



**EMA**

*Environmental Management Associates, LLC*

May 30, 2014

Reference No. 559

Mr. David Reuland  
Georgia Environmental Protection Division  
Hazardous Sites Response Program  
Floyd Towers East, Suite #1462  
2 Martin Luther King Jr. Drive, SE  
Atlanta, Georgia 30334-9000

Dear Mr. Reuland:

Re: Semi-annual VRP Progress Report - March 2014  
Voluntary Remediation Plan  
Professional Cleaners & Linen Service  
2040 Beaver Ruin Road, Norcross, GA

On behalf of Indian Trail Assoc, LTD, Environmental Management Associates, LLC (EMA) has attached the Semi-annual VRP Progress Report for March 2014 for the above-referenced site. The report includes the additional round of groundwater sampling requested by EPD in correspondence dated October 10, 2013.

Please find one hard copy and one electronic version of the progress report. We certify that to the best of our knowledge that the electronic copy is complete, identical in content to the paper copy, and virus free.

Should you have any questions related to this correspondence, please contact the undersigned at (770) 271-4628.

Yours truly,

Environmental Management Associates, LLC

Brent Cortelloni, CHMM

cc: Craig Harper - Indian Trail Assoc., LTD

**SEMI-ANNUAL VOLUNTARY  
REMEDICATION PLAN PROGRESS  
REPORT - MARCH 2014**

**PROFESSIONAL CLEANERS & LINEN  
SERVICE  
2040 BEAVER RUIN ROAD  
NORCROSS, GEORGIA**

**HSI No. NA**

**MAY 27, 2014**

**Prepared for**

**Indian Trail Retail Assoc., LP  
P.O. Box 767127  
Roswell, Georgia**

**SEMI-ANNUAL VOLUNTARY REMEDIATION PLAN  
PROGRESS REPORT - MARCH 2014**

**PROFESSIONAL CLEANERS & LINEN SERVICE  
2040 BEAVER RUIN ROAD  
NORCROSS, GEORGIA**

**HSI No. NA**

**MAY 27, 2014**

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**Brent Cortelloni, CHMM  
Project Manager**

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**John O. Schwaller, P.G.  
(GA. Registration No. 1617)**



**EMA**

*Environmental Management Associates, LLC*  
5262 Belle Wood Court, Suite A  
Buford, Georgia 30518

# SEMI-ANNUAL VOLUNTARY REMEDIATION PLAN PROGRESS REPORT - MARCH 2014

PROFESSIONAL CLEANERS & LINEN SERVICE  
2040 BEAVER RUIN ROAD  
NORCROSS, GEORGIA

HSI No. NA

MAY 27, 2014



A handwritten signature in black ink, appearing to read "Brent Cortelloni".

Brent Cortelloni, CHMM  
Project Manager

A handwritten signature in black ink, appearing to read "John O. Schwaller".

John O. Schwaller, P.G.  
(GA. Registration No. 1617)

**EMA**

*Environmental Management Associates, LLC*  
5262 Belle Wood Court, Suite A  
Buford, Georgia 30518

TABLE OF CONTENTS

	<u>Page</u>
1.0 PROJECT SUMMARY .....	1
2.0 ACTIONS TAKEN SINCE LAST SUBMITTAL.....	3
2.1 CONFIRMATORY GROUNDWATER MONITORING EVENT.....	3
2.2 SOIL SAMPLING .....	4
2.3 MEMBRANE INTERFACE PROBE DELINEATION INVESTIGATION ...	4
2.4 WELL INSTALLATION .....	5
2.5 DISCUSSION AND CONCLUSIONS .....	6
3.0 UPDATED COST ESTIMATE .....	7
4.0 SCHEDULE AND FUTURE SUBMITTALS.....	8
5.0 PROFESSIONAL GEOLOGIST CERTIFICATION STATEMENT .....	9

LIST OF FIGURES

Following  
Report

FIGURE 1	SITE LOCATION PLAN
FIGURE 2	GROUNDWATER CONTOURS AND FLOW DIRECTION - OCTOBER 29, 2013
FIGURE 3	GROUNDWATER PCE CONCENTRATIONS - OCTOBER 2013/ APRIL 2014
FIGURE 4	HAND AUGER BOREHOLE SAMPLING LOCATIONS
FIGURE 5	MIP INVESTIGATION LOCATIONS

LIST OF TABLES

TABLE 1	GROUNDWATER LEVEL MEASUREMENTS
TABLE 2	GROUNDWATER PCE ANALYTICAL RESULTS
TABLE 3	SUMMARY OF MIP ECD RESPONSES

LIST OF APPENDICES

APPENDIX A	GROUNDWATER SAMPLING FORMS
APPENDIX B	ANALYTICAL LABORATORY REPORTS
APPENDIX C	MEMBRANE INTERFACE PROBE INVESTIGATION REPORT
APPENDIX D	STRAIGRAPHIC AND INSTRUMENTATION LOG FOR MW-11
APPENDIX E	UPDATED COST ESTIMATE

## 1.0 PROJECT SUMMARY

The Professional Cleaners & Linen Service site (Site) is located at 2040 Beaver Ruin Road in Norcross, Gwinnett County, Georgia and is part of a 1.79-acre multi-tenant shopping center (Crossings Shopping Center) developed in 1984. The surrounding properties are predominantly commercial with some residential to the north. A dry cleaner has operated within one of the tenant spaces (Suite 15) since 1984 and is believed to be the source of the Site contamination. A topographic map (Property Location Map) of the surrounding area is included as Figure 1.

A Phase I and II Environmental Site Assessment (ESA) was completed in February 2011 for the subject property. During the Phase II ESA activities, a release of tetrachloroethene (PCE) was detected in the subsurface soils and groundwater above the applicable Notification Concentrations (NC) referenced in Georgia Environmental Protection Division's (EPD) Hazardous Site Response Act (HSRA) Regulations Chapter 391-3-19, Appendix I. Within 30 day's of detection, the detected soils above the NC were removed from the Site based on the confirmatory soil sample results. A release notification to groundwater was subsequently submitted to EPD on April 7, 2011. It should be noted that PCE is the only contaminant of concern at this Site.

A Voluntary Investigation and Remediation Plan (VIRP) prepared by EMA was submitted to EPD on September 2, 2011. EPD approved the VIRP and accepted the Site into the Voluntary remediation Program (VRP) with conditions and comments in two letters dated March 6, 2012.

EMA conducted two formal injections of an in-situ chemical oxidation (ISCO) reagent (FMC Corporation's Klozur® sodium persulfate mixed with an alkaline activator (sodium hydroxide) to form sulfate and hydroxyl radicals) to reduce the levels of the groundwater contamination in what was assumed to be the entire contaminant plume (The area from MW-1 south-southwest to MW-2). The injections were completed in April/June 2012 and August 2012. Several quarterly sampling events were completed prior to and following the final injection.

A VRP Compliance Status Report (V-CSR) dated May 15, 2013 was submitted to EPD in June 2013. At that time PCE was below the EPD Type 4 Risk reduction Standard (98 ppb) in all of the monitoring wells and the EMA proposed Alternative Concentration Limit (ACL) of 70 ppb in the V-CSR. EPD provided comments on the V-CSR in correspondence dated October 10, 2013.

This Semi-annual VRP Progress Report No. 3 was prepared in accordance with the VRP and covers the activities conducted since the V-CSR submittal. These activities include the confirmatory groundwater sampling event requested by EPD, additional soil sampling to identify any source areas not detected during the previous investigations, and additional horizontal delineation of the on-Site groundwater contamination.

## 2.0 ACTIONS TAKEN SINCE LAST SUBMITTAL

### 2.1 CONFIRMATORY GROUNDWATER MONITORING EVENT

The fourth quarterly post-injection groundwater monitoring event was conducted on October 29 and 30, 2013 using the low-flow purging and sampling technique referenced in Section 2.3. Static groundwater level measurements were recorded at each monitoring well prior to purging for each event. The groundwater measurements are included in Table 1. A potentiometric contour map for both monitoring events was prepared based on the groundwater elevations presented in Table 1 and is provided as Figure 2.

Groundwater samples were collected using the low-flow/low-stress purging and sampling technique referenced in USEPA Region IV's SESD Operating Procedures - Groundwater Sampling dated March 4, 2013. Peristaltic pumps with disposable Teflon or Teflon lined tubing was used for the purging and sampling. The "Soda Straw" method was used to collect the groundwater samples for the target compound list - volatile organic compounds (TCL VOCs). The groundwater samples were delivered to Analytical Environmental Services, Inc. (AES) located in Atlanta, Georgia. AES is an accredited laboratory under the National Environmental Laboratory Accreditation Program (NELAC) (Accreditation ID: E87582). The groundwater samples were submitted for TCL VOCs by SW-846 Method 8260B. During the low-flow/low-stress purging procedure, field measurements of reduction oxidation potential (redox), dissolved oxygen (D.O.), turbidity, pH, conductivity, and temperature were recorded. Once the field measurements stabilized for three consecutive readings, samples were collected directly into the pre-preserved laboratory supplied containers. A duplicate sample from well MW-10 was collected during the event for the TCL VOCs to assess precision and a trip blank sample was included with the sample sets to assess cross-contamination during shipping. Field "rinsate" samples were not required since disposable tubing was utilized for the sample collection. The low-flow well purging/sampling forms are included in Appendix A. The analytical reports are included in Appendix B.



It should be noted that a groundwater sample was not collected from side-gradient monitoring well MW-3 during this event because access for sampling was not possible on October 29 or 30, 2013.

The detected TCL VOCs for the confirmatory groundwater monitoring event are summarized in Table 2 and illustrated on Figure 3. PCE concentrations increased

at wells MW-1, MW-4, MW-6, MW-7, and MW-10. PCE either decreased or was relatively the same as the previous event in wells MW-2, MW-2D, MW-8, and MW-9. The only groundwater samples with concentrations of PCE that exceeded the Type 4 RRS were from wells MW-1 and MW-4.

Based on the elevated PCE concentrations in wells MW-4 and MW-6 for the October 29 and 30, 2013 sampling event, confirmatory groundwater samples were collected from these wells on November 9, 2013 and submitted to AES for PCE analysis. The results of this additional testing are also included in Table 2.

## 2.2 SOIL SAMPLING

In an effort to try and identify other PCE release areas that may have contributed to the groundwater contamination along the east side of the Site, EMA installed an additional four hand-auger borings (BH-11 thru BH-14) at suspect soil PCE source locations on January 13, 2014. These locations included the PCE waste storage drum area near the former dry cleaning machine, the expansion joint in concrete floor in the middle of the suite used by the dry cleaner, a location adjacent to the dumpster pad, and a location behind the retaining wall behind the dumpster pad as illustrated on Figure 4. The objective was to find a PCE source that resulted from a surface release and therefore soil samples were only collected at 1 foot below ground surface (bgs) at each borehole. The four soil samples were collected using a decontaminated stainless-steel hand auger and new Nitrile gloves at each location. The samples were transferred into laboratory supplied pre-preserved containers, placed on ice, and were hand delivered under standard chain-of-custody protocols to AES for PCE analysis. The hand auger decontamination procedures used before and after each borehole included a detergent (Alkonox) rinse, tap water rinse, followed by deionized water rinse.

No significant PCE contamination was identified in the soil samples from these borings as indicated in the analytical report provided in Appendix B.

## 2.3 MEMBRANE INTERFACE PROBE DELINEATION INVESTIGATION

Based on the results of the additional soil sampling discussed in Section 2.2, a subsurface investigation was conducted using a Membrane Interface Probe (MIP) connected to a GeoProbe to help locate other potential PCE sources and to help determine the presence and extent of the groundwater contamination along the eastern side of the building. KB Labs, Inc. and GeoLab Probing Services, under

the direction of EMA, conducted this MIP investigation on January 23, 2014. The MIP technology uses a hydraulically driven interface probe that takes constant measurements of the gases present in the soil and groundwater using an electron capture detector. The MIP system uses three detectors to measure the VOCs present: flame ionization detector (FID), photoionization detector (PID) and electron capture detector (ECD). The ECD provides a response to the levels of chlorinated compounds present which can be compared to actual sample data collected and submitted to a fixed-based laboratory. The MIP technology is used as a screening tool since the detector response can vary from project to project. It should be noted that the previous injections of activated sodium persulfate or the resulting degradation products from PCE oxidation (ethene/ethane, etc.) may have had an impact on the responses noted for the FID and PID.

A total of nine boreholes were logged on January 23, 2014 at the locations illustrated on Figure 5. The highest ECD response from each boring is included in Table 3. The MIP data indicated that high concentrations of chlorinated organics were present in the groundwater at MIP-2, MIP-3, and MIP-8 locations. A high MIP detection was also reported at MIP-6 location at 10 feet bgs. A copy of the MIP Report prepared by KB Labs, Inc. is included in Appendix C.

Based on the MIP data, a groundwater sample was collected through the Geoprobe boring at MIP-2 location using a disposable Teflon bailer and new rope on January 23, 2014. A soil sample was also collected at 10 feet bgs at a boring next to the MIP-6 location using the Geoprobe. The samples were placed on ice and were hand delivered under standard chain-of-custody protocols to AES for analysis of PCE. The groundwater sample (MIP-2) was reported with 200 micrograms per liter ( $\mu\text{g}/\text{L}$ ) of PCE. The soil sample from the MIP-6 location was free from detectable concentrations of this analyte. A copy of the report from AES is included in Appendix B.

Based on the MIP investigation and the confirmation sampling, groundwater contamination is present along the east side of the property. The PCE concentration level detected at MIP-2 is the highest level reported to date. The MIP-6 soil sample data did not confirm the high level detected with the MIP. The soil contamination may be located lower than where the sample was collected.

## 2.4 WELL INSTALLATION

Based on the screening data from the MIP and the groundwater sample collected at MIP-02 location, a monitoring well (MW-11) was installed at MIP-02 to

confirm the previously identified PCE levels within this area. The location of this well is illustrated on Figure 3. The well was installed by GeoLab Probing Services, Inc. under the supervision of EMA's Professional Geologist. The 2-inch PVC well was installed to depth of 26.5 feet bgs and was completed as a flush-mount. The well was developed by manual bailing on April 21, 2014. A copy of the stratigraphic and instrumentation log for MW-11 is included in Appendix D.

Well MW-11 was sampled on April 22, 2014 using the low-flow/low-stress purging and sampling technique identified in Section 2.1. The groundwater sample (MW-11) was submitted to AES for PCE analysis and was reported at 170 µg/L. A copy of the low-flow well purging/sampling form is included in Appendix A. A copy of the analytical report from AES is included in Appendix B.

## 2.5 DISCUSSION AND CONCLUSIONS

While significant efforts have been completed to remediate the groundwater contamination, the latest round of sampling indicates that PCE levels have rebounded at upgradient location MW-1 and other previous areas of unknown contamination have been identified along the east side of the building. Either these areas were not discovered during the initial Phase II ESA based on inadequate sampling procedures or the increase in the elevation of the groundwater table has resulted in an increase in the PCE concentrations at the problem areas identified. The higher level of PCE detected at well MW-4 was most likely the result of the upgradient injections around monitoring well MW-2 versus standard contaminant migration within the groundwater. The high level of PCE in the groundwater at MW-11 is not unexpected based on the groundwater flow direction.

Another downgradient monitoring well (MW-12) is proposed approximately 40 feet east of MW-4 and will be installed prior to the remediation discussed below.

Based on the investigations completed to date, additional ISCO injections are needed to reduce the PCE concentration in the groundwater at MW-1 and the area along the east side of the Site. The proposed treatment area will include vadose zone soil at MW-1 and the groundwater contaminant plume that extends from MW-1 to MW-4.

### 3.0 UPDATED COST ESTIMATE

The initial cost estimate for the proposed groundwater monitoring, delineation, and remediation of the groundwater PCE contamination known at the time was provided to EPD in the VIRP and included a range from \$66,600 to \$78,600. The total cost to date which includes the additional investigation activities detailed in this Progress Report is approximately \$93,700. Based on the proposed remediation, an additional \$43,500 is proposed. A summary of the initial estimate included in the VIRP and the proposed cost to complete is included in Appendix E. We have also included a tabulated summary of the expenses since the last reporting period and a summary of hours charged by our Professional Geologist.

#### **4.0 SCHEDULE AND FUTURE SUBMITTALS**

It is anticipated that over the next four to six months the proposed monitoring well will be installed and the additional injection(s) of the ISCO reagent will be completed at MW-1 to MW-4 along the east side of the Site followed by a limited monitoring event to evaluate cleanup. The next progress report will be submitted in October 2014.

**5.0 PROFESSIONAL GEOLOGIST CERTIFICATION STATEMENT**

“I certify under penalty of law that this report and all attachments were prepared by me or under my direct supervision in accordance with the Voluntary Remediation Program Act (O.C.G.A. Section 12-8-101, et seq.). I am a professional engineer/professional geologist who is registered with the Georgia State Board of Registration for Professional Engineers and Land Surveyors/Georgia State Board for Professional Geologists and I have the necessary experience and am in charge of the investigation and remediation of this release of regulated substances.

Furthermore, to document my direct oversight of the Voluntary Remediation Plan development, implementation of corrective action, and long term monitoring, I have attached a monthly summary of hours invoiced and description of services provided by me to the Voluntary Remediation Program participant since the previous submittal to the Georgia Environmental Protection Division.

