

April 8, 2015

Ms. Anuradha Mohanty
Land Restoration Program
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, Maryland 21230

RE: Groundwater Characterization Investigation
Elite/Free State/Star Cleaners
1 S. First Street
Delmar, Wicomico County, Maryland
Remedial Management Services Contract
CGS Project Number CG-12-0763.03

Dear Ms. Mohanty:

Chesapeake GeoSciences, Inc. (CGS) is pleased to present the enclosed report of the Groundwater Characterization Investigation performed at the Elite/Free State/Star Cleaners site located at 1 S. First Street in Delmar, Wicomico County, Maryland.

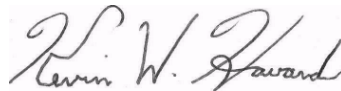
The enclosed report includes information regarding the field methodologies utilized during the investigation, the results of the investigation, and conclusions generated based on those results.

CGS is pleased to have had the opportunity to prepare this report for the Maryland Department of the Environment, Land Restoration Program (MDE-LRP). If there are any questions, please contact our office in Columbia, Maryland at (410) 740-1911 or via email. The undersigned can be reached at extension 106 or nlove@cgs.us.com or at extension 103 or khoward@cgs.us.com.

Sincerely,
Chesapeake GeoSciences, Inc.



Nancy D. Love, PG
Senior Project Manager



Kevin W. Howard, PG
Program Manager

Enclosure: Groundwater Characterization Investigation Report

cc: Mr. Art O'Connell, MDE-LRP
Mr. Brian Dietz, MDE-LRP
Project File

**Groundwater Characterization Investigation
Elite/Free State/Star Cleaners
1 S. First Street
Delmar, Wicomico County, Maryland**

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Prepared for:

Maryland Department of the Environment
Land Restoration Program
1800 Washington Boulevard
Baltimore, MD 21230

Remedial Management Services Contract
Contract Control No. U00B4400036

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Prepared by:

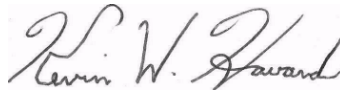
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CGS Proposal No. CG-P14-1763R (Work Plan #6)

CGS Project No. CG-12-0763.03



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**Groundwater Characterization Investigation
Elite/Free State/Star Cleaners
1 S. First Street
Delmar, Wicomico County, Maryland**

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**Groundwater Characterization Investigation
Elite/Free State/Star Cleaners
1 S. First Street
Delmar, Wicomico County, Maryland**

1.0 INTRODUCTION AND BACKGROUND

This report documents the methodology and results of a Groundwater Characterization Investigation that was performed by Chesapeake GeoSciences, Inc. (CGS) on behalf of the Maryland Department of the Environment, Land Restoration Program (MDE-LRP) at and in the vicinity of the former Elite/Free State/Star Cleaners that was located at 1 S. First Street in Delmar, Maryland (Site). CGS was retained by MDE-LRP, under its Remedial Management Services (RMS) Contract, to perform a series of investigation activities to gain information regarding chlorinated hydrocarbon contamination that had previously been detected at the Site. The scope of work for the Groundwater Characterization Investigation is outlined in CGS Proposal CG-P14-1763R (Work Plan #6) dated August 4, 2014.

1.1 Physical Setting, Site Background, and Prior Investigation

The location of the Site and the area included in the Groundwater Characterization Investigation, discussed in this report, are shown in **Figure 1**. The Site is located in a medium-density mixed-use area in the Maryland side of the Town of Delmar, approximately 180 feet south of the Maryland-Delaware state line. An alley borders the Site to the north, S. First Street borders the Site to the east, a residential property borders the Site to the south, and a municipally-owned property borders the Site to the west. Commercial properties and additional residential and municipally-owned properties are located in the immediate site vicinity. The layout of the Site and surrounding area and the distribution of commercial, residential, municipally-owned, and other properties are shown on **Figure 2**.

MDE-LRP performed a Site Inspection (SI) at and in the vicinity of the Site in 2012 (MDE-LRP, 2013). As stated in the SI report, the Site is roughly 5,000 square feet in size. The current site building, which occupies approximately 75% of the Site, was constructed in 1920 (SDAT). According to the information contained in the SI report, the Site appears to have been operated as an automobile dealership in the early 1920s and later as a furniture store. Laundry and dry cleaning operations, under the names of Elite Cleaners, Elite-Free State Cleaners, Star Cleaners, and/or Star Laundry, appear to have been located on-site between the early 1950s through 1970 or later (MDE-LRP, 2013). The SI report states that an above ground storage tank (AST) had previously been located on a concrete pad west of the northwest corner of the site building. The purpose of the AST (i.e., what it held) was not specified in the SI report. The site building is currently vacant.

The MDE-LRP SI included the collection and analysis of 13 groundwater samples, two surface soil samples, six subsurface soil samples, two indoor air samples, and one outdoor air sample. The MDE-LRP SI investigation area included the Groundwater Characterization Investigation Area shown on **Figure 1** and additional properties located to the south and southeast of this area. The groundwater samples were collected from the Site and 10 additional properties from the first water bearing zone to a maximum depth of 20 feet below grade (BG). The surface soil samples were obtained from two off-site properties between the depths of 0 and 1 foot or 0.5 and 1.5 feet BG, and the subsurface soil samples were obtained from the Site and five additional properties between the depths of 4 and 5.5 feet BG or 9 and 10 feet BG. The indoor and outdoor air samples were obtained from the commercial property located north of the Site. The groundwater, soil, and air sample results were compared to US Environmental Protection Agency (EPA) Tapwater, Residential Soil, and Industrial Air Regional Screening Levels (RSLs), respectively. The groundwater and soil sample results were also compared to MDE Groundwater and Soil Cleanup Standards.

The dry cleaning solvent tetrachloroethylene (also known as perchloroethylene or PCE and categorized as a chlorinated hydrocarbon) has been identified as the primary constituent of potential concern (COPC) for the Site. As stated in the SI report, PCE was detected in on-site and off-site groundwater samples at concentrations that exceed the EPA Tapwater RSL and the MDE Groundwater Cleanup Standard. The highest PCE concentrations detected during the 2012 MDE-LRP SI in each of the sampled media are summarized in **Table A** below.

Table A: Summary of Prior PCE Analytical Results

Media	On-Site (Location)	Off-Site (Location)
Groundwater [micrograms per liter (µg/L)]	84,400 (GW-24)	38 (GW-3)
Surface Soil [milligrams per kilogram (mg/Kg)]	Not Collected	0.009 (S-1)
Subsurface Soil (mg/Kg)	0.0779 (SS-24)	Not Detected
Indoor Air [micrograms per cubic meter (µg/m ³)]	Not Collected	Not Detected
Outdoor Air (µg/m ³)	Not Collected	Not Detected

Table Notes

Co-located GW-24/SS-24 was located on-site north of the site building (Repeat of GW-1).

S-1 was located off-site immediately west of the site building near the former AST location.

GW-3 was located off-site approximately 155 feet southwest of GW-24.

1.2 Physiographic Setting and Community Water Supply

Figure 1 shows the regional topography and surface water hydrology of the Site and surrounding area as depicted on the United States Geological Survey (USGS) 7.5-minute-series Delmar Quadrangle Topographic Map. The Site and surrounding area are located on a slight plateau with an elevation of approximately 50 feet above mean sea level (amsl). Surface topography in the region of the Site slightly slopes radially from the plateau. Headwaters for tributaries of rivers that flow into the Chesapeake Bay are located north (Meadow Branch), east (Leonard Pond Run), southeast (Wood Creek), and northwest (Connelly Mill Branch) of the Site (MERLIN Online).

As stated in the SI report, “The majority of the population in Delmar relies on municipal water supplies (derived from municipal production wells) for their potable water.” The municipal production wells are located north of the Site in Delaware. The Site is located within the southern boundary of the Well Head Protection Area for the municipal well cluster. The report also states that “There are 28 domestic wells located within a half mile of the Site.” (MDE-LRP, 2013).

Additional information regarding the hydrogeologic setting of the Site and surrounding area is discussed below in Sections 2.2.2 and 4.1.

1.3 Scope of Investigation

This report documents the Groundwater Characterization Investigation activities performed at the Site between November 5, 2014 and December 5, 2014. These activities included a site visit, utility clearances, a High Resolution Site Characterization (HRSC) Survey, and a discrete depth groundwater sampling event.

1.4 Report Organization

This report consists of eight sections. Brief summaries of Sections 2.0 through 8.0 are provided below:

- Section 2.0 presents the methodology of the field investigation and observations made during that time.
- Section 3.0 summarizes the laboratory analytical data generated from the analysis of samples obtained during the field investigation and the results of a generic risk-based screening analysis.

- Section 4.0 presents a site characterization discussion.
- Section 5.0 presents the conclusions made based upon the data analysis and site characterization.
- Sections 6.0 and 7.0 present the limitations to this report and the references used in developing this report.

In addition to the text sections described above, this report includes a series of figures, tables, and appendices. Figures 1 through 12 illustrate the setting of the Site, the locations of site features, the sampling point locations, and data presentation maps and images. Note that Figures 2 through 12 are designed to print on 11 x 17-inch paper. Tables A through F, embedded within the text of this report, and Table 1, attached to this report, present data and information utilized/gathered/evaluated during the investigation. Appendices A through D present supporting documents generated/utilized during the investigation.

It should be noted that the MDE-LRP SI report (MDE-LRP, 2013) used a site address of 3 S. First Street. The correct site address is 1 S. First Street. Deliverables related to the HRSC Survey included in this report (specifically Appendices A and D, Figures 7 and 12, and the two and three dimensional models generated from the HRSC data that are discussed below in Section 4.3) use the address reported in the SI. CGS apologizes for any inconvenience that this may cause.

2.0 FIELD INVESTIGATION - METHODOLOGY AND FIELD OBSERVATIONS

As discussed above, the fieldwork for the Groundwater Characterization Investigation was initiated on November 5, 2014 and completed on December 5, 2014. Prior to the initiation of the fieldwork, MDE-LRP negotiated access agreements with the owner of the Site and with the owners of additional properties located within the immediate vicinity of the Site. The parcels of land for which access was granted by the respective property owners are shown as shaded in **Figure 2**.

2.1 Site Visit and Utility Clearance

A site visit was performed on November 5, 2014 by representatives of MDE-LRP and CGS to mark an initial set of locations where borings might be advanced during the HRSC survey. Utility clearances were performed prior to advancing any borings to ensure that subsurface utilities were not damaged during boring advancement activities. Miss Utility marked out the locations of subsurface public utilities associated with each of the parcels for which access was granted. On November 18 and 19, 2014, Edwards Utility Mapping Corporation (EUMC), a professional utility locating firm, verified Miss Utility's findings and marked out additional un-marked, private utilities on the entirety of each of the access-granted parcels. The Miss Utility clearance tickets were renewed prior to mobilization for the HRSC Survey.

2.2 High Resolution Site Characterization (HRSC) Survey

2.2.1 Methodology

CGS retained Vironex, Inc. (Vironex) of Millersville, Maryland and Tidewater, Inc. (Tidewater) of Elkridge, Maryland to perform the HRSC survey at the Site. The HRSC survey was performed on December 1 through 3, 2014 using a Geoprobe® 6620DT direct-push technology (DPT) rig and a State-of-the-art Membrane Interface Hydraulic Profiling Tool (MiHPT) probing system and was supervised by a CGS geologist. The HRSC survey was performed to acquire HRSC data for use in characterizing subsurface contamination and profiling subsurface soil types.

A MiHPT probe is a 1.75-inch-diameter steel probe, which is driven into the subsurface using a Geoprobe® DPT rig. As the MiHPT probe advances through soil and groundwater, volatile organic compound (VOC) concentrations are characterized using a lab grade gas chromatograph (GC) equipped

with Electron Capture Detector (ECD), Halogenated Specific Detector (XSD), Photoionization Detector (PID), and Flame Ionization Detector (FID) sensors. The ECD is the primary instrument which detects chlorinated hydrocarbons, and the PID is the primary instrument which detects petroleum hydrocarbons. When discussed collectively in this report, the ECD/XSD/PID/FID data will be referred to as MIP (Membrane Interface Probe) data.

The MiHPT probe is also equipped with an Electrical Conductivity (EC) sensor and a Hydraulic Profiling Tool (HPT) which are utilized to characterize soil types and hydraulic properties of the soil as the probe advances in the boring. Lower EC values are associated with coarser-grained particles (i.e., sands); whereas higher EC values are associated with finer-grained particles (i.e., silts and clays). Water pressure and flow rate measurements acquired by the HPT can be used to estimate the hydraulic conductivity (K) of a saturated formation. Sands are more permeable (i.e., more able to transmit water) than silts and clays and have higher K values.

Eleven (11) MiHPT borings were advanced during the three-day HRSC survey. The MiHPT borings were advanced to the depth of Geoprobe®/MiHPT probe refusal or a maximum depth of 60 feet BG. The locations of the 11 MiHPT borings are shown in **Figure 3** and described below in **Table B**. The MiHPT borings were numbered as they were being advanced. Geoprobe®/MiHPT probe refusal was encountered in nine of the borings. Two of the borings (MiHPT10 and MiHPT11) were advanced to the target depth of 60 feet BG. MiHPT profile logs were emailed from the field as they were being generated, which allowed the CGS and MDE-LRP project managers to track and direct the progress of the survey based on the real time data as they were being received. Nine of the MiHPT borings were advanced at locations identified during the November 5, 2014 site visit. Two of the borings (MiHPT09 and MiHPT11) were advanced at locations chosen as the HRSC survey progressed.

Table B: Summary of MiHPT Boring Locations

HRSC Survey Day	MiHPT Boring	Pre-flagged Location?	Location Rational	Approximate Boring Depth (feet BG)
1	MiHPT01	Yes	Characterize conditions north of the site building. Calibration Location (same location as MDE-LRP SI GW-1 and GW-24).	48
	MiHPT02	Yes	Characterize conditions north of the Site and near the Maryland-Delaware state line (near MDE-LRP SI GW-22 – dry temporary well).	37
	MiHPT03	Yes	Characterize conditions northeast of the Site and near the Maryland-Delaware state line.	38
2	MiHPT04	Yes	Characterize conditions west of the Site.	50
	MiHPT05	Yes	Characterize conditions southwest of the Site. Calibration Location (same location as MDE-LRP SI GW-3).	54
	MiHPT06	Yes	Characterize conditions east of the Site.	33
	MiHPT07	Yes	Characterize conditions southeast of the Site.	39
3	MiHPT08	Yes	Characterize conditions east of the site building.	44
	MiHPT09	No	Characterize conditions west of the site building between MiHPT01 and MiHPT05.	46
	MiHPT10	Yes	Characterize conditions northwest of the Site and near the Maryland-Delaware state line.	60
	MiHPT11	No	Characterize conditions southwest of the Site and east of MiHPT05.	60

All of the MiHPT borings were backfilled with bentonite at the end of the survey. Asphalt and concrete patching was performed as needed.

Vironex's Membrane Interface Probe and Hydraulic Profiling Tool Investigation Report (**Appendix A**) discusses the survey methodology, provides the MiHPT profile logs, and presents additional technical details on the MiHPT probing system.

2.2.2 Brief Discussion of HRSC Survey Data

Data acquired during the HRSC survey, as depicted in the MiHPT profile logs in **Appendix A**, were utilized to choose the targeted sampling intervals for the discrete groundwater sampling event discussed below in Section 2.3. Therefore, a brief discussion of those data is presented herein.

The EC and HPT data demonstrate a layered unconsolidated stratigraphy with varying grain size distributions and K values. Three or four stratigraphic "units" were identified based on the EC and HPT data. Each is described below according to its relative permeability.

- **Unit 1** has a variable/moderate relative permeability and extends from the ground surface to a depth of 11 to 15 feet BG. The top of Unit 1 is unsaturated. Saturation may begin in Unit 1 at a depth as shallow as 8 to 10 feet BG.
- **Unit 2** has a low relative permeability and extends from a depth of 11 to 15 feet BG to depths ranging from 16 to 29 feet BG. Unit 2 is thickest in the northern portion of the investigation area and pinches out in the southern portion of the investigation area.
- **Unit 3** has a high relative permeability and extends from a depth of 16 to 29 feet BG to depths ranging from 41 to greater than 60 feet BG. Unit 3 contains occasional thin lower permeability lenses.
- **Unit 4** has a variable/moderate relative permeability and was observed starting at a depth of 41 feet BG in borings MiHPT01 and MiHPT08 and extending to the bottom of both of these borings. Based on its apparent limited lateral extent, it is likely that Unit 4 is a thicker lower permeability lens contained within Unit 3.

The MIP data demonstrate subsurface VOC contamination. As mentioned above, the ECD is the primary instrument which detects chlorinated hydrocarbons. The following is a brief discussion of the ECD data.

- ECD responses, of varying magnitude, were observed at the bottom of Unit 1 in many of the MiHPT borings.
- The highest ECD responses were observed at MiHPT01 and MiHPT08. ECD responses were observed at MiHPT01 in Units 1, 2, 3, and 4 and at MiHPT08 in Units 1, 2, and 3.
- High ECD responses were observed at MiHPT09. ECD responses were observed at MiHPT09 in Units 1 and 2 and into the top of Unit 3.
- Moderate ECD responses were observed at MiHPT05 and MiHPT11. ECD responses were observed at MiHPT05 in Unit 3 and at MiHPT11 in Units 1 and 3.
- Low ECD responses were commonly observed elsewhere.

Site characterization data acquired during the HRSC survey are further discussed below in Sections 4.1 and 4.2.

2.3 Discrete Depth Groundwater Sampling Event

The discrete groundwater sampling event was performed on December 4 and 5, 2014 following completion of the HRSC survey. Discrete groundwater sampling borings were advanced, by Tidewater

using the Geoprobe® DPT rig, at seven locations which were chosen in consultation with MDE-LRP based on the HRSC survey results (both subsurface contamination and hydraulic data) as briefly summarized above in Section 2.2.2.

Because the number of discrete groundwater sampling borings that could be accomplished in the two-day sampling event was not known, four priority locations were chosen. Sampling progressed from “clean to dirty” at these locations. Sampling was performed at three additional locations as time allowed. The locations of the seven MiHPT borings where discrete groundwater sampling borings were advanced at adjacent locations are shown in **Figure 4** and described below in **Table C**.

Table C: Summary of the Discrete Depth Groundwater Samples

Order of Sample Collection	Location Classification	Location Rational	Failed Sample Collection Depths (feet BG) (Stratigraphic Unit)	Successful Sample Collection Depths (feet BG) (Stratigraphic Unit)
MiHPT03	Priority	Characterize conditions northeast of the Site and near the Maryland-Delaware state line where low ECD responses were observed.	9-12 (Unit 1)	28-32 (Unit 3)
MiHPT02	Priority	Characterize conditions north of the Site and near the Maryland-Delaware state line where low ECD responses were observed.	9-12 (Unit 1/2)	26-30 (Unit 3) 41-45 (Unit 3)
MiHPT05	Priority	Characterize conditions southwest of the Site where moderate ECD responses were observed.	11-15 (Unit 1)	17-21 (Unit 3) 41-45 (Unit 3)* 52-56 (Unit 3)
MiHPT01	Priority	Characterize conditions north of the site building where the highest ECD responses were observed.	13-17 (Unit 2) 17-21 (Unit 2)	8-12 (Unit 1)* 24-28 (Unit 3) 32-36 (Unit 3) 39-43 (Unit 3/4) 52-56 (Unit 3/4)
MiHPT10	Extra	Characterize conditions northwest of the Site and near the Maryland-Delaware state line where low ECD responses were observed.	10-14 (Unit 1) 21-25 (Unit 2)	29-33 (Unit 3) 39-43 (Unit 3) 52-56 (Unit 3)
MiHPT07	Extra	Characterize conditions southeast of the Site where near background ECD responses were observed.	none	29-33 (Unit 3) 39-43 (Unit 3) 52-56 (Unit 3)
MiHPT09	Extra	Characterize conditions west of the site building between MiHPT01 and MiHPT05 where high ECD responses were observed.	8-12 (Unit 1/2) 14-18 (Unit 2)	18-22 (Unit 3) 29-33 (Unit 3) 39-43 (Unit 3) 52-56 (Unit 3)

Table Note

* Duplicate sample location.

Between two and seven intervals in each boring were targeted for sampling by CGS and MDE-LRP as listed in **Table C**. The groundwater samples were collected using the Geoprobe® rig and a 4-foot-long stainless steel groundwater screen point sampler, which was pushed into the sampling interval and

retracted to reveal the screen. A discrete boring was advanced for each targeted sampling interval, starting with the deepest interval and working upward (i.e., each sample was collected from its own dedicated boring). Disposable high density polyethylene (HDPE) tubing was used with a foot valve to collect the samples from the screen point sampler.

As shown in **Table C**, multiple attempts were made to collect groundwater samples from Units 1 and 2. However, because of the limited saturated thickness of Unit 1 and the low permeability of Unit 2, all but one attempt to sample these intervals failed using the screen point sampling methodology. The one successful sample was collected from Unit 1 at MiHPT01. Duplicate samples were collected from the two locations denoted in **Table C**.

Because a discrete boring was advanced for each sample and because disposable tubing was utilized during sample collection, the volume of purge and decontamination water generated was minimal (less than one gallon per sampling location). This water was discharged to the ground surface adjacent to each boring where it had been generated in accordance with MDE-LRP procedures.

The groundwater samples, duplicate samples, and a trip blank were preserved on ice and shipped to Air, Water & Soil Laboratories, Inc. (AWS) in Richmond, Virginia for laboratory analysis of VOCs via EPA Method 8260. All of the discrete groundwater sampling borings were backfilled with bentonite at the end of the sampling event. Asphalt patching was performed as needed.

3.0 LABORATORY ANALYTICAL RESULTS

The analytical results for the detected analytes in the groundwater samples are presented in **Table 1** (attached). Full analytical results are presented in **Table B-1** in **Appendix B**. The results are reported in µg/L [or parts per billion (ppb)]. Concentrations for detected analytes are shown on the tables in bold text. Limits of Detection (LODs) for analytes that were not detected in a particular sample are shown in the tables in gray text and qualified with a “U”. Any analyte detected at a concentration above the LOD, but below the Limit of Quantitation (LOQ) is presented in the tables with a “J” qualifier, indicating that the result is considered an estimated concentration. The laboratory report and chain-of-custody documentation are included in **Appendix C**.

3.1 Analytical Laboratory Results Screening Methodology

The groundwater analytical data were compared to MDE Groundwater Standards for Type I and II Aquifers (GWCSs) (MDE, 2008) and to EPA Tap Water RSLs (EPA, January 2015) to identify analytes and associated concentrations that may be of potential concern for the Site. These screening levels were developed with respect to the drinking water ingestion exposure route and are directly applicable to this investigation. The EPA RSLs utilized in this evaluation are the lower of those corresponding to a cancer risk of 1×10^{-6} or a Hazard Index of 0.1.

The results of the screening are shown in **Table 1** and **Table B-1** in **Appendix B**. Detected analyte concentrations or LODs which exceed the respective GWCSs and/or EPA Tap Water RSLs [hereafter referred to as the Risk-Based Screening Levels (RBSLs)] are underlined. Red text is used to highlight detected analyte concentrations which exceed the RBSLs. A brief summary of the analytical results and the results of the screening is included below in Section 3.2. A more detailed interpretation of the analytical results is included below in Section 4.2.

3.2 Groundwater Sample Analytical Results

A total of 27 VOCs were detected in the groundwater samples. (Note: Total Xylenes was not included in this accounting because its isomers were reported.) Nine VOCs [1,1,1,2-tetrachloroethane, 1,2,4-trimethylbenzene, 1,4-dichlorobenzene, benzene, chloroform, cis-1,2-dichloroethylene (cis-1,2-DCE),

naphthalene, PCE, and trichloroethylene (TCE)] were detected in the groundwater samples at concentrations that exceed the RBSLs.

4.0 SITE CHARACTERIZATION DISCUSSION

Data obtained from the MDE-LRP SI report and from literature references were utilized in combination with the data generated during this investigation to gain additional understanding of the hydrogeologic and contaminant conditions within the investigation area as discussed below in Sections 4.1 and 4.2, respectively.

4.1 Hydrogeologic Site Characterization

The investigation area is situated within the Atlantic Coastal Plain Physiographic Province of Maryland. The Atlantic Coastal Plain Province is characterized by flat to gently sloping topography, and horizontal unconsolidated sediment layers thickening toward the east.

Specifically, the investigation area is located near the border between the Denton Plain and Salisbury Plain Districts of the Delmarva Peninsula Region of the Atlantic Coastal Plain Physiographic Province. The Delmarva Peninsula Region encompasses the drainage divide between the Chesapeake Bay and the Atlantic Ocean south of the Elk River, and the investigation area itself is situated on the Chesapeake Bay side of that drainage divide in the Wicomico and Nanticoke River Watersheds. The Denton Plain District is an upland surface of very low topographic relief, whereas the Salisbury Plain District is a broad lowland plain with sand deposits developed via aeolian, fluvial, and marine processes which generated low-amplitude sand dunes and lagoon deposits. (Technical details obtained from Reger and Cleaves, 2008.)

The geologic unit mapped in this area is the Quaternary Lowland Deposits which contains undifferentiated sand, silt, clay, and gravel. In the region of the investigation area, the “Surficial deposits occur as intercalated fluvial sands and marsh muds (e.g. in upstream floodplains of the Wicomico and Nanticoke Rivers)...” (Quote and technical details obtained from MGS, 1968.)

The uppermost aquifer in the region of the Site is referred to as the “Surficial aquifer” and consists of Quaternary alluvium (i.e., the Lowland Deposits discussed above). “The depositional environments of the formations comprising the Surficial aquifer include eolian, fluvial, estuarine, lagoonal, and near-shore barrier and spit.” “The Surficial aquifer is predominantly an unconfined, water-table aquifer throughout its extent. However, reduced vertical permeability caused by localized silt and clay layers may result in confined or semi-confined conditions in some areas.” The Surficial aquifer is underlain by a series of confining units and additional aquifers which comprise the Maryland Coastal Plain aquifer system. The base of the Surficial aquifer in the region of the Site occurs at its contact with the Manokin aquifer to the west and the Upper Chesapeake confining unit 2 to the east. “Sand-on-sand contact between the Surficial aquifer and underlying aquifers results in a direct hydraulic connection which provides a source of recharge to the deeper, confined aquifers.” The Surficial aquifer is approximately 125 feet thick in the region of the Site and is used as a source of municipal and domestic water in Wicomico County. (Quotes and technical details obtained from Andreasen, et al., 2013.)

Based on its 2012 soil boring program, MDE-LRP described the unconsolidated formation to a depth of 20 feet BG as “an ungraded mix of sand, silt and clay changing to a uniform dense dry silty-clay at depth.” (MDE-LRP, 2013) This description is consistent with the HRSC survey data used to characterize Unit 1 and Unit 2 as discussed above in Section 2.2.2. The SI report description and the descriptions for Units 1 through 4 demonstrate a predominantly sandy formation with interbeds of finer-grained sediments of variable thickness which is consistent with the fluvial and floodplain depositional environment described in the literature referenced above.

As stated in the SI report, groundwater was encountered in sandy lenses of the shallow portion of the unconsolidated formation (i.e., in Unit 1) between the depths of 12 and 16 feet BG (MDE-LRP, 2013).

Based on the presumption that the shallow most, widespread MIP responses at 8 to 10 feet BG correspond with the top of the water table, groundwater may rise (or may seasonally rise) to depths this shallow.

4.2 Analytical Laboratory Data Discussion

As expected, based on the prior analytical data and HRSC data, high concentrations of VOC analytes were detected in the groundwater samples obtained from the investigation area. As discussed above in Section 3.2, nine VOCs were detected in the groundwater samples at concentrations that exceed the RBSLs (**Table 1**). These VOCs fall into the following categories:

- Chlorinated Hydrocarbons - 1,1,1,2-tetrachloroethane, 1,4-dichlorobenzene, chloroform, cis-1,2-DCE, PCE, and TCE; and
- Petroleum Hydrocarbons – 1,2,4-trimethylbenzene, benzene, and naphthalene.

Eight of the nine analytes listed above (i.e., all except benzene) were detected at concentrations that exceed the RBSLs in the groundwater sample/duplicate sample obtained from MiHPT01-GW (8-12'). This is the only sample that could be obtained from Unit 1 during this investigation using the chosen sampling methodology. The PCE concentration in this sample (72,400 µg/L) is similar in magnitude to the PCE concentration (84,400 µg/L) detected at this location during the MDE-LRP SI. This location is considered to be within the hot-spot of the groundwater contamination plume as currently defined by the MDE-LRP SI, the HRSC survey, and the discrete groundwater sampling event. It is presumed that the groundwater contamination plume hot-spot also includes MiHPT08 based on the HRSC survey data.

Five analytes that exceed the RBSLs, four chlorinated hydrocarbons (chloroform, cis-1,2-DCE, PCE, and TCE) and one petroleum hydrocarbon (benzene), were detected at concentrations that exceed the RBSLs in groundwater samples obtained from other locations.

- PCE and TCE were detected at concentrations that exceed the RBSLs in the remaining four MiHPT01 samples, in two of the three MiHPT05 samples, in two of the four MiHPT09 samples, and in two of the three MiHPT10 samples.
- cis-1,2-DCE was detected at concentrations that exceed the RBSL in two of the three MiHPT05 samples and in one of the four MiHPT09 samples. These samples are a subset of the samples listed above for PCE and TCE.
- Chloroform was detected at concentrations that exceed the RBSL in one of the three MiHPT05 samples and in one of the four MiHPT09 samples. These samples are a subset of the samples listed above for PCE, TCE, and cis-1,2-DCE.
- Benzene was detected at a concentration that exceeded the RBSL in the same MiHPT09 sample listed above for PCE, TCE, cis-1,2-DCE, and chloroform.
- Benzene was also detected at a concentration that exceeded the RBSL in the sample obtained from MiHPT02-GW (41-45'). Benzene is the only analyte detected at a concentration that exceeded an RBSL in this sample.

With the exception of MiHPT02-GW (41-45'), PCE and TCE were detected at concentrations that exceed the RBSLs in all of the samples in which other chlorinated hydrocarbon and petroleum hydrocarbon analytes were also detected at concentrations that exceed the RBSLs. Because PCE was detected at the highest concentrations and is the primary COPC for the Site, further contaminant site characterization discussion, as presented below in Section 4.4, will focus on PCE.

4.3 Generation and Viewing of HRSC Survey Data Images

As discussed in Vironex's Membrane Interface Probe and Hydraulic Profiling Tool Investigation Report (**Appendix A**), HRSC data are collected 20 times per foot (i.e., once every 0.05 foot) of boring

advancement. Vironex utilized sophisticated software to laterally interpolate the HRSC data between the borings and generate two and three dimensional graphics from the data. Vironex generated a second report, entitled Membrane Interface Hydraulic Profiling Tool (MiHPT) Investigation and Data Imaging Report (**Appendix D**), which discusses the methodology utilized to generate the graphics (i.e., three dimensional models, vertical cross-sections, and horizontal cross-sections), a listing of the graphics that were generated, and links to web sites from which a graphic viewer and the graphics themselves can be downloaded. Each of the graphics can be viewed as a rapidly progressing slide show or “short movie.” The slide shows can also be progressed one slide at a time, and screen shots of individual slides can be captured. Each of the graphics is interactive so that it can be viewed from any angle or magnification.

The three dimensional models progress from one end of the respective scale (concentration gradient for the MIP and EC data and flow rate or pressure gradient for the HPT data) to the other end of the scale. At the end of the three dimensional model slide shows, the viewer can visualize a three dimensional representation of the areas at the high end of the respective scale.

The cross-sections progress from one end of the respective section to the other end of the section. The easting vertical cross-sections (i.e., north-south cross-sections with view from the west looking east) progress from east to west; the northing vertical cross-sections (i.e., west-east cross-sections with view from the south looking north) progress from north to south; and the horizontal cross-sections progress from top to bottom.

All graphics were generated assuming a flat ground surface at an elevation of 50 feet amsl and using Maryland State Plane northing and easting coordinates for the borings. Vertical distances are depicted in feet below ground surface (bgs) (otherwise referred to as BG in this report). Horizontal distances are depicted in feet in the Maryland State Plane coordinate system. The coordinates for each boring are listed below in **Table D**.

Table D – Maryland State Plane Boring Coordinates

Boring	Easting (ft)	Northing (ft)
MiHPT01	1,719,809.908	290,487.686
MiHPT02	1,719,803.802	290,624.175
MiHPT03	1,719,895.205	290,629.647
MiHPT04	1,719,652.631	290,472.082
MiHPT05	1,719,733.927	290,352.130
MiHPT06	1,719,988.511	290,462.142
MiHPT07	1,719,993.412	290,351.939
MiHPT08	1,719,844.007	290,443.701
MiHPT09	1,719,762.289	290,429.274
MiHPT10	1,719,719.854	290,590.843
MiHPT11	1,719,768.276	290,351.464

As discussed earlier, the ECD is the primary instrument which detects chlorinated hydrocarbons. The ECD is highly sensitive to these compounds and can go over-range in areas of high concentration. This was seen at MiHPT01 and at MiHPT08. The ECD can become over-saturated at these times and often requires additional time before the instrument clears. This can result in a carry down of high ECD responses to deeper depths. The XSD also detects chlorinated hydrocarbons but is much less sensitive than the ECD. The XSD is used to provide definition in areas where over-range ECD responses are reported.

4.4 Contaminant Site Characterization

A series of figures were generated to illustrate the investigation area contaminant conditions as defined during this investigation. A PCE isoconcentration map, generated using the discrete depth groundwater sampling event analytical data, is presented in **Figure 5**. **Figure 6** presents three-dimensional (3-D)

representations of the PCE analytical data. **Figures 7 through 12** present screen shots captured from the HRSC Survey data images in the manner discussed above in Section 4.3. Note that **Figures 6 through 12** each contain four images. These images are presented at a reduced scale to efficiently illustrate the specific points discussed in the following paragraphs. It is suggested that the reader refer to the full-scale location maps presented in **Figures 3 and 4** for orientation during viewing of **Figures 6 through 12** and/or enlarge the images if viewed in Adobe reader.

The PCE isoconcentration map (**Figure 5**) presents the PCE analytical data in plan view. As depicted on **Figure 5**, PCE was detected at concentrations above its RBSLs (GWCS: 5 µg/L and RSL: 4.1 µg/L) in samples obtained from MiHPT01, MiHPT05, MiHPT09, and MiHPT10 at the depths listed in **Table E** below.

Table E: Groundwater Samples Where the PCE RBSLs were Exceeded

Boring	Sample Depth (feet BG) (Stratigraphic Unit)	PCE Concentration (µg/L)
MiHPT01	8-12 (Unit 1)	72,400
	24-28 (Unit 3)	743
	32-36 (Unit 3)	210
	39-43 (Unit 3/4)	142
	52-56 (Unit 3/4)*	91.5
MiHPT05	17-21 (Unit 3)	122
	41-45 (Unit 3)	477
MiHPT09	18-22 (Unit 3)	1,340
	29-33 (Unit 3)	5.33
MiHPT10	39-43 (Unit 3)	108
	52-56 (Unit 3)	11.3

Table Note

* Sample collected below the depth to which the MiHPT boring was advanced.

The highest concentration detected at each location, regardless of its depth, was contoured on **Figure 5** as an initial means of characterizing the shape of the PCE groundwater plume. The map was developed based on the analytical data and utilized the HRSC Survey data as well. As shown on **Figure 5**, the generalized PCE groundwater plume is depicted using a typical bull's eye pattern with the highest concentration/hot spot area including MiHPT01 and the area where MiHPT08 was advanced. The map illustrates contaminant migration from this hot spot area to the northwest at MiHPT10, to the southwest at MiHPT09 and MiHPT05, and includes the area to the south where MiHPT11 was advanced. The plume is depicted as being defined to concentrations below the RBSLs to the north and east using the available groundwater analytical data. The extent of the plume has not been defined to the RBSLs to the northwest, west, or south.

Figure 6 is a 3-D model of PCE analytical data viewed from four directions (plan view and from the west/southwest, northwest, and southwest/south). The images depict the outer view of the three-dimensional shape where PCE was detected at a concentration of 90 µg/L or greater as modeled by RockWorks software. The shape depicted in **Figure 6a** is similar to the generalized shape of the 100 µg/L isoconcentration contour line shown in **Figure 5**. The shape may be skewed to the southwest in the southern portion of the image (i.e., to locations where data are available). **Figure 6b** presents a visualization of a relatively thin lobe of the groundwater plume detected at depth at MiHPT10 (39-43') relative to the main portion of the plume. **Figure 6c** depicts the groundwater plume as being saddle shaped at MiHPT09 where a PCE concentration above 90 µg/L (specifically 1,340 µg/L) was detected in only the shallow-most sample (18-22') collected from this location. Much lower PCE concentrations were detected in the groundwater samples obtained from MiHPT09 at the depths of 39-43 feet and 52-56 feet BG (1.13 and 1.95 µg/L, respectively). PCE concentrations above 90 µg/L were detected at shallow and

deeper depths at MiHPT01 and MiHPT05 (i.e., the sides of the saddle). The groundwater plume is modeled as extending beyond the investigation area to the southwest as shown in **Figures 6a, 6b, and 6c**.

The characterizations listed below in **Table F** will be utilized when discussing the HRSC Survey data. The data obtained from the HRSC Survey generally correlated well with the analytical data. This is particularly the case for the “High” and the higher end of the “Moderate” characterizations and less so for the lower end of the “Moderate” and “Low” characterizations. The specific areas where these departures occur are discussed below.

Table F: HRSC Survey Color Characterization

Color	MIP Data Contaminant Characterization		EC Data Grain-Size Characterization
Dark Orange/Red	High	ECD>5.0E+6 uV	Very fine-grained sediment
Lime Green/Yellow/Light Orange	Moderate	ECD>2.5E+6 uV	
Green	Low	ECD>5.0E+5 uV	Predominantly fine-grained sediment
Blue	Very Low/None	ECD<5.0E+5 uV	Predominantly coarse-grained sediment

Figure 7 presents four screen shots of the ECD horizontal cross-section at depths of 5, 10, 15, 20 feet BG. The 5-foot screen shot (**Figure 7a**) exhibits moderate contaminant levels at MiHPT01 and low contaminant levels at MiHPT02 and MiHPT03. The 5-foot interval likely represents vapor-phase contamination. The 10-foot screen shot (**Figure 7b**) exhibits high contaminant levels at MiHPT01 and MiHPT08, moderate contaminant levels at MiHPT09, and low contaminant levels at MiHPT02, MiHPT03, MiHPT04, MiHPT05, and MiHPT11. The 10-foot interval may represent either vapor-phase, dissolved-phase, or residual contamination depending on the seasonal depth to the water table. The 15-foot screen shot (**Figure 7c**) exhibits high contaminant levels at MiHPT01, MiHPT08, and MiHPT09 and low contaminant levels at MiHPT02, MiHPT03, MiHPT04, MiHPT05, and MiHPT11. The 15-foot interval likely represents dissolved-phase contamination several feet below the water table. The 20-foot screen shot (**Figure 7d**) exhibits high contaminant levels at MiHPT01 and MiHPT08, moderate contaminant levels at MiHPT09, and low contaminant levels at MiHPT02, MiHPT03, MiHPT04, and MiHPT05. The 20-foot interval represents dissolved-phase contamination further below the water table. This 20-foot depth screen shot and those from deeper depth intervals illustrate a contraction of the higher levels of contamination to the area of MiHPT01 with increasing depth.

Figures 8, 9, and 10 present screen shots captured from the easting vertical cross-sections and show the ECD, XSD, and EC data where the cross-sections intersect MiHPT01 and MiHPT02 (**Figure 8**), MiHPT09 and MiHPT11 (**Figure 9**), and MiHPT05 and MiHPT10 (**Figure 10**). **Figure 11** presents screen shots captured from the northing vertical cross-sections and show the ECD, XSD, and EC data where the cross-sections intersect MiHPT01, MiHPT04, and MiHPT06. **Figure 12** presents screen shots captured from the 3-D ECD model and presents outer views of the three-dimensional shape characterized as having low contaminant levels as viewed from four directions (plan view and from the northwest, southeast, and northeast). An ECD value of 1.06E+6 uV was chosen for **Figure 12** which is slightly higher than the bottom of the low range identified herein. Note that the three-dimensional areas characterized as having moderate and high contaminant levels are contained “inside” of the three-dimensional low-contaminant-level shape depicted in **Figure 12**.

The shape depicted in **Figure 12a** is similar to the generalized shape of the 100 µg/L isoconcentration contour line shown in **Figure 5** and the shape depicted in **Figure 6a**. The primary differences between **Figure 12a** and **Figures 5 and 6a** are the exclusion of MiHPT10 where ECD responses were not detected and inclusion of MiHPT02 and MiHPT03 where low ECD responses were detected. The low ECD responses at MiHPT02 and MiHPT03 were primarily detected in Unit 1 which was not sampled, and therefore would not be reflected on **Figures 5 and 6**.

Figures 8a and 11a, which are based on the ECD data, depict the core of the groundwater plume as cone shaped, with its widest section between the depths of 10 and 20 feet BG and narrowing with depth. **Figures 8a and 11a** also suggest that the water table may seasonally rise to a depth as shallow as 8 feet BG. It should be noted that the “red” response portion of the groundwater plume depicted in the images presented in **Figures 8a and 11a** extends to a depth of 28 feet BG and may reflect carry down of the over-range ECD detections. The “dark orange,” “light orange,” and “yellow” response portions of the groundwater plume, shown below a depth of 28 feet BG, reflect ECD data below the depth where the over-range ECD detections occurred. **Figures 8b and 11b**, which are based on the XSD data, illustrate that the highest levels of contamination detected during the HRSC survey are present between the depths of 10 and 18 feet BG at MiHPT01.

With the exception of the analytical data for the groundwater samples obtained from MiHPT02 (26-30’), MiHPT03 (28-32’), MiHPT05 (17-21’), and MiHPT10 (39-43’), the data obtained from the HRSC Survey correlate well with the analytical data. As shown in **Figures 9a, 12b, and 12c**, the moderate/low contaminant levels at a depth of 40 to 45 feet BG at MiHPT11 and at MiHPT05 were modeled as not being connected to the high contaminant levels detected at shallow depths at MiHPT09. This area was modeled differently from the ECD data than the saddle shaped area modeled from the analytical data as shown in **Figure 6c**. As shown in **Figure 10a**, no contamination was detected at MiHPT10 during the HRSC survey as opposed to the lobe shaped area depicted in **Figures 6b and 6d**. Accordingly, concentrations of 122 and 108 µg/L, as detected in the groundwater samples from MiHPT05 (17-21’) and MiHPT10 (39-43’), did not result in appreciable ECD responses. Conversely, low ECD responses were recorded at the specific intervals where the groundwater samples from MiHPT02 (26-30’) (one J flagged analyte detection) and MiHPT03 (28-32’) (no analyte detections) were obtained. It is possible that these differences reflect the sensitivity limitation of the ECD and/or differences in instrument calibration on the various days of the HRSC survey.

The EC data presented in **Figures 8c, 9c, 10c, and 11c** depict the stratigraphy discussed above in Sections 2.2.2. and 4.1 (i.e., a predominantly sandy formation with variable thickness interbeds of finer-grained sediments consistent with a fluvial and floodplain depositional environment).

- **Unit 1** (variable/moderate relative permeability) is depicted as blue/greenish blue (i.e., predominantly coarse-grained sediment containing some finer-grained sediment) and extends throughout the study area.
- **Unit 2** (low relative permeability) is depicted as green through red (i.e., predominantly fine-grained sediment) and is thickest in the northern portion of the investigation area and pinches out in the southern portion of the investigation area (**Figures 8c, 9c, and 10c**). The finest-grained portion of Unit 2 (i.e., red EC data characterization) is present between the depths of 13 and 21 feet at MiHPT04 and at MiHPT10 (**Figures 10c and 11c**). **Figure 11c** suggests a possible thinning in Unit 2 at MiHPT01 relative to the thicknesses of Unit 2 at MiHPT04 at the west end of the cross-section and at MiHPT06 at the east end of the cross-section.
- **Unit 3** (high relative permeability) is depicted as blue with occasional greenish blue areas (i.e., predominantly coarse-grained sediment containing lenses of finer-grained sediment) and extends throughout the study area. Unit 1 and Unit 3 appear to be connected in the southern portion of the study area where Unit 2 pinches out.
- **Unit 4** (variable/moderate relative permeability) is depicted as bluish green (**Figures 8c and 11c**) (i.e., mix of coarse- and fine-grained sediment) at depth in borings MiHPT01 and MiHPT08. Based on its apparent limited lateral extent, Unit 4 is likely a thicker lower permeability lens contained within Unit 3.

4.5 Contaminant Site Characterization Summary

The data collected during this investigation demonstrate that the hot spot area encompasses the bottom of Unit 1 at MiHPT01 and MiHPT08.

Widespread “low” level contamination was observed in Unit 1; however, the limited saturated thickness of Unit 1 may be limiting the lateral migration of higher levels of contamination in Unit 1 from the hot spot area. This was demonstrated by the 2012 MDE-LRP SI groundwater data where the on-site PCE concentration (at MiHPT01) was 84,400 µg/L and the highest off-site PCE concentration (at MiHPT05) was 38 µg/L (i.e., a reduction of more than three orders of magnitude in 155 lateral feet). It should be noted that the direction(s) of groundwater flow has not been determined for the investigation area.

The HRSC Survey and discrete groundwater sample analytical data also demonstrate that Unit 2 is providing a partial barrier to downward contaminant migration. This is demonstrated by the significant decrease in the PCE concentrations detected in the groundwater samples obtained from MiHPT01 (i.e., 72,400 µg/L at 8-12 feet and maximum of 743 µg/L between the depths of 24 and 56 feet). However, Unit 2 is not providing a complete barrier to downward contaminant migration. PCE concentrations that exceed the RBSLs were detected in samples obtained from Unit 3 at MiHPT01, MiHPT05, MiHPT09, and MiHPT10. It is possible that contaminant migration to Unit 3 at MiHPT05 and MiHPT09 results from the pinching out of Unit 2 in this area. Contaminant migration to Unit 3 at MiHPT10 may result from “wrap around” migration from the area where Unit 2 pinches out and/or migration of contamination that penetrated Unit 2 in the hot spot area. The decrease in the PCE concentrations detected in the groundwater samples obtained from MiHPT09 in Unit 3 (i.e., 1,340 µg/L at 18-22 feet and 5.33 µg/L at 29-33 feet) suggest that lower permeability lenses within Unit 3, visible on the MiHPT log for this boring, also provide a partial barrier to downward contaminant migration.

5.0 CONCLUSIONS

CGS has performed a Groundwater Characterization Investigation at and in the vicinity of the former Elite/Free State/Star Cleaners Site that was located at 1 S. First Street in Delmar, Maryland. The Groundwater Characterization Investigation was performed to gain information regarding chlorinated hydrocarbon contamination that had previously been detected at the Site and included an HRSC Survey and a discrete depth groundwater sampling event. Based on data obtained during this investigation and from the 2012 MDE-LRP SI report and literature references, CGS concludes the following:

- The shallow unconsolidated formation (i.e., to a depth of 60 feet BG) at the Site is a predominantly sandy formation with interbeds of finer-grained sediments of variable thickness, which is consistent with a fluvial and floodplain depositional environment. Predominantly sandy units of this formation have been identified as Unit 1 and Unit 3 in this report. Unit 2 is a thick interbed, comprised of predominantly fine-grained sediment, between Units 1 and 3. Unit 2 is thickest in the northern portion of the investigation area and pinches out in the southern portion of the investigation area.
- Groundwater was encountered during the 2012 MDE-LRP SI in sandy lenses of the unconsolidated formation between the depths of 12 and 16 feet BG. Based upon data collected during this investigation, groundwater may rise (or may seasonally rise) to depths as shallow as 8 to 10 feet BG.
- The 2012 MDE-LRP SI report stated that most residents of the town of Delmar obtain their potable water from municipal production wells that are located north of the Site in Delaware. The Site is located within the southern boundary of the Well Head Protection Area for the municipal well cluster. The report also stated that additional domestic wells are located within a half-mile of the Site (MDE-LRP, 2013).

- The Surficial aquifer, which contains Units 1, 2, and 3 as identified in this report and additional stratigraphy below Unit 3, is approximately 125 feet thick in the region of the Site and is used as a source of municipal and domestic water in Wicomico County. The Surficial aquifer is mapped as being directly underlain by the Manokin aquifer to the west of the Site (Andreasen, et al., 2013). Accordingly, contamination detected in Units 1, 2, and 3 within the investigation area may be in direct hydraulic connection with the aquifers that provide water to the municipal and/or domestic wells.
- Chlorinated hydrocarbons and, to a lesser degree, petroleum hydrocarbons were detected in groundwater samples obtained during this investigation at concentrations that exceed drinking water RBSLs. The primary COPC at the Site is the dry cleaning solvent PCE. The highest PCE concentration detected in groundwater during this investigation (72,400 µg/L) is similar in magnitude to the PCE concentration (84,400 µg/L) detected in a groundwater sample obtained from this same location during the 2012 MDE-LRP SI.
- The HRSC Survey and discrete depth groundwater sample analytical data demonstrate that the highest levels of groundwater contamination (i.e., the hot spot area) are present at the bottom of Unit 1 and encompass the entire Site and extend into off-site areas. PCE concentrations above the RBSLs extend into Unit 3 and to depths of at least 56 feet BG below the hot spot area.
- Widespread “low” level contamination was observed in Unit 1; however, the limited saturated thickness of Unit 1 may be limiting the lateral migration of much higher levels of contamination in Unit 1 from the hot spot area.
- The data collected during this investigation demonstrate that Unit 2 is providing only a partial barrier to downward contaminant migration. PCE concentrations above the RBSLs, and as high as 1,340 µg/L, were detected in groundwater samples obtained from Unit 3. Contaminant migration to Unit 3 in the southern portion of the investigation area likely results from the pinching out of Unit 2 in this area. Contaminant migration to Unit 3 in other portions of the investigation area may result from “wrap around” migration from the area where Unit 2 pinches out and/or migration of contamination that penetrated Unit 2 below the hot spot area.
- The direction(s) of groundwater flow have not yet been determined in Units 1 and 3, and the risk of vapor intrusion at the closest residential properties located northeast and south of the Site has not yet been evaluated.
- Even though a groundwater contamination hot spot area has been identified, the exact source area of the contamination has not yet been identified. Regardless, the pattern of contamination appears to be highly amenable to source area remediation based on the data collected to date.

6.0 LIMITATIONS

The work performed in conjunction with this project, and that data developed, are intended as a description of available information at the sample locations indicated and the dates specified. Generally accepted industry standards were used in the preparation of this report.

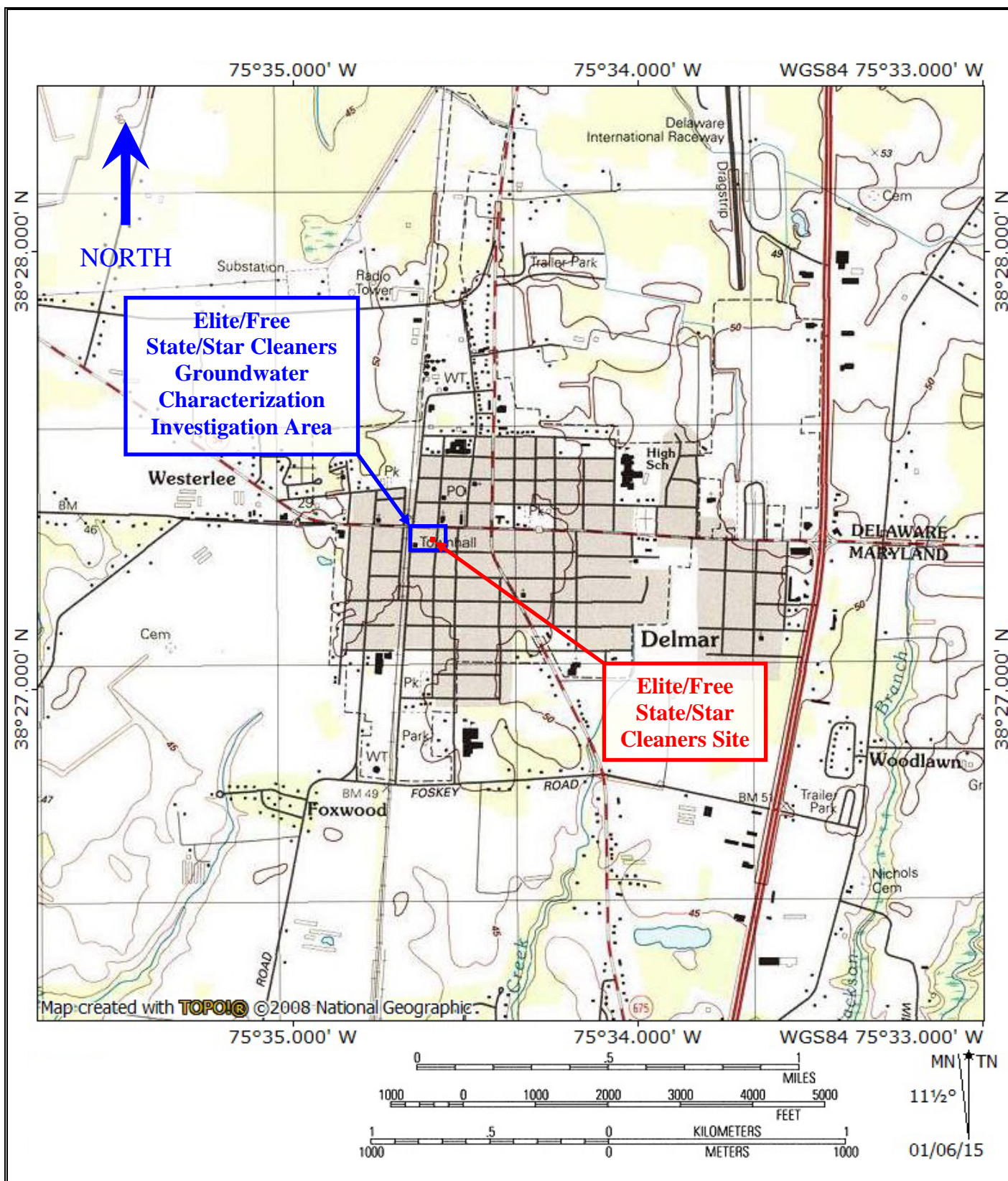
Laboratory data are intended to approximate actual conditions at the time of sampling. Results from future sampling and testing may vary significantly as a result of natural conditions, a changing environment, or the limits of analytical capabilities. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a specific location not investigated. The limited sampling conducted is intended to approximate subsurface conditions by extrapolation between data points. Actual subsurface conditions may vary.

CGS has based its characterization on observable conditions and analytical results from an independent analytical laboratory that is solely responsible for the accuracy of its methods and results.

7.0 REFERENCES

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- United States Geological Survey (USGS), 1992, 7.5-minute-series Delmar Quadrangle Topographic Map

FIGURES



CGS Project #: CG-12-0763.03

Project Mgr: Nancy Love

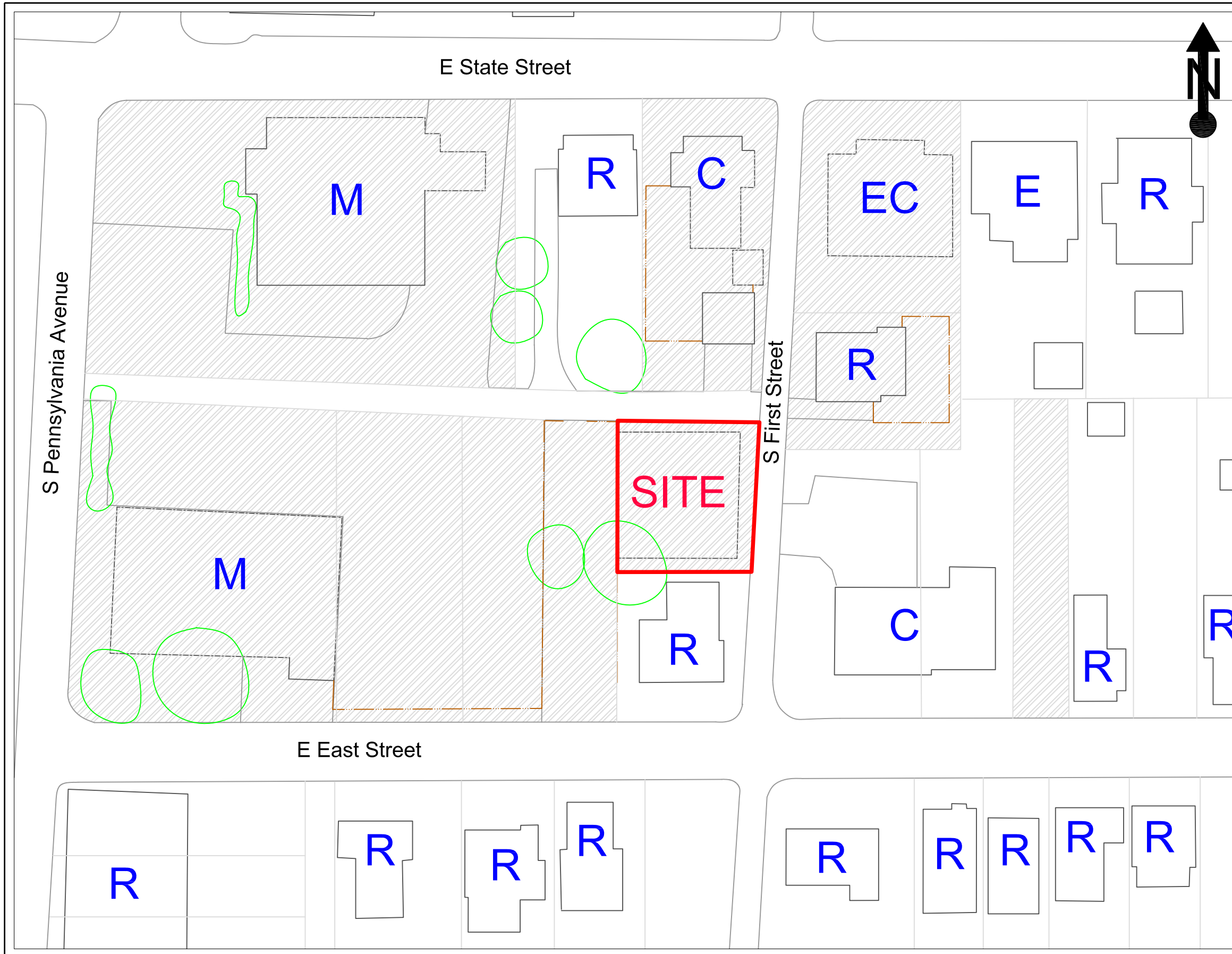
Drawn By: Lara Bennett

Date: January 6, 2015

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Figure 1
Site Location Map
Elite/Free State/Star Cleaners Site
Delmar, MD



5405 Twin Knolls Road, Suite 1
Columbia, Maryland 21045 USA
410-740-1911
410-740-3299 fax
www.cgs.us.com

FIGURE 2 - SITE DIAGRAM

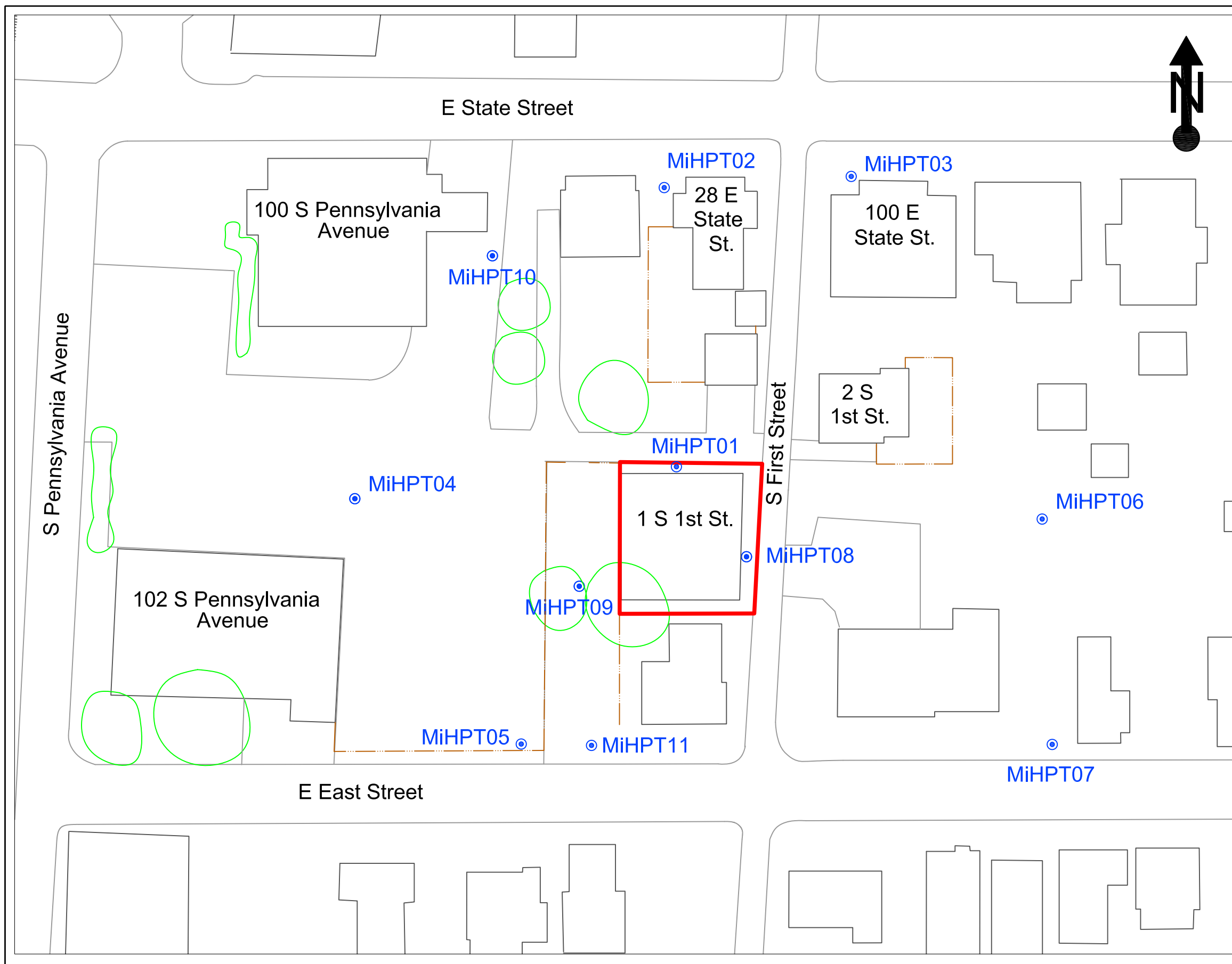
Elite/Free State/Star Cleaners
1 S. First Street
Delmar, MD 19940

CGS No. CG-12-0763.03
Prepared by: Lara Bennett
Date: 04/08/2015

LEGEND

- Building / Structure
- Site Property
- Road / Gravel
- Tree(s) / Bushes
- Fence
- Tax Parcel
- Access Granted Tax Parcel
- R** Residential Property
- C** Commercial Property
- M** Municipal Property
- EC** Exempt Commerical Property
- E** Exempt Property (i.e. Church)



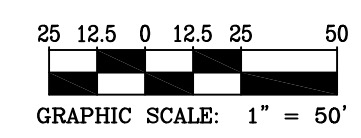


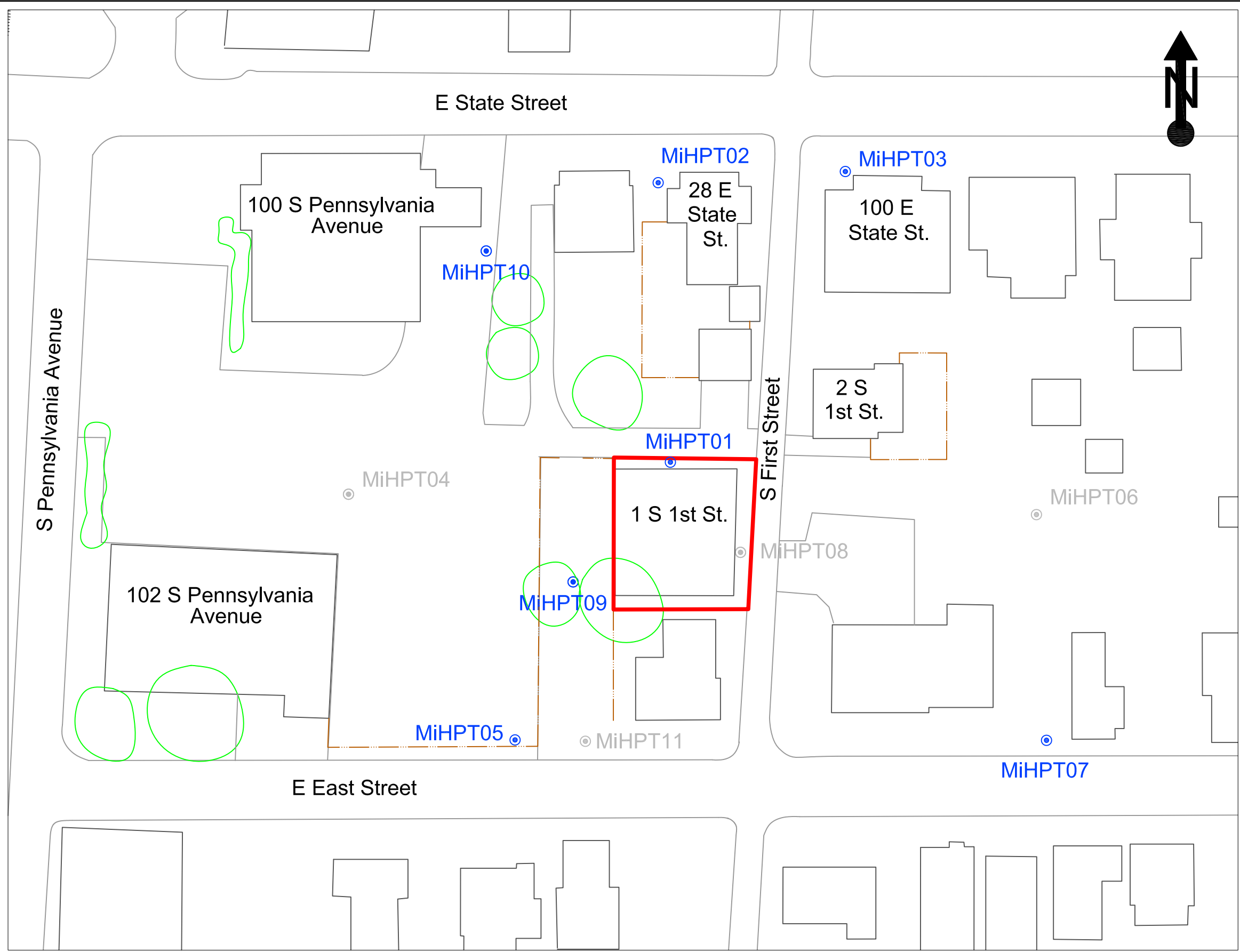
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**FIGURE 3 -
MiHPT BORING
LOCATION MAP**

Elite/Free State/Star Cleaners
1 S. First Street
Delmar, MD 19940
CGS No. CG-12-0763.03
Prepared by: Lara Bennett
Date: 04/08/2015

- LEGEND**
- Building / Structure
 - Site Property
 - Road / Gravel
 - Tree(s) / Bushes
 - Fence
 - MiHPT Boring Location





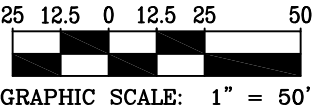
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410-740-3299 fax
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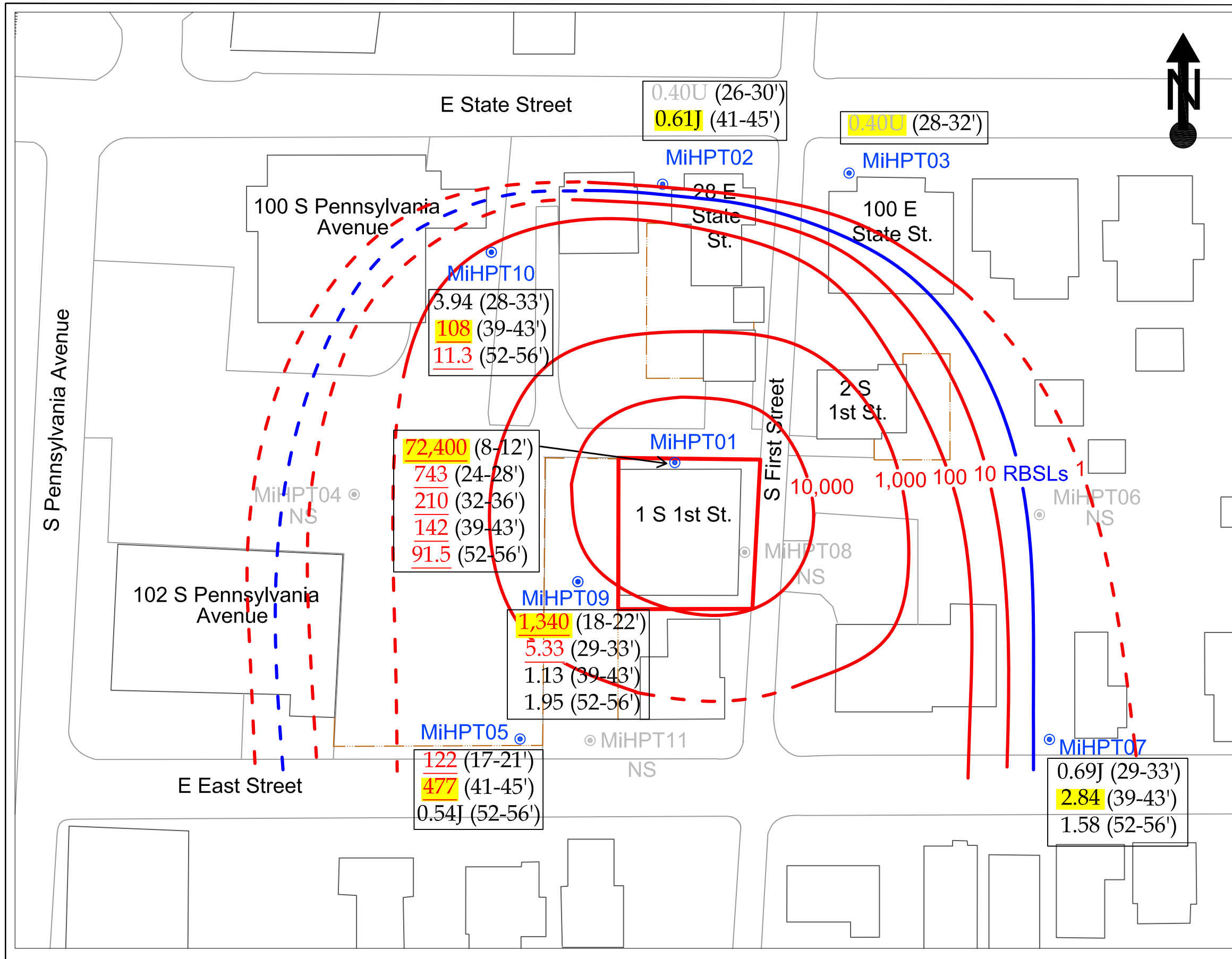
**FIGURE 4 -
DISCRETE
GROUNDWATER
SAMPLE
LOCATION MAP**

Elite/Free State/Star Cleaners
1 S. First Street
Delmar, MD 19940
CGS No. CG-12-0763.03
Prepared by: Lara Bennett
Date: 04/08/2015

LEGEND

- Building / Structure
- Site Property
- Road / Gravel
- Tree(s) / Bushes
- Fence
- MiHPT Boring Location / Discrete Groundwater Sample Location
- MiHPT Boring Location (No Sampling Performed)





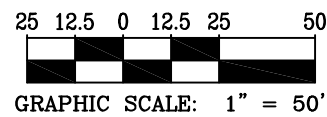
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FIGURE 5 - GENERALIZED PCE ISOCONCENTRATION MAP

Elite/Free State/Star Cleaners
1 S. First Street
Delmar, MD 19940
CGS No. CG-12-0763.03
Prepared by: Lara Bennett
Date: 04/08/2015

LEGEND

- Building / Structure
- Site Property
- Road / Gravel
- Fence
- MiHPT Boring Location / Discrete Groundwater Sample Location
- MiHPT Boring Location
- 1.58 (52-56') Detected PCE Concentration (µg/L) (depth (ft))
- RED Detected PCE Concentration Exceeds the RBSLs
- 0.40 U PCE Limit of Detection (LOD) (µg/L)
- U Analyte Not Detected Above Specified LOD
- J Estimated Concentration
- NS Not Sampled
- Concentration Used for Contouring
- PCE Isoconcentration Contour Line (Dashed Where Inferred)
- PCE RBSLs (4.1 µg/L & 5.0 µg/L) Contour Line (Dashed Where Inferred)



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FIGURE 6 - PCE CONCENTRATION 3-D MODEL

Elite/Free State/Star Cleaners
1 S. First Street
Delmar, MD 19940

CGS Project No. CG-12-0763.03
Prepared by: L. Bennett
Date: 04/08/2015

DIAGRAM NOTES:

PCE Concentration
Plume: 90 ppb

Models Generated by
RockWorks 15

Figure 6A
View From: Above
Relative Elevation: 90° Above Grade

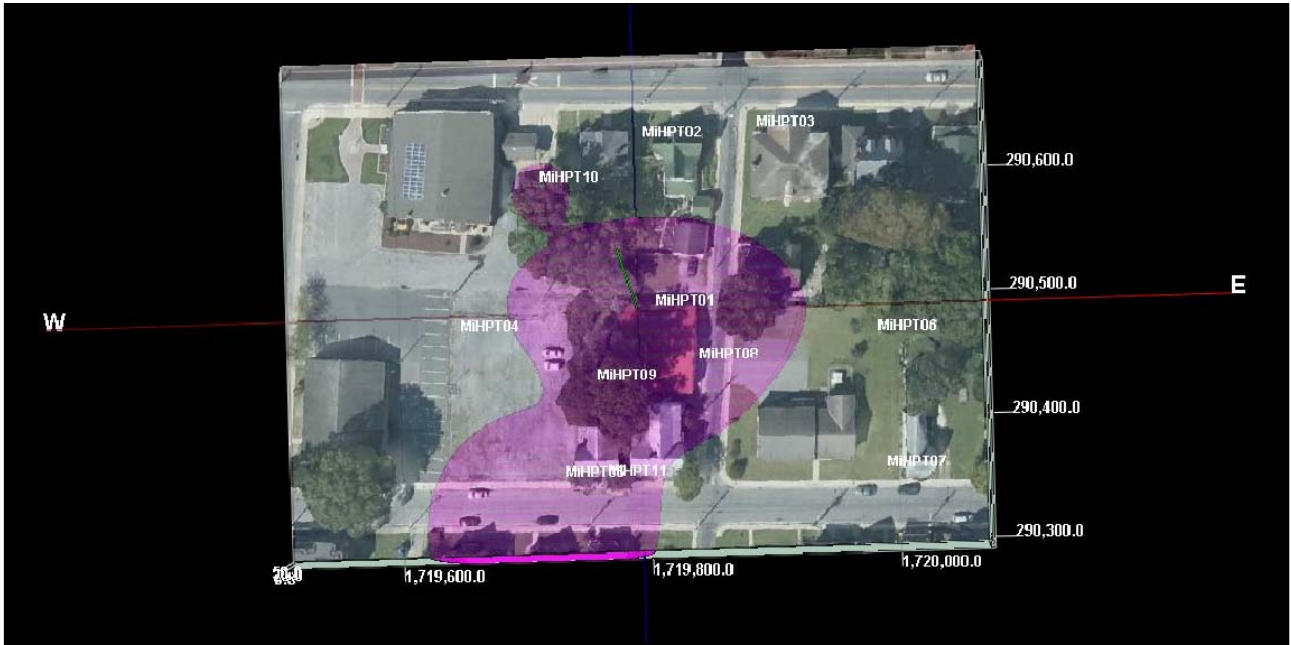


Figure 6B
View From: West / Southwest
Relative Elevation: Approx. 20° Above Grade

