Groundwater & Environmental Services, Inc.

LOWER HUDSON VALLEY OFFICE

July 14, 2017

Ms. Jamie Verrigni
New York State Department of Environmental Conservation
Division of Environmental Remediation, BURC
625 Broadway
Albany, New York 12233-7014

RE: Periodic Review Report
Orangeburg (Orangetown) Shopping Center
NYSDEC Site Number C344066
I-45 Orangetown Shopping Center
Orangetown, NY 10962

Dear Ms. Verrigni:

Enclosed is the *Periodic Review Report* for the above referenced site prepared by Groundwater & Environmental Services, Inc. (GES) on behalf of UB Orangeburg, LLC. The report summarizes work performed at the site from June 25, 2016 through June 22, 2017.

If you have any questions or comments regarding this submittal, please contact Michael DeGloria of GES at (866) 839-5195 at extension 3839.

Sincerely,

Jessica M. Thomas
Associate Remediation Specialist

Michael DeGloria, P.G
Senior Project Manager

cc: Monica Roth, UB Orangeburg, LLC
Miyun Sung, UB Orangeburg, LLC (e-copy)
Renata Ockerby, New York State Department of Health
Amen Omorogbe, New York State Department of Environmental Conservation
Edward Moore, Hazardous Waste Remediation Engineer, Region 3
Hilton Soniker, Esq., JLJ Management
Genevieve Bock, P.E., Groundwater & Environmental Services, Inc.

Attachment

PERIODIC REVIEW REPORT
July 2017

Orangeburg (Orangetown) Shopping Center
Rockland County, New York

NYSDEC Site Number: C344066

Prepared for:

UB Orangeburg, LLC
321 Railroad Avenue
Greenwich, Connecticut 06830

Prepared by:

Groundwater & Environmental Services, Inc.
16 Mount Ebo Road South, Suite 21
Brewster, New York 10509

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1.0 EXECUTIVE SUMMARY

This document is required as an element of the remedial program at the Orangeburg (Orangetown) Shopping Center, located in the Town of Orangetown (Orangeburg), County of Rockland, New York (hereinafter referred to as the "site") under the New York State (NYS) Brownfield Cleanup Program (BCP) administered by the New York State Department of Environmental Conservation (NYSDEC). The site remediation activities have been conducted in accordance with the Brownfield Cleanup Agreement (BCA) Index #A3-0563-0906, site #C344066. JLJ Management Company (hereinafter referred to as the "JLJ") entered into a BCA with the NYSDEC in January of 2007 to remediate a 1.33-acre portion of the approximately 11-acre property containing chlorinated solvent compounds above NYSDEC standards. The subject property was purchased from JLJ by UB Orangeburg, LLC in 2012. On March 28, 2012, the Certificate of Completion was officially transferred from JLJ to UB Orangeburg, LLC.

GES continues to implement the remedial activities outlined in the Site Management Plan (SMP). Groundwater concentrations of tetrachloroethene, trichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,1-dichloroethene, vinyl chloride, and ethene (constituents of concern) in down gradient well MW-10 have remained below laboratory detection limits. Concentrations of constituents of concern (COCs) in the source area have fluctuated over the monitoring period but show no trends except for cis-1,2-dichlorethene at MW-5 which had a negative trend.

No major non-compliance issues have been identified during the monitoring period of June 25, 2016 to June 22, 2017.

GES, on behalf of UB Orangeburg, LLC, will submit an update to the *Site Management Plan* to reflect the NYSDEC's approval to decommission the former Deli-Spot and Sparkle Cleaners sub-slab depressurization systems (SSDSs) and to keep the remaining (New China) SSDS off-line at this time. Additionally, GES requests NYSDEC approval to reduce site-wide quarterly compliance groundwater sampling events to an annual sampling schedule; however, quarterly sampling events for the analyses of COCs and total organic carbon (TOC) events would continue at monitoring wells MW-5 and MW-4 only.

2.0 SITE OVERVIEW

The approximate geographical coordinates for the Property are 41 degrees, 2 minutes, 41.6 seconds North (Latitude) by 73 degrees, 57 minutes, 10.4 seconds West (Longitude). The Property is comprised of one (1) parcel (Section, Lot & Block: 74.10-67-1) that covers an area of approximately 11 acres. Included are the following: a Site Location Map (**Figure 1**) for the general Property location, a Site Map (**Figure 2**) showing the current key site features at the subject Property, and a Bio-Augmentation System Well Locations map (**Figure 3**) showing the current locations of active injection and monitoring well points near building #2.

Contamination was first observed at the site after a damaged sewer line exiting the former Sparkle Cleaners Dry Cleaners was identified. The first remedial activity consisted of source removal activities and the repair of the sewer line in January of 2009. After completion of the

remedial work described in Construction Completion Report #1: Source Removal (CCR-1), residual contamination was left in the subsurface at the site, which is hereafter referred to as "remaining contamination." A SMP was prepared to manage remaining contamination until the Environmental Easement (EE) is extinguished in accordance with ECL Article 71, Title 36. Components of the selected remedy consist of SSDSs and a bio-augmented injection gallery.

- Because of the residual contaminated subsurface soil and contaminated groundwater, the SSDSs were designed to mitigate potential vapor intrusion from residual chlorinated volatile organic compounds (VOCs) contamination into the southern portion of building #2, which businesses include: former Sparkle Cleaners (currently vacant), former The Deli Spot (currently vacant but under construction for a new tenant), and New China House. The SSDS is configured to create a negative pressure (relative to the indoor environment) within the area beneath the concrete floor slabs of the businesses within the southern portion of building #2 thereby minimizing the potential for migration of contaminant vapor into the indoor air of the tenant spaces. The system was installed between February and May 2010, and it was activated in May 2010. The system as originally designed did not achieve the performance standard, and it was subsequently modified. Additional system performance testing was completed in June 2010 and a modified plan prepared and approved by NYSDEC in August 2010. Modifications were implemented between August and September 2010. The system was re-started with additional blowers in place on September 29, 2010 and operation has verified with another performance (vacuum response) test. Late in 2010, it was observed that ongoing heating, venting, and air conditioning (HVAC) issues in the building potentially affected system performance. These issues were the result of foundation leaking and back draft issues associated with furnaces and other fans. These issues were resolved in early 2011. The system was re-inspected in March to verify resolution of the issues. In late April 2011, three vapor-monitoring points were replaced in the New China Restaurant and another system check was performed. This test verified that the system achieved measured vacuum greater than 0.0025 inches of water column (i.w) across the slab in the three tenant spaces. The SSDSs were temporarily shut down in August 2015 following NYSDEC approval.

- Because of the presence of contaminated groundwater and residual soil contamination under building #2, a bio-augmentation treatment system was designed. This treatment promotes in situ microbial degradation of contaminants in saturated soil and groundwater. Addition of a bio-stimulant (molasses) to subsurface soil and groundwater act as an electron donor that stimulates metabolic reduction of chlorinated VOCs to ethene via microorganisms that have been detected as being present at the site, as have bacteria of the genus *Dehalococcoides* (in MW-5 and MW-6) and *Dehalobacter* (in MW-5). Bioaugmentation injection points and manifold piping were installed after the source removal excavation between February and April 2010. A batch injection tank connects to the manifold via manual gate valves to direct electron donor solution (a 10% molasses solution) to control flow to the injection points. Additional injection points were installed during April and May of 2012 and January of 2014 in accordance to the *Remedial Action Work Plan* (RAWP). Baseline and post-injection sampling (from a network of monitoring wells), monitoring, and laboratory analysis provide the means to monitor treatment effectiveness. The initial round of injections was completed in May, July, and November 2010 and monitored. The first round of treatment indicated bioaugmentation was enhancing biodegradation

and dechlorination of the contaminants. The results also suggest that additional injections of electron donor solution would enhance treatment.

The NYSDEC approved the decommissioning of two (2) of the three (3) SSDS's (former Deli Spot and Sparkle Cleaners) located in the Orangetown Shopping Center on January 20, 2017. During this monitoring period, SSDS removal activities were completed at the former Deli Spot tenant space. As requested by the NYSDEC, sub-slab and indoor air testing was conducted during the 2016/2017 heating season with at least two more additional events to be completed during the 2017/2018 and 2018/2019 heating season at the three (3) tenant spaces for the purpose of monitoring rebound following the shutdown of the SSDSs. If any potential impacts are identified then conditions will be re-evaluated and monitoring will continue.

Bio-augmentation monitoring and treatment of groundwater will continue, as determined by the NYSDEC, until residual groundwater concentrations are found to be consistently below NYSDEC standards or have become asymptotic at an acceptable level over an extended period. This treatment will continue until permission to discontinue is granted in writing by the NYSDEC. If groundwater contaminant concentrations become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment, and/or control measures will be evaluated.

Conditions that warrant discontinuing the bio-augmentation treatment system include contaminant concentrations in groundwater that: (1) reach levels that are consistently below groundwater quality standards (GWQS), (2) have become asymptotic to a low level over an extended period of time as accepted by the NYSDEC, or (3) the NYSDEC has determined that the bio-augmentation treatment system has reached the limit of its effectiveness. This assessment will be based in part on post-remediation contaminant levels in groundwater collected from monitoring wells located throughout the site. Systems will remain in place and operational until permission to discontinue their use is granted in writing by the NYSDEC.

3.0 EVALUATION OF REMEDY PERFORMANCE AND EFFECTIVNESS

3.1 Sub-Slab Depressurization System Evaluation

Quarterly operation maintenance and monitoring (OM&M) visits were not conducted during the reporting period due to the temporary shutdown of the SSDSs.

3.2 Bio-augmentation System Evaluation

A molasses injection event was conducted on September 14, 2016 at the Orangetown Shopping Center. Due to the short-term concentration trends at monitoring well MW-5 through the September 2016 monitoring event, injection wells in the vicinity of monitoring well MW-5 were targeted for the molasses injection of 10% solution. Wells IP-3, IP-4, INJ-3D, and INJ-4D were utilized for injection of a total volume of 315 gallons of 10% molasses.

Baseline and post-injection sampling (from a network of monitoring wells), monitoring, and laboratory analysis provide the means to monitor treatment effectiveness. Overall, 12 injection events have been completed since August 2012. A total approximate volume of 8,015 gallons of 10% molasses solution has been injected since the initiation of this remedy.

Please refer to **Figures 4** through **7** and **Table 4** for a summary of the concentrations and trends of the constituents of concerns at all sampled monitoring wells. **Figure 8** and **Tables 2** and **3** present the general chemistry analytical results and measured bio-parameter readings including optimal geochemical target range for TOC concentrations (50 mg/L and 500 mg/L) and pH (6 to 8) at the monitoring wells. Bio-parameter levels were outside the target range at monitoring well MW-5 during the September 9, 2016 event with pH of 5.87 measured and during the March 3, 2017 event when TOC was 44.4 mg/L. Therefore, these bio-parameters will continue to be monitored and evaluated during the 2nd quarter 2017 sampling event to determine if an additional bio-augmentation event is required.

GES evaluated VOC concentrations in groundwater at monitoring well MW-5 from March 2012 to present using the Mann-Kendall analysis to identify potential trends. The results of this evaluation indicated that concentrations of COCs in groundwater at MW-5 have a negative trend or no trend with the exception of trichloroethene which has a positive trend. Negative groundwater concentration trends of vinyl chloride and ethene do not suggest reductive transformation pathways are present at this time. These groundwater trends at monitoring well MW-5 are illustrated in **Figure 9**.

4.0 INSTITUTIONAL CONTROL & ENGINEERING CONTROL PLAN COMPLIANCE

4.1 Institutional Controls

Institutional Controls (ICs) at the site include compliance with the EE (**Appendix C**). The EE contains the following stipulations: no new drinking water wells can be installed and new business and residences must be connected to city water. The SMP stipulates all engineering controls (ECs) must be operated and maintained as specified in the SMP, all ECs on the controlled property must be inspected at a frequency and in a manner defined in the SMP, groundwater and other environmental monitoring must be performed as defined in this SMP and data and information pertinent to site management of the control property must be reported at a frequency and in a manner specified in the SMP.

During the monitoring period all ICs have been in compliance with the EE. No new drinking wells have been installed and no new businesses have been built which would require a connection to city water. All ECs have been operated and maintained as specified in the SMP or otherwise approved by the NYSDEC. ECs are inspected in accordance to the required frequency set forth by the SMP. Groundwater and other environmental monitoring have been performed as defined in the SMP. Progress reports summarizing groundwater and other environmental monitoring were submitted to the NYSDEC and NYSDOH as they are completed. Approval to

discontinue submittal of monthly progress reports was granted by the NYSDEC in a letter dated August 25, 2014. Regulatory correspondences are attached as **Appendix A.**

4.2 Engineering Controls

The SMP requires that three separate ECs be maintained at the site: the SSDS, the bio-augmentation system, and the composite cover system. Maintenance and inspections of the ECs at the site are reported to the NYSDEC and NYDOH as they are completed.

Maintenance and inspections of the composite cover system consisting of existing impermeable surfaces (concrete slabs and asphalt paving) were conducted during the monitoring period. Photographs of the composite cover system are included in **Appendix D**.

Historically, exposure to vapor intrusion within the southern portion of building #2 was mitigated by the operation of the SSDSs. This system was comprised of extraction piping, sub-slab ventilation blowers and associated appurtenances at former Sparkle Cleaners, the former Deli Spot, and New China House tenant spaces. The SSDSs created a negative pressure which intercepted potential soil vapor from beneath the concrete floor using eight branches (SSD-1 through SSD-8) and transferred extracted vapors using in-line blowers to discharge locations outside the building (above the roof). Thirteen extraction points were installed between the three tenant spaces. Additional extraction points were added to each tenant space after the SSDSs was initially installed. Fifteen SSD vacuum monitoring points were also installed within the three tenant spaces and can be measured to verify vacuum beneath the concrete slab. A manometer was installed on the suction side of the in-line blower on each of the SSD branches to provide a visual indicator that the SSDSs were operating properly.

The SSDSs have been temporarily shut-down since August 17, 2015 following receipt of NYSDEC approval. In May 2017, following NYSDEC approval, the former Deli Spot SSDS was permanently decommissioned.

Because of the presence of contaminated groundwater and residual soil contamination under building #2, a bio-augmentation treatment system was designed. This treatment promotes in-situ microbial degradation of contaminants in saturated soil and groundwater. Addition of a molasses solution to subsurface soil and groundwater acts as an electron donor that stimulates metabolic reduction of chlorinated VOCs to ethene. Bio-augmentation injection points and manifold piping were installed after the source removal excavation between February and April 2010. An additional nine nested bio-augmentation injection points and four additional monitoring wells were installed between April and May of 2012 and January of 2014 in accordance to the RAWP, submitted by Kleinfelder on December 19, 2011. Details regarding the installation of additional monitoring points and nested injection wells can be referenced in the *May 2012, January 2014 and February 2014 Monthly Progress Report*, submitted to the NYSDEC.

A molasses injection event was completed on September 14, 2016 targeting the area around MW-5. During the 1st quarter 2017 sampling event, TOC levels were 44.4 mg/L which is below the targeted range. Due to these results, TOC concentrations will be monitored and evaluated during the 2nd quarter 2017 sampling event to determine if an additional bio-augmentation event is needed. IC and EC certifications are provided in **Appendix E**.

5.0 MONITORING PLAN COMPLIANCE

The Monitoring Plan describes the measures for evaluating the performance and effectiveness of the remedy to reduce or mitigate contamination at the site, the composite cover system, and all affected site media identified in the SMP. Monitoring results and performance evaluation of the ECs are reported to the NYSDEC and NYDOH as they are completed.

Components and schedule of the monitoring plan are summarized in **Chart 1.**

Chart 1
Monitoring / Inspection Schedule

Monitoring Program	Frequency	Matrix	Analysis
Composite Cover System	Annual (minimum) or during other (more frequent) inspections as time and conditions warrant	Soil	Visual Inspection of Cover
SSDS	Temporarily Shutdown /Permanently Decommissioned	Soil Vapor	Negative Pressure
Bio-augmentation system	Only when TOC levels are out of range	Groundwater	Total Organic Carbon
Groundwater	Quarterly	Groundwater	Chlorinated VOCs, ethene

5.1 Composite Cover Monitoring Compliance

On May 18, 2017, the composite cover system was inspected by a qualified environmental professional. The composite cover system was determined to be intact and impervious to surface water infiltration. The qualified environmental professional noted that slumping was observed around injection points and monitoring wells, but that the integrity of the composite cover system had not been compromised. Photographs of the composite cover system are provided in **Appendix D**.

5.2 Sub-Slab Depressurization System Monitoring Compliance

SSDSs inspections and monitoring were not conducted this year due to the temporary shutdown of the SSDSs in August 2015.

On November 18, 2016 a Soil Vapor Intrusion (SVI) investigation was completed. Ambient air and sub slab sampled were collected from the former Deli Spot, former Sparkle Cleaners, and New China House. Sample areas are illustrated in **Figure 10**. Samples were submitted to SGS/Accutest Laboratories of Dayton, New Jersey (Accutest) and were analyzed for VTO15NYSVLL Volatiles. Concentrations for all COCs were below the NYSDOH Soil Vapor Indoor standards. This data is presented in **Table 6** and **7**.

A SSDS Decommissioning Request was submitted to the NYSDEC and NYSDOH (the Departments) on January 3, 2017 requesting approval to decommission two (2) of the three (3) tenant spaces at the Orangetown Shopping Center. The request to decommission the former Deli

Spot and former Sparkle Cleaners tenant spaces was approved by the Departments on January 20, 2017 with a contingency to collect yearly sub-slab and indoor air samples from the three (3) tenant spaces for the next two (2) heating seasons.

In May 2017, UB Orangeburg LLC hired a contractor to complete SSDS removal activities at the former Deli-Spot tenant space. GES conducted site visits on April 20 and May 18, 2017 to confirm satisfactory completion of the SSDS removal activities. A *Non-Routine Maintenance Report* documenting the SSDS removal activities at the former Deli-Spot was submitted to the Departments on June 2, 2017. Regulatory correspondences are attached in **Appendix A**.

5.3 Bio-augmentation System Monitoring Compliance

Inspections and monitoring of the bio-augmentation system were completed as described in the SMP. A total of 12 injection events have been completed since August 2012. A total approximate volume of 8,015 gallons of 10% molasses solution has been injected over this period.

A molasses injection event was completed on September 14, 2016 targeting the area around MW-5. Following the injection event, 1st quarter 2017 TOC levels at monitoring well MW-5 were 44.4 mg/L which is below the targeted range (50 mg/L to 500 mg/L). Since TOC levels are below the targeted range, GES will continue to monitor TOC levels at monitoring well MW-5 during the 2nd quarter of 2017 and if necessary, conduct additional injection events. Injection volumes for the September 2016 event are summarized in **Table 8**.

Quarterly groundwater monitoring and annual baseline sampling were completed at the site. Monitoring wells MW-3, MW-4, MW-5, MW-8A, MW-8B, and MW-10 are sampled each quarter. During the 3rd quarter of 2016, 4th quarter of 2016, and 1st quarter of 2017 monitoring well MW-8B could not be sampled due to an obstruction in the well. Additionally, due to an insufficient amount of water, MW-8A was not sampled during the 2nd quarter of 2016, MW-4 was not sampled in 3rd quarter of 2016, and MW-3 was not sampled in the 4th quarter of 2016. Each quarter samples were submitted to SGS/Accutest for the following analysis: VOCs, ethene, nitrate, iron (total, ferrous and ferric), sulfate, and/or TOC. Analytical data provided by SGS/Accutest are included in **Appendix F** and are represented in **Tables 2, 4,** and **5**, and **Figures 4** through **7.** Each quarter the Category B laboratory analytical reports provided by SGS/Accutest were submitted to RemVer for review of data quality. Subsequent to the data review, RemVer provided a data usability summary report (DUSR), included in **Appendix G**. Groundwater monitoring logs have been included in **Appendix B** and have served as the inspection form for the groundwater monitoring network.