The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. “

Mr. John O. Schwaller, P.G.  
*Georgia Registration No. 1617*

\_\_\_\_\_  
*Signature/Stamp*

### 5.0 PROFESSIONAL GEOLOGIST CERTIFICATION STATEMENT

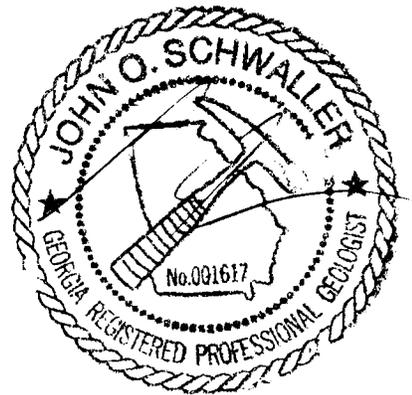
"I certify under penalty of law that this report and all attachments were prepared by me or under my direct supervision in accordance with the Voluntary Remediation Program Act (O.C.G.A. Section 12-8-101, et seq.). I am a professional engineer/professional geologist who is registered with the Georgia State Board of Registration for Professional Engineers and Land Surveyors/Georgia State Board for Professional Geologists and I have the necessary experience and am in charge of the investigation and remediation of this release of regulated substances.

Furthermore, to document my direct oversight of the Voluntary Remediation Plan development, implementation of corrective action, and log term monitoring, I have attached a monthly summary of hours invoiced and description of services provided by me to the Voluntary Remediation Program participant since the previous submittal to the Georgia Environmental Protection Division.

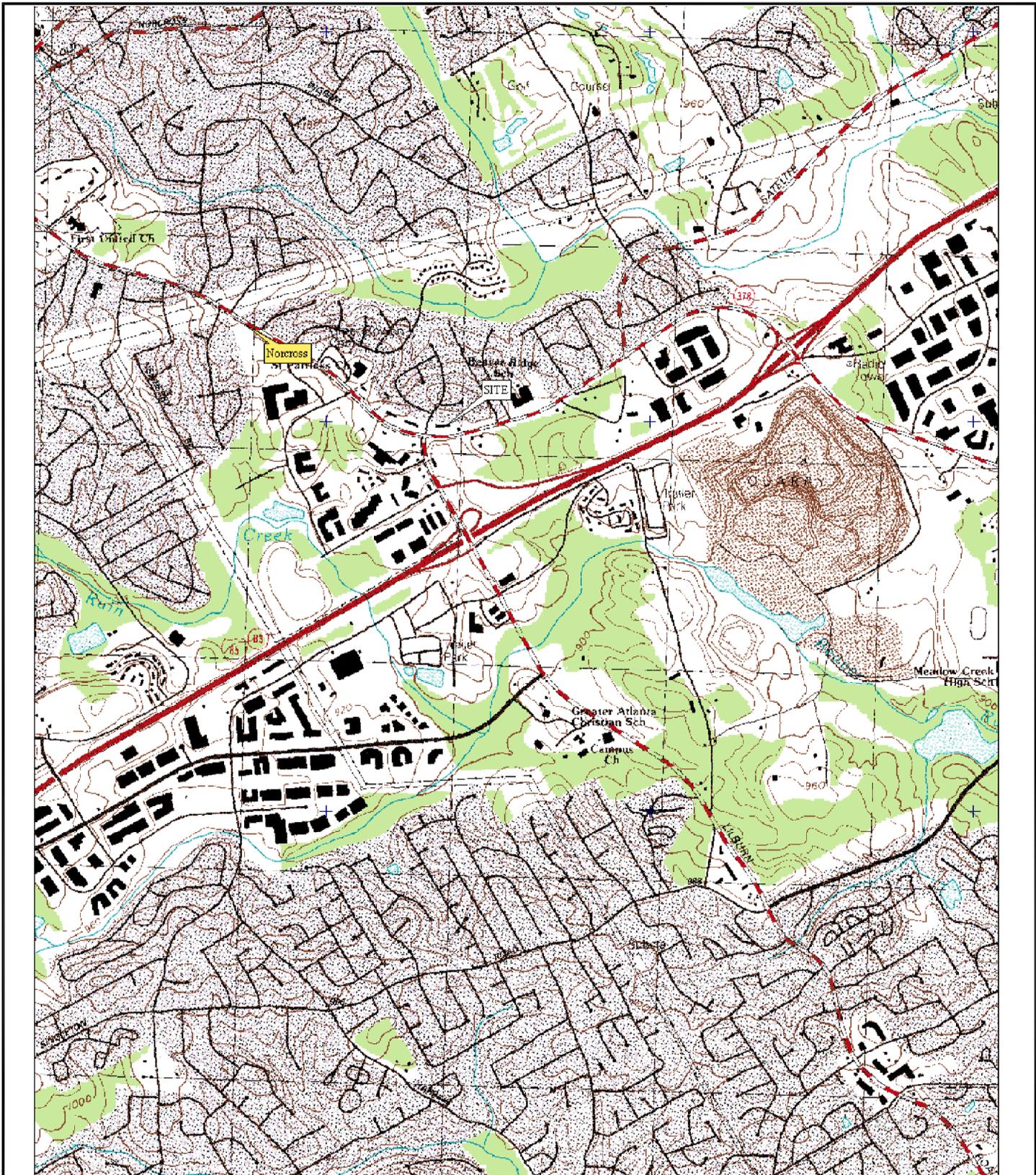
The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Mr. John O. Schwaller, P.G.  
Georgia Registration No. 1617

  
\_\_\_\_\_  
Signature/Stamp



## FIGURES

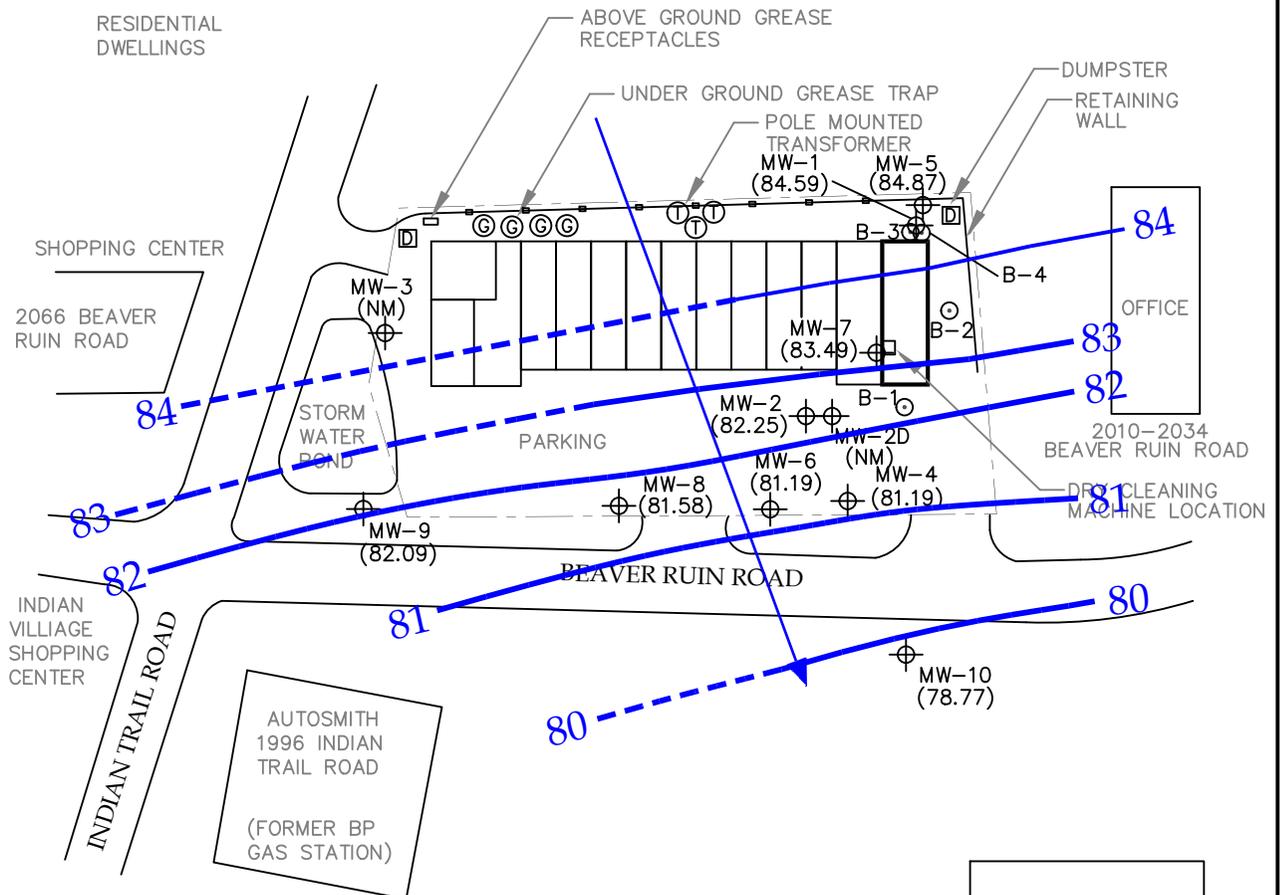


3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS

700 ft Scale: 1 : 24,000 Detail: 13-1 Datum: WGS84



Title	<b>SITE LOCATION MAP</b>	
Site	PROFESSIONAL CLEANERS & LINEN SERVICE 2040 Beaver Ruin Road, Norcross, Georgia	
	 <b>EMA</b> Environmental Management Associates, LLC	Facility ID.
		Figure <b>1</b>



**LEGEND:**

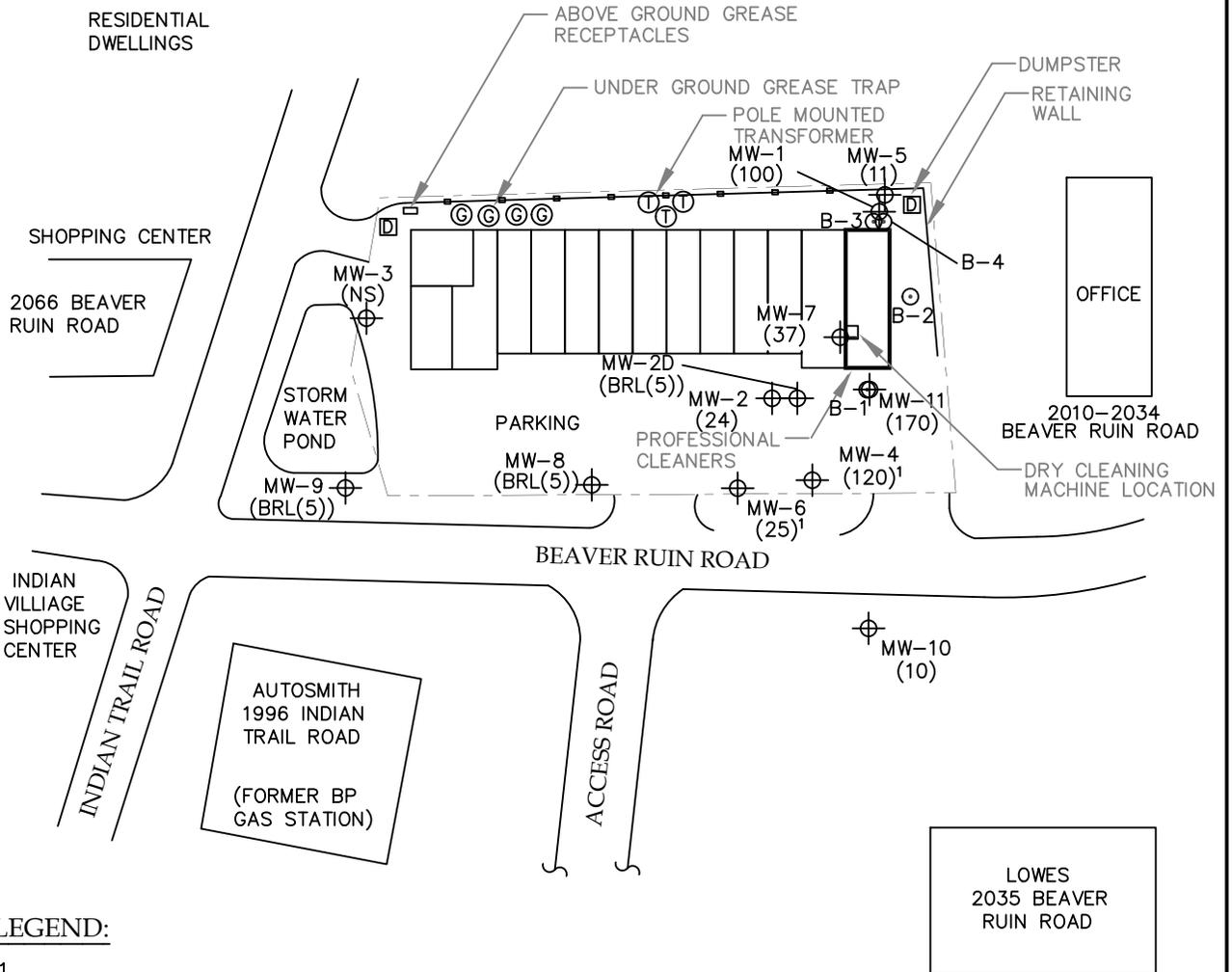
- B-1 BOREHOLE LOCATION
- MW-1 MONITORING WELL LOCATION
- (79.19) GROUNDWATER CONCENTRATION, FT AMSL
- (NM) NOT MEASURED
- 80** GROUNDWATER CONCENTRATION CONTOUR, FT AMSL
- GROUNDWATER FLOW DIRECTION

**NOTE:**

BASE MAP CREATED FROM GLE ASSOCIATES, INC  
DRAWING 11000-11045 SHEET A-3.



Title	<b>GROUNDWATER CONTOURS AND FLOW DIRECTION - OCTOBER 2013</b>
Site	PROFESSIONAL CLEANERS & LINEN SERVICE 2040 Beaver Ruin Road, Norcross, Georgia
<b>EMA</b>	Facility ID.
Environmental Management Associates, LLC	
Figure	<b>2</b>

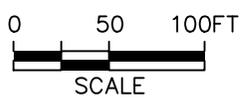


**LEGEND:**

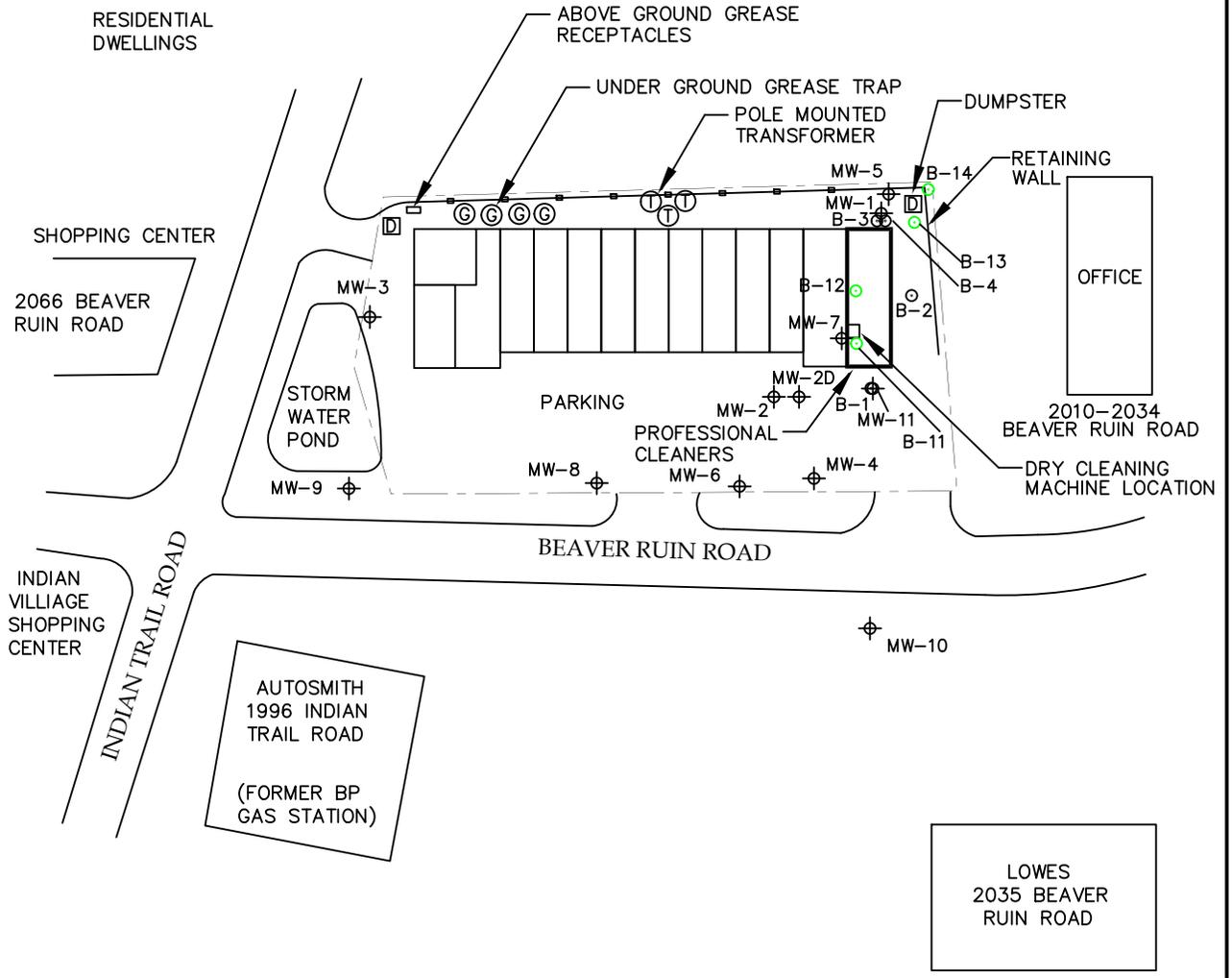
- B-1 ⊙ BOREHOLE LOCATION
- MW-1 ⊕ MONITORING WELL LOCATION
- (BRL(5)) BELOW REPORTING LIMITS

**NOTES:**

- 1.) CONFIRMATORY SAMPLE RESULT.
- 2.) CONCENTRATIONS ARE IN MICROGRAMS PER PER LITER.
- 3.) BASE MAP CREATED FROM GLE ASSOCIATES, INC. DRAWING 11000-11045 SHEET A-3.