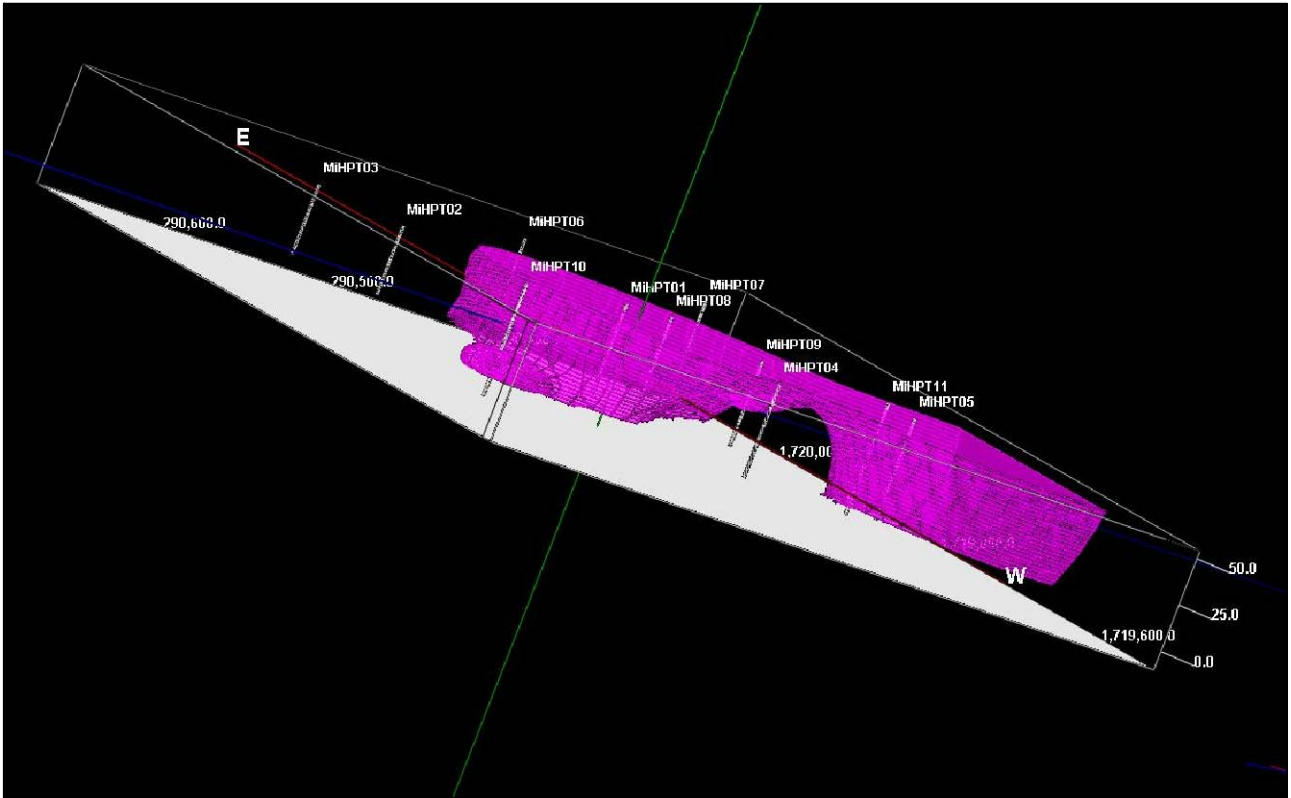
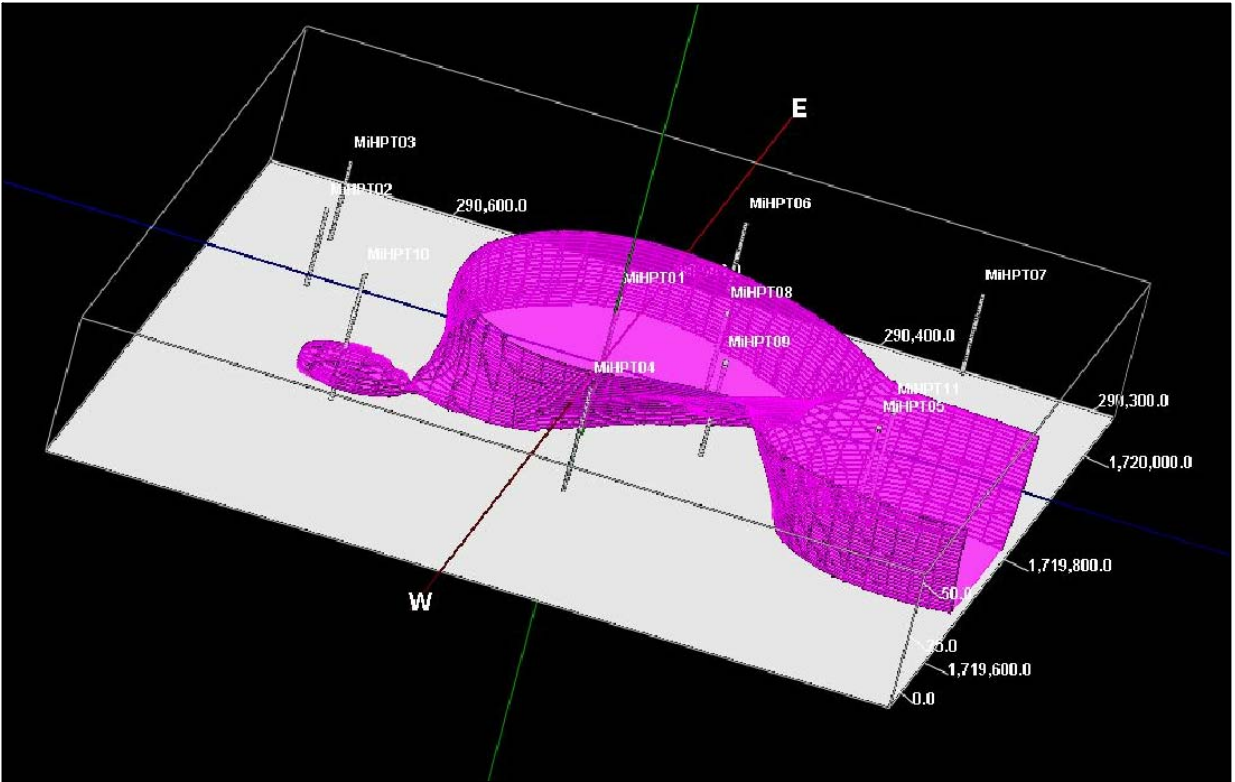


Figure 6C
View From: Northwest
Relative Elevation: Approx. 10° Above Grade

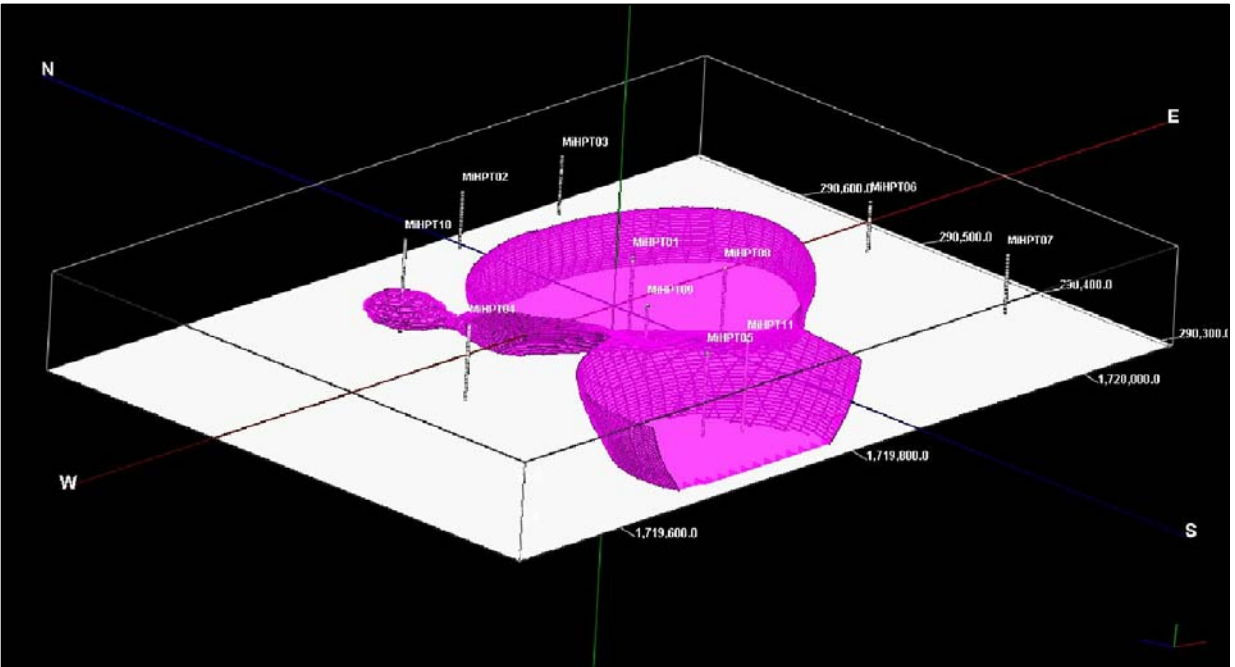


Figure 6D
View From: Southwest / South
Relative Elevation: Approx. 30° Above Grade

Figure 7A
View From: Above
Relative Elevation: 5 Feet Below Ground Surface

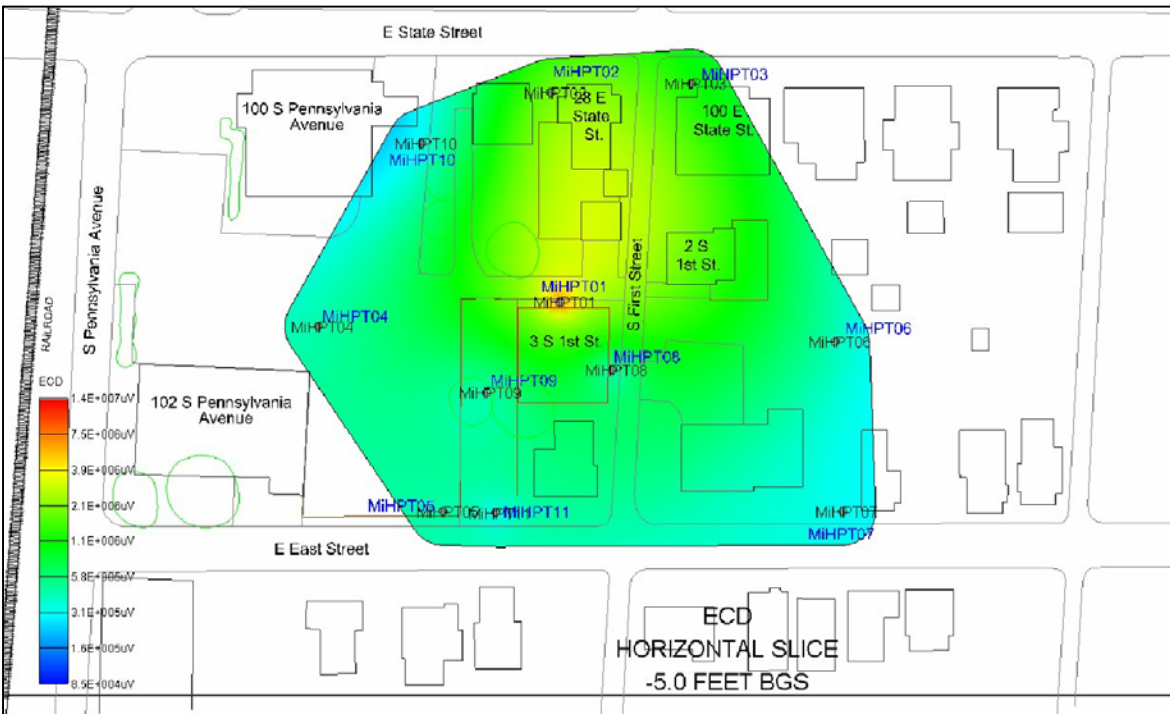


Figure 7B
View From: Above
Relative Elevation: 10 Feet Below Ground Surface

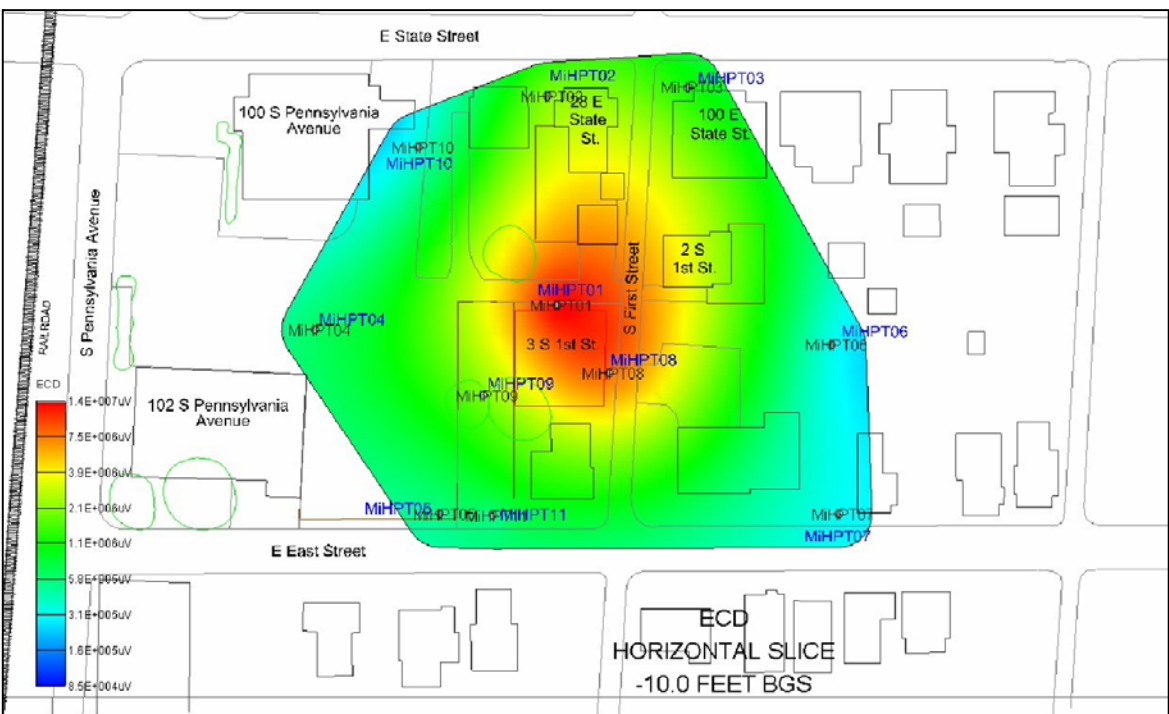


Figure 7C
View From: Above
Relative Elevation: 15 Feet Below Ground Surface

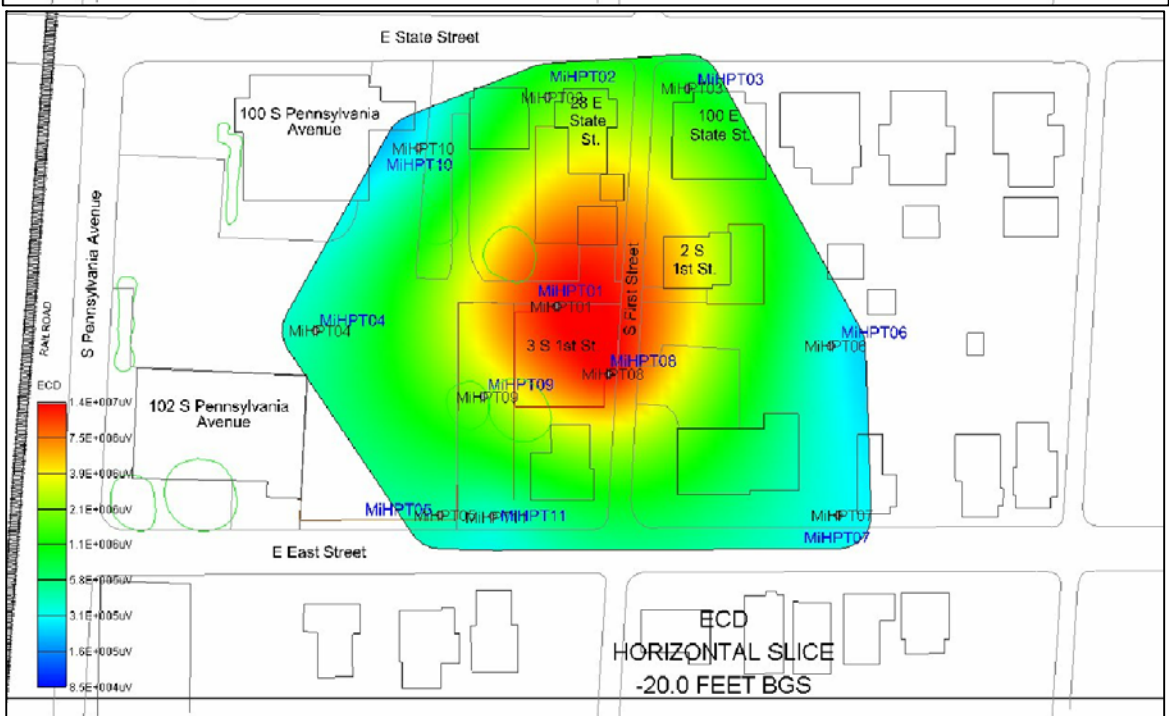


Figure 7D
View From: Above
Relative Elevation: 20 Feet Below Ground Surface

**FIGURE 7 - HRSC Survey
Data ECD Horizontal
Cross-Sections**

Elite/Free State/Star Cleaners
1 S. First Street
Delmar, MD 19940
CGS No. CG-12-0763.03
Prepared by: Lara Bennett
Date: 04/08/2015

DIAGRAM NOTES:

Models Generated From
From ECD Horizontal Data
Collected by Vironex, Inc.

Figure 8A
View From: West Toward East
ECD Vertical Easting Cross-Section
Located along 1,719,809 Easting (MiHPT01)

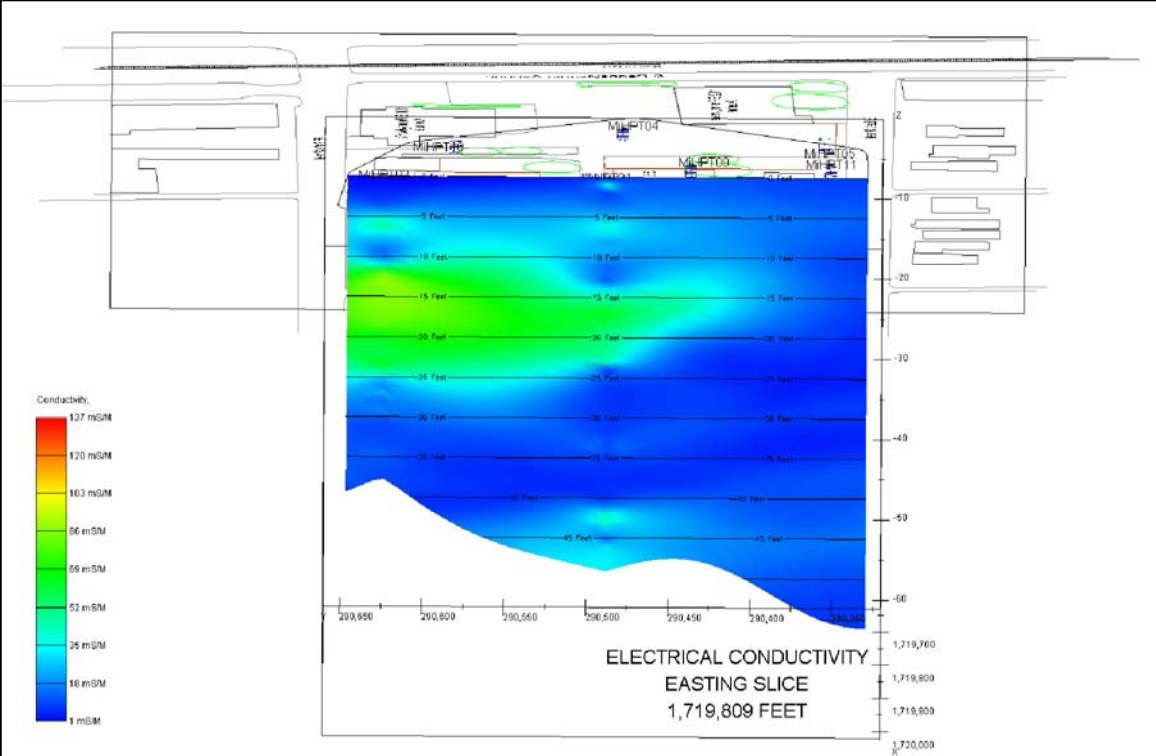
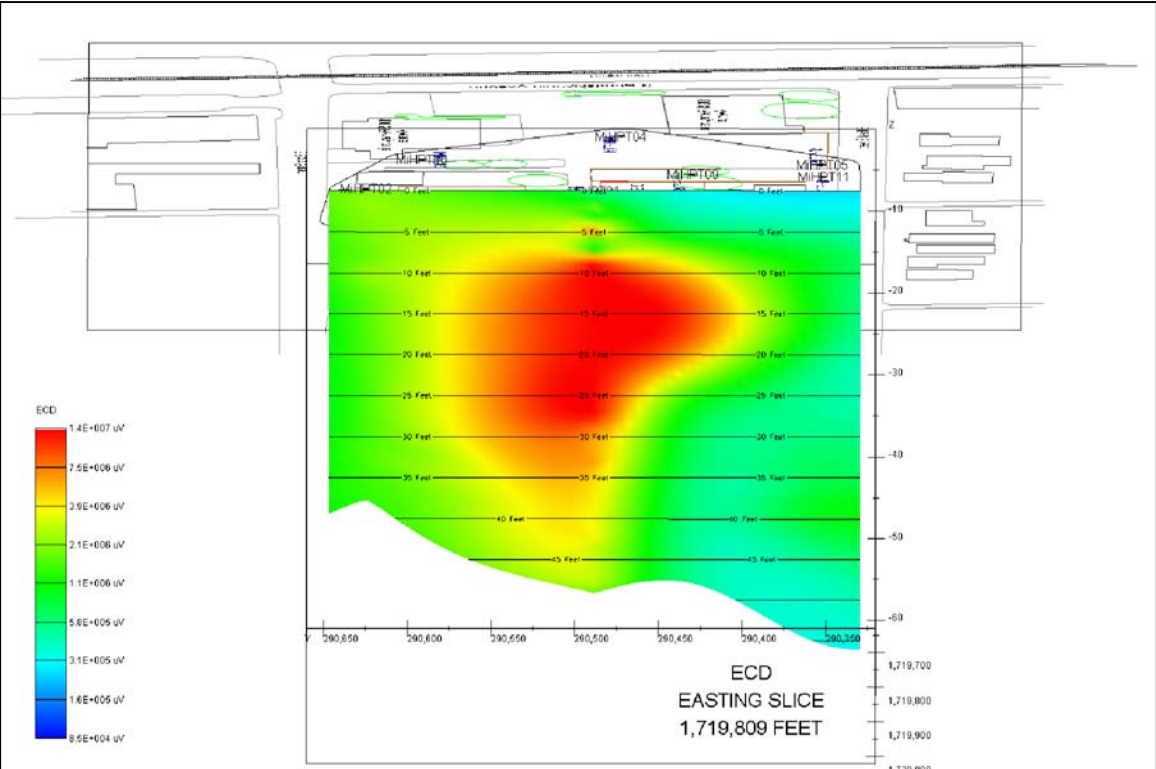


Figure 8C
View From: West Toward East
Electrical Conductivity Vertical Easting Cross-Section
Located along 1,719,809 Easting (MiHPT01)

Figure 8B
View From: West Toward East
XSD Vertical Easting Cross-Section
Located along 1,719,809 Easting (MiHPT01)

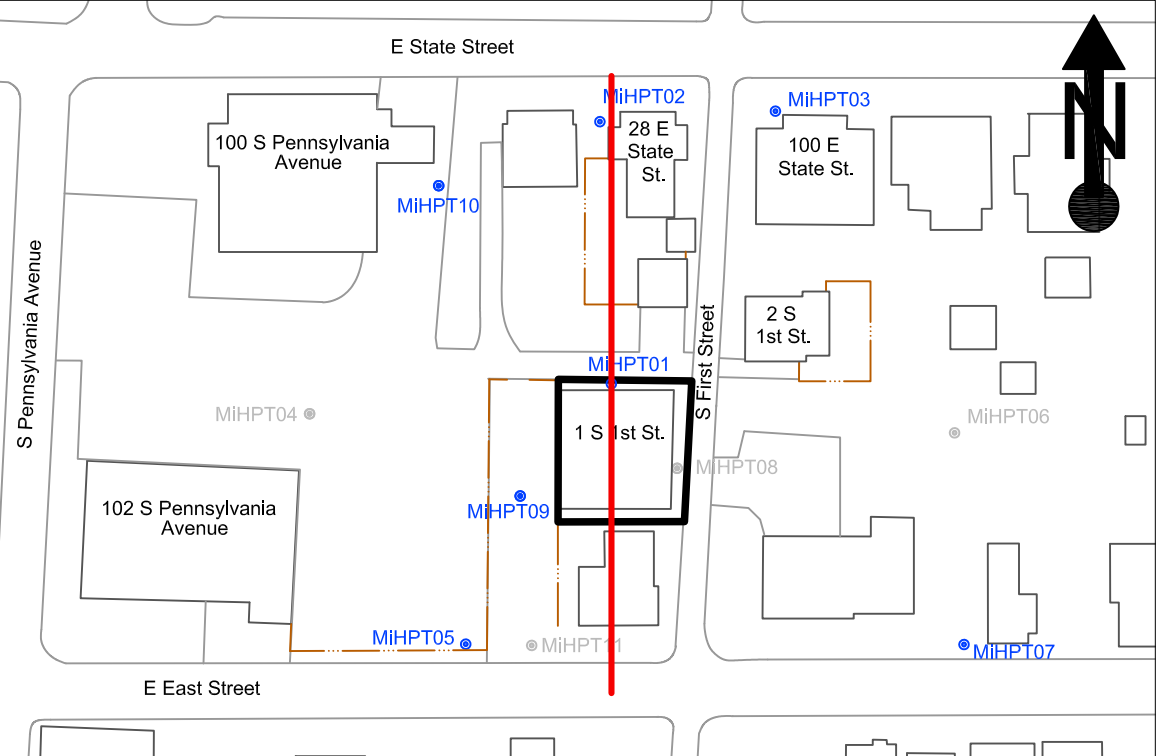
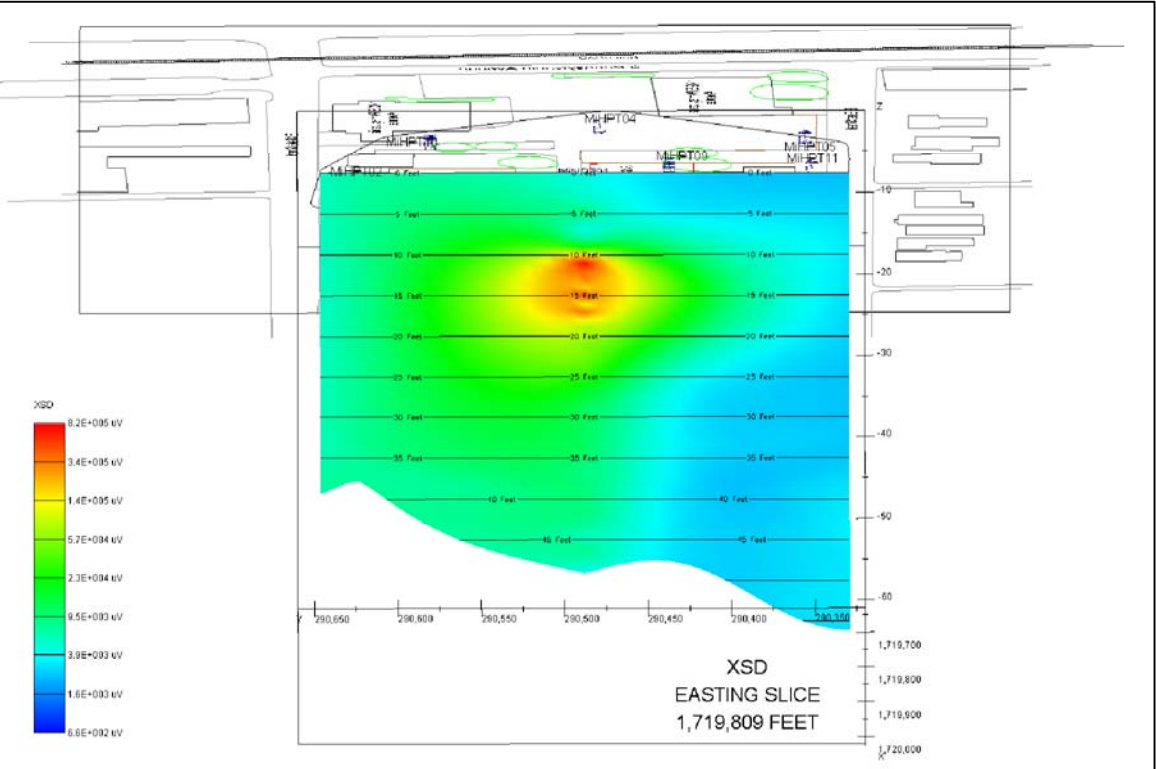


Figure 8D
Cross-Section Location Map



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**FIGURE 8 - HRSC Survey Data
ECD/XSD/EC Vertical Easting
Cross - Sections Intersecting
MiHPT01 and MiHPT02**

Elite/Free State/Star Cleaners
1 S. First Street
Delmar, MD 19940
CGS No. CG-12-0763.03
Prepared by: Lara Bennett
Date: 04/08/2015

LEGEND

- Building / Structure
- Site Property
- Road / Gravel
- Fence
- MiHPT Boring Location / Discrete Groundwater Sample Location
- MiHPT Boring Location
- Cross Section along 1,719,809 Easting

DIAGRAM NOTES:

Models Generated From
ECD / XSD / EC Vertical Data
Collected by Vironex, Inc.

Figure 9A
View From: West Toward East
ECD Vertical Easting Cross-Section
Located along 1,719,770 Easting (MiHPT11)

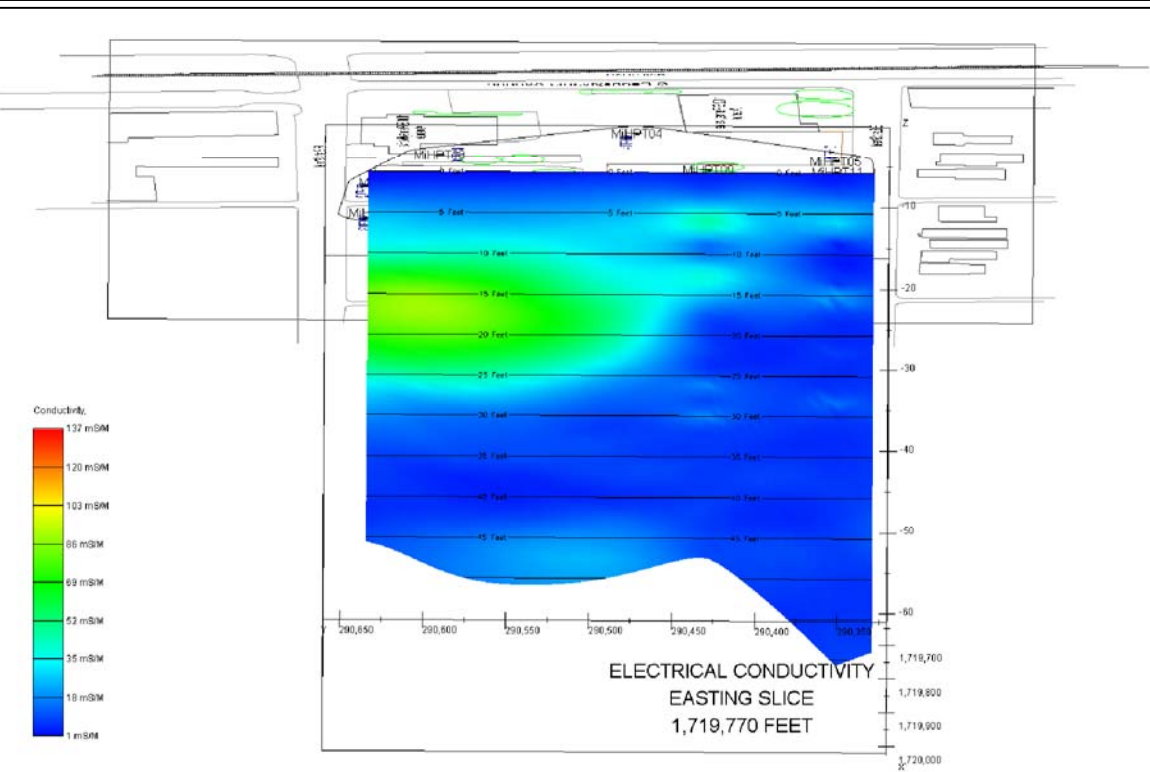
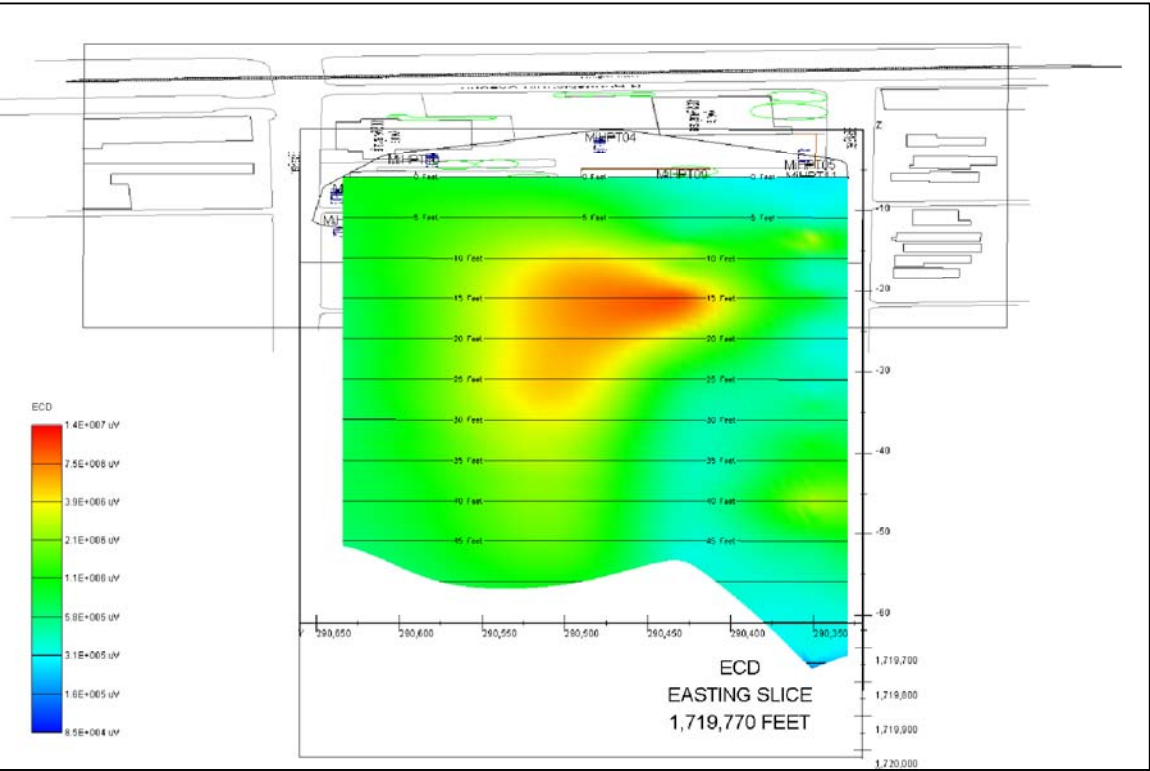


Figure 9C
View From: West Toward East
Electrical Conductivity Vertical Easting Cross-Section
Located along 1,719,770 Easting (MiHPT11)

Figure 9B
View From: West Toward East
XSD Vertical Easting Cross-Section
Located along 1,719,770 Easting (MiHPT11)

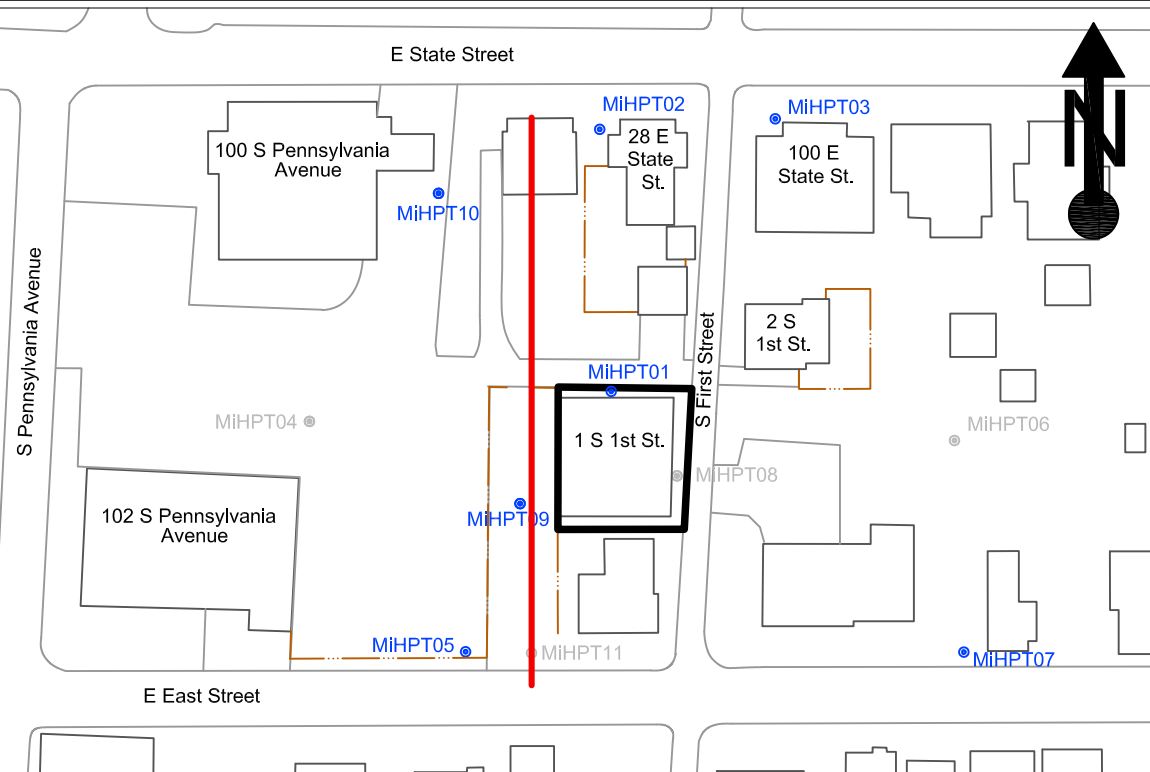
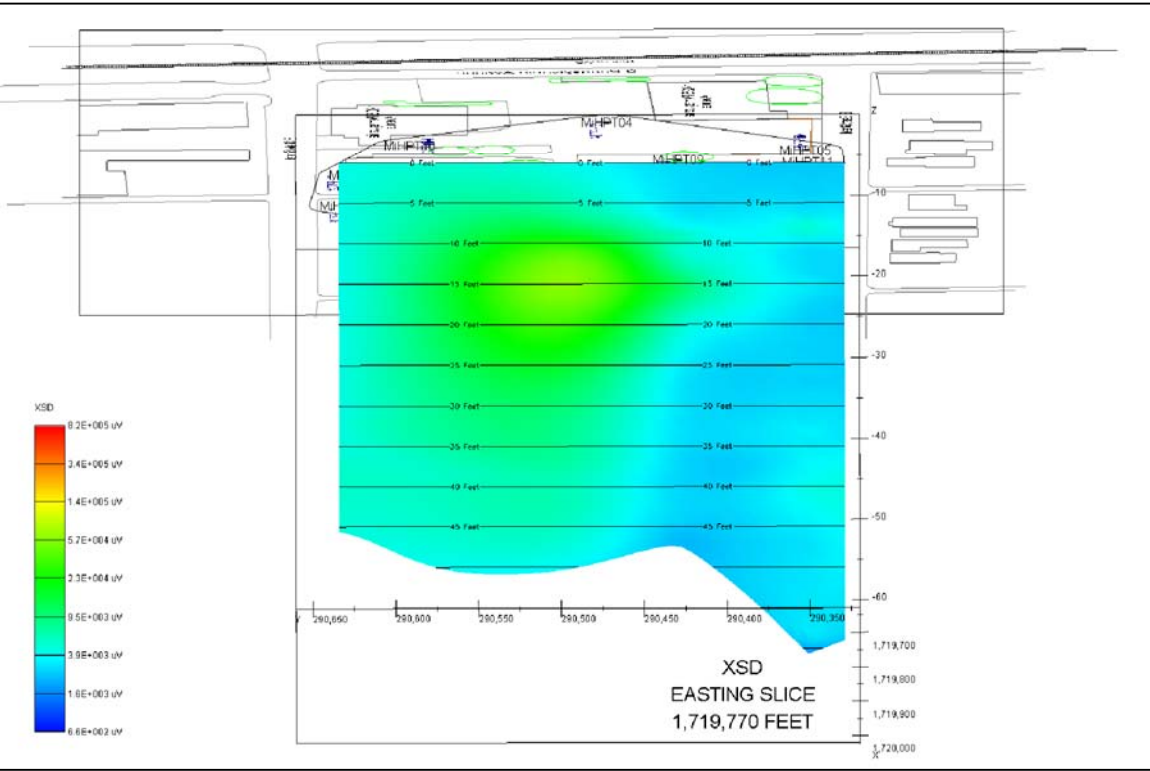


Figure 9D
Cross-Section Location Map



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**FIGURE 9 - HRSC Survey Data
ECD/XSD/EC Vertical Easting
Cross - Sections Intersecting
MiHPT09 and MiHPT11**

Elite/Free State/Star Cleaners
1 S. First Street
Delmar, MD 19940
CGS No. CG-12-0763.03
Prepared by: Lara Bennett
Date: 04/08/2015

LEGEND

- Building / Structure
- Site Property
- Road / Gravel
- Fence
- MiHPT Boring Location / Discrete Groundwater Sample Location
- MiHPT Boring Location
- Cross Section at 1,719,770 Easting

DIAGRAM NOTES:

Models Generated From
ECD / XSD / EC Vertical Data
Collected by Vironex, Inc.

Figure 10A
View From: West Toward East
ECD Vertical Easting Cross-Section
Located along 1,719,718 Easting (MiHPT10)

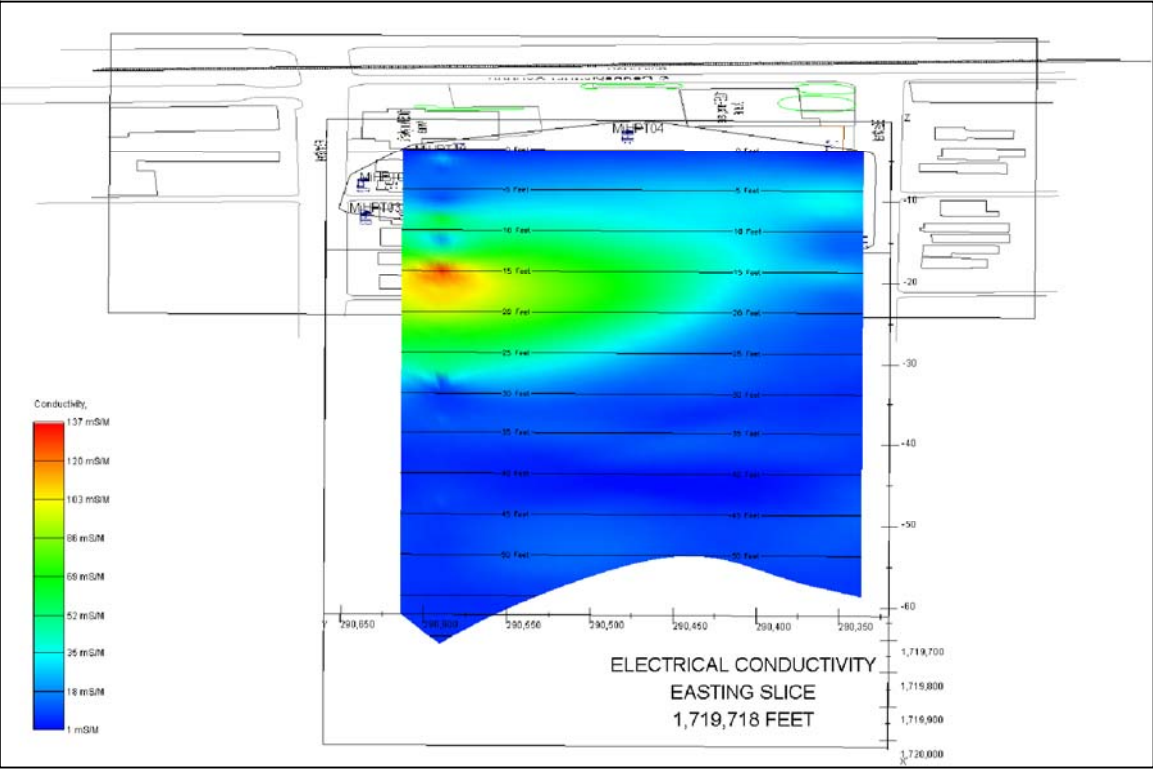
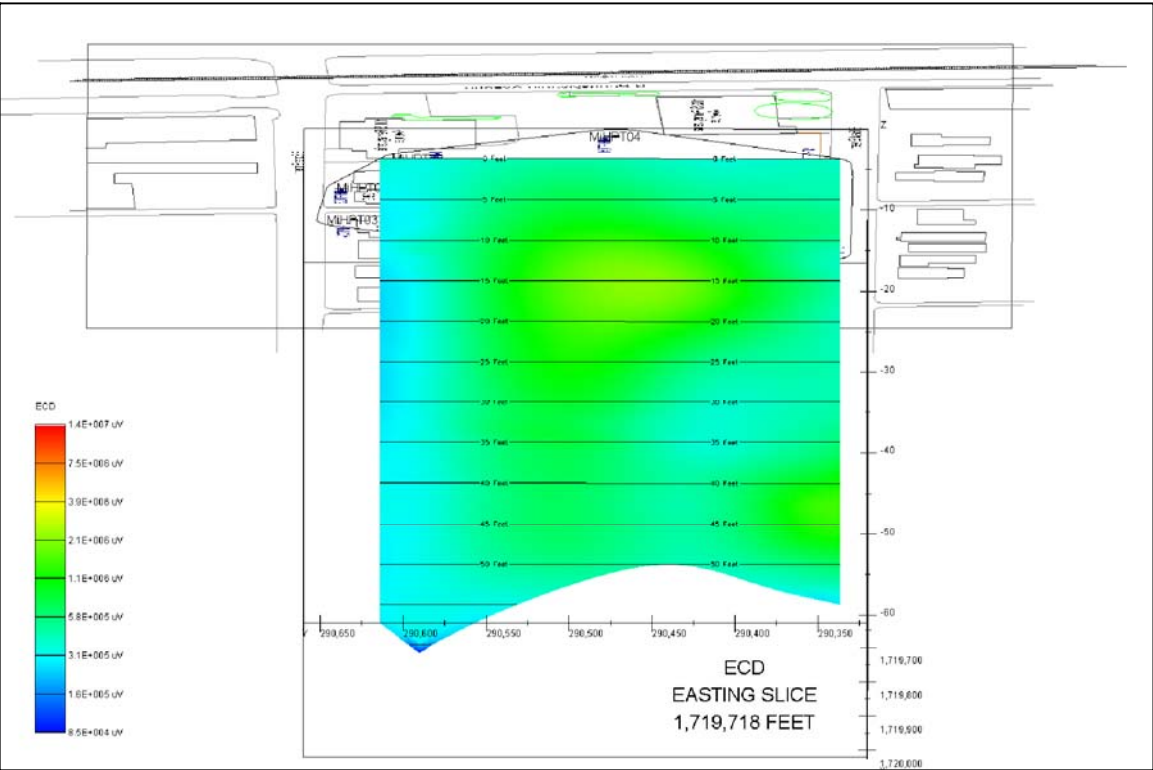


Figure 10C
View From: West Toward East
Electrical Conductivity Vertical Easting Cross-Section
Located along 1,719,718 Easting (MiHPT10)

Figure 10B
View From: West Toward East
XSD Vertical Easting Cross-Section
Located along 1,719,718 Easting (MiHPT10)

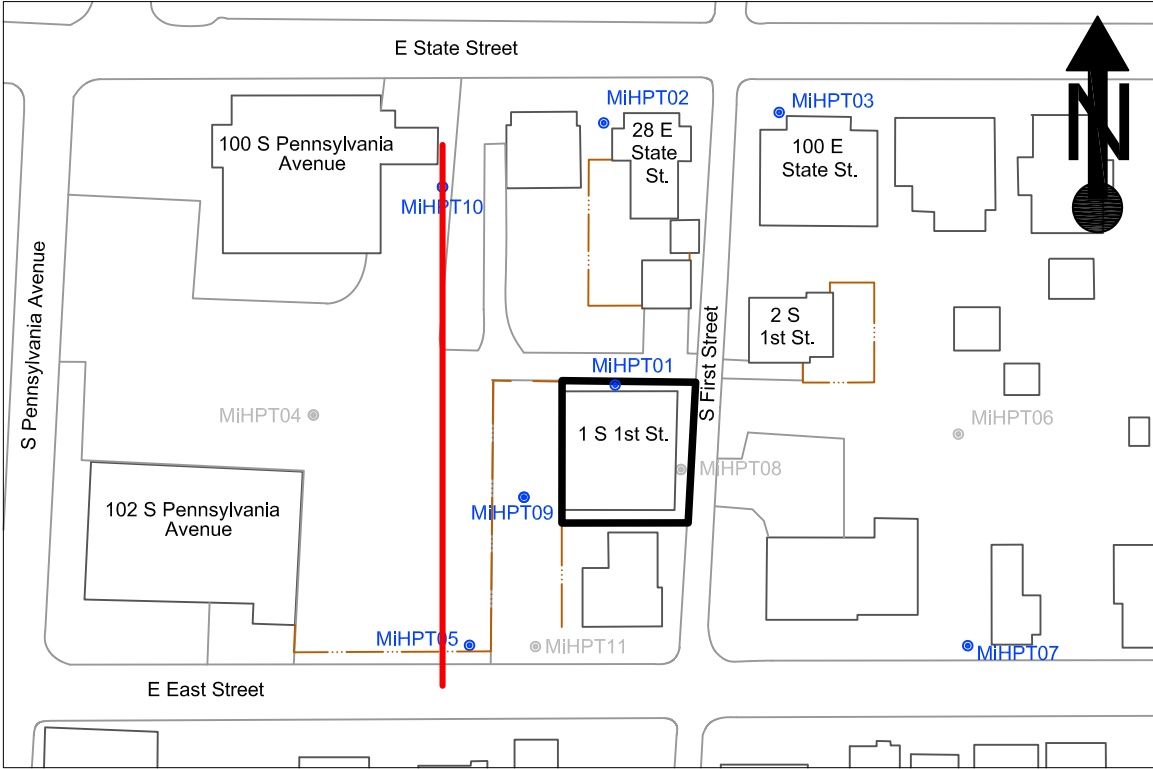
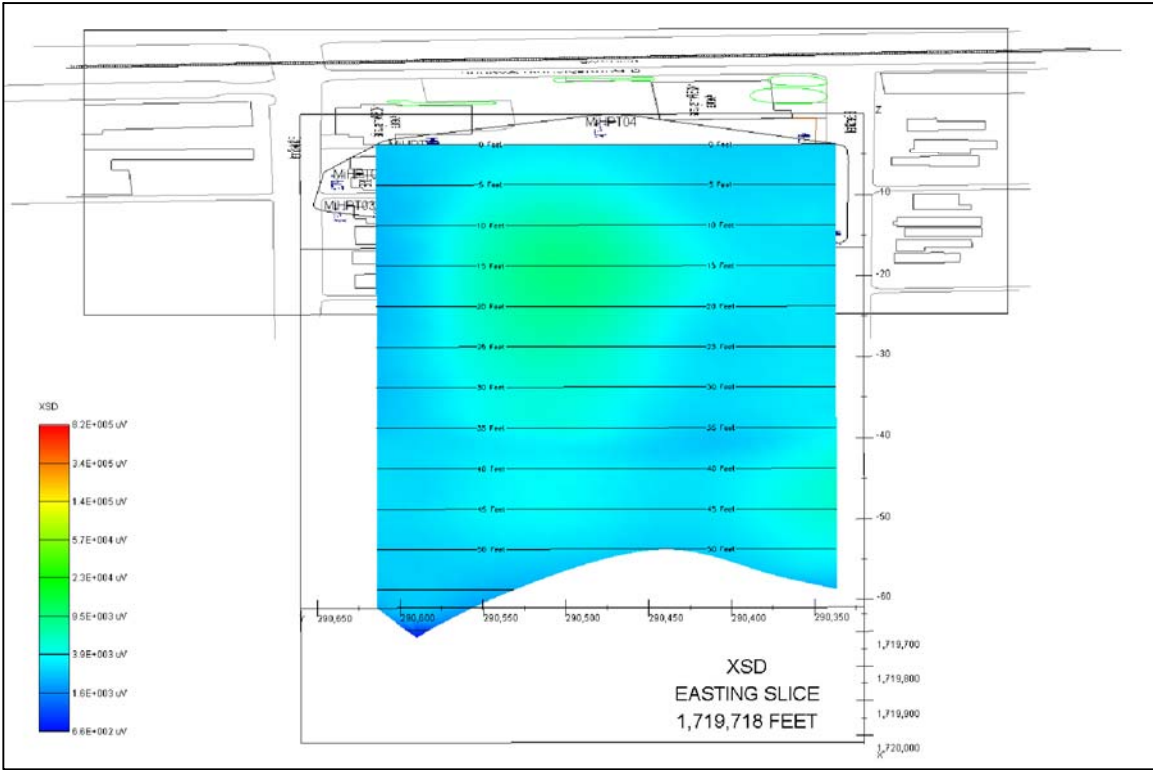


Figure 10D
Cross-Section Location Map



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**FIGURE 10 - HRSC Survey Data
ECD/XSD/EC Vertical Easting
Cross - Sections Intersecting
MiHPT05 and MiHPT10**

Elite/Free State/Star Cleaners
1 S. First Street
Delmar, MD 19940
CGS No. CG-12-0763.03
Prepared by: Lara Bennett
Date: 04/08/2015

LEGEND

- Building / Structure
- Site Property
- Road / Gravel
- Fence
- MiHPT Boring Location / Discrete Groundwater Sample Location
- MiHPT Boring Location
- Cross Section at 1,719,718 Easting

DIAGRAM NOTES:

Models Generated From
ECD / XSD / EC Vertical Data
Collected by Vironex, Inc.

**FIGURE 11 - HRSC Survey Data
ECD/XSD/EC Vertical Northing
Cross - Sections Intersecting
MiHPT01, MiHPT04, and
MiHPT06**

Elite/Free State/Star Cleaners
1 S. First Street
Delmar, MD 19940
CGS No. CG-12-0763.03
Prepared by: Lara Bennett
Date: 04/08/2015

LEGEND








-  Building / Structure
-  Site Property
-  Road / Gravel
-  Fence
-  MiHPT Boring Location / Discrete Groundwater Sample Location
-  MiHPT Boring Location
-  Cross Section at 290,487 Northing

DIAGRAM NOTES:

Models Generated From
ECD / XSD / EC Vertical Data
Collected by Vironex, Inc.

Figure 11A
View From: South Toward North
ECD Vertical Northing Cross-Section
Located along 290,487 Northing (MiHPT01)

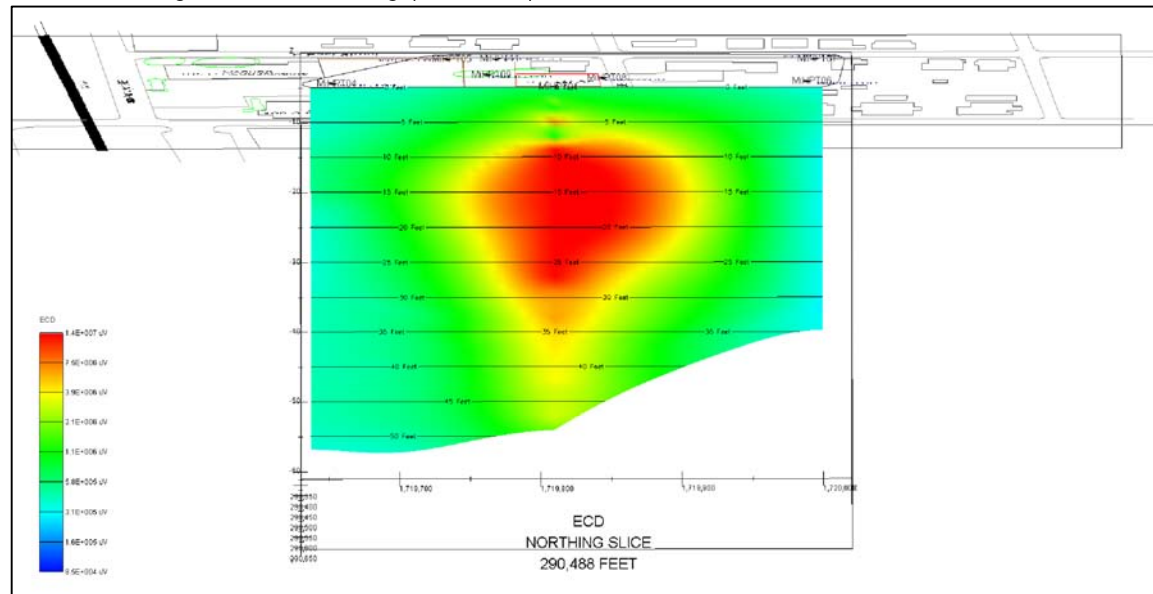


Figure 11B
View From: South Toward North
XSD Vertical Northing Cross-Section
Located along 290,487 Northing (MiHPT01)

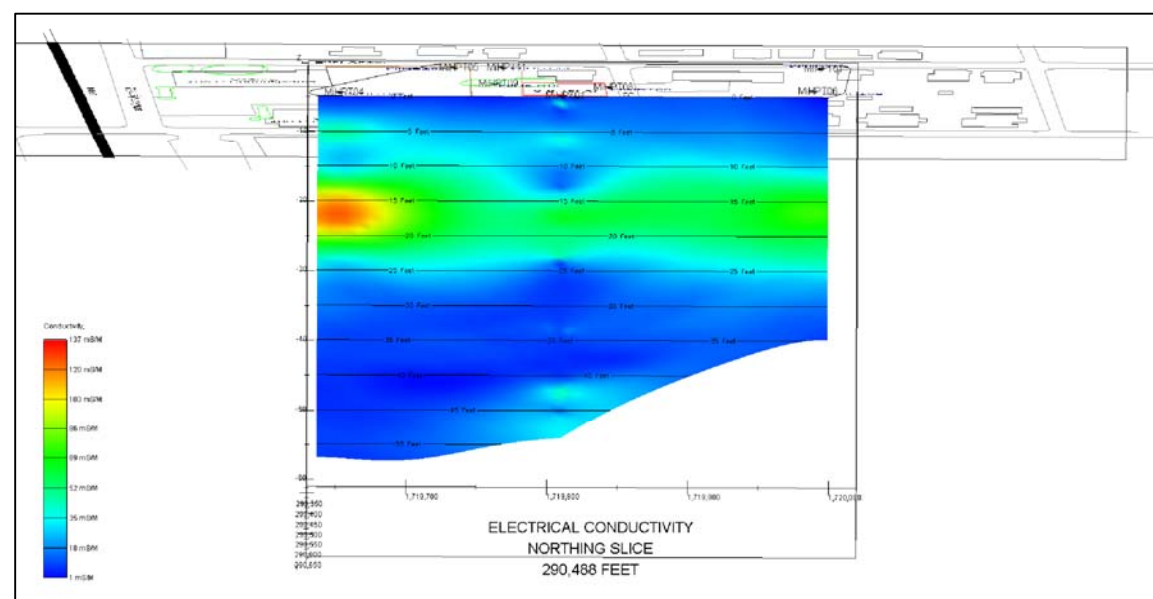
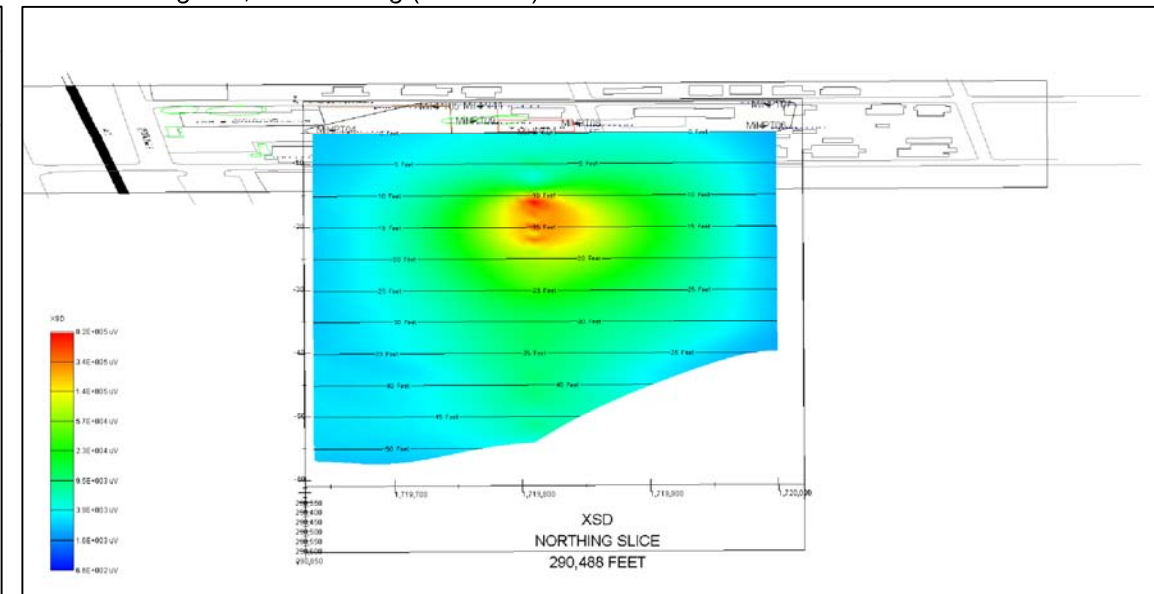


Figure 11C
View From: South Toward North
Electrical Conductivity Vertical Northing Cross-Section
Located along 290,487 Northing (MiHPT01)

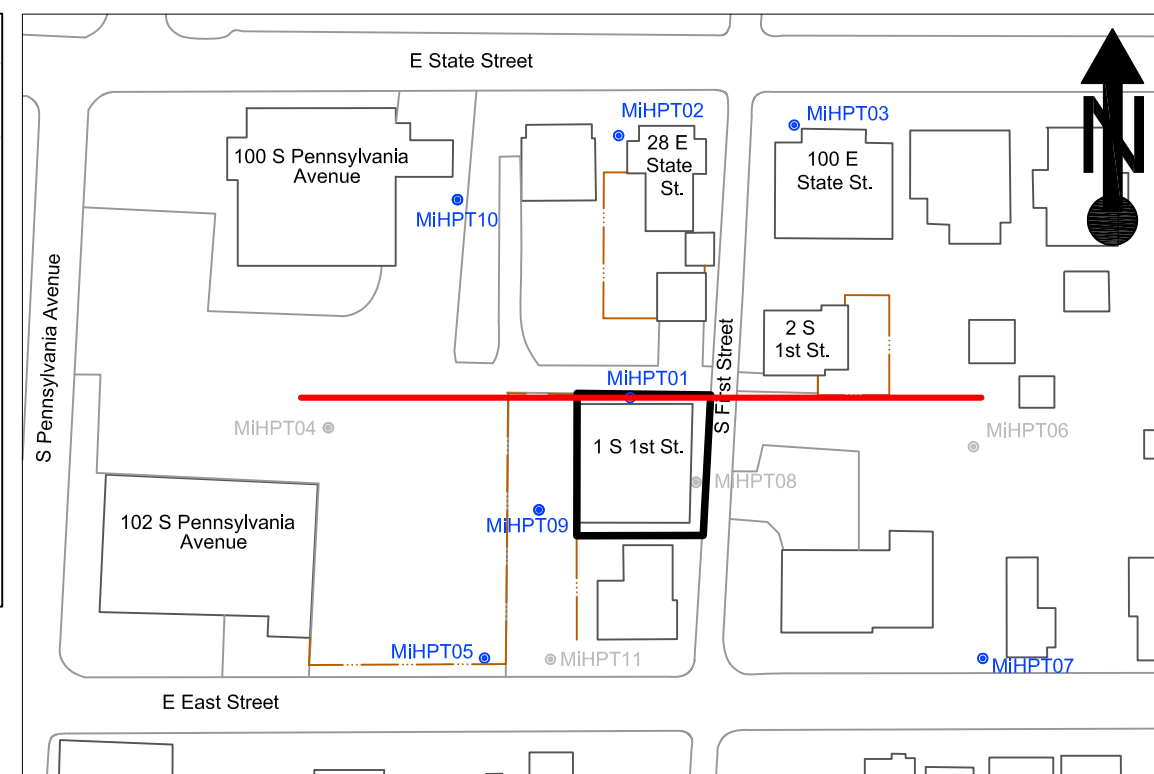


Figure 11D
Cross-Section Location Map

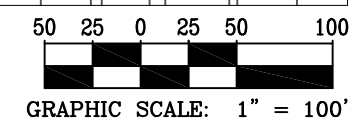


Figure 12A
View From: Above
ECD Greater Than 1.06E+006 uV

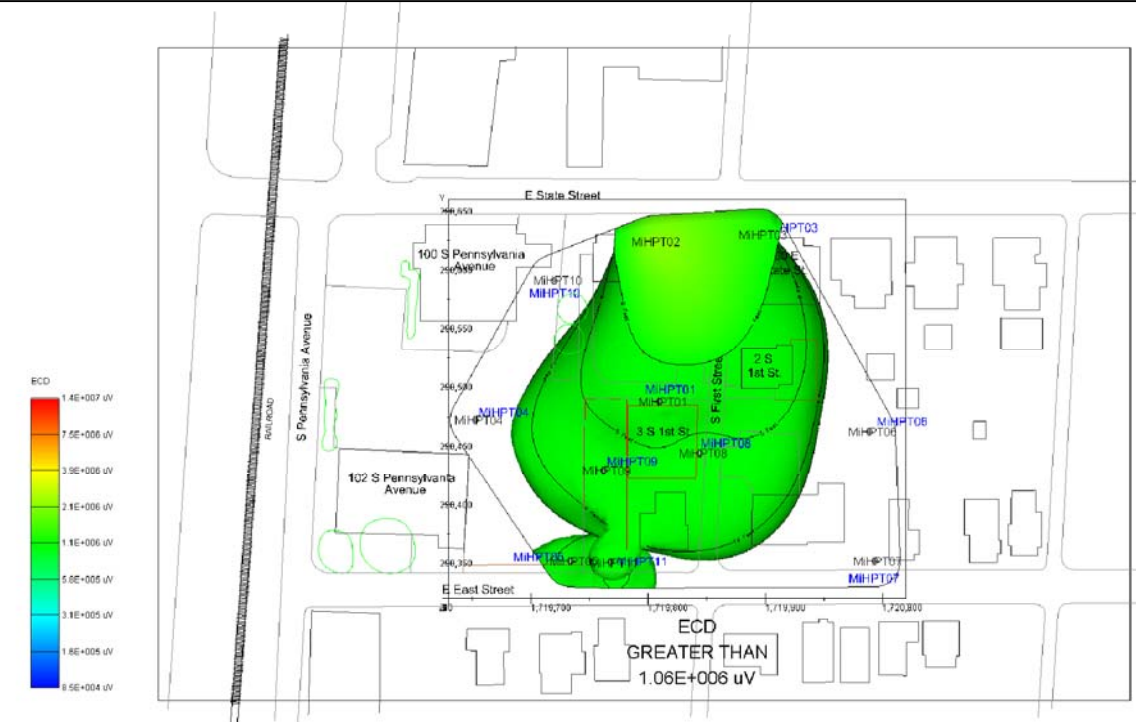


Figure 12B
View From: Northwest
ECD Greater Than 1.06E+006 uV

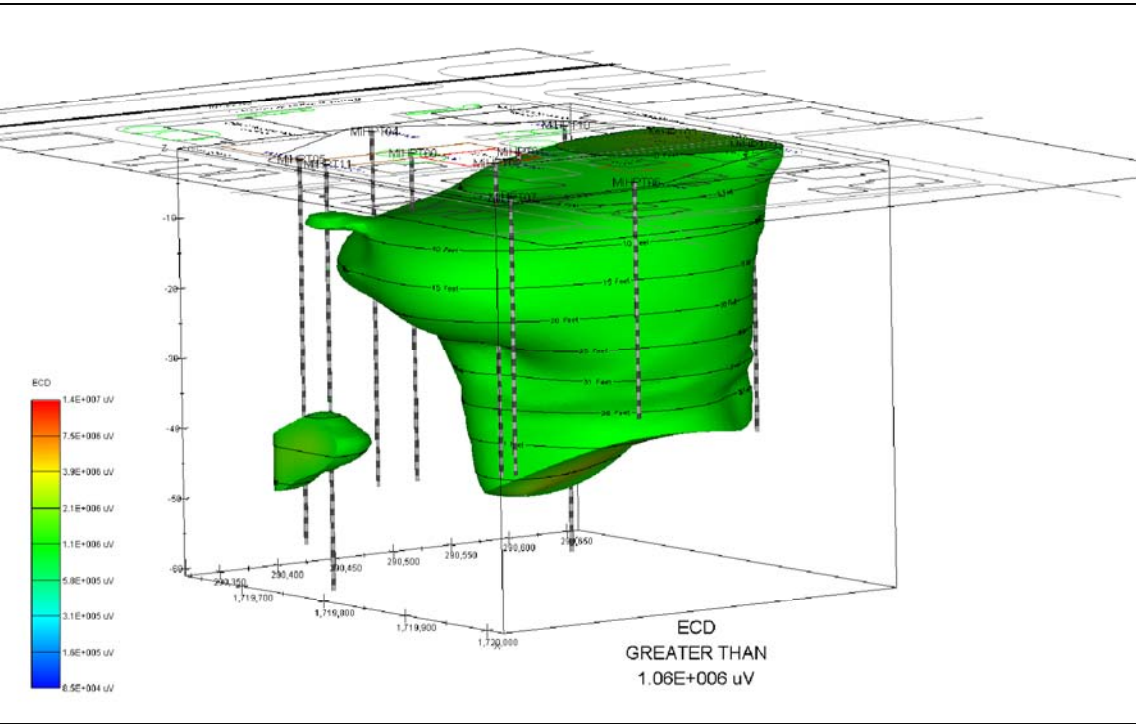
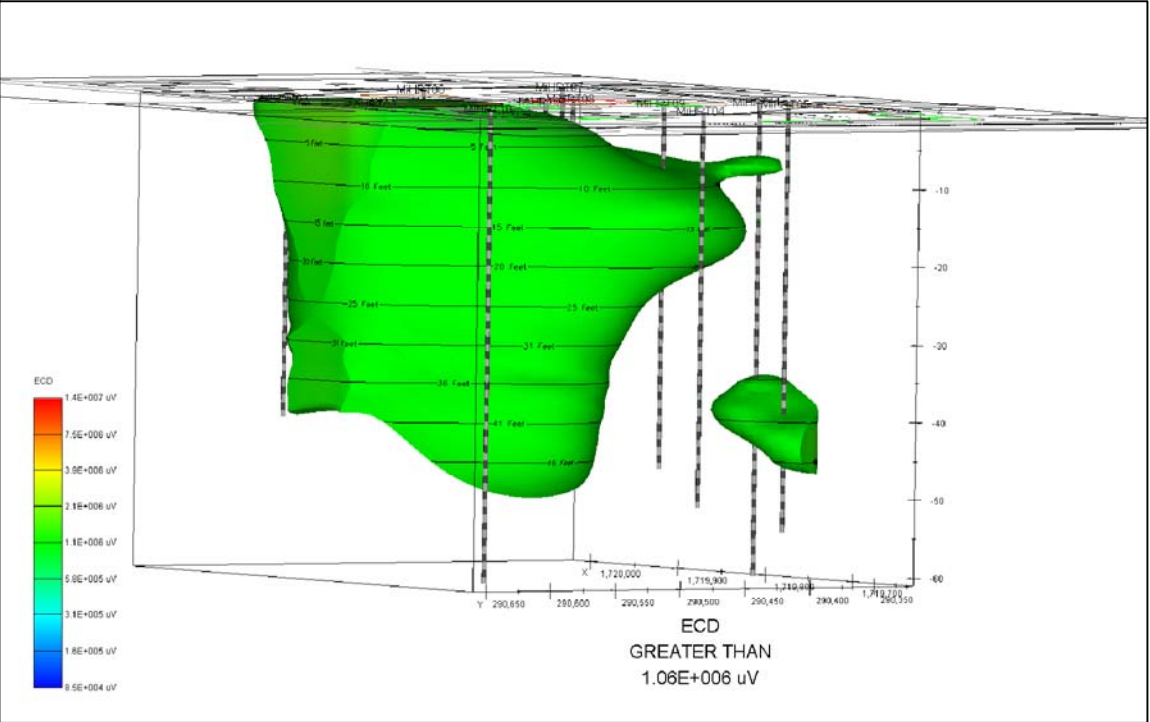


Figure 12C
View From: Southeast
ECD Greater Than 1.06E+006 uV

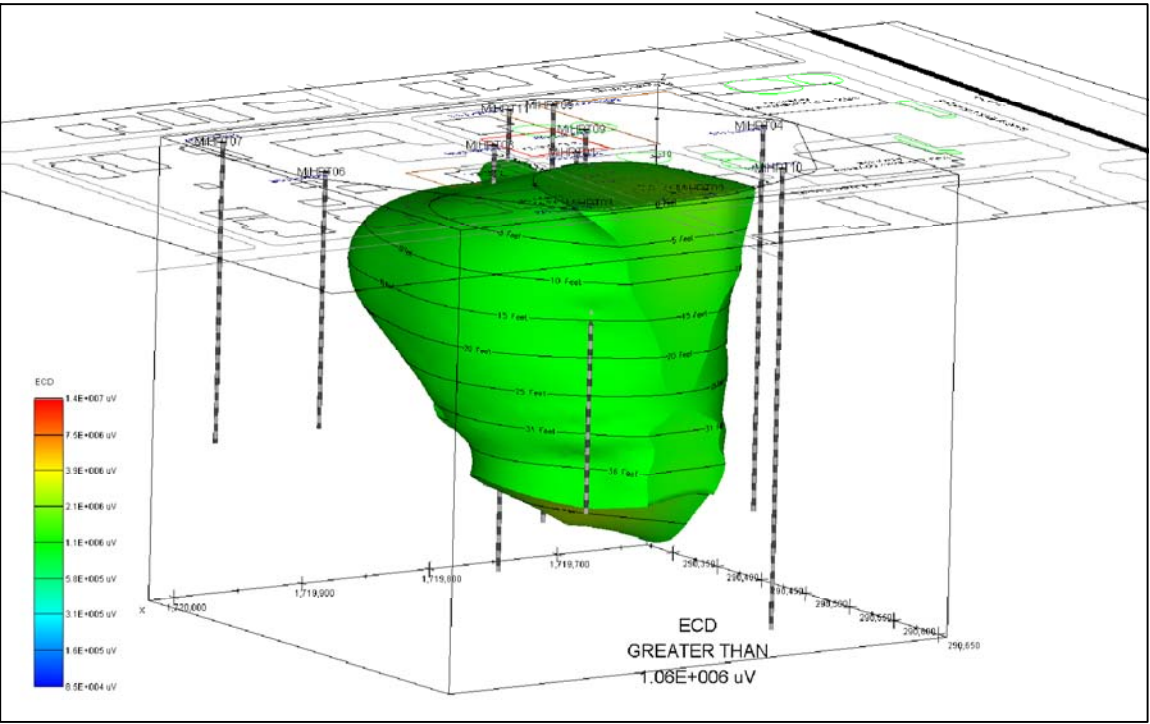


Figure 12D
View From: Northeast
ECD Greater Than 1.06E+006 uV

**FIGURE 12 -
HRSC Survey
Data ECD 3-D Model**

Elite/Free State/Star Cleaners
1 S. First Street
Delmar, MD 19940
CGS No. CG-12-0763.03
Prepared by: Lara Bennett
Date: 04/08/2015

DIAGRAM NOTES:

3-D Models Generated
From ECD Data
Collected by Vironex, Inc.

TABLE

Table 1
Elite/Free State/Star Cleaners
Delmar, Maryland

Groundwater Sample Analytical Results
December 4 and 5, 2014
Volatile Organic Compounds (VOCs) - Detected Analytes

MDE Groundwater Standard	EPA Tapwater RSL	Analyte Name	MiHPT01-GW (8-12')	MiHPT01-GW (8-12') [MiHPT-D2]	MiHPT01-GW (24-28')	MiHPT01-GW (32-36')	MiHPT01-GW (39-43')	MiHPT01-GW (52-56')	MiHPT02-GW (26-30')	MiHPT02-GW (41-45')	MiHPT03-GW (28-32')	MiHPT05-GW (17-21')	MiHPT05-GW (41-45')	MiHPT05-GW (41-45') [MiHPT-D1]	MiHPT05-GW (52-56')	MiHPT07-GW (29-33')	MiHPT07-GW (39-43')	MiHPT07-GW (52-56')
Concentration (ug/L)			Concentration (ug/L)															
na	5.7E-01	1,1,1,2-Tetrachloroethane	8.14	6.16	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
7.0E+00	2.8E+01	1,1-Dichloroethylene	1.84	1.87	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.47 J	0.39 J	0.30 U	0.30 U	0.30 U	0.30 U
na	1.5E+00	1,2,4-Trimethylbenzene	11.3	6.02	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
na	1.2E+01	1,3,5-Trimethylbenzene	3.24	1.69	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
7.5E+01	4.8E-01	1,4-Dichlorobenzene	0.47 J	0.57 J	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
7.0E+02	5.6E+02	2-Butanone (MEK)	2.13 J	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U
na	na	4-Isopropyltoluene	1.12	0.64 J	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
6.3E+02	1.2E+02	4-Methyl-2-pentanone (MIBK)	0.93 J	0.84 J	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
5.5E+02	1.4E+03	Acetone	17.4	11.9	13.9	9.46 J	7.00 U	18.0	7.00 U	11.8	7.00 U	12.6	7.00 U	7.00 U	8.36 J	7.00 U	7.00 U	7.00 U
5.0E+00	4.5E-01	Benzene	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	2.03	0.30 U	0.30 U	0.40 J	0.40 J	0.30 U	0.30 U	0.44 J	0.30 U
1.0E+02	8.1E+01	Carbon disulfide	0.60 U	0.60 U	0.63 J	0.60 U	0.60 U	0.87 J	0.60 U	0.78 J	0.60 U	0.62 J	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U
8.0E+01	2.2E-01	Chloroform	0.63 J	0.68 J	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.89 J	0.78 J	0.40 U	0.40 U	0.40 U	0.40 U
7.0E+01	3.6E+00	cis-1,2-Dichloroethylene	157	153	0.87 J	0.40 U	0.51 J	0.40 U	0.40 U	0.40 U	0.40 U	8.04	110	99.3	0.40 U	0.40 U	0.40 U	0.40 U
7.0E+02	1.5E+00	Ethylbenzene	0.79 J	0.58 J	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
6.6E+01	4.5E+01	Isopropylbenzene	0.58 J	0.41 J	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1.0E+04	1.9E+01	m+p-Xylenes	3.96	2.74	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2.0E+01	1.4E+01	Methyl-t-butyl ether (MTBE)	1.16	1.10	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.57 J	4.32	8.00
6.5E-01	1.7E-01	Naphthalene	3.52	3.00	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
na	1.0E+02	n-Butylbenzene	0.76 J	0.46 J	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
na	6.6E+01	n-Propylbenzene	1.26	0.80 J	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1.0E+04	1.9E+01	o-Xylene	3.50	2.56	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
na	2.0E+02	sec-Butylbenzene	0.53 J	0.40 J	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
na	6.9E+01	tert-Butylbenzene	0.11 J	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.20 J	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
5.0E+00	4.1E+00	Tetrachloroethylene (PCE)	67.100	72.400	743	210	142	91.5	0.40 U	0.61 J	0.40 U	122	477	390	0.54 J	0.69 J	2.84	1.58
1.0E+03	1.1E+02	Toluene	0.59 J	0.40 U	0.40 U	0.40 U	0.43 J	0.46 J	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.62 J	0.42 J
1.0E+02	3.6E+01	trans-1,2-Dichloroethylene	6.62	6.42	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.88 J	0.96 J	0.40 U	0.40 U	0.40 U	0.40 U
5.0E+00	2.8E-01	Trichloroethylene	225	190	3.39	0.88 J	1.10	0.77 J	0.30 U	0.30 U	0.30 U	12.6	49.5	42.4	0.30 U	0.30 U	0.30 U	0.30 U
1.0E+04	1.9E+01	Xylenes, Total	7.46	5.30	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

Table 1
Elite/Free State/Star Cleaners
Delmar, Maryland

Groundwater Sample Analytical Results
December 4 and 5, 2014
Volatile Organic Compounds (VOCs) - Detected Analytes

MDE Groundwater Standard	EPA Tapwater RSL	Analyte Name	MiHPT09-GW (18-22')	MiHPT09-GW (29-33')	MiHPT09-GW (39-43')	MiHPT09-GW (52-56')	MiHPT10-GW (29-33')	MiHPT10-GW (39-43')	MiHPT10-GW (52-56')	Trip Blank
Concentration (ug/L)			Concentration (ug/L)							
na	5.7E-01	1,1,1,2-Tetrachloroethane	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
7.0E+00	2.8E+01	1,1-Dichloroethylene	1.09	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
na	1.5E+00	1,2,4-Trimethylbenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
na	1.2E+01	1,3,5-Trimethylbenzene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
7.5E+01	4.8E-01	1,4-Dichlorobenzene	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
7.0E+02	5.6E+02	2-Butanone (MEK)	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	2.91 J	0.60 U	0.60 U
na	na	4-Isopropyltoluene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
6.3E+02	1.2E+02	4-Methyl-2-pentanone (MIBK)	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
5.5E+02	1.4E+03	Acetone	20.0	10.4	7.00 U	7.00 U	8.77 J	21.3	25.7	7.00 U
5.0E+00	4.5E-01	Benzene	0.72 J	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
1.0E+02	8.1E+01	Carbon disulfide	0.60 U	0.60 U	0.60 U	0.60 U	1.47 J	0.60 U	0.60 U	0.60 U
8.0E+01	2.2E-01	Chloroform	1.15	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
7.0E+01	3.6E+00	cis-1,2-Dichloroethylene	323	1.09	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
7.0E+02	1.5E+00	Ethylbenzene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
6.6E+01	4.5E+01	Isopropylbenzene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1.0E+04	1.9E+01	m+p-Xylenes	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2.0E+01	1.4E+01	Methyl-t-butyl ether (MTBE)	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
6.5E-01	1.7E-01	Naphthalene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
na	1.0E+02	n-Butylbenzene	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
na	6.6E+01	n-Propylbenzene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1.0E+04	1.9E+01	o-Xylene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
na	2.0E+02	sec-Butylbenzene	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
na	6.9E+01	tert-Butylbenzene	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
5.0E+00	4.1E+00	Tetrachloroethylene (PCE)	1,340	5,33	1,13	1,95	3,94	108	11,3	0.40 U
1.0E+03	1.1E+02	Toluene	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.41 J	0.40 U	0.40 U
1.0E+02	3.6E+01	trans-1,2-Dichloroethylene	2,03	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
5.0E+00	2.8E-01	Trichloroethylene	112	0,71 J	0,30 U	0,30 U	0,30 U	0,33 J	0,36 J	0.30 U
1.0E+04	1.9E+01	Xylenes, Total	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

Table Notes:
VOCs Analytical Method: EPA Method 8260B
[Sample ID] - Sample Identification as shown on COC and in Lab Report.
ug/L - micrograms per liter or parts per billion (ppb)
MDE Groundwater Standards for Type I and II Aquifers (June 2008)
EPA Tapwater Regional Screening Levels (RSLs) (at CR = 1x10⁻⁶ or HI = 0.1) (January 2015)
U - Analyte not detected above specified Limit of Detection (LOD) (shown as a gray tone).
J - The reported concentration is less than the Limit of Quantitation (LOQ) but greater than the LOD. The concentration is considered to be estimated.
na - not applicable
Bold - Detected analyte concentration
Underline - LOD exceeds the respective MDE Groundwater Standard or EPA Tapwater RSL.
Red, bold, and underline - Detected analyte concentration exceeds the respective MDE Groundwater Standard or EPA Tapwater RSL.