Once annually, samples from down gradient well (MW-10) and centrally located well (MW-5) are submitted for the additional analysis of polychlorinated biphenyls (PCBs). Approval to eliminate the analyses for pesticides, semi-volatile organic compounds (SVOCs) and metals, was granted by the NYSDEC in a letter dated August 25, 2014. Annual baseline sampling was completed at monitoring wells MW-3, MW-4, MW-5, MW-8A, and MW-10 on March 3, 2017. Analytical data provided by SGS/Accutest have been included in **Appendix F**. Results from the annual baseline sampling can be referenced in **Tables 2, 4,** and **5**.

6.0 OPERATION, MONITORING & MAINTENANCE PLAN COMPLIANCE

The Operation, Monitoring & Maintenance Plans describe the measures necessary to operate, monitor, and maintain the mechanical components of the remedy selected for the site. This section has two specific OM&M plans: one for the SSDS and one for the bioaugmentation treatment system.

Annually, copies of the OM&M forms generated from field activities at the site are placed inside the on-site hazardous communications box. Additionally, a copy of the Sub-Slab Depressurization Operation, Monitoring, and Maintenance Plan, Bio-augmentation System Operation, Maintenance, and Monitoring Plan and manuals provided by the equipment manufacturer are stored in the hazardous communications box for reference.

6.1 Sub-Slab Depressurization OM&M Compliance

The SSDSs remained temporarily shutdown for the entire monitoring period. Due to the shut down of the SSDSs, OM&M's were not completed this year. Following approval by the Departments to decommission the former Deli Spot SSDS, removal activities were completed in of May 2017. SSDS removal activities included the removal of SSD blowers SSD-B1, SSD-B2, and SSD-B3 and associated piping, sub-slab monitoring point SSD MP-1, sub-slab extraction points SSD-2A, SSD-3A, SSD-2B, and SSD-3B, and vapor points VP-2 and VP-3. Regulatory correspondences are attached in **Appendix A**.

6.2 Bio-augmentation System OM&M Compliance

Bio-augmentation System (BAS) OM&M visits were completed during quarterly sampling events, pre-/post-injection sampling events, and molasses injection events as described in the Bio-augmentation System Operation, Maintenance, and Monitoring Plan. Each visit included the following activities to evaluate performance and operation of the system: an inspection for security issues, vandalism, system damage, equipment or conveyance malfunction, connection integrity or environmental effects, gauging of BAS monitoring well network, collection of general groundwater chemistry parameters, visual inspection of piping stub-ups and BAS monitoring well road boxes, and inspection of well pads and injection road boxes and road pads. No non-compliance issues were identified during the reporting period.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Site Management Plan Compliance

During this monitoring period, all requirements set forth in the SMP have been completed. ICs described in the SMP are in place and in compliance. Monitoring and OM&M of the two active ECs (composite cover and bio-augmentation system) were conducted during the monitoring period as specified in the SMP. OM&M of SSDSs have been suspended while the systems are temporarily shut down. Inspections of the composite cover system was completed at a minimum

frequency of once annually. Monitoring and OM&M of the bio-augmentation system was completed on a quarterly basis during the quarterly groundwater sampling events.

7.2 Performance and Effectiveness of Remedy

The SSDSs have been temporarily shut-down since August 17, 2015. The NYSDEC approved the request to permanently decommission the SSDSs in the former Deli Spot and Sparkle Cleaners. SSDS removal activities were completed at the former Deli Spot in May 2017. As requested by the NYSDEC, sub-slab and indoor air testing will be conducted for at least two more heating seasons at the three (3) tenant spaces to monitor rebound following the shutdown of the SSDS's. The next event will be conducted during the 2017-2018 heating season. If any potential impacts are identified during the event then conditions will be evaluated and monitoring will continue.

Bio-augmentation injection events are generally scheduled when TOCs are outside the optimal geochemical range (50 mg/L to 500 mg/L) in monitoring well MW-5. On September 14, 2016, a bio-augmentation injection event was completed at the site injecting approximately 315 gallons of 10% molasses solution into the subsurface. Since the last injection event, TOC levels were below the targeted range with a TOC concentration of 44.4 mg/L during the 1st quarter 2017 sampling event. Therefore, TOC concentrations will be monitored and evaluated during the 2nd quarter 2017 to determine if adjustments are necessary. TOC concentrations in the monitoring well network can be referenced on **Table 2** and are graphically represented on **Figure 8**. Please refer to **Table 4** for a summary of the concentrations of the COCs for all currently sampled monitoring wells.

As demonstrated, monitoring well MW-5 exhibits an overall negative trend or no trend in groundwater concentrations since the initiation of the bio-augmentation remedy in August 2012 with the exception of trichloroethene. Based on the most recent groundwater data from March 2017, monitoring well MW-5 exhibits concentrations above GWQS at trichloroethene (13.4 ug/L), cis-1,2-dichlorethene (666 ug/L), and vinyl chloride (20.4 ug/L). In addition, monitoring well MW-5 exhibits low oxidation reduction potential (ORP) levels over the monitoring period, ranging from -11.5 to -78.9 millivolts (mv). This indicates that favorable reducing conditions have been maintained during the application of the bio-augmentation remedy within the targeted treatment area.

GES evaluated VOC concentrations in groundwater over the annual monitoring period. The results of this evaluation indicate that concentrations of COCs in groundwater generally have no trend over the annual period due to fluctuations in concentrations. COCs at monitoring well MW-8A were below GWQS levels except for vinyl chloride and concentrations at monitoring well MW-10 remained below laboratory detection limits. Additionally, ethene concentrations increased during the June 2016 sampling event at monitoring wells MW-4, MW-5, and MW-8B.

Based on observed groundwater concentrations and trends of COCs and the location of wells within the site monitoring network, GES, on behalf of UB Orangeburg, LLC, recommends the following:

- Department approval to conduct groundwater monitoring for VOCs and electron acceptor analytes on an annual basis beginning the 2nd quarter of 2017 with a reduced sampling list of monitoring wells: MW-3, MW-4, MW-5, MW-8A, and MW-E only.

- Eliminate the annual analyses for PCBs.
- Department approval to conduct groundwater monitoring for VOCs, TOC, pH, dissolved oxygen (DO), ORP, temperature, and conductivity quarterly at monitoring well MW-5 and control well MW-4 only to evaluate the effectiveness of the bio-augmentation remedy. Should analytical data collected from MW-5 continue to demonstrate concentrations of TOC are outside the targeted range of 50 to 500 mg/L, complete additional BAS injection events as outlined below:
    - Target MW-5 for continued bio-remediation by utilization injection wells IP-3, IP-4, INJ-3, and INJ-4;
    - Perform molasses injection (using a 10% solution) at a frequency to sustain the targeted TOC range; and,
    - Inject approximately 80 gallons of the molasses solution per injection location (totaling 320 gallons per event).
- Based on historical compliance with Groundwater Quality Standards, Department approval to abandon wells MW-1, MW-6, MW-7, MW-9A, 9B, 9C, MW-10, MW-11A, MW-11B, MW-12A, 12B, 12C, MW-13A, MW-15, MW-C, MW-D and MW-F.

Following Departmental review, comment and/or approval of the *Periodic Review Report* and its recommendations, the *Site Management Plan* will be updated to reflect the current site status and management plan.

Prepared by:

7/14/2017
Jessica M. Thomas Date
Associate Remediation Specialist

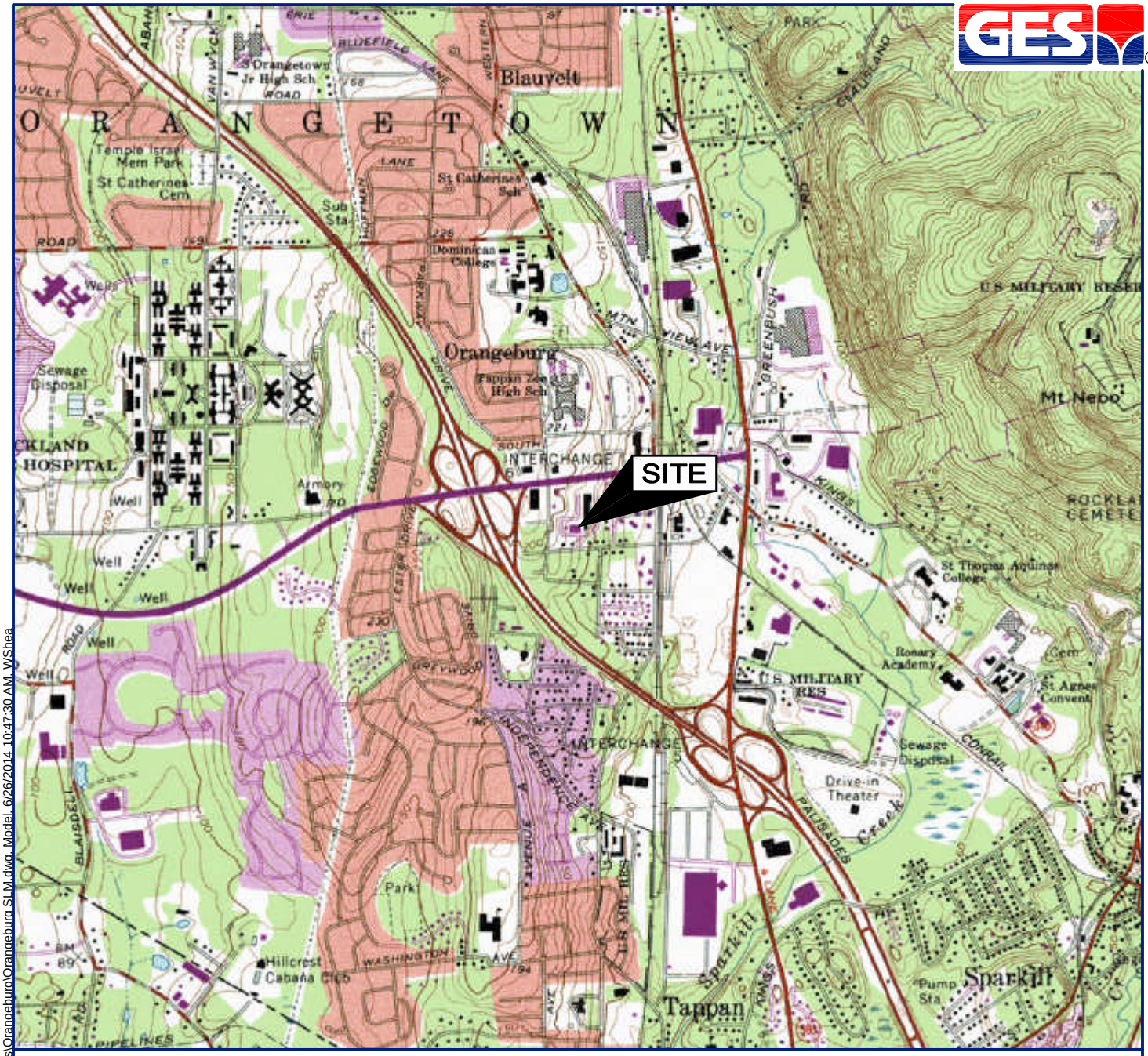
Reviewed by:

7/14/2017
Michael DeGloria, P.G Date
Senior Project Manager

Reviewed by:

7/14/2017
Genevieve F. Bock, P.E. Date
Regional Engineering Manager

FIGURES



SOURCE: USGS 7.5 MINUTE SERIES
TOPOGRAPHIC QUADRANGLE 1979
NYACK, NEW YORK
CONTOUR INTERVAL = 10'

QUADRANGLE LOCATION

DRAFTED BY: W.G.S. (N.J.)	SITE LOCATION MAP
CHECKED BY: CA	UB ORANGEBURG, LLC 1-45 ORANGETOWN SHOPPING CENTER ORANGEBURG, NEW YORK
REVIEWED BY: MD	Groundwater & Environmental Services, Inc. 16 MT. EBO ROAD SOUTH, SUITE 21, BREWSTER, NEW YORK 10509
NORTH	SCALE IN FEET: 0 – 2000 / DATE: 6-26-14 / FIGURE: 1

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LEGEND

- PROPERTY BOUNDARY
- CHAIN LINK FENCE
- CATCH BASIN
- UTILITY MANHOLE
- UTILITY POLE
- LIGHT POLE
- FIRE HYDRANT
- MONITORING WELL
- DESTROYED MONITORING WELL
- SOIL VAPOR EXTRACTION WELL
- SS — UNDERGROUND SANITARY SEWER LINE
- OHU — OVERHEAD UTILITIES

DRAFTED BY: W.G.S. (N.J.)	SITE MAP
CHECKED BY: CA	UB ORANGEBURG, LLC 1-45 ORANGETOWN SHOPPING CENTER ORANGEBURG, NEW YORK
REVIEWED BY: MD	Groundwater & Environmental Services, Inc. 16 MT. EBO ROAD SOUTH, SUITE 21, BREWSTER, NEW YORK 10509
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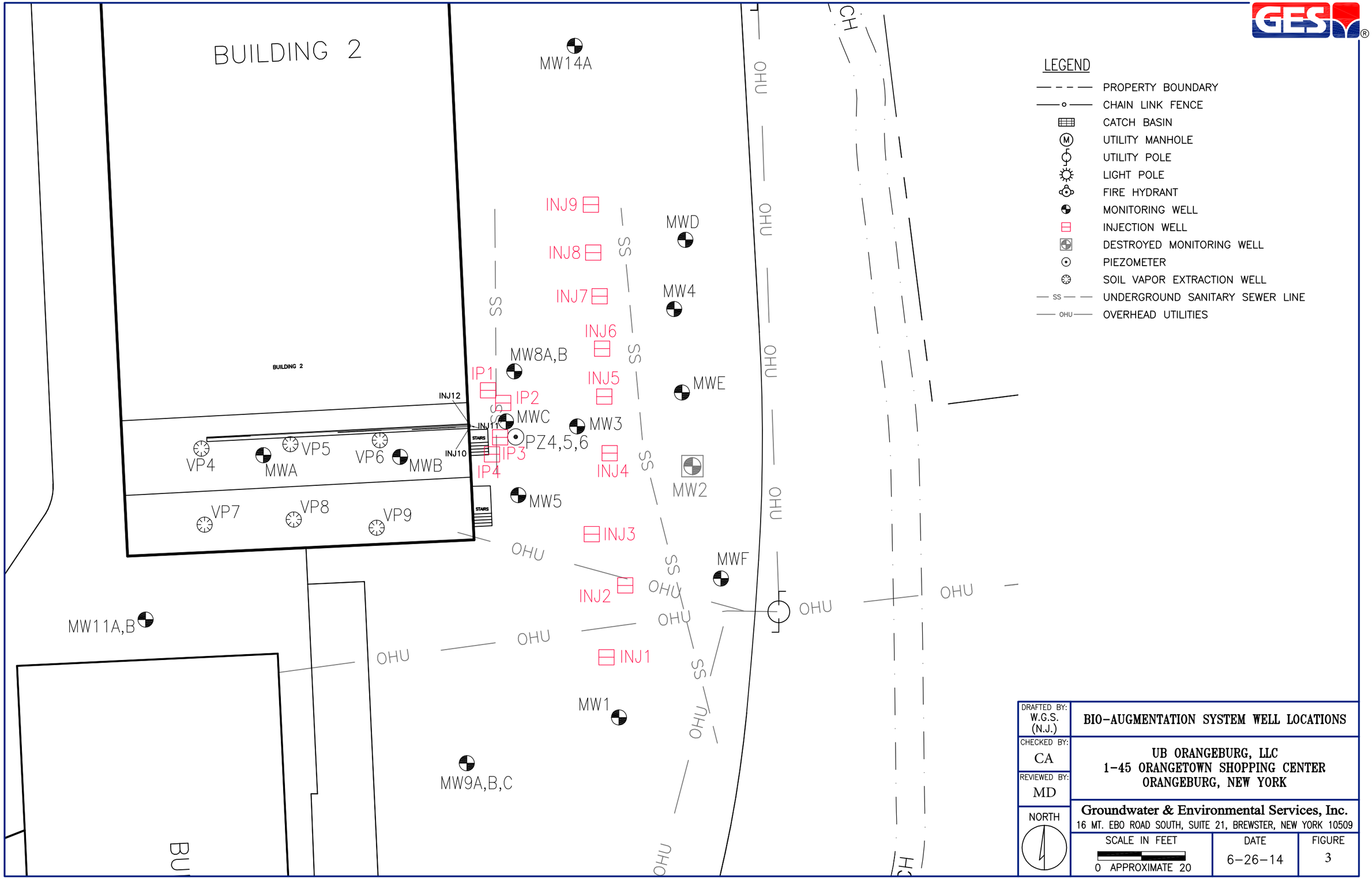

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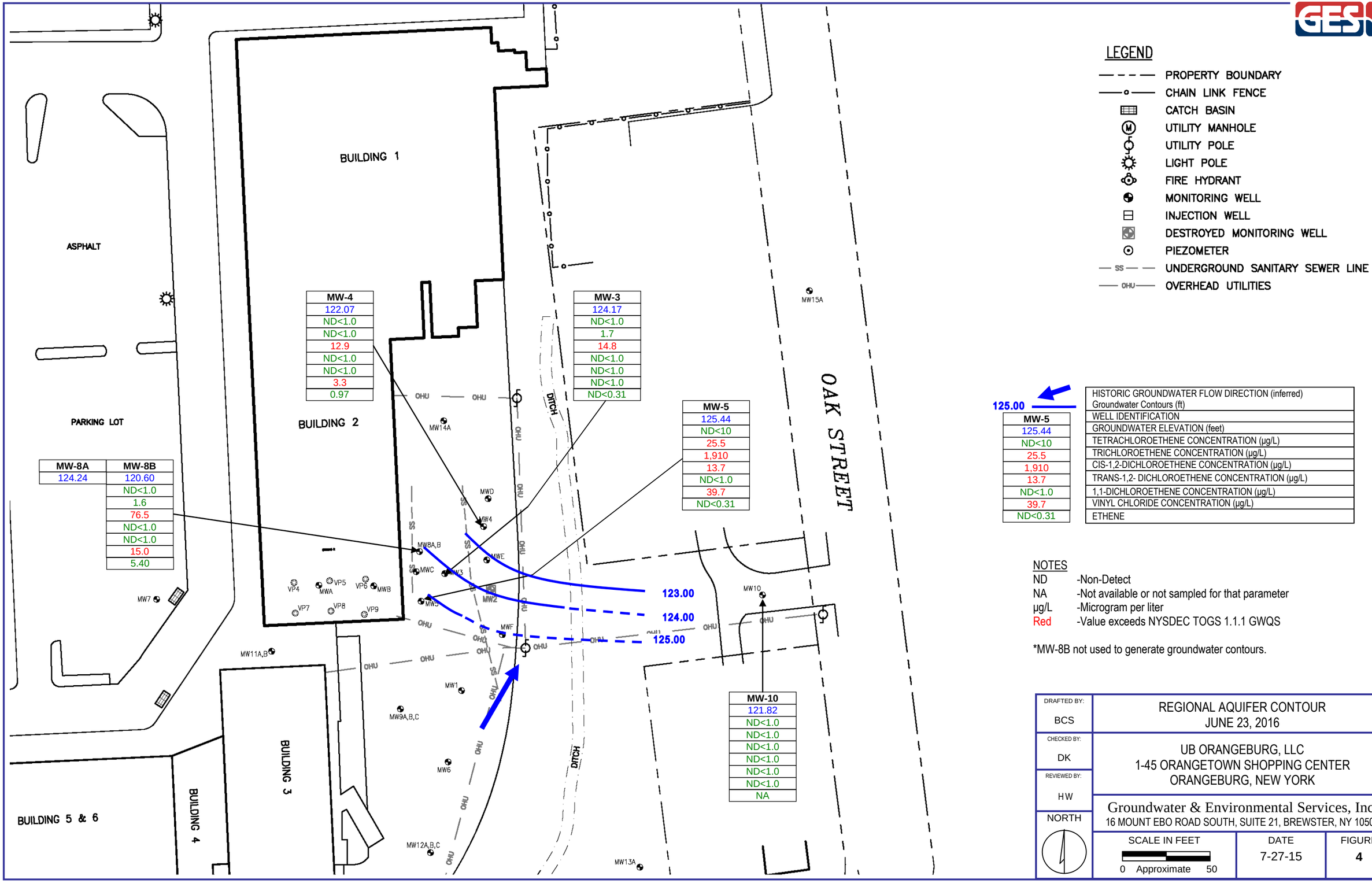


