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Environmental LOGIC
INNOVATION | REMEDIATION | CLOSURE

Summary of Environmental Activities
Marve Development Corporation
251 ½ Grove Avenue
Block 1201, Lot 12
Verona, Essex County, NJ
NJDEP PI No. G000011553
EL Project No. 20-0012
July 2026

Environmental Logic (EL) has prepared this letter detailing the results of environmental activities conducted at the above-referenced Site.

Based upon a site inspection and review historical documents several USTs were present on the Site. Investigations were conducted in accordance with the New Jersey Department of Environmental Protection (NJDEP) Technical Requirements for Site Remediation (N.J.A.C. 7:26E), and applicable NJDEP guidance documents.

1.0 GEOPHYSICAL SURVEY AND INVESTIGATION – DECEMBER 2020

On December 1, 2020, a ground penetrating radar (GPR) survey was conducted to identify any underground storage tanks (USTs), underground utilities, or any other anomalies. The GPR survey identified a total of four potential USTs, with two USTs located between Office Building and Garage Building, which were suspected to contain No. 2 heating oil, and two additional USTs collocated immediately east of the former Fueling Shed, which were reportedly abandoned in place. The locations of the of the former USTs are provided on Figure 1.

2.0 UST REMOVAL AND SOIL INVESTIGATIONS

UST removal activities were conducted from July 12 through 14, 2021. The USTs were removed by ADR Environmental (ADR) out of Branchville, New Jersey.

Prior to removal it was believed that the former diesel fuel and leaded gasoline USTs were abandoned in place prior to 1988. However, upon cutting open the tanks during removal, product was identified in each tank. As a result, the USTs were determined to be regulated and were required to be registered with the NJDEP. Registration documentation was submitted to NJDEP, and an emergency notification of closure was sent to the NJDEP via email on July 13, 2021 as the tanks were cut open. Upon completion of tank removal activities, the USTs were deregistered with NJDEP.

A description of the tank removal activities is discussed in the sections below. The UST locations,

post-removal sample locations, and soil analytical results are depicted on Figures 3 and 4.

2.1 AOC 1 – UST-1 – 1,000 Gallon No. 2 Heating Oil UST

Following the removal of the UST, evidence of a release was observed beneath the tank. Post removal samples were collected from beneath the tank at the base of the excavation as well as from the sidewalls of the excavation. Samples were analyzed for Category 1 EPH with contingent analysis for naphthalene and 2-menthylnaphthalene. The analytical results indicated elevated concentrations of EPH, naphthalene, and 2 methyl naphthalene. As soil impacts were identified, further investigation was required.

On December 14, 2021, the UST excavation was extended in the directions of soil exceedances. The post excavation samples indicated that soil remediation around the UST was completed.

The excavation was backfilled with certified clean quarry process and dense-grade aggregate. Impacted soils removed from this excavation were transported off-site to an approved facility for disposal.

2.2 AOC-2 – UST-2 – 1,000 Gallon No. 2 Heating Oil UST

Following the removal of the UST, evidence of a release was observed beneath the tank. Post removal samples were collected from beneath the tank at the base of the excavation as well as from the sidewalls of the excavation. Samples were analyzed for Category 1 EPH with contingent analysis for naphthalene and 2-menthylnaphthalene. The analytical results indicated elevated concentrations of EPH and naphthalene. As soil impacts were identified, further investigation was required.

On December 14, 2021, the UST excavation was extended in the directions of soil exceedances. The post excavation samples indicated that soil remediation around the UST was completed.

The excavation was backfilled with certified clean quarry process and dense-grade aggregate. Impacted soils removed from this excavation were transported off-site to an approved facility for disposal.

2.3 AOC-3 – USTs 3 and 4 – 1,000 Gallon Diesel and Gasoline USTs

Following the removal of the USTs, evidence of a release was observed beneath the tanks. Post removal samples were collected from beneath the tank at the base of the excavation as well as from the sidewalls of the excavation. Samples collected beneath the diesel fuel UST (UST-4) were analyzed for Category 2 EPH with contingent analysis for PAHs, while the samples collected beneath the leaded gasoline UST (UST-3) were collected for analysis of Volatile Organic Compounds plus a forward library search (VO+15) including 1,2-dibromoethane, 1,2-dichloroethane, tertiary butyl alcohol (TBA) and lead. The analytical results indicated elevated concentrations of benzene and TBA for UST 3. No impacts were identified associated with UST-4. As soil impacts were identified, further investigation was required.

On December 14, 2021, the UST excavation was extended in the directions of soil exceedances. The post excavation samples indicated that soil remediation around the UST was completed.

3.0 MONITORING WELL INSTALLATION AND SAMPLING

3.1 Monitoring Well Installation

On January 19 and 20, 2022, three monitoring wells (MW-1 through MW-3) were installed by Active Environmental Technologies, Inc. (Active), under the on-site supervision of EL. The monitoring wells were installed via hollow stem auger drilling techniques. One monitoring well was installed adjacent to each UST area. Additional monitoring wells (MW-4 and MW-5) were installed on April 13, 2025, by Active. The location of the monitoring wells are shown on Figure 2.

3.2 Ground Water Sampling and Analytical Results

Ground water samples results from the monitoring well network in February 2022, October 2022, February 2023 and May 2023. During these events the monitoring wells were sampled and analyzed for VO+15, 1,2-dibromoethane, 1,2-dichloroethane, TBA, BNs, and lead.

Laboratory analytical results of the ground water samples indicated the following compounds exceeded the NJDEP class II Ground Water Quality Standards in MW-1:

- Benzene (9.2-11 μg/l)
- 1,2,4-Trimethylbenzene (300 μg/l)
- 2-Methylnaphthalene (30-250 μg/l)
- TICs 500 (943 – 2727 μg/l)

The results of the ground water sampling confirm the groundwater impacts are confined to the former location of UST-1 in the shallow overburden aquifer. All other VO compounds were detected below their respective GWQS in the site monitoring well network.

Therefore, due to the persistent ground water impacts, active remediation was proposed.

4.0 GROUND WATER TREATMENT

Groundwater treatment using in situ remediation was conducted in the area of the former heating oil UST (UST-1). The treatment utilized BOS-200® which combines injectable granular activated carbon, a facultative blend of bacteria, macro and micronutrients and terminal electron acceptors to reduce the ground water impacts. The petroleum hydrocarbons sorb to the activated carbon, and the bacteria metabolize the sorbed contaminants of concern (COC) through aerobic and anaerobic decomposition pathways.

Temporary injection points were installed using direct-push point technology. Approximately 25 injection points were located on a closely spaced (5 feet) triangular grid pattern in the area of UST-1. The chemical injection activities were completed in accordance with the NJDEP Approved Discharge to Ground Water Permit By Rule, dated August 13, 2024. Chemical injection activities took place in October 2024 and consisted of treatment of an approximately 600 square foot area surrounding monitoring well MW-1. The ground water treatment area is provided on Figure 3.

Five rounds of required post-injection groundwater monitoring have been conducted to date:, January 2025, April 2025, August 2025, November 2025, and March 2026. Groundwater results indicated that concentrations of the contaminants of concern were below their respective NJDEP

groundwater standards. However, multiple compounds (iron, manganese, nitrate, and sulfate) were detected in groundwater at concentrations exceeding their respective NJDEP standards. These compounds are associated with the injection material and the observed concentrations were anticipated following the injection activities and should be temporary. Monitoring is expected until the injection constituents return to their preinjection concentrations.

5.0 SUMMARY AND CONCLUSIONS

Four former USTs were removed from the property in 2021. All soil associated with the USTs has been remediated to the most stringent NJDEP standards. Ground water impacts were detected in the area of UST-1. Due to these impacts, the ground water was treated through in-situ remediation. Post treatment sampling indicated compliance with the compounds of concern associated with the UST. A copy of the Permit-by-Rule application and NJDEP approval are provided in Attachment 1.

Continued quarterly groundwater monitoring is required to confirm that the contaminants of concern remain below the NJDEP groundwater standards, as well as to confirm that the injection-related compounds achieve their NJDEP groundwater standards. A figure showing the summarized pre and post treatment analytical results is provided as Figure 4. The next ground water sampling event is scheduled for August 2026.

Environmental Logic has reviewed the redevelopment plans prepared by Dynamic Engineering, last revised 06/19/2026. The planned activities will not interfere with the ongoing remediation (ground water monitoring) associated with NJDEP PI# G000011553.

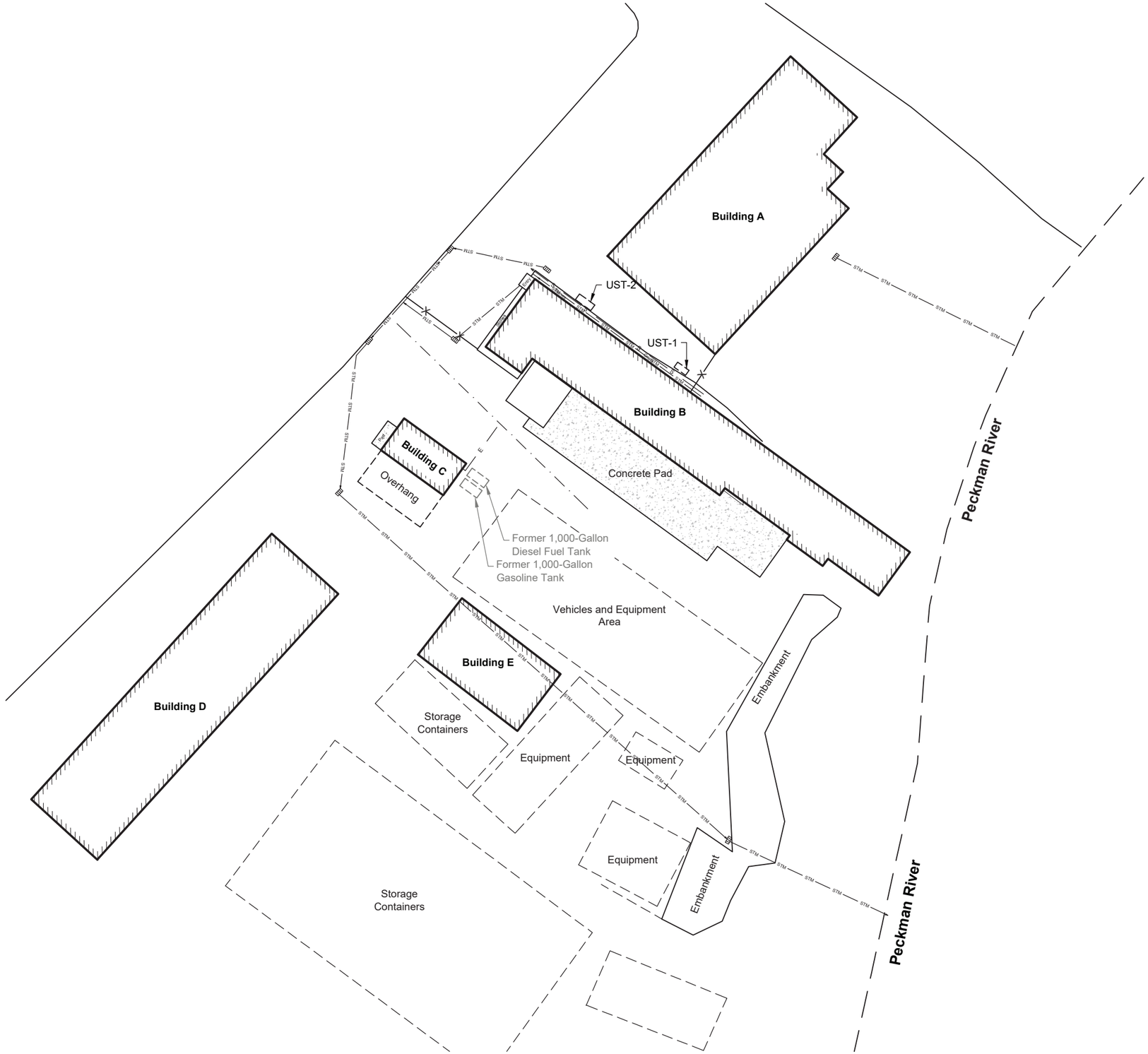
If you have any questions regarding this information, please feel free to contact me at (609) 910-0720.

Very truly yours,

Chris Esposito, LSRP
Vice President

Attachments: Figure 1 – Location of USTs
Figure 2 – Monitoring Well Locations
Figure 3 – Groundwater treatment Area/Groundwater Impacts
Figure 4 – Pre and Post Treatment Groundwater Analytical Results
Attachment 1 – Permit-By-Rule Application and NJDEP Approval

Attachment 1 – Permit-By-Rule Application and NJDEP Approval



LEGEND

- FENCE
- ELECTRIC CABLING
- SANITARY SEWER PIPING
- STORM SEWER PIPING
- UNKNOWN UTILITY
- MW-1 MONITORING WELL LOCATION

N
W E
S

GRAPHIC SCALE

0 30 60 120

(IN FEET)

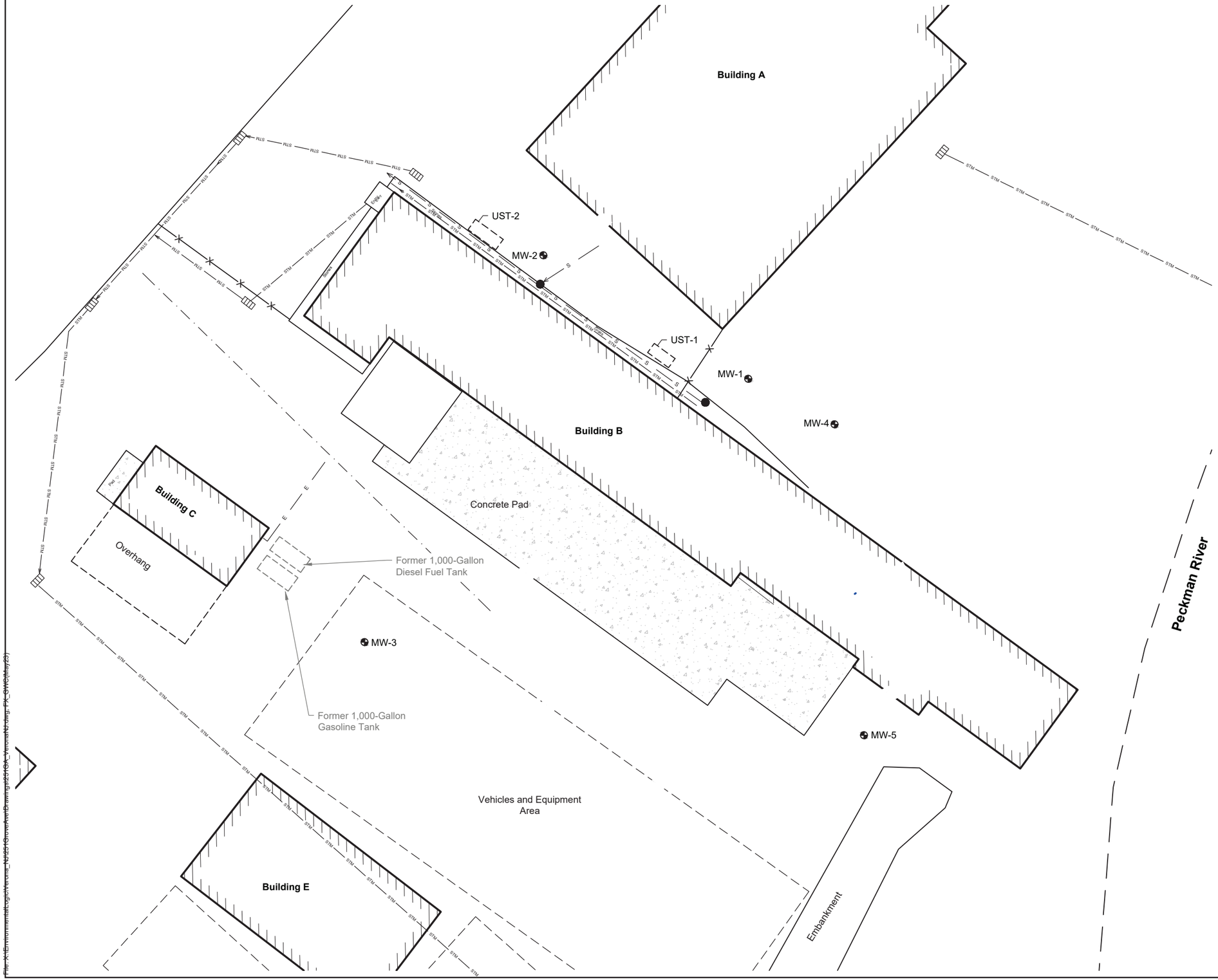
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UST LOCATIONS
251 GROVE AVENUE
VERONA, NEW JERSEY

FIGURE # 1

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MONITORING WELL LOCATION PLAN
251 GROVE AVENUE
VERONA, NEW JERSEY

FIGURE # 2



LEGEND

FENCE

ELECTRIC CABLING

SANITARY SEWER PIPING

STORM SEWER PIPING

UNKNOWN UTILITY

MW-1 MONITORING WELL LOCATION

TWP-1 TEMPORARY WELL POINT LOCATION

TREATMENT AREA

GRAPHIC SCALE

0 30 60 120

(IN FEET)

Environmental LOGIC

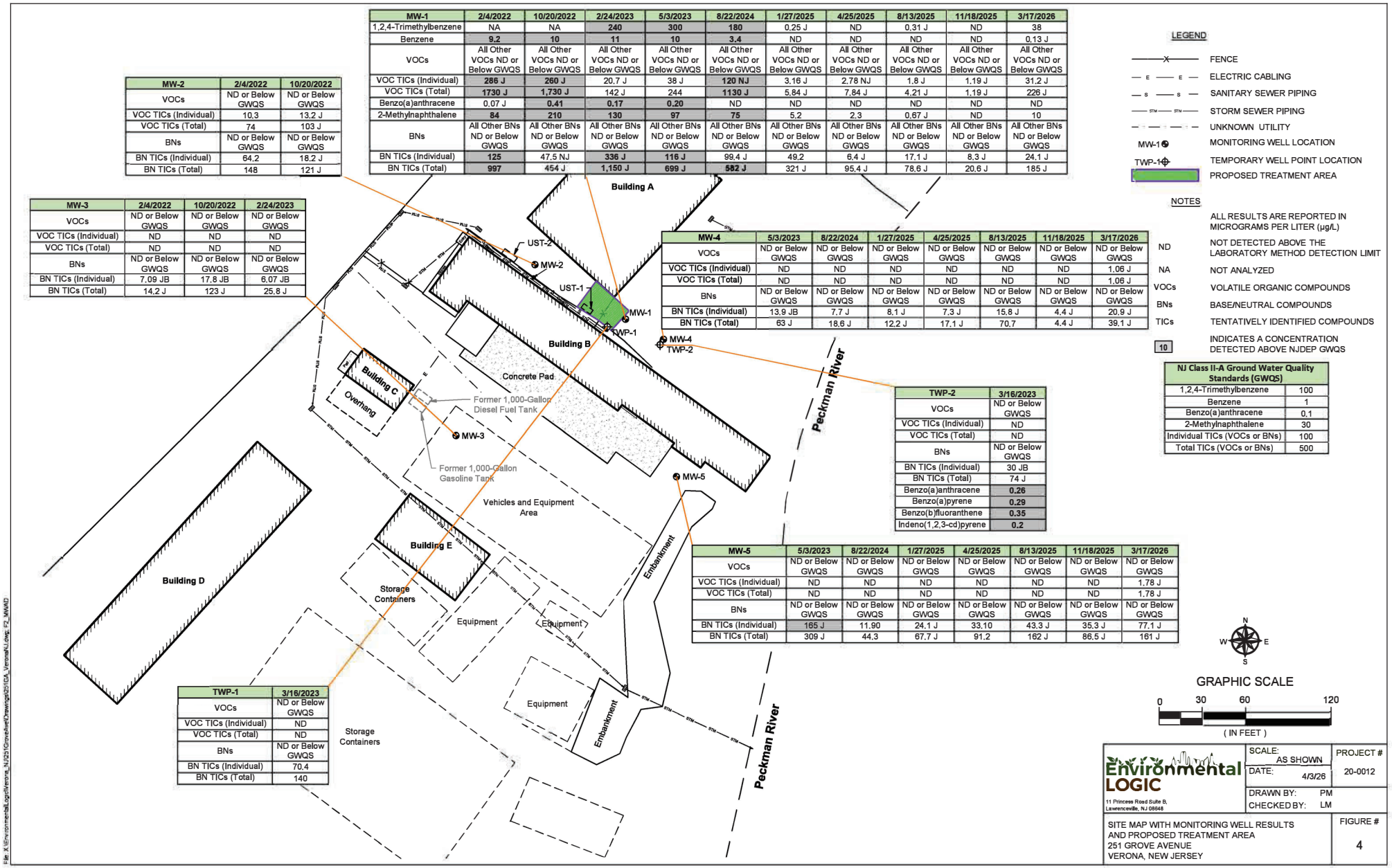
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Lawrenceville, NJ 08648