Title	<b>PCE ANALYTICAL RESULTS OCTOBER 2013 / APRIL 2014</b>
Site	PROFESSIONAL CLEANERS & LINEN SERVICE 2040 Beaver Ruin Road, Norcross, Georgia
EMA	Facility ID.
Environmental Management Associates, LLC	Figure <b>3</b>

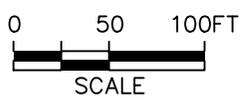


**LEGEND:**

- B-1 ○ BOREHOLE LOCATION
- MW-1 ⊕ MONITORING WELL LOCATION

**NOTE:**

BASE MAP CREATED FROM GLE ASSOCIATES, INC  
DRAWING 11000-11045 SHEET A-3.



<b>Title</b>	<b>HAND AUGER BOREHOLE LOCATIONS JANUARY 2014</b>
<b>Site</b>	<b>PROFESSIONAL CLEANERS &amp; LINEN SERVICE 2040 Beaver Ruin Road, Norcross, Georgia</b>
<b>EMA</b>	Facility ID.
Environmental Management Associates, LLC	
<b>Figure 4</b>	



## TABLES

TABLE 1

**GROUNDWATER LEVEL MEASUREMENTS  
PROFESSIONAL CLEANERS AND LINEN SERVICE  
NORCROSS, GEORGIA**

<i>Well Number</i>	<i>Date Measured</i>	<i>Ground Surface Elevation <sup>(1)</sup></i>	<i>TOC Elevation <sup>(1)</sup></i>	<i>Depth to Groundwater (feet BTOC) <sup>(2)</sup></i>	<i>Groundwater Elevation <sup>(1)</sup></i>
MW-1	7/1/2011	99.59	99.18	15.10	84.08
	7/12/2011	99.59	99.18	15.25	83.93
	8/17/2011	100.41	100.00	15.76	84.24
	3/19/2012	100.41	100.00	17.78	82.22
	4/23/2012	100.41	100.00	18.00	82.00
	7/24/2012	100.41	100.10	18.65	81.45
	10/24/2012	100.41	100.10	19.02	81.08
	12/13/2012	100.41	100.10	19.43	80.67
	2/8/2013	100.41	100.10	18.81	81.29
	5/13/2013	100.41	100.10	17.78	82.32
	10/29/2013	100.41	100.10	15.51	84.59
MW-2	7/1/2011	98.53	97.96	16.50	81.46
	7/12/2011	98.53	97.96	16.63	81.33
	8/17/2011	99.37	98.80	17.30	81.50
	3/19/2012	99.37	98.80	18.43	80.37
	4/23/2012	99.37	98.80	18.59	80.21
	7/24/2012	99.37	98.92	18.70	80.22
	10/24/2012	99.37	98.92	19.50	79.42
	12/13/2012	99.37	98.92	19.83	79.09
	2/8/2013	99.37	98.92	NM	NM
	5/13/2013	99.37	98.92	17.50	81.42
	10/29/2013	99.37	98.92	16.67	82.25
MW-2D	5/3/2013	99.58	99.33	18.05	81.28
	10/29/2013	99.58	99.33	17.21	82.12
MW-3	7/1/2011	98.43	98.00	14.39	83.61
	7/12/2011	98.43	98.00	14.75	83.25
	8/17/2011	99.26	98.83	15.47	83.36
	3/19/2012	99.26	98.83	17.09	81.74
	4/23/2012	99.26	98.83	17.04	81.79
	7/24/2012	99.26	98.83	17.06	81.77
	10/24/2012	99.26	98.83	NM	NM
	12/13/2012	99.26	98.83	18.70	80.13
	2/8/2013	99.26	98.83	17.82	81.01
	5/13/2013	99.26	98.83	15.34	83.49
MW-4	8/17/2011	97.81	97.39	16.70	80.69
	3/19/2012	97.81	97.39	17.71	79.68
	4/23/2012	97.81	97.39	17.87	79.52
	7/24/2012	97.81	97.39	17.94	79.45
	10/24/2012	97.81	97.39	18.55	78.84
	12/13/2012	97.81	97.39	19.00	78.39
	2/8/2013	97.81	97.39	18.43	78.96
	5/13/2013	97.81	97.39	16.74	80.65
	10/29/2013	97.81	97.39	16.20	81.19

TABLE 1

**GROUNDWATER LEVEL MEASUREMENTS  
PROFESSIONAL CLEANERS AND LINEN SERVICE  
NORCROSS, GEORGIA**

<i>Well Number</i>	<i>Date Measured</i>	<i>Ground Surface Elevation<sup>(1)</sup></i>	<i>TOC Elevation<sup>(1)</sup></i>	<i>Depth to Groundwater (feet BTOC)<sup>(2)</sup></i>	<i>Groundwater Elevation<sup>(1)</sup></i>
MW-5	3/19/2012	100.74	100.34	17.85	82.49
	4/23/2012	100.74	100.34	18.12	82.22
	7/24/2012	100.74	100.34	18.61	81.73
	10/24/2012	100.74	100.34	18.99	81.35
	12/13/2012	100.74	100.34	19.38	80.96
	2/8/2013	100.74	100.34	18.84	81.50
	5/13/2013	100.74	100.34	16.83	83.51
	10/29/2013	100.74	100.34	15.47	84.87
MW-6	3/19/2012	97.21	96.81	17.18	79.63
	4/23/2012	97.21	96.81	17.62	79.19
	7/24/2012	97.21	96.81	17.34	79.47
	10/24/2012	97.21	96.81	17.95	78.86
	12/13/2012	97.21	96.81	18.40	78.41
	2/8/2013	97.21	96.81	17.85	78.96
	5/13/2013	97.21	96.81	16.20	80.61
	10/29/2013	97.21	96.81	15.62	81.19
MW-7	3/19/2012	100.89	100.69	19.39	81.30
	4/23/2012	100.89	100.69	19.54	81.15
	7/24/2012	100.89	100.78	19.27	81.51
	10/24/2012	100.89	100.78	20.51	80.27
	12/13/2012	100.89	100.78	20.86	79.92
	2/8/2013	100.89	100.78	20.46	80.32
	5/13/2013	100.89	100.78	18.40	82.38
	10/29/2013	100.89	100.78	17.29	83.49
MW-8	12/13/2012	98.78	98.65	19.97	78.68
	2/8/2013	98.78	98.65	19.44	79.21
	5/13/2013	98.78	98.65	17.52	81.13
	10/29/2013	98.78	98.65	17.07	81.58
MW-9	12/13/2012	98.78	98.63	19.89	78.74
	2/8/2013	98.78	98.63	19.15	79.48
	5/13/2013	98.78	98.63	17.11	81.52
	10/29/2013	98.78	98.63	16.54	82.09
MW-10	2/12/2013	100.89	100.77	24.29	76.48
	5/13/2013	100.89	100.77	22.51	78.26
	10/29/2013	100.89	100.77	22.00	78.77
MW-11	4/22/2014	NM	NM	22.00	—

Notes:

(1) Top of casing (TOC), ground surface, and groundwater elevations based on an assumed datum. Re-surveyed on August 17, 2011. Modifications made to TOC elevations for MW-1, 2, and 7 on May 24, 2012.

(2) BTOC - below top of casing

**GROUNDWATER PCE ANALYTICAL DATA  
PROFESSIONAL CLEANERS AND LINEN SERVICE  
NORCROSS, GEORGIA**

<i>Sample Location</i>	<i>Sampling Period</i>	<i>Sample Date</i>	<i>Analyte</i>	<i>Concentration (µg/L) <sup>(1)</sup></i>	<i>Standard <sup>(2)</sup> (µg/L)</i>	
MW-1	Initial Inv.	7/1/2011	PCE	50	5/19/98	
	Baseline	4/23/2012	PCE	91/100 <sup>(3)</sup>		
	1st Quarter	7/24/2012	PCE	46		
	2nd Quarter	10/14/2012	PCE	BRL (5)		
	3rd Quarter	2/8/2013	PCE	5		
		10/29/2013	PCE	100		
MW-2	Initial Inv.	7/1/2011	PCE	62	5/19/98	
	Baseline	3/19/2012	PCE	47		
	1st Quarter	7/24/2012	PCE	41		
	2nd Quarter	10/14/2012	PCE	29/29 <sup>(3)</sup>		
	3rd Quarter	2/8/2013	PCE	36/35 <sup>(3)</sup>		
		10/29/2013	PCE	24		
MW-2D	Delineation	4/4/2013	PCE	BRL (5)		
		10/29/2013	PCE	BRL (5)		
MW-3	Initial Inv.	7/1/2011	PCE	BRL (5) <sup>(4)</sup>	5/19/98	
	Baseline	4/23/2012	PCE	BRL (5)		
	1st Quarter	7/24/2012	PCE	BRL (5)/BRL <sup>(3)</sup>		
	2nd Quarter	10/14/2012	PCE	Not Sampled <sup>(5)</sup>		
	3rd Quarter	2/8/2013	PCE	BRL (5)		
MW-4	Initial Inv.	7/22/2011	PCE	BRL (5)	5/19/98	
	Baseline	4/23/2012	PCE	BRL (5)		
	1st Quarter	7/24/2012	PCE	8.9		
	Confirmation	8/23/2012	PCE	8.3		
	2nd Quarter	10/14/2012	PCE	11		
		3rd Quarter	2/8/2013	PCE	11	
			10/29/2013	PCE	140/120 <sup>(6)</sup>	
MW-5	Baseline	3/19/2012	PCE	BRL (5)	5/19/98	
	1st Quarter	7/24/2012	PCE	BRL (5)		
	2nd Quarter	10/14/2012	PCE	BRL (5)		
	3rd Quarter	2/8/2013	PCE	11		
	Confirmation	2/18/2013	PCE	5.2		
		10/29/2013	PCE	11		

**GROUNDWATER PCE ANALYTICAL DATA  
PROFESSIONAL CLEANERS AND LINEN SERVICE  
NORCROSS, GEORGIA**

<i>Sample Location</i>	<i>Sampling Period</i>	<i>Sample Date</i>	<i>Analyte</i>	<i>Concentration (µg/L) <sup>(1)</sup></i>	<i>Standard <sup>(2)</sup> (µg/L)</i>
MW-6	Baseline	3/19/2012	PCE	BRL (5)	5/19/98
	1st Quarter	7/24/2012	PCE	5.2	
	Confirmation	8/23/2012	PCE	BRL (5)	
	2nd Quarter	10/14/2012	PCE	BRL(5)	
	3rd Quarter	2/8/2013	PCE	11	
	Confirmation	2/18/2013	PCE	BRL (5)	
		10/30/2013	PCE	33/25 <sup>(6)</sup>	
MW-7	Baseline	3/19/2012	PCE	82	5/19/98
	1st Quarter	7/24/2012	PCE	31	
	2nd Quarter	10/14/2012	PCE	19	
	3rd Quarter	2/8/2013	PCE	BRL (5)	
		10/29/2013	PCE	37	
MW-8	Delineation	12/11/2012	PCE	7.9	5/19/98
	Confirmation	12/13/2012	PCE	BRL(5)	
	3rd Quarter	2/8/2013	PCE	BRL (5)	
		10/30/2013	PCE	BRL (5)	
MW-9	Delineation	12/11/2012	PCE	BRL (5)	5/19/98
	3rd Quarter	2/8/2013	PCE	BRL(5)	
		10/30/2013	PCE	BRL (5)	
MW-10	Delineation	2/12/2013	PCE	6.6	5/19/98
		10/30/2013	PCE	10	
MW-11	Delineation	4/22/2014	PCE	170	5/19/98

## Notes:

- 1) µg/L - micrograms per liter
- 2) Type 1 Risk Reduction Standard (RRS)/Type 2 RRS/Type 4 RRS for groundwater.
- 3) Sample result and field duplicate result
- 4) BRL - Below reporting limit listed in paranthese
- 5) Insufficient groundwater available for sampling.
- 6) Sample result and confirmation sample result.

TABLE 3

SUMMARY OF MIP ECD RESPONSES  
PROFESSIONAL CLEANERS AND LINEN SERVICE  
NORCROSS, GEORGIA

<i>MIP Geoprobe ID</i>	<i>ECD Reponse (<math>\mu v \times 10^6</math>)</i>
MIP-1	1.5
MIP-2	4.6
MIP-3	1.8
MIP-4	1.6
MIP-5	0.2
MIP-6	>16
MIP-7	2.1
MIP-8	2.8
MIP-9	1.1

**APPENDIX A**  
**GROUNDWATER SAMPLING FORMS**

















**MONITORING WELL RECORD FOR LOW-FLOW PURGING**

**Project Data:**

Project Name: Professional Cleaners  
 Ref. No.: 559

Date: 10.30-13  
 Personnel: BC

**Monitoring Well Data:**

Well No.: MW-6  
 Measurement Point:  
 Constructed Well Depth (ft): 25.00  
 Measured Well Depth (ft):  
 Depth of Sediment (ft):

Screen Length (ft): 10'  
 Depth to Pump Intake (ft)<sup>(1)</sup>: 21.9'  
 Well Diameter, D (in): 2"  
 Well Screen Volume, V<sub>s</sub> (mL)<sup>(2)</sup>:  
 Initial Depth to Water (ft): 15.62

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level <sup>(3)</sup> (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, V <sub>p</sub> (mL)	No. of Well Screen Volumes Purged <sup>(3)</sup>
9:01	2150	15.60	9.40	6.93	21.53	0.103	162	3.01	140		
		15.65	4.35	4.93	21.51	0.052	139	3.65	8.6		
		15.65	4.35	4.74	21.49	0.041	139	3.69	5.2		
		15.66	4.34	4.74	21.49	0.032	141	3.71	3.9		
		15.68	4.33	4.73	21.49	0.033	142	3.72	3.30		

**Notes:**

- The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
- The well screen volume will be based on a 5-foot screen length,  $V_s = \pi(D/2)^2(5 \times 12)(2.54)^3$
- The drawdown from the initial water level should not exceed 0.3 ft.
- Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged =  $V_p/V_s$ .





**MONITORING WELL RECORD FOR LOW-FLOW PURGING**

**Project Data:**

Project Name: Professional Cleaners  
 Ref. No.: 559

Date: 11/9/2013  
 Personnel: BC

**Monitoring Well Data:**

Well No.: MW-6  
 Measurement Point:  
 Constructed Well Depth (ft): 25.00  
 Measured Well Depth (ft):  
 Depth of Sediment (ft):

Screen Length (ft): 10'  
 Depth to Pump Intake (ft)<sup>(1)</sup>: ~19'  
 Well Diameter, D (in): 2"  
 Well Screen Volume, V<sub>s</sub> (mL)<sup>(2)</sup>:  
 Initial Depth to Water (ft): 15.59

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level <sup>(3)</sup> (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, V <sub>p</sub> (mL)	No. of Well Screen Volumes Purged <sup>(4)</sup>
8:50	~160			5.01	21.73	0.061	126	3.56	11		
8:12				4.87	22.45	0.057	130	3.66	10		
8:21				4.86	22.65	0.057	133	3.76	9.1		
8:35				4.86	22.69	0.056	135	3.80	9.0		
8:44				4.85	22.65	0.049	137	3.81	8.9		

- Notes:
- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
  - (2) The well screen volume will be based on a 5-foot screen length,  $V_s = P \cdot (D/2)^2 \cdot (5 \cdot 12) \cdot (2.54)^3$
  - (3) The drawdown from the initial water level should not exceed 0.3 ft.
  - (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged =  $V_p / V_s$ .

**MONITORING WELL RECORD FOR LOW-FLOW PURGING**

**Project Data:**

Project Name: Professional Cleaners  
 Ref. No.: 559

Date: 4/22/2014  
 Personnel: BC

**Monitoring Well Data:**

Well No.: MW-11

Measurement Point:

Constructed Well Depth (ft): ~~26.40~~ 26.40

Measured Well Depth (ft): ~~26.40~~ 26.40

Depth of Sediment (ft): 0.0

Screen Length (ft): 10  
 Depth to Pump Intake (ft)<sup>(1)</sup>: ~ 2' from bottom  
 Well Diameter, D (in): 2  
 Well Screen Volume, V<sub>s</sub> (mL)<sup>(2)</sup>:  
 Initial Depth to Water (ft): 16.20

Time	Pumping Rate (mL/min)	Depth to Water (ft)	Drawdown from Initial Water Level <sup>(3)</sup> (ft)	pH	Temperature °C	Conductivity (mS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	Volume Purged, V <sub>p</sub> (mL)	No. of Well Screen Volumes Purged <sup>(4)</sup>
9:15	100	16.20		6.30	21.4	51.8	232	16.65			
9:23	"	16.25		6.45	21.5	54.1	176	14.01			
9:30	"	16.22		6.43	21.4	53.0	173	11.63			
9:40	3	16.28		6.42	21.3	52.8	170	10.95			
9:47	4	"		6.41	21.3	52.7	169	10.93			

*Sm*

**Notes:**

- (1) The pump intake will be placed at the well screen mid-point or at a minimum of 2 ft above any sediment accumulated at the well bottom.
- (2) The well screen volume will be based on a 5-foot screen length,  $V_s = \pi(D/2)^2(5 \times 12)(2.54)^3$
- (3) The drawdown from the initial water level should not exceed 0.3 ft.
- (4) Purging will continue until stabilization is achieved or until 20 well screen volumes have been purged (unless purge water remains visually turbid and appears to be clearing, or unless stabilization parameters are varying slightly outside of the stabilization criteria and appear to be stabilizing). No. of Well Screen Volumes Purged =  $V_p/V_s$ .

