

DRAFT

PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT

FORMER ROGELL GOLF COURSE
18600 AND 18601 BERG ROAD DETROIT, MICHIGAN

SME Project Number: 077832.00.001.006
February 27, 2018

February 27, 2018

Mr. Orza Robertson
Economic Development Corporation of the City of Detroit
500 Griswold, Suite 2200
Detroit, Michigan 48226

RE: Phase II Environmental Site Assessment Report
Former Rogell Golf Course
18600 and 18601 Berg Road, Detroit Michigan
SME Project No. 077832.00.001.006

Dear Mr. Robertson:

We have completed a Phase II Environmental Site Assessment (ESA) of the above referenced property, hereinafter referred to as the Property. The enclosed report presents our scope of assessment, procedures, results, and conclusions.

We understand the Economic Development Corporation of the City of Detroit will rely upon the professional opinions and representations contained in the report in accordance with the terms and conditions agreed upon for the project. This reliance is not to be construed as a warranty or guarantee on the part of SME.

Thank you for the opportunity to provide these services. If you have any questions concerning this report, or if additional services are required, please contact us.

Sincerely,

SME

Andrea H. Ryswick
Staff Geologist

Matthew Vander Eide, PG, CPG
Senior Project Geologist

Enclosures: Electronic (PDF file) copy of report on CD

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SOIL BORING LOGS

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1. INTRODUCTION

We have prepared this report to document the results of a Phase II Environmental Site Assessment (ESA) of two parcels of land, located at 18600 and 18601 Berg Road, in the City of Detroit, Wayne County, Michigan, hereinafter referred to as “the Property”. The Property location is shown on Figure 1. We conducted the assessment in accordance with our September 29, 2017 proposal (SME Proposal No. P02872.17), and the approved scope of work included in our Professional Services Agreement with the Economic Development Corporation of the City of Detroit, dated October 31, 2017.

1.1 SITE DESCRIPTION AND BACKGROUND

At the time of our assessment, the Property consisted of two parcels of land formerly developed with a golf course. The eastern, 93.62-acre parcel (18600 Berg Road) was developed with a 2,700 square-foot former maintenance building, former irrigation well pump house, a ticket booth building, and grass- and tree-covered areas that were formerly part of the golf course. The western, 29.77-acre parcel (18601 Berg Road) was developed with the former golf course club house, a refrigeration house, two asphalt parking lots, and grass- and tree-covered land that was part of the former golf course. The Rouge River flowed from north to south on the western parcel. The Property features are shown on Figure 2.

We conducted a Phase I Environmental Site Assessment (ESA) of the Property and prepared a Phase I ESA report dated February 23, 2018. Based on our historical research, the Property was first developed prior to 1905 with four structures (a church building and possible residential buildings) along West Seven Mile Road and three buildings (likely residences) along Berg Road. These buildings were demolished between 1931 and 1952. A portion of the Property was developed as the Phoenix Golf Club, a nine-hole golf course, in 1913/1914. The Property was sold to the City of Redford in 1920, and redesigned as an 18-hole golf course in 1920/1921. The City of Detroit purchased the Property in 1945, and continued to operate the golf course. The on-site clubhouse and maintenance building were constructed in the 1930s and 1940s, and by the 1960s, a pump house for an irrigation well and a refrigeration house for an ice rink were present on the Property. During the 1970s and 1980s, and possibly longer, an ice skating rink was present in the basement of the clubhouse building. Greater Grace Temple purchased the Property in 2007, and golf course operations ceased in 2013.

Operations on the Property included the use of four underground storage tanks (USTs). A 550-gallon UST (identified as UST #1) for gasoline storage was installed south of the southwest corner of the maintenance building in 1955. This UST was removed in 2007, and a release was reported. Groundwater impacted with benzene at concentrations above Part 201 Michigan generic residential Cleanup Criteria (Part 201 criteria) remained in the area of UST #1. A 560-gallon UST (identified as UST #2) for gasoline storage was installed south of UST #1 in 1998 and was removed in 2007. No releases were reported following the removal of UST #2. Heating oil stored in a 1,500-gallon UST (UST #3), installation date and location unknown, was used to heat the club house until the UST was replaced in 1981 with a 2,000-gallon UST (UST #4) for heating oil storage. UST #4 was taken out of service in 1990 and was removed in 2007. Soil was removed from around the area of UST #4, and soil impacted with heating oil constituents at concentrations above Part 201 criteria remained in the area of UST #4.

Our knowledge of suspected environmental impact on the Property was developed through completion of the Phase I ESA and identification of the following recognized environmental conditions (RECs):

- The presence of soil impacted with 1,2,4-trimethylbenzene (TMB) and 1,3,5-TMB at concentrations above Michigan generic residential cleanup criteria in the area of former UST #4 near the maintenance building (Sections 4.1, 4.2.2, and 4.2.4).
- The presence of soil impacted with arsenic, lead, mercury, dieldrin, and/or beta-hexachlorocyclohexane at concentrations above Michigan generic residential cleanup criteria in the tee box, fairway and green areas of the former golf course (Section 4.2.4).

- The presence of soil impacted with concentrations of arsenic, cadmium, mercury, selenium, and/or zinc above Michigan generic residential cleanup criteria near the locations of abandoned drums, the irrigation well pump house, the soil mound, and near the existing above-ground storage tanks along the southern wall of the maintenance building; and groundwater impacted with concentrations of arsenic and lead above Michigan generic residential cleanup criteria in the area of above-ground storage tanks formerly located along the northern wall of the maintenance building (Section 4.2.4).
- The potential for unreported and/or undetected releases of hazardous substances and/or petroleum products from former UST #3 (Sections 4.1 and 4.2.2).
- The potential for unreported and/or undetected releases of hazardous substances associated with historical golf course operations on the Property (Section 4.4.2).
- The potential for unreported and/or undetected releases of petroleum products from the diesel and gasoline ASTs located south of the maintenance building, fuel oil ASTs located in or near the maintenance building, fuel oil AST located in the basement of the club house, fuel oil AST located in the refrigeration house, and reported historical flammable liquids storage at the Property (Sections 4.2.2, 5.3.2, and 5.4.2).
- The potential for unreported and/or undetected releases of hazardous substances from the transformers located northwest of the maintenance building (Section 5.3.3).
- The potential for unreported and/or undetected releases of hazardous substances and/or petroleum products from the drums and buckets present on the ground around the maintenance building (Section 5.3.5).
- The potential for environmental impact associated with materials present in the soil mound located northeast of the maintenance building (Section 5.3.6).
- The potential for releases of lubricants/oils used in the refrigeration system in the refrigeration house to migrate to the subsurface (Section 5.4.7).
- The potential for migration of unreported and/or undetected releases associated with the north-adjointing Seven Mile and Consolidated Unit #2268 sites onto the Property (Section 4.1).
- The potential for migration of unreported and/or undetected releases of hazardous substances and/or petroleum products onto the Property from the historical auto repair and dry cleaning operations on adjoining and nearby sites located up-gradient (generally north and northeast of the Property (Section 4.4.3).
- The potential for migration of impacted groundwater and/or soil gas (vapor encroachment) from the northeast-adjointing Former Shell Station onto the Property (Section 4.1).

This assessment also identified the presence of groundwater impacted with benzene at concentrations above Part 201 criteria in the area of former UST #1 near the maintenance building as a controlled REC (CREC) in connection with the Property (Sections 4.1 and 4.2.2).

1.2 PURPOSE

We designed the scope of this Phase II ESA to further evaluate the RECs identified during the Phase I ESA for the purpose of supporting environmental due diligence and liability management for the prospective purchaser (the City of Detroit), and evaluating the potential for environmental conditions to impact future redevelopment plans. We compared the chemical analyses data to the Part 201 generic

residential cleanup criteria (Part 201 criteria) to evaluate if the Property meets the definition of a “facility” as defined in Part 201 of the Natural Resources and Environmental Protection Act (NREPA), P.A. 451 of 1994, as amended (Part 201).

We were unable to collect samples in the area of former UST #3 because we were unable to locate documentation indicating the former location of the tank. We were unable to collect samples from beneath the refrigeration house or the fuel oil AST in the refrigeration house due to the presence of debris from a partial building collapse and a safety concern related to the potential instability of the remaining building components. Our evaluation did not include collection of groundwater samples along W. Seven Mile Road because specific development plans, which typically indicate the location(s) of buildings, were not available at the time of this assessment. Additional assessment may be warranted after development plans are prepared, to evaluate groundwater conditions and the potential for vapor intrusion in the locations of proposed buildings.

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2. SCOPE OF SERVICE

We completed the following scope of services at the Property:

- Advanced soil borings at 52 sampling locations (SB1 through SB52; Figure 2) and installed temporary groundwater monitoring wells at five sampling locations (SB37, SB41, SB43, SB44, and SB51).
- Logged soil samples in accordance with ASTM D2488 *Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)*, and field screened them with a photoionization detector (PID) for the presence of ionizable volatile organic compounds (VOCs).
- Collected at least one soil sample from each boring location (SB1 through SB52) and collected a groundwater sample from five temporary monitoring wells (SB37, SB41, SB43, SB44, and SB51) for chemical analyses.
- Submitted the soil and groundwater samples for chemical analyses of one or more of the following analytes: VOCs, polynuclear aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), organochlorine pesticides, organochlorine herbicides, arsenic, barium, cadmium, chromium, hexavalent chromium, copper, lead (total and fine and coarse fractions), mercury, selenium, silver, and zinc. We selected the target analytes because they are representative of, or indicator parameters for, the contaminants reasonably expected to be associated with the historical uses of the Property. In addition, we submitted three duplicate soil samples, a duplicate groundwater sample, a methanol blank, and an aqueous field blank for quality control (QC) purposes.
- Prepared this summary report.

3. PROCEDURES

We conducted soil sampling and temporary monitoring well installation and sampling on January 10 through 12, 2018. Procedures for the direct-push sampling activities, temporary groundwater monitoring well installation and sampling, and chemical analyses are summarized in the following subsections.

3.1 SOIL AND GROUNDWATER SAMPLING

We advanced soil borings at sampling locations SB1 through SB52 using truck-mounted, hydraulically driven, direct-push coring equipment. Each soil sample was collected using a 4-foot long, 2-inch outside-diameter, GeoProbe® MacroCore® Sampler fitted with a single-use, disposable, acetate liner. The soil in the sample core was visually evaluated, and representative samples were collected from each soil unit for visual classification in accordance with ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure). A portion of each soil sample was placed in a sealed plastic bag for field screening of ionizable VOCs using a calibrated PID equipped with a 10.6 eV lamp. Field screening consisted of allowing the sample bag to warm and release ionizable VOCs, then piercing the bag with the tip of the PID to read the total VOCs within the headspace of the bag. PID readings were recorded on the soil boring logs (Appendix A).

Soil samples were collected from each boring for chemical analysis. The amount of soil collected at each sampling location was dependent on chemical analyses requirements. First, soil samples intended for VOC laboratory analyses were removed from the boring liner and placed in methanol-preserved 40-milliliter (mL) glass vials following U.S. EPA Method 5035A. Soil volumes sufficient for analyses of PAHs, PCBs, herbicides, pesticides, and metals were then removed from the boring liner and homogenized prior to transfer to pre-cleaned, 8-ounce, glass jars provided by the analytical laboratory. Following soil sampling, soil samples were logged on a chain of custody and then were placed on ice in a sample cooler.

Groundwater was encountered at soil borings SB37, SB41, SB43, SB44, and SB51 at depths between 7.5 and 10 feet below ground surface (bgs). Temporary monitoring wells were installed in each boring. The wells were constructed of a 5-foot long, 1-inch diameter, 0.010-inch slotted (10-slot) PVC screen with a pre-fabricated silica sand pack. The wells were installed such that the screens intersected the depth where groundwater was encountered during drilling.

After gauging the depth to water we purged each well using a variable flow rate, portable peristaltic pump fitted with clean, 0.375-inch outside diameter silicone and polyethylene tubing, until the purged water appeared visibly clear. Following well purging, we collected a groundwater sample from each temporary monitoring well using the portable peristaltic pump, operated at a low-flow pumping rate of approximately 100 milliliters/minute (mL/min). The groundwater samples were transferred directly into laboratory-supplied 40-mL glass vials preserved with hydrochloric acid (VOC analysis), 1-liter amber colored unpreserved glass jars (PAH, herbicide and pesticide analyses), and 250-mL plastic bottles preserved with nitric acid (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc analysis). Following sample collection, groundwater samples were logged on a chain of custody and placed on ice in a sample cooler.

3.1.1 SAMPLE LOCATIONS

The sample locations were selected to further evaluate the impact from current site conditions, historical on-site operations and potential off-site sources that were identified in our Phase I ESA. Groundwater samples were collected from the depth where groundwater was first encountered, to evaluate the potential for groundwater impact from on-site and off-site sources. A summary of the rationale for each sample location is provided in the following table.

SAMPLE ID	SAMPLE TARGET/RATIONALE
SB1 through SB36	Evaluate soil conditions in the areas of former golf course tee boxes, fairways, and greens on six holes.
SB37	Evaluate groundwater conditions and potential migration of impacted groundwater from the northeast-adjoining LUST site.
SB38 through SB40	Evaluate soil conditions in the soil mound located on the northern portion of the 18600 Berg Road parcel.
SB41 through SB43	Evaluate soil conditions and/or groundwater conditions near the maintenance building, in the area of the former underground storage tanks and dispenser.
SB44	Evaluate soil conditions in the drum storage area along the northern wall of the maintenance building.
SB45 through SB49	Evaluate soil conditions in the area of drums scattered in wooded areas near the irrigation well pump house.
SB50	Evaluate soil conditions in the area of pole-mounted transformers.
SB51	Evaluate soil and groundwater conditions near the former golf course club house, in the area of a former underground storage tank used to store heating oil.
SB52	Evaluate soil conditions near the maintenance building, in the area of the existing above-ground storage tanks formerly used to store gasoline and diesel.

3.2 FIELD QUALITY ASSURANCE (QA)

Our team members wore a new pair of disposable nitrile sampling gloves during collection of each sample to minimize the potential for cross-contamination. Direct-push sampling equipment was decontaminated before each use with a high-pressure, hot water, pressure washer. We decontaminated other soil sampling equipment before each use with a laboratory-grade detergent/deionized water solution wash followed by a deionized water rinse. We used new materials for temporary groundwater well construction and new polyethylene and silicone tubing for groundwater purging and sampling.

The analytical laboratory supplied properly preserved, pre-cleaned, containers for sample collection. After sample collection, the containerized soil and groundwater samples were kept on ice or refrigerated until delivery to the laboratory. Our field staff followed chain-of-custody procedures to document the sample handling sequence. Field instrument calibration, sample handling and custody requirements, and QA/QC procedures were in general accordance with our standard operating procedures.

3.3 FIELD QUALITY CONTROL (QC)

We collected three duplicate soil samples and a duplicate groundwater sample to evaluate the precision of sampling. In addition, we submitted a methanol blank and an aqueous field blank to evaluate the potential for cross-contamination during sample collection, transport, and storage.

3.4 CHEMICAL ANALYSES

We submitted 52 soil samples, 5 groundwater samples, and 6 QC samples to Fibertec Environmental Services, Inc. (Fibertec) of Holt, Michigan for chemical analyses of one or more of the following parameters: VOCs, PAHs, pesticides, herbicides, arsenic, barium, cadmium, total chromium, copper,

lead, mercury, selenium, silver, and zinc. The four soil samples (SB39, SB45, SB49, and SB52) with the highest total chromium concentrations were also analyzed for hexavalent chromium. Similarly, the five soil samples (SB11, SB20, SB31, SB33, and SB45) with the highest total lead concentrations were also analyzed for fine and coarse fraction of lead. The specific analytes for each sample are presented in Table 1 (soil) and Table 2 (groundwater). We selected the target analytes to be representative of, or indicator parameters for, the contaminants reasonably expected to be present in the environmental media sampled at each location.

Fibertec analyzed the samples using the USEPA reference methods listed below:

- VOCs – Method 8260
- PAHs – Method 8270
- Organochlorine Pesticides – Method 8081
- Organochlorine Herbicides – Method 8151
- Arsenic, barium, cadmium, total chromium, copper, lead, selenium, silver, and zinc – Method 6020
- Mercury – Method 7471
- Hexavalent chromium – Method 7196

The laboratory analysis reports, complete list of specific analytical reference methods, reporting limits, and chain of custody documentation for the samples collected on the Property are included in Appendix B.

4. RESULTS

The surface and subsurface conditions encountered during sampling activities, and the results of chemical analyses are described in the following subsections.

4.1 SURFACE AND SUBSURFACE CONDITIONS

Descriptions of the soil conditions encountered at the sampling locations are documented on the soil boring logs (Appendix A). The surface materials on the Property consisted of topsoil, sand, or sand fill. Sand fill was encountered either at or near the ground surface at SB39, SB40, SB41, SB42, SB44, SB45, SB46, SB50, SB51, and SB52, and extended to a maximum observed depth of 11 feet bgs at SB44. Fine to medium sand was encountered at the surface or underlying topsoil or sand fill in borings SB37, SB41, SB42, SB43, SB45, SB47, SB48, and SB49 to a maximum observed depth of 11 feet bgs at SB41 and SB42. Lean clay underlying the sand or fill sand was observed in soil borings SB37, SB41 through SB44 and SB51 at a depth of 10.5 or 11 feet bgs.

Stained soil, which exhibited a petroleum odor, was encountered at a depth of 10.5 to 11 feet bgs at SB44. Stained soil was encountered at a depth of 0 to 1.5 feet bgs at SB47 and a depth of 10.5 to 11 feet bgs at SB51. No other staining or odors were noted during field screening of soil samples. A PID measurement of 1.8 parts per million (PPM) was noted at depth of eight feet bgs at SB51. No other PID measurements greater than 1 ppm were noted during field screening of the soil samples.

Groundwater was encountered at a depths of 7.5 to 10 feet bgs at borings SB37, SB41 through SB44, and SB51. No sheens or odors were noted in the purged groundwater from the temporary monitoring wells. Groundwater was not encountered at the remaining boring locations.

4.2 RESULTS FROM CHEMICAL ANALYSES

Results from the chemical analyses performed on soil and groundwater samples collected during our assessment are tabulated in Table 1 and Table 2. Laboratory analysis reports and chain of custody documentation are included in Appendix B. We compared the results from chemical analyses of soil and groundwater samples to the Part 201 criteria dated December 30, 2013, to determine if the Property is a “facility” as defined in Part 201. Additionally, we compared soil and groundwater results to the Michigan Department of Environmental Quality (MDEQ) Media-Specific Volatilization to Indoor Air Interim Action Screening Levels, August 2017. Target analytes reported at concentrations greater than one or more Part 201 criteria in soil are depicted on Figures 3 and 3A. Target analytes reported at concentrations greater than one or more Part 201 criteria in groundwater are depicted on Figure 4.

4.2.1 ANALYSIS RESULTS – SOIL

Dieldrin, beta-hexachlorocyclohexane, arsenic, cadmium, total chromium¹, lead, mercury, selenium, and/or zinc were measured at concentrations above the Part 201 criteria. VOCs, PAHs, PCBs, herbicides, and hexavalent chromium were not measured at concentrations above the laboratory reporting limits in the soil samples. The measured concentrations of mercury at multiple sample locations were above the Media-Specific Volatilization to Indoor Air Interim Action Screening Level.

¹ Total chromium results were compared to trivalent chromium criteria because hexavalent chromium was analyzed and not measured above the laboratory reporting limit in the soil sample that had the highest total chromium concentration.

4.2.2 ANALYSIS RESULTS – GROUNDWATER

Total and dissolved arsenic and total lead were measured at concentrations above the Part 201 criteria at SB44. VOCs, PAHs, barium, cadmium, total chromium, copper, dissolved lead, mercury, selenium, silver, and zinc were measured at concentrations either below the laboratory reporting limits or the Part 201 criteria in the groundwater samples.

4.3 QUALITY CONTROL

We evaluated the representativeness of the data collected during our subsurface assessment to determine if the data set was valid and of usable quality. Our discussions of field quality control samples are summarized below. The laboratory QC results are detailed in the laboratory analytical reports and case narratives included in Appendix B.

No VOCs were measured at concentrations above laboratory RLs in the aqueous field blank or methanol blank samples, indicating that contamination was not introduced during sample transport or storage.

We collected three duplicate soil sample pairs during our Phase II ESA at sample locations SB29 (Duplicate-03), SB32 (Duplicate-02), and SB39 (Duplicate-01). With the exception of arsenic in the duplicate sample pair collected from SB32, the relative percent differences (RDPs) of the target analytes, reported at concentrations above the reporting limits were less than 50 percent. The RPD for arsenic in the duplicate pair from SB32 was 54.5 percent, which may have been attributable to the inherent heterogeneity of the fill material analyzed.

Some analytes were detected in one sample of a sample pair, but were not measured at concentrations above the laboratory reporting limits in the second sample of the pair; therefore, the RPDs were not calculated for those constituents. Concentrations of mercury, chlordane, 4-4'-DDE, dieldrin, and heptachlor epoxide were measured in one sample of the sample pair collected from SB29. Concentrations of chlordane, 4-4'-DDE, dieldrin, and heptachlor epoxide were detected in one sample of the sample pair collected from SB32. Concentrations of chlordane and 4-4'-DDE were detected in one sample of the sample pair collected from SB39.

No analyzed constituents were measured above the laboratory reporting limit in the duplicate groundwater sample pair collected from SB41.

We reviewed the laboratory quality control analysis results provided by Fibertec, and did not note exceptions that impaired the ability to meet the project objective of identifying Part 201 criteria exceedances.

FIGURES

FIGURE 1: PROPERTY LOCATION MAP

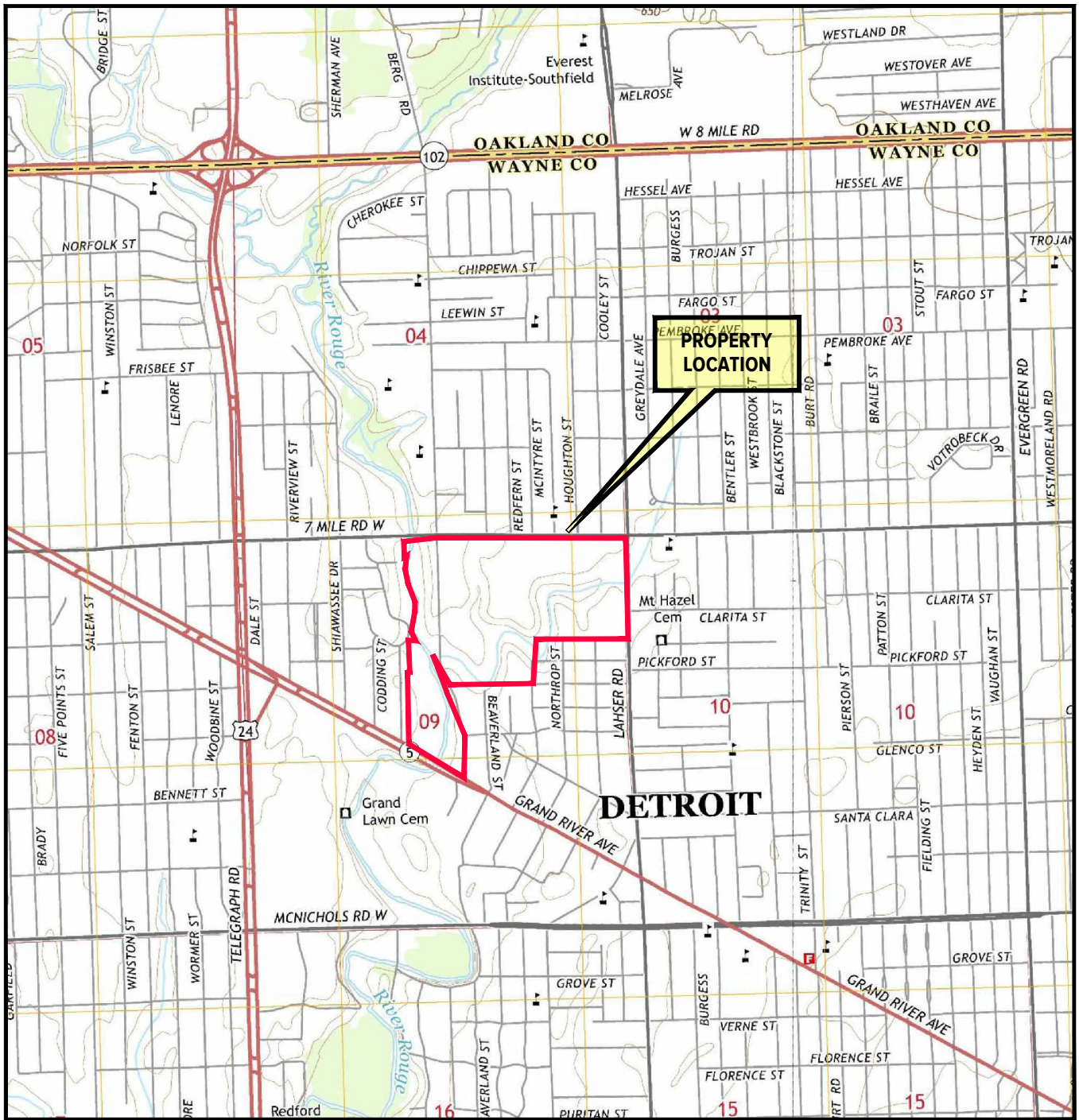
FIGURE 2: SAMPLE LOCATION DIAGRAM

FIGURE 3: PROPERTY AND ASSESSMENT SUMMARY DIAGRAM – SOIL

FIGURE 3A: PROPERTY AND ASSESSMENT SUMMARY DIAGRAM – SOIL

FIGURE 4: PROPERTY AND ASSESSMENT SUMMARY DIAGRAM – GROUNDWATER

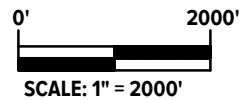
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Base map obtained from EDR.

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USGS QUADRANGLE(S) REFERENCED
 REDFORD (MI) TOPO QUAD - 2014
 ROYAL OAK (MI) TOPO QUAD - 2014



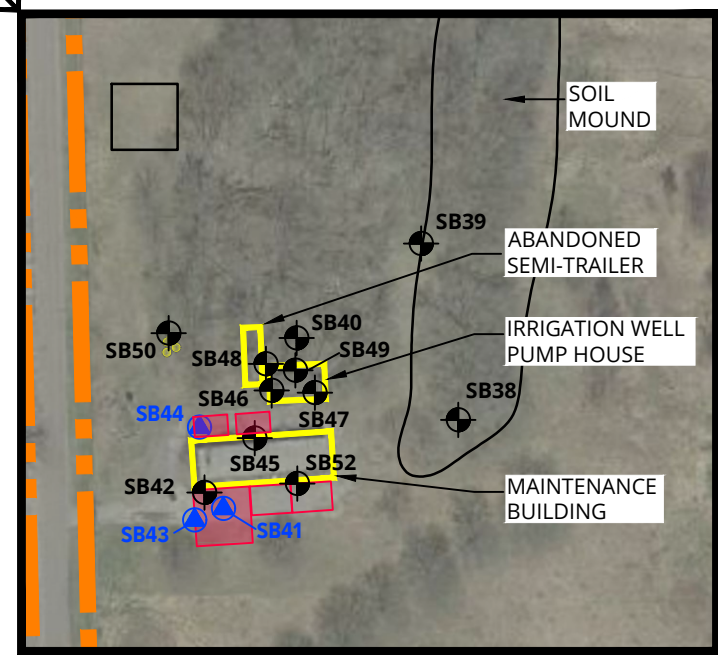
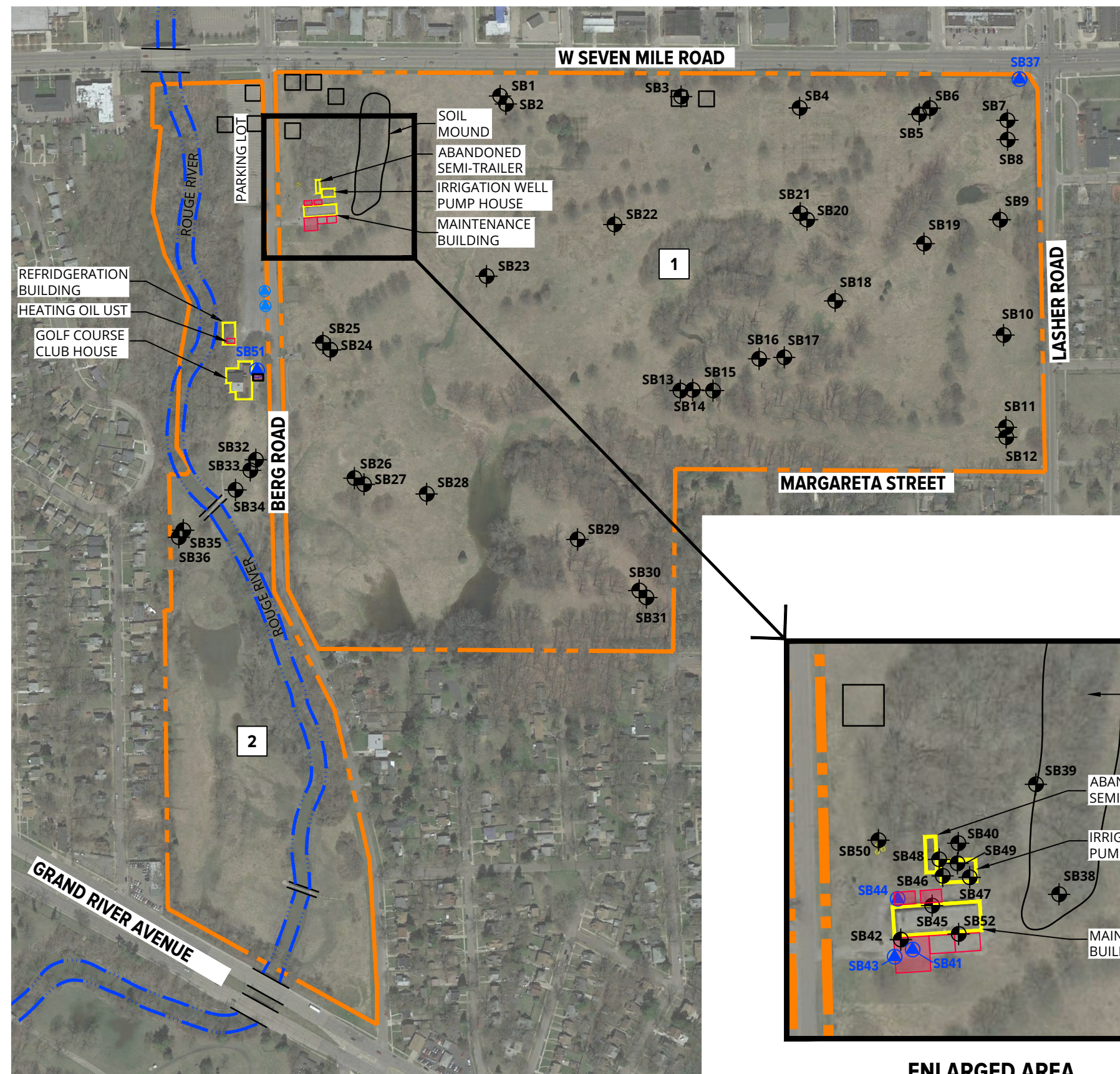
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		Drawn By	GM
		Designed By	AK
		Scale	1" = 2000'
		Project	077832.00.001.006

**PROPERTY LOCATION MAP
 FORMER ROGELL GOLF COURSE
 18600 - 18601 BERG ROAD
 DETROIT, MICHIGAN**

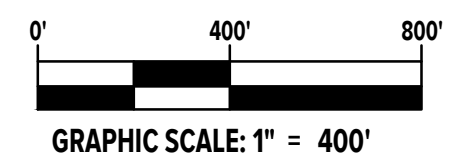


Figure No. 1

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ENLARGED AREA
SCALE: 1" = 150'



LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXISTING MONITORING WELLS
- POLE-MOUNTED TRANSFORMERS
- FORMER LOCATION OF BUILDINGS
- FORMER LOCATION OF GASOLINE USTs
- GASOLINE AND DIESEL ASTs
- FORMER LOCATION OF DIESEL ASTs
- FORMER LOCATION OF HEATING OIL UST
- 18600 BERG ROAD
- 18601 BERG ROAD
- APPROXIMATE SOIL BORING LOCATION
- APPROXIMATE SOIL BORING LOCATION WITH TEMPORARY MONITORING WELL

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NOTE:
DRAWING INFORMATION TAKEN FROM
GOOGLE EARTH PRO 2016 AERIAL PHOTO
AND SITE OBSERVATIONS.



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Project
**FORMER ROGELL
GOLF COURSE**

Project Location
**18600 AND 18601
BERG ROAD
DETROIT,
MICHIGAN**

Sheet Name
**SAMPLE LOCATION
DIAGRAM**

No.	Revision Date

Date	2-2-18
CADD	JAB
Designer	AHR
Scale	1" = 400'
Project	077832.00.001.006
Figure No.	2

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Project

FORMER ROGELL GOLF COURSE

Project Location

**18600 AND 18601 BERG ROAD
DETROIT,
MICHIGAN**

Sheet Name

PROPERTY AND ASSESSMENT SUMMARY AND DIAGRAM - SOIL

No.	Revision Date

Date **2-2-18**

CADD **JAB**

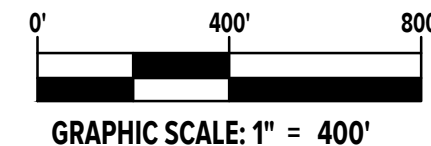
Designer **AHR**

Scale **1" = 400'**

Project **077832.00.001.006**

Figure No. **3**

DRAWING NOTE: SCALE DEPICTED IS MEANT FOR 11" X 17" AND WILL SCALE INCORRECTLY IF PRINTED ON ANY OTHER SIZE MEDIA
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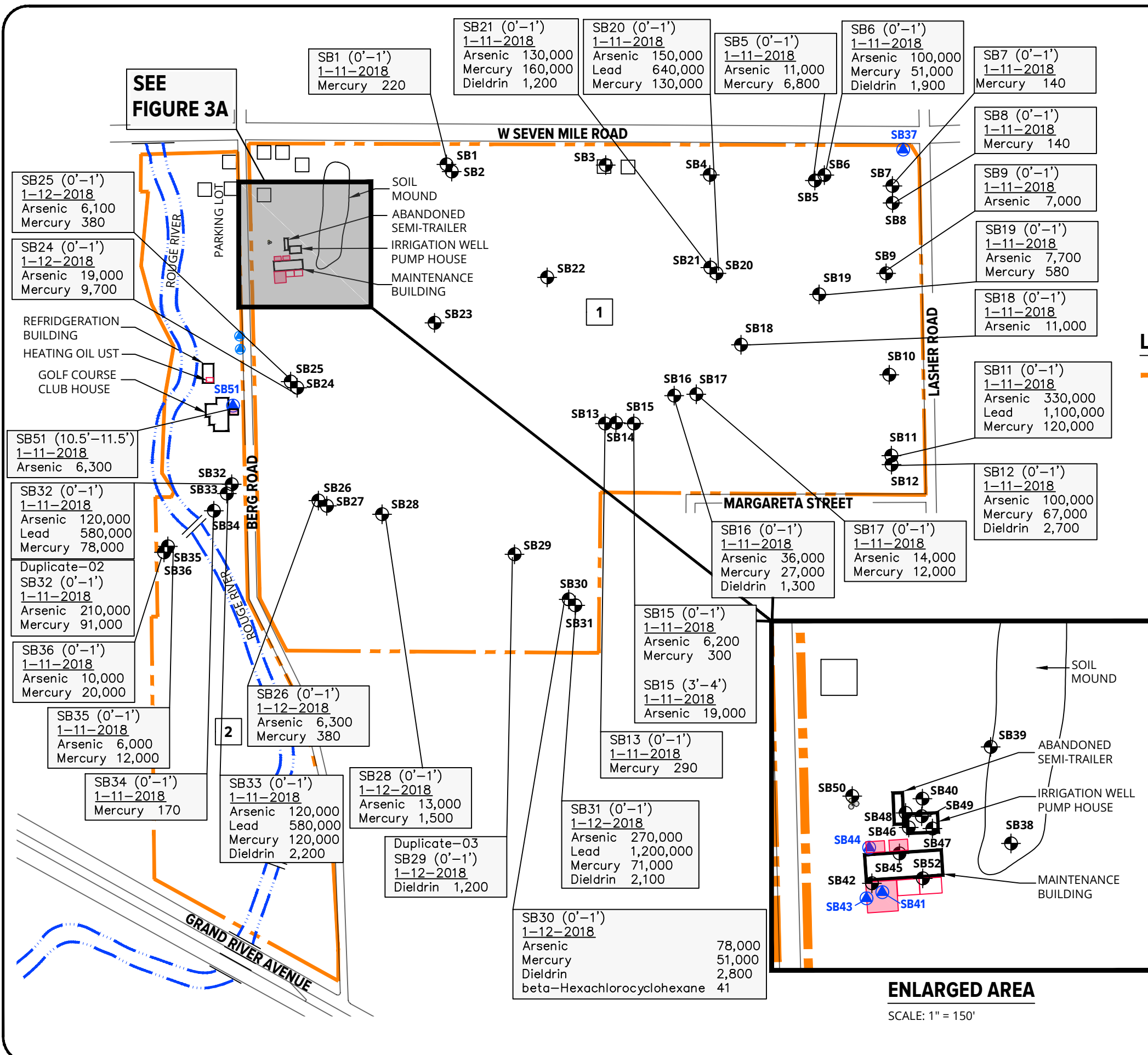


LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXISTING MONITORING WELLS
- POLE-MOUNTED TRANSFORMERS
- FORMER LOCATION OF BUILDINGS
- FORMER LOCATION OF GASOLINE USTs
- FORMER LOCATION OF DIESEL ASTs
- FORMER LOCATION OF HEATING OIL UST
- 18600 BERG ROAD
- 18601 BERG ROAD
- APPROXIMATE SOIL BORING LOCATION
- APPROXIMATE SOIL BORING LOCATION WITH TEMPORARY MONITORING WELL

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- NOTES:
- DRAWING INFORMATION TAKEN FROM GOOGLE EARTH PRO 2016 AERIAL PHOTO AND SITE OBSERVATIONS.
 - CONCENTRATIONS ARE SHOWN IN MICROGRAMS PER KILOGRAM ($\mu\text{g}/\text{kg}$) AND EXCEED ONE OR MORE PART 201 GENERIC RESIDENTIAL CLEANUP CRITERIA.