LEGEND

- PROPERTY BOUNDARY
- CHAIN LINK FENCE
- CATCH BASIN
- UTILITY MANHOLE
- UTILITY POLE
- LIGHT POLE
- FIRE HYDRANT
- MONITORING WELL
- INJECTION WELL
- DESTROYED MONITORING WELL
- PIEZOMETER
- SS — UNDERGROUND SANITARY SEWER LINE
- OHU — OVERHEAD UTILITIES

125.00 — HISTORIC GROUNDWATER FLOW DIRECTION (inferred) Groundwater Contours (ft)

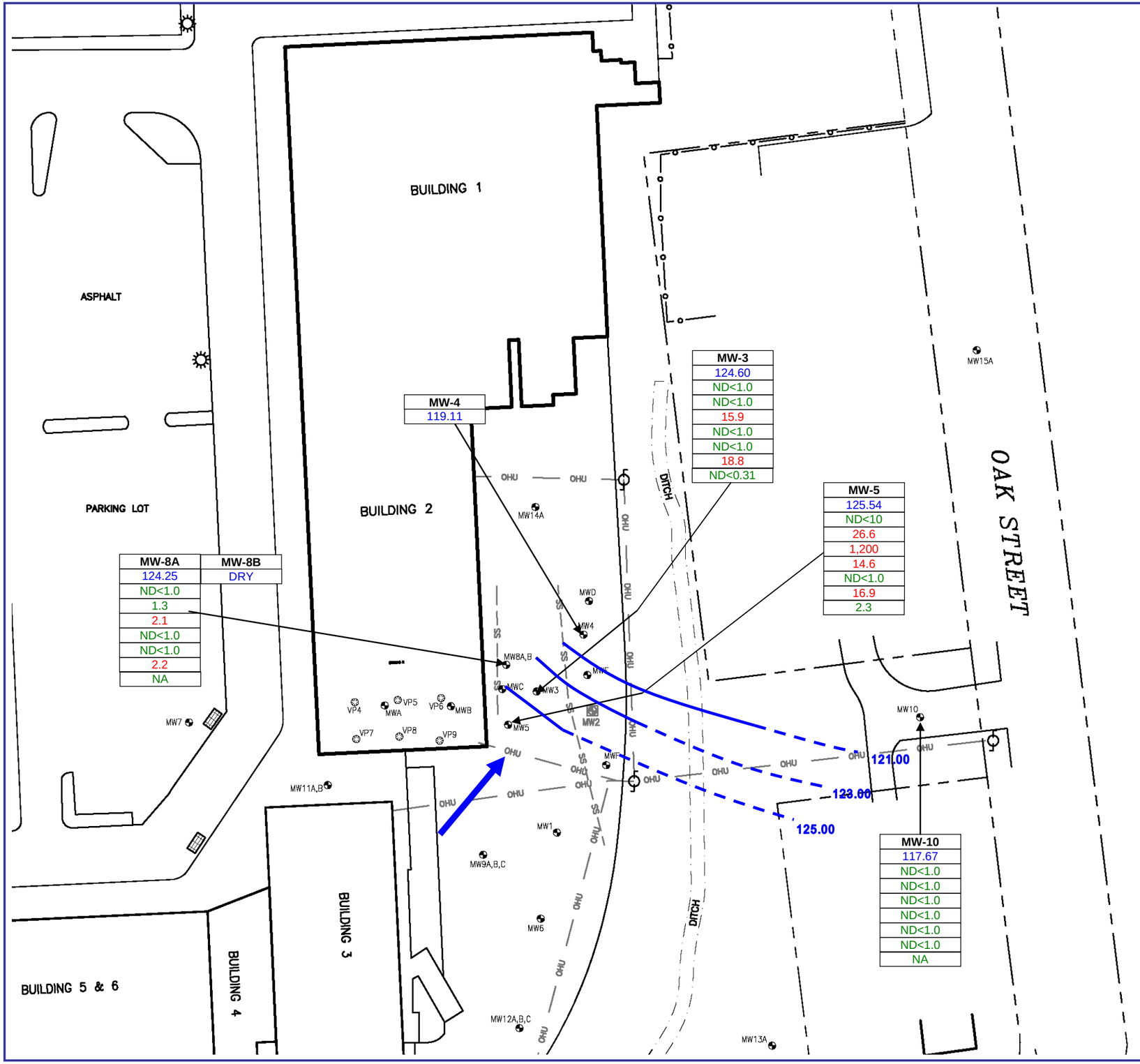
MW-5	WELL IDENTIFICATION
125.44	GROUNDWATER ELEVATION (feet)
ND<10	TETRACHLOROETHENE CONCENTRATION (µg/L)
25.5	TRICHLOROETHENE CONCENTRATION (µg/L)
1,910	CIS-1,2-DICHLOROETHENE CONCENTRATION (µg/L)
13.7	TRANS-1,2- DICHLOROETHENE CONCENTRATION (µg/L)
ND<1.0	1,1-DICHLOROETHENE CONCENTRATION (µg/L)
39.7	VINYL CHLORIDE CONCENTRATION (µg/L)
ND<0.31	ETHENE

NOTES

ND	-Non-Detect
NA	-Not available or not sampled for that parameter
µg/L	-Microgram per liter
Red	-Value exceeds NYSDEC TOGS 1.1.1 GWQS

*MW-8B not used to generate groundwater contours.

DRAFTED BY: BCS	REGIONAL AQUIFER CONTOUR JUNE 23, 2016
CHECKED BY: DK	UB ORANGEBURG, LLC 1-45 ORANGETOWN SHOPPING CENTER ORANGEBURG, NEW YORK
REVIEWED BY: HW	Groundwater & Environmental Services, Inc. 16 MOUNT EBO ROAD SOUTH, SUITE 21, BREWSTER, NY 10509
NORTH	SCALE IN FEET: 0 Approximate 50 / DATE: 7-27-15 / FIGURE: 4



LEGEND

- PROPERTY BOUNDARY
- CHAIN LINK FENCE
- CATCH BASIN
- UTILITY MANHOLE
- UTILITY POLE
- LIGHT POLE
- FIRE HYDRANT
- MONITORING WELL
- INJECTION WELL
- DESTROYED MONITORING WELL
- PIEZOMETER
- SS — UNDERGROUND SANITARY SEWER LINE
- OHU — OVERHEAD UTILITIES

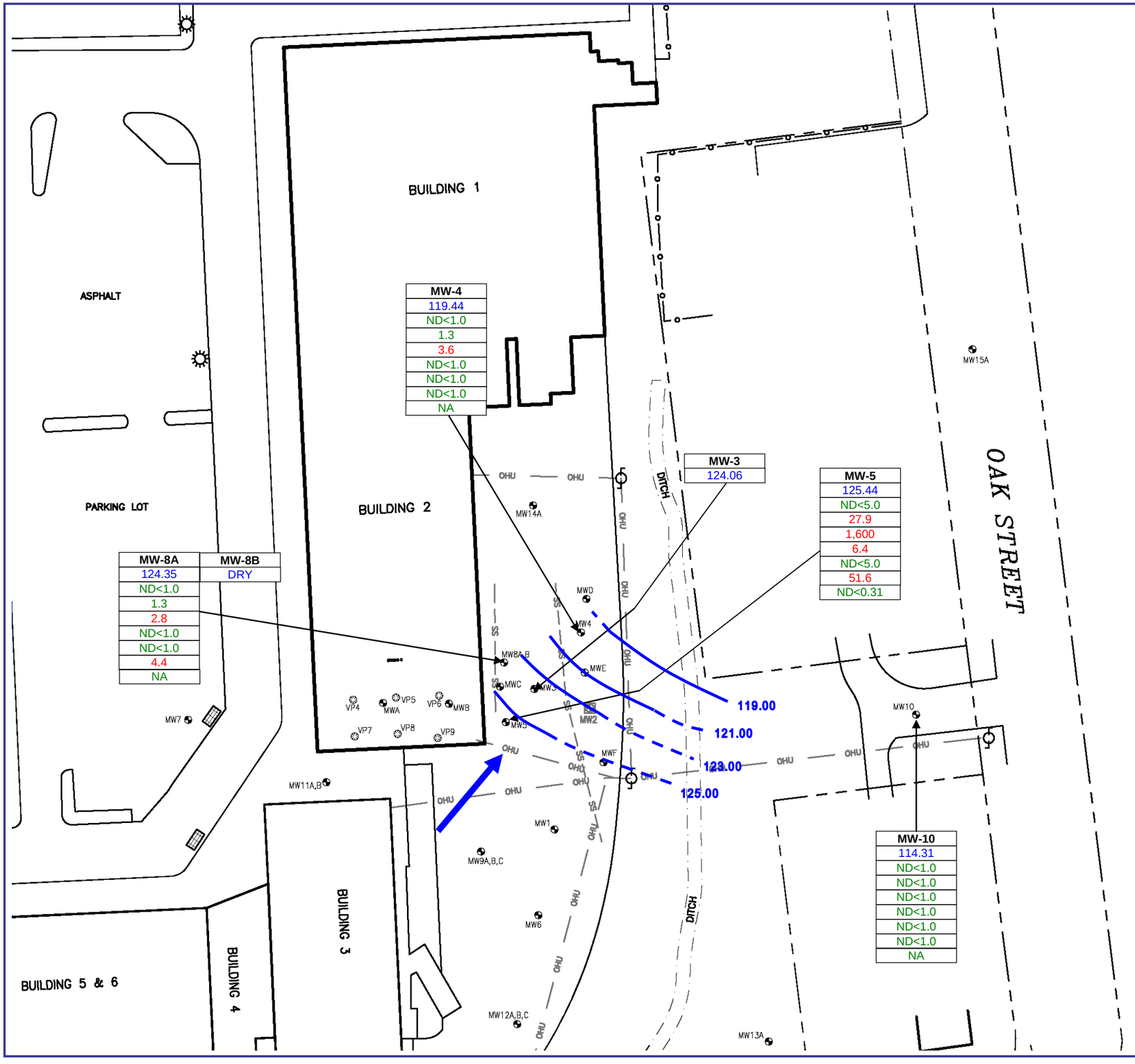
125.00 — HISTORIC GROUNDWATER FLOW DIRECTION (inferred)
Groundwater Contours (ft)

MW-5	
125.54	WELL IDENTIFICATION
ND<10	GROUNDWATER ELEVATION (feet)
26.6	TETRACHLOROETHENE CONCENTRATION (µg/L)
1,200	TRICHLOROETHENE CONCENTRATION (µg/L)
14.6	CIS-1,2-DICHLOROETHENE CONCENTRATION (µg/L)
ND<1.0	TRANS-1,2- DICHLOROETHENE CONCENTRATION (µg/L)
16.9	1,1-DICHLOROETHENE CONCENTRATION (µg/L)
2.3	VINYL CHLORIDE CONCENTRATION (µg/L)
	ETHENE

NOTES
ND -Non-Detect
NA -Not available or not sampled for that parameter
µg/L -Microgram per liter
Red -Value exceeds NYSDEC TOGS 1.1.1 GWQS

*MW-8B not sampled due to insufficient amount of water.

DRAFTED BY: BCS	REGIONAL AQUIFER CONTOUR MAP SEPTEMBER 7, 2016
CHECKED BY: DK	UB ORANGEBURG, LLC 1-45 ORANGETOWN SHOPPING CENTER ORANGEBURG, NEW YORK
REVIEWED BY: HW	Groundwater & Environmental Services, Inc. 16 MOUNT EBO ROAD SOUTH, SUITE 21, BREWSTER, NY 10509
NORTH	SCALE IN FEET: 0 Approximate 50 / DATE: 12-9-16 / FIGURE: 5



LEGEND

- PROPERTY BOUNDARY
- CHAIN LINK FENCE
- CATCH BASIN
- UTILITY MANHOLE
- UTILITY POLE
- LIGHT POLE
- FIRE HYDRANT
- MONITORING WELL
- INJECTION WELL
- DESTROYED MONITORING WELL
- PIEZOMETER
- SS — UNDERGROUND SANITARY SEWER LINE
- OHU — OVERHEAD UTILITIES

125.00 — HISTORIC GROUNDWATER FLOW DIRECTION (inferred) Groundwater Contours (ft)

MW-5	WELL IDENTIFICATION
125.44	GROUNDWATER ELEVATION (feet)
ND<5.0	TETRACHLOROETHENE CONCENTRATION (µg/L)
27.9	TRICHLOROETHENE CONCENTRATION (µg/L)
1,600	CIS-1,2-DICHLOROETHENE CONCENTRATION (µg/L)
6.4	TRANS-1,2- DICHLOROETHENE CONCENTRATION (µg/L)
ND<5.0	1,1-DICHLOROETHENE CONCENTRATION (µg/L)
51.6	VINYL CHLORIDE CONCENTRATION (µg/L)
ND<0.31	ETHENE

NOTES

ND	-Non-Detect
NA	-Not available or not sampled for that parameter
µg/L	-Microgram per liter
Red	-Value exceeds NYSDEC TOGS 1.1.1 GWQS

*Monitoring wells MW-3 and MW-8B not sampled due to an insufficient amount of water.

DRAFTED BY: BCS	GROUNDWATER MONITORING MAP NOVEMBER 18, 2016
CHECKED BY: DK	UB ORANGEBURG, LLC 1-45 ORANGETOWN SHOPPING CENTER ORANGEBURG, NEW YORK
REVIEWED BY: HW	Groundwater & Environmental Services, Inc. 16 MOUNT EBO ROAD SOUTH, SUITE 21, BREWSTER, NY 10509
NORTH	SCALE IN FEET: 0 Approximate 50 / DATE: 12-21-16 / FIGURE: 6

LEGEND

- PROPERTY BOUNDARY
- CHAIN LINK FENCE
- CATCH BASIN
- UTILITY MANHOLE
- UTILITY POLE
- LIGHT POLE
- FIRE HYDRANT
- MONITORING WELL
- INJECTION WELL
- DESTROYED MONITORING WELL
- PIEZOMETER
- SS — UNDERGROUND SANITARY SEWER LINE
- OHU — OVERHEAD UTILITIES

125.00 — HISTORIC GROUNDWATER FLOW DIRECTION (inferred)
Groundwater Contours (ft)

MW-5	WELL IDENTIFICATION
125.95	GROUNDWATER ELEVATION (feet)
1.2	TETRACHLOROETHENE CONCENTRATION (µg/L)
13.4	TRICHLOROETHENE CONCENTRATION (µg/L)
666	CIS-1,2-DICHLOROETHENE CONCENTRATION (µg/L)
4.3	TRANS-1,2- DICHLOROETHENE CONCENTRATION (µg/L)
ND<1.0	1,1-DICHLOROETHENE CONCENTRATION (µg/L)
20.4	VINYL CHLORIDE CONCENTRATION (µg/L)
0.41	ETHENE

NOTES

ND	-Non-Detect
NA	-Not available or not sampled for that parameter
µg/L	-Microgram per liter
Red	-Value exceeds NYSDEC TOGS 1.1.1 GWQS

*Monitoring well MW-8B not sampled due to an obstruction in the well.

DRAFTED BY: BCS	GROUNDWATER MONITORING MAP MARCH 3, 2017
CHECKED BY: DK	UB ORANGEBURG, LLC 1-45 ORANGETOWN SHOPPING CENTER ORANGEBURG, NEW YORK
REVIEWED BY: HW	Groundwater & Environmental Services, Inc. 16 MOUNT EBO ROAD SOUTH, SUITE 21, BREWSTER, NY 10509
NORTH	SCALE IN FEET: 0 Approximate 50 / DATE: 4-5-17 / FIGURE: 7