Additional Screening Level Notes		
Analyte	MDE Groundwater Standard	EPA Tapwater RSL
m+p-Xylenes	Total Xylenes	Total Xylenes
o-Xylene	Total Xylenes	o-Xylene

APPENDICES

APPENDIX A

**VIRONEX MEMBRANE INTERFACE PROBE AND
HYDRAULIC PROFILING TOOL INVESTIGATION REPORT**



Membrane Interface Probe and Hydraulic Profiling Tool Investigation Report

**Elite Cleaners
3 South First Street
Delmar, Maryland**

Prepared for:

**Chesapeake GeoSciences
5405 Twin Knolls Road
Columbia, Maryland**

Prepared by:

**Vironex, Inc.
403 Serendipity Drive
Millersville, Maryland**

December 19, 2014

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Project Summary

Project Name: Elite Cleaners

Project Dates: December 1st through 3rd, 2014

Project Summary: Vironex advanced 11 direct push MiHPT borings from the ground surface between 33 feet to 60 feet below ground surface (bgs). The MiHPT system is a combined VOC profiling and hydraulic conductivity profiling tool. Collecting these data sets in a single boring can provide an understanding of subsurface conditions. A description of the MIP and HPT systems that compose the MiHPT system are provided in the sections below.

Draft versions of all MiHPT logs were provided to Chesapeake GeoSciences during the field work portion of the project. Final versions of all MiHPT logs are provided in Appendices A, B, and C. The MIP boring logs are presented in Appendices A and B. The MIP detector response scales for boring logs in Appendix A are automatically chosen based on the highest response during each boring. The MIP detector response scales for boring logs in Appendix B are set to a common scaled based on the highest detector response observed across all borings at the site. The HPT boring logs are provided in Appendix C. Additional details regarding the MIP and HPT systems are provided in Appendix D.

MIP System

During the course of this project, the MIP system was equipped with four detectors, including an electron capture detector (ECD), halogen-specific detector (XSD), photo-ionization detector (PID), and flame-ionization detector (FID). During the advancement of each boring, the response of each detector, relative to depth, was recorded in accordance with the standard operating procedures for the MIP system. Additionally, the electrical conductivity of soil, relative to depth, was collected during each MIP boring to provide a relative indication of soil types across the boring interval. The details associated with each boring are presented in the table below.

Boring	Date	Time	Total Depth	MIP Notes
MiHPT01	12.01.2014	10:09	48.35	Refusal at 48.35 feet bgs.
MiHPT02	12.01.2014	12:02	36.80	Refusal at 36.80 feet bgs.
MiHPT03	12.01.2014	14:52	37.90	Refusal at 37.90 feet bgs.
MiHPT04	12.02.2014	08:20	50.20	Cleared asphalt. Refusal at 50.20 feet bgs.
MiHPT05	12.02.2014	10:21	54.30	Refusal at 54.30 feet bgs.
MiHPT06	12.02.2014	13:03	33.20	Refusal at 33.20 feet bgs.
MiHPT07	12.02.2014	14:20	38.95	Refusal at 38.95 feet bgs.
MiHPT08	12.03.2014	08:00	44.20	Cleared concrete. Refusal at 44.20 feet bgs.



MiHPT09	12.03.2014	10:01	46.15	Refusal at 46.15 feet bgs.
MiHPT10	12.03.2014	12:20	60.25	Cleared asphalt. Completed target depth of 60 feet bgs
MiHPT11	12.03.2014	14:37	60.15	Completed target depth of 60 feet bgs

HPT System

The HPT system was equipped to measure the flow of water injected into the subsurface and the resulting hydraulic pressure, relative to depth, to determine the hydraulic conductivity of the subsurface. If possible, dissipation tests are conducted to determine the piezometric pressure across the boring interval that is below water. From the HPT flow, HPT pressure, and piezometric pressure, the estimated hydraulic conductivity (est. K) can be calculated. The HPT details of each boring are provided below.

The details associated with each boring are presented below.

Boring	Date	Time	Total Depth	Dissipation Depths	HPT Notes
MiHPT01	12.01.2014	10:09	48.35	24.03 25.73 28.58 34.93	Refusal at 48.35 feet bgs.
MiHPT02	12.01.2014	12:02	36.80	29.58 26.53	Refusal at 36.80 feet bgs.
MiHPT03	12.01.2014	14:52	37.90	28.98 37.93	Refusal at 37.90 feet bgs.
MiHPT04	12.02.2014	08:20	50.20	23.93 26.98 49.98	Cleared asphalt. Refusal at 50.20 feet bgs.
MiHPT05	12.02.2014	10:21	54.30	22.03 54.03	Refusal at 54.30 feet bgs.
MiHPT06	12.02.2014	13:03	33.20	25.73 32.88	Refusal at 33.20 feet bgs.



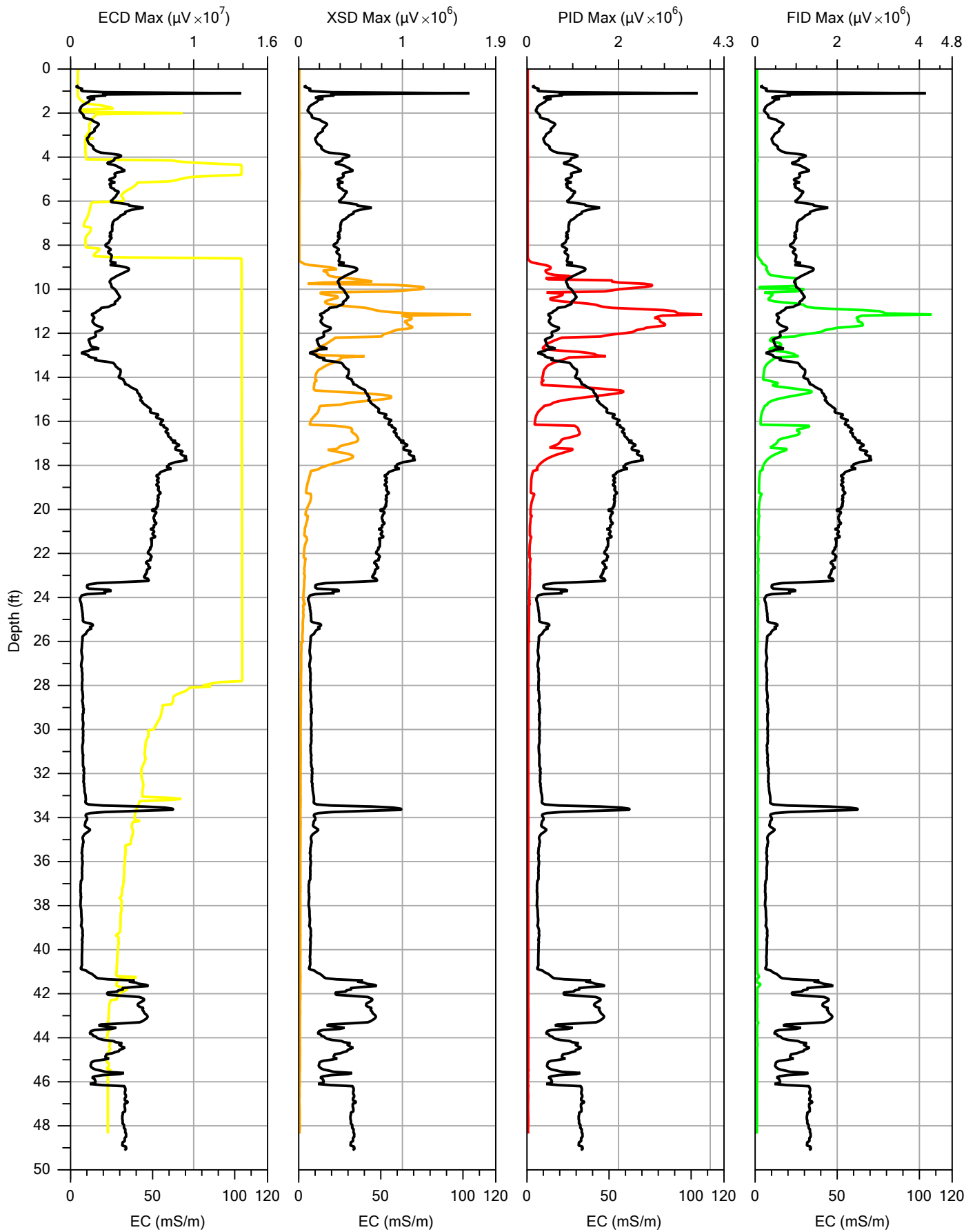
MiHPT07	12.02.2014	14:20	38.95	26.88 38.48	Refusal at 38.95 feet bgs.
MiHPT08	12.03.2014	08:00	44.20	22.03 28.58	Cleared concrete. Refusal at 44.20 feet bgs.
MiHPT09	12.03.2014	10:01	46.15	30.88 45.88	Refusal at 46.15 feet bgs.
MiHPT10	12.03.2014	12:20	60.25	31.88 36.13 51.17	Cleared asphalt. Completed target depth of 60 feet bgs.
MiHPT11	12.03.2014	14:37	60.15	25.93 46.93 59.87	Completed target depth of 60 feet bgs..

Quality Assurance/Quality Control

In order to maintain quality assurance and quality control standards during the course of the project, a response test was completed before and after each MIP and HPT boring (additional details regarding response testing are provided in Appendix D). The response test indicates that the systems are operating properly, and therefore, may be advanced into the subsurface. All response testing conducted during the project were within the applicable Geoprobe guidelines.



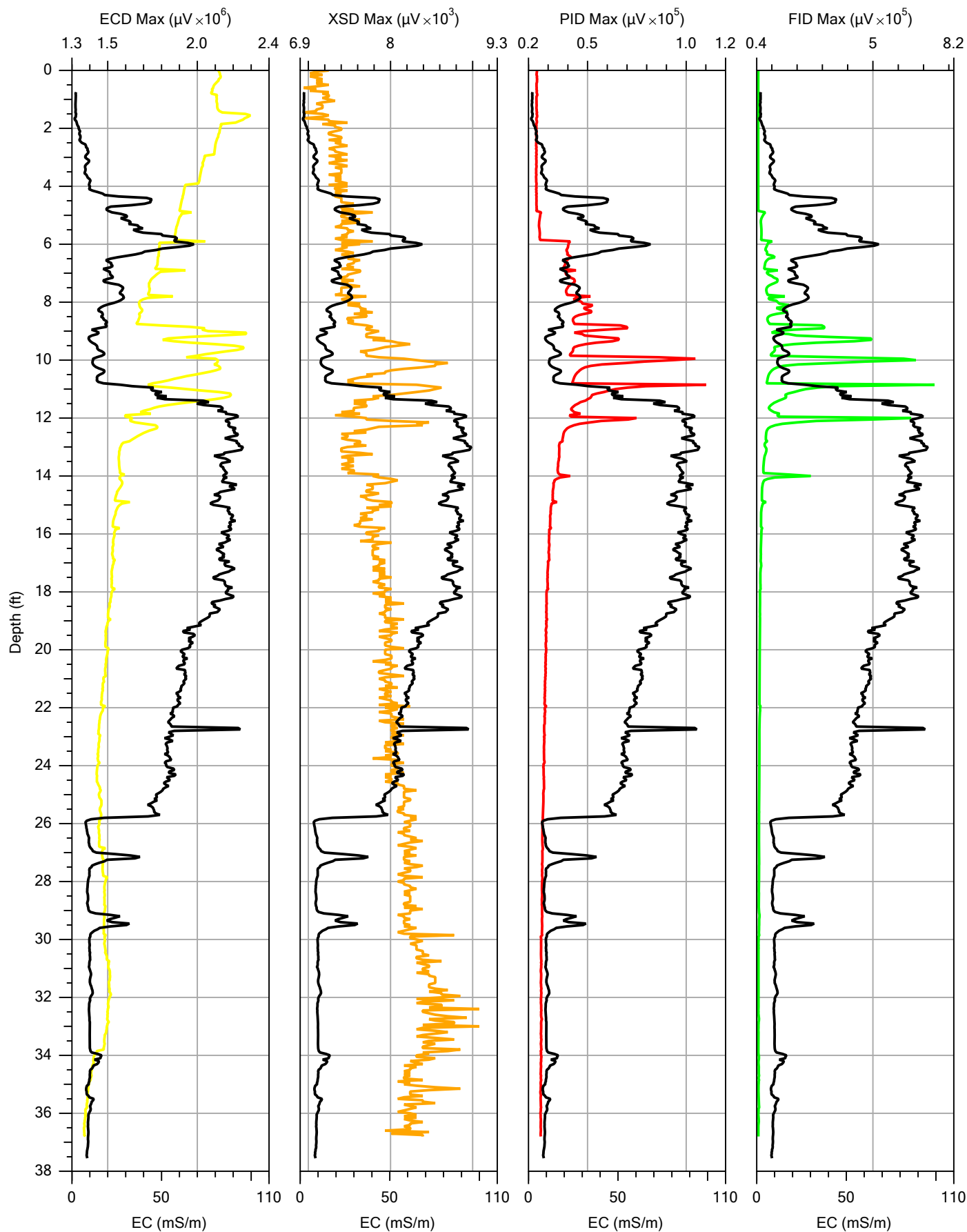
Appendix A – MIP Boring Logs (Auto-Scale)



Company: Vironex
Project ID: Star Cleaners

Operator: Charles Terry
Client: CGS

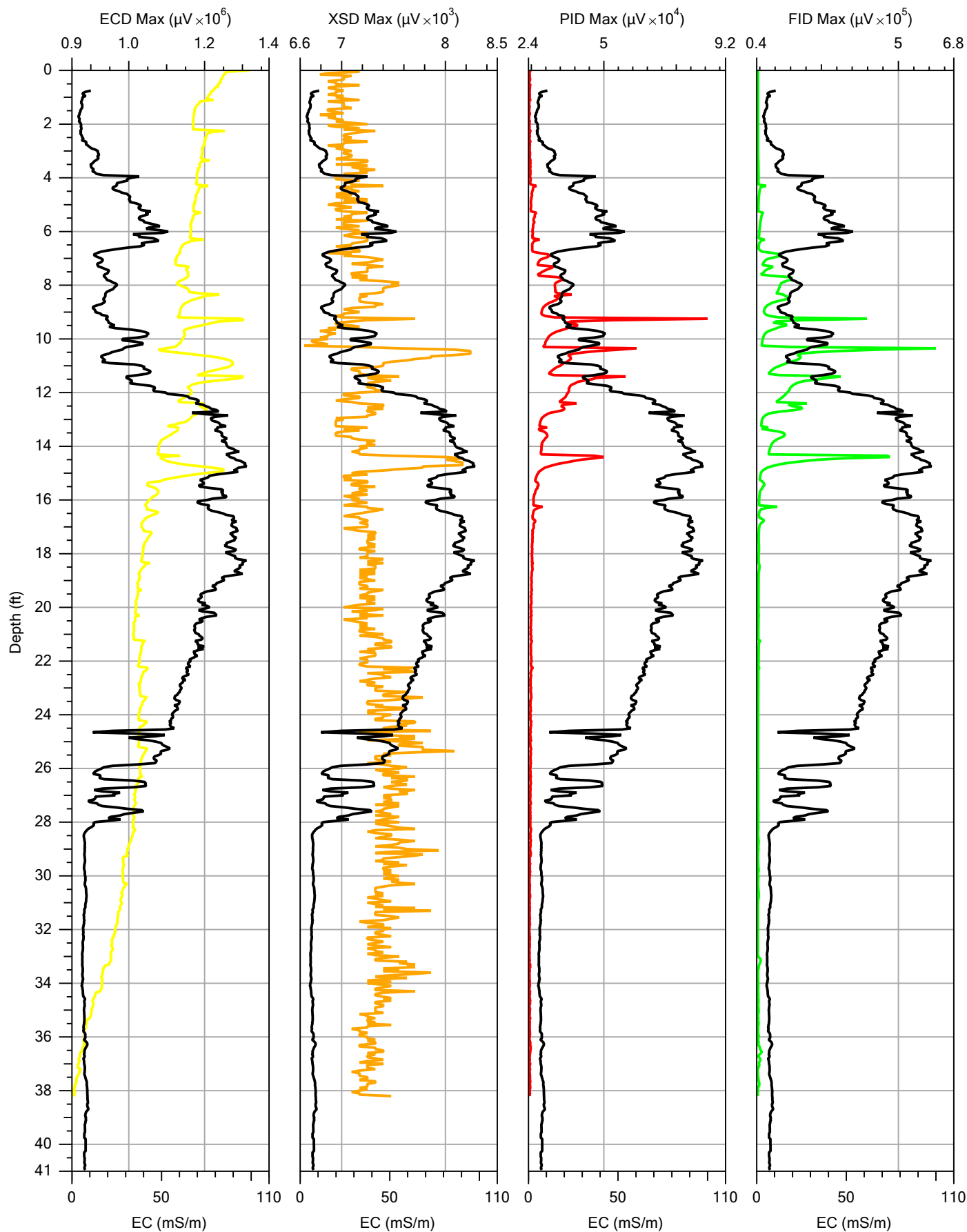
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Location:	



Company: Vironex
Project ID: Star Cleaners

Operator: Charles Terry
Client: CGS

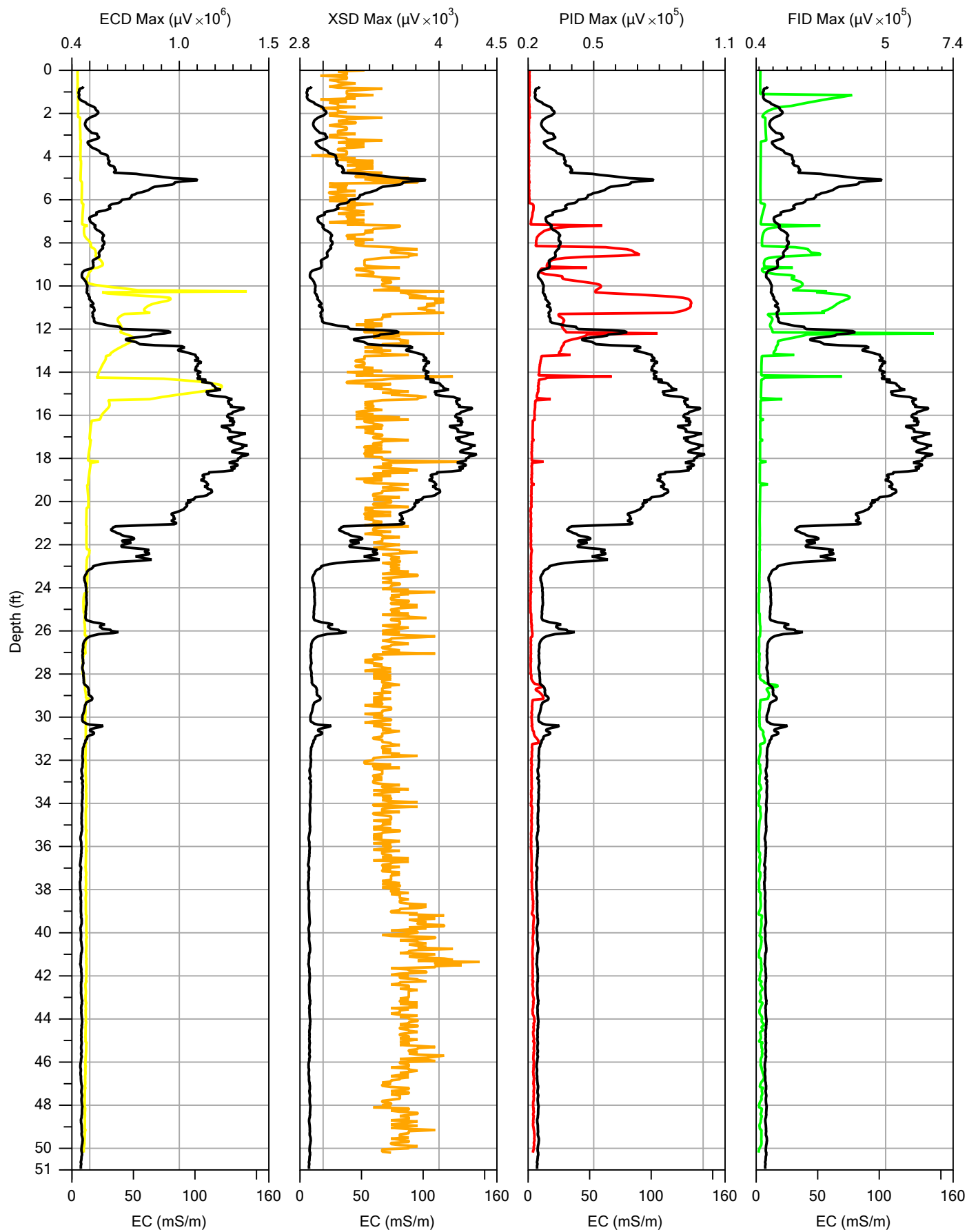
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Company: Vironex
Project ID: Star Cleaners

Operator: Charles Terry
Client: CGS

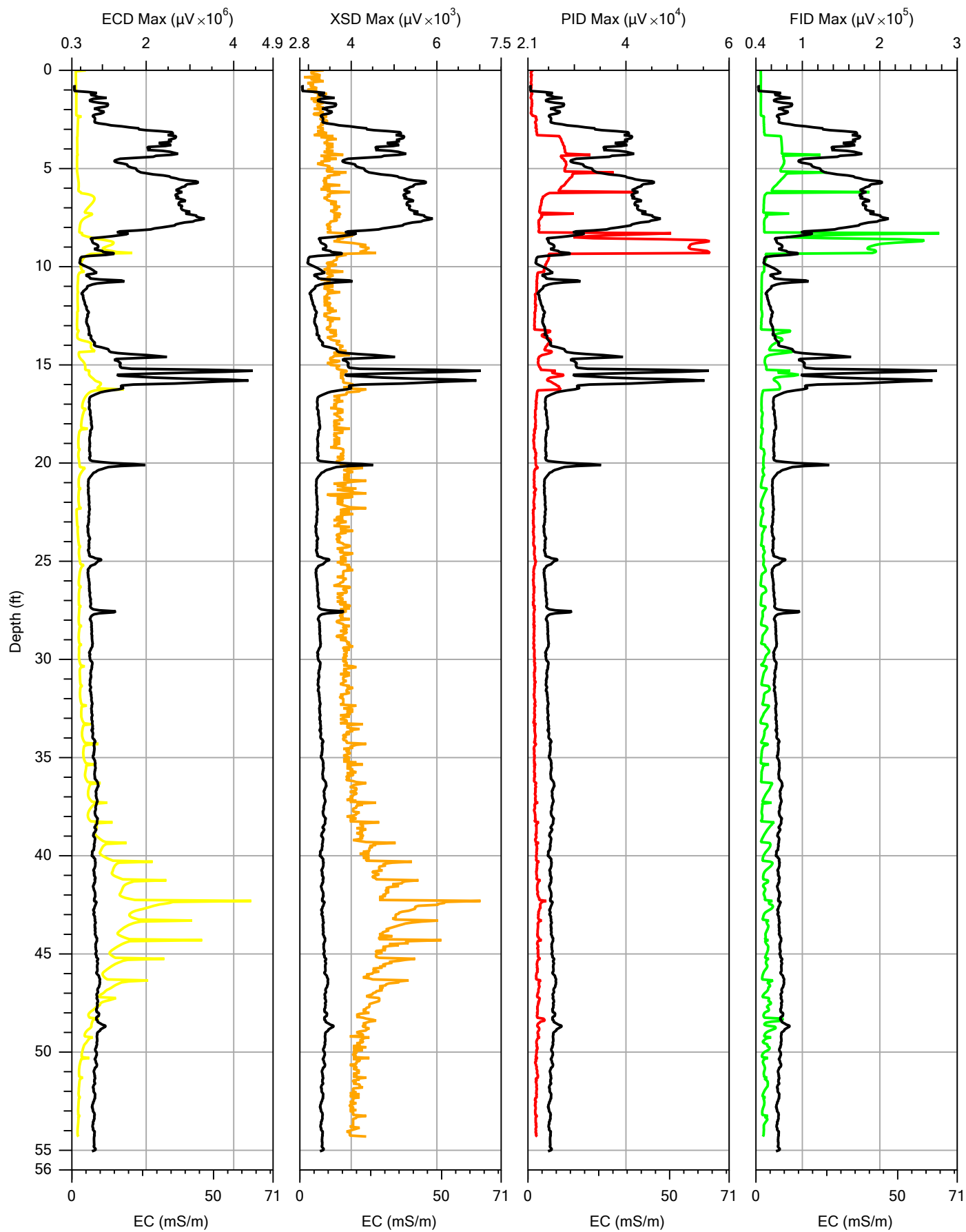
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Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

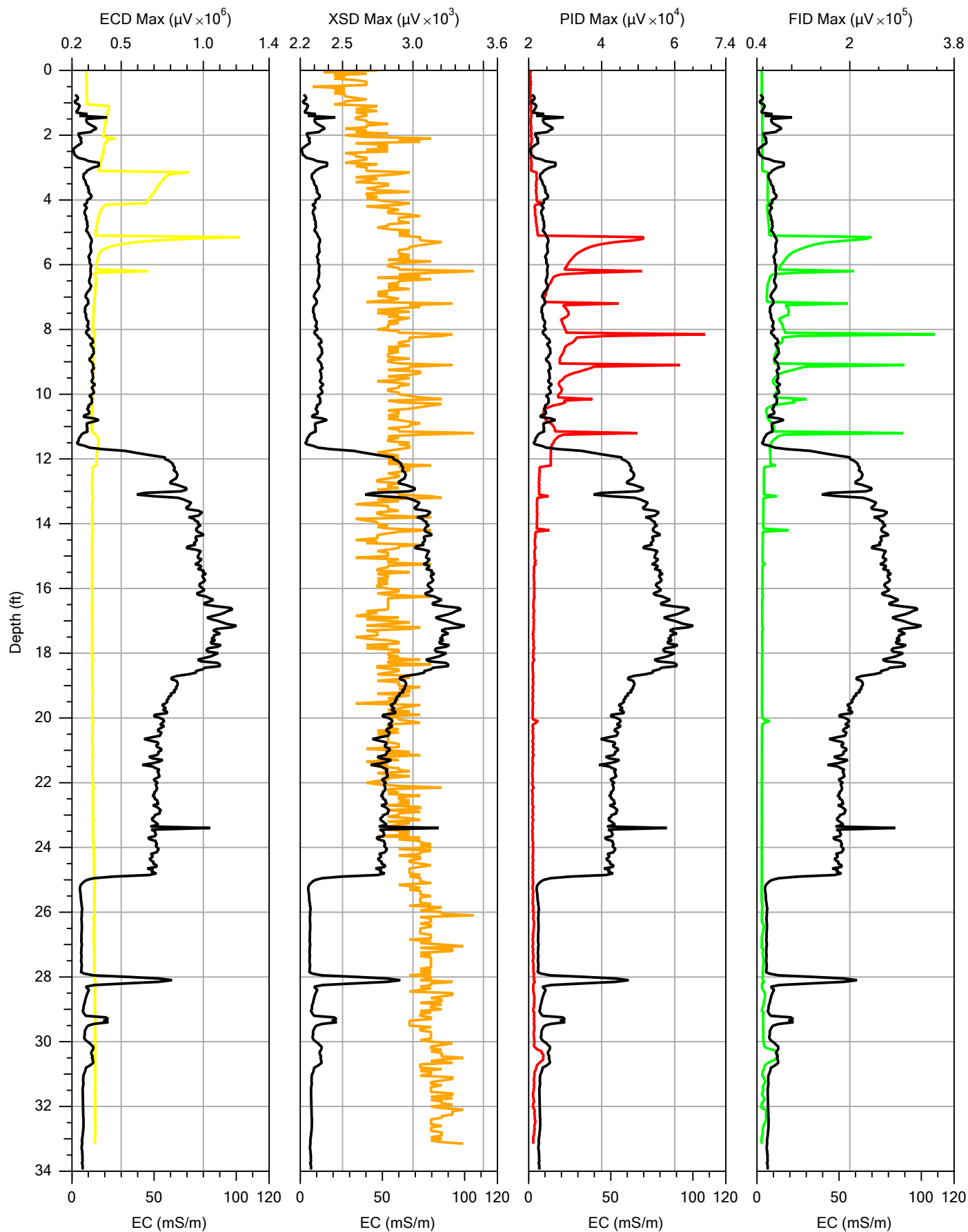
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Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

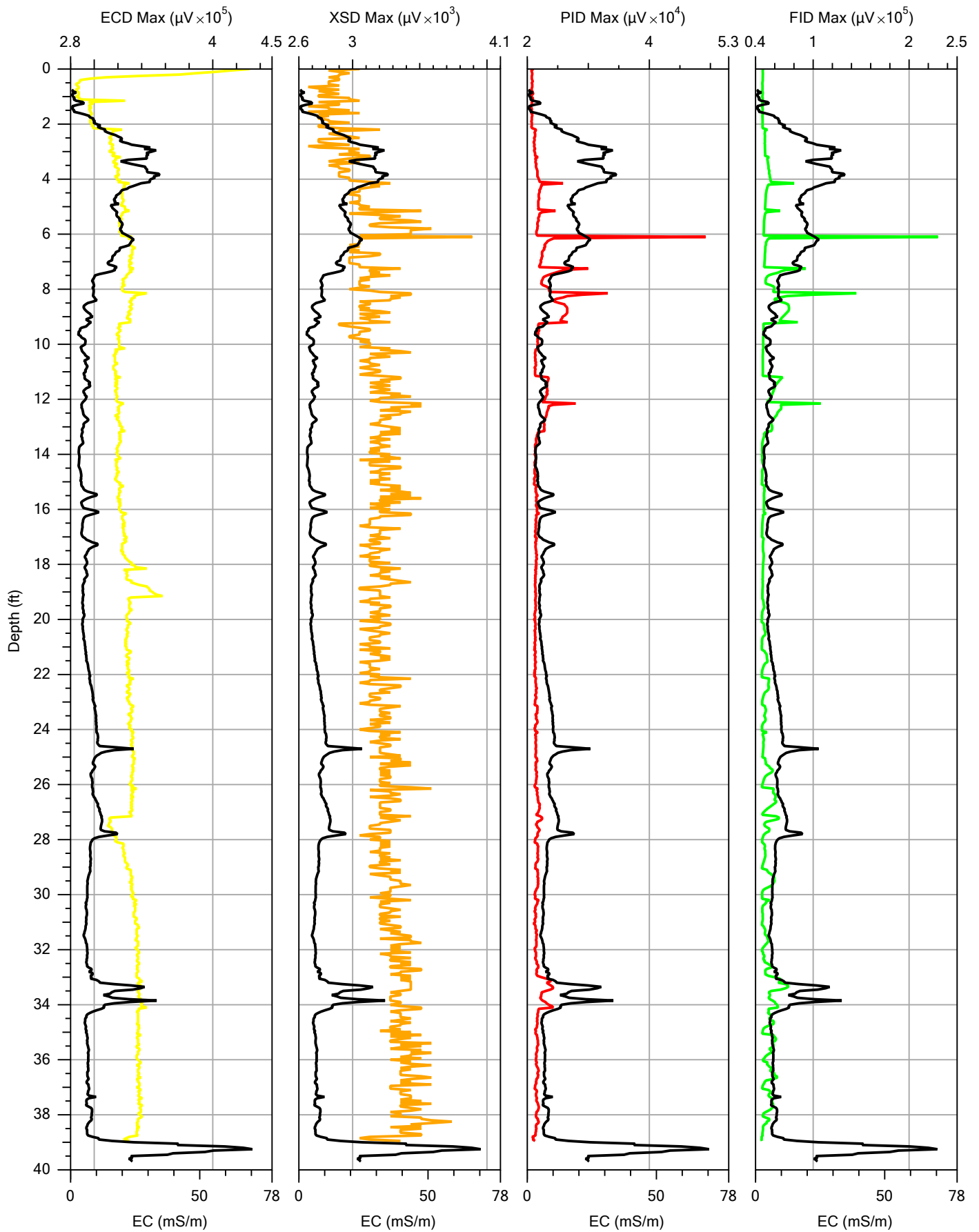
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Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

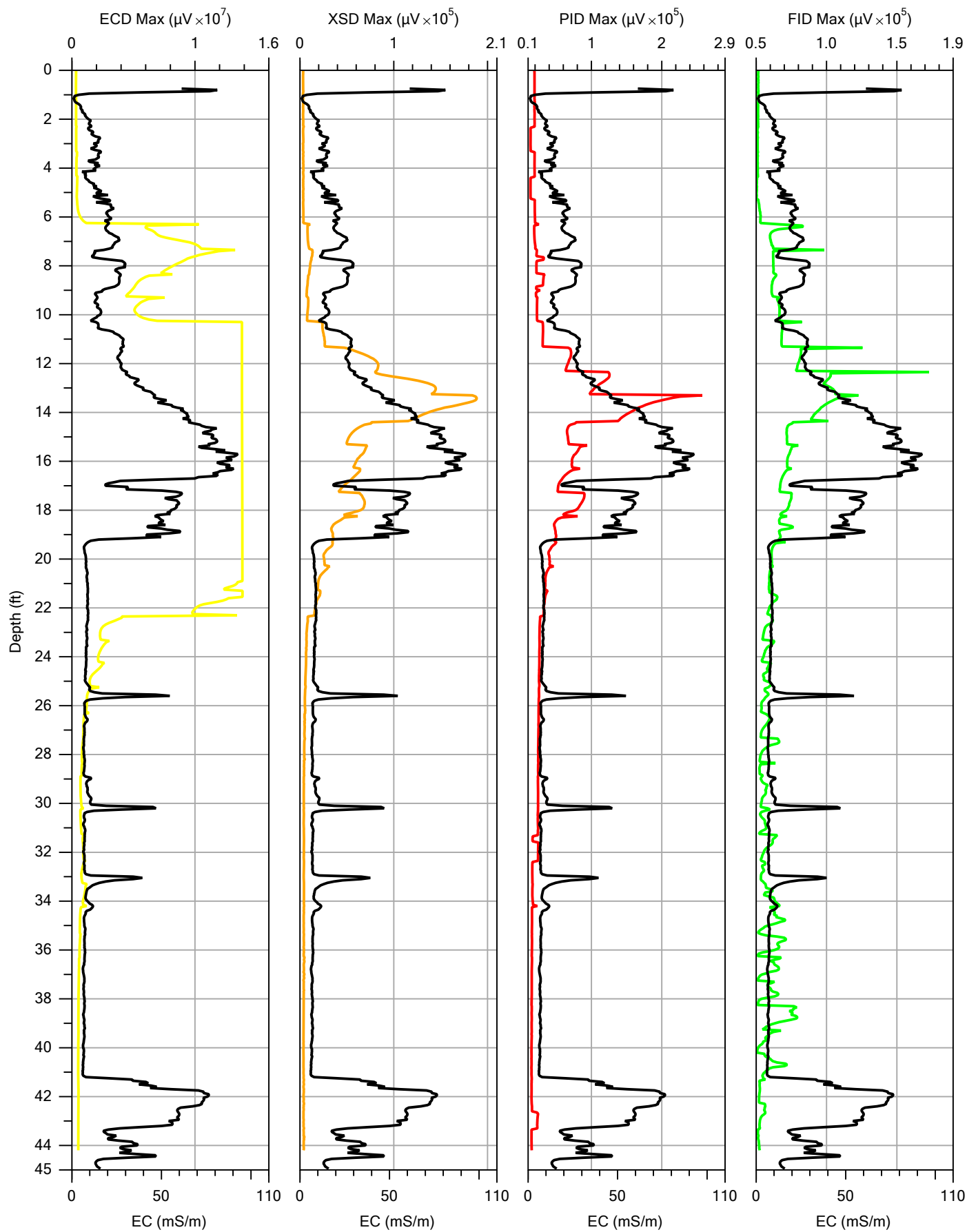
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Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

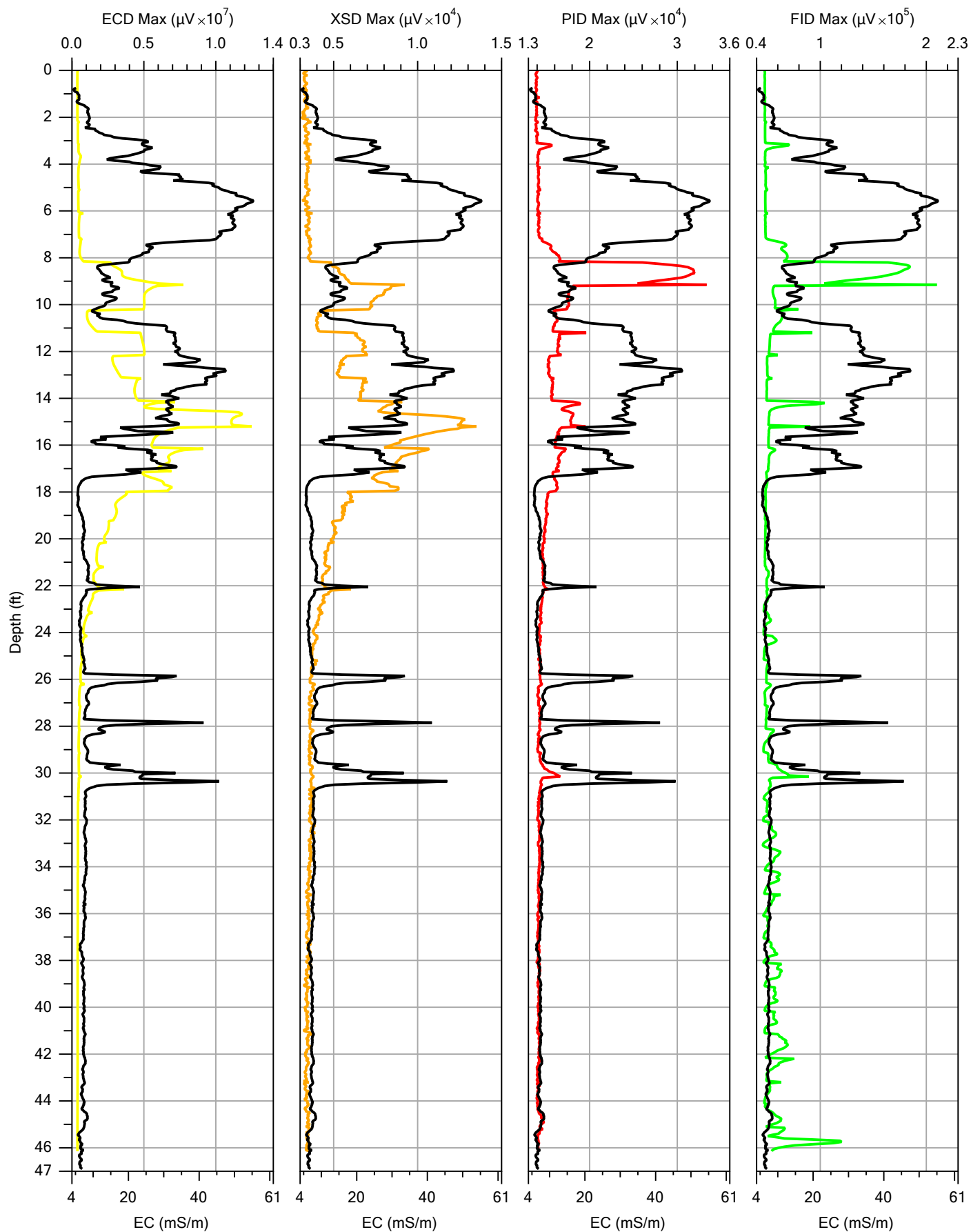
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Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

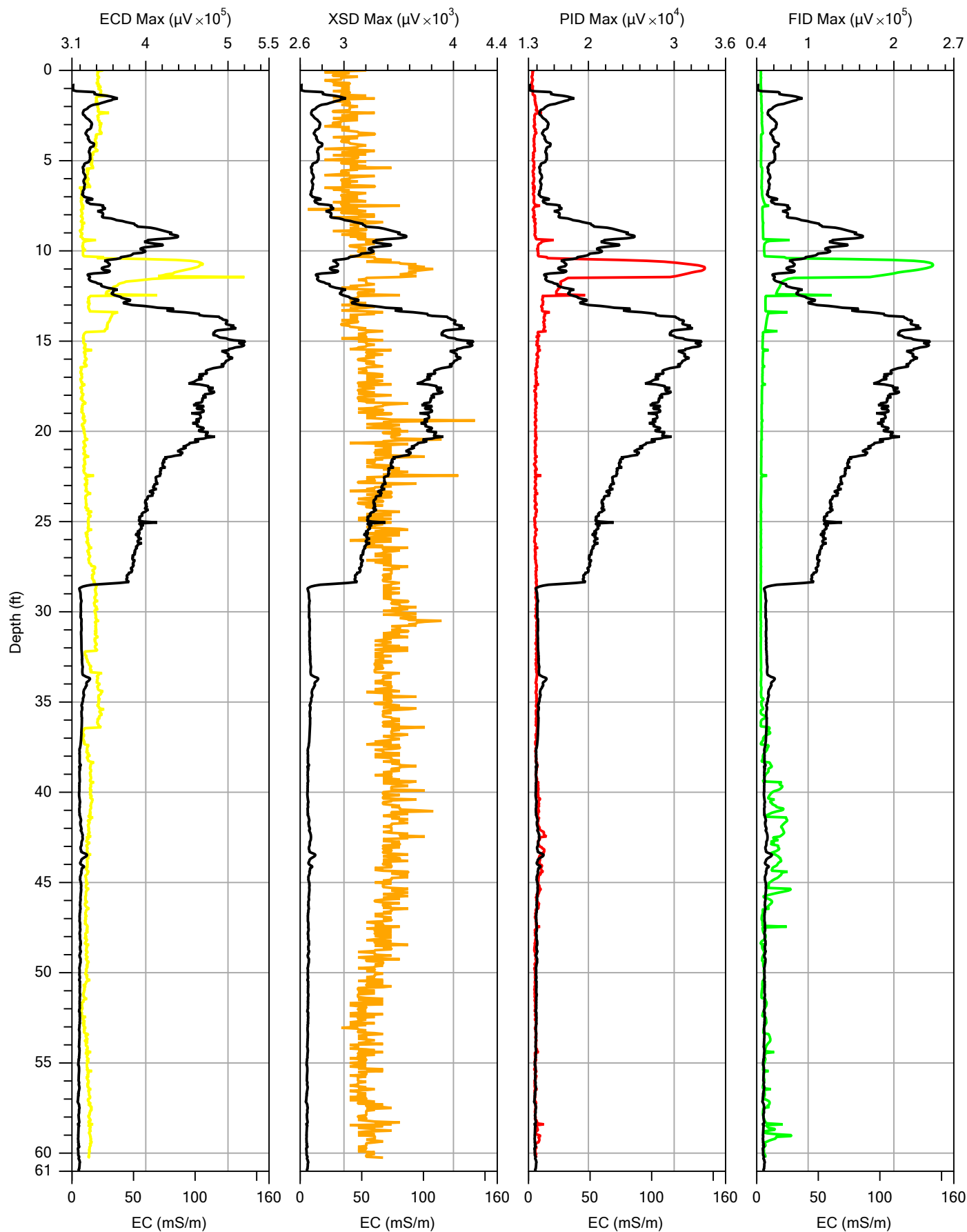
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Location:	



Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

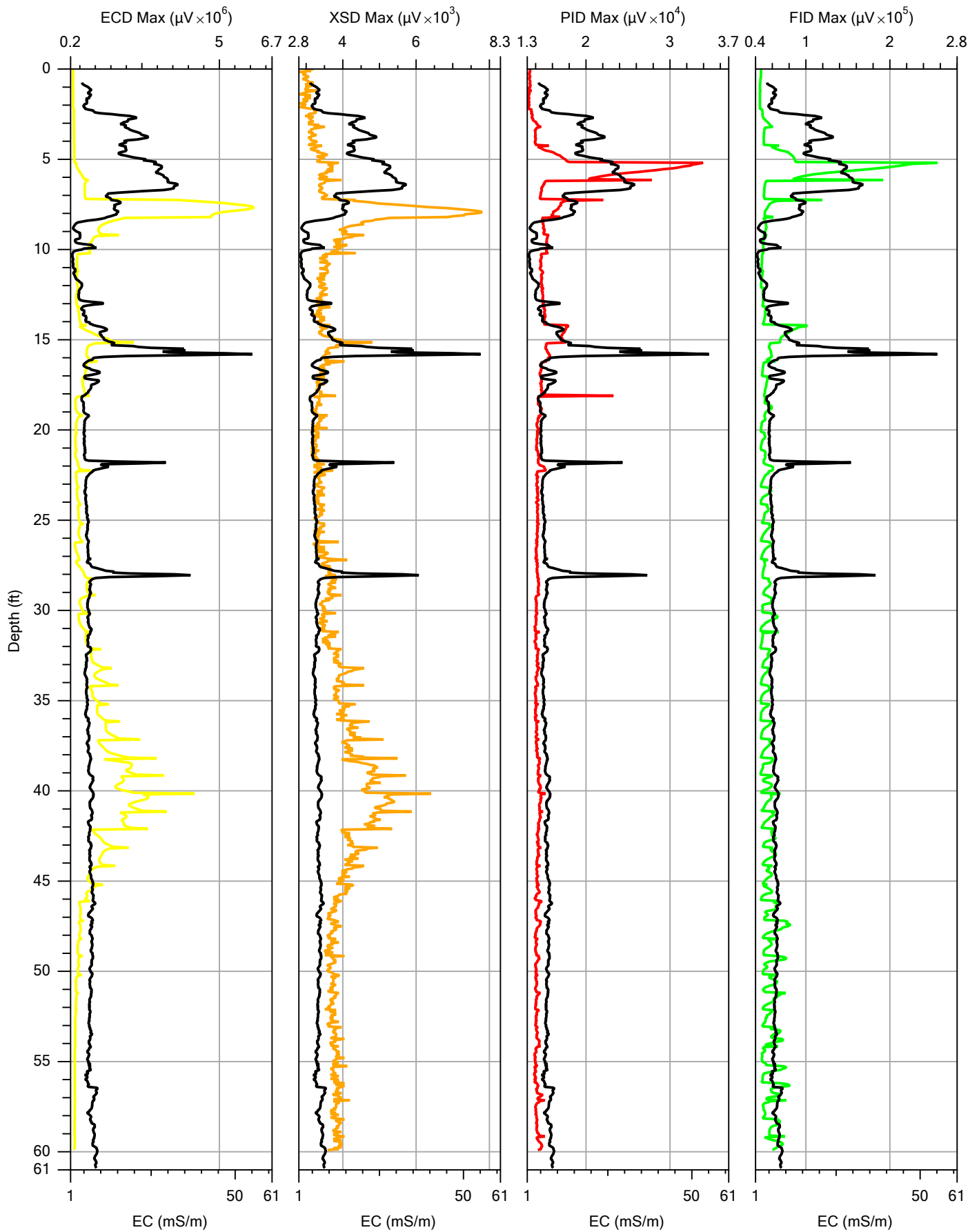
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Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

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Date:	12/3/2014
Location:	



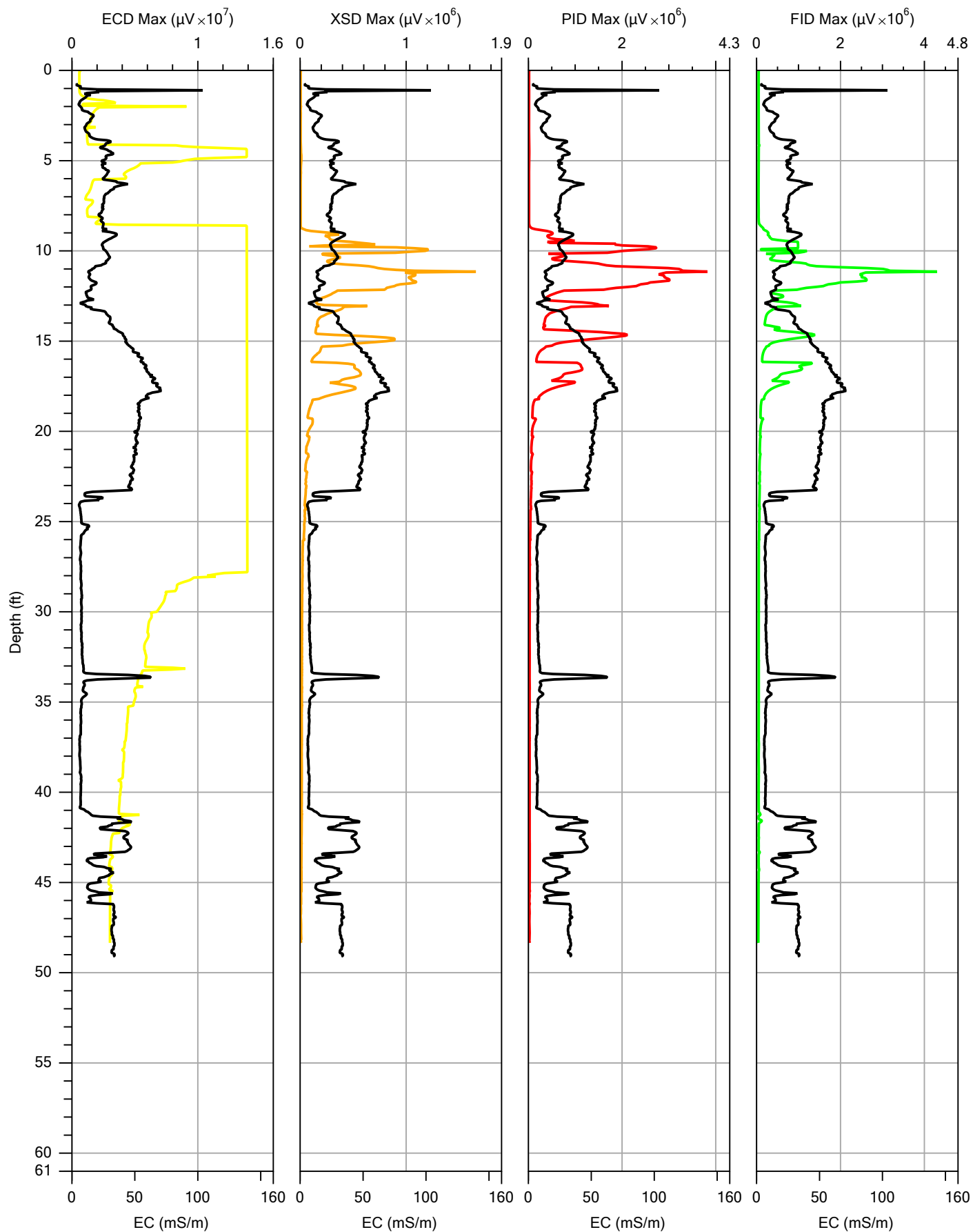
Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

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Date:	12/3/2014
Location:	



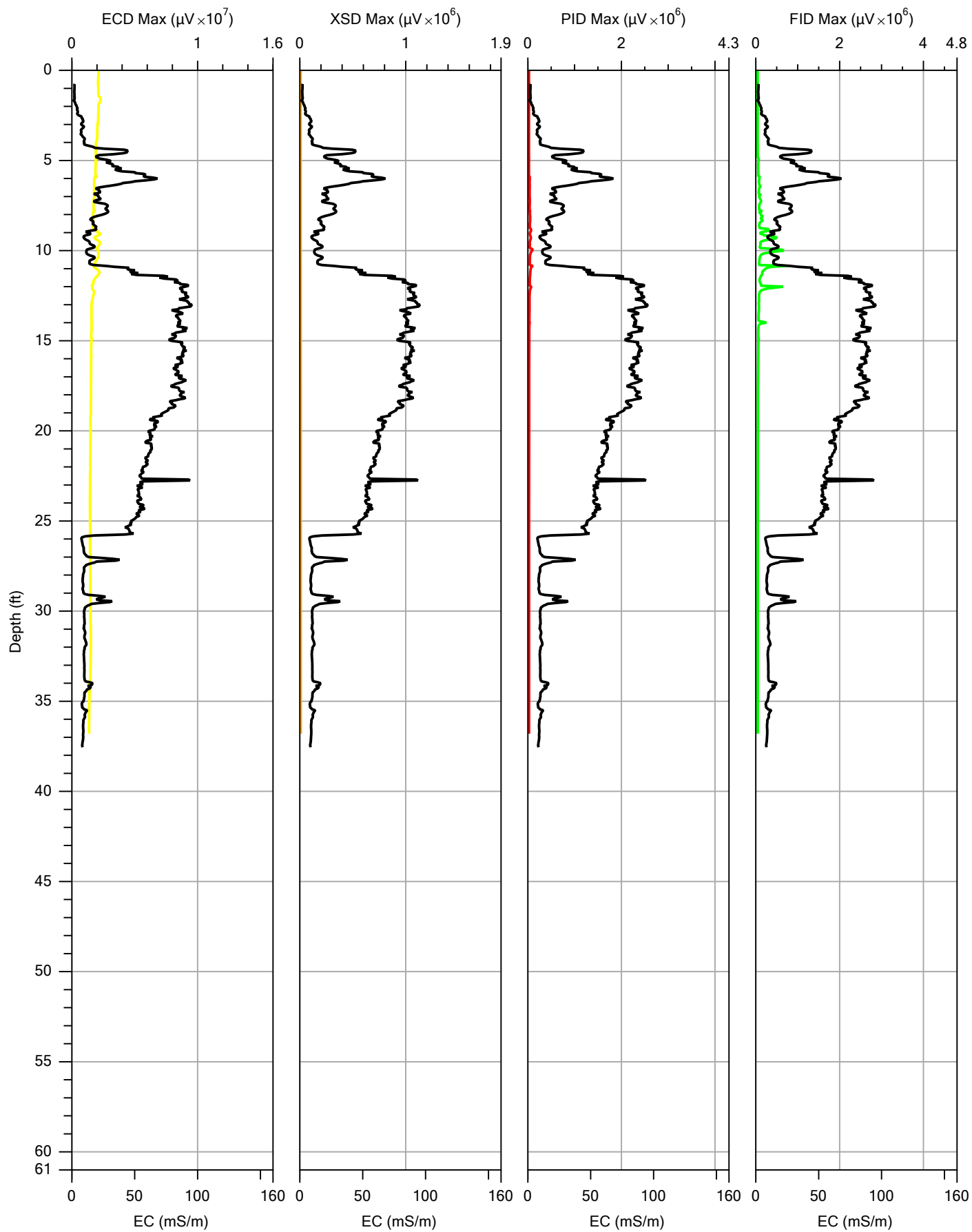
Appendix B – MIP Boring Logs (Common-Scale)



Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

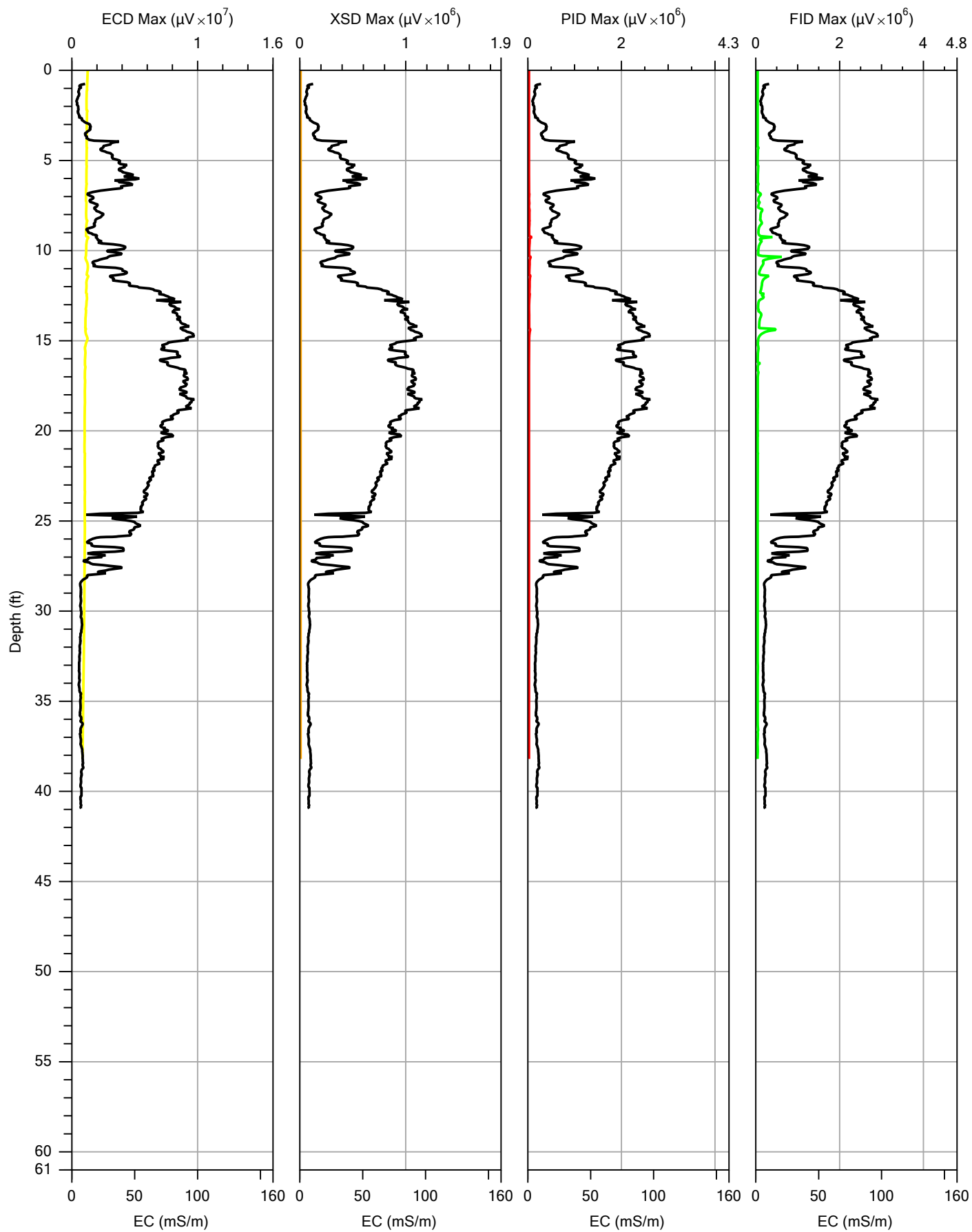
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Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

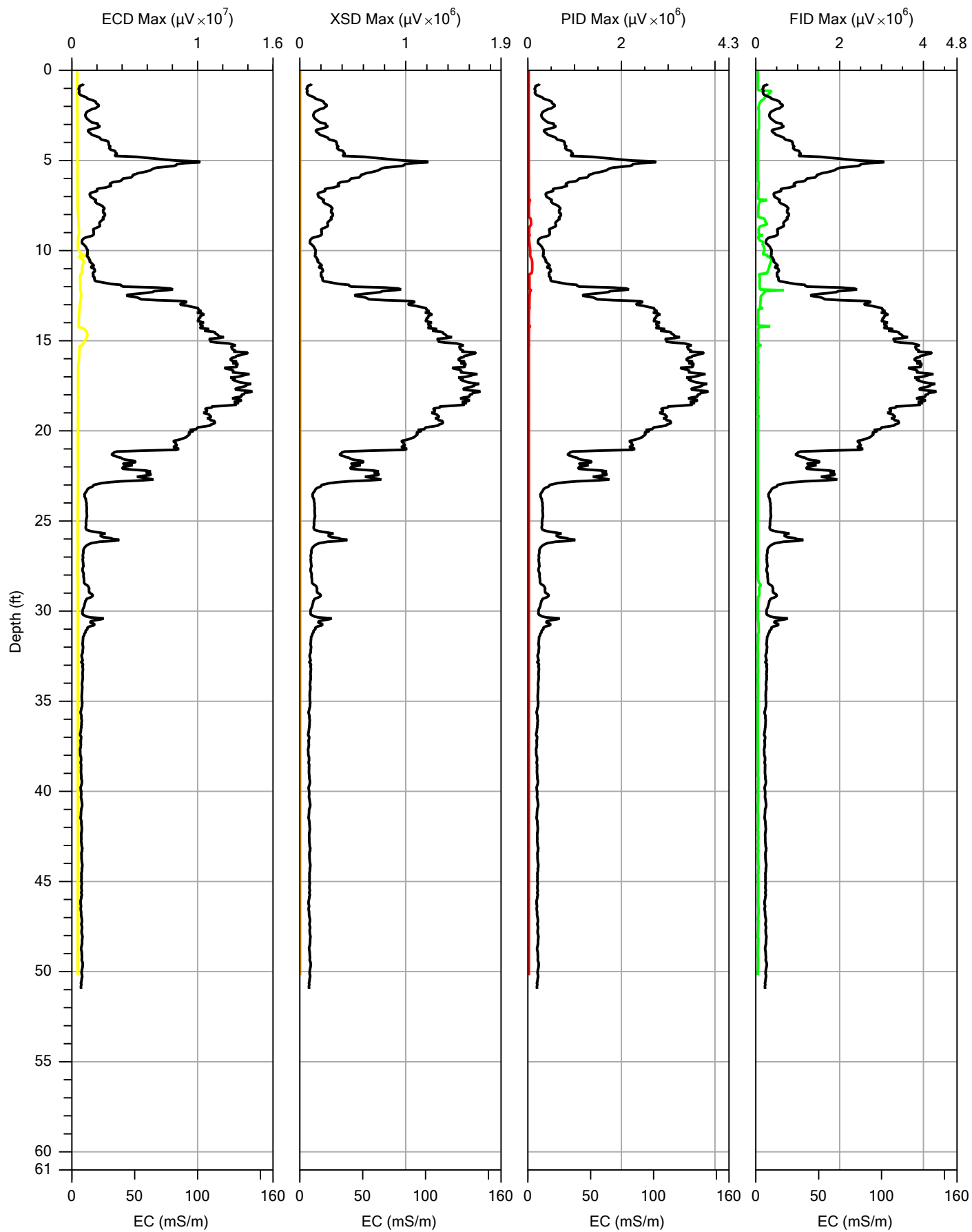
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Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

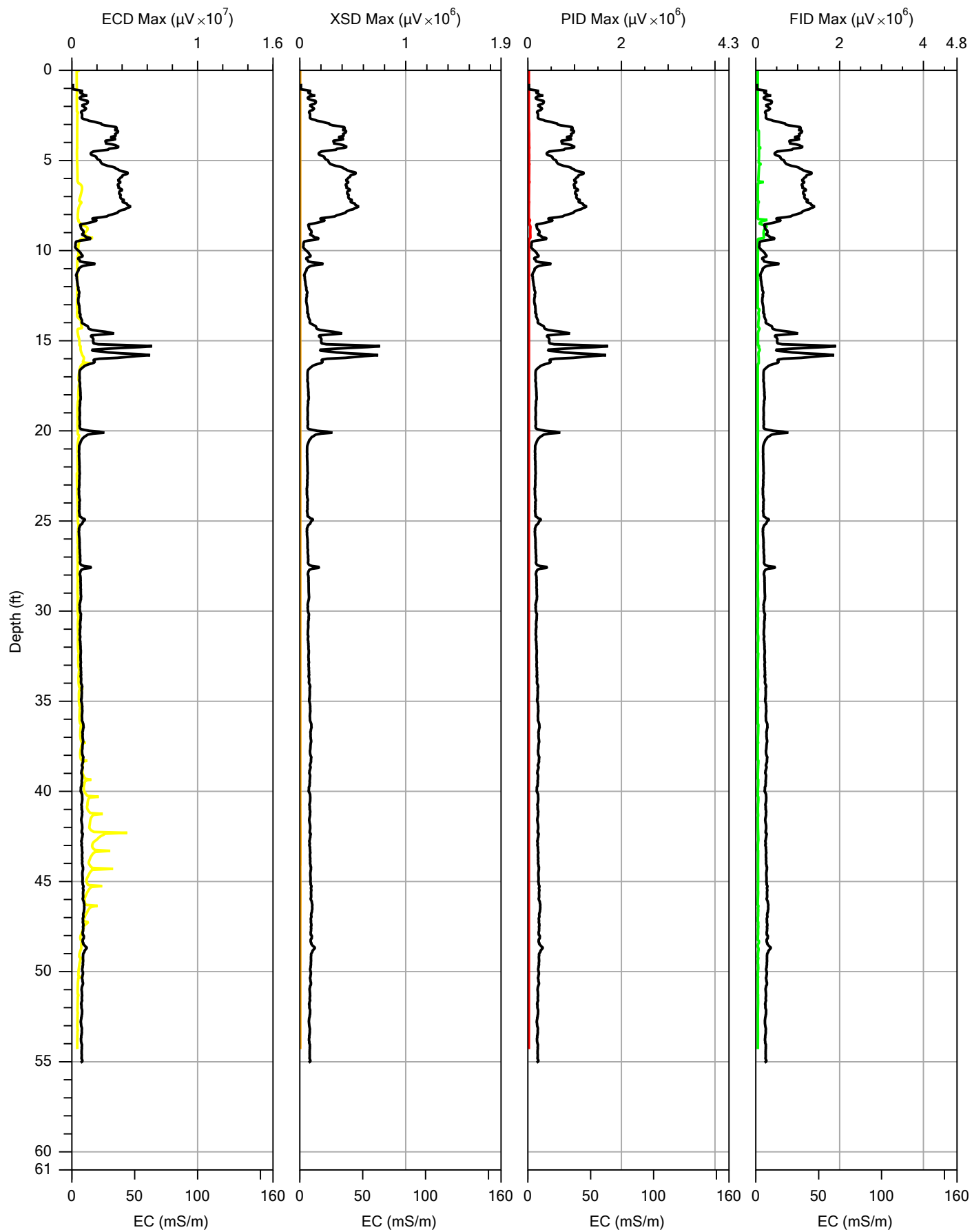
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Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

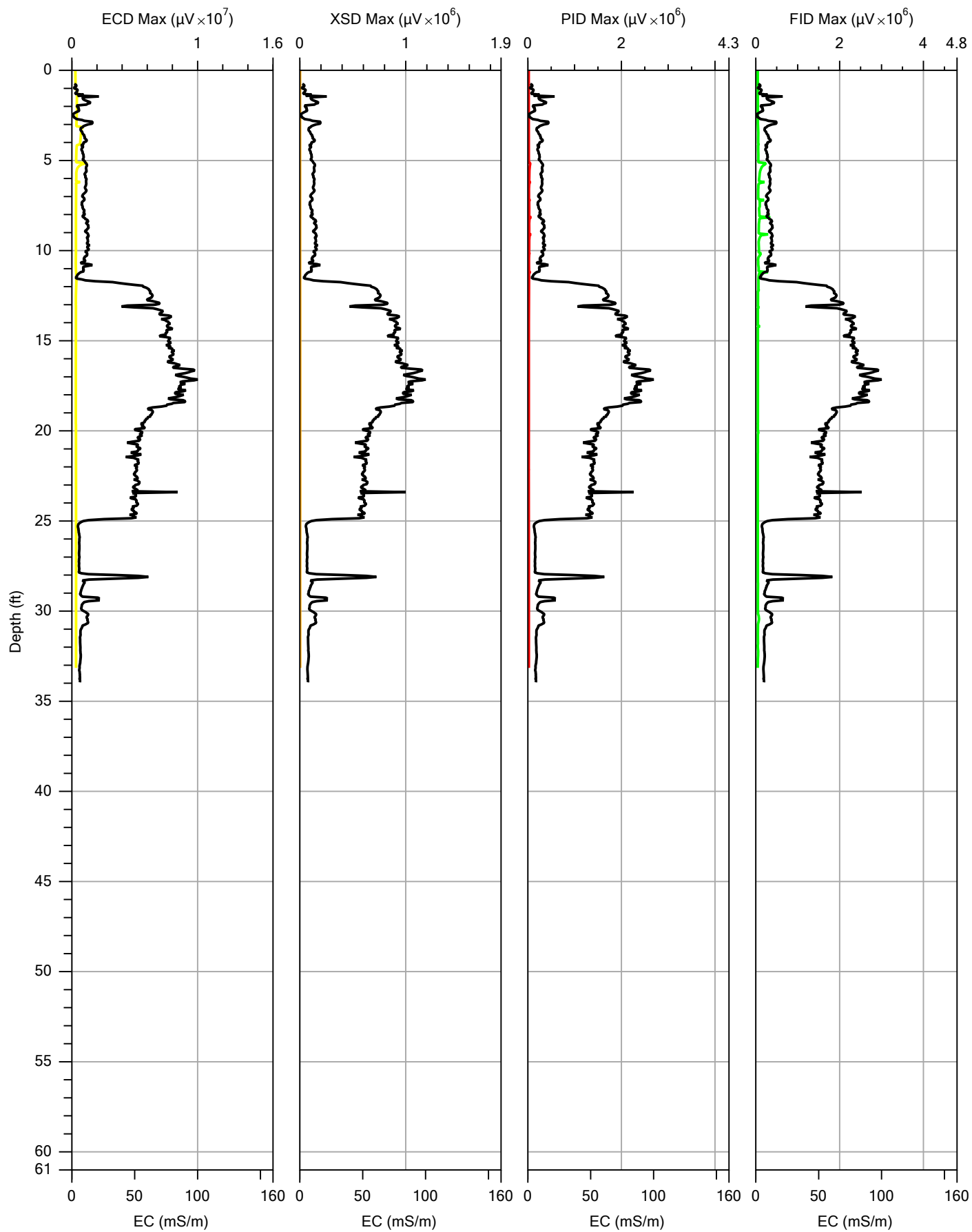
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Location:	



Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

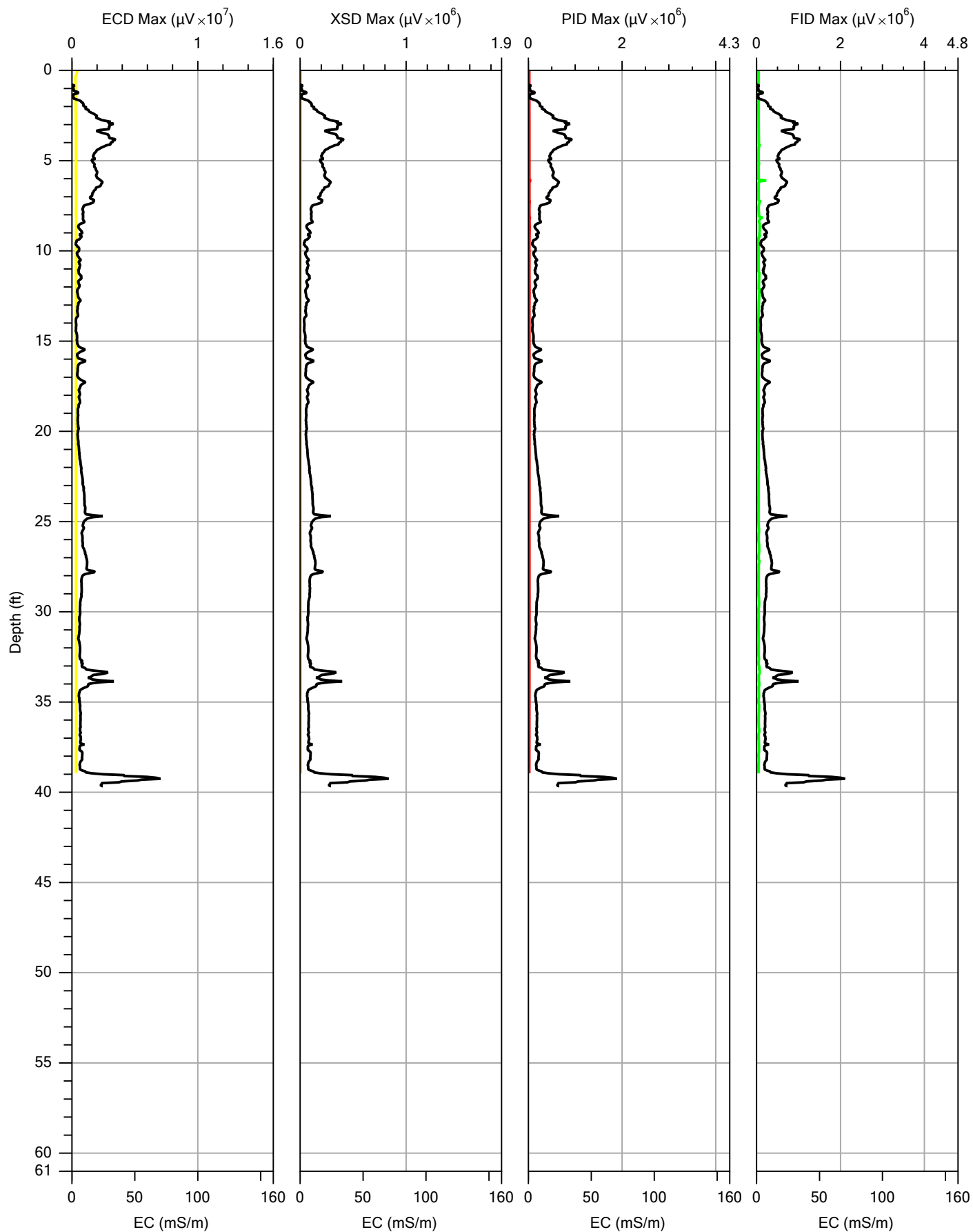
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Location:	



Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

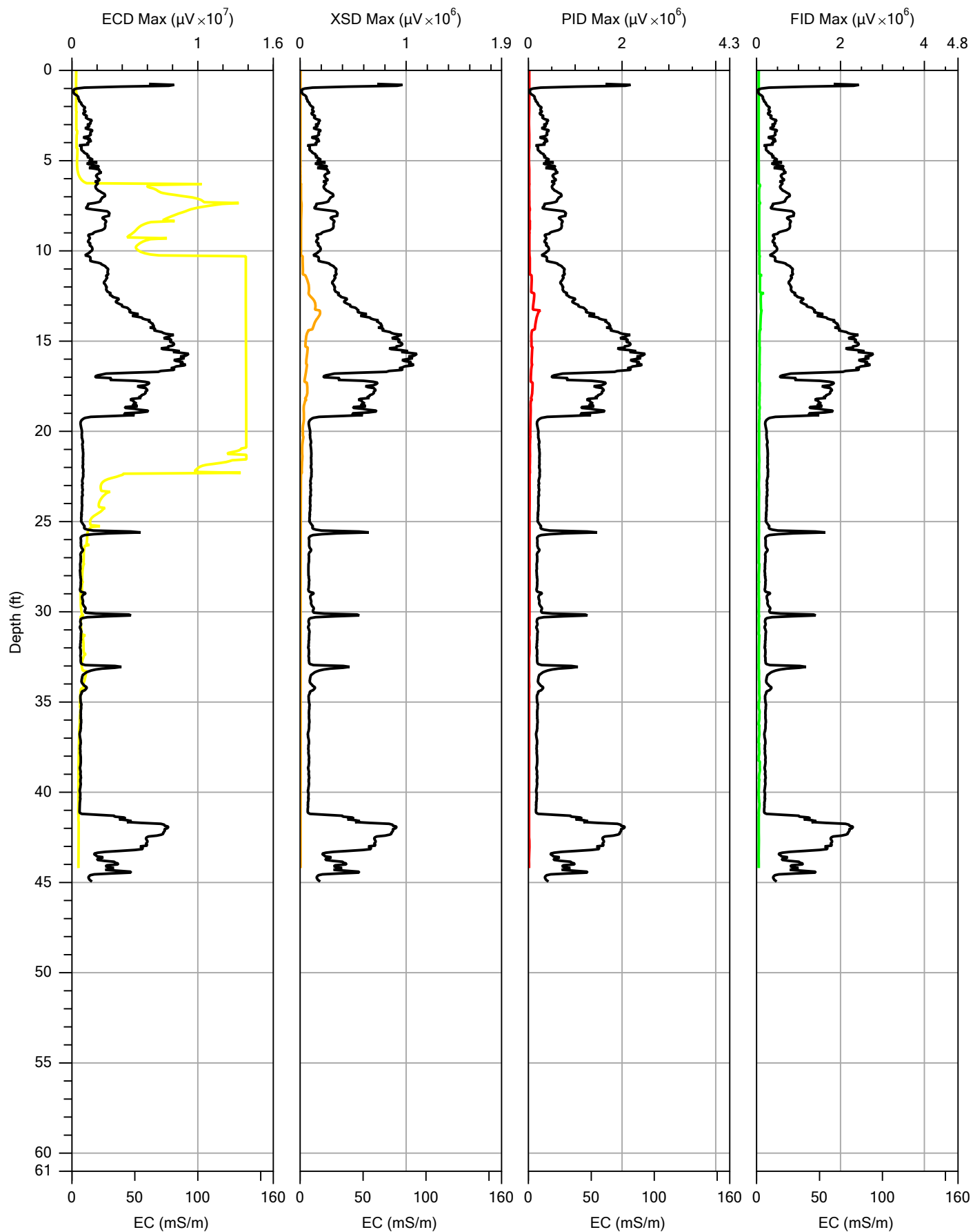
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Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

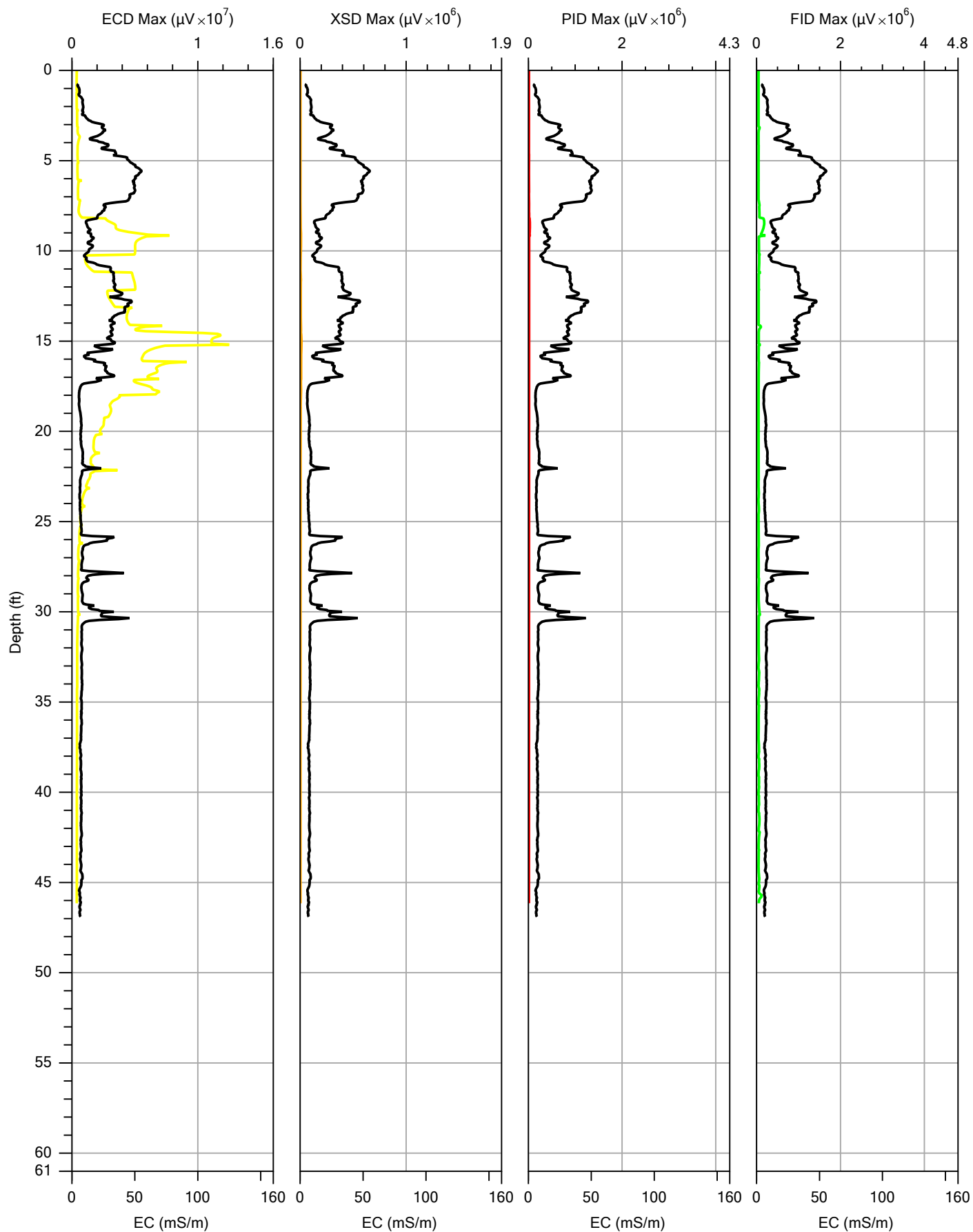
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Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

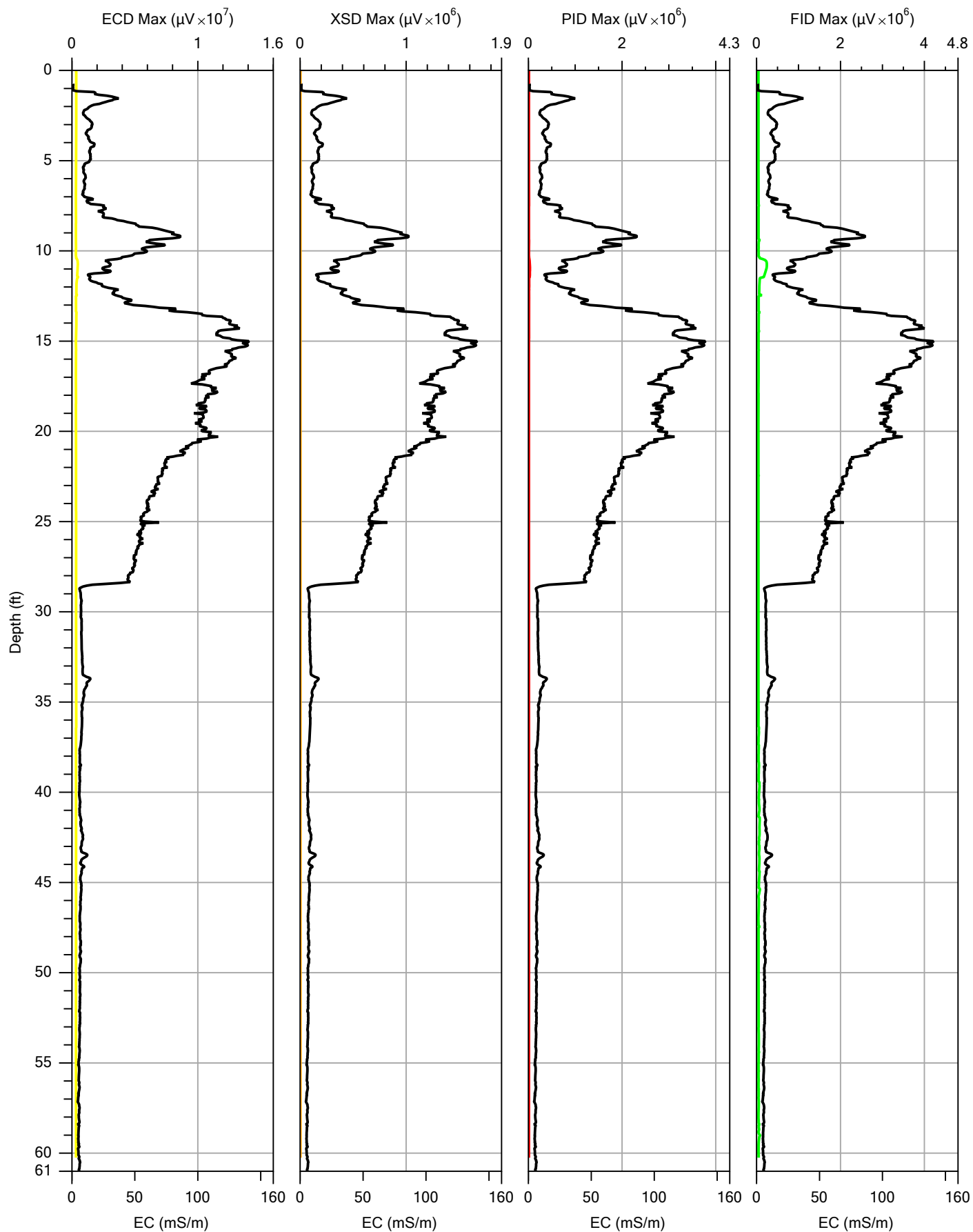
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Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

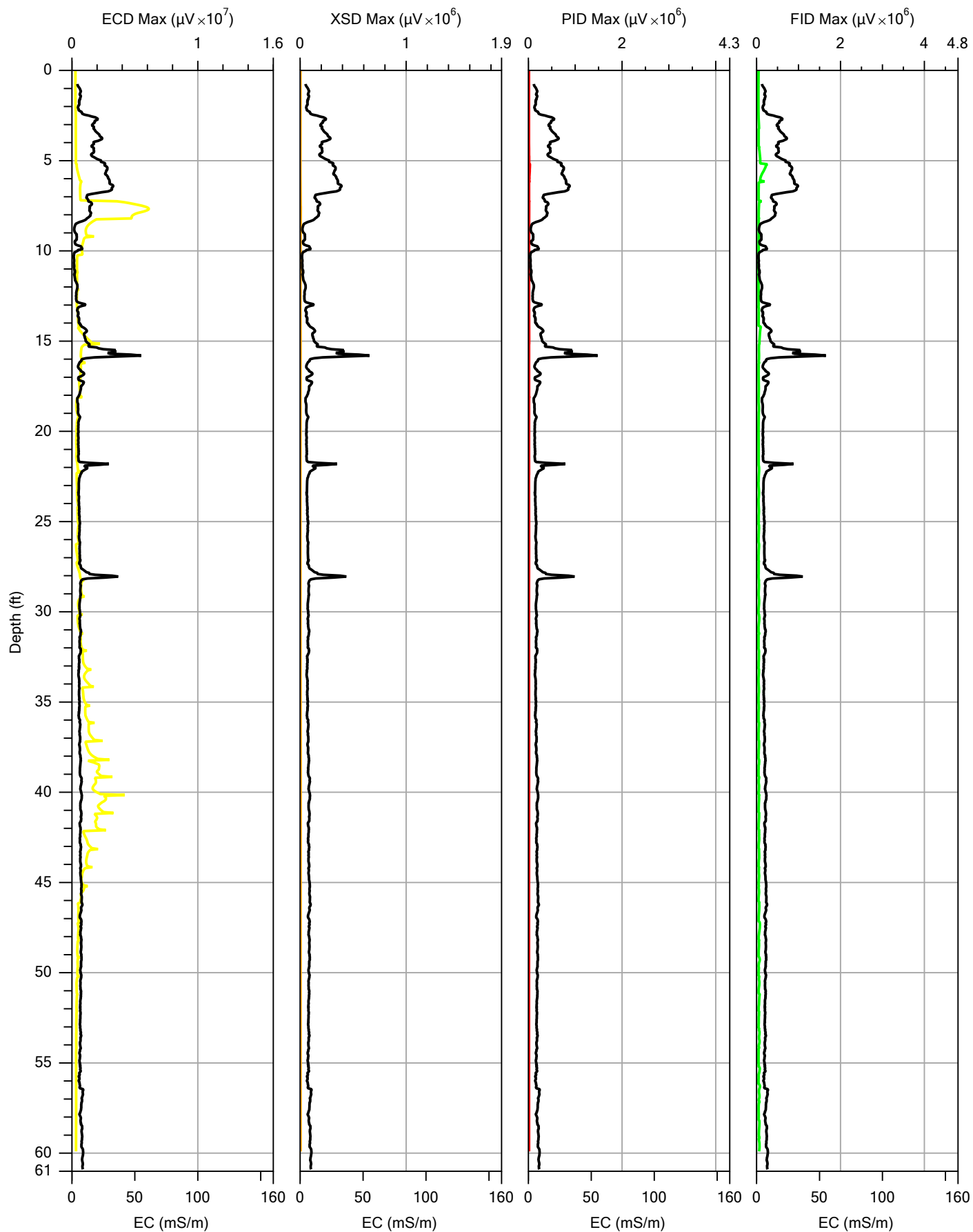
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Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

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Location:	



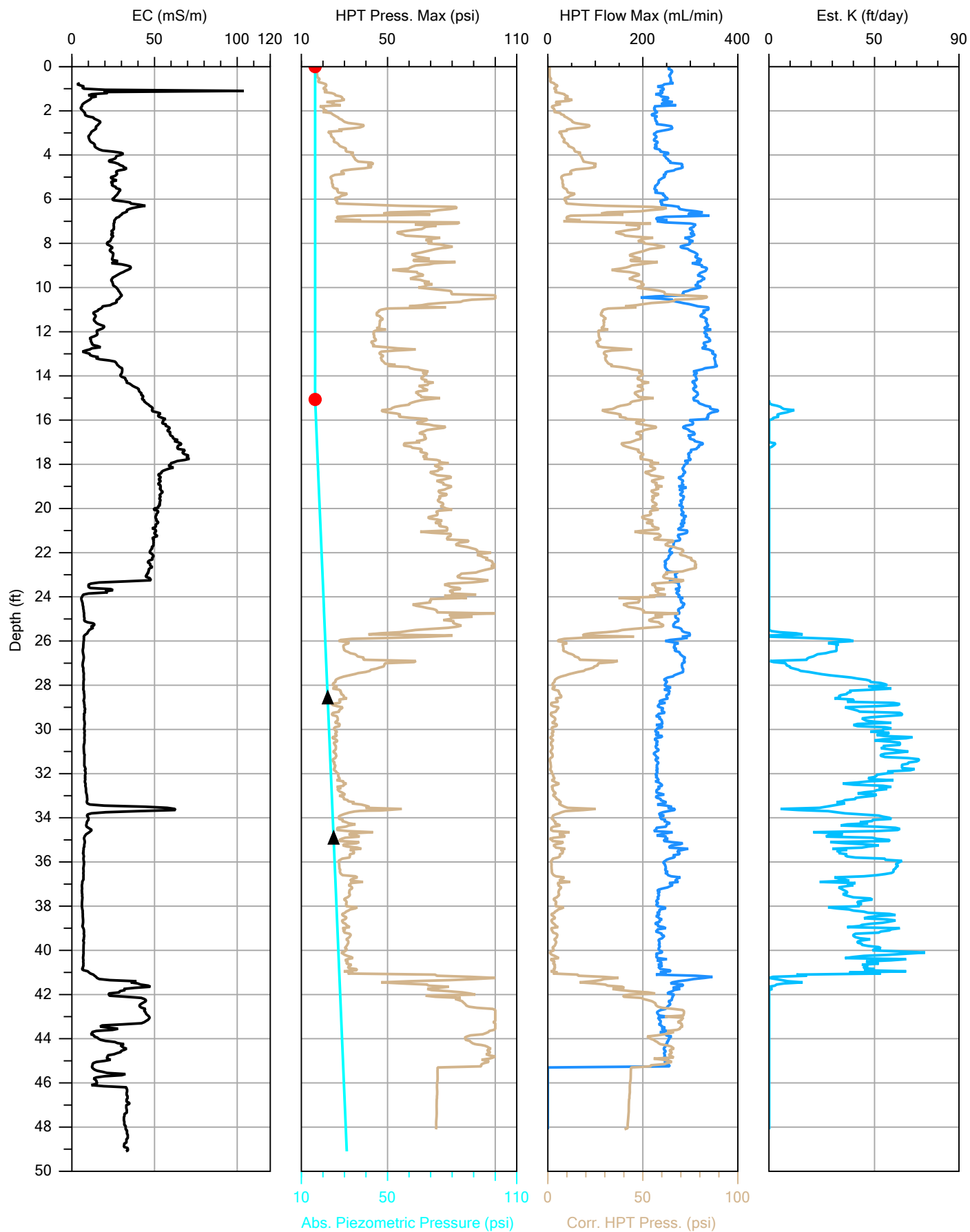
Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

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Location:	



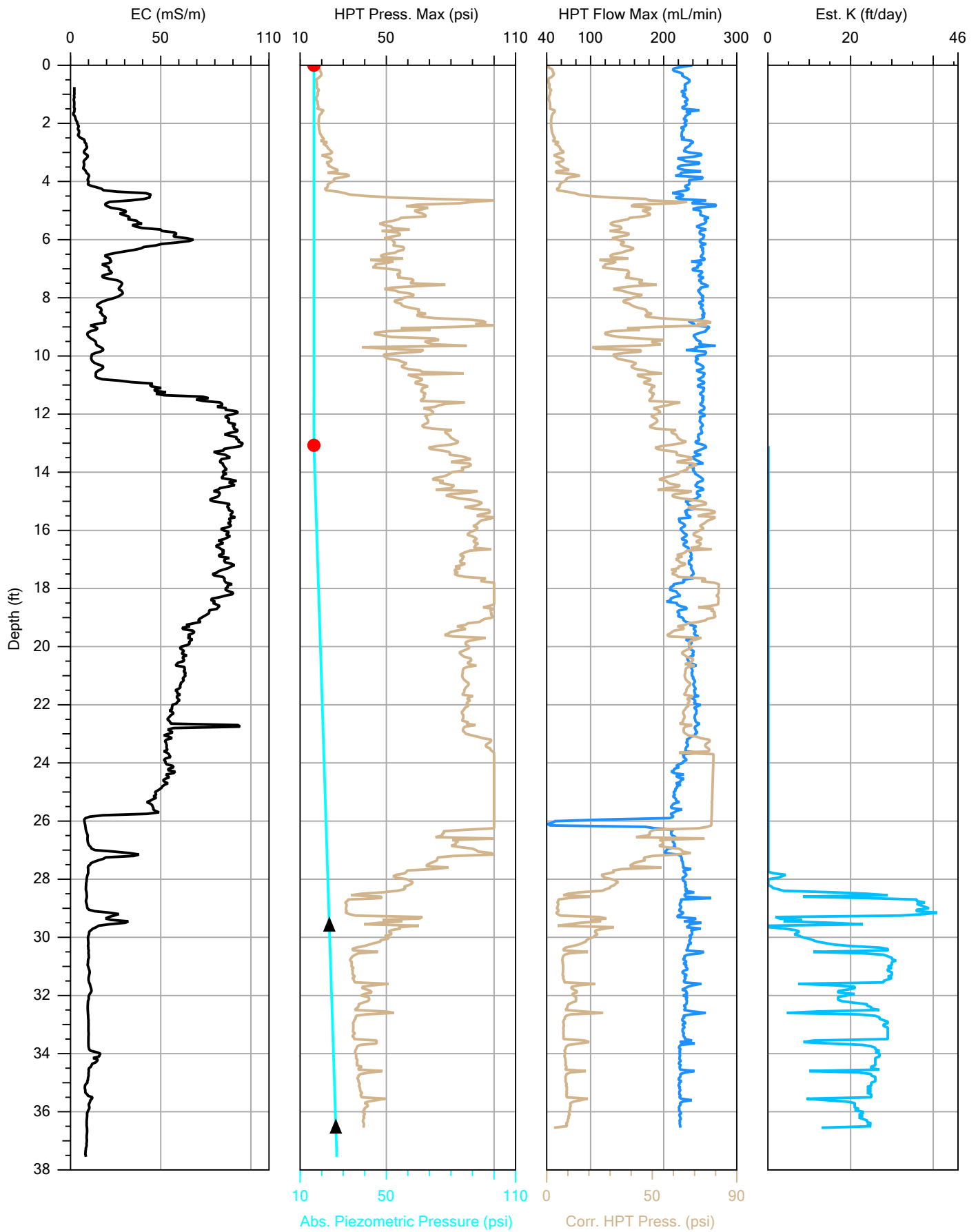
Appendix C – HPT Boring Logs



Company:
Vironex
Project ID:
Star Cleaners

Operator:
Charles Terry
Client:
CGS

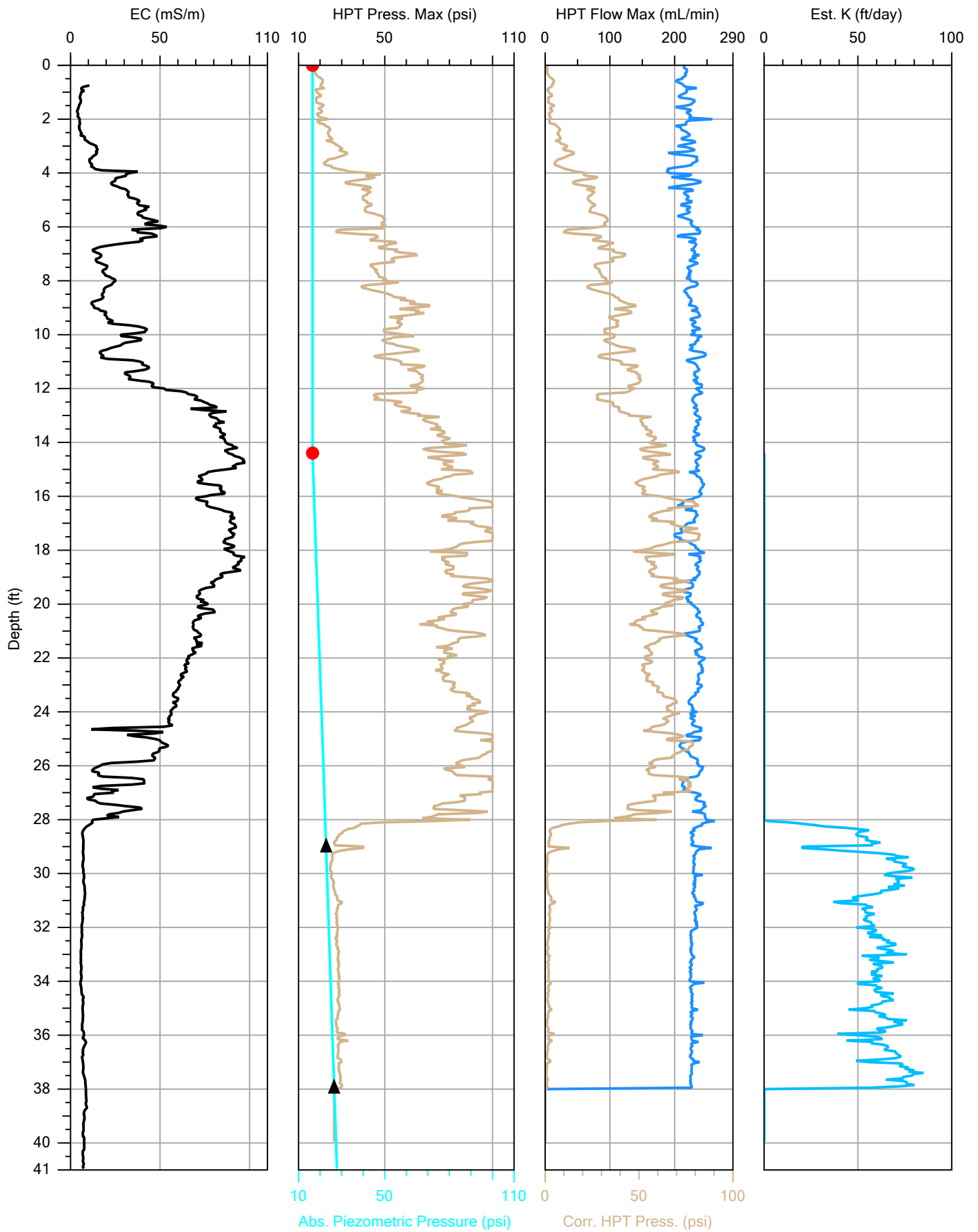
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Company: Vironex
Project ID: Star Cleaners

Operator: Charles Terry
Client: CGS

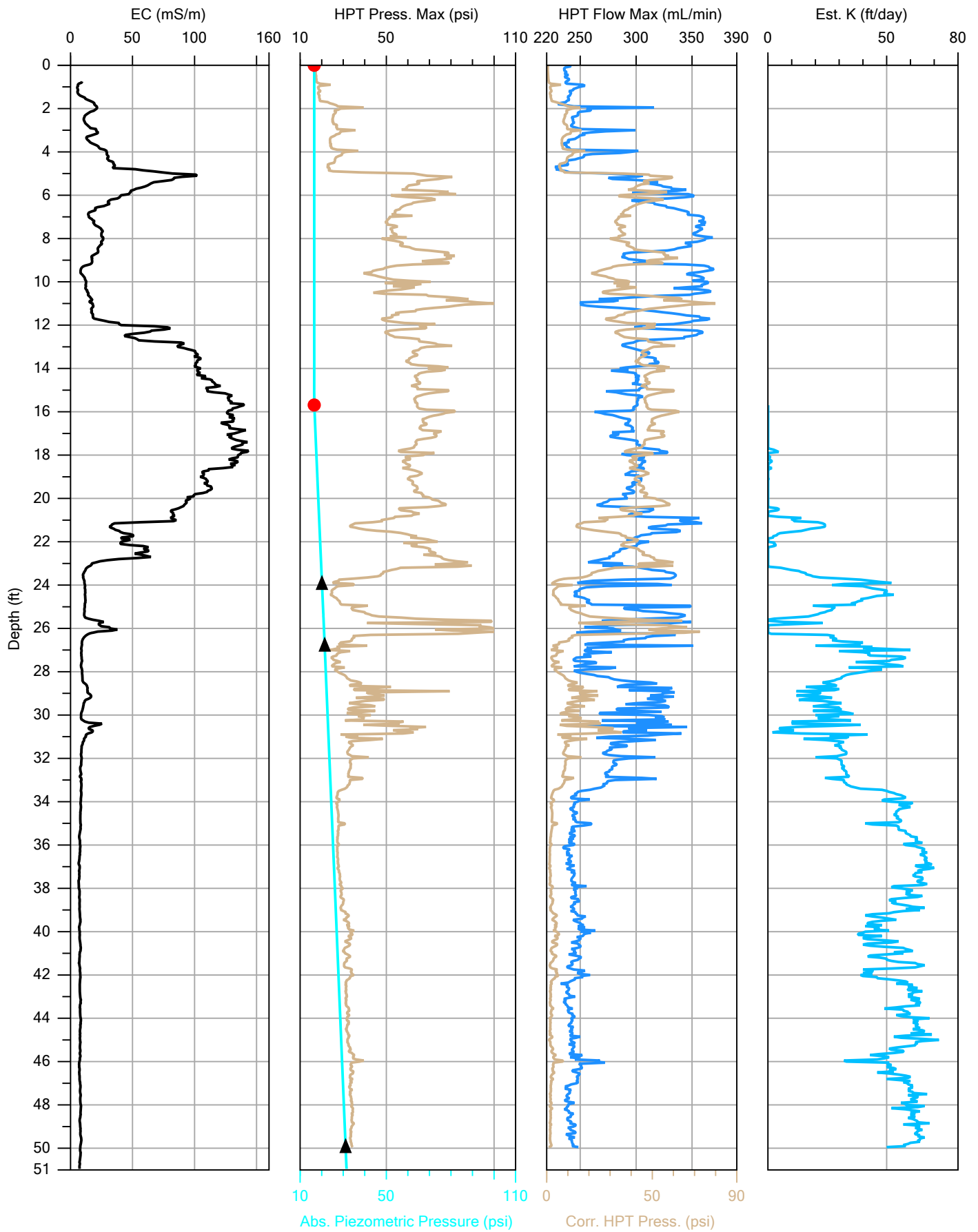
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Company: Vironex
Project ID: Star Cleaners

Operator: Charles Terry
Client: CGS

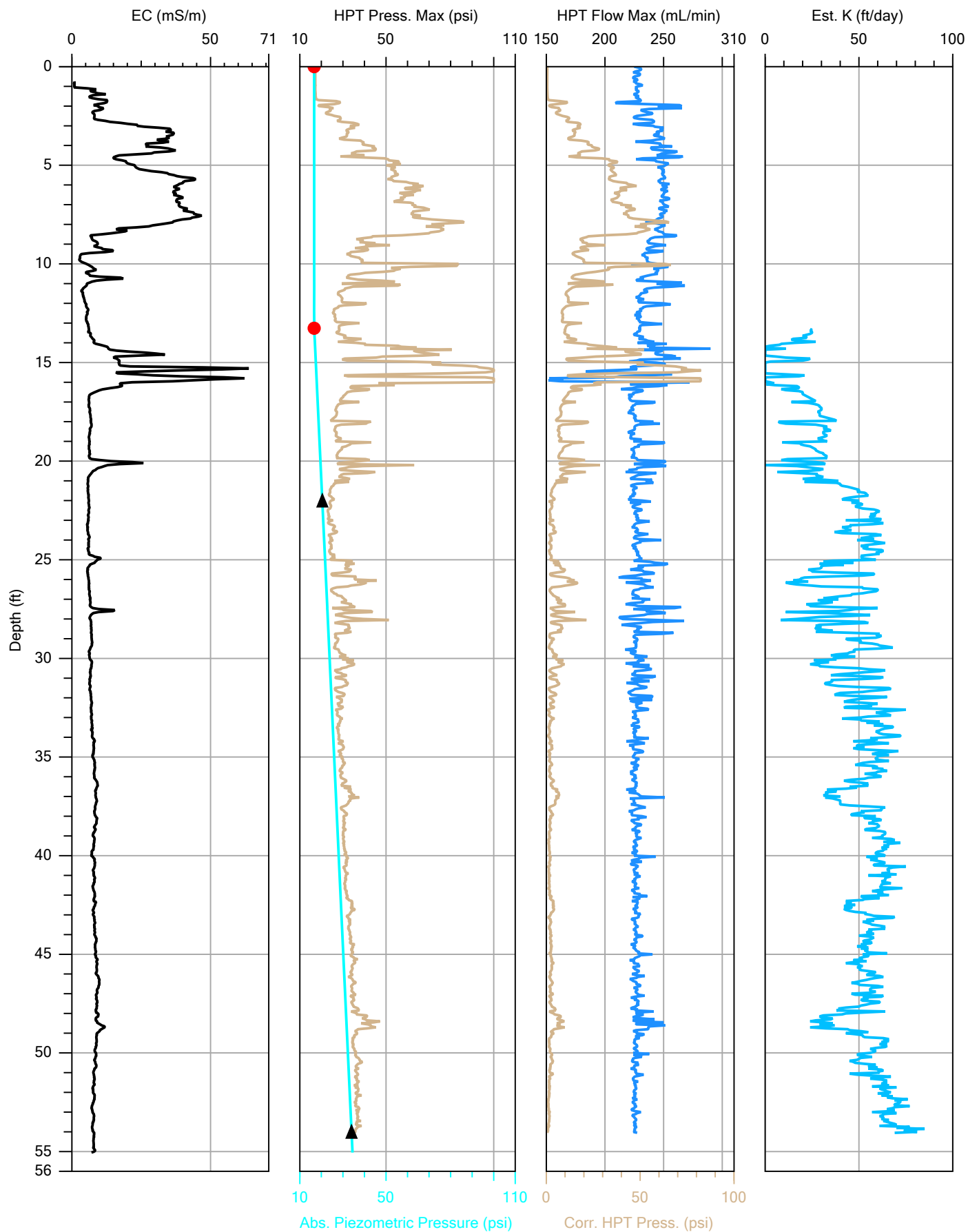
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Location:	



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Project ID: Elite

Operator: Charles Terry
Client: CGS

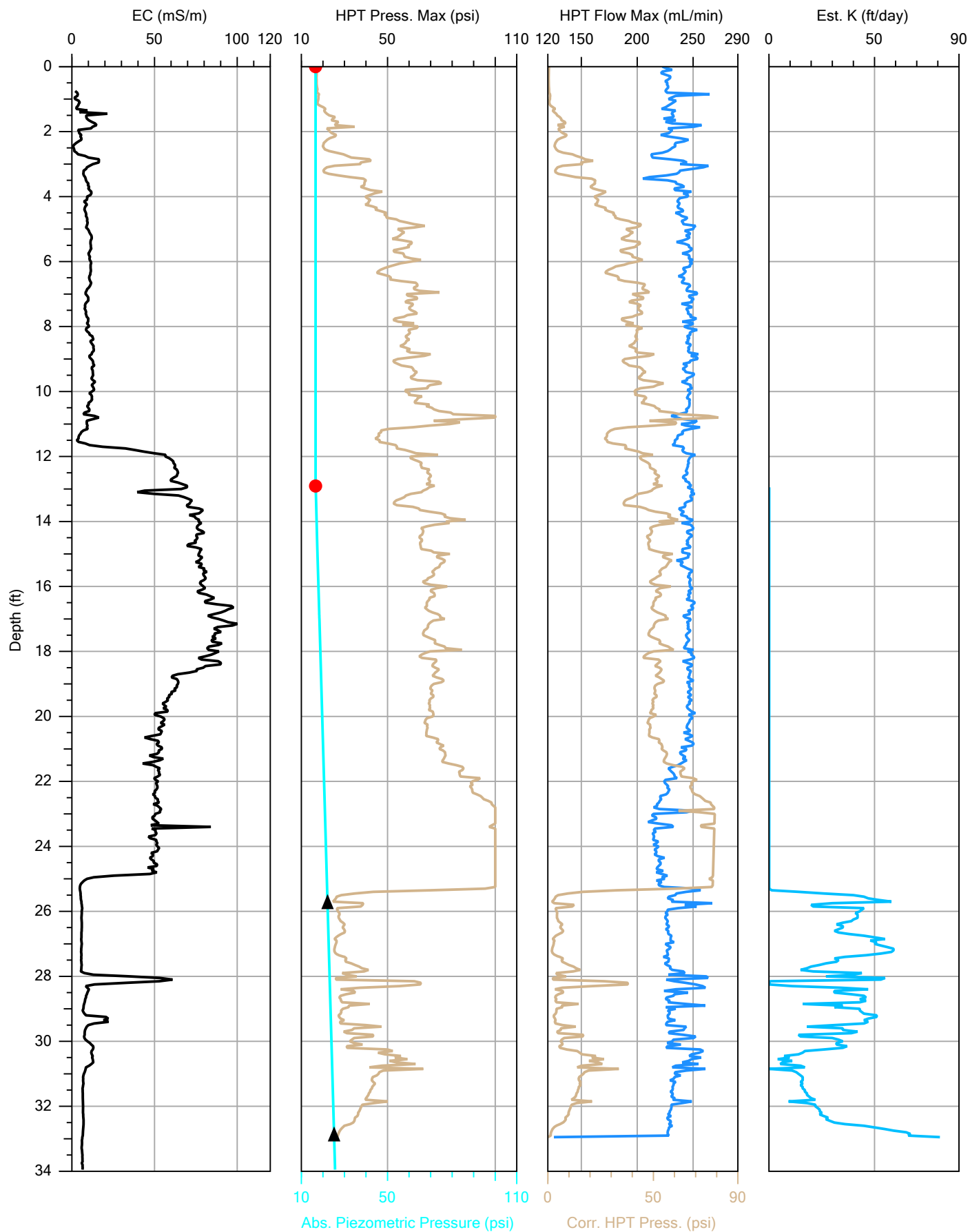
File:	MIHPT04.MHP
Date:	12/2/2014
Location:	



Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

File:	MIHPT05.MHP
Date:	12/2/2014
Location:	



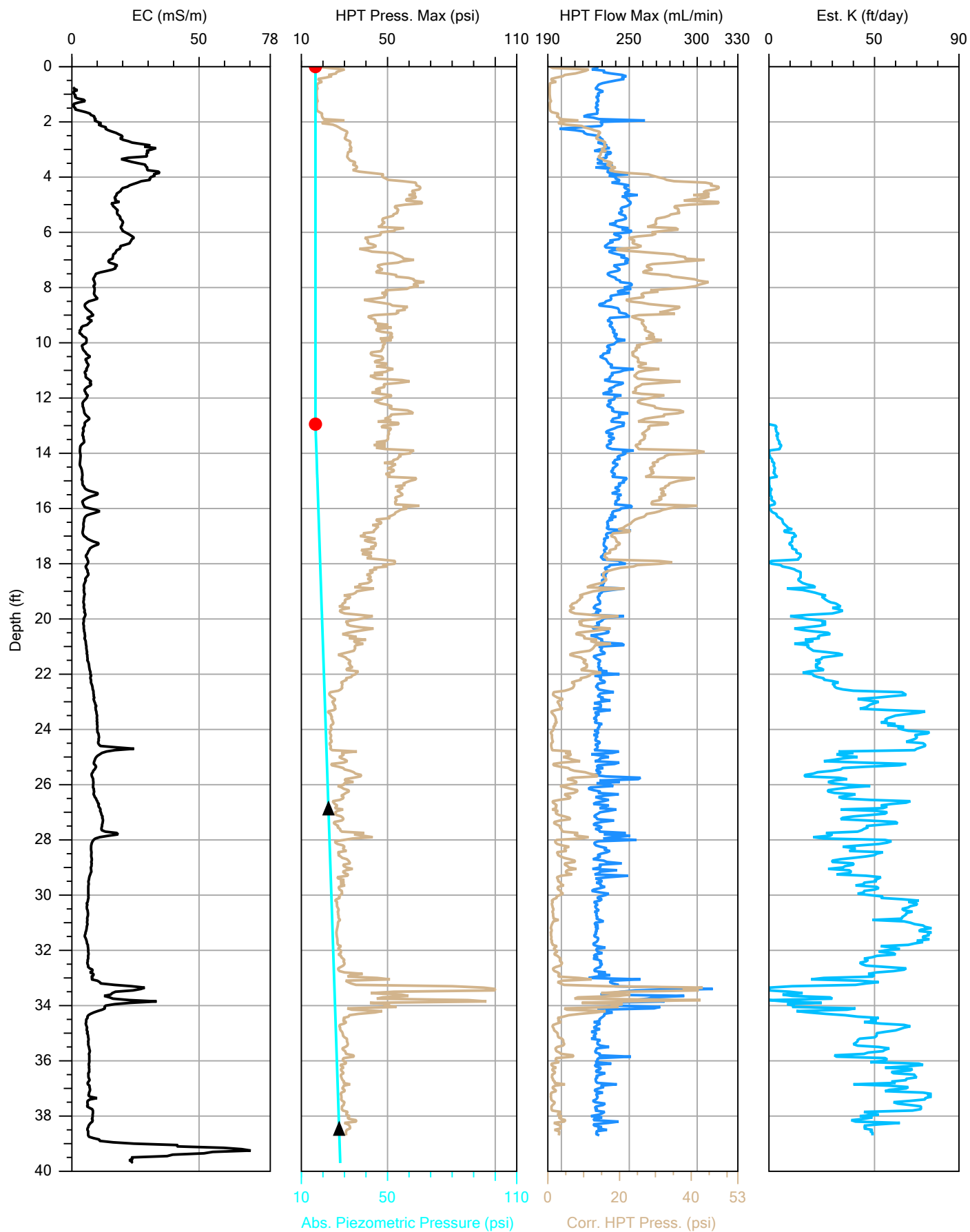
Company:
Vironex

Project ID:
Elite

Operator:
Charles Terry

Client:
CGS

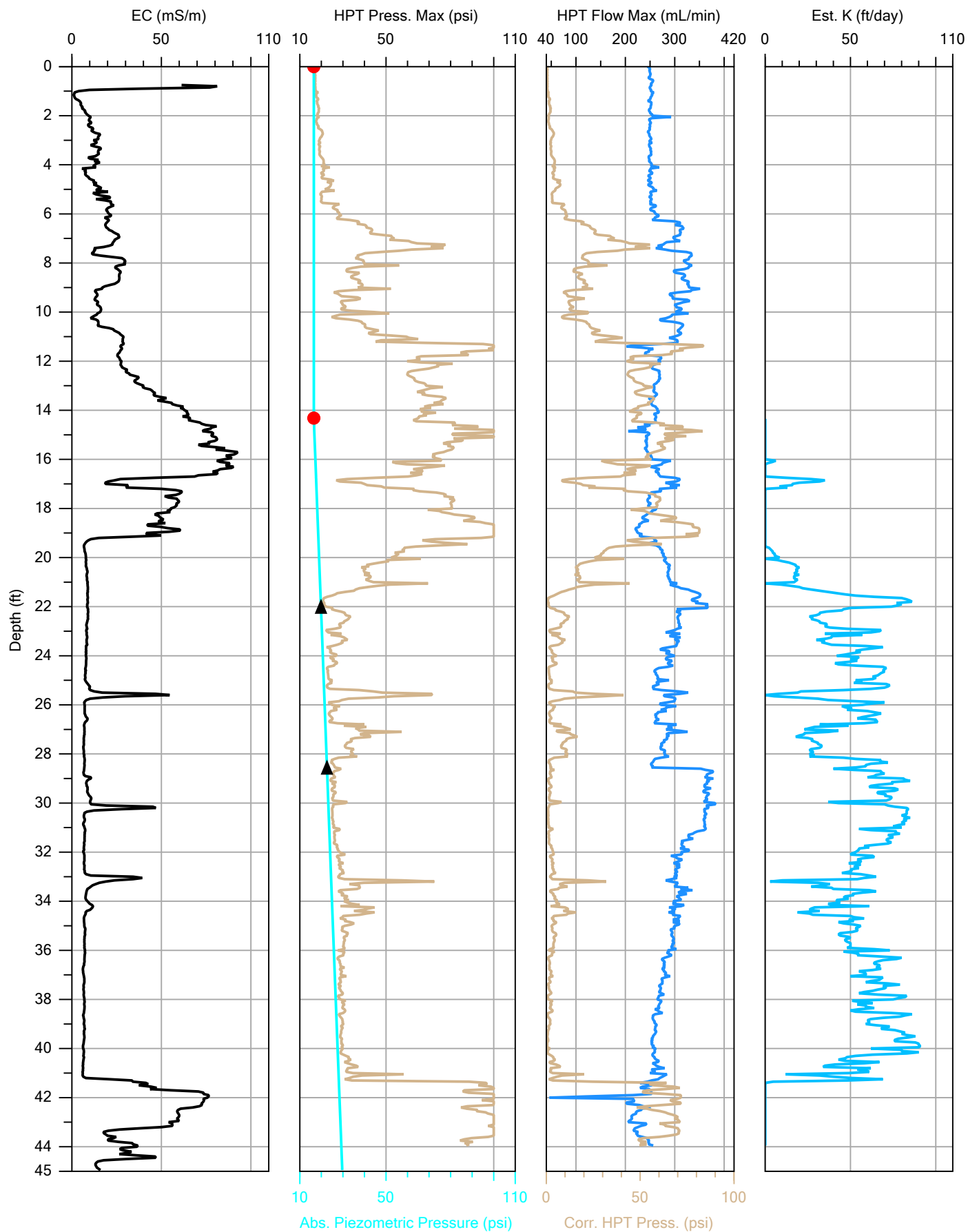
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Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

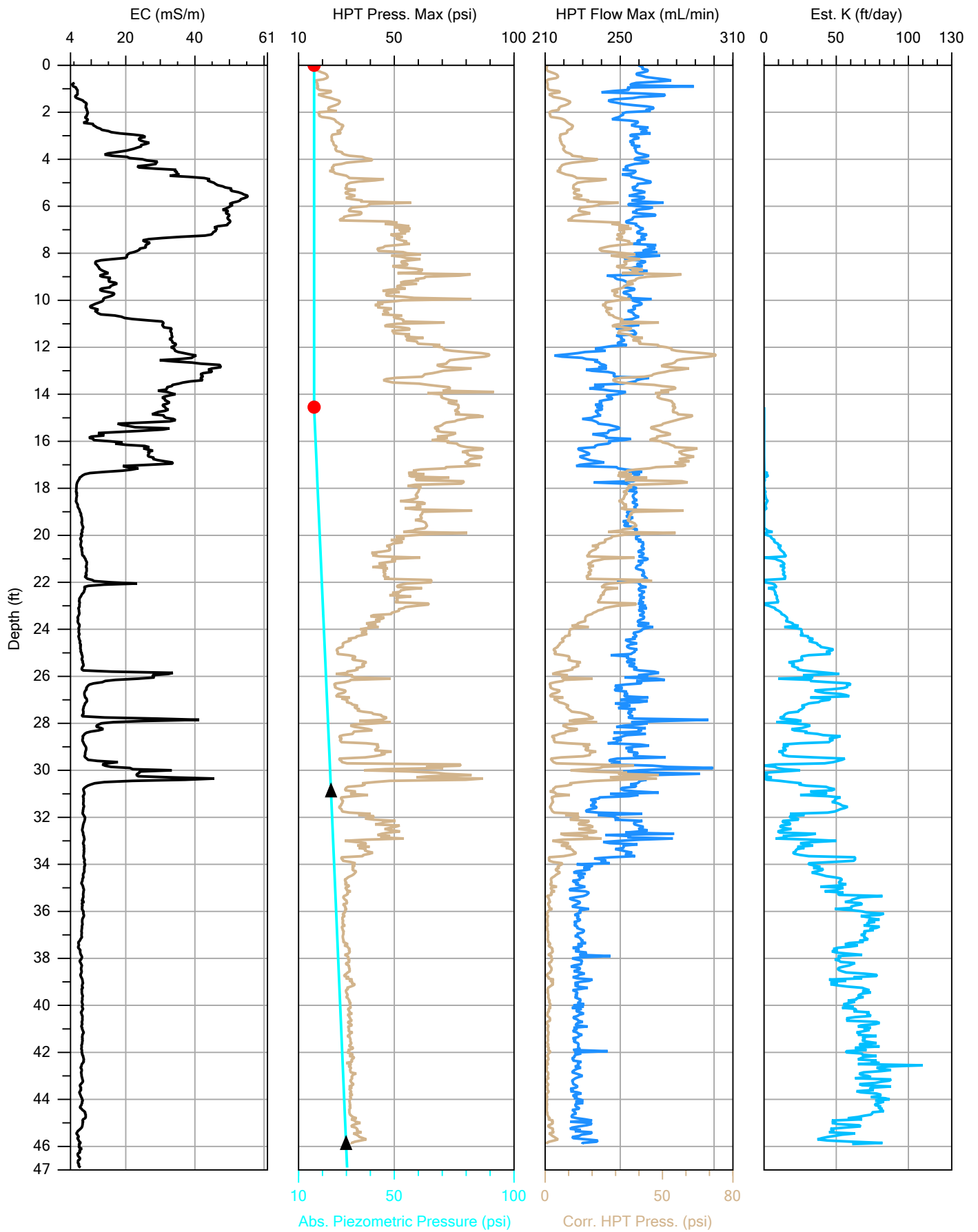
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Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

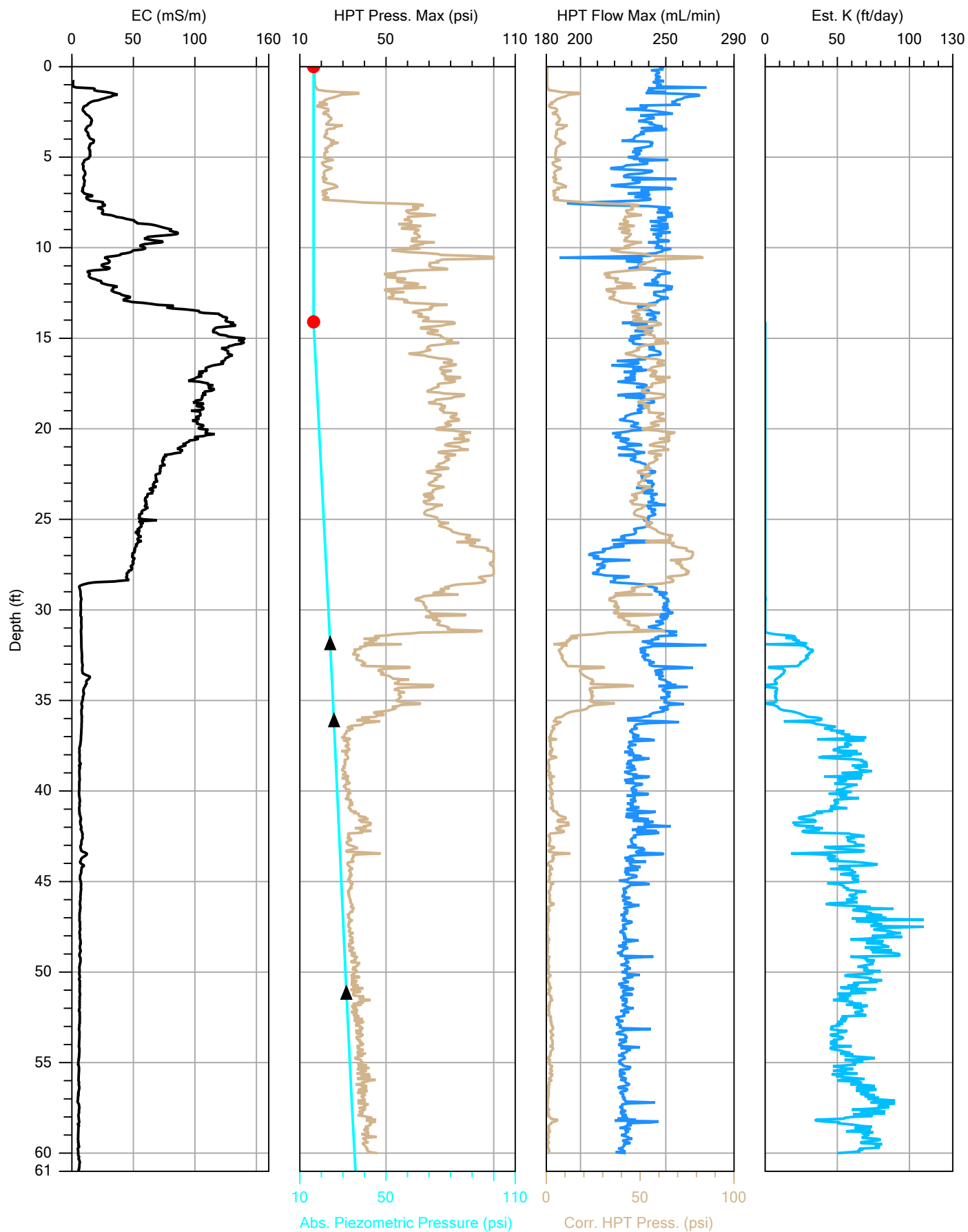
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Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

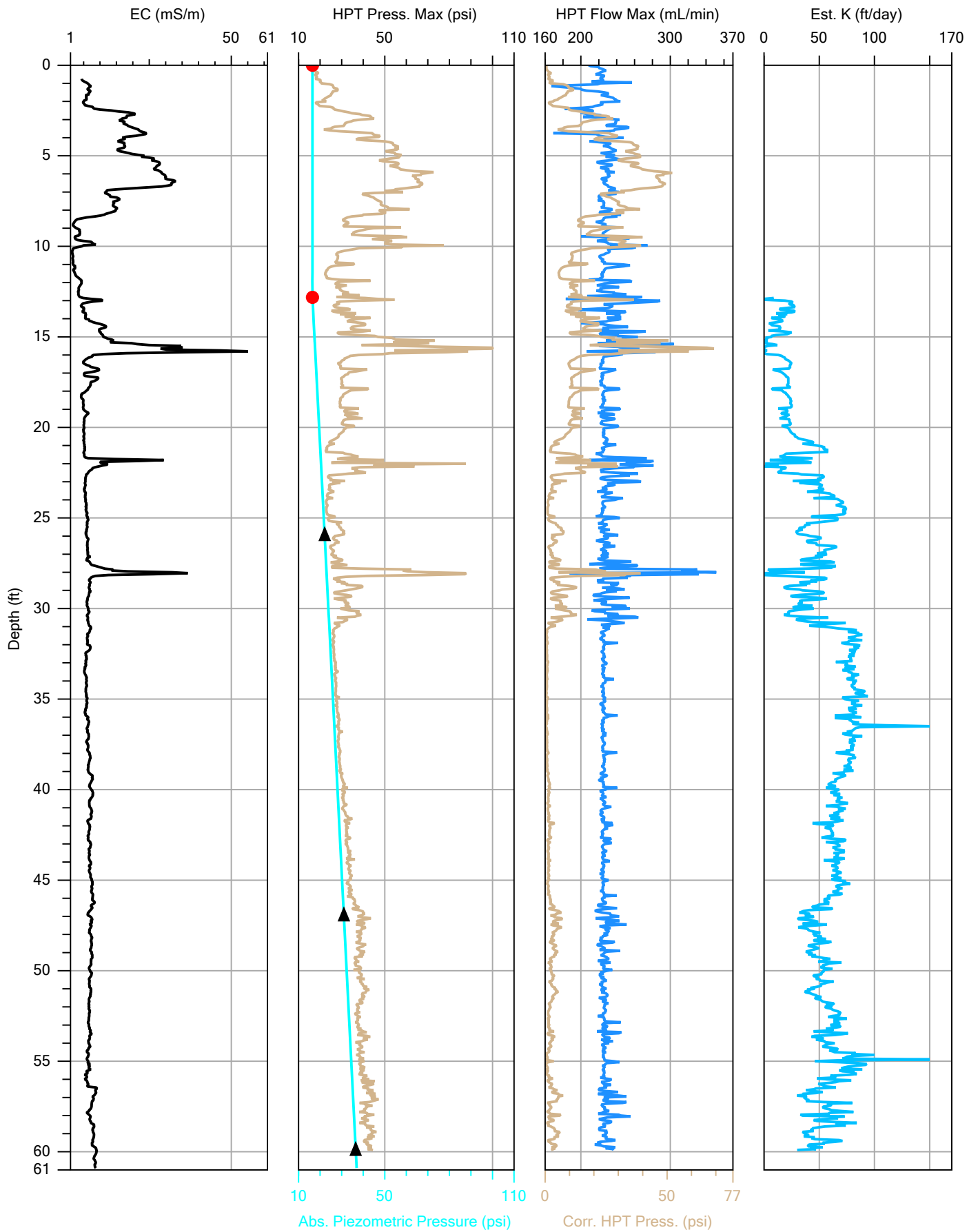
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Location:	



Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

File:	MIHPT10.MHP
Date:	12/3/2014
Location:	



Company: Vironex
Project ID: Elite

Operator: Charles Terry
Client: CGS

File:	MIHPT11.MHP
Date:	12/3/2014
Location:	

Appendix D – Membrane Interface Probe Hydraulic Profiling Tool

The sections below provide the operation details of the both the MIP system and the HPT system.

MIP System Overview

The MIP is a direct push tool that produces continuous chemical and physical logs of the vadose and saturated zones. It locates VOCs in-situ and shows you where they occur relative to the geologic and hydrologic units. Vertical profiles, transects, 3D pictures and maps can all be produced from the electronic data generated by the MIP logs. Its unique capability of providing reliable, real-time information allows you to make better and timely decisions while your team is still in the field.



The MIP is a downhole tool that heats the soils and groundwater adjacent to the probe to 120 degrees C. This increases volatility and the vapor phase diffuses across a membrane into a closed, inert gas loop that carries these vapors to a series of detectors housed at the surface. Continuous chemical logs or profiles are generated from each hole. Soil conductivity is also measured and these logs can be compared to the chemical logs to better understand where the VOCs occur. The MIP technology is only appropriate for volatile organic compounds (VOCs). The gas stream can be analyzed with multiple detectors, for example an electron capture detector is used to detect chlorinated solvents, a photo-ionization detector is used to detect petroleum hydrocarbons, and a flame ionization detector is used to detect methane.

Equipment:

- Geoprobe Direct Push Drill Rig
- MIP Controller (Nitrogen Flow and Heater)
- Geoprobe FI 6000 Computer
- HP 5890 Gas Chromatograph
- ECD (Electron Capture Detector)
- XSD (Halogen Specific Detector)
- PID (Photo Ionization Detector) 10.2 eV Lamp
- FID (Flame Ionization Detector)
- 150' MiHPT Trunkline
- 1.75" O.D. 6530 MiHPT Probe
- 1.75" O.D. Drive Rods

Detector Overview

- ECD – Electron Capture Detector uses a radioactive Beta emitter (electrons) to ionize some of the carrier gas and produce a current between a biased pair of electrodes. When organic molecules contain electronegative functional groups, such as halogens, phosphorous, and nitro groups pass by the detector, they capture some of the electrons and reduce the current measured between the electrodes.
- XSD – The Halogen Specific Detector converts compounds containing halogens to their oxidation products and free halogen atoms by oxidative pyrolysis. These halogen atoms are adsorbed onto the activated platinum surface of the detector probe assembly resulting in an

increase thermionic emission. This emission current provides a corresponding voltage that is measured via an electrometer circuit in the detector controller.

- PID – Photo Ionization Detector sample stream flows through the detector's reaction chamber where it is continuously irradiated with high energy ultraviolet light. When compounds are present that have a lower ionization potential than that of the irradiation energy (10.2 electron volts with standard lamp) they are ionized. The ions formed are collected in an electrical field, producing an ion current that is proportional to compound concentration. The ion current is amplified and output by the gas chromatograph's electrometer.
- FID – Flame Ionization Detector consists of a hydrogen / air flame and a collector plate. The effluent from the GC (trunkline) passes through the flame, which breaks down organic molecules and produces ions. The ions are collected on a biased electrode and produce an electric signal.

MIP Data Collected

- Depth - Data is collected from twenty data points per foot. 0.05', 0.10', 0.15', etc...
- Electrical Conductivity - Electrical Conductivity data is measured/collected in milli-siemens per Meter (ms/M). The conductivity of soils is different for each type of media. Finer grained sediments, such as silts or clays, will have a higher EC signal. While coarser grained sediments, sands and gravel, will have a lower EC signal. The coarser grained sediments will allow the migration of contaminants and the finer grained sediments will trap the contaminant.
- Speed / Advancement Rate - Speed data is measured/collected in feet per minute (ft/min). Speed is an indication of the physical advancement rate of the MIP probe. Speed of the MIP probe can vary due to operator advancement and dense soil types. Speed log can provide soil type information which can be correlated with electrical conductivity. Lower advancement speed, correlated with lower conductivity or larger grained soils would more than likely be associated with dense or compacted sands.
- Temperature - Temperature data is measured/collected in Degrees Celsius. Temperature is an indication of the physical temperature of the MIP block. Minimum and Maximum temperature is collected at each vertical interval. Vironex's temperature protocol indicates that the MIP probe temperature shall maintain a minimum temperature of 75 Degrees Celsius.
- Pressure - Pressure data is measured/collected in PSI. Pressure is an indication of the internal pressure of the nitrogen lines located within the trunkline and the pressure behind the membrane. Geoprobe's protocol indicates that the MIP probe pressure shall not exceed 1.5 PSI difference from baseline.
- Detector (XSD, ECD, PID, FID) - Detector responses are measured/collected in micro Volts (uV). Detector responses are an indication of relative contaminant responses. Minimum and Maximum detector responses are collected at each vertical interval.

Response Testing

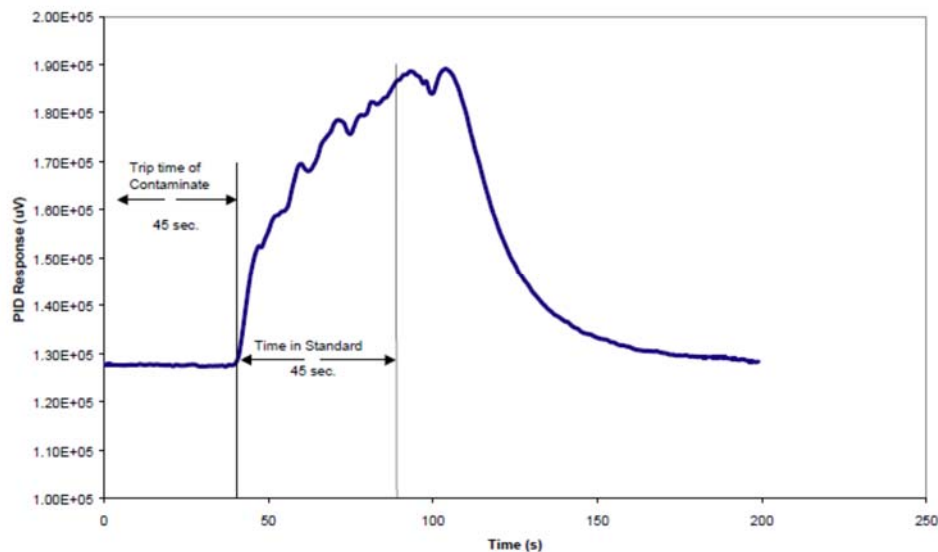
Response testing is an integral part of ensuring the quality of data from the MIP system. Response testing must be conducted before and after each log. This will ensure the validity of the data and the integrity of the system. Response testing also provides for comparison of data for later MIP logs at a particular site. However, results of the response test may change due to membrane wear from soil contact and abrasion.

Prior to conducting a response test, a response test standard solution is prepared by adding an appropriate volume of stock standard solution to 0.5 liters of clean water in a suitable measuring container (beaker or graduated cylinder) to produce a working standard, for example, 10 µL of 50

mg/mL concentration stock standard is added to 0.5 liters of water to yield a 1mg/L working standard. Generally, response test standard solutions are prepared using trichloroethene and toluene. However, response test standard solutions may be prepared based on the specific contaminants of concern at a site of necessary. Also prior to conducting the response test, the MIP is placed in clean water until detector response stabilization has occurred.

The working standard is poured into a 2-inch diameter by 30-inch long PVC or stainless steel pipe that is capped at one end. A stabilized MIP is inserted in the working standard for a duration of 30 seconds (Note: in the response test shown below, the MIP was inserted into the working standard for a duration of 45 seconds). At the end of 30 seconds the MIP is removed from the working standard, and placed into clean water. The working standard cannot be reused after a response test.

The results of the response test are shown on the MIP data acquisition unit (shown below). The trip time is measured by recording the time between the moment when the MIP is placed in the working standard solution and the response of the detectors, as viewed on the MIP data acquisition unit. The baseline and peak response value are also recorded for comparison with other MIP response tests. The trip time is entered manually into the data acquisition system account for the time it takes for compounds in the subsurface to travel the length of the trunkline during the MIP boring.



PID Response Test – 10 ppm Benzene

HPT System Overview

The HPT system is designed to evaluate the hydraulic behavior of unconsolidated materials. As the probe is pushed or hammered at 2cm/s, clean water is injected through a screen on the side of the HPT probe at a flow rate usually less than 300 mL/min. The injection pressure, which is monitored and plotted with depth, is an indication of the hydraulic properties of the soil. A relatively low pressure response indicates a relatively large grain size, and the ability to easily transmit water. However, a relatively high pressure response indicates a relatively small grain size, which correlates with the inability to transmit water.

Additionally, a Wenner array is integrated into the HPT probe. A Wenner array allows for the collection soil electrical conductivity (EC) data to interpret the lithology of the subsurface. In general, the higher the electrical conductivity value, the smaller the grain size, the lower the electrical conductivity value, the larger the grain size. However, other factors can affect EC, such as mineralogy and pore water chemistry (brines, extreme pH, contaminants). Conversely, the HPT pressure response is independent of these chemical and mineralogical factors.

There are five primary components of the HPT system (see schematic below): the probe assembly, controller, pump, trunkline, and field instrument. The probe assembly consists of the section that houses the 100 psi pressure transducer, water and electrical connections, and the probe body with the injection screen and electrical conductivity.

Injecting water at a constant rate is integral to system operation. A controller box houses components that monitor and regulate the water injection rate and pressure, as well as pressure transducer signal conditioning electronics. The flow rate, up to 1000 mL/min, is set manually on the front of the controller, and a valve is used to turn on or shut off flow.

A vane pump provides system pressure ensuring adequate flow to the screen. The pump is secured to a frame with an integrated visual flow meter. Water and power are transmitted from the controller to the probe assembly via the trunkline. The probe rods are pre-strung with the trunkline before advancing of the HPT probe begins.

Data Collection

The HPT system collects depth, electrical conductivity, advancement rate, hydraulic pressure, and flow information. Additional detail regarding each of these parameters is provided below.

- Depth - Data is collected from twenty data points per foot. 0.05', 0.10', 0.15', etc...
- Electrical Conductivity - Electrical Conductivity (EC) data is collected in milli-siemens per meter (ms/M). The conductivity of soils is different for each type of media. Finer grained sediments, such as silts or clays, will have a higher EC signal. While coarser grained sediments, sands and gravel, will have a lower EC signal. The coarser grained sediments will allow the migration of contaminants and the finer grained sediments will trap the contaminant.

-
- Advancement Rate – Advancement rate is collected in units of feet per minute (ft/min). Advancement rate of the HPT probe can vary due to operator advancement and soil types encountered.
 - Pressure - Pressure data is collected in pounds per square inch (PSI). Pressure is an indication of hydraulic pressure applied to the subsurface by the HPT system. The system collects both the minimum and maximum pressures over each vertical interval.
 - Flow - Flow data is collected in milliliters per minute (mL/min). Flow is an indication of the rate water that is pumped out of the membrane at the HPT probe. The system collects both the minimum and maximum flow over each vertical interval.
 - Estimated Hydraulic Conductivity (est. K) – Hydraulic conductivity, symbolically represented as K, is an in-situ property that describes the ease with which water can move through pore spaces or fractures. It is dependent on the intrinsic permeability of the material and on the degree of saturation. With respect to the HPT system, the estimated K values are only applicable to the saturated portion of the formation. The estimated K value is calculated using the HPT pressure and flow data. It is also necessary to collect HPT response test data before and after each boring. Additionally, it is necessary to conduct at least one pressure dissipation test during the logging operation, below the static water table level.

APPENDIX B
FULL LABORATORY ANALYTICAL DATA TABLE

Table B-1
Elite/Free State/Star Cleaners
Delmar, Maryland

Groundwater Sample Analytical Results
December 4 and 5, 2014
Volatile Organic Compounds (VOCs)

MDE Groundwater Standard	EPA Tapwater RSL	Analyte Name	MiHPT01-GW (8-12')	MiHPT01-GW (8-12') [MiHPT-D2]	MiHPT01-GW (24-28')	MiHPT01-GW (32-36')	MiHPT01-GW (39-43')	MiHPT01-GW (52-56')	MiHPT02-GW (26-30')	MiHPT02-GW (41-45')	MiHPT03-GW (28-32')	MiHPT05-GW (17-21')	MiHPT05-GW (41-45')	MiHPT05-GW (41-45') [MiHPT-D1]	MiHPT05-GW (52-56')	MiHPT07-GW (29-33')	MiHPT07-GW (39-43')	MiHPT07-GW (52-56')
Concentration (ug/L)			Concentration (ug/L)															
na	5.7E-01	1,1,1,2-Tetrachloroethane	8.14	6.16	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
2.0E+02	8.0E+02	1,1,1-Trichloroethane	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U
5.3E-02	7.6E-02	1,1,2,2-Tetrachloroethane	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
5.0E+00	4.1E-02	1,1,2-Trichloroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
9.0E+01	2.7E+00	1,1-Dichloroethane	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
7.0E+00	2.8E+01	1,1-Dichloroethylene	1.84	1.87	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.47 J	0.39 J	0.30 U	0.30 U	0.30 U
na	na	1,1-Dichloropropene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
na	7.0E-01	1,2,3-Trichlorobenzene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
na	7.5E-04	1,2,3-Trichloropropane	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
7.0E+01	4.0E-01	1,2,4-Trichlorobenzene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
na	1.5E+00	1,2,4-Trimethylbenzene	11.3	6.02	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2.0E-01	3.3E-04	1,2-Dibromo-3-chloropropane (DBCP)	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
5.0E-02	7.5E-03	1,2-Dibromoethane (EDB)	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
6.0E+02	3.0E+01	1,2-Dichlorobenzene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
5.0E+00	1.7E-01	1,2-Dichloroethane	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U
5.0E+00	4.4E-01	1,2-Dichloropropane	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U
na	1.2E+01	1,3,5-Trimethylbenzene	3.24	1.69	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1.8E+00	na	1,3-Dichlorobenzene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
na	3.7E+01	1,3-Dichloropropane	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
7.5E+01	4.8E-01	1,4-Dichlorobenzene	0.47 J	0.57 J	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
na	na	2,2-Dichloropropane	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U
7.0E+02	5.6E+02	2-Butanone (MEK)	2.13 J	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U
na	2.4E+01	2-Chlorotoluene	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U
na	3.8E+00	2-Hexanone (MBK)	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
na	2.5E+01	4-Chlorotoluene	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U
na	na	4-Isopropyltoluene	1.12	0.64 J	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
6.3E+02	1.2E+02	4-Methyl-2-pentanone (MIBK)	0.93 J	0.84 J	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
5.5E+02	1.4E+03	Acetone	17.4	11.9	13.9	9.46 J	7.00 U	18.0	7.00 U	11.8	7.00 U	12.6	7.00 U	7.00 U	8.36 J	7.00 U	7.00 U	7.00 U
5.0E+00	4.5E-01	Benzene	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	2.03	0.30 U	0.30 U	0.40 J	0.40 J	0.40 J	0.30 U	0.44 J	0.30 U
na	6.2E+00	Bromobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
na	8.3E+00	Bromochloromethane	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
8.0E+01	1.3E-01	Bromodichloromethane	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
8.0E+01	9.2E+00	Bromoform	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
8.5E-01	7.5E-01	Bromomethane	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
1.0E+02	8.1E+01	Carbon disulfide	0.60 U	0.60 U	0.63 J	0.60 U	0.60 U	0.87 J	0.60 U	0.78 J	0.60 U	0.62 J	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U
5.0E+00	4.5E-01	Carbon tetrachloride	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
1.0E+02	7.8E+00	Chlorobenzene	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
3.6E+00	2.1E+03	Chloroethane	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
8.0E+01	2.2E-01	Chloroform	0.63 J	0.68 J	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.89 J	0.78 J	0.40 U	0.40 U	0.40 U	0.40 U
1.9E+01	1.9E+01	Chloromethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
7.0E+01	3.6E+00	cis-1,2-Dichloroethylene	157	153	0.87 J	0.40 U	0.51 J	0.40 U	0.40 U	0.40 U	0.40 U	8.04	110	99.3	0.40 U	0.40 U	0.40 U	0.40 U
4.4E-01	na	cis-1,3-Dichloropropene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
8.0E+01	1.7E-01	Dibromochloromethane	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U
na	8.0E-01	Dibromomethane	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
na	2.0E+01	Dichlorodifluoromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
na	1.5E+02	Di-isopropyl ether (DIPE)	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
7.0E+02	1.5E+00	Ethylbenzene	0.79 J	0.58 J	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
na	na	Ethyl-t-butyl ether (ETBE)	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
8.6E-01	3.0E-01	Hexachlorobutadiene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
na	na	Iodomethane	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
6.6E+01	4.5E+01	Isopropylbenzene	0.58 J	0.41 J	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1.0E+04	1.9E+01	m+p-Xylenes	3.96	2.74	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
5.0E+00	1.1E+01	Methylene chloride	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2.0E+01	1.4E+01	Methyl-t-butyl ether (MTBE)	1.16	1.10	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.57 J	4.32
6.5E-01	1.7E-01	Naphthalene	3.52	3.00	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
na	1.0E+02	n-Butylbenzene	0.76 J	0.46 J	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
na	6.6E+01	n-Propylbenzene	1.26	0.80 J	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1.0E+04	1.9E+01	o-Xylene	3.50	2.56	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
na	2.0E+02	sec-Butylbenzene	0.53 J	0.40 J	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
1.0E+02	1.2E+02	Styrene	0.20 U	0.20 U	0.20 U	0.20 U	0											

Table B-1
Elite/Free State/Star Cleaners
Delmar, Maryland

Groundwater Sample Analytical Results
December 4 and 5, 2014
Volatile Organic Compounds (VOCs)

MDE Groundwater Standard	EPA Tapwater RSL	Analyte Name	MiHPT09-GW (18-22')	MiHPT09-GW (29-33')	MiHPT09-GW (39-43')	MiHPT09-GW (52-56')	MiHPT10-GW (29-33')	MiHPT10-GW (39-43')	MiHPT10-GW (52-56')	Trip Blank
Concentration (ug/L)			Concentration (ug/L)							
na	5.7E-01	1,1,1,2-Tetrachloroethane	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
2.0E+02	8.0E+02	1,1,1-Trichloroethane	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U
5.3E-02	7.6E-02	1,1,2,2-Tetrachloroethane	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
5.0E+00	4.1E-02	1,1,2-Trichloroethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
9.0E+01	2.7E+00	1,1-Dichloroethane	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
7.0E+00	2.8E+01	1,1-Dichloroethylene	1.09	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
na	na	1,1-Dichloropropene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
na	7.0E-01	1,2,3-Trichlorobenzene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
na	7.5E-04	1,2,3-Trichloropropane	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
7.0E+01	4.0E-01	1,2,4-Trichlorobenzene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
na	1.5E+00	1,2,4-Trimethylbenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2.0E-01	3.3E-04	1,2-Dibromo-3-chloropropane (DBCP)	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U	0.80 U
5.0E-02	7.5E-03	1,2-Dibromoethane (EDB)	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
6.0E+02	3.0E+01	1,2-Dichlorobenzene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
5.0E+00	1.7E-01	1,2-Dichloroethane	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U
5.0E+00	4.4E-01	1,2-Dichloropropane	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U
na	1.2E+01	1,3,5-Trimethylbenzene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1.8E+00	na	1,3-Dichlorobenzene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
na	3.7E+01	1,3-Dichloropropane	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
7.5E+01	4.8E-01	1,4-Dichlorobenzene	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
na	na	2,2-Dichloropropane	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U
7.0E+02	5.6E+02	2-Butanone (MEK)	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	2.91 J	0.60 U	0.60 U
na	2.4E+01	2-Chlorotoluene	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U
na	3.8E+00	2-Hexanone (MBK)	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
na	2.5E+01	4-Chlorotoluene	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U
na	na	4-Isopropyltoluene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
6.3E+02	1.2E+02	4-Methyl-2-pentanone (MIBK)	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
5.5E+02	1.4E+03	Acetone	20.0	10.4	7.00 U	7.00 U	8.77 J	21.3	25.7	7.00 U
5.0E+00	4.5E-01	Benzene	0.72 J	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
na	6.2E+00	Bromobenzene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
na	8.3E+00	Bromochloromethane	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
8.0E+01	1.3E-01	Bromodichloromethane	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
8.0E+01	9.2E+00	Bromoform	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
8.5E-01	7.5E-01	Bromomethane	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
1.0E+02	8.1E+01	Carbon disulfide	0.60 U	0.60 U	0.60 U	0.60 U	1.47 J	0.60 U	0.60 U	0.60 U
5.0E+00	4.5E-01	Carbon tetrachloride	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
1.0E+02	7.8E+00	Chlorobenzene	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
3.6E+00	2.1E+03	Chloroethane	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
8.0E+01	2.2E-01	Chloroform	1.15	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
1.9E+01	1.9E+01	Chloromethane	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
7.0E+01	3.6E+00	cis-1,2-Dichloroethylene	323	1.09	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
4.4E-01	na	cis-1,3-Dichloropropene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
8.0E+01	1.7E-01	Dibromochloromethane	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U	0.70 U
na	8.0E-01	Dibromomethane	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
na	2.0E+01	Dichlorodifluoromethane	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
na	1.5E+02	Di-isopropyl ether (DIPE)	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
7.0E+02	1.5E+00	Ethylbenzene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
na	na	Ethyl-t-butyl ether (ETBE)	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
8.6E-01	3.0E-01	Hexachlorobutadiene	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
na	na	Iodomethane	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
6.6E+01	4.5E+01	Isopropylbenzene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1.0E+04	1.9E+01	m+p-Xylenes	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
5.0E+00	1.1E+01	Methylene chloride	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
2.0E+01	1.4E+01	Methyl-t-butyl ether (MTBE)	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
6.5E-01	1.7E-01	Naphthalene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
na	1.0E+02	n-Butylbenzene	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
na	6.6E+01	n-Propylbenzene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
1.0E+04	1.9E+01	o-Xylene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
na	2.0E+02	sec-Butylbenzene	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
1.0E+02	1.2E+02	Styrene	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
na	na	TAME	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
na	na	TBA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
na	6.9E+01	tert-Butylbenzene	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
5.0E+00	4.1E+00	Tetrachloroethylene (PCE)	1.340	5.33	1.13	1.95	3.94	108	11.3	0.40 U
1.0E+03	1.1E+02	Toluene	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.41 J	0.40 U	0.40 U
1.0E+02	3.6E+01	trans-1,2-Dichloroethylene	2.03	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
4.4E-01	na	trans-1,3-Dichloropropene	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
5.0E+00	2.8E-01	Trichloroethylene	112	0.71 J	0.30 U	0.30 U	0.30 U	0.33 J	0.36 J	0.30 U
na	1.1E+02	Trichlorofluoromethane	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
na	4.1E+01	Vinyl acetate	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U
2.0E+00	1.9E-02	Vinyl chloride	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
1.0E+04	1.9E+01	Xylenes, Total	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

Table Notes:

VOCs Analytical Method: EPA Method 8260B

[Sample ID] - Sample Identification as shown on COC and in Lab Report.

ug/L - micrograms per liter or parts per billion (ppb)

MDE Groundwater Standards for Type I and II Aquifers (June 2008)

EPA Tapwater Regional Screening Levels (RSLs) (at CR = 1x10⁻⁶ or HI = 0.1) (January 2015)

U - Analyte not detected above specified Limit of Detection (LOD) (shown as a gray tone).

J - The reported concentration is less than the Limit of Quantitation (LOQ) but greater than the LOD. The concentration is considered to be estimated.

na - not applicable

TAME - Tertiary Amyl Methyl Ether

TBA - Tert-butyl Alcohol

Bold - Detected analyte concentration

Underline - LOD exceeds the respective MDE Groundwater Standard or EPA Tapwater RSL.

Red, bold, and underline - Detected analyte concentration exceeds the respective MDE Groundwater Standard or EPA Tapwater RSL.