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TREATMENT AREA
251 GROVE AVENUE
VERONA, NEW JERSEY

FIGURE # 3

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MW-1	2/4/2022	10/20/2022	2/24/2023	5/3/2023	8/22/2024	1/27/2025	4/25/2025	8/13/2025	11/18/2025	3/17/2026
1,2,4-Trimethylbenzene	NA	NA	**240**	**300**	**180**	0.25 J	ND	0.31 J	ND	38
Benzene	**9.2**	**10**	**11**	**10**	**3.4**	ND	ND	ND	ND	0.13 J
VOCs	All Other VOCs ND or Below GWQS	All Other VOCs ND or Below GWQS	All Other VOCs ND or Below GWQS	All Other VOCs ND or Below GWQS	All Other VOCs ND or Below GWQS	All Other VOCs ND or Below GWQS	All Other VOCs ND or Below GWQS	All Other VOCs ND or Below GWQS	All Other VOCs ND or Below GWQS	All Other VOCs ND or Below GWQS
VOC TICs (Individual)	**286 J**	**260 J**	20.7 J	38 J	**120 NJ**	3.16 J	2.78 NJ	1.8 J	1.19 J	31.2 J
VOC TICs (Total)	**1730 J**	**1,730 J**	142 J	244	**1130 J**	5.84 J	7.84 J	4.21 J	1.19 J	226 J
Benzo(a)anthracene	0.07 J	**0.41**	**0.17**	**0.20**	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	**84**	**210**	**130**	**97**	**75**	5.2	2.3	0.67 J	ND	10
BNs	All Other BNs ND or Below GWQS	All Other BNs ND or Below GWQS	All Other BNs ND or Below GWQS	All Other BNs ND or Below GWQS	All Other BNs ND or Below GWQS	All Other BNs ND or Below GWQS	All Other BNs ND or Below GWQS	All Other BNs ND or Below GWQS	All Other BNs ND or Below GWQS	All Other BNs ND or Below GWQS
BN TICs (Individual)	**125**	47.5 NJ	**336 J**	**116 J**	99.4 J	49.2	6.4 J	17.1 J	8.3 J	24.1 J
BN TICs (Total)	**997**	**454 J**	**1,150 J**	**699 J**	**582 J**	321 J	95.4 J	78.6 J	20.6 J	185 J

MW-2	2/4/2022	10/20/2022
VOCs	ND or Below GWQS	ND or Below GWQS
VOC TICs (Individual)	10.3	13.2 J
VOC TICs (Total)	74	103 J
BNs	ND or Below GWQS	ND or Below GWQS
BN TICs (Individual)	64.2	18.2 J
BN TICs (Total)	148	121 J

MW-3	2/4/2022	10/20/2022	2/24/2023
VOCs	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS
VOC TICs (Individual)	ND	ND	ND
VOC TICs (Total)	ND	ND	ND
BNs	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS
BN TICs (Individual)	7.09 JB	17.8 JB	6.07 JB
BN TICs (Total)	14.2 J	123 J	25.8 J

MW-4	5/3/2023	8/22/2024	1/27/2025	4/25/2025	8/13/2025	11/18/2025	3/17/2026
VOCs	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS
VOC TICs (Individual)	ND	ND	ND	ND	ND	ND	1.06 J
VOC TICs (Total)	ND	ND	ND	ND	ND	ND	1.06 J
BNs	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS
BN TICs (Individual)	13.9 JB	7.7 J	8.1 J	7.3 J	15.8 J	4.4 J	20.9 J
BN TICs (Total)	63 J	18.6 J	12.2 J	17.1 J	70.7	4.4 J	39.1 J

TWP-2	3/16/2023
VOCs	ND or Below GWQS
VOC TICs (Individual)	ND
VOC TICs (Total)	ND
BNs	ND or Below GWQS
BN TICs (Individual)	30 JB
BN TICs (Total)	74 J
Benzo(a)anthracene	**0.26**
Benzo(a)pyrene	**0.29**
Benzo(b)fluoranthene	**0.35**
Indeno(1,2,3-cd)pyrene	**0.2**

MW-5	5/3/2023	8/22/2024	1/27/2025	4/25/2025	8/13/2025	11/18/2025	3/17/2026
VOCs	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS
VOC TICs (Individual)	ND	ND	ND	ND	ND	ND	1.78 J
VOC TICs (Total)	ND	ND	ND	ND	ND	ND	1.78 J
BNs	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS
BN TICs (Individual)	165 J	11.90	24.1 J	33.10	43.3 J	35.3 J	77.1 J
BN TICs (Total)	309 J	44.3	67.7 J	91.2	162 J	86.5 J	161 J

TWP-1	3/16/2023
VOCs	ND or Below GWQS
VOC TICs (Individual)	ND
VOC TICs (Total)	ND
BNs	ND or Below GWQS
BN TICs (Individual)	70.4
BN TICs (Total)	140

LEGEND

- FENCE
- ELECTRIC CABLING
- SANITARY SEWER PIPING
- STORM SEWER PIPING
- UNKNOWN UTILITY
- MW-1 MONITORING WELL LOCATION
- TWP-1 TEMPORARY WELL POINT LOCATION
- PROPOSED TREATMENT AREA

NOTES

- ALL RESULTS ARE REPORTED IN MICROGRAMS PER LITER (µg/L)
- ND NOT DETECTED ABOVE THE LABORATORY METHOD DETECTION LIMIT
- NA NOT ANALYZED
- VOCs VOLATILE ORGANIC COMPOUNDS
- BNs BASE/NEUTRAL COMPOUNDS
- TICs TENTATIVELY IDENTIFIED COMPOUNDS
- 10 INDICATES A CONCENTRATION DETECTED ABOVE NJDEP GWQS

NJ Class II-A Ground Water Quality Standards (GWQS)	
1,2,4-Trimethylbenzene	100
Benzene	1
Benzo(a)anthracene	0.1
2-Methylnaphthalene	30
Individual TICs (VOCs or BNs)	100
Total TICs (VOCs or BNs)	500

N W E S

GRAPHIC SCALE

0 30 60 120

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Lawrenceville, NJ 08648

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PROJECT # 20-0012
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SITE MAP WITH MONITORING WELL RESULTS AND PROPOSED TREATMENT AREA
251 GROVE AVENUE
VERONA, NEW JERSEY

FIGURE # 4

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Attachment 1 – Permit-By-Rule Application and NJDEP Approval

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July 23, 2024

Bureau of Case Assignment & Initial Notices
Site Remediation Program
New Jersey Department of Environmental Protection
401 East State Street
401-05H
P.O. Box 420
Trenton, New Jersey 08625-0420

Re: DISCHARGE TO GROUND WATER PERMIT-BY-RULE PROPOSAL
MARVE DEVELOPMENT CORPORATION
251 ½ GROVE AVENUE
BLOCK 1201, LOT 12
VERONA, ESSEX COUNTY, NEW JERSEY
NJDEP SRP PI NO. G000011553
CASE NO. 22-07-07-1444-30

Dear Sir/Madam,

Environmental Logic, LLC (EL), on behalf of Marve Development Corporation, has prepared this Discharge to Groundwater (DGW) Permit-by-Rule (PBR) proposal for the above referenced Site. This permit application is being submitted to the New Jersey Department of Environmental Protection (NJDEP) in accordance with the requirements of N.J.A.C 7:14A-7.5 and 8.5-Authorization of Discharges to ground water by Permit-by-Rule, the Technical Requirements for Site Remediation, specifically N.J.A.C. 7:26E-5.6 – Permit Identification and Requirements for Discharge to Ground water Proposals, and the New Jersey Discharge Elimination System (NJPDES) Discharge to Ground Water (DGW) Technical Manual for the Site Remediation Program (SRP).

Specifically, this DGWPBR proposal is being submitted for authorization for full-scale application of an in situ chemical reduction at the referenced Site. The *in situ* application will treat overburden ground water with impacts of volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC) associated with a former heating oil underground storage tank (UST).

A Discharge to Ground Water (DGW) Permit-by-Rule (PBR) Authorization Request Form is attached, as well as supporting documentation. An electronic copy of the PBR proposal is provided on the enclosed CD.

1.0 BACKGROUND

The Site, a multi-tenant commercial/industrial facility, is located at 251 ½ Grove Avenue in Verona, NJ, and is identified as Block 1201, Lot 12 on the Township tax map. Impacts were identified in July 2021 following removal of a former 1,000-gallon heating oil UST (UST-1). A

Regional U.S.G.S. Topographic Map of the Orange, New Jersey Quadrangle, is provided on **Figure 1**. A Site map is shown on **Figure 2.** The property is bound to the north by a multi-tenant commercial property, to the east by the Peckman River followed by the Township of Verona wastewater treatment plant, to the south by residential properties, and to the west by residential properties followed by Grove Avenue.

Site investigation activities were initiated in July 2021, following the removal of two 1,000-gallon heating oil tanks (UST-1 and UST-2). Based on the results of post-excavation soil sampling, naphthalene was detected at concentrations of up to 57 mg/kg, above the Non-Residential NJDEP Ingestion-Dermal Soil Remediation Standards. A release was reported to NJDEP and Case No. 21-07-13-1349-36 was created for the UST removals.

Following additional soil excavation activities, one monitoring well (MW-1) was installed adjacent to the former location of UST-1. Benzene, 1,2,4-trimehtylbenzene, volatile organic tentatively identified compound (VOC TICs), 2-methylnaphthlene, and base neutral (BN) TICs were detected above groundwater quality standards (GWQS). The release to groundwater was reported to NJDEP and Case No. 22-07-07-1444-30 was assigned to the Site. No groundwater impacts were identified associated with UST-2.

Remedial investigations have been completed to delineate the soil and ground water impacts, including excavation (i.e., source removal), and additional monitoring well installation (see Section 2.2). The proposed remedial action at the Site will include *in situ* treatment via chemical reduction for the ground water impacted by the UST-related compounds, in the source area (MW-1). The remedial goal is to reduce concentrations in ground water and demonstrate decreasing contaminant trends such that monitoring natural attenuation (MNA) is the ground water remedial action.

2.0 SUMMARY OF THE REMEDIAL INVESTIGATION

This section discusses the Site hydrogeology and formations receiving the *in-situ* treatment, ground water flow direction, hydrogeology, and the nature and extent of contamination.

2.1 Formations Receiving *In Situ* Treatment

Groundwater contamination is isolated to the former area of the UST-1 (MW-1). Ground water at the Site has been encountered at shallow depths, with ground water observed at depths ranging from 5.3 feet bgs to 8 feet bgs during monitoring well gauging events conducted in February, March 2022, and May 2023. A groundwater contour map is provided as **Figure 3**. The formation receiving the in-situ remediation is the shallow, overburden soils consisting of brown to dark brown silts, with some clay layers, to provide remediation of VOCs.

2.2 Nature and Extent of Contamination

The primary contaminants of concern in groundwater are benzene, 2-methylnaphthalene, 1,2,4-trimethylbenzene, and TICs above the NJDEP Class II-A GWQS. The source of these contaminants is attributed to a former heating oil underground storage tank (UST-1) that was previously abandoned in place (prior to 1988). UST-1 was subsequently removed in July 2021, as part of Site investigations activities, documented in EL's Site Investigation Report submitted to NJDEP in July 2022.

Based on the initial tank closure sampling activities on July 13, 2021, soil sample results indicated impacts were identified in the UST-1 area, as shown on **Figure 4**. EPH was detected at concentrations between 2,270 mg/kg (UST1-SW-2) and 34,600 mg/kg (UST1-C1). As EPH concentrations were detected above 1,000 mg/kg, naphthalene and 2-methylnapthalene were analyzed on the samples with the highest EPH concentrations, UST1-C1 and UST1-SW-1. The analytical results from the contingent samples indicated that naphthalene was detected, with the highest detection (57 mg/kg) being above the Non-Residential Ingestion-Dermal SRS. Analytical results are summarized on **Table 1**.

Additional excavations were conducted in the UST areas in July 2021 and December 2021 to remove the impacted soils. The results of the post excavation soil sample results are shown on **Figure 4** and confirm the impacted soils were properly delineated and removed.

Following the completion of excavation activities, three monitoring wells (MW-1 through MW-3 were installed in January 2022. The locations of the monitoring wells are shown on **Figure 2**. The monitoring wells were sampled for VOC+TICs and BN+TICs, in February and October 2022. Results indicated that compounds of concern were not detected in MW-2 or MW-3 above the GWQS. Benzene, individual and total VOC TICs, 2-methylnaphthalene, and individual and total BN TICs were detected above GWQS in MW-1.

Remedial investigations were conducted in March and April 2023, with the installation of two temporary well points - TWP-1 for vertical delineation in the source area (MW-1) and TWP-2, for horizontal delineation purposes towards the Peckman River. The results of the temporary well points are shown on **Figure 2.** As impacts were identified in TWP-2, MW-4 was installed to confirm if impacts are above GWQS and MW-5 was installed further downgradient of MW-4.

In May 2023 all five monitoring wells, MW-1 through MW-5, were sampled. The results of the sampling indicated that compounds of concern were not detected in MW-2 through MW-5. Benzene, individual and total VOC TICs, 2-methylnaphthalene, and individual and total BN TICs were detected above GWQS in MW-1 as summarized below.

Summary of Results in MW-1

Compound	GWQS	2/4/2022	10/20/2022	2/24/2023	5/3/2023
Benzene	1	**9.2**	**10**	**11**	**10**
1,2,4-Trimethylbenzene	100	N/A	N/A	**300**	**300**
Indiv. VO TICs	100	**286**	**260**	20.7	38
Total VO TICs	500	**1,730**	**1,730**	142	244
2-Methylnaphthalene	30	**84**	**250**	**130**	**97**
Indiv. BN TICs	100	**125**	47.5	**336**	**116**
Total BN TICs	500	**997**	**454**	**1,150**	**699**

- Exceeds NJDEP GWQS Groundwater Standard

The results of the ground water sampling confirm the groundwater impacts are confined to the former location of UST-1 in the shallow overburden aquifer. Therefore, active remediation is proposed to address these impacts.

2.3 Receptor Status

The initial Receptor Evaluation (RE) Form was submitted to NJDEP in July 2022, in accordance with 7:26E-1.12. An updated RE has been prepared based on the information obtained during the RI activities, relative to land use, groundwater, vapor intrusion (VI), and ecological receptors and the results are provided on Section E Receptor Evaluation Summary of the attached Discharge to Groundwater Permit-By-Rule Authorization Request Form.

The surrounding area of the site, within 200 feet, includes mostly residential properties, with a few commercial, industrial and public properties. The Peckman River is located on the eastern adjoining property and is presumed to be hydraulically downgradient of the Site.

Based on the results of the recent well search, six potable wells appear within 0.5 miles of the Site, however, four of these wells were determined to be further than 0.5 miles away from the Site based on a review of well records. The closest well located within 0.5 miles of the Site is at least 1,500 feet west-northwest of the Site and is hydraulically upgradient.

There will be no negative impacts on any receptors from the proposed discharge.

3.0 PROPOSED REMEDIAL APPROACH

The proposed in situ activities will be conducted in one area of treatment adjacent to the former heating oil UST (UST-1). The proposed injection areas are shown on **Figure 2** and will be performed by ISOTEC, of Lawrenceville, New Jersey. The target treatment zone is 5 feet to 17 feet bgs (or top of bedrock). **Table 3** summarizes the injection design for the former UST-1 area.

The proposed amendments include BOS-200® which combines injectable granular activated carbon, a facultative blend of bacteria, macro and micronutrients and terminal electron acceptors. The petroleum hydrocarbons sorb to the activated carbon, and the bacteria metabolize the sorbed contaminants of concern (COC) through aerobic and anaerobic decomposition pathways. Safety Data Sheets (SDS) for each reagent are included as **Appendix A.**

Temporary injection points will be installed using direct-push point technology. Approximately 25 injection points will be located on a closely spaced (5 feet) triangular grid pattern in the area of UST-1. Actual injection points will be located based on site features above and below ground. Within the vertical interval of 5 to 17 feet bgs a total of approximately 2,500 of solution will be injected. Injection quantities are summarized in attached **Table 3**. ISOTEC will connect to each point via a dedicated injection point head. All of the temporary injection points will be abandoned the same day injection activities have been completed at that injection point, by filling with bentonite chips and hydrating with water.

4.0 GROUNDWATER MONITORING PLAN

A baseline sampling event will be conducted prior to implementation of the proposed injections which will includes samples collected from the source area monitoring well (MW-1) and downgradient monitoring well (MW-4). The samples will be analyzed for VOCs + TICs, BN + TICs, calcium, and sulfate.

A synoptic round of groundwater elevation measurements will be collected of all Site monitoring wells, prior to each round of sampling. Groundwater quality characteristics will also be measured

including depth to water, dissolved oxygen (DO), oxidation-reduction potential (ORP), pH, turbidity, specific conductivity, and temperature.

Upon completion of the in-situ injection activities, EL proposes to implement a long-term quarterly groundwater monitoring program to monitor the effectiveness of the remedial action and to evaluate the viability of a MNA remedy for groundwater. The proposed monitoring plan is included on **Table 4**.

If you have any questions or require any additional information, please do not hesitate to contact the Licensed Site Remediation Professional (LSRP), Chris Esposito, at (609) 910-0720 or cesposito@env-logic.com.