ENLARGED AREA
SCALE: 1" = 150'

PLOT DATE: Feb 02, 2018 - 4:39pm - jblake FILE LOCATION: \\sme-inc\p2\WIP\077832.00\CAD\077832.00.001.006\rev01\077832.00.001.006-AN.dwg

SEE FIGURE 3A



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Project

FORMER ROGELL GOLF COURSE

Project Location

**18600 AND 18601 BERG ROAD
DETROIT,
MICHIGAN**

Sheet Name

PROPERTY AND ASSESSMENT SUMMARY AND DIAGRAM - SOIL

No. Revision Date

No.	Revision Date

Date **2-2-18**

CADD **JAB**

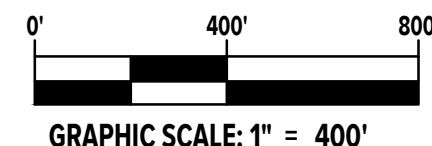
Designer **AHR**

Scale **1" = 400'**

Project **077832.00.001.006**

Figure No. **3A**

DRAWING NOTE: SCALE DEPICTED IS MEANT FOR 11" X 17" AND WILL SCALE INCORRECTLY IF PRINTED ON ANY OTHER SIZE MEDIA
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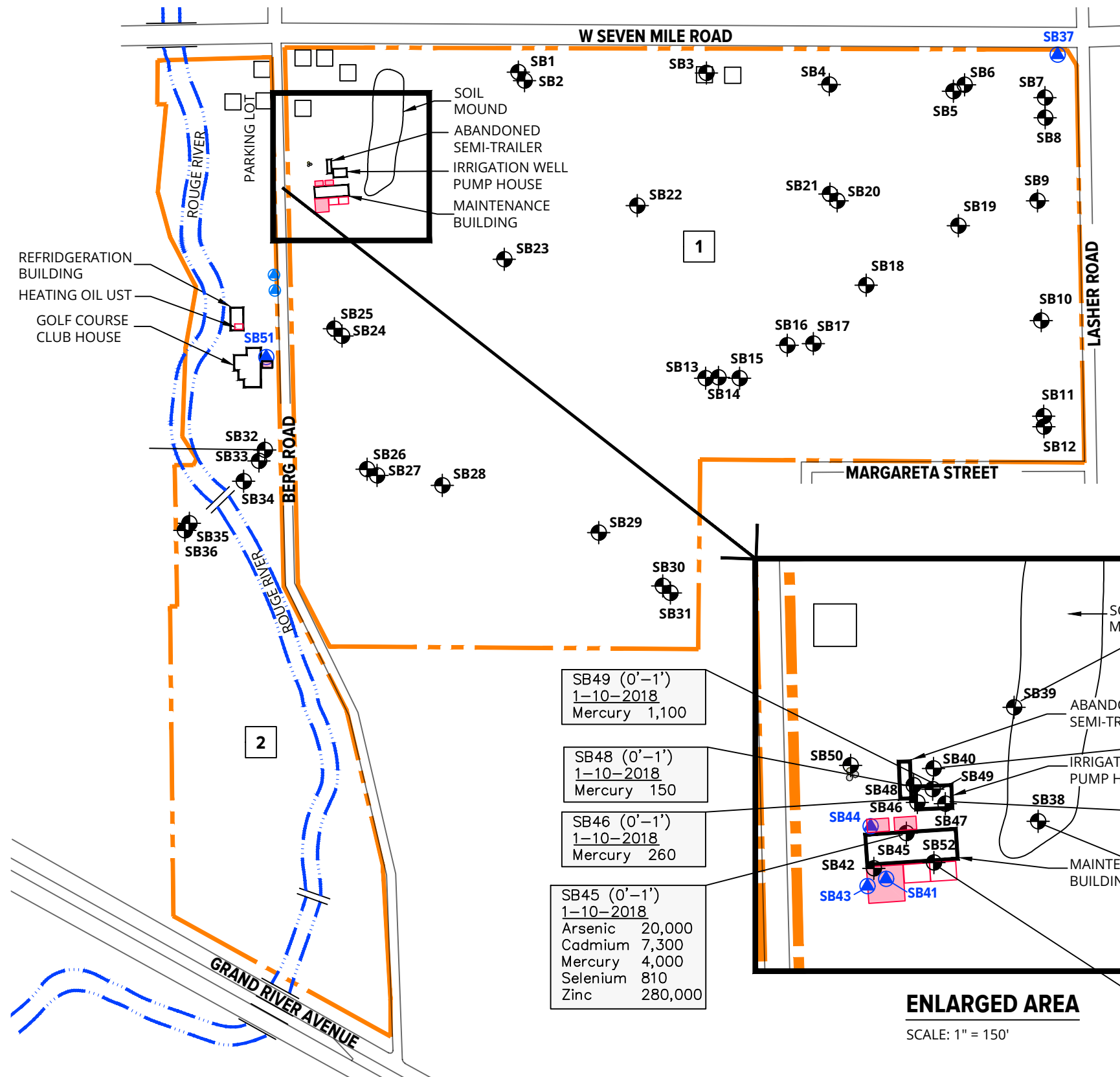


LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXISTING MONITORING WELLS
- POLE-MOUNTED TRANSFORMERS
- FORMER LOCATION OF BUILDINGS
- FORMER LOCATION OF GASOLINE USTs
- GASOLINE AND DIESEL ASTs
- FORMER LOCATION OF DIESEL ASTs
- FORMER LOCATION OF HEATING OIL UST
- 18600 BERG ROAD
- 18601 BERG ROAD
- APPROXIMATE SOIL BORING LOCATION
- APPROXIMATE SOIL BORING LOCATION WITH TEMPORARY MONITORING WELL

DRAFT

- NOTES:
- DRAWING INFORMATION TAKEN FROM GOOGLE EARTH PRO 2016 AERIAL PHOTO AND SITE OBSERVATIONS.
 - CONCENTRATIONS ARE SHOWN IN MICROGRAMS PER KILOGRAM ($\mu\text{g}/\text{kg}$) AND EXCEED ONE OR MORE PART 201 GENERIC RESIDENTIAL CLEANUP CRITERIA.



FILE LOCATION: \\sme-inc\p\WIP\077832.00\CAD\077832.00.001.006\rev\077832.00.001.006-AN.dwg

Feb 02, 2018 - 4:27pm - jblake

PLOT DATE

Project

FORMER ROGELL GOLF COURSE

Project Location

**18600 AND 18601 BERG ROAD
DETROIT,
MICHIGAN**

Sheet Name

PROPERTY AND ASSESSMENT SUMMARY AND DIAGRAM - GROUNDWATER

No.	Revision Date

Date **2-2-18**

CADD **JAB**

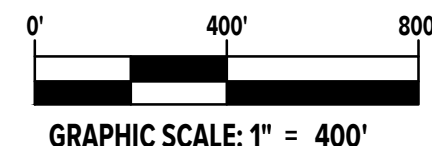
Designer **AHR**

Scale **1" = 400'**

Project **077832.00.001.006**

Figure No. **4**

DRAWING NOTE: SCALE DEPICTED IS MEANT FOR 11" X 17" AND WILL SCALE INCORRECTLY IF PRINTED ON ANY OTHER SIZE MEDIA
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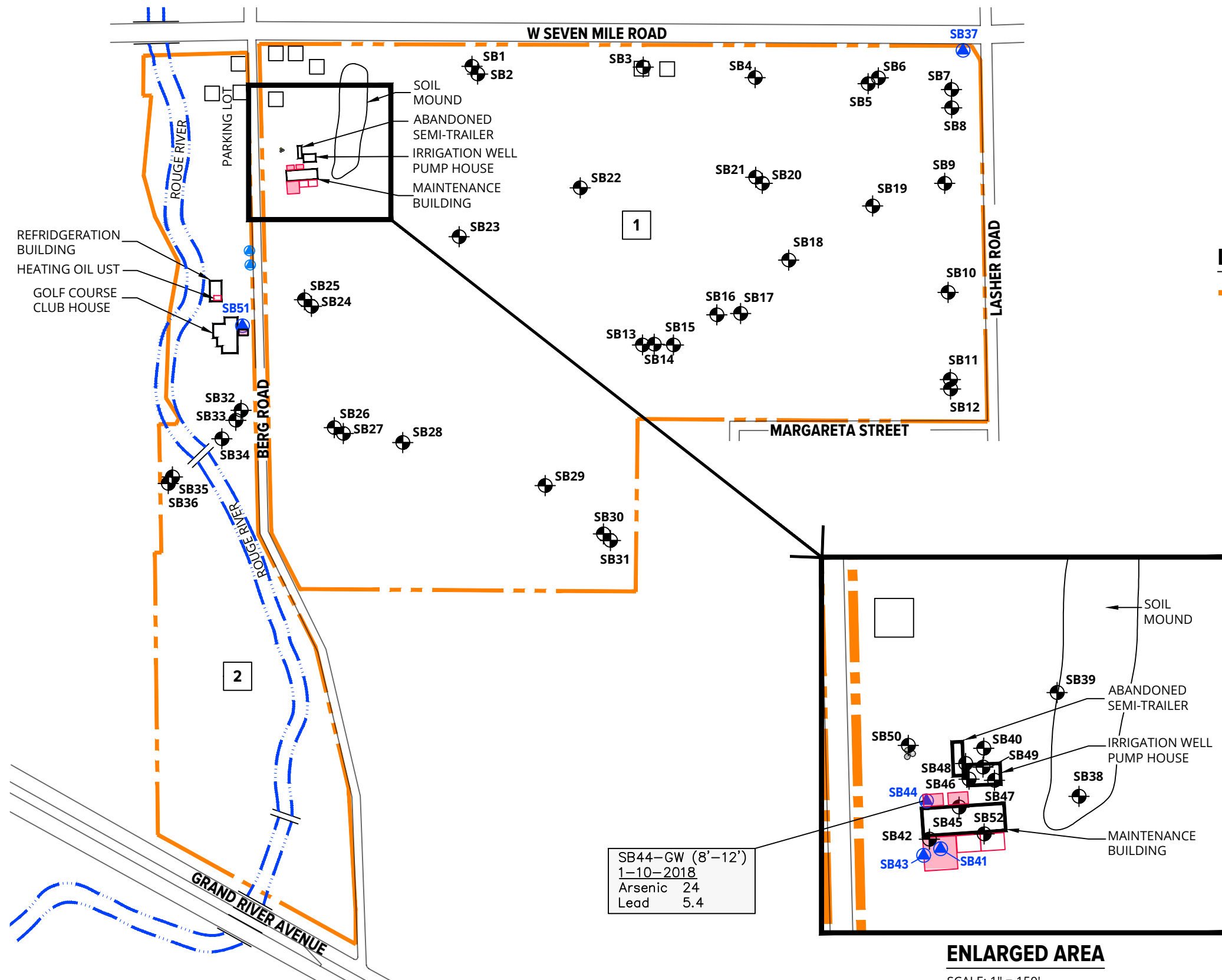


LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- EXISTING MONITORING WELLS
- POLE-MOUNTED TRANSFORMERS
- FORMER LOCATION OF BUILDINGS
- FORMER LOCATION OF GASOLINE USTs
- GASOLINE AND DIESEL ASTs
- FORMER LOCATION OF DIESEL ASTs
- FORMER LOCATION OF HEATING OIL UST
- 18600 BERG ROAD
- 18601 BERG ROAD
- APPROXIMATE SOIL BORING LOCATION
- APPROXIMATE SOIL BORING LOCATION WITH TEMPORARY MONITORING WELL

DRAFT

- NOTES:
- DRAWING INFORMATION TAKEN FROM GOOGLE EARTH PRO 2016 AERIAL PHOTO AND SITE OBSERVATIONS.
 - CONCENTRATIONS ARE SHOWN IN MICROGRAMS PER LITER (µg/L) AND EXCEED ONE OR MORE PART 201 GENERIC RESIDENTIAL CLEANUP CRITERIA.



SB44-GW (8'-12')
1-10-2018
Arsenic 24
Lead 5.4

ENLARGED AREA

SCALE: 1" = 150'

TABLES

TABLE 1: SUMMARY OF ANALYSIS RESULTS – SOIL

TABLE 2: SUMMARY OF ANALYSIS RESULTS – GROUNDWATER

DRAFT



**TABLE 1
SUMMARY OF ANALYSIS RESULTS - SOIL
FORMER ROGELL GOLF COURSE
18600 and 18601 BERG ROAD
DETROIT, MICHIGAN
SME PROJECT NO. 077832.00.001.006
PAGE 1 OF 8**

CONSTITUENT	Chemical Abstract Service Number	Statewide Default Background Levels	Part 201 Generic Residential Cleanup Criteria							MDEQ Recommended Interim Action Screening Levels for Soil	CHEMICAL ANALYSIS RESULTS								
			Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Direct Contact Criteria		Media-Specific Volatilization to Indoor Air Interim Action Screening Levels	Sample Identification							
												Depth (feet)							
												Date Collected							
Area of Evaluation										SB1	SB2	SB7	SB8	SB13	SB14	SB26	SB27		
										0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1		
										1/11/18	1/11/18	1/11/18	1/11/18	1/11/18	1/11/18	1/12/18	1/12/18		
										Former golf course - tee boxes									
										18600 Berg Road									
VOCs																			
All Analyzed VOCs	CS	NA	CS	CS	CS	CS	CS	CS	CS	CS	CS	NE	NE	NE	NE	NE	NE	NE	
PAHs																			
Fluoranthene	206-44-0	NA	730,000	5,500	1,000,000,000	740,000,000	740,000,000	740,000,000	46,000,000	NA	NE	NE	NE	NE	NE	NE	NE	NE	
All Other Analyzed PAHs		NA	CS	CS	CS	CS	CS	CS	CS	NA	NE	NE	NE	NE	NE	NE	NE	NE	
PCBs																			
Total of All Analyzed PCB Aroclors		NA	CS	CS	CS	CS	CS	CS	CS	NA	NE	NE	NE	NE	NE	NE	NE	NE	
Metals																			
Arsenic	7440-38-2	5,800	5,800	5,800	NLV	NLV	NLV	NLV	7,600	NA	5,400	2,700	3,200	2,600	5,700	5,700	6,300	3,100	
Barium	7440-39-3	75,000	1,300,000	440,000*	NLV	NLV	NLV	NLV	37,000,000	NA	NE	NE	NE	NE	NE	NE	NE	NE	
Cadmium	7440-43-9	1,200	6,000	3,000*	NLV	NLV	NLV	NLV	550,000	NA	NE	NE	NE	NE	NE	NE	NE	NE	
Chromium, Total**	16065-83-1	18,000	1,000,000,000	1,000,000,000	NLV	NLV	NLV	NLV	790,000,000	NA	NE	NE	NE	NE	NE	NE	NE	NE	
Chromium VI	18540-29-9	NA	30,000	3,300	NLV	NLV	NLV	NLV	2,500,000	NA	NE	NE	NE	NE	NE	NE	NE	NE	
Copper	7440-50-8	32,000	5,800,000	75,000*	NLV	NLV	NLV	NLV	20,000,000	NA	NE	NE	NE	NE	NE	NE	NE	NE	
Lead	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NA	40,000	17,000	36,000	28,000	26,000	48,000	30,000	19,000	
Lead, Total (Calculated)	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NA	NE	NE	NE	NE	NE	NE	NE	NE	
Lead, Coarse Fraction	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NAA	NE	NE	NE	NE	NE	NE	NE	NE	
Lead, Fine Fraction	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NA	NE	NE	NE	NE	NE	NE	NE	NE	
Mercury	7439-97-6	130	1,700	130	48,000	52,000	52,000	52,000	160,000	0.027	220	110	140	140	290	120	380	77	
Selenium	7782-49-2	410	4,000	410	NLV	NLV	NLV	NLV	2,600,000	NA	NE	NE	NE	NE	NE	NE	NE	NE	
Silver	7440-22-4	1,000	4,500	1,000	NLV	NLV	NLV	NLV	2,500,000	NA	NE	NE	NE	NE	NE	NE	NE	NE	
Zinc	7440-66-6	47,000	2,400,000	170,000*	NLV	NLV	NLV	NLV	170,000,000	NA	NE	NE	NE	NE	NE	NE	NE	NE	
Herbicides																			
Dalapon	75-99-0	NA	4,000	NA	NLV	NLV	NLV	NLV	19,000,000	NA	<100	<100	<100	<100	<100	<100	<100	<100	
Dicamba	1918-00-9	NA	4,400	NA	NA	NLV	NLV	NLV	3,400,000	NA	<100	<100	<100	<100	<100	<100	<100	<100	
2,4-Dichlorophenoxyacetic acid	94-75-7	NA	1,400	4,400	NLV	NLV	NLV	NLV	2,500,000	NA	<200	<200	<200	<200	<200	<200	<200	<200	
Dinoseb	88-85-7	NA	300	200	NLV	NLV	NLV	NLV	66,000	NA	<100	<100	<100	<100	<100	<100	<100	<100	
Silvex (2,4,5-TP)	93-72-1	NA	3,600	2,200	NLV	NLV	NLV	NLV	1,700,000	NA	<200	<200	<200	<200	<200	<200	<200	<200	
All Other Analyzed Herbicides	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	
Pesticides																			
Aldrin	309-00-2	NA	NLL	NLL	1,300,000	58,000	58,000	58,000	1,000	NA	<20	<20	<20	<20	<20	<20	<20	<20	
Chlordane	57-74-9	NA	NLL	NLL	11,000,000	1,200,000	1,200,000	1,200,000	31,000	13,000	<25	<25	<25	<25	<25	<25	<25	<25	
4-4-DDD	72-54-8	NA	NLL	NLL	NLV	NLV	NLV	NLV	95,000	NA	<20	<20	<20	<20	<20	<20	<20	<20	
4-4-DDE	72-55-9	NA	NLL	NLL	NLV	NLV	NLV	NLV	45,000	NA	64	<20	<20	<20	45	54	<20	<20	
4-4-DDT	50-29-3	NA	NLL	NLL	NLV	NLV	NLV	NLV	57,000	NA	63	<20	<20	<20	31	45	<20	<20	
Dieldrin	60-57-1	NA	NLL	NLL	140,000	19,000	19,000	19,000	1,100	NA	<20	<20	<20	<20	<20	<20	<20	<20	
Total Endosulfan	115-29-7	NA	NLL	NLL	ID	ID	ID	ID	1,400,000	NA	<40	<40	<40	<40	<40	<40	<40	<40	
Endrin	72-20-8	NA	NLL	NLL	NLV	NLV	NLV	NLV	65,000	NA	<20	<20	<20	<20	<20	<20	<20	<20	
Endrin Aldehyde	7421-93-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	<20	<20	<20	<20	<20	<20	<20	<20	
Heptachlor	76-44-8	NA	NLL	NLL	350,000	62,000	62,000	62,000	5,600	NA	<20	<20	<20	<20	<20	<20	<20	<20	
Heptachlor epoxide	1024-57-3	NA	NLL	NLL	NLV	NLV	NLV	NLV	3,100	NA	<20	<20	<20	<20	<20	<20	<20	<20	
alpha-Hexachlorocyclohexane	319-84-6	NA	18	ID	30,000	12,000	22,000	25,000	2,600	NA	<20	<20	<20	<20	<20	<20	<20	<20	
beta-Hexachlorocyclohexane	319-85-7	NA	37	ID	NLV	NLV	NLV	NLV	5,400	NA	<20	<20	<20	<20	<20	<20	<20	<20	
Lindane	58-89-9	NA	20	ID	ID	ID	ID	ID	8,300	NA	<20	<20	<20	<20	<20	<20	<20	<20	
Methoxychlor	72-43-5	NA	16,000	NA	ID	ID	ID	ID	1,900,000	NA	<50	<50	<50	<50	<50	<50	<50	<50	
Toxaphene	8001-35-2	NA	24,000	8,200	NLV	NLV	NLV	NLV	20,000	NA	<170	<170	<170	<170	<170	<170	<170	<170	
All Other Analyzed Pesticides	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	<RL	<RL	<RL	<RL	<RL	<RL	<RL	<RL	

- Notes:
- Concentrations reported in micrograms per kilogram (µg/kg).
 - Analytical results were compared to December 30, 2013 Promulgated Cleanup Criteria, R 299.46, Table 2. Soil: Residential Part 201 Generic Cleanup Criteria and Screening Levels and the MDEQ Media-Specific Volatilization to Indoor Air Interim Action Screening Levels, August 2017.
 - Results exceeding one or more criteria are shaded, as are the criteria exceeded.
 - VOCs - Volatile Organic Compounds. PAHs - Polynuclear Aromatic Hydrocarbons. PCBs - Polychlorinated Biphenyl. Refer to the analytical report for the full list of VOC, PAH, and PCB analytes.
 - CS - Criterion is specific to individual constituent.
 - <RL - Analytical result was below laboratory reporting limit(s).
 - ID - Insufficient data to develop criteria.
 - NA - Not applicable.
 - NE - Not evaluated.
 - NLV - Not likely to volatilize.
 - NLL - Not likely to leach.
 - * = GSI Protection was calculated for the indicated metals using the MDEQ spreadsheet for calculating GSI. A default water hardness value of 150 mg/kg as CaCO₃ was used to calculate GSI. Results are presented for surface water receiving bodies protected as a drinking water source.
 - Italicized - the respective criterion was below the Statewide Default Background Level (SDBL) and therefore the value defaulted to the SDBL value.
 - ** - Total chromium results compared to the more restrictive hexavalent chromium criteria because chromium was not speciated.
 - Concentrations were also compared to, and found to be below, the soil saturation concentration screening levels and particulate soil inhalation criteria.



TABLE 1
SUMMARY OF ANALYSIS RESULTS - SOIL
FORMER ROGELL GOLF COURSE
18600 and 18601 BERG ROAD
DETROIT, MICHIGAN
SME PROJECT NO. 077832.00.001.006
PAGE 2 OF 8

CONSTITUENT	Chemical Abstract Service Number	Statewide Default Background Levels	Part 201 Generic Residential Cleanup Criteria							MDEQ Recommended Interim Action Screening Levels for Soil	CHEMICAL ANALYSIS RESULTS							
			Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Direct Contact Criteria		Media-Specific Volatilization to Indoor Air Interim Action Screening Levels	Sample Identification						
												Depth (feet)						
												Date Collected						
												Area of Evaluation						
Parcel Address							SB3	SB4	SB9	SB10	SB15	SB15	SB18					
									0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	3 - 4	0 - 1			
									1/11/18	1/11/18	1/11/18	1/11/18	1/11/18	1/11/18	1/11/18			
									Former golf course - fairways									
									18600 Berg Road									
VOCs																		
All Analyzed VOCs	CS	NA	CS	CS	CS	CS	CS	CS	CS	CS	NE	NE	NE	NE	NE	NE	NE	
PAHs																		
Fluoranthene	206-44-0	NA	730,000	5,500	1,000,000,000	740,000,000	740,000,000	740,000,000	46,000,000	NA	NE	NE	NE	NE	NE	NE	NE	
All Other Analyzed PAHs		NA	CS	CS	CS	CS	CS	CS	CS	NA	NE	NE	NE	NE	NE	NE	NE	
PCBs																		
Total of All Analyzed PCB Aroclors		NA	CS	CS	CS	CS	CS	CS	CS	NA	NE	NE	NE	NE	NE	NE	NE	
Metals																		
Arsenic	7440-38-2	5,800	5,800	5,800	NLV	NLV	NLV	NLV	7,600	NA	2,200	2,600	7,000	3,600	6,200	19,000	11,000	
Barium	7440-39-3	75,000	1,300,000	440,000*	NLV	NLV	NLV	NLV	37,000,000	NA	NE	NE	NE	NE	NE	NE	NE	
Cadmium	7440-43-9	1,200	6,000	3,000*	NLV	NLV	NLV	NLV	550,000	NA	NE	NE	NE	NE	NE	NE	NE	
Chromium, Total**	16065-83-1	18,000	1,000,000,000	1,000,000,000	NLV	NLV	NLV	NLV	790,000,000	NA	NE	NE	NE	NE	NE	NE	NE	
Chromium VI	18540-29-9	NA	30,000	3,300	NLV	NLV	NLV	NLV	2,500,000	NA	NE	NE	NE	NE	NE	NE	NE	
Copper	7440-50-8	32,000	5,800,000	75,000*	NLV	NLV	NLV	NLV	20,000,000	NA	NE	NE	NE	NE	NE	NE	NE	
Lead	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NA	28,000	17,000	21,000	16,000	14,000	5,000	13,000	
Lead, Total (Calculated)	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NA	NE	NE	NE	NE	NE	NE	NE	
Lead, Coarse Fraction	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NAA	NE	NE	NE	NE	NE	NE	NE	
Lead, Fine Fraction	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NA	NE	NE	NE	NE	NE	NE	NE	
Mercury	7439-97-6	130	1,700	130	48,000	52,000	52,000	52,000	160,000	0.027	53	<50	85	130	300	<50	100	
Selenium	7782-49-2	410	4,000	410	NLV	NLV	NLV	NLV	2,600,000	NA	NE	NE	NE	NE	NE	NE	NE	
Silver	7440-22-4	1,000	4,500	1,000	NLV	NLV	NLV	NLV	2,500,000	NA	NE	NE	NE	NE	NE	NE	NE	
Zinc	7440-66-6	47,000	2,400,000	170,000*	NLV	NLV	NLV	NLV	170,000,000	NA	NE	NE	NE	NE	NE	NE	NE	
Herbicides																		
Dalapon	75-99-0	NA	4,000	NA	NLV	NLV	NLV	NLV	19,000,000	NA	<100	<100	<100	<100	<100	<100	<100	
Dicamba	1918-00-9	NA	4,400	NA	NA	NLV	NLV	NLV	3,400,000	NA	<100	<100	<100	<100	<100	<100	<100	
2,4-Dichlorophenoxyacetic acid	94-75-7	NA	1,400	4,400	NLV	NLV	NLV	NLV	2,500,000	NA	<200	<200	<200	<200	<200	<200	<200	
Dinoseb	88-85-7	NA	300	200	NLV	NLV	NLV	NLV	66,000	NA	<100	<100	<100	<100	<100	<100	<100	
Silvex (2,4,5-TP)	93-72-1	NA	3,600	2,200	NLV	NLV	NLV	NLV	1,700,000	NA	<200	<200	<200	<200	<200	<200	<200	
All Other Analyzed Herbicides	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	<RL	<RL	<RL	<RL	<RL	<RL	<RL	
Pesticides																		
Aldrin	309-00-2	NA	NLL	NLL	1,300,000	58,000	58,000	58,000	1,000	NA	<20	<20	<20	<20	<20	<20	<20	
Chlordane	57-74-9	NA	NLL	NLL	11,000,000	1,200,000	1,200,000	1,200,000	31,000	13,000	<25	<25	<25	<25	<25	<25	<25	
4'-DDD	72-54-8	NA	NLL	NLL	NLV	NLV	NLV	NLV	95,000	NA	<20	<20	<20	<20	<20	<20	<20	
4'-DDE	72-55-9	NA	NLL	NLL	NLV	NLV	NLV	NLV	45,000	NA	<20	<20	<20	<20	61	<20	<20	
4'-DDT	50-29-3	NA	NLL	NLL	NLV	NLV	NLV	NLV	57,000	NA	<20	<20	<20	<20	<20	<20	<20	
Dieldrin	60-57-1	NA	NLL	NLL	140,000	19,000	19,000	19,000	1,100	NA	<20	<20	<20	<20	<20	<20	<20	
Total Endosulfan	115-29-7	NA	NLL	NLL	ID	ID	ID	ID	1,400,000	NA	<40	<40	<40	<40	<40	<40	<40	
Endrin	72-20-8	NA	NLL	NLL	NLV	NLV	NLV	NLV	65,000	NA	<20	<20	<20	<20	<20	<20	<20	
Endrin Aldehyde	7421-93-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	<20	<20	<20	<20	<20	<20	<20	
Heptachlor	76-44-8	NA	NLL	NLL	350,000	62,000	62,000	62,000	5,600	NA	<20	<20	<20	<20	<20	<20	<20	
Heptachlor epoxide	1024-57-3	NA	NLL	NLL	NLV	NLV	NLV	NLV	3,100	NA	<20	<20	<20	<20	<20	<20	<20	
alpha-Hexachlorocyclohexane	319-84-6	NA	18	ID	30,000	12,000	22,000	25,000	2,600	NA	<20	<20	<20	<20	<20	<20	<20	
beta-Hexachlorocyclohexane	319-85-7	NA	37	ID	NLV	NLV	NLV	NLV	5,400	NA	<20	<20	<20	<20	<20	<20	<20	
Lindane	58-89-9	NA	20	20	ID	ID	ID	ID	8,300	NA	<20	<20	<20	<20	<20	<20	<20	
Methoxychlor	72-43-5	NA	16,000	NA	ID	ID	ID	ID	1,900,000	NA	<50	<50	<50	<50	<50	<50	<50	
Toxaphene	8001-35-2	NA	24,000	8,200	NLV	NLV	NLV	NLV	20,000	NA	<170	<170	<170	<170	<170	<170	<170	
All Other Analyzed Pesticides	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	<RL	<RL	<RL	<RL	<RL	<RL	<RL	

- Notes:
- Concentrations reported in micrograms per kilogram (µg/kg).
 - Analytical results were compared to December 30, 2013 Promulgated Cleanup Criteria, R 299.46, Table 2. Soil: Residential Part 201 Generic Cleanup Criteria and Screening Levels and the MDEQ Media-Specific Volatilization to Indoor Air Interim Action Screening Levels, August 2017.
 - Results exceeding one or more criteria are shaded, as are the criteria exceeded.
 - VOCs - Volatile Organic Compounds. PAHs - Polynuclear Aromatic Hydrocarbons. PCBs - Polychlorinated Biphenyl. Refer to the analytical report for the full list of VOC, PAH, and PCB analytes.
 - CS - Criterion is specific to individual constituent.
 - <RL - Analytical result was below laboratory reporting limit(s).
 - ID - Insufficient data to develop criteria.
 - NA - Not applicable.
 - NE - Not evaluated.
 - NLV - Not likely to volatilize.
 - NLL - Not likely to leach.
 - * = GSI Protection was calculated for the indicated metals using the MDEQ spreadsheet for calculating GSI. A default water hardness value of 150 mg/kg as CaCO₃ was used to calculate GSI. Results are presented for surface water receiving bodies protected as a drinking water source.
 - Italicized* - the respective criterion was below the Statewide Default Background Level (SDBL) and therefore the value defaulted to the SDBL value.
 - ** - Total chromium results compared to the more restrictive hexavalent chromium criteria because chromium was not speciated.
 - Concentrations were also compared to, and found to be below, the soil saturation concentration screening levels and particulate soil inhalation criteria.



TABLE 1
SUMMARY OF ANALYSIS RESULTS - SOIL
FORMER ROGELL GOLF COURSE
18600 and 18601 BERG ROAD
DETROIT, MICHIGAN
SME PROJECT NO. 077832.00.001.006
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CONSTITUENT	Chemical Abstract Service Number	Statewide Default Background Levels	Part 201 Generic Residential Cleanup Criteria							MDEQ Recommended Interim Action Screening Levels for Soil	CHEMICAL ANALYSIS RESULTS										
			Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Direct Contact Criteria		Media-Specific Volatilization to Indoor Air Interim Action Screening Levels	Sample Identification									
												Depth (feet)							Date Collected	Area of Evaluation	Parcel Address
												SB5	SB6	SB11	SB12	SB16	SB17	SB20			
										0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1					
										1/11/18	1/11/18	1/11/18	1/11/18	1/11/18	1/11/18	1/11/18					
Former golf course -greens																					
18600 Berg Road																					
VOCs																					
All Analyzed VOCs	CS	NA	CS	CS	CS	CS	CS	CS	CS	CS	NE	NE	NE	NE	NE	NE					
PAHs																					
Fluoranthene	206-44-0	NA	730,000	5,500	1,000,000,000	740,000,000	740,000,000	740,000,000	46,000,000	NA	NE	NE	NE	NE	NE	NE					
All Other Analyzed PAHs		NA	CS	CS	CS	CS	CS	CS	CS	NA	NE	NE	NE	NE	NE	NE					
PCBs																					
Total of All Analyzed PCB Aroclors		NA	CS	CS	CS	CS	CS	CS	CS	NA	NE	NE	NE	NE	NE	NE					
Metals																					
Arsenic	7440-38-2	5,800	5,800	5,800	NLV	NLV	NLV	NLV	7,600	NA	11,000	100,000	330,000	100,000	36,000	14,000					
Barium	7440-39-3	75,000	1,300,000	440,000*	NLV	NLV	NLV	NLV	37,000,000	NA	NE	NE	NE	NE	NE	NE					
Cadmium	7440-43-9	1,200	6,000	3,000*	NLV	NLV	NLV	NLV	550,000	NA	NE	NE	NE	NE	NE	NE					
Chromium, Total**	16065-83-1	18,000	1,000,000,000	1,000,000,000	NLV	NLV	NLV	NLV	790,000,000	NA	NE	NE	NE	NE	NE	NE					
Chromium VI	18540-29-9	NA	30,000	3,300	NLV	NLV	NLV	NLV	2,500,000	NA	NE	NE	NE	NE	NE	NE					
Copper	7440-50-8	32,000	5,800,000	75,000*	NLV	NLV	NLV	NLV	20,000,000	NA	NE	NE	NE	NE	NE	NE					
Lead	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NA	28,000	360,000	1,100,000	380,000	83,000	49,000					
Lead, Total (Calculated)	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NA	NE	327,000	1,020,000	NE	NE	655,000					
Lead, Coarse Fraction	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NAA	NE	338,000	1,080,000	NE	NE	690,000					
Lead, Fine Fraction	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NA	NE	253,000	752,000	NE	NE	257,000					
Mercury	7439-97-6	130	1,700	130	48,000	52,000	52,000	52,000	160,000	0.027	6,800	51,000	120,000	67,000	27,000	12,000					
Selenium	7782-49-2	410	4,000	410	NLV	NLV	NLV	NLV	2,600,000	NA	NE	NE	NE	NE	NE	NE					
Silver	7440-22-4	1,000	4,500	1,000	NLV	NLV	NLV	NLV	2,500,000	NA	NE	NE	NE	NE	NE	NE					
Zinc	7440-66-6	47,000	2,400,000	170,000*	NLV	NLV	NLV	NLV	170,000,000	NA	NE	NE	NE	NE	NE	NE					
Herbicides																					
Dalapon	75-99-0	NA	4,000	NA	NLV	NLV	NLV	NLV	19,000,000	NA	<100	<100	<100	<100	<100	<100					
Dicamba	1918-00-9	NA	4,400	NA	NA	NLV	NLV	NLV	3,400,000	NA	<100	<100	<100	<100	<100	<100					
2,4-Dichlorophenoxyacetic acid	94-75-7	NA	1,400	4,400	NLV	NLV	NLV	NLV	2,500,000	NA	<200	<200	<200	<200	<200	<200					
Dinoseb	88-85-7	NA	300	200	NLV	NLV	NLV	NLV	66,000	NA	<100	<100	<100	<100	<100	<100					
Silvex (2,4,5-TP)	93-72-1	NA	3,600	2,200	NLV	NLV	NLV	NLV	1,700,000	NA	<200	<200	<200	<200	<200	<200					
All Other Analyzed Herbicides	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	<RL	<RL	<RL	<RL	<RL	<RL					
Pesticides																					
Aldrin	309-00-2	NA	NLL	NLL	1,300,000	58,000	58,000	58,000	1,000	NA	<20	370	<20	32	<20	<20					
Chlordane	57-74-9	NA	NLL	NLL	11,000,000	1,200,000	1,200,000	1,200,000	31,000	13,000	2,200	10,000	2,700	5,600	3,100	740					
4'-4'-DDD	72-54-8	NA	NLL	NLL	NLV	NLV	NLV	NLV	95,000	NA	<20	<20	<20	<20	<20	<20					
4'-4'-DDE	72-55-9	NA	NLL	NLL	NLV	NLV	NLV	NLV	45,000	NA	58	<83	<20	<20	72	48					
4'-4'-DDT	50-29-3	NA	NLL	NLL	NLV	NLV	NLV	NLV	57,000	NA	<39	<83	<20	<20	25	<20					
Dieldrin	60-57-1	NA	NLL	NLL	140,000	19,000	19,000	19,000	1,100	NA	570	1,900	1,100	2,700	1,300	160					
Total Endosulfan	115-29-7	NA	NLL	NLL	ID	ID	ID	ID	1,400,000	NA	<40	<40	<40	<40	<40	<40					
Endrin	72-20-8	NA	NLL	NLL	NLV	NLV	NLV	NLV	65,000	NA	<20	<20	<20	<20	<20	<20					
Endrin Aldehyde	7421-93-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	<20	<20	<20	<20	<20	<20					
Heptachlor	76-44-8	NA	NLL	NLL	350,000	62,000	62,000	62,000	5,600	NA	<20	<20	<20	<20	<20	<20					
Heptachlor epoxide	1024-57-3	NA	NLL	NLL	NLV	NLV	NLV	NLV	3,100	NA	42	<83	88	90	<20	160					
alpha-Hexachlorocyclohexane	319-84-6	NA	18	ID	30,000	12,000	22,000	25,000	2,600	NA	<20	<20	<20	<20	<20	<20					
beta-Hexachlorocyclohexane	319-85-7	NA	37	ID	NLV	NLV	NLV	NLV	5,400	NA	<20	<20	<20	<20	<20	<20					
Lindane	58-89-9	NA	20	20	ID	ID	ID	ID	8,300	NA	<20	<20	<20	<20	<20	<20					
Methoxychlor	72-43-5	NA	16,000	NA	ID	ID	ID	ID	1,900,000	NA	<50	<50	<50	<50	<50	<50					
Toxaphene	8001-35-2	NA	24,000	8,200	NLV	NLV	NLV	NLV	20,000	NA	<170	<170	<170	<170	<170	<170					
All Other Analyzed Pesticides	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	<RL	<RL	<RL	<RL	<RL	<RL					

- Notes:
1. Concentrations reported in micrograms per kilogram ($\mu\text{g}/\text{kg}$).
 2. Analytical results were compared to December 30, 2013 Promulgated Cleanup Criteria, R 299.46, Table 2. Soil: Residential Part 201 Generic Cleanup Criteria and Screening Levels and the MDEQ Media-Specific Volatilization to Indoor Air Interim Action Screening Levels, August 2017.
 3. Results exceeding one or more criteria are shaded, as are the criteria exceeded.
 4. VOCs - Volatile Organic Compounds. PAHs - Polynuclear Aromatic Hydrocarbons. PCBs - Polychlorinated Biphenyl. Refer to the analytical report for the full list of VOC, PAH, and PCB analytes.
 5. CS - Criterion is specific to individual constituent.
 6. <RL - Analytical result was below laboratory reporting limit(s).
 7. ID - Insufficient data to develop criteria.
 8. NA - Not applicable.
 9. NE - Not evaluated.
 10. NLV - Not likely to volatilize.
 11. NLL - Not likely to leach.
 12. * = GSI Protection was calculated for the indicated metals using the MDEQ spreadsheet for calculating GSI. A default water hardness value of 150 mg/kg as CaCO_3 was used to calculate GSI. Results are presented for surface water receiving bodies protected as a drinking water source.
 13. *Italicized* - the respective criterion was below the Statewide Default Background Level (SDBL) and therefore the value defaulted to the SDBL value.
 14. ** - Total chromium results compared to the more restrictive hexavalent chromium criteria because chromium was not speciated.
 15. Concentrations were also compared to, and found to be below, the soil saturation concentration screening levels and particulate soil inhalation criteria.



TABLE 1
SUMMARY OF ANALYSIS RESULTS - SOIL
FORMER ROGELL GOLF COURSE
18600 and 18601 BERG ROAD
DETROIT, MICHIGAN
SME PROJECT NO. 077832.00.001.006
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CONSTITUENT	Chemical Abstract Service Number	Statewide Default Background Levels	Part 201 Generic Residential Cleanup Criteria							MDEQ Recommended Interim Action Screening Levels for Soil	CHEMICAL ANALYSIS RESULTS							
			Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Direct Contact Criteria		Sample Identification							
											Depth (feet)							
											Date Collected							
											Area of Evaluation							
Parcel Address							SB21	SB24	SB25	SB30	SB31	SB32	Duplicate-02					
							0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	0 - 1	SB32 (0 - 1)					
							1/11/18	1/12/18	1/12/18	1/12/18	1/12/18	1/11/18	1/11/18					
Former golf course -greens																		
18600 Berg Road								18601 Berg Road										
VOCs																		
All Analyzed VOCs	CS	NA	CS	CS	CS	CS	CS	CS	CS	CS	NE	NE	NE	NE	NE	NE		
PAHs																		
Fluoranthene	206-44-0	NA	730,000	5,500	1,000,000,000	740,000,000	740,000,000	740,000,000	46,000,000	NA	NE	NE	NE	NE	NE	NE		
All Other Analyzed PAHs		NA	CS	CS	CS	CS	CS	CS	CS	NA	NE	NE	NE	NE	NE	NE		
PCBs																		
Total of All Analyzed PCB Aroclors		NA	CS	CS	CS	CS	CS	CS	CS	NA	NE	NE	NE	NE	NE	NE		
Metals																		
Arsenic	7440-38-2	5,800	5,800	5,800	NLV	NLV	NLV	NLV	7,600	NA	130,000	19,000	6,100	78,000	270,000	120,000	210,000	
Barium	7440-39-3	75,000	1,300,000	440,000*	NLV	NLV	NLV	NLV	37,000,000	NA	NE	NE	NE	NE	NE	NE		
Cadmium	7440-43-9	1,200	6,000	3,000*	NLV	NLV	NLV	NLV	550,000	NA	NE	NE	NE	NE	NE	NE		
Chromium, Total**	16065-83-1	18,000	1,000,000,000	1,000,000,000	NLV	NLV	NLV	NLV	790,000,000	NA	NE	NE	NE	NE	NE	NE		
Chromium VI	18540-29-9	NA	30,000	3,300	NLV	NLV	NLV	NLV	2,500,000	NA	NE	NE	NE	NE	NE	NE		
Copper	7440-50-8	32,000	5,800,000	75,000*	NLV	NLV	NLV	NLV	20,000,000	NA	NE	NE	NE	NE	NE	NE		
Lead	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NA	310,000	56,000	34,000	310,000	1,200,000	580,000	400,000	
Lead, Total (Calculated)	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NA	NE	NE	NE	NE	379,000	NE	NE	
Lead, Coarse Fraction	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NAA	NE	NE	NE	NE	386,000	NE	NE	
Lead, Fine Fraction	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NA	NE	NE	NE	NE	347,000	NE	NE	
Mercury	7439-97-6	130	1,700	130	48,000	52,000	52,000	52,000	160,000	0.027	160,000	9,700	380	51,000	71,000	78,000	91,000	
Selenium	7782-49-2	410	4,000	410	NLV	NLV	NLV	NLV	2,600,000	NA	NE	NE	NE	NE	NE	NE	NE	
Silver	7440-22-4	1,000	4,500	1,000	NLV	NLV	NLV	NLV	2,500,000	NA	NE	NE	NE	NE	NE	NE	NE	
Zinc	7440-66-6	47,000	2,400,000	170,000*	NLV	NLV	NLV	NLV	170,000,000	NA	NE	NE	NE	NE	NE	NE	NE	
Herbicides																		
Dalapon	75-99-0	NA	4,000	NA	NLV	NLV	NLV	NLV	19,000,000	NA	<100	<100	<100	<100	<100	<100	<100	
Dicamba	1918-00-9	NA	4,400	NA	NA	NLV	NLV	NLV	3,400,000	NA	<100	<100	<100	<100	<100	<100	<100	
2,4-Dichlorophenoxyacetic acid	94-75-7	NA	1,400	4,400	NLV	NLV	NLV	NLV	2,500,000	NA	<200	<200	<200	<200	<200	<200	<200	
Dinoseb	88-85-7	NA	300	200	NLV	NLV	NLV	NLV	66,000	NA	<100	<100	<100	<100	<100	<100	<100	
Silvex (2,4,5-TP)	93-72-1	NA	3,600	2,200	NLV	NLV	NLV	NLV	1,700,000	NA	<200	<200	<200	<200	<200	<200	<200	
All Other Analyzed Herbicides	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	<RL	<RL	<RL	<RL	<RL	<RL	<RL	
Pesticides																		
Aldrin	309-00-2	NA	NLL	NLL	1,300,000	58,000	58,000	58,000	1,000	NA	<20	<20	<20	<20	<20	<20	<20	
Chlordane	57-74-9	NA	NLL	NLL	11,000,000	1,200,000	1,200,000	1,200,000	31,000	13,000	6,200	<25	<25	<25	12,000	5,200	2,100	3,100
4'-4'-DDD	72-54-8	NA	NLL	NLL	NLV	NLV	NLV	NLV	95,000	NA	<20	<20	<20	<20	<20	<20	<20	
4'-4'-DDE	72-55-9	NA	NLL	NLL	NLV	NLV	NLV	NLV	45,000	NA	85	<20	<20	<20	130	79	30	30
4'-4'-DDT	50-29-3	NA	NLL	NLL	NLV	NLV	NLV	NLV	57,000	NA	<46	<20	<20	<20	63	<20	<20	
Dieldrin	60-57-1	NA	NLL	NLL	140,000	19,000	19,000	19,000	1,100	NA	1,200	<20	<20	<20	2,800	2,100	760	1,200
Total Endosulfan	115-29-7	NA	NLL	NLL	ID	ID	ID	ID	1,400,000	NA	<40	<40	<40	<40	<40	<40	<40	
Endrin	72-20-8	NA	NLL	NLL	NLV	NLV	NLV	NLV	65,000	NA	<20	<20	<20	<20	<20	<20	<20	
Endrin Aldehyde	7421-93-4	NA	NA	NA	NLV	NLV	NLV	NA	NA	NA	<20	<20	<20	<20	26	<20	<20	
Heptachlor	76-44-8	NA	NLL	NLL	350,000	62,000	62,000	62,000	5,600	NA	<20	<20	<20	<20	<20	<20	<20	
Heptachlor epoxide	1024-57-3	NA	NLL	NLL	NLV	NLV	NLV	NLV	3,100	NA	130	<20	<20	<20	78	39	39	46
alpha-Hexachlorocyclohexane	319-84-6	NA	18	ID	30,000	12,000	22,000	25,000	2,600	NA	<20	<20	<20	<20	<20	<20	<20	
beta-Hexachlorocyclohexane	319-85-7	NA	37	ID	NLV	NLV	NLV	NLV	5,400	NA	<20	<20	<20	<20	41	<20	<20	<20
Lindane	58-89-9	NA	20	20	ID	ID	ID	ID	8,300	NA	<20	<20	<20	<20	<20	<20	<20	
Methoxychlor	72-43-5	NA	16,000	NA	ID	ID	ID	ID	1,900,000	NA	<50	<50	<50	<50	<50	<50	<50	
Toxaphene	8001-35-2	NA	24,000	8,200	NLV	NLV	NLV	NLV	20,000	NA	<170	<170	<170	<170	<170	<170	<170	
All Other Analyzed Pesticides	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	<RL	<RL	<RL	<RL	<RL	<RL	<RL	

Notes:

- Concentrations reported in micrograms per kilogram ($\mu\text{g}/\text{kg}$).
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- CS - Criterion is specific to individual constituent.
- <RL - Analytical result was below laboratory reporting limit(s).
- ID - Insufficient data to develop criteria.
- NA - Not applicable.
- NE - Not evaluated.
- NLV - Not likely to volatilize.
- NLL - Not likely to leach.
- * = GSI Protection was calculated for the indicated metals using the MDEQ spreadsheet for calculating GSI. A default water hardness value of 150 mg/kg as CaCO_3 was used to calculate GSI. Results are presented for surface water receiving bodies protected as a drinking water source.
- Italicized* - the respective criterion was below the Statewide Default Background Level (SDBL) and therefore the value defaulted to the SDBL value.
- ** - Total chromium results compared to the more restrictive hexavalent chromium criteria because chromium was not speciated.
- Concentrations were also compared to, and found to be below, the soil saturation concentration screening levels and particulate soil inhalation criteria.



