0.22	0.014	ND		2.2	0.14	-		-	-	ND		0.21	0.013	-	-	-	-
1,1,2,2-Tetrachloroethane	79-34-5	0.0069	3.5		18		ND		0.028	0.0094	ND		0.28	0.093	-		-	-	ND		0.026	0.0086	-	-	-	-
Benzene	71-43-2	0.0094	3	2.2	16	11	0.73		0.028	0.0094	**0.61**		0.28	0.093	-		-	-	0.18		0.026	0.0086	-		-	-
Toluene	108-88-3	7.8	6300		100000		2.2		0.056	0.03	**31**		0.56	0.3	-		-	-	5.2		0.052	0.028	-		-	-
Ethylbenzene	100-41-4	15	7800	10	130000	48	0.91		0.056	0.0079	**65 A**		0.56	0.079	-		-	-	7.3		0.052	0.0073	-		-	-
Chloromethane	74-87-3			270		1200	ND		0.22	0.052	ND		2.2	0.52	-		-	-	ND		0.21	0.048	-	-	-	-
Bromomethane	74-83-9	0.043	110	18	1800	82	ND		0.11	0.033	ND		1.1	0.33	-		-	-	ND		0.1	0.03	-	-	-	-
Vinyl chloride	75-01-4	0.0067	0.97	1.4	5	6.4	ND		0.056	0.019	ND		0.56	0.19	-		-	-	ND		0.052	0.017	-	-	-	-
Chloroethane	75-00-3						ND		0.11	0.025	ND		1.1	0.25	-		-	-	ND		0.1	0.023	-	-	-	-
1,1-Dichloroethene	75-35-4	0.0069	11	52	180	240	ND		0.056	0.013	ND		0.56	0.13	-		-	-	ND		0.052	0.012	-	-	-	-
trans-1,2-Dichloroethene	156-60-5	0.56	1300		22000		ND		0.084	0.0077	ND		0.84	0.077	-		-	-	ND		0.077	0.0071	-	-	-	-
Trichloroethene	79-01-6	0.0065	15	3	79	14	ND		0.028	0.0077	ND		0.28	0.077	-		-	-	ND		0.026	0.0071	-	-	-	-
1,2-Dichlorobenzene	95-50-1	11	6700		110000		ND		0.11	0.0081	ND		1.1	0.081	-		-	-	ND		0.1	0.0074	-	-	-	-
1,3-Dichlorobenzene	541-73-1	11	6700		110000		ND		0.11	0.0083	ND		1.1	0.083	-		-	-	ND		0.1	0.0076	-	-	-	-
1,4-Dichlorobenzene	106-46-7	1.4	780		13000		ND		0.11	0.0096	ND		1.1	0.096	-		-	-	ND		0.1	0.0088	-	-	-	-
Methyl tert butyl ether	1634-04-4	0.25	780	140	13000	650	ND		0.11	0.011	ND		1.1	0.11	-		-	-	ND		0.1	0.01	-	-	-	-
p/m-Xylene	179601-23-1	19	12000		190000		3.5		0.11	0.032	**430**	E	1.1	0.32	**460**		5.6	1.6	41		1	0.29	36	E	0.1	0.029
o-Xylene	95-47-6	19	12000		190000		1.6		0.056	0.016	**150**		0.56	0.16	-		-	-	11		0.052	0.015	-		-	-
Xylenes, Total	1330-20-7	19	12000		190000		5.1		0.056	0.016	**610**		0.56	0.16	-		-	-	52		0.052	0.015	-		-	-
cis-1,2-Dichloroethene	156-59-2	0.35	780		13000		ND		0.056	0.0098	ND		0.56	0.098	-		-	-	ND		0.052	0.009	-	-	-	-
1,2-Dichloroethene, Total	540-59-0																									
Styrene	100-42-5	2.1	16000		260000		ND		0.056	0.011	ND		0.56	0.11	-		-	-	ND		0.052	0.01	-	-	-	-
Dichlorodifluoromethane	75-71-8	38	16000		260000		ND		0.56	0.052	ND		5.6	0.51	-		-	-	ND		0.52	0.047	-	-	-	-
Acetone	67-64-1	19	70000				ND		0.56	0.27	ND		5.6	2.7	-		-	-	ND		0.52	0.25	-	-	-	-
Carbon disulfide	75-15-0	3.7					ND		0.56	0.26	ND		5.6	2.6	-		-	-	ND		0.52	0.23	-	-	-	-
2-Butanone	78-93-3	0.98	47000		780000		ND		0.56	0.12	ND		5.6	1.2	-		-	-	ND		0.52	0.11	-	-	-	-
4-Methyl-2-pentanone	108-10-1						ND		0.56	0.072	ND		5.6	0.72	-		-	-	ND		0.52	0.066	-	-	-	-
2-Hexanone	591-78-6	0.15	390	1000	6500		ND		0.56	0.066	ND		5.6	0.66	-		-	-	ND		0.52	0.061	-	-	-	-
Bromochloromethane	74-97-5						ND		0.11	0.012	ND		1.1	0.12	-		-	-	ND		0.1	0.01	-	-	-	-
Isopropylbenzene	98-82-8	22	7800		130000		0.06		0.056	0.0061	19		0.56	0.061	-		-	-	1.4		0.052	0.0056	-		-	-
Naphthalene	91-20-3	19	2500	5.7	34000	27	0.84		0.22	0.037	**48 A**		2.2	0.36	-		-	-	3.2		0.21	0.034	-		-	-
1,2,3-Trichlorobenzene	87-61-6						ND		0.11	0.018	ND		1.1	0.18	-		-	-	ND		0.1	0.017	-	-	-	-
1,2,4-Trichlorobenzene	120-82-1	0.52	780	94	13000		ND		0.11	0.015	ND		1.1	0.15	-		-	-	ND		0.1	0.014	-	-	-	-
Methyl Acetate	79-20-9	22	78000				ND		0.22	0.054	ND		2.2	0.53	-		-	-	ND		0.21	0.049	-	-	-	-
Cyclohexane	110-82-7						0.052	J	0.56	0.031	42		5.6	0.31	-		-	-	3.9		0.52	0.028	-		-	-
Tert-Butyl Alcohol	75-65-0	0.32	1400		23000		ND		1.1	0.29	ND		11	2.9	-		-	-	ND		1	0.26	-		-	-
Methyl cyclohexane	108-87-2						0.039	J	0.22	0.034	41		2.2	0.34	-		-	-	3.1		0.21	0.031	-		-	-
Freon-113	76-13-1						ND		0.22	0.039	ND		2.2	0.39	-		-	-	ND		0.21	0.036	-	-	-	-
Total VOCs							9.931	-	-	-	826.61	-	-	-	460	-	-	-	41	-	-	-	71.28	-	-	-
Comment																										
Sample collected in unsaturated zone							No				Yes				Yes				No				No			

65: Exceeds Residential Ingestion or inhalation standard

31 Exceeds migration to groundwater standard

A Also exceeds Non Residential Inhalation standard

Reporting level and or MDL above applicable standard

J: Estimated value

ND: Not detected at method detection level (MDL).

NJ-MGW-SRS: New Jersey 2021 Migration to Groundwater Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-NRI-SRS: New Jersey 2021 Non-Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-NRID-SRS: New Jersey 2021 Non-Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-RI-SRS: New Jersey 2021 Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-RID-SRS: New Jersey 2021 Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

Table 5: Samples Collected Behind Station Where Xylenes Exceeded the Soil Saturation Limit (continued: page 3)

						SAMPLE ID:	PE38:7'				PE38:7'				PE39:10 1/2'				PE39:10 1/2'				PE40:10 1/2'			
						LAB ID:	L2148004-08				L2148004-08 R1				L2148004-09				L2148004-09	HIGH			L2148004-10			
						COLLECTION DATE:	9/7/2021				9/7/2021				9/7/2021				9/7/2021				9/8/2021			
						SAMPLE DEPTH:	High Level DF = 10				High Level DF = 20???				LOW DF = 1				High DF = 1				High DF = 1			
						SAMPLE MATRIX:	SOIL				SOIL				SOIL				SOIL				SOIL			
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ-NRID-SRS	NJ-NRI-SRS																				
ANALYTE	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANICS BY EPA 5035																										
1,2-Dibromo-3-chloropropane	96-12-8	0.005	0.87	0.026	4.5	0.12	ND		1.7	0.57	-	-	-	-	ND		0.0034	0.0011	ND		0.2	0.067	ND		0.21	0.069
1,4-Dioxane	123-91-1	0.067	7	45	36	210	ND		46	20	-	-	-	-	ND		0.092	0.04	ND		5.4	2.4	ND		5.5	2.4
1,2-Dibromoethane (EDB)	106-93-4	0.005	0.35	0.085	1.8	0.41	ND		0.58	0.16	-	-	-	-	ND		0.0011	0.00032	ND		0.067	0.019	ND		0.069	0.019
Methylene chloride	75-09-2	0.013	50	1400	260		ND		2.9	1.3	-	-	-	-	ND		0.0057	0.0026	ND		0.34	0.15	ND		0.34	0.16
1,1-Dichloroethane	75-34-3	0.24	120		640		ND		0.58	0.083	-	-	-	-	ND		0.0011	0.00017	ND		0.067	0.0098	ND		0.069	0.01
Chloroform	67-66-3	0.33	780	590	13000		ND		0.86	0.08	-	-	-	-	ND		0.0017	0.00016	ND		0.1	0.0094	0.011	J	0.1	0.0096
Carbon tetrachloride	56-23-5	0.0075	7.6	1.4	40	6.9	ND		0.58	0.13	-	-	-	-	ND		0.0011	0.00026	ND		0.067	0.015	ND		0.069	0.016
1,2-Dichloropropane	78-87-5	0.0058	19	5.7	98	27	ND		0.58	0.072	-	-	-	-	ND		0.0011	0.00014	ND		0.067	0.0084	ND		0.069	0.0086
Dibromochloromethane	124-48-1	0.005	8.3		43		ND		0.58	0.08	-	-	-	-	ND		0.0011	0.00016	ND		0.067	0.0094	ND		0.069	0.0096
1,1,2-Trichloroethane	79-00-5	0.017	12		64		ND		0.58	0.15	-	-	-	-	ND		0.0011	0.00031	ND		0.067	0.018	ND		0.069	0.018
Tetrachloroethene	127-18-4	0.0086	330	47	1700		ND		0.29	0.11	-	-	-	-	ND		0.00057	0.00022	ND		0.034	0.013	ND		0.034	0.014
Chlorobenzene	108-90-7	0.64	510		8400		ND		0.29	0.073	-	-	-	-	0.0011		0.00057	0.00014	ND		0.034	0.0085	0.062		0.034	0.0088
Trichlorofluoromethane	75-69-4	29	23000		390000		ND		2.3	0.4	-	-	-	-	ND		0.0046	0.0008	ND		0.27	0.047	ND		0.28	0.048
1,2-Dichloroethane (EDC)	107-06-2	0.0095	5.8	71	30	320	ND		0.58	0.15	-	-	-	-	ND		0.0011	0.0003	ND		0.067	0.017	ND		0.069	0.018
1,1,1-Trichloroethane	71-55-6	0.2	160000				ND		0.29	0.096	-	-	-	-	ND		0.00057	0.00019	ND		0.034	0.011	ND		0.034	0.012
Bromodichloromethane	75-27-4	0.005	11		59		ND		0.29	0.063	-	-	-	-	ND		0.00057	0.00012	ND		0.034	0.0073	ND		0.034	0.0075
trans-1,3-Dichloropropene	10061-02-6	0.0063	7	4.8	36	23	ND		0.58	0.16	-	-	-	-	ND		0.0011	0.00031	ND		0.067	0.018	ND		0.069	0.019
cis-1,3-Dichloropropene	10061-01-5	0.0063	7	4.8	36	23	ND		0.29	0.091	-	-	-	-	ND		0.00057	0.00018	ND		0.034	0.011	ND		0.034	0.011
1,3-Dichloropropene, Total	542-75-6						ND		0.29	0.091	-	-	-	-	ND		0.00057	0.00018	ND		0.034	0.011	ND		0.034	0.011
Bromoform	75-25-2	0.018	88		460		ND		2.3	0.14	-	-	-	-	ND		0.0046	0.00028	ND		0.27	0.016	ND		0.28	0.017
1,1,2,2-Tetrachloroethane	79-34-5	0.0069	3.5		18		ND		0.29	0.095	-	-	-	-	ND		0.00057	0.00019	ND		0.034	0.011	ND		0.034	0.011
Benzene	71-43-2	0.0094	3	2.2	16	11	2.5		0.29	0.095	-	-	-	-	0.66	E	0.00057	0.00019	0.93		0.034	0.011	0.47		0.034	0.011
Toluene	108-88-3	7.8	6300		100000		4		0.58	0.31	-	-	-	-	0.09		0.0011	0.00062	0.13		0.067	0.036	7.9		0.069	0.037
Ethylbenzene	100-41-4	15	7800	10	130000	48	69 A		0.58	0.081	-	-	-	-	0.47	E	0.0011	0.00016	0.83		0.067	0.0095	3.3		0.069	0.0097
Chloromethane	74-87-3			270		1200	ND		2.3	0.54	-	-	-	-	ND		0.0046	0.0011	ND		0.27	0.063	ND		0.28	0.064
Bromomethane	74-83-9	0.043	110	18	1800	82	ND		1.2	0.33	-	-	-	-	ND		0.0023	0.00067	ND		0.13	0.039	ND		0.14	0.04
Vinyl chloride	75-01-4	0.0067	0.97	1.4	5	6.4	ND		0.58	0.19	-	-	-	-	ND		0.0011	0.00038	ND		0.067	0.022	ND		0.069	0.023
Chloroethane	75-00-3						ND		1.2	0.26	-	-	-	-	ND		0.0023	0.00052	ND		0.13	0.03	ND		0.14	0.031
1,1-Dichloroethene	75-35-4	0.0069	11	52	180	240	ND		0.58	0.14	-	-	-	-	ND		0.0011	0.00027	ND		0.067	0.016	ND		0.069	0.016
trans-1,2-Dichloroethene	156-60-5	0.56	1300		22000		ND		0.86	0.079	-	-	-	-	ND		0.0017	0.00016	ND		0.1	0.0092	ND		0.1	0.0094
Trichloroethene	79-01-6	0.0065	15	3	79	14	ND		0.29	0.079	-	-	-	-	ND		0.00057	0.00016	ND		0.034	0.0092	ND		0.034	0.0094
1,2-Dichlorobenzene	95-50-1	11	6700		110000		ND		1.2	0.083	-	-	-	-	ND		0.0023	0.00016	ND		0.13	0.0097	ND		0.14	0.0099
1,3-Dichlorobenzene	541-73-1	11	6700		110000		ND		1.2	0.085	-	-	-	-	ND		0.0023	0.00017	ND		0.13	0.01	ND		0.14	0.01
1,4-Dichlorobenzene	106-46-7	1.4	780		13000		ND		1.2	0.098	-	-	-	-	0.0002	J	0.0023	0.0002	ND		0.13	0.012	ND		0.14	0.012
Methyl tert butyl ether	1634-04-4	0.25	780	140	13000	650	ND		1.2	0.12	-	-	-	-	0.0075		0.0023	0.00023	ND		0.13	0.014	ND		0.14	0.014
p/m-Xylene	179601-23-1	19	12000		190000		370		2.3	0.64	360	E	1.2	0.32	0.73	E	0.0023	0.00064	1.2		0.13	0.038	15		0.14	0.038
o-Xylene	95-47-6	19	12000		190000		100		0.58	0.17	-		-	-	0.043		0.0011	0.00033	0.089		0.067	0.02	5.4		0.069	0.02
Xylenes, Total	1330-20-7	19	12000		190000		470		0.58	0.17	-		-	-	-		-	-	1.3		0.067	0.02	20		0.069	0.02
cis-1,2-Dichloroethene	156-59-2	0.35	780		13000		ND		0.58	0.1	-	-	-	-	0.0069		0.0011	0.0002	ND		0.067	0.012	ND		0.069	0.012
1,2-Dichloroethene, Total	540-59-0																		ND		0.067	0.0092				
Styrene	100-42-5	2.1	16000		260000		ND		0.58	0.11	-	-	-	-	0.0012		0.0011	0.00022	ND		0.067	0.013	ND		0.069	0.014
Dichlorodifluoromethane	75-71-8	38	16000		260000		ND		5.8	0.53	-	-	-	-	ND		0.011	0.001	ND		0.67	0.062	ND		0.69	0.063
Acetone	67-64-1	19	70000				ND		5.8	2.8	-	-	-	-	0.038		0.029	0.011	ND		0.67	0.32	ND		0.69	0.33
Carbon disulfide	75-15-0	3.7					ND		5.8	2.6	-	-	-	-	ND		0.011	0.0052	ND		0.67	0.31	ND		0.69	0.31
2-Butanone	78-93-3	0.98	47000		780000		ND		5.8	1.3	-	-	-	-	ND		0.011	0.0026	ND		0.67	0.15	ND		0.69	0.15
4-Methyl-2-pentanone	108-10-1						ND		5.8	0.74	-	-	-	-	0.0073	J	0.011	0.0015	ND		0.67	0.086	ND		0.69	0.088
2-Hexanone	591-78-6	0.15	390	1000	6500		ND		5.8	0.68	-	-	-	-	0.0018	J	0.011	0.0014	ND		0.67	0.079	ND		0.69	0.081
Bromochloromethane	74-97-5						ND		1.2	0.12	-	-	-	-	ND		0.0023	0.00024	ND		0.13	0.014	ND		0.14	0.014
Isopropylbenzene	98-82-8	22	7800		130000		9.7		0.58	0.063	-		-	-	0.038		0.0011	0.00012	0.062	J	0.067	0.0073	0.3		0.069	0.0075
Naphthalene	91-20-3	19	2500	5.7	34000	27	26		2.3	0.37	-	-	-	-	0.18		0.0046	0.00075	0.36		0.27	0.044	2.2		0.28	0.045
1,2,3-Trichlorobenzene	87-61-6						ND		1.2	0.18	-	-	-	-	ND		0.0023	0.00037	ND		0.13	0.022	ND		0.14	0.022
1,2,4-Trichlorobenzene	120-82-1	0.52	780	94	13000		ND		1.2	0.16	-	-	-	-	ND		0.0023	0.00031	ND		0.13	0.018	ND		0.14	0.019
Methyl Acetate	79-20-9	22	78000				ND		2.3	0.55	-	-	-	-	ND		0.0046	0.0011	ND		0.27	0.064	ND		0.28	0.065
Cyclohexane	110-82-7						30		5.8	0.31	-		-	-	0.042		0.011	0.00062	0.043	J	0.67	0.037	0.16	J	0.69	0.037
Tert-Butyl Alcohol	75-65-0	0.32	1400		23000		ND		12	3	-		-	-	0.029		0.023	0.0059	ND		1.3	0.34	ND		1.4	0.35
Methyl cyclohexane	108-87-2						24		2.3	0.35	-	-	-	-	0.03		0.0046	0.00069	ND		0.27	0.04	0.11	J	0.28	0.042
Freon-113	76-13-1						ND		2.3	0.4	-	-	-	-	ND		0.0046	0.0008	ND		0.27	0.047	ND		0.28	0.048
Total VOCs							370	-	-	-	625.2	-	-	-	2.347	-	-	-	3.644	-	-	-	34.913	-	-	-
Comment																										
Sample collected in unsaturated zone									No				No				No				No				No	