**APPENDIX B**  
**ANALYTICAL LABORATORY REPORTS**



November 19, 2013

Brent Cortelloni  
Environmental Management Associates, LLC  
5262 Belle Wood Court  
Buford Georgia 30518

TEL: (770) 271-4628  
FAX: (770) 271-8944

RE: Professional Cleaners

Dear Brent Cortelloni:

Order No: 1310059

Analytical Environmental Services, Inc. received 12 samples on October 30, 2013 10:40 am for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

AES' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/13-06/30/14.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Mirzeta Kararic  
Project Manager



**Client:** Environmental Management Associates, LLC  
**Project:** Professional Cleaners  
**Lab ID:** 1310059

**Case Narrative**

Per Brent Cortelloni on 11/4/13, proceed with VOC analysis on all samples.

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-1
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/29/2013 11:33:00 AM
<b>Lab ID:</b> 1310059-001	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>		<b>(SW5030B)</b>						
1,1,1-Trichloroethane	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
1,1,2-Trichloroethane	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
1,1-Dichloroethane	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
1,1-Dichloroethene	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
1,2-Dibromoethane	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
1,2-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
1,2-Dichloroethane	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
1,2-Dichloropropane	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
1,3-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
1,4-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
2-Butanone	BRL	50		ug/L	183234	1	11/04/2013 23:54	AK
2-Hexanone	BRL	10		ug/L	183234	1	11/04/2013 23:54	AK
4-Methyl-2-pentanone	BRL	10		ug/L	183234	1	11/04/2013 23:54	AK
Acetone	BRL	50		ug/L	183234	1	11/04/2013 23:54	AK
Benzene	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Bromodichloromethane	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Bromoform	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Bromomethane	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Carbon disulfide	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Carbon tetrachloride	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Chlorobenzene	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Chloroethane	BRL	10		ug/L	183234	1	11/04/2013 23:54	AK
Chloroform	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Chloromethane	BRL	10		ug/L	183234	1	11/04/2013 23:54	AK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
cis-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Cyclohexane	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Dibromochloromethane	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Dichlorodifluoromethane	BRL	10		ug/L	183234	1	11/04/2013 23:54	AK
Ethylbenzene	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Freon-113	BRL	10		ug/L	183234	1	11/04/2013 23:54	AK
Isopropylbenzene	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
m,p-Xylene	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Methyl acetate	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Methyl tert-butyl ether	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Methylcyclohexane	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Methylene chloride	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
o-Xylene	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-1
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/29/2013 11:33:00 AM
<b>Lab ID:</b> 1310059-001	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5030B)</b>			
Styrene	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Tetrachloroethene	100	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Toluene	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
trans-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Trichloroethene	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Trichlorofluoromethane	BRL	5.0		ug/L	183234	1	11/04/2013 23:54	AK
Vinyl chloride	BRL	2.0		ug/L	183234	1	11/04/2013 23:54	AK
Surr: 4-Bromofluorobenzene	80.1	66.2-120		%REC	183234	1	11/04/2013 23:54	AK
Surr: Dibromofluoromethane	103	79.5-121		%REC	183234	1	11/04/2013 23:54	AK
Surr: Toluene-d8	97.2	77-117		%REC	183234	1	11/04/2013 23:54	AK

<b>Qualifiers:</b>	* Value exceeds maximum contaminant level	E Estimated (value above quantitation range)
	BRL Below reporting limit	S Spike Recovery outside limits due to matrix
	H Holding times for preparation or analysis exceeded	Narr See case narrative
	N Analyte not NELAC certified	NC Not confirmed
	B Analyte detected in the associated method blank	< Less than Result value
	> Greater than Result value	J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-2
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/29/2013 12:41:00 PM
<b>Lab ID:</b> 1310059-002	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B (SW5030B)</b>								
1,1,1-Trichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
1,1,2-Trichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
1,1-Dichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
1,1-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
1,2-Dibromoethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
1,2-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
1,2-Dichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
1,2-Dichloropropane	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
1,3-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
1,4-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
2-Butanone	BRL	50		ug/L	183234	1	11/05/2013 01:18	AK
2-Hexanone	BRL	10		ug/L	183234	1	11/05/2013 01:18	AK
4-Methyl-2-pentanone	BRL	10		ug/L	183234	1	11/05/2013 01:18	AK
Acetone	BRL	50		ug/L	183234	1	11/05/2013 01:18	AK
Benzene	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Bromodichloromethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Bromoform	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Bromomethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Carbon disulfide	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Carbon tetrachloride	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Chlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Chloroethane	BRL	10		ug/L	183234	1	11/05/2013 01:18	AK
Chloroform	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Chloromethane	BRL	10		ug/L	183234	1	11/05/2013 01:18	AK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
cis-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Cyclohexane	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Dibromochloromethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Dichlorodifluoromethane	BRL	10		ug/L	183234	1	11/05/2013 01:18	AK
Ethylbenzene	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Freon-113	BRL	10		ug/L	183234	1	11/05/2013 01:18	AK
Isopropylbenzene	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
m,p-Xylene	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Methyl acetate	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Methyl tert-butyl ether	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Methylcyclohexane	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Methylene chloride	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
o-Xylene	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-2
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/29/2013 12:41:00 PM
<b>Lab ID:</b> 1310059-002	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5030B)</b>			
Styrene	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Tetrachloroethene	24	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Toluene	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
trans-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Trichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Trichlorofluoromethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:18	AK
Vinyl chloride	BRL	2.0		ug/L	183234	1	11/05/2013 01:18	AK
Surr: 4-Bromofluorobenzene	81.6	66.2-120		%REC	183234	1	11/05/2013 01:18	AK
Surr: Dibromofluoromethane	100	79.5-121		%REC	183234	1	11/05/2013 01:18	AK
Surr: Toluene-d8	95.2	77-117		%REC	183234	1	11/05/2013 01:18	AK

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-2D
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/29/2013 12:47:00 PM
<b>Lab ID:</b> 1310059-003	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B (SW5030B)</b>								
1,1,1-Trichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
1,1,2-Trichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
1,1-Dichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
1,1-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
1,2-Dibromoethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
1,2-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
1,2-Dichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
1,2-Dichloropropane	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
1,3-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
1,4-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
2-Butanone	BRL	50		ug/L	183234	1	11/05/2013 01:46	AK
2-Hexanone	BRL	10		ug/L	183234	1	11/05/2013 01:46	AK
4-Methyl-2-pentanone	BRL	10		ug/L	183234	1	11/05/2013 01:46	AK
Acetone	BRL	50		ug/L	183234	1	11/05/2013 01:46	AK
Benzene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Bromodichloromethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Bromoform	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Bromomethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Carbon disulfide	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Carbon tetrachloride	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Chlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Chloroethane	BRL	10		ug/L	183234	1	11/05/2013 01:46	AK
Chloroform	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Chloromethane	BRL	10		ug/L	183234	1	11/05/2013 01:46	AK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
cis-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Cyclohexane	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Dibromochloromethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Dichlorodifluoromethane	BRL	10		ug/L	183234	1	11/05/2013 01:46	AK
Ethylbenzene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Freon-113	BRL	10		ug/L	183234	1	11/05/2013 01:46	AK
Isopropylbenzene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
m,p-Xylene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Methyl acetate	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Methyl tert-butyl ether	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Methylcyclohexane	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Methylene chloride	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
o-Xylene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-2D
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/29/2013 12:47:00 PM
<b>Lab ID:</b> 1310059-003	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5030B)</b>			
Styrene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Tetrachloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Toluene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
trans-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Trichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Trichlorofluoromethane	BRL	5.0		ug/L	183234	1	11/05/2013 01:46	AK
Vinyl chloride	BRL	2.0		ug/L	183234	1	11/05/2013 01:46	AK
Surr: 4-Bromofluorobenzene	80.5	66.2-120		%REC	183234	1	11/05/2013 01:46	AK
Surr: Dibromofluoromethane	101	79.5-121		%REC	183234	1	11/05/2013 01:46	AK
Surr: Toluene-d8	97.7	77-117		%REC	183234	1	11/05/2013 01:46	AK

<b>Qualifiers:</b>	* Value exceeds maximum contaminant level	E Estimated (value above quantitation range)
	BRL Below reporting limit	S Spike Recovery outside limits due to matrix
	H Holding times for preparation or analysis exceeded	Narr See case narrative
	N Analyte not NELAC certified	NC Not confirmed
	B Analyte detected in the associated method blank	< Less than Result value
	> Greater than Result value	J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-4
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/29/2013 1:35:00 PM
<b>Lab ID:</b> 1310059-004	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>		<b>(SW5030B)</b>						
1,1,1-Trichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
1,1,2-Trichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
1,1-Dichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
1,1-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
1,2-Dibromoethane	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
1,2-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
1,2-Dichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
1,2-Dichloropropane	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
1,3-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
1,4-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
2-Butanone	BRL	50		ug/L	183234	1	11/05/2013 02:14	AK
2-Hexanone	BRL	10		ug/L	183234	1	11/05/2013 02:14	AK
4-Methyl-2-pentanone	BRL	10		ug/L	183234	1	11/05/2013 02:14	AK
Acetone	BRL	50		ug/L	183234	1	11/05/2013 02:14	AK
Benzene	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
Bromodichloromethane	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
Bromoform	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
Bromomethane	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
Carbon disulfide	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
Carbon tetrachloride	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
Chlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
Chloroethane	BRL	10		ug/L	183234	1	11/05/2013 02:14	AK
Chloroform	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
Chloromethane	BRL	10		ug/L	183234	1	11/05/2013 02:14	AK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
cis-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
Cyclohexane	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
Dibromochloromethane	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
Dichlorodifluoromethane	BRL	10		ug/L	183234	1	11/05/2013 02:14	AK
Ethylbenzene	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
Freon-113	BRL	10		ug/L	183234	1	11/05/2013 02:14	AK
Isopropylbenzene	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
m,p-Xylene	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
Methyl acetate	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
Methyl tert-butyl ether	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
Methylcyclohexane	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
Methylene chloride	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK
o-Xylene	BRL	5.0		ug/L	183234	1	11/05/2013 02:14	AK

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit



**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-5
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/29/2013 11:43:00 AM
<b>Lab ID:</b> 1310059-005	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B (SW5030B)</b>								
1,1,1-Trichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
1,1,2-Trichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
1,1-Dichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
1,1-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
1,2-Dibromoethane	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
1,2-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
1,2-Dichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
1,2-Dichloropropane	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
1,3-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
1,4-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
2-Butanone	BRL	50		ug/L	183234	1	11/05/2013 02:42	AK
2-Hexanone	BRL	10		ug/L	183234	1	11/05/2013 02:42	AK
4-Methyl-2-pentanone	BRL	10		ug/L	183234	1	11/05/2013 02:42	AK
Acetone	BRL	50		ug/L	183234	1	11/05/2013 02:42	AK
Benzene	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
Bromodichloromethane	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
Bromoform	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
Bromomethane	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
Carbon disulfide	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
Carbon tetrachloride	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
Chlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
Chloroethane	BRL	10		ug/L	183234	1	11/05/2013 02:42	AK
Chloroform	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
Chloromethane	BRL	10		ug/L	183234	1	11/05/2013 02:42	AK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
cis-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
Cyclohexane	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
Dibromochloromethane	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
Dichlorodifluoromethane	BRL	10		ug/L	183234	1	11/05/2013 02:42	AK
Ethylbenzene	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
Freon-113	BRL	10		ug/L	183234	1	11/05/2013 02:42	AK
Isopropylbenzene	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
m,p-Xylene	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
Methyl acetate	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
Methyl tert-butyl ether	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
Methylcyclohexane	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
Methylene chloride	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK
o-Xylene	BRL	5.0		ug/L	183234	1	11/05/2013 02:42	AK

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit



**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-7
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/29/2013 1:25:00 PM
<b>Lab ID:</b> 1310059-006	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B (SW5030B)</b>								
1,1,1-Trichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
1,1,2-Trichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
1,1-Dichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
1,1-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
1,2-Dibromoethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
1,2-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
1,2-Dichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
1,2-Dichloropropane	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
1,3-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
1,4-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
2-Butanone	BRL	50		ug/L	183234	1	11/05/2013 03:10	AK
2-Hexanone	BRL	10		ug/L	183234	1	11/05/2013 03:10	AK
4-Methyl-2-pentanone	BRL	10		ug/L	183234	1	11/05/2013 03:10	AK
Acetone	BRL	50		ug/L	183234	1	11/05/2013 03:10	AK
Benzene	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Bromodichloromethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Bromoform	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Bromomethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Carbon disulfide	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Carbon tetrachloride	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Chlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Chloroethane	BRL	10		ug/L	183234	1	11/05/2013 03:10	AK
Chloroform	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Chloromethane	BRL	10		ug/L	183234	1	11/05/2013 03:10	AK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
cis-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Cyclohexane	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Dibromochloromethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Dichlorodifluoromethane	BRL	10		ug/L	183234	1	11/05/2013 03:10	AK
Ethylbenzene	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Freon-113	BRL	10		ug/L	183234	1	11/05/2013 03:10	AK
Isopropylbenzene	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
m,p-Xylene	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Methyl acetate	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Methyl tert-butyl ether	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Methylcyclohexane	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Methylene chloride	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
o-Xylene	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-7
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/29/2013 1:25:00 PM
<b>Lab ID:</b> 1310059-006	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5030B)</b>			
Styrene	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Tetrachloroethene	37	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Toluene	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
trans-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Trichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Trichlorofluoromethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:10	AK
Vinyl chloride	BRL	2.0		ug/L	183234	1	11/05/2013 03:10	AK
Surr: 4-Bromofluorobenzene	77.5	66.2-120		%REC	183234	1	11/05/2013 03:10	AK
Surr: Dibromofluoromethane	105	79.5-121		%REC	183234	1	11/05/2013 03:10	AK
Surr: Toluene-d8	97.6	77-117		%REC	183234	1	11/05/2013 03:10	AK

<b>Qualifiers:</b>	* Value exceeds maximum contaminant level	E Estimated (value above quantitation range)
	BRL Below reporting limit	S Spike Recovery outside limits due to matrix
	H Holding times for preparation or analysis exceeded	Narr See case narrative
	N Analyte not NELAC certified	NC Not confirmed
	B Analyte detected in the associated method blank	< Less than Result value
	> Greater than Result value	J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-6
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/30/2013 8:33:00 AM
<b>Lab ID:</b> 1310059-007	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B (SW5030B)</b>								
1,1,1-Trichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
1,1,2-Trichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
1,1-Dichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
1,1-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
1,2-Dibromoethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
1,2-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
1,2-Dichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
1,2-Dichloropropane	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
1,3-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
1,4-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
2-Butanone	BRL	50		ug/L	183234	1	11/05/2013 03:38	AK
2-Hexanone	BRL	10		ug/L	183234	1	11/05/2013 03:38	AK
4-Methyl-2-pentanone	BRL	10		ug/L	183234	1	11/05/2013 03:38	AK
Acetone	BRL	50		ug/L	183234	1	11/05/2013 03:38	AK
Benzene	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Bromodichloromethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Bromoform	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Bromomethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Carbon disulfide	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Carbon tetrachloride	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Chlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Chloroethane	BRL	10		ug/L	183234	1	11/05/2013 03:38	AK
Chloroform	10	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Chloromethane	BRL	10		ug/L	183234	1	11/05/2013 03:38	AK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
cis-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Cyclohexane	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Dibromochloromethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Dichlorodifluoromethane	BRL	10		ug/L	183234	1	11/05/2013 03:38	AK
Ethylbenzene	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Freon-113	BRL	10		ug/L	183234	1	11/05/2013 03:38	AK
Isopropylbenzene	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
m,p-Xylene	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Methyl acetate	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Methyl tert-butyl ether	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Methylcyclohexane	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Methylene chloride	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
o-Xylene	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-6
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/30/2013 8:33:00 AM
<b>Lab ID:</b> 1310059-007	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5030B)</b>			
Styrene	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Tetrachloroethene	33	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Toluene	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
trans-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Trichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Trichlorofluoromethane	BRL	5.0		ug/L	183234	1	11/05/2013 03:38	AK
Vinyl chloride	BRL	2.0		ug/L	183234	1	11/05/2013 03:38	AK
Surr: 4-Bromofluorobenzene	76.5	66.2-120		%REC	183234	1	11/05/2013 03:38	AK
Surr: Dibromofluoromethane	106	79.5-121		%REC	183234	1	11/05/2013 03:38	AK
Surr: Toluene-d8	101	77-117		%REC	183234	1	11/05/2013 03:38	AK

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-8
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/30/2013 8:50:00 AM
<b>Lab ID:</b> 1310059-008	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B (SW5030B)</b>								
1,1,1-Trichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
1,1,2-Trichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
1,1-Dichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
1,1-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
1,2-Dibromoethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
1,2-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
1,2-Dichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
1,2-Dichloropropane	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
1,3-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
1,4-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
2-Butanone	BRL	50		ug/L	183234	1	11/05/2013 04:06	AK
2-Hexanone	BRL	10		ug/L	183234	1	11/05/2013 04:06	AK
4-Methyl-2-pentanone	BRL	10		ug/L	183234	1	11/05/2013 04:06	AK
Acetone	BRL	50		ug/L	183234	1	11/05/2013 04:06	AK
Benzene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Bromodichloromethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Bromoform	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Bromomethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Carbon disulfide	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Carbon tetrachloride	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Chlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Chloroethane	BRL	10		ug/L	183234	1	11/05/2013 04:06	AK
Chloroform	45	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Chloromethane	BRL	10		ug/L	183234	1	11/05/2013 04:06	AK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
cis-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Cyclohexane	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Dibromochloromethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Dichlorodifluoromethane	BRL	10		ug/L	183234	1	11/05/2013 04:06	AK
Ethylbenzene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Freon-113	BRL	10		ug/L	183234	1	11/05/2013 04:06	AK
Isopropylbenzene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
m,p-Xylene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Methyl acetate	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Methyl tert-butyl ether	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Methylcyclohexane	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Methylene chloride	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
o-Xylene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-8
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/30/2013 8:50:00 AM
<b>Lab ID:</b> 1310059-008	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5030B)</b>			
Styrene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Tetrachloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Toluene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
trans-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Trichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Trichlorofluoromethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:06	AK
Vinyl chloride	BRL	2.0		ug/L	183234	1	11/05/2013 04:06	AK
Surr: 4-Bromofluorobenzene	78.5	66.2-120		%REC	183234	1	11/05/2013 04:06	AK
Surr: Dibromofluoromethane	104	79.5-121		%REC	183234	1	11/05/2013 04:06	AK
Surr: Toluene-d8	98.4	77-117		%REC	183234	1	11/05/2013 04:06	AK