Figure 8

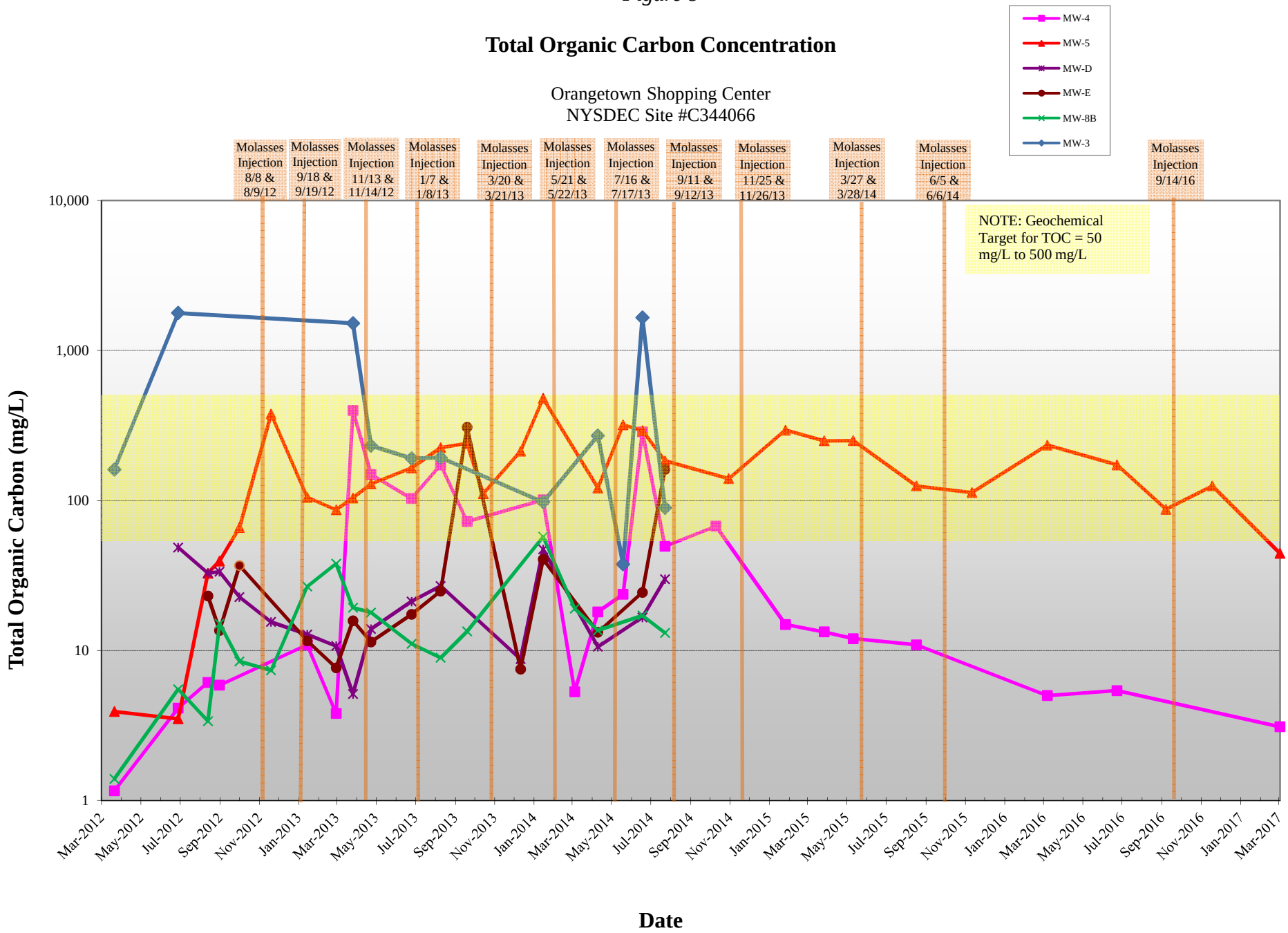
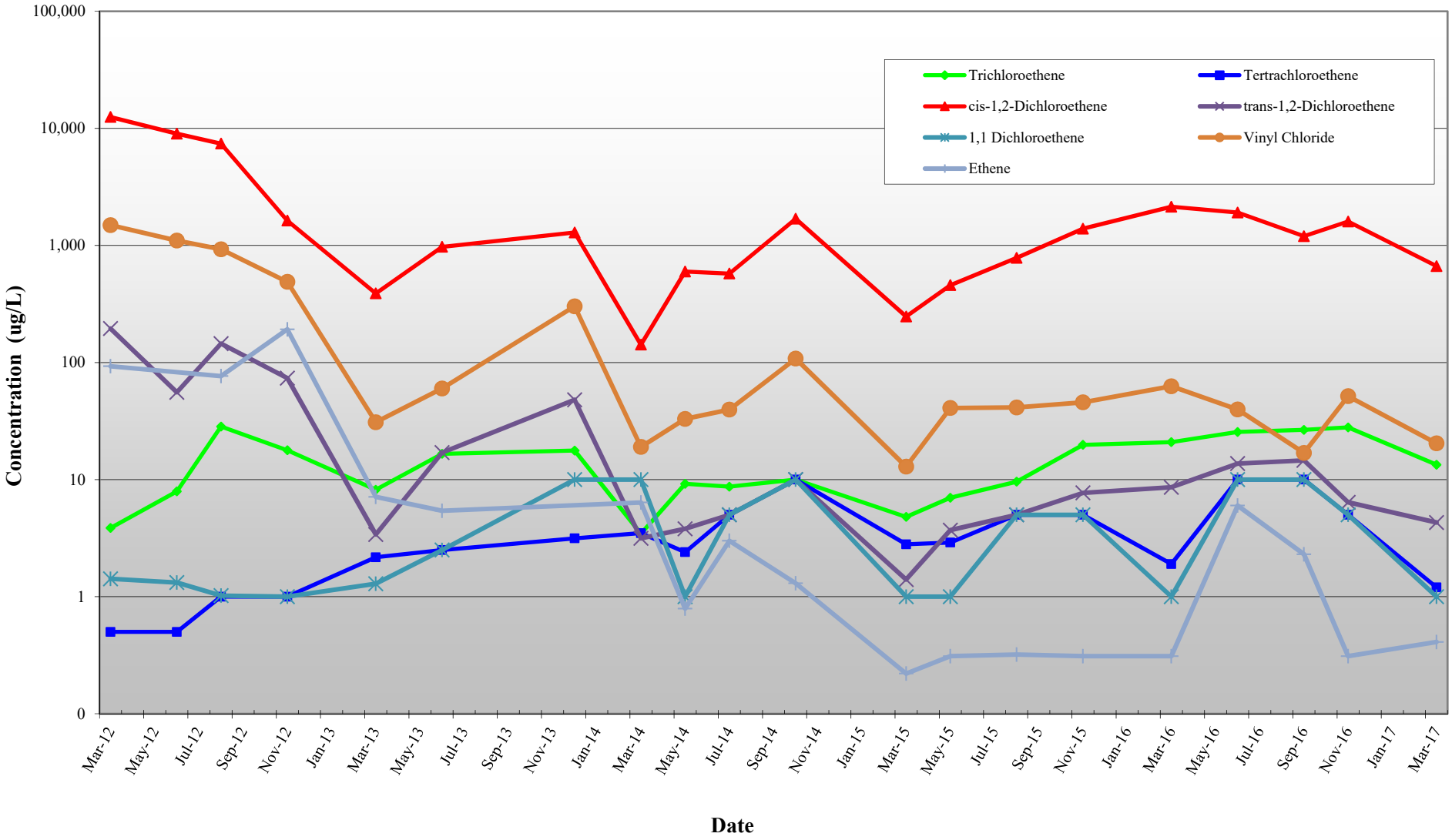
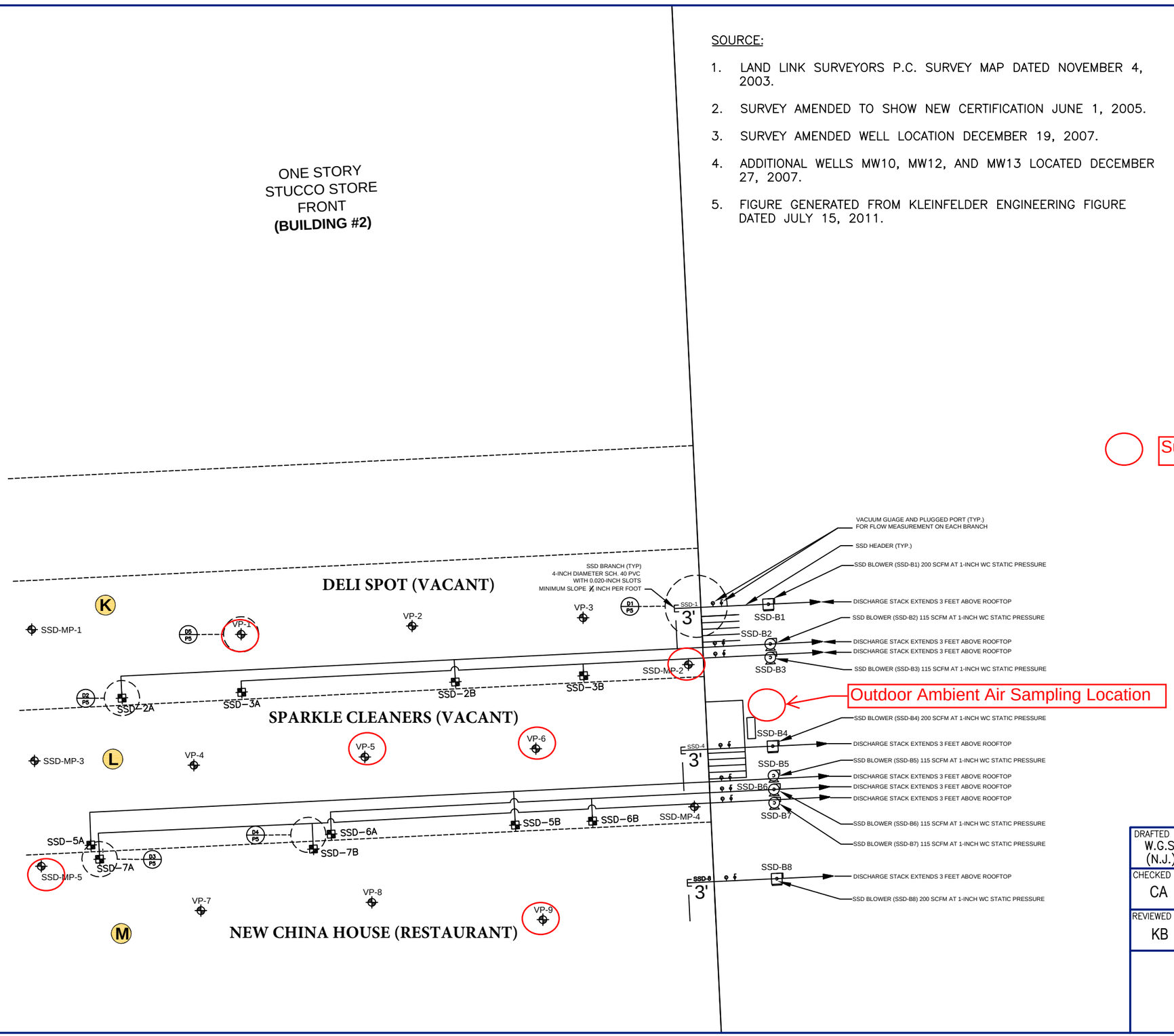

Total Organic Carbon Concentration
Orangetown Shopping Center
NYSDEC Site #C344066
MW-4
MW-5
MW-D
MW-E
MW-8B
MW-3
Molasses Injection 8/8 & 8/9/12
Molasses Injection 9/18 & 9/19/12
Molasses Injection 11/13 & 11/14/12
Molasses Injection 1/7 & 1/8/13
Molasses Injection 3/20 & 3/21/13
Molasses Injection 5/21 & 5/22/13
Molasses Injection 7/16 & 7/17/13
Molasses Injection 9/11 & 9/12/13
Molasses Injection 11/25 & 11/26/13
Molasses Injection 3/27 & 3/28/14
Molasses Injection 6/5 & 6/6/14
Molasses Injection 9/14/16
NOTE: Geochemical Target for TOC = 50 mg/L to 500 mg/L
Total Organic Carbon (mg/L)
10,000
1,000
100
10
1
Mar-2012
May-2012
Jul-2012
Sep-2012
Nov-2012
Jan-2013
Mar-2013
May-2013
Jul-2013
Sep-2013
Nov-2013
Jan-2014
Mar-2014
May-2014
Jul-2014
Sep-2014
Nov-2014
Jan-2015
Mar-2015
May-2015
Jul-2015
Sep-2015
Nov-2015
Jan-2016
Mar-2016
May-2016
Jul-2016
Sep-2016
Nov-2016
Jan-2017
Mar-2017
Date

Figure 9

MW-5
Chlorinated Solvent Reductive Transformation Pathway

Orangetown Shopping Center
NYSDEC Site #C344066





SOURCE:

1. LAND LINK SURVEYORS P.C. SURVEY MAP DATED NOVEMBER 4, 2003.
2. SURVEY AMENDED TO SHOW NEW CERTIFICATION JUNE 1, 2005.
3. SURVEY AMENDED WELL LOCATION DECEMBER 19, 2007.
4. ADDITIONAL WELLS MW10, MW12, AND MW13 LOCATED DECEMBER 27, 2007.
5. FIGURE GENERATED FROM KLEINFELDER ENGINEERING FIGURE DATED JULY 15, 2011.

LEGEND

- SSD-MP-6 — SUB-SLAB MONITORING PORT
- SUB-SLAB VAPOR EXTRACTION WELL
- D1 / P5 — DETAIL NUMBER / PLATE NUMBER
- SSD BLOWER (115 SCFM)
- SSD BLOWER (200 SCFM)
- VACUUM GAUGE
- PLUGGED PORT

COMMERCIAL STORE ID TABLE (BUILDING #2)

- (K) FORMER THE DELI SPOT
- (L) FORMER SPARKLE CLEANERS
- (M) NEW CHINA HOUSE

Sub-slab and/or ambient air sampling locations

NOTES:

1. THE EXTRACTION PIPING INSIDE THE BUILDING IS ROUTED ABOVE THE SUB-CEILING OR ALONG THE EXTERIOR WALL.
2. DISCHARGE STACKS EXTEND 3 FEET ABOVE THE ROOFTOP (TYP.).

DRAFTED BY: W.G.S. (N.J.)	Sub-Slab and Ambient Air Sampling Locations	
CHECKED BY: CA	UB ORANGEBURG, LLC 1-45 ORANGETOWN SHOPPING CENTER ORANGEBURG, NEW YORK	
REVIEWED BY: KB	Groundwater & Environmental Services, Inc. 16 MT. EBO ROAD SOUTH, SUITE 21, BREWSTER, NEW YORK 10509	
	NOT TO SCALE	DATE 10-24-14 / FIGURE 10

M:\Graphics\1100-Patterson-LHV\Misc\Urstadt Biddle Properties\Orangeburg\Engineering\Orangeburg (KLF-details).dwg, B- (3), 10/24/2014 10:14:39 AM, WShea

TABLES

Table 1
GROUNDWATER GAUGING

Orangetown Shopping Center
NYSDEC Site # C344066

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Detector Reading (ppm)
MW-3	3/22/2012	166.67	38.37	128.30	0.9
	6/28/2012	166.67	41.68	124.99	0.3
	8/13/2012	166.67	-	-	0
	8/31/2012	166.67	43.20	123.47	0
	10/1/2012	166.67	42.55	124.12	0
	11/19/2012	166.67	42.47	124.20	0
	1/14/2013	166.67	42.85	123.82	0
	2/28/2013	166.67	42.40	124.27	0
	3/26/2013	166.67	39.30	127.37	0
	4/23/2013	166.67	40.00	126.67	0
	6/25/2013	166.67	36.63	130.04	-
	12/11/2013	166.67	42.39	124.28	-
	1/15/2014	166.67	42.27	124.40	-
	3/5/2014	166.67	38.76	127.91	0
	4/10/2014	166.67	38.76	127.91	0
	5/19/2014	166.67	34.95	131.72	0
	6/18/2014	166.67	35.58	131.09	0
	7/23/2014	166.67	39.60	127.07	0
	10/10/2014	166.67	DRY	-	0
	3/27/2015	166.67	34.02	132.65	0
	5/11/2015	166.67	40.10	126.57	0
	8/17/2015	166.67	42.50	124.17	0
	11/11/2015	166.67	36.14	130.53	0
	3/7/2016	166.67	41.40	125.27	0
	6/23/2016	166.67	42.50	124.17	0
	9/7/2016	166.67	42.07	124.60	0
	11/18/2016	166.67	42.61	124.06	0
	3/3/2017	166.67	40.92	125.75	0
MW-4	3/21/2012	165.88	37.50	128.38	4.0
	6/28/2012	165.88	42.15	123.73	0.8
	8/13/2012	165.88	43.75	122.13	0
	8/31/2012	165.88	44.55	121.33	0
	10/1/2012	165.88	46.20	119.68	0
	11/19/2012	165.88	45.60	120.28	0
	1/14/2013	165.88	44.30	121.58	0
	2/28/2013	165.88	42.12	123.76	0
	3/26/2013	165.88	38.85	127.03	0
	4/23/2013	165.88	39.65	126.23	20.0
	6/25/2013	165.88	35.85	130.03	-
	12/11/2013	165.88	46.05	119.83	-
	1/15/2014	165.88	45.41	120.47	-
	3/5/2014	165.88	43.31	122.57	0
	4/10/2014	165.88	38.21	127.67	0
	5/19/2014	165.88	34.18	131.70	0
	6/18/2014	165.88	34.52	131.36	0
	7/23/2014	165.88	37.45	128.43	0

Table 1
GROUNDWATER GAUGING

Orangetown Shopping Center
NYSDEC Site # C344066

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Detector Reading (ppm)
MW-4 (cont.)	10/10/2014	165.88	44.53	121.35	0
	1/26/2015	165.88	42.90	122.98	0
	3/27/2015	165.88	38.82	127.06	0
	5/11/2015	165.88	37.76	128.12	0
	8/17/2015	165.88	44.30	121.58	0
	11/11/2015	165.88	45.58	120.30	0
	3/7/2016	165.88	41.30	124.58	0
	6/23/2016	165.88	43.81	122.07	0
	9/7/2016	165.88	46.77	119.11	0
	11/18/2016	165.88	46.44	119.44	0
	3/3/2017	165.88	40.48	125.40	0
MW-5	3/21/2012	166.70	39.70	127.00	22.6
	6/28/2012	166.70	40.31	126.39	0.6
	8/13/2012	166.70	40.27	126.43	0.7
	8/31/2012	166.70	40.30	126.40	0
	10/1/2012	166.70	40.40	126.30	1.0
	11/19/2012	166.70	40.42	126.28	0
	1/14/2013	166.70	40.25	126.45	0
	2/28/2013	166.70	40.35	126.35	1.7
	3/26/2013	166.70	39.85	126.85	6.9
	4/23/2013	166.70	40.27	126.43	0
	6/25/2013	166.70	37.11	129.59	-
	12/11/2013	166.70	40.65	126.05	-
	1/15/2014	166.70	37.22	129.48	-
	3/5/2014	166.70	40.11	126.59	0
	4/10/2014	166.70	39.41	127.29	0
	5/19/2014	166.70	34.98	131.72	0
	6/18/2014	166.70	35.42	131.28	0
	7/23/2014	166.70	38.44	128.26	0
	10/10/2014	166.70	40.55	126.15	0
	1/26/2015	166.70	39.01	127.69	0
	3/27/2015	166.70	34.77	131.93	0
	5/11/2015	166.70	38.76	127.94	0
	8/17/2015	166.70	41.32	125.38	0
	11/11/2015	166.70	40.81	125.89	0
	3/7/2016	166.70	40.60	126.10	0
	6/23/2016	166.70	41.26	125.44	0
	9/7/2016	166.70	41.16	125.54	0
	11/18/2016	166.70	41.26	125.44	0
	3/3/2017	166.70	40.75	125.95	0
MW-6	3/22/2012	166.14	36.85	129.29	0
	6/28/2012	166.14	41.41	124.73	0
	8/13/2012	166.14	41.11	125.03	0
	11/19/2012	166.14	47.15	118.99	0
	3/26/2013	166.14	39.65	126.49	0
	6/25/2013	166.14	36.61	129.53	-

Table 1
GROUNDWATER GAUGING

Orangetown Shopping Center
NYSDEC Site # C344066

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Detector Reading (ppm)
MW-6 (cont.)	12/11/2013	166.14	49.83	116.31	-
	3/5/2014	166.14	41.53	124.61	0
	5/19/2014	166.14	34.71	131.43	0
	7/23/2014	166.14	36.50	129.64	0
	3/27/2015	166.14	39.22	126.92	0
MW-7	3/21/2012	171.49	39.30	132.19	0
	6/29/2012	171.49	42.18	129.31	0
	8/13/2012	171.49	46.97	124.52	0
	11/19/2012	171.49	47.80	123.69	0
	3/26/2013	171.49	44.98	126.51	0
	4/23/2013	171.49	42.73	128.76	-
	6/25/2013	171.49	38.30	133.19	-
	12/11/2013	171.49	47.27	124.22	-
	3/5/2014	171.49	46.16	125.33	0
	5/19/2014	171.49	37.32	134.17	0
	7/23/2014	171.49	39.74	131.75	0
	3/27/2015	171.49	44.72	126.77	0
MW-8A	3/21/2012	166.15	41.90	124.25	38.0
	6/28/2012	166.15	42.00	124.15	43.5
	8/13/2012	166.15	DRY	-	34.6
	8/31/2012	166.15	41.80	124.35	24.0
	10/1/2012	166.15	42.10	124.05	12.2
	11/19/2012	166.15	42.40	123.75	39.4
	1/14/2013	166.15	42.95	123.13	0
	2/28/2013	166.15	42.60	123.55	37.6
	3/26/2013	166.15	-	-	0.1
	4/23/2013	166.15	42.05	124.10	35.5
	6/25/2013	166.15	39.95	126.20	-
	12/11/2013	166.15	41.80	124.35	-
	1/15/2014	166.15	42.68	123.47	-
	3/5/2014	166.15	42.63	123.52	0
	4/10/2014	166.15	39.67	126.48	0
	5/19/2014	166.15	42.83	123.32	0
	6/18/2014	166.15	37.12	129.03	0
	7/23/2014	166.15	42.05	124.10	0
	10/10/2014	166.15	DRY	-	0
	3/27/2015	166.15	40.31	125.84	0
	5/11/2015	166.15	42.08	124.07	0
	8/17/2015	166.15	42.30	123.85	0
	11/11/2015	166.15	41.82	124.33	0
	3/7/2016	166.15	41.80	124.35	0
	6/23/2016	166.15	41.91	124.24	0
	9/7/2016	166.15	41.90	124.25	0
	11/18/2016	166.15	41.80	124.35	0
	3/3/2017	166.15	41.72	124.43	0