Additional Screening Level Notes

Analyte	MDE Groundwater Standard	EPA Tapwater RSL
m+p-Xylenes	Total Xylenes	Total Xylenes
o-Xylene	Total Xylenes	o-Xylene

APPENDIX C
LABORATORY ANALYTICAL REPORT



Air Water & Soil Laboratories, Inc.
1941 Reymet Road
Richmond, VA 23237
(804)-358-8295 - Telephone
(804)-358-8297 - Fax

Analysis Detects Report

Client Name: Chesapeake Geosciences, Inc.
Client Site ID: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Laboratory Sample ID: 14L0150-02 Client Sample ID: MiHPT02-GW (26-30')

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
tert-Butylbenzene	02	SW8260B	0.20	J	0.10	1.00	1	ug/L

Laboratory Sample ID: 14L0150-03 Client Sample ID: MiHPT02-GW (41-45')

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
Acetone	03	SW8260B	11.8		7.00	10.0	1	ug/L
Benzene	03	SW8260B	2.03		0.30	1.00	1	ug/L
Carbon disulfide	03	SW8260B	0.78	J	0.60	10.0	1	ug/L
Tetrachloroethylene (PCE)	03	SW8260B	0.61	J	0.40	1.00	1	ug/L

Laboratory Sample ID: 14L0150-04 Client Sample ID: MiHPT05-GW (52-56')

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
Acetone	04	SW8260B	8.36	J	7.00	10.0	1	ug/L
Tetrachloroethylene (PCE)	04	SW8260B	0.54	J	0.40	1.00	1	ug/L



Air Water & Soil Laboratories, Inc.
1941 Reymet Road
Richmond, VA 23237
(804)-358-8295 - Telephone
(804)-358-8297 - Fax

Analysis Detects Report

Client Name: Chesapeake Geosciences, Inc.
Client Site ID: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Laboratory Sample ID: 14L0150-05

Client Sample ID: MiHPT05-GW (41-45')

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
1,1-Dichloroethylene	05	SW8260B	0.47	J	0.30	1.00	1	ug/L
Benzene	05	SW8260B	0.40	J	0.30	1.00	1	ug/L
Chloroform	05	SW8260B	0.89	J	0.40	1.00	1	ug/L
cis-1,2-Dichloroethylene	05	SW8260B	110		0.40	1.00	1	ug/L
Tetrachloroethylene (PCE)	05RE1	SW8260B	477		4.00	10.0	10	ug/L
trans-1,2-Dichloroethylene	05	SW8260B	0.88	J	0.40	1.00	1	ug/L
Trichloroethylene	05	SW8260B	49.5		0.30	1.00	1	ug/L

Laboratory Sample ID: 14L0150-06

Client Sample ID: MiHPT05-GW (17-21')

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
Acetone	06	SW8260B	12.6		7.00	10.0	1	ug/L
Carbon disulfide	06	SW8260B	0.62	J	0.60	10.0	1	ug/L
cis-1,2-Dichloroethylene	06	SW8260B	8.04		0.40	1.00	1	ug/L
Tetrachloroethylene (PCE)	06	SW8260B	122		0.40	1.00	1	ug/L
Trichloroethylene	06	SW8260B	12.6		0.30	1.00	1	ug/L

Laboratory Sample ID: 14L0150-07

Client Sample ID: MiHPT01-GW (52-56')

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
Acetone	07	SW8260B	18.0		7.00	10.0	1	ug/L
Carbon disulfide	07	SW8260B	0.87	J	0.60	10.0	1	ug/L
Tetrachloroethylene (PCE)	07	SW8260B	91.5		0.40	1.00	1	ug/L
Toluene	07	SW8260B	0.46	J	0.40	1.00	1	ug/L
Trichloroethylene	07	SW8260B	0.77	J	0.30	1.00	1	ug/L

Analysis Detects Report

Client Name: Chesapeake Geosciences, Inc.
 Client Site ID: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Laboratory Sample ID: 14L0150-08

Client Sample ID: MiHPT01-GW (39-43')

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
cis-1,2-Dichloroethylene	08	SW8260B	0.51	J	0.40	1.00	1	ug/L
Tetrachloroethylene (PCE)	08	SW8260B	142		0.40	1.00	1	ug/L
Toluene	08	SW8260B	0.43	J	0.40	1.00	1	ug/L
Trichloroethylene	08	SW8260B	1.10		0.30	1.00	1	ug/L

Laboratory Sample ID: 14L0150-09

Client Sample ID: MiHPT01-GW (32-36')

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
Acetone	09	SW8260B	9.46	J	7.00	10.0	1	ug/L
Tetrachloroethylene (PCE)	09	SW8260B	210		0.40	1.00	1	ug/L
Trichloroethylene	09	SW8260B	0.88	J	0.30	1.00	1	ug/L

Laboratory Sample ID: 14L0150-10

Client Sample ID: MiHPT01-GW (24-28')

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
Acetone	10	SW8260B	13.9		7.00	10.0	1	ug/L
Carbon disulfide	10	SW8260B	0.63	J	0.60	10.0	1	ug/L
cis-1,2-Dichloroethylene	10	SW8260B	0.87	J	0.40	1.00	1	ug/L
Tetrachloroethylene (PCE)	10RE1	SW8260B	743		4.00	10.0	10	ug/L
Trichloroethylene	10	SW8260B	3.39		0.30	1.00	1	ug/L



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Analysis Detects Report

Client Name: Chesapeake Geosciences, Inc.
 Client Site ID: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Laboratory Sample ID: 14L0150-11 Client Sample ID: MiHPT01-GW (8-12')

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
1,1,1,2-Tetrachloroethane	11	SW8260B	8.14		0.40	1.00	1	ug/L
1,1-Dichloroethylene	11	SW8260B	1.84		0.30	1.00	1	ug/L
1,2,4-Trimethylbenzene	11	SW8260B	11.3		0.50	1.00	1	ug/L
1,3,5-Trimethylbenzene	11	SW8260B	3.24		0.20	1.00	1	ug/L
1,4-Dichlorobenzene	11	SW8260B	0.47	J	0.40	1.00	1	ug/L
2-Butanone (MEK)	11	SW8260B	2.13	J	0.60	10.0	1	ug/L
4-Isopropyltoluene	11	SW8260B	1.12		0.20	1.00	1	ug/L
4-Methyl-2-pentanone (MIBK)	11	SW8260B	0.93	J	0.30	10.0	1	ug/L
Acetone	11	SW8260B	17.4		7.00	10.0	1	ug/L
Chloroform	11	SW8260B	0.63	J	0.40	1.00	1	ug/L
cis-1,2-Dichloroethylene	11	SW8260B	157		0.40	1.00	1	ug/L
Ethylbenzene	11	SW8260B	0.79	J	0.20	1.00	1	ug/L
Isopropylbenzene	11	SW8260B	0.58	J	0.20	1.00	1	ug/L
m+p-Xylenes	11	SW8260B	3.96		0.50	2.00	1	ug/L
Methyl-t-butyl ether (MTBE)	11	SW8260B	1.16		0.40	1.00	1	ug/L
Naphthalene	11	SW8260B	3.52		0.50	1.00	1	ug/L
n-Butylbenzene	11	SW8260B	0.76	J	0.30	1.00	1	ug/L
n-Propylbenzene	11	SW8260B	1.26		0.20	1.00	1	ug/L
o-Xylene	11	SW8260B	3.50		0.50	1.00	1	ug/L
sec-Butylbenzene	11	SW8260B	0.53	J	0.40	1.00	1	ug/L
tert-Butylbenzene	11	SW8260B	0.11	J	0.10	1.00	1	ug/L
Tetrachloroethylene (PCE)	11RE2	SW8260B	67100		400	1000	1000	ug/L
Toluene	11	SW8260B	0.59	J	0.40	1.00	1	ug/L
trans-1,2-Dichloroethylene	11	SW8260B	6.62		0.40	1.00	1	ug/L
Trichloroethylene	11	SW8260B	225		0.30	1.00	1	ug/L
Xylenes, Total	11	SW8260B	7.46		0.50	3.00	1	ug/L

Analysis Detects Report

Client Name: Chesapeake Geosciences, Inc.
 Client Site ID: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Laboratory Sample ID: 14L0150-12 **Client Sample ID: MiHPT10-GW (52-56')**

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
Acetone	12	SW8260B	25.7		7.00	10.0	1	ug/L
Tetrachloroethylene (PCE)	12RE1	SW8260B	11.3		0.40	1.00	1	ug/L
Trichloroethylene	12	SW8260B	0.36	J	0.30	1.00	1	ug/L

Laboratory Sample ID: 14L0150-13 **Client Sample ID: MiHPT10-GW (39-43')**

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
2-Butanone (MEK)	13	SW8260B	2.91	J	0.60	10.0	1	ug/L
Acetone	13	SW8260B	21.3		7.00	10.0	1	ug/L
Tetrachloroethylene (PCE)	13	SW8260B	108		0.40	1.00	1	ug/L
Toluene	13	SW8260B	0.41	J	0.40	1.00	1	ug/L
Trichloroethylene	13	SW8260B	0.33	J	0.30	1.00	1	ug/L

Laboratory Sample ID: 14L0150-14 **Client Sample ID: MiHPT10-GW (29-33')**

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
Acetone	14	SW8260B	8.77	J	7.00	10.0	1	ug/L
Carbon disulfide	14	SW8260B	1.47	J	0.60	10.0	1	ug/L
Tetrachloroethylene (PCE)	14	SW8260B	3.94		0.40	1.00	1	ug/L

Analysis Detects Report

Client Name: Chesapeake Geosciences, Inc.
 Client Site ID: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Laboratory Sample ID: 14L0150-15 **Client Sample ID: MiHPT07-GW (52-56')**

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
Methyl-t-butyl ether (MTBE)	15	SW8260B	8.00		0.40	1.00	1	ug/L
Tetrachloroethylene (PCE)	15	SW8260B	1.58		0.40	1.00	1	ug/L
Toluene	15	SW8260B	0.42	J	0.40	1.00	1	ug/L

Laboratory Sample ID: 14L0150-16 **Client Sample ID: MiHPT07-GW (39-43')**

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
Benzene	16	SW8260B	0.44	J	0.30	1.00	1	ug/L
Methyl-t-butyl ether (MTBE)	16	SW8260B	4.32		0.40	1.00	1	ug/L
Tetrachloroethylene (PCE)	16	SW8260B	2.84		0.40	1.00	1	ug/L
Toluene	16	SW8260B	0.62	J	0.40	1.00	1	ug/L

Laboratory Sample ID: 14L0150-17 **Client Sample ID: MiHPT07-GW (29-33')**

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
Methyl-t-butyl ether (MTBE)	17	SW8260B	0.57	J	0.40	1.00	1	ug/L
Tetrachloroethylene (PCE)	17	SW8260B	0.69	J	0.40	1.00	1	ug/L

Laboratory Sample ID: 14L0150-18 **Client Sample ID: MiHPT09-GW (52-56')**

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
Tetrachloroethylene (PCE)	18	SW8260B	1.95		0.40	1.00	1	ug/L



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Analysis Detects Report

Client Name: Chesapeake Geosciences, Inc.
Client Site ID: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Laboratory Sample ID: 14L0150-19

Client Sample ID: MiHPT09-GW (39-43')

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
Tetrachloroethylene (PCE)	19	SW8260B	1.13		0.40	1.00	1	ug/L

Laboratory Sample ID: 14L0150-20

Client Sample ID: MiHPT09-GW (29-33')

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
Acetone	20	SW8260B	10.4		7.00	10.0	1	ug/L
cis-1,2-Dichloroethylene	20	SW8260B	1.09		0.40	1.00	1	ug/L
Tetrachloroethylene (PCE)	20	SW8260B	5.33		0.40	1.00	1	ug/L
Trichloroethylene	20	SW8260B	0.71	J	0.30	1.00	1	ug/L

Laboratory Sample ID: 14L0150-21

Client Sample ID: MiHPT09-GW (18-22')

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
1,1-Dichloroethylene	21	SW8260B	1.09		0.30	1.00	1	ug/L
Acetone	21	SW8260B	20.0		7.00	10.0	1	ug/L
Benzene	21	SW8260B	0.72	J	0.30	1.00	1	ug/L
Chloroform	21	SW8260B	1.15		0.40	1.00	1	ug/L
cis-1,2-Dichloroethylene	21	SW8260B	323		0.40	1.00	1	ug/L
Tetrachloroethylene (PCE)	21RE1	SW8260B	1340		4.00	10.0	10	ug/L
trans-1,2-Dichloroethylene	21	SW8260B	2.03		0.40	1.00	1	ug/L
Trichloroethylene	21	SW8260B	112		0.30	1.00	1	ug/L



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Analysis Detects Report

Client Name: Chesapeake Geosciences, Inc.
Client Site ID: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Laboratory Sample ID: 14L0150-22

Client Sample ID: MiHPT-D1

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
1,1-Dichloroethylene	22	SW8260B	0.39	J	0.30	1.00	1	ug/L
Benzene	22	SW8260B	0.40	J	0.30	1.00	1	ug/L
Chloroform	22	SW8260B	0.78	J	0.40	1.00	1	ug/L
cis-1,2-Dichloroethylene	22	SW8260B	99.3		0.40	1.00	1	ug/L
Tetrachloroethylene (PCE)	22	SW8260B	390		0.40	1.00	1	ug/L
trans-1,2-Dichloroethylene	22	SW8260B	0.96	J	0.40	1.00	1	ug/L
Trichloroethylene	22	SW8260B	42.4		0.30	1.00	1	ug/L

Analysis Detects Report

Client Name: Chesapeake Geosciences, Inc.
 Client Site ID: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Laboratory Sample ID: 14L0150-23

Client Sample ID: MiHPT-D2

Parameter	Samp ID	Reference Method	Sample Results	Qual	LOD	LOQ	Dil. Factor	Units
1,1,1,2-Tetrachloroethane	23	SW8260B	6.16		0.40	1.00	1	ug/L
1,1-Dichloroethylene	23	SW8260B	1.87		0.30	1.00	1	ug/L
1,2,4-Trimethylbenzene	23	SW8260B	6.02		0.50	1.00	1	ug/L
1,3,5-Trimethylbenzene	23	SW8260B	1.69		0.20	1.00	1	ug/L
1,4-Dichlorobenzene	23	SW8260B	0.57	J	0.40	1.00	1	ug/L
4-Isopropyltoluene	23	SW8260B	0.64	J	0.20	1.00	1	ug/L
4-Methyl-2-pentanone (MIBK)	23	SW8260B	0.84	J	0.30	10.0	1	ug/L
Acetone	23	SW8260B	11.9		7.00	10.0	1	ug/L
Chloroform	23	SW8260B	0.68	J	0.40	1.00	1	ug/L
cis-1,2-Dichloroethylene	23	SW8260B	153		0.40	1.00	1	ug/L
Ethylbenzene	23	SW8260B	0.58	J	0.20	1.00	1	ug/L
Isopropylbenzene	23	SW8260B	0.41	J	0.20	1.00	1	ug/L
m+p-Xylenes	23	SW8260B	2.74		0.50	2.00	1	ug/L
Methyl-t-butyl ether (MTBE)	23	SW8260B	1.10		0.40	1.00	1	ug/L
Naphthalene	23	SW8260B	3.00		0.50	1.00	1	ug/L
n-Butylbenzene	23	SW8260B	0.46	J	0.30	1.00	1	ug/L
n-Propylbenzene	23	SW8260B	0.80	J	0.20	1.00	1	ug/L
o-Xylene	23	SW8260B	2.56		0.50	1.00	1	ug/L
sec-Butylbenzene	23	SW8260B	0.40	J	0.40	1.00	1	ug/L
Tetrachloroethylene (PCE)	23RE3	SW8260B	72400		400	1000	1000	ug/L
trans-1,2-Dichloroethylene	23	SW8260B	6.42		0.40	1.00	1	ug/L
Trichloroethylene	23	SW8260B	190		0.30	1.00	1	ug/L
Xylenes, Total	23	SW8260B	5.30		0.50	3.00	1	ug/L

Note that this report is not the "Certificate of Analysis". This report only lists the target analytes that displayed concentrations that exceeded the detection limit specified for that analyte. For a complete listing of all analytes requested and the results of the analysis see the "Certificate of Analysis".



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Certificate of Analysis

Final Report

Laboratory Order ID 14L0150

Client Name: Chesapeake Geosciences, Inc.
5405 Twin Knolls Rd. Suite 1
Columbia, Maryland 21045

Date Received: December 9, 2014 9:40
Date Issued: December 17, 2014 14:49

Submitted To: Nancy Love

Project Number: CG-12-0763.03
Purchase Order: CG120763.03NL

Client Site I.D.: Elite/Free Star/Star Cleaners

Enclosed are the results of analyses for samples received by the laboratory on 12/09/2014 09:40. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

A handwritten signature in black ink that reads "Ted Soyars".

Ted Soyars
Laboratory Manager

End Notes:

The test results listed in this report relate only to the samples submitted to the laboratory and as received by the Laboratory.

Unless otherwise noted, the test results for solid materials are calculated on a wet weight basis. Analyses for pH, dissolved oxygen, temperature, residual chlorine and sulfite that are performed in the laboratory do not meet NELAC requirements due to extremely short holding times. These analyses should be performed in the field. The results of field analyses performed by the Sampler included in the Certificate of Analysis are done so at the client's request and are not included in the laboratory's fields of certification nor have they been audited for adherence to a reference method or procedure.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise specified. For a complete list of the Laboratory's NELAC certified parameters please contact customer service.

This report shall not be reproduced except in full without the expressed and written approval of an authorized representative of Air Water & Soil Laboratories, Inc.



Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MiHPT03-GW (28-32')	14L0150-01	Ground Water	12/04/2014 08:40	12/09/2014 09:40
MiHPT02-GW (26-30')	14L0150-02	Ground Water	12/04/2014 09:50	12/09/2014 09:40
MiHPT02-GW (41-45')	14L0150-03	Ground Water	12/04/2014 10:15	12/09/2014 09:40
MiHPT05-GW (52-56')	14L0150-04	Ground Water	12/04/2014 11:45	12/09/2014 09:40
MiHPT05-GW (41-45')	14L0150-05	Ground Water	12/04/2014 12:20	12/09/2014 09:40
MiHPT05-GW (17-21')	14L0150-06	Ground Water	12/04/2014 12:38	12/09/2014 09:40
MiHPT01-GW (52-56')	14L0150-07	Ground Water	12/04/2014 14:35	12/09/2014 09:40
MiHPT01-GW (39-43')	14L0150-08	Ground Water	12/04/2014 15:08	12/09/2014 09:40
MiHPT01-GW (32-36')	14L0150-09	Ground Water	12/04/2014 16:15	12/09/2014 09:40
MiHPT01-GW (24-28')	14L0150-10	Ground Water	12/04/2014 16:45	12/09/2014 09:40
MiHPT01-GW (8-12')	14L0150-11	Ground Water	12/05/2014 08:50	12/09/2014 09:40
MiHPT10-GW (52-56')	14L0150-12	Ground Water	12/05/2014 09:30	12/09/2014 09:40
MiHPT10-GW (39-43')	14L0150-13	Ground Water	12/05/2014 10:10	12/09/2014 09:40
MiHPT10-GW (29-33')	14L0150-14	Ground Water	12/05/2014 10:40	12/09/2014 09:40
MiHPT07-GW (52-56')	14L0150-15	Ground Water	12/05/2014 12:10	12/09/2014 09:40
MiHPT07-GW (39-43')	14L0150-16	Ground Water	12/05/2014 12:35	12/09/2014 09:40
MiHPT07-GW (29-33')	14L0150-17	Ground Water	12/05/2014 13:05	12/09/2014 09:40
MiHPT09-GW (52-56')	14L0150-18	Ground Water	12/05/2014 13:40	12/09/2014 09:40
MiHPT09-GW (39-43')	14L0150-19	Ground Water	12/05/2014 14:00	12/09/2014 09:40
MiHPT09-GW (29-33')	14L0150-20	Ground Water	12/05/2014 14:25	12/09/2014 09:40
MiHPT09-GW (18-22')	14L0150-21	Ground Water	12/05/2014 14:50	12/09/2014 09:40

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MiHPT-D1	14L0150-22	Ground Water	12/04/2014 00:00	12/09/2014 09:40
MiHPT-D2	14L0150-23	Ground Water	12/05/2014 00:00	12/09/2014 09:40
Trip Blank	14L0150-24	Ground Water	11/24/2014 11:50	12/09/2014 09:40

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT03-GW (28-32')

Laboratory Sample ID: 14L0150-01

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	01	630-20-6	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	01	71-55-6	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	01	79-34-5	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	01	79-00-5	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	01	75-34-3	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	01	75-35-4	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	01	563-58-6	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	01	87-61-6	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	01	96-18-4	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	01	120-82-1	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	01	95-63-6	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	01	96-12-8	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	01	106-93-4	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	01	95-50-1	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	01	107-06-2	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	01	78-87-5	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	01	108-67-8	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	01	541-73-1	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	01	142-28-9	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	01	106-46-7	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	01	594-20-7	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	01	78-93-3	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	01	95-49-8	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	01	591-78-6	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT03-GW (28-32')

Laboratory Sample ID: 14L0150-01

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	01	106-43-4	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	01	99-87-6	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	01	108-10-1	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	01	67-64-1	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		7.00	10.0	1	ug/L	MKD
Benzene	01	71-43-2	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	01	108-86-1	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	01	74-97-5	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	01	75-27-4	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	01	75-25-2	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	01	74-83-9	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	01	75-15-0	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	01	56-23-5	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	01	108-90-7	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	01	75-00-3	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	01	67-66-3	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	01	74-87-3	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	01	156-59-2	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	01	10061-01-5	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	01	124-48-1	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	01	74-95-3	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	01	75-71-8	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	01	108-20-3	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	01	100-41-4	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	01	637-92-3	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT03-GW (28-32')

Laboratory Sample ID: 14L0150-01

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	01	87-68-3	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	01	74-88-4	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	01	98-82-8	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	01	179601-23-1	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	01	75-09-2	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	01	1634-04-4	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	01	91-20-3	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	01	104-51-8	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	01	103-65-1	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	01	95-47-6	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	01	135-98-8	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	01	100-42-5	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.20	1.00	1	ug/L	MKD
TAME	01	994-05-8	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		5.00	5.00	1	ug/L	MKD
TBA	01	75-65-0	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	01	98-06-6	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	01	127-18-4	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.40	1.00	1	ug/L	MKD
Toluene	01	108-88-3	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	01	156-60-5	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	01	10061-02-6	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	01	79-01-6	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	01	75-69-4	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	01	108-05-4	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	01	75-01-4	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	01	1330-20-7	SW8260B	12/10/2014 13:19	12/10/2014 13:19	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT03-GW (28-32')

Laboratory Sample ID: 14L0150-01

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
<i>Surr: 1,2-Dichloroethane-d4</i>	01	104 %	70-120	12/10/2014 13:19	12/10/2014 13:19							
<i>Surr: 4-Bromofluorobenzene</i>	01	93.0 %	75-120	12/10/2014 13:19	12/10/2014 13:19							
<i>Surr: Dibromofluoromethane</i>	01	97.8 %	80-119	12/10/2014 13:19	12/10/2014 13:19							
<i>Surr: Toluene-d8</i>	01	99.7 %	85-120	12/10/2014 13:19	12/10/2014 13:19							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT02-GW (26-30')

Laboratory Sample ID: 14L0150-02

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	02	630-20-6	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	02	71-55-6	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	02	79-34-5	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	02	79-00-5	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	02	75-34-3	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	02	75-35-4	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	02	563-58-6	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	02	87-61-6	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	02	96-18-4	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	02	120-82-1	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	02	95-63-6	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	02	96-12-8	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	02	106-93-4	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	02	95-50-1	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	02	107-06-2	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	02	78-87-5	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	02	108-67-8	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	02	541-73-1	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	02	142-28-9	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	02	106-46-7	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	02	594-20-7	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	02	78-93-3	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	02	95-49-8	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	02	591-78-6	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: **MiHPT02-GW (26-30')**

Laboratory Sample ID: **14L0150-02**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	02	106-43-4	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	02	99-87-6	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	02	108-10-1	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	02	67-64-1	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		7.00	10.0	1	ug/L	MKD
Benzene	02	71-43-2	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	02	108-86-1	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	02	74-97-5	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	02	75-27-4	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	02	75-25-2	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	02	74-83-9	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	02	75-15-0	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	02	56-23-5	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	02	108-90-7	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	02	75-00-3	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	02	67-66-3	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	02	74-87-3	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	02	156-59-2	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	02	10061-01-5	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	02	124-48-1	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	02	74-95-3	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	02	75-71-8	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	02	108-20-3	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	02	100-41-4	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	02	637-92-3	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: **MiHPT02-GW (26-30')**

Laboratory Sample ID: **14L0150-02**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	02	87-68-3	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	02	74-88-4	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	02	98-82-8	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	02	179601-23-1	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	02	75-09-2	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	02	1634-04-4	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	02	91-20-3	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	02	104-51-8	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	02	103-65-1	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	02	95-47-6	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	02	135-98-8	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	02	100-42-5	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.20	1.00	1	ug/L	MKD
TAME	02	994-05-8	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		5.00	5.00	1	ug/L	MKD
TBA	02	75-65-0	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	02	98-06-6	SW8260B	12/10/2014 13:43	12/10/2014 13:43	0.20	J	0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	02	127-18-4	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.40	1.00	1	ug/L	MKD
Toluene	02	108-88-3	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	02	156-60-5	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	02	10061-02-6	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	02	79-01-6	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	02	75-69-4	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	02	108-05-4	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	02	75-01-4	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	02	1330-20-7	SW8260B	12/10/2014 13:43	12/10/2014 13:43	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: **MiHPT02-GW (26-30')**

Laboratory Sample ID: **14L0150-02**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	02	102 %	70-120	12/10/2014 13:43	12/10/2014 13:43							
Surr: 4-Bromofluorobenzene	02	92.4 %	75-120	12/10/2014 13:43	12/10/2014 13:43							
Surr: Dibromofluoromethane	02	95.0 %	80-119	12/10/2014 13:43	12/10/2014 13:43							
Surr: Toluene-d8	02	101 %	85-120	12/10/2014 13:43	12/10/2014 13:43							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT02-GW (41-45')

Laboratory Sample ID: 14L0150-03

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	03	630-20-6	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	03	71-55-6	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	03	79-34-5	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	03	79-00-5	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	03	75-34-3	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	03	75-35-4	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	03	563-58-6	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	03	87-61-6	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	03	96-18-4	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	03	120-82-1	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	03	95-63-6	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	03	96-12-8	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	03	106-93-4	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	03	95-50-1	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	03	107-06-2	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	03	78-87-5	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	03	108-67-8	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	03	541-73-1	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	03	142-28-9	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	03	106-46-7	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	03	594-20-7	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	03	78-93-3	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	03	95-49-8	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	03	591-78-6	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT02-GW (41-45')

Laboratory Sample ID: 14L0150-03

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	03	106-43-4	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	03	99-87-6	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	03	108-10-1	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	03	67-64-1	SW8260B	12/10/2014 14:08	12/10/2014 14:08	11.8		7.00	10.0	1	ug/L	MKD
Benzene	03	71-43-2	SW8260B	12/10/2014 14:08	12/10/2014 14:08	2.03		0.30	1.00	1	ug/L	MKD
Bromobenzene	03	108-86-1	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	03	74-97-5	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	03	75-27-4	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	03	75-25-2	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	03	74-83-9	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	03	75-15-0	SW8260B	12/10/2014 14:08	12/10/2014 14:08	0.78	J	0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	03	56-23-5	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	03	108-90-7	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	03	75-00-3	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	03	67-66-3	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	03	74-87-3	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	03	156-59-2	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	03	10061-01-5	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	03	124-48-1	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	03	74-95-3	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	03	75-71-8	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	03	108-20-3	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	03	100-41-4	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	03	637-92-3	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT02-GW (41-45')

Laboratory Sample ID: 14L0150-03

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	03	87-68-3	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	03	74-88-4	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	03	98-82-8	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	03	179601-23-1	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	03	75-09-2	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	03	1634-04-4	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	03	91-20-3	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	03	104-51-8	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	03	103-65-1	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	03	95-47-6	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	03	135-98-8	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	03	100-42-5	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.20	1.00	1	ug/L	MKD
TAME	03	994-05-8	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		5.00	5.00	1	ug/L	MKD
TBA	03	75-65-0	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	03	98-06-6	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	03	127-18-4	SW8260B	12/10/2014 14:08	12/10/2014 14:08	0.61	J	0.40	1.00	1	ug/L	MKD
Toluene	03	108-88-3	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	03	156-60-5	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	03	10061-02-6	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	03	79-01-6	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	03	75-69-4	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	03	108-05-4	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	03	75-01-4	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	03	1330-20-7	SW8260B	12/10/2014 14:08	12/10/2014 14:08	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
Client Site I.D.: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT02-GW (41-45')

Laboratory Sample ID: 14L0150-03

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	03	100 %	70-120	12/10/2014 14:08	12/10/2014 14:08							
Surr: 4-Bromofluorobenzene	03	95.3 %	75-120	12/10/2014 14:08	12/10/2014 14:08							
Surr: Dibromofluoromethane	03	99.6 %	80-119	12/10/2014 14:08	12/10/2014 14:08							
Surr: Toluene-d8	03	97.6 %	85-120	12/10/2014 14:08	12/10/2014 14:08							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT05-GW (52-56')

Laboratory Sample ID: 14L0150-04

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	04	630-20-6	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	04	71-55-6	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	04	79-34-5	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	04	79-00-5	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	04	75-34-3	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	04	75-35-4	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	04	563-58-6	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	04	87-61-6	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	04	96-18-4	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	04	120-82-1	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	04	95-63-6	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	04	96-12-8	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	04	106-93-4	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	04	95-50-1	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	04	107-06-2	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	04	78-87-5	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	04	108-67-8	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	04	541-73-1	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	04	142-28-9	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	04	106-46-7	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	04	594-20-7	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	04	78-93-3	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	04	95-49-8	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	04	591-78-6	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT05-GW (52-56')

Laboratory Sample ID: 14L0150-04

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	04	106-43-4	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	04	99-87-6	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	04	108-10-1	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	04	67-64-1	SW8260B	12/10/2014 14:32	12/10/2014 14:32	8.36	J	7.00	10.0	1	ug/L	MKD
Benzene	04	71-43-2	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	04	108-86-1	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	04	74-97-5	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	04	75-27-4	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	04	75-25-2	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	04	74-83-9	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	04	75-15-0	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	04	56-23-5	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	04	108-90-7	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	04	75-00-3	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	04	67-66-3	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	04	74-87-3	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	04	156-59-2	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	04	10061-01-5	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	04	124-48-1	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	04	74-95-3	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	04	75-71-8	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	04	108-20-3	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	04	100-41-4	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	04	637-92-3	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT05-GW (52-56')

Laboratory Sample ID: 14L0150-04

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	04	87-68-3	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	04	74-88-4	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	04	98-82-8	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	04	179601-23-1	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	04	75-09-2	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	04	1634-04-4	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	04	91-20-3	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	04	104-51-8	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	04	103-65-1	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	04	95-47-6	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	04	135-98-8	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	04	100-42-5	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.20	1.00	1	ug/L	MKD
TAME	04	994-05-8	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		5.00	5.00	1	ug/L	MKD
TBA	04	75-65-0	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	04	98-06-6	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	04	127-18-4	SW8260B	12/10/2014 14:32	12/10/2014 14:32	0.54	J	0.40	1.00	1	ug/L	MKD
Toluene	04	108-88-3	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	04	156-60-5	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	04	10061-02-6	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	04	79-01-6	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	04	75-69-4	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	04	108-05-4	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	04	75-01-4	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	04	1330-20-7	SW8260B	12/10/2014 14:32	12/10/2014 14:32	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT05-GW (52-56')

Laboratory Sample ID: 14L0150-04

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	04	100 %	70-120	12/10/2014 14:32	12/10/2014 14:32							
Surr: 4-Bromofluorobenzene	04	94.8 %	75-120	12/10/2014 14:32	12/10/2014 14:32							
Surr: Dibromofluoromethane	04	97.5 %	80-119	12/10/2014 14:32	12/10/2014 14:32							
Surr: Toluene-d8	04	97.8 %	85-120	12/10/2014 14:32	12/10/2014 14:32							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT05-GW (41-45')

Laboratory Sample ID: 14L0150-05

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	05	630-20-6	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	05	71-55-6	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	05	79-34-5	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	05	79-00-5	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	05	75-34-3	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	05	75-35-4	SW8260B	12/10/2014 14:57	12/10/2014 14:57	0.47	J	0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	05	563-58-6	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	05	87-61-6	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	05	96-18-4	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	05	120-82-1	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	05	95-63-6	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	05	96-12-8	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	05	106-93-4	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	05	95-50-1	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	05	107-06-2	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	05	78-87-5	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	05	108-67-8	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	05	541-73-1	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	05	142-28-9	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	05	106-46-7	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	05	594-20-7	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	05	78-93-3	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	05	95-49-8	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	05	591-78-6	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: **MiHPT05-GW (41-45')**

Laboratory Sample ID: **14L0150-05**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	05	106-43-4	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	05	99-87-6	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	05	108-10-1	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	05	67-64-1	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		7.00	10.0	1	ug/L	MKD
Benzene	05	71-43-2	SW8260B	12/10/2014 14:57	12/10/2014 14:57	0.40	J	0.30	1.00	1	ug/L	MKD
Bromobenzene	05	108-86-1	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	05	74-97-5	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	05	75-27-4	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	05	75-25-2	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	05	74-83-9	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	05	75-15-0	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	05	56-23-5	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	05	108-90-7	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	05	75-00-3	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	05	67-66-3	SW8260B	12/10/2014 14:57	12/10/2014 14:57	0.89	J	0.40	1.00	1	ug/L	MKD
Chloromethane	05	74-87-3	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	05	156-59-2	SW8260B	12/10/2014 14:57	12/10/2014 14:57	110		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	05	10061-01-5	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	05	124-48-1	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	05	74-95-3	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	05	75-71-8	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	05	108-20-3	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	05	100-41-4	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	05	637-92-3	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT05-GW (41-45')

Laboratory Sample ID: 14L0150-05

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	05	87-68-3	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	05	74-88-4	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	05	98-82-8	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	05	179601-23-1	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	05	75-09-2	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	05	1634-04-4	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	05	91-20-3	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	05	104-51-8	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	05	103-65-1	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	05	95-47-6	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	05	135-98-8	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	05	100-42-5	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.20	1.00	1	ug/L	MKD
TAME	05	994-05-8	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		5.00	5.00	1	ug/L	MKD
TBA	05	75-65-0	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	05	98-06-6	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	05RE1	127-18-4	SW8260B	12/12/2014 12:35	12/12/2014 12:35	477		4.00	10.0	10	ug/L	MKD
Toluene	05	108-88-3	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	05	156-60-5	SW8260B	12/10/2014 14:57	12/10/2014 14:57	0.88	J	0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	05	10061-02-6	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	05	79-01-6	SW8260B	12/10/2014 14:57	12/10/2014 14:57	49.5		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	05	75-69-4	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	05	108-05-4	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	05	75-01-4	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	05	1330-20-7	SW8260B	12/10/2014 14:57	12/10/2014 14:57	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: **MiHPT05-GW (41-45')**

Laboratory Sample ID: **14L0150-05**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	05	97.5 %	70-120	12/10/2014 14:57	12/10/2014 14:57							
Surr: 4-Bromofluorobenzene	05	93.4 %	75-120	12/10/2014 14:57	12/10/2014 14:57							
Surr: Dibromofluoromethane	05	96.1 %	80-119	12/10/2014 14:57	12/10/2014 14:57							
Surr: Toluene-d8	05	99.8 %	85-120	12/10/2014 14:57	12/10/2014 14:57							
Surr: 1,2-Dichloroethane-d4	05RE1	99.6 %	70-120	12/12/2014 12:35	12/12/2014 12:35							
Surr: 4-Bromofluorobenzene	05RE1	94.5 %	75-120	12/12/2014 12:35	12/12/2014 12:35							
Surr: Dibromofluoromethane	05RE1	96.5 %	80-119	12/12/2014 12:35	12/12/2014 12:35							
Surr: Toluene-d8	05RE1	98.6 %	85-120	12/12/2014 12:35	12/12/2014 12:35							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: **MiHPT05-GW (17-21')**

Laboratory Sample ID: **14L0150-06**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	06	630-20-6	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	06	71-55-6	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	06	79-34-5	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	06	79-00-5	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	06	75-34-3	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	06	75-35-4	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	06	563-58-6	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	06	87-61-6	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	06	96-18-4	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	06	120-82-1	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	06	95-63-6	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	06	96-12-8	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	06	106-93-4	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	06	95-50-1	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	06	107-06-2	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	06	78-87-5	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	06	108-67-8	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	06	541-73-1	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	06	142-28-9	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	06	106-46-7	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	06	594-20-7	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	06	78-93-3	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	06	95-49-8	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	06	591-78-6	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: **MiHPT05-GW (17-21')**

Laboratory Sample ID: **14L0150-06**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	06	106-43-4	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	06	99-87-6	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	06	108-10-1	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	06	67-64-1	SW8260B	12/10/2014 15:21	12/10/2014 15:21	12.6		7.00	10.0	1	ug/L	MKD
Benzene	06	71-43-2	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	06	108-86-1	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	06	74-97-5	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	06	75-27-4	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	06	75-25-2	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	06	74-83-9	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	06	75-15-0	SW8260B	12/10/2014 15:21	12/10/2014 15:21	0.62	J	0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	06	56-23-5	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	06	108-90-7	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	06	75-00-3	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	06	67-66-3	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	06	74-87-3	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	06	156-59-2	SW8260B	12/10/2014 15:21	12/10/2014 15:21	8.04		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	06	10061-01-5	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	06	124-48-1	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	06	74-95-3	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	06	75-71-8	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	06	108-20-3	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	06	100-41-4	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	06	637-92-3	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT05-GW (17-21')

Laboratory Sample ID: 14L0150-06

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	06	87-68-3	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	06	74-88-4	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	06	98-82-8	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	06	179601-23-1	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	06	75-09-2	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	06	1634-04-4	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	06	91-20-3	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	06	104-51-8	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	06	103-65-1	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	06	95-47-6	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	06	135-98-8	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	06	100-42-5	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.20	1.00	1	ug/L	MKD
TAME	06	994-05-8	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		5.00	5.00	1	ug/L	MKD
TBA	06	75-65-0	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	06	98-06-6	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	06	127-18-4	SW8260B	12/10/2014 15:21	12/10/2014 15:21	122		0.40	1.00	1	ug/L	MKD
Toluene	06	108-88-3	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	06	156-60-5	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	06	10061-02-6	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	06	79-01-6	SW8260B	12/10/2014 15:21	12/10/2014 15:21	12.6		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	06	75-69-4	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	06	108-05-4	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	06	75-01-4	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	06	1330-20-7	SW8260B	12/10/2014 15:21	12/10/2014 15:21	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT05-GW (17-21')

Laboratory Sample ID: 14L0150-06

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	06	100 %	70-120	12/10/2014 15:21	12/10/2014 15:21							
Surr: 4-Bromofluorobenzene	06	94.1 %	75-120	12/10/2014 15:21	12/10/2014 15:21							
Surr: Dibromofluoromethane	06	99.2 %	80-119	12/10/2014 15:21	12/10/2014 15:21							
Surr: Toluene-d8	06	99.5 %	85-120	12/10/2014 15:21	12/10/2014 15:21							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (52-56')

Laboratory Sample ID: 14L0150-07

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	07	630-20-6	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	07	71-55-6	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	07	79-34-5	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	07	79-00-5	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	07	75-34-3	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	07	75-35-4	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	07	563-58-6	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	07	87-61-6	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	07	96-18-4	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	07	120-82-1	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	07	95-63-6	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	07	96-12-8	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	07	106-93-4	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	07	95-50-1	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	07	107-06-2	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	07	78-87-5	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	07	108-67-8	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	07	541-73-1	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	07	142-28-9	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	07	106-46-7	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	07	594-20-7	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	07	78-93-3	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	07	95-49-8	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	07	591-78-6	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (52-56')

Laboratory Sample ID: 14L0150-07

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	07	106-43-4	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	07	99-87-6	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	07	108-10-1	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	07	67-64-1	SW8260B	12/10/2014 15:46	12/10/2014 15:46	18.0		7.00	10.0	1	ug/L	MKD
Benzene	07	71-43-2	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	07	108-86-1	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	07	74-97-5	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	07	75-27-4	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	07	75-25-2	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	07	74-83-9	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	07	75-15-0	SW8260B	12/10/2014 15:46	12/10/2014 15:46	0.87	J	0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	07	56-23-5	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	07	108-90-7	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	07	75-00-3	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	07	67-66-3	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	07	74-87-3	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	07	156-59-2	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	07	10061-01-5	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	07	124-48-1	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	07	74-95-3	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	07	75-71-8	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	07	108-20-3	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	07	100-41-4	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	07	637-92-3	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (52-56')

Laboratory Sample ID: 14L0150-07

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	07	87-68-3	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	07	74-88-4	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	07	98-82-8	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	07	179601-23-1	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	07	75-09-2	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	07	1634-04-4	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	07	91-20-3	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	07	104-51-8	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	07	103-65-1	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	07	95-47-6	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	07	135-98-8	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	07	100-42-5	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.20	1.00	1	ug/L	MKD
TAME	07	994-05-8	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		5.00	5.00	1	ug/L	MKD
TBA	07	75-65-0	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	07	98-06-6	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	07	127-18-4	SW8260B	12/10/2014 15:46	12/10/2014 15:46	91.5		0.40	1.00	1	ug/L	MKD
Toluene	07	108-88-3	SW8260B	12/10/2014 15:46	12/10/2014 15:46	0.46	J	0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	07	156-60-5	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	07	10061-02-6	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	07	79-01-6	SW8260B	12/10/2014 15:46	12/10/2014 15:46	0.77	J	0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	07	75-69-4	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	07	108-05-4	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	07	75-01-4	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	07	1330-20-7	SW8260B	12/10/2014 15:46	12/10/2014 15:46	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (52-56')

Laboratory Sample ID: 14L0150-07

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	07	105 %	70-120	12/10/2014 15:46	12/10/2014 15:46							
Surr: 4-Bromofluorobenzene	07	94.6 %	75-120	12/10/2014 15:46	12/10/2014 15:46							
Surr: Dibromofluoromethane	07	98.0 %	80-119	12/10/2014 15:46	12/10/2014 15:46							
Surr: Toluene-d8	07	98.7 %	85-120	12/10/2014 15:46	12/10/2014 15:46							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (39-43')

Laboratory Sample ID: 14L0150-08

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	08	630-20-6	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	08	71-55-6	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	08	79-34-5	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	08	79-00-5	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	08	75-34-3	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	08	75-35-4	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	08	563-58-6	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	08	87-61-6	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	08	96-18-4	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	08	120-82-1	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	08	95-63-6	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	08	96-12-8	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	08	106-93-4	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	08	95-50-1	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	08	107-06-2	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	08	78-87-5	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	08	108-67-8	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	08	541-73-1	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	08	142-28-9	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	08	106-46-7	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	08	594-20-7	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	08	78-93-3	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	08	95-49-8	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	08	591-78-6	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (39-43')

Laboratory Sample ID: 14L0150-08

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	08	106-43-4	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	08	99-87-6	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	08	108-10-1	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	08	67-64-1	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		7.00	10.0	1	ug/L	MKD
Benzene	08	71-43-2	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	08	108-86-1	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	08	74-97-5	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	08	75-27-4	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	08	75-25-2	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	08	74-83-9	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	08	75-15-0	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	08	56-23-5	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	08	108-90-7	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	08	75-00-3	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	08	67-66-3	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	08	74-87-3	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	08	156-59-2	SW8260B	12/10/2014 16:11	12/10/2014 16:11	0.51	J	0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	08	10061-01-5	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	08	124-48-1	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	08	74-95-3	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	08	75-71-8	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	08	108-20-3	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	08	100-41-4	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	08	637-92-3	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (39-43')

Laboratory Sample ID: 14L0150-08

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	08	87-68-3	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	08	74-88-4	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	08	98-82-8	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	08	179601-23-1	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	08	75-09-2	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	08	1634-04-4	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	08	91-20-3	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	08	104-51-8	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	08	103-65-1	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	08	95-47-6	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	08	135-98-8	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	08	100-42-5	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.20	1.00	1	ug/L	MKD
TAME	08	994-05-8	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		5.00	5.00	1	ug/L	MKD
TBA	08	75-65-0	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	08	98-06-6	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	08	127-18-4	SW8260B	12/10/2014 16:11	12/10/2014 16:11	142		0.40	1.00	1	ug/L	MKD
Toluene	08	108-88-3	SW8260B	12/10/2014 16:11	12/10/2014 16:11	0.43	J	0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	08	156-60-5	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	08	10061-02-6	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	08	79-01-6	SW8260B	12/10/2014 16:11	12/10/2014 16:11	1.10		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	08	75-69-4	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	08	108-05-4	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	08	75-01-4	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	08	1330-20-7	SW8260B	12/10/2014 16:11	12/10/2014 16:11	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (39-43')

Laboratory Sample ID: 14L0150-08

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
<i>Surr: 1,2-Dichloroethane-d4</i>	08	102 %	70-120	12/10/2014 16:11	12/10/2014 16:11							
<i>Surr: 4-Bromofluorobenzene</i>	08	93.9 %	75-120	12/10/2014 16:11	12/10/2014 16:11							
<i>Surr: Dibromofluoromethane</i>	08	97.6 %	80-119	12/10/2014 16:11	12/10/2014 16:11							
<i>Surr: Toluene-d8</i>	08	98.5 %	85-120	12/10/2014 16:11	12/10/2014 16:11							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (32-36')

Laboratory Sample ID: 14L0150-09

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	09	630-20-6	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	09	71-55-6	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	09	79-34-5	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	09	79-00-5	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	09	75-34-3	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	09	75-35-4	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	09	563-58-6	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	09	87-61-6	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	09	96-18-4	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	09	120-82-1	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	09	95-63-6	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	09	96-12-8	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	09	106-93-4	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	09	95-50-1	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	09	107-06-2	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	09	78-87-5	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	09	108-67-8	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	09	541-73-1	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	09	142-28-9	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	09	106-46-7	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	09	594-20-7	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	09	78-93-3	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	09	95-49-8	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	09	591-78-6	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (32-36')

Laboratory Sample ID: 14L0150-09

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	09	106-43-4	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	09	99-87-6	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	09	108-10-1	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	09	67-64-1	SW8260B	12/10/2014 16:35	12/10/2014 16:35	9.46	J	7.00	10.0	1	ug/L	MKD
Benzene	09	71-43-2	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	09	108-86-1	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	09	74-97-5	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	09	75-27-4	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	09	75-25-2	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	09	74-83-9	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	09	75-15-0	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	09	56-23-5	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	09	108-90-7	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	09	75-00-3	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	09	67-66-3	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	09	74-87-3	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	09	156-59-2	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	09	10061-01-5	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	09	124-48-1	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	09	74-95-3	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	09	75-71-8	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	09	108-20-3	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	09	100-41-4	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	09	637-92-3	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (32-36')

Laboratory Sample ID: 14L0150-09

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	09	87-68-3	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	09	74-88-4	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	09	98-82-8	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	09	179601-23-1	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	09	75-09-2	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	09	1634-04-4	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	09	91-20-3	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	09	104-51-8	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	09	103-65-1	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	09	95-47-6	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	09	135-98-8	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	09	100-42-5	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.20	1.00	1	ug/L	MKD
TAME	09	994-05-8	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		5.00	5.00	1	ug/L	MKD
TBA	09	75-65-0	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	09	98-06-6	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	09	127-18-4	SW8260B	12/10/2014 16:35	12/10/2014 16:35	210		0.40	1.00	1	ug/L	MKD
Toluene	09	108-88-3	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	09	156-60-5	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	09	10061-02-6	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	09	79-01-6	SW8260B	12/10/2014 16:35	12/10/2014 16:35	0.88	J	0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	09	75-69-4	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	09	108-05-4	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	09	75-01-4	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	09	1330-20-7	SW8260B	12/10/2014 16:35	12/10/2014 16:35	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (32-36')

Laboratory Sample ID: 14L0150-09

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	09	102 %	70-120	12/10/2014 16:35	12/10/2014 16:35							
Surr: 4-Bromofluorobenzene	09	94.9 %	75-120	12/10/2014 16:35	12/10/2014 16:35							
Surr: Dibromofluoromethane	09	96.8 %	80-119	12/10/2014 16:35	12/10/2014 16:35							
Surr: Toluene-d8	09	98.4 %	85-120	12/10/2014 16:35	12/10/2014 16:35							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (24-28')

Laboratory Sample ID: 14L0150-10

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	10	630-20-6	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	10	71-55-6	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	10	79-34-5	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	10	79-00-5	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	10	75-34-3	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	10	75-35-4	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	10	563-58-6	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	10	87-61-6	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	10	96-18-4	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	10	120-82-1	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	10	95-63-6	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	10	96-12-8	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	10	106-93-4	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	10	95-50-1	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	10	107-06-2	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	10	78-87-5	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	10	108-67-8	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	10	541-73-1	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	10	142-28-9	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	10	106-46-7	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	10	594-20-7	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	10	78-93-3	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	10	95-49-8	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	10	591-78-6	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (24-28')

Laboratory Sample ID: 14L0150-10

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	10	106-43-4	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	10	99-87-6	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	10	108-10-1	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	10	67-64-1	SW8260B	12/10/2014 17:00	12/10/2014 17:00	13.9		7.00	10.0	1	ug/L	MKD
Benzene	10	71-43-2	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	10	108-86-1	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	10	74-97-5	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	10	75-27-4	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	10	75-25-2	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	10	74-83-9	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	10	75-15-0	SW8260B	12/10/2014 17:00	12/10/2014 17:00	0.63	J	0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	10	56-23-5	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	10	108-90-7	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	10	75-00-3	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	10	67-66-3	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	10	74-87-3	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	10	156-59-2	SW8260B	12/10/2014 17:00	12/10/2014 17:00	0.87	J	0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	10	10061-01-5	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	10	124-48-1	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	10	74-95-3	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	10	75-71-8	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	10	108-20-3	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	10	100-41-4	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	10	637-92-3	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (24-28')

Laboratory Sample ID: 14L0150-10

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	10	87-68-3	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	10	74-88-4	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	10	98-82-8	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	10	179601-23-1	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	10	75-09-2	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	10	1634-04-4	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	10	91-20-3	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	10	104-51-8	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	10	103-65-1	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	10	95-47-6	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	10	135-98-8	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	10	100-42-5	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.20	1.00	1	ug/L	MKD
TAME	10	994-05-8	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		5.00	5.00	1	ug/L	MKD
TBA	10	75-65-0	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	10	98-06-6	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	10RE1	127-18-4	SW8260B	12/12/2014 12:59	12/12/2014 12:59	743		4.00	10.0	10	ug/L	MKD
Toluene	10	108-88-3	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	10	156-60-5	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	10	10061-02-6	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	10	79-01-6	SW8260B	12/10/2014 17:00	12/10/2014 17:00	3.39		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	10	75-69-4	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	10	108-05-4	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	10	75-01-4	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	10	1330-20-7	SW8260B	12/10/2014 17:00	12/10/2014 17:00	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (24-28')

Laboratory Sample ID: 14L0150-10

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	10	105 %	70-120	12/10/2014 17:00	12/10/2014 17:00							
Surr: 4-Bromofluorobenzene	10	91.7 %	75-120	12/10/2014 17:00	12/10/2014 17:00							
Surr: Dibromofluoromethane	10	99.9 %	80-119	12/10/2014 17:00	12/10/2014 17:00							
Surr: Toluene-d8	10	99.0 %	85-120	12/10/2014 17:00	12/10/2014 17:00							
Surr: 1,2-Dichloroethane-d4	10RE1	98.8 %	70-120	12/12/2014 12:59	12/12/2014 12:59							
Surr: 4-Bromofluorobenzene	10RE1	94.1 %	75-120	12/12/2014 12:59	12/12/2014 12:59							
Surr: Dibromofluoromethane	10RE1	97.1 %	80-119	12/12/2014 12:59	12/12/2014 12:59							
Surr: Toluene-d8	10RE1	98.2 %	85-120	12/12/2014 12:59	12/12/2014 12:59							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (8-12')

Laboratory Sample ID: 14L0150-11

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	11	630-20-6	SW8260B	12/10/2014 17:24	12/10/2014 17:24	8.14		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	11	71-55-6	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	11	79-34-5	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	11	79-00-5	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	11	75-34-3	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	11	75-35-4	SW8260B	12/10/2014 17:24	12/10/2014 17:24	1.84		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	11	563-58-6	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	11	87-61-6	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	11	96-18-4	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	11	120-82-1	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	11	95-63-6	SW8260B	12/10/2014 17:24	12/10/2014 17:24	11.3		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	11	96-12-8	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	11	106-93-4	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	11	95-50-1	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	11	107-06-2	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	11	78-87-5	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	11	108-67-8	SW8260B	12/10/2014 17:24	12/10/2014 17:24	3.24		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	11	541-73-1	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	11	142-28-9	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	11	106-46-7	SW8260B	12/10/2014 17:24	12/10/2014 17:24	0.47	J	0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	11	594-20-7	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	11	78-93-3	SW8260B	12/10/2014 17:24	12/10/2014 17:24	2.13	J	0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	11	95-49-8	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	11	591-78-6	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (8-12')

Laboratory Sample ID: 14L0150-11

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	11	106-43-4	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	11	99-87-6	SW8260B	12/10/2014 17:24	12/10/2014 17:24	1.12		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	11	108-10-1	SW8260B	12/10/2014 17:24	12/10/2014 17:24	0.93	J	0.30	10.0	1	ug/L	MKD
Acetone	11	67-64-1	SW8260B	12/10/2014 17:24	12/10/2014 17:24	17.4		7.00	10.0	1	ug/L	MKD
Benzene	11	71-43-2	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	11	108-86-1	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	11	74-97-5	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	11	75-27-4	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	11	75-25-2	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	11	74-83-9	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	11	75-15-0	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	11	56-23-5	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	11	108-90-7	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	11	75-00-3	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	11	67-66-3	SW8260B	12/10/2014 17:24	12/10/2014 17:24	0.63	J	0.40	1.00	1	ug/L	MKD
Chloromethane	11	74-87-3	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	11	156-59-2	SW8260B	12/10/2014 17:24	12/10/2014 17:24	157		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	11	10061-01-5	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	11	124-48-1	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	11	74-95-3	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	11	75-71-8	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	11	108-20-3	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	11	100-41-4	SW8260B	12/10/2014 17:24	12/10/2014 17:24	0.79	J	0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	11	637-92-3	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (8-12')

Laboratory Sample ID: 14L0150-11

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	11	87-68-3	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	11	74-88-4	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	11	98-82-8	SW8260B	12/10/2014 17:24	12/10/2014 17:24	0.58	J	0.20	1.00	1	ug/L	MKD
m+p-Xylenes	11	179601-23-1	SW8260B	12/10/2014 17:24	12/10/2014 17:24	3.96		0.50	2.00	1	ug/L	MKD
Methylene chloride	11	75-09-2	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	11	1634-04-4	SW8260B	12/10/2014 17:24	12/10/2014 17:24	1.16		0.40	1.00	1	ug/L	MKD
Naphthalene	11	91-20-3	SW8260B	12/10/2014 17:24	12/10/2014 17:24	3.52		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	11	104-51-8	SW8260B	12/10/2014 17:24	12/10/2014 17:24	0.76	J	0.30	1.00	1	ug/L	MKD
n-Propylbenzene	11	103-65-1	SW8260B	12/10/2014 17:24	12/10/2014 17:24	1.26		0.20	1.00	1	ug/L	MKD
o-Xylene	11	95-47-6	SW8260B	12/10/2014 17:24	12/10/2014 17:24	3.50		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	11	135-98-8	SW8260B	12/10/2014 17:24	12/10/2014 17:24	0.53	J	0.40	1.00	1	ug/L	MKD
Styrene	11	100-42-5	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.20	1.00	1	ug/L	MKD
TAME	11	994-05-8	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		5.00	5.00	1	ug/L	MKD
TBA	11	75-65-0	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	11	98-06-6	SW8260B	12/10/2014 17:24	12/10/2014 17:24	0.11	J	0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	11RE2	127-18-4	SW8260B	12/15/2014 14:56	12/15/2014 14:56	67100		400	1000	1000	ug/L	MKD
Toluene	11	108-88-3	SW8260B	12/10/2014 17:24	12/10/2014 17:24	0.59	J	0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	11	156-60-5	SW8260B	12/10/2014 17:24	12/10/2014 17:24	6.62		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	11	10061-02-6	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	11	79-01-6	SW8260B	12/10/2014 17:24	12/10/2014 17:24	225		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	11	75-69-4	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	11	108-05-4	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	11	75-01-4	SW8260B	12/10/2014 17:24	12/10/2014 17:24	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	11	1330-20-7	SW8260B	12/10/2014 17:24	12/10/2014 17:24	7.46		0.50	3.00	1	ug/L	MKD
Surr: 1,2-Dichloroethane-d4	11	107 %	70-120	12/10/2014 17:24	12/10/2014 17:24							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
Client Site I.D.: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT01-GW (8-12')

Laboratory Sample ID: 14L0150-11

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 4-Bromofluorobenzene	11	89.1 %	75-120	12/10/2014 17:24	12/10/2014 17:24							
Surr: Dibromofluoromethane	11	98.1 %	80-119	12/10/2014 17:24	12/10/2014 17:24							
Surr: Toluene-d8	11	99.9 %	85-120	12/10/2014 17:24	12/10/2014 17:24							
Surr: 1,2-Dichloroethane-d4	11RE2	101 %	70-120	12/15/2014 14:56	12/15/2014 14:56							
Surr: 4-Bromofluorobenzene	11RE2	93.1 %	75-120	12/15/2014 14:56	12/15/2014 14:56							
Surr: Dibromofluoromethane	11RE2	101 %	80-119	12/15/2014 14:56	12/15/2014 14:56							
Surr: Toluene-d8	11RE2	100 %	85-120	12/15/2014 14:56	12/15/2014 14:56							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT10-GW (52-56')

Laboratory Sample ID: 14L0150-12

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	12	630-20-6	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	12	71-55-6	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	12	79-34-5	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	12	79-00-5	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	12	75-34-3	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	12	75-35-4	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	12	563-58-6	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	12	87-61-6	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	12	96-18-4	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	12	120-82-1	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	12	95-63-6	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	12	96-12-8	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	12	106-93-4	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	12	95-50-1	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	12	107-06-2	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	12	78-87-5	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	12	108-67-8	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	12	541-73-1	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	12	142-28-9	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	12	106-46-7	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	12	594-20-7	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	12	78-93-3	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	12	95-49-8	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	12	591-78-6	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT10-GW (52-56')

Laboratory Sample ID: 14L0150-12

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	12	106-43-4	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	12	99-87-6	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	12	108-10-1	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	12	67-64-1	SW8260B	12/10/2014 17:49	12/10/2014 17:49	25.7		7.00	10.0	1	ug/L	MKD
Benzene	12	71-43-2	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	12	108-86-1	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	12	74-97-5	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	12	75-27-4	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	12	75-25-2	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	12	74-83-9	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	12	75-15-0	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	12	56-23-5	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	12	108-90-7	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	12	75-00-3	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	12	67-66-3	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	12	74-87-3	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	12	156-59-2	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	12	10061-01-5	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	12	124-48-1	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	12	74-95-3	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	12	75-71-8	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	12	108-20-3	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	12	100-41-4	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	12	637-92-3	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT10-GW (52-56')

Laboratory Sample ID: 14L0150-12

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	12	87-68-3	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	12	74-88-4	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	12	98-82-8	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	12	179601-23-1	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	12	75-09-2	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	12	1634-04-4	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	12	91-20-3	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	12	104-51-8	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	12	103-65-1	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	12	95-47-6	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	12	135-98-8	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	12	100-42-5	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.20	1.00	1	ug/L	MKD
TAME	12	994-05-8	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		5.00	5.00	1	ug/L	MKD
TBA	12	75-65-0	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	12	98-06-6	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	12RE1	127-18-4	SW8260B	12/12/2014 12:10	12/12/2014 12:10	11.3		0.40	1.00	1	ug/L	MKD
Toluene	12	108-88-3	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	12	156-60-5	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	12	10061-02-6	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	12	79-01-6	SW8260B	12/10/2014 17:49	12/10/2014 17:49	0.36	J	0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	12	75-69-4	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	12	108-05-4	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	12	75-01-4	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	12	1330-20-7	SW8260B	12/10/2014 17:49	12/10/2014 17:49	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
Client Site I.D.: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT10-GW (52-56')

Laboratory Sample ID: 14L0150-12

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	12	101 %	70-120	12/10/2014 17:49	12/10/2014 17:49							
Surr: 4-Bromofluorobenzene	12	94.9 %	75-120	12/10/2014 17:49	12/10/2014 17:49							
Surr: Dibromofluoromethane	12	96.6 %	80-119	12/10/2014 17:49	12/10/2014 17:49							
Surr: Toluene-d8	12	99.5 %	85-120	12/10/2014 17:49	12/10/2014 17:49							
Surr: 1,2-Dichloroethane-d4	12RE1	102 %	70-120	12/12/2014 12:10	12/12/2014 12:10							
Surr: 4-Bromofluorobenzene	12RE1	93.7 %	75-120	12/12/2014 12:10	12/12/2014 12:10							
Surr: Dibromofluoromethane	12RE1	96.0 %	80-119	12/12/2014 12:10	12/12/2014 12:10							
Surr: Toluene-d8	12RE1	98.4 %	85-120	12/12/2014 12:10	12/12/2014 12:10							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT10-GW (39-43')

Laboratory Sample ID: 14L0150-13

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	13	630-20-6	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	13	71-55-6	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	13	79-34-5	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	13	79-00-5	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	13	75-34-3	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	13	75-35-4	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	13	563-58-6	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	13	87-61-6	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	13	96-18-4	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	13	120-82-1	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	13	95-63-6	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	13	96-12-8	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	13	106-93-4	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	13	95-50-1	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	13	107-06-2	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	13	78-87-5	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	13	108-67-8	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	13	541-73-1	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	13	142-28-9	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	13	106-46-7	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	13	594-20-7	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	13	78-93-3	SW8260B	12/10/2014 18:13	12/10/2014 18:13	2.91	J	0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	13	95-49-8	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	13	591-78-6	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT10-GW (39-43')

Laboratory Sample ID: 14L0150-13

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	13	106-43-4	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	13	99-87-6	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	13	108-10-1	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	13	67-64-1	SW8260B	12/10/2014 18:13	12/10/2014 18:13	21.3		7.00	10.0	1	ug/L	MKD
Benzene	13	71-43-2	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	13	108-86-1	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	13	74-97-5	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	13	75-27-4	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	13	75-25-2	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	13	74-83-9	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	13	75-15-0	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	13	56-23-5	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	13	108-90-7	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	13	75-00-3	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	13	67-66-3	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	13	74-87-3	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	13	156-59-2	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	13	10061-01-5	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	13	124-48-1	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	13	74-95-3	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	13	75-71-8	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	13	108-20-3	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	13	100-41-4	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	13	637-92-3	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT10-GW (39-43')

Laboratory Sample ID: 14L0150-13

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	13	87-68-3	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	13	74-88-4	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	13	98-82-8	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	13	179601-23-1	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	13	75-09-2	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	13	1634-04-4	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	13	91-20-3	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	13	104-51-8	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	13	103-65-1	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	13	95-47-6	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	13	135-98-8	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	13	100-42-5	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.20	1.00	1	ug/L	MKD
TAME	13	994-05-8	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		5.00	5.00	1	ug/L	MKD
TBA	13	75-65-0	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	13	98-06-6	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	13	127-18-4	SW8260B	12/10/2014 18:13	12/10/2014 18:13	108		0.40	1.00	1	ug/L	MKD
Toluene	13	108-88-3	SW8260B	12/10/2014 18:13	12/10/2014 18:13	0.41	J	0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	13	156-60-5	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	13	10061-02-6	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	13	79-01-6	SW8260B	12/10/2014 18:13	12/10/2014 18:13	0.33	J	0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	13	75-69-4	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	13	108-05-4	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	13	75-01-4	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	13	1330-20-7	SW8260B	12/10/2014 18:13	12/10/2014 18:13	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: **MiHPT10-GW (39-43')**

Laboratory Sample ID: **14L0150-13**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	13	103 %	70-120	12/10/2014 18:13	12/10/2014 18:13							
Surr: 4-Bromofluorobenzene	13	91.9 %	75-120	12/10/2014 18:13	12/10/2014 18:13							
Surr: Dibromofluoromethane	13	97.1 %	80-119	12/10/2014 18:13	12/10/2014 18:13							
Surr: Toluene-d8	13	99.6 %	85-120	12/10/2014 18:13	12/10/2014 18:13							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT10-GW (29-33')

Laboratory Sample ID: 14L0150-14

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	14	630-20-6	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	14	71-55-6	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	14	79-34-5	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	14	79-00-5	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	14	75-34-3	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	14	75-35-4	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	14	563-58-6	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	14	87-61-6	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	14	96-18-4	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	14	120-82-1	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	14	95-63-6	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	14	96-12-8	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	14	106-93-4	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	14	95-50-1	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	14	107-06-2	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	14	78-87-5	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	14	108-67-8	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	14	541-73-1	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	14	142-28-9	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	14	106-46-7	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	14	594-20-7	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	14	78-93-3	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	14	95-49-8	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	14	591-78-6	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT10-GW (29-33')

Laboratory Sample ID: 14L0150-14

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	14	106-43-4	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	14	99-87-6	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	14	108-10-1	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	14	67-64-1	SW8260B	12/11/2014 00:22	12/11/2014 00:22	8.77	J	7.00	10.0	1	ug/L	MKD
Benzene	14	71-43-2	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	14	108-86-1	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	14	74-97-5	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	14	75-27-4	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	14	75-25-2	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	14	74-83-9	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	14	75-15-0	SW8260B	12/11/2014 00:22	12/11/2014 00:22	1.47	J	0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	14	56-23-5	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	14	108-90-7	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	14RE1	75-00-3	SW8260B	12/11/2014 17:49	12/11/2014 17:49	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	14	67-66-3	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	14	74-87-3	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	14	156-59-2	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	14	10061-01-5	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	14	124-48-1	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	14	74-95-3	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	14	75-71-8	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	14	108-20-3	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	14	100-41-4	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	14	637-92-3	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: **MiHPT10-GW (29-33')**

Laboratory Sample ID: **14L0150-14**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	14	87-68-3	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	14	74-88-4	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	14	98-82-8	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	14	179601-23-1	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	14	75-09-2	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	14	1634-04-4	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	14	91-20-3	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	14	104-51-8	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	14	103-65-1	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	14	95-47-6	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	14	135-98-8	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	14	100-42-5	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.20	1.00	1	ug/L	MKD
TAME	14	994-05-8	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		5.00	5.00	1	ug/L	MKD
TBA	14	75-65-0	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	14	98-06-6	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	14	127-18-4	SW8260B	12/11/2014 00:22	12/11/2014 00:22	3.94		0.40	1.00	1	ug/L	MKD
Toluene	14	108-88-3	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	14	156-60-5	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	14	10061-02-6	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	14	79-01-6	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	14	75-69-4	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	14	108-05-4	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	14	75-01-4	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	14	1330-20-7	SW8260B	12/11/2014 00:22	12/11/2014 00:22	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
Client Site I.D.: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT10-GW (29-33')

Laboratory Sample ID: 14L0150-14

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	14	98.2 %	70-120	12/11/2014 00:22	12/11/2014 00:22							
Surr: 4-Bromofluorobenzene	14	94.4 %	75-120	12/11/2014 00:22	12/11/2014 00:22							
Surr: Dibromofluoromethane	14	94.1 %	80-119	12/11/2014 00:22	12/11/2014 00:22							
Surr: Toluene-d8	14	99.2 %	85-120	12/11/2014 00:22	12/11/2014 00:22							
Surr: 1,2-Dichloroethane-d4	14RE1	97.2 %	70-120	12/11/2014 17:49	12/11/2014 17:49							
Surr: 4-Bromofluorobenzene	14RE1	93.6 %	75-120	12/11/2014 17:49	12/11/2014 17:49							
Surr: Dibromofluoromethane	14RE1	96.9 %	80-119	12/11/2014 17:49	12/11/2014 17:49							
Surr: Toluene-d8	14RE1	100 %	85-120	12/11/2014 17:49	12/11/2014 17:49							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT07-GW (52-56')

Laboratory Sample ID: 14L0150-15

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	15	630-20-6	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	15	71-55-6	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	15	79-34-5	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	15	79-00-5	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	15	75-34-3	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	15	75-35-4	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	15	563-58-6	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	15	87-61-6	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	15	96-18-4	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	15	120-82-1	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	15	95-63-6	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	15	96-12-8	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	15	106-93-4	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	15	95-50-1	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	15	107-06-2	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	15	78-87-5	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	15	108-67-8	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	15	541-73-1	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	15	142-28-9	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	15	106-46-7	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	15	594-20-7	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	15	78-93-3	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	15	95-49-8	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	15	591-78-6	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT07-GW (52-56')

Laboratory Sample ID: 14L0150-15

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	15	106-43-4	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	15	99-87-6	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	15	108-10-1	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	15	67-64-1	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		7.00	10.0	1	ug/L	MKD
Benzene	15	71-43-2	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	15	108-86-1	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	15	74-97-5	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	15	75-27-4	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	15	75-25-2	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	15	74-83-9	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	15	75-15-0	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	15	56-23-5	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	15	108-90-7	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	15RE1	75-00-3	SW8260B	12/11/2014 18:13	12/11/2014 18:13	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	15	67-66-3	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	15	74-87-3	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	15	156-59-2	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	15	10061-01-5	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	15	124-48-1	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	15	74-95-3	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	15	75-71-8	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	15	108-20-3	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	15	100-41-4	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	15	637-92-3	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT07-GW (52-56')

Laboratory Sample ID: 14L0150-15

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	15	87-68-3	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	15	74-88-4	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	15	98-82-8	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	15	179601-23-1	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	15	75-09-2	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	15	1634-04-4	SW8260B	12/11/2014 00:47	12/11/2014 00:47	8.00		0.40	1.00	1	ug/L	MKD
Naphthalene	15	91-20-3	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	15	104-51-8	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	15	103-65-1	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	15	95-47-6	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	15	135-98-8	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	15	100-42-5	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.20	1.00	1	ug/L	MKD
TAME	15	994-05-8	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		5.00	5.00	1	ug/L	MKD
TBA	15	75-65-0	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	15	98-06-6	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	15	127-18-4	SW8260B	12/11/2014 00:47	12/11/2014 00:47	1.58		0.40	1.00	1	ug/L	MKD
Toluene	15	108-88-3	SW8260B	12/11/2014 00:47	12/11/2014 00:47	0.42	J	0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	15	156-60-5	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	15	10061-02-6	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	15	79-01-6	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	15	75-69-4	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	15	108-05-4	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	15	75-01-4	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	15	1330-20-7	SW8260B	12/11/2014 00:47	12/11/2014 00:47	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
Client Site I.D.: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT07-GW (52-56')

Laboratory Sample ID: 14L0150-15

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	15	100 %	70-120	12/11/2014 00:47	12/11/2014 00:47							
Surr: 4-Bromofluorobenzene	15	94.2 %	75-120	12/11/2014 00:47	12/11/2014 00:47							
Surr: Dibromofluoromethane	15	96.3 %	80-119	12/11/2014 00:47	12/11/2014 00:47							
Surr: Toluene-d8	15	100 %	85-120	12/11/2014 00:47	12/11/2014 00:47							
Surr: 1,2-Dichloroethane-d4	15RE1	99.0 %	70-120	12/11/2014 18:13	12/11/2014 18:13							
Surr: 4-Bromofluorobenzene	15RE1	94.7 %	75-120	12/11/2014 18:13	12/11/2014 18:13							
Surr: Dibromofluoromethane	15RE1	97.2 %	80-119	12/11/2014 18:13	12/11/2014 18:13							
Surr: Toluene-d8	15RE1	101 %	85-120	12/11/2014 18:13	12/11/2014 18:13							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT07-GW (39-43')

Laboratory Sample ID: 14L0150-16

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	16	630-20-6	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	16	71-55-6	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	16	79-34-5	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	16	79-00-5	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	16	75-34-3	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	16	75-35-4	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	16	563-58-6	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	16	87-61-6	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	16	96-18-4	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	16	120-82-1	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	16	95-63-6	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	16	96-12-8	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	16	106-93-4	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	16	95-50-1	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	16	107-06-2	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	16	78-87-5	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	16	108-67-8	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	16	541-73-1	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	16	142-28-9	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	16	106-46-7	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	16	594-20-7	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	16	78-93-3	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	16	95-49-8	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	16	591-78-6	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT07-GW (39-43')

Laboratory Sample ID: 14L0150-16

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	16	106-43-4	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	16	99-87-6	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	16	108-10-1	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	16	67-64-1	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		7.00	10.0	1	ug/L	MKD
Benzene	16	71-43-2	SW8260B	12/11/2014 01:12	12/11/2014 01:12	0.44	J	0.30	1.00	1	ug/L	MKD
Bromobenzene	16	108-86-1	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	16	74-97-5	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	16	75-27-4	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	16	75-25-2	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	16	74-83-9	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	16	75-15-0	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	16	56-23-5	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	16	108-90-7	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	16RE1	75-00-3	SW8260B	12/11/2014 18:38	12/11/2014 18:38	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	16	67-66-3	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	16	74-87-3	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	16	156-59-2	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	16	10061-01-5	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	16	124-48-1	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	16	74-95-3	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	16	75-71-8	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	16	108-20-3	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	16	100-41-4	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	16	637-92-3	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: **MiHPT07-GW (39-43')**

Laboratory Sample ID: **14L0150-16**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	16	87-68-3	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	16	74-88-4	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	16	98-82-8	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	16	179601-23-1	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	16	75-09-2	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	16	1634-04-4	SW8260B	12/11/2014 01:12	12/11/2014 01:12	4.32		0.40	1.00	1	ug/L	MKD
Naphthalene	16	91-20-3	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	16	104-51-8	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	16	103-65-1	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	16	95-47-6	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	16	135-98-8	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	16	100-42-5	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.20	1.00	1	ug/L	MKD
TAME	16	994-05-8	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		5.00	5.00	1	ug/L	MKD
TBA	16	75-65-0	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	16	98-06-6	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	16	127-18-4	SW8260B	12/11/2014 01:12	12/11/2014 01:12	2.84		0.40	1.00	1	ug/L	MKD
Toluene	16	108-88-3	SW8260B	12/11/2014 01:12	12/11/2014 01:12	0.62	J	0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	16	156-60-5	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	16	10061-02-6	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	16	79-01-6	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	16	75-69-4	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	16	108-05-4	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	16	75-01-4	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	16	1330-20-7	SW8260B	12/11/2014 01:12	12/11/2014 01:12	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
Client Site I.D.: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT07-GW (39-43')

Laboratory Sample ID: 14L0150-16

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	16	103 %	70-120	12/11/2014 01:12	12/11/2014 01:12							
Surr: 4-Bromofluorobenzene	16	94.4 %	75-120	12/11/2014 01:12	12/11/2014 01:12							
Surr: Dibromofluoromethane	16	96.5 %	80-119	12/11/2014 01:12	12/11/2014 01:12							
Surr: Toluene-d8	16	101 %	85-120	12/11/2014 01:12	12/11/2014 01:12							
Surr: 1,2-Dichloroethane-d4	16RE1	102 %	70-120	12/11/2014 18:38	12/11/2014 18:38							
Surr: 4-Bromofluorobenzene	16RE1	94.5 %	75-120	12/11/2014 18:38	12/11/2014 18:38							
Surr: Dibromofluoromethane	16RE1	94.6 %	80-119	12/11/2014 18:38	12/11/2014 18:38							
Surr: Toluene-d8	16RE1	100 %	85-120	12/11/2014 18:38	12/11/2014 18:38							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT07-GW (29-33')

Laboratory Sample ID: 14L0150-17

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	17	630-20-6	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	17	71-55-6	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	17	79-34-5	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	17	79-00-5	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	17	75-34-3	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	17	75-35-4	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	17	563-58-6	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	17	87-61-6	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	17	96-18-4	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	17	120-82-1	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	17	95-63-6	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	17	96-12-8	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	17	106-93-4	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	17	95-50-1	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	17	107-06-2	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	17	78-87-5	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	17	108-67-8	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	17	541-73-1	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	17	142-28-9	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	17	106-46-7	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	17	594-20-7	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	17	78-93-3	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	17	95-49-8	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	17	591-78-6	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT07-GW (29-33')

Laboratory Sample ID: 14L0150-17

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	17	106-43-4	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	17	99-87-6	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	17	108-10-1	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	17	67-64-1	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		7.00	10.0	1	ug/L	MKD
Benzene	17	71-43-2	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	17	108-86-1	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	17	74-97-5	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	17	75-27-4	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	17	75-25-2	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	17	74-83-9	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	17	75-15-0	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	17	56-23-5	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	17	108-90-7	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	17RE1	75-00-3	SW8260B	12/11/2014 19:03	12/11/2014 19:03	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	17	67-66-3	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	17	74-87-3	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	17	156-59-2	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	17	10061-01-5	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	17	124-48-1	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	17	74-95-3	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	17	75-71-8	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	17	108-20-3	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	17	100-41-4	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	17	637-92-3	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT07-GW (29-33')

Laboratory Sample ID: 14L0150-17

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	17	87-68-3	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	17	74-88-4	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	17	98-82-8	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	17	179601-23-1	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	17	75-09-2	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	17	1634-04-4	SW8260B	12/11/2014 01:37	12/11/2014 01:37	0.57	J	0.40	1.00	1	ug/L	MKD
Naphthalene	17	91-20-3	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	17	104-51-8	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	17	103-65-1	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	17	95-47-6	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	17	135-98-8	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	17	100-42-5	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.20	1.00	1	ug/L	MKD
TAME	17	994-05-8	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		5.00	5.00	1	ug/L	MKD
TBA	17	75-65-0	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	17	98-06-6	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	17	127-18-4	SW8260B	12/11/2014 01:37	12/11/2014 01:37	0.69	J	0.40	1.00	1	ug/L	MKD
Toluene	17	108-88-3	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	17	156-60-5	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	17	10061-02-6	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	17	79-01-6	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	17	75-69-4	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	17	108-05-4	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	17	75-01-4	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	17	1330-20-7	SW8260B	12/11/2014 01:37	12/11/2014 01:37	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
Client Site I.D.: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT07-GW (29-33')