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-9
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/30/2013 9:03:00 AM
<b>Lab ID:</b> 1310059-009	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5030B)</b>			
1,1,1-Trichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
1,1,2-Trichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
1,1-Dichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
1,1-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
1,2-Dibromoethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
1,2-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
1,2-Dichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
1,2-Dichloropropane	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
1,3-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
1,4-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
2-Butanone	BRL	50		ug/L	183234	1	11/05/2013 04:33	AK
2-Hexanone	BRL	10		ug/L	183234	1	11/05/2013 04:33	AK
4-Methyl-2-pentanone	BRL	10		ug/L	183234	1	11/05/2013 04:33	AK
Acetone	BRL	50		ug/L	183234	1	11/05/2013 04:33	AK
Benzene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Bromodichloromethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Bromoform	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Bromomethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Carbon disulfide	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Carbon tetrachloride	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Chlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Chloroethane	BRL	10		ug/L	183234	1	11/05/2013 04:33	AK
Chloroform	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Chloromethane	BRL	10		ug/L	183234	1	11/05/2013 04:33	AK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
cis-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Cyclohexane	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Dibromochloromethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Dichlorodifluoromethane	BRL	10		ug/L	183234	1	11/05/2013 04:33	AK
Ethylbenzene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Freon-113	BRL	10		ug/L	183234	1	11/05/2013 04:33	AK
Isopropylbenzene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
m,p-Xylene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Methyl acetate	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Methyl tert-butyl ether	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Methylcyclohexane	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Methylene chloride	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
o-Xylene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-9
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/30/2013 9:03:00 AM
<b>Lab ID:</b> 1310O59-009	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5030B)</b>			
Styrene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Tetrachloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Toluene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
trans-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Trichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Trichlorofluoromethane	BRL	5.0		ug/L	183234	1	11/05/2013 04:33	AK
Vinyl chloride	BRL	2.0		ug/L	183234	1	11/05/2013 04:33	AK
Surr: 4-Bromofluorobenzene	79.6	66.2-120		%REC	183234	1	11/05/2013 04:33	AK
Surr: Dibromofluoromethane	111	79.5-121		%REC	183234	1	11/05/2013 04:33	AK
Surr: Toluene-d8	100	77-117		%REC	183234	1	11/05/2013 04:33	AK

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-10
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/30/2013 9:55:00 AM
<b>Lab ID:</b> 1310059-010	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5030B)</b>			
1,1,1-Trichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
1,1,2-Trichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
1,1-Dichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
1,1-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
1,2-Dibromoethane	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
1,2-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
1,2-Dichloroethane	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
1,2-Dichloropropane	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
1,3-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
1,4-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
2-Butanone	BRL	50		ug/L	183234	1	11/05/2013 05:01	AK
2-Hexanone	BRL	10		ug/L	183234	1	11/05/2013 05:01	AK
4-Methyl-2-pentanone	BRL	10		ug/L	183234	1	11/05/2013 05:01	AK
Acetone	BRL	50		ug/L	183234	1	11/05/2013 05:01	AK
Benzene	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Bromodichloromethane	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Bromoform	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Bromomethane	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Carbon disulfide	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Carbon tetrachloride	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Chlorobenzene	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Chloroethane	BRL	10		ug/L	183234	1	11/05/2013 05:01	AK
Chloroform	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Chloromethane	BRL	10		ug/L	183234	1	11/05/2013 05:01	AK
cis-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
cis-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Cyclohexane	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Dibromochloromethane	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Dichlorodifluoromethane	BRL	10		ug/L	183234	1	11/05/2013 05:01	AK
Ethylbenzene	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Freon-113	BRL	10		ug/L	183234	1	11/05/2013 05:01	AK
Isopropylbenzene	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
m,p-Xylene	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Methyl acetate	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Methyl tert-butyl ether	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Methylcyclohexane	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Methylene chloride	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
o-Xylene	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-10
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/30/2013 9:55:00 AM
<b>Lab ID:</b> 1310059-010	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5030B)</b>			
Styrene	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Tetrachloroethene	10	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Toluene	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
trans-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
trans-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Trichloroethene	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Trichlorofluoromethane	BRL	5.0		ug/L	183234	1	11/05/2013 05:01	AK
Vinyl chloride	BRL	2.0		ug/L	183234	1	11/05/2013 05:01	AK
Surr: 4-Bromofluorobenzene	78.4	66.2-120		%REC	183234	1	11/05/2013 05:01	AK
Surr: Dibromofluoromethane	107	79.5-121		%REC	183234	1	11/05/2013 05:01	AK
Surr: Toluene-d8	95.7	77-117		%REC	183234	1	11/05/2013 05:01	AK

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> TRIP BLANK
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/30/2013
<b>Lab ID:</b> 1310059-011	<b>Matrix:</b> Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B (SW5030B)</b>								
1,1,1-Trichloroethane	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
1,1,2-Trichloroethane	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
1,1-Dichloroethane	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
1,1-Dichloroethene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
1,2-Dibromoethane	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
1,2-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
1,2-Dichloroethane	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
1,2-Dichloropropane	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
1,3-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
1,4-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
2-Butanone	BRL	50		ug/L	183234	1	11/06/2013 17:55	NH
2-Hexanone	BRL	10		ug/L	183234	1	11/06/2013 17:55	NH
4-Methyl-2-pentanone	BRL	10		ug/L	183234	1	11/06/2013 17:55	NH
Acetone	BRL	50		ug/L	183234	1	11/06/2013 17:55	NH
Benzene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Bromodichloromethane	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Bromoform	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Bromomethane	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Carbon disulfide	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Carbon tetrachloride	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Chlorobenzene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Chloroethane	BRL	10		ug/L	183234	1	11/06/2013 17:55	NH
Chloroform	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Chloromethane	BRL	10		ug/L	183234	1	11/06/2013 17:55	NH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Cyclohexane	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Dibromochloromethane	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Dichlorodifluoromethane	BRL	10		ug/L	183234	1	11/06/2013 17:55	NH
Ethylbenzene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Freon-113	BRL	10		ug/L	183234	1	11/06/2013 17:55	NH
Isopropylbenzene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
m,p-Xylene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Methyl acetate	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Methyl tert-butyl ether	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Methylcyclohexane	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Methylene chloride	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
o-Xylene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> TRIP BLANK
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/30/2013
<b>Lab ID:</b> 1310059-011	<b>Matrix:</b> Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>				<b>(SW5030B)</b>				
Styrene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Tetrachloroethene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Toluene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Trichloroethene	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Trichlorofluoromethane	BRL	5.0		ug/L	183234	1	11/06/2013 17:55	NH
Vinyl chloride	BRL	2.0		ug/L	183234	1	11/06/2013 17:55	NH
Surr: 4-Bromofluorobenzene	89.1	66.2-120		%REC	183234	1	11/06/2013 17:55	NH
Surr: Dibromofluoromethane	99	79.5-121		%REC	183234	1	11/06/2013 17:55	NH
Surr: Toluene-d8	96.3	77-117		%REC	183234	1	11/06/2013 17:55	NH

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> DUP
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/30/2013
<b>Lab ID:</b> 1310059-012	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5030B)</b>			
1,1,1-Trichloroethane	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
1,1,2-Trichloroethane	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
1,1-Dichloroethane	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
1,1-Dichloroethene	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
1,2-Dibromoethane	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
1,2-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
1,2-Dichloroethane	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
1,2-Dichloropropane	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
1,3-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
1,4-Dichlorobenzene	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
2-Butanone	BRL	50		ug/L	183234	1	11/06/2013 18:23	NH
2-Hexanone	BRL	10		ug/L	183234	1	11/06/2013 18:23	NH
4-Methyl-2-pentanone	BRL	10		ug/L	183234	1	11/06/2013 18:23	NH
Acetone	BRL	50		ug/L	183234	1	11/06/2013 18:23	NH
Benzene	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Bromodichloromethane	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Bromoform	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Bromomethane	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Carbon disulfide	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Carbon tetrachloride	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Chlorobenzene	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Chloroethane	BRL	10		ug/L	183234	1	11/06/2013 18:23	NH
Chloroform	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Chloromethane	BRL	10		ug/L	183234	1	11/06/2013 18:23	NH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Cyclohexane	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Dibromochloromethane	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Dichlorodifluoromethane	BRL	10		ug/L	183234	1	11/06/2013 18:23	NH
Ethylbenzene	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Freon-113	BRL	10		ug/L	183234	1	11/06/2013 18:23	NH
Isopropylbenzene	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
m,p-Xylene	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Methyl acetate	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Methyl tert-butyl ether	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Methylcyclohexane	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Methylene chloride	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
o-Xylene	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 19-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> DUP
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 10/30/2013
<b>Lab ID:</b> 1310059-012	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5030B)</b>			
Styrene	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Tetrachloroethene	10	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Toluene	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Trichloroethene	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Trichlorofluoromethane	BRL	5.0		ug/L	183234	1	11/06/2013 18:23	NH
Vinyl chloride	BRL	2.0		ug/L	183234	1	11/06/2013 18:23	NH
Surr: 4-Bromofluorobenzene	88.9	66.2-120		%REC	183234	1	11/06/2013 18:23	NH
Surr: Dibromofluoromethane	100	79.5-121		%REC	183234	1	11/06/2013 18:23	NH
Surr: Toluene-d8	98.4	77-117		%REC	183234	1	11/06/2013 18:23	NH

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client EMA/BC

Work Order Number 1310059

Checklist completed by [Signature] 10/30  
Signature Date

Carrier name: FedEx  UPS  Courier  Client  US Mail  Other

Shipping container/cooler in good condition? Yes  No  Not Present

Custody seals intact on shipping container/cooler? Yes  No  Not Present

Custody seals intact on sample bottles? Yes  No  Not Present

Container/Temp Blank temperature in compliance? (4°C±2)\* Yes  No

Cooler #1 3.9 Cooler #2  Cooler #3  Cooler #4  Cooler #5  Cooler #6

Chain of custody present? Yes  No

Chain of custody signed when relinquished and received? Yes  No

Chain of custody agrees with sample labels? Yes  No

Samples in proper container/bottle? Yes  No

Sample containers intact? Yes  No

Sufficient sample volume for indicated test? Yes  No

All samples received within holding time? Yes  No

Was TAT marked on the COC? Yes  No

Proceed with Standard TAT as per project history? Yes  No  Not Applicable

Water - VOA vials have zero headspace? No VOA vials submitted  Yes  No

Water - pH acceptable upon receipt? Yes  No  Not Applicable

Adjusted?  Checked by

Sample Condition: Good  Other(Explain)

(For diffusive samples or AIHA lead) Is a known blank included? Yes  No

See Case Narrative for resolution of the Non-Conformance.

\* Samples do not have to comply with the given range for certain parameters.

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1310059

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 183234**

Sample ID: <b>MB-183234</b>	Client ID:	Units: <b>ug/L</b>	Prep Date: <b>11/04/2013</b>	Run No: <b>255121</b>							
Sample Type: <b>MBLK</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>183234</b>	Analysis Date: <b>11/05/2013</b>	Seq No: <b>5357649</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1,1-Trichloroethane	BRL	5.0									
1,1,2,2-Tetrachloroethane	BRL	5.0									
1,1,2-Trichloroethane	BRL	5.0									
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2,4-Trichlorobenzene	BRL	5.0									
1,2-Dibromo-3-chloropropane	BRL	5.0									
1,2-Dibromoethane	BRL	5.0									
1,2-Dichlorobenzene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
1,2-Dichloropropane	BRL	5.0									
1,3-Dichlorobenzene	BRL	5.0									
1,4-Dichlorobenzene	BRL	5.0									
2-Butanone	BRL	50									
2-Hexanone	BRL	10									
4-Methyl-2-pentanone	BRL	10									
Acetone	BRL	50									
Benzene	BRL	5.0									
Bromodichloromethane	BRL	5.0									
Bromoform	BRL	5.0									
Bromomethane	BRL	5.0									
Carbon disulfide	BRL	5.0									
Carbon tetrachloride	BRL	5.0									
Chlorobenzene	BRL	5.0									
Chloroethane	BRL	10									
Chloroform	BRL	5.0									
Chloromethane	BRL	10									

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1310059

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 183234**

Sample ID: <b>MB-183234</b>	Client ID:	Units: <b>ug/L</b>	Prep Date: <b>11/04/2013</b>	Run No: <b>255121</b>							
SampleType: <b>MBLK</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>183234</b>	Analysis Date: <b>11/05/2013</b>	Seq No: <b>5357649</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

cis-1,2-Dichloroethene	BRL	5.0									
cis-1,3-Dichloropropene	BRL	5.0									
Cyclohexane	BRL	5.0									
Dibromochloromethane	BRL	5.0									
Dichlorodifluoromethane	BRL	10									
Ethylbenzene	BRL	5.0									
Freon-113	BRL	10									
Isopropylbenzene	BRL	5.0									
m,p-Xylene	BRL	5.0									
Methyl acetate	BRL	5.0									
Methyl tert-butyl ether	BRL	5.0									
Methylcyclohexane	BRL	5.0									
Methylene chloride	BRL	5.0									
o-Xylene	BRL	5.0									
Styrene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
Toluene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
trans-1,3-Dichloropropene	BRL	5.0									
Trichloroethene	BRL	5.0									
Trichlorofluoromethane	BRL	5.0									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	41.54	0	50.00		83.1	66.2	120				
Surr: Dibromofluoromethane	52.13	0	50.00		104	79.5	121				
Surr: Toluene-d8	47.72	0	50.00		95.4	77	117				

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1310059

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 183234**

Sample ID: <b>LCS-183234</b>	Client ID:	Units: <b>ug/L</b>	Prep Date: <b>11/04/2013</b>	Run No: <b>255121</b>							
SampleType: <b>LCS</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>183234</b>	Analysis Date: <b>11/04/2013</b>	Seq No: <b>5357603</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	64.97	5.0	50.00		130	63.1	140				
Benzene	49.31	5.0	50.00		98.6	74.2	129				
Chlorobenzene	51.01	5.0	50.00		102	70	129				
Toluene	51.28	5.0	50.00		103	74.2	129				
Trichloroethene	54.44	5.0	50.00		109	71.2	135				
Surr: 4-Bromofluorobenzene	48.93	0	50.00		97.9	66.2	120				
Surr: Dibromofluoromethane	52.90	0	50.00		106	79.5	121				
Surr: Toluene-d8	51.50	0	50.00		103	77	117				

Sample ID: <b>1310059-001AMS</b>	Client ID: <b>MW-1</b>	Units: <b>ug/L</b>	Prep Date: <b>11/04/2013</b>	Run No: <b>255121</b>							
SampleType: <b>MS</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>183234</b>	Analysis Date: <b>11/05/2013</b>	Seq No: <b>5357605</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	81.35	5.0	50.00		163	60.2	159				S
Benzene	63.88	5.0	50.00		128	70.2	138				
Chlorobenzene	62.15	5.0	50.00		124	70.1	133				
Toluene	68.42	5.0	50.00	1.380	134	70	139				
Trichloroethene	69.68	5.0	50.00		139	70.1	144				
Surr: 4-Bromofluorobenzene	50.93	0	50.00		102	66.2	120				
Surr: Dibromofluoromethane	56.19	0	50.00		112	79.5	121				
Surr: Toluene-d8	52.31	0	50.00		105	77	117				

Sample ID: <b>1310059-001AMSD</b>	Client ID: <b>MW-1</b>	Units: <b>ug/L</b>	Prep Date: <b>11/04/2013</b>	Run No: <b>255121</b>							
SampleType: <b>MSD</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>183234</b>	Analysis Date: <b>11/05/2013</b>	Seq No: <b>5357606</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	68.56	5.0	50.00		137	60.2	159	81.35	17.1	19.2	
Benzene	59.46	5.0	50.00		119	70.2	138	63.88	7.17	20	

**Qualifiers:** > Greater than Result value < Less than Result value B Analyte detected in the associated method blank  
 BRL Below reporting limit E Estimated (value above quantitation range) H Holding times for preparation or analysis exceeded  
 J Estimated value detected below Reporting Limit N Analyte not NELAC certified R RPD outside limits due to matrix  
 Rpt Lim Reporting Limit S Spike Recovery outside limits due to matrix

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1310059

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 183234**

Sample ID: <b>1310059-001AMSD</b>	Client ID: <b>MW-1</b>	Units: <b>ug/L</b>	Prep Date: <b>11/04/2013</b>	Run No: <b>255121</b>
SampleType: <b>MSD</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>183234</b>	Analysis Date: <b>11/05/2013</b>	Seq No: <b>5357606</b>

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlorobenzene	61.86	5.0	50.00		124	70.1	133	62.15	0.468	20	
Toluene	63.18	5.0	50.00	1.380	124	70	139	68.42	7.96	20	
Trichloroethene	66.13	5.0	50.00		132	70.1	144	69.68	5.23	20	
Surr: 4-Bromofluorobenzene	50.03	0	50.00		100	66.2	120	50.93	0	0	
Surr: Dibromofluoromethane	54.34	0	50.00		109	79.5	121	56.19	0	0	
Surr: Toluene-d8	50.39	0	50.00		101	77	117	52.31	0	0	