Table 1
GROUNDWATER GAUGING

Orangetown Shopping Center
NYSDEC Site # C344066

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Detector Reading (ppm)
MW-8B	3/21/2012	166.08	39.13	126.95	14.6
	6/28/2012	166.08	42.55	123.53	5.1
	8/13/2012	166.08	45.30	120.78	0.7
	8/31/2012	166.08	46.40	119.68	0
	10/1/2012	166.08	49.40	116.68	0.1
	11/19/2012	166.08	48.45	117.63	0
	1/14/2013	166.08	47.07	119.01	0
	2/28/2013	166.08	44.00	122.08	0
	3/26/2013	166.08	40.32	125.76	4.6
	4/23/2013	166.08	40.08	126.00	30.2
	6/25/2013	166.08	37.20	128.88	-
	12/11/2013	166.08	49.63	116.45	-
	1/15/2014	166.08	49.63	116.45	-
	3/5/2014	166.08	45.07	121.01	0
	4/10/2014	166.08	39.69	126.39	0
	5/19/2014	166.08	35.55	130.53	0
	6/18/2014	166.08	36.05	130.03	0
	7/23/2014	166.08	38.95	127.13	0
	10/10/2014	166.08	47.21	118.87	0
	3/27/2015	166.08	40.21	125.87	0
	5/11/2015	166.08	39.15	126.93	0
	8/17/2015	166.08	45.32	120.76	0
	11/11/2015	166.08	41.56	124.52	0
	3/7/2016	166.08	42.85	123.23	0
	6/23/2016	166.08	45.85	120.23	0
	9/7/2016	166.08	DRY	-	0
	11/18/2016	166.08	DRY	-	0
	3/3/2017	166.08	42.11	123.97	0
MW-10	3/21/2012	137.86	9.37	128.49	0
	6/29/2012	137.86	12.58	125.28	0
	8/13/2012	137.86	15.38	122.48	0
	11/19/2012	137.86	18.00	119.86	0
	3/26/2013	137.86	9.90	127.96	0
	6/25/2013	137.86	8.05	129.81	-
	12/11/2013	137.86	19.71	118.15	-
	3/5/2014	137.86	9.33	128.53	0
	4/10/2014	137.86	9.33	128.53	0
	5/19/2014	137.86	5.75	132.11	0
	7/23/2014	137.86	9.87	127.99	0
	10/10/2014	137.86	18.12	119.74	0
	3/27/2015	137.86	9.55	128.31	0
	5/11/2015	137.86	9.92	127.94	0
	8/17/2015	137.86	15.80	122.06	0
	11/11/2015	137.86	21.47	116.39	0
	3/7/2016	137.86	12.46	125.40	0
	6/23/2016	137.86	16.04	121.82	0

Table 1
GROUNDWATER GAUGING

Orangetown Shopping Center
NYSDEC Site # C344066

Monitoring Well	Date	Top of Casing (ft)	Depth to Water (ft)	GW Elevation (ft)	Detector Reading (ppm)
MW-10	9/7/2016	137.86	20.19	117.67	0
(cont.)	11/18/2016	137.86	23.55	114.31	0
	3/3/2017	137.86	11.55	126.31	0

Notes:

DRY = No water in well to gauge
\- = Not available or measured
ft = Feet
ppm = parts per million

Table 2
GENERAL CHEMISTRY ANALYTICAL RESULTS

Orangetown Shopping Center
NYSDEC Site # C344066

Monitoring Well	Date	Iron, Ferric (mg/l)	Iron, Ferrous (mg/l)	Iron, Total (mg/l)	Nitrate Nitrogen (mg/l)	Sulfate (mg/l)	Total Organic Carbon (mg/l)	Ethene (mg/l)
NY TOGS 1.1.1 GWQS		NA	NA	NA	NA	NA	NA	NA
MW-3	3/22/2012	NA	NA	NA	ND<0.0500	8.94	161	0.00628 B
	6/28/2012	NA	NA	NA	NA	NA	1,780	NA
	8/13/2012	NS	NS	NS	NS	NS	NS	NS
	8/31/2012	NS	NS	NS	NS	NS	NS	NS
	10/1/2012	NS	NS	NS	NS	NS	NS	NS
	11/19/2012	NS	NS	NS	NS	NS	NS	NS
	1/14/2013	NS	NS	NS	NS	NS	NS	NS
	2/28/2013	NS	NS	NS	NS	NS	NS	NS
	3/26/2013	5.60	41.6	47.2	NA	8.01	1520 B	ND<0.0025
	4/23/2013	NA	NA	NA	NA	NA	232 B	NA
	6/25/2013	6.50	24.4	30.9	NA	29.4	191	ND<0.0025
	12/11/2013	NS	NS	NS	NS	NS	NS	NS
	1/15/2014	NA	NA	NA	NA	NA	97.6	NA
	3/5/2014	NS	NS	NS	NS	NS	NS	NS
	4/10/2014	NA	NA	NA	NA	NA	271	NA
	5/19/2014	8.9	0.52	9.39	ND<0.11	ND<10	37.6	ND<0.00031
	6/18/2014	NA	NA	NA	NA	NA	1,660	NA
	7/24/2014	17.5	3.5	21.0	ND<0.10	ND<10	89.3	ND<0.00031
	10/10/2014	NS	NS	NS	NS	NS	NS	NS
	3/27/2015	102.0	ND<0.20	102	0.29	19.8	NS	ND<0.00031
	5/11/2015	36.0	0.52	36.5	ND<0.11	ND<20	NS	ND<0.00031
	8/17/2015	NA	NA	NA	NA	NA	NA	ND<0.00031
	11/11/2015	30.1	ND<0.20	30.1	ND<0.010	10.4	NA	ND<0.00031
	3/7/2016	31.1	ND<2.0	31.1	ND<0.11	ND<10	NA	ND<0.00031
	6/23/2016	NA	NA	NA	NA	NA	NA	ND<0.00031
	9/7/2016	NA	NA	NA	NA	NA	NA	ND<0.00031
	11/18/2016	NS	NS	NS	NS	NS	NS	NS
	3/3/2017	NA	NA	NA	NA	NA	NA	ND<0.00031
MW-4	3/21/2012	0.0560	ND<50.0 J	0.0560	0.993	24.9	1.16	ND<0.00250
	6/28/2012	NA	NA	NA	NA	NA	4.13 B	NA
	8/13/2012	NA	7.01	6.97	NA	28.9	NA	ND<0.005
	8/31/2012	NA	NA	NA	NA	NA	5.87	NA
	10/1/2012	NS	NS	NS	NS	NS	NS	NS
	11/19/2012	NA	NA	NA	NA	NA	NA	ND<0.005
	1/14/2013	NA	NA	NA	NA	NA	10.9	NA
	2/28/2013	NA	NA	NA	NA	NA	3.8	NA
	3/26/2013	0.300	10.6	10.3	NA	12.2	399 B	0.0083
	4/23/2013	NA	NA	NA	NA	NA	149	NA
	6/25/2013	1.70	12.1	13.8	NA	ND<0.6	103	0.00609
	12/11/2013	NS	NS	NS	NS	NS	NS	NS
	1/15/2014	NA	NA	NA	NA	NA	101	NA
	3/5/2014	ND<0.100	NA	4.03 B	NA	27.4	5.31	ND<0.00500
	4/10/2014	NA	NA	NA	NA	NA	18.1	NA
	5/19/2014	4.1	ND<0.20	4.23	ND<0.11	10.6	23.7	0.00043
	6/18/2014	NA	NA	NA	NA	NA	287	NA
	7/24/2014	3.4	2.41	5.81	ND<0.10	ND<10	49.5	ND<0.00031
	10/10/2014	NA	NA	NA	ND<0.10	ND<10	67.4	ND<0.00031
	1/26/2015	NA	NA	NA	NA	NA	14.9	NA
	3/27/2015	3.3	0.50	3.83	ND<0.10	ND<10	13.3	ND<0.00031
	5/11/2015	3.4	ND<0.20	3.60	0.23	20.9	12.0	ND<0.00031

Table 2
GENERAL CHEMISTRY ANALYTICAL RESULTS

Orangetown Shopping Center
NYSDEC Site # C344066

Monitoring Well	Date	Iron, Ferric (mg/l)	Iron, Ferrous (mg/l)	Iron, Total (mg/l)	Nitrate Nitrogen (mg/l)	Sulfate (mg/l)	Total Organic Carbon (mg/l)	Ethene (mg/l)
NY TOGS 1.1.1 GWQS		NA	NA	NA	NA	NA	NA	NA
MW-4	8/17/2015	NA	1.8	NA	ND<0.11	12	10.9	ND<0.00031
(cont)	11/11/2015	NA	NA	NA	NA	NA	NA	ND<0.00031
	3/7/2016	2.2	ND<0.20	2.2	ND<0.11	32.6	5.0	ND<0.00031
	6/23/2016	15.9	1.1	17	ND<0.11	33.4	5.4	0.00097
	9/7/2016	NS	NS	NS	NS	NS	NS	NS
	11/18/2016	NA	NA	NA	NA	NA	NA	NA
	3/3/2017	2.4	ND<0.20	2.4	0.13	43.7	3.1	ND<0.00031
MW-5	3/21/2012	2.27	0.253 J	2.52	ND<0.0500	7.65	3.92	0.0929
	6/28/2012	NA	NA	NA	NA	NA	3.5 B	NA
	8/13/2012	NA	3.37	4.1	NA	10.1	NA	0.0766
	8/31/2012	NA	NA	NA	NA	NA	39.5	NA
	10/1/2012	NA	NA	NA	NA	NA	66.1	NA
	11/19/2012	0.430	6.74	7.17	NA	26.5	377	0.192
	1/14/2013	NA	NA	NA	NA	NA	105	NA
	2/28/2013	NA	NA	NA	NA	NA	86.6	NA
	3/26/2013	4.10	12.5	16.6	NA	15.9	104 B	0.00712
	4/23/2013	NA	NA	NA	NA	NA	129 B	NA
	6/25/2013	0.900	9.03	8.13	NA	1.47	165	0.00541
	12/11/2013	ND<0.100	NA	3.75	NA	12.8	213	NA
	1/15/2014	NA	NA	NA	NA	NA	480	NA
	3/5/2014	5.80	NA	16.5 B	NA	1.69	NA	0.00637
	4/10/2014	NA	NA	NA	NA	NA	121	NA
	5/19/2014	13.6	4.4	18	ND<0.15	14.0	319	0.00079
	6/18/2014	NA	NA	NA	NA	NA	293	NA
	7/24/2014	13.7	2	15.70	ND<0.10	ND<10	184	ND<0.00030
	10/10/2014	NA	NA	NA	ND<0.10	12.0	NA	0.0013
	10/30/2014	NA	NA	NA	NA	NA	140	0.0013
	1/26/2015	NA	NA	NA	NA	NA	295	NA
	3/27/2015	31.0	1.9	32.9	ND<0.10	94.6	250	0.00022
	5/11/2015	NS	5.8	NS	ND<0.11	ND<200	251	ND<0.00031
	8/17/2015	8.3	3.5	11.8	ND<0.11	ND<10	125	0.83
	11/11/2015	8.9	0.9	9.8	0.02	ND<10	113	ND<0.00031
	3/7/2016	61.1	18	79.1	ND<0.11	ND<10	234	ND<0.00031
	6/23/2016	14.6	3.9	18.5	ND<0.11	23.7	173	0.0006
	9/7/2016	4.3	9.8	14.1	0.23	ND<10	87.4	0.0023
	11/18/2016	3.3	3.1	6.41	ND<0.11	ND<10	125.0	ND<0.00031
	3/3/2017	11.6	19	30.6	ND<0.010	ND<10	44.4	0.00041
MW-8A	3/21/2012	NS	NS	NS	NS	NS	NS	NS
	6/28/2012	NS	NS	NS	NS	NS	NS	NS
	8/13/2012	NS	NS	NS	NS	NS	NS	NS
	8/31/2012	NS	NS	NS	NS	NS	NS	NS
	10/1/2012	NA	NA	NA	NA	NA	2.75	NA
	11/19/2012	NS	NS	NS	NS	NS	NS	NS
	1/14/2013	NS	NS	NS	NS	NS	NS	NS
	2/28/2013	NS	NS	NS	NS	NS	NS	NS
	3/26/2013	NS	NS	NS	NS	NS	NS	NS
	4/23/2013	NS	NS	NS	NS	NS	NS	NS
	6/25/2013	NS	NS	NS	NS	NS	NS	NS
	12/11/2013	NS	NS	NS	NS	NS	NS	NS
	1/15/2014	NS	NS	NS	NS	NS	NS	NS

Table 2
GENERAL CHEMISTRY ANALYTICAL RESULTS

Orangetown Shopping Center
NYSDEC Site # C344066

Monitoring Well	Date	Iron, Ferric (mg/l)	Iron, Ferrous (mg/l)	Iron, Total (mg/l)	Nitrate Nitrogen (mg/l)	Sulfate (mg/l)	Total Organic Carbon (mg/l)	Ethene (mg/l)
NY TOGS 1.1.1 GWQS		NA	NA	NA	NA	NA	NA	NA
MW-8A (cont)	3/5/2014	NS	NS	NS	NS	NS	NS	NS
	4/10/2014	NA	NA	NA	NA	NA	12.0	NA
	5/19/2014	NS	NS	NS	NS	NS	NS	NS
	7/24/2014	NS	NS	NS	NS	NS	NS	NS
	10/10/2014	NS	NS	NS	NS	NS	NS	NS
	6/23/2016	NS	NS	NS	NS	NS	NS	NS
	9/7/2016	NA	NA	NA	NA	NA	NA	0.00033
	11/18/2016	NA	NA	NA	NA	NA	NA	NA
	3/3/2017	NA	NA	NA	NA	NA	NA	NA
MW-8B	3/21/2012	ND<0.0500	0.113 J	0.0733	0.91	17.5	1.39	ND<0.00250
	6/28/2012	NA	NA	NA	NA	NA	5.51	NA
	8/13/2012	NA	3.92	4.27	NA	20.7	NA	0.00978
	8/31/2012	NA	NA	NA	NA	NA	15.1	NA
	10/1/2012	NA	NA	NA	NA	NA	8.45	NA
	11/19/2012	NA	NA	NA	NA	NA	7.37	0.0204
	1/14/2013	NA	NA	NA	NA	NA	26.7	NA
	2/28/2013	NA	NA	NA	NA	NA	37.9	NA
	3/26/2013	1.44	5.91	7.35	NA	1.48	19.3 B	ND<0.0025
	4/23/2013	NA	NA	NA	NA	NA	17.9 B	NA
	6/25/2013	ND<0.0800	5.74	5.73	NA	1.73	11.1	0.0317
	12/11/2013	NS	NS	NS	NS	NS	NS	NS
	1/15/2014	NA	NA	NA	NA	NA	57.3	NA
	3/5/2014	ND<0.100	NA	9.28 B	NA	5.68	19.0	ND<0.00500
	4/10/2014	NA	NA	NA	NA	NA	13.6	NA
	5/19/2014	NA	0.32	NA	NA	NA	NA	0.00020
	6/18/2014	NA	NA	NA	NA	NA	17.1	NA
	7/24/2014	2.4	0.2	2.6	ND<0.10	11.8	13.1	ND<0.00031
	10/10/2014	NA	NA	NA	ND<0.10	15.5	NA	0.0022
	3/27/2015	NA	NA	NA	ND<0.10	15.5	NA	0.00026
	5/11/2015	7.4	0.82	8.22	ND<0.11	ND<20	NA	0.00067
	6/23/2016	NA	NA	NA	NA	NA	NA	0.00054
	9/7/2016	NS	NS	NS	NS	NS	NS	NS
	11/18/2016	NS	NS	NS	NS	NS	NS	NS
	3/3/2017	NS	NS	NS	NS	NS	NS	NS
MW-10	8/17/2015	5.2	0.57	5760	ND<0.11	23	NA	0.83
	3/21/2012	0.0631	ND<50.0 J	0.0631	2.13	27.6	0.935 J	ND<0.00250
	6/29/2012	NS	NS	NS	NS	NS	NS	NS
	8/13/2012	NA	ND<0.100	0.139	NA	24.6	1.56	ND<0.005
	11/19/2012	5.18	0.610	5.79	NA	24.3	3.39	ND<0.005
	3/26/2013	0.291	ND<0.0800	0.291	NA	20.6	1.26 B	ND<0.0025
	6/25/2013	0.704	ND<0.0800	0.704	NA	24.5	1.13	ND<0.0025
	12/11/2013	NS	NS	NS	NS	NS	NS	NS
	3/5/2014	NS	NS	NS	NS	NS	NS	NS
	4/10/2014	NS	NS	NS	NS	NS	NS	NS
	5/19/2014	NS	NS	NS	NS	NS	NS	NS
	7/24/2014	NS	NS	NS	NS	NS	NS	NS
	10/10/2014	NS	NS	NS	NS	NS	NS	NS
	8/17/2015	NA	NA	NA	NA	NA	NA	NA
	6/23/2016	NA	NA	NA	NA	NA	NA	NA
	9/7/2016	NA	NA	NA	NA	NA	NA	NA

Table 2
GENERAL CHEMISTRY ANALYTICAL RESULTS

Orangetown Shopping Center
NYSDEC Site # C344066

Monitoring Well	Date	Iron, Ferric (mg/l)	Iron, Ferrous (mg/l)	Iron, Total (mg/l)	Nitrate Nitrogen (mg/l)	Sulfate (mg/l)	Total Organic Carbon (mg/l)	Ethene (mg/l)
NY TOGS 1.1.1 GWQS		NA	NA	NA	NA	NA	NA	NA
MW-10	11/18/2016	NA	NA	NA	NA	NA	NA	NA
(cont)	3/3/2017	NA	NA	NA	NA	NA	NA	NA

Notes:

mg/L = Milligrams per liter (parts per million)
NA = Not available/not analyzed for that specific compound
ND = Not detected (# is method detection limit)
NS = Not sampled
J = Reporting limit raised due to SAMPLE matrix effects
J* = Holding time for this test is immediate
HF = Field parameter with holding time of 15 minutes
B1 = Analyte was detected in the associated method blank. Analyte concentration in the sample is greater than 10x the concentration found in the method blank.
B = Analyte was detected in associated method blank
NYSDEC = New York State Department of Conservation
TOGS = Technical and Operational Guidance Series 1.1.1
GWQS = Groundwater Quality Standards or Guidance Values

Table 3
GENERAL GROUNDWATER CHEMISTRY

Orangetown Shopping Center
NYSDEC Site # C344066

Monitoring Well	Date	pH	Temperature (°C)	Specific Conductivity (uS/cm or umhos/cm)	Dissolved Oxygen (mg/L)	Oxygen Reduction Potential (mV)	Turbidity (NTUs)
MW-3	03/22/2012	7.36	16.59	3,090	1.42	-39.0	309
	06/28/2012	6.25	21.29	2,370	0.48	-101.2	149.6
	03/26/2013	6.07	13.13	3,551	2.10	99.1	406.0
	04/23/2013	6.58	13.88	1,925	1.30	-88.4	NA
	06/25/2013	6.37	19.73	2,051	0.42	-88.8	397.4
	08/09/2013	6.33	17.72	2,252	1.13	-77.3	NA
	09/19/2013	5.77	15.77	3,462	0.45	-70.9	68.9
	01/15/2014	6.41	14.53	2,422	0.62	-73.3	NA
	05/19/2014	6.13	18.58	2,171	5.47	-11.9	21.2
	06/18/2014	6.51	17.20	3,874	0.96	-45.5	NA
	07/24/2014	6.27	15.76	2,047	0.54	441.4	41.4
	10/10/2014	NA	NA	NA	NA	NA	NA
	03/27/2015	7.67	10.49	1,405	3.69	-269.8	NA
	05/11/2015	6.56	15.59	1,951	0.10	-173.2	NA
	08/17/2015	6.51	15.75	1,895	0.51	-136.8	NA
	11/11/2015	7.23	14.10	546	4.73	-83.0	NA
	03/07/2016	7.77	16.39	1,956	1.55	-77.6	NA
	06/23/2016	6.12	17.40	2,141	0.73	-29.1	NA
	09/07/2016	4.31	22.38	1,706	0.55	-87.5	NA
	11/18/2016	NA	NA	NA	NA	NA	NA
	03/03/2017	6.60	10.45	2,142	0.76	-94.2	NA
MW-4	03/21/2012	7.31	15.25	1,400	1.09	147.0	6.2
	06/28/2012	6.69	19.46	764	3.61	47.9	28.1
	08/13/2012	6.59	17.75	1,621	6.21	9.1	152.1
	08/31/2012	6.07	17.45	1,450	1.08	-21.4	NA
	11/19/2012	6.32	11.63	1,126	1.59	70.6	85.28
	01/14/2013	6.36	14.62	1,486	1.75	-56.9	NA
	02/28/2013	6.51	13.92	2,014	1.45	-35.1	NA
	03/26/2013	5.90	14.32	2,212	2.16	-49.0	64.7
	04/23/2013	6.54	13.31	1,685	2.02	-24.1	NA
	06/25/2013	6.51	18.03	1,982	0.82	-70.1	55.5
	08/09/2013	6.18	17.27	1,872	1.43	-39.3	NA
	09/19/2013	6.22	14.79	2,101	0.55	-72.5	143.3
	01/15/2014	6.11	14.74	10,411	0.91	-26.4	NA
	03/05/2014	6.01	12.86	3,755	1.70	-52.2	22.4
	05/19/2014	6.28	18.76	13	13.01	-54.8	21.8
	06/18/2014	7.23	17.09	2,770	1.73	-29.6	NA
	07/24/2014	6.32	14.92	2,284	0.89	-155.1	9.47
	10/10/2014	6.64	19.02	2,345	1.50	-34.8	20.30
	01/26/2015	6.49	12.42	5,329	2.80	-118.7	NA
	03/27/2015	6.78	12.84	2,480	0.82	-213.0	NA
	05/11/2015	6.60	17.24	2,328	2.78	-142.2	NA
	08/17/2015	6.51	15.91	4,455	0.52	-121.9	NA
	11/11/2015	6.48	14.20	2,059	1.40	-71.1	NA
	03/07/2016	6.78	14.73	1,882	1.07	-13.5	NA
	06/23/2016	6.18	18.79	1.936	0.35	-38.5	NA
	09/07/2016	NA	NA	NA	NA	NA	NA
	11/18/2016	NA	NA	NA	NA	NA	NA
	03/03/2017	6.66	10.53	1,639	1.58	-70.2	NA