2.5 Exceeds Residential Ingestion or inhalation standard

Exceeds migration to groundwater standard

A Also exceeds Non Residential Inhalation standard

Reporting level and or MDL above applicable standard

J: Estimated value

ND: Not detected at method detection level (MDL).

NJ-MGW-SRS: New Jersey 2021 Migration to Groundwater Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-NRI-SRS: New Jersey 2021 Non-Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-NRID-SRS: New Jersey 2021 Non-Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-RI-SRS: New Jersey 2021 Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-RID-SRS: New Jersey 2021 Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

Table 5: Samples Collected Behind Station Where Xylenes Exceeded the Soil Saturation Limit (continued: page 4)

						SAMPLE ID:			PE31:8'				PE32:5'				PE33:10'				PE33:10'				PE34:6 1/2'	
						LAB ID:			L2148004-01				L2148004-02				L2148004-03				L2148004-03 R1				L2148004-04	
						COLLECTION DATE:			9/7/2021				9/7/2021				9/7/2021				9/7/2021				9/7/2021	
						SAMPLE DEPTH:											Hih level DF = 1				High level DF = 5					
						SAMPLE MATRIX:			SOIL				SOIL				SOIL				SOIL				SOIL	
		NJ-MGW-SRS	NJ-NRI-SRS	NJ-NRID-SRS	NJ-RI-SRS	NJ-RID-SRS																				
ANALYTE	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANICS BY EPA 5035 HIGH-TIC																										
Unknown							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Indane	000496-11-7						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Cyclopentane, Methyl-	000096-37-7						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Pentane, 2-methyl-	000107-83-5						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Alkene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Total TIC Compounds							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
VOLATILE ORGANICS BY EPA 5035-TIC																										
Unknown Alkane							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Alkane							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Alkene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Alkene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Alkene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Alkene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Aromatic							-		-	-	-		-	-	-		-	-	-		-	-	0.003	J	0	0
Unknown Aromatic							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Aromatic							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	0.002	J	0	0
Unknown Benzene							-		-	-	-		-	-	4.88	J	0	0	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	1.88	J	0	0	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	5.33	J	0	0	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	2.27	J	0	0	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Cycloalkane							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Cyclohexane							-		-	-	-		-	-	2.66	J	0	0	-		-	-	-		-	-
Unknown Cyclopentane							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown							0.007	J	0	0	0.009	J	0	0	2.45	J	0	0	-		-	-	0.007	J	0	0
Unknown							0.002	J	0	0	0.002	J	0	0	3.16	J	0	0	-		-	-	0.002	J	0	0
Unknown							0.002	J	0	0	0.003	J	0	0	-		-	-	-		-	-	0.002	J	0	0
Unknown							-		-	-	-		-	-	-		-	-	-		-	-	0.003	J	0	0
Unknown							-		-	-	-		-	-	-		-	-	-		-	-	0.003	J	0	0
Unknown							-		-	-	-		-	-	-		-	-	-		-	-	0.003	J	0	0
Benzene, Propyl-	000103-65-1						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Butane, 2-Methyl-	000078-78-4						0.016	NJ	0	0	-		-	-	-		-	-	-		-	-	-		-	-
Cyclopentane, 1,3-dimethyl-	002453-00-1						-		-	-	-		-	-	2.52	NJ	0	0	-	-	-	-	-	-	-	-
Cyclopentane, Methyl-	000096-37-7						0.003	NJ	0	0	-		-	-	4.78	NJ	0	0	-		-	-	-		-	-
Cyclopentene	000142-29-0						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Heptane, 2-methyl-	000592-27-8						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Heptane, 3-methyl-	000589-81-1						-		-	-	-		-	-	7.34	NJ	0	0	-		-	-	-		-	-
Hexane, 2,4-dimethyl-	000589-43-5						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Hexane, 3-methyl-	000589-34-4						-		-	-	-		-	-	7.11	NJ	0	0	-		-	-	-		-	-
Indane	000496-11-7						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Isobutane	000075-28-5						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
n-Hexane	000110-54-3						-		-	-	-		-	-	4.94	NJ	0	0	-		-	-	-		-	-
Octane	000111-65-9						-		-	-	-		-	-	4.95	NJ	0	0	-		-	-	-		-	-
Pentane	000109-66-0						0.004	NJ	0	0	-		-	-	-		-	-	-		-	-	-		-	-
Pentane, 2,3,4-trimethyl-	000565-75-3						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Pentane, 2,3-dimethyl-	000565-59-3						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Pentane, 2-methyl-	000107-83-5						0.01	NJ	0	0	-		-	-	6.82	NJ	0	0	-		-	-	-		-	-
Unknown Alkane							-		-	-	-		-	-	2.21	J	0	0	-		-	-	-		-	-
Total TIC Compounds							0.043	J	0	0	0.014	J	0	0	63.3	J	0	0	-		-	-	0.026	J	0	0
GENERAL CHEMISTRY																										

Table 5: Samples Collected Behind Station Where Xylenes Exceeded the Soil Saturation Limit (continued: page 5)

						SAMPLE ID:	PE35:9'				PE36:5'				PE36:5'				PE37:9'				PE37:9'			
						LAB ID:	L2148004-05				L2148004-06				L2148004-06 R1				L2148004-07				L2148004-07 R1			
						COLLECTION DATE:	9/7/2021				9/7/2021				9/7/2021				9/7/2021				9/7/2021			
						SAMPLE DEPTH:	High Level DF = 1				high level DF = 10				High Level DF = 50				High Level DF = 1				High Level DF = 10			
						SAMPLE MATRIX:	SOIL				SOIL				SOIL				SOIL				SOIL			
		NJ-MGW-SRS	NJ-NRI-SRS	NJ-NRID-SRS	NJ-RI-SRS	NJ-RID-SRS																				
ANALYTE	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANICS BY EPA 5035 HIGH-TIC																										
Unknown							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Indane	000496-11-7						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Cyclopentane, Methyl-	000096-37-7						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Pentane, 2-methyl-	000107-83-5						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Alkene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Total TIC Compounds							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
VOLATILE ORGANICS BY EPA 5035-TIC																										
Unknown Alkane							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Alkane							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Alkene							0.146	J	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown Alkene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Alkene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Alkene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Aromatic							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Aromatic							0.17	J	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown Aromatic							0.168	J	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown Benzene							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown Benzene							0.936	J	0	0	37.5	J	0	0	-		-	-	3.77	J	0	0	-		-	-
Unknown Benzene							0.395	J	0	0	43.9	J	0	0	-		-	-	1.54	J	0	0	-		-	-
Unknown Benzene							0.275	J	0	0	-		-	-	-		-	-	4.58	J	0	0	-		-	-
Unknown Benzene							1.55	J	0	0	-		-	-	-		-	-	1.55	J	0	0	-		-	-
Unknown Benzene							0.181	J	0	0	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							0.155	J	0	0	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							0.149	J	0	0	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Cycloalkane							-		-	-	-		-	-	-		-	-	1.35	J	0	0	-	-	-	-
Unknown Cyclohexane							-		-	-	26.4	J	0	0	-	-	-	-	-	-	-	-	-	-	-	-
Unknown Cyclopentane							-		-	-	21.2	J	0	0	-	-	-	-	-	-	-	-	-	-	-	-
Unknown							0.367	J	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown							-		-	-	-		-	-	-		-	-	3.34	J	0	0	-		-	-
Unknown							-		-	-	-		-	-	-		-	-	2.75	J	0	0	-		-	-
Unknown							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene, Propyl-	000103-65-1						0.141	NJ	0	0	-		-	-	-		-	-	-		-	-	-		-	-
Butane, 2-Methyl-	000078-78-4						0.188	NJ	0	0	-		-	-	-		-	-	-		-	-	-		-	-
Cyclopentane, 1,3-dimethyl-	002453-00-1						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyclopentane, Methyl-	000096-37-7						0.211	NJ	0	0	22.9	NJ	0	0	-		-	-	-		-	-	-		-	-
Cyclopentene	000142-29-0						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Heptane, 2-methyl-	000592-27-8						-		-	-	108	NJ	0	0	-		-	-	1.49	NJ	0	0	-	-	-	-
Heptane, 3-methyl-	000589-81-1						-		-	-	77.6	NJ	0	0	-		-	-	3.98	NJ	0	0	-		-	-
Hexane, 2,4-dimethyl-	000589-43-5						-		-	-	19	NJ	0	0	-	-	-	-	-	-	-	-	-	-	-	-
Hexane, 3-methyl-	000589-34-4						-		-	-	67.1	NJ	0	0	-		-	-	4.17	NJ	0	0	-		-	-
Indane	000496-11-7						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Isobutane	000075-28-5						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
n-Hexane	000110-54-3						-		-	-	24.7	NJ	0	0	-		-	-	3.64	NJ	0	0	-		-	-
Octane	000111-65-9						-		-	-	58.1	NJ	0	0	-		-	-	2.75	NJ	0	0	-		-	-
Pentane	000109-66-0						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Pentane, 2,3,4-trimethyl-	000565-75-3						-		-	-	27.9	NJ	0	0	-		-	-	-		-	-	-		-	-
Pentane, 2,3-dimethyl-	000565-59-3						-		-	-	29.7	NJ	0	0	-		-	-	1.94	NJ	0	0	-		-	-
Pentane, 2-methyl-	000107-83-5						0.352	NJ	0	0	33.4	NJ	0	0	-		-	-	6.5	NJ	0	0	-		-	-
Unknown Alkane							-		-	-	67.6	J	0	0	-		-	-	1.66	J	0	0	-	-	-	-
Total TIC Compounds							5.38	J	0	0	665	J	0	0	-		-	-	45	J	0	0	-		-	-
GENERAL CHEMISTRY																										
Solids, Total	NONE						81.5		0.1	NA	82.8		0.1	NA	-		-	-	85.4		0.1	NA	-		-	-

NJ-MGW-SRS: New Jersey 2021 Migration to Groundwater Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
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NJ-NRID-SRS: New Jersey 2021 Non-Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-RI-SRS: New Jersey 2021 Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-RID-SRS: New Jersey 2021 Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

Table 5: Samples Collected Behind Station Where Xylenes Exceeded the Soil Saturation Limit (continued: page 6)