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		



November 15, 2013

Brent Cortelloni  
Environmental Management Associates, LLC  
5262 Belle Wood Court  
Buford Georgia 30518

TEL: (770) 271-4628  
FAX: (770) 271-8944

RE: Professional Cleaners

Dear Brent Cortelloni:

Order No: 1311777

Analytical Environmental Services, Inc. received 2 samples on 11/9/2013 9:30:00 AM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

AES' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/13-06/30/14.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Mirzeta Kararic  
Project Manager



# ANALYTICAL ENVIRONMENTAL SERVICES, INC

3785 Presidential Parkway, Atlanta GA 30340-3704

TEL: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

# CHAIN OF CUSTODY

Work Order: 1311777

Date: \_\_\_\_\_ Page \_\_\_\_\_ of \_\_\_\_\_

COMPANY: <b>EMA/BK</b>		ADDRESS: _____		ANALYSIS REQUESTED		REMARKS		Visit our website <a href="http://www.aesatlanta.com">www.aesatlanta.com</a> to check on the status of your results, place bottle orders, etc.		No # of Containers	
PHONE: _____	FAX: _____	SIGNATURE: <i>[Signature]</i>		PRESERVATION (See codes)		REMARKS		Visit our website <a href="http://www.aesatlanta.com">www.aesatlanta.com</a> to check on the status of your results, place bottle orders, etc.		No # of Containers	
SAMPLED BY: <i>B. Carter / J. Schuler</i>	SAMPLE ID	SAMPLED	DATE	TIME	Matrix (See codes)	Composite	Grab	No # of Containers			
1	MW-4		11-9-13	8:20	GW	X		No # of Containers			
2	MW-6		"	8:45	"	X		No # of Containers			
3								No # of Containers			
4								No # of Containers			
5								No # of Containers			
6								No # of Containers			
7								No # of Containers			
8								No # of Containers			
9								No # of Containers			
10								No # of Containers			
11								No # of Containers			
12								No # of Containers			
13								No # of Containers			
14								No # of Containers			
RELINQUISHED BY: <i>[Signature]</i>		DATE/TIME: 11-9-13 9:05		RECEIVED BY: <i>[Signature]</i>		DATE/TIME: 11/9/13 9:30AM		PROJECT INFORMATION			
1. <i>[Signature]</i>		2. <i>[Signature]</i>		3. <i>[Signature]</i>		PROJECT NAME: <i>Professional Cleaners</i>		Total # of Containers			
PROJECT #:		SITE ADDRESS:		SEND REPORT TO:		INVOICE TO:		Turnaround Time Request			
SHIPMENT METHOD		SHIPMENT METHOD		SHIPMENT METHOD		SHIPMENT METHOD		Standard 5 Business Days			
OUT / / VIA:		OUT / / VIA:		OUT / / VIA:		OUT / / VIA:		2 Business Day Rush			
IN / / VIA:		IN / / VIA:		IN / / VIA:		IN / / VIA:		Next Business Day Rush			
CLIENT: <input checked="" type="checkbox"/> edEx		CLIENT: <input checked="" type="checkbox"/> edEx		CLIENT: <input checked="" type="checkbox"/> edEx		CLIENT: <input checked="" type="checkbox"/> edEx		Same Day Rush (auth req.)			
SHIPMENT METHOD		SHIPMENT METHOD		SHIPMENT METHOD		SHIPMENT METHOD		Other			
STATE PROGRAM (if any):		STATE PROGRAM (if any):		STATE PROGRAM (if any):		STATE PROGRAM (if any):		E-mail? Y / N; Fax? Y / N			
DATA PACKAGE: I II III IV		DATA PACKAGE: I II III IV		DATA PACKAGE: I II III IV		DATA PACKAGE: I II III IV		QUOTE #:			
SPECIAL INSTRUCTIONS/COMMENTS:		SPECIAL INSTRUCTIONS/COMMENTS:		SPECIAL INSTRUCTIONS/COMMENTS:		SPECIAL INSTRUCTIONS/COMMENTS:		SAMPLER RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.			
SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.		SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.		SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.		SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.		MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water			
PRESERVATIVE CODES: H+1 = Hydrochloric acid + ice I = Ice only N = Nitric acid S+1 = Sulfuric acid + ice S/M+1 = Sodium Bisulfate/Methanol + ice		PRESERVATIVE CODES: H+1 = Hydrochloric acid + ice I = Ice only N = Nitric acid S+1 = Sulfuric acid + ice S/M+1 = Sodium Bisulfate/Methanol + ice		PRESERVATIVE CODES: H+1 = Hydrochloric acid + ice I = Ice only N = Nitric acid S+1 = Sulfuric acid + ice S/M+1 = Sodium Bisulfate/Methanol + ice		PRESERVATIVE CODES: H+1 = Hydrochloric acid + ice I = Ice only N = Nitric acid S+1 = Sulfuric acid + ice S/M+1 = Sodium Bisulfate/Methanol + ice		White Copy - Original: Yellow Copy - Client			

**Client:** Environmental Management Associates, LLC  
**Project:** Professional Cleaners  
**Lab ID:** 1311777

**Case Narrative**

Per Brent Cortelloni via email 11/11/2013, samples were analyzed at two day TAT.

**Analytical Environmental Services, Inc**

**Date:** 15-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-4
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 11/9/2013 8:10:00 AM
<b>Lab ID:</b> 1311777-001	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>				<b>(SW5030B)</b>				
Tetrachloroethene	120	5.0		ug/L	183603	1	11/13/2013 13:10	AK
Surr: 4-Bromofluorobenzene	88.4	66.2-120		%REC	183603	1	11/13/2013 13:10	AK
Surr: Dibromofluoromethane	93.2	79.5-121		%REC	183603	1	11/13/2013 13:10	AK
Surr: Toluene-d8	99.8	77-117		%REC	183603	1	11/13/2013 13:10	AK

<b>Qualifiers:</b>	* Value exceeds maximum contaminant level	E Estimated (value above quantitation range)
	BRL Below reporting limit	S Spike Recovery outside limits due to matrix
	H Holding times for preparation or analysis exceeded	Narr See case narrative
	N Analyte not NELAC certified	NC Not confirmed
	B Analyte detected in the associated method blank	< Less than Result value
	> Greater than Result value	J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 15-Nov-13

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-6
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 11/9/2013 8:45:00 AM
<b>Lab ID:</b> 1311777-002	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5030B)</b>			
Tetrachloroethene	25	5.0		ug/L	183603	1	11/13/2013 13:39	AK
Surr: 4-Bromofluorobenzene	89.4	66.2-120		%REC	183603	1	11/13/2013 13:39	AK
Surr: Dibromofluoromethane	92.9	79.5-121		%REC	183603	1	11/13/2013 13:39	AK
Surr: Toluene-d8	94.6	77-117		%REC	183603	1	11/13/2013 13:39	AK

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client EMAIBC

Work Order Number 1311777

Checklist completed by Jam B Signature 11/9/13 Date

Carrier name: FedEx  UPS  Courier  Client  US Mail  Other

Shipping container/cooler in good condition? Yes  No  Not Present

Custody seals intact on shipping container/cooler? Yes  No  Not Present

Custody seals intact on sample bottles? Yes  No  Not Present

Container/Temp Blank temperature in compliance? (4°C±2)\* Yes  No

Cooler #1 3.2 Cooler #2 \_\_\_\_\_ Cooler #3 \_\_\_\_\_ Cooler #4 \_\_\_\_\_ Cooler#5 \_\_\_\_\_ Cooler #6 \_\_\_\_\_

Chain of custody present? Yes  No

Chain of custody signed when relinquished and received? Yes  No

Chain of custody agrees with sample labels? Yes  No

Samples in proper container/bottle? Yes  No

Sample containers intact? Yes  No

Sufficient sample volume for indicated test? Yes  No

All samples received within holding time? Yes  No

Was TAT marked on the COC? Yes  No

Proceed with Standard TAT as per project history? Yes  No  Not Applicable

Water - VOA vials have zero headspace? No VOA vials submitted  Yes  No

Water - pH acceptable upon receipt? Yes  No  Not Applicable

Adjusted? \_\_\_\_\_ Checked by \_\_\_\_\_

Sample Condition: Good  Other(Explain) \_\_\_\_\_

(For diffusive samples or AIHA lead) Is a known blank included? Yes  No

See Case Narrative for resolution of the Non-Conformance.

\* Samples do not have to comply with the given range for certain parameters.

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1311777

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 183603**

Sample ID: <b>MB-183603</b>	Client ID:	Units: <b>ug/L</b>	Prep Date: <b>11/13/2013</b>	Run No: <b>255690</b>							
Sample Type: <b>MBLK</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>183603</b>	Analysis Date: <b>11/13/2013</b>	Seq No: <b>5369148</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1,1-Trichloroethane	BRL	5.0									
1,1,2,2-Tetrachloroethane	BRL	5.0									
1,1,2-Trichloroethane	BRL	5.0									
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2,4-Trichlorobenzene	BRL	5.0									
1,2-Dibromo-3-chloropropane	BRL	5.0									
1,2-Dibromoethane	BRL	5.0									
1,2-Dichlorobenzene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
1,2-Dichloropropane	BRL	5.0									
1,3-Dichlorobenzene	BRL	5.0									
1,4-Dichlorobenzene	BRL	5.0									
2-Butanone	BRL	50									
2-Hexanone	BRL	10									
4-Methyl-2-pentanone	BRL	10									
Acetone	BRL	50									
Benzene	BRL	5.0									
Bromodichloromethane	BRL	5.0									
Bromoform	BRL	5.0									
Bromomethane	BRL	5.0									
Carbon disulfide	BRL	5.0									
Carbon tetrachloride	BRL	5.0									
Chlorobenzene	BRL	5.0									
Chloroethane	BRL	10									
Chloroform	BRL	5.0									
Chloromethane	BRL	10									

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1311777

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 183603**

Sample ID: <b>MB-183603</b>	Client ID:	Units: <b>ug/L</b>	Prep Date: <b>11/13/2013</b>	Run No: <b>255690</b>							
SampleType: <b>MBLK</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>183603</b>	Analysis Date: <b>11/13/2013</b>	Seq No: <b>5369148</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

cis-1,2-Dichloroethene	BRL	5.0									
cis-1,3-Dichloropropene	BRL	5.0									
Cyclohexane	BRL	5.0									
Dibromochloromethane	BRL	5.0									
Dichlorodifluoromethane	BRL	10									
Ethylbenzene	BRL	5.0									
Freon-113	BRL	10									
Isopropylbenzene	BRL	5.0									
m,p-Xylene	BRL	5.0									
Methyl acetate	BRL	5.0									
Methyl tert-butyl ether	BRL	5.0									
Methylcyclohexane	BRL	5.0									
Methylene chloride	BRL	5.0									
o-Xylene	BRL	5.0									
Styrene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
Toluene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
trans-1,3-Dichloropropene	BRL	5.0									
Trichloroethene	BRL	5.0									
Trichlorofluoromethane	BRL	5.0									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	45.93	0	50.00		91.9	66.2	120				
Surr: Dibromofluoromethane	46.31	0	50.00		92.6	79.5	121				
Surr: Toluene-d8	48.69	0	50.00		97.4	77	117				

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1311777

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 183603**

Sample ID: <b>LCS-183603</b>	Client ID:	Units: <b>ug/L</b>	Prep Date: <b>11/13/2013</b>	Run No: <b>255690</b>							
SampleType: <b>LCS</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>183603</b>	Analysis Date: <b>11/13/2013</b>	Seq No: <b>5369151</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	50.19	5.0	50.00		100	63.1	140				
Benzene	48.52	5.0	50.00		97.0	74.2	129				
Chlorobenzene	51.89	5.0	50.00		104	70	129				
Toluene	49.30	5.0	50.00		98.6	74.2	129				
Trichloroethene	46.54	5.0	50.00		93.1	71.2	135				
Surr: 4-Bromofluorobenzene	50.88	0	50.00		102	66.2	120				
Surr: Dibromofluoromethane	46.99	0	50.00		94.0	79.5	121				
Surr: Toluene-d8	48.98	0	50.00		98.0	77	117				

Sample ID: <b>1311777-001AMS</b>	Client ID: <b>MW-4</b>	Units: <b>ug/L</b>	Prep Date: <b>11/13/2013</b>	Run No: <b>255690</b>							
SampleType: <b>MS</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>183603</b>	Analysis Date: <b>11/13/2013</b>	Seq No: <b>5370314</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	52.36	5.0	50.00		105	60.2	159				
Benzene	50.58	5.0	50.00		101	70.2	138				
Chlorobenzene	52.32	5.0	50.00		105	70.1	133				
Toluene	51.98	5.0	50.00		104	70	139				
Trichloroethene	49.56	5.0	50.00		99.1	70.1	144				
Surr: 4-Bromofluorobenzene	50.04	0	50.00		100	66.2	120				
Surr: Dibromofluoromethane	50.22	0	50.00		100	79.5	121				
Surr: Toluene-d8	50.25	0	50.00		100	77	117				

Sample ID: <b>1311777-001AMSD</b>	Client ID: <b>MW-4</b>	Units: <b>ug/L</b>	Prep Date: <b>11/13/2013</b>	Run No: <b>255690</b>							
SampleType: <b>MSD</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>183603</b>	Analysis Date: <b>11/13/2013</b>	Seq No: <b>5370320</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	50.28	5.0	50.00		101	60.2	159	52.36	4.05	19.2	
Benzene	51.67	5.0	50.00		103	70.2	138	50.58	2.13	20	

**Qualifiers:**

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1311777

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 183603**

Sample ID: <b>1311777-001AMSD</b>	Client ID: <b>MW-4</b>	Units: <b>ug/L</b>	Prep Date: <b>11/13/2013</b>	Run No: <b>255690</b>							
SampleType: <b>MSD</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>183603</b>	Analysis Date: <b>11/13/2013</b>	Seq No: <b>5370320</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chlorobenzene	53.07	5.0	50.00		106	70.1	133	52.32	1.42	20	
Toluene	52.08	5.0	50.00		104	70	139	51.98	0.192	20	
Trichloroethene	50.11	5.0	50.00		100	70.1	144	49.56	1.10	20	
Surr: 4-Bromofluorobenzene	50.97	0	50.00		102	66.2	120	50.04	0	0	
Surr: Dibromofluoromethane	49.26	0	50.00		98.5	79.5	121	50.22	0	0	
Surr: Toluene-d8	49.49	0	50.00		99.0	77	117	50.25	0	0	

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		



January 21, 2014

Brent Cortelloni  
Environmental Management Associates, LLC  
5262 Belle Wood Court  
Buford Georgia 30518

TEL: (770) 271-4628  
FAX: (770) 271-8944

RE: Professional Cleaners

Dear Brent Cortelloni:

Order No: 1401731

Analytical Environmental Services, Inc. received 4 samples on 1/13/2014 12:15:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

AES' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/13-06/30/14.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Mirzeta Kararic  
Project Manager



# ANALYTICAL ENVIRONMENTAL SERVICES, INC

3785 Presidential Parkway, Atlanta GA 30340-3704

TEL: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

# CHAIN OF CUSTODY

Work Order: 1401731-15 11/13/14

Date: \_\_\_\_\_ Page: 1401731 of \_\_\_\_\_

#	SAMPLE ID	SAMPLED		Grab	Composite	Matrix (See codes)	PRESERVATION (See codes)	REMARKS	ANALYSIS REQUESTED	No # of Containers	
		DATE	TIME								
1	BTA-11	1-13-14	10:30	X		S		1 BGS	Visit our website <a href="http://www.aesatlanta.com">www.aesatlanta.com</a> to check on the status of your results, place bottle orders, etc.		
2	12	↓	10:45	X		↓		↓			
3	13	↓	10:59	X		↓					
4	14	↓	11:30	X		↓					
5	TIP Blank										
6											
7											
8											
9											
10											
11											
12											
13											
14											
RELINQUISHED BY		DATE/TIME	RECEIVED BY	DATE/TIME	PROJECT INFORMATION						
1. <u>BBS</u>		<u>1-13-14/11:15</u>	<u>James B</u>	<u>11/13/14 12:15</u>	PROJECT NAME: <u>Professional Cleaners</u>						
2.					PROJECT #: <u>55A</u>						
3.					SITE ADDRESS: _____						
SPECIAL INSTRUCTIONS/COMMENTS:		SHIPMENT METHOD		SEND REPORT TO:							
		OUT	VIA:	INVOICE TO:							
		IN	VIA:	(IF DIFFERENT FROM ABOVE)							
		CLIENT	UPS MAIL COURIER	QUOTE #:							
		GREYHOUND	OTHER	PO#:							
				STATE PROGRAM (if any):							
				E-mail? Y/N; Fax? Y/N							
				DATA PACKAGE: I II III IV							

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES. SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water PRESERVATIVE CODES: H-1 = Hydrochloric acid + ice I = Ice only N = Nitric acid S-H = Sulfuric acid + ice SM-H = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

**Client:** Environmental Management Associates, LLC  
**Project:** Professional Cleaners  
**Lab ID:** 1401731

**Case Narrative**

Sample Trip Blank was listed on the COC but was not received. Trip Blank analysis could not be performed. Brent Cortelloni was notified via email 1/16/2014.