Laboratory Sample ID: 14L0150-17

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	17	98.3 %	70-120	12/11/2014 01:37	12/11/2014 01:37							
Surr: 4-Bromofluorobenzene	17	92.6 %	75-120	12/11/2014 01:37	12/11/2014 01:37							
Surr: Dibromofluoromethane	17	96.8 %	80-119	12/11/2014 01:37	12/11/2014 01:37							
Surr: Toluene-d8	17	99.5 %	85-120	12/11/2014 01:37	12/11/2014 01:37							
Surr: 1,2-Dichloroethane-d4	17RE1	101 %	70-120	12/11/2014 19:03	12/11/2014 19:03							
Surr: 4-Bromofluorobenzene	17RE1	94.5 %	75-120	12/11/2014 19:03	12/11/2014 19:03							
Surr: Dibromofluoromethane	17RE1	97.0 %	80-119	12/11/2014 19:03	12/11/2014 19:03							
Surr: Toluene-d8	17RE1	102 %	85-120	12/11/2014 19:03	12/11/2014 19:03							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT09-GW (52-56')

Laboratory Sample ID: 14L0150-18

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	18	630-20-6	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	18	71-55-6	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	18	79-34-5	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	18	79-00-5	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	18	75-34-3	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	18	75-35-4	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	18	563-58-6	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	18	87-61-6	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	18	96-18-4	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	18	120-82-1	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	18	95-63-6	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	18	96-12-8	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	18	106-93-4	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	18	95-50-1	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	18	107-06-2	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	18	78-87-5	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	18	108-67-8	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	18	541-73-1	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	18	142-28-9	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	18	106-46-7	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	18	594-20-7	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	18	78-93-3	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	18	95-49-8	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	18	591-78-6	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT09-GW (52-56')

Laboratory Sample ID: 14L0150-18

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	18	106-43-4	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	18	99-87-6	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	18	108-10-1	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	18	67-64-1	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		7.00	10.0	1	ug/L	MKD
Benzene	18	71-43-2	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	18	108-86-1	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	18	74-97-5	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	18	75-27-4	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	18	75-25-2	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	18	74-83-9	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	18	75-15-0	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	18	56-23-5	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	18	108-90-7	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	18RE1	75-00-3	SW8260B	12/11/2014 19:27	12/11/2014 19:27	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	18	67-66-3	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	18	74-87-3	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	18	156-59-2	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	18	10061-01-5	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	18	124-48-1	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	18	74-95-3	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	18	75-71-8	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	18	108-20-3	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	18	100-41-4	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	18	637-92-3	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: **MiHPT09-GW (52-56')**

Laboratory Sample ID: **14L0150-18**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	18	87-68-3	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	18	74-88-4	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	18	98-82-8	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	18	179601-23-1	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	18	75-09-2	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	18	1634-04-4	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	18	91-20-3	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	18	104-51-8	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	18	103-65-1	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	18	95-47-6	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	18	135-98-8	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	18	100-42-5	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.20	1.00	1	ug/L	MKD
TAME	18	994-05-8	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		5.00	5.00	1	ug/L	MKD
TBA	18	75-65-0	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	18	98-06-6	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	18	127-18-4	SW8260B	12/11/2014 02:01	12/11/2014 02:01	1.95		0.40	1.00	1	ug/L	MKD
Toluene	18	108-88-3	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	18	156-60-5	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	18	10061-02-6	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	18	79-01-6	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	18	75-69-4	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	18	108-05-4	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	18	75-01-4	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	18	1330-20-7	SW8260B	12/11/2014 02:01	12/11/2014 02:01	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
Client Site I.D.: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT09-GW (52-56')

Laboratory Sample ID: 14L0150-18

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	18	101 %	70-120	12/11/2014 02:01	12/11/2014 02:01							
Surr: 4-Bromofluorobenzene	18	95.3 %	75-120	12/11/2014 02:01	12/11/2014 02:01							
Surr: Dibromofluoromethane	18	98.5 %	80-119	12/11/2014 02:01	12/11/2014 02:01							
Surr: Toluene-d8	18	99.6 %	85-120	12/11/2014 02:01	12/11/2014 02:01							
Surr: 1,2-Dichloroethane-d4	18RE1	97.8 %	70-120	12/11/2014 19:27	12/11/2014 19:27							
Surr: 4-Bromofluorobenzene	18RE1	94.6 %	75-120	12/11/2014 19:27	12/11/2014 19:27							
Surr: Dibromofluoromethane	18RE1	97.8 %	80-119	12/11/2014 19:27	12/11/2014 19:27							
Surr: Toluene-d8	18RE1	100 %	85-120	12/11/2014 19:27	12/11/2014 19:27							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT09-GW (39-43')

Laboratory Sample ID: 14L0150-19

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	19	630-20-6	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	19	71-55-6	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	19	79-34-5	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	19	79-00-5	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	19	75-34-3	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	19	75-35-4	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	19	563-58-6	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	19	87-61-6	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	19	96-18-4	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	19	120-82-1	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	19	95-63-6	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	19	96-12-8	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	19	106-93-4	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	19	95-50-1	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	19	107-06-2	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	19	78-87-5	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	19	108-67-8	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	19	541-73-1	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	19	142-28-9	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	19	106-46-7	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	19	594-20-7	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	19	78-93-3	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	19	95-49-8	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	19	591-78-6	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT09-GW (39-43')

Laboratory Sample ID: 14L0150-19

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	19	106-43-4	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	19	99-87-6	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	19	108-10-1	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	19	67-64-1	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		7.00	10.0	1	ug/L	MKD
Benzene	19	71-43-2	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	19	108-86-1	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	19	74-97-5	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	19	75-27-4	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	19	75-25-2	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	19	74-83-9	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	19	75-15-0	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	19	56-23-5	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	19	108-90-7	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	19RE1	75-00-3	SW8260B	12/11/2014 19:52	12/11/2014 19:52	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	19	67-66-3	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	19	74-87-3	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	19	156-59-2	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	19	10061-01-5	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	19	124-48-1	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	19	74-95-3	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	19	75-71-8	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	19	108-20-3	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	19	100-41-4	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	19	637-92-3	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT09-GW (39-43')

Laboratory Sample ID: 14L0150-19

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	19	87-68-3	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	19	74-88-4	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	19	98-82-8	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	19	179601-23-1	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	19	75-09-2	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	19	1634-04-4	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	19	91-20-3	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	19	104-51-8	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	19	103-65-1	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	19	95-47-6	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	19	135-98-8	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	19	100-42-5	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.20	1.00	1	ug/L	MKD
TAME	19	994-05-8	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		5.00	5.00	1	ug/L	MKD
TBA	19	75-65-0	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	19	98-06-6	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	19	127-18-4	SW8260B	12/11/2014 02:26	12/11/2014 02:26	1.13		0.40	1.00	1	ug/L	MKD
Toluene	19	108-88-3	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	19	156-60-5	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	19	10061-02-6	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	19	79-01-6	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	19	75-69-4	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	19	108-05-4	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	19	75-01-4	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	19	1330-20-7	SW8260B	12/11/2014 02:26	12/11/2014 02:26	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
Client Site I.D.: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT09-GW (39-43')

Laboratory Sample ID: 14L0150-19

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	19	102 %	70-120	12/11/2014 02:26	12/11/2014 02:26							
Surr: 4-Bromofluorobenzene	19	92.4 %	75-120	12/11/2014 02:26	12/11/2014 02:26							
Surr: Dibromofluoromethane	19	94.8 %	80-119	12/11/2014 02:26	12/11/2014 02:26							
Surr: Toluene-d8	19	102 %	85-120	12/11/2014 02:26	12/11/2014 02:26							
Surr: 1,2-Dichloroethane-d4	19RE1	102 %	70-120	12/11/2014 19:52	12/11/2014 19:52							
Surr: 4-Bromofluorobenzene	19RE1	94.3 %	75-120	12/11/2014 19:52	12/11/2014 19:52							
Surr: Dibromofluoromethane	19RE1	99.3 %	80-119	12/11/2014 19:52	12/11/2014 19:52							
Surr: Toluene-d8	19RE1	99.0 %	85-120	12/11/2014 19:52	12/11/2014 19:52							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT09-GW (29-33')

Laboratory Sample ID: 14L0150-20

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	20	630-20-6	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	20	71-55-6	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	20	79-34-5	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	20	79-00-5	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	20	75-34-3	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	20	75-35-4	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	20	563-58-6	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	20	87-61-6	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	20	96-18-4	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	20	120-82-1	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	20	95-63-6	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	20	96-12-8	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	20	106-93-4	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	20	95-50-1	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	20	107-06-2	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	20	78-87-5	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	20	108-67-8	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	20	541-73-1	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	20	142-28-9	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	20	106-46-7	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	20	594-20-7	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	20	78-93-3	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	20	95-49-8	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	20	591-78-6	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: **MiHPT09-GW (29-33')**

Laboratory Sample ID: **14L0150-20**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	20	106-43-4	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	20	99-87-6	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	20	108-10-1	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	20	67-64-1	SW8260B	12/11/2014 02:51	12/11/2014 02:51	10.4		7.00	10.0	1	ug/L	MKD
Benzene	20	71-43-2	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	20	108-86-1	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	20	74-97-5	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	20	75-27-4	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	20	75-25-2	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	20	74-83-9	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	20	75-15-0	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	20	56-23-5	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	20	108-90-7	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	20RE1	75-00-3	SW8260B	12/11/2014 20:16	12/11/2014 20:16	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	20	67-66-3	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	20	74-87-3	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	20	156-59-2	SW8260B	12/11/2014 02:51	12/11/2014 02:51	1.09		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	20	10061-01-5	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	20	124-48-1	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	20	74-95-3	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	20	75-71-8	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	20	108-20-3	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	20	100-41-4	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	20	637-92-3	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT09-GW (29-33')

Laboratory Sample ID: 14L0150-20

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	20	87-68-3	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	20	74-88-4	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	20	98-82-8	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	20	179601-23-1	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	20	75-09-2	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	20	1634-04-4	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	20	91-20-3	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	20	104-51-8	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	20	103-65-1	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	20	95-47-6	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	20	135-98-8	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	20	100-42-5	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.20	1.00	1	ug/L	MKD
TAME	20	994-05-8	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		5.00	5.00	1	ug/L	MKD
TBA	20	75-65-0	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	20	98-06-6	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	20	127-18-4	SW8260B	12/11/2014 02:51	12/11/2014 02:51	5.33		0.40	1.00	1	ug/L	MKD
Toluene	20	108-88-3	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	20	156-60-5	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	20	10061-02-6	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	20	79-01-6	SW8260B	12/11/2014 02:51	12/11/2014 02:51	0.71	J	0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	20	75-69-4	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	20	108-05-4	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	20	75-01-4	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	20	1330-20-7	SW8260B	12/11/2014 02:51	12/11/2014 02:51	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
Client Site I.D.: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT09-GW (29-33')

Laboratory Sample ID: 14L0150-20

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	20	101 %	70-120	12/11/2014 02:51	12/11/2014 02:51							
Surr: 4-Bromofluorobenzene	20	92.2 %	75-120	12/11/2014 02:51	12/11/2014 02:51							
Surr: Dibromofluoromethane	20	96.2 %	80-119	12/11/2014 02:51	12/11/2014 02:51							
Surr: Toluene-d8	20	102 %	85-120	12/11/2014 02:51	12/11/2014 02:51							
Surr: 1,2-Dichloroethane-d4	20RE1	104 %	70-120	12/11/2014 20:16	12/11/2014 20:16							
Surr: 4-Bromofluorobenzene	20RE1	94.0 %	75-120	12/11/2014 20:16	12/11/2014 20:16							
Surr: Dibromofluoromethane	20RE1	99.8 %	80-119	12/11/2014 20:16	12/11/2014 20:16							
Surr: Toluene-d8	20RE1	99.6 %	85-120	12/11/2014 20:16	12/11/2014 20:16							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT09-GW (18-22')

Laboratory Sample ID: 14L0150-21

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	21	630-20-6	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	21	71-55-6	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	21	79-34-5	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	21	79-00-5	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	21	75-34-3	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	21	75-35-4	SW8260B	12/11/2014 03:15	12/11/2014 03:15	1.09		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	21	563-58-6	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	21	87-61-6	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	21	96-18-4	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	21	120-82-1	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	21	95-63-6	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	21	96-12-8	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	21	106-93-4	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	21	95-50-1	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	21	107-06-2	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	21	78-87-5	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	21	108-67-8	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	21	541-73-1	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	21	142-28-9	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	21	106-46-7	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	21	594-20-7	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	21	78-93-3	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	21	95-49-8	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	21	591-78-6	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: **MiHPT09-GW (18-22')**

Laboratory Sample ID: **14L0150-21**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	21	106-43-4	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	21	99-87-6	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	21	108-10-1	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	21	67-64-1	SW8260B	12/11/2014 03:15	12/11/2014 03:15	20.0		7.00	10.0	1	ug/L	MKD
Benzene	21	71-43-2	SW8260B	12/11/2014 03:15	12/11/2014 03:15	0.72	J	0.30	1.00	1	ug/L	MKD
Bromobenzene	21	108-86-1	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	21	74-97-5	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	21	75-27-4	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	21	75-25-2	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	21	74-83-9	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	21	75-15-0	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	21	56-23-5	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	21	108-90-7	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	21RE2	75-00-3	SW8260B	12/11/2014 21:31	12/11/2014 21:31	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	21	67-66-3	SW8260B	12/11/2014 03:15	12/11/2014 03:15	1.15		0.40	1.00	1	ug/L	MKD
Chloromethane	21	74-87-3	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	21	156-59-2	SW8260B	12/11/2014 03:15	12/11/2014 03:15	323		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	21	10061-01-5	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	21	124-48-1	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	21	74-95-3	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	21	75-71-8	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	21	108-20-3	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	21	100-41-4	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	21	637-92-3	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT09-GW (18-22')

Laboratory Sample ID: 14L0150-21

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	21	87-68-3	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	21	74-88-4	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	21	98-82-8	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	21	179601-23-1	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	21	75-09-2	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	21	1634-04-4	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	21	91-20-3	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	21	104-51-8	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	21	103-65-1	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	21	95-47-6	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	21	135-98-8	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	21	100-42-5	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.20	1.00	1	ug/L	MKD
TAME	21	994-05-8	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		5.00	5.00	1	ug/L	MKD
TBA	21	75-65-0	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	21	98-06-6	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	21RE1	127-18-4	SW8260B	12/11/2014 20:41	12/11/2014 20:41	1340		4.00	10.0	10	ug/L	MKD
Toluene	21	108-88-3	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	21	156-60-5	SW8260B	12/11/2014 03:15	12/11/2014 03:15	2.03		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	21	10061-02-6	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	21	79-01-6	SW8260B	12/11/2014 03:15	12/11/2014 03:15	112		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	21	75-69-4	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	21	108-05-4	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	21	75-01-4	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	21	1330-20-7	SW8260B	12/11/2014 03:15	12/11/2014 03:15	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
Client Site I.D.: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT09-GW (18-22')

Laboratory Sample ID: 14L0150-21

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	21	103 %	70-120	12/11/2014 03:15	12/11/2014 03:15							
Surr: 4-Bromofluorobenzene	21	93.9 %	75-120	12/11/2014 03:15	12/11/2014 03:15							
Surr: Dibromofluoromethane	21	100 %	80-119	12/11/2014 03:15	12/11/2014 03:15							
Surr: Toluene-d8	21	97.3 %	85-120	12/11/2014 03:15	12/11/2014 03:15							
Surr: 1,2-Dichloroethane-d4	21RE1	100 %	70-120	12/11/2014 20:41	12/11/2014 20:41							
Surr: 4-Bromofluorobenzene	21RE1	94.6 %	75-120	12/11/2014 20:41	12/11/2014 20:41							
Surr: Dibromofluoromethane	21RE1	96.5 %	80-119	12/11/2014 20:41	12/11/2014 20:41							
Surr: Toluene-d8	21RE1	99.9 %	85-120	12/11/2014 20:41	12/11/2014 20:41							
Surr: 1,2-Dichloroethane-d4	21RE2	101 %	70-120	12/11/2014 21:31	12/11/2014 21:31							
Surr: 4-Bromofluorobenzene	21RE2	94.2 %	75-120	12/11/2014 21:31	12/11/2014 21:31							
Surr: Dibromofluoromethane	21RE2	96.5 %	80-119	12/11/2014 21:31	12/11/2014 21:31							
Surr: Toluene-d8	21RE2	97.8 %	85-120	12/11/2014 21:31	12/11/2014 21:31							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: **MiHPT-D1**

Laboratory Sample ID: **14L0150-22**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	22	630-20-6	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	22	71-55-6	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	22	79-34-5	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	22	79-00-5	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	22	75-34-3	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	22	75-35-4	SW8260B	12/11/2014 03:40	12/11/2014 03:40	0.39	J	0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	22	563-58-6	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	22	87-61-6	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	22	96-18-4	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	22	120-82-1	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	22	95-63-6	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	22	96-12-8	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	22	106-93-4	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	22	95-50-1	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	22	107-06-2	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	22	78-87-5	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	22	108-67-8	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	22	541-73-1	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	22	142-28-9	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	22	106-46-7	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	22	594-20-7	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	22	78-93-3	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	22	95-49-8	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	22	591-78-6	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT-D1

Laboratory Sample ID: 14L0150-22

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	22	106-43-4	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	22	99-87-6	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	22	108-10-1	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	22	67-64-1	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		7.00	10.0	1	ug/L	MKD
Benzene	22	71-43-2	SW8260B	12/11/2014 03:40	12/11/2014 03:40	0.40	J	0.30	1.00	1	ug/L	MKD
Bromobenzene	22	108-86-1	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	22	74-97-5	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	22	75-27-4	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	22	75-25-2	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	22	74-83-9	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	22	75-15-0	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	22	56-23-5	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	22	108-90-7	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	22RE1	75-00-3	SW8260B	12/11/2014 21:06	12/11/2014 21:06	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	22	67-66-3	SW8260B	12/11/2014 03:40	12/11/2014 03:40	0.78	J	0.40	1.00	1	ug/L	MKD
Chloromethane	22	74-87-3	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	22	156-59-2	SW8260B	12/11/2014 03:40	12/11/2014 03:40	99.3		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	22	10061-01-5	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	22	124-48-1	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	22	74-95-3	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	22	75-71-8	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	22	108-20-3	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	22	100-41-4	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	22	637-92-3	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: **MiHPT-D1**

Laboratory Sample ID: **14L0150-22**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	22	87-68-3	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	22	74-88-4	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	22	98-82-8	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	22	179601-23-1	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	22	75-09-2	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	22	1634-04-4	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	22	91-20-3	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	22	104-51-8	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	22	103-65-1	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	22	95-47-6	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	22	135-98-8	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	22	100-42-5	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.20	1.00	1	ug/L	MKD
TAME	22	994-05-8	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		5.00	5.00	1	ug/L	MKD
TBA	22	75-65-0	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	22	98-06-6	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	22	127-18-4	SW8260B	12/11/2014 03:40	12/11/2014 03:40	390		0.40	1.00	1	ug/L	MKD
Toluene	22	108-88-3	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	22	156-60-5	SW8260B	12/11/2014 03:40	12/11/2014 03:40	0.96	J	0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	22	10061-02-6	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	22	79-01-6	SW8260B	12/11/2014 03:40	12/11/2014 03:40	42.4		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	22	75-69-4	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	22	108-05-4	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	22	75-01-4	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	22	1330-20-7	SW8260B	12/11/2014 03:40	12/11/2014 03:40	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
Client Site I.D.: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT-D1

Laboratory Sample ID: 14L0150-22

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	22	103 %	70-120	12/11/2014 03:40	12/11/2014 03:40							
Surr: 4-Bromofluorobenzene	22	92.9 %	75-120	12/11/2014 03:40	12/11/2014 03:40							
Surr: Dibromofluoromethane	22	97.8 %	80-119	12/11/2014 03:40	12/11/2014 03:40							
Surr: Toluene-d8	22	99.5 %	85-120	12/11/2014 03:40	12/11/2014 03:40							
Surr: 1,2-Dichloroethane-d4	22RE1	90.9 %	70-120	12/11/2014 21:06	12/11/2014 21:06							
Surr: 4-Bromofluorobenzene	22RE1	92.6 %	75-120	12/11/2014 21:06	12/11/2014 21:06							
Surr: Dibromofluoromethane	22RE1	93.4 %	80-119	12/11/2014 21:06	12/11/2014 21:06							
Surr: Toluene-d8	22RE1	99.4 %	85-120	12/11/2014 21:06	12/11/2014 21:06							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: **MiHPT-D2**

Laboratory Sample ID: **14L0150-23**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	23	630-20-6	SW8260B	12/11/2014 04:04	12/11/2014 04:04	6.16		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	23	71-55-6	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	23	79-34-5	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	23	79-00-5	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	23	75-34-3	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	23	75-35-4	SW8260B	12/11/2014 04:04	12/11/2014 04:04	1.87		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	23	563-58-6	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	23	87-61-6	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	23	96-18-4	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	23	120-82-1	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	23	95-63-6	SW8260B	12/11/2014 04:04	12/11/2014 04:04	6.02		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	23	96-12-8	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	23	106-93-4	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	23	95-50-1	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	23	107-06-2	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	23	78-87-5	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	23	108-67-8	SW8260B	12/11/2014 04:04	12/11/2014 04:04	1.69		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	23	541-73-1	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	23	142-28-9	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	23	106-46-7	SW8260B	12/11/2014 04:04	12/11/2014 04:04	0.57	J	0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	23	594-20-7	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	23	78-93-3	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	23	95-49-8	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	23	591-78-6	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: **MiHPT-D2**

Laboratory Sample ID: **14L0150-23**

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	23	106-43-4	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	23	99-87-6	SW8260B	12/11/2014 04:04	12/11/2014 04:04	0.64	J	0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	23	108-10-1	SW8260B	12/11/2014 04:04	12/11/2014 04:04	0.84	J	0.30	10.0	1	ug/L	MKD
Acetone	23	67-64-1	SW8260B	12/11/2014 04:04	12/11/2014 04:04	11.9		7.00	10.0	1	ug/L	MKD
Benzene	23	71-43-2	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	23	108-86-1	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	23	74-97-5	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	23	75-27-4	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	23	75-25-2	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	23	74-83-9	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	23	75-15-0	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	23	56-23-5	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	23	108-90-7	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	23RE2	75-00-3	SW8260B	12/11/2014 22:20	12/11/2014 22:20	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	23	67-66-3	SW8260B	12/11/2014 04:04	12/11/2014 04:04	0.68	J	0.40	1.00	1	ug/L	MKD
Chloromethane	23	74-87-3	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	23	156-59-2	SW8260B	12/11/2014 04:04	12/11/2014 04:04	153		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	23	10061-01-5	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	23	124-48-1	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	23	74-95-3	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	23	75-71-8	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	23	108-20-3	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	23	100-41-4	SW8260B	12/11/2014 04:04	12/11/2014 04:04	0.58	J	0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	23	637-92-3	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT-D2

Laboratory Sample ID: 14L0150-23

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	23	87-68-3	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	23	74-88-4	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	23	98-82-8	SW8260B	12/11/2014 04:04	12/11/2014 04:04	0.41	J	0.20	1.00	1	ug/L	MKD
m+p-Xylenes	23	179601-23-1	SW8260B	12/11/2014 04:04	12/11/2014 04:04	2.74		0.50	2.00	1	ug/L	MKD
Methylene chloride	23	75-09-2	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	23	1634-04-4	SW8260B	12/11/2014 04:04	12/11/2014 04:04	1.10		0.40	1.00	1	ug/L	MKD
Naphthalene	23	91-20-3	SW8260B	12/11/2014 04:04	12/11/2014 04:04	3.00		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	23	104-51-8	SW8260B	12/11/2014 04:04	12/11/2014 04:04	0.46	J	0.30	1.00	1	ug/L	MKD
n-Propylbenzene	23	103-65-1	SW8260B	12/11/2014 04:04	12/11/2014 04:04	0.80	J	0.20	1.00	1	ug/L	MKD
o-Xylene	23	95-47-6	SW8260B	12/11/2014 04:04	12/11/2014 04:04	2.56		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	23	135-98-8	SW8260B	12/11/2014 04:04	12/11/2014 04:04	0.40	J	0.40	1.00	1	ug/L	MKD
Styrene	23	100-42-5	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.20	1.00	1	ug/L	MKD
TAME	23	994-05-8	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		5.00	5.00	1	ug/L	MKD
TBA	23	75-65-0	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	23	98-06-6	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	23RE3	127-18-4	SW8260B	12/15/2014 12:43	12/15/2014 12:43	72400		400	1000	1000	ug/L	MKD
Toluene	23	108-88-3	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	23	156-60-5	SW8260B	12/11/2014 04:04	12/11/2014 04:04	6.42		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	23	10061-02-6	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	23	79-01-6	SW8260B	12/11/2014 04:04	12/11/2014 04:04	190		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	23	75-69-4	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	23	108-05-4	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	23	75-01-4	SW8260B	12/11/2014 04:04	12/11/2014 04:04	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	23	1330-20-7	SW8260B	12/11/2014 04:04	12/11/2014 04:04	5.30		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
Client Site I.D.: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: MiHPT-D2

Laboratory Sample ID: 14L0150-23

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	23	101 %	70-120	12/11/2014 04:04	12/11/2014 04:04							
Surr: 4-Bromofluorobenzene	23	91.1 %	75-120	12/11/2014 04:04	12/11/2014 04:04							
Surr: Dibromofluoromethane	23	97.6 %	80-119	12/11/2014 04:04	12/11/2014 04:04							
Surr: Toluene-d8	23	96.5 %	85-120	12/11/2014 04:04	12/11/2014 04:04							
Surr: 1,2-Dichloroethane-d4	23RE2	98.7 %	70-120	12/11/2014 22:20	12/11/2014 22:20							
Surr: 4-Bromofluorobenzene	23RE2	90.8 %	75-120	12/11/2014 22:20	12/11/2014 22:20							
Surr: Dibromofluoromethane	23RE2	96.1 %	80-119	12/11/2014 22:20	12/11/2014 22:20							
Surr: Toluene-d8	23RE2	98.9 %	85-120	12/11/2014 22:20	12/11/2014 22:20							
Surr: 1,2-Dichloroethane-d4	23RE3	103 %	70-120	12/15/2014 12:43	12/15/2014 12:43							
Surr: 4-Bromofluorobenzene	23RE3	93.8 %	75-120	12/15/2014 12:43	12/15/2014 12:43							
Surr: Dibromofluoromethane	23RE3	102 %	80-119	12/15/2014 12:43	12/15/2014 12:43							
Surr: Toluene-d8	23RE3	101 %	85-120	12/15/2014 12:43	12/15/2014 12:43							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: Trip Blank

Laboratory Sample ID: 14L0150-24

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
1,1,1,2-Tetrachloroethane	24	630-20-6	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.40	1.00	1	ug/L	MKD
1,1,1-Trichloroethane	24	71-55-6	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.70	1.00	1	ug/L	MKD
1,1,2,2-Tetrachloroethane	24	79-34-5	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.40	1.00	1	ug/L	MKD
1,1,2-Trichloroethane	24	79-00-5	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.50	1.00	1	ug/L	MKD
1,1-Dichloroethane	24	75-34-3	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.40	1.00	1	ug/L	MKD
1,1-Dichloroethylene	24	75-35-4	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.30	1.00	1	ug/L	MKD
1,1-Dichloropropene	24	563-58-6	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichlorobenzene	24	87-61-6	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.20	1.00	1	ug/L	MKD
1,2,3-Trichloropropane	24	96-18-4	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trichlorobenzene	24	120-82-1	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.20	1.00	1	ug/L	MKD
1,2,4-Trimethylbenzene	24	95-63-6	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.50	1.00	1	ug/L	MKD
1,2-Dibromo-3-chloropropane (DBCP)	24	96-12-8	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.80	4.00	1	ug/L	MKD
1,2-Dibromoethane (EDB)	24	106-93-4	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.30	1.00	1	ug/L	MKD
1,2-Dichlorobenzene	24	95-50-1	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.20	1.00	1	ug/L	MKD
1,2-Dichloroethane	24	107-06-2	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.90	1.00	1	ug/L	MKD
1,2-Dichloropropane	24	78-87-5	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.60	1.00	1	ug/L	MKD
1,3,5-Trimethylbenzene	24	108-67-8	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichlorobenzene	24	541-73-1	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.20	1.00	1	ug/L	MKD
1,3-Dichloropropane	24	142-28-9	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.20	1.00	1	ug/L	MKD
1,4-Dichlorobenzene	24	106-46-7	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.40	1.00	1	ug/L	MKD
2,2-Dichloropropane	24	594-20-7	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.60	1.00	1	ug/L	MKD
2-Butanone (MEK)	24	78-93-3	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.60	10.0	1	ug/L	MKD
2-Chlorotoluene	24	95-49-8	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.60	1.00	1	ug/L	MKD
2-Hexanone (MBK)	24	591-78-6	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.40	10.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: Trip Blank

Laboratory Sample ID: 14L0150-24

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
4-Chlorotoluene	24	106-43-4	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.70	1.00	1	ug/L	MKD
4-Isopropyltoluene	24	99-87-6	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.20	1.00	1	ug/L	MKD
4-Methyl-2-pentanone (MIBK)	24	108-10-1	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.30	10.0	1	ug/L	MKD
Acetone	24	67-64-1	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		7.00	10.0	1	ug/L	MKD
Benzene	24	71-43-2	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.30	1.00	1	ug/L	MKD
Bromobenzene	24	108-86-1	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.50	1.00	1	ug/L	MKD
Bromochloromethane	24	74-97-5	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.20	1.00	1	ug/L	MKD
Bromodichloromethane	24	75-27-4	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.30	1.00	1	ug/L	MKD
Bromoform	24	75-25-2	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.50	1.00	1	ug/L	MKD
Bromomethane	24	74-83-9	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.30	1.00	1	ug/L	MKD
Carbon disulfide	24	75-15-0	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.60	10.0	1	ug/L	MKD
Carbon tetrachloride	24	56-23-5	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.40	1.00	1	ug/L	MKD
Chlorobenzene	24	108-90-7	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.40	1.00	1	ug/L	MKD
Chloroethane	24	75-00-3	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.40	1.00	1	ug/L	MKD
Chloroform	24	67-66-3	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.40	1.00	1	ug/L	MKD
Chloromethane	24	74-87-3	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.50	1.00	1	ug/L	MKD
cis-1,2-Dichloroethylene	24	156-59-2	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.40	1.00	1	ug/L	MKD
cis-1,3-Dichloropropene	24	10061-01-5	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.20	1.00	1	ug/L	MKD
Dibromochloromethane	24	124-48-1	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.70	1.00	1	ug/L	MKD
Dibromomethane	24	74-95-3	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.40	1.00	1	ug/L	MKD
Dichlorodifluoromethane	24	75-71-8	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		1.00	1.00	1	ug/L	MKD
Di-isopropyl ether (DIPE)	24	108-20-3	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.30	5.00	1	ug/L	MKD
Ethylbenzene	24	100-41-4	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.20	1.00	1	ug/L	MKD
Ethyl-t-butyl ether (ETBE)	24	637-92-3	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.40	25.0	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: Trip Blank

Laboratory Sample ID: 14L0150-24

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Hexachlorobutadiene	24	87-68-3	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		1.00	1.00	1	ug/L	MKD
Iodomethane	24	74-88-4	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.10	10.0	1	ug/L	MKD
Isopropylbenzene	24	98-82-8	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.20	1.00	1	ug/L	MKD
m+p-Xylenes	24	179601-23-1	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.50	2.00	1	ug/L	MKD
Methylene chloride	24	75-09-2	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		1.00	4.00	1	ug/L	MKD
Methyl-t-butyl ether (MTBE)	24	1634-04-4	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.40	1.00	1	ug/L	MKD
Naphthalene	24	91-20-3	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.50	1.00	1	ug/L	MKD
n-Butylbenzene	24	104-51-8	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.30	1.00	1	ug/L	MKD
n-Propylbenzene	24	103-65-1	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.20	1.00	1	ug/L	MKD
o-Xylene	24	95-47-6	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.50	1.00	1	ug/L	MKD
sec-Butylbenzene	24	135-98-8	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.40	1.00	1	ug/L	MKD
Styrene	24	100-42-5	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.20	1.00	1	ug/L	MKD
TAME	24	994-05-8	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		5.00	5.00	1	ug/L	MKD
TBA	24	75-65-0	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		100	100	1	ug/L	MKD
tert-Butylbenzene	24	98-06-6	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.10	1.00	1	ug/L	MKD
Tetrachloroethylene (PCE)	24	127-18-4	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.40	1.00	1	ug/L	MKD
Toluene	24	108-88-3	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,2-Dichloroethylene	24	156-60-5	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.40	1.00	1	ug/L	MKD
trans-1,3-Dichloropropene	24	10061-02-6	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.50	1.00	1	ug/L	MKD
Trichloroethylene	24	79-01-6	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.30	1.00	1	ug/L	MKD
Trichlorofluoromethane	24	75-69-4	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.40	1.00	1	ug/L	MKD
Vinyl acetate	24	108-05-4	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.90	10.0	1	ug/L	MKD
Vinyl chloride	24	75-01-4	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.30	1.00	1	ug/L	MKD
Xylenes, Total	24	1330-20-7	SW8260B	12/10/2014 12:54	12/10/2014 12:54	BLOD		0.50	3.00	1	ug/L	MKD

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Client Sample ID: Trip Blank

Laboratory Sample ID: 14L0150-24

Parameter	Samp ID	CAS	Reference Method	Sample Prep Date/Time	Analyzed Date/Time	Sample Results	Qual	LOD	LOQ	DF	Units	Analyst
Volatile Organic Compounds by GCMS												
Surr: 1,2-Dichloroethane-d4	24	97.0 %	70-120	12/10/2014 12:54	12/10/2014 12:54							
Surr: 4-Bromofluorobenzene	24	93.7 %	75-120	12/10/2014 12:54	12/10/2014 12:54							
Surr: Dibromofluoromethane	24	97.1 %	80-119	12/10/2014 12:54	12/10/2014 12:54							
Surr: Toluene-d8	24	100 %	85-120	12/10/2014 12:54	12/10/2014 12:54							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
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 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0259 - SW5030B

Blank (BXL0259-BLK1)

Prepared & Analyzed: 12/10/2014

1,1,1,2-Tetrachloroethane	BLOD	1.00	ug/L
1,1,1-Trichloroethane	BLOD	1.00	ug/L
1,1,2,2-Tetrachloroethane	BLOD	1.00	ug/L
1,1,2-Trichloroethane	BLOD	1.00	ug/L
1,1-Dichloroethane	BLOD	1.00	ug/L
1,1-Dichloroethylene	BLOD	1.00	ug/L
1,1-Dichloropropene	BLOD	1.00	ug/L
1,2,3-Trichlorobenzene	BLOD	1.00	ug/L
1,2,3-Trichloropropane	BLOD	1.00	ug/L
1,2,4-Trichlorobenzene	BLOD	1.00	ug/L
1,2,4-Trimethylbenzene	BLOD	1.00	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	BLOD	4.00	ug/L
1,2-Dibromoethane (EDB)	BLOD	1.00	ug/L
1,2-Dichlorobenzene	BLOD	1.00	ug/L
1,2-Dichloroethane	BLOD	1.00	ug/L
1,2-Dichloropropane	BLOD	1.00	ug/L
1,3,5-Trimethylbenzene	BLOD	1.00	ug/L
1,3-Dichlorobenzene	BLOD	1.00	ug/L
1,3-Dichloropropane	BLOD	1.00	ug/L
1,4-Dichlorobenzene	BLOD	1.00	ug/L
2,2-Dichloropropane	BLOD	1.00	ug/L
2-Butanone (MEK)	BLOD	10.0	ug/L
2-Chlorotoluene	BLOD	1.00	ug/L
2-Hexanone (MBK)	BLOD	10.0	ug/L
4-Chlorotoluene	BLOD	1.00	ug/L
4-Isopropyltoluene	BLOD	1.00	ug/L

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0259 - SW5030B

Blank (BXL0259-BLK1)

Prepared & Analyzed: 12/10/2014

4-Methyl-2-pentanone (MIBK)	BLOD	10.0	ug/L
Acetone	BLOD	10.0	ug/L
Benzene	BLOD	1.00	ug/L
Bromobenzene	BLOD	1.00	ug/L
Bromochloromethane	BLOD	1.00	ug/L
Bromodichloromethane	BLOD	1.00	ug/L
Bromoform	BLOD	1.00	ug/L
Bromomethane	BLOD	1.00	ug/L
Carbon disulfide	BLOD	10.0	ug/L
Carbon tetrachloride	BLOD	1.00	ug/L
Chlorobenzene	BLOD	1.00	ug/L
Chloroethane	BLOD	1.00	ug/L
Chloroform	BLOD	1.00	ug/L
Chloromethane	BLOD	1.00	ug/L
cis-1,2-Dichloroethylene	BLOD	1.00	ug/L
cis-1,3-Dichloropropene	BLOD	1.00	ug/L
Dibromochloromethane	BLOD	1.00	ug/L
Dibromomethane	BLOD	1.00	ug/L
Dichlorodifluoromethane	BLOD	1.00	ug/L
Di-isopropyl ether (DIPE)	BLOD	5.00	ug/L
Ethylbenzene	BLOD	1.00	ug/L
Ethyl-t-butyl ether (ETBE)	BLOD	25.0	ug/L
Hexachlorobutadiene	BLOD	1.00	ug/L
Iodomethane	BLOD	10.0	ug/L
Isopropylbenzene	BLOD	1.00	ug/L
m+p-Xylenes	BLOD	2.00	ug/L

Certificate of Analysis

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0259 - SW5030B										
Blank (BXL0259-BLK1)				Prepared & Analyzed: 12/10/2014						
Methylene chloride	BLOD	4.00	ug/L							
Methyl-t-butyl ether (MTBE)	BLOD	1.00	ug/L							
Naphthalene	BLOD	1.00	ug/L							
n-Butylbenzene	BLOD	1.00	ug/L							
n-Propylbenzene	BLOD	1.00	ug/L							
o-Xylene	BLOD	1.00	ug/L							
sec-Butylbenzene	BLOD	1.00	ug/L							
Styrene	BLOD	1.00	ug/L							
TAME	BLOD	5.00	ug/L							
TBA	BLOD	100	ug/L							
tert-Butylbenzene	BLOD	1.00	ug/L							
Tetrachloroethylene (PCE)	BLOD	1.00	ug/L							
Toluene	BLOD	1.00	ug/L							
trans-1,2-Dichloroethylene	BLOD	1.00	ug/L							
trans-1,3-Dichloropropene	BLOD	1.00	ug/L							
Trichloroethylene	BLOD	1.00	ug/L							
Trichlorofluoromethane	BLOD	1.00	ug/L							
Vinyl acetate	BLOD	10.0	ug/L							
Vinyl chloride	BLOD	1.00	ug/L							
Xylenes, Total	BLOD	3.00	ug/L							
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>48.9</i>		ug/L	<i>50.0</i>		<i>97.8</i>	<i>70-120</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>46.8</i>		ug/L	<i>50.0</i>		<i>93.6</i>	<i>75-120</i>			
<i>Surr: Dibromofluoromethane</i>	<i>48.4</i>		ug/L	<i>50.0</i>		<i>96.8</i>	<i>80-119</i>			
<i>Surr: Toluene-d8</i>	<i>49.7</i>		ug/L	<i>50.0</i>		<i>99.3</i>	<i>85-120</i>			
LCS (BXL0259-BS1)				Prepared & Analyzed: 12/10/2014						
1,1,1,2-Tetrachloroethane	53.6	1	ug/L	50.0		107	80-130			

Certificate of Analysis

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Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0259 - SW5030B

LCS (BXL0259-BS1)

Prepared & Analyzed: 12/10/2014

1,1,1-Trichloroethane	49.0	1	ug/L	50.0		98.1	65-130			
1,1,2,2-Tetrachloroethane	56.3	1	ug/L	50.0		113	65-130			
1,1,2-Trichloroethane	51.6	1	ug/L	50.0		103	75-125			
1,1-Dichloroethane	51.3	1	ug/L	50.0		103	70-135			
1,1-Dichloroethylene	47.4	1	ug/L	50.0		94.7	70-130			
1,1-Dichloropropene	49.1	1	ug/L	50.0		98.3	75-135			
1,2,3-Trichlorobenzene	55.5	1	ug/L	50.0		111	55-140			
1,2,3-Trichloropropane	51.8	1	ug/L	50.0		104	75-125			
1,2,4-Trichlorobenzene	56.0	1	ug/L	50.0		112	65-135			
1,2,4-Trimethylbenzene	49.3	1	ug/L	50.0		98.5	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	54.7	4	ug/L	50.0		109	50-130			
1,2-Dibromoethane (EDB)	52.0	1	ug/L	50.0		104	80-120			
1,2-Dichlorobenzene	55.3	1	ug/L	50.0		111	70-120			
1,2-Dichloroethane	46.1	1	ug/L	50.0		92.2	70-130			
1,2-Dichloropropane	45.8	1	ug/L	50.0		91.5	75-125			
1,3,5-Trimethylbenzene	52.1	1	ug/L	50.0		104	75-125			
1,3-Dichlorobenzene	55.7	1	ug/L	50.0		111	75-125			
1,3-Dichloropropane	49.3	1	ug/L	50.0		98.6	75-125			
1,4-Dichlorobenzene	53.9	1	ug/L	50.0		108	75-125			
2,2-Dichloropropane	48.5	1	ug/L	50.0		97.0	70-135			
2-Butanone (MEK)	51.1	10	ug/L	50.0		102	30-150			
2-Chlorotoluene	55.6	1	ug/L	50.0		111	75-125			
2-Hexanone (MBK)	57.0	10	ug/L	50.0		114	55-130			
4-Chlorotoluene	56.0	1	ug/L	50.0		112	75-130			
4-Isopropyltoluene	54.2	1	ug/L	50.0		108	75-130			
4-Methyl-2-pentanone (MIBK)	58.0	10	ug/L	50.0		116	60-135			

Certificate of Analysis

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Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0259 - SW5030B

LCS (BXL0259-BS1)

Prepared & Analyzed: 12/10/2014

Acetone	57.1	10	ug/L	50.0		114	40-140			
Benzene	51.8	1	ug/L	50.0		104	80-120			
Bromobenzene	51.8	1	ug/L	50.0		104	75-125			
Bromochloromethane	48.2	1	ug/L	50.0		96.5	65-130			
Bromodichloromethane	51.1	1	ug/L	50.0		102	75-120			
Bromoform	57.8	1	ug/L	50.0		116	70-130			
Bromomethane	48.9	1	ug/L	50.0		97.8	30-145			
Carbon disulfide	40.9	10	ug/L	50.0		81.7	35-160			
Carbon tetrachloride	50.5	1	ug/L	50.0		101	65-140			
Chlorobenzene	53.2	1	ug/L	50.0		106	80-120			
Chloroethane	48.1	1	ug/L	50.0		96.2	60-135			
Chloroform	46.0	1	ug/L	50.0		92.0	65-135			
Chloromethane	39.3	1	ug/L	50.0		78.5	40-125			
cis-1,2-Dichloroethylene	46.6	1	ug/L	50.0		93.2	70-125			
cis-1,3-Dichloropropene	46.8	1	ug/L	50.0		93.5	70-130			
Dibromochloromethane	52.9	1	ug/L	50.0		106	60-135			
Dibromomethane	50.3	1	ug/L	50.0		101	75-125			
Dichlorodifluoromethane	40.1	1	ug/L	50.0		80.3	30-155			
Ethylbenzene	49.9	1	ug/L	50.0		99.8	75-125			
Hexachlorobutadiene	52.5	1	ug/L	50.0		105	50-140			
Isopropylbenzene	54.1	1	ug/L	50.0		108	75-125			
m+p-Xylenes	103	2	ug/L	100		103	75-130			
Methylene chloride	41.6	4	ug/L	50.0		83.1	55-140			
Methyl-t-butyl ether (MTBE)	50.8	1	ug/L	50.0		102	65-125			
Naphthalene	56.5	1	ug/L	50.0		113	55-140			
n-Butylbenzene	55.2	1	ug/L	50.0		110	70-135			

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0259 - SW5030B										
LCS (BXL0259-BS1)										
Prepared & Analyzed: 12/10/2014										
n-Propylbenzene	56.4	1	ug/L	50.0		113	70-130			
o-Xylene	53.0	1	ug/L	50.0		106	80-120			
sec-Butylbenzene	55.0	1	ug/L	50.0		110	70-125			
Styrene	56.3	1	ug/L	50.0		113	65-135			
tert-Butylbenzene	56.0	1	ug/L	50.0		112	70-130			
Tetrachloroethylene (PCE)	64.3	1	ug/L	50.0		129	45-150			
Toluene	48.8	1	ug/L	50.0		97.6	75-120			
trans-1,2-Dichloroethylene	48.2	1	ug/L	50.0		96.4	60-140			
trans-1,3-Dichloropropene	47.8	1	ug/L	50.0		95.7	55-140			
Trichloroethylene	49.1	1	ug/L	50.0		98.3	70-125			
Trichlorofluoromethane	37.1	1	ug/L	50.0		74.2	60-145			
Vinyl chloride	46.3	1	ug/L	50.0		92.6	50-145			
<i>Surr: 1,2-Dichloroethane-d4</i>	49.4		ug/L	50.0		98.8	70-120			
<i>Surr: 4-Bromofluorobenzene</i>	48.5		ug/L	50.0		97.0	75-120			
<i>Surr: Dibromofluoromethane</i>	47.9		ug/L	50.0		95.8	80-119			
<i>Surr: Toluene-d8</i>	49.5		ug/L	50.0		99.1	85-120			
LCS Dup (BXL0259-BSD1)										
Prepared & Analyzed: 12/10/2014										
1,1,1,2-Tetrachloroethane	51.2	1	ug/L	50.0		102	80-130	4.59	30	
1,1,1-Trichloroethane	48.1	1	ug/L	50.0		96.2	65-130	1.89	30	
1,1,2,2-Tetrachloroethane	56.4	1	ug/L	50.0		113	65-130	0.236	30	
1,1,2-Trichloroethane	50.3	1	ug/L	50.0		101	75-125	2.53	30	
1,1-Dichloroethane	50.0	1	ug/L	50.0		99.9	70-135	2.69	30	
1,1-Dichloroethylene	46.8	1	ug/L	50.0		93.6	70-130	1.14	30	
1,1-Dichloropropene	48.7	1	ug/L	50.0		97.5	75-135	0.776	30	
1,2,3-Trichlorobenzene	55.2	1	ug/L	50.0		110	55-140	0.520	30	
1,2,3-Trichloropropane	50.7	1	ug/L	50.0		101	75-125	2.24	30	

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
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 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0259 - SW5030B

LCS Dup (BXL0259-BSD1)

Prepared & Analyzed: 12/10/2014

1,2,4-Trichlorobenzene	54.8	1	ug/L	50.0		110	65-135	2.08	30	
1,2,4-Trimethylbenzene	48.5	1	ug/L	50.0		97.0	75-130	1.53	30	
1,2-Dibromo-3-chloropropane (DBCP)	56.0	4	ug/L	50.0		112	50-130	2.27	30	
1,2-Dibromoethane (EDB)	51.1	1	ug/L	50.0		102	80-120	1.64	30	
1,2-Dichlorobenzene	54.7	1	ug/L	50.0		109	70-120	1.07	30	
1,2-Dichloroethane	46.4	1	ug/L	50.0		92.9	70-130	0.679	30	
1,2-Dichloropropane	45.6	1	ug/L	50.0		91.2	75-125	0.333	30	
1,3,5-Trimethylbenzene	50.5	1	ug/L	50.0		101	75-125	3.26	30	
1,3-Dichlorobenzene	54.3	1	ug/L	50.0		109	75-125	2.62	30	
1,3-Dichloropropane	48.4	1	ug/L	50.0		96.8	75-125	1.89	30	
1,4-Dichlorobenzene	52.5	1	ug/L	50.0		105	75-125	2.63	30	
2,2-Dichloropropane	46.4	1	ug/L	50.0		92.7	70-135	4.58	30	
2-Butanone (MEK)	56.6	10	ug/L	50.0		113	30-150	10.3	30	
2-Chlorotoluene	54.0	1	ug/L	50.0		108	75-125	2.91	30	
2-Hexanone (MBK)	60.0	10	ug/L	50.0		120	55-130	5.19	30	
4-Chlorotoluene	53.6	1	ug/L	50.0		107	75-130	4.48	30	
4-Isopropyltoluene	51.9	1	ug/L	50.0		104	75-130	4.38	30	
4-Methyl-2-pentanone (MIBK)	58.8	10	ug/L	50.0		118	60-135	1.51	30	
Acetone	55.7	10	ug/L	50.0		111	40-140	2.49	30	
Benzene	49.6	1	ug/L	50.0		99.3	80-120	4.19	30	
Bromobenzene	51.1	1	ug/L	50.0		102	75-125	1.52	30	
Bromochloromethane	47.6	1	ug/L	50.0		95.2	65-130	1.36	30	
Bromodichloromethane	49.5	1	ug/L	50.0		99.1	75-120	3.08	30	
Bromoform	56.6	1	ug/L	50.0		113	70-130	2.01	30	
Bromomethane	52.0	1	ug/L	50.0		104	30-145	6.12	30	
Carbon disulfide	41.5	10	ug/L	50.0		82.9	35-160	1.43	30	

Certificate of Analysis

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 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0259 - SW5030B

LCS Dup (BXL0259-BSD1)

Prepared & Analyzed: 12/10/2014

Carbon tetrachloride	48.1	1	ug/L	50.0		96.2	65-140	4.90	30	
Chlorobenzene	51.2	1	ug/L	50.0		102	80-120	3.79	30	
Chloroethane	48.6	1	ug/L	50.0		97.3	60-135	1.14	30	
Chloroform	45.6	1	ug/L	50.0		91.2	65-135	0.933	30	
Chloromethane	38.3	1	ug/L	50.0		76.6	40-125	2.49	30	
cis-1,2-Dichloroethylene	45.0	1	ug/L	50.0		90.0	70-125	3.50	30	
cis-1,3-Dichloropropene	45.5	1	ug/L	50.0		91.1	70-130	2.66	30	
Dibromochloromethane	50.7	1	ug/L	50.0		101	60-135	4.34	30	
Dibromomethane	49.6	1	ug/L	50.0		99.2	75-125	1.43	30	
Dichlorodifluoromethane	38.3	1	ug/L	50.0		76.6	30-155	4.63	30	
Ethylbenzene	47.9	1	ug/L	50.0		95.8	75-125	4.14	30	
Hexachlorobutadiene	52.6	1	ug/L	50.0		105	50-140	0.284	30	
Isopropylbenzene	52.6	1	ug/L	50.0		105	75-125	2.86	30	
m+p-Xylenes	99.5	2	ug/L	100		99.5	75-130	3.81	30	
Methylene chloride	40.2	4	ug/L	50.0		80.5	55-140	3.25	30	
Methyl-t-butyl ether (MTBE)	50.7	1	ug/L	50.0		101	65-125	0.250	30	
Naphthalene	57.0	1	ug/L	50.0		114	55-140	0.917	30	
n-Butylbenzene	53.5	1	ug/L	50.0		107	70-135	3.04	30	
n-Propylbenzene	54.4	1	ug/L	50.0		109	70-130	3.49	30	
o-Xylene	50.9	1	ug/L	50.0		102	80-120	3.91	30	
sec-Butylbenzene	53.6	1	ug/L	50.0		107	70-125	2.49	30	
Styrene	55.1	1	ug/L	50.0		110	65-135	2.13	30	
tert-Butylbenzene	54.5	1	ug/L	50.0		109	70-130	2.73	30	
Tetrachloroethylene (PCE)	62.3	1	ug/L	50.0		125	45-150	3.06	30	
Toluene	47.6	1	ug/L	50.0		95.1	75-120	2.58	30	
trans-1,2-Dichloroethylene	46.6	1	ug/L	50.0		93.2	60-140	3.43	30	

Certificate of Analysis

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Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0259 - SW5030B										
LCS Dup (BXL0259-BSD1)				Prepared & Analyzed: 12/10/2014						
trans-1,3-Dichloropropene	46.9	1	ug/L	50.0		93.8	55-140	1.98	30	
Trichloroethylene	47.2	1	ug/L	50.0		94.4	70-125	4.04	30	
Trichlorofluoromethane	37.0	1	ug/L	50.0		73.9	60-145	0.289	30	
Vinyl chloride	45.7	1	ug/L	50.0		91.5	50-145	1.18	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	47.9		ug/L	50.0		95.8	70-120			
<i>Surr: 4-Bromofluorobenzene</i>	48.3		ug/L	50.0		96.6	75-120			
<i>Surr: Dibromofluoromethane</i>	48.7		ug/L	50.0		97.3	80-119			
<i>Surr: Toluene-d8</i>	48.4		ug/L	50.0		96.8	85-120			
Matrix Spike (BXL0259-MS1)				Source: 14L0150-13	Prepared & Analyzed: 12/10/2014					
1,1,1,2-Tetrachloroethane	53.1	1	ug/L	50.0	BLOD	106	80-130			
1,1,1-Trichloroethane	50.2	1	ug/L	50.0	BLOD	100	65-130			
1,1,2,2-Tetrachloroethane	61.7	1	ug/L	50.0	BLOD	123	65-130			
1,1,2-Trichloroethane	54.1	1	ug/L	50.0	BLOD	108	75-125			
1,1-Dichloroethane	53.4	1	ug/L	50.0	BLOD	107	70-135			
1,1-Dichloroethylene	48.0	1	ug/L	50.0	BLOD	96.1	70-130			
1,1-Dichloropropene	50.3	1	ug/L	50.0	BLOD	101	75-135			
1,2,3-Trichlorobenzene	56.0	1	ug/L	50.0	BLOD	112	55-140			
1,2,3-Trichloropropane	57.1	1	ug/L	50.0	BLOD	114	75-125			
1,2,4-Trichlorobenzene	54.2	1	ug/L	50.0	BLOD	108	65-135			
1,2,4-Trimethylbenzene	48.4	1	ug/L	50.0	BLOD	96.7	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	63.2	4	ug/L	50.0	BLOD	126	50-130			
1,2-Dibromoethane (EDB)	55.5	1	ug/L	50.0	BLOD	111	80-120			
1,2-Dichlorobenzene	56.2	1	ug/L	50.0	BLOD	112	70-120			
1,2-Dichloroethane	52.0	1	ug/L	50.0	BLOD	104	70-130			
1,2-Dichloropropane	47.1	1	ug/L	50.0	BLOD	94.3	75-125			
1,3,5-Trimethylbenzene	50.2	1	ug/L	50.0	BLOD	100	75-125			

Certificate of Analysis

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Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0259 - SW5030B

Matrix Spike (BXL0259-MS1)		Source: 14L0150-13			Prepared & Analyzed: 12/10/2014					
1,3-Dichlorobenzene	53.7	1	ug/L	50.0	BLOD	107	75-125			
1,3-Dichloropropane	53.2	1	ug/L	50.0	BLOD	106	75-125			
1,4-Dichlorobenzene	52.6	1	ug/L	50.0	BLOD	105	75-125			
2,2-Dichloropropane	46.4	1	ug/L	50.0	BLOD	92.8	70-135			
2-Butanone (MEK)	71.9	10	ug/L	50.0	2.91	138	30-150			
2-Chlorotoluene	53.8	1	ug/L	50.0	BLOD	108	75-125			
2-Hexanone (MBK)	61.6	10	ug/L	50.0	BLOD	123	55-130			
4-Chlorotoluene	53.3	1	ug/L	50.0	BLOD	107	75-130			
4-Isopropyltoluene	51.3	1	ug/L	50.0	BLOD	103	75-130			
4-Methyl-2-pentanone (MIBK)	63.2	10	ug/L	50.0	BLOD	126	60-135			
Acetone	101	10	ug/L	50.0	21.3	159	40-140			M
Benzene	50.6	1	ug/L	50.0	BLOD	101	80-120			
Bromobenzene	51.7	1	ug/L	50.0	BLOD	103	75-125			
Bromochloromethane	52.8	1	ug/L	50.0	BLOD	106	65-130			
Bromodichloromethane	51.2	1	ug/L	50.0	BLOD	102	75-120			
Bromoform	58.8	1	ug/L	50.0	BLOD	118	70-130			
Bromomethane	50.8	1	ug/L	50.0	BLOD	102	30-145			
Carbon disulfide	41.3	10	ug/L	50.0	BLOD	81.8	35-160			
Carbon tetrachloride	47.2	1	ug/L	50.0	BLOD	94.4	65-140			
Chlorobenzene	51.7	1	ug/L	50.0	BLOD	103	80-120			
Chloroethane	49.0	1	ug/L	50.0	BLOD	98.0	60-135			
Chloroform	47.9	1	ug/L	50.0	BLOD	95.8	65-135			
Chloromethane	39.7	1	ug/L	50.0	BLOD	79.5	40-125			
cis-1,2-Dichloroethylene	47.6	1	ug/L	50.0	BLOD	95.2	70-125			
cis-1,3-Dichloropropene	47.1	1	ug/L	50.0	BLOD	94.2	70-130			
Dibromochloromethane	54.5	1	ug/L	50.0	BLOD	109	60-135			

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
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Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0259 - SW5030B

Matrix Spike (BXL0259-MS1)		Source: 14L0150-13		Prepared & Analyzed: 12/10/2014						
Dibromomethane	53.9	1	ug/L	50.0	BLOD	108	75-125			
Dichlorodifluoromethane	41.0	1	ug/L	50.0	BLOD	82.1	30-155			
Ethylbenzene	47.3	1	ug/L	50.0	BLOD	94.6	75-125			
Hexachlorobutadiene	50.6	1	ug/L	50.0	BLOD	101	50-140			
Isopropylbenzene	51.1	1	ug/L	50.0	BLOD	102	75-125			
m+p-Xylenes	98.8	2	ug/L	100	BLOD	98.8	75-130			
Methylene chloride	45.0	4	ug/L	50.0	BLOD	89.9	55-140			
Methyl-t-butyl ether (MTBE)	57.1	1	ug/L	50.0	BLOD	114	65-125			
Naphthalene	62.2	1	ug/L	50.0	BLOD	124	55-140			
n-Butylbenzene	51.1	1	ug/L	50.0	BLOD	102	70-135			
n-Propylbenzene	53.3	1	ug/L	50.0	BLOD	107	70-130			
o-Xylene	51.5	1	ug/L	50.0	BLOD	103	80-120			
sec-Butylbenzene	52.5	1	ug/L	50.0	BLOD	105	70-125			
Styrene	54.9	1	ug/L	50.0	BLOD	110	65-135			
tert-Butylbenzene	53.2	1	ug/L	50.0	BLOD	106	70-130			
Tetrachloroethylene (PCE)	149	1	ug/L	50.0	108	81.6	45-150			
Toluene	47.9	1	ug/L	50.0	0.41	94.9	75-120			
trans-1,2-Dichloroethylene	48.6	1	ug/L	50.0	BLOD	97.1	60-140			
trans-1,3-Dichloropropene	47.8	1	ug/L	50.0	BLOD	95.6	55-140			
Trichloroethylene	47.4	1	ug/L	50.0	0.33	94.1	70-125			
Trichlorofluoromethane	36.9	1	ug/L	50.0	BLOD	73.8	60-145			
Vinyl chloride	47.8	1	ug/L	50.0	BLOD	95.5	50-145			
Surr: 1,2-Dichloroethane-d4	54.1		ug/L	50.0		108	70-120			
Surr: 4-Bromofluorobenzene	48.4		ug/L	50.0		96.7	75-120			
Surr: Dibromofluoromethane	49.9		ug/L	50.0		99.8	80-119			
Surr: Toluene-d8	48.9		ug/L	50.0		97.8	85-120			

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0259 - SW5030B

Matrix Spike Dup (BXL0259-MSD1)		Source: 14L0150-13			Prepared & Analyzed: 12/10/2014					
1,1,1,2-Tetrachloroethane	54.7	1	ug/L	50.0	BLOD	109	80-130	2.96	30	
1,1,1-Trichloroethane	51.7	1	ug/L	50.0	BLOD	103	65-130	2.84	30	
1,1,2,2-Tetrachloroethane	60.5	1	ug/L	50.0	BLOD	121	65-130	1.94	30	
1,1,2-Trichloroethane	56.0	1	ug/L	50.0	BLOD	112	75-125	3.58	30	
1,1-Dichloroethane	54.9	1	ug/L	50.0	BLOD	110	70-135	2.68	30	
1,1-Dichloroethylene	49.1	1	ug/L	50.0	BLOD	98.3	70-130	2.27	30	
1,1-Dichloropropene	50.9	1	ug/L	50.0	BLOD	102	75-135	1.14	30	
1,2,3-Trichlorobenzene	56.6	1	ug/L	50.0	BLOD	113	55-140	0.917	30	
1,2,3-Trichloropropane	54.5	1	ug/L	50.0	BLOD	109	75-125	4.62	30	
1,2,4-Trichlorobenzene	55.2	1	ug/L	50.0	BLOD	110	65-135	1.79	30	
1,2,4-Trimethylbenzene	50.1	1	ug/L	50.0	BLOD	100	75-130	3.53	30	
1,2-Dibromo-3-chloropropane (DBCP)	58.9	4	ug/L	50.0	BLOD	118	50-130	7.12	30	
1,2-Dibromoethane (EDB)	54.9	1	ug/L	50.0	BLOD	110	80-120	1.13	30	
1,2-Dichlorobenzene	58.4	1	ug/L	50.0	BLOD	117	70-120	3.85	30	
1,2-Dichloroethane	51.2	1	ug/L	50.0	BLOD	102	70-130	1.54	30	
1,2-Dichloropropane	49.5	1	ug/L	50.0	BLOD	98.9	75-125	4.77	30	
1,3,5-Trimethylbenzene	53.1	1	ug/L	50.0	BLOD	106	75-125	5.63	30	
1,3-Dichlorobenzene	56.9	1	ug/L	50.0	BLOD	114	75-125	5.69	30	
1,3-Dichloropropane	53.5	1	ug/L	50.0	BLOD	107	75-125	0.548	30	
1,4-Dichlorobenzene	54.5	1	ug/L	50.0	BLOD	109	75-125	3.57	30	
2,2-Dichloropropane	48.6	1	ug/L	50.0	BLOD	97.2	70-135	4.66	30	
2-Butanone (MEK)	62.9	10	ug/L	50.0	2.91	120	30-150	13.5	30	
2-Chlorotoluene	56.4	1	ug/L	50.0	BLOD	113	75-125	4.76	30	
2-Hexanone (MBK)	56.4	10	ug/L	50.0	BLOD	113	55-130	8.88	30	
4-Chlorotoluene	55.9	1	ug/L	50.0	BLOD	112	75-130	4.78	30	
4-Isopropyltoluene	54.2	1	ug/L	50.0	BLOD	108	75-130	5.34	30	

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0259 - SW5030B

Matrix Spike Dup (BXL0259-MSD1)		Source: 14L0150-13			Prepared & Analyzed: 12/10/2014					
4-Methyl-2-pentanone (MIBK)	58.8	10	ug/L	50.0	BLOD	118	60-135	7.17	30	M
Acetone	93.2	10	ug/L	50.0	21.3	144	40-140	7.58	30	
Benzene	53.3	1	ug/L	50.0	BLOD	107	80-120	5.20	30	
Bromobenzene	53.4	1	ug/L	50.0	BLOD	107	75-125	3.24	30	
Bromochloromethane	51.7	1	ug/L	50.0	BLOD	103	65-130	2.08	30	
Bromodichloromethane	53.1	1	ug/L	50.0	BLOD	106	75-120	3.78	30	
Bromoform	58.3	1	ug/L	50.0	BLOD	117	70-130	0.882	30	
Bromomethane	55.6	1	ug/L	50.0	BLOD	111	30-145	9.17	30	
Carbon disulfide	40.5	10	ug/L	50.0	BLOD	80.3	35-160	1.85	30	
Carbon tetrachloride	50.4	1	ug/L	50.0	BLOD	101	65-140	6.52	30	
Chlorobenzene	53.4	1	ug/L	50.0	BLOD	107	80-120	3.26	30	
Chloroethane	51.3	1	ug/L	50.0	BLOD	103	60-135	4.64	30	
Chloroform	50.0	1	ug/L	50.0	BLOD	100	65-135	4.43	30	
Chloromethane	41.4	1	ug/L	50.0	BLOD	82.7	40-125	4.03	30	
cis-1,2-Dichloroethylene	49.1	1	ug/L	50.0	BLOD	98.2	70-125	3.12	30	
cis-1,3-Dichloropropene	48.9	1	ug/L	50.0	BLOD	97.8	70-130	3.83	30	
Dibromochloromethane	55.5	1	ug/L	50.0	BLOD	111	60-135	1.72	30	
Dibromomethane	55.6	1	ug/L	50.0	BLOD	111	75-125	3.26	30	
Dichlorodifluoromethane	41.2	1	ug/L	50.0	BLOD	82.3	30-155	0.306	30	
Ethylbenzene	50.1	1	ug/L	50.0	BLOD	100	75-125	5.69	30	
Hexachlorobutadiene	52.7	1	ug/L	50.0	BLOD	105	50-140	4.11	30	
Isopropylbenzene	54.5	1	ug/L	50.0	BLOD	109	75-125	6.35	30	
m+p-Xylenes	103	2	ug/L	100	BLOD	103	75-130	4.04	30	
Methylene chloride	44.9	4	ug/L	50.0	BLOD	89.8	55-140	0.147	30	
Methyl-t-butyl ether (MTBE)	56.4	1	ug/L	50.0	BLOD	113	65-125	1.29	30	
Naphthalene	61.6	1	ug/L	50.0	BLOD	123	55-140	0.913	30	

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0259 - SW5030B

Matrix Spike Dup (BXL0259-MSD1)		Source: 14L0150-13		Prepared & Analyzed: 12/10/2014						
n-Butylbenzene	55.0	1	ug/L	50.0	BLOD	110	70-135	7.25	30	
n-Propylbenzene	56.3	1	ug/L	50.0	BLOD	113	70-130	5.47	30	
o-Xylene	53.2	1	ug/L	50.0	BLOD	106	80-120	3.34	30	
sec-Butylbenzene	55.6	1	ug/L	50.0	BLOD	111	70-125	5.74	30	
Styrene	57.6	1	ug/L	50.0	BLOD	115	65-135	4.82	30	
tert-Butylbenzene	57.0	1	ug/L	50.0	BLOD	114	70-130	7.04	30	
Tetrachloroethylene (PCE)	157	1	ug/L	50.0	108	96.5	45-150	4.88	30	
Toluene	51.0	1	ug/L	50.0	0.41	101	75-120	6.34	30	
trans-1,2-Dichloroethylene	49.9	1	ug/L	50.0	BLOD	99.7	60-140	2.66	30	
trans-1,3-Dichloropropene	49.0	1	ug/L	50.0	BLOD	98.0	55-140	2.48	30	
Trichloroethylene	50.5	1	ug/L	50.0	0.33	100	70-125	6.36	30	
Trichlorofluoromethane	39.8	1	ug/L	50.0	BLOD	79.5	60-145	7.45	30	
Vinyl chloride	49.2	1	ug/L	50.0	BLOD	98.5	50-145	3.05	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>50.4</i>		ug/L	<i>50.0</i>		<i>101</i>	<i>70-120</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>48.2</i>		ug/L	<i>50.0</i>		<i>96.4</i>	<i>75-120</i>			
<i>Surr: Dibromofluoromethane</i>	<i>49.1</i>		ug/L	<i>50.0</i>		<i>98.1</i>	<i>80-119</i>			
<i>Surr: Toluene-d8</i>	<i>50.1</i>		ug/L	<i>50.0</i>		<i>100</i>	<i>85-120</i>			

Batch BXL0284 - SW5030B

Blank (BXL0284-BLK1)		Prepared & Analyzed: 12/10/2014								
1,1,1,2-Tetrachloroethane	BLOD	1.00	ug/L							
1,1,1-Trichloroethane	BLOD	1.00	ug/L							
1,1,2,2-Tetrachloroethane	BLOD	1.00	ug/L							
1,1,2-Trichloroethane	BLOD	1.00	ug/L							
1,1-Dichloroethane	BLOD	1.00	ug/L							
1,1-Dichloroethylene	BLOD	1.00	ug/L							

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0284 - SW5030B

Blank (BXL0284-BLK1)

Prepared & Analyzed: 12/10/2014

1,1-Dichloropropene	BLOD	1.00	ug/L
1,2,3-Trichlorobenzene	BLOD	1.00	ug/L
1,2,3-Trichloropropane	BLOD	1.00	ug/L
1,2,4-Trichlorobenzene	BLOD	1.00	ug/L
1,2,4-Trimethylbenzene	BLOD	1.00	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	BLOD	4.00	ug/L
1,2-Dibromoethane (EDB)	BLOD	1.00	ug/L
1,2-Dichlorobenzene	BLOD	1.00	ug/L
1,2-Dichloroethane	BLOD	1.00	ug/L
1,2-Dichloropropane	BLOD	1.00	ug/L
1,3,5-Trimethylbenzene	BLOD	1.00	ug/L
1,3-Dichlorobenzene	BLOD	1.00	ug/L
1,3-Dichloropropane	BLOD	1.00	ug/L
1,4-Dichlorobenzene	BLOD	1.00	ug/L
2,2-Dichloropropane	BLOD	1.00	ug/L
2-Butanone (MEK)	BLOD	10.0	ug/L
2-Chlorotoluene	BLOD	1.00	ug/L
2-Hexanone (MBK)	BLOD	10.0	ug/L
4-Chlorotoluene	BLOD	1.00	ug/L
4-Isopropyltoluene	BLOD	1.00	ug/L
4-Methyl-2-pentanone (MIBK)	BLOD	10.0	ug/L
Acetone	BLOD	10.0	ug/L
Benzene	BLOD	1.00	ug/L
Bromobenzene	BLOD	1.00	ug/L
Bromochloromethane	BLOD	1.00	ug/L
Bromodichloromethane	BLOD	1.00	ug/L

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0284 - SW5030B

Blank (BXL0284-BLK1)

Prepared & Analyzed: 12/10/2014

Bromoform	BLOD	1.00	ug/L
Bromomethane	BLOD	1.00	ug/L
Carbon disulfide	BLOD	10.0	ug/L
Carbon tetrachloride	BLOD	1.00	ug/L
Chlorobenzene	BLOD	1.00	ug/L
Chloroethane	BLOD	1.00	ug/L
Chloroform	BLOD	1.00	ug/L
Chloromethane	BLOD	1.00	ug/L
cis-1,2-Dichloroethylene	BLOD	1.00	ug/L
cis-1,3-Dichloropropene	BLOD	1.00	ug/L
Dibromochloromethane	BLOD	1.00	ug/L
Dibromomethane	BLOD	1.00	ug/L
Dichlorodifluoromethane	BLOD	1.00	ug/L
Di-isopropyl ether (DIPE)	BLOD	5.00	ug/L
Ethylbenzene	BLOD	1.00	ug/L
Ethyl-t-butyl ether (ETBE)	BLOD	25.0	ug/L
Hexachlorobutadiene	BLOD	1.00	ug/L
Iodomethane	BLOD	10.0	ug/L
Isopropylbenzene	BLOD	1.00	ug/L
m+p-Xylenes	BLOD	2.00	ug/L
Methylene chloride	BLOD	4.00	ug/L
Methyl-t-butyl ether (MTBE)	BLOD	1.00	ug/L
Naphthalene	BLOD	1.00	ug/L
n-Butylbenzene	BLOD	1.00	ug/L
n-Propylbenzene	BLOD	1.00	ug/L
o-Xylene	BLOD	1.00	ug/L

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0284 - SW5030B										
Blank (BXL0284-BLK1)				Prepared & Analyzed: 12/10/2014						
sec-Butylbenzene	BLOD	1.00	ug/L							
Styrene	BLOD	1.00	ug/L							
TAME	BLOD	5.00	ug/L							
TBA	BLOD	100	ug/L							
tert-Butylbenzene	BLOD	1.00	ug/L							
Tetrachloroethylene (PCE)	BLOD	1.00	ug/L							
Toluene	BLOD	1.00	ug/L							
trans-1,2-Dichloroethylene	BLOD	1.00	ug/L							
trans-1,3-Dichloropropene	BLOD	1.00	ug/L							
Trichloroethylene	BLOD	1.00	ug/L							
Trichlorofluoromethane	BLOD	1.00	ug/L							
Vinyl acetate	BLOD	10.0	ug/L							
Vinyl chloride	BLOD	1.00	ug/L							
Xylenes, Total	BLOD	3.00	ug/L							
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>49.4</i>		ug/L	<i>50.0</i>		<i>98.9</i>	<i>70-120</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>46.8</i>		ug/L	<i>50.0</i>		<i>93.7</i>	<i>75-120</i>			
<i>Surr: Dibromofluoromethane</i>	<i>47.4</i>		ug/L	<i>50.0</i>		<i>94.8</i>	<i>80-119</i>			
<i>Surr: Toluene-d8</i>	<i>49.9</i>		ug/L	<i>50.0</i>		<i>99.8</i>	<i>85-120</i>			
LCS (BXL0284-BS1)				Prepared & Analyzed: 12/10/2014						
1,1,1,2-Tetrachloroethane	49.5	1	ug/L	50.0		99.0	80-130			
1,1,1-Trichloroethane	46.9	1	ug/L	50.0		93.7	65-130			
1,1,2,2-Tetrachloroethane	54.1	1	ug/L	50.0		108	65-130			
1,1,2-Trichloroethane	48.9	1	ug/L	50.0		97.8	75-125			
1,1-Dichloroethane	48.9	1	ug/L	50.0		97.9	70-135			
1,1-Dichloroethylene	45.3	1	ug/L	50.0		90.6	70-130			
1,1-Dichloropropene	46.6	1	ug/L	50.0		93.3	75-135			

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0284 - SW5030B

LCS (BXL0284-BS1)

Prepared & Analyzed: 12/10/2014

1,2,3-Trichlorobenzene	49.8	1	ug/L	50.0		99.7	55-140			
1,2,3-Trichloropropane	49.4	1	ug/L	50.0		98.8	75-125			
1,2,4-Trichlorobenzene	48.0	1	ug/L	50.0		96.0	65-135			
1,2,4-Trimethylbenzene	44.4	1	ug/L	50.0		88.7	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	51.3	4	ug/L	50.0		103	50-130			
1,2-Dibromoethane (EDB)	49.5	1	ug/L	50.0		99.0	80-120			
1,2-Dichlorobenzene	51.2	1	ug/L	50.0		102	70-120			
1,2-Dichloroethane	45.8	1	ug/L	50.0		91.5	70-130			
1,2-Dichloropropane	44.9	1	ug/L	50.0		89.8	75-125			
1,3,5-Trimethylbenzene	47.7	1	ug/L	50.0		95.4	75-125			
1,3-Dichlorobenzene	50.7	1	ug/L	50.0		101	75-125			
1,3-Dichloropropane	46.2	1	ug/L	50.0		92.5	75-125			
1,4-Dichlorobenzene	48.5	1	ug/L	50.0		97.0	75-125			
2,2-Dichloropropane	43.6	1	ug/L	50.0		87.1	70-135			
2-Butanone (MEK)	54.7	10	ug/L	50.0		109	30-150			
2-Chlorotoluene	50.4	1	ug/L	50.0		101	75-125			
2-Hexanone (MBK)	55.3	10	ug/L	50.0		111	55-130			
4-Chlorotoluene	49.8	1	ug/L	50.0		99.7	75-130			
4-Isopropyltoluene	47.7	1	ug/L	50.0		95.3	75-130			
4-Methyl-2-pentanone (MIBK)	54.9	10	ug/L	50.0		110	60-135			
Acetone	54.3	10	ug/L	50.0		109	40-140			
Benzene	48.6	1	ug/L	50.0		97.2	80-120			
Bromobenzene	48.7	1	ug/L	50.0		97.4	75-125			
Bromochloromethane	47.2	1	ug/L	50.0		94.3	65-130			
Bromodichloromethane	46.7	1	ug/L	50.0		93.3	75-120			
Bromoform	53.7	1	ug/L	50.0		107	70-130			

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0284 - SW5030B

LCS (BXL0284-BS1)

Prepared & Analyzed: 12/10/2014

Bromomethane	52.1	1	ug/L	50.0		104	30-145			
Carbon disulfide	38.3	10	ug/L	50.0		76.6	35-160			
Carbon tetrachloride	43.5	1	ug/L	50.0		87.0	65-140			
Chlorobenzene	49.2	1	ug/L	50.0		98.4	80-120			
Chloroethane	45.5	1	ug/L	50.0		91.0	60-135			
Chloroform	45.2	1	ug/L	50.0		90.5	65-135			
Chloromethane	37.6	1	ug/L	50.0		75.2	40-125			
cis-1,2-Dichloroethylene	43.9	1	ug/L	50.0		87.8	70-125			
cis-1,3-Dichloropropene	43.0	1	ug/L	50.0		85.9	70-130			
Dibromochloromethane	49.0	1	ug/L	50.0		98.1	60-135			
Dibromomethane	49.5	1	ug/L	50.0		99.1	75-125			
Dichlorodifluoromethane	38.4	1	ug/L	50.0		76.9	30-155			
Ethylbenzene	45.3	1	ug/L	50.0		90.6	75-125			
Hexachlorobutadiene	46.3	1	ug/L	50.0		92.5	50-140			
Isopropylbenzene	49.8	1	ug/L	50.0		99.7	75-125			
m+p-Xylenes	94.9	2	ug/L	100		94.9	75-130			
Methylene chloride	41.1	4	ug/L	50.0		82.1	55-140			
Methyl-t-butyl ether (MTBE)	50.0	1	ug/L	50.0		100	65-125			
Naphthalene	53.3	1	ug/L	50.0		107	55-140			
n-Butylbenzene	48.0	1	ug/L	50.0		95.9	70-135			
n-Propylbenzene	50.6	1	ug/L	50.0		101	70-130			
o-Xylene	49.3	1	ug/L	50.0		98.6	80-120			
sec-Butylbenzene	49.7	1	ug/L	50.0		99.3	70-125			
Styrene	52.4	1	ug/L	50.0		105	65-135			
tert-Butylbenzene	50.8	1	ug/L	50.0		102	70-130			
Tetrachloroethylene (PCE)	59.5	1	ug/L	50.0		119	45-150			