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SME PROJECT NO. 077832.00.001.006
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			Drinking Water Protection Criteria	Groundwater Surface Water Interface Protection Criteria	Soil Volatilization to Indoor Air Inhalation Criteria	Infinite Source Volatile Soil Inhalation Criteria (VSIC)	Finite VSIC for 5 Meter Source Thickness	Finite VSIC for 2 Meter Source Thickness	Direct Contact Criteria		Media-Specific Volatilization to Indoor Air Interim Action Screening Levels	Sample Identification					
												Depth (feet)					Methanol Blank Quality Control
												SB49	SB50	SB51	SB52		
									0 - 1	0 - 1	10.5 - 11.5	1 - 2					
									1/10/18	1/10/18	1/11/18	1/10/18	1/12/18				
									Drums of unknown content	Pole mounted transformer	Former heating oil UST area	Gasoline and diesel AST area	-				
									18600 Berg Road	18601 Berg Road	18600 Berg Road	18601 Berg Road	-				
VOCs																	
All Analyzed VOCs	CS	NA	CS	CS	CS	CS	CS	CS	CS	CS	<RL	NE	<RL	<RL	<RL		
PAHs																	
Fluoranthene	206-44-0	NA	730,000	5,500	1,000,000,000	740,000,000	740,000,000	740,000,000	46,000,000	NA	<330	NE	<330	<330	NE		
All Other Analyzed PAHs		NA	CS	CS	CS	CS	CS	CS	CS	NA	<RL	NE	<RL	<RL	<RL		
PCBs																	
Total of All Analyzed PCB Aroclors		NA	CS	CS	CS	CS	CS	CS	CS	NA	NE	<RL	NE	NE	NE		
Metals																	
Arsenic	7440-38-2	5,800	5,800	5,800	NLV	NLV	NLV	NLV	7,600	NA	5,700	NE	6,300	5,400	NE		
Barium	7440-39-3	75,000	1,300,000	440,000*	NLV	NLV	NLV	NLV	37,000,000	NA	29,000	NE	54,000	57,000	NE		
Cadmium	7440-43-9	1,200	6,000	3,000*	NLV	NLV	NLV	NLV	550,000	NA	500	NE	190	800	NE		
Chromium, Total**	16065-83-1	18,000	1,000,000,000	1,000,000,000	NLV	NLV	NLV	NLV	790,000,000	NA	12,000	NE	15,000	18,000	NE		
Chromium VI	18540-29-9	NA	30,000	3,300	NLV	NLV	NLV	NLV	2,500,000	NA	<2,300	NE	NE	<2,200	NE		
Copper	7440-50-8	32,000	5,800,000	75,000*	NLV	NLV	NLV	NLV	20,000,000	NA	8,600	NE	17,000	4,700	NE		
Lead	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NA	41,000	NE	9,000	42,000	NE		
Lead, Total (Calculated)	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NA	NE	NE	NE	NE	NE		
Lead, Coarse Fraction	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NAA	NE	NE	NE	NE	NE		
Lead, Fine Fraction	7439-92-1	21,000	700,000	2,500,000*	NLV	NLV	NLV	NLV	400,000	NA	NE	NE	NE	NE	NE		
Mercury	7439-97-6	130	1,700	130	48,000	52,000	52,000	52,000	160,000	0.027	1,100	NE	<50	620	NE		
Selenium	7782-49-2	410	4,000	410	NLV	NLV	NLV	NLV	2,600,000	NA	270	NE	370	<200	NE		
Silver	7440-22-4	1,000	4,500	1,000	NLV	NLV	NLV	NLV	2,500,000	NA	<100	NE	<100	<100	NE		
Zinc	7440-66-6	47,000	2,400,000	170,000*	NLV	NLV	NLV	NLV	170,000,000	NA	49,000	NE	48,000	99,000	NE		
Herbicides																	
Dalapon	75-99-0	NA	4,000	NA	NLV	NLV	NLV	NLV	19,000,000	NA	<100	NE	NE	NE	NE		
Dicamba	1918-00-9	NA	4,400	NA	NA	NLV	NLV	NLV	3,400,000	NA	<100	NE	NE	NE	NE		
2,4-Dichlorophenoxyacetic acid	94-75-7	NA	1,400	4,400	NLV	NLV	NLV	NLV	2,500,000	NA	<200	NE	NE	NE	NE		
Dinoseb	88-85-7	NA	300	200	NLV	NLV	NLV	NLV	66,000	NA	<100	NE	NE	NE	NE		
Silvex (2,4,5-TP)	93-72-1	NA	3,600	2,200	NLV	NLV	NLV	NLV	1,700,000	NA	<200	NE	NE	NE	NE		
All Other Analyzed Herbicides	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	<RL	NE	NE	NE	NE		
Pesticides																	
Aldrin	309-00-2	NA	NLL	NLL	1,300,000	58,000	58,000	58,000	1,000	NA	<20	NE	NE	NE	NE		
Chlordane	57-74-9	NA	NLL	NLL	11,000,000	1,200,000	1,200,000	1,200,000	31,000	13,000	<25	NE	NE	NE	NE		
4-4'-DDD	72-54-8	NA	NLL	NLL	NLV	NLV	NLV	NLV	95,000	NA	<20	NE	NE	NE	NE		
4-4'-DDE	72-55-9	NA	NLL	NLL	NLV	NLV	NLV	NLV	45,000	NA	110	NE	NE	NE	NE		
4-4'-DDT	50-29-3	NA	NLL	NLL	NLV	NLV	NLV	NLV	57,000	NA	80	NE	NE	NE	NE		
Dieldrin	60-57-1	NA	NLL	NLL	140,000	19,000	19,000	19,000	1,100	NA	33	NE	NE	NE	NE		
Total Endosulfan	115-29-7	NA	NLL	NLL	ID	ID	ID	ID	1,400,000	NA	<40	NE	NE	NE	NE		
Endrin	72-20-8	NA	NLL	NLL	NLV	NLV	NLV	NLV	65,000	NA	<20	NE	NE	NE	NE		
Endrin Aldehyde	7421-93-4	NA	NA	NA	NA	NA	NA	NA	NA	NA	<20	NE	NE	NE	NE		
Heptachlor	76-44-8	NA	NLL	NLL	350,000	62,000	62,000	62,000	5,600	NA	<20	NE	NE	NE	NE		
Heptachlor epoxide	1024-57-3	NA	NLL	NLL	NLV	NLV	NLV	NLV	3,100	NA	<20	NE	NE	NE	NE		
alpha-Hexachlorocyclohexane	319-84-6	NA	18	ID	30,000	12,000	22,000	25,000	2,600	NA	<20	NE	NE	NE	NE		
beta-Hexachlorocyclohexane	319-85-7	NA	37	ID	NLV	NLV	NLV	NLV	5,400	NA	<20	NE	NE	NE	NE		
Lindane	58-89-9	NA	20	20	ID	ID	ID	ID	8,300	NA	<20	NE	NE	NE	NE		
Methoxychlor	72-43-5	NA	16,000	NA	ID	ID	ID	ID	1,900,000	NA	<50	NE	NE	NE	NE		
Toxaphene	8001-35-2	NA	24,000	8,200	NLV	NLV	NLV	NLV	20,000	NA	<170	NE	NE	NE	NE		
All Other Analyzed Pesticides	CS	CS	CS	CS	CS	CS	CS	CS	CS	CS	<RL	NE	NE	NE	NE		

- Notes:
- Concentrations reported in micrograms per kilogram (µg/kg).
 - Analytical results were compared to December 30, 2013 Promulgated Cleanup Criteria, R 299.46, Table 2. Soil: Residential Part 201 Generic Cleanup Criteria and Screening Levels and the MDEQ Media-Specific Volatilization to Indoor Air Interim Action Screening Levels, August 2017.
 - Results exceeding one or more criteria are shaded, as are the criteria exceeded.
 - VOCs - Volatile Organic Compounds. PAHs - Polynuclear Aromatic Hydrocarbons. PCBs - Polychlorinated Biphenyl. Refer to the analytical report for the full list of VOC, PAH, and PCB analytes.
 - CS - Criterion is specific to individual constituent.
 - <RL - Analytical result was below laboratory reporting limit(s).
 - ID - Insufficient data to develop criteria.
 - NA - Not applicable.
 - NE - Not evaluated.
 - NLV - Not likely to volatilize.
 - NLL - Not likely to leach.
 - * = GSI Protection was calculated for the indicated metals using the MDEQ spreadsheet for calculating GSI. A default water hardness value of 150 mg/kg as CaCO3 was used to calculate GSI. Results are presented for surface water receiving bodies protected as a drinking water source.
 - Italicized* - the respective criterion was below the Statewide Default Background Level (SDBL) and therefore the value defaulted to the SDBL value.
 - ** - Total chromium results compared to the more restrictive hexavalent chromium criteria because chromium was not speciated.
 - Concentrations were also compared to, and found to be below, the soil saturation concentration screening levels and particulate soil inhalation criteria.



TABLE 2
SUMMARY OF ANALYSIS RESULTS - GROUNDWATER
FORMER ROGELL GOLF COURSE
18600-18601 BERG ROAD
DETROIT, MICHIGAN
SME PROJECT NO. 077832.00.001.006
PAGE 1 OF 1

CONSTITUENT	Chemical Abstract Service Number	Part 201 Generic Cleanup Criteria		MDEQ Recommended Interim Action Screening Levels for Shallow Groundwater	Chemical Analytical Results Sample Identification Screened Interval (depth in feet) Date Collected						
		Residential Drinking Water Criteria	Groundwater Surface Water Interface Criteria	Residential RIASL	SB37	SB41	Duplicate-01	SB43	SB44	SB51	Field Blank
					7 - 12	8 - 12	SB41 (8 - 12)	6 - 10	8 - 12	8 - 12	Quality Control
					01/11/18	01/10/18	01/10/18	01/10/18	01/10/18	01/11/18	01/12/18
VOCs											
All Analyzed VOCs	CS	CS	CS	CS	<RL	<RL	<RL	<RL	<RL	<RL	<RL
PAHs											
All Analyzed PAHs	CS	CS	CS	NA	<RL	<RL	<RL	<RL	<RL	<RL	<RL
Metals											
Arsenic	7440-38-2	10	10	NA	<5.0	<5.0	<5.0	<5.0	24	NE	NE
Arsenic, dissolved	7440-38-2	10	10	NA	NE	NE	NE	NE	44	NE	NE
Barium	7440-39-3	2,000	670*	NA	<100	<100	<100	<100	<100	NE	NE
Cadmium	7440-43-9	5	2.5*	NA	<1.0	<1.0	<1.0	<1.0	<1.0	NE	NE
Chromium, total**	18540-29-9	100	11	NA	<10	<10	<10	<10	<10	NE	NE
Copper	7440-50-8	1,000	13*	NA	4.1	<4.0	<4.0	<4.0	5.3	NE	NE
Lead	7439-92-1	4.0	14*	NA	<3.0	<3.0	<3.0	<3.0	5.4	NE	NE
Lead, dissolved	7439-92-1	4.0	14*	NA	NE	NE	NE	NE	<3.0	NE	NE
Mercury	7439-97-6	2.0	0.0013	0.088	<0.20	<0.20	<0.20	<0.20	<0.20	NE	NE
Selenium	7782-49-2	50	5	NA	<5.0	<5.0	<5.0	<5.0	<5.0	NE	NE
Silver	7440-22-4	34	0.2	NA	<0.20	<0.20	<0.20	<0.20	<0.20	NE	NE
Zinc	7440-66-6	2,400	170*	NA	<50	<50	<50	<50	<50	NE	NE

Notes:

- Concentrations reported in micrograms per liter (µg/L).
- Analytical results were compared to December 30, 2013 Promulgated Cleanup Criteria, R 299.44, Table 1. Groundwater Residential and Nonresidential Part 201 Generic Cleanup Criteria and Screening Levels and the MDEQ Volatilization to Indoor Air Recommendations for Interim Action Screening Levels and Time-Sensitive Interim Action Screening Levels.
- Results exceeding one or more criteria are shaded, as are the criteria exceeded.
- VOCs - Volatile Organic Compounds, SVOCs - Semivolatile Organic Compounds, PAHs - Polynuclear Aromatic Hydrocarbons, PCBs - Polychlorinated Biphenyls. Refer to the analytical report for the full list of VOC, SVOC, and PCB analytes. Refer to the analytical report for the full list of VOC, SVOC, and PCB analytes.
- CS - Criterion is specific to individual constituent.
- <RL - Analytical result was below laboratory reporting limit.
- NE - Not evaluated.
- NA - Not available.
- ID - Insufficient data to develop criterion.
- NLL - Not likely to leach under most soil conditions.
- * = GSI Protection was calculated for the indicated metals using the MDEQ spreadsheet for calculating GSI. A default water hardness value of 150 mg/kg as CaCO₃ was used to calculate GSI. Results are presented for surface water receiving bodies protected as a drinking water source.
- **Total chromium concentrations were compared to the more restrictive hexavalent chromium criteria because chromium was not speciated.
- Concentrations were also compared to, and found to be below, the groundwater volatilization to indoor air inhalation criteria, the flammability and explosivity screening levels, and the water solubility screening levels.
- RIASL - Recommended Interim Action Screening Levels.

APPENDIX A
SOIL BORING LOGS

DRAFT



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BORING SB-1

PAGE 1 OF 1

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- CLAYEY SAND with Silt and Roots- Dark Brown- Moist (SC)	LS1	14			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION	<p>NOTES: 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.</p> <p>2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.</p> <p>3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).</p> <p>4. No odors noted and no staining observed.</p>
<p>GROUNDWATER WAS NOT ENCOUNTERED</p> <p>BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite</p>	



DRAFT

BORING SB-2

PAGE 1 OF 1

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- CLAYEY SAND with Silt and Roots- Dark Brown- Moist (SC)	LS1	15			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION	<p>NOTES: 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.</p> <p>2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.</p> <p>3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).</p> <p>4. No odors noted and no staining observed.</p>
<p>GROUNDWATER WAS NOT ENCOUNTERED</p> <p>BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite</p>	



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BORING SB-3

PAGE 1 OF 1

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- SAND with Silt and Roots- Dark Brown- Moist (SP)	LS1	13			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION	NOTES: 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design. 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable). 4. No odors noted and no staining observed.
GROUNDWATER WAS NOT ENCOUNTERED BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite	



DRAFT

BORING SB-4

PAGE 1 OF 1

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- CLAYEY SAND with Silt and Roots- Dark Brown- Moist (SC)	LS1	17			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION	NOTES: 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design. 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable). 4. No odors noted and no staining observed.
GROUNDWATER WAS NOT ENCOUNTERED BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite	



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BORING SB-5

PAGE 1 OF 1

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP)	LS1	13			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION	<p>NOTES: 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.</p> <p>2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.</p> <p>3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).</p> <p>4. No odors noted and no staining observed.</p>
<p>GROUNDWATER WAS NOT ENCOUNTERED</p> <p>BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite</p>	



DRAFT

BORING SB-6

PAGE 1 OF 1

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP)	LS1				
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION	<p>NOTES: 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.</p> <p>2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.</p> <p>3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).</p> <p>4. No odors noted and no staining observed.</p>
<p>GROUNDWATER WAS NOT ENCOUNTERED</p> <p>BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite</p>	



DRAFT

BORING SB-7

PAGE 1 OF 1

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP)	LS1	12			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION
GROUNDWATER WAS NOT ENCOUNTERED
BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

NOTES:

1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. No odors noted and no staining observed.



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BORING SB-8

PAGE 1 OF 1

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP)	LS1	12			
0.8							
1.0		Fine to Medium SAND- Light Brown- Moist (SP)					
END OF BORING AT 1.0 FEET.							
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION	<p>NOTES: 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.</p> <p>2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.</p> <p>3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).</p> <p>4. No odors noted and no staining observed.</p>
<p>GROUNDWATER WAS NOT ENCOUNTERED</p> <p>BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite</p>	



DRAFT

BORING SB-9

PAGE 1 OF 1

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		Sandy LEAN CLAY with Roots- Brown- Moist (CL)	LS1	12			
	1.0	END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION	NOTES: 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design. 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable). 4. No odors noted and no staining observed.
GROUNDWATER WAS NOT ENCOUNTERED BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite	



DRAFT BORING SB-10

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18
OPERATOR: BJM

COMPLETED: 1/11/18
RIG NO.: ATV

BORING METHOD: Direct Push
LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
0.3		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP)					
1.0		Fine to Medium SAND- Light Brown- Moist (SP)	LS1	14			
END OF BORING AT 1.0 FEET.							
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

- NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
 4. No odors noted and no staining observed.



DRAFT BORING SB-11

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18
OPERATOR: BJM

COMPLETED: 1/11/18
RIG NO.: ATV

BORING METHOD: Direct Push
LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP)	LS1	10			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

- NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
 4. No odors noted and no staining observed.



DRAFT BORING SB-12

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP)	LS1	12			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION
GROUNDWATER WAS NOT ENCOUNTERED
BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

- NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
 4. No odors noted and no staining observed.



DRAFT BORING SB-13

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP)					
0.4		Sandy LEAN CLAY- Brown (CL)	LS1	13			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

- NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
 4. No odors noted and no staining observed.



DRAFT BORING SB-14

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
0.4		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP)					
1.0		Sandy LEAN CLAY- Brown (CL)	LS1	14			
END OF BORING AT 1.0 FEET.							
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION
GROUNDWATER WAS NOT ENCOUNTERED
BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

NOTES: 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. No odors noted and no staining observed.



DRAFT BORING SB-15

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0		TOPSOIL- SILTY CLAY with Silt and Roots- Dark Brown- Moist (CL/ML)					
0.5							
2.5		Sandy LEAN CLAY- Brown (CL)	LS1	14			
4.0		END OF BORING AT 4.0 FEET.					
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

- NOTES:**
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
 4. No odors noted and no staining observed.



DRAFT BORING SB-16

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- CLAYEY SAND with Silt and Roots- Dark Brown- Moist (SC)	LS1	9			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

- NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
 4. No odors noted and no staining observed.



DRAFT BORING SB-17

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- CLAYEY SAND with Silt and Roots- Dark Brown- Moist (SC)	LS1	10			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION
GROUNDWATER WAS NOT ENCOUNTERED
BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

NOTES: 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. No odors noted and no staining observed.



DRAFT BORING SB-18

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0		TOPSOIL- CLAYEY SAND with Silt and Roots- Dark Brown- Moist (SC)	LS1	12			
0.5		CLAYEY SAND- Brown- Moist (SC)					
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

- NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
 4. No odors noted and no staining observed.



DRAFT BORING SB-19

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- CLAYEY SAND with Silt and Roots- Dark Brown- Moist (SC)	LS1	13			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION
GROUNDWATER WAS NOT ENCOUNTERED
BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

- NOTES: 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. No odors noted and no staining observed.



DRAFT BORING SB-20

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP-SM)	LS1	13			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

- NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
 4. No odors noted and no staining observed.



DRAFT BORING SB-21

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP-SM)	LS1	12			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

- NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
 4. No odors noted and no staining observed.



DRAFT BORING SB-22

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
0.7		TOPSOIL- CLAYEY SAND with Silt and Roots- Dark Brown- Moist (SC)	LS1	12			
1.0		CLAYEY SAND- Brown- Moist (SC)					
END OF BORING AT 1.0 FEET.							
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

- NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
 4. No odors noted and no staining observed.



DRAFT BORING SB-23

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
0.7		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP-SM)	LS1	12			
1.0		Fine to Medium SAND- Light Brown- Moist (SP)					
END OF BORING AT 1.0 FEET.							
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION
GROUNDWATER WAS NOT ENCOUNTERED
BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

NOTES:

1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. No odors noted and no staining observed.



DRAFT BORING SB-24

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/12/18

COMPLETED: 1/12/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP-SM)	LS1	12			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION
GROUNDWATER WAS NOT ENCOUNTERED
BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

NOTES:

1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. No odors noted and no staining observed.



DRAFT BORING SB-25

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/12/18

COMPLETED: 1/12/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP-SM)	LS1	12			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

NOTES:

1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. No odors noted and no staining observed.



DRAFT BORING SB-26

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/12/18

COMPLETED: 1/12/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP-SM)	LS1	12			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

NOTES:

1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. No odors noted and no staining observed.



DRAFT BORING SB-27

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/12/18

COMPLETED: 1/12/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP-SM)	LS1	12			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION	<p>NOTES: 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.</p> <p>2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.</p> <p>3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).</p> <p>4. No odors noted and no staining observed.</p>
<p>GROUNDWATER WAS NOT ENCOUNTERED</p> <p>BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite</p>	



DRAFT BORING SB-28

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/12/18

COMPLETED: 1/12/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP-SM)	LS1	12			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

NOTES:

1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. No odors noted and no staining observed.



DRAFT BORING SB-29

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/12/18

COMPLETED: 1/12/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP-SM)	LS1	12			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION	NOTES: 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design. 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable). 4. No odors noted and no staining observed.
GROUNDWATER WAS NOT ENCOUNTERED	
BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite	



DRAFT BORING SB-30

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/12/18

COMPLETED: 1/12/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP-SM)	LS1	12			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

- NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
 4. No odors noted and no staining observed.



DRAFT BORING SB-31

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/12/18

COMPLETED: 1/12/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP-SM)	LS1	12			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

- NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
 4. No odors noted and no staining observed.



DRAFT BORING SB-32

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP-SM)	LS1	8			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION	<p>NOTES: 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.</p> <p>2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.</p> <p>3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).</p> <p>4. No odors noted and no staining observed.</p>
<p>GROUNDWATER WAS NOT ENCOUNTERED</p> <p>BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite</p>	



DRAFT BORING SB-33

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP-SM)	LS1	13			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

NOTES:

1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. No odors noted and no staining observed.



DRAFT BORING SB-34

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP-SM)	LS1	10			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

- NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
 4. No odors noted and no staining observed.



DRAFT BORING SB-35

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP-SM)	LS1	11			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION
GROUNDWATER WAS NOT ENCOUNTERED
BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

NOTES:

1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. No odors noted and no staining observed.



DRAFT BORING SB-36

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18

COMPLETED: 1/11/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP-SM)	LS1	13			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

- NOTES:
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
 4. No odors noted and no staining observed.



DRAFT BORING SB-37

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/11/18
OPERATOR: BJM

COMPLETED: 1/11/18
RIG NO.: ATV

BORING METHOD: Direct Push
LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	TEMPORARY WELL SCREEN	REMARKS
0.0		TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP-SM)			<1			
1.0			LS1	41	<1			
2.5					<1			
5.0		Fine to Medium SAND- Light Brown- Moist (SP)	LS2	39	<1			
7.5					<1			
10.0			LS3	44	<1			
10.5					<1			
12.0		LEAN CLAY- Gray (CL)			<1			A groundwater sample was collected from a temporary monitoring well; the well screen was set between 7 feet and 12 feet below ground surface.

END OF BORING AT 12.0 FEET.

GROUNDWATER & BACKFILL INFORMATION	NOTES:
<p>DEPTH (FT) DURING BORING: 9.0</p> <p>BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite</p>	<p>1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.</p> <p>2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.</p> <p>3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).</p> <p>4. No odors noted and no staining observed.</p>



DRAFT BORING SB-38

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/10/18

COMPLETED: 1/10/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
2.5		TOPSOIL- Fine to Medium SAND with Trace Brick, Gravel, and Roots- Brown- Moist (SP)	LS1	34			
4.0		END OF BORING AT 4.0 FEET.					
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION
GROUNDWATER WAS NOT ENCOUNTERED
BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

NOTES:

1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. No odors noted and no staining observed.



DRAFT BORING SB-39

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/10/18

COMPLETED: 1/10/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
2.5		FILL- CLAYEY SAND with Trace Wood, Brick, and Concrete- Brown- Moist (SC)	LS1	45			
4.0		END OF BORING AT 4.0 FEET.					
5.0							
7.5							
10.0							

<p>GROUNDWATER & BACKFILL INFORMATION</p> <p>GROUNDWATER WAS NOT ENCOUNTERED</p> <p>BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite</p>	<p>NOTES:</p> <ol style="list-style-type: none"> 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design. 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable). 4. No odors noted and no staining observed. 5. Central Soil Mound.
---	---



DRAFT BORING SB-40

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/10/18
OPERATOR: BJM

COMPLETED: 1/10/18
RIG NO.: ATV

BORING METHOD: Direct Push
LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
2.5		FILL- CLAYEY SAND with Trace Wood, Brick, and Concrete- Brown- Moist (SC)	LS1	46			
4.0		END OF BORING AT 4.0 FEET.					
5.0							
7.5							
10.0							

<p>GROUNDWATER & BACKFILL INFORMATION</p> <p>GROUNDWATER WAS NOT ENCOUNTERED</p> <p>BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite</p>	<p>NOTES:</p> <ol style="list-style-type: none"> 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design. 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable). 4. No odors noted and no staining observed. 5. West Soil Mound.
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DRAFT BORING SB-41

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/10/18
OPERATOR: BJM

COMPLETED: 1/10/18
RIG NO.: ATV

BORING METHOD: Direct Push
LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	TEMPORARY WELL SCREEN	REMARKS
0.0		FILL- Fine to Medium SAND with Gravel- Brown- Moist (SP)						
1.0			LS1	31	<1			
2.5					<1			
5.0		FILL- PEASTONE- Gray- Moist (GP)	LS2	38	<1			
7.5					<1			
8.0		Fine to Medium SAND- Light Brown- Moist to Wet (SP)	LS3	33	<1			A groundwater sample was collected from a temporary monitoring well; the well screen was set between 8 feet and 12 feet below ground surface.
11.0		LEAN CLAY- Gray (CL)			<1			
12.0		END OF BORING AT 12.0 FEET.						

<p>GROUNDWATER & BACKFILL INFORMATION</p> <p style="text-align: center;">DEPTH (FT)</p> <p>▽ DURING BORING: 10.0</p> <p>BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite</p>	<p>NOTES:</p> <ol style="list-style-type: none"> 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design. 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable). 4. No odors noted and no staining observed. 5. UST Basin - Maintenance
--	---



DRAFT BORING SB-42

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/10/18 **COMPLETED:** 1/10/18
OPERATOR: BJM **RIG NO.:** ATV

BORING METHOD: Direct Push
LOGGED BY: CEB **CHECKED BY:** MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0	[Cross-hatch pattern]	FILL- Fine to Medium SAND- Brown- Moist (SP)			<1		
1.0							
	[Dotted pattern]	FILL- PEASTONE- Gray- Moist (PEASTONE)	LS1	35	<1		
2.5							
3.0							
	[Dotted pattern]	Fine to Medium SAND- Light Brown- Moist to Wet (SP)	LS2	24	<1		
5.0							
7.5							
10.0	[Dotted pattern]		LS3	23	<1		
11.0							
	[Diagonal lines]	LEAN CLAY- Gray (CL)			<1	[Black triangle]	
12.0							

END OF BORING AT 12.0 FEET.

<p>GROUNDWATER & BACKFILL INFORMATION</p> <p style="text-align: right;">DEPTH (FT)</p> <p>▽ DURING BORING: 10.0</p> <p>BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite</p>	<p>NOTES:</p> <ol style="list-style-type: none"> 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design. 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable). 4. No odors noted and no staining observed. 5. UST Dispenser - Maintenance
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DRAFT BORING SB-43

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/10/18
OPERATOR: BJM

COMPLETED: 1/10/18
RIG NO.: ATV

BORING METHOD: Direct Push
LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	TEMPORARY WELL SCREEN	REMARKS
0.0		TOPSOIL- Fine to Medium SAND with Silt-Dark Brown- Moist (SP-SM)			<1			
1.0			LS1	37	<1			
2.5					<1			
5.0		Fine to Medium SAND with Trace Gravel- Light Brown- Moist to Wet (SP)	LS2	42	<1			
7.5					<1			A groundwater sample was collected from a temporary monitoring well; the well screen was set between 6 feet and 10 feet below ground surface.
10.0			LS3	41	<1			
11.0					<1			
12.0		LEAN CLAY- Gray (CL)			<1			

END OF BORING AT 12.0 FEET.

<p>GROUNDWATER & BACKFILL INFORMATION</p> <p style="text-align: center;">DEPTH (FT)</p> <p>▽ DURING BORING: 7.5</p> <p>BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite</p>	<p>NOTES:</p> <ol style="list-style-type: none"> 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design. 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable). 4. No odors noted and no staining observed. 5. UST Basin - Maintenance
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DRAFT BORING SB-44

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/10/18 **COMPLETED:** 1/10/18
OPERATOR: BJM **RIG NO.:** ATV

BORING METHOD: Direct Push
LOGGED BY: CEB **CHECKED BY:** MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	TEMPORARY WELL SCREEN	REMARKS
0.0								
2.5		FILL- Fine to Medium SAND with Trace Gravel, Silt, Brick, and Roots- Light Brown (SP)	LS1	33	<1			
5.0			LS2	38	<1			
7.5						<1		
10.0			LS3	47	<1			A groundwater sample was collected from a temporary monitoring well; the well screen was set between 8 feet and 12 feet below ground surface.
11.0					<1	■		Petroleum odors noted and black staining observed from approximately 10.5 to 11 feet bgs.
12.0		LEAN CLAY- Gray (CL)						

END OF BORING AT 12.0 FEET.

<p>GROUNDWATER & BACKFILL INFORMATION</p> <p style="text-align: right;">DEPTH (FT)</p> <p>▽ DURING BORING: 10.0</p> <p>BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite</p>	<p>NOTES:</p> <ol style="list-style-type: none"> 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design. 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable). 4. Middle of Drum Storage Area Excavation
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DRAFT BORING SB-45

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/10/18
OPERATOR: BJM

COMPLETED: 1/10/18
RIG NO.: ATV

BORING METHOD: Direct Push
LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0	[Cross-hatch pattern]	FILL- Fine to Medium SAND with Gravel- Trace Brick and Asphalt- Dark Brown (SP)				[Black triangle]	
1.0					<1		
2.5	[Dotted pattern]	Fine to Medium SAND- Light Brown (SP)	LS1	39			
4.0					<1		
END OF BORING AT 4.0 FEET.							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION

GROUNDWATER WAS NOT ENCOUNTERED

BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

- NOTES:**
1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
 4. No odors noted and no staining observed.



DRAFT BORING SB-46

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/10/18

COMPLETED: 1/10/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
2.5		FILL- Fine to Medium SAND with Trace Wood- Light Brown- Moist (SP)	LS1	36	<1		
4.0					<1		
END OF BORING AT 4.0 FEET.							
5.0							
7.5							
10.0							

<p>GROUNDWATER & BACKFILL INFORMATION</p> <p>GROUNDWATER WAS NOT ENCOUNTERED</p> <p>BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite</p>	<p>NOTES:</p> <ol style="list-style-type: none"> 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design. 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable). 4. No odors noted and no staining observed. 5. South side of trailer.
---	--



DRAFT BORING SB-47

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/10/18

COMPLETED: 1/10/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
2.5		Fine to Medium SAND- Trace Roots- Light Brown- Moist (SP)	LS1	39			Slight dark staining observed on surface under a drum with oil in it from approximately 0 to 1.5 feet bgs.
4.0		END OF BORING AT 4.0 FEET.					
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION
GROUNDWATER WAS NOT ENCOUNTERED
BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

NOTES:

1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. No odors noted.



DRAFT BORING SB-48

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/10/18

COMPLETED: 1/10/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
2.5		Fine to Medium SAND with Trace Wood, Roots, and Gravel (SP)	LS1	27	<1		
4.0					<1		
END OF BORING AT 4.0 FEET.							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION	NOTES: 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design. 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable). 4. No odors noted and no staining observed.
GROUNDWATER WAS NOT ENCOUNTERED	
BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite	



DRAFT BORING SB-49

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/10/18

COMPLETED: 1/10/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
		Fine to Medium SAND- Light Brown- Moist (SP)	LS1	12			
1.0		END OF BORING AT 1.0 FEET.					
2.5							
5.0							
7.5							
10.0							

GROUNDWATER & BACKFILL INFORMATION
GROUNDWATER WAS NOT ENCOUNTERED
BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite

NOTES:

1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design.
2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual.
3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable).
4. No odors noted and no staining observed.



DRAFT BORING SB-50

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/10/18

COMPLETED: 1/10/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0		TOPSOIL- Fine to Medium SAND with Silt-Trace Wood- Brown- Moist (SP-SM)					
1.0		FLL- Fine to Medium SAND with Trace Wood- Light Brown- Moist (SP)			<1		
2.0		FILL- Sandy LEAN CLAY- Light Brown (CL)	LS1	40			
2.5					<1		
4.0							
END OF BORING AT 4.0 FEET.							
5.0							
7.5							
10.0							

<p>GROUNDWATER & BACKFILL INFORMATION</p> <p>GROUNDWATER WAS NOT ENCOUNTERED</p> <p>BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite</p>	<p>NOTES:</p> <ol style="list-style-type: none"> 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design. 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable). 4. No odors noted and no staining observed.
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DRAFT BORING SB-51

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/10/18

COMPLETED: 1/10/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	TEMPORARY WELL SCREEN	REMARKS
0.0		0.2 TOPSOIL- Fine to Medium SAND with Silt and Roots- Dark Brown- Moist (SP-SM)						
2.5			LS1	41	<1			
5.0		FILL- Fine to Medium SAND with Trace Gravel and Concrete- Light Brown- Moist (SP)						
7.5			LS2	22	<1			
10.0								
10.5			LS3	29	1.8			A groundwater sample was attempted from a temporary monitoring well; the well screen was set between 8 feet and 12 feet below ground surface.
12.0		LEAN CLAY- Gray (CL)			2.1			staining observed from approximately 10.5 to 11 feet bgs.

END OF BORING AT 12.0 FEET.