Sincerely,

Bill Major
Project Manager

Attachments
Table 1 - Summary of Volatile Organic Compound Results in Soil
Table 2 – Summary Groundwater Results in Monitoring Wells and Temporary Well Points
Table 3 – Proposed Injection Plan
Table 4 – Groundwater Monitoring Plan

Figure 1 – Site Location Map on USGS Caldwell, NJ Quadrangle
Figure 2 – Site Plan with Groundwater Monitoring Results and Proposed Injection Area
Figure 3 – Groundwater Contour Map – May 2023
Figure 4 – Site Plan with Soil Sample Results

Appendix A – Safety Data Sheets for Reagents

TABLES

TABLE 1

251 Grove Avenue
Block 1201, Lot 12
Verona, Essex County, New Jersey

Summary of Category 1 Extractable Petroleum Hydrocarbons (EPH) Results for Soil
UST #1

SAMPLE ID: LAB ID: COLLECTION DATE: DEPTH:	EPH Soil Remediation Criterion Non-Residential Ingestion-Dermal (mg/kg)	EPH Soil Remediation Criterion Non-Residential Inhalation (mg/kg)	EPH Soil Remediation Criterion Residential Ingestion-Dermal (mg/kg)	EPH Soil Remediation Criterion Residential Inhalation (mg/kg)	EPH Contingent Analyses Trigger Level (mg/kg)	UST1-C1 L2137371-05 7/12/2021 8.0'-8.5'				UST1-C2 L2137371-06 7/12/2021 8.0'-8.5'				UST1-SW-1 L2137371-01 7/12/2021 6.0'-6.5'				UST1-SW-2 L2137371-02 7/12/2021 6.0'-6.5'				UST1-SW-3 L2137371-03 7/12/2021 6.0'-6.5'				UST1-SW-4 L2137371-04 7/12/2021 6.0'-6.5'				UST1-B L2168641-03 12/14/2021 13'-13.5'				UST1-SW-S L2168641-04 12/14/2021 6'-6.5'				UST1-SW-W L2168641-05 12/14/2021 6'-6.5'				UST1-SW-E L2168641-06 12/14/2021 6'-6.5'			
						Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL
Category 1 EPH																																										
Total EPH	75,000	NS	5,300	NS	1,000	**34600**		1370	1370	**3250**		128	128	**21100**		632	632	**2270**		141	141	**7440**		138	138	**5550**		139	139	**2260**		76.5	76.5	632		28.6	28.6	**1930**		53.1	53.1	ND		27.8	27.8

SAMPLE ID: LAB ID: COLLECTION DATE: DEPTH:	Soil Remediation Standards for the Ingestion-Dermal Exposure Pathway - Non-Residential (mg/kg)	Non-Residential Inhalation Soil Remediation Standard (mg/kg)	Soil Remediation Standards for the Ingestion-Dermal Exposure Pathway - Residential (mg/kg)	Residential Inhalation Soil Remediation Standard (mg/kg)	Migration to Ground Water Soil Remediation Standard (SRS-MGW) (mg/kg)	UST1-C1 L2137371-05 7/12/2021 8.0'-8.5'				UST1-C2 L2137371-06 7/12/2021 8.0'-8.5'				UST1-SW-1 L2137371-01 7/12/2021 6.0'-6.5'				UST1-SW-2 L2137371-02 7/12/2021 6.0'-6.5'				UST1-SW-3 L2137371-03 7/12/2021 6.0'-6.5'				UST1-SW-4 L2137371-04 7/12/2021 6.0'-6.5'				UST1-B L2168641-03 12/14/2021 13'-13.5'				UST1-SW-S L2168641-04 12/14/2021 6'-6.5'				UST1-SW-W L2168641-05 12/14/2021 6'-6.5'				UST1-SW-E L2168641-06 12/14/2021 6'-6.5'			
						Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL
Contingent Analysis																																										
Naphthalene	34,000	27	2,500	5.7	19	**57**		9.6	1.2	NA		~	~	**18**		2.2	0.26	NA		~	~	NA		~	~	NA		~	~	3		0.2	0.024	NA		~	~	NA		~	~	NA		~	~
2-Methylnaphthalene	3,300	NS	240	NS	3.1	160		11	1	NA		~	~	49		2.6	0.23	NA		~	~	NA		~	~	NA		~	~	6.3		0.23	0.021	NA		~	~	NA		~	~	NA		~	~

Notes:
All results reported in milligrams per kilogram (mg/kg)
EPH - Extractable Petroleum Hydrocarbons
Results Exceed EPH Contingent Analyses Trigger Level
Results Exceed NJDEP Migration to Groundwater EPH Soil Remediation Criterion
Results Exceed NJDEP Non-Residential EPH Soil Remediation Criterion
Results Exceed NJDEP Residential EPH Soil Remediation Criterion
Q - Laboratory Qualifier
ND - Analyzed for but Not Detected at the MDL
RL - Reporting Limit
MDL - Method Detection Limit

TABLE 2

251 Grove Avenue
Block 1201, Lot 12
Verona, Essex County, New Jersey

Summary of Volatile Organic Compounds Results for Ground Water

SAMPLE ID: LAB ID: COLLECTION DATE:	NJ Class II-A Groundwater Quality Standards (March 2022) (ug/l)	MW-1 L2206141-01 2/4/2022				MW-1 L2258919-01 10/20/2022				MW-1 L2310047-01 2/24/2023				MW-1 L2324488-01 5/3/2023				MW-2 L2206141-02 2/4/2022				MW-2 L2258919-02 10/20/2022				MW-3 L2206141-03 2/4/2022				MW-3 L2258919-03 10/20/2022				MW-3 L2310047-02 2/24/2023				MW-4 L2324488-02 5/3/2023				MW-5 L2324488-03 5/3/2023			
		Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL
VOLATILE ORGANICS																																												
1,1,1-Trichloroethane	30	ND		0.5	0.16	ND		1	0.32	ND		0.5	0.16	ND		1	0.32	ND		0.5	0.16	ND		0.5	0.16	0.23	J	0.5	0.16	0.24	J	0.5	0.16	0.2	J	0.5	0.16	ND		0.5	0.16	ND		0.5	0.16
1,1,2,2-Tetrachloroethane	1	ND		0.5	0.17	ND		1	0.33	ND		0.5	0.17	ND		1	0.33	ND		0.5	0.17	ND		0.5	0.17	ND		0.5	0.17	ND		0.5	0.17	ND		0.5	0.17	ND		0.5	0.17	ND		0.5	0.17
1,1,2-Trichloroethane	3	ND		0.75	0.14	ND		1.5	0.29	ND		0.75	0.14	ND		1.5	0.29	ND		0.75	0.14	ND		0.75	0.14	ND		0.75	0.14	ND		0.75	0.14	ND		0.75	0.14	ND		0.75	0.14	ND		0.75	0.14
1,1-Dichloroethane	50	ND		0.75	0.21	ND		1.5	0.42	ND		0.75	0.21	ND		1.5	0.42	ND		0.75	0.21	ND		0.75	0.21	ND		0.75	0.21	ND		0.75	0.21	ND		0.75	0.21	ND		0.75	0.21	ND		0.75	0.21
1,1-Dichloroethene	1	ND		0.5	0.17	ND		1	0.34	ND		0.5	0.17	ND		1	0.34	ND		0.5	0.17	ND		0.5	0.17	ND		0.5	0.17	ND		0.5	0.17	ND		0.5	0.17	ND		0.5	0.17	ND		0.5	0.17
1,2,3-Trichlorobenzene	NS	ND		2.5	0.23	ND		5	0.47	ND		2.5	0.23	ND		5	0.47	ND		2.5	0.23	ND		2.5	0.23	ND		2.5	0.23	ND		2.5	0.23	ND		2.5	0.23	ND		2.5	0.23	ND		2.5	0.23
1,2,4-Trichlorobenzene	9	ND		2.5	0.22	ND		5	0.44	ND		2.5	0.22	ND		5	0.44	ND		2.5	0.22	ND		2.5	0.22	ND		2.5	0.22	ND		2.5	0.22	ND		2.5	0.22	ND		2.5	0.22	ND		2.5	0.22
1,2,4-Trimethylbenzene	100	~		~	~	~		~	~	**240**		12	0.96	**300**		5	0.38	~		~	~	~		~	~	~		~	~	~		~	~	~		~	~	ND		2.5	0.19	ND		2.5	0.19
1,2-Dibromo-3-chloropropane	0.02	ND		**2.5**	**0.35**	ND		**5**	**0.71**	ND		**2.5**	**0.35**	ND		**5**	**0.71**	ND		**2.5**	**0.35**	ND		**2.5**	**0.35**	ND		**2.5**	**0.35**	ND		**2.5**	**0.35**	ND		**2.5**	**0.35**	ND		**2.5**	**0.35**	ND		**2.5**	**0.35**
1,2-Dibromoethane	0.03	ND		**2**	**0.19**	ND		**4**	**0.39**	ND		**2**	**0.19**	ND		**4**	**0.39**	ND		**2**	**0.19**	ND		**2**	**0.19**	ND		**2**	**0.19**	ND		**2**	**0.19**	ND		**2**	**0.19**	ND		**2**	**0.19**	ND		**2**	**0.19**
1,2-Dichlorobenzene	600	ND		2.5	0.18	ND		5	0.37	ND		2.5	0.18	ND		5	0.37	ND		2.5	0.18	ND		2.5	0.18	ND		2.5	0.18	ND		2.5	0.18	ND		2.5	0.18	ND		2.5	0.18	ND		2.5	0.18
1,2-Dichloroethane	2	ND		0.5	0.13	ND		1	0.26	ND		0.5	0.13	ND		1	0.26	ND		0.5	0.13	ND		0.5	0.13	ND		0.5	0.13	ND		0.5	0.13	ND		0.5	0.13	ND		0.5	0.13	ND		0.5	0.13
1,2-Dichloroethene, Total	NS	ND		0.5	0.16	ND		1	0.33	ND		0.5	0.16	ND		1	0.33	ND		0.5	0.16	ND		0.5	0.16	ND		0.5	0.16	ND		0.5	0.16	ND		0.5	0.16	ND		0.5	0.16	ND		0.5	0.16
1,2-Dichloropropane	1	ND		**1**	0.14	ND		**2**	0.27	ND		1	0.14	ND		**2**	0.27	ND		**1**	0.14	ND		**1**	0.14	ND		**1**	0.14	ND		**1**	0.14	ND		1	0.14	ND		1	0.14	ND		1	0.14
1,3-Dichlorobenzene	600	ND		2.5	0.19	ND		5	0.37	ND		2.5	0.19	ND		5	0.37	ND		2.5	0.19	ND		2.5	0.19	ND		2.5	0.19	ND		2.5	0.19	ND		2.5	0.19	ND		2.5	0.19	ND		2.5	0.19
1,3-Dichloropropene, Total	1	ND		0.5	0.14	ND		1	0.29	ND		0.5	0.14	ND		1	0.29	ND		0.5	0.14	ND		0.5	0.14	ND		0.5	0.14	ND		0.5	0.14	ND		0.5	0.14	ND		0.5	0.14	ND		0.5	0.14
1,4-Dichlorobenzene	75	ND		2.5	0.19	ND		5	0.37	ND		2.5	0.19	ND		5	0.37	ND		2.5	0.19	ND		2.5	0.19	ND		2.5	0.19	ND		2.5	0.19	ND		2.5	0.19	ND		2.5	0.19	ND		2.5	0.19
1,4-Dioxane	0.4	ND		**250**	**61**	ND		**500**	**120**	ND		**250**	**61**	ND		**500**	**120**	ND		**250**	**61**	ND		**250**	**61**	ND		**250**	**61**	ND		**250**	**61**	ND		**250**	**61**	ND		**250**	**61**	ND		**250**	**61**
2-Butanone	300	ND		5	1.9	ND		10	3.9	ND		5	1.9	ND		10	3.9	2.5	J	5	1.9	ND		5	1.9	ND		5	1.9	ND		5	1.9	ND		5	1.9	3.6	J	5	1.9	ND		5	1.9
2-Hexanone	40	ND		5	0.52	ND		10	1	ND		5	0.52	ND		10	1	ND		5	0.52	ND		5	0.52	ND		5	0.52	ND		5	0.52	ND		5	0.52	ND		5	0.52	ND		5	0.52
4-Methyl-2-pentanone	NS	ND		5	0.42	ND		10	0.83	ND		5	0.42	ND		10	0.83	ND		5	0.42	ND		5	0.42	ND		5	0.42	ND		5	0.42	ND		5	0.42	ND		5	0.42	ND		5	0.42
Acetone	6,000	2	J	5	1.5	ND		10	2.9	ND		5	1.5	ND		10	2.9	32		5	1.5	ND		5	1.5	ND		5	1.5	ND		5	1.5	ND		5	1.5	ND		5	1.5	1.8	J	5	1.5
Benzene	1	**9.2**		0.5	0.08	**10**		1	0.16	**11**		0.5	0.08	**10**		1	0.16	**0.11**	J	0.5	0.08	ND		0.5	0.08	ND		0.5	0.08	ND		0.5	0.08	ND		0.5	0.08	ND		0.5	0.08	ND		0.5	0.08
Bromochloromethane	NS	ND		2.5	0.15	ND		5	0.3	ND		2.5	0.15	ND		5	0.3	ND		2.5	0.15	ND		2.5	0.15	ND		2.5	0.15	ND		2.5	0.15	ND		2.5	0.15	ND		2.5	0.15	ND		2.5	0.15
Bromodichloromethane	1	ND		0.5	0.19	ND		1	0.38	ND		0.5	0.19	ND		1	0.38	ND		0.5	0.19	ND		0.5	0.19	ND		0.5	0.19	ND		0.5	0.19	ND		0.5	0.19	ND		0.5	0.19	ND		0.5	0.19
Bromoform	4	ND		2	0.25	ND		4	0.5	ND		2	0.25	ND		4	0.5	ND		2	0.25	ND		2	0.25	ND		2	0.25	ND		2	0.25	ND		2	0.25	ND		2	0.25	ND		2	0.25
Bromomethane	10	ND		1	0.26	ND		2	0.51	ND		1	0.26	ND		2	0.51	ND		1	0.26	ND		1	0.26	ND		1	0.26	ND		1	0.26	ND		1	0.26	ND		1	0.26	ND		1	0.26
Carbon disulfide	700	ND		5	0.3	ND		10	0.6	ND		5	0.3	ND		10	0.6	ND		5	0.3	ND		5	0.3	0.31	J	5	0.3	ND		5	0.3	ND		5	0.3	ND		5	0.3	ND		5	0.3
Carbon tetrachloride	1	ND		0.5	0.13	ND		1	0.27	ND		0.5	0.13	ND		1	0.27	ND		0.5	0.13	ND		0.5	0.13	ND		0.5	0.13	ND		0.5	0.13	ND		0.5	0.13	ND		0.5	0.13	ND		0.5	0.13
Chlorobenzene	50	ND		0.5	0.18	ND		1	0.36	ND		0.5	0.18	ND		1	0.36	ND		0.5	0.18	ND		0.5	0.18	ND		0.5	0.18	ND		0.5	0.18	ND		0.5	0.18	ND		0.5	0.18	ND		0.5	0.18
Chloroethane	5	ND		1	0.13	ND		2	0.27	ND		1	0.13	ND		2	0.27	ND		1	0.13	ND		1	0.13	ND		1	0.13	ND		1	0.13	ND		1	0.13	ND		1	0.13	ND		1	0.13
Chloroform	70	ND		0.75	0.22	ND		1.5	0.44	ND		0.75	0.22	ND		1.5	0.44	ND		0.75	0.22	ND		0.75	0.22	ND		0.75	0.22	ND		0.75	0.22	ND		0.75	0.22	ND		0.75	0.22	ND		0.75	0.22
Chloromethane	NS	ND		2.5	0.2	ND		5	0.4	ND		2.5	0.2	ND		5	0.4	ND		2.5	0.2	ND		2.5	0.2	ND		2.5	0.2	ND		2.5	0.2	ND		2.5	0.2	ND		2.5	0.2	ND		2.5	0.2
cis-1,2-Dichloroethene	70	ND		0.5	0.19	ND		1	0.37	ND		0.5	0.19	ND		1	0.37	ND		0.5	0.19	ND		0.5	0.19	ND		0.5	0.19	ND		0.5	0.19	ND		0.5	0.19	ND		0.5	0.19	ND		0.5	0.19
cis-1,3-Dichloropropene	NS	ND		0.5	0.14	ND		1	0.29	ND		0.5	0.14	ND		1	0.29	ND		0.5	0.14	ND		0.5	0.14	ND		0.5	0.14	ND		0.5	0.14	ND		0.5	0.14	ND		0.5	0.14	ND		0.5	0.14
Cyclohexane	NS	9.2	J	10	0.27	4.9	J	20	0.54	5.1	J	10	0.27	5.9	J	20	0.54	ND		10	0.27	ND		10	0.27	ND		10	0.27	ND		10	0.27	ND		10	0.27	ND		10	0.27	ND		10	0.27
Dibromochloromethane	1	ND		0.5	0.15	ND		1	0.3	ND		0.5	0.15	ND		1	0.3	ND		0.5	0.15	ND		0.5	0.15	ND		0.5	0.15	ND		0.5	0.15	ND		0.5	0.15	ND		0.5	0.15	ND		0.5	0.15
Dichlorodifluoromethane	1,000	ND		5	0.24	ND		10	0.49	ND		5	0.24	ND		10	0.49	ND		5	0.24	ND		5	0.24	ND		5	0.24	ND		5	0.24	ND		5	0.24	ND		5	0.24	ND		5	0.24
Ethylbenzene	700	100		0.5	0.17	88		1	0.33	78		0.5	0.17	75		1	0.33	0.36	J	0.5	0.17	0.74		0.5	0.17	ND		0.5	0.17	ND		0.5	0.17	ND		0.5	0.17	ND		0.5	0.17	ND		0.5	0.17
Freon-113	20,000	ND		2.5	0.15	ND		5	0.3	ND		2.5	0.15	ND		5	0.3	ND		2.5	0.15	ND		2.5	0.15	ND		2.5	0.15	ND		2.5	0.15	ND		2.5	0.15	ND		2.5	0.15	ND		2.5	0.15
Isopropylbenzene	700	21		0.5	0.19	26		1	0.37	29		0.5	0.19	28		1	0.37	0.53		0.5	0.19	1.8		0.5	0.19	ND		0.5	0.19	ND		0.5	0.19	ND		0.5	0.19	ND		0.5	0.19	ND		0.5	0.19
Methyl Acetate	7,000	ND		2	0.23	ND		4	0.47	ND		2	0.23	ND		4	0.47	ND		2	0.23	ND		2	0.23	ND		2	0.23	ND		2	0.23	ND		2	0.23	ND		2	0.23	ND		2	0.23
Methyl cyclohexane	NS	17		10	0.4	7.8	J	20	0.79	12		10	0.4	13	J	20	0.79	0.65	J	10	0.4	0.92	J	10	0.4	ND		10	0.4	ND		10	0.4	ND		10	0.4	ND		10	0.4	ND		10	0.4
Methyl tert butyl ether	70	0.29	J	1	0.17	ND		2	0.33	0.17	J	1	0.17	ND		2	0.33	ND		1	0.17	ND		1	0.17	ND		1	0.17	ND		1	0.17	ND		1	0.17	ND		1	0.17	ND		1	0.17
Methylene chloride	3	ND		**2.5**	0.68	ND		**5**	1.4	ND		2.5	0.68	ND		**5**	1.4	ND		**2.5**	0.68	ND		2.5	0.68	ND		**2.5**	0.68	ND		**2.5**	0.68	ND		2.5	0.68	ND		2.5	0.68	ND		2.5	0.68
o-Xylene	NS	84		1	0.39	34		2	0.78	28		1	0.39	29		2	0.78	ND		1	0.39	ND		1	0.39	ND		1	0.39	ND		1	0.39	ND		1	0.39	ND		1	0.39	ND		1	0.39
p/m-Xylene	NS	160		1	0.33	53		2	0.66	38		1	0.33	35		2	0.66	ND		1	0.33	ND		1	0.33	ND		1	0.33	ND		1	0.33	ND		1	0.33	ND		1	0.33	ND		1	0.33
Styrene	100	ND		1	0.36	ND		2	0.72	ND		1	0.36	ND		2	0.72	ND		1	0.36	ND		1	0.36	ND		1	0.36	ND		1	0.36	ND		1	0.36	ND		1	0.36	ND		1	0.36
Tert-Butyl Alcohol	100	~		~	~	~		~	~	~		~	~	~		~	~	~		~	~	~		~	~	ND		10	1.4	~		~	~	~		~	~	~		~	~	~		~	~
Tetrachloroethene	1	ND		0.5	0.18	ND		1	0.36	ND		0.5	0.18	ND		1	0.36	ND		0.5	0.18	ND		0.5	0.18	ND		0.5	0.18	ND		0.5	0.18	ND		0.5	0.18	ND		0.5	0.18	ND		0.5	0.18
Toluene	600	14		0.75	0.2	5.7		1.5	0.41	4.5		0.75	0.2	4.1		1.5	0.41	1.1		0.75	0.2	ND		0.75	0.2	ND		0.75	0.2	ND		0.75	0.2	ND		0.75	0.2	ND		0.75	0.2	ND		0.75	0.2
trans-1,2-Dichloroethene	100	ND		0.75	0.16	ND		1.5	0.33	ND		0.75	0.16	ND		1.5	0.33	ND		0.75	0.16	ND		0.75	0.16	ND		0.75	0.16	ND		0.75	0.16	ND		0.75	0.16	ND		0.75	0.16	ND		0.75	0.16	ND		0.75	0.16
trans-1,3-Dichloropropene	NS	ND		0.5	0.16	ND		1	0.33	ND		0.5	0.16	ND		1	0.33	ND		0.5	0.16	ND		0.5	0.16	ND		0.5	0.16	ND		0.5	0.16	ND		0.5	0.16	ND		0.5	0.16	ND		0.5	0.16	ND		0.5	0.16
Trichloroethene	1	ND		0.5	0.18	ND		1	0.35	ND		0.5	0.18	ND		1	0.35	ND		0.5	0.18	ND		0.5	0.18	ND		0.5	0.18	ND		0.5	0.18	ND		0.5	0.18	ND		0.5	0.18	ND		0.5	0.18	ND		0.5	0.18
Trichlorofluoromethane	2,000	ND		2.5	0.16	ND		5	0.32	ND		2.5	0.16	ND		5	0.32	ND		2.5	0.16	ND		2.5	0.16	ND		2.5	0.16	ND		2.5	0.16	ND		2.5	0.16	ND		2.5	0.16	ND		2.5	0.16	ND		2.5	0.16
Vinyl chloride	1	ND		0.2	0.07	ND		0.4	0.14	ND		0.2	0.07	ND		0.4	0.14	ND		0.2	0.07	ND		0.2	0.07	ND		0.2	0.07	ND		0.2	0.07	ND		0.2	0.07	ND		0.2	0.07	ND		0.2	0.07	ND		0.2	0.07
Xylenes, Total	1,000	240		1	0.33	87		2	0.66	66		1	0.33	64		2	0.66	ND		1	0.33	ND		1	0.33	ND		1	0.33	ND		1	0.33	ND		1	0.33	ND		1	0.33	ND		1	0.33	ND		1	0.33
Total VOCs	NS	416.69	-	-	-	229.4	-	-	-	505.77	-	-	-	500	-	-	-	37.25	-	-	-	3.46	-	-	-	0.54	-	-	-	0.24	-	-	-	0.2	-	-	-	3.6	-	-	-	1.8	-	-	-
Highest TIC	100	286	J	-	-	260	J	-	-	20.7	J	-	-	38	J	-	-	10.3	J	-	-	13.2	J	-	-	ND		-	-	ND		-	-	ND		-	-	ND		-	-	ND		-	-
Total TIC Compounds	500	1730	J	-	-	1730	J	-	-	142	J	-	-	244	J	-	-	74	J	-	-	103	J	-	-	ND		-	-	ND		-	-	ND		-	-	ND		-	-	ND		-	-