Certificate of Analysis

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0284 - SW5030B										
LCS (BXL0284-BS1)										
Prepared & Analyzed: 12/10/2014										
Toluene	45.3	1	ug/L	50.0		90.5	75-120			
trans-1,2-Dichloroethylene	45.0	1	ug/L	50.0		89.9	60-140			
trans-1,3-Dichloropropene	43.3	1	ug/L	50.0		86.6	55-140			
Trichloroethylene	44.2	1	ug/L	50.0		88.4	70-125			
Trichlorofluoromethane	34.5	1	ug/L	50.0		69.0	60-145			
Vinyl chloride	45.2	1	ug/L	50.0		90.4	50-145			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>48.2</i>		ug/L	<i>50.0</i>		<i>96.4</i>	<i>70-120</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>49.4</i>		ug/L	<i>50.0</i>		<i>98.8</i>	<i>75-120</i>			
<i>Surr: Dibromofluoromethane</i>	<i>48.3</i>		ug/L	<i>50.0</i>		<i>96.6</i>	<i>80-119</i>			
<i>Surr: Toluene-d8</i>	<i>48.7</i>		ug/L	<i>50.0</i>		<i>97.3</i>	<i>85-120</i>			
LCS Dup (BXL0284-BSD1)										
Prepared & Analyzed: 12/10/2014										
1,1,1,2-Tetrachloroethane	49.8	1	ug/L	50.0		99.5	80-130	0.534	30	
1,1,1-Trichloroethane	46.0	1	ug/L	50.0		92.0	65-130	1.91	30	
1,1,2,2-Tetrachloroethane	53.8	1	ug/L	50.0		108	65-130	0.653	30	
1,1,2-Trichloroethane	50.3	1	ug/L	50.0		101	75-125	2.78	30	
1,1-Dichloroethane	48.0	1	ug/L	50.0		96.1	70-135	1.87	30	
1,1-Dichloroethylene	43.3	1	ug/L	50.0		86.5	70-130	4.64	30	
1,1-Dichloropropene	46.9	1	ug/L	50.0		93.8	75-135	0.560	30	
1,2,3-Trichlorobenzene	49.8	1	ug/L	50.0		99.7	55-140	0.0221	30	
1,2,3-Trichloropropane	49.1	1	ug/L	50.0		98.3	75-125	0.518	30	
1,2,4-Trichlorobenzene	48.0	1	ug/L	50.0		96.1	65-135	0.0187	30	
1,2,4-Trimethylbenzene	44.8	1	ug/L	50.0		89.7	75-130	1.04	30	
1,2-Dibromo-3-chloropropane (DBCP)	51.9	4	ug/L	50.0		104	50-130	1.21	30	
1,2-Dibromoethane (EDB)	50.8	1	ug/L	50.0		102	80-120	2.47	30	
1,2-Dichlorobenzene	52.0	1	ug/L	50.0		104	70-120	1.61	30	
1,2-Dichloroethane	46.7	1	ug/L	50.0		93.4	70-130	2.06	30	

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
Client Site I.D.: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0284 - SW5030B

LCS Dup (BXL0284-BSD1)

Prepared & Analyzed: 12/10/2014

1,2-Dichloropropane	44.1	1	ug/L	50.0		88.2	75-125	1.83	30	
1,3,5-Trimethylbenzene	46.9	1	ug/L	50.0		93.9	75-125	1.58	30	
1,3-Dichlorobenzene	50.9	1	ug/L	50.0		102	75-125	0.496	30	
1,3-Dichloropropane	47.2	1	ug/L	50.0		94.3	75-125	1.98	30	
1,4-Dichlorobenzene	48.5	1	ug/L	50.0		97.1	75-125	0.0453	30	
2,2-Dichloropropane	43.4	1	ug/L	50.0		86.8	70-135	0.338	30	
2-Butanone (MEK)	66.3	10	ug/L	50.0		133	30-150	19.3	30	
2-Chlorotoluene	51.0	1	ug/L	50.0		102	75-125	1.23	30	
2-Hexanone (MBK)	60.0	10	ug/L	50.0		120	55-130	8.12	30	
4-Chlorotoluene	50.0	1	ug/L	50.0		99.9	75-130	0.243	30	
4-Isopropyltoluene	47.5	1	ug/L	50.0		95.1	75-130	0.250	30	
4-Methyl-2-pentanone (MIBK)	60.3	10	ug/L	50.0		121	60-135	9.33	30	
Acetone	62.3	10	ug/L	50.0		125	40-140	13.7	30	
Benzene	49.1	1	ug/L	50.0		98.3	80-120	1.06	30	
Bromobenzene	48.7	1	ug/L	50.0		97.5	75-125	0.0390	30	
Bromochloromethane	46.4	1	ug/L	50.0		92.8	65-130	1.61	30	
Bromodichloromethane	48.0	1	ug/L	50.0		95.9	75-120	2.73	30	
Bromoform	53.1	1	ug/L	50.0		106	70-130	1.08	30	
Bromomethane	54.6	1	ug/L	50.0		109	30-145	4.65	30	
Carbon disulfide	42.5	10	ug/L	50.0		85.1	35-160	10.4	30	
Carbon tetrachloride	45.1	1	ug/L	50.0		90.2	65-140	3.65	30	
Chlorobenzene	49.1	1	ug/L	50.0		98.2	80-120	0.224	30	
Chloroethane	47.0	1	ug/L	50.0		94.1	60-135	3.33	30	
Chloroform	45.4	1	ug/L	50.0		90.9	65-135	0.432	30	
Chloromethane	38.1	1	ug/L	50.0		76.1	40-125	1.18	30	
cis-1,2-Dichloroethylene	44.2	1	ug/L	50.0		88.4	70-125	0.640	30	

Certificate of Analysis

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Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0284 - SW5030B										
LCS Dup (BXL0284-BSD1)										
Prepared & Analyzed: 12/10/2014										
cis-1,3-Dichloropropene	43.4	1	ug/L	50.0		86.8	70-130	0.952	30	
Dibromochloromethane	49.3	1	ug/L	50.0		98.7	60-135	0.573	30	
Dibromomethane	49.0	1	ug/L	50.0		97.9	75-125	1.14	30	
Dichlorodifluoromethane	37.9	1	ug/L	50.0		75.8	30-155	1.36	30	
Ethylbenzene	45.9	1	ug/L	50.0		91.8	75-125	1.31	30	
Hexachlorobutadiene	47.1	1	ug/L	50.0		94.2	50-140	1.83	30	
Isopropylbenzene	49.2	1	ug/L	50.0		98.3	75-125	1.38	30	
m+p-Xylenes	93.5	2	ug/L	100		93.5	75-130	1.51	30	
Methylene chloride	39.7	4	ug/L	50.0		79.4	55-140	3.30	30	
Methyl-t-butyl ether (MTBE)	50.8	1	ug/L	50.0		102	65-125	1.50	30	
Naphthalene	53.9	1	ug/L	50.0		108	55-140	1.02	30	
n-Butylbenzene	47.6	1	ug/L	50.0		95.2	70-135	0.701	30	
n-Propylbenzene	50.4	1	ug/L	50.0		101	70-130	0.551	30	
o-Xylene	49.8	1	ug/L	50.0		99.7	80-120	1.04	30	
sec-Butylbenzene	49.6	1	ug/L	50.0		99.2	70-125	0.107	30	
Styrene	52.0	1	ug/L	50.0		104	65-135	0.797	30	
tert-Butylbenzene	51.0	1	ug/L	50.0		102	70-130	0.336	30	
Tetrachloroethylene (PCE)	58.8	1	ug/L	50.0		118	45-150	1.06	30	
Toluene	45.9	1	ug/L	50.0		91.8	75-120	1.43	30	
trans-1,2-Dichloroethylene	44.5	1	ug/L	50.0		89.0	60-140	1.04	30	
trans-1,3-Dichloropropene	44.2	1	ug/L	50.0		88.5	55-140	2.15	30	
Trichloroethylene	45.4	1	ug/L	50.0		90.8	70-125	2.70	30	
Trichlorofluoromethane	35.3	1	ug/L	50.0		70.6	60-145	2.25	30	
Vinyl chloride	44.2	1	ug/L	50.0		88.4	50-145	2.17	30	
Surr: 1,2-Dichloroethane-d4	50.2		ug/L	50.0		100	70-120			
Surr: 4-Bromofluorobenzene	47.6		ug/L	50.0		95.3	75-120			

Certificate of Analysis

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0284 - SW5030B										
LCS Dup (BXL0284-BSD1)				Prepared & Analyzed: 12/10/2014						
Surr: Dibromofluoromethane	48.2		ug/L	50.0		96.5	80-119			
Surr: Toluene-d8	49.8		ug/L	50.0		99.6	85-120			
Matrix Spike (BXL0284-MS1)				Source: 14L0150-23	Prepared & Analyzed: 12/11/2014					
1,1,1,2-Tetrachloroethane	61.1	1	ug/L	50.0	6.16	110	80-130			
1,1,1-Trichloroethane	48.8	1	ug/L	50.0	BLOD	97.6	65-130			
1,1,2,2-Tetrachloroethane	58.8	1	ug/L	50.0	BLOD	118	65-130			
1,1,2-Trichloroethane	52.8	1	ug/L	50.0	BLOD	105	75-125			
1,1-Dichloroethane	52.7	1	ug/L	50.0	BLOD	105	70-135			
1,1-Dichloroethylene	51.2	1	ug/L	50.0	1.87	98.6	70-130			
1,1-Dichloropropene	48.5	1	ug/L	50.0	BLOD	96.9	75-135			
1,2,3-Trichlorobenzene	50.3	1	ug/L	50.0	BLOD	101	55-140			
1,2,3-Trichloropropane	53.3	1	ug/L	50.0	BLOD	107	75-125			
1,2,4-Trichlorobenzene	46.2	1	ug/L	50.0	BLOD	92.5	65-135			
1,2,4-Trimethylbenzene	51.7	1	ug/L	50.0	6.02	91.5	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	59.0	4	ug/L	50.0	BLOD	118	50-130			
1,2-Dibromoethane (EDB)	53.7	1	ug/L	50.0	BLOD	107	80-120			
1,2-Dichlorobenzene	53.5	1	ug/L	50.0	BLOD	107	70-120			
1,2-Dichloroethane	48.6	1	ug/L	50.0	BLOD	97.1	70-130			
1,2-Dichloropropane	46.0	1	ug/L	50.0	BLOD	92.0	75-125			
1,3,5-Trimethylbenzene	50.7	1	ug/L	50.0	1.69	97.9	75-125			
1,3-Dichlorobenzene	50.7	1	ug/L	50.0	BLOD	101	75-125			
1,3-Dichloropropane	50.2	1	ug/L	50.0	BLOD	100	75-125			
1,4-Dichlorobenzene	49.7	1	ug/L	50.0	0.57	98.3	75-125			
2,2-Dichloropropane	44.4	1	ug/L	50.0	BLOD	88.7	70-135			
2-Butanone (MEK)	62.8	10	ug/L	50.0	BLOD	126	30-150			
2-Chlorotoluene	52.3	1	ug/L	50.0	BLOD	105	75-125			

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
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 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0284 - SW5030B

Matrix Spike (BXL0284-MS1)		Source: 14L0150-23			Prepared & Analyzed: 12/11/2014					
2-Hexanone (MBK)	60.5	10	ug/L	50.0	BLOD	121	55-130			
4-Chlorotoluene	51.2	1	ug/L	50.0	BLOD	102	75-130			
4-Isopropyltoluene	49.5	1	ug/L	50.0	0.64	97.7	75-130			
4-Methyl-2-pentanone (MIBK)	60.8	10	ug/L	50.0	0.84	120	60-135			
Acetone	83.7	10	ug/L	50.0	11.9	143	40-140			M
Benzene	51.3	1	ug/L	50.0	BLOD	102	80-120			
Bromobenzene	48.9	1	ug/L	50.0	BLOD	97.9	75-125			
Bromochloromethane	49.7	1	ug/L	50.0	BLOD	99.3	65-130			
Bromodichloromethane	50.2	1	ug/L	50.0	BLOD	100	75-120			
Bromoform	58.9	1	ug/L	50.0	BLOD	118	70-130			
Bromomethane	55.8	1	ug/L	50.0	BLOD	112	30-145			
Carbon disulfide	39.7	10	ug/L	50.0	BLOD	78.9	35-160			
Carbon tetrachloride	48.0	1	ug/L	50.0	BLOD	96.0	65-140			
Chlorobenzene	50.8	1	ug/L	50.0	BLOD	102	80-120			
Chloroethane	45.3	1	ug/L	50.0	BLOD	90.6	60-135			
Chloroform	47.2	1	ug/L	50.0	0.68	93.0	65-135			
Chloromethane	40.5	1	ug/L	50.0	BLOD	81.0	40-125			
cis-1,2-Dichloroethylene	189	1	ug/L	50.0	153	72.0	70-125			
cis-1,3-Dichloropropene	43.7	1	ug/L	50.0	BLOD	87.4	70-130			
Dibromochloromethane	53.3	1	ug/L	50.0	BLOD	107	60-135			
Dibromomethane	53.7	1	ug/L	50.0	BLOD	107	75-125			
Dichlorodifluoromethane	39.4	1	ug/L	50.0	BLOD	78.9	30-155			
Ethylbenzene	47.8	1	ug/L	50.0	0.58	94.4	75-125			
Hexachlorobutadiene	46.7	1	ug/L	50.0	BLOD	93.4	50-140			
Isopropylbenzene	50.6	1	ug/L	50.0	0.41	100	75-125			
m+p-Xylenes	98.1	2	ug/L	100	2.74	95.4	75-130			

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
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 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0284 - SW5030B										
Matrix Spike (BXL0284-MS1) Source: 14L0150-23 Prepared & Analyzed: 12/11/2014										
Methylene chloride	42.5	4	ug/L	50.0	BLOD	85.1	55-140			
Methyl-t-butyl ether (MTBE)	55.1	1	ug/L	50.0	1.10	108	65-125			
Naphthalene	61.0	1	ug/L	50.0	3.00	116	55-140			
n-Butylbenzene	47.7	1	ug/L	50.0	0.46	94.5	70-135			
n-Propylbenzene	52.0	1	ug/L	50.0	0.80	103	70-130			
o-Xylene	52.7	1	ug/L	50.0	2.56	100	80-120			
sec-Butylbenzene	52.1	1	ug/L	50.0	0.40	103	70-125			
Styrene	51.4	1	ug/L	50.0	BLOD	103	65-135			
tert-Butylbenzene	52.8	1	ug/L	50.0	BLOD	106	70-130			
Tetrachloroethylene (PCE)	29800	1	ug/L	50.0	31000	-2340	45-150			E, M
Toluene	49.0	1	ug/L	50.0	BLOD	97.2	75-120			
trans-1,2-Dichloroethylene	53.9	1	ug/L	50.0	6.42	95.0	60-140			
trans-1,3-Dichloropropene	44.1	1	ug/L	50.0	BLOD	88.2	55-140			
Trichloroethylene	228	1	ug/L	50.0	190	76.9	70-125			
Trichlorofluoromethane	37.8	1	ug/L	50.0	BLOD	75.5	60-145			
Vinyl chloride	48.4	1	ug/L	50.0	BLOD	96.8	50-145			
<i>Surr: 1,2-Dichloroethane-d4</i>	49.6		ug/L	50.0		99.3	70-120			
<i>Surr: 4-Bromofluorobenzene</i>	48.7		ug/L	50.0		97.4	75-120			
<i>Surr: Dibromofluoromethane</i>	49.3		ug/L	50.0		98.5	80-119			
<i>Surr: Toluene-d8</i>	49.9		ug/L	50.0		99.9	85-120			
Matrix Spike Dup (BXL0284-MSD1) Source: 14L0150-23 Prepared & Analyzed: 12/11/2014										
1,1,1,2-Tetrachloroethane	58.9	1	ug/L	50.0	6.16	105	80-130	3.65	30	
1,1,1-Trichloroethane	46.9	1	ug/L	50.0	BLOD	93.8	65-130	4.01	30	
1,1,2,2-Tetrachloroethane	55.9	1	ug/L	50.0	BLOD	112	65-130	4.99	30	
1,1,2-Trichloroethane	51.6	1	ug/L	50.0	BLOD	102	75-125	2.42	30	
1,1-Dichloroethane	51.4	1	ug/L	50.0	BLOD	103	70-135	2.58	30	

Certificate of Analysis

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0284 - SW5030B

Matrix Spike Dup (BXL0284-MSD1)		Source: 14L0150-23			Prepared & Analyzed: 12/11/2014					
1,1-Dichloroethylene	46.5	1	ug/L	50.0	1.87	89.2	70-130	9.65	30	
1,1-Dichloropropene	47.7	1	ug/L	50.0	BLOD	95.3	75-135	1.65	30	
1,2,3-Trichlorobenzene	51.3	1	ug/L	50.0	BLOD	103	55-140	1.86	30	
1,2,3-Trichloropropane	48.5	1	ug/L	50.0	BLOD	96.9	75-125	9.56	30	
1,2,4-Trichlorobenzene	47.1	1	ug/L	50.0	BLOD	94.3	65-135	1.93	30	
1,2,4-Trimethylbenzene	51.1	1	ug/L	50.0	6.02	90.2	75-130	1.27	30	
1,2-Dibromo-3-chloropropane (DBCP)	53.2	4	ug/L	50.0	BLOD	106	50-130	10.3	30	
1,2-Dibromoethane (EDB)	51.8	1	ug/L	50.0	BLOD	104	80-120	3.49	30	
1,2-Dichlorobenzene	52.7	1	ug/L	50.0	BLOD	105	70-120	1.51	30	
1,2-Dichloroethane	47.5	1	ug/L	50.0	BLOD	94.9	70-130	2.28	30	
1,2-Dichloropropane	45.8	1	ug/L	50.0	BLOD	91.6	75-125	0.423	30	
1,3,5-Trimethylbenzene	49.5	1	ug/L	50.0	1.69	95.5	75-125	2.40	30	
1,3-Dichlorobenzene	50.1	1	ug/L	50.0	BLOD	100	75-125	1.23	30	
1,3-Dichloropropane	49.5	1	ug/L	50.0	BLOD	99.0	75-125	1.40	30	
1,4-Dichlorobenzene	48.8	1	ug/L	50.0	0.57	96.5	75-125	1.86	30	
2,2-Dichloropropane	42.4	1	ug/L	50.0	BLOD	84.7	70-135	4.62	30	
2-Butanone (MEK)	54.8	10	ug/L	50.0	BLOD	110	30-150	13.5	30	
2-Chlorotoluene	51.4	1	ug/L	50.0	BLOD	103	75-125	1.77	30	
2-Hexanone (MBK)	55.2	10	ug/L	50.0	BLOD	110	55-130	9.15	30	
4-Chlorotoluene	49.4	1	ug/L	50.0	BLOD	98.7	75-130	3.66	30	
4-Isopropyltoluene	49.3	1	ug/L	50.0	0.64	97.3	75-130	0.435	30	
4-Methyl-2-pentanone (MIBK)	56.2	10	ug/L	50.0	0.84	111	60-135	7.90	30	
Acetone	68.4	10	ug/L	50.0	11.9	113	40-140	20.0	30	
Benzene	48.3	1	ug/L	50.0	BLOD	96.2	80-120	6.11	30	
Bromobenzene	48.2	1	ug/L	50.0	BLOD	96.4	75-125	1.52	30	
Bromochloromethane	47.7	1	ug/L	50.0	BLOD	95.4	65-130	4.08	30	

Certificate of Analysis

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0284 - SW5030B

Matrix Spike Dup (BXL0284-MSD1)		Source: 14L0150-23			Prepared & Analyzed: 12/11/2014					
Bromodichloromethane	48.8	1	ug/L	50.0	BLOD	97.6	75-120	2.76	30	
Bromoform	57.6	1	ug/L	50.0	BLOD	115	70-130	2.23	30	
Bromomethane	52.4	1	ug/L	50.0	BLOD	105	30-145	6.25	30	
Carbon disulfide	39.1	10	ug/L	50.0	BLOD	77.6	35-160	1.68	30	
Carbon tetrachloride	45.4	1	ug/L	50.0	BLOD	90.9	65-140	5.47	30	
Chlorobenzene	48.8	1	ug/L	50.0	BLOD	97.6	80-120	3.98	30	
Chloroethane	45.9	1	ug/L	50.0	BLOD	91.8	60-135	1.41	30	
Chloroform	45.9	1	ug/L	50.0	0.68	90.5	65-135	2.71	30	
Chloromethane	43.8	1	ug/L	50.0	BLOD	87.7	40-125	7.93	30	
cis-1,2-Dichloroethylene	184	1	ug/L	50.0	153	61.6	70-125	2.79	30	M
cis-1,3-Dichloropropene	43.1	1	ug/L	50.0	BLOD	86.2	70-130	1.31	30	
Dibromochloromethane	50.4	1	ug/L	50.0	BLOD	101	60-135	5.61	30	
Dibromomethane	50.8	1	ug/L	50.0	BLOD	102	75-125	5.65	30	
Dichlorodifluoromethane	39.1	1	ug/L	50.0	BLOD	78.3	30-155	0.756	30	
Ethylbenzene	46.8	1	ug/L	50.0	0.58	92.4	75-125	2.10	30	
Hexachlorobutadiene	48.2	1	ug/L	50.0	BLOD	96.4	50-140	3.18	30	
Isopropylbenzene	49.3	1	ug/L	50.0	0.41	97.8	75-125	2.60	30	
m+p-Xylenes	94.4	2	ug/L	100	2.74	91.6	75-130	3.90	30	
Methylene chloride	41.2	4	ug/L	50.0	BLOD	82.4	55-140	3.18	30	
Methyl-t-butyl ether (MTBE)	53.6	1	ug/L	50.0	1.10	105	65-125	2.78	30	
Naphthalene	60.1	1	ug/L	50.0	3.00	114	55-140	1.51	30	
n-Butylbenzene	49.1	1	ug/L	50.0	0.46	97.3	70-135	2.90	30	
n-Propylbenzene	51.9	1	ug/L	50.0	0.80	102	70-130	0.343	30	
o-Xylene	51.3	1	ug/L	50.0	2.56	97.4	80-120	2.83	30	
sec-Butylbenzene	51.2	1	ug/L	50.0	0.40	102	70-125	1.80	30	
Styrene	50.9	1	ug/L	50.0	BLOD	102	65-135	1.02	30	

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0284 - SW5030B

Matrix Spike Dup (BXL0284-MSD1)		Source: 14L0150-23		Prepared & Analyzed: 12/11/2014						
tert-Butylbenzene	52.7	1	ug/L	50.0	BLOD	105	70-130	0.169	30	
Tetrachloroethylene (PCE)	29000	1	ug/L	50.0	31000	-3950	45-150	2.74	30	E, M
Toluene	46.6	1	ug/L	50.0	BLOD	92.4	75-120	4.99	30	
trans-1,2-Dichloroethylene	52.0	1	ug/L	50.0	6.42	91.1	60-140	3.73	30	
trans-1,3-Dichloropropene	43.8	1	ug/L	50.0	BLOD	87.6	55-140	0.733	30	
Trichloroethylene	218	1	ug/L	50.0	190	56.8	70-125	4.51	30	M
Trichlorofluoromethane	35.9	1	ug/L	50.0	BLOD	71.9	60-145	4.97	30	
Vinyl chloride	46.4	1	ug/L	50.0	BLOD	92.7	50-145	4.32	30	
Surr: 1,2-Dichloroethane-d4	49.3		ug/L	50.0		98.5	70-120			
Surr: 4-Bromofluorobenzene	47.5		ug/L	50.0		95.0	75-120			
Surr: Dibromofluoromethane	48.8		ug/L	50.0		97.6	80-119			
Surr: Toluene-d8	49.1		ug/L	50.0		98.1	85-120			

Batch BXL0295 - SW5030B

Blank (BXL0295-BLK1)		Prepared & Analyzed: 12/11/2014								
1,1,1,2-Tetrachloroethane	BLOD	1.00	ug/L							
1,1,1-Trichloroethane	BLOD	1.00	ug/L							
1,1,2,2-Tetrachloroethane	BLOD	1.00	ug/L							
1,1,2-Trichloroethane	BLOD	1.00	ug/L							
1,1-Dichloroethane	BLOD	1.00	ug/L							
1,1-Dichloroethylene	BLOD	1.00	ug/L							
1,1-Dichloropropene	BLOD	1.00	ug/L							
1,2,3-Trichlorobenzene	BLOD	1.00	ug/L							
1,2,3-Trichloropropane	BLOD	1.00	ug/L							
1,2,4-Trichlorobenzene	BLOD	1.00	ug/L							
1,2,4-Trimethylbenzene	BLOD	1.00	ug/L							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
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 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0295 - SW5030B

Blank (BXL0295-BLK1)

Prepared & Analyzed: 12/11/2014

1,2-Dibromo-3-chloropropane (DBCP)	BLOD	4.00	ug/L
1,2-Dibromoethane (EDB)	BLOD	1.00	ug/L
1,2-Dichlorobenzene	BLOD	1.00	ug/L
1,2-Dichloroethane	BLOD	1.00	ug/L
1,2-Dichloropropane	BLOD	1.00	ug/L
1,3,5-Trimethylbenzene	BLOD	1.00	ug/L
1,3-Dichlorobenzene	BLOD	1.00	ug/L
1,3-Dichloropropane	BLOD	1.00	ug/L
1,4-Dichlorobenzene	BLOD	1.00	ug/L
2,2-Dichloropropane	BLOD	1.00	ug/L
2-Butanone (MEK)	BLOD	10.0	ug/L
2-Chlorotoluene	BLOD	1.00	ug/L
2-Hexanone (MBK)	BLOD	10.0	ug/L
4-Chlorotoluene	BLOD	1.00	ug/L
4-Isopropyltoluene	BLOD	1.00	ug/L
4-Methyl-2-pentanone (MIBK)	BLOD	10.0	ug/L
Acetone	BLOD	10.0	ug/L
Benzene	BLOD	1.00	ug/L
Bromobenzene	BLOD	1.00	ug/L
Bromochloromethane	BLOD	1.00	ug/L
Bromodichloromethane	BLOD	1.00	ug/L
Bromoform	BLOD	1.00	ug/L
Bromomethane	BLOD	1.00	ug/L
Carbon disulfide	BLOD	10.0	ug/L
Carbon tetrachloride	BLOD	1.00	ug/L
Chlorobenzene	BLOD	1.00	ug/L

Certificate of Analysis

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Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0295 - SW5030B

Blank (BXL0295-BLK1)

Prepared & Analyzed: 12/11/2014

Chloroethane	BLOD	1.00	ug/L
Chloroform	BLOD	1.00	ug/L
Chloromethane	BLOD	1.00	ug/L
cis-1,2-Dichloroethylene	BLOD	1.00	ug/L
cis-1,3-Dichloropropene	BLOD	1.00	ug/L
Dibromochloromethane	BLOD	1.00	ug/L
Dibromomethane	BLOD	1.00	ug/L
Dichlorodifluoromethane	BLOD	1.00	ug/L
Di-isopropyl ether (DIPE)	BLOD	5.00	ug/L
Ethylbenzene	BLOD	1.00	ug/L
Ethyl-t-butyl ether (ETBE)	BLOD	25.0	ug/L
Hexachlorobutadiene	BLOD	1.00	ug/L
Iodomethane	BLOD	10.0	ug/L
Isopropylbenzene	BLOD	1.00	ug/L
m+p-Xylenes	BLOD	2.00	ug/L
Methylene chloride	BLOD	4.00	ug/L
Methyl-t-butyl ether (MTBE)	BLOD	1.00	ug/L
Naphthalene	BLOD	1.00	ug/L
n-Butylbenzene	BLOD	1.00	ug/L
n-Propylbenzene	BLOD	1.00	ug/L
o-Xylene	BLOD	1.00	ug/L
sec-Butylbenzene	BLOD	1.00	ug/L
Styrene	BLOD	1.00	ug/L
TAME	BLOD	5.00	ug/L
TBA	BLOD	100	ug/L
tert-Butylbenzene	BLOD	1.00	ug/L

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
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 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0295 - SW5030B										
Blank (BXL0295-BLK1)				Prepared & Analyzed: 12/11/2014						
Tetrachloroethylene (PCE)	BLOD	1.00	ug/L							
Toluene	BLOD	1.00	ug/L							
trans-1,2-Dichloroethylene	BLOD	1.00	ug/L							
trans-1,3-Dichloropropene	BLOD	1.00	ug/L							
Trichloroethylene	BLOD	1.00	ug/L							
Trichlorofluoromethane	BLOD	1.00	ug/L							
Vinyl acetate	BLOD	10.0	ug/L							
Vinyl chloride	BLOD	1.00	ug/L							
Xylenes, Total	BLOD	3.00	ug/L							
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>48.1</i>		ug/L	<i>50.0</i>		<i>96.1</i>	<i>70-120</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>47.3</i>		ug/L	<i>50.0</i>		<i>94.5</i>	<i>75-120</i>			
<i>Surr: Dibromofluoromethane</i>	<i>48.7</i>		ug/L	<i>50.0</i>		<i>97.3</i>	<i>80-119</i>			
<i>Surr: Toluene-d8</i>	<i>51.2</i>		ug/L	<i>50.0</i>		<i>102</i>	<i>85-120</i>			
LCS (BXL0295-BS1)				Prepared & Analyzed: 12/11/2014						
1,1,1,2-Tetrachloroethane	51.0	1	ug/L	50.0		102	80-130			
1,1,1-Trichloroethane	49.9	1	ug/L	50.0		99.8	65-130			
1,1,2,2-Tetrachloroethane	53.8	1	ug/L	50.0		108	65-130			
1,1,2-Trichloroethane	48.4	1	ug/L	50.0		96.9	75-125			
1,1-Dichloroethane	51.0	1	ug/L	50.0		102	70-135			
1,1-Dichloroethylene	48.3	1	ug/L	50.0		96.5	70-130			
1,1-Dichloropropene	50.3	1	ug/L	50.0		101	75-135			
1,2,3-Trichlorobenzene	54.0	1	ug/L	50.0		108	55-140			
1,2,3-Trichloropropane	48.0	1	ug/L	50.0		95.9	75-125			
1,2,4-Trichlorobenzene	54.1	1	ug/L	50.0		108	65-135			
1,2,4-Trimethylbenzene	48.0	1	ug/L	50.0		96.0	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	50.6	4	ug/L	50.0		101	50-130			

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0295 - SW5030B

LCS (BXL0295-BS1)

Prepared & Analyzed: 12/11/2014

1,2-Dibromoethane (EDB)	50.6	1	ug/L	50.0		101	80-120			
1,2-Dichlorobenzene	54.2	1	ug/L	50.0		108	70-120			
1,2-Dichloroethane	45.1	1	ug/L	50.0		90.2	70-130			
1,2-Dichloropropane	45.1	1	ug/L	50.0		90.3	75-125			
1,3,5-Trimethylbenzene	51.0	1	ug/L	50.0		102	75-125			
1,3-Dichlorobenzene	53.4	1	ug/L	50.0		107	75-125			
1,3-Dichloropropane	47.6	1	ug/L	50.0		95.2	75-125			
1,4-Dichlorobenzene	52.7	1	ug/L	50.0		105	75-125			
2,2-Dichloropropane	47.7	1	ug/L	50.0		95.4	70-135			
2-Butanone (MEK)	115	10	ug/L	50.0		230	30-150			L
2-Chlorotoluene	54.2	1	ug/L	50.0		108	75-125			
2-Hexanone (MBK)	115	10	ug/L	50.0		230	55-130			L
4-Chlorotoluene	54.3	1	ug/L	50.0		109	75-130			
4-Isopropyltoluene	52.8	1	ug/L	50.0		106	75-130			
4-Methyl-2-pentanone (MIBK)	116	10	ug/L	50.0		232	60-135			L
Acetone	108	10	ug/L	50.0		215	40-140			L
Benzene	50.6	1	ug/L	50.0		101	80-120			
Bromobenzene	51.0	1	ug/L	50.0		102	75-125			
Bromochloromethane	44.9	1	ug/L	50.0		89.7	65-130			
Bromodichloromethane	46.8	1	ug/L	50.0		93.7	75-120			
Bromoform	52.8	1	ug/L	50.0		106	70-130			
Bromomethane	60.1	1	ug/L	50.0		120	30-145			
Carbon disulfide	85.5	10	ug/L	50.0		171	35-160			L
Carbon tetrachloride	48.3	1	ug/L	50.0		96.7	65-140			
Chlorobenzene	51.6	1	ug/L	50.0		103	80-120			
Chloroethane	47.9	1	ug/L	50.0		95.7	60-135			

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
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 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0295 - SW5030B

LCS (BXL0295-BS1)

Prepared & Analyzed: 12/11/2014

Chloroform	46.1	1	ug/L	50.0		92.2	65-135			
Chloromethane	39.8	1	ug/L	50.0		79.5	40-125			
cis-1,2-Dichloroethylene	44.9	1	ug/L	50.0		89.8	70-125			
cis-1,3-Dichloropropene	45.4	1	ug/L	50.0		90.7	70-130			
Dibromochloromethane	48.7	1	ug/L	50.0		97.3	60-135			
Dibromomethane	49.5	1	ug/L	50.0		99.0	75-125			
Dichlorodifluoromethane	40.5	1	ug/L	50.0		80.9	30-155			
Ethylbenzene	48.9	1	ug/L	50.0		97.8	75-125			
Hexachlorobutadiene	52.8	1	ug/L	50.0		106	50-140			
Isopropylbenzene	53.0	1	ug/L	50.0		106	75-125			
m+p-Xylenes	98.6	2	ug/L	100		98.6	75-130			
Methylene chloride	40.9	4	ug/L	50.0		81.8	55-140			
Methyl-t-butyl ether (MTBE)	48.5	1	ug/L	50.0		97.0	65-125			
Naphthalene	53.9	1	ug/L	50.0		108	55-140			
n-Butylbenzene	54.9	1	ug/L	50.0		110	70-135			
n-Propylbenzene	55.6	1	ug/L	50.0		111	70-130			
o-Xylene	51.2	1	ug/L	50.0		102	80-120			
sec-Butylbenzene	54.9	1	ug/L	50.0		110	70-125			
Styrene	54.7	1	ug/L	50.0		109	65-135			
tert-Butylbenzene	55.0	1	ug/L	50.0		110	70-130			
Tetrachloroethylene (PCE)	65.0	1	ug/L	50.0		130	45-150			
Toluene	47.4	1	ug/L	50.0		94.7	75-120			
trans-1,2-Dichloroethylene	47.7	1	ug/L	50.0		95.4	60-140			
trans-1,3-Dichloropropene	45.8	1	ug/L	50.0		91.6	55-140			
Trichloroethylene	47.3	1	ug/L	50.0		94.7	70-125			
Trichlorofluoromethane	37.9	1	ug/L	50.0		75.8	60-145			

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0295 - SW5030B										
LCS (BXL0295-BS1)										
Prepared & Analyzed: 12/11/2014										
Vinyl chloride	47.1	1	ug/L	50.0		94.2	50-145			
Surr: 1,2-Dichloroethane-d4	47.8		ug/L	50.0		95.6	70-120			
Surr: 4-Bromofluorobenzene	48.7		ug/L	50.0		97.3	75-120			
Surr: Dibromofluoromethane	47.2		ug/L	50.0		94.4	80-119			
Surr: Toluene-d8	49.5		ug/L	50.0		98.9	85-120			
LCS Dup (BXL0295-BSD1)										
Prepared & Analyzed: 12/11/2014										
1,1,1,2-Tetrachloroethane	54.9	1	ug/L	50.0		110	80-130	7.43	30	
1,1,1-Trichloroethane	52.4	1	ug/L	50.0		105	65-130	4.88	30	
1,1,2,2-Tetrachloroethane	56.2	1	ug/L	50.0		112	65-130	4.30	30	
1,1,2-Trichloroethane	51.8	1	ug/L	50.0		104	75-125	6.74	30	
1,1-Dichloroethane	55.4	1	ug/L	50.0		111	70-135	8.30	30	
1,1-Dichloroethylene	49.6	1	ug/L	50.0		99.2	70-130	2.75	30	
1,1-Dichloropropene	53.1	1	ug/L	50.0		106	75-135	5.32	30	
1,2,3-Trichlorobenzene	58.4	1	ug/L	50.0		117	55-140	7.72	30	
1,2,3-Trichloropropane	50.9	1	ug/L	50.0		102	75-125	5.90	30	
1,2,4-Trichlorobenzene	59.2	1	ug/L	50.0		118	65-135	9.13	30	
1,2,4-Trimethylbenzene	52.3	1	ug/L	50.0		105	75-130	8.50	30	
1,2-Dibromo-3-chloropropane (DBCP)	50.4	4	ug/L	50.0		101	50-130	0.450	30	
1,2-Dibromoethane (EDB)	52.5	1	ug/L	50.0		105	80-120	3.76	30	
1,2-Dichlorobenzene	59.0	1	ug/L	50.0		118	70-120	8.44	30	
1,2-Dichloroethane	48.4	1	ug/L	50.0		96.9	70-130	7.17	30	
1,2-Dichloropropane	48.8	1	ug/L	50.0		97.6	75-125	7.79	30	
1,3,5-Trimethylbenzene	55.0	1	ug/L	50.0		110	75-125	7.67	30	
1,3-Dichlorobenzene	58.5	1	ug/L	50.0		117	75-125	8.96	30	
1,3-Dichloropropane	50.3	1	ug/L	50.0		101	75-125	5.43	30	
1,4-Dichlorobenzene	57.4	1	ug/L	50.0		115	75-125	8.38	30	

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0295 - SW5030B

LCS Dup (BXL0295-BSD1)

Prepared & Analyzed: 12/11/2014

2,2-Dichloropropane	51.9	1	ug/L	50.0		104	70-135	8.47	30	
2-Butanone (MEK)	54.1	10	ug/L	50.0		108	30-150	71.9	30	P
2-Chlorotoluene	57.8	1	ug/L	50.0		116	75-125	6.33	30	
2-Hexanone (MBK)	56.6	10	ug/L	50.0		113	55-130	68.1	30	P
4-Chlorotoluene	58.1	1	ug/L	50.0		116	75-130	6.72	30	
4-Isopropyltoluene	57.5	1	ug/L	50.0		115	75-130	8.57	30	
4-Methyl-2-pentanone (MIBK)	56.7	10	ug/L	50.0		113	60-135	68.6	30	P
Acetone	55.0	10	ug/L	50.0		110	40-140	64.8	30	P
Benzene	54.1	1	ug/L	50.0		108	80-120	6.53	30	
Bromobenzene	53.6	1	ug/L	50.0		107	75-125	4.97	30	
Bromochloromethane	49.7	1	ug/L	50.0		99.5	65-130	10.3	30	
Bromodichloromethane	51.3	1	ug/L	50.0		103	75-120	9.00	30	
Bromoform	55.6	1	ug/L	50.0		111	70-130	5.16	30	
Bromomethane	55.8	1	ug/L	50.0		112	30-145	7.27	30	
Carbon disulfide	37.2	10	ug/L	50.0		74.4	35-160	78.7	30	P
Carbon tetrachloride	52.0	1	ug/L	50.0		104	65-140	7.21	30	
Chlorobenzene	55.1	1	ug/L	50.0		110	80-120	6.49	30	
Chloroethane	51.6	1	ug/L	50.0		103	60-135	7.56	30	
Chloroform	50.4	1	ug/L	50.0		101	65-135	8.89	30	
Chloromethane	46.2	1	ug/L	50.0		92.4	40-125	15.0	30	
cis-1,2-Dichloroethylene	48.2	1	ug/L	50.0		96.4	70-125	7.05	30	
cis-1,3-Dichloropropene	47.9	1	ug/L	50.0		95.8	70-130	5.48	30	
Dibromochloromethane	53.4	1	ug/L	50.0		107	60-135	9.31	30	
Dibromomethane	52.3	1	ug/L	50.0		105	75-125	5.48	30	
Dichlorodifluoromethane	41.8	1	ug/L	50.0		83.6	30-155	3.28	30	
Ethylbenzene	52.0	1	ug/L	50.0		104	75-125	6.12	30	

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0295 - SW5030B										
LCS Dup (BXL0295-BSD1)										
Prepared & Analyzed: 12/11/2014										
Hexachlorobutadiene	55.4	1	ug/L	50.0		111	50-140	4.88	30	
Isopropylbenzene	56.3	1	ug/L	50.0		113	75-125	5.90	30	
m+p-Xylenes	107	2	ug/L	100		107	75-130	8.43	30	
Methylene chloride	44.2	4	ug/L	50.0		88.5	55-140	7.87	30	
Methyl-t-butyl ether (MTBE)	52.6	1	ug/L	50.0		105	65-125	8.07	30	
Naphthalene	57.9	1	ug/L	50.0		116	55-140	7.15	30	
n-Butylbenzene	58.4	1	ug/L	50.0		117	70-135	6.17	30	
n-Propylbenzene	60.3	1	ug/L	50.0		121	70-130	8.19	30	
o-Xylene	54.9	1	ug/L	50.0		110	80-120	7.10	30	
sec-Butylbenzene	59.1	1	ug/L	50.0		118	70-125	7.30	30	
Styrene	58.5	1	ug/L	50.0		117	65-135	6.59	30	
tert-Butylbenzene	58.6	1	ug/L	50.0		117	70-130	6.33	30	
Tetrachloroethylene (PCE)	68.9	1	ug/L	50.0		138	45-150	5.82	30	
Toluene	51.3	1	ug/L	50.0		103	75-120	8.01	30	
trans-1,2-Dichloroethylene	50.2	1	ug/L	50.0		100	60-140	5.09	30	
trans-1,3-Dichloropropene	48.5	1	ug/L	50.0		97.0	55-140	5.73	30	
Trichloroethylene	51.9	1	ug/L	50.0		104	70-125	9.26	30	
Trichlorofluoromethane	39.9	1	ug/L	50.0		79.8	60-145	5.10	30	
Vinyl chloride	50.2	1	ug/L	50.0		100	50-145	6.40	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>48.3</i>		ug/L	<i>50.0</i>		<i>96.5</i>	<i>70-120</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>48.1</i>		ug/L	<i>50.0</i>		<i>96.3</i>	<i>75-120</i>			
<i>Surr: Dibromofluoromethane</i>	<i>48.9</i>		ug/L	<i>50.0</i>		<i>97.7</i>	<i>80-119</i>			
<i>Surr: Toluene-d8</i>	<i>49.2</i>		ug/L	<i>50.0</i>		<i>98.4</i>	<i>85-120</i>			
Matrix Spike (BXL0295-MS1)										
Prepared & Analyzed: 12/11/2014										
1,1,1,2-Tetrachloroethane	54.6	1	ug/L	50.0	BLOD	109	80-130			
1,1,1-Trichloroethane	53.2	1	ug/L	50.0	BLOD	106	65-130			

Certificate of Analysis

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0295 - SW5030B

Matrix Spike (BXL0295-MS1)

Source: 14L0150-14RE1

Prepared & Analyzed: 12/11/2014

1,1,2,2-Tetrachloroethane	58.2	1	ug/L	50.0	BLOD	116	65-130			
1,1,2-Trichloroethane	54.5	1	ug/L	50.0	BLOD	109	75-125			
1,1-Dichloroethane	56.3	1	ug/L	50.0	BLOD	113	70-135			
1,1-Dichloroethylene	50.8	1	ug/L	50.0	BLOD	102	70-130			
1,1-Dichloropropene	54.0	1	ug/L	50.0	BLOD	108	75-135			
1,2,3-Trichlorobenzene	55.7	1	ug/L	50.0	BLOD	111	55-140			
1,2,3-Trichloropropane	52.1	1	ug/L	50.0	BLOD	104	75-125			
1,2,4-Trichlorobenzene	53.9	1	ug/L	50.0	BLOD	108	65-135			
1,2,4-Trimethylbenzene	50.6	1	ug/L	50.0	BLOD	101	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	55.2	4	ug/L	50.0	BLOD	110	50-130			
1,2-Dibromoethane (EDB)	54.2	1	ug/L	50.0	BLOD	108	80-120			
1,2-Dichlorobenzene	58.0	1	ug/L	50.0	BLOD	116	70-120			
1,2-Dichloroethane	50.3	1	ug/L	50.0	BLOD	101	70-130			
1,2-Dichloropropane	49.1	1	ug/L	50.0	BLOD	98.2	75-125			
1,3,5-Trimethylbenzene	53.7	1	ug/L	50.0	BLOD	107	75-125			
1,3-Dichlorobenzene	56.3	1	ug/L	50.0	BLOD	113	75-125			
1,3-Dichloropropane	52.0	1	ug/L	50.0	BLOD	104	75-125			
1,4-Dichlorobenzene	54.4	1	ug/L	50.0	BLOD	109	75-125			
2,2-Dichloropropane	49.2	1	ug/L	50.0	BLOD	98.5	70-135			
2-Butanone (MEK)	57.8	10	ug/L	50.0	BLOD	116	30-150			
2-Chlorotoluene	56.7	1	ug/L	50.0	BLOD	113	75-125			
2-Hexanone (MBK)	56.3	10	ug/L	50.0	BLOD	113	55-130			
4-Chlorotoluene	55.1	1	ug/L	50.0	BLOD	110	75-130			
4-Isopropyltoluene	54.3	1	ug/L	50.0	BLOD	109	75-130			
4-Methyl-2-pentanone (MIBK)	59.2	10	ug/L	50.0	BLOD	118	60-135			
Acetone	73.5	10	ug/L	50.0	23.2	101	40-140			

Certificate of Analysis

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 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0295 - SW5030B

Matrix Spike (BXL0295-MS1)

Source: 14L0150-14RE1

Prepared & Analyzed: 12/11/2014

Benzene	54.5	1	ug/L	50.0	BLOD	109	80-120			
Bromobenzene	54.0	1	ug/L	50.0	BLOD	108	75-125			
Bromochloromethane	52.4	1	ug/L	50.0	BLOD	105	65-130			
Bromodichloromethane	54.3	1	ug/L	50.0	BLOD	109	75-120			
Bromoform	58.8	1	ug/L	50.0	BLOD	118	70-130			
Bromomethane	56.9	1	ug/L	50.0	BLOD	114	30-145			
Carbon disulfide	40.1	10	ug/L	50.0	0.83	78.6	35-160			
Carbon tetrachloride	51.4	1	ug/L	50.0	BLOD	103	65-140			
Chlorobenzene	54.9	1	ug/L	50.0	BLOD	110	80-120			
Chloroethane	52.6	1	ug/L	50.0	BLOD	105	60-135			
Chloroform	50.7	1	ug/L	50.0	BLOD	101	65-135			
Chloromethane	45.0	1	ug/L	50.0	BLOD	90.1	40-125			
cis-1,2-Dichloroethylene	50.1	1	ug/L	50.0	BLOD	100	70-125			
cis-1,3-Dichloropropene	49.3	1	ug/L	50.0	BLOD	98.6	70-130			
Dibromochloromethane	56.9	1	ug/L	50.0	BLOD	114	60-135			
Dibromomethane	55.8	1	ug/L	50.0	BLOD	112	75-125			
Dichlorodifluoromethane	40.4	1	ug/L	50.0	BLOD	80.8	30-155			
Ethylbenzene	50.9	1	ug/L	50.0	BLOD	102	75-125			
Hexachlorobutadiene	53.4	1	ug/L	50.0	BLOD	107	50-140			
Isopropylbenzene	54.9	1	ug/L	50.0	BLOD	110	75-125			
m+p-Xylenes	104	2	ug/L	100	BLOD	104	75-130			
Methylene chloride	45.5	4	ug/L	50.0	BLOD	91.0	55-140			
Methyl-t-butyl ether (MTBE)	55.5	1	ug/L	50.0	BLOD	111	65-125			
Naphthalene	59.7	1	ug/L	50.0	BLOD	119	55-140			
n-Butylbenzene	55.1	1	ug/L	50.0	BLOD	110	70-135			
n-Propylbenzene	57.9	1	ug/L	50.0	BLOD	116	70-130			

Certificate of Analysis

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 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0295 - SW5030B										
Matrix Spike (BXL0295-MS1) Source: 14L0150-14RE1 Prepared & Analyzed: 12/11/2014										
o-Xylene	53.7	1	ug/L	50.0	BLOD	107	80-120			
sec-Butylbenzene	56.8	1	ug/L	50.0	BLOD	114	70-125			
Styrene	57.1	1	ug/L	50.0	BLOD	114	65-135			
tert-Butylbenzene	58.1	1	ug/L	50.0	BLOD	116	70-130			
Tetrachloroethylene (PCE)	204	1	ug/L	50.0	3.85	400	45-150			M
Toluene	51.3	1	ug/L	50.0	BLOD	102	75-120			
trans-1,2-Dichloroethylene	51.6	1	ug/L	50.0	BLOD	103	60-140			
trans-1,3-Dichloropropene	49.0	1	ug/L	50.0	BLOD	98.0	55-140			
Trichloroethylene	51.3	1	ug/L	50.0	BLOD	103	70-125			
Trichlorofluoromethane	40.8	1	ug/L	50.0	BLOD	81.7	60-145			
Vinyl chloride	50.5	1	ug/L	50.0	BLOD	101	50-145			
<i>Surr: 1,2-Dichloroethane-d4</i>	48.8		ug/L	50.0		97.7	70-120			
<i>Surr: 4-Bromofluorobenzene</i>	48.0		ug/L	50.0		96.1	75-120			
<i>Surr: Dibromofluoromethane</i>	47.1		ug/L	50.0		94.2	80-119			
<i>Surr: Toluene-d8</i>	50.2		ug/L	50.0		100	85-120			
Matrix Spike Dup (BXL0295-MSD1) Source: 14L0150-14RE1 Prepared & Analyzed: 12/11/2014										
1,1,1,2-Tetrachloroethane	59.1	1	ug/L	50.0	BLOD	118	80-130	7.92	30	
1,1,1-Trichloroethane	56.0	1	ug/L	50.0	BLOD	112	65-130	5.11	30	
1,1,2,2-Tetrachloroethane	65.3	1	ug/L	50.0	BLOD	131	65-130	11.6	30	M
1,1,2-Trichloroethane	60.0	1	ug/L	50.0	BLOD	120	75-125	9.48	30	
1,1-Dichloroethane	58.4	1	ug/L	50.0	BLOD	117	70-135	3.62	30	
1,1-Dichloroethylene	55.2	1	ug/L	50.0	BLOD	110	70-130	8.22	30	
1,1-Dichloropropene	57.0	1	ug/L	50.0	BLOD	114	75-135	5.47	30	
1,2,3-Trichlorobenzene	62.3	1	ug/L	50.0	BLOD	124	55-140	11.1	30	
1,2,3-Trichloropropane	60.1	1	ug/L	50.0	BLOD	120	75-125	14.2	30	
1,2,4-Trichlorobenzene	59.8	1	ug/L	50.0	BLOD	120	65-135	10.3	30	

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0295 - SW5030B

Matrix Spike Dup (BXL0295-MSD1)		Source: 14L0150-14RE1			Prepared & Analyzed: 12/11/2014					
1,2,4-Trimethylbenzene	54.2	1	ug/L	50.0	BLOD	108	75-130	6.85	30	
1,2-Dibromo-3-chloropropane (DBCP)	61.7	4	ug/L	50.0	BLOD	123	50-130	11.1	30	
1,2-Dibromoethane (EDB)	60.0	1	ug/L	50.0	BLOD	120	80-120	10.2	30	
1,2-Dichlorobenzene	61.6	1	ug/L	50.0	BLOD	123	70-120	6.04	30	M
1,2-Dichloroethane	55.7	1	ug/L	50.0	BLOD	111	70-130	10.3	30	
1,2-Dichloropropane	54.6	1	ug/L	50.0	BLOD	109	75-125	10.6	30	
1,3,5-Trimethylbenzene	57.2	1	ug/L	50.0	BLOD	114	75-125	6.26	30	
1,3-Dichlorobenzene	60.5	1	ug/L	50.0	BLOD	121	75-125	7.19	30	
1,3-Dichloropropane	57.0	1	ug/L	50.0	BLOD	114	75-125	9.05	30	
1,4-Dichlorobenzene	58.5	1	ug/L	50.0	BLOD	117	75-125	7.31	30	
2,2-Dichloropropane	52.4	1	ug/L	50.0	BLOD	105	70-135	6.25	30	
2-Butanone (MEK)	76.7	10	ug/L	50.0	BLOD	153	30-150	28.0	30	M
2-Chlorotoluene	59.8	1	ug/L	50.0	BLOD	120	75-125	5.33	30	
2-Hexanone (MBK)	66.1	10	ug/L	50.0	BLOD	132	55-130	16.0	30	M
4-Chlorotoluene	59.3	1	ug/L	50.0	BLOD	119	75-130	7.33	30	
4-Isopropyltoluene	57.6	1	ug/L	50.0	BLOD	115	75-130	5.85	30	
4-Methyl-2-pentanone (MIBK)	68.3	10	ug/L	50.0	BLOD	137	60-135	14.3	30	M
Acetone	81.8	10	ug/L	50.0	23.2	117	40-140	10.7	30	
Benzene	58.7	1	ug/L	50.0	BLOD	117	80-120	7.43	30	
Bromobenzene	57.5	1	ug/L	50.0	BLOD	115	75-125	6.21	30	
Bromochloromethane	56.3	1	ug/L	50.0	BLOD	113	65-130	7.07	30	
Bromodichloromethane	57.3	1	ug/L	50.0	BLOD	115	75-120	5.36	30	
Bromoform	63.0	1	ug/L	50.0	BLOD	126	70-130	6.84	30	
Bromomethane	59.3	1	ug/L	50.0	BLOD	119	30-145	4.29	30	
Carbon disulfide	40.5	10	ug/L	50.0	0.83	79.4	35-160	0.989	30	
Carbon tetrachloride	56.3	1	ug/L	50.0	BLOD	113	65-140	9.01	30	

Certificate of Analysis

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0295 - SW5030B										
Matrix Spike Dup (BXL0295-MSD1) Source: 14L0150-14RE1 Prepared & Analyzed: 12/11/2014										
Chlorobenzene	58.2	1	ug/L	50.0	BLOD	116	80-120	5.95	30	
Chloroethane	54.6	1	ug/L	50.0	BLOD	109	60-135	3.72	30	
Chloroform	54.3	1	ug/L	50.0	BLOD	109	65-135	6.99	30	
Chloromethane	51.4	1	ug/L	50.0	BLOD	103	40-125	13.2	30	
cis-1,2-Dichloroethylene	54.1	1	ug/L	50.0	BLOD	108	70-125	7.57	30	
cis-1,3-Dichloropropene	52.2	1	ug/L	50.0	BLOD	104	70-130	5.77	30	
Dibromochloromethane	61.8	1	ug/L	50.0	BLOD	124	60-135	8.23	30	
Dibromomethane	60.4	1	ug/L	50.0	BLOD	121	75-125	8.05	30	
Dichlorodifluoromethane	44.0	1	ug/L	50.0	BLOD	88.0	30-155	8.56	30	
Ethylbenzene	54.3	1	ug/L	50.0	BLOD	109	75-125	6.44	30	
Hexachlorobutadiene	56.0	1	ug/L	50.0	BLOD	112	50-140	4.79	30	
Isopropylbenzene	59.0	1	ug/L	50.0	BLOD	118	75-125	7.08	30	
m+p-Xylenes	111	2	ug/L	100	BLOD	111	75-130	6.15	30	
Methylene chloride	48.9	4	ug/L	50.0	BLOD	97.8	55-140	7.12	30	
Methyl-t-butyl ether (MTBE)	60.2	1	ug/L	50.0	BLOD	120	65-125	8.22	30	
Naphthalene	66.4	1	ug/L	50.0	BLOD	132	55-140	10.6	30	
n-Butylbenzene	58.6	1	ug/L	50.0	BLOD	117	70-135	6.18	30	
n-Propylbenzene	61.5	1	ug/L	50.0	BLOD	123	70-130	6.08	30	
o-Xylene	58.8	1	ug/L	50.0	BLOD	118	80-120	9.04	30	
sec-Butylbenzene	59.6	1	ug/L	50.0	BLOD	119	70-125	4.85	30	
Styrene	60.8	1	ug/L	50.0	BLOD	122	65-135	6.36	30	
tert-Butylbenzene	61.6	1	ug/L	50.0	BLOD	123	70-130	5.98	30	
Tetrachloroethylene (PCE)	104	1	ug/L	50.0	3.85	200	45-150	64.8	30	M, P
Toluene	55.6	1	ug/L	50.0	BLOD	110	75-120	8.07	30	
trans-1,2-Dichloroethylene	53.9	1	ug/L	50.0	BLOD	108	60-140	4.38	30	
trans-1,3-Dichloropropene	53.9	1	ug/L	50.0	BLOD	108	55-140	9.42	30	

Certificate of Analysis

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0295 - SW5030B

Matrix Spike Dup (BXL0295-MSD1)		Source: 14L0150-14RE1		Prepared & Analyzed: 12/11/2014						
Trichloroethylene	55.3	1	ug/L	50.0	BLOD	111	70-125	7.50	30	
Trichlorofluoromethane	42.8	1	ug/L	50.0	BLOD	85.5	60-145	4.57	30	
Vinyl chloride	54.0	1	ug/L	50.0	BLOD	108	50-145	6.73	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>50.0</i>		ug/L	<i>50.0</i>		<i>100</i>	<i>70-120</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>48.3</i>		ug/L	<i>50.0</i>		<i>96.6</i>	<i>75-120</i>			
<i>Surr: Dibromofluoromethane</i>	<i>49.4</i>		ug/L	<i>50.0</i>		<i>98.9</i>	<i>80-119</i>			
<i>Surr: Toluene-d8</i>	<i>50.0</i>		ug/L	<i>50.0</i>		<i>100</i>	<i>85-120</i>			

Batch BXL0299 - SW5030B

Blank (BXL0299-BLK1)		Prepared & Analyzed: 12/12/2014								
1,1,1,2-Tetrachloroethane	BLOD	1.00	ug/L							
1,1,1-Trichloroethane	BLOD	1.00	ug/L							
1,1,2,2-Tetrachloroethane	BLOD	1.00	ug/L							
1,1,2-Trichloroethane	BLOD	1.00	ug/L							
1,1-Dichloroethane	BLOD	1.00	ug/L							
1,1-Dichloroethylene	BLOD	1.00	ug/L							
1,1-Dichloropropene	BLOD	1.00	ug/L							
1,2,3-Trichlorobenzene	0.28	1.00	ug/L							J
1,2,3-Trichloropropane	BLOD	1.00	ug/L							
1,2,4-Trichlorobenzene	0.25	1.00	ug/L							J
1,2,4-Trimethylbenzene	BLOD	1.00	ug/L							
1,2-Dibromo-3-chloropropane (DBCP)	BLOD	4.00	ug/L							
1,2-Dibromoethane (EDB)	BLOD	1.00	ug/L							
1,2-Dichlorobenzene	BLOD	1.00	ug/L							
1,2-Dichloroethane	BLOD	1.00	ug/L							
1,2-Dichloropropane	BLOD	1.00	ug/L							

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0299 - SW5030B

Blank (BXL0299-BLK1)

Prepared & Analyzed: 12/12/2014

1,3,5-Trimethylbenzene	BLOD	1.00	ug/L
1,3-Dichlorobenzene	BLOD	1.00	ug/L
1,3-Dichloropropane	BLOD	1.00	ug/L
1,4-Dichlorobenzene	BLOD	1.00	ug/L
2,2-Dichloropropane	BLOD	1.00	ug/L
2-Butanone (MEK)	BLOD	10.0	ug/L
2-Chlorotoluene	BLOD	1.00	ug/L
2-Hexanone (MBK)	BLOD	10.0	ug/L
4-Chlorotoluene	BLOD	1.00	ug/L
4-Isopropyltoluene	BLOD	1.00	ug/L
4-Methyl-2-pentanone (MIBK)	BLOD	10.0	ug/L
Acetone	BLOD	10.0	ug/L
Benzene	BLOD	1.00	ug/L
Bromobenzene	BLOD	1.00	ug/L
Bromochloromethane	BLOD	1.00	ug/L
Bromodichloromethane	BLOD	1.00	ug/L
Bromoform	BLOD	1.00	ug/L
Bromomethane	BLOD	1.00	ug/L
Carbon disulfide	BLOD	10.0	ug/L
Carbon tetrachloride	BLOD	1.00	ug/L
Chlorobenzene	BLOD	1.00	ug/L
Chloroethane	BLOD	1.00	ug/L
Chloroform	BLOD	1.00	ug/L
Chloromethane	BLOD	1.00	ug/L
cis-1,2-Dichloroethylene	BLOD	1.00	ug/L
cis-1,3-Dichloropropene	BLOD	1.00	ug/L

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
Client Site I.D.: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0299 - SW5030B

Blank (BXL0299-BLK1)

Prepared & Analyzed: 12/12/2014

Dibromochloromethane	BLOD	1.00	ug/L
Dibromomethane	BLOD	1.00	ug/L
Dichlorodifluoromethane	BLOD	1.00	ug/L
Di-isopropyl ether (DIPE)	BLOD	5.00	ug/L
Ethylbenzene	BLOD	1.00	ug/L
Ethyl-t-butyl ether (ETBE)	BLOD	25.0	ug/L
Hexachlorobutadiene	BLOD	1.00	ug/L
Iodomethane	BLOD	10.0	ug/L
Isopropylbenzene	BLOD	1.00	ug/L
m+p-Xylenes	BLOD	2.00	ug/L
Methylene chloride	BLOD	4.00	ug/L
Methyl-t-butyl ether (MTBE)	BLOD	1.00	ug/L
Naphthalene	BLOD	1.00	ug/L
n-Butylbenzene	BLOD	1.00	ug/L
n-Propylbenzene	BLOD	1.00	ug/L
o-Xylene	BLOD	1.00	ug/L
sec-Butylbenzene	BLOD	1.00	ug/L
Styrene	BLOD	1.00	ug/L
TAME	BLOD	5.00	ug/L
TBA	BLOD	100	ug/L
tert-Butylbenzene	BLOD	1.00	ug/L
Tetrachloroethylene (PCE)	BLOD	1.00	ug/L
Toluene	BLOD	1.00	ug/L
trans-1,2-Dichloroethylene	BLOD	1.00	ug/L
trans-1,3-Dichloropropene	BLOD	1.00	ug/L
Trichloroethylene	BLOD	1.00	ug/L

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0299 - SW5030B										
Blank (BXL0299-BLK1)				Prepared & Analyzed: 12/12/2014						
Trichlorofluoromethane	BLOD	1.00	ug/L							
Vinyl acetate	BLOD	10.0	ug/L							
Vinyl chloride	BLOD	1.00	ug/L							
Xylenes, Total	BLOD	3.00	ug/L							
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>48.2</i>		ug/L	<i>50.0</i>		<i>96.4</i>	<i>70-120</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>47.4</i>		ug/L	<i>50.0</i>		<i>94.9</i>	<i>75-120</i>			
<i>Surr: Dibromofluoromethane</i>	<i>47.5</i>		ug/L	<i>50.0</i>		<i>95.1</i>	<i>80-119</i>			
<i>Surr: Toluene-d8</i>	<i>49.0</i>		ug/L	<i>50.0</i>		<i>97.9</i>	<i>85-120</i>			
LCS (BXL0299-BS1)				Prepared & Analyzed: 12/12/2014						
1,1,1,2-Tetrachloroethane	51.5	1	ug/L	50.0		103	80-130			
1,1,1-Trichloroethane	49.0	1	ug/L	50.0		98.0	65-130			
1,1,2,2-Tetrachloroethane	56.3	1	ug/L	50.0		113	65-130			
1,1,2-Trichloroethane	51.9	1	ug/L	50.0		104	75-125			
1,1-Dichloroethane	50.6	1	ug/L	50.0		101	70-135			
1,1-Dichloroethylene	46.0	1	ug/L	50.0		92.1	70-130			
1,1-Dichloropropene	49.1	1	ug/L	50.0		98.2	75-135			
1,2,3-Trichlorobenzene	55.6	1	ug/L	50.0		111	55-140			
1,2,3-Trichloropropane	50.9	1	ug/L	50.0		102	75-125			
1,2,4-Trichlorobenzene	56.4	1	ug/L	50.0		113	65-135			
1,2,4-Trimethylbenzene	48.2	1	ug/L	50.0		96.5	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	54.7	4	ug/L	50.0		109	50-130			
1,2-Dibromoethane (EDB)	51.4	1	ug/L	50.0		103	80-120			
1,2-Dichlorobenzene	55.5	1	ug/L	50.0		111	70-120			
1,2-Dichloroethane	47.2	1	ug/L	50.0		94.5	70-130			
1,2-Dichloropropane	45.6	1	ug/L	50.0		91.2	75-125			
1,3,5-Trimethylbenzene	50.3	1	ug/L	50.0		101	75-125			

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0299 - SW5030B

LCS (BXL0299-BS1)

Prepared & Analyzed: 12/12/2014

1,3-Dichlorobenzene	54.8	1	ug/L	50.0		110	75-125			
1,3-Dichloropropane	49.2	1	ug/L	50.0		98.4	75-125			
1,4-Dichlorobenzene	53.1	1	ug/L	50.0		106	75-125			
2,2-Dichloropropane	48.2	1	ug/L	50.0		96.4	70-135			
2-Butanone (MEK)	50.1	10	ug/L	50.0		100	30-150			
2-Chlorotoluene	53.7	1	ug/L	50.0		107	75-125			
2-Hexanone (MBK)	54.6	10	ug/L	50.0		109	55-130			
4-Chlorotoluene	53.6	1	ug/L	50.0		107	75-130			
4-Isopropyltoluene	52.4	1	ug/L	50.0		105	75-130			
4-Methyl-2-pentanone (MIBK)	56.0	10	ug/L	50.0		112	60-135			
Acetone	53.0	10	ug/L	50.0		106	40-140			
Benzene	50.5	1	ug/L	50.0		101	80-120			
Bromobenzene	51.0	1	ug/L	50.0		102	75-125			
Bromochloromethane	48.3	1	ug/L	50.0		96.7	65-130			
Bromodichloromethane	49.8	1	ug/L	50.0		99.6	75-120			
Bromoform	54.6	1	ug/L	50.0		109	70-130			
Bromomethane	54.5	1	ug/L	50.0		109	30-145			
Carbon disulfide	39.4	10	ug/L	50.0		78.7	35-160			
Carbon tetrachloride	49.0	1	ug/L	50.0		98.1	65-140			
Chlorobenzene	52.4	1	ug/L	50.0		105	80-120			
Chloroethane	46.5	1	ug/L	50.0		93.0	60-135			
Chloroform	46.2	1	ug/L	50.0		92.5	65-135			
Chloromethane	40.2	1	ug/L	50.0		80.4	40-125			
cis-1,2-Dichloroethylene	45.2	1	ug/L	50.0		90.4	70-125			
cis-1,3-Dichloropropene	46.9	1	ug/L	50.0		93.8	70-130			
Dibromochloromethane	51.1	1	ug/L	50.0		102	60-135			

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
Client Site I.D.: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0299 - SW5030B										
LCS (BXL0299-BS1)				Prepared & Analyzed: 12/12/2014						
Dibromomethane	52.3	1	ug/L	50.0		105	75-125			
Dichlorodifluoromethane	37.3	1	ug/L	50.0		74.7	30-155			
Ethylbenzene	48.0	1	ug/L	50.0		96.0	75-125			
Hexachlorobutadiene	52.0	1	ug/L	50.0		104	50-140			
Isopropylbenzene	52.9	1	ug/L	50.0		106	75-125			
m+p-Xylenes	98.6	2	ug/L	100		98.6	75-130			
Methylene chloride	41.4	4	ug/L	50.0		82.9	55-140			
Methyl-t-butyl ether (MTBE)	51.1	1	ug/L	50.0		102	65-125			
Naphthalene	56.8	1	ug/L	50.0		114	55-140			
n-Butylbenzene	53.9	1	ug/L	50.0		108	70-135			
n-Propylbenzene	54.9	1	ug/L	50.0		110	70-130			
o-Xylene	50.9	1	ug/L	50.0		102	80-120			
sec-Butylbenzene	54.0	1	ug/L	50.0		108	70-125			
Styrene	54.5	1	ug/L	50.0		109	65-135			
tert-Butylbenzene	54.9	1	ug/L	50.0		110	70-130			
Tetrachloroethylene (PCE)	64.4	1	ug/L	50.0		129	45-150			
Toluene	48.4	1	ug/L	50.0		96.7	75-120			
trans-1,2-Dichloroethylene	46.5	1	ug/L	50.0		92.9	60-140			
trans-1,3-Dichloropropene	47.4	1	ug/L	50.0		94.8	55-140			
Trichloroethylene	48.7	1	ug/L	50.0		97.3	70-125			
Trichlorofluoromethane	36.2	1	ug/L	50.0		72.4	60-145			
Vinyl chloride	46.0	1	ug/L	50.0		92.0	50-145			
Surr: 1,2-Dichloroethane-d4	48.6		ug/L	50.0		97.3	70-120			
Surr: 4-Bromofluorobenzene	47.9		ug/L	50.0		95.7	75-120			
Surr: Dibromofluoromethane	48.4		ug/L	50.0		96.8	80-119			
Surr: Toluene-d8	49.6		ug/L	50.0		99.3	85-120			

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0299 - SW5030B

LCS Dup (BXL0299-BSD1)

Prepared & Analyzed: 12/12/2014

1,1,1,2-Tetrachloroethane	53.0	1	ug/L	50.0		106	80-130	2.94	30	
1,1,1-Trichloroethane	51.3	1	ug/L	50.0		103	65-130	4.62	30	
1,1,2,2-Tetrachloroethane	58.5	1	ug/L	50.0		117	65-130	3.88	30	
1,1,2-Trichloroethane	53.2	1	ug/L	50.0		106	75-125	2.62	30	
1,1-Dichloroethane	53.8	1	ug/L	50.0		108	70-135	6.25	30	
1,1-Dichloroethylene	48.1	1	ug/L	50.0		96.2	70-130	4.36	30	
1,1-Dichloropropene	51.8	1	ug/L	50.0		104	75-135	5.37	30	
1,2,3-Trichlorobenzene	59.1	1	ug/L	50.0		118	55-140	6.10	30	
1,2,3-Trichloropropane	53.0	1	ug/L	50.0		106	75-125	3.99	30	
1,2,4-Trichlorobenzene	58.9	1	ug/L	50.0		118	65-135	4.31	30	
1,2,4-Trimethylbenzene	50.0	1	ug/L	50.0		99.9	75-130	3.50	30	
1,2-Dibromo-3-chloropropane (DBCP)	59.2	4	ug/L	50.0		118	50-130	7.89	30	
1,2-Dibromoethane (EDB)	53.3	1	ug/L	50.0		107	80-120	3.57	30	
1,2-Dichlorobenzene	57.6	1	ug/L	50.0		115	70-120	3.61	30	
1,2-Dichloroethane	49.7	1	ug/L	50.0		99.5	70-130	5.14	30	
1,2-Dichloropropane	47.3	1	ug/L	50.0		94.6	75-125	3.69	30	
1,3,5-Trimethylbenzene	52.9	1	ug/L	50.0		106	75-125	5.05	30	
1,3-Dichlorobenzene	57.1	1	ug/L	50.0		114	75-125	4.14	30	
1,3-Dichloropropane	50.8	1	ug/L	50.0		102	75-125	3.31	30	
1,4-Dichlorobenzene	54.1	1	ug/L	50.0		108	75-125	1.91	30	
2,2-Dichloropropane	50.1	1	ug/L	50.0		100	70-135	3.83	30	
2-Butanone (MEK)	65.5	10	ug/L	50.0		131	30-150	26.7	30	
2-Chlorotoluene	56.9	1	ug/L	50.0		114	75-125	5.82	30	
2-Hexanone (MBK)	56.6	10	ug/L	50.0		113	55-130	3.53	30	
4-Chlorotoluene	55.5	1	ug/L	50.0		111	75-130	3.60	30	
4-Isopropyltoluene	54.3	1	ug/L	50.0		109	75-130	3.56	30	

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
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Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0299 - SW5030B										
LCS Dup (BXL0299-BSD1)				Prepared & Analyzed: 12/12/2014						
4-Methyl-2-pentanone (MIBK)	57.0	10	ug/L	50.0		114	60-135	1.84	30	
Acetone	62.6	10	ug/L	50.0		125	40-140	16.6	30	
Benzene	52.0	1	ug/L	50.0		104	80-120	3.04	30	
Bromobenzene	52.9	1	ug/L	50.0		106	75-125	3.76	30	
Bromochloromethane	50.8	1	ug/L	50.0		102	65-130	4.94	30	
Bromodichloromethane	51.5	1	ug/L	50.0		103	75-120	3.43	30	
Bromoform	56.4	1	ug/L	50.0		113	70-130	3.13	30	
Bromomethane	56.6	1	ug/L	50.0		113	30-145	3.89	30	
Carbon disulfide	39.4	10	ug/L	50.0		78.8	35-160	0.0838	30	
Carbon tetrachloride	51.2	1	ug/L	50.0		102	65-140	4.24	30	
Chlorobenzene	52.5	1	ug/L	50.0		105	80-120	0.153	30	
Chloroethane	48.6	1	ug/L	50.0		97.3	60-135	4.44	30	
Chloroform	47.4	1	ug/L	50.0		94.8	65-135	2.46	30	
Chloromethane	42.6	1	ug/L	50.0		85.2	40-125	5.87	30	
cis-1,2-Dichloroethylene	46.4	1	ug/L	50.0		92.8	70-125	2.65	30	
cis-1,3-Dichloropropene	47.7	1	ug/L	50.0		95.3	70-130	1.65	30	
Dibromochloromethane	53.0	1	ug/L	50.0		106	60-135	3.67	30	
Dibromomethane	54.6	1	ug/L	50.0		109	75-125	4.31	30	
Dichlorodifluoromethane	40.9	1	ug/L	50.0		81.8	30-155	9.08	30	
Ethylbenzene	49.5	1	ug/L	50.0		99.1	75-125	3.14	30	
Hexachlorobutadiene	55.4	1	ug/L	50.0		111	50-140	6.39	30	
Isopropylbenzene	53.6	1	ug/L	50.0		107	75-125	1.29	30	
m+p-Xylenes	103	2	ug/L	100		103	75-130	3.94	30	
Methylene chloride	44.0	4	ug/L	50.0		88.1	55-140	6.03	30	
Methyl-t-butyl ether (MTBE)	52.8	1	ug/L	50.0		106	65-125	3.24	30	
Naphthalene	61.3	1	ug/L	50.0		123	55-140	7.52	30	

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
Client Site I.D.: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0299 - SW5030B										
LCS Dup (BXL0299-BSD1)				Prepared & Analyzed: 12/12/2014						
n-Butylbenzene	56.3	1	ug/L	50.0		113	70-135	4.29	30	
n-Propylbenzene	57.9	1	ug/L	50.0		116	70-130	5.45	30	
o-Xylene	52.4	1	ug/L	50.0		105	80-120	3.00	30	
sec-Butylbenzene	56.1	1	ug/L	50.0		112	70-125	3.81	30	
Styrene	56.6	1	ug/L	50.0		113	65-135	3.76	30	
tert-Butylbenzene	56.6	1	ug/L	50.0		113	70-130	3.05	30	
Tetrachloroethylene (PCE)	64.7	1	ug/L	50.0		129	45-150	0.542	30	
Toluene	50.2	1	ug/L	50.0		100	75-120	3.78	30	
trans-1,2-Dichloroethylene	49.2	1	ug/L	50.0		98.4	60-140	5.73	30	
trans-1,3-Dichloropropene	49.7	1	ug/L	50.0		99.4	55-140	4.76	30	
Trichloroethylene	49.4	1	ug/L	50.0		98.7	70-125	1.43	30	
Trichlorofluoromethane	37.8	1	ug/L	50.0		75.5	60-145	4.26	30	
Vinyl chloride	49.5	1	ug/L	50.0		99.0	50-145	7.37	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	49.8		ug/L	50.0		99.6	70-120			
<i>Surr: 4-Bromofluorobenzene</i>	48.2		ug/L	50.0		96.5	75-120			
<i>Surr: Dibromofluoromethane</i>	48.7		ug/L	50.0		97.5	80-119			
<i>Surr: Toluene-d8</i>	50.1		ug/L	50.0		100	85-120			
Matrix Spike (BXL0299-MS1)				Source: 14L0264-01	Prepared & Analyzed: 12/12/2014					
1,1,1,2-Tetrachloroethane	54.7	1	ug/L	50.0	BLOD	109	80-130			
1,1,1-Trichloroethane	52.3	1	ug/L	50.0	BLOD	105	65-130			
1,1,2,2-Tetrachloroethane	59.0	1	ug/L	50.0	BLOD	118	65-130			
1,1,2-Trichloroethane	55.4	1	ug/L	50.0	BLOD	111	75-125			
1,1-Dichloroethane	55.5	1	ug/L	50.0	BLOD	111	70-135			
1,1-Dichloroethylene	50.8	1	ug/L	50.0	BLOD	102	70-130			
1,1-Dichloropropene	53.3	1	ug/L	50.0	BLOD	107	75-135			
1,2,3-Trichlorobenzene	56.2	1	ug/L	50.0	0.29	112	55-140			

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
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 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0299 - SW5030B

Matrix Spike (BXL0299-MS1)

Source: 14L0264-01

Prepared & Analyzed: 12/12/2014

1,2,3-Trichloropropane	54.7	1	ug/L	50.0	BLOD	109	75-125
1,2,4-Trichlorobenzene	53.9	1	ug/L	50.0	0.23	107	65-135
1,2,4-Trimethylbenzene	49.8	1	ug/L	50.0	BLOD	99.6	75-130
1,2-Dibromo-3-chloropropane (DBCP)	58.6	4	ug/L	50.0	BLOD	117	50-130
1,2-Dibromoethane (EDB)	55.2	1	ug/L	50.0	BLOD	110	80-120
1,2-Dichlorobenzene	57.4	1	ug/L	50.0	BLOD	115	70-120
1,2-Dichloroethane	51.6	1	ug/L	50.0	BLOD	103	70-130
1,2-Dichloropropane	49.9	1	ug/L	50.0	BLOD	99.8	75-125
1,3,5-Trimethylbenzene	52.9	1	ug/L	50.0	BLOD	106	75-125
1,3-Dichlorobenzene	55.6	1	ug/L	50.0	BLOD	111	75-125
1,3-Dichloropropane	52.2	1	ug/L	50.0	BLOD	104	75-125
1,4-Dichlorobenzene	54.2	1	ug/L	50.0	BLOD	108	75-125
2,2-Dichloropropane	48.9	1	ug/L	50.0	BLOD	97.8	70-135
2-Butanone (MEK)	64.9	10	ug/L	50.0	BLOD	130	30-150
2-Chlorotoluene	56.6	1	ug/L	50.0	BLOD	113	75-125
2-Hexanone (MBK)	60.6	10	ug/L	50.0	BLOD	121	55-130
4-Chlorotoluene	56.3	1	ug/L	50.0	BLOD	113	75-130
4-Isopropyltoluene	52.9	1	ug/L	50.0	BLOD	106	75-130
4-Methyl-2-pentanone (MIBK)	61.6	10	ug/L	50.0	BLOD	123	60-135
Acetone	67.2	10	ug/L	50.0	BLOD	132	40-140
Benzene	54.3	1	ug/L	50.0	BLOD	109	80-120
Bromobenzene	52.8	1	ug/L	50.0	BLOD	106	75-125
Bromochloromethane	52.4	1	ug/L	50.0	BLOD	105	65-130
Bromodichloromethane	53.4	1	ug/L	50.0	BLOD	107	75-120
Bromoform	58.5	1	ug/L	50.0	BLOD	117	70-130
Bromomethane	57.0	1	ug/L	50.0	BLOD	114	30-145