<p>GROUNDWATER & BACKFILL INFORMATION</p> <p style="text-align: center;">DEPTH (FT)</p> <p>▽ DURING BORING: 10.0</p> <p>BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite</p>	<p>NOTES:</p> <ol style="list-style-type: none"> 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design. 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable). 4. No odors noted. 5. No measurable water from well.
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DRAFT BORING SB-52

PROJECT NAME: Former Rogell Golf Course
CLIENT: Detroit Economic Growth Corporation

PROJECT NUMBER: 077832.00.001.006
PROJECT LOCATION: Detroit, Michigan

DATE STARTED: 1/10/18

COMPLETED: 1/10/18

BORING METHOD: Direct Push

OPERATOR: BJM

RIG NO.: ATV

LOGGED BY: CEB

CHECKED BY: MAV

DEPTH (FEET)	SYMBOLIC PROFILE	PROFILE DESCRIPTION	SAMPLE TYPE/NO. INTERVAL	RECOVERY (inches)	PID (ppm)	SOIL ANALYTICAL SAMPLE	REMARKS
0.0							
	X	FILL- Fine to Medium SAND with Trace Gravel, Brick, and Asphalt- Brown- Moist (SP)			<1	▲	
2.0			LS1	39			
2.5		FILL- Fine to Medium SAND- Light Brown- Moist (SP)			<1		
4.0							
END OF BORING AT 4.0 FEET.							
5.0							
7.5							
10.0							

<p>GROUNDWATER & BACKFILL INFORMATION</p> <p>GROUNDWATER WAS NOT ENCOUNTERED</p> <p>BACKFILL METHOD: Soil Cuttings & Hydrated Bentonite</p>	<p>NOTES:</p> <ol style="list-style-type: none"> 1. Soil samples were classified according to ASTM D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) for environmental purposes only. Therefore, the boring logs and associated report(s) should not be used for geotechnical evaluation or design. 2. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 3. Listed depths under the profile description are rounded to the nearest tenth of a foot (e.g. 5.75 = 5.8). Refer to the report and attachments for actual sample depths and/or intervals (where applicable). 4. No odors noted and no staining observed.
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APPENDIX B
LABORATORY ANALYTICAL REPORTS

DRAFT



Thursday, January 25, 2018

Fibertec Project Number: 82744
Project Identification: Rogell GC (077832.00.001.006) /077832.00.001.006
Submittal Date: 01/15/2018

Mr. Christiaan Bon
Soil and Materials Engineers, Inc. - Plymouth
43980 Plymouth Oaks
Plymouth, MI 48170

Dear Mr. Bon,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 10 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

By Emily Kennedy at 3:35 PM, Jan 25, 2018

For Daryl P. Strandbergh
Laboratory Director

Enclosures

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-001

Order: 82744
Page: 2 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-38_1-2	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-001** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-38_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	9		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Michigan 10 Elements by ICP/MS Aliquot ID: **82744-001** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-38_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	5100		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
2. Barium	23000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
3. Cadmium	240		µg/kg	50	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
4. Chromium	9000		µg/kg	500	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
5. Copper	10000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
6. Lead	27000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
7. Selenium	220		µg/kg	200	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
8. Silver	U		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
9. Zinc	43000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH

Mercury by CVAAS Aliquot ID: **82744-001** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-38_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	200		µg/kg	50	9.5	01/19/18	PM18A19A	01/19/18	M618A19A	NRV

Organochlorine Pesticides Aliquot ID: **82744-001** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-38_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
6. Chlordane	650		µg/kg	94	25	01/18/18	PS18A18A	01/19/18	SF18A19A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
8. 4,4'-DDE	140		µg/kg	20	25	01/18/18	PS18A18A	01/19/18	SF18A19A	TKT
9. 4,4'-DDT	92		µg/kg	20	25	01/18/18	PS18A18A	01/19/18	SF18A19A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-001

Order: 82744
 Page: 3 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-38_1-2	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-001** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-38_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA

Polychlorinated Biphenyls (PCBs) Aliquot ID: **82744-001** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8082A** Description: **SB-38_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
2. Aroclor-1221	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
3. Aroclor-1232	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
4. Aroclor-1242	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
5. Aroclor-1248	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
6. Aroclor-1254	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
7. Aroclor-1260	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT

Organochlorine Herbicides Aliquot ID: **82744-001** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-38_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK

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Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-38_1-2** Chain of Custody: **162116**
Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/10/18**
Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **09:00**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Herbicides
Method: EPA 8151A

Aliquot ID: 82744-001 **Matrix: Soil/Solid**
Description: SB-38_1-2

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 7,2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 8,2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-001A **Matrix: Soil/Solid**
Description: SB-38_1-2

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 2. Acrylonitrile	U		µg/kg	120	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
3. Benzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
4. Bromobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
5. Bromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
6. Bromodichloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
7. Bromoform	U		µg/kg	120	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
8. Bromomethane	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
9. 2-Butanone	U		µg/kg	750	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
10. n-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
11. sec-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
12. tert-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
13. Carbon Disulfide	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
14. Carbon Tetrachloride	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
15. Chlorobenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
16. Chloroethane	U		µg/kg	310	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
17. Chloroform	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
18. Chloromethane	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
19. 2-Chlorotoluene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
20. Dibromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
22. Dibromomethane	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
25. 1,4-Dichlorobenzene	U		µg/kg	120	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
26. Dichlorodifluoromethane	U		µg/kg	310	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-001

Order: 82744
 Page: 5 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-38_1-2	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-001A **Matrix: Soil/Solid**
Description: SB-38_1-2

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
32. 1,2-Dichloropropane	U		µg/kg	62	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
35. Ethylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
36. Ethylene Dibromide	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
37. 2-Hexanone	U		µg/kg	2500	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
38. Isopropylbenzene	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
39. Methylene Chloride	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
40. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
41. MTBE	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
42. Naphthalene	U		µg/kg	330	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
43. n-Propylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
44. Styrene	U		µg/kg	62	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
45. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
46. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
47. Tetrachloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
48. Toluene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
49. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
50. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
51. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
52. Trichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
53. Trichlorofluoromethane	U		µg/kg	120	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
54. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 55. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
56. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
57. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
58. Vinyl Chloride	U		µg/kg	40	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
59. m&p-Xylene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
60. o-Xylene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 61. Xylenes	U		µg/kg	150	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-001

Order: 82744
 Page: 6 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-38_1-2	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable †: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **82744-001** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8270C** Description: **SB-38_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
3. Anthracene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
9. Chrysene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
12. Fluorene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
15. Phenanthrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
16. Pyrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-002

Order: 82744
Page: 7 of 167
Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-39_1-3** Chain of Custody: **162116**
Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/10/18**
Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **09:10**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-002** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-39_1-3**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	13		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Michigan 10 Elements by ICP/MS Aliquot ID: **82744-002** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-39_1-3**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	8600		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
2. Barium	58000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
3. Cadmium	420		µg/kg	50	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
4. Chromium	24000		µg/kg	500	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
5. Copper	15000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
6. Lead	40000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
7. Selenium	380		µg/kg	200	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
8. Silver	U		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
9. Zinc	60000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH

Mercury by CVAAS Aliquot ID: **82744-002** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-39_1-3**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	120		µg/kg	50	8.8	01/19/18	PM18A19A	01/19/18	M618A19A	NRV

Organochlorine Pesticides Aliquot ID: **82744-002** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-39_1-3**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
6. Chlordane	800		µg/kg	200	50	01/18/18	PS18A18A	01/19/18	SF18A19A	TKT
7. 4,4'-DDD	U		µg/kg	20	25	01/18/18	PS18A18A	01/22/18	SF18A22A	TKT
8. 4,4'-DDE	1000		µg/kg	38	50	01/18/18	PS18A18A	01/19/18	SF18A19A	TKT
9. 4,4'-DDT	880		µg/kg	38	50	01/18/18	PS18A18A	01/19/18	SF18A19A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-002

Order: 82744
 Page: 8 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-39_1-3	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-002** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-39_1-3**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA

Polychlorinated Biphenyls (PCBs) Aliquot ID: **82744-002** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8082A** Description: **SB-39_1-3**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/19/18	SA18A19A	TKT
2. Aroclor-1221	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/19/18	SA18A19A	TKT
3. Aroclor-1232	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/19/18	SA18A19A	TKT
4. Aroclor-1242	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/19/18	SA18A19A	TKT
5. Aroclor-1248	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/19/18	SA18A19A	TKT
6. Aroclor-1254	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/19/18	SA18A19A	TKT
7. Aroclor-1260	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/19/18	SA18A19A	TKT
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/19/18	SA18A19A	TKT
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/19/18	SA18A19A	TKT

Organochlorine Herbicides Aliquot ID: **82744-002** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-39_1-3**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK

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Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-39_1-3** Chain of Custody: **162116**
Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/10/18**
Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **09:10**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Herbicides
Method: EPA 8151A

Aliquot ID: 82744-002 **Matrix: Soil/Solid**
Description: SB-39_1-3

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 7,2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 8,2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-002B **Matrix: Soil/Solid**
Description: SB-39_1-3

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	H	µg/kg	1000	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 2. Acrylonitrile	U	H	µg/kg	130	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
3. Benzene	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
4. Bromobenzene	U	H	µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
5. Bromochloromethane	U	H	µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
6. Bromodichloromethane	U	H	µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
7. Bromoform	U	H	µg/kg	130	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
8. Bromomethane	U	H	µg/kg	260	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
9. 2-Butanone	U	H	µg/kg	750	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
10. n-Butylbenzene	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
11. sec-Butylbenzene	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
12. tert-Butylbenzene	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
13. Carbon Disulfide	U	H	µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
14. Carbon Tetrachloride	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
15. Chlorobenzene	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
16. Chloroethane	U	H	µg/kg	330	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
17. Chloroform	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
18. Chloromethane	U	H	µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
19. 2-Chlorotoluene	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
20. Dibromochloromethane	U	H	µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U	H	µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
22. Dibromomethane	U	H	µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
23. 1,2-Dichlorobenzene	U	H	µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
24. 1,3-Dichlorobenzene	U	H	µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
25. 1,4-Dichlorobenzene	U	H	µg/kg	130	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
26. Dichlorodifluoromethane	U	H	µg/kg	330	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
27. 1,1-Dichloroethane	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
28. 1,2-Dichloroethane	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
29. 1,1-Dichloroethene	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-002

Order: 82744
Page: 10 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-39_1-3	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-002B **Matrix: Soil/Solid**
Description: SB-39_1-3

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
31. trans-1,2-Dichloroethene	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
32. 1,2-Dichloropropane	U	H	µg/kg	66	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
33. cis-1,3-Dichloropropene	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
34. trans-1,3-Dichloropropene	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
35. Ethylbenzene	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
36. Ethylene Dibromide	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
37. 2-Hexanone	U	H	µg/kg	2500	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
38. Isopropylbenzene	U	H	µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
39. Methylene Chloride	U	H	µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
40. 4-Methyl-2-pentanone	U	H	µg/kg	2500	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
41. MTBE	U	H	µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
42. Naphthalene	U	H	µg/kg	330	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
43. n-Propylbenzene	U	H	µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
44. Styrene	U	H	µg/kg	66	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
45. 1,1,1,2-Tetrachloroethane	U	H	µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
46. 1,1,2,2-Tetrachloroethane	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
47. Tetrachloroethene	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
48. Toluene	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
49. 1,2,4-Trichlorobenzene	U	H	µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
50. 1,1,1-Trichloroethane	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
51. 1,1,2-Trichloroethane	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
52. Trichloroethene	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
53. Trichlorofluoromethane	U	H	µg/kg	130	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
54. 1,2,3-Trichloropropane	U	H	µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 55. 1,2,3-Trimethylbenzene	U	H	µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
56. 1,2,4-Trimethylbenzene	U	H	µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
57. 1,3,5-Trimethylbenzene	U	H	µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
58. Vinyl Chloride	U	H	µg/kg	40	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
59. m&p-Xylene	U	H	µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
60. o-Xylene	U	H	µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 61. Xylenes	U	H	µg/kg	150	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-002

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-39_1-3	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **82744-002** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8270C** Description: **SB-39_1-3**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
3. Anthracene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
9. Chrysene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
11. Fluoranthene (SIM)	330		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
12. Fluorene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
15. Phenanthrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP
16. Pyrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/18/18	S518A18B	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-003

Order: 82744
 Page: 12 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-40_1-2	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:25

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-003** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-40_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Michigan 10 Elements by ICP/MS Aliquot ID: **82744-003** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-40_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	4800		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
2. Barium	31000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
3. Cadmium	330		µg/kg	50	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
4. Chromium	11000		µg/kg	500	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
5. Copper	8100		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
6. Lead	19000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
7. Selenium	330		µg/kg	200	10	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
8. Silver	U		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
9. Zinc	36000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH

Mercury by CVAAS Aliquot ID: **82744-003** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-40_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	330		µg/kg	50	9.1	01/19/18	PM18A19A	01/19/18	M618A19A	NRV

Organochlorine Pesticides Aliquot ID: **82744-003** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-40_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
6. Chlordane	610		µg/kg	97	25	01/18/18	PS18A18A	01/20/18	SF18A20B	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
8. 4,4'-DDE	53		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
9. 4,4'-DDT	120		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-003

Order: 82744
 Page: 13 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-40_1-2	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:25

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-003** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-40_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
10. Dieldrin	110		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA

Polychlorinated Biphenyls (PCBs) Aliquot ID: **82744-003** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8082A** Description: **SB-40_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
2. Aroclor-1221	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
3. Aroclor-1232	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
4. Aroclor-1242	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
5. Aroclor-1248	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
6. Aroclor-1254	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
7. Aroclor-1260	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT

Organochlorine Herbicides Aliquot ID: **82744-003** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-40_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK

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Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-40_1-2** Chain of Custody: **162116**
Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/10/18**
Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **09:25**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Herbicides
Method: EPA 8151A

Aliquot ID: 82744-003 **Matrix: Soil/Solid**
Description: SB-40_1-2

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 7.2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 8.2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-003A **Matrix: Soil/Solid**
Description: SB-40_1-2

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 2. Acrylonitrile	U		µg/kg	130	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
3. Benzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
4. Bromobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
5. Bromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
6. Bromodichloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
7. Bromoform	U		µg/kg	130	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
8. Bromomethane	U		µg/kg	260	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
9. 2-Butanone	U		µg/kg	750	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
10. n-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
11. sec-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
12. tert-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
13. Carbon Disulfide	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
14. Carbon Tetrachloride	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
15. Chlorobenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
16. Chloroethane	U		µg/kg	320	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
17. Chloroform	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
18. Chloromethane	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
19. 2-Chlorotoluene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
20. Dibromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
22. Dibromomethane	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
25. 1,4-Dichlorobenzene	U		µg/kg	130	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
26. Dichlorodifluoromethane	U		µg/kg	320	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP

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Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-40_1-2** Chain of Custody: **162116**
Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/10/18**
Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **09:25**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-003A **Matrix: Soil/Solid**
Description: SB-40_1-2

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
32. 1,2-Dichloropropane	U		µg/kg	64	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
35. Ethylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
36. Ethylene Dibromide	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
37. 2-Hexanone	U		µg/kg	2500	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
38. Isopropylbenzene	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
39. Methylene Chloride	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
40. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
41. MTBE	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
42. Naphthalene	U		µg/kg	330	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
43. n-Propylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
44. Styrene	U		µg/kg	64	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
45. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
46. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
47. Tetrachloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
48. Toluene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
49. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
50. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
51. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
52. Trichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
53. Trichlorofluoromethane	U		µg/kg	130	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
54. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 55. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
56. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
57. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
58. Vinyl Chloride	U		µg/kg	40	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
59. m&p-Xylene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
60. o-Xylene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 61. Xylenes	U		µg/kg	150	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-003

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-40_1-2	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:25

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **82744-003** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8270C** Description: **SB-40_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
3. Anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
9. Chrysene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
12. Fluorene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
15. Phenanthrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
16. Pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-004

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-50_0-1	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-004** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-50_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	18		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Polychlorinated Biphenyls (PCBs) Aliquot ID: **82744-004** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8082A Description: **SB-50_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aroclor-1016	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
2. Aroclor-1221	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
3. Aroclor-1232	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
4. Aroclor-1242	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
5. Aroclor-1248	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
6. Aroclor-1254	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
7. Aroclor-1260	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-006

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-41_10-11	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 10:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-006** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-41_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	17		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Michigan 10 Elements by ICP/MS Aliquot ID: **82744-006** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-41_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	2600		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
2. Barium	4800		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
3. Cadmium	U		µg/kg	50	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
4. Chromium	2900		µg/kg	500	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
5. Copper	3000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
6. Lead	1600		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
7. Selenium	U		µg/kg	200	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
8. Silver	U		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
9. Zinc	8300		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH

Mercury by CVAAS Aliquot ID: **82744-006** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-41_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	U		µg/kg	50	8.9	01/19/18	PM18A19A	01/19/18	M618A19A	NRV

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **82744-006A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260B** Description: **SB-41_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Acetone	U		µg/kg	1000	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 2. Acrylonitrile	U		µg/kg	140	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
3. Benzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
4. Bromobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
5. Bromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
6. Bromodichloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
7. Bromoform	U		µg/kg	140	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
8. Bromomethane	U		µg/kg	280	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
9.2-Butanone	U		µg/kg	750	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP

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Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-41_10-11** Chain of Custody: **162116**
Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/10/18**
Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **10:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-006A **Matrix: Soil/Solid**
Description: SB-41_10-11

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
10. n-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
11. sec-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
12. tert-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
13. Carbon Disulfide	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
14. Carbon Tetrachloride	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
15. Chlorobenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
16. Chloroethane	U		µg/kg	350	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
17. Chloroform	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
18. Chloromethane	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
19. 2-Chlorotoluene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
20. Dibromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
22. Dibromomethane	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
25. 1,4-Dichlorobenzene	U		µg/kg	140	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
26. Dichlorodifluoromethane	U		µg/kg	350	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
32. 1,2-Dichloropropane	U		µg/kg	71	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
35. Ethylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
36. Ethylene Dibromide	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
37. 2-Hexanone	U		µg/kg	2500	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
38. Isopropylbenzene	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
39. Methylene Chloride	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
40. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
41. MTBE	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
42. Naphthalene	U		µg/kg	330	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
43. n-Propylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
44. Styrene	U		µg/kg	71	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
45. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
46. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-006

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-41_10-11	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 10:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: **82744-006A** Matrix: **Soil/Solid**
 Description: **SB-41_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
47. Tetrachloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
48. Toluene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
49. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
50. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
51. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
52. Trichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
53. Trichlorofluoromethane	U		µg/kg	140	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
54. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 55. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
56. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
57. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
58. Vinyl Chloride	U		µg/kg	40	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
59. m&p-Xylene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
60. o-Xylene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 61. Xylenes	U		µg/kg	150	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270C

Aliquot ID: **82744-006** Matrix: **Soil/Solid**
 Description: **SB-41_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Acenaphthene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
3. Anthracene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
9. Chrysene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
12. Fluorene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
15. Phenanthrene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
16. Pyrene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-007

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-41_8-12	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Ground Water	Collect Time: 10:45

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Michigan 10 Elements by ICP/MS, Total Recoverable Aliquot ID: **82744-007A** Matrix: **Ground Water**
Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: **SB-41_8-12**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	U		µg/L	5.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
2. Barium	U		µg/L	100	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
3. Cadmium	U		µg/L	1.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
4. Chromium	U		µg/L	10	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
5. Copper	U		µg/L	4.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
6. Lead	U		µg/L	3.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
7. Selenium	U		µg/L	5.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
8. Silver	U		µg/L	0.20	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
9. Zinc	U		µg/L	50	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH

Mercury by CVAAS, Total Aliquot ID: **82744-007A** Matrix: **Ground Water**
Method: EPA 7470A Description: **SB-41_8-12**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/L	0.20	1.0	01/18/18	PM18A18A	01/18/18	M618A18A	NRV

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: **82744-007C** Matrix: **Ground Water**
Method: EPA 5030B/EPA 8260B Description: **SB-41_8-12**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 2. Acrylonitrile	U		µg/L	2.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
3. Benzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
4. Bromobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
5. Bromochloromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
6. Bromodichloromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
7. Bromoform	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
8. Bromomethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
9. 2-Butanone	U		µg/L	25	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
10. n-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
11. sec-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
12. tert-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
13. Carbon Disulfide	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
14. Carbon Tetrachloride	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
15. Chlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-007

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-41_8-12	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Ground Water	Collect Time: 10:45

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS
Method: EPA 5030B/EPA 8260B

Aliquot ID: 82744-007C **Matrix: Ground Water**
Description: SB-41_8-12

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
16. Chloroethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
17. Chloroform	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
18. Chloromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
19. 2-Chlorotoluene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
20. Dibromochloromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
22. Dibromomethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
23. 1,2-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
24. 1,3-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
25. 1,4-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
26. Dichlorodifluoromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
27. 1,1-Dichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
28. 1,2-Dichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
29. 1,1-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
30. cis-1,2-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
31. trans-1,2-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
32. 1,2-Dichloropropane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
33. cis-1,3-Dichloropropene	U		µg/L	0.50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
34. trans-1,3-Dichloropropene	U		µg/L	0.50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
35. Ethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
36. Ethylene Dibromide	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
37. 2-Hexanone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
38. Isopropylbenzene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
39. Methylene Chloride	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
40. 4-Methyl-2-pentanone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
41. MTBE	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
42. Naphthalene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
43. n-Propylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
44. Styrene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
45. 1,1,1,2-Tetrachloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
46. 1,1,1,2,2-Tetrachloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
47. Tetrachloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
48. Toluene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
49. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
50. 1,1,1-Trichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
51. 1,1,2-Trichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
52. Trichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-007

Order: 82744
 Page: 23 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-41_8-12	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Ground Water	Collect Time: 10:45

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS
Method: EPA 5030B/EPA 8260B

Aliquot ID: 82744-007C **Matrix: Ground Water**
Description: SB-41_8-12

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
53. Trichlorofluoromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
54. 1,2,3-Trichloropropane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 55. 1,2,3-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
56. 1,2,4-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
57. 1,3,5-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
58. Vinyl Chloride	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
59. m&p-Xylene	U		µg/L	2.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
60. o-Xylene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 61. Xylenes	U		µg/L	3.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3510C/EPA 8270C

Aliquot ID: 82744-007 **Matrix: Ground Water**
Description: SB-41_8-12

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/L	5.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
2. Acenaphthylene (SIM)	U		µg/L	5.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
3. Anthracene (SIM)	U		µg/L	5.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
4. Benzo(a)anthracene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
5. Benzo(a)pyrene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
6. Benzo(b)fluoranthene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
7. Benzo(ghi)perylene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
8. Benzo(k)fluoranthene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
9. Chrysene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
10. Dibenzo(a,h)anthracene (SIM)	U		µg/L	2.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
11. Fluoranthene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
12. Fluorene (SIM)	U		µg/L	5.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/L	2.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
14. 2-Methylnaphthalene (SIM)	U		µg/L	5.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
15. Phenanthrene (SIM)	U		µg/L	2.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
16. Pyrene (SIM)	U		µg/L	5.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-008

Order: 82744
 Page: 24 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-42_10-11	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 11:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-008** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-42_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	18		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Michigan 10 Elements by ICP/MS Aliquot ID: **82744-008** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-42_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	1900		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
2. Barium	6100		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
3. Cadmium	62		µg/kg	50	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
4. Chromium	3900		µg/kg	500	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
5. Copper	4400		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
6. Lead	2200		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
7. Selenium	U		µg/kg	200	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
8. Silver	U		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
9. Zinc	12000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH

Mercury by CVAAS Aliquot ID: **82744-008** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-42_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	U		µg/kg	50	8.9	01/19/18	PM18A19A	01/19/18	M618A19A	NRV

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **82744-008A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260B** Description: **SB-42_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Acetone	U		µg/kg	1000	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 2. Acrylonitrile	U		µg/kg	140	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
3. Benzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
4. Bromobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
5. Bromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
6. Bromodichloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
7. Bromoform	U		µg/kg	140	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
8. Bromomethane	U		µg/kg	280	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
9. 2-Butanone	U		µg/kg	750	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-008

Order: 82744
Page: 25 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-42_10-11	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 11:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-008A **Matrix: Soil/Solid**
Description: SB-42_10-11

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
10. n-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
11. sec-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
12. tert-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
13. Carbon Disulfide	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
14. Carbon Tetrachloride	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
15. Chlorobenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
16. Chloroethane	U		µg/kg	350	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
17. Chloroform	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
18. Chloromethane	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
19. 2-Chlorotoluene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
20. Dibromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
22. Dibromomethane	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
25. 1,4-Dichlorobenzene	U		µg/kg	140	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
26. Dichlorodifluoromethane	U		µg/kg	350	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
32. 1,2-Dichloropropane	U		µg/kg	70	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
35. Ethylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
36. Ethylene Dibromide	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
37. 2-Hexanone	U		µg/kg	2500	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
38. Isopropylbenzene	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
39. Methylene Chloride	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
40. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
41. MTBE	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
42. Naphthalene	U		µg/kg	330	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
43. n-Propylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
44. Styrene	U		µg/kg	70	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
45. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
46. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-008

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-42_10-11	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 11:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: **82744-008A** Matrix: **Soil/Solid**
 Description: **SB-42_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
47. Tetrachloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
48. Toluene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
49. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
50. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
51. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
52. Trichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
53. Trichlorofluoromethane	U		µg/kg	140	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
54. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 55. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
56. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
57. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
58. Vinyl Chloride	U		µg/kg	40	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
59. m&p-Xylene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
60. o-Xylene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 61. Xylenes	U		µg/kg	150	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270C

Aliquot ID: **82744-008** Matrix: **Soil/Solid**
 Description: **SB-42_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
3. Anthracene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
9. Chrysene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
12. Fluorene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
15. Phenanthrene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
16. Pyrene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18A	01/19/18	S518A18B	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-009

Order: 82744
Page: 27 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-43_10-11	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 11:25

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-009** Matrix: **Soil/Solid**
Method: **ASTM D2216-10** Description: **SB-43_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	18		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Michigan 10 Elements by ICP/MS Aliquot ID: **82744-009** Matrix: **Soil/Solid**
Method: **EPA 0200.2/EPA 6020A** Description: **SB-43_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	2700		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
2. Barium	6000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
3. Cadmium	62		µg/kg	50	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
4. Chromium	3000		µg/kg	500	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
5. Copper	2900		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
6. Lead	1500		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
7. Selenium	U		µg/kg	200	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
8. Silver	U		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
9. Zinc	8400		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH

Mercury by CVAAS Aliquot ID: **82744-009** Matrix: **Soil/Solid**
Method: **EPA 7471B** Description: **SB-43_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	U		µg/kg	50	9.1	01/19/18	PM18A19A	01/19/18	M618A19A	NRV

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **82744-009A** Matrix: **Soil/Solid**
Method: **EPA 5035A/EPA 8260B** Description: **SB-43_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Acetone	U		µg/kg	1000	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 2. Acrylonitrile	U		µg/kg	140	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
3. Benzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
4. Bromobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
5. Bromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
6. Bromodichloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
7. Bromoform	U		µg/kg	140	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
8. Bromomethane	U		µg/kg	290	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
9.2-Butanone	U		µg/kg	750	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP

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Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-43_10-11** Chain of Custody: **162116**
Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/10/18**
Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **11:25**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-009A **Matrix: Soil/Solid**
Description: SB-43_10-11

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
10. n-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
11. sec-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
12. tert-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
13. Carbon Disulfide	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
14. Carbon Tetrachloride	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
15. Chlorobenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
16. Chloroethane	U		µg/kg	360	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
17. Chloroform	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
18. Chloromethane	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
19. 2-Chlorotoluene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
20. Dibromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
22. Dibromomethane	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
25. 1,4-Dichlorobenzene	U		µg/kg	140	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
26. Dichlorodifluoromethane	U		µg/kg	360	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
32. 1,2-Dichloropropane	U		µg/kg	72	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
35. Ethylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
36. Ethylene Dibromide	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
37. 2-Hexanone	U		µg/kg	2500	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
38. Isopropylbenzene	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
39. Methylene Chloride	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
40. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
41. MTBE	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
42. Naphthalene	U		µg/kg	330	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
43. n-Propylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
44. Styrene	U		µg/kg	72	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
45. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
46. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-009

Order: 82744
 Page: 29 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-43_10-11	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 11:25

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-009A **Matrix: Soil/Solid**
Description: SB-43_10-11

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
47. Tetrachloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
48. Toluene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
49. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
50. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
51. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
52. Trichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
53. Trichlorofluoromethane	U		µg/kg	140	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
54. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 55. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
56. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
57. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
58. Vinyl Chloride	U		µg/kg	40	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
59. m&p-Xylene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
60. o-Xylene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 61. Xylenes	U		µg/kg	150	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270C

Aliquot ID: 82744-009 **Matrix: Soil/Solid**
Description: SB-43_10-11

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/18/18	SG18A18A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/18/18	SG18A18A	GJP
3. Anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/18/18	SG18A18A	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/18/18	SG18A18A	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/18/18	SG18A18A	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/18/18	SG18A18A	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/18/18	SG18A18A	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/18/18	SG18A18A	GJP
9. Chrysene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/18/18	SG18A18A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/18/18	SG18A18A	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/18/18	SG18A18A	GJP
12. Fluorene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/18/18	SG18A18A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/18/18	SG18A18A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/18/18	SG18A18A	GJP
15. Phenanthrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/18/18	SG18A18A	GJP
16. Pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/18/18	SG18A18A	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-010

Order: 82744
Page: 30 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-43_6-10	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Ground Water	Collect Time: 11:40

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Michigan 10 Elements by ICP/MS, Total Recoverable Aliquot ID: **82744-010A** Matrix: **Ground Water**
Method: **EPA 3005A (Total Recoverable)/EPA 6020A** Description: **SB-43_6-10**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	U		µg/L	5.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
2. Barium	U		µg/L	100	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
3. Cadmium	U		µg/L	1.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
4. Chromium	U		µg/L	10	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
5. Copper	U		µg/L	4.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
6. Lead	U		µg/L	3.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
7. Selenium	U		µg/L	5.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
8. Silver	U		µg/L	0.20	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
9. Zinc	U		µg/L	50	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH

Mercury by CVAAS, Total Aliquot ID: **82744-010A** Matrix: **Ground Water**
Method: **EPA 7470A** Description: **SB-43_6-10**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/L	0.20	1.0	01/18/18	PM18A18A	01/18/18	M618A18A	NRV

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: **82744-010C** Matrix: **Ground Water**
Method: **EPA 5030B/EPA 8260B** Description: **SB-43_6-10**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 2. Acrylonitrile	U		µg/L	2.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
3. Benzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
4. Bromobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
5. Bromochloromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
6. Bromodichloromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
7. Bromoform	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
8. Bromomethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
9. 2-Butanone	U		µg/L	25	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
10. n-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
11. sec-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
12. tert-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
13. Carbon Disulfide	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
14. Carbon Tetrachloride	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
15. Chlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-010

Order: 82744
Page: 31 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-43_6-10	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Ground Water	Collect Time: 11:40

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS
Method: EPA 5030B/EPA 8260B

Aliquot ID: 82744-010C **Matrix: Ground Water**
Description: SB-43_6-10

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
16. Chloroethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
17. Chloroform	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
18. Chloromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
19. 2-Chlorotoluene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
20. Dibromochloromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
22. Dibromomethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
23. 1,2-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
24. 1,3-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
25. 1,4-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
26. Dichlorodifluoromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
27. 1,1-Dichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
28. 1,2-Dichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
29. 1,1-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
30. cis-1,2-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
31. trans-1,2-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
32. 1,2-Dichloropropane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
33. cis-1,3-Dichloropropene	U		µg/L	0.50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
34. trans-1,3-Dichloropropene	U		µg/L	0.50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
35. Ethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
36. Ethylene Dibromide	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
37. 2-Hexanone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
38. Isopropylbenzene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
39. Methylene Chloride	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
40. 4-Methyl-2-pentanone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
41. MTBE	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
42. Naphthalene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
43. n-Propylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
44. Styrene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
45. 1,1,1,2-Tetrachloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
46. 1,1,2,2-Tetrachloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
47. Tetrachloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
48. Toluene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
49. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
50. 1,1,1-Trichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
51. 1,1,2-Trichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
52. Trichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

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Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-43_6-10** Chain of Custody: **162116**
Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/10/18**
Client Project No: **077832.00.001.006** Sample Matrix: **Ground Water** Collect Time: **11:40**

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS
Method: EPA 5030B/EPA 8260B

Aliquot ID: 82744-010C **Matrix: Ground Water**
Description: SB-43_6-10

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
53. Trichlorofluoromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
54. 1,2,3-Trichloropropane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 55. 1,2,3-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
56. 1,2,4-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
57. 1,3,5-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
58. Vinyl Chloride	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
59. m&p-Xylene	U		µg/L	2.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
60. o-Xylene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 61. Xylenes	U		µg/L	3.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3510C/EPA 8270C

Aliquot ID: 82744-010 **Matrix: Ground Water**
Description: SB-43_6-10

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/L	5.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
2. Acenaphthylene (SIM)	U		µg/L	5.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
3. Anthracene (SIM)	U		µg/L	5.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
4. Benzo(a)anthracene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
5. Benzo(a)pyrene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
6. Benzo(b)fluoranthene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
7. Benzo(ghi)perylene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
8. Benzo(k)fluoranthene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
9. Chrysene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
10. Dibenzo(a,h)anthracene (SIM)	U		µg/L	2.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
11. Fluoranthene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
12. Fluorene (SIM)	U		µg/L	5.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/L	2.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
14. 2-Methylnaphthalene (SIM)	U		µg/L	5.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
15. Phenanthrene (SIM)	U		µg/L	2.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
16. Pyrene (SIM)	U		µg/L	5.0	1.1	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-011

Order: 82744
 Page: 33 of 167
 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-44_10-11** Chain of Custody: **162118**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/10/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **12:30**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-011** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-44_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Michigan 10 Elements by ICP/MS Aliquot ID: **82744-011** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-44_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	3800		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
2. Barium	15000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
3. Cadmium	110		µg/kg	50	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
4. Chromium	7700		µg/kg	500	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
5. Copper	6700		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
6. Lead	4800		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
7. Selenium	U		µg/kg	200	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
8. Silver	U		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
9. Zinc	22000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH

Mercury by CVAAS Aliquot ID: **82744-011** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-44_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	U		µg/kg	50	9.0	01/19/18	PM18A19A	01/19/18	M618A19A	NRV

Organochlorine Pesticides Aliquot ID: **82744-011** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-44_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
8. 4,4'-DDE	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-011

Order: 82744
Page: 34 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-44_10-11	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 12:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-011** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-44_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA

Polychlorinated Biphenyls (PCBs) Aliquot ID: **82744-011** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8082A** Description: **SB-44_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
2. Aroclor-1221	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
3. Aroclor-1232	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
4. Aroclor-1242	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
5. Aroclor-1248	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
6. Aroclor-1254	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
7. Aroclor-1260	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/18/18	SA18A18B	TKT

Organochlorine Herbicides Aliquot ID: **82744-011** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-44_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-011

Order: 82744
 Page: 35 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-44_10-11	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 12:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Herbicides
Method: EPA 8151A

Aliquot ID: 82744-011 **Matrix: Soil/Solid**
Description: SB-44_10-11

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 7,2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 8,2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-011A **Matrix: Soil/Solid**
Description: SB-44_10-11

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 2. Acrylonitrile	U		µg/kg	140	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
3. Benzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
4. Bromobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
5. Bromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
6. Bromodichloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
7. Bromoform	U		µg/kg	140	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
8. Bromomethane	U		µg/kg	280	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
9. 2-Butanone	U		µg/kg	750	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
10. n-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
11. sec-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
12. tert-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
13. Carbon Disulfide	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
14. Carbon Tetrachloride	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
15. Chlorobenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
16. Chloroethane	U		µg/kg	350	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
17. Chloroform	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
18. Chloromethane	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
19. 2-Chlorotoluene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
20. Dibromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
22. Dibromomethane	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
25. 1,4-Dichlorobenzene	U		µg/kg	140	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
26. Dichlorodifluoromethane	U		µg/kg	350	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-011

Order: 82744
Page: 36 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-44_10-11	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 12:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-011A **Matrix: Soil/Solid**
Description: SB-44_10-11

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
32. 1,2-Dichloropropane	U		µg/kg	71	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
35. Ethylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
36. Ethylene Dibromide	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
37. 2-Hexanone	U		µg/kg	2500	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
38. Isopropylbenzene	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
39. Methylene Chloride	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
40. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
41. MTBE	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
42. Naphthalene	U		µg/kg	330	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
43. n-Propylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
44. Styrene	U		µg/kg	71	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
45. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
46. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
47. Tetrachloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
48. Toluene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
49. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
50. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
51. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
52. Trichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
53. Trichlorofluoromethane	U		µg/kg	140	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
54. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 55. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
56. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
57. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
58. Vinyl Chloride	U		µg/kg	40	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
59. m&p-Xylene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
60. o-Xylene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 61. Xylenes	U		µg/kg	150	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-011

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-44_10-11	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 12:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **82744-011** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8270C** Description: **SB-44_10-11**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
3. Anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
9. Chrysene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
12. Fluorene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
15. Phenanthrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
16. Pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-012

Order: 82744
Page: 38 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-44_8-12	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Ground Water	Collect Time: 12:40

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Michigan 10 Elements by ICP/MS, Total Recoverable Aliquot ID: **82744-012A** Matrix: **Ground Water**
Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: **SB-44_8-12**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	24		µg/L	5.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
2. Barium	U		µg/L	100	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
3. Cadmium	U		µg/L	1.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
4. Chromium	U		µg/L	10	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
5. Copper	5.3		µg/L	4.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
6. Lead	5.4		µg/L	3.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
7. Selenium	U		µg/L	5.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
8. Silver	U		µg/L	0.20	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
9. Zinc	U		µg/L	50	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH

Mercury by CVAAS, Total Aliquot ID: **82744-012A** Matrix: **Ground Water**
Method: EPA 7470A Description: **SB-44_8-12**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/L	0.20	1.0	01/18/18	PM18A18A	01/18/18	M618A18A	NRV

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: **82744-012C** Matrix: **Ground Water**
Method: EPA 5030B/EPA 8260B Description: **SB-44_8-12**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 2. Acrylonitrile	U		µg/L	2.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
3. Benzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
4. Bromobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
5. Bromochloromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
6. Bromodichloromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
7. Bromoform	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
8. Bromomethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
9. 2-Butanone	U		µg/L	25	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
10. n-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
11. sec-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
12. tert-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
13. Carbon Disulfide	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
14. Carbon Tetrachloride	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
15. Chlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-012

Order: 82744
 Page: 39 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-44_8-12	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Ground Water	Collect Time: 12:40

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS
Method: EPA 5030B/EPA 8260B

Aliquot ID: 82744-012C **Matrix: Ground Water**
Description: SB-44_8-12

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
16. Chloroethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
17. Chloroform	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
18. Chloromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
19. 2-Chlorotoluene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
20. Dibromochloromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
22. Dibromomethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
23. 1,2-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
24. 1,3-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
25. 1,4-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
26. Dichlorodifluoromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
27. 1,1-Dichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
28. 1,2-Dichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
29. 1,1-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
30. cis-1,2-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
31. trans-1,2-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
32. 1,2-Dichloropropane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
33. cis-1,3-Dichloropropene	U		µg/L	0.50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
34. trans-1,3-Dichloropropene	U		µg/L	0.50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
35. Ethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
36. Ethylene Dibromide	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
37. 2-Hexanone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
38. Isopropylbenzene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
39. Methylene Chloride	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
40. 4-Methyl-2-pentanone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
41. MTBE	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
42. Naphthalene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
43. n-Propylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
44. Styrene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
45. 1,1,1,2-Tetrachloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
46. 1,1,2,2-Tetrachloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
47. Tetrachloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
48. Toluene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
49. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
50. 1,1,1-Trichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
51. 1,1,2-Trichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
52. Trichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-012

Order: 82744
 Page: 40 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-44_8-12	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Ground Water	Collect Time: 12:40

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS
Method: EPA 5030B/EPA 8260B

Aliquot ID: 82744-012C **Matrix: Ground Water**
Description: SB-44_8-12

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
53. Trichlorofluoromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
54. 1,2,3-Trichloropropane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 55. 1,2,3-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
56. 1,2,4-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
57. 1,3,5-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
58. Vinyl Chloride	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
59. m&p-Xylene	U		µg/L	2.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
60. o-Xylene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 61. Xylenes	U		µg/L	3.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3510C/EPA 8270C

Aliquot ID: 82744-012 **Matrix: Ground Water**
Description: SB-44_8-12

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/L	5.0	1.2	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
2. Acenaphthylene (SIM)	U		µg/L	5.0	1.2	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
3. Anthracene (SIM)	U		µg/L	5.0	1.2	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
4. Benzo(a)anthracene (SIM)	U		µg/L	1.0	1.2	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
5. Benzo(a)pyrene (SIM)	U		µg/L	1.0	1.2	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
6. Benzo(b)fluoranthene (SIM)	U		µg/L	1.0	1.2	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
7. Benzo(ghi)perylene (SIM)	U		µg/L	1.0	1.2	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
8. Benzo(k)fluoranthene (SIM)	U		µg/L	1.0	1.2	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
9. Chrysene (SIM)	U		µg/L	1.0	1.2	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
10. Dibenzo(a,h)anthracene (SIM)	U		µg/L	2.0	1.2	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
11. Fluoranthene (SIM)	U		µg/L	1.0	1.2	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
12. Fluorene (SIM)	U		µg/L	5.0	1.2	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/L	2.0	1.2	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
14. 2-Methylnaphthalene (SIM)	U		µg/L	5.0	1.2	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
15. Phenanthrene (SIM)	U		µg/L	2.0	1.2	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT
16. Pyrene (SIM)	U		µg/L	5.0	1.2	01/17/18	PS18A17D	01/17/18	SG18A17B	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-013

Order: 82744
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 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-45_0-1** Chain of Custody: **162118**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/10/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **13:20**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-013** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-45_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Michigan 10 Elements by ICP/MS Aliquot ID: **82744-013** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-45_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	20000		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
2. Barium	150000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
3. Cadmium	7300		µg/kg	50	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
4. Chromium	110000		µg/kg	500	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
5. Copper	44000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
6. Lead	260000		µg/kg	1000	100	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
7. Selenium	810		µg/kg	200	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
8. Silver	660		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
9. Zinc	280000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH

Mercury by CVAAS Aliquot ID: **82744-013** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-45_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	4000		µg/kg	200	88	01/19/18	PM18A19A	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-013** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-45_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
6. Chlordane	U		µg/kg	30	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	TKT
7. 4,4'-DDD	160		µg/kg	39	50	01/18/18	PS18A18A	01/19/18	SF18A19A	TKT
8. 4,4'-DDE	710		µg/kg	39	50	01/18/18	PS18A18A	01/19/18	SF18A19A	TKT
9. 4,4'-DDT	130		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA

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Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-45_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:20

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-013** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-45_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA

Organochlorine Herbicides Aliquot ID: **82744-013** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-45_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **82744-013A** Matrix: **Soil/Solid**
Method: **EPA 5035A/EPA 8260B** Description: **SB-45_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 2. Acrylonitrile	U		µg/kg	140	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
3. Benzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
4. Bromobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
5. Bromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
6. Bromodichloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
7. Bromoform	U		µg/kg	140	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-013

Order: 82744
Page: 43 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-45_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:20

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-013A **Matrix: Soil/Solid**
Description: SB-45_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
8. Bromomethane	U		µg/kg	280	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
9. 2-Butanone	U		µg/kg	750	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
10. n-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
11. sec-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
12. tert-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
13. Carbon Disulfide	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
14. Carbon Tetrachloride	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
15. Chlorobenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
16. Chloroethane	U		µg/kg	360	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
17. Chloroform	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
18. Chloromethane	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
19. 2-Chlorotoluene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
20. Dibromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
22. Dibromomethane	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
25. 1,4-Dichlorobenzene	U		µg/kg	140	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
26. Dichlorodifluoromethane	U		µg/kg	360	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
32. 1,2-Dichloropropane	U		µg/kg	71	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
35. Ethylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
36. Ethylene Dibromide	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
37. 2-Hexanone	U		µg/kg	2500	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
38. Isopropylbenzene	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
39. Methylene Chloride	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
40. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
41. MTBE	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
42. Naphthalene	U		µg/kg	330	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
43. n-Propylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
44. Styrene	U		µg/kg	71	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-013