						SAMPLE ID:	PE38:7'				PE38:7'				PE39:10 1/2'				PE39:10 1/2'		PE40:10 1/2'			
						LAB ID:	L2148004-08				L2148004-08 R1				L2148004-09				L2148004-09	HIGH	L2148004-10			
						COLLECTION DATE:	9/7/2021				9/7/2021				9/7/2021				9/7/2021		9/8/2021			
						SAMPLE DEPTH:	High Level DF = 10				High Level DF = 20???				LOW DF = 1				High DF = 1		High DF = 1			
						SAMPLE MATRIX:	SOIL				SOIL				SOIL				SOIL		SOIL			
		NJ-MGW-SRS	NJ-NRI-SRS	NJ-NRID-SRS	NJ-RI-SRS	NJ-RID-SRS																		
ANALYTE	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL			Conc	Q	RL	MDL
VOLATILE ORGANICS BY EPA 5035 HIGH-TIC																								
Unknown							-		-	-	-		-	-	0.161	J	0	0			-	-	-	-
Unknown Benzene							-		-	-	-		-	-	0.957	J	0	0			-	-	-	-
Indane	000496-11-7						-		-	-	-		-	-	0.291	NJ	0	0			-	-	-	-
Unknown Benzene							-		-	-	-		-	-	0.192	J	0	0			-	-	-	-
Unknown Benzene							-		-	-	-		-	-	0.252	J	0	0			-	-	-	-
Cyclopentane, Methyl-	000096-37-7						-		-	-	-		-	-	0.182	NJ	0	0			-	-	-	-
Unknown							-		-	-	-		-	-	0.151	J	0	0			-	-	-	-
Unknown							-		-	-	-		-	-	0.142	J	0	0			-	-	-	-
Pentane, 2-methyl-	000107-83-5						-		-	-	-		-	-	0.313	NJ	0	0			-	-	-	-
Unknown Benzene							-		-	-	-		-	-	0.632	J	0	0			-	-	-	-
Unknown Alkene							-		-	-	-		-	-	0.175	J	0	0			-	-	-	-
Total TIC Compounds							-		-	-	-		-	-	3.45	J	0	0			-	-	-	-
VOLATILE ORGANICS BY EPA 5035-TIC																								
Unknown Alkane							52.5	J	0	0	-	-	-	-	-	-	-	-			-	-	-	-
Unknown Alkane							17.4	J	0	0	-	-	-	-	-	-	-	-			-	-	-	-
Unknown Alkene							-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-
Unknown Alkene							-		-	-	-		-	-	0.08	J	0	0			-	-	-	-
Unknown Alkene							-		-	-	-		-	-	0.048	J	0	0			-	-	-	-
Unknown Alkene							-		-	-	-		-	-	0.068	J	0	0			-	-	-	-
Unknown Aromatic							-		-	-	-		-	-	-		-	-			0.674	J	0	0
Unknown Aromatic							-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-
Unknown Aromatic							-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-
Unknown Benzene							-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-
Unknown Benzene							41.6	J	0	0	-		-	-	0.057	J	0	0			5.74	J	0	0
Unknown Benzene							17.3	J	0	0	-		-	-	0.08	J	0	0			1.97	J	0	0
Unknown Benzene							52.2	J	0	0	-		-	-	-		-	-			1.44	J	0	0
Unknown Benzene							-		-	-	-		-	-	-		-	-			7.99	J	0	0
Unknown Benzene							-		-	-	-		-	-	-		-	-			1.96	J	0	0
Unknown Benzene							-		-	-	-		-	-	-		-	-			0.564	J	0	0
Unknown Benzene							-		-	-	-		-	-	-		-	-			0.832	J	0	0
Unknown Benzene							-		-	-	-		-	-	-		-	-			0.648	J	0	0
Unknown Benzene							-		-	-	-		-	-	-		-	-			0.58	J	0	0
Unknown Cycloalkane							-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-
Unknown Cyclohexane							-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-
Unknown Cyclopentane							-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-
Unknown							-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-
Unknown							33.1	J	0	0	-		-	-	0.176	J	0	0			-	-	-	-
Unknown							19.5	J	0	0	-		-	-	0.11	J	0	0			-	-	-	-
Unknown							-		-	-	-		-	-	0.027	J	0	0			-	-	-	-
Unknown							-		-	-	-		-	-	0.146	J	0	0			-	-	-	-
Unknown							-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-
Unknown							-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-
Benzene, Propyl-	000103-65-1						-		-	-	-		-	-	-		-	-			1.11	NJ	0	0
Butane, 2-Methyl-	000078-78-4						19	NJ	0	0	-		-	-	0.196	NJ	0	0			-	-	-	-
Cyclopentane, 1,3-dimethyl-	002453-00-1						-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-
Cyclopentane, Methyl-	000096-37-7						-		-	-	-		-	-	0.101	NJ	0	0			0.613	NJ	0	0
Cyclopentene	000142-29-0						-		-	-	-		-	-	0.049	NJ	0	0			-	-	-	-
Heptane, 2-methyl-	000592-27-8						-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-
Heptane, 3-methyl-	000589-81-1						39.2	NJ	0	0	-	-	-	-	-	-	-	-			-	-	-	-
Hexane, 2,4-dimethyl-	000589-43-5						-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-
Hexane, 3-methyl-	000589-34-4						39.1	NJ	0	0	-	-	-	-	-	-	-	-			-	-	-	-
Indane	000496-11-7						-		-	-	-		-	-	0.027	NJ	0	0			-	-	-	-
Isobutane	000075-28-5						-		-	-	-		-	-	0.069	NJ	0	0			-	-	-	-
n-Hexane	000110-54-3						31	NJ	0	0	-		-	-	-		-	-			0.604	NJ	0	0
Octane	000111-65-9						26.6	NJ	0	0	-	-	-	-	-	-	-	-			-	-	-	-
Pentane	000109-66-0						-		-	-	-		-	-	0.116	NJ	0	0			-	-	-	-
Pentane, 2,3,4-trimethyl-	000565-75-3						19.4	NJ	0	0	-	-	-	-	-	-	-	-			-	-	-	-
Pentane, 2,3-dimethyl-	000565-59-3						21.9	NJ	0	0	-	-	-	-	-	-	-	-			-	-	-	-
Pentane, 2-methyl-	000107-83-5						61.1	NJ	0	0	-		-	-	-		-	-			0.908	NJ	0	0
Unknown Alkane							-	-	-	-	-	-	-	-	-	-	-	-			-	-	-	-
Total TIC Compounds							491	J	0	0	-		-	-	1.35	J	0	0			25.6	J	0	0
GENERAL CHEMISTRY																								
Solids, Total	NONE						81.1		0.1	NA	-		-	-	76.9		0.1	NA			75.9		0.1	NA

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NJ-NRI-SRS: New Jersey 2021 Non-Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-NRID-SRS: New Jersey 2021 Non-Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-RI-SRS: New Jersey 2021 Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-RID-SRS: New Jersey 2021 Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

Table 6: Samples Collected in Swale Area: Area 2: AOC 8: Page 1 of 10

						SAMPLE ID:	PE41:7'			PE42:7'			PE43:6'			PE44:7 1/2'			PE45:4 1/2'			PE46:4'		
						LAB ID:	L2148302-01			L2148302-02			L2148302-03			L2148302-04			L2148302-05			L2148302-06		
						COLLECTION DATE:	9/8/2021			9/8/2021			9/8/2021			9/8/2021			9/8/2021			9/8/2021		
						SAMPLE DEPTH:																		
						SAMPLE MATRIX:	SOIL			SOIL			SOIL			SOIL			SOIL			SOIL		
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ-NRID-SRS	NJ-NRI-SRS																		
ANALYTE	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANICS BY EPA 5035																										
1,2-Dibromo-3-chloropropane	96-12-8	0.005	0.87	0.026	4.5	0.12	ND		0.0031	0.001	ND		0.0029	0.00097	ND		0.0025	0.00082	ND		0.0027	0.0009	ND		0.003	0.001	ND		0.0028	0.00092
1,4-Dioxane	123-91-1	0.067	7	45	36	210	ND		0.082	0.036	ND		0.078	0.034	ND		0.066	0.029	ND		0.072	0.032	ND		0.081	0.036	ND		0.074	0.032
1,2-Dibromoethane	106-93-4	0.005	0.35	0.085	1.8	0.41	ND		0.001	0.00029	ND		0.00098	0.00027	ND		0.00082	0.00023	ND		0.0009	0.00025	ND		0.001	0.00028	ND		0.00092	0.00026
Methylene chloride	75-09-2	0.013	50	1400	260		ND		0.0051	0.0024	ND		0.0049	0.0022	ND		0.0041	0.0019	ND		0.0045	0.0021	ND		0.0051	0.0023	ND		0.0046	0.0021
1,1-Dichloroethane	75-34-3	0.24	120		640		ND		0.001	0.00015	ND		0.00098	0.00014	ND		0.00082	0.00012	ND		0.0009	0.00013	ND		0.001	0.00015	ND		0.00092	0.00013
Chloroform	67-66-3	0.33	780	590	13000		ND		0.0015	0.00014	ND		0.0015	0.00014	ND		0.0012	0.00012	ND		0.0014	0.00013	0.00018	J	0.0015	0.00014	ND		0.0014	0.00013
Carbon tetrachloride	56-23-5	0.0075	7.6	1.4	40	6.9	ND		0.001	0.00024	ND		0.00098	0.00022	ND		0.00082	0.00019	ND		0.0009	0.00021	ND		0.001	0.00023	ND		0.00092	0.00021
1,2-Dichloropropane	78-87-5	0.0058	19	5.7	98	27	ND		0.001	0.00013	ND		0.00098	0.00012	ND		0.00082	0.0001	ND		0.0009	0.00011	ND		0.001	0.00013	ND		0.00092	0.00012
Dibromochloromethane	124-48-1	0.005	8.3		43		ND		0.001	0.00014	ND		0.00098	0.00014	ND		0.00082	0.00012	ND		0.0009	0.00013	ND		0.001	0.00014	ND		0.00092	0.00013
1,1,2-Trichloroethane	79-00-5	0.017	12		64		ND		0.001	0.00027	ND		0.00098	0.00026	ND		0.00082	0.00022	ND		0.0009	0.00024	ND		0.001	0.00027	ND		0.00092	0.00025
Tetrachloroethene	127-18-4	0.0086	330	47	1700		ND		0.00051	0.0002	ND		0.00049	0.00019	ND		0.00041	0.00016	ND		0.00045	0.00018	ND		0.00051	0.0002	ND		0.00046	0.00018
Chlorobenzene	108-90-7	0.64	510		8400		ND		0.00051	0.00013	ND		0.00049	0.00012	ND		0.00041	0.0001	ND		0.00045	0.00011	ND		0.00051	0.00013	ND		0.00046	0.00012
Trichlorofluoromethane	75-69-4	29	23000		390000		ND		0.0041	0.00071	ND		0.0039	0.00068	ND		0.0033	0.00057	ND		0.0036	0.00063	ND		0.0041	0.0007	ND		0.0037	0.00064
1,2-Dichloroethane	107-06-2	0.0095	5.8	71	30	320	ND		0.001	0.00026	ND		0.00098	0.00025	ND		0.00082	0.00021	ND		0.0009	0.00023	ND		0.001	0.00026	ND		0.00092	0.00024
1,1,1-Trichloroethane	71-55-6	0.2	160000				ND		0.00051	0.00017	ND		0.00049	0.00016	ND		0.00041	0.00014	ND		0.00045	0.00015	ND		0.00051	0.00017	ND		0.00046	0.00015
Bromodichloromethane	75-27-4	0.005	11		59		ND		0.00051	0.00011	ND		0.00049	0.00011	ND		0.00041	0.00009	ND		0.00045	0.00009	ND		0.00051	0.00011	ND		0.00046	0.0001
trans-1,3-Dichloropropene	10061-02-6	0.0063	7	4.8	36	23	ND		0.001	0.00028	ND		0.00098	0.00027	ND		0.00082	0.00022	ND		0.0009	0.00025	ND		0.001	0.00028	ND		0.00092	0.00025
cis-1,3-Dichloropropene	10061-01-5	0.0063	7	4.8	36	23	ND		0.00051	0.00016	ND		0.00049	0.00015	ND		0.00041	0.00013	ND		0.00045	0.00014	ND		0.00051	0.00016	ND		0.00046	0.00014
1,3-Dichloropropene, Total	542-75-6						ND		0.00051	0.00016	ND		0.00049	0.00015	ND		0.00041	0.00013	ND		0.00045	0.00014	ND		0.00051	0.00016	ND		0.00046	0.00014
Bromoform	75-25-2	0.018	88		460		ND		0.0041	0.00025	ND		0.0039	0.00024	ND		0.0033	0.0002	ND		0.0036	0.00022	ND		0.0041	0.00025	ND		0.0037	0.00023
1,1,2,2-Tetrachloroethane	79-34-5	0.0069	3.5		18		ND		0.00051	0.00017	ND		0.00049	0.00016	ND		0.00041	0.00014	ND		0.00045	0.00015	ND		0.00051	0.00017	ND		0.00046	0.00015
Benzene	71-43-2	0.0094	3	2.2	16	11	0.001		0.00051	0.00017	ND		0.00049	0.00016	0.00014	J	0.00041	0.00014	0.029		0.00045	0.00015	ND		0.00051	0.00017	ND		0.00046	0.00015
Toluene	108-88-3	7.8	6300		100000		ND		0.001	0.00056	ND		0.00098	0.00053	ND		0.00082	0.00045	0.00082	J	0.0009	0.00049	ND		0.001	0.00055	ND		0.00092	0.0005
Ethylbenzene	100-41-4	15	7800	10	130000	48	0.00078	J	0.001	0.00014	0.00018	J	0.00098	0.00014	0.00046	J	0.00082	0.00012	0.06		0.0009	0.00013	ND		0.001	0.00014	ND		0.00092	0.00013
Chloromethane	74-87-3			270		1200	ND		0.0041	0.00096	ND		0.0039	0.00091	ND		0.0033	0.00077	ND		0.0036	0.00084	ND		0.0041	0.00095	ND		0.0037	0.00086
Bromomethane	74-83-9	0.043	110	18	1800	82	ND		0.002	0.0006	ND		0.002	0.00057	ND		0.0016	0.00048	ND		0.0018	0.00052	ND		0.002	0.00059	ND		0.0018	0.00054
Vinyl chloride	75-01-4	0.0067	0.97	1.4	5	6.4	ND		0.001	0.00034	ND		0.00098	0.00033	ND		0.00082	0.00028	ND		0.0009	0.0003	ND		0.001	0.00034	ND		0.00092	0.00031
Chloroethane	75-00-3						ND		0.002	0.00046	ND		0.002	0.00044	ND		0.0016	0.00037	ND		0.0018	0.00041	ND		0.002	0.00046	ND		0.0018	0.00042
1,1-Dichloroethene	75-35-4	0.0069	11	52	180	240	ND		0.001	0.00024	ND		0.00098	0.00023	ND		0.00082	0.0002	ND		0.0009	0.00022	ND		0.001	0.00024	ND		0.00092	0.00022
trans-1,2-Dichloroethene	156-60-5	0.56	1300		22000		ND		0.0015	0.00014	ND		0.0015	0.00013	ND		0.0012	0.00011	ND		0.0014	0.00012	ND		0.0015	0.00014	ND		0.0014	0.00013
Trichloroethene	79-01-6	0.0065	15	3	79	14	ND		0.00051	0.00014	0.00058		0.00049	0.00013	ND		0.00041	0.00011	ND		0.00045	0.00012	ND		0.00051	0.00014	ND		0.00046	0.00013
1,2-Dichlorobenzene	95-50-1	11	6700		110000		ND		0.002	0.00015	ND		0.002	0.00014	ND		0.0016	0.00012	ND		0.0018	0.00013	ND		0.002	0.00015	ND		0.0018	0.00013
1,3-Dichlorobenzene	541-73-1	11	6700		110000		ND		0.002	0.00015	ND		0.002	0.00014	ND		0.0016	0.00012	ND		0.0018	0.00013	ND		0.002	0.00015	ND		0.0018	0.00014
1,4-Dichlorobenzene	106-46-7	1.4	780		13000		ND		0.002	0.00018	ND		0.002	0.00017	ND		0.0016	0.00014	ND		0.0018	0.00015	ND		0.002	0.00017	ND		0.0018	0.00016
Methyl tert butyl ether	1634-04-4	0.25	780	140	13000	650	ND		0.002	0.00021	ND		0.002	0.0002	ND		0.0016	0.00016	0.0025		0.0018	0.00018	0.00043	J	0.002	0.0002	ND		0.0018	0.00018
p/m-Xylene	179601-23-1	19	12000		190000		0.0022		0.002	0.00058	ND		0.002	0.00055	ND		0.0016	0.00046	0.037		0.0018	0.00051	ND		0.002	0.00057	ND		0.0018	0.00052
o-Xylene	95-47-6	19	12000		190000		0.00077	J	0.001	0.0003	ND		0.00098	0.00028	ND		0.00082	0.00024	0.017		0.0009	0.00026	ND		0.001	0.0003	ND		0.00092	0.00027
Xylenes, Total	1330-20-7	19	12000		190000		0.003	J	0.001	0.0003	ND		0.00098	0.00028	ND		0.00082	0.00024	0.054		0.0009	0.00026	ND		0.001	0.0003	ND		0.00092	0.00027
cis-1,2-Dichloroethene	156-59-2	0.35	780		13000		ND		0.001	0.00018	ND		0.00098	0.00017	ND		0.00082	0.00014	ND		0.0009	0.00016	ND		0.001	0.00018	ND		0.00092	0.00016
1,2-Dichloroethene, Total	540-59-0																									
Styrene	100-42-5	2.1	16000		260000		ND		0.001	0.0002	ND		0.00098	0.00019	ND		0.00082	0.00016	ND		0.0009	0.00018	ND		0.001	0.0002	ND		0.00092	0.00018
Dichlorodifluoromethane	75-71-8	38	16000		260000		ND		0.01	0.00094	ND		0.0098	0.00089	ND		0.0082	0.00075	ND		0.009	0.00083	ND		0.01	0.00093	ND		0.0092	0.00084
Acetone	67-64-1	19	70000				0.13		0.026	0.01	0.032		0.024	0.0098	0.035		0.02	0.0082	ND		0.023	0.009	ND		0.025	0.01	ND		0.023	0.0092
Carbon disulfide	75-15-0	3.7					ND		0.01	0.0047	ND		0.0098	0.0044	ND		0.0082	0.0037	ND		0.009	0.0041	ND		0.01	0.0046	ND		0.0092	0.0042
2-Butanone	78-93-3	0.98	47000		780000		0.015		0.01	0.0023	ND		0.0098	0.0022	ND		0.0082	0.0018	ND		0.009	0.002	ND		0.01	0.0022	ND		0.0092	0.002
4-Methyl-2-pentanone	108-10-1						ND		0.01	0.0013	ND		0.0098	0.0012	ND		0.0082	0.001	ND		0.009	0.0012	ND		0.01	0.0013	ND		0.0092	0.0012
2-Hexanone	591-78-6	0.15	390	1000	6500		ND		0.01	0.0012	ND		0.0098	0.0012	ND		0.0082	0.00097	ND		0.009	0.0011	ND		0.01	0.0012	ND		0.0092	0.0011
Bromochloromethane	74-97-5						ND		0.002	0.00021	ND		0.002	0.0002	ND		0.0016	0.00017	ND		0.0018	0.00018	ND		0.002	0.00021	ND		0.0018	0.00019
Isopropylbenzene	98-82-8	22	7800		130000		0.0024		0.001	0.00011	0.00022	J	0.00098	0.00011	0.0037		0.00082	0.00009	0.025		0.0009	0.00009	ND		0.001	0.00011	ND		0.00092	0.0001
Naphthalene	91-20-3	19	2500	5.7	34000	27	0.0054		0.0041	0.00067	ND		0.0039	0.00063	ND		0.0033	0.00053	0.12		0.0036	0.00059	ND		0.0041	0.00066	ND		0.0037	0.0006
1,2,3-Trichlorobenzene	87-61-6						ND		0.002	0.00033	ND		0.002	0.00031	ND		0.0016	0.00026	ND		0.0018	0.00029	ND		0.002	0.00033	ND		0.0018	0.0003
1,2,4-Trichlorobenzene	120-82-1	0.52	780	94	13000		ND		0.002	0.00028	ND		0.002	0.00026	ND		0.0016	0.00022	ND		0.0018	0.00025	ND		0.002	0.00028	ND		0.0018	0.00025
Methyl Acetate	79-20-9	22	78000				ND		0.0041	0.00098	ND		0.0039	0.00093	ND		0.0033	0.00078	ND		0.0036	0.00086	ND		0.0041	0.00096	ND		0.0037	0.00088
Cyclohexane	110-82-7						0.0021	J	0.01	0.00056	ND		0.0098	0.00053	ND		0.0082	0.00045	0.042		0.009	0.00049	ND		0.01	0.00055	ND		0.0092	0.0005
Tert-Butyl Alcohol	75-65-0	0.32	1400		23000		ND		0.02	0.0053	ND		0.02	0.005	ND		0.016	0.0042	0.0062	J	0.018	0.0046	ND		0.02	0.0052	ND		0.018	0.0047
Methyl cyclohexane	108-87-2						0.0015	J	0.0041	0.00062	0.00085	J	0.0039	0.00059	0.0092		0.0033	0.0005	0.043		0.0036	0.00054	ND		0.0041	0.00061	ND		0.0037	0.00056
Freon-113	76-13-1						ND		0.0041	0.00071	ND		0.0039	0.00068	ND		0.0033	0.00057	ND		0.0036	0.00063	ND		0.0041	0.0007	ND		0.0037	0.00064
Total VOCs							0.16115	-	-	-	0.03383	-	-	-	0.0485	-	-	-	0.37632	-	-	-	0.00061	-	-	-	-	-	-	-
GENERAL CHEMISTRY																										
Solids, Total	NONE						80.9		0.1	NA	79.7		0.1	NA	85.4		0.1	NA	88.8		0.1	NA	82.2		0.1	NA	84.5		0.1	NA
Comment																										
Sample collected in unsaturated zone									No				No				Yes				No				Yes				Yes	