Notes:
All results are reported in µg/L

Bold - Indicates a concentration detected above NJ Class II-A Groundwater Quality Standards (GWQS)
NS - No Standard
NSLE - No Screening Level Established
ND - None detected
~ - Compound Not Analyzed
Q - Qualifier
RL - Reporting Limit
MDL - Method Detection Limit
J - The concentration was detected at a value below the detection limit, but greater than zero
RL/MDL - Bold RL/MDL indicates that the RL/MDL is greater than the GWQS standard
µg/L - Microgram Per Liter

Environmental LOGIC

TABLE 2

251 Grove Avenue
Block 1201, Lot 12
Verona, Essex County, New Jersey

Summary of Base/Neutral Compounds Results for Ground Water

SAMPLE ID: LAB ID: COLLECTION DATE:	CAS	NJ Class II-A Groundwater Quality Standards (March 2022) (ug/l)	MW-1 L2258919-01 10/20/2022				MW-1 L2310047-01 2/24/2023				MW-1 L2324488-01 5/3/2023				MW-2 L2258919-02 10/20/2022				MW-3 L2258919-03 10/20/2022				MW-3 L2310047-02 2/24/2023				MW-4 L2324488-02 5/3/2023				MW-5 L2324488-03 5/3/2023			
			Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL	Result	Q	RL	MDL
BASE/NEUTRAL EXTRACTABLES																																		
1,2,4,5-Tetrachlorobenzene	95-94-3	NS	ND		10	0.44	ND		10	0.44	ND		10	0.44	ND		10	0.44	ND		10	0.44	ND		10	0.44	ND		10	0.44	ND		10	0.44
2,4-Dinitrotoluene	121-14-2	10	ND		5	1.2	ND		5	1.2	ND		5	1.2	ND		5	1.2	ND		5	1.2	ND		5	1.2	ND		5	1.2	ND		5	1.2
2,6-Dinitrotoluene	606-20-2	10	ND		5	0.93	ND		5	0.93	ND		5	0.93	ND		5	0.93	ND		5	0.93	ND		5	0.93	ND		5	0.93	ND		5	0.93
2-Chloronaphthalene	91-58-7	600	ND		2	0.44	ND		2	0.44	ND		2	0.44	ND		2	0.44	ND		2	0.44	ND		2	0.44	ND		2	0.44	ND		2	0.44
2-Methylnaphthalene	91-57-6	30	**210**		2	0.45	**130**		2	0.45	**97**		2	0.45	ND		2	0.45	ND		2	0.45	ND		2	0.45	ND		2	0.45	ND		2	0.45
2-Nitroaniline	88-74-4	NS	ND		5	0.5	ND		5	0.5	ND		5	0.5	ND		5	0.5	ND		5	0.5	ND		5	0.5	ND		5	0.5	ND		5	0.5
3,3'-Dichlorobenzidine	91-94-1	30	ND		5	1.6	ND		5	1.6	ND		5	1.6	ND		5	1.6	ND		5	1.6	ND		5	1.6	ND		5	1.6	ND		5	1.6
3-Nitroaniline	99-09-2	NS	ND		5	0.81	ND		5	0.81	ND		5	0.81	ND		5	0.81	ND		5	0.81	ND		5	0.81	ND		5	0.81	ND		5	0.81
4-Bromophenyl phenyl ether	101-55-3	NS	ND		2	0.38	ND		2	0.38	ND		2	0.38	ND		2	0.38	ND		2	0.38	ND		2	0.38	ND		2	0.38	ND		2	0.38
4-Chloroaniline	106-47-8	30	ND		5	1.1	ND		5	1.1	ND		5	1.1	ND		5	1.1	ND		5	1.1	ND		5	1.1	ND		5	1.1	ND		5	1.1
4-Chlorophenyl phenyl ether	7005-72-3	NS	ND		2	0.49	ND		2	0.49	ND		2	0.49	ND		2	0.49	ND		2	0.49	ND		2	0.49	ND		2	0.49	ND		2	0.49
4-Nitroaniline	100-01-6	NS	ND		5	0.8	ND		5	0.8	ND		5	0.8	ND		5	0.8	ND		5	0.8	ND		5	0.8	ND		5	0.8	ND		5	0.8
Acenaphthene	83-32-9	400	13		2	0.44	5.5		2	0.44	6.1		2	0.44	ND		2	0.44	ND		2	0.44	ND		2	0.44	ND		2	0.44	ND		2	0.44
Acenaphthylene	208-96-8	100	ND		2	0.46	ND		2	0.46	1.2	J	2	0.46	ND		2	0.46	ND		2	0.46	ND		2	0.46	ND		2	0.46	ND		2	0.46
Acetophenone	98-86-2	700	ND		5	0.53	ND		5	0.53	18		5	0.53	ND		5	0.53	ND		5	0.53	ND		5	0.53	ND		5	0.53	ND		5	0.53
Anthracene	120-12-7	2,000	6.3		2	0.33	1.7	J	2	0.33	2.1		2	0.33	ND		2	0.33	ND		2	0.33	ND		2	0.33	ND		2	0.33	ND		2	0.33
Atrazine	1912-24-9	3	ND		3	0.76	ND		3	0.76	ND		3	0.76	ND		3	0.76	ND		3	0.76	ND		3	0.76	ND		3	0.76	ND		3	0.76
Benzaldehyde	100-52-7	NS	ND		5	0.53	ND		5	0.53	ND		5	0.53	ND		5	0.53	ND		5	0.53	ND		5	0.53	ND		5	0.53	ND		5	0.53
Benzo(ghi)perylene	191-24-2	100	ND		2	0.3	ND		2	0.3	ND		2	0.3	ND		2	0.3	ND		2	0.3	ND		2	0.3	ND		2	0.3	ND		2	0.3
Biphenyl	92-52-4	400	21		2	0.46	13		2	0.46	5.9		2	0.46	ND		2	0.46	ND		2	0.46	1	J	2	0.46	ND		2	0.46	ND		2	0.46
Bis(2-chloroethoxy)methane	111-91-1	NS	ND		5	0.5	ND		5	0.5	ND		5	0.5	ND		5	0.5	ND		5	0.5	ND		5	0.5	ND		5	0.5	ND		5	0.5
Bis(2-chloroethyl)ether	111-44-4	7	ND		2	0.5	ND		2	0.5	ND		2	0.5	ND		2	0.5	ND		2	0.5	ND		2	0.5	ND		2	0.5	ND		2	0.5
Bis(2-chloroisopropyl)ether	108-60-1	300	ND		2	0.53	ND		2	0.53	ND		2	0.53	ND		2	0.53	ND		2	0.53	ND		2	0.53	ND		2	0.53	ND		2	0.53
Bis(2-ethylhexyl)phthalate	117-81-7	3	ND		3	1.5	1.6	J	3	1.5	ND		3	1.5	ND		3	1.5	ND		3	1.5	ND		3	1.5	ND		3	1.5	ND		3	1.5
Butyl benzyl phthalate	85-68-7	100	ND		5	1.2	ND		5	1.2	ND		5	1.2	ND		5	1.2	ND		5	1.2	ND		5	1.2	ND		5	1.2	ND		5	1.2
Caprolactam	105-60-2	4,000	ND		10	3.3	ND		10	3.3	ND		10	3.3	9	J	10	3.3	42		10	3.3	ND		10	3.3	ND		10	3.3	ND		10	3.3
Carbazole	86-74-8	NS	14		2	0.49	13		2	0.49	3.1		2	0.49	ND		2	0.49	ND		2	0.49	ND		2	0.49	ND		2	0.49	ND		2	0.49
Chrysene	218-01-9	5	1.1	J	2	0.34	0.36	J	2	0.34	ND		2	0.34	ND		2	0.34	ND		2	0.34	ND		2	0.34	ND		2	0.34	ND		2	0.34
Di-n-butylphthalate	84-74-2	700	ND		5	0.39	ND		5	0.39	ND		5	0.39	ND		5	0.39	ND		5	0.39	ND		5	0.39	ND		5	0.39	ND		5	0.39
Di-n-octylphthalate	117-84-0	100	ND		5	1.3	ND		5	1.3	ND		5	1.3	ND		5	1.3	ND		5	1.3	ND		5	1.3	ND		5	1.3	ND		5	1.3
Dibenzofuran	132-64-9	NS	6.8		2	0.5	3.2		2	0.5	3.2		2	0.5	ND		2	0.5	ND		2	0.5	ND		2	0.5	ND		2	0.5	ND		2	0.5
Diethyl phthalate	84-66-2	6,000	ND		5	0.38	ND		5	0.38	ND		5	0.38	ND		5	0.38	ND		5	0.38	ND		5	0.38	ND		5	0.38	ND		5	0.38
Dimethyl phthalate	131-11-3	100	ND		5	1.8	ND		5	1.8	ND		5	1.8	ND		5	1.8	ND		5	1.8	ND		5	1.8	ND		5	1.8	ND		5	1.8
Fluoranthene	206-44-0	300	1.5	J	2	0.26	0.49	J	2	0.26	ND		2	0.26	ND		2	0.26	ND		2	0.26	ND		2	0.26	ND		2	0.26	ND		2	0.26
Fluorene	86-73-7	300	20		2	0.41	9.2		2	0.41	9.3		2	0.41	ND		2	0.41	ND		2	0.41	ND		2	0.41	ND		2	0.41	ND		2	0.41
Hexachlorocyclopentadiene	77-47-4	40	ND		20	0.69	ND		20	0.69	ND		20	0.69	ND		20	0.69	ND		20	0.69	ND		20	0.69	ND		20	0.69	ND		20	0.69
Hexachloroethane	67-72-1	7	ND		2	0.58	ND		2	0.58	ND		2	0.58	ND		2	0.58	ND		2	0.58	ND		2	0.58	ND		2	0.58	ND		2	0.58
Isophorone	78-59-1	40	ND		5	1.2	ND		5	1.2	ND		5	1.2	ND		5	1.2	ND		5	1.2	ND		5	1.2	ND		5	1.2	ND		5	1.2
n-Nitrosodi-n-propylamine	621-64-7	NS	ND		5	0.64	ND		5	0.64	ND		5	0.64	ND		5	0.64	ND		5	0.64	ND		5	0.64	ND		5	0.64	ND		5	0.64
Naphthalene	91-20-3	300	140		2	0.46	80		2	0.46	74		2	0.46	ND		2	0.46	ND		2	0.46	ND		2	0.46	ND		2	0.46	ND		2	0.46
NDPA/DPA	86-30-6	10	ND		2	0.42	ND		2	0.42	ND		2	0.42	ND		2	0.42	ND		2	0.42	ND		2	0.42	ND		2	0.42	ND		2	0.42
Nitrobenzene	98-95-3	6	ND		2	0.77	ND		2	0.77	ND		2	0.77	ND		2	0.77	ND		2	0.77	ND		2	0.77	ND		2	0.77	ND		2	0.77
Phenanthrene	85-01-8	100	44		2	0.33	16		2	0.33	17		2	0.33	ND		2	0.33	ND		2	0.33	0.63	J	2	0.33	ND		2	0.33	ND		2	0.33
Pyrene	129-00-0	200	8.3		2	0.28	2.7		2	0.28	2.8		2	0.28	ND		2	0.28	ND		2	0.28	ND		2	0.28	ND		2	0.28	ND		2	0.28
Highest TIC		100	47.5	J	-	-	**336**	J	-	-	**116**	J	-	-	18.2	J	-	-	17.8	JB	-	-	6.07	JB	-	-	13.9	JB	-	-	165	J	-	-
Total TIC Compounds		500	454	J	-	-	**1150**	J	-	-	**699**	J	-	-	121	J	-	-	123	J	-	-	25.8	J	-	-	63	J	-	-	309	J	-	-
BASE/NEUTRAL EXTRACTABLES																																		
Benzo(a)anthracene	56-55-3	0.1	**0.41**		0.1	0.02	**0.17**		0.1	0.02	**0.2**		0.1	0.02	0.08	J	0.1	0.02	0.06	J	0.1	0.02	0.06	J	0.1	0.02	0.04	J	0.1	0.02	0.03	J	0.1	0.02
Benzo(a)pyrene	50-32-8	0.1	0.03	J	0.1	0.02	0.03	J	0.1	0.02	0.02	J	0.1	0.02	0.04	J	0.1	0.02	0.03	J	0.1	0.02	0.02	J	0.1	0.02	0.03	J	0.1	0.02	ND		0.1	0.02
Benzo(b)fluoranthene	205-99-2	0.2	0.05	J	0.1	0.01	0.03	J	0.1	0.01	0.02	J	0.1	0.01	0.06	J	0.1	0.01	0.03	J	0.1	0.01	0.03	J	0.1	0.01	0.03	J	0.1	0.01	0.02	J	0.1	0.01
Benzo(k)fluoranthene	207-08-9	0.5	0.01	J	0.1	0.01	0.01	J	0.1	0.01	ND		0.1	0.01	0.02	J	0.1	0.01	ND		0.1	0.01	ND		0.1	0.01	0.01	J	0.1	0.01	ND		0.1	0.01
Dibenzo(a,h)anthracene	53-70-3	0.3	ND		0.1	0.01	ND		0.1	0.01	ND		0.1	0.01	ND		0.1	0.01	ND		0.1	0.01	ND		0.1	0.01	ND		0.1	0.01	ND		0.1	0.01
Hexachlorobenzene	118-74-1	0.02	ND		0.02	0.01	ND		0.02	0.01	ND		0.02	0.01	ND		0.02	0.01	ND		0.02	0.01	ND		0.02	0.01	ND		0.02	0.01	ND		0.02	0.01
Hexachlorobutadiene	87-68-3	1	ND		1	0.05	ND		1	0.05	ND		1	0.05	ND		1	0.05	ND		1	0.05	ND		1	0.05	ND		1	0.05	ND		1	0.05
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	0.02	J	0.1	0.01	0.02	J	0.1	0.01	ND		0.1	0.01	0.03	J	0.1	0.01	0.02	J	0.1	0.01	ND		0.1	0.01	0.02	J	0.1	0.01	ND		0.1	0.01

Notes:
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RL/MDL	- Bold RL/MDL indicates that the RL/MDL is greater than the GWQS standard
µg/L	- Microgram Per Liter

Environmental LOGIC

TABLE 2

251 Grove Avenue
Block 1201, Lot 12
Verona, Essex County, New Jersey

Summary of Volatile Organic Compounds Results for Ground Water

SAMPLE ID: / LAB ID: / COLLECTION DATE:	NJ Class II-A Groundwater Quality Standards (March 2022) (ug/l)	TWP-1 L2313975-01 3/16/2023				TWP-2 L2313975-02 3/16/2023			
		Result	Q	RL	MDL	Result	Q	RL	MDL
VOLATILE ORGANICS									
1,1,1-Trichloroethane	30	ND		0.5	0.16	ND		0.5	0.16
1,1,2,2-Tetrachloroethane	1	ND		0.5	0.17	ND		0.5	0.17
1,1,2-Trichloroethane	3	ND		0.75	0.14	ND		0.75	0.14
1,1-Dichloroethane	50	ND		0.75	0.21	ND		0.75	0.21
1,1-Dichloroethene	1	ND		0.5	0.17	ND		0.5	0.17
1,2,3-Trichlorobenzene	NS	ND		2.5	0.23	ND		2.5	0.23
1,2,4-Trichlorobenzene	9	ND		2.5	0.22	ND		2.5	0.22
1,2,4-Trimethylbenzene	100	ND		2.5	0.19	ND		2.5	0.19
1,2-Dibromo-3-chloropropane	0.02	ND		**2.5**	**0.35**	ND		**2.5**	**0.35**
1,2-Dibromoethane	0.03	ND		**2**	**0.19**	ND		**2**	**0.19**
1,2-Dichlorobenzene	600	ND		2.5	0.18	ND		2.5	0.18
1,2-Dichloroethane	2	0.14	J	0.5	0.13	ND		0.5	0.13
1,2-Dichloroethene, Total	NS	ND		0.5	0.16	ND		0.5	0.16
1,2-Dichloropropane	1	ND		1	0.14	ND		1	0.14
1,3-Dichlorobenzene	600	ND		2.5	0.19	ND		2.5	0.19
1,3-Dichloropropene, Total	1	ND		0.5	0.14	ND		0.5	0.14
1,4-Dichlorobenzene	75	ND		2.5	0.19	ND		2.5	0.19
1,4-Dioxane	0.4	ND		**250**	**61**	ND		**250**	**61**
2-Butanone	300	ND		5	1.9	ND		5	1.9
2-Hexanone	40	ND		5	0.52	ND		5	0.52
4-Methyl-2-pentanone	NS	ND		5	0.42	ND		5	0.42
Acetone	6000	ND		5	1.5	ND		5	1.5
Benzene	1	ND		0.5	0.08	ND		0.5	0.08
Bromochloromethane	NS	ND		2.5	0.15	ND		2.5	0.15
Bromodichloromethane	1	ND		0.5	0.19	ND		0.5	0.19
Bromoform	4	ND		2	0.25	ND		2	0.25
Bromomethane	10	ND		1	0.26	ND		1	0.26
Carbon disulfide	700	ND		5	0.3	ND		5	0.3
Carbon tetrachloride	1	ND		0.5	0.13	ND		0.5	0.13
Chlorobenzene	50	ND		0.5	0.18	ND		0.5	0.18
Chloroethane	5	ND		1	0.13	ND		1	0.13
Chloroform	70	ND		0.75	0.22	ND		0.75	0.22
Chloromethane	NS	ND		2.5	0.2	ND		2.5	0.2
cis-1,2-Dichloroethene	70	ND		0.5	0.19	ND		0.5	0.19
cis-1,3-Dichloropropene	NS	ND		0.5	0.14	ND		0.5	0.14
Cyclohexane	NS	ND		10	0.27	ND		10	0.27
Dibromochloromethane	1	ND		0.5	0.15	ND		0.5	0.15
Dichlorodifluoromethane	1000	ND		5	0.24	ND		5	0.24
Ethylbenzene	700	ND		0.5	0.17	ND		0.5	0.17
Freon-113	20000	ND		2.5	0.15	ND		2.5	0.15
Isopropylbenzene	700	ND		0.5	0.19	ND		0.5	0.19
Methyl Acetate	7000	ND		2	0.23	ND		2	0.23
Methyl cyclohexane	NS	ND		10	0.4	ND		10	0.4
Methyl tert butyl ether	70	1.5		1	0.17	ND		1	0.17
Methylene chloride	3	ND		2.5	0.68	ND		2.5	0.68
o-Xylene	NS	ND		1	0.39	ND		1	0.39
p/m-Xylene	NS	0.36	J	1	0.33	ND		1	0.33
Styrene	100	ND		1	0.36	ND		1	0.36
Tetrachloroethene	1	ND		0.5	0.18	ND		0.5	0.18
Toluene	600	ND		0.75	0.2	ND		0.75	0.2
trans-1,2-Dichloroethene	100	ND		0.75	0.16	ND		0.75	0.16
trans-1,3-Dichloropropene	NS	ND		0.5	0.16	ND		0.5	0.16
Trichloroethene	1	ND		0.5	0.18	ND		0.5	0.18
Trichlorofluoromethane	2000	ND		2.5	0.16	ND		2.5	0.16
Vinyl chloride	1	ND		0.2	0.07	ND		0.2	0.07
Xylenes, Total	1000	0.36	J	1	0.33	ND		1	0.33
Total VOCs	NS	2	-	-	-	-	-	-	-
Highest TIC	100	ND		-	-	ND		-	-
Total TIC Compounds	500	ND		-	-	ND		-	-

Notes:
All results are reported in µg/L

Bold	- Indicates a concentration detected above NJ Class II-A Groundwater Quality Standards (GWQS)
NS	- No Standard
NSLE	- No Screening Level Established
ND	- None detected
~	- Compound Not Analyzed
Q	- Qualifier
RL	- Reporting Limit
MDL	- Method Detection Limit
J	- The concentration was detected at a value below the detection limit, but greater than zero
RL/MDL	- Bold RL/MDL indicates that the RL/MDL is greater than the GWQS standard
µg/L	- Microgram Per Liter