Table 3
GENERAL GROUNDWATER CHEMISTRY

Orangetown Shopping Center
NYSDEC Site # C344066

Monitoring Well	Date	pH	Temperature (°C)	Specific Conductivity (uS/cm or umhos/cm)	Dissolved Oxygen (mg/L)	Oxygen Reduction Potential (mV)	Turbidity (NTUs)
MW-5	03/21/2012	7.37	16.16	3,900	3.06	-30.0	0.0
	06/28/2012	6.88	22.10	1,399	1.74	28.6	29.6
	08/13/2012	6.43	19.91	2,188	1.54	-17.6	88.0
	08/31/2012	6.25	20.12	1,580	2.22	-22.5	NA
	10/01/2012	6.19	17.02	2,433	1.36	3.8	NA
	11/19/2012	6.60	14.24	13,900	1.27	70.4	1025
	01/14/2013	6.38	15.36	8,535	0.95	-103.6	NA
	02/28/2013	6.67	14.21	5,230	2.06	-63.4	NA
	03/26/2013	6.91	13.16	6,468	1.02	-27.6	171.6
	04/23/2013	6.85	14.40	6,231	1.56	-71.2	NA
	06/25/2013	6.82	20.21	8,587	0.82	-87.2	77.7
	08/09/2013	6.75	17.51	7,434	1.88	-71.7	NA
	09/19/2013	6.56	16.06	7,413	0.94	-118.8	87.9
	10/14/2013	6.51	15.93	3,671	3.55	-66.8	104.3
	12/11/2013	6.59	11.53	8,003	5.48	-135.6	52.0
	01/15/2014	6.63	12.97	19,214	1.45	-123.4	NA
	03/05/2014	6.61	11.20	14,120	0.21	-73.3	203.7
	04/10/2014	6.54	15.05	10,980	1.59	-65.5	NA
	05/19/2014	6.76	16.82	10,036	0.96	-41.4	43.0
	06/18/2014	7.94	17.14	14,984	1.00	-90.4	NA
	07/24/2014	6.72	15.85	1,271	0.51	-113.5	35.3
	10/10/2014	6.82	17.40	1,477	0.50	-66.9	147.6
	01/26/2015	6.59	9.46	17,539	1.30	-133.8	NA
	03/27/2015	7.17	12.35	15,077	0.51	-211.1	NA
	05/11/2015	6.67	24.60	16,764	0.41	-156.9	NA
	08/17/2015	6.56	16.29	9,737	0.21	-118.1	NA
	11/11/2015	6.57	13.80	9,937	1.57	-101.0	NA
	03/07/2016	7.92	14.53	2,299	1.34	-70.5	NA
	06/23/2016	6.35	17.55	11,200	0.70	-62.1	NA
	09/07/2016	5.87	17.18	11,010	0.81	-78.9	NA
	11/18/2016	6.62	15.34	6,687	0.20	-11.5	NA
	03/03/2017	6.39	1,048	6,571	0.87	-63.8	NA
MW-6	03/22/2012	7.49	16.43	1,130	2.62	-13.0	221.0
	03/26/2013	6.59	16.42	1,463	3.55	-27.8	59.1
	03/05/2014	6.40	13.59	11,770	2.50	-23.0	226.7
	03/27/2015	7.39	12.71	5,356	0.65	-209.6	NA
MW-7	03/21/2012	8.37	14.25	2,700	1.14	119.0	17.0
	06/29/2012	6.89	17.71	2,960	4.78	159.8	151.6
	08/13/2012	6.17	20.76	2,380	4.39	80.1	250.1
	03/26/2013	6.69	13.98	11,320	3.21	171.2	125.6
	06/25/2013	6.02	17.49	2,625	4.45	292.5	37.3
	09/19/2013	6.95	18.24	10,986	2.07	191.2	37.0
	10/14/2013	7.02	17.13	2,533	1.26	130.6	43.9
	12/11/2013	6.80	9.60	5.129	4.94	63.8	95.6
	03/05/2014	6.24	12.15	4,919	2.02	104.7	29.8
	05/19/2014	6.76	16.48	4,881	3.43	145.4	57.9
	07/23/2014	7.07	18.62	2,688	3.91	55.7	35.3
	03/27/2015	6.60	13.71	44,406	0.50	-205.4	NA

Table 3
GENERAL GROUNDWATER CHEMISTRY

Orangetown Shopping Center
NYSDEC Site # C344066

Monitoring Well	Date	pH	Temperature (°C)	Specific Conductivity (uS/cm or umhos/cm)	Dissolved Oxygen (mg/L)	Oxygen Reduction Potential (mV)	Turbidity (NTUs)
MW-8A	06/28/2012	6.93	23.61	33	7.43	-43.1	275.6
	10/01/2012	6.33	19.60	1,323	1.52	-4.3	NA
	06/25/2013	6.02	23.16	1,535	4.44	-20.8	326.1
	12/11/2013	6.70	11.55	1,531	9.49	-48.9	905.0
	10/10/2014	NA	NA	NA	NA	NA	NA
	03/27/2015	7.09	14.25	2,376	0.98	-165.7	NA
	11/11/2015	6.55	14.20	1,657	1.67	-87.4	NA
	03/07/2016	8.02	14.80	1,938	3.95	-15.9	NA
	06/23/2016	NA	NA	NA	NA	NA	NA
	09/07/2016	4.51	19.93	1.396	1.59	-16.4	NA
	11/18/2016	NA	NA	NA	NA	NA	NA
	03/03/2017	NA	NA	NA	NA	NA	NA
MW-8B	03/21/2012	6.80	17.09	1,580	6.74	-12.0	216.0
	06/28/2012	6.82	20.11	1,196	2.75	-3.9	30.4
	08/13/2012	6.51	19.15	791	1.79	59.2	105.4
	08/31/2012	6.30	21.40	535	3.08	46.7	NA
	10/01/2012	6.46	17.43	1,122	1.66	-21.7	NA
	11/19/2012	6.83	16.96	1,350	0.85	75.7	1,311
	01/14/2013	6.87	14.33	1,501	1.95	-50.7	NA
	02/28/2013	6.98	15.73	1,592	2.21	-74.3	NA
	03/26/2013	6.70	13.22	3,372	0.52	-80.1	75.1
	04/23/2013	7.16	12.33	1,865	3.15	-74.2	NA
	06/25/2013	6.02	20.37	1,808	3.24	-4.0	20.2
	08/09/2013	6.90	19.41	1,577	2.75	-68.9	NA
	09/19/2013	6.99	17.89	1,537	1.85	-70.1	1.85
	01/15/2014	6.44	12.22	1,865	1.30	-3.1	NA
	03/05/2014	6.47	12.62	3,725	2.64	-24.4	57.50
	05/19/2014	6.51	19.90	1,252	2.68	-29.5	15.70
	06/18/2014	7.73	18.93	2,728	1.95	2.9	NA
	07/24/2014	6.75	20.09	2,227	2.98	-72.8	23.00
	10/10/2014	7.24	18.60	110	3.90	-35.5	211.30
	03/27/2015	7.00	13.24	3,702	2.89	-149.2	NA
	05/11/2015	6.85	19.72	4,042	2.29	-98.0	NA
	08/17/2015	6.77	20.18	1,847	2.09	-82.8	NA
	03/07/2016	7.66	15.46	1,982	4.02	13.1	NA
	06/23/2016	6.00	18.84	1.934	1.69	30.9	NA
	09/07/2016	NA	NA	NA	NA	NA	NA
	11/18/2016	NA	NA	NA	NA	NA	NA
	03/03/2017	NA	NA	NA	NA	NA	NA
MW-10	03/21/2012	7.36	12.98	1,310	4.56	150.0	5.2
	06/29/2012	6.73	16.09	1,338	11.37	138.7	159.6
	08/13/2012	6.29	15.29	1,413	7.11	56.1	129.6
	11/19/2012	6.80	12.51	1,009	7.23	102.7	NA
	03/26/2013	6.89	11.57	521	8.86	219.7	79.2
	06/25/2013	6.17	17.89	655	9.27	205.3	26.4
	09/19/2013	6.86	15.64	1,093	5.75	211.7	106.7
	10/14/2013	7.01	15.13	1,349	7.97	37.2	37.2
	12/11/2013	6.85	12.52	555	6.32	-45.5	7.5
	04/10/2014	6.16	12.48	424	8.29	23.1	NA

Table 3
GENERAL GROUNDWATER CHEMISTRY

Orangetown Shopping Center
NYSDEC Site # C344066

Monitoring Well	Date	pH	Temperature (°C)	Specific Conductivity (uS/cm or umhos/cm)	Dissolved Oxygen (mg/L)	Oxygen Reduction Potential (mV)	Turbidity (NTUs)
MW-10 (cont)	05/19/2014	6.35	12.73	529	7.98	169.4	53.5
	07/23/2014	6.65	16.76	1,190	5.06	122.1	55.1
	10/10/2014	6.64	15.67	451	6.74	150.0	41.0
	03/27/2015	7.23	9.35	287	7.21	-133.1	NA
	05/11/2015	6.51	15.96	1,593	6.66	-23.2	NA
	08/17/2015	6.65	17.28	1,486	5.48	22.2	NA
	11/11/2015	6.63	13.30	1,034	6.17	140.1	NA
	03/07/2016	7.66	15.46	1,982	4.02	13.1	NA
	06/23/2016	5.99	15.47	924	5.05	71.0	NA
	09/07/2016	3.91	15.32	645	6.62	92.2	NA
	11/18/2016	6.75	15.00	947	1.52	178.9	NA
	03/03/2017	6.33	10.95	692	10.26	113.4	NA

Notes:

NA = Not available/Not analyzed for that specific compound
mg/L = Milligrams per Liter
uS/cm = Micro-Siemens per centimeter
umhos/cm = Micro-mhos/centimeter
mV = Millivolts
Spec.Cond. = Specific conductance
°C = Degrees Celsius
pH = Potential of Hydrogen

Table 4
CONSTITUENTS OF CONCERN

Orangetown Shopping Center
NYSDEC Site # C344066

Monitoring Well	Date	Tetrachloro-ethene (ug/l)	Trichloro-ethene (ug/l)	cis-1,2-Dichloro-ethene (ug/l)	trans-1,2-Dichloro-ethene (ug/l)	1,1-Dichloro-ethene (ug/l)	Vinyl Chloride (ug/l)	Ethene (ug/l)
NY TOGS 1.1.1 GWQS		5	5	5	5	5	2	NA
MW-3	3/22/2012	ND<5.00 J	ND<5.00 J	**60.1**	ND<5.00 J	ND<5.00 J	**23.4**	6.28 B
	6/28/2012	ND<5.00	ND<5.00	**143**	ND<5.00	ND<5.00	**47.5**	NA
	8/13/2012	NS	NS	NS	NS	NS	NS	NS
	8/31/2012	NS	NS	NS	NS	NS	NS	NS
	10/1/2012	NS	NS	NS	NS	NS	NS	NS
	11/19/2012	NS	NS	NS	NS	NS	NS	NS
	1/14/2013	NS	NS	NS	NS	NS	NS	NS
	2/28/2013	NS	NS	NS	NS	NS	NS	NS
	3/26/2013	ND<0.250	0.327 J	2.62	0.269 J	ND<0.250	**2.26**	ND<2.5
	4/23/2013	NS	NS	NS	NS	NS	NS	NS
	6/25/2013	ND<0.250	ND<0.200	**7.02**	0.617 J	ND<0.250	**3.43**	ND<2.5
	12/11/2013	NS	NS	NS	NS	NS	NS	NS
	1/15/2014	NS	NS	NS	NS	NS	NS	NS
	3/5/2014	NS	NS	NS	NS	NS	NS	NS
	4/10/2014	NS	NS	NS	NS	NS	NS	NS
	5/19/2014	ND<1.0	ND<1.0	**12.6**	ND<1.0	ND<1.0	**2.2**	ND<0.31
	7/24/2014	ND<1.0	ND<1.0	1.2	ND<1.0	ND<1.0	ND<1.0	ND<0.31
	10/10/2014	NS	NS	NS	NS	NS	NS	NS
	3/27/2015	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<0.31
	5/11/2015	ND<1.0	ND<1.0	**8.6**	ND<1.0	ND<1.0	**2.9**	ND<0.31
	8/17/2015	ND<1.0	ND<1.0	2.8	ND<1.0	ND<1.0	**3.6**	ND<0.31
	11/11/2015	ND<1.0	ND<1.0	**7.8**	ND<1.0	ND<1.0	ND<1.0	ND<0.31
	3/7/2016	ND<1.0	1.1	NA	NA	NA	**6.1**	ND<0.31
	6/23/2016	ND<1.0	1.7	**14.8**	ND<1.0	ND<1.0	ND<1.0	ND<0.31
	9/7/2016	ND<1.0	ND<1.0	**15.9**	ND<1.0	ND<1.0	**18.8**	ND<0.31
	11/18/2016	NS	NS	NS	NS	NS	NS	NS
	3/3/2017	ND<1.0	ND<1.0	**6.7**	ND<1.0	ND<1.0	**3.2**	ND<0.31
MW-4	3/21/2012	ND<0.500	**5.28**	**276**	0.680 J	ND<0.500	1.59	ND<2.50
	6/28/2012	ND<0.500	**7.71**	**495**	4.29	ND<0.500	**21.9**	NA
	8/13/2012	ND<1.00	4.51	**197**	1.16	ND<1.00	**8.66**	ND<5
	8/31/2012	NS	NS	NS	NS	NS	NS	NS
	10/1/2012	NS	NS	NS	NS	NS	NS	NS
	11/19/2012	ND<1.00	3.48	**200**	ND<1.00	ND<1.00	**13.1**	ND<5
	1/14/2013	NS	NS	NS	NS	NS	NS	NS
	2/28/2013	NS	NS	NS	NS	NS	NS	NS
	3/26/2013	ND<0.250	1.20	**39.8**	0.634 J	ND<0.250	**57.7**	8.3
	4/23/2013	NS	NS	NS	NS	NS	NS	NS
	6/25/2013	ND<0.250	ND<0.200	3.88	0.288 J	ND<0.250	**2.84**	6.09
	12/11/2013	NS	NS	NS	NS	NS	NS	NS
	1/15/2014	NS	NS	NS	NS	NS	NS	NS
	3/5/2014	ND<1.00	ND<1.00	4.25	0.336 J	ND<1.00	**5.03**	ND<5.00
	4/10/2014	NS	NS	NS	NS	NS	NS	NS
	5/19/2014	ND<1.0	3.4	**104**	ND<1.0	ND<1.0	**35.1**	0.43
	7/24/2014	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	1.2	ND<0.31
	10/10/2014	ND<1.0	ND<1.0	2.3	ND<1.0	ND<1.0	1.8	ND<0.31
	3/27/2015	ND<1.0	ND<1.0	3.4	ND<1.0	ND<1.0	**5.8**	ND<0.31
	5/11/2015	ND<1.0	ND<1.0	2.1	ND<1.0	ND<1.0	1.7	ND<0.31
	8/17/2015	ND<1.0	ND<1.0	1	ND<1.0	ND<1.0	1.8	ND<0.31
	11/11/2015	ND<1.0	ND<1.0	4	ND<1.0	ND<1.0	ND<1.0	ND<0.31
	3/7/2016	ND<1.0	ND<1.0	**13.6**	ND<1.0	ND<1.0	**2.1**	ND<0.31
	6/23/2016	ND<1.0	ND<1.0	**12.9**	ND<1.0	ND<1.0	**3.3**	0.97
	9/7/2016	NS	NS	NS	NS	NS	NS	NS
	11/18/2016	ND<1.0	1.3	3.6	ND<1.0	ND<1.0	ND<1.0	NA
	3/3/2017	ND<1.0	ND<1.0	**14.6**	ND<1.0	ND<1.0	ND<1.0	ND<0.31
MW-5	3/21/2012	ND<0.500	3.86	**12,500**	**195**	1.42	**1,490**	92.9
	6/28/2012	ND<0.500	**7.93**	**9,000**	**55.7**	1.32	**1,100**	NA