Note: Samples collected in saturated zone should not be compared to migration to groundwater standard.
Note: Samples collected in unsaturated zone should be compared to migration to groundwater standard.
J: Estimated value
ND: Not detected at method detection level (MDL)
Reporting level exceeds applicable standard
NJ-MGW-SRS: NJ - New Jersey 2021 Migration to Groundwater Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-RID-SRS: NJ - New Jersey 2021 Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-RI-SRS: NJ - New Jersey 2021 Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-NRID-SRS: NJ - New Jersey 2021 Non-Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-NRI-SRS: NJ - New Jersey 2021 Non-Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

Table 6: Samples Collected in Swale Area: Area 2: AOC 8 (continued: page 2 of 10)

						SAMPLE ID:																									
						LAB ID:		PE47:4 1/2'				PE48:4'				PE49:3'				PE50:4'				PE51:8'							
						COLLECTION DATE:		L2148302-07				L2148302-08				L2148302-09				L2148302-10				L2148302-11							
						SAMPLE DEPTH:		9/8/2021				9/8/2021				9/8/2021				9/8/2021				9/8/2021							
						SAMPLE MATRIX:																									
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ-NRID-SRS	NJ-NRI-SRS		SOIL				SOIL				SOIL				SOIL				SOIL							
ANALYTE	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)																									
VOLATILE ORGANICS BY EPA 5035							Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
1,2-Dibromo-3-chloropropane	96-12-8	0.005	0.87	0.026	4.5	0.12	ND		0.0032	0.001	ND		0.003	0.00098	ND		0.0029	0.00095	ND		0.18	0.062	ND		0.0029	0.00097				
1,4-Dioxane	123-91-1	0.067	7	45	36	210	ND		0.085	0.037	ND		0.079	0.035	ND		0.076	0.034	ND		4.9	2.2	ND		0.077	0.034				
1,2-Dibromoethane	106-93-4	0.005	0.35	0.085	1.8	0.41	ND		0.0011	0.0003	ND		0.00098	0.00028	ND		0.00096	0.00027	ND		0.062	0.017	ND		0.00097	0.00027				
Methylene chloride	75-09-2	0.013	50	1400	260		ND		0.0053	0.0024	ND		0.0049	0.0022	ND		0.0048	0.0022	ND		0.31	0.14	ND		0.0048	0.0022				
1,1-Dichloroethane	75-34-3	0.24	120		640		ND		0.0011	0.00015	ND		0.00098	0.00014	ND		0.00096	0.00014	ND		0.062	0.0089	ND		0.00097	0.00014				
Chloroform	67-66-3	0.33	780	590	13000		0.00018	J	0.0016	0.00015	ND		0.0015	0.00014	0.00052	J	0.0014	0.00013	ND		0.092	0.0086	ND		0.0014	0.00014				
Carbon tetrachloride	56-23-5	0.0075	7.6	1.4	40	6.9	ND		0.0011	0.00024	ND		0.00098	0.00023	ND		0.00096	0.00022	ND		0.062	0.014	ND		0.00097	0.00022				
1,2-Dichloropropane	78-87-5	0.0058	19	5.7	98	27	ND		0.0011	0.00013	ND		0.00098	0.00012	ND		0.00096	0.00012	ND		0.062	0.0077	ND		0.00097	0.00012				
Dibromochloromethane	124-48-1	0.005	8.3		43		ND		0.0011	0.00015	ND		0.00098	0.00014	ND		0.00096	0.00013	ND		0.062	0.0086	ND		0.00097	0.00014				
1,1,2-Trichloroethane	79-00-5	0.017	12		64		ND		0.0011	0.00028	ND		0.00098	0.00026	ND		0.00096	0.00026	ND		0.062	0.016	ND		0.00097	0.00026				
Tetrachloroethene	127-18-4	0.0086	330	47	1700		ND		0.00053	0.00021	ND		0.00049	0.00019	ND		0.00048	0.00019	ND		0.031	0.012	ND		0.00048	0.00019				
Chlorobenzene	108-90-7	0.64	510		8400		ND		0.00053	0.00013	ND		0.00049	0.00012	ND		0.00048	0.00012	ND		0.031	0.0078	ND		0.00048	0.00012				
Trichlorofluoromethane	75-69-4	29	23000		390000		ND		0.0042	0.00074	ND		0.0039	0.00068	ND		0.0038	0.00066	ND		0.25	0.043	ND		0.0039	0.00067				
1,2-Dichloroethane	107-06-2	0.0095	5.8	71	30	320	ND		0.0011	0.00027	ND		0.00098	0.00025	ND		0.00096	0.00024	ND		0.062	0.016	ND		0.00097	0.00025				
1,1,1-Trichloroethane	71-55-6	0.2	160000				ND		0.00053	0.00018	ND		0.00049	0.00016	ND		0.00048	0.00016	ND		0.031	0.01	ND		0.00048	0.00016				
Bromodichloromethane	75-27-4	0.005	11		59		ND		0.00053	0.00012	ND		0.00049	0.00011	ND		0.00048	0.0001	ND		0.031	0.0067	ND		0.00048	0.0001				
trans-1,3-Dichloropropene	10061-02-6	0.0063	7	4.8	36	23	ND		0.0011	0.00029	ND		0.00098	0.00027	ND		0.00096	0.00026	ND		0.062	0.017	ND		0.00097	0.00026				
cis-1,3-Dichloropropene	10061-01-5	0.0063	7	4.8	36	23	ND		0.00053	0.00017	ND		0.00049	0.00016	ND		0.00048	0.00015	ND		0.031	0.0097	ND		0.00048	0.00015				
1,3-Dichloropropene, Total	542-75-6						ND		0.00053	0.00017	ND		0.00049	0.00016	ND		0.00048	0.00015	ND		0.031	0.0097	ND		0.00048	0.00015				
Bromoform	75-25-2	0.018	88		460		ND		0.0042	0.00026	ND		0.0039	0.00024	ND		0.0038	0.00024	ND		0.25	0.015	ND		0.0039	0.00024				
1,1,2,2-Tetrachloroethane	79-34-5	0.0069	3.5		18		ND		0.00053	0.00018	ND		0.00049	0.00016	ND		0.00048	0.00016	ND		0.031	0.01	ND		0.00048	0.00016				
Benzene	71-43-2	0.0094	3	2.2	16	11	ND		0.00053	0.00018	ND		0.00049	0.00016	ND		0.00048	0.00016	0.2		0.031	0.01	0.056		0.00048	0.00016				
Toluene	108-88-3	7.8	6300		100000		ND		0.0011	0.00058	ND		0.00098	0.00054	ND		0.00096	0.00052	0.051	J	0.062	0.033	0.00064	J	0.00097	0.00052				
Ethylbenzene	100-41-4	15	7800	10	130000	48	ND		0.0011	0.00015	ND		0.00098	0.00014	ND		0.00096	0.00013	1.6		0.062	0.0087	0.013		0.00097	0.00014				
Chloromethane	74-87-3			270		1200	ND		0.0042	0.00099	ND		0.0039	0.00092	ND		0.0038	0.00089	ND		0.25	0.057	ND		0.0039	0.0009				
Bromomethane	74-83-9	0.043	110	18	1800	82	ND		0.0021	0.00062	ND		0.002	0.00057	ND		0.0019	0.00056	ND		0.12	0.036	ND		0.0019	0.00056				
Vinyl chloride	75-01-4	0.0067	0.97	1.4	5	6.4	ND		0.0011	0.00036	ND		0.00098	0.00033	ND		0.00096	0.00032	ND		0.062	0.021	ND		0.00097	0.00032				
Chloroethane	75-00-3						ND		0.0021	0.00048	ND		0.002	0.00044	ND		0.0019	0.00043	ND		0.12	0.028	ND		0.0019	0.00044				
1,1-Dichloroethene	75-35-4	0.0069	11	52	180	240	ND		0.0011	0.00025	ND		0.00098	0.00023	ND		0.00096	0.00023	ND		0.062	0.015	ND		0.00097	0.00023				
trans-1,2-Dichloroethene	156-60-5	0.56	1300		22000		ND		0.0016	0.00014	ND		0.0015	0.00014	ND		0.0014	0.00013	ND		0.092	0.0084	ND		0.0014	0.00013				
Trichloroethene	79-01-6	0.0065	15	3	79	14	ND		0.00053	0.00014	ND		0.00049	0.00014	ND		0.00048	0.00013	ND		0.031	0.0084	ND		0.00048	0.00013				
1,2-Dichlorobenzene	95-50-1	11	6700		110000		ND		0.0021	0.00015	ND		0.002	0.00014	ND		0.0019	0.00014	ND		0.12	0.0089	ND		0.0019	0.00014				
1,3-Dichlorobenzene	541-73-1	11	6700		110000		ND		0.0021	0.00016	ND		0.002	0.00014	ND		0.0019	0.00014	ND		0.12	0.0091	ND		0.0019	0.00014				
1,4-Dichlorobenzene	106-46-7	1.4	780		13000		ND		0.0021	0.00018	ND		0.002	0.00017	ND		0.0019	0.00016	ND		0.12	0.01	ND		0.0019	0.00016				
Methyl tert butyl ether	1634-04-4	0.25	780	140	13000	650	ND		0.0021	0.00021	ND		0.002	0.0002	ND		0.0019	0.00019	ND		0.12	0.012	0.01		0.0019	0.00019				
p/m-Xylene	179601-23-1	19	12000		190000		ND		0.0021	0.00059	ND		0.002	0.00055	ND		0.0019	0.00054	4.6		0.12	0.034	0.022		0.0019	0.00054				
o-Xylene	95-47-6	19	12000		190000		ND		0.0011	0.00031	ND		0.00098	0.00029	ND		0.00096	0.00028	0.15		0.062	0.018	0.026		0.00097	0.00028				
Xylenes, Total	1330-20-7	19	12000		190000		ND		0.0011	0.00031	ND		0.00098	0.00029	ND		0.00096	0.00028	4.8		0.062	0.018	0.048		0.00097	0.00028				
cis-1,2-Dichloroethene	156-59-2	0.35	780		13000		ND		0.0011	0.00018	ND		0.00098	0.00017	ND		0.00096	0.00017	ND		0.062	0.011	ND		0.00097	0.00017				
1,2-Dichloroethene, Total																															
Styrene	100-42-5	2.1	16000		260000		ND		0.0011	0.00021	0.011		0.00098	0.00019	ND		0.00096	0.00019	ND		0.062	0.012	ND		0.00097	0.00019				
Dichlorodifluoromethane	75-71-8	38	16000		260000		ND		0.011	0.00097	ND		0.0098	0.0009	ND		0.0096	0.00088	ND		0.62	0.056	ND		0.0097	0.00089				
Acetone	67-64-1	19	70000				ND		0.026	0.011	ND		0.025	0.0098	ND		0.024	0.0096	ND		0.62	0.3	0.044		0.024	0.0097				
Carbon disulfide	75-15-0	3.7					ND		0.011	0.0048	ND		0.0098	0.0045	ND		0.0096	0.0044	ND		0.62	0.28	ND		0.0097	0.0044				
2-Butanone	78-93-3	0.98	47000		780000		ND		0.011	0.0024	ND		0.0098	0.0022	ND		0.0096	0.0021	ND		0.62	0.14	0.021		0.0097	0.0022				
4-Methyl-2-pentanone	108-10-1						ND		0.011	0.0014	ND		0.0098	0.0013	ND		0.0096	0.0012	ND		0.62	0.079	ND		0.0097	0.0012				
2-Hexanone	591-78-6	0.15	390	1000	6500		ND		0.011	0.0012	ND		0.0098	0.0012	ND		0.0096	0.0011	ND		0.62	0.073	ND		0.0097	0.0011				
Bromochloromethane	74-97-5						ND		0.0021	0.00022	ND		0.002	0.0002	ND		0.0019	0.0002	ND		0.12	0.013	ND		0.0019	0.0002				
Isopropylbenzene	98-82-8	22	7800		130000		ND		0.0011	0.00012	ND		0.00098	0.00011	ND		0.00096	0.0001	0.56		0.062	0.0067	0.0068		0.00097	0.0001				
Naphthalene	91-20-3	19	2500	5.7	34000	27	ND		0.0042	0.00069	ND		0.0039	0.00064	ND		0.0038	0.00062	2.5		0.25	0.04	0.0089		0.0039	0.00063				
1,2,3-Trichlorobenzene	87-61-6						ND		0.0021	0.00034	ND		0.002	0.00032	ND		0.0019	0.00031	ND		0.12	0.02	ND		0.0019	0.00031				
1,2,4-Trichlorobenzene	120-82-1	0.52	780	94	13000		ND		0.0021	0.00029	ND		0.002	0.00027	ND		0.0019	0.00026	ND		0.12	0.017	ND		0.0019	0.00026				
Methyl Acetate	79-20-9	22	78000				ND		0.0042	0.001	ND		0.0039	0.00094	ND		0.0038	0.00091	ND		0.25	0.059	ND		0.0039	0.00092				
Cyclohexane	110-82-7						ND		0.011	0.00058	ND		0.0098	0.00054	ND		0.0096	0.00052	0.89		0.62	0.034	0.0047	J	0.0097	0.00053				
Tert-Butyl Alcohol	75-65-0	0.32					ND		0.021	0.0054	ND		0.02	0.0051	ND		0.019	0.0049	ND		1.2	0.32	0.03		0.019	0.005				
Freon-113	76-13-1						ND		0.0042	0.00074	ND		0.0039	0.00068	ND		0.0038	0.00066	ND		0.25	0.043	ND		0.0039	0.00067				
Total VOCs							0.00018	-	-	-	0.011	-	-	-	0.00052	-	-	-	11.551	-	-	-	0.21744	-	-	-				
GENERAL CHEMISTRY																															
Solids, Total	NONE						80.2		0.1	NA	82.2		0.1	NA	81.8		0.1	NA	76.7		0.1	NA	82.2		0.1	NA				
Comment																															
Sample collected in unsaturated zone									Yes				Yes				Yes				Yes				No					