**Analytical Environmental Services, Inc**

**Date:** 21-Jan-14

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> BH-11
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 1/13/2014 10:30:00 AM
<b>Lab ID:</b> 1401731-001	<b>Matrix:</b> Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5035)</b>			
Tetrachloroethene	5.9	4.8		ug/Kg-dry	185948	1	01/15/2014 08:51	MD
Surr: 4-Bromofluorobenzene	101	70-128		%REC	185948	1	01/15/2014 08:51	MD
Surr: Dibromofluoromethane	108	78.2-128		%REC	185948	1	01/15/2014 08:51	MD
Surr: Toluene-d8	99.8	76.5-116		%REC	185948	1	01/15/2014 08:51	MD
<b>PERCENT MOISTURE D2216</b>								
Percent Moisture	13.3	0		wt%	R259574	1	01/15/2014 09:30	EH

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 21-Jan-14

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> BH-12
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 1/13/2014 10:45:00 AM
<b>Lab ID:</b> 1401731-002	<b>Matrix:</b> Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5035)</b>			
Tetrachloroethene	BRL	5.2		ug/Kg-dry	185948	1	01/15/2014 09:17	MD
Surr: 4-Bromofluorobenzene	96.3	70-128		%REC	185948	1	01/15/2014 09:17	MD
Surr: Dibromofluoromethane	106	78.2-128		%REC	185948	1	01/15/2014 09:17	MD
Surr: Toluene-d8	96.7	76.5-116		%REC	185948	1	01/15/2014 09:17	MD
<b>PERCENT MOISTURE D2216</b>								
Percent Moisture	14.4	0		wt%	R259574	1	01/15/2014 09:30	EH

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 21-Jan-14

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> BH-13
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 1/13/2014 10:59:00 AM
<b>Lab ID:</b> 1401731-003	<b>Matrix:</b> Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5035)</b>			
Tetrachloroethene	BRL	4.8		ug/Kg-dry	185948	1	01/15/2014 09:44	MD
Surr: 4-Bromofluorobenzene	98.5	70-128		%REC	185948	1	01/15/2014 09:44	MD
Surr: Dibromofluoromethane	109	78.2-128		%REC	185948	1	01/15/2014 09:44	MD
Surr: Toluene-d8	101	76.5-116		%REC	185948	1	01/15/2014 09:44	MD
<b>PERCENT MOISTURE D2216</b>								
Percent Moisture	17.3	0		wt%	R259574	1	01/15/2014 09:30	EH

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 21-Jan-14

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> BH-14
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 1/13/2014 11:20:00 AM
<b>Lab ID:</b> 1401731-004	<b>Matrix:</b> Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5035)</b>			
Tetrachloroethene	BRL	3.9		ug/Kg-dry	185948	1	01/15/2014 14:59	MD
Surr: 4-Bromofluorobenzene	94.8	70-128		%REC	185948	1	01/15/2014 14:59	MD
Surr: Dibromofluoromethane	106	78.2-128		%REC	185948	1	01/15/2014 14:59	MD
Surr: Toluene-d8	99.3	76.5-116		%REC	185948	1	01/15/2014 14:59	MD
<b>PERCENT MOISTURE D2216</b>								
Percent Moisture	13.6	0		wt%	R259574	1	01/15/2014 09:30	EH

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client EMA/BC

Work Order Number 1401731

Checklist completed by [Signature] 11/13/14  
Signature Date

Carrier name: FedEx  UPS  Courier  Client  US Mail  Other

Shipping container/cooler in good condition? Yes  No  Not Present

Custody seals intact on shipping container/cooler? Yes  No  Not Present

Custody seals intact on sample bottles? Yes  No  Not Present

Container/Temp Blank temperature in compliance? (4°C±2)\* Yes  No

Cooler #1 3.1 Cooler #2 \_\_\_\_\_ Cooler #3 \_\_\_\_\_ Cooler #4 \_\_\_\_\_ Cooler#5 \_\_\_\_\_ Cooler #6 \_\_\_\_\_

Chain of custody present? Yes  No

Chain of custody signed when relinquished and received? Yes  No

Chain of custody agrees with sample labels? Yes  No

Samples in proper container/bottle? Yes  No

Sample containers intact? Yes  No

Sufficient sample volume for indicated test? Yes  No

All samples received within holding time? Yes  No

Was TAT marked on the COC? Yes  No

Proceed with Standard TAT as per project history? Yes  No  Not Applicable

Water - VOA vials have zero headspace? No VOA vials submitted  Yes  No

Water - pH acceptable upon receipt? Yes  No  Not Applicable

Adjusted? \_\_\_\_\_ Checked by \_\_\_\_\_

Sample Condition: Good  Other(Explain) \_\_\_\_\_

(For diffusive samples or AIHA lead) Is a known blank included? Yes  No

See Case Narrative for resolution of the Non-Conformance.

\* Samples do not have to comply with the given range for certain parameters.

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1401731

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 185948**

Sample ID: <b>MB-185948</b>	Client ID:	Units: <b>ug/Kg</b>	Prep Date: <b>01/14/2014</b>	Run No: <b>259534</b>							
Sample Type: <b>MBLK</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>185948</b>	Analysis Date: <b>01/14/2014</b>	Seq No: <b>5455350</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1,1-Trichloroethane	BRL	5.0									
1,1,2,2-Tetrachloroethane	BRL	5.0									
1,1,2-Trichloroethane	BRL	5.0									
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2,4-Trichlorobenzene	BRL	5.0									
1,2-Dibromo-3-chloropropane	BRL	5.0									
1,2-Dibromoethane	BRL	5.0									
1,2-Dichlorobenzene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
1,2-Dichloropropane	BRL	5.0									
1,3-Dichlorobenzene	BRL	5.0									
1,4-Dichlorobenzene	BRL	5.0									
2-Butanone	BRL	50									
2-Hexanone	BRL	10									
4-Methyl-2-pentanone	BRL	10									
Acetone	BRL	100									
Benzene	BRL	5.0									
Bromodichloromethane	BRL	5.0									
Bromoform	BRL	5.0									
Bromomethane	BRL	5.0									
Carbon disulfide	BRL	10									
Carbon tetrachloride	BRL	5.0									
Chlorobenzene	BRL	5.0									
Chloroethane	BRL	10									
Chloroform	BRL	5.0									
Chloromethane	BRL	10									

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1401731

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 185948**

Sample ID: <b>MB-185948</b>	Client ID:	Units: <b>ug/Kg</b>	Prep Date: <b>01/14/2014</b>	Run No: <b>259534</b>							
SampleType: <b>MBLK</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>185948</b>	Analysis Date: <b>01/14/2014</b>	Seq No: <b>5455350</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

cis-1,2-Dichloroethene	BRL	5.0									
cis-1,3-Dichloropropene	BRL	5.0									
Cyclohexane	BRL	5.0									
Dibromochloromethane	BRL	5.0									
Dichlorodifluoromethane	BRL	10									
Ethylbenzene	BRL	5.0									
Freon-113	BRL	10									
Isopropylbenzene	BRL	5.0									
m,p-Xylene	BRL	5.0									
Methyl acetate	BRL	5.0									
Methyl tert-butyl ether	BRL	5.0									
Methylcyclohexane	BRL	5.0									
Methylene chloride	BRL	20									
o-Xylene	BRL	5.0									
Styrene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
Toluene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
trans-1,3-Dichloropropene	BRL	5.0									
Trichloroethene	BRL	5.0									
Trichlorofluoromethane	BRL	5.0									
Vinyl chloride	BRL	10									
Surr: 4-Bromofluorobenzene	48.05	0	50.00		96.1	70	128				
Surr: Dibromofluoromethane	54.25	0	50.00		108	78.2	128				
Surr: Toluene-d8	49.85	0	50.00		99.7	76.5	116				

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1401731

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 185948**

Sample ID: <b>LCS-185948</b>	Client ID:	Units: <b>ug/Kg</b>	Prep Date: <b>01/14/2014</b>	Run No: <b>259534</b>							
SampleType: <b>LCS</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>185948</b>	Analysis Date: <b>01/14/2014</b>	Seq No: <b>5455351</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	50.12	5.0	50.00		100	69.9	145				
Benzene	49.86	5.0	50.00		99.7	72.3	130				
Chlorobenzene	48.44	5.0	50.00		96.9	69	130				
Toluene	49.35	5.0	50.00		98.7	71.1	130				
Trichloroethene	51.25	5.0	50.00		102	71.7	136				
Surr: 4-Bromofluorobenzene	51.54	0	50.00		103	70	128				
Surr: Dibromofluoromethane	52.47	0	50.00		105	78.2	128				
Surr: Toluene-d8	50.43	0	50.00		101	76.5	116				

Sample ID: <b>1401567-038AMS</b>	Client ID: <b>S-41@3</b>	Units: <b>ug/Kg-dry</b>	Prep Date: <b>01/14/2014</b>	Run No: <b>259534</b>							
SampleType: <b>MS</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>185948</b>	Analysis Date: <b>01/14/2014</b>	Seq No: <b>5456690</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	64.43	6.3	63.17		102	56.6	151				
Benzene	66.02	6.3	63.17	1.730	102	70.4	130				
Chlorobenzene	64.72	6.3	63.17		102	67.5	132				
Toluene	66.12	6.3	63.17	2.082	101	70.4	130				
Trichloroethene	66.93	6.3	63.17		106	70.1	137				
Surr: 4-Bromofluorobenzene	65.92	0	63.17		104	70	128				
Surr: Dibromofluoromethane	67.26	0	63.17		106	78.2	128				
Surr: Toluene-d8	65.31	0	63.17		103	76.5	116				

Sample ID: <b>1401567-038AMSD</b>	Client ID: <b>S-41@3</b>	Units: <b>ug/Kg-dry</b>	Prep Date: <b>01/14/2014</b>	Run No: <b>259534</b>							
SampleType: <b>MSD</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>185948</b>	Analysis Date: <b>01/14/2014</b>	Seq No: <b>5456692</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	61.99	6.3	63.17		98.1	56.6	151	64.43	3.86	20.4	
Benzene	61.89	6.3	63.17	1.730	95.2	70.4	130	66.02	6.46	16.9	

**Qualifiers:**

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1401731

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 185948**

Sample ID: **1401567-038AMSD** Client ID: **S-41@3** Units: **ug/Kg-dry** Prep Date: **01/14/2014** Run No: **259534**  
 SampleType: **MSD** TestCode: **TCL VOLATILE ORGANICS SW8260B** BatchID: **185948** Analysis Date: **01/14/2014** Seq No: **5456692**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlorobenzene	60.02	6.3	63.17		95.0	67.5	132	64.72	7.53	14.6	
Toluene	60.32	6.3	63.17	2.082	92.2	70.4	130	66.12	9.17	16.6	
Trichloroethene	61.41	6.3	63.17		97.2	70.1	137	66.93	8.60	17	
Surr: 4-Bromofluorobenzene	65.20	0	63.17		103	70	128	65.92	0	0	
Surr: Dibromofluoromethane	66.77	0	63.17		106	78.2	128	67.26	0	0	
Surr: Toluene-d8	63.82	0	63.17		101	76.5	116	65.31	0	0	

**Qualifiers:** > Greater than Result value < Less than Result value B Analyte detected in the associated method blank  
 BRL Below reporting limit E Estimated (value above quantitation range) H Holding times for preparation or analysis exceeded  
 J Estimated value detected below Reporting Limit N Analyte not NELAC certified R RPD outside limits due to matrix  
 Rpt Lim Reporting Limit S Spike Recovery outside limits due to matrix



February 05, 2014

Brent Cortelloni  
Environmental Management Associates, LLC  
5262 Belle Wood Court  
Buford Georgia 30518

TEL: (770) 271-4628  
FAX: (770) 271-8944

RE: Professional Cleaners

Dear Brent Cortelloni:

Order No: 1401G81

Analytical Environmental Services, Inc. received 2 samples on 1/24/2014 9:30:00 AM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

AES' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/13-06/30/14.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Mirzeta Kararic  
Project Manager

**Revision** 2/5/2014



**ANALYTICAL ENVIRONMENTAL SERVICES, INC**

3785 Presidential Parkway, Atlanta GA 30340-3704

**AES** TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

**CHAIN OF CUSTODY**

Work Order: 1401681

Date: \_\_\_\_\_ of \_\_\_\_\_ Page \_\_\_\_\_

COMPANY: <b>EMA/BC</b>		ADDRESS: _____		ANALYSIS REQUESTED		Visit our website <a href="http://www.aesatlanta.com">www.aesatlanta.com</a> to check on the status of your results, place bottle orders, etc.		No # of Containers	
PHONE: _____	FAX: _____	SIGNATURE: <i>B. Cortillon</i>		PRESERVATION (See codes)		REMARKS			
SAMPLED BY: <i>B. Cortillon</i>	SAMPLED DATE: _____	SAMPLED TIME: _____	DATE: _____	TIME: _____	Grab	Composite	Matrix (See codes)		
#	SAMPLE ID	DATE	TIME	Grab	Composite	Matrix (See codes)			
1	MTP-2	1-23-14	1:30	X		GW	* Tetrachloroethylene		
2	MTP-6 (9-10)	1-23-14	3:20	X		S	Spils positive		
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
RELINQUISHED BY: <i>B. Cortillon</i>		DATE/TIME RECEIVED BY: <i>1-24-14 9:30</i>	DATE/TIME: <i>1-24-14 9:30</i>		PROJECT INFORMATION		RECEIPT		
1: _____		2: _____		PROJECT NAME: <i>Professional Cleaners</i>		Total # of Containers			
3: _____		3: _____		PROJECT #: <i>559</i>		Turnaround Time Request			
				SITE ADDRESS: _____		Standard 5 Business Days			
				SEND REPORT TO: _____		2 Business Day Rush			
				INVOICE TO: _____		Next Business Day Rush			
				(IF DIFFERENT FROM ABOVE)		Same Day Rush (auth req.)			
				QUOTE #: _____		Other			
				PO#: _____		STATE PROGRAM (if any):			
				SHIPMENT METHOD		B-mail? Y/N; Fax? Y/N			
				OUT: / / VIA: _____		DATA PACKAGE: I II III IV			
				IN: / / VIA: _____		Turnaround Time Request			
				CLIENT: FedEx UPS MAIL COURIER		Standard 5 Business Days			
				GREYHOUND OTHER		2 Business Day Rush			
						Next Business Day Rush			
						Same Day Rush (auth req.)			
						Other			

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.

SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water

PRESERVATIVE CODES: H+1 = Hydrochloric acid + ice I = Ice only N = Nitric acid S+1 = Sulfuric acid + ice SAM+1 = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

**Client:** Environmental Management Associates, LLC  
**Project:** Professional Cleaners  
**Lab ID:** 1401G81

**Case Narrative**

Sample Receiving Nonconformance:

Preserved soil vials in accordance with Method 5035 were not received for sample 1401G81. Preserved soil vials were prepared at the laboratory from the sample jar.

Per Brent Cortelloni on 2/3/14, full list for VOCs was reported on sample "MIP-6(9-10)."

**Analytical Environmental Services, Inc**

**Date:** 5-Feb-14

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MIP-2
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 1/23/2014 1:30:00 PM
<b>Lab ID:</b> 1401G81-001	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>								
					<b>(SW5030B)</b>			
Tetrachloroethene	200	5.0		ug/L	186363	1	01/25/2014 16:03	AK
Surr: 4-Bromofluorobenzene	94.9	66.2-120		%REC	186363	1	01/25/2014 16:03	AK
Surr: Dibromofluoromethane	110	79.5-121		%REC	186363	1	01/25/2014 16:03	AK
Surr: Toluene-d8	96.3	77-117		%REC	186363	1	01/25/2014 16:03	AK

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MIP-6(9-10)
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 1/23/2014 3:20:00 PM
<b>Lab ID:</b> 1401G81-002	<b>Matrix:</b> Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B (SW5035)</b>								
1,1,1-Trichloroethane	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
1,1,2,2-Tetrachloroethane	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
1,1,2-Trichloroethane	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
1,1-Dichloroethane	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
1,1-Dichloroethene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
1,2,4-Trichlorobenzene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
1,2-Dibromo-3-chloropropane	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
1,2-Dibromoethane	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
1,2-Dichlorobenzene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
1,2-Dichloroethane	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
1,2-Dichloropropane	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
1,3-Dichlorobenzene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
1,4-Dichlorobenzene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
2-Butanone	BRL	61		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
2-Hexanone	BRL	12		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
4-Methyl-2-pentanone	BRL	12		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Acetone	BRL	120		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Benzene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Bromodichloromethane	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Bromoform	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Bromomethane	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Carbon disulfide	BRL	12		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Carbon tetrachloride	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Chlorobenzene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Chloroethane	BRL	12		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Chloroform	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Chloromethane	BRL	12		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
cis-1,2-Dichloroethene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
cis-1,3-Dichloropropene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Cyclohexane	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Dibromochloromethane	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Dichlorodifluoromethane	BRL	12		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Ethylbenzene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Freon-113	BRL	12		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Isopropylbenzene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
m,p-Xylene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Methyl acetate	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Methyl tert-butyl ether	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Methylcyclohexane	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Methylene chloride	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
o-Xylene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD

<b>Qualifiers:</b>	* Value exceeds maximum contaminant level	E Estimated (value above quantitation range)
	BRL Below reporting limit	S Spike Recovery outside limits due to matrix
	H Holding times for preparation or analysis exceeded	Narr See case narrative
	N Analyte not NELAC certified	NC Not confirmed
	B Analyte detected in the associated method blank	< Less than Result value
	> Greater than Result value	J Estimated value detected below Reporting Limit

**Analytical Environmental Services, Inc**

**Date:** 5-Feb-14

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MIP-6(9-10)
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 1/23/2014 3:20:00 PM
<b>Lab ID:</b> 1401G81-002	<b>Matrix:</b> Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5035)</b>			
Styrene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Tetrachloroethene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Toluene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
trans-1,2-Dichloroethene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
trans-1,3-Dichloropropene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Trichloroethene	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Trichlorofluoromethane	BRL	6.1		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Vinyl chloride	BRL	12		ug/Kg-dry	186338	1	01/24/2014 14:17	MD
Surr: 4-Bromofluorobenzene	91.1	70-128		%REC	186338	1	01/24/2014 14:17	MD
Surr: Dibromofluoromethane	104	78.2-128		%REC	186338	1	01/24/2014 14:17	MD
Surr: Toluene-d8	97.3	76.5-116		%REC	186338	1	01/24/2014 14:17	MD
<b>PERCENT MOISTURE D2216</b>								
Percent Moisture	16.9	0		wt%	R260264	1	01/27/2014 10:00	EH

<b>Qualifiers:</b>	* Value exceeds maximum contaminant level	E Estimated (value above quantitation range)
	BRL Below reporting limit	S Spike Recovery outside limits due to matrix
	H Holding times for preparation or analysis exceeded	Narr See case narrative
	N Analyte not NELAC certified	NC Not confirmed
	B Analyte detected in the associated method blank	< Less than Result value
	> Greater than Result value	J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client EMA/BC

Work Order Number 1401681

Checklist completed by JMB 11/24/14  
Signature Date

Carrier name: FedEx  UPS  Courier  Client  US Mail  Other

Shipping container/cooler in good condition? Yes  No  Not Present

Custody seals intact on shipping container/cooler? Yes  No  Not Present

Custody seals intact on sample bottles? Yes  No  Not Present

Container/Temp Blank temperature in compliance? (4°C±2)\* Yes  No

Cooler #1 3-2 Cooler #2 \_\_\_\_\_ Cooler #3 \_\_\_\_\_ Cooler #4 \_\_\_\_\_ Cooler#5 \_\_\_\_\_ Cooler #6 \_\_\_\_\_

Chain of custody present? Yes  No

Chain of custody signed when relinquished and received? Yes  No

Chain of custody agrees with sample labels? Yes  No

Samples in proper container/bottle? Yes  No

Sample containers intact? Yes  No

Sufficient sample volume for indicated test? Yes  No

All samples received within holding time? Yes  No

Was TAT marked on the COC? Yes  No

Proceed with Standard TAT as per project history? Yes  No  Not Applicable

Water - VOA vials have zero headspace? No VOA vials submitted  Yes  No

Water - pH acceptable upon receipt? Yes  No  Not Applicable

Adjusted? \_\_\_\_\_ Checked by \_\_\_\_\_

Sample Condition: Good  Other(Explain) \_\_\_\_\_

(For diffusive samples or AIHA lead) Is a known blank included? Yes  No

See Case Narrative for resolution of the Non-Conformance.