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-45_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:20

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-013A **Matrix: Soil/Solid**
Description: SB-45_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
45. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
46. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
47. Tetrachloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
48. Toluene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
49. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
50. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
51. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
52. Trichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
53. Trichlorofluoromethane	U		µg/kg	140	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
54. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 55. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
56. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
57. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
58. Vinyl Chloride	U		µg/kg	40	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
59. m&p-Xylene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
60. o-Xylene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 61. Xylenes	U		µg/kg	150	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270C

Aliquot ID: 82744-013 **Matrix: Soil/Solid**
Description: SB-45_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
3. Anthracene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
9. Chrysene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
12. Fluorene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-013

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-45_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:20

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable †: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **82744-013** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8270C** Description: **SB-45_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
15. Phenanthrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
16. Pyrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-014

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-46_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:25

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-014** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-46_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	10		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Michigan 10 Elements by ICP/MS Aliquot ID: **82744-014** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-46_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	5100		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
2. Barium	21000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
3. Cadmium	350		µg/kg	50	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
4. Chromium	10000		µg/kg	500	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
5. Copper	6600		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
6. Lead	18000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
7. Selenium	U		µg/kg	200	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
8. Silver	U		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
9. Zinc	67000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH

Mercury by CVAAS Aliquot ID: **82744-014** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-46_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	260		µg/kg	50	9.3	01/19/18	PM18A19A	01/19/18	M618A19A	NRV

Organochlorine Pesticides Aliquot ID: **82744-014** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-46_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
8. 4,4'-DDE	44		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
9. 4,4'-DDT	50		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-014

Order: 82744
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 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-46_0-1** Chain of Custody: **162118**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/10/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **13:25**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-014** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-46_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA

Organochlorine Herbicides Aliquot ID: **82744-014** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-46_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **82744-014A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260B** Description: **SB-46_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 2. Acrylonitrile	U		µg/kg	130	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
3. Benzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
4. Bromobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
5. Bromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
6. Bromodichloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
7. Bromoform	U		µg/kg	130	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-014

Order: 82744
Page: 48 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-46_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:25

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-014A **Matrix: Soil/Solid**
Description: SB-46_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
8. Bromomethane	U		µg/kg	260	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
9. 2-Butanone	U		µg/kg	750	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
10. n-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
11. sec-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
12. tert-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
13. Carbon Disulfide	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
14. Carbon Tetrachloride	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
15. Chlorobenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
16. Chloroethane	U		µg/kg	320	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
17. Chloroform	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
18. Chloromethane	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
19. 2-Chlorotoluene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
20. Dibromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
22. Dibromomethane	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
25. 1,4-Dichlorobenzene	U		µg/kg	130	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
26. Dichlorodifluoromethane	U		µg/kg	320	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
32. 1,2-Dichloropropane	U		µg/kg	65	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
35. Ethylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
36. Ethylene Dibromide	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
37. 2-Hexanone	U		µg/kg	2500	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
38. Isopropylbenzene	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
39. Methylene Chloride	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
40. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
41. MTBE	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
42. Naphthalene	U		µg/kg	330	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
43. n-Propylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
44. Styrene	U		µg/kg	65	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-014

Order: 82744
Page: 49 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-46_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:25

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-014A **Matrix: Soil/Solid**
Description: SB-46_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
45. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
46. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
47. Tetrachloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
48. Toluene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
49. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
50. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
51. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
52. Trichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
53. Trichlorofluoromethane	U		µg/kg	130	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
54. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 55. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
56. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
57. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
58. Vinyl Chloride	U		µg/kg	40	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
59. m&p-Xylene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
60. o-Xylene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 61. Xylenes	U		µg/kg	150	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270C

Aliquot ID: 82744-014 **Matrix: Soil/Solid**
Description: SB-46_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
3. Anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
9. Chrysene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
12. Fluorene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-014

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-46_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:25

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable †: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **82744-014** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8270C** Description: **SB-46_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
15. Phenanthrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
16. Pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-015

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-47_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:35

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-015** Matrix: **Soil/Solid**
Method: **ASTM D2216-10** Description: **SB-47_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Michigan 10 Elements by ICP/MS Aliquot ID: **82744-015** Matrix: **Soil/Solid**
Method: **EPA 0200.2/EPA 6020A** Description: **SB-47_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	8600		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
2. Barium	36000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
3. Cadmium	440		µg/kg	50	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
4. Chromium	11000		µg/kg	500	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
5. Copper	13000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
6. Lead	44000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
7. Selenium	300		µg/kg	200	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
8. Silver	U		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
9. Zinc	52000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH

Mercury by CVAAS Aliquot ID: **82744-015** Matrix: **Soil/Solid**
Method: **EPA 7471B** Description: **SB-47_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	880		µg/kg	50	9.0	01/19/18	PM18A19A	01/19/18	M618A19A	NRV

Organochlorine Pesticides Aliquot ID: **82744-015** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-47_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
8. 4,4'-DDE	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-015

Order: 82744
 Page: 52 of 167
 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-47_0-1** Chain of Custody: **162118**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/10/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **13:35**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides
Method: EPA 3546/EPA 8081B

Aliquot ID: 82744-015 **Matrix: Soil/Solid**
Description: SB-47_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
10. Dieldrin	150		µg/kg	20	25	01/18/18	PS18A18A	01/19/18	SF18A19A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA

Organochlorine Herbicides
Method: EPA 8151A

Aliquot ID: 82744-015 **Matrix: Soil/Solid**
Description: SB-47_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1,2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 3,2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 7,2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 8,2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-015A **Matrix: Soil/Solid**
Description: SB-47_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 2. Acrylonitrile	U		µg/kg	140	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
3. Benzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
4. Bromobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
5. Bromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
6. Bromodichloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
7. Bromoform	U		µg/kg	140	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-015

Order: 82744
 Page: 53 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-47_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:35

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-015A **Matrix: Soil/Solid**
Description: SB-47_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
8. Bromomethane	U		µg/kg	280	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
9. 2-Butanone	U		µg/kg	750	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
10. n-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
11. sec-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
12. tert-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
13. Carbon Disulfide	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
14. Carbon Tetrachloride	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
15. Chlorobenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
16. Chloroethane	U		µg/kg	350	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
17. Chloroform	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
18. Chloromethane	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
19. 2-Chlorotoluene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
20. Dibromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
22. Dibromomethane	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
25. 1,4-Dichlorobenzene	U		µg/kg	140	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
26. Dichlorodifluoromethane	U		µg/kg	350	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
32. 1,2-Dichloropropane	U		µg/kg	70	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
35. Ethylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
36. Ethylene Dibromide	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
37. 2-Hexanone	U		µg/kg	2500	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
38. Isopropylbenzene	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
39. Methylene Chloride	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
40. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
41. MTBE	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
42. Naphthalene	U		µg/kg	330	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
43. n-Propylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
44. Styrene	U		µg/kg	70	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-015

Order: 82744
Page: 54 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-47_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:35

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-015A **Matrix: Soil/Solid**
Description: SB-47_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
45. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
46. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
47. Tetrachloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
48. Toluene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
49. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
50. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
51. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
52. Trichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
53. Trichlorofluoromethane	U		µg/kg	140	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
54. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 55. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
56. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
57. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
58. Vinyl Chloride	U		µg/kg	40	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
59. m&p-Xylene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
60. o-Xylene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 61. Xylenes	U		µg/kg	150	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270C

Aliquot ID: 82744-015 **Matrix: Soil/Solid**
Description: SB-47_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
3. Anthracene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
9. Chrysene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
12. Fluorene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-015

Order: 82744
Page: 55 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-47_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:35

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable †: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **82744-015** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8270C Description: **SB-47_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
15. Phenanthrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
16. Pyrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-016

Order: 82744
 Page: 56 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-48_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-016** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-48_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	5		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Michigan 10 Elements by ICP/MS Aliquot ID: **82744-016** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-48_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	2800		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
2. Barium	16000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
3. Cadmium	150		µg/kg	50	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
4. Chromium	4800		µg/kg	500	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
5. Copper	3000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
6. Lead	5400		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
7. Selenium	U		µg/kg	200	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
8. Silver	U		µg/kg	100	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH
9. Zinc	83000		µg/kg	1000	20	01/18/18	PT18A18A	01/18/18	T418A18A	JLH

Mercury by CVAAS Aliquot ID: **82744-016** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-48_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	150		µg/kg	50	8.8	01/19/18	PM18A19A	01/19/18	M618A19A	NRV

Organochlorine Pesticides Aliquot ID: **82744-016** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-48_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
8. 4,4'-DDE	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA

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Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-48_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: 82744-016 Matrix: Soil/Solid
Method: EPA 3546/EPA 8081B Description: SB-48_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA

Organochlorine Herbicides Aliquot ID: 82744-016 Matrix: Soil/Solid
Method: EPA 8151A Description: SB-48_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: 82744-016A Matrix: Soil/Solid
Method: EPA 5035A/EPA 8260B Description: SB-48_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 2. Acrylonitrile	U		µg/kg	110	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
3. Benzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
4. Bromobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
5. Bromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
6. Bromodichloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
7. Bromoform	U		µg/kg	110	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-016

Order: 82744
Page: 58 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-48_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-016A **Matrix: Soil/Solid**
Description: SB-48_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
8. Bromomethane	U		µg/kg	220	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
9. 2-Butanone	U		µg/kg	750	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
10. n-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
11. sec-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
12. tert-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
13. Carbon Disulfide	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
14. Carbon Tetrachloride	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
15. Chlorobenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
16. Chloroethane	U		µg/kg	280	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
17. Chloroform	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
18. Chloromethane	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
19. 2-Chlorotoluene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
20. Dibromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
22. Dibromomethane	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
25. 1,4-Dichlorobenzene	U		µg/kg	110	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
26. Dichlorodifluoromethane	U		µg/kg	280	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
32. 1,2-Dichloropropane	U		µg/kg	56	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
35. Ethylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
36. Ethylene Dibromide	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
37. 2-Hexanone	U		µg/kg	2500	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
38. Isopropylbenzene	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
39. Methylene Chloride	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
40. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
41. MTBE	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
42. Naphthalene	U		µg/kg	330	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
43. n-Propylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
44. Styrene	U		µg/kg	56	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-016

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-48_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: **82744-016A** Matrix: **Soil/Solid**
 Description: **SB-48_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
45. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
46. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
47. Tetrachloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
48. Toluene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
49. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
50. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
51. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
52. Trichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
53. Trichlorofluoromethane	U		µg/kg	110	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
54. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 55. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
56. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
57. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
58. Vinyl Chloride	U		µg/kg	40	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
59. m&p-Xylene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
60. o-Xylene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 61. Xylenes	U		µg/kg	150	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270C

Aliquot ID: **82744-016** Matrix: **Soil/Solid**
 Description: **SB-48_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
3. Anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
9. Chrysene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
12. Fluorene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-016

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-48_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable †: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **82744-016** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8270C** Description: **SB-48_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
15. Phenanthrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
16. Pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18A	01/19/18	S518A18B	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-017

Order: 82744
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 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-49_0-1** Chain of Custody: **162118**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/10/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **14:15**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-017** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-49_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Michigan 10 Elements by ICP/MS Aliquot ID: **82744-017** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-49_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	5700		µg/kg	100	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
2. Barium	29000		µg/kg	1000	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
3. Cadmium	500		µg/kg	50	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
4. Chromium	12000		µg/kg	500	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
5. Copper	8600		µg/kg	1000	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
6. Lead	41000		µg/kg	1000	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
7. Selenium	270		µg/kg	200	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
8. Silver	U		µg/kg	100	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
9. Zinc	49000		µg/kg	1000	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-017** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-49_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	1100		µg/kg	50	18	01/19/18	PM18A19A	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-017** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-49_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
8. 4,4'-DDE	110		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
9. 4,4'-DDT	80		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-017

Order: 82744
 Page: 62 of 167
 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-49_0-1** Chain of Custody: **162118**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/10/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **14:15**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-017** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-49_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
10. Dieldrin	33		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-017** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-49_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1,2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 3,2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 7,2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 8,2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **82744-017A** Matrix: **Soil/Solid**
 Method: **EPA 5035A/EPA 8260B** Description: **SB-49_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 2. Acrylonitrile	U		µg/kg	130	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
3. Benzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
4. Bromobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
5. Bromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
6. Bromodichloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
7. Bromoform	U		µg/kg	130	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-017

Order: 82744
Page: 63 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-49_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:15

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable †: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-017A **Matrix: Soil/Solid**
Description: SB-49_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
8. Bromomethane	U		µg/kg	260	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
9. 2-Butanone	U		µg/kg	750	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
10. n-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
11. sec-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
12. tert-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
13. Carbon Disulfide	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
14. Carbon Tetrachloride	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
15. Chlorobenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
16. Chloroethane	U		µg/kg	330	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
17. Chloroform	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
18. Chloromethane	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
19. 2-Chlorotoluene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
20. Dibromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
† 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
22. Dibromomethane	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
25. 1,4-Dichlorobenzene	U		µg/kg	130	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
26. Dichlorodifluoromethane	U		µg/kg	330	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
32. 1,2-Dichloropropane	U		µg/kg	65	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
35. Ethylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
36. Ethylene Dibromide	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
37. 2-Hexanone	U		µg/kg	2500	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
38. Isopropylbenzene	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
39. Methylene Chloride	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
40. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
41. MTBE	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
42. Naphthalene	U		µg/kg	330	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
43. n-Propylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
44. Styrene	U		µg/kg	65	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-017

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-49_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:15

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-017A **Matrix: Soil/Solid**
Description: SB-49_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
45. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
46. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
47. Tetrachloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
48. Toluene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
49. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
50. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
51. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
52. Trichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
53. Trichlorofluoromethane	U		µg/kg	130	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
54. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 55. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
56. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
57. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
58. Vinyl Chloride	U		µg/kg	40	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
59. m&p-Xylene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
60. o-Xylene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 61. Xylenes	U		µg/kg	150	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270C

Aliquot ID: 82744-017 **Matrix: Soil/Solid**
Description: SB-49_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
3. Anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
9. Chrysene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
12. Fluorene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-017

Order: 82744
 Page: 65 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-49_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:15

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable †: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **82744-017** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8270C** Description: **SB-49_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
15. Phenanthrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
16. Pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP

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Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-52_1-2	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-018** Matrix: **Soil/Solid**
Method: **ASTM D2216-10** Description: **SB-52_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	7		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Michigan 10 Elements by ICP/MS Aliquot ID: **82744-018** Matrix: **Soil/Solid**
Method: **EPA 0200.2/EPA 6020A** Description: **SB-52_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	5400		µg/kg	100	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
2. Barium	57000		µg/kg	1000	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
3. Cadmium	800		µg/kg	50	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
4. Chromium	18000		µg/kg	500	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
5. Copper	4700		µg/kg	1000	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
6. Lead	42000		µg/kg	1000	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
7. Selenium	U		µg/kg	200	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
8. Silver	U		µg/kg	100	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
9. Zinc	99000		µg/kg	1000	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-018** Matrix: **Soil/Solid**
Method: **EPA 7471B** Description: **SB-52_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	620		µg/kg	50	8.8	01/19/18	PM18A19A	01/19/18	M618A19A	NRV

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **82744-018A** Matrix: **Soil/Solid**
Method: **EPA 5035A/EPA 8260B** Description: **SB-52_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Acetone	U		µg/kg	1000	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 2. Acrylonitrile	U		µg/kg	120	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
3. Benzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
4. Bromobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
5. Bromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
6. Bromodichloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
7. Bromoform	U		µg/kg	120	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
8. Bromomethane	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
9.2-Butanone	U		µg/kg	750	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-018

Order: 82744
Page: 67 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-52_1-2	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-018A **Matrix: Soil/Solid**
Description: SB-52_1-2

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
10. n-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
11. sec-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
12. tert-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
13. Carbon Disulfide	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
14. Carbon Tetrachloride	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
15. Chlorobenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
16. Chloroethane	U		µg/kg	310	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
17. Chloroform	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
18. Chloromethane	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
19. 2-Chlorotoluene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
20. Dibromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
22. Dibromomethane	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
25. 1,4-Dichlorobenzene	U		µg/kg	120	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
26. Dichlorodifluoromethane	U		µg/kg	310	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
32. 1,2-Dichloropropane	U		µg/kg	62	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
35. Ethylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
36. Ethylene Dibromide	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
37. 2-Hexanone	U		µg/kg	2500	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
38. Isopropylbenzene	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
39. Methylene Chloride	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
40. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
41. MTBE	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
42. Naphthalene	U		µg/kg	330	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
43. n-Propylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
44. Styrene	U		µg/kg	62	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
45. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
46. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-018

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-52_1-2	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-018A **Matrix: Soil/Solid**
Description: SB-52_1-2

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
47. Tetrachloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
48. Toluene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
49. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
50. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
51. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
52. Trichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
53. Trichlorofluoromethane	U		µg/kg	120	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
54. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 55. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
56. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
57. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
58. Vinyl Chloride	U		µg/kg	40	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
59. m&p-Xylene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
60. o-Xylene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 61. Xylenes	U		µg/kg	150	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270C

Aliquot ID: 82744-018 **Matrix: Soil/Solid**
Description: SB-52_1-2

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18D	01/18/18	SJ18A18A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18D	01/18/18	SJ18A18A	GJP
3. Anthracene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18D	01/18/18	SJ18A18A	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18D	01/18/18	SJ18A18A	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18D	01/18/18	SJ18A18A	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18D	01/18/18	SJ18A18A	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18D	01/18/18	SJ18A18A	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18D	01/18/18	SJ18A18A	GJP
9. Chrysene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18D	01/18/18	SJ18A18A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18D	01/18/18	SJ18A18A	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18D	01/18/18	SJ18A18A	GJP
12. Fluorene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18D	01/18/18	SJ18A18A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18D	01/18/18	SJ18A18A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18D	01/18/18	SJ18A18A	GJP
15. Phenanthrene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18D	01/18/18	SJ18A18A	GJP
16. Pyrene (SIM)	U		µg/kg	330	10	01/18/18	PS18A18D	01/18/18	SJ18A18A	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-019

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-51_10.5-11.5	Chain of Custody: 162115
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 08:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-019** Matrix: **Soil/Solid**
Method: **ASTM D2216-10** Description: **SB-51_10.5-11.5**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	19		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Michigan 10 Elements by ICP/MS Aliquot ID: **82744-019** Matrix: **Soil/Solid**
Method: **EPA 0200.2/EPA 6020A** Description: **SB-51_10.5-11.5**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	6300		µg/kg	100	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
2. Barium	54000		µg/kg	1000	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
3. Cadmium	190		µg/kg	50	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
4. Chromium	15000		µg/kg	500	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
5. Copper	17000		µg/kg	1000	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
6. Lead	9000		µg/kg	1000	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
7. Selenium	370		µg/kg	200	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
8. Silver	U		µg/kg	100	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
9. Zinc	48000		µg/kg	1000	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-019** Matrix: **Soil/Solid**
Method: **EPA 7471B** Description: **SB-51_10.5-11.5**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	U		µg/kg	50	8.4	01/19/18	PM18A19A	01/19/18	M618A19A	NRV

Volatile Organic Compounds (VOCs) by GC/MS, 5035 Aliquot ID: **82744-019A** Matrix: **Soil/Solid**
Method: **EPA 5035A/EPA 8260B** Description: **SB-51_10.5-11.5**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Acetone	U		µg/kg	1000	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 2. Acrylonitrile	U		µg/kg	150	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
3. Benzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
4. Bromobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
5. Bromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
6. Bromodichloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
7. Bromoform	U		µg/kg	150	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
8. Bromomethane	U		µg/kg	300	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
9.2-Butanone	U		µg/kg	750	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-019

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-51_10.5-11.5	Chain of Custody: 162115
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 08:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-019A **Matrix: Soil/Solid**
Description: SB-51_10.5-11.5

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
10. n-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
11. sec-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
12. tert-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
13. Carbon Disulfide	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
14. Carbon Tetrachloride	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
15. Chlorobenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
16. Chloroethane	U		µg/kg	380	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
17. Chloroform	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
18. Chloromethane	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
19. 2-Chlorotoluene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
20. Dibromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
22. Dibromomethane	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
25. 1,4-Dichlorobenzene	U		µg/kg	150	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
26. Dichlorodifluoromethane	U		µg/kg	380	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
32. 1,2-Dichloropropane	U		µg/kg	75	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
35. Ethylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
36. Ethylene Dibromide	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
37. 2-Hexanone	U		µg/kg	2500	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
38. Isopropylbenzene	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
39. Methylene Chloride	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
40. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
41. MTBE	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
42. Naphthalene	U		µg/kg	330	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
43. n-Propylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
44. Styrene	U		µg/kg	75	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
45. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
46. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-019

Order: 82744
 Page: 71 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-51_10.5-11.5	Chain of Custody: 162115
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 08:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-019A **Matrix: Soil/Solid**
Description: SB-51_10.5-11.5

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
47. Tetrachloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
48. Toluene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
49. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
50. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
51. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
52. Trichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
53. Trichlorofluoromethane	U		µg/kg	150	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
54. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 55. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
56. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
57. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
58. Vinyl Chloride	U		µg/kg	40	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
59. m&p-Xylene	U		µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
60. o-Xylene	U		µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 61. Xylenes	U		µg/kg	150	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3546/EPA 8270C

Aliquot ID: 82744-019 **Matrix: Soil/Solid**
Description: SB-51_10.5-11.5

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
3. Anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
9. Chrysene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
12. Fluorene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
15. Phenanthrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP
16. Pyrene (SIM)	U		µg/kg	330	1.0	01/18/18	PS18A18D	01/19/18	SJ18A18A	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-022

Order: 82744
 Page: 72 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-51_8-12	Chain of Custody: 162115
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Ground Water	Collect Time: 09:15

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS
Method: EPA 5030B/EPA 8260B

Aliquot ID: 82744-022 **Matrix: Ground Water**
Description: SB-51_8-12

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 2. Acrylonitrile	U		µg/L	2.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
3. Benzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
4. Bromobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
5. Bromochloromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
6. Bromodichloromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
7. Bromoform	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
8. Bromomethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
9. 2-Butanone	U		µg/L	25	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
10. n-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
11. sec-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
12. tert-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
13. Carbon Disulfide	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
14. Carbon Tetrachloride	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
15. Chlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
16. Chloroethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
17. Chloroform	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
18. Chloromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
19. 2-Chlorotoluene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
20. Dibromochloromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
22. Dibromomethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
23. 1,2-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
24. 1,3-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
25. 1,4-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
26. Dichlorodifluoromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
27. 1,1-Dichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
28. 1,2-Dichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
29. 1,1-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
30. cis-1,2-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
31. trans-1,2-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
32. 1,2-Dichloropropane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
33. cis-1,3-Dichloropropene	U		µg/L	0.50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
34. trans-1,3-Dichloropropene	U		µg/L	0.50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
35. Ethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
36. Ethylene Dibromide	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
37. 2-Hexanone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-022

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-51_8-12	Chain of Custody: 162115
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Ground Water	Collect Time: 09:15

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: **82744-022** Matrix: **Ground Water**
 Method: **EPA 5030B/EPA 8260B** Description: **SB-51_8-12**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
38. Isopropylbenzene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
39. Methylene Chloride	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 40. 2-Methylnaphthalene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
41. 4-Methyl-2-pentanone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
42. MTBE	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
43. Naphthalene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
44. n-Propylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
45. Styrene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
47. 1,1,2,2-Tetrachloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
48. Tetrachloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
49. Toluene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
51. 1,1,1-Trichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
52. 1,1,2-Trichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
53. Trichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
54. Trichlorofluoromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
55. 1,2,3-Trichloropropane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
59. Vinyl Chloride	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
60. m&p-Xylene	U		µg/L	2.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
61. o-Xylene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 62. Xylenes	U		µg/L	3.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-023

Order: 82744
 Page: 74 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-32_0-1	Chain of Custody: 162115
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:50

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-023** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-32_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	18		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-023** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-32_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	120000		µg/kg	500	100	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	580000		µg/kg	1000	100	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-023** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-32_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	78000		µg/kg	4300	1800	01/19/18	PM18A19A	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-023** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-32_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
6. Chlordane	2100		µg/kg	210	50	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
8. 4,4'-DDE	30		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
9. 4,4'-DDT	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
10. Dieldrin	760		µg/kg	41	50	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-023

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-32_0-1	Chain of Custody: 162115
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:50

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-023** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-32_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	39		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

Organochlorine Herbicides Aliquot ID: **82744-023** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-32_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-024

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-33_0-1	Chain of Custody: 162115
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:55

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-024** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-33_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	22		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-024** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-33_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	120000		µg/kg	500	100	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	580000		µg/kg	1000	100	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-024** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-33_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	120000		µg/kg	4800	1900	01/19/18	PM18A19A	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-024** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-33_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	27		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
6. Chlordane	7400		µg/kg	220	50	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
8. 4,4'-DDE	90		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
9. 4,4'-DDT	58		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
10. Dieldrin	2200		µg/kg	210	250	01/17/18	PS18A17B	01/22/18	SF18A22A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-024

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-33_0-1	Chain of Custody: 162115
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:55

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-024** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-33_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	95		µg/kg	43	50	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

Organochlorine Herbicides Aliquot ID: **82744-024** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-33_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-025

Order: 82744
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 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-34_0-1** Chain of Custody: **162115**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/11/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **10:02**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-025** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-34_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	23		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-025** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-34_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	3900		µg/kg	100	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	18000		µg/kg	1000	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-025** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-34_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	170		µg/kg	50	8.9	01/19/18	PM18A19A	01/19/18	M618A19A	NRV

Organochlorine Pesticides Aliquot ID: **82744-025** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-34_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
6. Chlordane	U		µg/kg	25	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
8. 4,4'-DDE	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
9. 4,4'-DDT	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
10. Dieldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-025

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-34_0-1	Chain of Custody: 162115
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 10:02

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-025** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-34_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

Organochlorine Herbicides Aliquot ID: **82744-025** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-34_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-026

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-35_0-1	Chain of Custody: 162115
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 10:11

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-026** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-35_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	19		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-026** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-35_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	6000		µg/kg	100	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	38000		µg/kg	1000	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-026** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-35_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	12000		µg/kg	1200	470	01/19/18	PM18A19B	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-026** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-35_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
6. Chlordane	700		µg/kg	110	25	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
8. 4,4'-DDE	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
9. 4,4'-DDT	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
10. Dieldrin	500		µg/kg	41	50	01/17/18	PS18A17B	01/18/18	SA18A18A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-026

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-35_0-1	Chain of Custody: 162115
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 10:11

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-026** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-35_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

Organochlorine Herbicides Aliquot ID: **82744-026** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-35_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-027

Order: 82744
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 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-36_0-1** Chain of Custody: **162115**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/11/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **10:18**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-027** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-36_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	20		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-027** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-36_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	10000		µg/kg	100	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	52000		µg/kg	1000	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-027** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-36_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	20000		µg/kg	1100	460	01/19/18	PM18A19B	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-027** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-36_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
3. beta-BHC	28		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
6. Chlordane	1500		µg/kg	110	25	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
8. 4,4'-DDE	36		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
9. 4,4'-DDT	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
10. Dieldrin	980		µg/kg	42	50	01/17/18	PS18A17B	01/18/18	SA18A18A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-027

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-36_0-1	Chain of Custody: 162115
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 10:18

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-027** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-36_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

Organochlorine Herbicides Aliquot ID: **82744-027** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-36_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK

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Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-1_0-1** Chain of Custody: **162115**
Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/11/18**
Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **11:08**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-028** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-1_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	17		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-028** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-1_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	5400		µg/kg	100	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	40000		µg/kg	1000	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-028** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-1_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	220		µg/kg	50	9.3	01/19/18	PM18A19B	01/19/18	M618A19A	NRV

Organochlorine Pesticides Aliquot ID: **82744-028** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-1_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
6. Chlordane	U		µg/kg	25	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
8. 4,4'-DDE	64		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
9. 4,4'-DDT	63		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
10. Dieldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-028

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-1_0-1	Chain of Custody: 162115
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 11:08

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-028** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-1_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

Organochlorine Herbicides Aliquot ID: **82744-028** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-1_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-029

Order: 82744
 Page: 86 of 167
 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-2_0-1** Chain of Custody: **162119**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/11/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **11:15**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-029** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-2_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	17		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-029** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-2_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	2700		µg/kg	100	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	17000		µg/kg	1000	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-029** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-2_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	110		µg/kg	50	9.4	01/19/18	PM18A19B	01/19/18	M618A19A	NRV

Organochlorine Pesticides Aliquot ID: **82744-029** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-2_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
6. Chlordane	U		µg/kg	25	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
8. 4,4'-DDE	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
9. 4,4'-DDT	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
10. Dieldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-029

Order: 82744
 Page: 87 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-2_0-1	Chain of Custody: 162119
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 11:15

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-029** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-2_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

Organochlorine Herbicides Aliquot ID: **82744-029** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-2_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK

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Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-3_0-1** Chain of Custody: **162119**
Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/11/18**
Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **11:26**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-030** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-3_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	15		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-030** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-3_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	2200		µg/kg	100	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	28000		µg/kg	1000	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-030** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-3_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	53		µg/kg	50	9.2	01/19/18	PM18A19B	01/19/18	M618A19A	NRV

Organochlorine Pesticides Aliquot ID: **82744-030** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-3_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
6. Chlordane	U		µg/kg	25	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
8. 4,4'-DDE	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
9. 4,4'-DDT	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
10. Dieldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-030

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-3_0-1	Chain of Custody: 162119
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 11:26

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-030** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-3_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

Organochlorine Herbicides Aliquot ID: **82744-030** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-3_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-031

Order: 82744
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 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-4_0-1** Chain of Custody: **162119**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/11/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **11:31**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-031** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-4_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	17		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-031** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-4_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	2600		µg/kg	100	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	17000		µg/kg	1000	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-031** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-4_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	U		µg/kg	50	8.9	01/19/18	PM18A19B	01/19/18	M618A19A	NRV

Organochlorine Pesticides Aliquot ID: **82744-031** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-4_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
6. Chlordane	U		µg/kg	25	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
8. 4,4'-DDE	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
9. 4,4'-DDT	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
10. Dieldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-031

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-4_0-1	Chain of Custody: 162119
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 11:31

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-031** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-4_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

Organochlorine Herbicides Aliquot ID: **82744-031** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-4_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/20/18	SC18A19A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-032

Order: 82744
 Page: 92 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-5_0-1	Chain of Custody: 162119
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 11:41

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-032** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-5_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-032** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-5_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	11000		µg/kg	100	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	28000		µg/kg	1000	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-032** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-5_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	6800		µg/kg	210	91	01/19/18	PM18A19B	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-032** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-5_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
6. Chlordane	2200		µg/kg	200	50	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
8. 4,4'-DDE	58		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
9. 4,4'-DDT	U		µg/kg	39	50	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
10. Dieldrin	570		µg/kg	39	50	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-032

Order: 82744
 Page: 93 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-5_0-1	Chain of Custody: 162119
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 11:41

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-032** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-5_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	42		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

Organochlorine Herbicides Aliquot ID: **82744-032** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-5_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U	*	µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 3. 2,4-DB	U	F	µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 4. Dicamba	U	*	µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 5. Dichlorprop	U	*	µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 6. Dinoseb	U	*	µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 7. 2,4,5-T	U	*	µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 8. 2,4,5-TP	U	*	µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK

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Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-6_0-1** Chain of Custody: **162119**
Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/11/18**
Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **11:45**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-033** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-6_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	19		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-033** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-6_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	100000		µg/kg	500	100	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	360000		µg/kg	1000	100	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-033** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-6_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	51000		µg/kg	2300	930	01/19/18	PM18A19B	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-033** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-6_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	370		µg/kg	83	100	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
6. Chlordane	10000		µg/kg	420	100	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
8. 4,4'-DDE	U		µg/kg	83	100	01/17/18	PS18A17B	01/18/18	SF18A18A	BDA
9. 4,4'-DDT	U		µg/kg	83	100	01/17/18	PS18A17B	01/18/18	SF18A18A	BDA
10. Dieldrin	1900		µg/kg	83	100	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-033

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-6_0-1	Chain of Custody: 162119
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 11:45

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-033** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-6_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	U		µg/kg	83	100	01/17/18	PS18A17B	01/18/18	SF18A18A	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

Organochlorine Herbicides Aliquot ID: **82744-033** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-6_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/18/18	PS18A18E	01/19/18	SC18A19A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-034

Order: 82744
 Page: 96 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-37_7-12	Chain of Custody: 162119
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Ground Water	Collect Time: 12:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Michigan 10 Elements by ICP/MS, Total Recoverable Aliquot ID: **82744-034A** Matrix: **Ground Water**
 Method: **EPA 3005A (Total Recoverable)/EPA 6020A** Description: **SB-37_7-12**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	U		µg/L	5.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
2. Barium	U		µg/L	100	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
3. Cadmium	U		µg/L	1.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
4. Chromium	U		µg/L	10	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
5. Copper	4.1		µg/L	4.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
6. Lead	U		µg/L	3.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
7. Selenium	U		µg/L	5.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
8. Silver	U		µg/L	0.20	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
9. Zinc	U		µg/L	50	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH

Mercury by CVAAS, Total Aliquot ID: **82744-034A** Matrix: **Ground Water**
 Method: **EPA 7470A** Description: **SB-37_7-12**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/L	0.20	1.0	01/18/18	PM18A18A	01/18/18	M618A18A	NRV

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: **82744-034C** Matrix: **Ground Water**
 Method: **EPA 5030B/EPA 8260B** Description: **SB-37_7-12**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 2. Acrylonitrile	U		µg/L	2.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
3. Benzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
4. Bromobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
5. Bromochloromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
6. Bromodichloromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
7. Bromoform	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
8. Bromomethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
9. 2-Butanone	U		µg/L	25	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
10. n-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
11. sec-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
12. tert-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
13. Carbon Disulfide	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
14. Carbon Tetrachloride	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
15. Chlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

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Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-37_7-12	Chain of Custody: 162119
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Ground Water	Collect Time: 12:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS
Method: EPA 5030B/EPA 8260B

Aliquot ID: 82744-034C **Matrix: Ground Water**
Description: SB-37_7-12

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
16. Chloroethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
17. Chloroform	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
18. Chloromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
19. 2-Chlorotoluene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
20. Dibromochloromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
22. Dibromomethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
23. 1,2-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
24. 1,3-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
25. 1,4-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
26. Dichlorodifluoromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
27. 1,1-Dichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
28. 1,2-Dichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
29. 1,1-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
30. cis-1,2-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
31. trans-1,2-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
32. 1,2-Dichloropropane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
33. cis-1,3-Dichloropropene	U		µg/L	0.50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
34. trans-1,3-Dichloropropene	U		µg/L	0.50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
35. Ethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
36. Ethylene Dibromide	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
37. 2-Hexanone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
38. Isopropylbenzene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
39. Methylene Chloride	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
40. 4-Methyl-2-pentanone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
41. MTBE	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
42. Naphthalene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
43. n-Propylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
44. Styrene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
45. 1,1,1,2-Tetrachloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
46. 1,1,2,2-Tetrachloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
47. Tetrachloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
48. Toluene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
49. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
50. 1,1,1-Trichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
51. 1,1,2-Trichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
52. Trichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-034

Order: 82744
Page: 98 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-37_7-12	Chain of Custody: 162119
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Ground Water	Collect Time: 12:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS
Method: EPA 5030B/EPA 8260B

Aliquot ID: 82744-034C **Matrix: Ground Water**
Description: SB-37_7-12

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
53. Trichlorofluoromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
54. 1,2,3-Trichloropropane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 55. 1,2,3-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
56. 1,2,4-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
57. 1,3,5-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
58. Vinyl Chloride	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
59. m&p-Xylene	U		µg/L	2.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
60. o-Xylene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 61. Xylenes	U		µg/L	3.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3510C/EPA 8270C

Aliquot ID: 82744-034 **Matrix: Ground Water**
Description: SB-37_7-12

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/L	5.0	1.1	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
2. Acenaphthylene (SIM)	U		µg/L	5.0	1.1	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
3. Anthracene (SIM)	U		µg/L	5.0	1.1	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
4. Benzo(a)anthracene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
5. Benzo(a)pyrene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
6. Benzo(b)fluoranthene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
7. Benzo(ghi)perylene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
8. Benzo(k)fluoranthene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
9. Chrysene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
10. Dibenzo(a,h)anthracene (SIM)	U		µg/L	2.0	1.1	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
11. Fluoranthene (SIM)	U		µg/L	1.0	1.1	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
12. Fluorene (SIM)	U		µg/L	5.0	1.1	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/L	2.0	1.1	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
14. 2-Methylnaphthalene (SIM)	U		µg/L	5.0	1.1	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
15. Phenanthrene (SIM)	U		µg/L	2.0	1.1	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
16. Pyrene (SIM)	U		µg/L	5.0	1.1	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-035

Order: 82744
 Page: 99 of 167
 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-7_0-1** Chain of Custody: **162119**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/11/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **12:20**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-035** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-7_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	18		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-035** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-7_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	3200		µg/kg	100	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	36000		µg/kg	1000	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-035** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-7_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	140		µg/kg	50	9.2	01/19/18	PM18A19B	01/19/18	M618A19A	NRV

Organochlorine Pesticides Aliquot ID: **82744-035** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-7_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
6. Chlordane	U		µg/kg	25	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
8. 4,4'-DDE	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
9. 4,4'-DDT	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
10. Dieldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-035

Order: 82744
Page: 100 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-7_0-1	Chain of Custody: 162119
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 12:20

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-035** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-7_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

Organochlorine Herbicides Aliquot ID: **82744-035** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-7_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-036

Order: 82744
 Page: 101 of 167
 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-8_0-1** Chain of Custody: **162119**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/11/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **12:32**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-036** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-8_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-036** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-8_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	2600		µg/kg	100	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	28000		µg/kg	1000	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-036** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-8_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	140		µg/kg	50	9.1	01/19/18	PM18A19B	01/19/18	M618A19A	NRV

Organochlorine Pesticides Aliquot ID: **82744-036** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-8_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
6. Chlordane	U		µg/kg	25	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
8. 4,4'-DDE	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
9. 4,4'-DDT	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
10. Dieldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-036

Order: 82744
 Page: 102 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-8_0-1	Chain of Custody: 162119
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 12:32

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-036** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-8_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

Organochlorine Herbicides Aliquot ID: **82744-036** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-8_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-037

Order: 82744
 Page: 103 of 167
 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-9_0-1** Chain of Custody: **162119**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/11/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **12:41**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-037** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-9_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	18		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-037** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-9_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	7000		µg/kg	100	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	21000		µg/kg	1000	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-037** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-9_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	85		µg/kg	50	9.3	01/19/18	PM18A19B	01/19/18	M618A19A	NRV

Organochlorine Pesticides Aliquot ID: **82744-037** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-9_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
6. Chlordane	U		µg/kg	25	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
8. 4,4'-DDE	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
9. 4,4'-DDT	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
10. Dieldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-037

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-9_0-1	Chain of Custody: 162119
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 12:41

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-037** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-9_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

Organochlorine Herbicides Aliquot ID: **82744-037** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-9_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-038

Order: 82744
 Page: 105 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-10_0-1	Chain of Custody: 162119
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 12:48

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-038** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-10_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	17		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-038** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-10_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	3600		µg/kg	100	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	16000		µg/kg	1000	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-038** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-10_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	130		µg/kg	50	9.0	01/19/18	PM18A19B	01/19/18	M618A19A	NRV

Organochlorine Pesticides Aliquot ID: **82744-038** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-10_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
6. Chlordane	U		µg/kg	25	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
8. 4,4'-DDE	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
9. 4,4'-DDT	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
10. Dieldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-038

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-10_0-1	Chain of Custody: 162119
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 12:48

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-038** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-10_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT

Organochlorine Herbicides Aliquot ID: **82744-038** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-10_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-039

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-11_0-1	Chain of Custody: 162114
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 12:55

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-039** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-11_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	19		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-039** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-11_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	330000		µg/kg	1000	200	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	1100000		µg/kg	1000	200	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-039** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-11_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	120000		µg/kg	4400	1800	01/19/18	PM18A19B	01/22/18	M618A22A	JLH

Organochlorine Pesticides Aliquot ID: **82744-039** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-11_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
6. Chlordane	2700		µg/kg	210	50	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
8. 4,4'-DDE	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
9. 4,4'-DDT	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
10. Dieldrin	1100		µg/kg	41	50	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-039

Order: 82744
Page: 108 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-11_0-1	Chain of Custody: 162114
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 12:55

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-039** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-11_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	88		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

Organochlorine Herbicides Aliquot ID: **82744-039** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-11_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-040

Order: 82744
Page: 109 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-12_0-1	Chain of Custody: 162114
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:05

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-040** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-12_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	18		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-040** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-12_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	100000		µg/kg	500	100	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	380000		µg/kg	1000	100	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-040** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-12_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	67000		µg/kg	2100	850	01/19/18	PM18A19B	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-040** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-12_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	32		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
6. Chlordane	5600		µg/kg	210	50	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
8. 4,4'-DDE	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
9. 4,4'-DDT	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
10. Dieldrin	2700		µg/kg	200	250	01/17/18	PS18A17B	01/22/18	SF18A22A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-040