Note: Samples collected in saturated zone should not be compared to migration to groundwater standard.
Note: Samples collected in unsaturated zone should be compared to migration to groundwater standard.
Exceeds migration to groundwater standard
Reporting level exceeds applicable standard
J: Estimated value
ND: Not detected at method detection level (MDL)
NJ-MGW-SRS: NJ - New Jersey 2021 Migration to Groundwater Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-RID-SRS: NJ - New Jersey 2021 Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-RI-SRS: NJ - New Jersey 2021 Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-NRID-SRS: NJ - New Jersey 2021 Non-Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-NRI-SRS: NJ - New Jersey 2021 Non-Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

Table 6: Samples Collected in Swale Area: Area 2: AOC 8 (continued : page 3 of 10)

							SAMPLE ID:		PE52-5'					PE52-5'					PE53-8'				PE54-8-8 1/2'				PE55-6'			
							LAB ID:		L2148302-12					L2148302-12 R1					L2148302-13				L2148302-14				L2148302-15			
							COLLECTION DATE:		9/8/2021					9/8/2021					9/8/2021				9/8/2021				9/8/2021			
							SAMPLE DEPTH:																							
							SAMPLE MATRIX:		SOIL					SOIL					SOIL				SOIL				SOIL			
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ-NRID-SRS	NJ-NRI-SRS																												
ANALYTE	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANICS BY EPA 5035																																		
1,2-Dibromo-3-chloropropane	96-12-8	0.005	0.87	0.026	4.5	0.12	ND		0.2	0.068	-	-	-	-	ND		0.0026	0.00085	ND		0.0023	0.00076	ND		0.0031	0.001				
1,4-Dioxane	123-91-1	0.067	7	45	36	210	ND		5.5	2.4	-	-	-	-	ND		0.068	0.03	ND		0.061	0.027	ND		0.084	0.037				
1,2-Dibromoethane	106-93-4	0.005	0.35	0.085	1.8	0.41	ND		0.068	0.019	-	-	-	-	ND		0.00085	0.00024	ND		0.00076	0.00021	ND		0.001	0.00029				
Methylene chloride	75-09-2	0.013	50	1400	260		ND		0.34	0.16	-	-	-	-	ND		0.0043	0.002	ND		0.0038	0.0017	ND		0.0052	0.0024				
1,1-Dichloroethane	75-34-3	0.24	120		640		ND		0.068	0.0099	-	-	-	-	ND		0.00085	0.00012	ND		0.00076	0.00011	ND		0.001	0.00015				
Chloroform	67-66-3	0.33	780	590	13000		ND		0.1	0.0096	-	-	-	-	ND		0.0013	0.00012	ND		0.0011	0.00011	ND		0.0016	0.00015				
Carbon tetrachloride	56-23-5	0.0075	7.6	1.4	40	6.9	ND		0.068	0.016	-	-	-	-	ND		0.00085	0.0002	ND		0.00076	0.00018	ND		0.001	0.00024				
1,2-Dichloropropane	78-87-5	0.0058	19	5.7	98	27	ND		0.068	0.0086	-	-	-	-	ND		0.00085	0.00011	ND		0.00076	0.00009	ND		0.001	0.00013				
Dibromochloromethane	124-48-1	0.005	8.3		43		ND		0.068	0.0096	-	-	-	-	ND		0.00085	0.00012	ND		0.00076	0.00011	ND		0.001	0.00015				
1,1,2-Trichloroethane	79-00-5	0.017	12		64		ND		0.068	0.018	-	-	-	-	ND		0.00085	0.00023	ND		0.00076	0.0002	ND		0.001	0.00028				
Tetrachloroethene	127-18-4	0.0086	330	47	1700		ND		0.034	0.013	-	-	-	-	ND		0.00043	0.00017	ND		0.00038	0.00015	ND		0.00052	0.0002				
Chlorobenzene	108-90-7	0.64	510		8400		ND		0.034	0.0087	-	-	-	-	ND		0.00043	0.00011	ND		0.00038	0.00009	ND		0.00052	0.00013				
Trichlorofluoromethane	75-69-4	29	23000		390000		ND		0.27	0.048	-	-	-	-	ND		0.0034	0.00059	ND		0.003	0.00053	ND		0.0042	0.00073				
1,2-Dichloroethane	107-06-2	0.0095	5.8	71	30	320	ND		0.068	0.018	-	-	-	-	ND		0.00085	0.00022	ND		0.00076	0.0002	ND		0.001	0.00027				
1,1,1-Trichloroethane	71-55-6	0.2	160000				ND		0.034	0.011	-	-	-	-	ND		0.00043	0.00014	ND		0.00038	0.00013	ND		0.00052	0.00017				
Bromodichloromethane	75-27-4	0.005	11		59		ND		0.034	0.0075	-	-	-	-	ND		0.00043	0.00009	ND		0.00038	0.00008	ND		0.00052	0.00011				
trans-1,3-Dichloropropene	10061-02-6	0.0063	7	4.8	36	23	ND		0.068	0.019	-	-	-	-	ND		0.00085	0.00023	ND		0.00076	0.00021	ND		0.001	0.00028				
cis-1,3-Dichloropropene	10061-01-5	0.0063	7	4.8	36	23	ND		0.034	0.011	-	-	-	-	ND		0.00043	0.00013	ND		0.00038	0.00012	ND		0.00052	0.00016				
1,3-Dichloropropene, Total	542-75-6						ND		0.034	0.011	-	-	-	-	ND		0.00043	0.00013	ND		0.00038	0.00012	ND		0.00052	0.00016				
Bromoform	75-25-2	0.018	88		460		ND		0.27	0.017	-	-	-	-	ND		0.0034	0.00021	ND		0.003	0.00019	ND		0.0042	0.00026				
1,1,2,2-Tetrachloroethane	79-34-5	0.0069	3.5		18		ND		0.034	0.011	-	-	-	-	ND		0.00043	0.00014	ND		0.00038	0.00013	ND		0.00052	0.00017				
Benzene	71-43-2	0.0094	3	2.2	16	11	2.4		0.034	0.011	-	-	-	-	0.048		0.00043	0.00014	0.057		0.00038	0.00013	0.00041	J	0.00052	0.00017				
Toluene	108-88-3	7.8	6300		100000		0.64		0.068	0.037	-	-	-	-	0.00062	J	0.00085	0.00046	0.00046	J	0.00076	0.00041	ND		0.001	0.00057				
Ethylbenzene	100-41-4	15	7800	10	130000	48	24		0.14	0.019	25	E	0.068	0.0097	0.0063		0.00085	0.00012	0.00086		0.00076	0.00011	0.013		0.001	0.00015				
Chloromethane	74-87-3			270		1200	ND		0.27	0.064	-	-	-	-	ND		0.0034	0.00079	ND		0.003	0.00071	ND		0.0042	0.00098				
Bromomethane	74-83-9	0.043	110	18	1800	82	ND		0.14	0.04	-	-	-	-	ND		0.0017	0.0005	ND		0.0015	0.00044	ND		0.0021	0.00061				
Vinyl chloride	75-01-4	0.0067	0.97	1.4	5	6.4	ND		0.068	0.023	-	-	-	-	ND		0.00085	0.00028	ND		0.00076	0.00025	ND		0.001	0.00035				
Chloroethane	75-00-3						ND		0.14	0.031	-	-	-	-	ND		0.0017	0.00038	ND		0.0015	0.00034	ND		0.0021	0.00047				
1,1-Dichloroethene	75-35-4	0.0069	11	52	180	240	ND		0.068	0.016	-	-	-	-	ND		0.00085	0.0002	ND		0.00076	0.00018	ND		0.001	0.00025				
trans-1,2-Dichloroethene	156-60-5	0.56	1300		22000		ND		0.1	0.0094	-	-	-	-	ND		0.0013	0.00012	ND		0.0011	0.0001	ND		0.0016	0.00014				
Trichloroethene	79-01-6	0.0065	15	3	79	14	ND		0.034	0.0094	-	-	-	-	ND		0.00043	0.00012	ND		0.00038	0.0001	ND		0.00052	0.00014				
1,2-Dichlorobenzene	95-50-1	11	6700		110000		ND		0.14	0.0099	-	-	-	-	ND		0.0017	0.00012	ND		0.0015	0.00011	ND		0.0021	0.00015				
1,3-Dichlorobenzene	541-73-1	11	6700		110000		ND		0.14	0.01	-	-	-	-	ND		0.0017	0.00013	ND		0.0015	0.00011	ND		0.0021	0.00016				
1,4-Dichlorobenzene	106-46-7	1.4	780		13000		ND		0.14	0.012	-	-	-	-	ND		0.0017	0.00014	ND		0.0015	0.00013	ND		0.0021	0.00018				
Methyl tert butyl ether	1634-04-4	0.25	780	140	13000	650	ND		0.14	0.014	-	-	-	-	0.016		0.0017	0.00017	0.0027		0.0015	0.00015	ND		0.0021	0.00021				
p/m-Xylene	179601-23-1	19	12000		190000		46		0.27	0.077	46	E	0.14	0.038	0.00067	J	0.0017	0.00048	0.00072	J	0.0015	0.00043	0.051		0.0021	0.00059				
o-Xylene	95-47-6	19	12000		190000		2.4		0.068	0.02	-		-	-	0.0053		0.00085	0.00025	ND		0.00076	0.00022	0.016		0.001	0.0003				
Xylenes, Total	1330-20-7	19	12000		190000		48		0.068	0.02	-		-	-	0.006	J	0.00085	0.00025	0.00072	J	0.00076	0.00022	0.067		0.001	0.0003				
cis-1,2-Dichloroethene	156-59-2	0.35	780		13000		ND		0.068	0.012	-	-	-	-	ND		0.00085	0.00015	ND		0.00076	0.00013	ND		0.001	0.00018				
1,2-Dichloroethene, Total																																		
Styrene	100-42-5	2.1	16000		260000		ND		0.068	0.013	-	-	-	-	ND		0.00085	0.00017	ND		0.00076	0.00015	ND		0.001	0.0002				
Dichlorodifluoromethane	75-71-8	38	16000		260000		ND		0.68	0.063	-	-	-	-	ND		0.0085	0.00078	ND		0.0076	0.0007	ND		0.01	0.00096				
Acetone	67-64-1	19	70000				ND		0.68	0.33	-	-	-	-	ND		0.021	0.0085	0.0089	J	0.019	0.0076	ND		0.026	0.01				
Carbon disulfide	75-15-0	3.7					ND		0.68	0.31	-	-	-	-	ND		0.0085	0.0039	ND		0.0076	0.0035	ND		0.01	0.0048				
2-Butanone	78-93-3	0.98	47000		780000		ND		0.68	0.15	-	-	-	-	ND		0.0085	0.0019	ND		0.0076	0.0017	ND		0.01	0.0023				
4-Methyl-2-pentanone	108-10-1						ND		0.68	0.088	-	-	-	-	ND		0.0085	0.0011	ND		0.0076	0.00097	ND		0.01	0.0013				
2-Hexanone	591-78-6	0.15	390	1000	6500		ND		0.68	0.081	-	-	-	-	ND		0.0085	0.001	ND		0.0076	0.0009	ND		0.01	0.0012				
Bromochloromethane	74-97-5						ND		0.14	0.014	-	-	-	-	ND		0.0017	0.00017	ND		0.0015	0.00016	ND		0.0021	0.00021				
Isopropylbenzene	98-82-8	22	7800		130000		5.7		0.068	0.0075	-		-	-	0.035		0.00085	0.00009	0.013		0.00076	0.00008	0.042		0.001	0.00011				
Naphthalene	91-20-3	19	2500	5.7	34000	27	12		0.27	0.044	-		-	-	0.072		0.0034	0.00055	0.047		0.003	0.00049	0.13		0.0042	0.00068				
1,2,3-Trichlorobenzene	87-61-6						ND		0.14	0.022	-	-	-	-	ND		0.0017	0.00027	ND		0.0015	0.00024	ND		0.0021	0.00034				
1,2,4-Trichlorobenzene	120-82-1	0.52	780	94	13000		ND		0.14	0.019	-	-	-	-	ND		0.0017	0.00023	ND		0.0015	0.00021	ND		0.0021	0.00028				
Methyl Acetate	79-20-9	22	78000				ND		0.27	0.065	-	-	-	-	ND		0.0034	0.00081	ND		0.003	0.00072	ND		0.0042	0.001				
Cyclohexane	110-82-7						10		0.68	0.037	-		-	-	0.031		0.0085	0.00046	0.005	J	0.0076	0.00041	0.023		0.01	0.00057				
Tert-Butyl Alcohol	75-65-0	0.32					ND		1.4	0.35	-		-	-	0.017		0.017	0.0044	ND		0.015	0.0039	ND		0.021	0.0054				
Methyl cyclohexane	108-87-2						10		0.27	0.041	-		-	-	0.04		0.0034	0.00051	0.0044		0.003	0.00046	0.038		0.0042	0.00063				
Freon-113	76-13-1						ND		0.27	0.047	-	-	-	-	ND		0.0034	0.00059	ND		0.003	0.00053	ND		0.0042	0.00072				
Total VOCs							70	-	-	-	114.14	-	-	-	0.25489	-	-	-	0.14004	-	-	-	0.31341	-	-	-				
GENERAL CHEMISTRY																																		
Solids, Total	NONE						78.3		0.1	NA	-		-	-	85.7		0.1	NA	88.9		0.1	NA	83.3		0.1	NA				
Comment																																		
Sample collected in unsaturated zone									Yes				Yes				No				No				Yes					

Note: Samples collected in saturated zone should not be compared to migration to groundwater standard.
Note: Samples collected in unsaturated zone should be compared to migration to groundwater standard.
12: Exceeds Residential Ingestion or inhalation standard
Exceeds migration to groundwater standard
Reporting level exceeds applicable standard
J: Estimated value
ND: Not detected at method detection level (MDL)
NJ-MGW-SRS: NJ - New Jersey 2021 Migration to Groundwater Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-RID-SRS: NJ - New Jersey 2021 Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-RI-SRS: NJ - New Jersey 2021 Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-NRID-SRS: NJ - New Jersey 2021 Non-Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-NRI-SRS: NJ - New Jersey 2021 Non-Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

Table 6: Samples Collected in Swale Area: Area 2: AOC 8 (continued: page 4 of 10)