Environmental LOGIC

TABLE 2

251 Grove Avenue
Block 1201, Lot 12
Verona, Essex County, New Jersey

Summary of Base/ Neutral Compounds Results for Ground Water

SAMPLE ID: LAB ID: COLLECTION DATE:	NJ Class II-A Groundwater Quality Standards (March 2022) (ug/l)	TWP-1 L2313975-01 3/16/2023				TWP-2 L2313975-02 3/16/2023			
		Result	Q	RL	MDL	Result	Q	RL	MDL
BASE/NEUTRAL EXTRACTABLES									
1,2,4,5-Tetrachlorobenzene	NS	ND		10	0.44	ND		10	0.44
2,4-Dinitrotoluene	10	ND		5	1.2	ND		5	1.2
2,6-Dinitrotoluene	10	ND		5	0.93	ND		5	0.93
2-Chloronaphthalene	600	ND		2	0.44	ND		2	0.44
2-Methylnaphthalene	30	ND		2	0.45	ND		2	0.45
2-Nitroaniline	NS	ND		5	0.5	ND		5	0.5
3,3'-Dichlorobenzidine	30	ND		5	1.6	ND		5	1.6
3-Nitroaniline	NS	ND		5	0.81	ND		5	0.81
4-Bromophenyl phenyl ether	NS	ND		2	0.38	ND		2	0.38
4-Chloroaniline	30	ND		5	1.1	ND		5	1.1
4-Chlorophenyl phenyl ether	NS	ND		2	0.49	ND		2	0.49
4-Nitroaniline	NS	ND		5	0.8	ND		5	0.8
Acenaphthene	400	ND		2	0.44	ND		2	0.44
Acenaphthylene	100	ND		2	0.46	ND		2	0.46
Acetophenone	700	ND		5	0.53	ND		5	0.53
Anthracene	2000	ND		2	0.33	ND		2	0.33
Atrazine	3	ND		3	0.76	ND		3	0.76
Benzaldehyde	NS	ND		5	0.53	ND		5	0.53
Benzo(ghi)perylene	100	ND		2	0.3	ND		2	0.3
Biphenyl	400	ND		2	0.46	ND		2	0.46
Bis(2-chloroethoxy)methane	NS	ND		5	0.5	ND		5	0.5
Bis(2-chloroethyl)ether	7	ND		2	0.5	ND		2	0.5
Bis(2-chloroisopropyl)ether	300	ND		2	0.53	ND		2	0.53
Bis(2-ethylhexyl)phthalate	3	ND		3	1.5	ND		3	1.5
Butyl benzyl phthalate	100	ND		5	1.2	ND		5	1.2
Caprolactam	4000	ND		10	3.3	ND		10	3.3
Carbazole	NS	ND		2	0.49	ND		2	0.49
Chrysene	5	ND		2	0.34	ND		2	0.34
Di-n-butylphthalate	700	ND		5	0.39	ND		5	0.39
Di-n-octylphthalate	100	ND		5	1.3	ND		5	1.3
Dibenzofuran	NS	ND		2	0.5	ND		2	0.5
Diethyl phthalate	6000	ND		5	0.38	ND		5	0.38
Dimethyl phthalate	100	ND		5	1.8	ND		5	1.8
Fluoranthene	300	ND		2	0.26	0.4	J	2	0.26
Fluorene	300	ND		2	0.41	ND		2	0.41
Hexachlorocyclopentadiene	40	ND		20	0.69	ND		20	0.69
Hexachloroethane	7	ND		2	0.58	ND		2	0.58
Isophorone	40	ND		5	1.2	ND		5	1.2
n-Nitrosodi-n-propylamine	NS	ND		5	0.64	ND		5	0.64
Naphthalene	300	ND		2	0.46	ND		2	0.46
NDPA/DPA	10	ND		2	0.42	ND		2	0.42
Nitrobenzene	6	ND		2	0.77	ND		2	0.77
Phenanthrene	100	ND		2	0.33	ND		2	0.33
Pyrene	200	ND		2	0.28	0.33	J	2	0.28
Highest TIC	100	70.4	JB	-	-	30	JB	-	-
Total TIC Compounds	500	140	J	-	-	174	J	-	-
BASE/NEUTRAL EXTRACTABLES									
Benzo(a)anthracene	0.1	0.03	J	0.1	0.02	**0.26**		0.1	0.02
Benzo(a)pyrene	0.1	ND		0.1	0.02	**0.29**		0.1	0.02
Benzo(b)fluoranthene	0.2	0.02	J	0.1	0.01	**0.35**		0.1	0.01
Benzo(k)fluoranthene	0.5	0.01	J	0.1	0.01	0.09	J	0.1	0.01
Dibenzo(a,h)anthracene	0.3	ND		0.1	0.01	ND		0.1	0.01
Hexachlorobenzene	0.02	ND		0.02	0.01	ND		0.02	0.01
Hexachlorobutadiene	1	ND		1	0.05	ND		1	0.05
Indeno(1,2,3-cd)pyrene	0.2	0.01	J	0.1	0.01	**0.2**		0.1	0.01

Notes:
All results are reported in µg/L

Bold - Indicates a concentration detected above NJ Class II-A Groundwater Quality Standards (GWQS)
NS - No Standard
NSLE - No Screening Level Established
ND - None detected
~ - Compound Not Analyzed
Q - Qualifier
RL - Reporting Limit
MDL - Method Detection Limit
J - The concentration was detected at a value below the detection limit, but greater than zero
RL/MDL - Bold RL/MDL indicates that the RL/MDL is greater than the GWQS standard
µg/L - Microgram Per Liter

Environmental LOGIC

TABLE 3

251 Grove Avanue
Verona, New Jersey

Proposed Injection Plan - BOS 200 Trap and Treat

Area	Area	Treatment Depth [1]	Treatment Interval	Pt Spacing	# Points	BOS 200®	Gypsum (Terra Alba F&P)	Trap and Treat Bacteria Concentrate	Injection Volume
	(sq ft)	(ft bgs)	(ft)	(ft)		(lbs)	(lbs)	(gal)	(gal)
Former UST-1 Area	600	5-17	12	5	25	1,600	4,700	5	2,500

Notes.
1. Safety Data Sheets (SDS) for each reagent are included as Appendix A.

Environmental LOGIC

TABLE 4

251 Grove Avenue
Verona, New Jersey

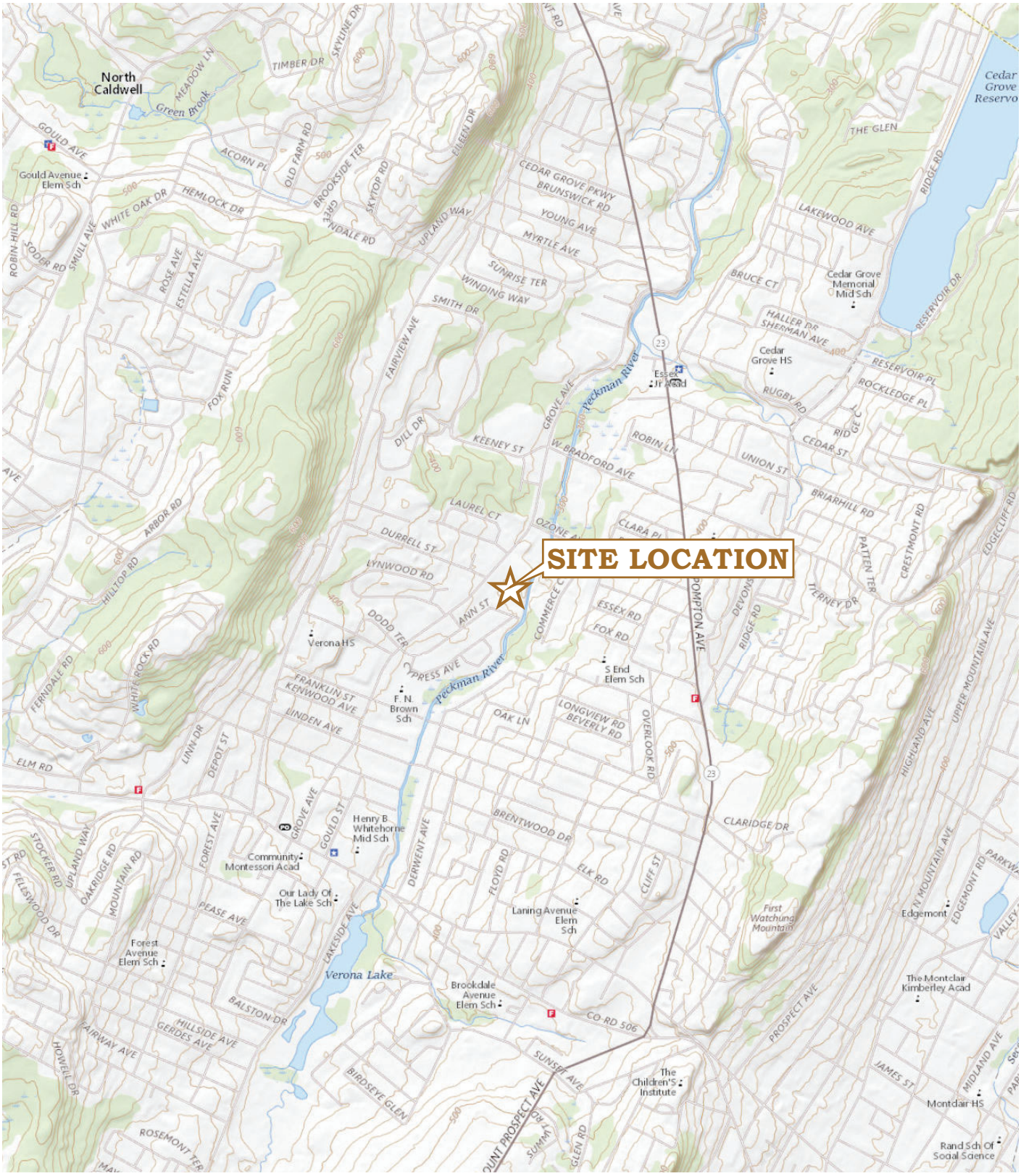
Groundwater Monitoring Plan

WELLS	Frequency[1]	VOCs + TICs	BNs + TICs	Calcium	Sulfate
MW-1	Quarterly	x	x	x	x
MW-4	Quarterly	x	x	x	x

Notes:
1. Water quality indicator parameters including, depth to water, dissolved oxygen, oxidation reduction potential (ORP), conductivity, pH and temperature will be collected during each sampling event.
VOCs = volatile organic compounds (VOCs)
BN - Base Neturals
TICs = tentatively identified compounds (TICs)

Environmental LOGIC

FIGURES



NEW JERSEY
QUADRANGLE LOCATION

GRAPHIC SCALE

0 1,000 2,000 4,000

(IN FEET)

N
W E
S

USGS The National Map
USGS 7.5 Minute Series Topographic Map of Orange, New Jersey

PM File: 251GA_VeronaNJ-F1_SLM.mxd

Environmental LOGIC
11 Princess Road Suite B,
Lawrencevill, NJ 08648

Scale: AS SHOWN		PROJECT: 20-0012
Date: 7/14/21		
Drawn By: PM	Checked By: KL	

USGS TOPOGRAPHIC SITE LOCATION MAP
251 GROVE AVENUE
VERONA, NEW JERSEY

FIGURE # 1



MW-2	2/4/2022	10/20/2022
VOCs	ND or Below GWQS	ND or Below GWQS
VOC TICs (Individual)	10.3	13.2 J
VOC TICs (Total)	74	103 J
BNs	ND or Below GWQS	ND or Below GWQS
BN TICs (Individual)	64.2	18.2 J
BN TICs (Total)	148	121 J

MW-3	2/4/2022	10/20/2022	2/24/2023
VOCs	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS
VOC TICs (Individual)	ND	ND	ND
VOC TICs (Total)	ND	ND	ND
BNs	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS
BN TICs (Individual)	7.09 JB	17.8 JB	6.07 JB
BN TICs (Total)	14.2 J	123 J	25.8 J

MW-4	5/3/2023
VOCs	ND or Below GWQS
VOC TICs (Individual)	ND
VOC TICs (Total)	ND
BNs	ND or Below GWQS
BN TICs (Individual)	13.9 JB
BN TICs (Total)	63 J

TWP-2	3/16/2023
VOCs	ND or Below GWQS
VOC TICs (Individual)	ND
VOC TICs (Total)	ND
BNs	ND or Below GWQS
BN TICs (Individual)	30 JB
BN TICs (Total)	74 J
Benzo(a)anthracene	**0.26**
Benzo(a)pyrene	**0.29**
Benzo(b)fluoranthene	**0.35**
Indeno(1,2,3-cd)pyrene	**0.2**

TWP-1	3/16/2023
VOCs	ND or Below GWQS
VOC TICs (Individual)	ND
VOC TICs (Total)	ND
BNs	ND or Below GWQS
BN TICs (Individual)	70.4
BN TICs (Total)	140

MW-1	2/4/2022	10/20/2022	2/24/2023	5/3/2023
1,2,4-Trimethylbenzene	NA	NA	**240**	**300**
Benzene	**9.2**	**10**	**11**	**10**
VOCs	All Other VOCs ND or Below GWQS	All Other VOCs ND or Below GWQS	All Other VOCs ND or Below GWQS	All Other VOCs ND or Below GWQS
VOC TICs (Individual)	**286 J**	**260 J**	20.7 J	38 J
VOC TICs (Total)	**1730 J**	**1,730 J**	142 J	244
Benzo(a)anthracene	0.07 J	**0.41**	**0.17**	**0.20**
2-Methylnaphthalene	**84**	**210**	**130**	**97**
BNs	All Other BNs ND or Below GWQS	All Other BNs ND or Below GWQS	All Other BNs ND or Below GWQS	All Other BNs ND or Below GWQS
BN TICs (Individual)	**125**	47.5 NJ	**336 J**	**116 J**
BN TICs (Total)	**997**	454 J	**1,150 J**	**699 J**

MW-5	5/3/2023
VOCs	ND or Below GWQS
VOC TICs (Individual)	ND
VOC TICs (Total)	ND
BNs	ND or Below GWQS
BN TICs (Individual)	165 J
BN TICs (Total)	309 J

LEGEND

- FENCE
- ELECTRIC CABLING
- SANITARY SEWER PIPING
- STORM SEWER PIPING
- UNKNOWN UTILITY
- MW-1 MONITORING WELL LOCATION
- TWP-1 TEMPORARY WELL POINT LOCATION
- PROPOSED TREATMENT AREA

NOTES

- ALL RESULTS ARE REPORTED IN MICROGRAMS PER LITER (µg/L)
- ND NOT DETECTED ABOVE THE LABORATORY METHOD DETECTION LIMIT
- NA NOT ANALYZED
- VOCs VOLATILE ORGANIC COMPOUNDS
- BNs BASE/NEUTRAL COMPOUNDS
- TICs TENTATIVELY IDENTIFIED COMPOUNDS
- 10 INDICATES A CONCENTRATION DETECTED ABOVE NJDEP GWQS

NJ Class II-A Ground Water Quality Standards (GWQS)	
1,2,4-Trimethylbenzene	100
Benzene	1
Benzo(a)anthracene	0.1
2-Methylnaphthalene	30
Individual TICs (VOCs or BNs)	100
Total TICs (VOCs or BNs)	500

N W E S

GRAPHIC SCALE

0 30 60 120

(IN FEET)

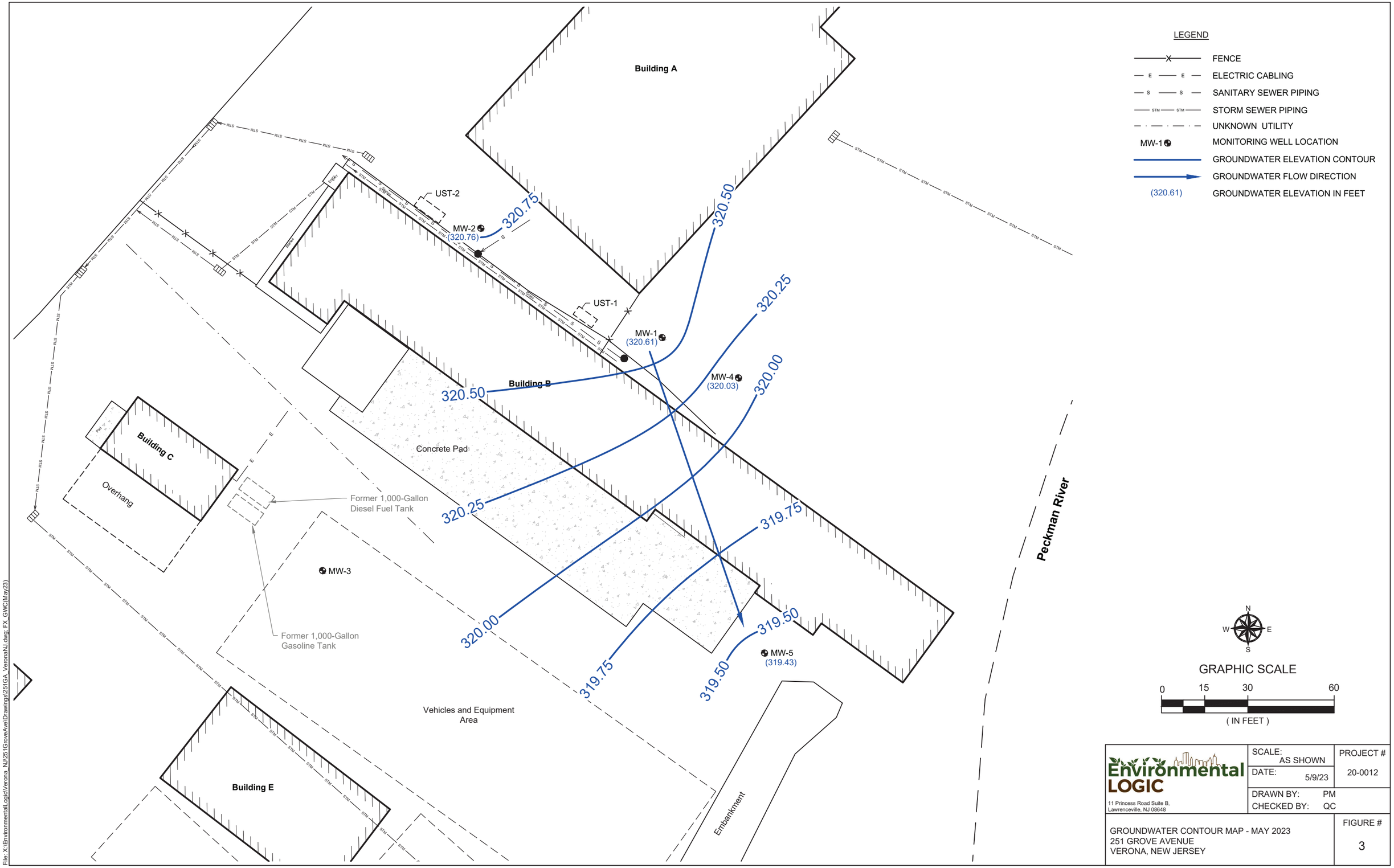
Environmental LOGIC
11 Princess Road Suite B,
Lawrenceville, NJ 08648

SCALE: AS SHOWN
DATE: 7/15/24
PROJECT # 20-0012
DRAWN BY: PM
CHECKED BY: LM

SITE MAP WITH MONITORING WELL RESULTS AND PROPOSED TREATMENT AREA
251 GROVE AVENUE
VERONA, NEW JERSEY

FIGURE # 2

File: X:\Environmental Logic\Verona_NJ\251GroveAve\Drawings\251GA_VeronaNJ.dwg; F2_MWAD



File: X:\EnvironmentalLogic\Verona_NJ\251GroveAve\Drawings\251GA_VeronaNJ.dwg; FX_GWC(May23)

Environmental LOGIC
11 Princess Road Suite B,
Lawrenceville, NJ 08648

SCALE: AS SHOWN	PROJECT # 20-0012
DATE: 5/9/23	
DRAWN BY: PM	
CHECKED BY: QC	

GROUNDWATER CONTOUR MAP - MAY 2023
251 GROVE AVENUE
VERONA, NEW JERSEY

FIGURE # 3

Compound	Residential Soil Remediation Standards for the Ingestion-Dermal Pathway (May 2021)	Non-Residential Soil Remediation Standards for the Ingestion-Dermal Pathway (May 2021)	Residential Inhalation Soil Remediation Standards (May 2021)	Non-Residential Inhalation Soil Remediation Standard (May 2021)	Migration to Ground Water Soil Remediation Standard (May 2021)
Naphthalene	2,500	34,000	5.7	27	19
2-Methylnaphthalene	240	3,300	NS	NS	3.1