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0299 - SW5030B

Matrix Spike (BXL0299-MS1)

Source: 14L0264-01

Prepared & Analyzed: 12/12/2014

Carbon disulfide	37.1	10	ug/L	50.0	BLOD	74.2	35-160
Carbon tetrachloride	54.6	1	ug/L	50.0	BLOD	109	65-140
Chlorobenzene	54.8	1	ug/L	50.0	BLOD	110	80-120
Chloroethane	52.0	1	ug/L	50.0	BLOD	104	60-135
Chloroform	51.0	1	ug/L	50.0	BLOD	102	65-135
Chloromethane	41.1	1	ug/L	50.0	BLOD	82.2	40-125
cis-1,2-Dichloroethylene	49.2	1	ug/L	50.0	BLOD	98.4	70-125
cis-1,3-Dichloropropene	48.4	1	ug/L	50.0	BLOD	96.8	70-130
Dibromochloromethane	54.1	1	ug/L	50.0	BLOD	108	60-135
Dibromomethane	54.9	1	ug/L	50.0	BLOD	110	75-125
Dichlorodifluoromethane	40.9	1	ug/L	50.0	BLOD	81.8	30-155
Ethylbenzene	51.3	1	ug/L	50.0	BLOD	103	75-125
Hexachlorobutadiene	51.6	1	ug/L	50.0	BLOD	103	50-140
Isopropylbenzene	55.1	1	ug/L	50.0	BLOD	110	75-125
m+p-Xylenes	104	2	ug/L	100	BLOD	104	75-130
Methylene chloride	46.3	4	ug/L	50.0	BLOD	92.6	55-140
Methyl-t-butyl ether (MTBE)	55.8	1	ug/L	50.0	BLOD	112	65-125
Naphthalene	59.4	1	ug/L	50.0	BLOD	118	55-140
n-Butylbenzene	54.1	1	ug/L	50.0	BLOD	108	70-135
n-Propylbenzene	57.3	1	ug/L	50.0	BLOD	115	70-130
o-Xylene	54.1	1	ug/L	50.0	BLOD	108	80-120
sec-Butylbenzene	56.7	1	ug/L	50.0	BLOD	113	70-125
Styrene	57.1	1	ug/L	50.0	BLOD	114	65-135
tert-Butylbenzene	56.7	1	ug/L	50.0	BLOD	113	70-130
Tetrachloroethylene (PCE)	65.6	1	ug/L	50.0	BLOD	131	45-150
Toluene	51.1	1	ug/L	50.0	BLOD	102	75-120

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0299 - SW5030B										
Matrix Spike (BXL0299-MS1)		Source: 14L0264-01			Prepared & Analyzed: 12/12/2014					
trans-1,2-Dichloroethylene	50.5	1	ug/L	50.0	BLOD	101	60-140			
trans-1,3-Dichloropropene	49.1	1	ug/L	50.0	BLOD	98.3	55-140			
Trichloroethylene	50.3	1	ug/L	50.0	BLOD	101	70-125			
Trichlorofluoromethane	40.3	1	ug/L	50.0	BLOD	80.5	60-145			
Vinyl chloride	49.3	1	ug/L	50.0	BLOD	98.6	50-145			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>48.4</i>		ug/L	<i>50.0</i>		<i>96.9</i>	<i>70-120</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>48.4</i>		ug/L	<i>50.0</i>		<i>96.7</i>	<i>75-120</i>			
<i>Surr: Dibromofluoromethane</i>	<i>49.6</i>		ug/L	<i>50.0</i>		<i>99.3</i>	<i>80-119</i>			
<i>Surr: Toluene-d8</i>	<i>49.2</i>		ug/L	<i>50.0</i>		<i>98.5</i>	<i>85-120</i>			
Matrix Spike Dup (BXL0299-MSD1)		Source: 14L0264-01			Prepared & Analyzed: 12/12/2014					
1,1,1,2-Tetrachloroethane	57.7	1	ug/L	50.0	BLOD	115	80-130	5.22	30	
1,1,1-Trichloroethane	54.3	1	ug/L	50.0	BLOD	109	65-130	3.79	30	
1,1,2,2-Tetrachloroethane	64.6	1	ug/L	50.0	BLOD	129	65-130	9.03	30	
1,1,2-Trichloroethane	59.9	1	ug/L	50.0	BLOD	120	75-125	7.83	30	
1,1-Dichloroethane	59.1	1	ug/L	50.0	BLOD	118	70-135	6.32	30	
1,1-Dichloroethylene	52.8	1	ug/L	50.0	BLOD	106	70-130	3.84	30	
1,1-Dichloropropene	56.3	1	ug/L	50.0	BLOD	113	75-135	5.58	30	
1,2,3-Trichlorobenzene	58.1	1	ug/L	50.0	0.29	116	55-140	3.33	30	
1,2,3-Trichloropropane	57.8	1	ug/L	50.0	BLOD	116	75-125	5.61	30	
1,2,4-Trichlorobenzene	56.4	1	ug/L	50.0	0.23	112	65-135	4.47	30	
1,2,4-Trimethylbenzene	52.6	1	ug/L	50.0	BLOD	105	75-130	5.52	30	
1,2-Dibromo-3-chloropropane (DBCP)	64.4	4	ug/L	50.0	BLOD	129	50-130	9.43	30	
1,2-Dibromoethane (EDB)	58.4	1	ug/L	50.0	BLOD	117	80-120	5.62	30	
1,2-Dichlorobenzene	60.2	1	ug/L	50.0	BLOD	120	70-120	4.79	30	M
1,2-Dichloroethane	55.6	1	ug/L	50.0	BLOD	111	70-130	7.53	30	
1,2-Dichloropropane	52.1	1	ug/L	50.0	BLOD	104	75-125	4.34	30	

Certificate of Analysis

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 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0299 - SW5030B

Matrix Spike Dup (BXL0299-MSD1)		Source: 14L0264-01			Prepared & Analyzed: 12/12/2014					
1,3,5-Trimethylbenzene	55.9	1	ug/L	50.0	BLOD	112	75-125	5.52	30	
1,3-Dichlorobenzene	58.4	1	ug/L	50.0	BLOD	117	75-125	5.03	30	
1,3-Dichloropropane	55.4	1	ug/L	50.0	BLOD	111	75-125	5.90	30	
1,4-Dichlorobenzene	56.1	1	ug/L	50.0	BLOD	112	75-125	3.38	30	
2,2-Dichloropropane	53.3	1	ug/L	50.0	BLOD	107	70-135	8.65	30	
2-Butanone (MEK)	77.7	10	ug/L	50.0	BLOD	155	30-150	17.9	30	M
2-Chlorotoluene	59.0	1	ug/L	50.0	BLOD	118	75-125	4.25	30	
2-Hexanone (MBK)	68.0	10	ug/L	50.0	BLOD	136	55-130	11.5	30	M
4-Chlorotoluene	56.9	1	ug/L	50.0	BLOD	114	75-130	1.12	30	
4-Isopropyltoluene	56.3	1	ug/L	50.0	BLOD	113	75-130	6.15	30	
4-Methyl-2-pentanone (MIBK)	67.1	10	ug/L	50.0	BLOD	134	60-135	8.58	30	
Acetone	78.9	10	ug/L	50.0	BLOD	155	40-140	16.0	30	M
Benzene	57.7	1	ug/L	50.0	BLOD	115	80-120	6.02	30	
Bromobenzene	55.0	1	ug/L	50.0	BLOD	110	75-125	4.17	30	
Bromochloromethane	57.1	1	ug/L	50.0	BLOD	114	65-130	8.69	30	
Bromodichloromethane	55.8	1	ug/L	50.0	BLOD	112	75-120	4.26	30	
Bromoform	60.7	1	ug/L	50.0	BLOD	121	70-130	3.77	30	
Bromomethane	65.1	1	ug/L	50.0	BLOD	130	30-145	13.3	30	
Carbon disulfide	40.4	10	ug/L	50.0	BLOD	80.8	35-160	8.61	30	
Carbon tetrachloride	57.3	1	ug/L	50.0	BLOD	115	65-140	4.81	30	
Chlorobenzene	56.1	1	ug/L	50.0	BLOD	112	80-120	2.39	30	
Chloroethane	55.7	1	ug/L	50.0	BLOD	111	60-135	6.84	30	
Chloroform	54.4	1	ug/L	50.0	BLOD	109	65-135	6.57	30	
Chloromethane	45.7	1	ug/L	50.0	BLOD	91.3	40-125	10.5	30	
cis-1,2-Dichloroethylene	53.4	1	ug/L	50.0	BLOD	107	70-125	8.27	30	
cis-1,3-Dichloropropene	51.5	1	ug/L	50.0	BLOD	103	70-130	6.21	30	

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0299 - SW5030B										
Matrix Spike Dup (BXL0299-MSD1)		Source: 14L0264-01		Prepared & Analyzed: 12/12/2014						
Dibromochloromethane	58.1	1	ug/L	50.0	BLOD	116	60-135	7.14	30	
Dibromomethane	59.5	1	ug/L	50.0	BLOD	119	75-125	8.11	30	
Dichlorodifluoromethane	43.9	1	ug/L	50.0	BLOD	87.9	30-155	7.19	30	
Ethylbenzene	53.4	1	ug/L	50.0	BLOD	107	75-125	4.06	30	
Hexachlorobutadiene	53.7	1	ug/L	50.0	BLOD	107	50-140	4.09	30	
Isopropylbenzene	57.7	1	ug/L	50.0	BLOD	115	75-125	4.64	30	
m+p-Xylenes	108	2	ug/L	100	BLOD	108	75-130	3.94	30	
Methylene chloride	47.7	4	ug/L	50.0	BLOD	95.5	55-140	3.11	30	
Methyl-t-butyl ether (MTBE)	60.9	1	ug/L	50.0	BLOD	122	65-125	8.62	30	
Naphthalene	63.9	1	ug/L	50.0	BLOD	127	55-140	7.21	30	
n-Butylbenzene	56.7	1	ug/L	50.0	BLOD	113	70-135	4.73	30	
n-Propylbenzene	60.3	1	ug/L	50.0	BLOD	121	70-130	5.12	30	
o-Xylene	55.7	1	ug/L	50.0	BLOD	111	80-120	2.98	30	
sec-Butylbenzene	58.6	1	ug/L	50.0	BLOD	117	70-125	3.16	30	
Styrene	59.5	1	ug/L	50.0	BLOD	119	65-135	4.14	30	
tert-Butylbenzene	58.8	1	ug/L	50.0	BLOD	118	70-130	3.71	30	
Tetrachloroethylene (PCE)	68.5	1	ug/L	50.0	BLOD	137	45-150	4.29	30	
Toluene	54.3	1	ug/L	50.0	BLOD	108	75-120	6.08	30	
trans-1,2-Dichloroethylene	54.9	1	ug/L	50.0	BLOD	110	60-140	8.43	30	
trans-1,3-Dichloropropene	52.6	1	ug/L	50.0	BLOD	105	55-140	6.82	30	
Trichloroethylene	53.7	1	ug/L	50.0	BLOD	107	70-125	6.58	30	
Trichlorofluoromethane	43.3	1	ug/L	50.0	BLOD	86.5	60-145	7.18	30	
Vinyl chloride	52.8	1	ug/L	50.0	BLOD	106	50-145	6.89	30	
Surr: 1,2-Dichloroethane-d4	50.1		ug/L	50.0		100	70-120			
Surr: 4-Bromofluorobenzene	48.4		ug/L	50.0		96.7	75-120			
Surr: Dibromofluoromethane	49.5		ug/L	50.0		99.0	80-119			

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0299 - SW5030B

Matrix Spike Dup (BXL0299-MSD1) **Source: 14L0264-01** Prepared & Analyzed: 12/12/2014

Surr: Toluene-d8	49.6	ug/L	50.0	99.2	85-120
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Batch BXL0323 - SW5030B

Blank (BXL0323-BLK1) Prepared & Analyzed: 12/15/2014

1,1,1,2-Tetrachloroethane	BLOD	1.00	ug/L
1,1,1-Trichloroethane	BLOD	1.00	ug/L
1,1,2,2-Tetrachloroethane	BLOD	1.00	ug/L
1,1,2-Trichloroethane	BLOD	1.00	ug/L
1,1-Dichloroethane	BLOD	1.00	ug/L
1,1-Dichloroethylene	BLOD	1.00	ug/L
1,1-Dichloropropene	BLOD	1.00	ug/L
1,2,3-Trichlorobenzene	BLOD	1.00	ug/L
1,2,3-Trichloropropane	BLOD	1.00	ug/L
1,2,4-Trichlorobenzene	BLOD	1.00	ug/L
1,2,4-Trimethylbenzene	BLOD	1.00	ug/L
1,2-Dibromo-3-chloropropane (DBCP)	BLOD	4.00	ug/L
1,2-Dibromoethane (EDB)	BLOD	1.00	ug/L
1,2-Dichlorobenzene	BLOD	1.00	ug/L
1,2-Dichloroethane	BLOD	1.00	ug/L
1,2-Dichloropropane	BLOD	1.00	ug/L
1,3,5-Trimethylbenzene	BLOD	1.00	ug/L
1,3-Dichlorobenzene	BLOD	1.00	ug/L
1,3-Dichloropropane	BLOD	1.00	ug/L
1,4-Dichlorobenzene	BLOD	1.00	ug/L
2,2-Dichloropropane	BLOD	1.00	ug/L
2-Butanone (MEK)	BLOD	10.0	ug/L

Certificate of Analysis

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0323 - SW5030B

Blank (BXL0323-BLK1)

Prepared & Analyzed: 12/15/2014

2-Chlorotoluene	BLOD	1.00	ug/L
2-Hexanone (MBK)	BLOD	10.0	ug/L
4-Chlorotoluene	BLOD	1.00	ug/L
4-Isopropyltoluene	BLOD	1.00	ug/L
4-Methyl-2-pentanone (MIBK)	BLOD	10.0	ug/L
Acetone	BLOD	10.0	ug/L
Benzene	BLOD	1.00	ug/L
Bromobenzene	BLOD	1.00	ug/L
Bromochloromethane	BLOD	1.00	ug/L
Bromodichloromethane	BLOD	1.00	ug/L
Bromoform	BLOD	1.00	ug/L
Bromomethane	BLOD	1.00	ug/L
Carbon disulfide	BLOD	10.0	ug/L
Carbon tetrachloride	BLOD	1.00	ug/L
Chlorobenzene	BLOD	1.00	ug/L
Chloroethane	BLOD	1.00	ug/L
Chloroform	BLOD	1.00	ug/L
Chloromethane	BLOD	1.00	ug/L
cis-1,2-Dichloroethylene	BLOD	1.00	ug/L
cis-1,3-Dichloropropene	BLOD	1.00	ug/L
Dibromochloromethane	BLOD	1.00	ug/L
Dibromomethane	BLOD	1.00	ug/L
Dichlorodifluoromethane	BLOD	1.00	ug/L
Di-isopropyl ether (DIPE)	BLOD	5.00	ug/L
Ethylbenzene	BLOD	1.00	ug/L
Ethyl-t-butyl ether (ETBE)	BLOD	25.0	ug/L

Certificate of Analysis

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0323 - SW5030B

Blank (BXL0323-BLK1)

Prepared & Analyzed: 12/15/2014

Hexachlorobutadiene	BLOD	1.00	ug/L							
Iodomethane	BLOD	10.0	ug/L							
Isopropylbenzene	BLOD	1.00	ug/L							
m+p-Xylenes	BLOD	2.00	ug/L							
Methylene chloride	BLOD	4.00	ug/L							
Methyl-t-butyl ether (MTBE)	BLOD	1.00	ug/L							
Naphthalene	BLOD	1.00	ug/L							
n-Butylbenzene	BLOD	1.00	ug/L							
n-Propylbenzene	BLOD	1.00	ug/L							
o-Xylene	BLOD	1.00	ug/L							
sec-Butylbenzene	BLOD	1.00	ug/L							
Styrene	BLOD	1.00	ug/L							
TAME	BLOD	5.00	ug/L							
TBA	BLOD	100	ug/L							
tert-Butylbenzene	BLOD	1.00	ug/L							
Tetrachloroethylene (PCE)	BLOD	1.00	ug/L							
Toluene	BLOD	1.00	ug/L							
trans-1,2-Dichloroethylene	BLOD	1.00	ug/L							
trans-1,3-Dichloropropene	BLOD	1.00	ug/L							
Trichloroethylene	BLOD	1.00	ug/L							
Trichlorofluoromethane	BLOD	1.00	ug/L							
Vinyl acetate	BLOD	10.0	ug/L							
Vinyl chloride	BLOD	1.00	ug/L							
Xylenes, Total	BLOD	3.00	ug/L							
Surr: 1,2-Dichloroethane-d4	50.7		ug/L	50.0		101	70-120			
Surr: 4-Bromofluorobenzene	47.0		ug/L	50.0		94.0	75-120			

Certificate of Analysis

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0323 - SW5030B										
Blank (BXL0323-BLK1)				Prepared & Analyzed: 12/15/2014						
Surr: Dibromofluoromethane	48.4		ug/L	50.0		96.9	80-119			
Surr: Toluene-d8	49.6		ug/L	50.0		99.2	85-120			
LCS (BXL0323-BS1)				Prepared & Analyzed: 12/15/2014						
1,1,1,2-Tetrachloroethane	56.4	1	ug/L	50.0		113	80-130			
1,1,1-Trichloroethane	55.1	1	ug/L	50.0		110	65-130			
1,1,2,2-Tetrachloroethane	53.8	1	ug/L	50.0		108	65-130			
1,1,2-Trichloroethane	52.6	1	ug/L	50.0		105	75-125			
1,1-Dichloroethane	57.2	1	ug/L	50.0		114	70-135			
1,1-Dichloroethylene	52.8	1	ug/L	50.0		106	70-130			
1,1-Dichloropropene	57.0	1	ug/L	50.0		114	75-135			
1,2,3-Trichlorobenzene	58.3	1	ug/L	50.0		117	55-140			
1,2,3-Trichloropropane	48.5	1	ug/L	50.0		97.0	75-125			
1,2,4-Trichlorobenzene	60.2	1	ug/L	50.0		120	65-135			
1,2,4-Trimethylbenzene	52.0	1	ug/L	50.0		104	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	48.4	4	ug/L	50.0		96.9	50-130			
1,2-Dibromoethane (EDB)	52.6	1	ug/L	50.0		105	80-120			
1,2-Dichlorobenzene	58.2	1	ug/L	50.0		116	70-120			
1,2-Dichloroethane	49.1	1	ug/L	50.0		98.1	70-130			
1,2-Dichloropropane	48.7	1	ug/L	50.0		97.4	75-125			
1,3,5-Trimethylbenzene	55.8	1	ug/L	50.0		112	75-125			
1,3-Dichlorobenzene	58.6	1	ug/L	50.0		117	75-125			
1,3-Dichloropropane	50.2	1	ug/L	50.0		100	75-125			
1,4-Dichlorobenzene	56.8	1	ug/L	50.0		114	75-125			
2,2-Dichloropropane	54.9	1	ug/L	50.0		110	70-135			
2-Butanone (MEK)	48.0	10	ug/L	50.0		96.1	30-150			
2-Chlorotoluene	57.6	1	ug/L	50.0		115	75-125			

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0323 - SW5030B

LCS (BXL0323-BS1)

Prepared & Analyzed: 12/15/2014

2-Hexanone (MBK)	48.6	10	ug/L	50.0		97.3	55-130			
4-Chlorotoluene	58.6	1	ug/L	50.0		117	75-130			
4-Isopropyltoluene	58.1	1	ug/L	50.0		116	75-130			
4-Methyl-2-pentanone (MIBK)	48.9	10	ug/L	50.0		97.7	60-135			
Acetone	54.1	10	ug/L	50.0		108	40-140			
Benzene	55.8	1	ug/L	50.0		112	80-120			
Bromobenzene	55.1	1	ug/L	50.0		110	75-125			
Bromochloromethane	51.2	1	ug/L	50.0		102	65-130			
Bromodichloromethane	54.9	1	ug/L	50.0		110	75-120			
Bromoform	57.7	1	ug/L	50.0		115	70-130			
Bromomethane	55.5	1	ug/L	50.0		111	30-145			
Carbon disulfide	41.2	10	ug/L	50.0		82.4	35-160			
Carbon tetrachloride	58.8	1	ug/L	50.0		118	65-140			
Chlorobenzene	57.3	1	ug/L	50.0		115	80-120			
Chloroethane	53.2	1	ug/L	50.0		106	60-135			
Chloroform	51.2	1	ug/L	50.0		102	65-135			
Chloromethane	43.1	1	ug/L	50.0		86.1	40-125			
cis-1,2-Dichloroethylene	51.0	1	ug/L	50.0		102	70-125			
cis-1,3-Dichloropropene	49.7	1	ug/L	50.0		99.4	70-130			
Dibromochloromethane	55.0	1	ug/L	50.0		110	60-135			
Dibromomethane	53.2	1	ug/L	50.0		106	75-125			
Dichlorodifluoromethane	43.7	1	ug/L	50.0		87.5	30-155			
Ethylbenzene	53.6	1	ug/L	50.0		107	75-125			
Hexachlorobutadiene	57.3	1	ug/L	50.0		115	50-140			
Isopropylbenzene	59.2	1	ug/L	50.0		118	75-125			
m+p-Xylenes	111	2	ug/L	100		111	75-130			

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0323 - SW5030B										
LCS (BXL0323-BS1) Prepared & Analyzed: 12/15/2014										
Methylene chloride	44.6	4	ug/L	50.0		89.2	55-140			
Methyl-t-butyl ether (MTBE)	52.5	1	ug/L	50.0		105	65-125			
Naphthalene	54.6	1	ug/L	50.0		109	55-140			
n-Butylbenzene	59.3	1	ug/L	50.0		119	70-135			
n-Propylbenzene	61.3	1	ug/L	50.0		123	70-130			
o-Xylene	57.6	1	ug/L	50.0		115	80-120			
sec-Butylbenzene	60.2	1	ug/L	50.0		120	70-125			
Styrene	59.7	1	ug/L	50.0		119	65-135			
tert-Butylbenzene	59.9	1	ug/L	50.0		120	70-130			
Tetrachloroethylene (PCE)	72.4	1	ug/L	50.0		145	45-150			
Toluene	52.6	1	ug/L	50.0		105	75-120			
trans-1,2-Dichloroethylene	53.0	1	ug/L	50.0		106	60-140			
trans-1,3-Dichloropropene	50.6	1	ug/L	50.0		101	55-140			
Trichloroethylene	53.8	1	ug/L	50.0		108	70-125			
Trichlorofluoromethane	42.7	1	ug/L	50.0		85.4	60-145			
Vinyl chloride	53.4	1	ug/L	50.0		107	50-145			
<i>Surr: 1,2-Dichloroethane-d4</i>	47.6		ug/L	50.0		95.2	70-120			
<i>Surr: 4-Bromofluorobenzene</i>	48.7		ug/L	50.0		97.4	75-120			
<i>Surr: Dibromofluoromethane</i>	48.8		ug/L	50.0		97.6	80-119			
<i>Surr: Toluene-d8</i>	48.5		ug/L	50.0		97.0	85-120			
LCS Dup (BXL0323-BSD1) Prepared & Analyzed: 12/15/2014										
1,1,1,2-Tetrachloroethane	60.3	1	ug/L	50.0		121	80-130	6.69	30	
1,1,1-Trichloroethane	59.0	1	ug/L	50.0		118	65-130	6.80	30	
1,1,2,2-Tetrachloroethane	60.1	1	ug/L	50.0		120	65-130	11.2	30	
1,1,2-Trichloroethane	55.9	1	ug/L	50.0		112	75-125	5.99	30	
1,1-Dichloroethane	60.6	1	ug/L	50.0		121	70-135	5.88	30	

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0323 - SW5030B

LCS Dup (BXL0323-BSD1)

Prepared & Analyzed: 12/15/2014

1,1-Dichloroethylene	57.0	1	ug/L	50.0		114	70-130	7.63	30	
1,1-Dichloropropene	60.5	1	ug/L	50.0		121	75-135	6.10	30	
1,2,3-Trichlorobenzene	64.0	1	ug/L	50.0		128	55-140	9.18	30	
1,2,3-Trichloropropane	52.4	1	ug/L	50.0		105	75-125	7.64	30	
1,2,4-Trichlorobenzene	65.0	1	ug/L	50.0		130	65-135	7.59	30	
1,2,4-Trimethylbenzene	56.8	1	ug/L	50.0		114	75-130	8.78	30	
1,2-Dibromo-3-chloropropane (DBCP)	55.5	4	ug/L	50.0		111	50-130	13.6	30	
1,2-Dibromoethane (EDB)	57.1	1	ug/L	50.0		114	80-120	8.06	30	
1,2-Dichlorobenzene	63.6	1	ug/L	50.0		127	70-120	8.85	30	L
1,2-Dichloroethane	53.3	1	ug/L	50.0		107	70-130	8.36	30	
1,2-Dichloropropane	54.1	1	ug/L	50.0		108	75-125	10.5	30	
1,3,5-Trimethylbenzene	59.6	1	ug/L	50.0		119	75-125	6.57	30	
1,3-Dichlorobenzene	63.5	1	ug/L	50.0		127	75-125	8.06	30	L
1,3-Dichloropropane	54.8	1	ug/L	50.0		110	75-125	8.70	30	
1,4-Dichlorobenzene	61.7	1	ug/L	50.0		123	75-125	8.18	30	
2,2-Dichloropropane	58.0	1	ug/L	50.0		116	70-135	5.55	30	
2-Butanone (MEK)	47.7	10	ug/L	50.0		95.4	30-150	0.645	30	
2-Chlorotoluene	63.2	1	ug/L	50.0		126	75-125	9.27	30	L
2-Hexanone (MBK)	51.1	10	ug/L	50.0		102	55-130	5.01	30	
4-Chlorotoluene	62.7	1	ug/L	50.0		125	75-130	6.69	30	
4-Isopropyltoluene	62.6	1	ug/L	50.0		125	75-130	7.55	30	
4-Methyl-2-pentanone (MIBK)	54.3	10	ug/L	50.0		109	60-135	10.5	30	
Acetone	55.0	10	ug/L	50.0		110	40-140	1.60	30	
Benzene	59.8	1	ug/L	50.0		120	80-120	6.88	30	
Bromobenzene	58.6	1	ug/L	50.0		117	75-125	6.23	30	
Bromochloromethane	55.4	1	ug/L	50.0		111	65-130	7.88	30	

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0323 - SW5030B

LCS Dup (BXL0323-BSD1)

Prepared & Analyzed: 12/15/2014

Bromodichloromethane	59.0	1	ug/L	50.0		118	75-120	7.24	30	
Bromoform	62.1	1	ug/L	50.0		124	70-130	7.40	30	
Bromomethane	64.5	1	ug/L	50.0		129	30-145	15.0	30	
Carbon disulfide	41.6	10	ug/L	50.0		83.2	35-160	0.920	30	
Carbon tetrachloride	61.8	1	ug/L	50.0		124	65-140	5.01	30	
Chlorobenzene	60.0	1	ug/L	50.0		120	80-120	4.61	30	
Chloroethane	58.0	1	ug/L	50.0		116	60-135	8.68	30	
Chloroform	55.4	1	ug/L	50.0		111	65-135	7.80	30	
Chloromethane	45.9	1	ug/L	50.0		91.7	40-125	6.33	30	
cis-1,2-Dichloroethylene	52.9	1	ug/L	50.0		106	70-125	3.71	30	
cis-1,3-Dichloropropene	54.7	1	ug/L	50.0		109	70-130	9.64	30	
Dibromochloromethane	59.1	1	ug/L	50.0		118	60-135	7.19	30	
Dibromomethane	58.1	1	ug/L	50.0		116	75-125	8.86	30	
Dichlorodifluoromethane	46.8	1	ug/L	50.0		93.6	30-155	6.81	30	
Ethylbenzene	56.7	1	ug/L	50.0		113	75-125	5.64	30	
Hexachlorobutadiene	61.0	1	ug/L	50.0		122	50-140	6.21	30	
Isopropylbenzene	61.9	1	ug/L	50.0		124	75-125	4.49	30	
m+p-Xylenes	116	2	ug/L	100		116	75-130	4.85	30	
Methylene chloride	48.6	4	ug/L	50.0		97.3	55-140	8.71	30	
Methyl-t-butyl ether (MTBE)	57.6	1	ug/L	50.0		115	65-125	9.20	30	
Naphthalene	60.9	1	ug/L	50.0		122	55-140	11.0	30	
n-Butylbenzene	64.4	1	ug/L	50.0		129	70-135	8.13	30	
n-Propylbenzene	66.2	1	ug/L	50.0		132	70-130	7.80	30	L
o-Xylene	58.9	1	ug/L	50.0		118	80-120	2.24	30	
sec-Butylbenzene	64.4	1	ug/L	50.0		129	70-125	6.79	30	L
Styrene	63.6	1	ug/L	50.0		127	65-135	6.38	30	

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0323 - SW5030B										
LCS Dup (BXL0323-BSD1)				Prepared & Analyzed: 12/15/2014						
tert-Butylbenzene	64.3	1	ug/L	50.0		129	70-130	7.14	30	L
Tetrachloroethylene (PCE)	75.4	1	ug/L	50.0		151	45-150	4.04	30	
Toluene	57.2	1	ug/L	50.0		114	75-120	8.24	30	
trans-1,2-Dichloroethylene	55.1	1	ug/L	50.0		110	60-140	3.92	30	
trans-1,3-Dichloropropene	54.3	1	ug/L	50.0		109	55-140	7.04	30	
Trichloroethylene	58.5	1	ug/L	50.0		117	70-125	8.35	30	
Trichlorofluoromethane	45.3	1	ug/L	50.0		90.7	60-145	6.06	30	
Vinyl chloride	55.7	1	ug/L	50.0		111	50-145	4.18	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	48.2		ug/L	50.0		96.5	70-120			
<i>Surr: 4-Bromofluorobenzene</i>	48.5		ug/L	50.0		97.0	75-120			
<i>Surr: Dibromofluoromethane</i>	49.2		ug/L	50.0		98.4	80-119			
<i>Surr: Toluene-d8</i>	49.8		ug/L	50.0		99.5	85-120			
Duplicate (BXL0323-DUP1)				Source: 14L0150-23RE3		Prepared & Analyzed: 12/15/2014				
1,1,1,2-Tetrachloroethane	BLOD	1000	ug/L		BLOD			NA	30	
1,1,1-Trichloroethane	BLOD	1000	ug/L		BLOD			NA	30	
1,1,2,2-Tetrachloroethane	BLOD	1000	ug/L		BLOD			NA	30	
1,1,2-Trichloroethane	BLOD	1000	ug/L		BLOD			NA	30	
1,1-Dichloroethane	BLOD	1000	ug/L		BLOD			NA	30	
1,1-Dichloroethylene	BLOD	1000	ug/L		BLOD			NA	30	
1,1-Dichloropropene	BLOD	1000	ug/L		BLOD			NA	30	
1,2,3-Trichlorobenzene	BLOD	1000	ug/L		BLOD			NA	30	
1,2,3-Trichloropropane	BLOD	1000	ug/L		BLOD			NA	30	
1,2,4-Trichlorobenzene	BLOD	1000	ug/L		BLOD			NA	30	
1,2,4-Trimethylbenzene	BLOD	1000	ug/L		BLOD			NA	30	
1,2-Dibromo-3-chloropropane (DBCP)	BLOD	4000	ug/L		BLOD			NA	30	
1,2-Dibromoethane (EDB)	BLOD	1000	ug/L		BLOD			NA	30	

Certificate of Analysis

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 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0323 - SW5030B

Duplicate (BXL0323-DUP1)

Source: 14L0150-23RE3

Prepared & Analyzed: 12/15/2014

1,2-Dichlorobenzene	BLOD	1000	ug/L		BLOD			NA	30	
1,2-Dichloroethane	BLOD	1000	ug/L		BLOD			NA	30	
1,2-Dichloropropane	BLOD	1000	ug/L		BLOD			NA	30	
1,3,5-Trimethylbenzene	BLOD	1000	ug/L		BLOD			NA	30	
1,3-Dichlorobenzene	BLOD	1000	ug/L		BLOD			NA	30	
1,3-Dichloropropane	BLOD	1000	ug/L		BLOD			NA	30	
1,4-Dichlorobenzene	BLOD	1000	ug/L		BLOD			NA	30	
2,2-Dichloropropane	BLOD	1000	ug/L		BLOD			NA	30	
2-Butanone (MEK)	BLOD	10000	ug/L		BLOD			NA	30	
2-Chlorotoluene	BLOD	1000	ug/L		BLOD			NA	30	
2-Hexanone (MBK)	BLOD	10000	ug/L		BLOD			NA	30	
4-Chlorotoluene	BLOD	1000	ug/L		BLOD			NA	30	
4-Isopropyltoluene	BLOD	1000	ug/L		BLOD			NA	30	
4-Methyl-2-pentanone (MIBK)	BLOD	10000	ug/L		BLOD			NA	30	
Acetone	BLOD	10000	ug/L		BLOD			NA	30	
Benzene	BLOD	1000	ug/L		BLOD			NA	30	
Bromobenzene	BLOD	1000	ug/L		BLOD			NA	30	
Bromochloromethane	BLOD	1000	ug/L		BLOD			NA	30	
Bromodichloromethane	BLOD	1000	ug/L		BLOD			NA	30	
Bromoform	BLOD	1000	ug/L		BLOD			NA	30	
Bromomethane	BLOD	1000	ug/L		BLOD			NA	30	
Carbon disulfide	BLOD	10000	ug/L		BLOD			NA	30	
Carbon tetrachloride	BLOD	1000	ug/L		BLOD			NA	30	
Chlorobenzene	BLOD	1000	ug/L		BLOD			NA	30	
Chloroethane	BLOD	1000	ug/L		BLOD			NA	30	
Chloroform	BLOD	1000	ug/L		BLOD			NA	30	

Certificate of Analysis

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0323 - SW5030B

Duplicate (BXL0323-DUP1)

Source: 14L0150-23RE3

Prepared & Analyzed: 12/15/2014

Chloromethane	BLOD	1000	ug/L		BLOD			NA	30	
cis-1,2-Dichloroethylene	BLOD	1000	ug/L		BLOD			NA	30	
cis-1,3-Dichloropropene	BLOD	1000	ug/L		BLOD			NA	30	
Dibromochloromethane	BLOD	1000	ug/L		BLOD			NA	30	
Dibromomethane	BLOD	1000	ug/L		BLOD			NA	30	
Dichlorodifluoromethane	BLOD	1000	ug/L		BLOD			NA	30	
Di-isopropyl ether (DIPE)	BLOD	5000	ug/L		BLOD			NA	30	
Ethylbenzene	BLOD	1000	ug/L		BLOD			NA	30	
Ethyl-t-butyl ether (ETBE)	BLOD	25000	ug/L		BLOD			NA	30	
Hexachlorobutadiene	BLOD	1000	ug/L		BLOD			NA	30	
Iodomethane	BLOD	10000	ug/L		BLOD			NA	30	
Isopropylbenzene	BLOD	1000	ug/L		BLOD			NA	30	
m+p-Xylenes	BLOD	2000	ug/L		BLOD			NA	30	
Methylene chloride	BLOD	4000	ug/L		BLOD			NA	30	
Methyl-t-butyl ether (MTBE)	BLOD	1000	ug/L		BLOD			NA	30	
Naphthalene	BLOD	1000	ug/L		BLOD			NA	30	
n-Butylbenzene	BLOD	1000	ug/L		BLOD			NA	30	
n-Propylbenzene	BLOD	1000	ug/L		BLOD			NA	30	
o-Xylene	BLOD	1000	ug/L		BLOD			NA	30	
sec-Butylbenzene	BLOD	1000	ug/L		BLOD			NA	30	
Styrene	BLOD	1000	ug/L		BLOD			NA	30	
TAME	BLOD	5000	ug/L		BLOD			NA	30	
TBA	BLOD	100000	ug/L		BLOD			NA	30	
tert-Butylbenzene	BLOD	1000	ug/L		BLOD			NA	30	
Tetrachloroethylene (PCE)	75300	1000	ug/L		72400			3.89	30	
Toluene	BLOD	1000	ug/L		BLOD			NA	30	

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Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0323 - SW5030B										
Duplicate (BXL0323-DUP1)		Source: 14L0150-23RE3			Prepared & Analyzed: 12/15/2014					
trans-1,2-Dichloroethylene	BLOD	1000	ug/L		BLOD			NA	30	
trans-1,3-Dichloropropene	BLOD	1000	ug/L		BLOD			NA	30	
Trichloroethylene	314	1000	ug/L		BLOD			NA	30	J
Trichlorofluoromethane	BLOD	1000	ug/L		BLOD			NA	30	
Vinyl acetate	BLOD	10000	ug/L		BLOD			NA	30	
Vinyl chloride	BLOD	1000	ug/L		BLOD			NA	30	
Xylenes, Total	BLOD	3000	ug/L		BLOD			NA	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>49.2</i>		ug/L	<i>50.0</i>		<i>98.5</i>	<i>70-120</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>46.6</i>		ug/L	<i>50.0</i>		<i>93.2</i>	<i>75-120</i>			
<i>Surr: Dibromofluoromethane</i>	<i>50.0</i>		ug/L	<i>50.0</i>		<i>100</i>	<i>80-119</i>			
<i>Surr: Toluene-d8</i>	<i>49.3</i>		ug/L	<i>50.0</i>		<i>98.6</i>	<i>85-120</i>			
Matrix Spike (BXL0323-MS1)		Source: 14L0270-23			Prepared & Analyzed: 12/15/2014					
1,1,1,2-Tetrachloroethane	57.1	1	ug/L	50.0	BLOD	114	80-130			
1,1,1-Trichloroethane	58.4	1	ug/L	50.0	BLOD	117	65-130			
1,1,2,2-Tetrachloroethane	62.2	1	ug/L	50.0	BLOD	124	65-130			
1,1,2-Trichloroethane	57.6	1	ug/L	50.0	BLOD	115	75-125			
1,1-Dichloroethane	61.3	1	ug/L	50.0	BLOD	123	70-135			
1,1-Dichloroethylene	55.6	1	ug/L	50.0	BLOD	111	70-130			
1,1-Dichloropropene	57.1	1	ug/L	50.0	BLOD	114	75-135			
1,2,3-Trichlorobenzene	56.1	1	ug/L	50.0	BLOD	112	55-140			
1,2,3-Trichloropropane	56.4	1	ug/L	50.0	BLOD	113	75-125			
1,2,4-Trichlorobenzene	54.4	1	ug/L	50.0	BLOD	109	65-135			
1,2,4-Trimethylbenzene	50.4	1	ug/L	50.0	BLOD	101	75-130			
1,2-Dibromo-3-chloropropane (DBCP)	58.8	4	ug/L	50.0	BLOD	118	50-130			
1,2-Dibromoethane (EDB)	58.2	1	ug/L	50.0	BLOD	116	80-120			
1,2-Dichlorobenzene	58.1	1	ug/L	50.0	BLOD	116	70-120			

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0323 - SW5030B

Matrix Spike (BXL0323-MS1)

Source: 14L0270-23

Prepared & Analyzed: 12/15/2014

1,2-Dichloroethane	56.1	1	ug/L	50.0	BLOD	112	70-130
1,2-Dichloropropane	51.0	1	ug/L	50.0	BLOD	102	75-125
1,3,5-Trimethylbenzene	53.7	1	ug/L	50.0	BLOD	107	75-125
1,3-Dichlorobenzene	56.5	1	ug/L	50.0	BLOD	113	75-125
1,3-Dichloropropane	54.8	1	ug/L	50.0	BLOD	110	75-125
1,4-Dichlorobenzene	55.5	1	ug/L	50.0	BLOD	111	75-125
2,2-Dichloropropane	53.3	1	ug/L	50.0	BLOD	107	70-135
2-Butanone (MEK)	65.1	10	ug/L	50.0	BLOD	130	30-150
2-Chlorotoluene	56.7	1	ug/L	50.0	BLOD	113	75-125
2-Hexanone (MBK)	62.6	10	ug/L	50.0	BLOD	125	55-130
4-Chlorotoluene	57.1	1	ug/L	50.0	BLOD	114	75-130
4-Isopropyltoluene	54.4	1	ug/L	50.0	BLOD	109	75-130
4-Methyl-2-pentanone (MIBK)	65.0	10	ug/L	50.0	BLOD	130	60-135
Acetone	75.5	10	ug/L	50.0	BLOD	142	40-140
Benzene	57.6	1	ug/L	50.0	BLOD	115	80-120
Bromobenzene	55.6	1	ug/L	50.0	BLOD	111	75-125
Bromochloromethane	58.5	1	ug/L	50.0	BLOD	117	65-130
Bromodichloromethane	55.5	1	ug/L	50.0	BLOD	111	75-120
Bromoform	60.3	1	ug/L	50.0	BLOD	121	70-130
Bromomethane	57.4	1	ug/L	50.0	BLOD	115	30-145
Carbon disulfide	41.7	10	ug/L	50.0	BLOD	83.4	35-160
Carbon tetrachloride	55.7	1	ug/L	50.0	BLOD	111	65-140
Chlorobenzene	55.8	1	ug/L	50.0	BLOD	112	80-120
Chloroethane	54.5	1	ug/L	50.0	BLOD	109	60-135
Chloroform	55.3	1	ug/L	50.0	BLOD	111	65-135
Chloromethane	44.2	1	ug/L	50.0	BLOD	88.5	40-125

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Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0323 - SW5030B										
Matrix Spike (BXL0323-MS1)		Source: 14L0270-23		Prepared & Analyzed: 12/15/2014						
cis-1,2-Dichloroethylene	53.7	1	ug/L	50.0	BLOD	107	70-125			
cis-1,3-Dichloropropene	50.4	1	ug/L	50.0	BLOD	101	70-130			
Dibromochloromethane	58.8	1	ug/L	50.0	BLOD	118	60-135			
Dibromomethane	57.5	1	ug/L	50.0	BLOD	115	75-125			
Dichlorodifluoromethane	45.1	1	ug/L	50.0	BLOD	90.1	30-155			
Ethylbenzene	51.7	1	ug/L	50.0	BLOD	103	75-125			
Hexachlorobutadiene	53.0	1	ug/L	50.0	BLOD	106	50-140			
Isopropylbenzene	56.1	1	ug/L	50.0	BLOD	112	75-125			
m+p-Xylenes	106	2	ug/L	100	BLOD	106	75-130			
Methylene chloride	49.7	4	ug/L	50.0	BLOD	99.4	55-140			
Methyl-t-butyl ether (MTBE)	61.3	1	ug/L	50.0	BLOD	123	65-125			
Naphthalene	60.1	1	ug/L	50.0	BLOD	120	55-140			
n-Butylbenzene	54.2	1	ug/L	50.0	BLOD	108	70-135			
n-Propylbenzene	59.1	1	ug/L	50.0	BLOD	118	70-130			
o-Xylene	54.9	1	ug/L	50.0	BLOD	110	80-120			
sec-Butylbenzene	56.8	1	ug/L	50.0	BLOD	114	70-125			
Styrene	59.0	1	ug/L	50.0	BLOD	118	65-135			
tert-Butylbenzene	57.8	1	ug/L	50.0	BLOD	116	70-130			
Tetrachloroethylene (PCE)	67.5	1	ug/L	50.0	BLOD	135	45-150			
Toluene	53.3	1	ug/L	50.0	BLOD	106	75-120			
trans-1,2-Dichloroethylene	57.5	1	ug/L	50.0	BLOD	115	60-140			
trans-1,3-Dichloropropene	50.5	1	ug/L	50.0	BLOD	101	55-140			
Trichloroethylene	53.7	1	ug/L	50.0	BLOD	107	70-125			
Trichlorofluoromethane	43.1	1	ug/L	50.0	BLOD	86.1	60-145			
Vinyl chloride	54.7	1	ug/L	50.0	BLOD	109	50-145			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>52.7</i>		<i>ug/L</i>	<i>50.0</i>		<i>105</i>	<i>70-120</i>			

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0323 - SW5030B										
Matrix Spike (BXL0323-MS1)		Source: 14L0270-23		Prepared & Analyzed: 12/15/2014						
Surr: 4-Bromofluorobenzene	46.8		ug/L	50.0		93.6	75-120			
Surr: Dibromofluoromethane	51.4		ug/L	50.0		103	80-119			
Surr: Toluene-d8	49.7		ug/L	50.0		99.4	85-120			
Matrix Spike Dup (BXL0323-MSD1)		Source: 14L0270-23		Prepared & Analyzed: 12/15/2014						
1,1,1,2-Tetrachloroethane	62.0	1	ug/L	50.0	BLOD	124	80-130	8.29	30	
1,1,1-Trichloroethane	61.5	1	ug/L	50.0	BLOD	123	65-130	5.20	30	
1,1,2,2-Tetrachloroethane	68.1	1	ug/L	50.0	BLOD	136	65-130	9.03	30	M
1,1,2-Trichloroethane	62.9	1	ug/L	50.0	BLOD	126	75-125	8.75	30	M
1,1-Dichloroethane	65.8	1	ug/L	50.0	BLOD	132	70-135	7.03	30	
1,1-Dichloroethylene	59.4	1	ug/L	50.0	BLOD	119	70-130	6.48	30	
1,1-Dichloropropene	62.2	1	ug/L	50.0	BLOD	124	75-135	8.59	30	
1,2,3-Trichlorobenzene	61.8	1	ug/L	50.0	BLOD	124	55-140	9.78	30	
1,2,3-Trichloropropane	62.1	1	ug/L	50.0	BLOD	124	75-125	9.53	30	
1,2,4-Trichlorobenzene	59.0	1	ug/L	50.0	BLOD	118	65-135	8.22	30	
1,2,4-Trimethylbenzene	56.3	1	ug/L	50.0	BLOD	113	75-130	11.1	30	
1,2-Dibromo-3-chloropropane (DBCP)	64.9	4	ug/L	50.0	BLOD	130	50-130	9.87	30	
1,2-Dibromoethane (EDB)	61.8	1	ug/L	50.0	BLOD	124	80-120	6.01	30	M
1,2-Dichlorobenzene	64.2	1	ug/L	50.0	BLOD	128	70-120	9.99	30	M
1,2-Dichloroethane	59.7	1	ug/L	50.0	BLOD	119	70-130	6.17	30	
1,2-Dichloropropane	56.9	1	ug/L	50.0	BLOD	114	75-125	10.9	30	
1,3,5-Trimethylbenzene	59.1	1	ug/L	50.0	BLOD	118	75-125	9.63	30	
1,3-Dichlorobenzene	62.7	1	ug/L	50.0	BLOD	125	75-125	10.4	30	M
1,3-Dichloropropane	59.9	1	ug/L	50.0	BLOD	120	75-125	8.81	30	
1,4-Dichlorobenzene	60.6	1	ug/L	50.0	BLOD	121	75-125	8.83	30	
2,2-Dichloropropane	57.0	1	ug/L	50.0	BLOD	114	70-135	6.70	30	
2-Butanone (MEK)	72.3	10	ug/L	50.0	BLOD	145	30-150	10.5	30	

Certificate of Analysis

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Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BXL0323 - SW5030B

Matrix Spike Dup (BXL0323-MSD1)		Source: 14L0270-23			Prepared & Analyzed: 12/15/2014					
2-Chlorotoluene	63.1	1	ug/L	50.0	BLOD	126	75-125	10.6	30	M
2-Hexanone (MBK)	67.7	10	ug/L	50.0	BLOD	135	55-130	7.71	30	M
4-Chlorotoluene	63.1	1	ug/L	50.0	BLOD	126	75-130	9.88	30	
4-Isopropyltoluene	60.6	1	ug/L	50.0	BLOD	121	75-130	10.9	30	
4-Methyl-2-pentanone (MIBK)	70.0	10	ug/L	50.0	BLOD	140	60-135	7.32	30	M
Acetone	81.6	10	ug/L	50.0	BLOD	154	40-140	7.69	30	M
Benzene	61.8	1	ug/L	50.0	BLOD	124	80-120	7.07	30	M
Bromobenzene	59.3	1	ug/L	50.0	BLOD	119	75-125	6.34	30	
Bromochloromethane	61.4	1	ug/L	50.0	BLOD	123	65-130	4.95	30	
Bromodichloromethane	61.3	1	ug/L	50.0	BLOD	123	75-120	10.0	30	M
Bromoform	65.3	1	ug/L	50.0	BLOD	131	70-130	7.97	30	M
Bromomethane	62.3	1	ug/L	50.0	BLOD	125	30-145	8.16	30	
Carbon disulfide	43.5	10	ug/L	50.0	BLOD	87.1	35-160	4.26	30	
Carbon tetrachloride	60.7	1	ug/L	50.0	BLOD	121	65-140	8.57	30	
Chlorobenzene	60.6	1	ug/L	50.0	BLOD	121	80-120	8.29	30	M
Chloroethane	58.9	1	ug/L	50.0	BLOD	118	60-135	7.72	30	
Chloroform	59.7	1	ug/L	50.0	BLOD	119	65-135	7.81	30	
Chloromethane	48.7	1	ug/L	50.0	BLOD	97.3	40-125	9.52	30	
cis-1,2-Dichloroethylene	57.7	1	ug/L	50.0	BLOD	115	70-125	7.18	30	
cis-1,3-Dichloropropene	54.8	1	ug/L	50.0	BLOD	110	70-130	8.28	30	
Dibromochloromethane	63.5	1	ug/L	50.0	BLOD	127	60-135	7.70	30	
Dibromomethane	62.4	1	ug/L	50.0	BLOD	125	75-125	8.17	30	
Dichlorodifluoromethane	46.8	1	ug/L	50.0	BLOD	93.7	30-155	3.85	30	
Ethylbenzene	56.4	1	ug/L	50.0	BLOD	113	75-125	8.80	30	
Hexachlorobutadiene	57.0	1	ug/L	50.0	BLOD	114	50-140	7.29	30	
Isopropylbenzene	61.4	1	ug/L	50.0	BLOD	123	75-125	8.99	30	

Certificate of Analysis

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Date Issued: December 17, 2014 14:49

Volatile Organic Compounds by GCMS - Quality Control

Air Water & Soil Laboratories, Inc.

Analyte	Result	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch BXL0323 - SW5030B										
Matrix Spike Dup (BXL0323-MSD1)		Source: 14L0270-23		Prepared & Analyzed: 12/15/2014						
m+p-Xylenes	116	2	ug/L	100	BLOD	116	75-130	8.94	30	
Methylene chloride	53.1	4	ug/L	50.0	BLOD	106	55-140	6.60	30	
Methyl-t-butyl ether (MTBE)	65.4	1	ug/L	50.0	BLOD	131	65-125	6.37	30	M
Naphthalene	67.0	1	ug/L	50.0	BLOD	134	55-140	10.8	30	
n-Butylbenzene	60.2	1	ug/L	50.0	BLOD	120	70-135	10.4	30	
n-Propylbenzene	64.7	1	ug/L	50.0	BLOD	129	70-130	9.11	30	
o-Xylene	59.8	1	ug/L	50.0	BLOD	120	80-120	8.58	30	
sec-Butylbenzene	62.8	1	ug/L	50.0	BLOD	126	70-125	10.0	30	M
Styrene	64.1	1	ug/L	50.0	BLOD	128	65-135	8.28	30	
tert-Butylbenzene	64.1	1	ug/L	50.0	BLOD	128	70-130	10.5	30	
Tetrachloroethylene (PCE)	73.3	1	ug/L	50.0	BLOD	147	45-150	8.23	30	
Toluene	59.2	1	ug/L	50.0	BLOD	118	75-120	10.4	30	
trans-1,2-Dichloroethylene	58.6	1	ug/L	50.0	BLOD	117	60-140	1.84	30	
trans-1,3-Dichloropropene	55.8	1	ug/L	50.0	BLOD	112	55-140	9.87	30	
Trichloroethylene	57.4	1	ug/L	50.0	BLOD	115	70-125	6.63	30	
Trichlorofluoromethane	45.6	1	ug/L	50.0	BLOD	91.1	60-145	5.65	30	
Vinyl chloride	57.3	1	ug/L	50.0	BLOD	115	50-145	4.70	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>52.8</i>		ug/L	<i>50.0</i>		<i>106</i>	<i>70-120</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>48.4</i>		ug/L	<i>50.0</i>		<i>96.9</i>	<i>75-120</i>			
<i>Surr: Dibromofluoromethane</i>	<i>49.9</i>		ug/L	<i>50.0</i>		<i>99.8</i>	<i>80-119</i>			
<i>Surr: Toluene-d8</i>	<i>50.3</i>		ug/L	<i>50.0</i>		<i>101</i>	<i>85-120</i>			

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Organic Compounds by GCMS			Preparation Method: SW5030B		
14L0150-01	5.00 mL / 5.00 mL	SW8260B	BXL0259	SXL0317	AL40040
14L0150-02	5.00 mL / 5.00 mL	SW8260B	BXL0259	SXL0317	AL40040
14L0150-03	5.00 mL / 5.00 mL	SW8260B	BXL0259	SXL0317	AL40040
14L0150-04	5.00 mL / 5.00 mL	SW8260B	BXL0259	SXL0317	AL40040
14L0150-05	5.00 mL / 5.00 mL	SW8260B	BXL0259	SXL0317	AL40040
14L0150-06	5.00 mL / 5.00 mL	SW8260B	BXL0259	SXL0317	AL40040
14L0150-07	5.00 mL / 5.00 mL	SW8260B	BXL0259	SXL0317	AL40040
14L0150-08	5.00 mL / 5.00 mL	SW8260B	BXL0259	SXL0317	AL40040
14L0150-09	5.00 mL / 5.00 mL	SW8260B	BXL0259	SXL0317	AL40040
14L0150-10	5.00 mL / 5.00 mL	SW8260B	BXL0259	SXL0317	AL40040
14L0150-11	5.00 mL / 5.00 mL	SW8260B	BXL0259	SXL0317	AL40040
14L0150-12	5.00 mL / 5.00 mL	SW8260B	BXL0259	SXL0317	AL40040
14L0150-13	5.00 mL / 5.00 mL	SW8260B	BXL0259	SXL0317	AL40040
14L0150-24	5.00 mL / 5.00 mL	SW8260B	BXL0259	SXL0317	AL40040
14L0150-14	5.00 mL / 5.00 mL	SW8260B	BXL0284	SXL0329	AL40040
14L0150-15	5.00 mL / 5.00 mL	SW8260B	BXL0284	SXL0329	AL40040
14L0150-16	5.00 mL / 5.00 mL	SW8260B	BXL0284	SXL0329	AL40040
14L0150-17	5.00 mL / 5.00 mL	SW8260B	BXL0284	SXL0329	AL40040
14L0150-18	5.00 mL / 5.00 mL	SW8260B	BXL0284	SXL0329	AL40040
14L0150-19	5.00 mL / 5.00 mL	SW8260B	BXL0284	SXL0329	AL40040
14L0150-20	5.00 mL / 5.00 mL	SW8260B	BXL0284	SXL0329	AL40040
14L0150-21	5.00 mL / 5.00 mL	SW8260B	BXL0284	SXL0329	AL40040
14L0150-22	5.00 mL / 5.00 mL	SW8260B	BXL0284	SXL0329	AL40040
14L0150-23	5.00 mL / 5.00 mL	SW8260B	BXL0284	SXL0329	AL40040
14L0150-14RE1	5.00 mL / 5.00 mL	SW8260B	BXL0295	SXL0339	AL40040
14L0150-15RE1	5.00 mL / 5.00 mL	SW8260B	BXL0295	SXL0339	AL40040
14L0150-16RE1	5.00 mL / 5.00 mL	SW8260B	BXL0295	SXL0339	AL40040

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Organic Compounds by GCMS			Preparation Method: SW5030B		
14L0150-17RE1	5.00 mL / 5.00 mL	SW8260B	BXL0295	SXL0339	AL40040
14L0150-18RE1	5.00 mL / 5.00 mL	SW8260B	BXL0295	SXL0339	AL40040
14L0150-19RE1	5.00 mL / 5.00 mL	SW8260B	BXL0295	SXL0339	AL40040
14L0150-20RE1	5.00 mL / 5.00 mL	SW8260B	BXL0295	SXL0339	AL40040
14L0150-21RE1	5.00 mL / 5.00 mL	SW8260B	BXL0295	SXL0339	AL40040
14L0150-21RE2	5.00 mL / 5.00 mL	SW8260B	BXL0295	SXL0339	AL40040
14L0150-22RE1	5.00 mL / 5.00 mL	SW8260B	BXL0295	SXL0339	AL40040
14L0150-23RE1	5.00 mL / 5.00 mL	SW8260B	BXL0295	SXL0339	AL40040
14L0150-23RE2	5.00 mL / 5.00 mL	SW8260B	BXL0295	SXL0339	AL40040
14L0150-05RE1	5.00 mL / 5.00 mL	SW8260B	BXL0299	SXL0350	AL40040
14L0150-10RE1	5.00 mL / 5.00 mL	SW8260B	BXL0299	SXL0350	AL40040
14L0150-11RE1	5.00 mL / 5.00 mL	SW8260B	BXL0299	SXL0350	AL40040
14L0150-12RE1	5.00 mL / 5.00 mL	SW8260B	BXL0299	SXL0350	AL40040
14L0150-11RE2	5.00 mL / 5.00 mL	SW8260B	BXL0323	SXL0372	AL40040
14L0150-23RE3	5.00 mL / 5.00 mL	SW8260B	BXL0323	SXL0372	AL40040

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Certified Analyses included in this Report

Analyte	Certifications
<i>SW8260B in Non-Potable Water</i>	
1,1,1,2-Tetrachloroethane	NC, VELAP, WVDEP
1,1,1-Trichloroethane	NC, VELAP, WVDEP
1,1,2,2-Tetrachloroethane	NC, VELAP, WVDEP
1,1,2-Trichloroethane	NC, VELAP, WVDEP
1,1-Dichloroethane	NC, VELAP, WVDEP
1,1-Dichloroethylene	NC, VELAP, WVDEP
1,1-Dichloropropene	NC, VELAP, WVDEP
1,2,3-Trichlorobenzene	NC, VELAP, WVDEP
1,2,3-Trichloropropane	NC, VELAP, WVDEP
1,2,4-Trichlorobenzene	NC, VELAP, WVDEP
1,2,4-Trimethylbenzene	NC, VELAP, WVDEP
1,2-Dibromo-3-chloropropane (DBCP)	NC, VELAP, WVDEP
1,2-Dibromoethane (EDB)	NC, VELAP, WVDEP
1,2-Dichlorobenzene	NC, VELAP, WVDEP
1,2-Dichloroethane	NC, VELAP, WVDEP
1,2-Dichloropropane	NC, VELAP, WVDEP
1,3,5-Trimethylbenzene	NC, WVDEP
1,3-Dichlorobenzene	NC, VELAP, WVDEP
1,3-Dichloropropane	NC, VELAP, WVDEP
1,4-Dichlorobenzene	NC, VELAP, WVDEP
2,2-Dichloropropane	NC, VELAP, WVDEP
2-Butanone (MEK)	NC, VELAP, WVDEP
2-Chlorotoluene	NC, VELAP, WVDEP
2-Hexanone (MBK)	NC, VELAP, WVDEP
4-Chlorotoluene	NC, VELAP, WVDEP
4-Isopropyltoluene	NC, VELAP, WVDEP
4-Methyl-2-pentanone (MIBK)	NC, VELAP, WVDEP

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Certified Analyses included in this Report

Analyte	Certifications
Acetone	NC, VELAP, WVDEP
Benzene	NC, VELAP, WVDEP
Bromobenzene	NC, VELAP, WVDEP
Bromochloromethane	NC, VELAP, WVDEP
Bromodichloromethane	NC, VELAP, WVDEP
Bromoform	NC, VELAP, WVDEP
Bromomethane	NC, VELAP, WVDEP
Carbon disulfide	NC, VELAP, WVDEP
Carbon tetrachloride	NC, VELAP, WVDEP
Chlorobenzene	NC, VELAP, WVDEP
Chloroethane	NC, VELAP, WVDEP
Chloroform	NC, VELAP, WVDEP
Chloromethane	NC, VELAP, WVDEP
cis-1,2-Dichloroethylene	NC, VELAP, WVDEP
cis-1,3-Dichloropropene	NC, VELAP, WVDEP
Dibromochloromethane	NC, VELAP, WVDEP
Dibromomethane	NC, VELAP, WVDEP
Dichlorodifluoromethane	NC, VELAP, WVDEP
Di-isopropyl ether (DIPE)	NC, VELAP, WVDEP
Ethylbenzene	NC, VELAP, WVDEP
Ethyl-t-butyl ether (ETBE)	NC, VELAP, WVDEP
Hexachlorobutadiene	NC, VELAP, WVDEP
Iodomethane	NC, VELAP, WVDEP
Isopropylbenzene	NC, VELAP, WVDEP
m+p-Xylenes	NC, VELAP, WVDEP
Methylene chloride	NC, VELAP, WVDEP
Methyl-t-butyl ether (MTBE)	NC, VELAP, WVDEP
Naphthalene	NC, VELAP, WVDEP

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
 Client Site I.D.: Elite/Free Star/Star Cleaners
 Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Certified Analyses included in this Report

Analyte	Certifications
n-Butylbenzene	NC, VELAP, WVDEP
n-Propylbenzene	NC, VELAP, WVDEP
o-Xylene	NC, VELAP, WVDEP
sec-Butylbenzene	NC, VELAP, WVDEP
Styrene	NC, VELAP, WVDEP
TAME	NC, VELAP, WVDEP
TBA	NC, VELAP, WVDEP
tert-Butylbenzene	NC, VELAP, WVDEP
Tetrachloroethylene (PCE)	NC, VELAP, WVDEP
Toluene	NC, VELAP, WVDEP
trans-1,2-Dichloroethylene	NC, VELAP, WVDEP
trans-1,3-Dichloropropene	NC, VELAP, WVDEP
Trichloroethylene	NC, VELAP, WVDEP
Trichlorofluoromethane	NC, VELAP, WVDEP
Vinyl acetate	NC, VELAP, WVDEP
Vinyl chloride	NC, VELAP, WVDEP
Xylenes, Total	NC, VELAP, WVDEP

Code	Description	Cert Number	Expires
MdDOE	Maryland DE Drinking Water	341	12/31/2014
NC	North Carolina DENR	495	12/31/2014
VELAP Certificate #4337	NELAC-Virginia Certificate #4337	460021	06/14/2015

Certificate of Analysis

Client Name: Chesapeake Geosciences, Inc.
Client Site I.D.: Elite/Free Star/Star Cleaners
Submitted To: Nancy Love

Date Issued: December 17, 2014 14:49

Qualifiers and Definitions

E	Estimated concentration, outside calibration range
J	The reported result is an estimated value.
L	LCS recovery is outside of established acceptance limits
M	Matrix spike recovery is outside established acceptance limits
P	Duplicate analysis does not meet the acceptance criteria for precision
pH	The container used to analyze this sample had a pH measurement of greater than 2 s.u.
RPD	Relative Percent Difference
Qual	Qualifiers
-RE	Denotes sample was re-analyzed
LOD	Limit of Detection
BLOD	Below Limit of Detection
LOQ	Limit of Quantitation
DF	Dilution Factor

Company Name: Chesapeake GeoSciences, Inc.		Project Manager: Nancy Love		Parameters										CHAIN-OF-CUSTODY RECORD Air, Water, & Soil Laboratories, Inc. 2109A North Hamilton Street Richmond, VA. 23230 (804) 358-8295					
Project Name: Elite/Free State/Star Cleaners Page 1 of 2		Project ID: CG-12-0763.03																	
Sampler(s): Lara Bennett		P.O. Number: CG120763.03NL																	
Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	VOCs via EPA 8260											Preservative/Remarks	Lab ID
MiHPT03-GW (28 - 32')	12/4/14	08:40	X			3	X											1:1 HCL + 4 degrees C	
MiHPT02-GW (26 - 30')	12/4/14	09:50	X			3	X											1:1 HCL + 4 degrees C	
MiHPT02-GW (41 - 45')	12/4/14	10:15	X			3	X											1:1 HCL + 4 degrees C	
MiHPT05-GW (52 - 56')	12/4/14	11:45	X			3	X											1:1 HCL + 4 degrees C	
MiHPT05-GW (41 - 45')	12/4/14	12:20	X			3	X											1:1 HCL + 4 degrees C	
MiHPT05-GW (17 - 21')	12/4/14	12:38	X			3	X											1:1 HCL + 4 degrees C	
MiHPT01-GW (52 - 56')	12/4/14	14:35	X			3	X											1:1 HCL + 4 degrees C	
MiHPT01-GW (39 - 43')	12/4/14	15:08	X			3	X											1:1 HCL + 4 degrees C	
MiHPT01-GW (32 - 36')	12/4/14	16:15	X			3	X											1:1 HCL + 4 degrees C	
MiHPT01-GW (24 - 28')	12/4/14	16:45	X			3	X											1:1 HCL + 4 degrees C	
MiHPT01-GW (8 - 12')	12/5/14	08:50	X			3	X											1:1 HCL + 4 degrees C	
MiHPT10-GW (52 - 56')	12/5/14	09:30	X			3	X											1:1 HCL + 4 degrees C	
MiHPT10-GW (39 - 43')	12/5/14	10:10	X			3	X											1:1 HCL + 4 degrees C	
MiHPT10-GW (29 - 33')	12/5/14	10:40	X			3	X											1:1 HCL + 4 degrees C	
MiHPT07-GW (52 - 56')	12/5/14	12:10	X			3	X											1:1 HCL + 4 degrees C	
MiHPT07-GW (39 - 43')	12/5/14	12:35	X			3	X											1:1 HCL + 4 degrees C	
MiHPT07-GW (29 - 33')	12/5/14	13:05	X			3	X											1:1 HCL	

COOLER
3.8°C
TEMPERATURE

Relinquished by: (Signature) <i>[Signature]</i>	Date/Time 12/8/14	Received by: (Signature) UPS Next Day Air Saver	Relinquished by: (Signature)
(Printed) Lara Bennett	15:00	(Printed) Tracking# 1Z6Y6 1E 1373096370	(Printed)
Relinquished by: (Signature) <i>[Signature]</i>	Date/Time 9.40	Received by Laboratory: (Signature) <i>[Signature]</i>	Date/Time
(Printed) 9 DEC 2014		(Printed) AFRAL MIDDLETON	

14L0150
 CGI
 MDE Package 2 (Level II) 2014
 Recd: 12/09/2014 Due: 12/16/2014
 v130325002

Remarks: MDE Data Deliverable Package II/Rates
 Please include BTEX, Naphthalene, MTBE, TAME, TBA, ETBE, DIPE, 1,2-DCA, and 1,2-Dibromoethane in EPA 8260 Analyses.
 E-mail results to nlove@cos.us.com and lbennett@cos.us.com



1941 Reymet Road • Richmond, Virginia 23237 • Tel : (804) 358-8295 Fax: (804) 358-8207

Sample Conditions Checklist

Opened by: (Initials)

TM

Lab ID No.:

Date Cooler Opened:

CGI

14L0150

MDE Package 2 (Level II) 2014

Recd: 12/09/2014 Due: 12/16/2014

v130325002

		YES	NO	N/A
1.	How were samples received?			
	Fed Ex <input type="checkbox"/>			
	UPS <input checked="" type="checkbox"/>			
	Courier <input type="checkbox"/>			
	Walk In <input type="checkbox"/>			
2.	Were custody seals used?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.	If yes, are custody seals unbroken and intact at the date and time of arrival?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.	Are the custody papers filled out completely and correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.	Do all bottle labels agree with custody papers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	Are the samples received on ice?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.	Is the temperature blank or representative sample within acceptable limits? (above freezing to 6°C)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.	Are all samples within holding time for requested laboratory tests?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.	Is a sufficient amount of sample provided to perform the tests indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.	Are all samples in proper containers for the analyses requested?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.	Are all samples appropriately preserved for the analyses requested?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	Are all volatile organic containers free of headspace?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
13.	Are all TOX containers free of headspace?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14.	Is Trip blank provided with each VOC sample set? Circle applicable method: (Document if trip blank is not received with the sample set)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	EPA 8011 EPA 504 <u>EPA 8260</u> EPA 624			
	RSK-175 EPA 8015 (GRO) EPA 8021			
	EPA 524 GRO Wisconsin DNR (water and/or methanol trip blank must be provided)			

COMMENTS

SEE ATTACHED EMAIL: *TM* 9 DEC 2014

Per email notification; Sample TAT is requested for 10 days. RLC 12/19/14 Per Lara Bennett.

FOR LAB USE ONLY:

CrVI preserved date/time: _____

Buffer Sol'n ID: _____

1N NaOH ID: _____ or

Analyst initials: _____

5N NaOH ID: _____

THIS DOCUMENT IS UNCONTROLLED WHEN PRINTED
F1302 Sample Condition 4_0.xls

Tafral Middleton

From: Nancy Love [NLove@cgs.us.com]
Sent: Tuesday, December 09, 2014 1:54 PM
To: Tafral Middleton; Lara Bennett
Subject: RE: Revised COC for Elite/Free State/Star Cleaners - 14L0150

Thanks Tafral. We appreciate your help with this.

Nancy

Nancy D. Love, PG
Senior Project Manager
Chesapeake GeoSciences, Inc.
5405 Twin Knolls Road, Suite 1
Columbia, Maryland 21045
Phone: 410-740-1911 (ext. 106)
Fax: 410-740-3299
nlove@cgs.us.com
www.cgs.us.com

From: Tafral Middleton [mailto:tmiddleton@awslabs.com]
Sent: Tuesday, December 09, 2014 1:04 PM
To: Lara Bennett; Nancy Love
Subject: RE: Revised COC for Elite/Free State/Star Cleaners - 14L0150

Hello Nancy and Lara,

Just so we're all the same page:

Sample -21 is to be named MiHPT09-GW (18-22'). I have printed off the revised COC and made the original COC obsolete.

The samples to be run with headspace are:

- 07 (MiHPT01-GW (52-56'))
- 08 (MiHPT01-GW (39-43'))
- 15 (MiHPT07-GW (52-56'))
- 16 (MiHPT07-GW (39-43'))
- 18 (MiHPT09-GW (52-56'))
- 21 (MiHPT09-GW (18-22'))

-12 (MiHPT10-GW (52-56')) has only one voa vial with no headspace

All other wells have at least TWO voa vials with no headspace

Thanks for all your help ladies!

Tafral

From: Lara Bennett [mailto:LBennett@cgs.us.com]
Sent: Tuesday, December 09, 2014 11:52 AM

12/9/2014

14L0150

CGI **14L0150**
MDE Package 2 (Level II) 2014
Recd: 12/09/2014 Due: 12/16/2014

Page 190 of 190

APPENDIX D

VIRONEX MEMBRANE INTERFACE HYDRAULIC PROFILING TOOL (MIHPT) INVESTIGATION AND DATA IMAGING REPORT



**Membrane Interface Hydraulic Profiling Tool (MiHPT)
Investigation and Data Imaging Report**

**Elite Cleaners
3 South First Street
Delmar, Maryland**

Prepared for:

Chesapeake GeoSciences
5405 Twin Knolls Road
Columbia, Maryland

Prepared by:

Vironex, Inc.
403 Serendipity Drive
Millersville, Maryland

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Introduction

Vironex has prepared this Data Imaging Report for Chesapeake GeoSciences based on data produced by the advancement of the MiHPT system at the Elite Cleaners. This report provides visual renderings of data using the Mining Visualization System (MVS) software; develop by CTech Development Corporation (www.ctech.com).

Renderings of MIP, EC and HPT data are provided in the four dimensional models (model files are provided individually as separate attachments). These models are composed of the three spatial dimensions with the additional dimension relating to detector response (commonly referred to as 4DIM models). The models provide an interactive interface that allows the user to produce screen shots from any angle, magnification, or detector response value for each respective model.

The sections below provide a summary of the project, a summary of the data imaging contained in this report, a description of the how the images provided were developed, a description how to navigate 4DIM models, 4DIM files (separate files), and a description of the limitations regarding the imaging presented with this report.

Project Summary

This section provides a summary of field activities completed by Vironex at the Elite Cleaner the equipment used, the duration of field activities, the configuration of the MiHPT system and any relevant site information provided by Chesapeake GeoSciences.

Between December 1st – 3rd, 2014 Vironex advanced 11 direct push MiHPT borings from the ground surface to a maximum of 60 feet below ground surface (bgs). In order to advance the MiHPT borings Vironex mobilized one MiHPT System and one MiHPT specialist to the project site. The direct-push drill rig and operator were supplied by tidewater, Inc.

For the purposes of this project, the MiHPT system was equipped with an Electrical Conductivity sensor, an Electron Capture Detector (ECD), a Photo Ionization Detector (PID), a Flame Ionization Detector (FID) and a Halogenated Specific Detector (XSD). During the advancement of each boring, the response of each detector, relative to depth, was recorded in accordance with the standard operating procedures for the MiHPT system.

The details associated with each boring are presented in Table 1 below.

Table 1 Summary of MiHPT Borings

MiHPT Boring	Date	Time	Total Depth	Notes
MiHPT01	12.01.2014	10:09	48.35	Refusal at 48.35 feet bgs.
MiHPT02	12.01.2014	12:02	36.80	Refusal at 36.80 feet bgs.
MiHPT03	12.01.2014	14:52	37.90	Refusal at 37.90 feet bgs.
MiHPT04	12.02.2014	08:20	50.20	Cleared asphalt. Refusal at 50.20 feet bgs.
MiHPT05	12.02.2014	10:21	54.30	Refusal at 54.30 feet bgs.
MiHPT06	12.02.2014	13:03	33.20	Refusal at 33.20 feet bgs.
MiHPT07	12.02.2014	14:20	38.95	Refusal at 38.95 feet bgs.
MiHPT08	12.03.2014	08:00	44.20	Cleared concrete. Refusal at 44.20 feet bgs.
MiHPT09	12.03.2014	10:01	46.15	Refusal at 46.15 feet bgs.
MiHPT10	12.03.2014	12:20	60.25	Cleared asphalt. Completed target depth of 60 feet bgs
MiHPT11	12.03.2014	14:37	60.15	Completed target depth of 60 feet bgs

Summary of Data Visualization

Data Visualization is graphical display of MiHPT information, which provides an interpolation of the MiHPT data set. This output, which is provided in 4DIM files, provides the user a powerful tool of skilled visualization options. This option gives a visual interpolation of the detector or analytical results. This allows the end user to see how the data come together and to visualize potential movement of the contaminant.

Model Development

This section describes the types of images provided in this report and the methods used to develop them. As noted above, Vironex utilize CTech's MVS software to develop the data renderings that are listed in this report. The settings and parameters associated with these renderings are based on the suggested configuration by CTech. Vironex used MVS software to develop a base model and three types of data imaging including:

- Three dimensional models;
- Vertical cross-sections;
- Horizontal cross-sections.

Each of these model types may be produced using the various data types. For example, three dimensional models may be produced using MiHPT response, as well as using EC to give a three dimensional indication of site lithology. Below is a discussion regarding the settings and parameters associated with each type of data images previously noted.

Prior to Kriging MiHPT data, a domain is created as a hierarchy to the MiHPT data, which is comprised of all the sample locations. This is called the convex hull which can be visualized as the shape assumed by a rubber band that has been stretched around the set and released to conform as closely as possible to it. MiHPT data is then Kriged, which is a mathematical process recognized by the EPA as the standard means for interpolation and extrapolation of measured data.

4DIM Models Provided

Vironex has provided 4DIM models which allow the user to manipulate each model spatially and determine the detector response value. The users of these models may select various angles, magnifications, and detector response values to develop their own static figures of these models. The following 4DIM models are listed in this report in Table 2 (please note that these are standalone files and only viewable on a computer).

Three Dimensional Models

Three Dimensional Models represent a collection of points in 3D space. The models will display the interpolation of the data used within this project at various concentrations and/or responses. They give the viewer an indication of the extent of distribution based on the data set used. However the interpolation has limitations based on the gridding pattern and depth of the borings. To provide a complete interpolation, the borings X and Y need to be within a grid pattern.

Vertical Cross-Sections

Vertical Cross-Sections are comprised of connecting borings and providing a vertical profile of the model providing all detector information from surface to total depth. These are viewed from easting or northing of the model and provide side profile of the detector responses.

Horizontal Cross-Sections

Horizontal Cross-Sections are horizontal profiles of the base model at a given depth providing all detector information at a given depth in MSL. These are viewed from a plan view and provide the detector response at each depth.

Model Development Notes

The ground surface is depicted as flat in the model as Chesapeake GeoSciences indicated that there is minimal relief across the area of investigation.

Access to 4DIM Models

4DIM Link: [http://www.opendrive.com/files/MF83MTIyNjk2MF81WlIFQl8xNDc4/4DIM\(Vers2\)%20-%20cgs%20-%20elite%20cleaners%20-%20delmar,%20md%20-%202-2-2015.zip](http://www.opendrive.com/files/MF83MTIyNjk2MF81WlIFQl8xNDc4/4DIM(Vers2)%20-%20cgs%20-%20elite%20cleaners%20-%20delmar,%20md%20-%202-2-2015.zip)

To view 4DIM files, users are required to have the 4DIM Player installed on their computer. The 4DIM Player may be downloaded at <http://www.ctech.com/?page=&action=download&fid=129> or accessed via the CTech website www.ctech.com.

Table 2 List of 4DIM files provided to Chesapeake GeoSciences.

Name of file	Date issued
ECD - 3D - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
ECD - EASTING SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
ECD - HORIZONTAL SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
ECD - NORTHING SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
ELECTRICAL CONDUCTIVITY - 3D - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
ELECTRICAL CONDUCTIVITY - EASTING SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
ELECTRICAL CONDUCTIVITY - HORIZONTAL SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
ELECTRICAL CONDUCTIVITY - NORTHING SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
FID - 3D - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
FID - EASTING SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
FID - HORIZONTAL SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
FID - NORTHING SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
HPT FLOW - 3D - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
HPT FLOW - EASTING SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
HPT FLOW - HORIZONTAL SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
HPT FLOW - NORTHING SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
HPT PRESSURE - 3D - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
HPT PRESSURE - EASTING SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
HPT PRESSURE - HORIZONTAL SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
HPT PRESSURE - NORTHING SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
PID - 3D - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
PID - EASTING SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
PID - HORIZONTAL SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
PID - NORTHING SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
XSD - 3D - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
XSD - EASTING SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
XSD - HORIZONTAL SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015
XSD - NORTHING SLICE - CGS - ELITE CLEANERS - DELMAR, MD - 1-5-2015.4D	12/5/2015

Limitations

The information and images presented in this report rely on data produced by Vironex under the supervision of Chesapeake GeoSciences and/or data provided by Chesapeake GeoSciences. Because



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