						SAMPLE ID:	PE56:6'			PE57:8-8 1/2'			PE58: 2 1/2'			PE59: 6'			PE60: 9-9 1/2'			PE61: 5'		
						LAB ID:	L2148302-16			L2148302-17			L2148765-01			L2148765-02			L2148765-03			L2148765-04		
						COLLECTION DATE:	9/8/2021			9/8/2021			9/9/2021			9/9/2021			9/9/2021			9/9/2021		
						SAMPLE DEPTH:																		
						SAMPLE MATRIX:	SOIL			SOIL			SOIL			SOIL			SOIL			SOIL		
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ-NRID-SRS	NJ-NRI-SRS																		
ANALYTE	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANICS BY EPA 5035																														
1,2-Dibromo-3-chloropropane	96-12-8	0.005	0.87	0.026	4.5	0.12	ND		0.0026	0.00088	ND		0.0024	0.0008	ND		0.0026	0.00086	ND		0.0026	0.00087	ND		0.0032	0.0011	ND		0.0026	0.00087
1,4-Dioxane	123-91-1	0.067	7	45	36	210	ND		0.07	0.031	ND		0.064	0.028	ND		0.069	0.03	ND		0.07	0.031	ND		0.086	0.038	ND		0.07	0.03
1,2-Dibromoethane	106-93-4	0.005	0.35	0.085	1.8	0.41	ND		0.00088	0.00024	ND		0.00081	0.00022	ND		0.00086	0.00024	ND		0.00088	0.00024	ND		0.0011	0.0003	ND		0.00087	0.00024
Methylene chloride	75-09-2	0.013	50	1400	260		ND		0.0044	0.002	ND		0.004	0.0018	ND		0.0043	0.002	ND		0.0044	0.002	ND		0.0054	0.0025	ND		0.0043	0.002
1,1-Dichloroethane	75-34-3	0.24	120		640		ND		0.00088	0.00013	ND		0.00081	0.00012	ND		0.00086	0.00012	ND		0.00088	0.00013	ND		0.0011	0.00016	ND		0.00087	0.00012
Chloroform	67-66-3	0.33	780	590	13000		ND		0.0013	0.00012	0.00014	J	0.0012	0.00011	ND		0.0013	0.00012	ND		0.0013	0.00012	ND		0.0016	0.00015	ND		0.0013	0.00012
Carbon tetrachloride	56-23-5	0.0075	7.6	1.4	40	6.9	ND		0.00088	0.0002	ND		0.00081	0.00018	ND		0.00086	0.0002	ND		0.00088	0.0002	ND		0.0011	0.00025	ND		0.00087	0.0002
1,2-Dichloropropane	78-87-5	0.0058	19	5.7	98	27	ND		0.00088	0.00011	ND		0.00081	0.0001	ND		0.00086	0.00011	ND		0.00088	0.00011	ND		0.0011	0.00013	ND		0.00087	0.00011
Dibromochloromethane	124-48-1	0.005	8.3		43		ND		0.00088	0.00012	ND		0.00081	0.00011	ND		0.00086	0.00012	ND		0.00088	0.00012	ND		0.0011	0.00015	ND		0.00087	0.00012
1,1,2-Trichloroethane	79-00-5	0.017	12		64		ND		0.00088	0.00023	ND		0.00081	0.00022	ND		0.00086	0.00023	ND		0.00088	0.00023	ND		0.0011	0.00029	ND		0.00087	0.00023
Tetrachloroethene	127-18-4	0.0086	330	47	1700		ND		0.00044	0.00017	ND		0.0004	0.00016	ND		0.00043	0.00017	ND		0.00044	0.00017	ND		0.00054	0.00021	ND		0.00043	0.00017
Chlorobenzene	108-90-7	0.64	510		8400		ND		0.00044	0.00011	ND		0.0004	0.0001	ND		0.00043	0.00011	ND		0.00044	0.00011	ND		0.00054	0.00014	ND		0.00043	0.00011
Trichlorofluoromethane	75-69-4	29	23000		390000		ND		0.0035	0.00061	ND		0.0032	0.00056	ND		0.0034	0.0006	ND		0.0035	0.00061	ND		0.0043	0.00075	ND		0.0035	0.0006
1,2-Dichloroethane	107-06-2	0.0095	5.8	71	30	320	ND		0.00088	0.00023	ND		0.00081	0.00021	ND		0.00086	0.00022	ND		0.00088	0.00022	ND		0.0011	0.00028	ND		0.00087	0.00022
1,1,1-Trichloroethane	71-55-6	0.2	160000				ND		0.00044	0.00015	ND		0.0004	0.00013	ND		0.00043	0.00014	ND		0.00044	0.00015	ND		0.00054	0.00018	ND		0.00043	0.00014
Bromodichloromethane	75-27-4	0.005	11		59		ND		0.00044	0.00009	ND		0.0004	0.00008	ND		0.00043	0.00009	ND		0.00044	0.00009	ND		0.00054	0.00012	ND		0.00043	0.00009
trans-1,3-Dichloropropene	10061-02-6	0.0063	7	4.8	36	23	ND		0.00088	0.00024	ND		0.00081	0.00022	ND		0.00086	0.00023	ND		0.00088	0.00024	ND		0.0011	0.00029	ND		0.00087	0.00024
cis-1,3-Dichloropropene	10061-01-5	0.0063	7	4.8	36	23	ND		0.00044	0.00014	ND		0.0004	0.00013	ND		0.00043	0.00014	ND		0.00044	0.00014	ND		0.00054	0.00017	ND		0.00043	0.00014
1,3-Dichloropropene, Total	542-75-6						ND		0.00044	0.00014	ND		0.0004	0.00013	ND		0.00043	0.00014	ND		0.00044	0.00014	ND		0.00054	0.00017	ND		0.00043	0.00014
Bromoform	75-25-2	0.018	88		460		ND		0.0035	0.00022	ND		0.0032	0.0002	ND		0.0034	0.00021	ND		0.0035	0.00022	ND		0.0043	0.00026	ND		0.0035	0.00021
1,1,2,2-Tetrachloroethane	79-34-5	0.0069	3.5		18		ND		0.00044	0.00015	ND		0.0004	0.00013	ND		0.00043	0.00014	ND		0.00044	0.00014	ND		0.00054	0.00018	ND		0.00043	0.00014
Benzene	71-43-2	0.0094	3	2.2	16	11	ND		0.00044	0.00015	0.0039		0.0004	0.00013	ND		0.00043	0.00014	ND		0.00044	0.00014	0.0033		0.00054	0.00018	ND		0.00043	0.00014
Toluene	108-88-3	7.8	6300		100000		ND		0.00088	0.00048	0.0037		0.00081	0.00044	ND		0.00086	0.00047	ND		0.00088	0.00048	ND		0.0011	0.00058	ND		0.00087	0.00047
Ethylbenzene	100-41-4	15	7800	10	130000	48	ND		0.00088	0.00012	0.069		0.00081	0.00011	ND		0.00086	0.00012	ND		0.00088	0.00012	0.021		0.0011	0.00015	0.00031	J	0.00087	0.00012
Chloromethane	74-87-3			270		1200	ND		0.0035	0.00082	ND		0.0032	0.00075	ND		0.0034	0.0008	ND		0.0035	0.00082	ND		0.0043	0.001	ND		0.0035	0.00081
Bromomethane	74-83-9	0.043	110	18	1800	82	ND		0.0018	0.00051	ND		0.0016	0.00047	ND		0.0017	0.0005	ND		0.0018	0.00051	ND		0.0022	0.00062	ND		0.0017	0.0005
Vinyl chloride	75-01-4	0.0067	0.97	1.4	5	6.4	ND		0.00088	0.00029	ND		0.00081	0.00027	ND		0.00086	0.00029	ND		0.00088	0.00029	ND		0.0011	0.00036	ND		0.00087	0.00029
Chloroethane	75-00-3						ND		0.0018	0.0004	ND		0.0016	0.00036	ND		0.0017	0.00039	ND		0.0018	0.0004	ND		0.0022	0.00048	ND		0.0017	0.00039
1,1-Dichloroethene	75-35-4	0.0069	11	52	180	240	ND		0.00088	0.00021	ND		0.00081	0.00019	ND		0.00086	0.0002	ND		0.00088	0.00021	ND		0.0011	0.00026	ND		0.00087	0.00021
trans-1,2-Dichloroethene	156-60-5	0.56	1300		22000		ND		0.0013	0.00012	ND		0.0012	0.00011	ND		0.0013	0.00012	ND		0.0013	0.00012	ND		0.0016	0.00015	ND		0.0013	0.00012
Trichloroethene	79-01-6	0.0065	15	3	79	14	ND		0.00044	0.00012	ND		0.0004	0.00011	ND		0.00043	0.00012	ND		0.00044	0.00012	ND		0.00054	0.00015	ND		0.00043	0.00012
1,2-Dichlorobenzene	95-50-1	11	6700		110000		ND		0.0018	0.00013	ND		0.0016	0.00012	ND		0.0017	0.00012	ND		0.0018	0.00013	ND		0.0022	0.00015	ND		0.0017	0.00012
1,3-Dichlorobenzene	541-73-1	11	6700		110000		ND		0.0018	0.00013	ND		0.0016	0.00012	ND		0.0017	0.00013	ND		0.0018	0.00013	ND		0.0022	0.00016	ND		0.0017	0.00013
1,4-Dichlorobenzene	106-46-7	1.4	780		13000		ND		0.0018	0.00015	ND		0.0016	0.00014	ND		0.0017	0.00015	ND		0.0018	0.00015	ND		0.0022	0.00018	ND		0.0017	0.00015
Methyl tert butyl ether	1634-04-4	0.25	780	140	13000	650	0.0013	J	0.0018	0.00018	0.00056	J	0.0016	0.00016	ND		0.0017	0.00017	ND		0.0018	0.00018	0.0025		0.0022	0.00022	ND		0.0017	0.00017
p/m-Xylene	179601-23-1	19	12000		190000		ND		0.0018	0.00049	0.32		0.0016	0.00045	ND		0.0017	0.00048	ND		0.0018	0.00049	ND		0.0022	0.0006	ND		0.0017	0.00049
o-Xylene	95-47-6	19	12000		190000		ND		0.00088	0.00026	0.14		0.00081	0.00023	ND		0.00086	0.00025	ND		0.00088	0.00025	0.00092	J	0.0011	0.00031	ND		0.00087	0.00025
Xylenes, Total	1330-20-7	19	12000		190000		ND		0.00088	0.00026	0.46		0.00081	0.00023	ND		0.00086	0.00025	ND		0.00088	0.00025	0.00092	J	0.0011	0.00031	ND		0.00087	0.00025
cis-1,2-Dichloroethene	156-59-2	0.35	780		13000		ND		0.00088	0.00015	ND		0.00081	0.00014	ND		0.00086	0.00015	ND		0.00088	0.00015	ND		0.0011	0.00019	ND		0.00087	0.00015
1,2-Dichloroethene, Total															ND		0.00086	0.00012	ND		0.00088	0.00012	ND		0.0011	0.00015	ND		0.00087	0.00012
Styrene	100-42-5	2.1	16000		260000		ND		0.00088	0.00017	ND		0.00081	0.00016	ND		0.00086	0.00017	ND		0.00088	0.00017	ND		0.0011	0.00021	ND		0.00087	0.00017
Dichlorodifluoromethane	75-71-8	38	16000		260000		ND		0.0088	0.0008	ND		0.0081	0.00074	ND		0.0086	0.00078	ND		0.0088	0.0008	ND		0.011	0.00098	ND		0.0087	0.0008
Acetone	67-64-1	19	70000				0.014	J	0.022	0.0088	ND		0.02	0.0081	ND		0.021	0.0086	ND		0.022	0.0088	0.017	J	0.027	0.011	0.012	J	0.022	0.0087
Carbon disulfide	75-15-0	3.7					ND		0.0088	0.004	ND		0.0081	0.0037	ND		0.0086	0.0039	ND		0.0088	0.004	ND		0.011	0.0049	ND		0.0087	0.004
2-Butanone	78-93-3	0.98	47000		780000		ND		0.0088	0.002	ND		0.0081	0.0018	ND		0.0086	0.0019	ND		0.0088	0.0019	ND		0.011	0.0024	ND		0.0087	0.0019
4-Methyl-2-pentanone	108-10-1						ND		0.0088	0.0011	ND		0.0081	0.001	ND		0.0086	0.0011	ND		0.0088	0.0011	ND		0.011	0.0014	ND		0.0087	0.0011
2-Hexanone	591-78-6	0.15	390	1000	6500		ND		0.0088	0.001	ND		0.0081	0.00095	ND		0.0086	0.001	ND		0.0088	0.001	ND		0.011	0.0013	ND		0.0087	0.001
Bromochloromethane	74-97-5						ND		0.0018	0.00018	ND		0.0016	0.00016	ND		0.0017	0.00018	ND		0.0018	0.00018	ND		0.0022	0.00022	ND		0.0017	0.00018
Isopropylbenzene	98-82-8	22	7800		130000		0.0049		0.00088	0.00009	0.016		0.00081	0.00008	ND		0.00086	0.00009	ND		0.00088	0.00009	0.053		0.0011	0.00012	0.0015		0.00087	0.00009
Naphthalene	91-20-3	19	2500	5.7	34000	27	0.0016	J	0.0035	0.00057	0.075		0.0032	0.00052	ND		0.0034	0.00056	ND		0.0035	0.00057	0.15		0.0043	0.0007	0.014		0.0035	0.00056
1,2,3-Trichlorobenzene	87-61-6						ND		0.0018	0.00028	ND		0.0016	0.00026	ND		0.0017	0.00028	ND		0.0018	0.00028	ND		0.0022	0.00035	ND		0.0017	0.00028
1,2,4-Trichlorobenzene	120-82-1	0.52	780	94	13000		ND		0.0018	0.00024	ND		0.0016	0.00022	ND		0.0017	0.00023	ND		0.0018	0.00024	ND		0.0022	0.00029	ND		0.0017	0.00024
Methyl Acetate	79-20-9	22	78000				ND		0.0035	0.00084	ND		0.0032	0.00077	ND		0.0034	0.00082	ND		0.0035	0.00083	ND		0.0043	0.001	ND		0.0035	0.00082
Cyclohexane	110-82-7						ND		0.0088	0.00048	0.0051	J	0.0081	0.00044	ND		0.0086	0.00047	ND		0.0088	0.00048	0.01	J	0.011	0.00058	0.0045	J	0.0087	0.00047
Tert-Butyl Alcohol	75-65-0	0.32					ND		0.018	0.0045	ND		0.016	0.0041	ND		0.017	0.0044	ND		0.018	0.0045	ND		0.022	0.0055	ND		0.017	0.0045
Methyl cyclohexane	108-87-2						ND		0.0035	0.00053	0.0077		0.0032	0.00049	ND		0.0034	0.00052	ND		0.0035	0.00053	0.017		0.0043	0.00065	0.0029	J	0.0035	0.00052
Freon-113	76-13-1						ND		0.0035	0.00061	ND		0.0032	0.00056	ND		0.0034	0.0006	ND		0.0035	0.00061	ND		0.0043	0.00074	ND		0.0035	0.0006
Total VOCs							0.0218	-	-	-	0.6411	-	-	-	-	-	-	-	-	-	-	-	0.27472	-	-	-	0.03521	-	-	-
GENERAL CHEMISTRY																														
Solids, Total	NONE						83.8		0.1	NA	88.4		0.1	NA	89.7		0.1	NA	89.4		0.1	NA	77		0.1	NA	86.4		0.1	NA
Comment																														
Sample collected in unsaturated zone									Yes				No				Yes				Yes				No				Yes	

Note: Samples collected in saturated zone should not be compared to migration to groundwater standard.
Note: Samples collected in unsaturated zone should be compared to migration to groundwater standard.
J: Estimated value
ND: Not detected at method detection level (MDL)
Reporting level exceeds applicable standard
NJ-MGW-SRS: NJ - New Jersey 2021 Migration to Groundwater Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-RID-SRS: NJ - New Jersey 2021 Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-RI-SRS: NJ - New Jersey 2021 Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-NRID-SRS: NJ - New Jersey 2021 Non-Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.
NJ-NRI-SRS: NJ - New Jersey 2021 Non-Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

Table 6: Samples Collected in Swale Area: Area 2: AOC 8 (5 of 10)