Compound	Residential Soil Remediation Standards for the Ingestion-Dermal Pathway (May 2021)	Non-Residential Soil Remediation Standards for the Ingestion-Dermal Pathway (May 2021)	NJDEP Default EPH Product Limit	Trigger for Contingent Analysis
EPH Category 1	5,300	75,000	8,000	1,000

LEGEND

- FENCE
- SANITARY SEWER PIPING
- STORM SEWER PIPING
- SOIL EXCAVATION, JULY 2021
- ADDITIONAL SOIL EXCAVATION, DEC 2021
- UST1-C1 — SOIL SAMPLE

NOTES:

- ALL SOIL RESULTS REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg)
- ND — NOT DETECTED ABOVE THE LABORATORY METHOD DETECTION LIMIT
- NS — NO STANDARD
- VOCs — VOLATILE ORGANIC COMPOUNDS
- EPH — EXTRACTABLE PETROLEUM HYDROCARBONS
- ^ — INDICATES THE SAMPLE WAS COLLECTED IN THE SATURATED ZONE AND THEFORE THE MGWSRS DOES NOT APPLY. APPROXIMATE DEPTH TO GROUNDWATER IS 8 FEET BGS IN THE AREA OF UST-1 AND 6 FEET BGS IN THE AREA OF UST-2
- *10* — RESULTS EXCEED APPLICABLE NJDEP MIGRATION TO GROUND WATER SOIL REMEDIATION STANDARDS
- **10** — RESULTS EXCEED APPLICABLE NJDEP RESIDENTIAL INHALATION AND/OR INGESTION DERMAL SOIL REMEDIATION STANDARDS
- 10 — RESULTS EXCEED APPLICABLE NJDEP NON-RESIDENTIAL INHALATION AND/OR INGESTION-DERMAL SOIL REMEDIATION STANDARDS
- **5,550** — EPH RESULTS EXCEED APPLICABLE NJDEP INGESTION DERMAL SOIL REMEDIATION STANDARDS AND/OR DEFAULT EPH PRODUCT LIMIT

Entry

Building B

UST-2

UST2-C2	7/12/2021
	8-8.5
EPH	**8,540**
Naphthalene	3.1
2-Methylnaphthalene	*18*

UST2-SW-4	7/12/2021
	6-6.5
EPH	3,350

UST2-SW-1	7/12/2021
	6-6.5
EPH	2,290

UST2-C1	7/12/2021
	8-8.5
EPH	3,830

UST2-SW-3	7/12/2021
	6-6.5
EPH	2,070

UST2-SW-S	12/14/2021
	6-6.5
EPH	1,750
Naphthalene	ND
2-Methylnaphthalene	ND

UST2-B	12/13/2021
	10-10.5
EPH	ND

UST2-SW-2	7/12/2021
	6-6.5
EPH	**5,550**
Naphthalene	3.9
2-Methylnaphthalene	*26*

UST1-C2	7/12/2021
	8-8.5
EPH	3,250

UST1-SW-4	7/12/2021
	6-6.5
EPH	**5,550**

UST1-SW-2	7/12/2021
	6-6.5
EPH	2,270

UST1-SW-W	12/14/2021
	6-6.5
EPH	1,930

UST1-B	12/14/2021
	13-13.5
EPH	2,260
Naphthalene	3
2-Methylnaphthalene	6.3^

UST-1

UST1-C1	7/12/2021
	8-8.5
EPH	**34,600**
Naphthalene	*57*
2-Methylnaphthalene	*160*

UST1-SW-E	12/14/2021
	6-6.5
EPH	ND

UST1-SW-S	12/14/2021
	6-6.5
EPH	632

UST1-SW-3	7/12/2021
	6-6.5
EPH	**7,440**

UST1-SW-1	7/12/2021
	6-6.5
EPH	**21,100**
Naphthalene	**18**
2-Methylnaphthalene	*49*

N W E S

GRAPHIC SCALE

0 5 10 20

(IN FEET)

Environmental LOGIC
11 Princess Road Suite B,
Lawrenceville, NJ 08648

SCALE: AS SHOWN	PROJECT # 20-0012
DATE: 11/21/22	
DRAWN BY: PM	
CHECKED BY: BM	

HEATING OIL UST SAMPLE LOCATIONS AND ANALYTICAL RESULTS
251 GROVE AVENUE
VERONA, NEW JERSEY

FIGURE # 4

File: X:\EnvironmentalLogic\Verona_NJ\251GroveAve\Drawings\251GA_VeronaNJ.dwg, F3_SSAD_UST(1&2)

APPENDIX A

Safety Data Sheets for Reagents

TRAP & TREAT® BOS 200®

Safety Data Sheet

Issued: 06/05/2015
Supersedes: 12/30/2011
Version: 1.0

SECTION 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1. Product identifier

Product name : Activated Carbon

Product form : Mixture

Product code : 3967

Other means of identification : Activated Carbon

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Adsorbent

1.3. Details of the supplier of the safety data sheet

Calgon Carbon Corporation
P.O. Box 717
Pittsburgh, PA 15230
412-787-6700

1.4. Emergency telephone number

Emergency number : CHEMTREC (24 HRS): 1-800-424-9300

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

GHS-US classification

Combustible Dust H232

Not classified as a simple asphyxiant. Product does not displace oxygen in the ambient atmosphere, but slowly adsorbs oxygen from a confined space when wet. Under conditions of anticipated and recommended use, product does not pose an asphyxiation hazard.

2.2. Label elements

GHS-US labeling

Signal word (GHS-US) : **Warning**

Hazard statements (GHS-US) : H232 - May form combustible dust concentrations in air

2.3. Other hazards

Other hazards not contributing to the classification : Wet activated carbon can deplete oxygen from air in enclosed spaces. If use in an enclosed space is required, procedures for work in an oxygen deficient environment should be followed.

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/Information on Ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%
Activated Carbon	(CAS No) 7440-44-0	≥ 80
Gypsum (Hydrated calcium sulfate)	(CAS No) 13397-24-5	< 20

SECTION 4: First Aid Measures

4.1. Description of first aid measures

First-aid measures general : If exposed or concerned, get medical attention/advice. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.

First-aid measures after inhalation : IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

First-aid measures after skin contact : IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin with water for at least 15 minutes.

First-aid measures after eye contact : IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do so. Continue rinsing.

First-aid measures after ingestion : IF SWALLOWED: Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use. However, dust may cause irritation and redness of the eyes, irritation of the skin and respiratory system. The effects of long-term, low-level exposures to this product have not been determined.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting Measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Carbon dioxide. Dry chemical. Foam. Sand.

Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Dust may be combustible under specific conditions. May be ignited by heat, sparks or flames.

Explosion hazard : Dust may form explosive mixture in air.

Reactivity : No dangerous reactions known under normal conditions of use. Carbon oxides, ammonia, or toxic halide fumes may be emitted upon combustion of the material.

5.3. Advice for firefighters

Firefighting instructions : Wear NIOSH-approved self-contained breathing apparatus suitable for the surrounding fire. Use water spray or fog for cooling exposed containers. Evacuate area.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate area. Keep upwind. Ventilate area. Spill should be handled by trained clean-up crews properly equipped with respiratory equipment and full chemical protective gear (see Section 8).

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent entry to sewers and public waters. Avoid release to the environment. Product is not soluble, but can cause particulate emission of discharged into waterways. Dike all entrances to sewers and drains to avoid introducing material to waterways. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Sweep or shovel spills into appropriate container for disposal. Minimize generation of dust.

Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Minimize generation of dust. Dispose of material in compliance with local, state, and federal regulations.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid dust formation. Avoid contact with skin, eyes and clothing. Do not handle until all safety precautions have been read and understood. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Keep away from sources of ignition - No smoking.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed in a cool, dry, and well-ventilated place. Keep away from ignition sources.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Activated Carbon (7440-44-0)*	
OSHA PEL (TWA) (mg/m³)	≤ 5 (Respirable Fraction) ≤ 15 (Total Dust)

Gypsum (Hydrated calcium sulfate) (13397-24-5)*	
OSHA PEL (TWA) (mg/m³)	≤ 5 (Respirable Fraction) ≤ 15 (Total Dust)

*Exposure limits are for inert or nuisance dust. No specific exposure limits have been established for this activated carbon product by OSHA or ACGIH.

8.2. Exposure controls

Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment with flammable materials. Ensure adequate ventilation, especially in confined areas. Wet activated carbon can deplete oxygen from air in enclosed spaces. If use in an enclosed space is required, procedures for work in an oxygen deficient environment should be followed.

Personal protective equipment : Gloves. Safety glasses. Insufficient ventilation: wear respiratory protection.



Hand protection : Gloves should be classified under Standard EN 374 or ASTM F1296. Suggested glove materials are: Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl. Suitable gloves for this specific application can be recommended by the glove supplier.

Eye protection : Use eye protection suitable to the environment. Avoid direct contact with eyes.

Skin and body protection : Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.

Respiratory protection : Use NIOSH-approved dust/particulate respirator. Where vapor, mist, or dust exceed PELs or other applicable OELs, use NIOSH-approved respiratory protective equipment.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Granular, powder, or pelletized substance
Color	: Black
Odor	: Odorless
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: Not applicable
Melting point	: Not applicable
Freezing point	: Not applicable
Boiling point	: Not applicable
Flash point	: No data available
Auto-ignition temperature	: > 220 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: > 220 °C
Vapor pressure	: Not applicable
Relative vapor density at 20 °C	: Not applicable
Apparent density	: 0.4 - 0.8 g/cc
Solubility	: Carbon and gypsum are insoluble; fertilizer components are soluble
Log Pow	: Not applicable
Log Kow	: Not applicable
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: Not applicable
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and Reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under use and storage conditions as recommended in section 7.

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

Avoid dust formation. Heat. Ignition sources. Exposure to high concentrations of organic compounds may cause bed temperature to rise.

10.5. Incompatible materials

Alkali metals. Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon monoxide (CO), carbon dioxide (CO_2). Ammonia. Toxic halide fumes.

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Activated Carbon (7440-44-0)	
LD50 oral rat	> 2000 mg/kg

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Silica: Crystalline, quartz (14808-60-7)	
IARC group	1 - Carcinogenic to humans
The International Agency for Research on Cancer (IARC) has classified "silica dust, crystalline, in the form of quartz or cristobalite" as carcinogenic to humans (group 1). However these warnings refer to crystalline silica dusts and do not apply to solid activated carbon containing crystalline silica as a naturally occuring, bound impurity. As such, we have not classified this product as a carcinogen in accordance with the US OSHA Hazard Communication Standard (29 CFR §1910.1200) but recommmend that users avoid inhalation of product in a dust form.	

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : Not classified

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use. However, dust may cause irritation and redness of the eyes, irritation of the skin and respiratory system. The effects of long-term, low-level exposures to this product have not been determined.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Waste treatment and disposal methods : Vacuum or shovel material into a closed container. Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment.

Additional information : Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbate. Consult U.S. EPA guidelines listed in 40 CFR 261.3 for more information on hazardous waste disposal.

SECTION 14: Transport Information

14.1. In accordance with DOT

Not classified as hazardous for domestic land transport

UN-No.(DOT) : None on finished product

DOT NA no. : None on finished product

Proper Shipping Name (DOT) : Not regulated

Department of Transportation (DOT) Hazard Classes : None on finished product

Hazard labels (DOT) : None on finished product

Packing group (DOT) : None on finished product

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : None on finished product

14.2. Transport by sea

Not classified as hazardous for water transport

IMO / IMDG

UN/NA Identification Number : None on finished product

UN- Proper Shipping Name : Not regulated

Transport Hazard Class : None on finished product

14.3. Air transport

Not classified as hazardous for air transport

ICAO / IATA

UN/NA No : None on finished product

UN- Proper Shipping Name : Not regulated

Transport Hazard Class : None on finished product

Packing Group : None on finished product

Marine Pollutant : None on finished product

14.4. Additional information

Other information : Under the UN classification for activated carbon, all activated carbons have been identified as a class 4.2 product. However, this product type or an equivalent has been tested according to the *United Nations Transport of Dangerous Goods* test protocol for a "self-heating substance" (*United Nations Transportation of Dangerous Goods, Manual of Tests and Criteria, Part III, Section 33.3.1.6 - Test N.4 - Test Method for Self Heating Substances)* and it has been specifically determined that this product type or an equivalent does not meet the definition of a DOT self-heating substance (class 4.2) or any other hazard class.

SECTION 15: Regulatory Information

15.1. US Federal regulations

Activated Carbon Profile 85	
All chemical substances in this product are listed in the EPA (Environment Protection Agency) TSCA (Toxic Substances Control Act) Inventory or are exempt.	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
Cobalt (7440-48-4)*	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on United States SARA Section 313	
SARA Section 313 - Emission Reporting	0.1 %

*Present below de minimis level

15.2. International regulations

No additional information available

15.3. US State regulations

California Proposition 65

WARNING: This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer, birth defects, or other reproductive harm.

Silica: Crystalline, quartz (14808-60-7)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes	No	No	No	NA
Cobalt (7440-48-4)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes	No	No	No	NA
Titanium dioxide (13463-67-7)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes	No	No	No	NA

Aluminum oxide (1344-28-1)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Massachusetts - Right to Know List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
Calcium sulfate (7778-18-9)
U.S. - Massachusetts - Right to Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List
Silica: Crystalline, quartz (14808-60-7)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right to Know List

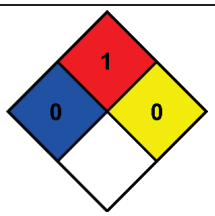
Gypsum (Hydrated calcium sulfate) (13397-24-5)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List
Ammonium Nitrate (6484-52-2)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List
Limestone (1317-65-3)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other Information

Indication of changes	:	Revision 1.0: New SDS Created.
Revision Date	:	06/05/2015
Other information	:	Author: CJS.
For internal use only	:	PR #85

Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

NFPA health hazard	: 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard	: 1 - Must be preheated before ignition can occur.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health	: 0
Flammability	: 1
Physical	: 0
Personal Protection	:

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. The information is this document applies to this specific material as supplied. It may not be valid if product is used in combination with other materials. It is the user's responsibility to determine the suitability and completeness of this information for their particular use. While the information and recommendations set forth herein are believed to be accurate as of the date hereof, Calgon Carbon Corporation makes no warranty with respect to the same, and disclaims all liability for reliance thereon.

Advanced Microbial Services Inc.

5738 S. 116th West Ave, Sand Springs, OK 74063, 918 246 9733

Safety Data Sheet

Section 1: Product Identification

Product Name:	Trap and Treat Bacteria Concentrate
Harmonized Tariff Code:	3002 90 10 00
Product Use:	Bioremediation agent, for petroleum hydrocarbons
Manufacturer Address:	Advanced Microbial Services Inc 5738 S. 116th West Ave Sand Springs, OK 74063
Phone/Email:	918-246-9733/advmicrobe@msn.com

Section 2: Hazards Identification

Emergency Overview: This product is not considered to be hazardous to animals, plants, humans or the environment. The microbes have not been genetically modified. This product has very low toxicity via ingestion, skin/eye contact or inhalation.

Possible routes of Entry: Inhalation, ingestion, eyes and skin.

Potential Health Effects from Over-exposure:

Acute:

- Skin/Eye Irritation: Direct contact with skin or eyes may cause mild irritation in some individuals.
- Inhalation: Inhalation of powder may cause respiratory tract irritation in some individuals.
- Ingestion: May cause nausea and diarrhea in some individuals.

Chronic:

- Symptoms: Available data does not suggest any long term symptoms from exposure.
- Aggravation: Available data does not suggest any aggravation of existing conditions.

Section Notes: In the unlikely event that over-exposure occurs, follow first aid measures in Section 4.

Section 3: Composition/Information on Ingredients

Ingredient	CAS No	Percent
Liquid mixture of microbial strains	Not applicable	4.37% (nominal)
Ferment residue (non-animal)	Not applicable	0.2% (nominal)
Water	Not applicable	95.43% (nominal)

Section Notes: This preparation contains no hazardous ingredients per Directive 67/548/EEC. (European Union - Dangerous Goods)

Section 4: First Aid Measures

General:	Remove from source of exposure. If irritation or other signs of exposure occur, seek medical attention.
Eyes:	Remove contact lenses if present and flush with water for 15 minutes.
Skin:	Remove contaminated clothing. Wash thoroughly with soap and rinse with water.
Inhalation:	Remove to fresh air. If person is not breathing, call an ambulance and perform artificial respiration.
Ingestion:	Do not induce vomiting. Give water if able to swallow.

Note to Physicians and First Aid Providers: This product has low oral, dermal and inhalation toxicity. Direct contact with eyes may cause temporary irritation. Provide symptomatic and supportive care as necessary.

Section 5: Fire Fighting Measures

General:	Use methods and protective gear that are appropriate for the conditions and size of the fire.
Extinguishing Media:	Use appropriate media for underlying cause and combustibles involved in the fire.
Special Equipment:	Self-contained breathing apparatus and full protective gear according to the conditions and size of the fire.

Section Notes: This material is not explosive and does not constitute a fire hazard.

Section 6: Accidental Release Measures

Personal Precautions:	Wear suitable protective clothing such as long-sleeved shirt, pants, waterproof gloves and shoes with socks.
Methods for Clean Up:	Carefully mop or sweep up spill and place in a closed container for disposal. Rinse area with water.

Section Notes: Refer to Section 8 for personal protection and Section 13 for disposal considerations.

Section 7: Handling and Storage

Handling:	Use handling procedures that minimize exposure to the product.
Storage:	Store in a refrigerator or alternatively a cool location in original container.

Section Notes: Avoid contact with skin, eyes and clothing. Wash any contamination from skin or eyes immediately. Wash hands and exposed skin before eating, drinking, smoking or using the toilet.

Section 8: Exposure Controls/Personal Protection

General:	Protective clothing should be selected according to the conditions likely to be encountered in the workplace. Ensure good ventilation. No exposure limits have been established.
Engineering Controls:	There are no specific engineering controls for this product.
Personal Protective Equipment:	
Respiratory:	If liquid is sprayed, use an approved droplet mask.
Eyes and Face:	Chemical safety goggles or safety glasses with side shields.
Hands/Skin:	Impermeable gloves of neoprene, vinyl, rubber or nitrile may be used to avoid contact.
Other Clothing:	Wear suitable protective clothing such as long-sleeve shirt, pants and shoes with socks.
Hygienic Practices:	Wash hands and exposed skin before eating, drinking, smoking or using the toilet.

Section 9: Physical and Chemical Properties

Appearance:	Tan to flesh colored
Form:	Liquid
Odor:	Creamed corn
Melting Point:	Not applicable
Boiling Point:	Not applicable
Solubility in Water:	Easily dispersible in water
Incompatibility:	None known

Section 10: Stability and Reactivity

Stability:	Stable, material is non-reactive.
Conditions to Avoid:	None that are known.
Materials to Avoid:	None that are known.
Hazardous Decomposition Products:	None that are known.
Hazardous Polymerization:	Will not occur.

Section 11: Toxicological Information

Possible Routes of Entry: Eyes and skin.

Potential Health Effects from Over-exposure:

Skin/Eye Irritation: Direct contact with skin or eyes may cause slight irritation in some individuals.

Inhalation: Not applicable

Section Notes: None of the components of this product are listed as carcinogenic by NTP, IARC or OSHA. While no toxicological studies have been performed on this product, no reports of toxicity have been reported in over 20 years of use. The microbial components are naturally occurring and are nonpathogenic for animal and plants. They have not been genetically modified.

Section 12: Ecological Information

Ecological Information: With regard to environmental fate and behavior, this product is not expected to impose any environmental risk. Without continuous application, populations revert to pre-inoculation numbers with no lasting impact on the environment and indigenous populations.

Ecotoxicity Information: This product has been in use for over 20 years for surface water, groundwater and land applications and has never been reported to be toxic to animals or plants.

Section 13: Disposal Considerations

Disposal Method: If this product becomes a waste it does not meet the criteria of a hazardous waste. As a non-hazardous solid waste, it can be disposed of in an industrial waste landfill in accordance with government regulations.

Empty Container: The empty container can be disposed of as a non-hazardous solid waste or alternatively returned to the vendor for recycle.

Section Notes: Regulatory requirements are subject to change and acceptable methods of disposal may vary by location. The appropriate agencies should be contacted for advisement prior to disposal.

Section 14: Transport Information

Land:	ADR/RID Class:	European transport of dangerous goods (Road/Rail)	Not controlled under ADR
Water:	IMDG Class:	Transport of hazardous materials by vessel	Not controlled under IMDG
Air:	IATA-DGR Class:	International Air Transport Assoc (Dangerous Goods)	Not controlled under IATA
Other:	U.S. DOT:	U.S. Department of Transportation	Not regulated

Section Notes: This product may require importation permits in some countries.