Table 4
CONSTITUENTS OF CONCERN

Orangetown Shopping Center
NYSDEC Site # C344066

Monitoring Well	Date	Tetrachloro-ethene (ug/l)	Trichloro-ethene (ug/l)	cis-1,2-Dichloro-ethene (ug/l)	trans-1,2-Dichloro-ethene (ug/l)	1,1-Dichloro-ethene (ug/l)	Vinyl Chloride (ug/l)	Ethene (ug/l)
NY TOGS 1.1.1 GWQS		5	5	5	5	5	2	NA
MW-5 (Cont.)	8/13/2012	ND<1.00	**28.4**	**7,410**	**145**	1.02	**928**	76.6
	8/31/2012	NS	NS	NS	NS	NS	NS	NS
	10/1/2012	NS	NS	NS	NS	NS	NS	NS
	11/19/2012	ND<1.00	**17.8**	**1,630**	**73.6**	ND<1.00	**489**	192
	1/14/2013	NS	NS	NS	NS	NS	NS	NS
	2/28/2013	NS	NS	NS	NS	NS	NS	NS
	3/26/2013	2.17	**8.19**	**389**	3.40	1.29	**30.9**	7.12
	4/23/2013	NS	NS	NS	NS	NS	NS	NS
	6/25/2013	ND<2.50	**16.6**	**972**	**17.0**	ND<2.50	**60.0**	5.41
	12/11/2013	3.15 J	**17.7**	**1,290**	**48.0**	ND<10.0	**302**	NA
	1/15/2014	NS	NS	NS	NS	NS	NS	NS
	3/5/2014	3.49 J	3.45 J	**142**	3.15 J	ND<10.0	**19.0**	6.37
	4/10/2014	NS	NS	NS	NS	NS	NS	NS
	5/19/2014	2.4	**9.2**	**598**	3.8	ND<1.0	**33.0**	0.79
	7/24/2014	ND<5.0	**8.7**	**575**	ND<5.0	ND<5.0	**39.6**	3.00
	10/10/2014	ND<10	ND<10	**1,690**	ND<10	ND<10	**108**	1.3
	3/27/2015	2.8	4.8	**247**	1.4	ND<1.0	**13**	0.22
	5/11/2015	2.9	**7.0**	**458**	3.7	ND<1.0	**40.9**	ND<0.31
	8/17/2015	ND<5.0	**9.6**	**783**	ND<5.0	ND<5.0	**41.3**	0.32
	11/11/2015	ND<5.0	**19.8**	**1,390**	**7.7**	ND<5.0	**45.7**	ND<0.31
	3/7/2016	1.9	**20.9**	**2,140**	**8.6**	ND<1.0	**62.7**	ND<0.31
	6/23/2016	ND<10	**25.5**	**1,910**	**13.7**	ND<10	**39.7**	6
	9/7/2016	ND<10	**26.6**	**1,200**	**14.6**	ND<10	**16.9**	2.3
	11/18/2016	ND<5.0	**27.9**	**1,600**	**6.4**	ND<5.0	**51.6**	ND<0.31
	3/3/2017	1.2	**13.4**	**666**	4.3	ND<1.0	**20.4**	0.41
MW-8A	3/21/2012	NS	NS	NS	NS	NS	NS	NS
	6/28/2012	1.20	**46.2**	**786**	**8.66**	ND<0.500	**29.4**	NA
	8/13/2012	NS	NS	NS	NS	NS	NS	NS
	8/31/2012	NS	NS	NS	NS	NS	NS	NS
	10/1/2012	NS	NS	NS	NS	NS	NS	NS
	11/19/2012	NS	NS	NS	NS	NS	NS	NS
	1/14/2013	NS	NS	NS	NS	NS	NS	NS
	2/28/2013	NS	NS	NS	NS	NS	NS	NS
	3/26/2013	NS	NS	NS	NS	NS	NS	NS
	4/23/2013	NS	NS	NS	NS	NS	NS	NS
	6/25/2013	ND<0.250	**14.8**	**358**	4.17	ND<0.250	**59.3**	NA
	12/11/2013	ND<1.00	ND<1.00	**7.70**	0.300 J	ND<1.00	0.665 J	NA
	1/15/2014	NS	NS	NS	NS	NS	NS	NS
	3/5/2014	NS	NS	NS	NS	NS	NS	NS
	4/10/2014	NS	NS	NS	NS	NS	NS	NS
	5/19/2014	NS	NS	NS	NS	NS	NS	NS
	7/24/2014	NS	NS	NS	NS	NS	NS	NS
	10/10/2014	NS	NS	NS	NS	NS	NS	NS
	3/27/2015	ND<1.0	3.4	**17.4**	ND<1.0	ND<1.0	ND<1.0	NS
	3/27/2015	NS	NS	NS	NS	NS	NS	NS
	8/17/2015	NS	NS	NS	NS	NS	NS	NS
	11/11/2015	ND<1.0	ND<1.0	2.4	ND<1.0	ND<1.0	ND<1.0	NA
	3/7/2016	ND<1.0	ND<1.0	3.2	ND<1.0	ND<1.0	**3.2**	NA
	6/23/2016	NS	NS	NS	NS	NS	NS	NS
	9/7/2016	ND<1.0	1.3	2.1	ND<1.0	ND<1.0	**2.2**	NA
	11/18/2016	ND<1.0	1.3	2.8	ND<1.0	ND<1.0	**4.4**	NA
	3/3/2017	ND<1.0	1.3	ND<1.0	ND<1.0	ND<1.0	**4**	NA
MW-8B	3/21/2012	ND<0.500	**9.02**	**387**	1.49	ND<0.500 J	**26.0 J**	ND<2.50
	6/28/2012	ND<0.500	**6.40**	**331**	2.28	ND<0.500	1.39	NA
	8/13/2012	ND<1.00	**6.29**	**265**	1.16	ND<1.00	**8.60**	9.78
	8/31/2012	NS	NS	NS	NS	NS	NS	NS

Table 4
CONSTITUENTS OF CONCERN

Orangetown Shopping Center
NYSDEC Site # C344066

Monitoring Well	Date	Tetrachloro-ethene (ug/l)	Trichloro-ethene (ug/l)	cis-1,2-Dichloro-ethene (ug/l)	trans-1,2-Dichloro-ethene (ug/l)	1,1-Dichloro-ethene (ug/l)	Vinyl Chloride (ug/l)	Ethene (ug/l)
NY TOGS 1.1.1 GWQS		5	5	5	5	5	2	NA
MW-8B	10/1/2012	NS	NS	NS	NS	NS	NS	NS
(Cont.)	11/19/2012	ND<1.00	**11.7**	**786**	**23.5**	ND<1.00	**43.6**	20.4
	1/14/2013	NS	NS	NS	NS	NS	NS	NS
	2/28/2013	NS	NS	NS	NS	NS	NS	NS
	3/26/2013	ND<0.250	0.479 J	**6.75**	0.725 J	ND<0.250	**3.06**	ND<2.5
	4/23/2013	NS	NS	NS	NS	NS	NS	NS
	6/25/2013	ND<0.250	0.811 J	**36.6**	1.61	ND<0.250	**93.9**	31.7
	12/11/2013	NS	NS	NS	NS	NS	NS	NS
	1/15/2014	NS	NS	NS	NS	NS	NS	NS
	3/5/2014	ND<1.00	ND<1.00	2.55	0.359 J	ND<1.00	**2.24**	ND<5.00
	4/10/2014	NS	NS	NS	NS	NS	NS	NS
	5/19/2014	ND<1.0	ND<1.0	3.6	ND<1.0	ND<1.0	**4.5**	0.20
	7/24/2014	ND<1.0	ND<1.0	4.0	ND<1.0	ND<1.0	**3.3**	ND<0.31
	10/10/2014	ND<1.0	ND<1.0	**234**	1.7	ND<1.0	**121**	2.2
	3/27/2015	ND<1.0	ND<1.0	**14.2**	ND<1.0	ND<1.0	1.2	0.26
	5/11/2015	ND<1.0	ND<1.0	**10.1**	ND<1.0	ND<1.0	**23.3**	0.67
	8/17/2015	ND<1.0	ND<1.0	**39.6**	1.1	ND<1.0	**40.5**	0.83
	3/7/2016	ND<1.0	2.5	**229.0**	1	ND<1.0	**11.1**	ND<0.31
	6/23/2016	ND<1.0	1.6	**76.5**	ND<1.0	ND<1.0	**15.0**	5.40
	9/27/2016	NS	NS	NS	NS	NS	NS	NS
	11/18/2016	NS	NS	NS	NS	NS	NS	NS
	3/3/2017	NS	NS	NS	NS	NS	NS	NS
MW-10	3/21/2012	ND<0.500	1.41	**74.8**	0.780 J	ND<0.500	ND<0.500	ND<2.50
	6/29/2012	ND<0.500	ND<0.500	**21.1**	ND<0.500	ND<0.500	ND<0.500	NA
	8/13/2012	ND<1.00	ND<1.00	**17.2**	ND<1.00	ND<1.00	ND<1.00	ND<5
	11/19/2012	ND<1.00	ND<1.00	1.84	ND<1.00	ND<1.00	ND<1.00	ND<5
	3/26/2013	ND<0.250	ND<0.200	1.16	ND<0.230	ND<0.250	ND<0.180	ND<2.5
	6/25/2013	ND<0.250	ND<0.200	0.798 J	ND<0.230	ND<0.250	ND<0.180	ND<2.5
	12/11/2013	ND<1.00	ND<1.00	0.667 J	ND<1.00	ND<1.00	ND<1.00	NA
	3/5/2014	NS	NS	NS	NS	NS	NS	NS
	4/10/2014	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA
	5/19/2014	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA
	7/23/2014	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA
	10/10/2014	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA
	3/27/2015	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA
	5/11/2015	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA
	8/17/2015	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA
	11/11/2015	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA
	3/7/2016	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA
	6/23/2016	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA
	9/7/2016	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA
	11/18/2016	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA
	3/3/2017	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	NA

Notes:

BOLD = Concentration exceeds NY TOGS 1.1.1 GWQS
µg/L = Micrograms/liter
BDL = Below Detection Limit
DRY = No water for sampling
GWQS = Groundwater Quality Standards
NA = Not Available or not analyzed for that specific compound
ND = Not detected (# is method detection limit)
NS =Not sampled
TOGS = Technical and Operational Guidance Series 1.1.1
J = Estimated Value

Table 5

POLYCHLORINATED BIPHENYLS ANALYTICAL RESULTS

Orangetown Shopping Center
NYSDEC Site # C344066

Monitoring Well	Date	Aroclor 1016 (ug/l)	Aroclor 1221 (ug/l)	Aroclor 1232 (ug/l)	Aroclor 1242 (ug/l)	Aroclor 1248 (ug/l)	Aroclor 1254 (ug/l)	Aroclor 1260 (ug/l)
NY TOGS 1.1.1 GWQS		0.09	0.09	0.09	0.09	0.09	0.09	0.09
MW-5	3/21/2012	ND<0.25 U	ND<0.25 U	ND<0.25 U	ND<0.25 U	ND<0.25 U	ND<0.25 U	ND<0.25 U
	3/26/2013	ND<3.06 U	ND<16.3 U	ND<4.38 U	ND<4 U	**431**	ND<0.438 U	ND<0.75 U
	4/23/2013	ND<0.0485 U	ND<0.257 U	ND<0.0693 U	ND<0.0634 U	ND<0.0683 U	ND<0.00693 U	ND<0.0119 U
	3/27/2015	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050
	3/7/2016	ND<0.067	ND<0.067	ND<0.067	ND<0.067	ND<0.067	ND<0.067	ND<0.067
	3/3/2017	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050
MW-6	3/22/2012	ND<0.24 U	ND<0.24 U	ND<0.24 U	ND<0.24 U	ND<0.24 U	ND<0.24 U	ND<0.24 U
	3/26/2013	ND<0.0458 U	ND<0.243 U	ND<0.0654 U	ND<0.0598 U	ND<0.0645 U	ND<0.00654 U	ND<0.0112 U
	3/5/2014	ND<0.521 U	ND<0.521 U	ND<0.521 U	ND<0.521 U	ND<0.521 U	ND<0.521 U	ND<0.521 U
	3/27/2015	ND<0.050	ND<0.050	ND<0.050	0.35	ND<0.050	ND<0.050	ND<0.050
	3/7/2016	NA	NA	NA	NA	NA	NA	NA
	3/3/2017	NA	NA	NA	NA	NA	NA	NA
MW-7	3/21/2012	ND<0.243 U	ND<0.243 U	ND<0.243 U	ND<0.243 U	ND<0.243 U	ND<0.243 U	ND<0.243 U
	4/23/2013	ND<0.048 U	ND<0.255 U	ND<0.0686 U	ND<0.0627 U	**0.528**	ND<0.00686 U	ND<0.0118 U
	6/25/2013	ND<0.0485 U	ND<0.257 U	ND<0.0693 U	**0.22 J**	ND<0.0683 U	ND<0.00693 U	ND<0.0119 U
	3/5/2014	ND<0.446 U	ND<0.446 U	ND<0.446 U	ND<0.446 U	ND<0.446 U	ND<0.446 U	ND<0.446 U
	3/27/2015	ND<0.042	ND<0.042	ND<0.042	ND<0.042	ND<0.042	ND<0.042	ND<0.042
	3/7/2016	NA	NA	NA	NA	NA	NA	NA
	3/3/2017	NA	NA	NA	NA	NA	NA	NA
MW-10	3/21/2012	ND<0.243 U	ND<0.243 U	ND<0.243 U	**2.99**	ND<0.243 U	ND<0.243 U	ND<0.243 U
	6/29/2012	ND<0.263 U	ND<0.263 U	ND<0.263 U	ND<0.263 U	ND<0.263 U	ND<0.263 U	ND<0.263 U
	3/26/2013	ND<0.0458 U	ND<0.243 U	ND<0.0654 U	ND<0.0598 U	ND<0.0645 U	ND<0.00654 U	ND<0.0112 U
	3/27/2015	ND<0.053	ND<0.053	ND<0.053	ND<0.053	ND<0.053	ND<0.053	ND<0.053
	3/7/2016	ND<0.053	ND<0.053	ND<0.053	ND<0.053	ND<0.053	ND<0.053	ND<0.053
	3/3/2017	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050	ND<0.050

Notes:

BOLD = Concentration exceeds NY TOGS 1.1.1 GWQS
µg/L = Micrograms per liter (parts per billion)
ND = Not detected (# is method detection limit)
NYSDEC = New York State Department of Conservation
TOGS = Technical and Operational Guidance Series 1.1.1
GWQS = Groundwater Quality Standards or Guidance Values
NA = Not analyzed

Table 6
SOIL VAPOR INTRUSION - ALL ANALYTICAL COMPOUNDS

Orangetown Shopping Center
NYSDEC Site # C344066

Client Sample ID:	**DELI VP-1**	**DELI VP-1 AMBIENT**	**DELI SSD-MP-2**	**DELI SSD-MP-2 AMBIENT**	**CHINA SSD-MP-5**	**CHINA SSD-MP-5 AMBIENT**	**CHINA VP-9**	**CHINA VP-9 AMBIENT**	**SPARKLE VP-6**	**SPARKLE VP-6 AMBIENT**	**SPARKLE VP-5**	**SPARKLE VP-5 AMBIENT**	**OUTSIDE AMBIENT**	**REGULATORY GUIDANCE**		
Lab Sample ID:	**JC32202-4**	**JC32202-5**	**JC32202-2**	**JC32202-3**	**JC32202-12**	**JC32202-13**	**JC32202-10**	**JC32202-11**	**JC32202-6**	**JC32202-7**	**JC32202-8**	**JC32202-9**	**JC32202-1**	**NYSDOH 2003 Soil Vapor Indoor 95th Percentile (1)**	**NYSDOH 2003 Soil Vapor Intrusion Air Guidance Value (2)**	**EPA 2001 BASE 90th Percentile (3)**
Date Sampled:	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**			
Matrix:	**Sub Slab Comp.**	**Ambient Air Comp.**	**Sub Slab Comp.**	**Ambient Air Comp.**	**Sub Slab Comp.**	**Ambient Air Comp.**	**Sub Slab Comp.**	**Ambient Air Comp.**	**Sub Slab Comp.**	**Ambient Air Comp.**	**Sub Slab Comp.**	**Ambient Air Comp.**	**Ambient Air Comp.**			
Acetone	51.3	44.7	52.5	28.5	79.6	22	55.3	26.1	80.1	19	26.4	16	23	140	NS	98.9
1,3-Butadiene	ND < 0.44	ND < 1.2	ND < 0.44	ND < 1.0	ND < 0.44	ND < 0.44	ND < 0.44	ND < 0.44	ND < 0.44	ND < 0.44	ND < 0.44	ND < 0.44	ND < 0.44	NS	NS	<3.0
Benzene	0.99	ND < 1.7	1.1	ND < 1.5	1	1.2	0.96	1.5	1.1	1.2	0.64	1.2	1.6	29	NS	9.4
Bromodichloromethane	ND < 0.67	ND < 1.8	ND < 0.67	ND < 1.5	ND < 0.67	ND < 0.67	ND < 0.67	ND < 0.67	ND < 0.67	ND < 0.67	ND < 0.67	ND < 0.67	ND < 0.67	NS	NS	NS
Bromoform	ND < 0.41	ND < 1.1	ND < 0.41	ND < 0.95	ND < 0.41	ND < 0.41	ND < 0.41	ND < 0.41	ND < 0.41	ND < 0.41	ND < 0.41	ND < 0.41	ND < 0.41	NS	NS	NS
Bromomethane	ND < 0.78	ND < 2.1	ND < 0.78	ND < 1.8	ND < 0.78	ND < 0.78	ND < 0.78	ND < 0.78	ND < 0.78	ND < 0.78	ND < 0.78	ND < 0.78	ND < 0.78	0.9	NS	<1.7
Bromoethene	ND < 0.87	ND < 2.4	ND < 0.87	ND < 2.0	ND < 0.87	ND < 0.87	ND < 0.87	ND < 0.87	ND < 0.87	ND < 0.87	ND < 0.87	ND < 0.87	ND < 0.87	NS	NS	NS
Benzyl Chloride	ND < 1.0	ND < 2.8	ND < 1.0	ND < 2.4	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	NS	NS	<6.8
Carbon disulfide	ND < 0.62	ND < 1.7	ND < 0.62	ND < 1.4	ND < 0.62	ND < 0.62	0.62	1.1	ND < 0.62	ND < 0.62	ND < 0.62	ND < 0.62	ND < 0.62	NS	NS	4.2
Chlorobenzene	ND < 0.92	ND < 2.5	ND < 0.92	ND < 2.1	ND < 0.92	ND < 0.92	ND < 0.92	ND < 0.92	ND < 0.92	ND < 0.92	ND < 0.92	ND < 0.92	ND < 0.92	<0.25	NS	<0.9
Chloroethane	ND < 0.53	ND < 1.4	ND < 0.53	ND < 1.2	ND < 0.53	ND < 0.53	ND < 0.53	ND < 0.53	ND < 0.53	ND < 0.53	ND < 0.53	ND < 0.53	ND < 0.53	0.6	NS	<1.1
Chloroform	ND < 0.98	ND < 2.6	**1.2**	ND < 2.2	ND < 0.98	ND < 0.98	ND < 0.98	ND < 0.98	ND < 0.98	ND < 0.98	ND < 0.98	ND < 0.98	ND < 0.98	4.6	NS	**1.1**
Chloromethane	ND < 0.41	1.2	1.4	1.2	0.52	1.1	ND < 0.41	1.2	0.52	0.56	ND < 0.41	0.93	1.1	5.2	NS	3.7
3-Chloropropene	ND < 0.63	ND < 1.7	ND < 0.63	ND < 1.4	ND < 0.63	ND < 0.63	ND < 0.63	ND < 0.63	ND < 0.63	ND < 0.63	ND < 0.63	ND < 0.63	ND < 0.63	NS	NS	NS
2-Chlorotoluene	ND < 1.0	ND < 2.8	ND < 1.0	ND < 2.4	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	ND < 1.0	NS	NS	NS
Carbon tetrachloride	ND < 0.25	ND < 0.69	0.63	ND < 0.58	ND < 0.25	ND < 0.25	ND < 0.25	0.62	ND < 0.25	0.6	ND < 0.25	ND < 0.25	0.38	1.1	NS	<1.3
Cyclohexane	1.2	ND < 1.9	1.1	ND < 1.6	1	ND < 0.69	1.2	ND < 0.69	1.6	ND < 0.69	ND < 0.69	ND < 0.69	ND < 0.69	19	NS	NS
1,1-Dichloroethane	ND < 0.81	ND < 2.2	ND < 0.81	ND < 1.9	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.81	<0.25	NS	<0.7
1,1-Dichloroethylene	ND < 0.79	ND < 2.1	ND < 0.79	ND < 1.8	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	<0.25	NS	<1.4
1,2-Dibromoethane	ND < 0.77	ND < 2.1	ND < 0.77	ND < 1.8	ND < 0.77	ND < 0.77	ND < 0.77	ND < 0.77	ND < 0.77	ND < 0.77	ND < 0.77	ND < 0.77	ND < 0.77	<0.25	NS	<1.5
1,2-Dichloroethane	ND < 0.81	ND < 2.2	ND < 0.81	ND < 1.9	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.81	<0.25	NS	<0.9
1,2-Dichloropropane	ND < 0.92	ND < 2.5	ND < 0.92	ND < 2.1	ND < 0.92	ND < 0.92	ND < 0.92	ND < 0.92	ND < 0.92	ND < 0.92	ND < 0.92	ND < 0.92	ND < 0.92	<0.25	NS	<1.6
1,4-Dioxane	ND < 0.72	ND < 1.9	ND < 0.72	ND < 1.7	ND < 0.72	ND < 0.72	ND < 0.72	ND < 0.72	ND < 0.72	ND < 0.72	ND < 0.72	ND < 0.72	ND < 0.72	NS	NS	NS
Dichlorodifluoromethane	2.2	2.9	3.1	3	2.7	2.6	2.3	3.1	2.7	ND < 0.99	2.2	2.5	2.5	26	NS	16.5
Dibromochloromethane	ND < 0.85	ND < 2.3	ND < 0.85	ND < 2.0	ND < 0.85	ND < 0.85	ND < 0.85	ND < 0.85	ND < 0.85	ND < 0.85	ND < 0.85	ND < 0.85	ND < 0.85	NS	NS	NS
trans-1,2-Dichloroethylene	ND < 0.79	ND < 2.1	ND < 0.79	ND < 1.8	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	NS	NS	NS
cis-1,2-Dichloroethylene	ND < 0.79	ND < 2.1	ND < 0.79	ND < 1.8	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	0.99	ND < 0.79	ND < 0.79	1.2	NS	<1.9
cis-1,3-Dichloropropene	ND < 0.91	ND < 2.5	ND < 0.91	ND < 2.1	ND < 0.91	ND < 0.91	ND < 0.91	ND < 0.91	ND < 0.91	ND < 0.91	ND < 0.91	ND < 0.91	ND < 0.91	<0.25	NS	<2.3
m-Dichlorobenzene	ND < 0.60	ND < 1.6	ND < 0.60	ND < 1.4	ND < 0.60	ND < 0.60	ND < 0.60	ND < 0.60	ND < 0.60	ND < 0.60	ND < 0.60	ND < 0.60	ND < 0.60	1	NS	<2.4
o-Dichlorobenzene	ND < 0.24	ND < 0.66	ND < 0.24	ND < 0.55	ND < 0.24	ND < 0.24	ND < 0.24	ND < 0.24	ND < 0.24	ND < 0.24	ND < 0.24	ND < 0.24	ND < 0.24	0.9	NS	<1.2
p-Dichlorobenzene	ND < 0.60	ND < 1.6	ND < 0.60	ND < 1.4	ND < 0.60	ND < 0.60	ND < 0.60	ND < 0.60	ND < 0.60	ND < 0.60	ND < 0.60	ND < 0.60	ND < 0.60	2.6	NS	5.5
trans-1,3-Dichloropropene	ND < 0.91	ND < 2.5	ND < 0.91	ND < 2.1	ND < 0.91	ND < 0.91	ND < 0.91	ND < 0.91	ND < 0.91	ND < 0.91	ND < 0.91	ND < 0.91	ND < 0.91	<0.25	NS	<1.3
Ethanol	52.8	30.3	45.6	26.4	82.5 E	172 E	94.2 E	**236 E**	63.7	26.4	35	27.1	14	NS	NS	**210**
Ethylbenzene	1.3	ND < 2.3	ND < 0.87	ND < 2.0	1	ND < 0.87	0.96	ND < 0.87	1.5	ND < 0.87	ND < 0.87	ND < 0.87	ND < 0.87	13.0	NS	5.7
Ethyl Acetate	7.2	30	1.3	38.5	7.2	9.4	4	21	14	9	9.4	17	17	NS	NS	5.4
4-Ethyltoluene	2	ND < 2.7	ND < 0.98	ND < 2.3	1.8	ND < 0.98	1.8	ND < 0.98	1.8	ND < 0.98	1.5	ND < 0.98	ND < 0.98	NS	NS	NS
Freon 113	ND < 0.77	ND < 2.1	0.84	ND < 1.8	ND < 0.77	ND < 0.77	ND < 0.77	**4.1**	ND < 0.77	ND < 0.77	ND < 0.77	ND < 0.77	ND < 0.77	NS	NS	**3.5**
Freon 114	ND < 0.70	ND < 1.9	ND < 0.70	ND < 1.6	ND < 0.70	ND < 0.70	ND < 0.70	ND < 0.70	ND < 0.70	ND < 0.70	ND < 0.70	ND < 0.70	ND < 0.70	NS	NS	NS
Heptane	1.4	ND < 2.2	1.3	ND < 1.9	1.2	ND < 0.82	1.4	ND < 0.82	2.3	ND < 0.82	ND < 0.82	ND < 0.82	0.94	NS	NS	NS
Hexachlorobutadiene	ND < 0.96	ND < 2.6	ND < 0.96	ND < 2.2	ND < 0.96	ND < 0.96	ND < 0.96	ND < 0.96	ND < 0.96	ND < 0.96	ND < 0.96	ND < 0.96	ND < 0.96	11.0	NS	<6.8
Hexane	1.7	3.3	2.6	4.2	1.5	1.1	2	1.5	2.5	2.7	0.95	1.2	2.2	NS	NS	NS
2-Hexanone	ND < 0.82	ND < 2.2	ND < 0.82	ND < 1.9	ND < 0.82	ND < 0.82	ND < 0.82	ND < 0.82	ND < 0.82	ND < 0.82	ND < 0.82	ND < 0.82	ND < 0.82	NS	NS	NS
Isopropyl Alcohol	18	7.6	9.3	8.1	18	6.1	18	10	18	7.4	10	5.9	4.2	NS	NS	250
Methylene chloride	0.69	ND < 1.9	1	5.9	ND < 0.69	0.87	0.69	1.5	0.97	3.8	0.73	ND < 0.69	0.76	45.0	60	10
Methyl ethyl ketone	7.4	4.4	5	2	6.8	1.4	6.2	2.9	8.3	1.4	3.5	1.5	2.5	39.0	NS	NS