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-12_0-1	Chain of Custody: 162114
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:05

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-040** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-12_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	90		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

Organochlorine Herbicides Aliquot ID: **82744-040** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-12_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-041

Order: 82744
 Page: 111 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-19_0-1	Chain of Custody: 162114
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:25

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-041** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-19_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	21		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-041** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-19_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	7700		µg/kg	100	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	30000		µg/kg	1000	20	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-041** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-19_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	580		µg/kg	50	9.2	01/19/18	PM18A19B	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-041** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-19_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
6. Chlordane	U		µg/kg	25	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
8. 4,4'-DDE	23		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
9. 4,4'-DDT	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
10. Dieldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-041

Order: 82744
 Page: 112 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-19_0-1	Chain of Custody: 162114
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:25

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-041** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-19_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17A	TKT

Organochlorine Herbicides Aliquot ID: **82744-041** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-19_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-042

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-20_0-1	Chain of Custody: 162114
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-042** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-20_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	24		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-042** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-20_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	150000		µg/kg	1000	200	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	640000		µg/kg	1000	200	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-042** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-20_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	130000		µg/kg	4800	1800	01/19/18	PM18A19B	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-042** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-20_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
6. Chlordane	12000		µg/kg	450	100	01/17/18	PS18A17B	01/19/18	SF18A19A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
8. 4,4'-DDE	160		µg/kg	44	50	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
9. 4,4'-DDT	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
10. Dieldrin	1100		µg/kg	44	50	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-042

Order: 82744
 Page: 114 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-20_0-1	Chain of Custody: 162114
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: 82744-042 Matrix: Soil/Solid
Method: EPA 3546/EPA 8081B Description: SB-20_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	160		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT

Organochlorine Herbicides Aliquot ID: 82744-042 Matrix: Soil/Solid
Method: EPA 8151A Description: SB-20_0-1

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U	G+	µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U	G+	µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U	G+	µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U	G+	µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U	G+	µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U	G+	µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U	G+	µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U	G+	µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-043

Order: 82744
 Page: 115 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-21_0-1	Chain of Custody: 162114
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:46

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-043** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-21_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	20		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-043** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-21_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	130000		µg/kg	500	100	01/18/18	PT18A18B	01/19/18	T418A19A	JLH
2. Lead	310000		µg/kg	1000	100	01/18/18	PT18A18B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-043** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-21_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	160000		µg/kg	4600	1800	01/19/18	PM18A19B	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-043** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-21_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
2. alpha-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
3. beta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
4. delta-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
5. gamma-BHC	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
6. Chlordane	6200		µg/kg	210	50	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
8. 4,4'-DDE	85		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
9. 4,4'-DDT	U		µg/kg	46	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
10. Dieldrin	1200		µg/kg	42	50	01/17/18	PS18A17B	01/18/18	SF18A18A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
12. Endosulfan II	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
14. Endrin	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
16. Heptachlor	U		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-043

Order: 82744
Page: 116 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-21_0-1	Chain of Custody: 162114
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:46

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-043** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-21_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	130		µg/kg	20	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
18. Methoxychlor	U		µg/kg	50	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT
19. Toxaphene	U		µg/kg	170	5.0	01/17/18	PS18A17B	01/17/18	SF18A17B	TKT

Organochlorine Herbicides Aliquot ID: **82744-043** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-21_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-044

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-18_0-1	Chain of Custody: 162114
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:56

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-044** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-18_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	21		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-044** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-18_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	11000		µg/kg	100	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	13000		µg/kg	1000	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-044** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-18_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	100		µg/kg	50	8.5	01/19/18	PM18A19B	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-044** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-18_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
8. 4,4'-DDE	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-044

Order: 82744
 Page: 118 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-18_0-1	Chain of Custody: 162114
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:56

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-044** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-18_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-044** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-18_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-045

Order: 82744
 Page: 119 of 167
 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-17_0-1** Chain of Custody: **162114**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/11/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **14:00**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-045** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-17_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	26		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-045** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-17_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	14000		µg/kg	100	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	49000		µg/kg	1000	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-045** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-17_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	12000		µg/kg	260	96	01/19/18	PM18A19B	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-045** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-17_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
6. Chlordane	740		µg/kg	110	25	01/18/18	PS18A18C	01/20/18	SF18A20B	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
8. 4,4'-DDE	48		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
9. 4,4'-DDT	25		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
10. Dieldrin	160		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-045

Order: 82744
 Page: 120 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-17_0-1	Chain of Custody: 162114
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-045** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-17_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-045** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-17_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-046

Order: 82744
 Page: 121 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-16_0-1	Chain of Custody: 162114
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-046** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-16_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	23		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-046** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-16_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	36000		µg/kg	100	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	83000		µg/kg	1000	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-046** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-16_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	27000		µg/kg	1100	420	01/19/18	PM18A19B	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-046** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-16_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
6. Chlordane	3100		µg/kg	110	25	01/18/18	PS18A18C	01/19/18	SF18A19A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
8. 4,4'-DDE	72		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
10. Dieldrin	1300		µg/kg	87	100	01/18/18	PS18A18C	01/22/18	SF18A22A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-046

Order: 82744
 Page: 122 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-16_0-1	Chain of Custody: 162114
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-046** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-16_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-046** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-16_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-047

Order: 82744
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 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-15_0-1** Chain of Custody: **162114**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/11/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **14:20**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-047** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-15_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	20		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-047** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-15_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	6200		µg/kg	100	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	14000		µg/kg	1000	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-047** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-15_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	300	*	µg/kg	50	8.8	01/19/18	PM18A19C	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-047** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-15_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
8. 4,4'-DDE	61		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-047

Order: 82744
 Page: 124 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-15_0-1	Chain of Custody: 162114
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:20

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-047** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-15_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-047** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-15_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-048

Order: 82744
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 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-15_3-4** Chain of Custody: **162114**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/11/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **14:24**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-048** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-15_3-4**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	19		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-048** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-15_3-4**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	19000		µg/kg	100	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	5000		µg/kg	1000	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-048** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-15_3-4**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/kg	50	9.6	01/19/18	PM18A19C	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-048** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-15_3-4**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
8. 4,4'-DDE	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-048

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-15_3-4	Chain of Custody: 162114
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:24

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-048** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-15_3-4**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-048** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-15_3-4**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-049

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-14_0-1	Chain of Custody: 162113
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:28

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-049** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-14_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	18		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-049** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-14_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	5700		µg/kg	100	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	48000		µg/kg	1000	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-049** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-14_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	120		µg/kg	50	8.8	01/19/18	PM18A19C	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-049** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-14_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
8. 4,4'-DDE	54		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
9. 4,4'-DDT	45		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-049

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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-14_0-1	Chain of Custody: 162113
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:28

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-049** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-14_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/18/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-049** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-14_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-050

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 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-13_0-1** Chain of Custody: **162113**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/11/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **14:41**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-050** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-13_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-050** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-13_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	5700		µg/kg	100	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	26000		µg/kg	1000	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-050** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-13_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	290		µg/kg	50	9.3	01/19/18	PM18A19C	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-050** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-13_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
8. 4,4'-DDE	45		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
9. 4,4'-DDT	31		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-050

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-13_0-1	Chain of Custody: 162113
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:41

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-050** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-13_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-050** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-13_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-051

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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-22_0-1	Chain of Custody: 162113
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:55

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-051** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-22_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	13		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-051** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-22_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	2800		µg/kg	100	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	9100		µg/kg	1000	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-051** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-22_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/kg	50	9.3	01/19/18	PM18A19C	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-051** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-22_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
8. 4,4'-DDE	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-051

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-22_0-1	Chain of Custody: 162113
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:55

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-051** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-22_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-051** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-22_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-052

Order: 82744
 Page: 133 of 167
 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **SB-23_0-1** Chain of Custody: **162113**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/11/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **15:09**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-052** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **SB-23_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-052** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-23_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	2100		µg/kg	100	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	13000		µg/kg	1000	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-052** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **SB-23_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/kg	50	9.6	01/19/18	PM18A19C	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-052** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **SB-23_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
8. 4,4'-DDE	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-052

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-23_0-1	Chain of Custody: 162113
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 15:09

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-052** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-23_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-052** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-23_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-053

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-25_0-1	Chain of Custody: 162113
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 08:06

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-053** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-25_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	17		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-053** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-25_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	6100		µg/kg	100	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	34000		µg/kg	1000	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-053** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-25_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	380		µg/kg	50	8.7	01/19/18	PM18A19C	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-053** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-25_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
8. 4,4'-DDE	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-053

Order: 82744
Page: 136 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-25_0-1	Chain of Custody: 162113
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 08:06

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-053** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-25_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-053** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-25_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. 2,4-D	U		µg/kg	200	1.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	1.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	1.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	1.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	1.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	1.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	1.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	1.0	01/22/18	PS18A22B	01/23/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-054

Order: 82744
 Page: 137 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-24_0-1	Chain of Custody: 162113
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 08:12

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-054** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-24_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	17		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-054** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-24_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	19000		µg/kg	100	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	56000		µg/kg	1000	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-054** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-24_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	9700		µg/kg	220	93	01/19/18	PM18A19C	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-054** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-24_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
8. 4,4'-DDE	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-054

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-24_0-1	Chain of Custody: 162113
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 08:12

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-054** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-24_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-054** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-24_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/22/18	PS18A22B	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-055

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-26_0-1	Chain of Custody: 162113
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 08:17

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-055** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-26_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	16		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-055** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-26_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	6300		µg/kg	100	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	30000		µg/kg	1000	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-055** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-26_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	380		µg/kg	50	9.1	01/19/18	PM18A19C	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-055** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-26_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
8. 4,4'-DDE	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-055

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-26_0-1	Chain of Custody: 162113
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 08:17

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-055** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-26_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-055** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-26_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-056

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-28_0-1	Chain of Custody: 162113
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 08:22

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-056** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-28_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	19		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-056** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-28_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	13000		µg/kg	100	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	41000		µg/kg	1000	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-056** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-28_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	1500		µg/kg	50	17	01/19/18	PM18A19C	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-056** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-28_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
8. 4,4'-DDE	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-056

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-28_0-1	Chain of Custody: 162113
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 08:22

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-056** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-28_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-056** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-28_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-057

Order: 82744
 Page: 143 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-27_0-1	Chain of Custody: 162113
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 08:31

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-057** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-27_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	13		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-057** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-27_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	3100		µg/kg	100	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	19000		µg/kg	1000	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-057** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-27_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	77		µg/kg	50	8.7	01/19/18	PM18A19C	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-057** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-27_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
8. 4,4'-DDE	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-057

Order: 82744
Page: 144 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-27_0-1	Chain of Custody: 162113
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 08:31

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-057** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-27_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-057** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-27_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U	*	µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-058

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-29_0-1	Chain of Custody: 162113
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 08:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-058** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-29_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-058** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-29_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	3400		µg/kg	100	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	8400		µg/kg	1000	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-058** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-29_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/kg	50	9.7	01/19/18	PM18A19C	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-058** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-29_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
8. 4,4'-DDE	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-058

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-29_0-1	Chain of Custody: 162113
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 08:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-058** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **SB-29_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-058** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **SB-29_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-059

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-30_0-1	Chain of Custody: 160022
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-059** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-30_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	21		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-059** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-30_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	78000		µg/kg	100	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	310000		µg/kg	1000	100	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-059** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-30_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	51000		µg/kg	2400	950	01/19/18	PM18A19C	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-059** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-30_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
3. beta-BHC	41		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
6. Chlordane	12000		µg/kg	430	100	01/18/18	PS18A18C	01/19/18	SF18A19A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
8. 4,4'-DDE	130		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
10. Dieldrin	2800		µg/kg	210	250	01/18/18	PS18A18C	01/22/18	SF18A22A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
15. Endrin Aldehyde	26		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-059

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-30_0-1	Chain of Custody: 160022
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:00

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-059** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-30_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	78		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-059** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-30_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-060

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-31_0-1	Chain of Custody: 160022
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:14

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-060** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-31_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	21		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-060** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-31_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	270000		µg/kg	1000	200	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	1200000		µg/kg	1000	200	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-060** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **SB-31_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	71000		µg/kg	2200	860	01/19/18	PM18A19C	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-060** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-31_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
6. Chlordane	5200		µg/kg	430	100	01/18/18	PS18A18C	01/19/18	SF18A19A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
8. 4,4'-DDE	79		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
9. 4,4'-DDT	63		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
10. Dieldrin	2100		µg/kg	84	100	01/18/18	PS18A18C	01/19/18	SF18A19A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-060

Order: 82744
 Page: 150 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-31_0-1	Chain of Custody: 160022
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:14

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-060** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **SB-31_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	57		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-060** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **SB-31_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-061

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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: Dup-01	Chain of Custody: 162117
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: NA

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-061** Matrix: **Soil/Solid**
Method: **ASTM D2216-10** Description: **Dup-01**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Michigan 10 Elements by ICP/MS Aliquot ID: **82744-061** Matrix: **Soil/Solid**
Method: **EPA 0200.2/EPA 6020A** Description: **Dup-01**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	11000		µg/kg	100	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
2. Barium	49000		µg/kg	1000	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
3. Cadmium	350		µg/kg	50	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
4. Chromium	18000		µg/kg	500	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
5. Copper	12000		µg/kg	1000	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
6. Lead	48000		µg/kg	1000	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
7. Selenium	390		µg/kg	200	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
8. Silver	U		µg/kg	100	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH
9. Zinc	64000		µg/kg	1000	20	01/19/18	PT18A19B	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-061** Matrix: **Soil/Solid**
Method: **EPA 7471B** Description: **Dup-01**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	110		µg/kg	50	9.1	01/19/18	PM18A19C	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-061** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **Dup-01**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
8. 4,4'-DDE	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-061

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: Dup-01	Chain of Custody: 162117
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: NA

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-061** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **Dup-01**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18A	01/18/18	SF18A18B	BDA

Polychlorinated Biphenyls (PCBs) Aliquot ID: **82744-061** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8082A** Description: **Dup-01**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aroclor-1016	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/19/18	SA18A19A	TKT
2. Aroclor-1221	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/19/18	SA18A19A	TKT
3. Aroclor-1232	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/19/18	SA18A19A	TKT
4. Aroclor-1242	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/19/18	SA18A19A	TKT
5. Aroclor-1248	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/19/18	SA18A19A	TKT
6. Aroclor-1254	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/19/18	SA18A19A	TKT
7. Aroclor-1260	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/19/18	SA18A19A	TKT
‡ 8. Aroclor-1262	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/19/18	SA18A19A	TKT
‡ 9. Aroclor-1268	U		µg/kg	100	5.0	01/18/18	PS18A18A	01/19/18	SA18A19A	TKT

Organochlorine Herbicides Aliquot ID: **82744-061** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **Dup-01**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK

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Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **Dup-01** Chain of Custody: **162117**
Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/10/18**
Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **NA**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Herbicides
Method: EPA 8151A

Aliquot ID: 82744-061 **Matrix: Soil/Solid**
Description: Dup-01

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 7,2,4,5-T	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 8,2,4,5-TP	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-061B **Matrix: Soil/Solid**
Description: Dup-01

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U	H	µg/kg	1000	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 2. Acrylonitrile	U	H	µg/kg	130	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
3. Benzene	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
4. Bromobenzene	U	H	µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
5. Bromochloromethane	U	H	µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
6. Bromodichloromethane	U	H	µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
7. Bromoform	U	H	µg/kg	130	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
8. Bromomethane	U	H	µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
9. 2-Butanone	U	H	µg/kg	750	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
10. n-Butylbenzene	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
11. sec-Butylbenzene	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
12. tert-Butylbenzene	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
13. Carbon Disulfide	U	H	µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
14. Carbon Tetrachloride	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
15. Chlorobenzene	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
16. Chloroethane	U	H	µg/kg	320	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
17. Chloroform	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
18. Chloromethane	U	H	µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
19. 2-Chlorotoluene	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
20. Dibromochloromethane	U	H	µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U	H	µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
22. Dibromomethane	U	H	µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
23. 1,2-Dichlorobenzene	U	H	µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
24. 1,3-Dichlorobenzene	U	H	µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
25. 1,4-Dichlorobenzene	U	H	µg/kg	130	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
26. Dichlorodifluoromethane	U	H	µg/kg	320	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
27. 1,1-Dichloroethane	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
28. 1,2-Dichloroethane	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP
29. 1,1-Dichloroethene	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-061

Order: 82744
Page: 154 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: Dup-01	Chain of Custody: 162117
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: NA

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-061B **Matrix: Soil/Solid**
Description: Dup-01

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis			Init.
						P. Date	P. Batch	A. Date	A. Batch		
30. cis-1,2-Dichloroethene	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
31. trans-1,2-Dichloroethene	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
32. 1,2-Dichloropropane	U	H	µg/kg	63	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
33. cis-1,3-Dichloropropene	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
34. trans-1,3-Dichloropropene	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
35. Ethylbenzene	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
36. Ethylene Dibromide	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
37. 2-Hexanone	U	H	µg/kg	2500	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
38. Isopropylbenzene	U	H	µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
39. Methylene Chloride	U	H	µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
40. 4-Methyl-2-pentanone	U	H	µg/kg	2500	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
41. MTBE	U	H	µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
42. Naphthalene	U	H	µg/kg	330	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
43. n-Propylbenzene	U	H	µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
44. Styrene	U	H	µg/kg	63	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
45. 1,1,1,2-Tetrachloroethane	U	H	µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
46. 1,1,2,2-Tetrachloroethane	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
47. Tetrachloroethene	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
48. Toluene	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
49. 1,2,4-Trichlorobenzene	U	H	µg/kg	250	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
50. 1,1,1-Trichloroethane	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
51. 1,1,2-Trichloroethane	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
52. Trichloroethene	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
53. Trichlorofluoromethane	U	H	µg/kg	130	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
54. 1,2,3-Trichloropropane	U	H	µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
‡ 55. 1,2,3-Trimethylbenzene	U	H	µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
56. 1,2,4-Trimethylbenzene	U	H	µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
57. 1,3,5-Trimethylbenzene	U	H	µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
58. Vinyl Chloride	U	H	µg/kg	40	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
59. m&p-Xylene	U	H	µg/kg	100	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
60. o-Xylene	U	H	µg/kg	50	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	
‡ 61. Xylenes	U	H	µg/kg	150	1.0	01/16/18	VI18A16B	01/17/18	VI18A16B	MJP	

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-061

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: Dup-01	Chain of Custody: 162117
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: NA

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Polynuclear Aromatic Hydrocarbons (PNAs) Aliquot ID: **82744-061** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8270C** Description: **Dup-01**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
2. Acenaphthylene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
3. Anthracene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
4. Benzo(a)anthracene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
5. Benzo(a)pyrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
6. Benzo(b)fluoranthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
7. Benzo(ghi)perylene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
8. Benzo(k)fluoranthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
9. Chrysene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
10. Dibenzo(a,h)anthracene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
11. Fluoranthene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
12. Fluorene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
14. 2-Methylnaphthalene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
15. Phenanthrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP
16. Pyrene (SIM)	U		µg/kg	330	20	01/18/18	PS18A18A	01/19/18	S518A18B	GJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-062

Order: 82744
Page: 156 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: Dup-01_GW	Chain of Custody: 162117
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Ground Water	Collect Time: NA

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Michigan 10 Elements by ICP/MS, Total Recoverable Aliquot ID: **82744-062A** Matrix: **Ground Water**
Method: EPA 3005A (Total Recoverable)/EPA 6020A Description: **Dup-01_GW**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	U		µg/L	5.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
2. Barium	U		µg/L	100	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
3. Cadmium	U		µg/L	1.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
4. Chromium	U		µg/L	10	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
5. Copper	U		µg/L	4.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
6. Lead	U		µg/L	3.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
7. Selenium	U		µg/L	5.0	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
8. Silver	U		µg/L	0.20	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH
9. Zinc	U		µg/L	50	10	01/19/18	PT18A19A	01/19/18	T418A19A	JLH

Mercury by CVAAS, Total Aliquot ID: **82744-062A** Matrix: **Ground Water**
Method: EPA 7470A Description: **Dup-01_GW**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	U		µg/L	0.20	1.0	01/18/18	PM18A18A	01/18/18	M618A18A	NRV

Volatile Organic Compounds (VOCs) by GC/MS Aliquot ID: **82744-062C** Matrix: **Ground Water**
Method: EPA 5030B/EPA 8260B Description: **Dup-01_GW**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 2. Acrylonitrile	U		µg/L	2.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
3. Benzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
4. Bromobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
5. Bromochloromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
6. Bromodichloromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
7. Bromoform	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
8. Bromomethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
9. 2-Butanone	U		µg/L	25	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
10. n-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
11. sec-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
12. tert-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
13. Carbon Disulfide	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
14. Carbon Tetrachloride	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
15. Chlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-062

Order: 82744
Page: 157 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: Dup-01_GW	Chain of Custody: 162117
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Ground Water	Collect Time: NA

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS
Method: EPA 5030B/EPA 8260B

Aliquot ID: 82744-062C **Matrix: Ground Water**
Description: Dup-01_GW

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
16. Chloroethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
17. Chloroform	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
18. Chloromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
19. 2-Chlorotoluene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
20. Dibromochloromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
22. Dibromomethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
23. 1,2-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
24. 1,3-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
25. 1,4-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
26. Dichlorodifluoromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
27. 1,1-Dichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
28. 1,2-Dichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
29. 1,1-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
30. cis-1,2-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
31. trans-1,2-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
32. 1,2-Dichloropropane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
33. cis-1,3-Dichloropropene	U		µg/L	0.50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
34. trans-1,3-Dichloropropene	U		µg/L	0.50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
35. Ethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
36. Ethylene Dibromide	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
37. 2-Hexanone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
38. Isopropylbenzene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
39. Methylene Chloride	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
40. 4-Methyl-2-pentanone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
41. MTBE	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
42. Naphthalene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
43. n-Propylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
44. Styrene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
45. 1,1,1,2-Tetrachloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
46. 1,1,2,2-Tetrachloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
47. Tetrachloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
48. Toluene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
49. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
50. 1,1,1-Trichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
51. 1,1,2-Trichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
52. Trichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-062

Order: 82744
 Page: 158 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: Dup-01_GW	Chain of Custody: 162117
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Ground Water	Collect Time: NA

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS
Method: EPA 5030B/EPA 8260B

Aliquot ID: 82744-062C **Matrix: Ground Water**
Description: Dup-01_GW

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
53. Trichlorofluoromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
54. 1,2,3-Trichloropropane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 55. 1,2,3-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
56. 1,2,4-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
57. 1,3,5-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
58. Vinyl Chloride	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
59. m&p-Xylene	U		µg/L	2.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
60. o-Xylene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 61. Xylenes	U		µg/L	3.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

Polynuclear Aromatic Hydrocarbons (PNAs)
Method: EPA 3510C/EPA 8270C

Aliquot ID: 82744-062 **Matrix: Ground Water**
Description: Dup-01_GW

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acenaphthene (SIM)	U		µg/L	5.0	1.2	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
2. Acenaphthylene (SIM)	U		µg/L	5.0	1.2	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
3. Anthracene (SIM)	U		µg/L	5.0	1.2	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
4. Benzo(a)anthracene (SIM)	U		µg/L	1.0	1.2	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
5. Benzo(a)pyrene (SIM)	U		µg/L	1.0	1.2	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
6. Benzo(b)fluoranthene (SIM)	U		µg/L	1.0	1.2	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
7. Benzo(ghi)perylene (SIM)	U		µg/L	1.0	1.2	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
8. Benzo(k)fluoranthene (SIM)	U		µg/L	1.0	1.2	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
9. Chrysene (SIM)	U		µg/L	1.0	1.2	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
10. Dibenzo(a,h)anthracene (SIM)	U		µg/L	2.0	1.2	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
11. Fluoranthene (SIM)	U		µg/L	1.0	1.2	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
12. Fluorene (SIM)	U		µg/L	5.0	1.2	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
13. Indeno(1,2,3-cd)pyrene (SIM)	U		µg/L	2.0	1.2	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
14. 2-Methylnaphthalene (SIM)	U		µg/L	5.0	1.2	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
15. Phenanthrene (SIM)	U		µg/L	2.0	1.2	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT
16. Pyrene (SIM)	U		µg/L	5.0	1.2	01/17/18	PS18A17D	01/18/18	SG18A17B	TKT

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-063

Order: 82744
 Page: 159 of 167
 Date: 01/25/18

Client Identification: **Soil and Materials Engineers, Inc. - Plymouth** Sample Description: **Dup-02** Chain of Custody: **162117**
 Client Project Name: **Rogell GC (077832.00.001.006)** Sample No: Collect Date: **01/11/18**
 Client Project No: **077832.00.001.006** Sample Matrix: **Soil/Solid** Collect Time: **NA**

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-063** Matrix: **Soil/Solid**
Method: ASTM D2216-10 Description: **Dup-02**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-063** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **Dup-02**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Arsenic	210000		µg/kg	500	100	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	400000		µg/kg	1000	100	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-063** Matrix: **Soil/Solid**
Method: EPA 7471B Description: **Dup-02**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Mercury	91000		µg/kg	2000	880	01/19/18	PM18A19C	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-063** Matrix: **Soil/Solid**
Method: EPA 3546/EPA 8081B Description: **Dup-02**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
6. Chlordane	3100		µg/kg	200	50	01/18/18	PS18A18C	01/19/18	SF18A19A	TKT
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
8. 4,4'-DDE	30		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
10. Dieldrin	1200		µg/kg	77	100	01/18/18	PS18A18C	01/22/18	SF18A22A	TKT
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-063

Order: 82744
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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: Dup-02	Chain of Custody: 162117
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: NA

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-063** Matrix: **Soil/Solid**
Method: **EPA 3546/EPA 8081B** Description: **Dup-02**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	46		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-063** Matrix: **Soil/Solid**
Method: **EPA 8151A** Description: **Dup-02**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-064

Order: 82744
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 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: Dup-03	Chain of Custody: 162117
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: NA

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-064** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **Dup-03**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. Percent Moisture (Water Content)	16		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Trace Elements by ICP/MS Aliquot ID: **82744-064** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **Dup-03**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	3300		µg/kg	100	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH
2. Lead	11000		µg/kg	1000	20	01/18/18	PT18A18C	01/19/18	T418A19A	JLH

Mercury by CVAAS Aliquot ID: **82744-064** Matrix: **Soil/Solid**
 Method: **EPA 7471B** Description: **Dup-03**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Mercury	63		µg/kg	50	8.6	01/19/18	PM18A19C	01/19/18	M618A19B	NRV

Organochlorine Pesticides Aliquot ID: **82744-064** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **Dup-03**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Aldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
2. alpha-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
3. beta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
4. delta-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
5. gamma-BHC	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
6. Chlordane	U		µg/kg	25	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
7. 4,4'-DDD	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
8. 4,4'-DDE	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
9. 4,4'-DDT	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
10. Dieldrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
11. Endosulfan I	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
12. Endosulfan II	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
13. Endosulfan Sulfate	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
14. Endrin	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
15. Endrin Aldehyde	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
16. Heptachlor	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-064

Order: 82744
 Page: 162 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: Dup-03	Chain of Custody: 162117
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: NA

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Organochlorine Pesticides Aliquot ID: **82744-064** Matrix: **Soil/Solid**
 Method: **EPA 3546/EPA 8081B** Description: **Dup-03**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
17. Heptachlor Epoxide	U		µg/kg	20	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
18. Methoxychlor	U		µg/kg	50	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA
19. Toxaphene	U		µg/kg	170	5.0	01/18/18	PS18A18C	01/19/18	SF18A18C	BDA

Organochlorine Herbicides Aliquot ID: **82744-064** Matrix: **Soil/Solid**
 Method: **EPA 8151A** Description: **Dup-03**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
‡ 1. 2,4-D	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 2. Dalapon	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 3. 2,4-DB	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 4. Dicamba	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 5. Dichlorprop	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 6. Dinoseb	U		µg/kg	100	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 7. 2,4,5-T	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK
‡ 8. 2,4,5-TP	U		µg/kg	200	5.0	01/23/18	PS18A23A	01/24/18	SC18A23A	RDK

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-065

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Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: Field Blank	Chain of Custody: 162117
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Blank: Field	Collect Time: 10:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS
Method: EPA 0624/EPA 8260B

Aliquot ID: 82744-065 **Matrix: Blank: Field**
Description: Field Blank

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 2. Acrylonitrile	U		µg/L	2.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
3. Benzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
4. Bromobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
5. Bromochloromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
6. Bromodichloromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
7. Bromoform	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
8. Bromomethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
9. 2-Butanone	U		µg/L	25	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
10. n-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
11. sec-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
12. tert-Butylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
13. Carbon Disulfide	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
14. Carbon Tetrachloride	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
15. Chlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
16. Chloroethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
17. Chloroform	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
18. Chloromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
19. 2-Chlorotoluene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
20. Dibromochloromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
22. Dibromomethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
23. 1,2-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
24. 1,3-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
25. 1,4-Dichlorobenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
26. Dichlorodifluoromethane	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
27. 1,1-Dichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
28. 1,2-Dichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
29. 1,1-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
30. cis-1,2-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
31. trans-1,2-Dichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
32. 1,2-Dichloropropane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
33. cis-1,3-Dichloropropene	U		µg/L	0.50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
34. trans-1,3-Dichloropropene	U		µg/L	0.50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
35. Ethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
36. Ethylene Dibromide	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
37. 2-Hexanone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-065

Order: 82744
 Page: 164 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: Field Blank	Chain of Custody: 162117
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Blank: Field	Collect Time: 10:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS
Method: EPA 0624/EPA 8260B

Aliquot ID: 82744-065 **Matrix: Blank: Field**
Description: Field Blank

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
38. Isopropylbenzene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
39. Methylene Chloride	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 40. 2-Methylnaphthalene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
41. 4-Methyl-2-pentanone	U		µg/L	50	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
42. MTBE	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
43. Naphthalene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
44. n-Propylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
45. Styrene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
46. 1,1,1,2-Tetrachloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
47. 1,1,2,2-Tetrachloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
48. Tetrachloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
49. Toluene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
50. 1,2,4-Trichlorobenzene	U		µg/L	5.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
51. 1,1,1-Trichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
52. 1,1,2-Trichloroethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
53. Trichloroethene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
54. Trichlorofluoromethane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
55. 1,2,3-Trichloropropane	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 56. 1,2,3-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
57. 1,2,4-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
58. 1,3,5-Trimethylbenzene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
59. Vinyl Chloride	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
60. m&p-Xylene	U		µg/L	2.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
61. o-Xylene	U		µg/L	1.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB
‡ 62. Xylenes	U		µg/L	3.0	1.0	01/16/18	VB18A16A	01/16/18	VB18A16A	ANB

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-066

Order: 82744
Page: 165 of 167
Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: Meth Blank	Chain of Custody: 162117
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Blank: Methanol	Collect Time: 10:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-066 **Matrix: Blank: Methanol**
Description: Meth Blank

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Acetone	U		µg/kg	1000	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 2. Acrylonitrile	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
3. Benzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
4. Bromobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
5. Bromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
6. Bromodichloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
7. Bromoform	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
8. Bromomethane	U		µg/kg	200	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
9. 2-Butanone	U		µg/kg	750	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
10. n-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
11. sec-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
12. tert-Butylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
13. Carbon Disulfide	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
14. Carbon Tetrachloride	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
15. Chlorobenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
16. Chloroethane	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
17. Chloroform	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
18. Chloromethane	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
19. 2-Chlorotoluene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
20. Dibromochloromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 21. 1,2-Dibromo-3-chloropropane (SIM)	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
22. Dibromomethane	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
23. 1,2-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
24. 1,3-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
25. 1,4-Dichlorobenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
26. Dichlorodifluoromethane	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
27. 1,1-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
28. 1,2-Dichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
29. 1,1-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
30. cis-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
31. trans-1,2-Dichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
32. 1,2-Dichloropropane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
33. cis-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
34. trans-1,3-Dichloropropene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
35. Ethylbenzene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
36. Ethylene Dibromide	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
37. 2-Hexanone	U		µg/kg	2500	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-066

Order: 82744
 Page: 166 of 167
 Date: 01/25/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: Meth Blank	Chain of Custody: 162117
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Blank: Methanol	Collect Time: 10:00

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Volatile Organic Compounds (VOCs) by GC/MS, 5035
Method: EPA 5035A/EPA 8260B

Aliquot ID: 82744-066 **Matrix: Blank: Methanol**
Description: Meth Blank

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
38. Isopropylbenzene	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
39. Methylene Chloride	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 40. 2-Methylnaphthalene	U		µg/kg	330	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
41. 4-Methyl-2-pentanone	U		µg/kg	2500	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
42. MTBE	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
43. Naphthalene	U		µg/kg	330	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
44. n-Propylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
45. Styrene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
46. 1,1,1,2-Tetrachloroethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
47. 1,1,2,2-Tetrachloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
48. Tetrachloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
49. Toluene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
50. 1,2,4-Trichlorobenzene	U		µg/kg	250	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
51. 1,1,1-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
52. 1,1,2-Trichloroethane	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
53. Trichloroethene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
54. Trichlorofluoromethane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
55. 1,2,3-Trichloropropane	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 56. 1,2,3-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
57. 1,2,4-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
58. 1,3,5-Trimethylbenzene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
59. Vinyl Chloride	U		µg/kg	40	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
60. m&p-Xylene	U		µg/kg	100	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
61. o-Xylene	U		µg/kg	50	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP
‡ 62. Xylenes	U		µg/kg	150	1.0	01/16/18	VI18A16A	01/16/18	VI18A16A	MJP

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Definitions/ Qualifiers:

- A:** Spike recovery or precision unusable due to dilution.
- B:** The analyte was detected in the associated method blank.
- E:** The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J:** The concentration is an estimated value.
- M:** Modified Method
- U:** The analyte was not detected at or above the reporting limit.
- X:** Matrix Interference has resulted in a raised reporting limit or distorted result.
- W:** Results reported on a wet-weight basis.
- *:** Value reported is outside QC limits

Exception Summary:

- *** : Duplicate analysis not within control limits.
 - F** : Recovery from the spiked aliquot failed the expected range (matrix spike or matrix spike duplicate)
 - G+** : Recovery of the associated Surrogate Compound exceeds the upper control limit. Results may be biased high.
 - H** : Hold time exceeded.
-



Accreditation Number(s):

T104704518-17-6 (TX)

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Friday, February 02, 2018

Fibertec Project Number: 82744 Supplemental
Project Identification: Rogell GC (077832.00.001.006) /077832.00.001.006
Submittal Date: 01/15/2018

Mr. Christiaan Bon
Soil and Materials Engineers, Inc. - Plymouth
43980 Plymouth Oaks
Plymouth, MI 48170

Dear Mr. Bon,

Thank you for selecting Fibertec Environmental Services as your analytical laboratory. The samples you submitted have been analyzed in accordance with NELAC standards and the results compiled in the attached report. Any exceptions to NELAC compliance are noted in the report. These results apply only to those samples submitted. Please note TO-15 samples will be disposed of 10 calendar days after the reporting date. All other samples will be disposed of 30 days after the reporting date.

If you have any questions regarding these results or if we may be of further assistance to you, please contact me at (517) 699-0345.

Sincerely,

By Emily Kennedy at 4:00 PM, Feb 02, 2018

For Daryl P. Strandbergh
Laboratory Director

Enclosures

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-002

Order: 82744
 Page: 2 of 12
 Date: 02/02/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-39_1-3	Chain of Custody: 162116
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:10

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C **Aliquot ID: 82744-002** **Matrix: Soil/Solid**
Method: ASTM D2216-10 **Description: SB-39_1-3**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	13		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Chromium, Hexavalent **Aliquot ID: 82744-002** **Matrix: Soil/Solid**
Method: EPA 3060A/EPA 7196A **Description: SB-39_1-3**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Chromium VI	U		µg/kg	2300	5.0	01/29/18	WF18A29B	01/31/18	WF18A29B	RKP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-012

Order: 82744
 Page: 3 of 12
 Date: 02/02/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-44_8-12	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Ground Water	Collect Time: 12:40

Sample Comments:

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable †: Parameter not included in NELAC Scope of Analysis.

Trace Elements by ICP/MS, Dissolved Aliquot ID: **82744-012B** Matrix: **Ground Water**
 Method: **EPA 3005A (Dissolved)/EPA 6020A** Description: **SB-44_8-12**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Arsenic	22		µg/L	5.0	10	01/30/18	PT18A30B	01/30/18	T418A30A	JLH
2. Lead	U		µg/L	3.0	10	01/30/18	PT18A30B	01/30/18	T418A30A	JLH

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-013

Order: 82744
 Page: 4 of 12
 Date: 02/02/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-45_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:20

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-013** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-45_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	14		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Lead, MDEQ Criteria Aliquot ID: **82744-013B** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-45_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Lead, Coarse Fraction	126000		µg/kg	1000	100	02/01/18	PT18B01A	02/02/18	T418B02A	JLH
2. Lead, Fine Fraction	116000		µg/kg	1000	200	02/01/18	PT18B01A	02/02/18	T418B02A	JLH
3. Lead, Total (Calculated)	125000		µg/kg	1000	1.0	NA	NA	02/02/18	NA	JLH
‡ 4. Percent Total Solids	87.2		%	0.1	1.0	NA	NA	02/02/18	NA	JLH

Chromium, Hexavalent Aliquot ID: **82744-013** Matrix: **Soil/Solid**
 Method: **EPA 3060A/EPA 7196A** Description: **SB-45_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Chromium VI	U		µg/kg	2300	5.0	01/29/18	WF18A29B	01/31/18	WF18A29B	RKP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-017

Order: 82744
 Page: 5 of 12
 Date: 02/02/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-49_0-1	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:15

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C **Aliquot ID: 82744-017** **Matrix: Soil/Solid**
Method: ASTM D2216-10 **Description: SB-49_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	12		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Chromium, Hexavalent **Aliquot ID: 82744-017** **Matrix: Soil/Solid**
Method: EPA 3060A/EPA 7196A **Description: SB-49_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Chromium VI	U	F	µg/kg	2300	5.0	01/29/18	WF18A29B	01/31/18	WF18A29B	RKP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-018

Order: 82744
 Page: 6 of 12
 Date: 02/02/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-52_1-2	Chain of Custody: 162118
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/10/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 14:30

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Water (Moisture) Content Dried at 105 ± 5°C Aliquot ID: **82744-018** Matrix: **Soil/Solid**
 Method: **ASTM D2216-10** Description: **SB-52_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
‡ 1. Percent Moisture (Water Content)	7		%	1	1.0	01/17/18	MC180117	01/18/18	MC180117	NCZ

Chromium, Hexavalent Aliquot ID: **82744-018** Matrix: **Soil/Solid**
 Method: **EPA 3060A/EPA 7196A** Description: **SB-52_1-2**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		Init.
						P. Date	P. Batch	A. Date	A. Batch	
1. Chromium VI	U		µg/kg	2200	5.0	01/29/18	WF18A29B	01/31/18	WF18A29B	RKP

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-024

Order: 82744
 Page: 7 of 12
 Date: 02/02/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-33_0-1	Chain of Custody: NA
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:55

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Lead, MDEQ Criteria Aliquot ID: **82744-024A** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-33_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Lead, Coarse Fraction	641000		µg/kg	1000	100	02/01/18	PT18B01A	02/02/18	T418B02A	JLH
2. Lead, Fine Fraction	499000		µg/kg	1000	200	02/01/18	PT18B01A	02/02/18	T418B02A	JLH
3. Lead, Total (Calculated)	631000		µg/kg	1000	1.0	NA	NA	02/02/18	NA	JLH
‡ 4. Percent Total Solids	79.2		%	0.1	1.0	NA	NA	02/02/18	NA	JLH

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-033

Order: 82744
Page: 8 of 12
Date: 02/02/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-6_0-1	Chain of Custody: NA
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 11:45

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Lead, MDEQ Criteria Aliquot ID: **82744-033A** Matrix: **Soil/Solid**
Method: EPA 0200.2/EPA 6020A Description: **SB-6_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Lead, Coarse Fraction	338000		µg/kg	1000	100	02/01/18	PT18B01A	02/02/18	T418B02A	JLH
2. Lead, Fine Fraction	253000		µg/kg	1000	200	02/01/18	PT18B01A	02/02/18	T418B02A	JLH
3. Lead, Total (Calculated)	327000		µg/kg	1000	1.0	NA	NA	02/02/18	NA	JLH
‡ 4. Percent Total Solids	80.5		%	0.1	1.0	NA	NA	02/02/18	NA	JLH

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-039

Order: 82744
 Page: 9 of 12
 Date: 02/02/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-11_0-1	Chain of Custody: NA
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 12:55

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Lead, MDEQ Criteria Aliquot ID: **82744-039A** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-11_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Lead, Coarse Fraction	1080000		µg/kg	1000	200	02/01/18	PT18B01A	02/02/18	T418B02A	JLH
2. Lead, Fine Fraction	752000		µg/kg	1000	200	02/01/18	PT18B01A	02/02/18	T418B02A	JLH
3. Lead, Total (Calculated)	1020000		µg/kg	1000	1.0	NA	NA	02/02/18	NA	JLH
‡ 4. Percent Total Solids	81.1		%	0.1	1.0	NA	NA	02/02/18	NA	JLH

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-042

Order: 82744
 Page: 10 of 12
 Date: 02/02/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-20_0-1	Chain of Custody: NA
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/11/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 13:40

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Lead, MDEQ Criteria Aliquot ID: **82744-042A** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-20_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Lead, Coarse Fraction	690000		µg/kg	1000	100	02/01/18	PT18B01A	02/02/18	T418B02A	JLH
2. Lead, Fine Fraction	257000		µg/kg	1000	200	02/01/18	PT18B01A	02/02/18	T418B02A	JLH
3. Lead, Total (Calculated)	655000		µg/kg	1000	1.0	NA	NA	02/02/18	NA	JLH
‡ 4. Percent Total Solids	76.8		%	0.1	1.0	NA	NA	02/02/18	NA	JLH

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Analytical Laboratory Report
Laboratory Project Number: 82744
Laboratory Sample Number: 82744-060

Order: 82744
 Page: 11 of 12
 Date: 02/02/18

Client Identification: Soil and Materials Engineers, Inc. - Plymouth	Sample Description: SB-31_0-1	Chain of Custody: NA
Client Project Name: Rogell GC (077832.00.001.006)	Sample No:	Collect Date: 01/12/18
Client Project No: 077832.00.001.006	Sample Matrix: Soil/Solid	Collect Time: 09:14

Sample Comments: **Soil results have been calculated and reported on a dry weight basis unless otherwise noted.**

Definitions: Q: Qualifier (see definitions at end of report) NA: Not Applicable ‡: Parameter not included in NELAC Scope of Analysis.