Section 15: Regulatory Information

Labeling According to EC Directives:

Symbol:	Not required
R-Phrases:	Not required
S Phrases: (Recommended)	S 2 Keep out of reach of children S20/21 When using do not eat, drink or smoke
U.S. EPA SARA: (Title III Classification)	No acute or chronic health hazards. No fire, release of pressure, or reactivity hazards.
U.S. EPA:	No registration required.

Section 16: Other Information

User's Responsibility	This material safety data sheet provides health and safety information. This product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to ensure safe workplace operations.

SAFETY DATA SHEET

1. Identification

Product identifier **Terra Alba F & P**

Other means of identification

SDS number 52000000116

Synonyms Filler

Recommended use Food & Pharmaceutical Filler.

Recommended restrictions Use in accordance with manufacturer's recommendations.

Manufacturer / Importer / Supplier / Distributor information

Company name United States Gypsum Company

Address 550 West Adams Street
Chicago, Illinois 60661-3637

Telephone 1-800-874-4968

Website www.usg.com

Emergency phone number 1-800-507-8899

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement None.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Get medical attention/advice if you feel unwell.

Storage Store as indicated in Section 7.

Disposal Dispose of in accordance with local, state, and federal regulations.

Hazard(s) not otherwise classified (HNOC) None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Calcium sulfate dihydrate (alternative CAS 10101-41-4)	13397-24-5	> 95

Composition comments All concentrations are in percent by weight unless ingredient is a gas.

4. First-aid measures

Inhalation Dust irritates the respiratory system, and may cause coughing and difficulties in breathing. Move injured person into fresh air and keep person calm under observation. Get medical attention if symptoms persist.

Skin contact Contact with dust: Rinse area with plenty of water. Get medical attention if irritation develops or persists.

Eye contact Dust in the eyes: Do not rub eyes. Flush thoroughly with water. If irritation occurs, get medical assistance.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed Under normal conditions of intended use, this product is not expected to be a health risk. Dust may irritate throat and respiratory system and cause coughing.

Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved.

5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	Not applicable.
Specific hazards arising from the chemical	Not a fire hazard.
Special protective equipment and precautions for firefighters	Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	Use standard firefighting procedures and consider the hazards of other involved materials.
Specific methods	Cool material exposed to heat with water spray and remove it if no risk is involved.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	See Section 8 of the SDS for Personal Protective Equipment.
Methods and materials for containment and cleaning up	Vacuum up the spilled material. Vacuums used for this purpose should be equipped with HEPA filters. Containers must be labeled. Collect in approved containers and seal securely. For waste disposal, see Section 13 of the SDS.
Environmental precautions	Avoid discharge to drains, sewers, and other water systems.

7. Handling and storage

Precautions for safe handling	Minimize dust production when mixing, or opening and closing bags. Avoid inhalation of dust. Wear appropriate personal protective equipment. Wash hands after handling. Observe good industrial hygiene practices and use appropriate lifting techniques.
Conditions for safe storage, including any incompatibilities	Store in a cool, dry, well-ventilated place. Store away from incompatible materials. Avoid contact with acids, water, and moisture.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Calcium sulfate dihydrate (alternative CAS 10101-41-4) (CAS 13397-24-5)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Calcium sulfate dihydrate (alternative CAS 10101-41-4) (CAS 13397-24-5)	TWA	10 mg/m3	Inhalable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Calcium sulfate dihydrate (alternative CAS 10101-41-4) (CAS 13397-24-5)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Total

Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Provide sufficient ventilation for operations causing dust formation. Observe occupational exposure limits and minimize the risk of exposure.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear approved safety goggles.

Skin protection	
Hand protection	It is a good industrial hygiene practice to minimize skin contact. For prolonged or repeated skin contact use suitable protective gloves.
Other	Normal work clothing (long sleeved shirts and long pants) is recommended.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Use a NIOSH/MSHA approved air purifying respirator as needed to control exposure. Consult with respirator manufacturer to determine respirator selection, use, and limitations. Use positive pressure, air-supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use.
Thermal hazards	None.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment separately from regular wash. Observe any medical surveillance requirements.

9. Physical and chemical properties

Appearance	
Physical state	Solid.
Form	Powder.
Color	White to off-white.
Odor	Low to no odor.
Odor threshold	Not applicable.
pH	6 - 8
Melting point/freezing point	Not applicable. Not applicable.
Initial boiling point and boiling range	Not applicable.
Flash point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable.
Flammability limit - upper (%)	Not applicable.
Explosive limit - lower (%)	Not applicable.
Explosive limit - upper (%)	Not applicable.
Vapor pressure	Not applicable.
Vapor density	Not applicable.
Relative density	2.96 (H2O=1)
Solubility(ies)	
Solubility (water)	0.15 - 0.4 g/100 g (H2O)
Partition coefficient (n-octanol/water)	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	2642 °F (1450 °C)
Viscosity	Not applicable.
Other information	
Bulk density	55 - 70 lb/ft³
Particle size	Varies.
VOC (Weight %)	0 %

10. Stability and reactivity

Reactivity	Not available.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

Conditions to avoid	Contact with incompatible materials. Exposure to moisture.
Incompatible materials	Strong oxidizing agents. Strong acids.
Hazardous decomposition products	Calcium oxides, carbon dioxide, and carbon monoxide.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Ingestion may cause irritation and stomach discomfort.
Inhalation	Airborne dust may irritate throat and upper respiratory system causing coughing.
Skin contact	Under normal conditions of intended use, this product does not pose a skin hazard.
Eye contact	Direct contact with airborne particulates may cause temporary irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Dust may irritate eyes and mucous membranes of the nose, throat and upper respiratory system causing sneezing and/or coughing.

Information on toxicological effects

Acute toxicity	Not expected to be a hazard under normal conditions of intended use.
Skin corrosion/irritation	Not a skin irritant.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not expected to cause respiratory sensitization based on non-skin sensitization history.
Skin sensitization	Not a skin sensitizer.
Germ cell mutagenicity	No evidence of mutagenicty found in Ames bacterial tests.
Carcinogenicity	This material is not classified as a carcinogen by IARC, ACGIH, NTP or OSHA.
Reproductive toxicity	Not expected to be a reproductive hazard.
Specific target organ toxicity - single exposure	No data available, but none expected.
Specific target organ toxicity - repeated exposure	No data available, but none expected.
Aspiration hazard	Due to the physical form of the product it is not an aspiration hazard.
Chronic effects	No other specific acute or chronic health impact noted.

12. Ecological information

Ecotoxicity The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species	Test Results
Calcium sulfate dihydrate (alternative CAS 10101-41-4) (CAS 13397-24-5)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	> 1970 mg/l, 96 hours

Persistence and degradability	Calcium sulfate dissolves in water forming calcium and sulfate ions.
Bioaccumulative potential	Bioaccumulation is not expected.
Mobility in soil	No data available.
Other adverse effects	None expected.

13. Disposal considerations

Disposal instructions	Dispose in accordance with applicable federal, state, and local regulations. Recycle responsibly.
Local disposal regulations	Dispose of in accordance with local regulations.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Dispose of in accordance with local regulations.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable. This product is a solid. Therefore, bulk transport is governed by IMSBC code.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200 (OSHA) and 8 CCR § 5194 (Cal/OSHA).

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Calcium sulfate dihydrate (alternative CAS 10101-41-4) (CAS 13397-24-5)

US. New Jersey Worker and Community Right-to-Know Act

Calcium sulfate dihydrate (alternative CAS 10101-41-4) (CAS 13397-24-5)

US. Pennsylvania Worker and Community Right-to-Know Law

Calcium sulfate dihydrate (alternative CAS 10101-41-4) (CAS 13397-24-5)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

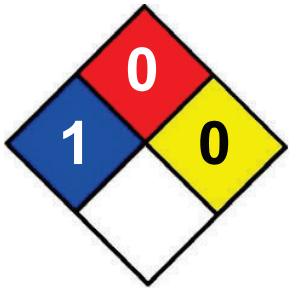
International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 03-April-2014

Revision date	-
Version #	01
Further information	NFPA Ratings: Health: 1 Flammability: 0 Physical hazard: 0 Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe
NFPA Ratings	
Disclaimer	This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.

New Jersey Department of Environmental Protection
Site Remediation and Waste Management Program

DISCHARGE TO GROUND WATER (DGW) PERMIT-BY-RULE AUTHORIZATION REQUEST

☐ LSRP ☐ Subsurface Evaluator (UHOT)

Date Stamp
(For Department use only)

SECTION A. SITE NAME AND LOCATION

Site Name: Marve Development Corporation

AKAs:

Street Address: 251 1/2 Grove Avenue

Municipality: Verona (*Township, Borough or City*)

County: Essex Zip Code: 07044

Program Interest (PI) Number(s): G000011553

Case Tracking Number(s) for this submission: 22-07-07-1444-30

Municipal block(s) and lot(s) where the **proposed discharge(s)** would occur:

Block # 1201 Lot #(s) 12 Block # Lot #(s)

Block # Lot #(s) Block # Lot #(s)

SECTION B. FEE AND DISCHARGE INFORMATION

DGW Proposal Review Fee $350.00

Discharge Type *(check all that apply)*

☐ Discharge of Recovered Ground Water

Will the discharge be a result of dewatering only? ..... ☐ Yes ☐ No

☒ Discharge that is part of an *In situ* Remediation

☐ Discharges other than those above *(see instructions for more information)*

Facility Type *(check all that apply)*

☒ Underground Injection Control (UIC) facility (i.e., any type of injection)

☐ Non-UIC (e.g., surface application) *(see instructions for more information)*

Attach a Discharge to Ground Water Proposal to this form *(see instructions)*

SECTION C. PUBLIC NOTICE PROVISIONS *(Does not apply to residential heating oil tank cases)*

Is the proposed discharge lasting greater than 180 days? ..... ☐ Yes ☒ No

If "Yes," attach a copy of the public notice written as you intend it to be published. *(see instructions)*

SECTION D. SITE USE AND GROUND WATER CLASSIFICATION

Current Site Use *(check all that apply)*

☐ Industrial
☐ Residential
☒ Commercial
☐ School or child care
☐ Other
☐ Agricultural
☐ Park or recreational use
☐ Vacant
☐ Government

Intended Future Site Use *(check all that apply)*

☐ Industrial
☐ Residential
☐ Commercial
☐ School or child care
☐ Park or recreational use
☐ Vacant
☐ Government
☒ Future site use unknown

What is the ground water classification for this site as per N.J.A.C. 7:9C? *(check all that apply)*

☐ Class I-A
☐ Class I-PL Pinelands Protection Area
☐ Class I-PL Pinelands Preservation Area
☒ Class II-A
☐ Class III-A
☐ Class III-B

SECTION E. RECEPTOR EVALUATION SUMMARY

Non-UHOT Cases

1. Have any of the following been identified on the site or within 200 feet of the site boundary?

   Check all that apply.

   ☒ Residences
   ☐ Child care facilities
   ☐ Public and private schools (K-12)
   ☐ Surface water
   ☐ Other occupied buildings
   ☐ Public parks and playgrounds

2. Did the well search conducted as a part of the receptor evaluation show any well use (potable, industrial, or irrigation)? ☒ Yes ☐ No

   If "Yes," indicate the type of use and approximate distance (closest occurrence) from site: *(Check all that apply)*

   ☒ Potable Distance from site: 1,500 feet
   ☐ Industrial Distance from site: _____ feet
   ☐ Irrigation Distance from site: _____ feet

3. Have any of these receptors been impacted? ☐ Yes ☒ No
   If "Yes," Do you have an NJDEP assigned Case Manager? ☐ Yes ☐ No

   If "Yes," please list the Case Manager: _____

UHOT Cases

1. Is ground water contamination above the Ground Water Remediation Standards? ☐ Yes ☐ No
   If "Yes," answer questions 2 and 3.
2. Has a potable well been identified within 100 feet of the contamination? ☐ Yes ☐ No
3. Have any potable wells been impacted? ☐ Yes ☐ No
   If "Yes," has the NJDEP been notified? ☐ Yes ☐ No

SECTION F. PERSON RESPONSIBLE FOR CONDUCTING THE REMEDIATION INFORMATION AND CERTIFICATION

Full Legal Name of the Person Responsible for Conducting the Remediation: Marve Development Corporation

Representative First Name: Vincent Representative Last Name: Cestone

Title: _____

Telephone Number: (973) 332-2603 Ext.: _____ FAX: _____

Mailing Address: P.O. Box 216

City/Town: Verona State: NJ Zip Code: 07044

Email Address: vrc@eet-inc.com

This certification shall be signed by the person responsible for conducting the remediation who is submitting this notification in accordance with Administrative Requirements for the Remediation of Contaminated Sites rule at N.J.A.C. 7:26C-1.5(a).

I certify under penalty of law that I have personally examined and am familiar with the information submitted herein, including all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, to the best of my knowledge, I believe that the submitted information is true, accurate and complete. I am aware that there are significant civil penalties for knowingly submitting false, inaccurate or incomplete information and that I am committing a crime of the fourth degree if I make a written false statement which I do not believe to be true. I am also aware that if I knowingly direct or authorize the violation of any statute, I am personally liable for the penalties.

Signature: [signature] Date: 7/20/2024

Name/Title: Vincent Cestone

☒ Check this box if the person above is also the property owner of the site or their representative. If this person is not the site property owner, please ensure the site property owner's name and address is included in the DGW Proposal, and also indicate that the property owner has been informed about the proposed discharge.

SECTION G. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENT

LSRP ID Number: 668072

First Name: Christian Last Name: Esposito

Phone Numbers: (609) 910-0720 Ext.: 424 Fax:

Mailing Address: 15 Princess Road, Suite K

Municipality: Lawrenceville State: NJ Zip Code: 08648

Email Address: cesposito@env-logic.com

This statement shall be signed by the LSRP who is submitting this notification in accordance with N.J.S.A. 58:10C-14, and N.J.S.A. 58:10B-1.3b(1) and (2).

(1) I certify, as a Licensed Site Remediation Professional authorized pursuant to N.J.S.A. 58:10C-1 et seq. to conduct business in New Jersey, that for the remediation described in this submission, and all attachments included in this submission, I personally: Managed, supervised, or performed the remediation conducted at this site that is described in this submission, and all attachments included in this submission; and/or periodically reviewed and evaluated the work performed by other persons that forms the basis for the information in this submission; and/or completed the work of another site remediation professional, licensed or not, after having: (1) reviewed all available documentation on which I relied; (2) conducted a site visit and observed the then-current conditions and verified the status of as much of the work as was reasonably observable; and (3)concluded, in the exercise of my independent professional judgment, that there was sufficient information upon which to complete any additional phase of remediation and prepare workplans and reports related thereto.

(2) I certify:

- *That I have read this submission and all attachments to this submission;*
- *That in performing the professional services as the licensed site remediation professional for the entire site or each area of concern, I adhered to the professional conduct standards and requirements governing licensed site remediation professionals provided in N.J.S.A. 58:10C-16;*
- *That the remediation conducted at the entire site or each area of concern, that is described in this submission and all attachments to this submission, was conducted pursuant to and in compliance with the remediation requirements in N.J.S.A. 58:10C-14.c;*
- *That the remediation described in this submission, and all attachments to this submission, was conducted pursuant to and in compliance with the regulations of the Site Remediation Professional Licensing Board at N.J.A.C. 7:26I; and*
- *That the information contained in this submission and all attachments to this submission is true, accurate, and complete.*

(3) I certify, when this submission includes a response action outcome, that the entire site or each area of concern has been remediated in compliance with all applicable statutes, rules, and regulations and is protective of public health and safety and the environment.

(4) I certify that no other person is authorized or able to use any password, encryption method, or electronic signature that the Board or the Department have provided to me.

(5) I certify that I understand and acknowledge that:

- *If I knowingly make a false statement, representation, or certification in any document or information I submit to the Department I may be subject to civil and administrative enforcement pursuant to N.J.S.A. 58:10C-17.a.1(a)through (f) by the Board, including but not limited to license suspension, revocation, or denial of renewal; and*
- *If I purposely, knowingly, or recklessly make a false statement, representation, or certification in any application, form, record, document or other information submitted to the Department or required to be maintained pursuant to the Site Remediation Reform Act, I shall be guilty, upon conviction, of a crime of the third degree and shall, notwithstanding the provisions of subsection b. of N.J.S.2C:43-3, be subject to a fine of not less than $5,000 nor more than $75,000 per day of violation, or by imprisonment, or both.*

(6) I certify that I have read this certification prior to signing, certifying, and making this submission.

LSRP Signature: Date: 7/23/24

LSRP Name: Christian Esposito

Company Name: Environmental Logic, LLC

SECTION G. SUBSURFACE EVALUATOR UST REPORT CERTIFICATION FORM

I certify under penalty of law that the work was performed under my oversight and I have reviewed the report and all attached documents, and the submitted information is true, accurate and complete in accordance with the requirements of N.J.A.C. 7:14B and N.J.A.C. 7:26E. I am aware that there are significant civil and criminal penalties for submitting false, inaccurate or incomplete information including fines and/or imprisonment.

Name: _____ UST Cert. No.: _____

Firm: _____ Firm's UST Cert. Number: _____

Firm Address: _____

City/Town: _____ State: _____ Zip Code: _____

Phone Number: _____ Ext: _____ Fax: _____

Signature: _____ Date: _____

Completed forms should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

ENVIRONMENTAL LOGIC, LLC 4393

Re. Check Total: $350.00 07/03/2024

Pay To Treasurer - State of New Jersey Check No. 4393

Invoice No.	Invoice Date	Invoice Amount	Amount Due	Discount	Apply	Balance
PI #G000011553	06/28/2024	350.00	350.00	0.00	350.00	0.00

4393 Check No. 4393

ENVIRONMENTAL LOGIC, LLC
15 Princess Road, Suite K
Lawrenceville, NJ 08648

Bank of America

63-27/631

Three Hundred Fifty and 00/100 Dollars

DATE 7/3/2024

AMOUNT $350.00

PAY TO THE ORDER OF Treasurer - State of New Jersey

AUTHORIZED SIGNATURE

Security features. Details on back.

⑈004393⑈ ⑆063100277⑆ 898070719371⑈

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
CONTAMINATED SITE REMEDIATION & REDEVELOPMENT
BUREAU OF GROUNDWATER POLLUTION ABATEMENT
401 East State Street, 5th Floor
P.O. Box 420, Mail Code 401-05V
Trenton, New Jersey 08625-0420
Tel. (609) 292-8427
www.nj.gov/dep
www.nj.gov/dep/srp

PHILIP D. MURPHY
Governor

TAHESHA L. WAY
Lt. Governor

SHAWN M. LATOURETTE
Commissioner

August 13, 2024

Vincent Cestone
Marve Development Corporation
P.O. Box 216
Verona, New Jersey 07044

Re: Discharge to Ground Water Authorization
Marve Development Corporation
251 Grove Avenue
Verona, Essex County
NJ Program Interest Number: G000011553
Subject Item ID: DGWD0000028265

Dear Mr. Cestone:

This New Jersey Pollutant Discharge Elimination System/Discharge to Ground Water (NJPDES/DGW) authorization is hereby issued under the authority of the New Jersey Water Pollution Control Act, N.J.S.A. 58:10A-1 et seq. and the implementing regulations, N.J.A.C. 7:14A-1 et seq. N.J.A.C. 7:14A-7.5 authorizes the discharge described below which will allow the implementation of enhanced bioremediation of contaminated ground water at the above referenced site**.**

Pursuant to N.J.A.C. 7:14A-22.4(b)5, a Treatment Works Approval is not required for discharges to ground water authorized pursuant to N.J.A.C. 7:14A-7.5 or 8.5 and a licensed operator is not required pursuant to N.J.A.C. 7:10A-1.10(c)1. The discharge approved through this authorization will be to injection points described below. The discharge shall be conducted as detailed in the July 23, 2024 Permit by Rule Application and amended by email on August 7, 2024. This document was submitted on your behalf by LSRP Christian Esposito of Environmental Logic, LLC.

Consistent with N.J.A.C. 7:14A-7.5(b) and N.J.A.C. 7:26E-5.6(c), the duration of the approved discharge is not to exceed 180 calendar days. Be advised that the time period for the discharge begins on the day the discharge first occurs, not on the date this discharge approval letter is issued or received.

The Department shall be notified of the date when the discharge begins as instructed in section IV of this letter. Only the discharge described in Section I below is authorized. The discharge shall be conducted in conformance with the DGW proposal and shall comply with the requirements of Sections II, III, and IV, farther below.