Table 6
SOIL VAPOR INTRUSION - ALL ANALYTICAL COMPOUNDS

Orangetown Shopping Center
NYSDEC Site # C344066

Client Sample ID:	**DELI VP-1**	**DELI VP-1 AMBIENT**	**DELI SSD-MP-2**	**DELI SSD-MP-2 AMBIENT**	**CHINA SSD-MP-5**	**CHINA SSD-MP-5 AMBIENT**	**CHINA VP-9**	**CHINA VP-9 AMBIENT**	**SPARKLE VP-6**	**SPARKLE VP-6 AMBIENT**	**SPARKLE VP-5**	**SPARKLE VP-5 AMBIENT**	**OUTSIDE AMBIENT**	**REGULATORY GUIDANCE**		
Lab Sample ID:	**JC32202-4**	**JC32202-5**	**JC32202-2**	**JC32202-3**	**JC32202-12**	**JC32202-13**	**JC32202-10**	**JC32202-11**	**JC32202-6**	**JC32202-7**	**JC32202-8**	**JC32202-9**	**JC32202-1**	**NYSDOH 2003 Soil Vapor Indoor 95th Percentile (1)**	**NYSDOH 2003 Soil Vapor Intrusion Air Guidance Value (2)**	**EPA 2001 BASE 90th Percentile (3)**
Date Sampled:	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**			
Matrix:	**Soil Vapor Comp.**	**Ambient Air Comp.**	**Soil Vapor Comp.**	**Ambient Air Comp.**	**Soil Vapor Comp.**	**Ambient Air Comp.**	**Soil Vapor Comp.**	**Ambient Air Comp.**	**Soil Vapor Comp.**	**Ambient Air Comp.**	**Soil Vapor Comp.**	**Ambient Air Comp.**	**Ambient Air Comp.**			
Methyl Isobutyl Ketone	ND < 0.82	ND < 2.2	ND < 0.82	ND < 1.9	ND < 0.82	ND < 0.82	ND < 0.82	ND < 0.82	ND < 0.82	ND < 0.82	ND < 0.82	ND < 0.82	ND < 0.82	5.3	NS	NS
Methyl Tert Butyl Ether	ND < 0.72	ND < 1.9	ND < 0.72	ND < 1.7	ND < 0.72	ND < 0.72	ND < 0.72	ND < 0.72	ND < 0.72	ND < 0.72	ND < 0.72	ND < 0.72	ND < 0.72	71.0	NS	11.5
Methylmethacrylate	ND < 0.82	ND < 2.2	ND < 0.82	ND < 1.9	ND < 0.82	ND < 0.82	ND < 0.82	ND < 0.82	ND < 0.82	ND < 0.82	ND < 0.82	ND < 0.82	ND < 0.82	1.1	NS	NS
Propylene	ND < 0.86	2.9	3.4	2.6	1.6	14	1.9	31.3	1.2	ND < 0.86	ND < 0.86	2.2	3.1	NS	NS	NS
Styrene	ND < 0.85	ND < 2.3	ND < 0.85	ND < 2.0	ND < 0.85	ND < 0.85	ND < 0.85	ND < 0.85	ND < 0.85	ND < 0.85	ND < 0.85	ND < 0.85	ND < 0.85	2.3	NS	1.9
1,1,1-Trichloroethane	0.87	ND < 1.5	ND < 0.55	ND < 1.3	ND < 0.55	ND < 0.55	ND < 0.55	ND < 0.55	ND < 0.55	ND < 0.55	ND < 0.55	ND < 0.55	ND < 0.55	6.9	NS	20.6
1,1,2,2-Tetrachloroethane	ND < 0.69	ND < 1.9	ND < 0.69	ND < 1.6	ND < 0.69	ND < 0.69	ND < 0.69	ND < 0.69	ND < 0.69	ND < 0.69	ND < 0.69	ND < 0.69	ND < 0.69	<0.25	NS	NS
1,1,2-Trichloroethane	ND < 0.55	ND < 1.5	ND < 0.55	ND < 1.3	ND < 0.55	ND < 0.55	ND < 0.55	ND < 0.55	ND < 0.55	ND < 0.55	ND < 0.55	ND < 0.55	ND < 0.55	<0.25	NS	<1.5
1,2,4-Trichlorobenzene	ND < 0.74	ND < 2.0	ND < 0.74	ND < 1.7	ND < 0.74	ND < 0.74	ND < 0.74	ND < 0.74	ND < 0.74	ND < 0.74	ND < 0.74	ND < 0.74	ND < 0.74	6.3	NS	<6.8
1,2,4-Trimethylbenzene	5.4	ND < 2.7	ND < 0.98	ND < 2.3	5.4	ND < 0.98	4.9	ND < 0.98	4.4	ND < 0.98	3.9	ND < 0.98	ND < 0.98	18	NS	9.5
1,3,5-Trimethylbenzene	2.3	ND < 2.7	ND < 0.98	ND < 2.3	2.5	ND < 0.98	2.4	ND < 0.98	2.3	ND < 0.98	1.8	ND < 0.98	ND < 0.98	6.5	NS	NS
2,2,4-Trimethylpentane	4.2	ND < 2.5	3.3	ND < 2.1	3.8	1	4.3	1.3	6.1	1	1.7	1	1.3	NS	NS	NS
Tertiary Butyl Alcohol	0.91	ND < 1.6	0.67	ND < 1.4	2	ND < 0.61	1.1	ND < 0.61	1.7	ND < 0.61	0.97	ND < 0.61	0.67	NS	NS	NS
Tetrachloroethylene	1.5	ND < 0.75	0.68	ND < 0.62	2	1.7	**5.8**	**5.1**	0.56	0.64	0.63	0.51	0.39	**4.1**	30	15.9
Tetrahydrofuran	ND < 0.59	ND < 1.6	1.2	1.4	ND < 0.59	ND < 0.59	ND < 0.59	ND < 0.59	ND < 0.59	ND < 0.59	ND < 0.59	ND < 0.59	ND < 0.59	9.4	NS	NS
Toluene	6	5.7	4.9	5.3	4.9	4.5	4.5	6.4	6.8	4.5	2.9	5.3	6.4	110	NS	43
Trichloroethylene	**1.8**	ND < 0.59	ND < 0.21	ND < 0.49	0.7	ND < 0.21	ND < 0.21	**0.91**	ND < 0.21	ND < 0.21	0.47	ND < 0.21	ND < 0.21	**0.8**	2	4.2
Trichlorofluoromethane	1.5	1.6	1.9	1.9	1.6	1.6	1.4	1.8	1.5	1.7	1.3	1.4	1.5	30	NS	18.1
Vinyl chloride	ND < 0.10	ND < 0.28	ND < 0.10	ND < 0.24	ND < 0.10	ND < 0.10	ND < 0.10	ND < 0.10	ND < 0.10	ND < 0.10	ND < 0.10	ND < 0.10	ND < 0.10	<0.25	NS	<1.9
Vinyl Acetate	ND < 0.70	ND < 1.9	3.4	ND < 1.6	ND < 0.70	ND < 0.70	ND < 0.70	ND < 0.70	ND < 0.70	ND < 0.70	ND < 0.70	ND < 0.70	3.9	NS	NS	NS
m,p-Xylene	4.8	ND < 2.3	1.8	ND < 2.0	3.6	1.5	3.3	1.7	5.2	1.3	2.4	1.6	2.2	21.0	NS	22.2
o-Xylene	2.2	ND < 2.3	ND < 0.87	ND < 2.0	1.7	ND < 0.87	1.5	ND < 0.87	2.3	ND < 0.87	1.1	ND < 0.87	0.87	13.0	NS	7.9
Xylenes (total	6.9	ND < 2.3	2.6	ND < 2.0	5.2	2.1	4.8	2.3	7.4	1.9	3.5	2.2	3	NS	NS	NS

Notes:

Results and Standards expressed in micrograms per cubic meter (µg/m3)
Bold = Indicates sample concentration that exceeds regulatory guidance values
NS = No Standard
ND = Not detected above laboratory reporting limits
E = The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
B = Analyte is found in the associated analysis batch blank. For volatiles, methylene chloride and acetone are common lab contaminants. Data users should consider anything <10x the blank value as artifact.
(1) 95th percentile indoor air values from "Table C1. NYSDOH 2003: Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes', published in the NYSDOH Soil Vapor Intrusion Guidance Document, Appendix C" (October 2006)
(2) NYSDOH Air Guidance Values (AGVs) presented in the Final Guidance for evaluating Soil Vapor Intrusion in the State of New York, dated October 2006 ("NYSDOH Vapor Intrusion Guidance Document"); however, Tetrachloroethene (PCE) guidance was revised to 30 ug/m3 in September of 2013 and the trichloroethylene (TCE) Air Guideline Value was reduced to 2 ug/m3 in August of 2015
(3) 90th percentile indoor air values from "Table C-2. EPA 2001: Building Assessment and Survey Evaluation (BASE) Database, SUMMA canister method" published in the NYSDOH Soil Vapor Intrusion Guidance Document, Appendix C" (October 2006)

Table 7
SOIL VAPOR INTRUSTION - CONSTITUENTS OF CONCERN

Orangetown Shopping Center
NYSDEC Site # C344066

Client Sample ID:	**DELI VP-1**	**DELI VP-1 AMBIENT**	**DELI SSD-MP-2**	**DELI SSD-MP-2 AMBIENT**	**CHINA SSD-MP-5**	**CHINA SSD-MP-5 AMBIENT**	**CHINA VP-9**	**CHINA VP-9 AMBIENT**	**SPARKLE VP-6**	**SPARKLE VP-6 AMBIENT**	**SPARKLE VP-5**	**SPARKLE VP-5 AMBIENT**	**OUTSIDE AMBIENT**	**REGULATORY GUIDANCE**		
Lab Sample ID:	**JC32202-4**	**JC32202-5**	**JC32202-2**	**JC32202-3**	**JC32202-12**	**JC32202-13**	**JC32202-10**	**JC32202-11**	**JC32202-6**	**JC32202-7**	**JC32202-8**	**JC32202-9**	**JC32202-1**	**NYSDOH 2003 Soil Vapor Indoor 95th Percentile (1)**	**NYSDOH 2003 Soil Vapor Intrusion Air Guidance Value (2)**	**EPA 2001 BASE 90th Percentile (3)**
Date Sampled:	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**	**11/18/2016**			
Matrix:	**Sub Slab**	**Ambient Air**	**Sub Slab**	**Ambient Air**	**Sub Slab**	**Ambient Air**	**Sub Slab**	**Ambient Air**	**Sub Slab**	**Ambient Air**	**Sub Slab**	**Ambient Air**	**Ambient Air**			
	Comp.	**Comp.**	**Comp.**	**Comp.**	**Comp.**	**Comp.**	**Comp.**	**Comp.**	**Comp.**	**Comp.**	**Comp.**	**Comp.**	**Comp.**			
Carbon tetrachloride	ND < 0.25	ND < 0.69	0.63	ND < 0.58	ND < 0.25	ND < 0.25	ND < 0.25	0.62	ND < 0.25	0.6	ND < 0.25	ND < 0.25	0.38	1.1	NS	<1.3
1,1-Dichloroethylene	ND < 0.81	ND < 2.2	ND < 0.81	ND < 1.9	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.81	ND < 0.81	<0.25	NS	<1.4
trans-1,2-Dichloroethylene	ND < 0.79	ND < 2.1	ND < 0.79	ND < 1.8	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	NS	NS	NS
cis-1,2-Dichloroethylene	ND < 0.79	ND < 2.1	ND < 0.79	ND < 1.8	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	ND < 0.79	0.99	ND < 0.79	ND < 0.79	1.2	NS	<1.9
1,1,1-Trichloroethane	0.87	ND < 1.5	ND < 0.55	ND < 1.3	ND < 0.55	ND < 0.55	ND < 0.55	ND < 0.55	ND < 0.55	ND < 0.55	ND < 0.55	ND < 0.55	ND < 0.55	6.9	NS	20.6
Tetrachloroethylene	1.5	ND < 0.75	0.68	ND < 0.62	2	1.7	5.8	5.1	0.56	0.64	0.63	0.51	0.39	4.1	30	15.9
Trichloroethylene	**1.8**	ND < 0.59	ND < 0.21	ND < 0.49	0.7	ND < 0.21	ND < 0.21	**0.91**	ND < 0.21	ND < 0.21	0.47	ND < 0.21	ND < 0.21	**0.8**	2	4.2
Vinyl chloride	ND < 0.10	ND < 0.28	ND < 0.10	ND < 0.24	ND < 0.10	ND < 0.10	ND < 0.10	ND < 0.10	ND < 0.10	ND < 0.10	ND < 0.10	ND < 0.10	ND < 0.10	<0.25	NS	<1.9

Notes:
Results and Standards expressed in micrograms per cubic meter (µg/m3)
Bold = Indicates sample concentration that exceeds regulatory guidance values
NS = No Standard
ND = Not detected above laboratory reporting limits
E = The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate.
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(1) 95th percentile indoor air values from "Table C1. NYSDOH 2003: Study of Volatile Organic Chemicals in Air of Fuel Oil Heated Homes', published in the NYSDOH Soil Vapor Intrusion Guidance Document, Appendix C" (October 2006)
(2) NYSDOH Air Guidance Values (AGVs) presented in the Final Guidance for evaluating Soil Vapor Intrusion in the State of New York, dated October 2006 ("NYSDOH Vapor Intrusion Guidance Document"); however, Tetrachloroethene (PCE) guidance was revised to 30 ug/m3 in September of 2013 and the trichloroethylene (TCE) Air Guideline Value was reduced to 2 ug/m3 in August of 2015
(3) 90th percentile indoor air values from "Table C-2. EPA 2001: Building Assessment and Survey Evaluation (BASE) Database, SUMMA canister method" published in the NYSDOH Soil Vapor Intrusion Guidance Document, Appendix C" (October 2006)

Table 8 - Molasses Injection Summary Details

Injection Well ID	Injected Solution	Injected Volume (Gallons)
IP-1	NA	0
IP-2	NA	0
MW-3	NA	0
IP-3	10% Molasses	90
IP-4	10% Molasses	90
INJ-1S	NA	0
INJ-1D	NA	0
INJ-2S	NA	0
INJ-2D	NA	0
INJ-3S	NA	0
INJ-3D	10% Molasses	90
INJ-4S	NA	0
INJ-4D	10% Molasses	45
INJ-5S	NA	0
INJ-5D	NA	0
INJ-6S	NA	0
INJ-6D	NA	0
INJ-7S	NA	0
INJ-7D	NA	0
INJ-8S	NA	0
INJ-8D	NA	0
INJ-9S	NA	0
INJ-9D	NA	0

Notes:
NA = Not Applicable