Lead, MDEQ Criteria Aliquot ID: **82744-060A** Matrix: **Soil/Solid**
 Method: **EPA 0200.2/EPA 6020A** Description: **SB-31_0-1**

Parameter(s)	Result	Q	Units	Reporting Limit	Dilution	Preparation		Analysis		
						P. Date	P. Batch	A. Date	A. Batch	Init.
1. Lead, Coarse Fraction	386000		µg/kg	1000	100	02/01/18	PT18B01A	02/02/18	T418B02A	JLH
2. Lead, Fine Fraction	347000		µg/kg	1000	200	02/01/18	PT18B01A	02/02/18	T418B02A	JLH
3. Lead, Total (Calculated)	379000		µg/kg	1000	1.0	NA	NA	02/02/18	NA	JLH
‡ 4. Percent Total Solids	83.8		%	0.1	1.0	NA	NA	02/02/18	NA	JLH

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Definitions/ Qualifiers:

- A:** Spike recovery or precision unusable due to dilution.
- B:** The analyte was detected in the associated method blank.
- E:** The analyte was detected at a concentration greater than the calibration range, therefore the result is estimated.
- J:** The concentration is an estimated value.
- M:** Modified Method
- U:** The analyte was not detected at or above the reporting limit.
- X:** Matrix Interference has resulted in a raised reporting limit or distorted result.
- W:** Results reported on a wet-weight basis.
- *:** Value reported is outside QC limits

Exception Summary:

- F** : Recovery from the spiked aliquot failed the expected range (matrix spike or matrix spike duplicate)



Accreditation Number(s):

T104704518-18-7 (TX)

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Case Narrative

Client: Soil and Materials Engineers, Inc.
 Project Identification: Rogell GC /077832.00.001.006

Fifty eight soil samples (including blank) and eight water samples (including blank) were collected on January 10, 2018 through January 12, 2018 and received by Fibertec, Inc. on January 15, 2018. The shipping cooler temperature was within specifications (0 – 6 °C) and the sample containers arrived without any visible signs of tampering or breakage. Containers were checked for correct pH, where appropriate, and were properly preserved as needed. Samples listed as “HOLD” were not analyzed. The remaining samples were prepared and analyzed within the required holding times. Exceptions are noted below.

Cross reference

Client ID#	Lab ID#	Matrix	Requested Tests
SB-38 1-2	82744-001	S	% Moisture, Trace Metals, Mercury, Pesticides, PCB, Herbicides, VOC, SVOC
SB-39 1-3	82744-002	S	% Moisture, Trace Metals, Mercury, Pesticides, PCB, Herbicides, VOC, SVOC
SB-40 1-2	82744-003	S	% Moisture, Trace Metals, Mercury, Pesticides, PCB, Herbicides, VOC, SVOC
SB-50 0-1	82744-004	S	% Moisture, PCB
SB-50 1-2	82744-005	S	HOLD
SB-41 10-11	82744-006	S	% Moisture, Trace Metals, Mercury, VOC, SVOC
SB-41 8-12	82744-007	W	Trace Metals, Mercury, VOC, SVOC
SB-42 10-11	82744-008	S	% Moisture, Trace Metals, Mercury, VOC, SVOC
SB-43 10-11	82744-009	S	% Moisture, Trace Metals, Mercury, VOC, SVOC
SB-43 6-10	82744-010	S	% Moisture, Trace Metals, Mercury, VOC, SVOC
SB-44 10-11	82744-011	S	% Moisture, Trace Metals, Mercury, Pesticides, PCB, Herbicides, VOC, SVOC
SB-44 8-12	82744-012	W	Trace Metals, Mercury, VOC, SVOC
SB-45 0-1	82744-013	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides, VOC, SVOC
SB-46 0-1	82744-014	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides, VOC, SVOC
SB-47 0-1	82744-015	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides, VOC, SVOC
SB-48 0-1	82744-016	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides, VOC, SVOC
SB-49 0-1	82744-017	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides, VOC, SVOC
SB-52 1-2	82744-018	S	% Moisture, Trace Metals, Mercury, VOC, SVOC
SB-51 10.5-11.5	82744-019	S	% Moisture, Trace Metals, Mercury, VOC, SVOC
MW-S	82744-020	W	HOLD
MW-N	82744-021	W	HOLD
SB-51 8-12	82744-022	W	VOC
SB-32 0-1	82744-023	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-33 0-1	82744-024	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-34 0-1	82744-025	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-35 0-1	82744-026	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-36 0-1	82744-027	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-1 0-1	82744-028	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-2 0-1	82744-029	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-3 0-1	82744-030	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-4 0-1	82744-031	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-5 0-1	82744-032	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-6 0-1	82744-033	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-37 7-12	82744-034	W	Trace Metals, Mercury, VOC, SVOC
SB-7 0-1	82744-035	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-8 0-1	82744-036	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-9 0-1	82744-037	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-10 0-1	82744-038	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides

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Case Narrative

Client: Soil and Materials Engineers, Inc.
 Project Identification: Rogell GC /077832.00.001.006

Cross reference (continued)

Client ID#	Lab ID#	Matrix	Requested Tests
SB-11 0-1	82744-039	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-12 0-1	82744-040	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-19 0-1	82744-041	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-20 0-1	82744-042	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-21 0-1	82744-043	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-18 0-1	82744-044	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-17 0-1	82744-045	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-16 0-1	82744-046	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-15 0-1	82744-047	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-15 3-4	82744-048	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-14 0-1	82744-049	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-13 0-1	82744-050	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-22 0-1	82744-051	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-23 0-1	82744-052	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-25 0-1	82744-053	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-24 0-1	82744-054	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-26 0-1	82744-055	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-28 0-1	82744-056	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-27 0-1	82744-057	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-29 0-1	82744-058	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-30 0-1	82744-059	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
SB-31 0-1	82744-060	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
Dup-01	82744-061	S	% Moisture, Trace Metals, Mercury, Pesticides, PCB, Herbicides, VOC, SVOC
Dup-01_GW	82744-062	W	Trace Metals, Mercury, VOC, SVOC
Dup-02	82744-063	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
Dup-03	82744-064	S	% Moisture, Trace Metals, Mercury, Pesticides, Herbicides
Field Blank	82744-065	W	VOC
Meth Blank	82744-066	S	VOC

Exceptions

Volatile Organic Compounds (VOC) by EPA 8260B

The samples 82744-002 and 82744-061 were qualified as having estimated results due to exceeding the hold time (time from sampling to preparation exceeded 48 hours).

Organochlorine Herbicides by EPA 8151A

The matrix spike/ matrix spike duplicate (MS/MSD) pair exhibited an RPD for multiple compounds exceeding criteria (RPD \leq 20%), associated with sample 82744-032.

Sample 82744-032 was qualified for 2,4-DB as the matrix spike sample recovery was low for the MS (42% recovery with criteria being 49-129%, the laboratory control sample was acceptable at 107%).

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Case Narrative

Client: Soil and Materials Engineers, Inc.
Project Identification: Rogell GC /077832.00.001.006

Exceptions (continued)

The surrogate recovery of 2,4-dichlorophenylacetic acid was above acceptance criteria in sample 82744-042 (123% with criteria being 10-120%). Results may be biased high, but were not detected.

The matrix spike/ matrix spike duplicate (MS/MSD) pair exhibited an RPD for dinoseb (23%) exceeding criteria ($RPD \leq 20\%$), associated with sample 82744-057.

No other exceptions were observed.

Sample data has been reviewed and results are valid with exceptions as noted above.

PM18A18A: Method Blank (MB)

EPA 7470A

Run Time: PM18A18A.MB 01/18/2018 11:56 [M618A18A]

Analyte	MB Result	MB Qualifier	MB RDL
	µg/L		µg/L
Mercury	U		0.20

PM18A18A: Laboratory Control Sample (LCS)

EPA 7470A

Run Time: PM18A18A.LCS: 01/18/2018 11:58 [M618A18A]

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	µg/L	µg/L	µg/L	%	%					
Mercury	0.250	0.251		100		85-115				

PM18A19A: Method Blank (MB)

EPA 7471B

Run Time: PM18A19A.MB 01/19/2018 13:34 [M618A19A]

Analyte	MB Result	MB Qualifier	MB RDL
	µg/kg		µg/kg
Mercury	U		50

PM18A19A: Laboratory Control Sample (LCS)

EPA 7471B

Run Time: PM18A19A.LCS: 01/19/2018 13:36 [M618A19A]

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	µg/kg	µg/kg	µg/kg	%	%					
Mercury	200	196		98		85-115				

PM18A19B: Method Blank (MB)

EPA 7471B

Run Time: PM18A19B.MB 01/19/2018 14:27 [M618A19A]

Analyte	MB Result	MB Qualifier	MB RDL
	µg/kg		µg/kg
Mercury	U		50

PM18A19B: Laboratory Control Sample (LCS)

EPA 7471B

Run Time: PM18A19B.LCS: 01/19/2018 14:29 [M618A19A]

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	µg/kg	µg/kg	µg/kg	%	%					
Mercury	200	195		98		85-115				

PM18A19C: Method Blank (MB)

EPA 7471B

Run Time: PM18A19C.MB 01/19/2018 16:06 [M618A19B]

Analyte	MB Result	MB Qualifier	MB RDL
	µg/kg		µg/kg
Mercury	U		50

PM18A19C: Laboratory Control Sample (LCS)

EPA 7471B

Run Time: PM18A19C.LCS: 01/19/2018 16:08 [M618A19B]

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	µg/kg	µg/kg	µg/kg	%	%					
Mercury	200	187		94		85-115				

PS18A17B: Method Blank (MB)

EPA 8081B

Run Time: PS18A17B.MB 01/17/2018 16:39 [SF18A17A]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
Aldrin	U		20
alpha-BHC	U		20
beta-BHC	U		20
delta-BHC	U		20
gamma-BHC	U		20
4,4'-DDD	U		20
4,4'-DDE	U		20
4,4'-DDT	U		20
Dieldrin	U		20
Endosulfan I	U		20
Endosulfan II	U		20
Endosulfan Sulfate	U		20
Endrin	U		20
Endrin Aldehyde	U		20
Heptachlor	U		20
Heptachlor Epoxide	U		20
Methoxychlor	U		50
<i>Decachlorobiphenyl-PST(S)</i>	99		35-139
<i>2,4,5,6-Tetrachloro-m-xylene-PST(S)</i>	70		40-123

PS18A17B: Laboratory Control Sample (LCS)

EPA 8081B

Run Time: PS18A17B.LCS: 01/17/2018 16:51 [SF18A17A]

Analyte	Spike Amount µg/kg	LCS Result µg/kg	LCSD Result µg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Aldrin	66.7	62.8		94		60-120				
alpha-BHC	66.7	62.9		94		60-120				
beta-BHC	66.7	77.2		116		50-160				
delta-BHC	66.7	63.0		94		30-160				
gamma-BHC	66.7	62.0		93		60-120				
4,4'-DDD	66.7	69.3		104		60-130				
4,4'-DDE	66.7	67.4		101		70-120				
4,4'-DDT	66.7	72.6		109		70-130				
Dieldrin	66.7	74.2		111		70-120				
Endosulfan I	66.7	66.9		100		70-120				
Endosulfan II	66.7	75.3		113		70-140				
Endosulfan Sulfate	66.7	83.3		125		50-150				
Endrin	66.7	76.7		115		60-120				
Endrin Aldehyde	66.7	62.4		94		50-140				
Heptachlor	66.7	61.9		93		60-120				
Heptachlor Epoxide	66.7	67.7		102		70-120				
Methoxychlor	66.7	81.0		122		80-140				
<i>Decachlorobiphenyl-PST(S)</i>				<i>101</i>		<i>35-139</i>				
<i>2,4,5,6-Tetrachloro-m-xylene-PST(S)</i>				<i>77</i>		<i>40-123</i>				

PS18A17D: Method Blank (MB)

EPA 8270C

Run Time: PS18A17D.MB 01/17/2018 18:04 [SG18A17B]

Analyte	MB Result µg/L	MB Qualifier	MB RDL µg/L
Acenaphthene (SIM)	U		5.0
Acenaphthylene (SIM)	U		5.0
Anthracene (SIM)	U		5.0
Benzo(a)anthracene (SIM)	U		1.0
Benzo(a)pyrene (SIM)	U		1.0
Benzo(b)fluoranthene (SIM)	U		1.0
Benzo(ghi)perylene (SIM)	U		1.0
Benzo(k)fluoranthene (SIM)	U		1.0
Chrysene (SIM)	U		1.0
Dibenzo(a,h)anthracene (SIM)	U		2.0
Fluoranthene (SIM)	U		1.0
Fluorene (SIM)	U		5.0
Indeno(1,2,3-cd)pyrene (SIM)	U		2.0
2-Methylnaphthalene (SIM)	U		5.0
Naphthalene (SIM)	U		5.0
Phenanthrene (SIM)	U		2.0
Pyrene (SIM)	U		5.0
2-Fluorobiphenyl(S)	69		44-109
1-Fluoronaphthalene(S)	74		44-103
4-Terphenyl-d14(S)	84		44-124

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PS18A17D: Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD)

EPA 8270C

Run Time: PS18A17D.LCS: 01/17/2018 18:56 [SG18A17B] PS18A17D.LCSD: 01/17/2018 19:48 [SG18A17B]

Analyte	Spike Amount µg/L	LCS Result µg/L	LCSD Result µg/L	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Acenaphthene (SIM)	80.0	68.9	62.4	86	78	53-107			10	30
Acenaphthylene (SIM)	80.0	71.1	67.3	89	84	52-107			6	30
Anthracene (SIM)	80.0	70.9	66.4	89	83	55-112			7	30
Benzo(a)anthracene (SIM)	80.0	75.2	70.8	94	89	59-116			5	30
Benzo(a)pyrene (SIM)	80.0	88.9	84.7	111	106	60-118			5	30
Benzo(b)fluoranthene (SIM)	80.0	77.3	73.8	97	92	58-118			5	30
Benzo(ghi)perylene (SIM)	80.0	80.8	75.9	101	95	47-122			6	30
Benzo(k)fluoranthene (SIM)	80.0	79.7	75.6	100	95	56-120			5	30
Chrysene (SIM)	80.0	83.1	79.0	104	99	56-117			5	30
Dibenzo(a,h)anthracene (SIM)	80.0	78.0	74.8	98	93	48-128			5	30
Fluoranthene (SIM)	80.0	84.8	79.0	106	99	57-119			7	30
Fluorene (SIM)	80.0	71.2	67.5	89	84	57-112			6	30
Indeno(1,2,3-cd)pyrene (SIM)	80.0	78.4	74.3	98	93	54-130			5	30
2-Methylnaphthalene (SIM)	80.0	74.9	66.6	94	83	42-100			12	30
Naphthalene (SIM)	80.0	65.6	58.6	82	73	39-100			12	30
Phenanthrene (SIM)	80.0	73.9	68.4	92	86	58-112			7	30
Pyrene (SIM)	80.0	84.9	78.5	106	98	57-115			8	30
2-Fluorobiphenyl(S)				80	72	44-109				
1-Fluoronaphthalene(S)				84	75	44-103				
4-Terphenyl-d14(S)				94	86	44-124				

PS18A18A: Method Blank (MB)

EPA 8081B

Run Time: PS18A18A.MB 01/18/2018 17:26 [SF18A18B]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
Aldrin	U		20
alpha-BHC	U		20
beta-BHC	U		20
delta-BHC	U		20
gamma-BHC	U		20
4,4'-DDD	U		20
4,4'-DDE	U		20
4,4'-DDT	U		20
Dieldrin	U		20
Endosulfan I	U		20
Endosulfan II	U		20
Endosulfan Sulfate	U		20
Endrin	U		20
Endrin Aldehyde	U		20
Heptachlor	U		20
Heptachlor Epoxide	U		20
Methoxychlor	U		50
<i>Decachlorobiphenyl-PST(S)</i>	<i>120</i>		<i>35-139</i>
<i>2,4,5,6-Tetrachloro-m-xylene-PST(S)</i>	<i>89</i>		<i>40-123</i>

PS18A18A: Method Blank (MB)

EPA 8270C

Run Time: PS18A18A.MB 01/18/2018 18:52 [S518A18B]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
Acenaphthene (SIM)	U		330
Acenaphthylene (SIM)	U		330
Anthracene (SIM)	U		330
Benzo(a)anthracene (SIM)	U		330
Benzo(a)pyrene (SIM)	U		330
Benzo(b)fluoranthene (SIM)	U		330
Benzo(ghi)perylene (SIM)	U		330
Benzo(k)fluoranthene (SIM)	U		330
Chrysene (SIM)	U		330

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PS18A18A: Method Blank (MB)

EPA 8270C

Run Time: PS18A18A.MB 01/18/2018 18:52 [S518A18B]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
Dibenzo(a,h)anthracene (SIM)	U		330
Fluoranthene (SIM)	U		330
Fluorene (SIM)	U		330
Indeno(1,2,3-cd)pyrene (SIM)	U		330
2-Methylnaphthalene (SIM)	U		330
Naphthalene (SIM)	U		330
Phenanthrene (SIM)	U		330
Pyrene (SIM)	U		330
2-Fluorobiphenyl(S)	84		49-115
1-Fluoronaphthalene(S)	77		46-114
4-Terphenyl-d14(S)	96		48-117

PS18A18A: Method Blank (MB)

EPA 8082A

Run Time: PS18A18A.MB 01/18/2018 21:56 [SA18A18B]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
Aroclor-1016	U		100
Aroclor-1260	U		100
Decachlorobiphenyl-PCB(S)	99		40-143
2,4,5,6-Tetrachloro-m-xylene-PCB(S)	71		42-133

PS18A18A: Laboratory Control Sample (LCS)

EPA 8270C

Run Time: PS18A18A.LCS: 01/18/2018 19:25 [S518A18B]

Analyte	Spike Amount µg/kg	LCS Result µg/kg	LCSD Result µg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Acenaphthene (SIM)	5330	4840		91		50-114				
Acenaphthylene (SIM)	5330	5200		97		53-115				
Anthracene (SIM)	5330	4720		88		48-119				
Benzo(a)anthracene (SIM)	5330	4580		86		56-120				
Benzo(a)pyrene (SIM)	5330	5730		108		57-122				
Benzo(b)fluoranthene (SIM)	5330	4920		92		50-131				
Benzo(ghi)perylene (SIM)	5330	4300		81		41-132				
Benzo(k)fluoranthene (SIM)	5330	5340		100		39-137				
Chrysene (SIM)	5330	4840		91		53-124				
Dibenzo(a,h)anthracene (SIM)	5330	4770		90		53-126				
Fluoranthene (SIM)	5330	4880		92		48-135				
Fluorene (SIM)	5330	5120		96		49-126				
Indeno(1,2,3-cd)pyrene (SIM)	5330	4910		92		51-132				
2-Methylnaphthalene (SIM)	5330	5000		94		46-105				
Naphthalene (SIM)	5330	4290		80		53-110				
Phenanthrene (SIM)	5330	4740		89		53-119				
Pyrene (SIM)	5330	5020		94		55-127				
2-Fluorobiphenyl(S)				86		49-115				
1-Fluoronaphthalene(S)				76		46-114				
4-Terphenyl-d14(S)				96		48-117				

PS18A18A: Laboratory Control Sample (LCS)

EPA 8082A

Run Time: PS18A18A.LCS: 01/18/2018 22:16 [SA18A18B]

Analyte	Spike Amount µg/kg	LCS Result µg/kg	LCSD Result µg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Aroclor-1016	667	546		82		60-120				
Aroclor-1260	667	631		95		60-120				
Decachlorobiphenyl-PCB(S)				98		40-143				
2,4,5,6-Tetrachloro-m-xylene-PCB(S)				78		42-133				

PS18A18A: Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD)

EPA 8081B

Run Time: PS18A18A.LCS: 01/20/2018 17:36 [SF18A20B] PS18A18A.LCSD: 01/20/2018 17:48 [SF18A20B]

Analyte	Spike Amount µg/kg	LCS Result µg/kg	LCSD Result µg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Aldrin	66.7	56.8	64.1	85	96	60-120			12	20
alpha-BHC	66.7	61.2	64.5	92	97	60-120			5	20
beta-BHC	66.7	70.9	78.0	106	117	50-160			10	20
delta-BHC	66.7	64.0	70.1	96	105	30-160			9	20
gamma-BHC	66.7	61.9	66.0	93	99	60-120			6	20
4,4'-DDD	66.7	63.0	68.6	94	103	60-130			9	20
4,4'-DDE	66.7	63.3	68.4	95	103	70-120			8	20
4,4'-DDT	66.7	66.9	70.5	100	106	70-130			6	20
Dieldrin	66.7	68.8	75.1	103	113	70-120			9	20
Endosulfan I	66.7	63.6	69.6	95	104	70-120			9	20
Endosulfan II	66.7	70.4	77.2	106	116	70-140			9	20
Endosulfan Sulfate	66.7	76.6	82.9	115	124	50-150			8	20
Endrin	66.7	74.0	80.1	111	120	60-120			8	20
Endrin Aldehyde	66.7	59.2	62.8	89	94	50-140			5	20
Heptachlor	66.7	62.3	65.6	93	98	60-120			5	20
Heptachlor Epoxide	66.7	56.9	69.5	85	104	70-120			20	20
Methoxychlor	66.7	64.5	71.5	97	107	80-140			10	20
<i>Decachlorobiphenyl-PST(S)</i>				89	96	35-139				
<i>2,4,5,6-Tetrachloro-m-xylene-PST(S)</i>				86	79	40-123				

PS18A18C: Method Blank (MB)

EPA 8081B

Run Time: PS18A18C.MB 01/18/2018 21:53 [SF18A18C]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
Aldrin	U		20
alpha-BHC	U		20
beta-BHC	U		20
delta-BHC	U		20
gamma-BHC	U		20
4,4'-DDD	U		20
4,4'-DDE	U		20
4,4'-DDT	U		20
Dieldrin	U		20
Endosulfan I	U		20
Endosulfan II	U		20
Endosulfan Sulfate	U		20
Endrin	U		20
Endrin Aldehyde	U		20
Heptachlor	U		20
Heptachlor Epoxide	U		20
Methoxychlor	U		50
<i>Decachlorobiphenyl-PST(S)</i>	81		35-139
<i>2,4,5,6-Tetrachloro-m-xylene-PST(S)</i>	68		40-123

PS18A18C: Laboratory Control Sample (LCS)

EPA 8081B

Run Time: PS18A18C.LCS: 01/18/2018 22:05 [SF18A18C]

Analyte	Spike Amount µg/kg	LCS Result µg/kg	LCSD Result µg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Aldrin	66.7	60.4		91		60-120				
alpha-BHC	66.7	63.7		96		60-120				
beta-BHC	66.7	74.3		111		50-160				
delta-BHC	66.7	65.7		99		30-160				
gamma-BHC	66.7	65.3		98		60-120				
4,4'-DDD	66.7	66.6		100		60-130				
4,4'-DDE	66.7	67.6		101		70-120				
4,4'-DDT	66.7	69.3		104		70-130				
Dieldrin	66.7	73.0		110		70-120				
Endosulfan I	66.7	66.3		99		70-120				
Endosulfan II	66.7	76.2		114		70-140				
Endosulfan Sulfate	66.7	81.6		122		50-150				
Endrin	66.7	75.0		112		60-120				
Endrin Aldehyde	66.7	63.6		95		50-140				
Heptachlor	66.7	65.1		98		60-120				
Heptachlor Epoxide	66.7	67.9		102		70-120				
Methoxychlor	66.7	73.3		110		80-140				
<i>Decachlorobiphenyl-PST(S)</i>				99		35-139				
<i>2,4,5,6-Tetrachloro-m-xylene-PST(S)</i>				95		40-123				

PS18A18D: Method Blank (MB)

EPA 8270C

Run Time: PS18A18D.MB 01/18/2018 16:36 [SJ18A18A]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
Acenaphthene (SIM)	U		330
Acenaphthylene (SIM)	U		330
Anthracene (SIM)	U		330
Benzo(a)anthracene (SIM)	U		330
Benzo(a)pyrene (SIM)	U		330
Benzo(b)fluoranthene (SIM)	U		330
Benzo(ghi)perylene (SIM)	U		330
Benzo(k)fluoranthene (SIM)	U		330
Chrysene (SIM)	U		330
Dibenzo(a,h)anthracene (SIM)	U		330
Fluoranthene (SIM)	U		330
Fluorene (SIM)	U		330
Indeno(1,2,3-cd)pyrene (SIM)	U		330
2-Methylnaphthalene (SIM)	U		330
Naphthalene (SIM)	U		330
Phenanthrene (SIM)	U		330
Pyrene (SIM)	U		330
2-Fluorobiphenyl(S)	81		49-115
1-Fluoronaphthalene(S)	85		46-114
4-Terphenyl-d14(S)	85		48-117

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PS18A18D: Laboratory Control Sample (LCS)

EPA 8270C

Run Time: PS18A18D.LCS: 01/18/2018 17:13 [SJ18A18A]

Analyte	Spike Amount µg/kg	LCS Result µg/kg	LCSD Result µg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Acenaphthene (SIM)	5330	4430		83		50-114				
Acenaphthylene (SIM)	5330	4590		86		53-115				
Anthracene (SIM)	5330	4180		78		48-119				
Benzo(a)anthracene (SIM)	5330	4650		87		56-120				
Benzo(a)pyrene (SIM)	5330	5010		94		57-122				
Benzo(b)fluoranthene (SIM)	5330	4190		79		50-131				
Benzo(ghi)perylene (SIM)	5330	4770		89		41-132				
Benzo(k)fluoranthene (SIM)	5330	4840		91		39-137				
Chrysene (SIM)	5330	4860		91		53-124				
Dibenzo(a,h)anthracene (SIM)	5330	4970		93		53-126				
Fluoranthene (SIM)	5330	4580		86		48-135				
Fluorene (SIM)	5330	4450		83		49-126				
Indeno(1,2,3-cd)pyrene (SIM)	5330	4960		93		51-132				
2-Methylnaphthalene (SIM)	5330	4630		87		46-105				
Naphthalene (SIM)	5330	4350		82		53-110				
Phenanthrene (SIM)	5330	4290		80		53-119				
Pyrene (SIM)	5330	4660		87		55-127				
<i>2-Fluorobiphenyl(S)</i>				78		49-115				
<i>1-Fluoronaphthalene(S)</i>				81		46-114				
<i>4-Terphenyl-d14(S)</i>				81		48-117				

PS18A18E: Method Blank (MB)

EPA 8151A

Run Time: PS18A18E.MB 01/19/2018 14:01 [SC18A19A]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
2,4-D	U		200
Dalapon	U		100
2,4-DB	U		200
Dicamba	U		100
Dichlorprop	U		200
Dinoseb	U		100
2,4,5-T	U		200
2,4,5-TP	U		200
DCAA(S)	131	*	10-120

PS18A18E: Laboratory Control Sample (LCS)

EPA 8151A

Run Time: PS18A18E.LCS: 01/19/2018 14:45 [SC18A19A]

Analyte	Spike Amount µg/kg	LCS Result µg/kg	LCSD Result µg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
2,4-D	333	394		118		55-130				
Dalapon	333	332		100		52-150				
2,4-DB	333	355		107		49-129				
Dicamba	333	376		113		73-127				
Dichlorprop	333	386		116		47-141				
Dinoseb	333	299		90		48-123				
2,4,5-T	333	389		117		54-127				
2,4,5-TP	333	384		115		54-132				
DCAA(S)				140		10-120			*	

PS18A22B: Method Blank (MB)

EPA 8151A

Run Time: PS18A22B.MB 01/23/2018 14:22 [SC18A23A]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
2,4-D	U		200
Dalapon	U		100
2,4-DB	U		200
Dicamba	U		100
Dichlorprop	U		200
Dinoseb	U		100
2,4,5-T	U		200
2,4,5-TP	U		200
DCAA(S)	115		10-120

PS18A22B: Laboratory Control Sample (LCS)

EPA 8151A

Run Time: PS18A22B.LCS: 01/23/2018 15:06 [SC18A23A]

Analyte	Spike Amount µg/kg	LCS Result µg/kg	LCSD Result µg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
2,4-D	333	430		129		55-130				
Dalapon	333	341		102		52-150				
Dicamba	333	393		118		73-127				
Dichlorprop	333	393		118		47-141				
Dinoseb	333	354		106		48-123				
2,4,5-T	333	421		126		54-127				
2,4,5-TP	333	392		118		54-132				
DCAA(S)				118		10-120				

PS18A22B: Laboratory Control Sample (LCS)

EPA 8151A

Run Time: PS18A22B.LCS: 01/23/2018 15:06 [SC18A23A]

Analyte	Spike Amount µg/kg	LCS Result µg/kg	LCSD Result µg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
2,4-DB	333	380		114		49-129				

PS18A23A: Method Blank (MB)

EPA 8151A

Run Time: PS18A23A.MB 01/24/2018 07:18 [SC18A23A]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
2,4-D	U		200
Dalapon	U		100
2,4-DB	U		200
Dicamba	U		100
Dichlorprop	U		200
Dinoseb	U		100
2,4,5-T	U		200
2,4,5-TP	U		200
DCAA(S)	95		10-120

PS18A23A: Laboratory Control Sample (LCS)

EPA 8151A

Run Time: PS18A23A.LCS: 01/24/2018 08:02 [SC18A23A]

Analyte	Spike Amount µg/kg	LCS Result µg/kg	LCSD Result µg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
2,4-D	333	349		105		55-130				
Dalapon	333	293		88		52-150				
2,4-DB	333	370		111		49-129				
Dicamba	333	325		98		73-127				
Dichlorprop	333	324		97		47-141				
Dinoseb	333	377		113		48-123				
2,4,5-T	333	349		105		54-127				
2,4,5-TP	333	323		97		54-132				
DCAA(S)				91		10-120				

PT18A18A: Method Blank (MB)

EPA 6020A

Run Time: PT18A18A.MB 01/18/2018 10:40 [T418A18A]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
Arsenic	U		100
Barium	U		1000
Cadmium	U		50
Chromium	U		500
Copper	U		1000
Lead	U		1000
Selenium	U		200
Silver	U		100
Zinc	U		1000

PT18A18A: Laboratory Control Sample (LCS)

EPA 6020A

Run Time: PT18A18A.LCS: 01/18/2018 10:42 [T418A18A]

Analyte	Spike Amount µg/kg	LCS Result µg/kg	LCSD Result µg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Arsenic	10000	10200		102		85-115				
Barium	50000	49200		98		85-115				
Cadmium	10000	10100		101		85-115				
Chromium	20000	19700		98		85-115				
Copper	20000	21500		108		85-115				
Lead	20000	20400		102		85-115				
Selenium	10000	10500		105		85-115				
Silver	10000	10000		100		85-115				
Zinc	50000	52500		105		85-115				

PT18A18B: Method Blank (MB)

EPA 6020A

Run Time: PT18A18B.MB 01/19/2018 10:26 [T418A19A]

Analyte	MB Result	MB Qualifier	MB RDL
	µg/kg		µg/kg
Arsenic	U		100
Lead	U		1000

PT18A18B: Laboratory Control Sample (LCS)

EPA 6020A

Run Time: PT18A18B.LCS: 01/19/2018 10:27 [T418A19A]

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	µg/kg	µg/kg	µg/kg	%	%					
Arsenic	10000	10200		102		85-115				
Lead	20000	21000		105		85-115				

PT18A18C: Method Blank (MB)

EPA 6020A

Run Time: PT18A18C.MB 01/19/2018 11:07 [T418A19A]

Analyte	MB Result	MB Qualifier	MB RDL
	µg/kg		µg/kg
Arsenic	U		100
Lead	U		1000

PT18A18C: Laboratory Control Sample (LCS)

EPA 6020A

Run Time: PT18A18C.LCS: 01/19/2018 11:08 [T418A19A]

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	µg/kg	µg/kg	µg/kg	%	%					
Arsenic	10000	10200		102		85-115				
Lead	20000	20500		102		85-115				

PT18A19A: Method Blank (MB)

EPA 6020A

Run Time: PT18A19A.MB 01/22/2018 11:29 [T418A22A]

Analyte	MB Result µg/L	MB Qualifier	MB RDL µg/L
Arsenic	U		5.0
Barium	U		100
Cadmium	U		1.0
Chromium	U		10
Copper	U		4.0
Lead	U		3.0
Selenium	U		5.0
Silver	U		0.20
Zinc	U		50

PT18A19A: Laboratory Control Sample (LCS)

EPA 6020A

Run Time: PT18A19A.LCS: 01/22/2018 11:30 [T418A22A]

Analyte	Spike Amount µg/L	LCS Result µg/L	LCSD Result µg/L	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Arsenic	100	100		100		85-115				
Barium	500	489		98		85-115				
Cadmium	100	99.6		100		85-115				
Chromium	200	188		94		85-115				
Copper	200	210		105		85-115				
Lead	200	204		102		85-115				
Selenium	100	104		104		85-115				
Silver	100	98.0		98		85-115				
Zinc	500	521		104		85-115				

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PT18A19B: Method Blank (MB)

EPA 6020A

Run Time: PT18A19B.MB 01/19/2018 11:57 [T418A19A]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
Arsenic	U		100
Barium	U		1000
Cadmium	U		50
Chromium	U		500
Copper	U		1000
Lead	U		1000
Selenium	U		200
Silver	U		100
Zinc	U		1000

PT18A19B: Laboratory Control Sample (LCS)

EPA 6020A

Run Time: PT18A19B.LCS: 01/19/2018 11:58 [T418A19A]

Analyte	Spike Amount µg/kg	LCS Result µg/kg	LCSD Result µg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Arsenic	10000	10600		106		85-115				
Barium	50000	52900		106		85-115				
Cadmium	10000	10400		104		85-115				
Chromium	20000	20200		101		85-115				
Copper	20000	22000		110		85-115				
Lead	20000	21000		105		85-115				
Selenium	10000	10900		109		85-115				
Silver	10000	10600		106		85-115				
Zinc	50000	54700		109		85-115				

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VB18A16A: Method Blank (MB)

EPA 8260B

Run Time: VB18A16A.MB 01/16/2018 12:32 [VB18A16A]

Analyte	MB Result µg/L	MB Qualifier	MB RDL µg/L
Acetone	U		50
Acrylonitrile	U		2.0
Benzene	U		1.0
Bromobenzene	U		1.0
Bromochloromethane	U		1.0
Bromodichloromethane	U		1.0
Bromoform	U		1.0
Bromomethane	U		5.0
2-Butanone	U		25
n-Butylbenzene	U		1.0
sec-Butylbenzene	U		1.0
tert-Butylbenzene	U		1.0
Carbon Disulfide	U		5.0
Carbon Tetrachloride	U		1.0
Chlorobenzene	U		1.0
Chloroethane	U		5.0
Chloroform	U		1.0
Chloromethane	U		5.0
2-Chlorotoluene	U		5.0
1,2-Dibromo-3-chloropropane (SIM)	U		1.0
Dibromochloromethane	U		5.0
Dibromomethane	U		5.0
1,2-Dichlorobenzene	U		1.0
1,3-Dichlorobenzene	U		1.0
1,4-Dichlorobenzene	U		1.0
Dichlorodifluoromethane	U		5.0
1,1-Dichloroethane	U		1.0
1,2-Dichloroethane	U		1.0
1,1-Dichloroethene	U		1.0
cis-1,2-Dichloroethene	U		1.0
trans-1,2-Dichloroethene	U		1.0
1,2-Dichloropropane	U		1.0
cis-1,3-Dichloropropene	U		0.50

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VB18A16A: Method Blank (MB)

EPA 8260B

Run Time: VB18A16A.MB 01/16/2018 12:32 [VB18A16A]

Analyte	MB Result µg/L	MB Qualifier	MB RDL µg/L
trans-1,3-Dichloropropene	U		0.50
Ethylbenzene	U		1.0
Ethylene Dibromide	U		1.0
2-Hexanone	U		50
Isopropylbenzene	U		5.0
4-Methyl-2-pentanone	U		50
Methylene Chloride	U		5.0
2-Methylnaphthalene	U		5.0
MTBE	U		5.0
Naphthalene	U		5.0
n-Propylbenzene	U		1.0
Styrene	U		1.0
1,1,1,2-Tetrachloroethane	U		1.0
1,1,2,2-Tetrachloroethane	U		1.0
Tetrachloroethene	U		1.0
Toluene	U		1.0
1,2,4-Trichlorobenzene	U		5.0
1,1,1-Trichloroethane	U		1.0
1,1,2-Trichloroethane	U		1.0
Trichloroethene	U		1.0
Trichlorofluoromethane	U		1.0
1,2,3-Trichloropropane	U		1.0
1,2,3-Trimethylbenzene	U		1.0
1,2,4-Trimethylbenzene	U		1.0
1,3,5-Trimethylbenzene	U		1.0
Vinyl Chloride	U		1.0
m&p-Xylene	U		2.0
o-Xylene	U		1.0
4-Bromofluorobenzene(S)	99		80-120
Dibromofluoromethane(S)	95		80-120
1,2-Dichloroethane-d4(S)	97		80-120
Toluene-d8(S)	98		80-120

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VB18A16A: Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD)

EPA 8260B

Run Time: VB18A16A.LCS: 01/16/2018 11:10 [VB18A16A] VB18A16A.LCSD: 01/16/2018 11:37 [VB18A16A]

Analyte	Spike Amount µg/L	LCS Result µg/L	LCSD Result µg/L	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Acetone	50.0	38.0	35.4	76	71	70-147			7	20
Acrylonitrile	50.0	49.2	48.1	98	96	70-147			2	20
Benzene	50.0	47.5	45.1	95	90	70-147			5	20
Bromobenzene	50.0	49.2	47.8	98	96	70-147			2	20
Bromochloromethane	50.0	46.3	44.8	93	90	70-147			3	20
Bromodichloromethane	50.0	47.2	45.4	94	91	70-147			3	20
Bromoform	50.0	54.6	52.2	109	104	70-147			5	20
Bromomethane	50.0	46.1	43.0	92	86	70-147			7	20
2-Butanone	50.0	38.1	36.0	76	72	70-147			5	20
n-Butylbenzene	50.0	57.5	54.1	115	108	70-147			6	20
sec-Butylbenzene	50.0	55.6	52.2	111	104	70-147			7	20
tert-Butylbenzene	50.0	55.3	51.9	111	104	70-147			7	20
Carbon Disulfide	50.0	47.2	43.6	94	87	70-147			8	20
Carbon Tetrachloride	50.0	49.1	46.3	98	93	70-140			5	20
Chlorobenzene	50.0	51.7	49.1	103	98	70-147			5	20
Chloroethane	50.0	47.0	43.1	94	86	70-147			9	20
Chloroform	50.0	45.8	43.5	92	87	76-138			6	20
Chloromethane	50.0	45.9	42.1	92	84	70-147			9	20
2-Chlorotoluene	50.0	52.6	49.7	105	99	70-147			6	20
1,2-Dibromo-3-chloropropane (SIM)	50.0	55.7	55.1	111	110	70-147			1	20
Dibromochloromethane	50.0	51.8	50.2	104	100	70-147			4	20
Dibromomethane	50.0	49.2	47.4	98	95	70-147			3	20
1,2-Dichlorobenzene	50.0	51.9	50.4	104	101	70-147			3	20
1,3-Dichlorobenzene	50.0	51.7	49.3	103	99	70-147			4	20
1,4-Dichlorobenzene	50.0	50.9	48.7	102	97	70-147			5	20
Dichlorodifluoromethane	50.0	50.4	46.4	101	93	70-147			8	20
1,1-Dichloroethane	50.0	45.1	42.3	90	85	70-147			6	20
1,2-Dichloroethane	50.0	47.2	45.5	94	91	70-147			3	20
1,1-Dichloroethene	50.0	46.7	43.6	93	87	76-147			7	20
cis-1,2-Dichloroethene	50.0	47.1	44.3	94	89	70-147			5	20
trans-1,2-Dichloroethene	50.0	46.8	43.8	94	88	70-147			7	20
1,2-Dichloropropane	50.0	48.5	45.5	97	91	76-147			6	20
cis-1,3-Dichloropropene	50.0	53.1	50.6	106	101	70-147			5	20