Regardless of whether the approved discharge is ever initiated and regardless of the date when the discharge first occurs, pursuant to N.J.A.C. 7:14A-2.7 NJDEP authorization for the permittee to initiate and conduct this approved discharge does not extend beyond five years from the date of this letter. If the approved discharge has not been initiated or completed after five years from the date on this letter, a new discharge proposal must be submitted, and a new authorization letter obtained if the permittee still intends to initiate or conduct any type of discharge into or onto the ground that is subject to N.J.A.C. 7:14A-7.5(b) and N.J.A.C. 7:26E-5.6(c).

I. DISCHARGE DESCRIPTION

The authorized discharge is the in-situ injection of Trap and Treat BOS 200, Terra Alba F&P and Trap and Treat Bacteria Concentrate. BOS 200 is a remedial technology consisting of activated carbon and gypsum. It uses the activated carbon to absorb petroleum hydrocarbons from the dissolved phase. Terra Alba F&P consists of calcium sulfate dihydrate. Its purpose is to be an electron acceptor that facilitates biodegradation. Trap and Treat Bacteria Concentrate consists of water and a liquid mixture of microbes that is designed to degrade petroleum hydrocarbon contaminants.

The treatment area is approximately 600 ft^2 and located in the source area of a former UST location. Approximately twenty-five (25) temporary injection points will be installed. The vertical treatment interval will be from 5 to 17 below ground surface (bgs).

During the discharge, 1,600 pounds of BOS 200, 4,700 pounds Terra Alba F&P and 5 gallons of Trap and Treat Bacteria Concentrate mixed with potable water will be injected. The authorized discharges are designed to remediate petroleum hydrocarbons that have contaminated site ground water.

As a necessary part of the in-situ remediation process, the discharge may cause minor, temporary and localized noncompliance with the ground water quality criteria for constituents such as sodium, sulfate, iron and/or manganese. As such a Classification Exception Area (CEA) for the discharge is approved pursuant to N.J.A.C. 7:9C-1.6(c) for the duration of this permit action and the remediation process for the area monitored by the wells indicated in Section III below. If levels elevated above background conditions for these contaminants persist beyond the permit monitoring period, they will be included in the site remediation CEA for the plume.

II. SYSTEM OPERATION AND MONITORING

The area of discharge shall be monitored for evidence of malfunction. Said evidence shall include, but is not limited to: breakout, wet areas, ponding, odors, and elevated PID readings in the nearby work area or building.

The discharge shall not cause any of the following negative impacts: adversely impact the behavior of free product or the plume; adversely impact a water supply well or have a long term adverse impact on ground water quality; create an unpermitted discharge to any surface water of the State or violation of Surface Water Quality Standards; create a persistent standing, ponded or surface-flowing fluid condition, or cause adverse vapor intrusion to occur.

Pursuant to N.J.A.C. 7:14A-6.2(a)5 and 11, if free product in ground water, vapors or odors in any building, or any malfunction resulting in a potential impact to a receptor are detected and are a result of the discharge authorized by this approval, the discharger will immediately: (1) cease the discharge or make necessary adjustments to the discharge rate or system operation; and (2) repair or mitigate any negative impacts.

After completion of the discharge, the property should be returned to its previous condition, or as agreed to with property owner if the permittee is not the property owner. All UIC-Class V injection wells shall be properly abandoned in accordance with N.J.A.C. 7:14A-8.16(d)1 as applicable. The permittee will comply with any applicable provisions of the Additional Conditions Applicable to Class I, II, III and V UIC Permits of the NJPDES regulations, N.J.A.C. 7:14A-8.9, et seq. when UIC-Class V injection well units (i.e. injection points) are used.

III. GROUND WATER MONITORING REQUIREMENTS

The Permittee shall perform the following ground water sampling as was specified in the DGW proposal (including all addendums and modifications) for the purpose of complying with this Discharge to Ground Water Permit-By-Rule authorization.

Baseline Sampling:
Sampling of monitoring wells MW-1, MW-4 and MW-5 will be conducted for TCL VOC+TICs, TCL BN+TICs, calcium, sulfate, nitrate-nitrite nitrogen, total iron, total manganese and alkalinity. The wells will also be sampled and analyzed for field parameters (oxidation reduction potential, dissolved oxygen, pH, specific conductivity, temperature).

Post-Injection Sampling:
Sampling of monitoring wells MW-1, MW-4 and MW-5 will be conducted for TCL VOC+TICs, TCL BN+TICs, calcium, sulfate, nitrate-nitrite nitrogen, total iron, total manganese and alkalinity. The wells will also be sampled and analyzed for field parameters (oxidation reduction potential, dissolved oxygen, pH, specific conductivity, temperature). Post-injection sampling will be conducted quarterly for one year.

Pursuant to the Tech Regs, the Permittee shall measure ground water elevations at all sampled wells upon each sampling event and shall construct ground water flow maps with the water elevation data to document the direction of ground water flow. Any product observed, including sheen, shall be documented. If measurable product is observed, injections shall be suspended until all of the recoverable product is removed from the treatment area.

All sampling shall be performed as proposed and consistent with the methods specified in the most current edition of the Department's Field Sampling Procedures Manual. All samples shall be analyzed by a New Jersey Certified Laboratory certified for the methods being used to analyze groundwater samples. Analytical method MDLs shall be less than or equal to the ground water quality standards (N.J.A.C. 7:9C-1.7). Parameters determined in the field (pH, specific conductance, dissolved oxygen, temperature) are to be measured by a certified contractor or laboratory.

Comparison to the vapor intrusion (VI) screening levels is necessary in order to monitor whether or not the discharge activities have the potential to cause VI issues within any nearby structures by means of adversely impacting the behavior of the ground-water contaminants (e.g., unexpected contaminant

movement). If there are any exceedances of the VI screening levels caused by the authorized discharge, a VI evaluation shall be conducted of any potentially impacted structures.

Compliance with N.J.A.C. 7:26E-5.7(b) requires that the Permittee satisfy the post-injection ground water monitoring requirements that are set forth in this letter before applying for any Remedial Action Permit for Ground Water. If a Remedial Action Permit application is submitted before the required ground water sampling has been completed, the application will be denied.

Additionally, contingency compliance ground water sampling is required if ground water sampling results indicate that ground water quality criteria (GWQC) have been contravened because of the authorized discharge (e.g., the GWQC for sodium is exceeded as a result of sodium persulfate injection, or the GWQC for iron is exceeded as a result of pH change), or that ground water quality has not returned to baseline conditions (when baseline concentrations are greater than GWQC) in the expected timeframe. Ground water sampling must continue until it can be demonstrated that the GWQC have been met or until the ground water quality has returned to baseline conditions. To demonstrate either of these conditions, a minimum of two consecutive ground water sampling events spaced far enough apart to account for seasonal fluctuations, must be conducted.

Furthermore, if the Permittee is planning to apply for a Ground Water Remedial Action Permit for Natural Attenuation in the future, and exceedances of the GWQC that are due to the discharge remain, those exceedances must be treated similarly to any other site related contaminants (i.e., a sufficient number of samples are required and a decreasing concentration trend must be evident) consistent with the Department's Remedial Action Permits for Ground Water Guidance.

IV. REPORTING REQUIREMENTS AND INFORMATION SUBMITTALS

All information, including a detailed summary of the discharge and ground water sampling results, as well as the QA/QC package specified at N.J.A.C. 7:26E-2.1(a)15 shall be submitted with the next key document due following completion of the discharge monitoring program.

Consistent with N.J.A.C. 7:14A-2.11(a) and 6.2(a)14, within 14 days after initiation of the discharge, notify the Department of the "start date" of the discharge. To report this date, send an email to daryl.clark@dep.nj.gov stating the start date of the discharge.

Consistent with N.J.A.C. 7:14A-2.11(a) and 6.2(a)14, any malfunctions or non-compliance should be reported by telephone within 24 hours to the Bureau of Ground Water Pollution Abatement at (609) 292-8427 and in writing within seven days. Written submissions must include the facility name and PI Number. Failure to report this information is a violation of N.J.A.C. 7:14A and the permit-by-rule.

Nothing in this correspondence affects your potential liability and obligations to the State Trustee, the Department or its Commissioner regarding natural resource injuries, restoration or damages.

If you have any questions or concerns associated with this Discharge Authorization, please contact Daryl Clark at daryl.clark@dep.nj.gov or (609) 940-4635.

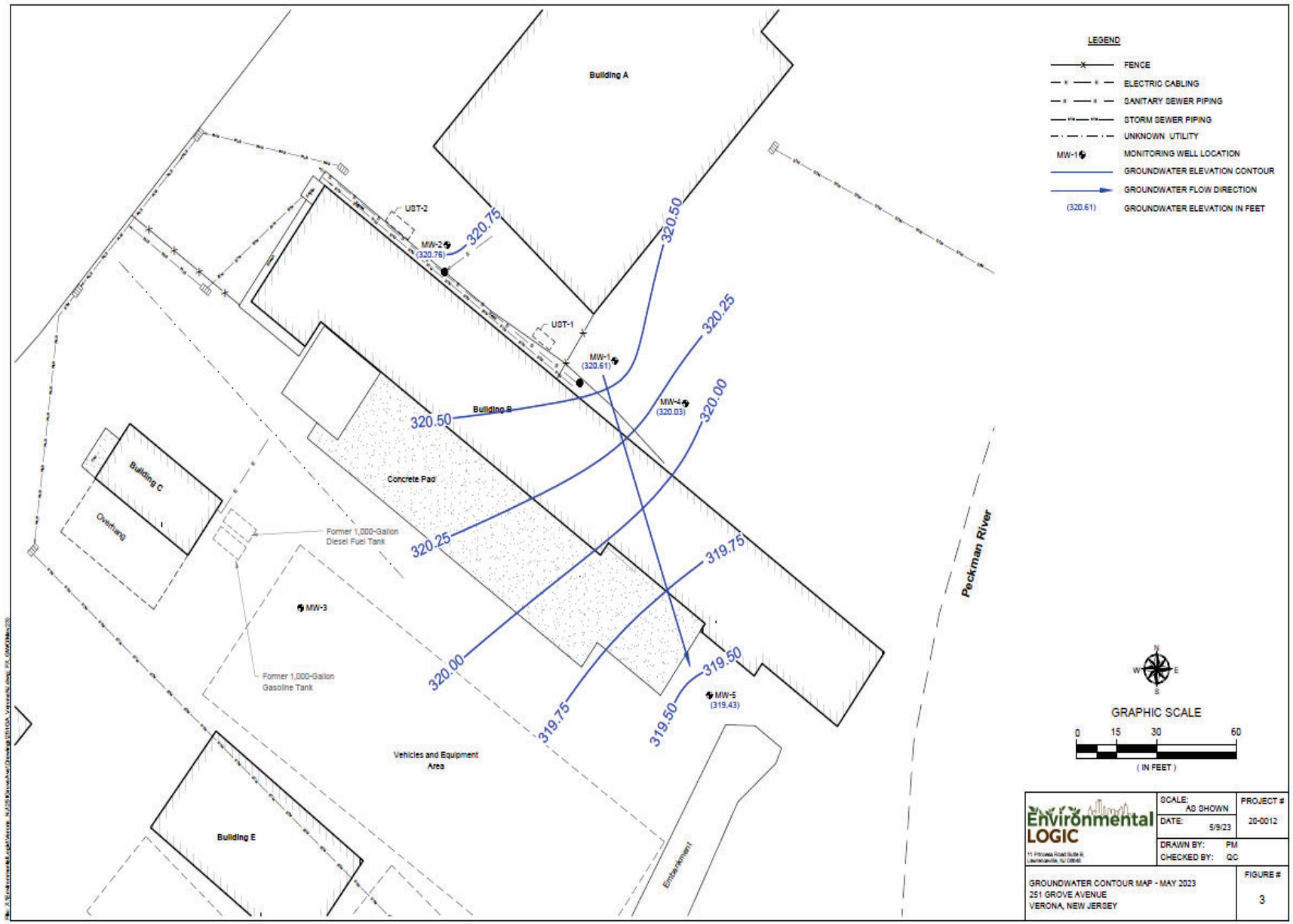
Sincerely,

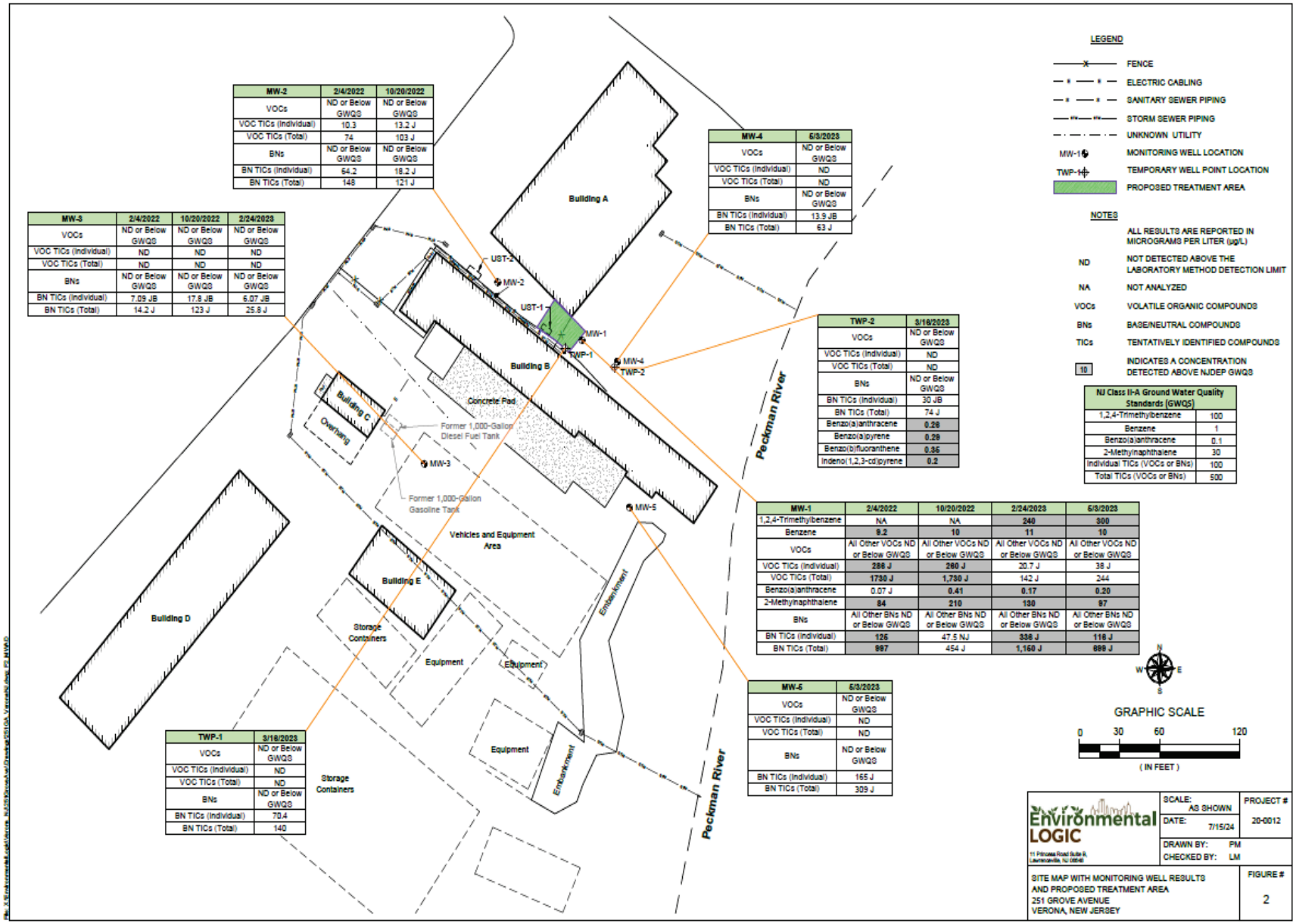


Joel Fradel, Chief
Bureau of Ground Water Pollution Abatement

Attachments

c: Christian Esposito, LSRP, Environmental Logic, LLC


LEGEND
FENCE
ELECTRIC CABLING
SANITARY SEWER PIPING
STORM SEWER PIPING
UNKNOWN UTILITY
MW-1 MONITORING WELL LOCATION
GROUNDWATER ELEVATION CONTOUR
GROUNDWATER FLOW DIRECTION
(320.61) GROUNDWATER ELEVATION IN FEET
Building A
Building B
Building C
Building E
Overhang
UST-1
UST-2
MW-1 (320.61)
MW-2 (320.76)
MW-3
MW-4 (320.03)
MW-5 (319.43)
Concrete Pad
Former 1,000-Gallon Diesel Fuel Tank
Former 1,000-Gallon Gasoline Tank
Vehicles and Equipment Area
Peckman River
Embankment
320.75
320.50
320.25
320.00
319.75
319.50
GRAPHIC SCALE
0 15 30 60
(IN FEET)
Environmental LOGIC
SCALE: AS SHOWN
DATE: 5/9/23
PROJECT # 20-0012
DRAWN BY: PM
CHECKED BY: QC
GROUNDWATER CONTOUR MAP - MAY 2023
251 GROVE AVENUE
VERONA, NEW JERSEY
FIGURE # 3



MW-2	2/4/2022	10/20/2022
VOCs	ND or Below GWQS	ND or Below GWQS
VOC TICs (Individual)	10.3	13.2 J
VOC TICs (Total)	74	103 J
BNs	ND or Below GWQS	ND or Below GWQS
BN TICs (Individual)	64.2	18.2 J
BN TICs (Total)	148	121 J

MW-3	2/4/2022	10/20/2022	2/24/2023
VOCs	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS
VOC TICs (Individual)	ND	ND	ND
VOC TICs (Total)	ND	ND	ND
BNs	ND or Below GWQS	ND or Below GWQS	ND or Below GWQS
BN TICs (Individual)	7.09 JB	17.8 JB	6.07 JB
BN TICs (Total)	14.2 J	123 J	25.8 J

MW-4	5/3/2023
VOCs	ND or Below GWQS
VOC TICs (Individual)	ND
VOC TICs (Total)	ND
BNs	ND or Below GWQS
BN TICs (Individual)	13.9 JB
BN TICs (Total)	63 J

TWP-2	3/18/2023
VOCs	ND or Below GWQS
VOC TICs (Individual)	ND
VOC TICs (Total)	ND
BNs	ND or Below GWQS
BN TICs (Individual)	30 JB
BN TICs (Total)	74 J
Benzo(a)anthracene	0.28
Benzo(a)pyrene	0.29
Benzo(b)fluoranthene	0.36
Indeno(1,2,3-cd)pyrene	0.2

NJ Class II-A Ground Water Quality Standards (GWQS)	
1,2,4-Trimethylbenzene	100
Benzene	1
Benzo(a)anthracene	0.1
2-Methylnaphthalene	30
Individual TICs (VOCs or BNs)	100
Total TICs (VOCs or BNs)	500

MW-1	2/4/2022	10/20/2022	2/24/2023	5/3/2023
1,2,4-Trimethylbenzene	NA	NA	240	300
Benzene	9.2	10	11	10
VOCs	All Other VOCs ND or Below GWQS	All Other VOCs ND or Below GWQS	All Other VOCs ND or Below GWQS	All Other VOCs ND or Below GWQS
VOC TICs (Individual)	288 J	260 J	20.7 J	38 J
VOC TICs (Total)	1730 J	1,730 J	142 J	244
Benzo(a)anthracene	0.07 J	0.41	0.17	0.20
2-Methylnaphthalene	84	210	130	97
BNs	All Other BNs ND or Below GWQS	All Other BNs ND or Below GWQS	All Other BNs ND or Below GWQS	All Other BNs ND or Below GWQS
BN TICs (Individual)	126	47.5 NJ	338 J	118 J
BN TICs (Total)	997	454 J	1,160 J	699 J

MW-5	5/3/2023
VOCs	ND or Below GWQS
VOC TICs (Individual)	ND
VOC TICs (Total)	ND
BNs	ND or Below GWQS
BN TICs (Individual)	165 J
BN TICs (Total)	309 J

TWP-1	3/18/2023
VOCs	ND or Below GWQS
VOC TICs (Individual)	ND
VOC TICs (Total)	ND
BNs	ND or Below GWQS
BN TICs (Individual)	70.4
BN TICs (Total)	140

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SCALE: AS SHOWN	PROJECT # 20-0012
DATE: 7/15/24	
DRAWN BY: PM	
CHECKED BY: LM	

SITE MAP WITH MONITORING WELL RESULTS AND PROPOSED TREATMENT AREA
251 GROVE AVENUE
VERONA, NEW JERSEY

FIGURE # 2