						SAMPLE ID:			PE41:7'				PE42:7'				PE43:6'				PE44:7 1/2'				PE45:4 1/2'				PE46:4'	
						LAB ID:			L2148302-01				L2148302-02				L2148302-03				L2148302-04				L2148302-05				L2148302-06	
						COLLECTION DATE:			9/8/2021				9/8/2021				9/8/2021				9/8/2021				9/8/2021				9/8/2021	
						SAMPLE DEPTH:																								
						SAMPLE MATRIX:			SOIL				SOIL				SOIL				SOIL				SOIL				SOIL	
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ-NRID-SRS	NJ-NRI-SRS																								
	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANICS BY EPA 5035 HIGH-TIC																														
Unknown Aromatic							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Aromatic							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Aromatic							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Aromatic							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Benzene, Propyl-	000103-65-1						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Hexane, 3-methyl-	000589-34-4						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Total TIC Compounds							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
VOLATILE ORGANICS BY EPA 5035-TIC																														
Hexane, 3-methyl-	000589-34-4						-		-	-	-		-	-	-		-	-	0.06	NJ	0	0	-		-	-	-		-	-
Unknown Cyclopentane							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Indene							-		-	-	0.023	J	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown Indene							-		-	-	0.01	J	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown							0.007	J	0	0	0.008	J	0	0	0.035	J	0	0	-		-	-	0.006	J	0	0	0.005	J	0	0
Unknown							0.011	J	0	0	0.031	J	0	0	0.045	J	0	0	-		-	-	0.004	J	0	0	0.006	J	0	0
Unknown							-		-	-	0.01	J	0	0	0.038	J	0	0	-		-	-	0.004	J	0	0	0.004	J	0	0
Unknown							-		-	-	0.008	J	0	0	0.046	J	0	0	-		-	-	0.003	J	0	0	-	-	-	-
Unknown							-		-	-	-		-	-	0.044	J	0	0	-	-	-	-	-	-	-	-	-	-	-	-
Indane	000496-11-7						0.031	NJ	0	0	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
n-Hexane	000110-54-3						-		-	-	-		-	-	-		-	-	0.104	NJ	0	0	-		-	-	-		-	-
Octane	000111-65-9						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Octane, 3-methyl-	002216-33-3						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Pentane	000109-66-0						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Pentane, 2,3,4-trimethyl-	000565-75-3						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Pentane, 2,3-dimethyl-	000565-59-3						-		-	-	-		-	-	0.044	NJ	0	0	-		-	-	-		-	-	-		-	-
Pentane, 2-methyl-	000107-83-5						0.016	NJ	0	0	-		-	-	-		-	-	0.175	NJ	0	0	-		-	-	-		-	-
Pentane, 3-methyl-	000096-14-0						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Alkane							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Aromatic							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Aromatic							0.01	J	0	0	0.041	J	0	0	0.057	J	0	0	0.082	J	0	0	-		-	-	-		-	-
Unknown Aromatic							0.018	J	0	0	0.009	J	0	0	0.054	J	0	0	0.047	J	0	0	-		-	-	-		-	-
Unknown Aromatic							0.038	J	0	0	0.011	J	0	0	0.053	J	0	0	-		-	-	-		-	-	-		-	-
Unknown Aromatic							0.008	J	0	0	0.021	J	0	0	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Aromatic							0.009	J	0	0	0.009	J	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown Aromatic							0.011	J	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Benzene							0.025	J	0	0	0.008	J	0	0	0.033	J	0	0	0.159	J	0	0	-		-	-	-		-	-
Unknown Benzene							0.015	J	0	0	0.014	J	0	0	0.08	J	0	0	0.085	J	0	0	-		-	-	-		-	-
Unknown Benzene							0.014	J	0	0	0.011	J	0	0	0.045	J	0	0	0.065	J	0	0	-		-	-	-		-	-
Unknown Benzene							0.026	J	0	0	0.012	J	0	0	0.045	J	0	0	0.236	J	0	0	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	0.078	J	0	0	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	0.067	J	0	0	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	0.055	J	0	0	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	0.059	J	0	0	-		-	-	-		-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Cycloalkane							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Cyclohexane							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Benzene, 1-propenyl-	000637-50-3						-		-	-	-		-	-	-		-	-	0.112	NJ	0	0	-	-	-	-	-	-	-	-
Benzene, Propyl-	000103-65-1						0.01	NJ	0	0	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Butane	000106-97-8						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Butane, 2,3-Dimethyl-	000079-29-8						-		-	-	-		-	-	0.033	NJ	0	0	-	-	-	-	-	-	-	-	-	-	-	-
Butane, 2-Methyl-	000078-78-4						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Cyclopentane, Methyl-	000096-37-7						-		-	-	-		-	-	-		-	-	0.073	NJ	0	0	-		-	-	-		-	-
Cyclotrisiloxane, Hexamethyl-	000541-05-9						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	0.006	NJ	0	0
Heptane, 2-methyl-	000592-27-8						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Heptane, 3-methyl-	000589-81-1						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Hexane, 2,4-dimethyl-	000589-43-5						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Unknown Cyclopentane							-		-	-	-		-	-	0.038	J	0	0	-		-	-	-		-	-	-		-	-
Unknown Cyclopentane							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	-		-	-
Total TIC Compounds							0.249	J	0	0	0.227	J	0	0	0.689	J	0	0	1.46	J	0	0	0.016	J	0	0	0.021	J	0	0

Table 6: Samples Collected in Swale Area: Area 2: AOC 8 (page 7 of 10)

						SAMPLE ID:			PE52:5'						PE52:5'						PE53:8'						PE54:8-8 1/2'						PE55:6'			
						LAB ID:			L2148302-12						L2148302-12 R1						L2148302-13						L2148302-14						L2148302-15			
						COLLECTION DATE:			9/8/2021						9/8/2021						9/8/2021						9/8/2021						9/8/2021			
						SAMPLE DEPTH:																														
						SAMPLE MATRIX:			SOIL						SOIL						SOIL						SOIL						SOIL			
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ-NRID-SRS	NJ-NRI-SRS																														
	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANICS BY EPA 5035 HIGH-TIC																																				
Unknown Aromatic							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	1.48	J	0	0				
Unknown Aromatic							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	0.46	J	0	0				
Unknown Aromatic							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	0.53	J	0	0				
Unknown Aromatic							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	0.965	J	0	0				
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	2.33	J	0	0				
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	1.45	J	0	0				
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	0.966	J	0	0				
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	4.95	J	0	0				
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	1.18	J	0	0				
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	1	J	0	0				
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	0.83	J	0	0				
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	0.462	J	0	0				
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	0.761	J	0	0				
Benzene, Propyl-	000103-65-1						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	0.597	NJ	0	0				
Hexane, 3-methyl-	000589-34-4						-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	0.334	NJ	0	0				
Total TIC Compounds							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-	18.3	J	0	0				
VOLATILE ORGANICS BY EPA 5035-TIC																																				
Hexane, 3-methyl-	000589-34-4						10.2	NJ	0	0	-		-	-	0.038	NJ	0	0	0.006	NJ	0	0	0.048	NJ	0	0								
Unknown Cyclopentane							-		-	-	-		-	-	-		-	-	-		-	-	0.021	J	0	0								
Unknown Indene							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Unknown Indene							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Unknown							2.09	J	0	0	-		-	-	0.028	J	0	0	-	-	-	-	-	-	-	-								
Unknown							-		-	-	-		-	-	-		-	-	0.005	J	0	0	-		-	-								
Unknown							-		-	-	-		-	-	-		-	-	0.027	J	0	0	-		-	-								
Unknown							-		-	-	-		-	-	-		-	-	0.006	J	0	0	-	-	-	-								
Unknown							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Unknown							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Indane	000496-11-7						-		-	-	-		-	-	-		-	-	0.005	NJ	0	0	-	-	-	-								
n-Hexane	000110-54-3						7.96	NJ	0	0	-		-	-	-		-	-	-		-	-	0.043	NJ	0	0								
Octane	000111-65-9						4.91	NJ	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Octane, 3-methyl-	002216-33-3						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Pentane	000109-66-0						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Pentane, 2,3,4-trimethyl-	000565-75-3						2.03	NJ	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Pentane, 2,3-dimethyl-	000565-59-3						4.22	NJ	0	0	-		-	-	0.022	NJ	0	0	-	-	-	-	0.025	NJ	0	0								
Pentane, 2-methyl-	000107-83-5						12.8	NJ	0	0	-		-	-	0.175	NJ	0	0	0.034	NJ	0	0	0.078	NJ	0	0								
Pentane, 3-methyl-	000096-14-0						7.59	NJ	0	0	-		-	-	-		-	-	-		-	-	0.058	NJ	0	0								
Unknown Alkane							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Unknown Aromatic							-		-	-	-		-	-	-		-	-	-		-	-	0.013	J	0	0								
Unknown Aromatic							-		-	-	-		-	-	0.048	J	0	0	0.011	J	0	0	-		-	-								
Unknown Aromatic							-		-	-	-		-	-	0.026	J	0	0	0.015	J	0	0	-		-	-								
Unknown Aromatic							-		-	-	-		-	-	0.032	J	0	0	-		-	-	-		-	-								
Unknown Aromatic							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-								
Unknown Aromatic							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Unknown Aromatic							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Unknown Benzene							5.34	J	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Unknown Benzene							-		-	-	-		-	-	0.017	J	0	0	0.003	J	0	0	0.048	J	0	0								
Unknown Benzene							-		-	-	-		-	-	0.021	J	0	0	0.005	J	0	0	0.027	J	0	0								
Unknown Benzene							-		-	-	-		-	-	0.014	J	0	0	0.006	J	0	0	0.021	J	0	0								
Unknown Benzene							-		-	-	-		-	-	0.014	J	0	0	0.009	J	0	0	0.094	J	0	0								
Unknown Benzene							-		-	-	-		-	-	-		-	-	0.013	J	0	0	0.025	J	0	0								
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-								
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-								
Unknown Benzene							-		-	-	-		-	-	-		-	-	-		-	-	-		-	-								
Unknown Benzene							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Unknown Cycloalkane							-		-	-	-		-	-	0.132	J	0	0	-		-	-	-		-	-								
Unknown Cyclohexane							2.9	J	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Benzene, 1-propenyl-	000637-50-3						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Benzene, Propyl-	000103-65-1						-		-	-	-		-	-	0.026	NJ	0	0	-		-	-	0.012	NJ	0	0								
Butane	000106-97-8						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Butane, 2,3-Dimethyl-	000079-29-8						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Butane, 2-Methyl-	000078-78-4						-		-	-	-		-	-	0.086	NJ	0	0	0.019	NJ	0	0	-	-	-	-								
Cyclopentane, Methyl-	000096-37-7						8.91	NJ	0	0	-		-	-	-		-	-	-		-	-	0.049	NJ	0	0								
Cyclotrisiloxane, Hexamethyl-	000541-05-9						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Heptane, 2-methyl-	000592-27-8						10.1	NJ	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Heptane, 3-methyl-	000589-81-1						7.17	NJ	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Hexane, 2,4-dimethyl-	000589-43-5						2.01	NJ	0	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-								
Unknown Cyclopentane							3.64	J	0	0	-		-	-	0.026	J	0	0	0.004	J	0	0	-	-	-	-								
Unknown Cyclopentane							-		-	-	-		-	-	-		-	-	-		-	-	0.026	J	0	0								
Total TIC Compounds							91.9	J	0	0	-		-	-	0.705	J	0	0	0.169	J	0	0	0.587	J	0	0								

Table 6: Samples Collected in Swale Area: Area 2: AOC 8 (page 8 of 10)

						SAMPLE ID:			PE56:6'				PE57:8-8 1/2'	
						LAB ID:			L2148302-16				L2148302-17	
						COLLECTION DATE:			9/8/2021				9/8/2021	
						SAMPLE DEPTH:								
						SAMPLE MATRIX:			SOIL				SOIL	
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ-NRID-SRS	NJ-NRI-SRS								
	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANICS BY EPA 5035 HIGH-TIC														
Unknown Aromatic							-	-	-	-	-	-	-	-
Unknown Aromatic							-	-	-	-	-	-	-	-
Unknown Aromatic							-	-	-	-	-	-	-	-
Unknown Aromatic							-	-	-	-	-	-	-	-
Unknown Benzene							-	-	-	-	-	-	-	-
Unknown Benzene							-	-	-	-	-	-	-	-
Unknown Benzene							-	-	-	-	-	-	-	-
Unknown Benzene							-	-	-	-	-	-	-	-
Unknown Benzene							-	-	-	-	-	-	-	-
Unknown Benzene							-	-	-	-	-	-	-	-
Unknown Benzene							-	-	-	-	-	-	-	-
Unknown Benzene							-	-	-	-	-	-	-	-
Unknown Benzene							-	-	-	-	-	-	-	-
Benzene, Propyl-	000103-65-1						-	-	-	-	-	-	-	-
Hexane, 3-methyl-	000589-34-4						-	-	-	-	-	-	-	-
Total TIC Compounds							-	-	-	-	-	-	-	-
VOLATILE ORGANICS BY EPA 5035-TIC														
Hexane, 3-methyl-	000589-34-4						-	-	-	-	-	-	-	-
Unknown Cyclopentane							-	-	-	-	-	-	-	-
Unknown Indene							-	-	-	-	-	-	-	-
Unknown Indene							-	-	-	-	-	-	-	-
Unknown							-	-	-	-	-	-	-	-
Unknown							0.002	J	0	0	-	-	-	-
Unknown							0.003	J	0	0	-	-	-	-
Unknown							-	-	-	-	-	-	-	-
Unknown							-	-	-	-	-	-	-	-
Unknown							-	-	-	-	-	-	-	-
Indane	000496-11-7						-	-	-	-	-	-	-	-
n-Hexane	000110-54-3						-	-	-	-	-	-	-	-
Octane	000111-65-9						-	-	-	-	-	-	-	-
Octane, 3-methyl-	002216-33-3						-	-	-	-	-	-	-	-
Pentane	000109-66-0						-	-	-	-	-	-	-	-
Pentane, 2,3,4-trimethyl-	000565-75-3						-	-	-	-	-	-	-	-
Pentane, 2,3-dimethyl-	000565-59-3						-	-	-	-	-	-	-	-
Pentane, 2-methyl-	000107-83-5						-		-	-	0.028	NJ	0	0
Pentane, 3-methyl-	000096-14-0						-	-	-	-	-	-	-	-
Unknown Alkane							-	-	-	-	-	-	-	-
Unknown Aromatic							-	-	-	-	-	-	-	-
Unknown Aromatic							0.012	J	0	0	0.021	J	0	0
Unknown Aromatic							0.004	J	0	0	0.004	J	0	0
Unknown Aromatic							0.002	J	0	0	0.003	J	0	0
Unknown Aromatic							-		-	-	0.008	J	0	0
Unknown Aromatic							-	-	-	-	-	-	-	-
Unknown Aromatic							-	-	-	-	-	-	-	-
Unknown Benzene							-	-	-	-	-	-	-	-
Unknown Benzene							-		-	-	0.028	J	0	0
Unknown Benzene							-		-	-	0.013	J	0	0
Unknown Benzene							-		-	-	0.011	J	0	0
Unknown Benzene							-		-	-	0.046	J	0	0
Unknown Benzene							-		-	-	0.005	J	0	0
Unknown Benzene							-		-	-	0.005	J	0	0
Unknown Benzene							-		-	-	0.005	J	0	0
Unknown Benzene							-		-	-	0.004	J	0	0
Unknown Benzene							-	-	-	-	-	-	-	-
Unknown Cycloalkane							-	-	-	-	-	-	-	-
Unknown Cyclohexane							-	-	-	-	-	-	-	-
Benzene, 1-propenyl-	000637-50-3						-	-	-	-	-	-	-	-
Benzene, Propyl-	000103-65-1						-		-	-	0.007	NJ	0	0
Butane	000106-97-8						-	-	-	-	-	-	-	-
Butane, 2,3-Dimethyl-	000079-29-8						-	-	-	-	-	-	-	-
Butane, 2-Methyl-	000078-78-4						-	-	-	-	-	-	-	-
Cyclopentane, Methyl-	000096-37-7						-		-	-	0.019	NJ	0	0
Cyclotrisiloxane, Hexamethyl-	000541-05-9						-	-	-	-	-	-	-	-
Heptane, 2-methyl-	000592-27-8						-	-	-	-	-	-	-	-
Heptane, 3-methyl-	000589-81-1						-	-	-	-	-	-	-	-
Hexane, 2,4-dimethyl-	000589-43-5						-	-	-	-	-	-	-	-
Unknown Cyclopentane							-	-	-	-	-	-	-	-
Unknown Cyclopentane							-	-	-	-	-	-	-	-
Total TIC Compounds							0.024	J	0	0	0.207	J	0	0