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VB18A16A: Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD)

EPA 8260B

Run Time: VB18A16A.LCS: 01/16/2018 11:10 [VB18A16A] VB18A16A.LCSD: 01/16/2018 11:37 [VB18A16A]

Analyte	Spike Amount µg/L	LCS Result µg/L	LCSD Result µg/L	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
trans-1,3-Dichloropropene	50.0	51.9	50.0	104	100	70-147			4	20
Ethylbenzene	50.0	52.5	49.4	105	99	76-147			6	20
Ethylene Dibromide	50.0	51.5	50.1	103	100	70-147			3	20
2-Hexanone	50.0	42.4	40.7	85	81	70-147			5	20
Isopropylbenzene	50.0	58.3	55.0	117	110	70-147			6	20
4-Methyl-2-pentanone	50.0	50.9	50.1	102	100	70-147			2	20
Methylene Chloride	50.0	39.9	37.9	80	76	70-147			5	20
2-Methylnaphthalene	50.0	53.0	52.9	106	106	70-147			0	20
MTBE	50.0	49.9	48.6	100	97	70-147			3	20
Naphthalene	50.0	57.5	56.7	115	113	70-147			2	20
n-Propylbenzene	50.0	53.8	50.9	108	102	70-147			6	20
Styrene	50.0	51.7	49.4	103	99	70-147			4	20
1,1,1,2-Tetrachloroethane	50.0	55.1	53.2	110	106	70-147			4	20
1,1,2,2-Tetrachloroethane	50.0	53.3	52.2	107	104	70-147			3	20
Tetrachloroethene	50.0	51.9	48.6	104	97	70-147			7	20
Toluene	50.0	48.8	46.2	98	92	76-147			6	20
1,2,4-Trichlorobenzene	50.0	56.0	53.9	112	108	70-147			4	20
1,1,1-Trichloroethane	50.0	47.0	43.3	94	87	70-147			8	20
1,1,2-Trichloroethane	50.0	49.8	48.1	100	96	70-147			4	20
Trichloroethene	50.0	49.7	46.4	99	93	71-157			6	20
Trichlorofluoromethane	50.0	44.6	40.5	89	81	70-147			9	20
1,2,3-Trichloropropane	50.0	50.1	49.9	100	100	70-147			0	20
1,2,3-Trimethylbenzene	50.0	52.7	50.2	105	100	70-147			5	20
1,2,4-Trimethylbenzene	50.0	59.1	56.1	118	112	70-147			5	20
1,3,5-Trimethylbenzene	50.0	55.2	52.9	110	106	70-147			4	20
Vinyl Chloride	50.0	47.1	43.6	94	87	76-147			8	20
m&p-Xylene	100	108	102	108	102	70-147			6	20
o-Xylene	50.0	54.5	51.5	109	103	70-147			6	20
4-Bromofluorobenzene(S)				99	96	80-120				
Dibromofluoromethane(S)				94	94	80-120				
1,2-Dichloroethane-d4(S)				97	97	80-120				
Toluene-d8(S)				98	99	80-120				

VI18A16A: Method Blank (MB)

EPA 8260B

Run Time: VI18A16A.MB 01/16/2018 12:26 [VI18A16A]

Analyte	MB Result	MB Qualifier	MB RDL
	µg/kg		µg/kg
Acetone	U		1000
Acrylonitrile	U		120
Benzene	U		50
Bromobenzene	U		100
Bromochloromethane	U		100
Bromodichloromethane	U		100
Bromoform	U		120
Bromomethane	U		250
2-Butanone	U		750
n-Butylbenzene	U		50
sec-Butylbenzene	U		50
tert-Butylbenzene	U		50
Carbon Disulfide	U		250
Carbon Tetrachloride	U		50
Chlorobenzene	U		50
Chloroethane	U		310
Chloroform	U		50
Chloromethane	U		250
2-Chlorotoluene	U		50
1,2-Dibromo-3-chloropropane (SIM)	U		250
Dibromochloromethane	U		100
Dibromomethane	U		250
1,2-Dichlorobenzene	U		100
1,3-Dichlorobenzene	U		100
1,4-Dichlorobenzene	U		120
Dichlorodifluoromethane	U		310
1,1-Dichloroethane	U		50
1,2-Dichloroethane	U		50
1,1-Dichloroethene	U		50
cis-1,2-Dichloroethene	U		50
trans-1,2-Dichloroethene	U		50
1,2-Dichloropropane	U		62
cis-1,3-Dichloropropene	U		50

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VI18A16A: Method Blank (MB)

EPA 8260B

Run Time: VI18A16A.MB 01/16/2018 12:26 [VI18A16A]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
trans-1,3-Dichloropropene	U		50
Ethylbenzene	U		50
Ethylene Dibromide	U		50
2-Hexanone	U		2500
Isopropylbenzene	U		250
4-Methyl-2-pentanone	U		2500
Methylene Chloride	U		100
2-Methylnaphthalene	U		330
MTBE	U		250
Naphthalene	U		330
n-Propylbenzene	U		100
Styrene	U		62
1,1,1,2-Tetrachloroethane	U		100
1,1,2,2-Tetrachloroethane	U		50
Tetrachloroethene	U		50
Toluene	U		50
1,2,4-Trichlorobenzene	U		250
1,1,1-Trichloroethane	U		50
1,1,2-Trichloroethane	U		50
Trichloroethene	U		50
Trichlorofluoromethane	U		120
1,2,3-Trichloropropane	U		100
1,2,3-Trimethylbenzene	U		100
1,2,4-Trimethylbenzene	U		100
1,3,5-Trimethylbenzene	U		100
Vinyl Chloride	U		40
m&p-Xylene	U		100
o-Xylene	U		50
4-Bromofluorobenzene(S)	102		76-127
Dibromofluoromethane(S)	99		76-126
1,2-Dichloroethane-d4(S)	103		75-120
Toluene-d8(S)	102		80-120

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VI18A16A: Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD)

EPA 8260B

Run Time: VI18A16A.LCS: 01/16/2018 11:02 [VI18A16A] VI18A16A.LCSD: 01/16/2018 11:31 [VI18A16A]

Analyte	Spike Amount µg/kg	LCS Result µg/kg	LCSD Result µg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Acetone	2500	3140	3110	125	124	70-150			1	20
Acrylonitrile	2500	2870	2860	115	114	70-134			1	20
Benzene	2500	2190	2070	88	83	70-134			6	20
Bromobenzene	2500	2130	2100	85	84	70-134			1	20
Bromochloromethane	2500	2310	2250	92	90	70-134			2	20
Bromodichloromethane	2500	2320	2230	93	89	70-134			4	20
Bromoform	2500	2640	2670	106	107	70-134			1	20
Bromomethane	2500	2230	2140	89	86	70-134			3	20
2-Butanone	2500	3050	3070	122	123	70-150			1	20
n-Butylbenzene	2500	2330	2180	93	87	70-134			7	20
sec-Butylbenzene	2500	2290	2120	92	85	70-134			8	20
tert-Butylbenzene	2500	2250	2090	90	84	70-134			7	20
Carbon Disulfide	2500	2350	2200	94	88	70-134			7	20
Carbon Tetrachloride	2500	2530	2370	101	95	70-134			6	20
Chlorobenzene	2500	2330	2230	93	89	70-134			4	20
Chloroethane	2500	2790	2630	112	105	70-134			6	20
Chloroform	2500	2240	2120	90	85	75-134			6	20
Chloromethane	2500	2500	2310	100	92	70-134			8	20
2-Chlorotoluene	2500	2230	2130	89	85	70-134			5	20
1,2-Dibromo-3-chloropropane (SIM)	2500	2920	2940	117	118	70-134			1	20
Dibromochloromethane	2500	2570	2530	103	101	70-134			2	20
Dibromomethane	2500	2380	2360	95	94	70-134			1	20
1,2-Dichlorobenzene	2500	2230	2160	89	87	70-134			2	20
1,3-Dichlorobenzene	2500	2210	2100	88	84	70-134			5	20
1,4-Dichlorobenzene	2500	2210	2110	88	84	70-134			5	20
Dichlorodifluoromethane	2500	2760	2570	110	103	70-134			7	20
1,1-Dichloroethane	2500	2190	2080	88	83	70-134			6	20
1,2-Dichloroethane	2500	2300	2250	92	90	70-134			2	20
1,1-Dichloroethene	2500	2280	2160	91	86	75-134			6	20
cis-1,2-Dichloroethene	2500	2260	2160	91	86	70-134			6	20
trans-1,2-Dichloroethene	2500	2270	2130	91	85	70-134			7	20
1,2-Dichloropropane	2500	2310	2230	92	89	75-134			3	20
cis-1,3-Dichloropropene	2500	2460	2390	99	96	70-134			3	20

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VI18A16A: Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD)

EPA 8260B

Run Time: VI18A16A.LCS: 01/16/2018 11:02 [VI18A16A] VI18A16A.LCSD: 01/16/2018 11:31 [VI18A16A]

Analyte	Spike Amount µg/kg	LCS Result µg/kg	LCSD Result µg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
trans-1,3-Dichloropropene	2500	2500	2460	100	98	70-134			2	20
Ethylbenzene	2500	2360	2230	94	89	75-134			5	20
Ethylene Dibromide	2500	2510	2480	100	99	70-134			1	20
2-Hexanone	2500	3160	3210	126	129	70-150			2	20
Isopropylbenzene	2500	2470	2330	99	93	70-134			6	20
4-Methyl-2-pentanone	2500	2890	2910	115	117	70-134			2	20
Methylene Chloride	2500	2150	2060	86	83	70-134			4	20
2-Methylnaphthalene	2500	2320	2280	93	91	70-134			2	20
MTBE	2500	2440	2390	97	96	70-134			1	20
Naphthalene	2500	2300	2320	92	93	70-134			1	20
n-Propylbenzene	2500	2270	2110	91	84	70-134			8	20
Styrene	2500	2330	2250	93	90	70-134			3	20
1,1,1,2-Tetrachloroethane	2500	2630	2570	105	103	70-134			2	20
1,1,2,2-Tetrachloroethane	2500	2500	2500	100	100	70-134			0	20
Tetrachloroethene	2500	2420	2260	97	91	70-134			6	20
Toluene	2500	2290	2170	91	87	75-134			4	20
1,2,4-Trichlorobenzene	2500	2310	2220	92	89	70-134			3	20
1,1,1-Trichloroethane	2500	2290	2140	92	86	70-134			7	20
1,1,2-Trichloroethane	2500	2350	2290	94	92	70-134			2	20
Trichloroethene	2500	2430	2310	97	92	70-134			5	20
Trichlorofluoromethane	2500	3290	3030	132	121	70-134			9	20
1,2,3-Trichloropropane	2500	2610	2620	105	105	70-134			0	20
1,2,3-Trimethylbenzene	2500	2240	2150	90	86	70-134			5	20
1,2,4-Trimethylbenzene	2500	2460	2330	99	93	70-134			6	20
1,3,5-Trimethylbenzene	2500	2290	2160	92	87	70-134			6	20
Vinyl Chloride	2500	2400	2260	96	91	75-134			5	20
m&p-Xylene	5000	4780	4530	96	91	70-134			5	20
o-Xylene	2500	2330	2220	93	89	70-134			4	20
4-Bromofluorobenzene(S)				95	103	76-127				
Dibromofluoromethane(S)				100	101	76-126				
1,2-Dichloroethane-d4(S)				102	102	75-120				
Toluene-d8(S)				102	102	80-120				

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VI18A16B: Method Blank (MB)

EPA 8260B

Run Time: VI18A16B.MB 01/17/2018 02:44 [VI18A16B]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
Acetone	U		1000
Acrylonitrile	U		110
Benzene	U		50
Bromobenzene	U		100
Bromochloromethane	U		100
Bromodichloromethane	U		100
Bromoform	U		110
Bromomethane	U		220
2-Butanone	U		750
n-Butylbenzene	U		50
sec-Butylbenzene	U		50
tert-Butylbenzene	U		50
Carbon Disulfide	U		250
Carbon Tetrachloride	U		50
Chlorobenzene	U		50
Chloroethane	U		280
Chloroform	U		50
Chloromethane	U		250
2-Chlorotoluene	U		50
1,2-Dibromo-3-chloropropane (SIM)	U		250
Dibromochloromethane	U		100
Dibromomethane	U		250
1,2-Dichlorobenzene	U		100
1,3-Dichlorobenzene	U		100
1,4-Dichlorobenzene	U		110
Dichlorodifluoromethane	U		280
1,1-Dichloroethane	U		50
1,2-Dichloroethane	U		50
1,1-Dichloroethene	U		50
cis-1,2-Dichloroethene	U		50
trans-1,2-Dichloroethene	U		50
1,2-Dichloropropane	U		56
cis-1,3-Dichloropropene	U		50

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VI18A16B: Method Blank (MB)

EPA 8260B

Run Time: VI18A16B.MB 01/17/2018 02:44 [VI18A16B]

Analyte	MB Result µg/kg	MB Qualifier	MB RDL µg/kg
trans-1,3-Dichloropropene	U		50
Ethylbenzene	U		50
Ethylene Dibromide	U		50
2-Hexanone	U		2500
Isopropylbenzene	U		250
4-Methyl-2-pentanone	U		2500
Methylene Chloride	U		100
2-Methylnaphthalene	U		330
MTBE	U		250
Naphthalene	U		330
n-Propylbenzene	U		100
Styrene	U		56
1,1,1,2-Tetrachloroethane	U		100
1,1,2,2-Tetrachloroethane	U		50
Tetrachloroethene	U		50
Toluene	U		50
1,2,4-Trichlorobenzene	U		250
1,1,1-Trichloroethane	U		50
1,1,2-Trichloroethane	U		50
Trichloroethene	U		50
Trichlorofluoromethane	U		110
1,2,3-Trichloropropane	U		100
1,2,3-Trimethylbenzene	U		100
1,2,4-Trimethylbenzene	U		100
1,3,5-Trimethylbenzene	U		100
Vinyl Chloride	U		40
m&p-Xylene	U		100
o-Xylene	U		50
4-Bromofluorobenzene(S)	95		76-127
Dibromofluoromethane(S)	100		76-126
1,2-Dichloroethane-d4(S)	104		75-120
Toluene-d8(S)	102		80-120

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VI18A16B: Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD)

EPA 8260B

Run Time: VI18A16B.LCS: 01/17/2018 01:21 [VI18A16B] VI18A16B.LCSD: 01/17/2018 01:48 [VI18A16B]

Analyte	Spike Amount µg/kg	LCS Result µg/kg	LCSD Result µg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Acetone	2500	2960	3070	118	123	70-150			4	20
Acrylonitrile	2500	2920	3070	117	123	70-134			5	20
Benzene	2500	2220	2170	89	87	70-134			2	20
Bromobenzene	2500	2180	2110	87	84	70-134			4	20
Bromochloromethane	2500	2410	2390	97	96	70-134			1	20
Bromodichloromethane	2500	2350	2330	94	93	70-134			1	20
Bromoform	2500	2630	2730	105	109	70-134			4	20
Bromomethane	2500	2300	2200	92	88	70-134			4	20
2-Butanone	2500	2960	3030	119	121	70-150			2	20
n-Butylbenzene	2500	2300	2210	92	88	70-134			4	20
sec-Butylbenzene	2500	2340	2230	94	89	70-134			5	20
tert-Butylbenzene	2500	2300	2220	92	89	70-134			3	20
Carbon Disulfide	2500	2370	2280	95	91	70-134			4	20
Carbon Tetrachloride	2500	2510	2400	100	96	70-134			4	20
Chlorobenzene	2500	2340	2310	94	92	70-134			2	20
Chloroethane	2500	2850	2790	114	112	70-134			2	20
Chloroform	2500	2300	2270	92	91	75-134			1	20
Chloromethane	2500	2530	2470	101	99	70-134			2	20
2-Chlorotoluene	2500	2310	2220	93	89	70-134			4	20
1,2-Dibromo-3-chloropropane (SIM)	2500	2980	3030	119	121	70-134			2	20
Dibromochloromethane	2500	2560	2560	103	102	70-134			1	20
Dibromomethane	2500	2370	2390	95	96	70-134			1	20
1,2-Dichlorobenzene	2500	2280	2210	91	88	70-134			3	20
1,3-Dichlorobenzene	2500	2240	2160	90	86	70-134			5	20
1,4-Dichlorobenzene	2500	2230	2170	89	87	70-134			2	20
Dichlorodifluoromethane	2500	2710	2550	108	102	70-134			6	20
1,1-Dichloroethane	2500	2270	2230	91	89	70-134			2	20
1,2-Dichloroethane	2500	2380	2360	95	94	70-134			1	20
1,1-Dichloroethene	2500	2350	2240	94	90	75-134			4	20
cis-1,2-Dichloroethene	2500	2360	2320	94	93	70-134			1	20
trans-1,2-Dichloroethene	2500	2340	2280	94	91	70-134			3	20
1,2-Dichloropropane	2500	2340	2350	93	94	75-134			1	20
cis-1,3-Dichloropropene	2500	2340	2330	94	93	70-134			1	20

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VI18A16B: Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD)

EPA 8260B

Run Time: VI18A16B.LCS: 01/17/2018 01:21 [VI18A16B] VI18A16B.LCSD: 01/17/2018 01:48 [VI18A16B]

Analyte	Spike Amount µg/kg	LCS Result µg/kg	LCSD Result µg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
trans-1,3-Dichloropropene	2500	2390	2390	96	96	70-134			0	20
Ethylbenzene	2500	2360	2310	94	92	75-134			2	20
Ethylene Dibromide	2500	2530	2550	101	102	70-134			1	20
2-Hexanone	2500	3110	3250	124	130	70-150			5	20
Isopropylbenzene	2500	2460	2420	98	97	70-134			1	20
4-Methyl-2-pentanone	2500	2900	3010	116	121	70-134			4	20
Methylene Chloride	2500	2250	2240	90	90	70-134			0	20
2-Methylnaphthalene	2500	2280	2270	91	91	70-134			0	20
MTBE	2500	2510	2560	100	102	70-134			2	20
Naphthalene	2500	2380	2380	95	95	70-134			0	20
n-Propylbenzene	2500	2310	2230	92	89	70-134			3	20
Styrene	2500	2320	2300	93	92	70-134			1	20
1,1,1,2-Tetrachloroethane	2500	2640	2610	105	104	70-134			1	20
1,1,2,2-Tetrachloroethane	2500	2480	2480	99	99	70-134			0	20
Tetrachloroethene	2500	2350	2300	94	92	70-134			2	20
Toluene	2500	2300	2260	92	90	75-134			2	20
1,2,4-Trichlorobenzene	2500	2320	2250	93	90	70-134			3	20
1,1,1-Trichloroethane	2500	2330	2240	93	90	70-134			3	20
1,1,2-Trichloroethane	2500	2360	2380	94	95	70-134			1	20
Trichloroethene	2500	2540	2440	102	98	70-134			4	20
Trichlorofluoromethane	2500	3210	3010	129	120	70-134			7	20
1,2,3-Trichloropropane	2500	2640	2620	105	105	70-134			0	20
1,2,3-Trimethylbenzene	2500	2290	2220	92	89	70-134			3	20
1,2,4-Trimethylbenzene	2500	2500	2440	100	98	70-134			2	20
1,3,5-Trimethylbenzene	2500	2340	2260	93	90	70-134			3	20
Vinyl Chloride	2500	2460	2370	98	95	75-134			3	20
m&p-Xylene	5000	4760	4690	95	94	70-134			1	20
o-Xylene	2500	2340	2310	93	92	70-134			1	20
4-Bromofluorobenzene(S)				95	95	76-127				
Dibromofluoromethane(S)				102	103	76-126				
1,2-Dichloroethane-d4(S)				104	103	75-120				
Toluene-d8(S)				102	102	80-120				

Definitions/ Qualifiers:

U: The analyte was not detected at or above the Reporting Limit (RL).
***:** Value reported is outside QC limits

Exception Summary:

Exceptions have been properly noted on reported results or affected samples have been scheduled for reanalysis when appropriate.

Report Generated By:



By Anthony Donnelly at 10:22 AM, Jan 26, 2018



Quality Control Report
Preparation Batch QC Summary
Inductively Coupled Plasma - Mass Spectrometry
Aqueous

Batch ID: PT18A30B
Page: 1 of 1
Date: 02/02/18

Preparation Batch: PT18A30B Preparation Date: 01/30/18

Parameter	Method Blank (MB)			Laboratory Control Sample (LCS)					LCS Duplicate (LCD)				Run Code		
	Result µg/L	RL µg/L	Q	Result µg/L	Spike µg/L	Rec. %	LCL - UCL %	Q	Rec. %	RPD %	UCL %	Q	MB	LCS	LCD
1. Arsenic	U	5.0		9.70	10.0	97	85 - 115						MB-1	LCS-1	
2. Lead	U	3.0		20.1	20.0	101	85 - 115						MB-1	LCS-1	

Definitions/ Qualifiers:

U: The analyte was not detected at or above the Reporting Limit (RL).
*****: Value reported is outside QC limits

Run Code (Analysis Sequence/Run Time):

MB-1 T418A30A 01/30/18 11:00
LCS-1 T418A30A 01/30/18 11:01

Exception Summary:

Exceptions have been properly noted on reported results or affected samples have been scheduled for reanalysis when appropriate.

Report Generated By:

By Emily Kennedy at 4:04 PM, Feb 02, 2018

1914 Holloway Drive
11766 E. Grand River
8660 S. Mackinaw Trail

Holt, MI 48842
Brighton, MI 48116
Cadillac, MI 49601

T: (517) 699-0345
T: (810) 220-3300
T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584



Quality Control Report
Preparation Batch QC Summary
Inductively Coupled Plasma - Mass Spectrometry
Soil/Solid

Batch ID: PT18B01A
Page: 1 of 1
Date: 02/02/18

Preparation Batch: PT18B01A Preparation Date: 02/01/18

Parameter	Method Blank (MB)			Laboratory Control Sample (LCS)					LCS Duplicate (LCD)			Run Code			
	Result µg/kg	RL µg/kg	Q	Result µg/kg	Spike µg/kg	Rec. %	LCL - UCL %	Q	Rec. %	RPD %	UCL %	Q	MB	LCS	LCD
1. Lead	U	1000		442,077	400,000	111	85 - 115						MB-3	LCS-3	

Definitions/ Qualifiers:

U: The analyte was not detected at or above the Reporting Limit (RL).
***:** Value reported is outside QC limits

Run Code (Analysis Sequence/Run Time):

MB-3 T418B01A 02/01/18 10:43
LCS-3 T418B01A 02/01/18 10:45

Exception Summary:

Exceptions have been properly noted on reported results or affected samples have been scheduled for reanalysis when appropriate.

Report Generated By:

By Emily Kennedy at 4:04 PM, Feb 02, 2018

1914 Holloway Drive
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Cadillac, MI 49601

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T: (231) 775-8368

F: (517) 699-0388
F: (810) 220-3311
F: (231) 775-8584

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Fax: 517 699 0382
email: asbestos@fibertecinc.com

Geoprobe
11766 E. Grand River Rd.
Brighton, MI 48116
Phone: 810 220 3300
Fax: 810 220 3311

Client Name: **SME**

Contact Person: **Christina Bon / Matt Vander Eide**

Project Name/ Number: **077832.00.001.006**

Email distribution list: **Rogell GC**

Quote#

Purchase Order#

Date	Time	Sample #	Client Sample Descriptor
1/10/18	9:00	SB-38-1-2	
1/10/18	9:10	SB-39-1-3	
1/10/18	9:25	SB-40-1-2	
1/10/18	9:30	SB-50-0-1	
1/10/18	9:35	SB-50-004-1-2	
1/10/18	10:30	SB-41-10-11	
1/10/18	10:45	SB-41-8-12	
1/10/18	11:10	SB-42-10-11	
1/10/18	11:25	SB-43-10-11	
1/10/18	11:40	SB-43-6-10	

Comments:

MATRIX (SEE RIGHT CORNER FOR CODE)	# OF CONTAINERS	PARAMETERS
	3	JOCs no meth
	3	PAHs
	3	PCBx
	3	MI-10 metals
	3	Chlorinated Pesticides
	3	Chlorinated Herbicides

Matrix Code	
S Soil	GW Ground Water
A Air	SW Surface Water
O Oil	WW Waste Water
P Wipe	Other: Specify

Deliverables
Level 2
Level 3
Level 4
EDD

Sampled/Relinquished By: **Amot J**

Relinquished By: **SME**

Relinquished By: **Amot J**

Turnaround Time **ALL RESULTS WILL BE SENT BY THE END OF THE BUSINESS DAY**

1 bus. day _____ 2 bus. days _____ 3 bus. days _____ 4 bus. days _____

5-7 bus. days (standard) Other (specify time/date requirement): _____

Date/Time: **1/12/18 12:30**

Date/Time: **1/15/18 10:00am**

Date/Time: **1/15/18 3:10**

Received By: **SME Cold Storage**

Received By: **Amot J**

Received By: **Amot J**

LAB USE ONLY

Fibertec project number: **82744**

Temperature upon receipt at Lab: **4.30C**

RCVD BY: AB

JAN 15 2018

INITIAL: JS

Hold 61 Hered metals (marked 61 Hered)

Hold 61 Hered metals (marked 61 Hered)

Hold 61 Hered metals (marked 61 Hered)

Please see back for terms and conditions

environmental services

1914 Holloway Drive
Holt, MI 48842
Phone: 517 699 0345
Fax: 517 699 0388
email: lab@berfec.us

Industrial Hygiene Services, Inc.
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Phone: 517 699 0345
Fax: 517 699 0382
email: asbestos@berfecus.com

Geoprobe
11766 E. Grand River Rd.
Brighton, MI 48116
Phone: 810 220 3300
Fax: 810 220 3311

Chain of Custody #

Analytical Laboratory

Name:

Person:

Vander

Project Name/ Number: 077832.00,001,006

Email distribution list:

Quote#

Purchase Order#

Date Time Sample # Client Sample Descriptor

1/10	12:30		SR-44_10-11
	12:40		SB-44_8-12
	1:20		SB-44_0-1
	1:25		SR-46_0-1
	1:35		SR-47_0-1
	2:00		SR-48_0-1
	2:15		SR-49_0-1
	2:30		SB-52_1-7

MATRIX (SEE RIGHT CORNER FOR CODE)
OF CONTAINERS

S	3	X	X	X	X	X	X	X	X
GW	6	X	X	X	X	X	X	X	X
S	3	X	X	X	X	X	X	X	X
S	3	X	X	X	X	X	X	X	X
S	3	X	X	X	X	X	X	X	X
S	3	X	X	X	X	X	X	X	X
S	3	X	X	X	X	X	X	X	X
S	3	X	X	X	X	X	X	X	X
S	3	X	X	X	X	X	X	X	X
S	3	X	X	X	X	X	X	X	X

PAHs
PCBs
MT-10 metals
Chlor. Pest.
Chlor. Herb

HOLD SAMPLE

S	GW	Ground Water	Level 2
A	SW	Surface Water	Level 3
O	WW	Waste Water	Level 4
P	X	Specify	EDD

Remarks:

Hold Air-bred metals (metals filtered)

By: *F*
Date: *1/10*

Received By: *A*
Date: *12:30*
By: *SME Cold Storage*

1 bus. day _____ 2 bus. days _____ 3 bus. days _____ 4 bus. days _____

Turnaround time ALL RESULTS WILL BE SENT BY THE END OF THE BUSINESS DAY

Date/time: *1/10* | Receiver: *1*

Fibertec project number:

874

LAB USE ONLY

SVD ON

5-7 bus. days (standard)

Other (specify time/date requirement)

Temperature upon receipt at Lab: *4.30°C*

JAN 15 2018

RECEIVED BY LA

[Signature]

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Fibertec
environmental
services

Analytical Laboratory
1914 Holloway Drive
Holt, MI 48842
Phone: 517 699 0345
Fax: 517 699 0388
email: lab@fibertec.us

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Fax: 517 699 0382
email: asbestos@fibertechs.com

Geoprobe
11766 E. Grand River Rd.
Brighton, MI 48116
Phone: 810 220 3300
Fax: 810 220 3311

Chain of Custody #
162115
PAGE 3 of

Name: **M**
Contact Person: **Christina Bon / Matt Vander Ende.**
Project Name/ Number: **07 0.001.006 GC**

Email distribution list:

Quote#

Purchase Order#
Date Time Sample # Client Sample Descriptor

1/11	8:06		SR51-10-5-11.5
	8:45		MW-5
	9:00		MW-N
	9:15		SR-51-8-12
	9:50		SR-32-0-1
	9:55		SR-33-0-1
	10:02		SR-34 0-1
	10:11		SR-35 0-1
	10:18		SR-36-0-1
	11:08		SR-1 0-1

MATRIX (SEE RIGHT CORNER FOR CODE)

OF CONTAINERS

	5	3	X	X					
	6	6	X	X					
	6	3	X	X					
	6	3	X	X					
	5	1	X	X					
	5	1	X	X					
	5	1	X	X					
	5	1	X	X					
	5	1	X	X					
	5	1	X	X					

PARAMETERS

PAHs
PCBs
MI-10 metals
Chlor. Pest.
Chlor. Herb.
Arsenic, lead, mercury

HOLD SAMPLE

S	GW	Water	Level 2
A AR	SW	Water	Level 3
O Oil	WW	Water	Level 4
P Wipe	X	Specify	EDD

Remarks:

H
a
1
cars

NOV 2011

JAN 13 2010

IC

Sampled/Relinquished By: **Chris**

Received By: **1**
By: **17:30**

SME Cold Storage

Relinquished

TS WILL BE SENT BY THE END OF

1 bus. day _____ 2 bus. days

_____ 3 bus. days

_____ 4 bus. days

7 bus. days (standard)

Other (specify time/date requirement):

LAB USE ONLY

Fibertec project number: **82744**

NOV 2011

Temperature upon receipt at Lab: **4.3°C**

ICE

Please see back for terms and conditions

Analytical Laboratory
1914 Holloway Drive
Holt, MI 48842
Phone: 517 699 0345
Fax: 517 699 0388
email: lab@fibertec.us

Industrial Hygiene Services, Inc.
1914 Holloway Drive
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Phone: 517 699 0345
Fax: 517 699 0382
email: asbestos@fibertecus.com

Geoprobe
11766 E. Grand River Rd.
Brighton, MI 48116
Phone: 810 220 3300
Fax: 810 220 3311

Name: **E**
Person: **h**
Name/ Number: **0 -00.001,006**
Email distribution list:

Quote#
Purchase Order#
Date Time Sample # Client Sample Descriptor

1/11 11:15 SB-2-0-1
11:26 SB-3-0-1
11:31 SB-4-0-1
11:41 SB-5-0-1
11:45 SB-6-0-1
12:00 337-7-12
12:20 SB-7-0-1
12:32 SB-8-0-1
12:41 SB-9-0-1
12:48 SI-1

MATRIX (SEE RIGHT CORNER FOR CODE)
OF CONTAINERS

VOLs
PAHs
MI-10 metals
Chlor.
Chlor. Herb
Arsenic, lead, mercu

HOLD SAMPLE

Matrix Code	Deliverables
S GW Ground Water	Level 2
A SW Surface Water	Level 3
O WW Waste Water	Level 4
P Other: Specify	EDD

Remarks:

Comments:

Hold Filtered sample
ROVD BY LAB
JAN 15 2010
JAN 15 2010

LAB USE ONLY

Sampled/Relinquished By:

Relinquished

Relinquished

Relinquished

Date/Time

1/12/18 12:30

Received By:

SME Cold Storage.

Turnaround time ALL RESULTS WILL BE SENT BY THE END OF THE BUSINESS DAY

1 bus. day

2 bus. days

3 bus. days

4 bus. days

5-7 bus. days (standard)

Other (specify time/date requirement)

Fibertec project number:

82744

Temperature upon receipt at Lab:

43°C

LAB USE ONLY

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Fibertec
Environmental
Services

Analytical Laboratory
1914 Holloway Drive
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email: lab@fibertec.us

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email: asbestos@fibertechs.com

Geoprobe
11766 E. Grand River Rd
Brighton, MI 48116
Phone: 810 220 3300
Fax: 810 220 3311

Chain of Custody #
162114
PAGE of

Name: **M**

Person:

Name/Number:

077
1/McH Vander E. etc
.08.001.006
11 GC

Email distribution list:

Quote#

Purchase Order#

Sample #

Client Sample Descriptor

Date	Time	Sample #	Client Sample Descriptor	MATRIX (SEE RIGHT CORNER FOR CODE)	# OF CONTAINERS
1/11	12:55		SB-11_0-1		5 1
	1 05		SB-12_0-1		5 1
	1 25		SB- _0-1		5 1
	1:40		SB-20_0-1		5 1
	1:46		SB-21_0-1		5 1
	1:56		SB-R_0-1		5 1
	2:00		SB-17_0-1		5 1
	2:10		SB-16_0-1		5 1
	2:20		SB-15_0-1		5 1
	2:24		-4		5 1

MATRIX (SEE RIGHT CORNER FOR CODE)

OF CONTAINERS

VOCs
PAHs
PCBs
YF-10 metals
Chlor. Pest.
lor. Herb.
ic

PARAM

HOLD SAMPLE

S GW Ground Water
A SW Water
O WW Waste Water
P Other: Specify

Matrix Code

Deliverables

Remarks:

Comments:

mpied/Relinquished By:

By:

Relinquished By:

1 12 18 2:30
P 10:00 AM
ME Cold na

BE SENT BY THE END OF

DAY

7

LAB USE ONLY

1 bus. day

2 bus. days

3 bus. days

Fibertec project number:

82744

ROWDON
ICE

bus. days (standard)

Other (specify time/date requirement)

Temperature upon receipt at Lab: 4.3°C

REMOVED BY LAB
JAN 15 2010

Please see back for terms and conditions

Fibertec
environmental
services

1914 Holloway Drive
Holt, MI 48842
Phone: 517 699 0345
Fax: 517 699 0388
email: lab@fibertec.us

Industrial Hygiene Services, Inc.
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Fax: 517 699 0382
email: asbestos@fibertechs.com

Geoprobe
11766 E. Grand River Rd.
Brighton, MI 48116
Phone: 810 220 3300
Fax: 810 220 3311

Chain of Custody #

113

of

Client Name **SME**

Person: **Chris**

Matt Vander Ertle

Project Name/Number: **077832.00.001.006**

Bozell GC

Email distribution list:

PARAMET

Matrix Code

Deliverables

	S	GW	nd Water	Level 2
A Ar		SW	Water	Level 3
O Oil		WW	Water	Level 4
P Wipe		X	Specify	EDD

Quote#

Purchase Order#

Date	Time	Sample #	Client Sample Descriptor	MATRIX (SEE RIGHT CORNER FOR CODE)	# OF CONTAINERS
1/11	2:28		SB-14-0-1		5 1
			SB-13-0-1		5 1
			SB-22-0-1		5 1
			SB-23-0-1		5 1
			SB-25-0-1		5 1
1/12	8:06		SB-24-0-1		5 1
			SB-26-0-1		5 1
			SB-28-0-1		5 1
			SB-27-0-1		5 1
			SB-29-0-1		5 1

LOCs
PAHs
CBs
MI-10 metals
Chlor. Pest
Chlor. Herb

ROVDO BY T&R

JAN 15 2010

Comments:

Sampled/Relinquished By: **(Signature)**

By:

By:

1 bus day

2 bus. days

3 bus. days

4 bus. days

5-7 bus. days (standard)

Other (specify time/date requirement)

FOR FURTHER INFORMATION ALL RESULTS WILL BE SENT BY THE END OF THE BUSINESS DAY

LAB USE ONLY

Fibertec project number:

82794

Temperature upon receipt at Lab: **4.30C**

ROVDO ICE

Please see back for terms and conditions

Fibertec
Environmental
Services

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Brighton, MI 48116
Phone: 810 220 3300
Fax: 810 220 3311

Chain of Custody #
160022
PAGE of

Analytical Laboratory

Client Name:

Person *hien Math*

Project Name/ Number:

*077832.00.001.006
Rowell GC*

Email distribution list:

Quote#

Purchase Order#

Date	Time	Sample #	Client Sample Descriptor
<i>1/12</i>	<i>9:00</i>		<i>SR-30-0-1</i>
<i>1/12</i>	<i>9:14</i>		<i>SR-31-0-1</i>

PARAMETERS

MATRIX (SEE RIGHT CORNER FOR CODE)	# OF CONTAINERS	OC	Hs	PCBs	MI-10 metals	Chlor. Pest.	Chlor. Herb.	Arsenic, lead mercury
<i>S</i>	<i>1</i>					<i>X</i>	<i>X</i>	<i>X</i>
<i>S</i>	<i>1</i>					<i>X</i>	<i>X</i>	<i>X</i>

Matrix Code	Deliverables
S	nd Water Level 2
A	SW Water Level 3
O	Oil Water Level 4
P	WW Specify EDD

Remarks:

JAN 15 2018

Comments:

Sampled/Relinquished By:

SHREK

Date/Time

D 1 1 8 15:00

Received By:

SME

Receiver

to

BE SENT BY THE END OF

DAY

LAB USE ONLY

1 bus. day _____ 2 bus. days

_____ 3 bus. days

_____ 4 bus. days

Fibertec project number:

82744 **ROWD O ICE**

bus. days (standard)

Other (specify time/date requirement)

Temperature upon receipt at Lab: *4.3°C*

Please see back for terms and conditions

1914 Holloway Drive
Holt, MI 48842
Phone: 517 699 0345
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email: lab@fibertec.us

8660 S. Mackinow Trail
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Phone: 231 775 8368
Fax: 231 775 8584
email: lab@fibertec.us

Industrial Hygiene Services, Inc.
1914 Holloway Drive
Holt, MI 48842
Phone: 517 699 0345
Fax: 517 699 0382
email: asbestos@fibertechs.com

Geoprobe
11766 E. Grand River Rd.
Brighton, MI 48116
Phone: 810 220 3300
Fax: 810 220 3311

Chain of Custody #
62117

Client Name: **SME**

Contact Person:

Project Name/ Number: **077832, 00, 001, 006**

Emgll distribution list:
Rogell GC

Quote#

Purchase Order#

Client Sample Descriptor

Date	Time	Sample #	Client Sample Descriptor
1/10/18		DUP-01	
1/10/18		DUP-1 - GW	
1/11/18		DUP-02	
1/12/18		DUP-03	
1/2/18	10:00	Field Blank	
1/12/18	10:00	Meln Blank	

Comments:

Sampled/Relinquished By:

Relinquished By:

Relinquished By:

1 bus. day

2 bus. days

3 bus. days

4 bus. days

Other (specify time/date requirement)

X 5-7 bus. days (standard)

PARAMETERS

MATRIX (SEE RIGHT CORNER FOR CODE)	
# OF CONTAINERS	
JOCs	
PAHs	
PEBC	
MI-LO metals	
Chlor Pest	
Chlor Herb	
Arsenic, Lead, Mercury	

HOLD SAMPLE

S Soil	GW	Water
A Air	SW	Water
O Oil	WW	Water
P	X Other: Specify	

Matrix Code

Deliverables

Level 2	Level 3	Level 4	EDD
---------	---------	---------	-----

held

marked file

Time Received By:
1 12/18 12:30
D 2 10:00am
Date/Time DAY 1/12/18 3:11p

By: **SME Cold Storage**

JAN 15 2018

Fibertec project number: **82744**

Temperature upon receipt at Lab: **4.3°C**

PROVIDE

Please see back for terms and conditions



Case Narrative - Supplemental

Client: Soil and Materials Engineers, Inc.
Project Identification: Rogell GC /077832.00.001.006

On February 2, 2018 analysis for fine/coarse lead, arsenic, lead and hexavalent chromium was requested as listed below. The samples were prepared and analyzed within the required holding time. Exceptions are noted below.

Cross reference

Client ID#	Lab ID#	Matrix	Requested Tests
SB-39 1-3	82744-002	S	Hexavalent Chromium
SB-44 8-12	82744-012	W	Arsenic, Lead
SB-45 0-1	82744-013	S	Fine/Coarse Lead, Hexavalent Chromium
SB-49 0-1	82744-017	S	Hexavalent Chromium
SB-52 1-2	82744-018	S	Hexavalent Chromium
SB-33 0-1	82744-024	S	Fine/Coarse Lead
SB-6 0-1	82744-033	S	Fine/Coarse Lead
SB-11 0-1	82744-039	S	Fine/Coarse Lead
SB-20 0-1	82744-042	S	Fine/Coarse Lead
SB-31 0-1	82744-060	S	Fine/Coarse Lead

Exceptions

Hexavalent Chromium by EPA 7196A

Sample 82744-017 was qualified for hexavalent chromium as the spiked sample recovery was not within control limits for the MS (0% recovery with criteria being 75-125%). The post digestion spike was also low (19%) indicating a potential reducing sample matrix. The laboratory control sample was acceptable.

No other exceptions were observed.

Sample data has been reviewed and results are valid with exceptions as noted above.