Table 6: Samples Collected in Swale Area: Area 2: AOC 8 (page 9 of 10)

						SAMPLE ID:			PE58: 2 1/2'					PE59: 6'					PE60: 9-9 1/2'					PE61: 5'		
						LAB ID:			L2148765-01					L2148765-02					L2148765-03					L2148765-04		
						COLLECTION DATE:			9/9/2021					9/9/2021					9/9/2021					9/9/2021		
						SAMPLE DEPTH:																					
						SAMPLE MATRIX:			SOIL					SOIL					SOIL					SOIL		
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ-NRID-SRS	NJ-NRI-SRS																				
	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
VOLATILE ORGANICS BY EPA 5035-TIC																										
Benzene, Propyl-	000103-65-1						-		-	-	-		-	-	0.043	NJ	0	0	-	-	-	-	-	-	-	-
Cyclopentane, Methyl-	000096-37-7						-		-	-	-		-	-	0.042	NJ	0	0	-	-	-	-	-	-	-	-
Cyclotrisiloxane, Hexamethyl-	000541-05-9						-		-	-	0.004	NJ	0	0	-	-	-	-	-	-	-	-	-	-	-	-
Hexane, 3-methyl-	000589-34-4						-		-	-	-		-	-	0.016	NJ	0	0	0.012	NJ	0	0	-	-	-	-
Indane	000496-11-7						-		-	-	-		-	-	0.074	NJ	0	0	-	-	-	-	-	-	-	-
Pentane, 2,3-dimethyl-	000565-59-3						-		-	-	-		-	-	0.023	NJ	0	0	-	-	-	-	-	-	-	-
Unknown Aromatic							-		-	-	-		-	-	0.052	J	0	0	0.023	J	0	0	-	-	-	-
Unknown Aromatic							-		-	-	-		-	-	0.077	J	0	0	0.044	J	0	0	-	-	-	-
Unknown Aromatic							-		-	-	-		-	-	-		-	-	0.013	J	0	0	-	-	-	-
Unknown Aromatic							-		-	-	-		-	-	-		-	-	0.015	J	0	0	-	-	-	-
Unknown Benzene							-		-	-	-		-	-	0.033	J	0	0	0.015	J	0	0	-	-	-	-
Unknown Benzene							-		-	-	-		-	-	0.014	J	0	0	0.014	J	0	0	-	-	-	-
Unknown Benzene							-		-	-	-		-	-	0.029	J	0	0	0.026	J	0	0	-	-	-	-
Unknown Benzene							-		-	-	-		-	-	0.012	J	0	0	0.021	J	0	0	-	-	-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	0.036	J	0	0	-	-	-	-
Unknown Benzene							-		-	-	-		-	-	-		-	-	0.019	J	0	0	-	-	-	-
Unknown Cycloalkane							-		-	-	-		-	-	0.025	J	0	0	-	-	-	-	-	-	-	-
Unknown							0.006	J	0	0	0.008	J	0	0	0.095	J	0	0	0.012	J	0	0	-	-	-	-
Unknown							0.002	J	0	0	0.003	J	0	0	0.024	J	0	0	0.017	J	0	0	-	-	-	-
Unknown							0.002	J	0	0	0.002	J	0	0	0.011	J	0	0	0.011	J	0	0	-	-	-	-
Unknown							0.002	J	0	0	-		-	-	-		-	-	0.017	J	0	0	-	-	-	-
Total TIC Compounds							0.013	J	0	0	0.018	J	0	0	0.571	J	0	0	0.294	J	0	0	-	-	-	-

Table 6: Samples Collected in Swale Area: Area 2: AOC 8 (page 10 of 10)

						SAMPLE ID:	PE41:7'			PE42:7'			PE43:6'			PE44:7 1/2'			PE45:4 1/2'		
						LAB ID:	L2148302-01			L2148302-02			L2148302-03			L2148302-04			L2148302-05		
						COLLECTION DATE:	9/8/2021			9/8/2021			9/8/2021			9/8/2021			9/8/2021		
						SAMPLE DEPTH:															
						SAMPLE MATRIX:	SOIL			SOIL			SOIL			SOIL			SOIL		
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ-NRID-SRS	NJ-NRI-SRS															
	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
SEMIVOLATILE ORGANICS BY GC/MS																										
Acenaphthene	83-32-9		3600		50000		ND		0.16	0.017	ND		0.16	0.017	ND		0.16	0.016	ND		0.14	0.015	ND		0.16	0.017
2-Chloronaphthalene	91-58-7		4800		67000		ND		0.2	0.02	ND		0.21	0.02	ND		0.19	0.018	ND		0.18	0.017	ND		0.2	0.019
Fluoranthene	206-44-0		2400		33000		ND		0.12	0.024	ND		0.12	0.024	ND		0.12	0.022	ND		0.11	0.021	ND		0.12	0.023
Naphthalene	91-20-3	19	2500	5.7	34000	27	0.2		0.2	0.025	ND		0.21	0.025	ND		0.19	0.024	0.069	J	0.18	0.022	ND		0.2	0.024
Benzo(a)anthracene	56-55-3	0.71	5.1	78000	23	370000	ND		0.069	0.023	ND		0.07	0.023	ND		0.065	0.022	ND		0.061	0.02	ND		0.067	0.022
Benzo(a)pyrene	50-32-8		0.51	3500	2.3	16000	ND		0.15	0.05	ND		0.15	0.05	ND		0.14	0.047	ND		0.13	0.044	ND		0.14	0.048
Benzo(b)fluoranthene	205-99-2		5.1	78000	23	370000	ND		0.052	0.017	ND		0.052	0.017	ND		0.049	0.016	ND		0.046	0.015	ND		0.05	0.016
Benzo(k)fluoranthene	207-08-9		51	780000	230		ND		0.043	0.014	ND		0.043	0.014	ND		0.041	0.014	ND		0.038	0.013	ND		0.042	0.014
Chrysene	218-01-9		510		2300		ND		0.12	0.021	ND		0.12	0.021	ND		0.12	0.02	ND		0.11	0.019	ND		0.12	0.02
Acenaphthylene	208-96-8						ND		0.16	0.023	ND		0.16	0.023	ND		0.16	0.022	ND		0.14	0.02	ND		0.16	0.022
Anthracene	120-12-7		18000		250000		ND		0.12	0.018	ND		0.12	0.018	ND		0.12	0.017	ND		0.11	0.016	ND		0.12	0.018
Benzo(ghi)perylene	191-24-2						ND		0.16	0.024	ND		0.16	0.024	ND		0.16	0.023	ND		0.14	0.021	ND		0.16	0.023
Fluorene	86-73-7		2400		33000		ND		0.2	0.02	ND		0.21	0.02	ND		0.19	0.019	ND		0.18	0.018	ND		0.2	0.019
Phenanthrene	85-01-8						ND		0.12	0.015	ND		0.12	0.015	ND		0.12	0.014	0.014	J	0.11	0.013	ND		0.12	0.014
Dibenzo(a,h)anthracene	53-70-3		0.51	7800	2.3	37000	ND		0.071	0.024	ND		0.072	0.024	ND		0.068	0.022	ND		0.063	0.021	ND		0.069	0.023
Indeno(1,2,3-cd)pyrene	193-39-5		5.1	78000	23	370000	ND		0.086	0.029	ND		0.087	0.029	ND		0.082	0.027	ND		0.077	0.025	ND		0.084	0.028
Pyrene	129-00-0		1800		25000		ND		0.12	0.018	ND		0.12	0.018	ND		0.12	0.017	ND		0.11	0.016	ND		0.12	0.017
2-Methylnaphthalene	91-57-6	3.1	240		3300		0.089	J	0.25	0.022	ND		0.25	0.022	ND		0.23	0.02	0.11	J	0.22	0.019	ND		0.24	0.021
Total SVOCs							0.289	-	-	-	-	-	-	-	-	-	-	-	0.193	-	-	-	-	-	-	-
TOTAL METALS																										
Mercury, Total	7439-97-6	0.1	23	520000	390		ND		0.083	0.054	ND		0.086	0.056	ND		0.081	0.053	ND		0.075	0.049	ND		0.077	0.05
GENERAL CHEMISTRY																										
Solids, Total	NONE						80.9		0.1	NA	79.7		0.1	NA	85.4		0.1	NA	88.8		0.1	NA	82.2		0.1	NA
Comment																										
Sample collected in unsaturated zone									No				No				Yes				No				Yes	

						SAMPLE ID:	PE46:4'			PE47:4 1/2'			PE48:4'			PE49:3'					
						LAB ID:	L2148302-06			L2148302-07			L2148302-08			L2148302-09					
						COLLECTION DATE:	9/8/2021			9/8/2021			9/8/2021			9/8/2021					
						SAMPLE DEPTH:															
						SAMPLE MATRIX:	SOIL			SOIL			SOIL			SOIL					
		NJ-MGW-SRS	NJ-RID-SRS	NJ-RI-SRS	NJ-NRID-SRS	NJ-NRI-SRS															
	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
SEMIVOLATILE ORGANICS BY GC/MS																					
Acenaphthene	83-32-9		3600		50000		ND		0.16	0.016	ND		0.16	0.017	ND		0.16	0.016	ND		0.16	0.016
2-Chloronaphthalene	91-58-7		4800		67000		ND		0.19	0.018	ND		0.21	0.02	ND		0.2	0.019	ND		0.2	0.019
Fluoranthene	206-44-0		2400		33000		ND		0.12	0.022	ND		0.12	0.024	ND		0.12	0.023	ND		0.12	0.023
Naphthalene	91-20-3	19	2500	5.7	34000	27	ND		0.19	0.024	ND		0.21	0.025	ND		0.2	0.024	ND		0.2	0.024
Benzo(a)anthracene	56-55-3	0.71	5.1	78000	23	370000	ND		0.065	0.022	ND		0.069	0.023	ND		0.066	0.022	ND		0.066	0.022
Benzo(a)pyrene	50-32-8		0.51	3500	2.3	16000	ND		0.14	0.047	ND		0.15	0.05	ND		0.14	0.048	ND		0.14	0.048
Benzo(b)fluoranthene	205-99-2		5.1	78000	23	370000	ND		0.049	0.016	ND		0.052	0.017	ND		0.05	0.016	ND		0.05	0.016
Benzo(k)fluoranthene	207-08-9		51	780000	230		ND		0.041	0.014	ND		0.043	0.014	ND		0.041	0.014	ND		0.042	0.014
Chrysene	218-01-9		510		2300		ND		0.12	0.02	ND		0.12	0.021	ND		0.12	0.02	ND		0.12	0.02
Acenaphthylene	208-96-8						ND		0.16	0.022	ND		0.16	0.023	ND		0.16	0.022	ND		0.16	0.022
Anthracene	120-12-7		18000		250000		ND		0.12	0.017	ND		0.12	0.018	ND		0.12	0.018	ND		0.12	0.018
Benzo(ghi)perylene	191-24-2						ND		0.16	0.023	ND		0.16	0.024	ND		0.16	0.023	ND		0.16	0.023
Fluorene	86-73-7		2400		33000		ND		0.19	0.019	ND		0.21	0.02	ND		0.2	0.019	ND		0.2	0.019
Phenanthrene	85-01-8						ND		0.12	0.014	ND		0.12	0.015	ND		0.12	0.014	ND		0.12	0.014
Dibenzo(a,h)anthracene	53-70-3		0.51	7800	2.3	37000	ND		0.067	0.022	ND		0.072	0.024	ND		0.069	0.023	ND		0.069	0.023
Indeno(1,2,3-cd)pyrene	193-39-5		5.1	78000	23	370000	ND		0.081	0.027	ND		0.087	0.029	ND		0.083	0.028	ND		0.083	0.028
Pyrene	129-00-0		1800		25000		ND		0.12	0.017	ND		0.12	0.018	ND		0.12	0.017	ND		0.12	0.017
2-Methylnaphthalene	91-57-6	3.1	240		3300		ND		0.23	0.02	ND		0.25	0.022	ND		0.24	0.021	ND		0.24	0.021
Total SVOCs							-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL METALS																					
Mercury, Total	7439-97-6	0.1	23	520000	390		ND		0.079	0.052	ND		0.081	0.053	ND		0.078	0.051	ND		0.081	0.053
GENERAL CHEMISTRY																					
Solids, Total	NONE						84.5		0.1	NA	80.2		0.1	NA	82.2		0.1	NA	81.8		0.1	NA
Comment																					
Sample collected in unsaturated zone									Yes				Yes				Yes				Yes	

J: Estimated value

ND: Not detected at method detection level (MDL)

Note: Samples collected in saturated zone should not be compared to migration to groundwater standard.

Note: Samples collected in unsaturated zone should be compared to migration to groundwater standard.

NJ-MGW-SRS: NJ - New Jersey 2021 Migration to Groundwater Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-RID-SRS: NJ - New Jersey 2021 Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-RI-SRS: NJ - New Jersey 2021 Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-NRID-SRS: NJ - New Jersey 2021 Non-Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-NRI-SRS: NJ - New Jersey 2021 Non-Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

Table 7: Samples Collected North of Swale Where Lead Exceeded Standard.

						SAMPLE ID:		PE62:1-1 1/2'					PE63:2 1/2-3'					PE64:1-1 1/2'				PE65:1-1 1/2'	
						LAB ID:		L2148839-01					L2148839-02					L2148839-03				L2148839-04	
						COLLECTION DATE:		9/10/2021					9/10/2021					9/10/2021				9/10/2021	
						SAMPLE DEPTH:																	
						SAMPLE MATRIX:		SOIL					SOIL					SOIL				SOIL	
		NJ-IGWS	NJ-RID-SRS	NJ-RI-SRS	NJ-NRID-SRS	NJ-NRI-SRS																
ANALYTE	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
TOTAL METALS																						
Lead, Total	7439-92-1	90	400		800		45.6		2.26	0.121	9.98		2.36	0.126	18.6		2.17	0.116	**117**		2.38	0.128
GENERAL CHEMISTRY																						
Solids, Total	NONE						86.7		0.1	NA	82.1		0.1	NA	87.9		0.1	NA	81.6		0.1	NA
Comment																						
Sample collected in unsaturated zone							Yes				Yes				Yes				Yes			

						SAMPLE ID:		PE66:3-3 1/2'					PE67:3-3 1/2'					PE68:4'					
						LAB ID:		L2148839-05					L2148839-06					L2148839-07					
						COLLECTION DATE:		9/10/2021					9/10/2021					9/10/2021					
						SAMPLE DEPTH:																	
						SAMPLE MATRIX:		SOIL					SOIL					SOIL					
		NJ-IGWS	NJ-RID-SRS	NJ-RI-SRS	NJ-NRID-SRS	NJ-NRI-SRS																
ANALYTE	CAS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL				
TOTAL METALS																						
Lead, Total	7439-92-1	90	400		800		17.4		2.34	0.126	54.1		2.41	0.129	34.2		2.49	0.133				
GENERAL CHEMISTRY																						
Solids, Total	NONE						84		0.1	NA	79		0.1	NA	75.4		0.1	NA				
Comment																						
Sample collected in unsaturated zone							Yes				Yes				Yes							

117 Exceeds migration to groundwater standard

Note: Samples collected in saturated zone should not be compared to migration to groundwater standard.

Note: Samples collected in unsaturated zone should be compared to migration to groundwater standard.

NJ-MGW-SRS: NJ - New Jersey 2021 Migration to Groundwater Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-RID-SRS: NJ - New Jersey 2021 Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-RI-SRS: NJ - New Jersey 2021 Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-NRID-SRS: NJ - New Jersey 2021 Non-Residential Ingestion-Dermal Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.

NJ-NRI-SRS: NJ - New Jersey 2021 Non-Residential Inhalation Exposure Pathway Soil Remediation Standards Criteria per Remediation Standards, last amended May 17, 2021.