\* Samples do not have to comply with the given range for certain parameters.

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1401G81

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 186338**

Sample ID: <b>MB-186338</b>	Client ID:	Units: <b>ug/Kg</b>	Prep Date: <b>01/24/2014</b>	Run No: <b>260163</b>							
SampleType: <b>MBLK</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>186338</b>	Analysis Date: <b>01/24/2014</b>	Seq No: <b>5468678</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1,1-Trichloroethane	BRL	5.0									
1,1,2,2-Tetrachloroethane	BRL	5.0									
1,1,2-Trichloroethane	BRL	5.0									
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2,4-Trichlorobenzene	BRL	5.0									
1,2-Dibromo-3-chloropropane	BRL	5.0									
1,2-Dibromoethane	BRL	5.0									
1,2-Dichlorobenzene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
1,2-Dichloropropane	BRL	5.0									
1,3-Dichlorobenzene	BRL	5.0									
1,4-Dichlorobenzene	BRL	5.0									
2-Butanone	BRL	50									
2-Hexanone	BRL	10									
4-Methyl-2-pentanone	BRL	10									
Acetone	BRL	100									
Benzene	BRL	5.0									
Bromodichloromethane	BRL	5.0									
Bromoform	BRL	5.0									
Bromomethane	BRL	5.0									
Carbon disulfide	BRL	10									
Carbon tetrachloride	BRL	5.0									
Chlorobenzene	BRL	5.0									
Chloroethane	BRL	10									
Chloroform	BRL	5.0									
Chloromethane	BRL	10									

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1401G81

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 186338**

Sample ID: <b>MB-186338</b>	Client ID:	Units: <b>ug/Kg</b>	Prep Date: <b>01/24/2014</b>	Run No: <b>260163</b>							
SampleType: <b>MBLK</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>186338</b>	Analysis Date: <b>01/24/2014</b>	Seq No: <b>5468678</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,2-Dichloroethene	BRL	5.0									
cis-1,3-Dichloropropene	BRL	5.0									
Cyclohexane	BRL	5.0									
Dibromochloromethane	BRL	5.0									
Dichlorodifluoromethane	BRL	10									
Ethylbenzene	BRL	5.0									
Freon-113	BRL	10									
Isopropylbenzene	BRL	5.0									
m,p-Xylene	BRL	5.0									
Methyl acetate	BRL	5.0									
Methyl tert-butyl ether	BRL	5.0									
Methylcyclohexane	BRL	5.0									
Methylene chloride	BRL	20									
o-Xylene	BRL	5.0									
Styrene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
Toluene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
trans-1,3-Dichloropropene	BRL	5.0									
Trichloroethene	BRL	5.0									
Trichlorofluoromethane	BRL	5.0									
Vinyl chloride	BRL	10									
Surr: 4-Bromofluorobenzene	44.11	0	50.00		88.2	70	128				
Surr: Dibromofluoromethane	47.63	0	50.00		95.3	78.2	128				
Surr: Toluene-d8	46.88	0	50.00		93.8	76.5	116				

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1401G81

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 186338**

Sample ID: <b>LCS-186338</b>	Client ID:	Units: <b>ug/Kg</b>	Prep Date: <b>01/24/2014</b>	Run No: <b>260163</b>							
SampleType: <b>LCS</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>186338</b>	Analysis Date: <b>01/24/2014</b>	Seq No: <b>5468681</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	48.84	5.0	50.00		97.7	69.9	145				
Benzene	46.84	5.0	50.00		93.7	72.3	130				
Chlorobenzene	51.10	5.0	50.00		102	69	130				
Toluene	48.29	5.0	50.00		96.6	71.1	130				
Trichloroethene	47.57	5.0	50.00		95.1	71.7	136				
Surr: 4-Bromofluorobenzene	50.94	0	50.00		102	70	128				
Surr: Dibromofluoromethane	46.81	0	50.00		93.6	78.2	128				
Surr: Toluene-d8	46.54	0	50.00		93.1	76.5	116				

Sample ID: <b>1401F82-002AMS</b>	Client ID:	Units: <b>ug/Kg-dry</b>	Prep Date: <b>01/24/2014</b>	Run No: <b>260163</b>							
SampleType: <b>MS</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>186338</b>	Analysis Date: <b>01/24/2014</b>	Seq No: <b>5468679</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	66.18	6.5	65.19		102	56.6	151				
Benzene	62.44	6.5	65.19		95.8	70.4	130				
Chlorobenzene	69.32	6.5	65.19		106	67.5	132				
Toluene	67.36	6.5	65.19		103	70.4	130				
Trichloroethene	63.51	6.5	65.19		97.4	70.1	137				
Surr: 4-Bromofluorobenzene	65.88	0	65.19		101	70	128				
Surr: Dibromofluoromethane	60.80	0	65.19		93.3	78.2	128				
Surr: Toluene-d8	63.09	0	65.19		96.8	76.5	116				

Sample ID: <b>1401F82-002AMSD</b>	Client ID:	Units: <b>ug/Kg-dry</b>	Prep Date: <b>01/24/2014</b>	Run No: <b>260163</b>							
SampleType: <b>MSD</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>186338</b>	Analysis Date: <b>01/24/2014</b>	Seq No: <b>5468680</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	66.35	6.5	65.19		102	56.6	151	66.18	0.256	20.4	
Benzene	63.31	6.5	65.19		97.1	70.4	130	62.44	1.39	16.9	

**Qualifiers:** > Greater than Result value < Less than Result value B Analyte detected in the associated method blank  
 BRL Below reporting limit E Estimated (value above quantitation range) H Holding times for preparation or analysis exceeded  
 J Estimated value detected below Reporting Limit N Analyte not NELAC certified R RPD outside limits due to matrix  
 Rpt Lim Reporting Limit S Spike Recovery outside limits due to matrix

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1401G81

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 186338**

Sample ID: <b>1401F82-002AMSD</b>	Client ID:	Units: <b>ug/Kg-dry</b>	Prep Date: <b>01/24/2014</b>	Run No: <b>260163</b>							
SampleType: <b>MSD</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>186338</b>	Analysis Date: <b>01/24/2014</b>	Seq No: <b>5468680</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chlorobenzene	69.06	6.5	65.19		106	67.5	132	69.32	0.377	14.6	
Toluene	64.20	6.5	65.19		98.5	70.4	130	67.36	4.80	16.6	
Trichloroethene	64.98	6.5	65.19		99.7	70.1	137	63.51	2.29	17	
Surr: 4-Bromofluorobenzene	67.00	0	65.19		103	70	128	65.88	0	0	
Surr: Dibromofluoromethane	60.63	0	65.19		93.0	78.2	128	60.80	0	0	
Surr: Toluene-d8	61.07	0	65.19		93.7	76.5	116	63.09	0	0	

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1401G81

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 186363**

Sample ID: <b>MB-186363</b>	Client ID:	Units: <b>ug/L</b>	Prep Date: <b>01/25/2014</b>	Run No: <b>260201</b>							
SampleType: <b>MBLK</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>186363</b>	Analysis Date: <b>01/25/2014</b>	Seq No: <b>5469467</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1,1-Trichloroethane	BRL	5.0									
1,1,2,2-Tetrachloroethane	BRL	5.0									
1,1,2-Trichloroethane	BRL	5.0									
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2,4-Trichlorobenzene	BRL	5.0									
1,2-Dibromo-3-chloropropane	BRL	5.0									
1,2-Dibromoethane	BRL	5.0									
1,2-Dichlorobenzene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
1,2-Dichloropropane	BRL	5.0									
1,3-Dichlorobenzene	BRL	5.0									
1,4-Dichlorobenzene	BRL	5.0									
2-Butanone	BRL	50									
2-Hexanone	BRL	10									
4-Methyl-2-pentanone	BRL	10									
Acetone	BRL	50									
Benzene	BRL	5.0									
Bromodichloromethane	BRL	5.0									
Bromoform	BRL	5.0									
Bromomethane	BRL	5.0									
Carbon disulfide	BRL	5.0									
Carbon tetrachloride	BRL	5.0									
Chlorobenzene	BRL	5.0									
Chloroethane	BRL	10									
Chloroform	BRL	5.0									
Chloromethane	BRL	10									

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1401G81

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 186363**

Sample ID: <b>MB-186363</b>	Client ID:	Units: <b>ug/L</b>	Prep Date: <b>01/25/2014</b>	Run No: <b>260201</b>							
SampleType: <b>MBLK</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>186363</b>	Analysis Date: <b>01/25/2014</b>	Seq No: <b>5469467</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

cis-1,2-Dichloroethene	BRL	5.0									
cis-1,3-Dichloropropene	BRL	5.0									
Cyclohexane	BRL	5.0									
Dibromochloromethane	BRL	5.0									
Dichlorodifluoromethane	BRL	10									
Ethylbenzene	BRL	5.0									
Freon-113	BRL	10									
Isopropylbenzene	BRL	5.0									
m,p-Xylene	BRL	5.0									
Methyl acetate	BRL	5.0									
Methyl tert-butyl ether	BRL	5.0									
Methylcyclohexane	BRL	5.0									
Methylene chloride	BRL	5.0									
o-Xylene	BRL	5.0									
Styrene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
Toluene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
trans-1,3-Dichloropropene	BRL	5.0									
Trichloroethene	BRL	5.0									
Trichlorofluoromethane	BRL	5.0									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	49.14	0	50.00		98.3	66.2	120				
Surr: Dibromofluoromethane	56.54	0	50.00		113	79.5	121				
Surr: Toluene-d8	48.62	0	50.00		97.2	77	117				

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1401G81

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 186363**

Sample ID: <b>LCS-186363</b>	Client ID:	Units: <b>ug/L</b>	Prep Date: <b>01/25/2014</b>	Run No: <b>260201</b>							
SampleType: <b>LCS</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>186363</b>	Analysis Date: <b>01/25/2014</b>	Seq No: <b>5469486</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	57.66	5.0	50.00		115	63.1	140				
Benzene	56.20	5.0	50.00		112	74.2	129				
Chlorobenzene	54.72	5.0	50.00		109	70	129				
Toluene	55.70	5.0	50.00		111	74.2	129				
Trichloroethene	56.86	5.0	50.00		114	71.2	135				
Surr: 4-Bromofluorobenzene	54.70	0	50.00		109	66.2	120				
Surr: Dibromofluoromethane	55.41	0	50.00		111	79.5	121				
Surr: Toluene-d8	49.29	0	50.00		98.6	77	117				

Sample ID: <b>1401G25-001AMS</b>	Client ID:	Units: <b>ug/L</b>	Prep Date: <b>01/25/2014</b>	Run No: <b>260201</b>							
SampleType: <b>MS</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>186363</b>	Analysis Date: <b>01/25/2014</b>	Seq No: <b>5469500</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	54.04	5.0	50.00		108	60.2	159				
Benzene	53.69	5.0	50.00		107	70.2	138				
Chlorobenzene	53.13	5.0	50.00		106	70.1	133				
Toluene	54.64	5.0	50.00		109	70	139				
Trichloroethene	76.76	5.0	50.00	21.31	111	70.1	144				
Surr: 4-Bromofluorobenzene	53.99	0	50.00		108	66.2	120				
Surr: Dibromofluoromethane	54.14	0	50.00		108	79.5	121				
Surr: Toluene-d8	48.51	0	50.00		97.0	77	117				

Sample ID: <b>1401G25-001AMSD</b>	Client ID:	Units: <b>ug/L</b>	Prep Date: <b>01/25/2014</b>	Run No: <b>260201</b>							
SampleType: <b>MSD</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>186363</b>	Analysis Date: <b>01/25/2014</b>	Seq No: <b>5469501</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	53.29	5.0	50.00		107	60.2	159	54.04	1.40	19.2	
Benzene	52.97	5.0	50.00		106	70.2	138	53.69	1.35	20	

**Qualifiers:** > Greater than Result value < Less than Result value B Analyte detected in the associated method blank  
 BRL Below reporting limit E Estimated (value above quantitation range) H Holding times for preparation or analysis exceeded  
 J Estimated value detected below Reporting Limit N Analyte not NELAC certified R RPD outside limits due to matrix  
 Rpt Lim Reporting Limit S Spike Recovery outside limits due to matrix

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1401G81

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 186363**

Sample ID: <b>1401G25-001AMSD</b>	Client ID:	Units: <b>ug/L</b>	Prep Date: <b>01/25/2014</b>	Run No: <b>260201</b>							
SampleType: <b>MSD</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>186363</b>	Analysis Date: <b>01/25/2014</b>	Seq No: <b>5469501</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chlorobenzene	52.19	5.0	50.00		104	70.1	133	53.13	1.79	20	
Toluene	51.14	5.0	50.00		102	70	139	54.64	6.62	20	
Trichloroethene	73.09	5.0	50.00	21.31	104	70.1	144	76.76	4.90	20	
Surr: 4-Bromofluorobenzene	54.32	0	50.00		109	66.2	120	53.99	0	0	
Surr: Dibromofluoromethane	53.90	0	50.00		108	79.5	121	54.14	0	0	
Surr: Toluene-d8	47.69	0	50.00		95.4	77	117	48.51	0	0	

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		



April 29, 2014

Brent Cortelloni  
Environmental Management Associates, LLC  
5262 Belle Wood Court  
Buford Georgia 30518

TEL: (770) 271-4628  
FAX: (770) 271-8944

RE: Professional Cleaners

Dear Brent Cortelloni:

Order No: 1404L57

Analytical Environmental Services, Inc. received 2 samples on April 22, 2014 10:10 am for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.

AES' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/13-06/30/14.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/15.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Mirzeta Kararic  
Project Manager



ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive, Atlanta GA 30340-3704  
TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1404LS7

Date: \_\_\_\_\_ Page \_\_\_\_\_ of \_\_\_\_\_

COMPANY: <b>EMA/BC</b>		ADDRESS: _____	
PHONE: _____	FAX: _____	SIGNATURE: <i>[Signature]</i>	
SAMPLED BY: <i>[Signature]</i>	SAMPLE ID	DATE	TIME
#			
1	D-01	4/22/14	9:05
2	MW-11	4/22/14	9:47
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
REL. ACQUIRED BY: <i>[Signature]</i>	DATE/TIME: 4-22-14	RECEIVED BY: <i>[Signature]</i>	DATE/TIME: 4/22/14 10:10
1:			
2:			
3:			
SPECIAL INSTRUCTIONS/COMMENTS:		SHIPMENT METHOD	
page 2 of 8		OUT / / VIA:	
		IN / / VIA:	
		CLIENT / FedEx / UPS / MAIL / COURIER	
		GREYHOUND / OTHER:	
ANALYSIS REQUESTED			
PRESERVATION (See codes)			
REMARKS			
No # of Containers			
Visit our website <a href="http://www.aesatlanta.com">www.aesatlanta.com</a> to check on the status of your results, place bottle orders, etc.			
PROJECT NAME: <b>Professional Cleaners</b>			
PROJECT #: <b>559</b>			
SITE ADDRESS: _____			
SEND REPORT TO: _____			
INVOICE TO: _____ (IF DIFFERENT FROM ABOVE)			
Total # of Containers: <b>00000</b>			
Turnaround Time Request: _____			
Standard 5 Business Days: _____			
2 Business Day Rush: _____			
Next Business Day Rush: _____			
Same Day Rush (auth req.): _____			
Other: _____			
STATE PROGRAM (if any): _____			
E-mail? Y/N: _____ Fax? Y/N: _____			
DATA PACKAGE: I II III IV			

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES. SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water  
 PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

**Analytical Environmental Services, Inc**

**Date:** 29-Apr-14

<b>Client:</b> Environmental Management Associates, LLC	<b>Client Sample ID:</b> MW-11
<b>Project Name:</b> Professional Cleaners	<b>Collection Date:</b> 4/22/2014 9:42:00 AM
<b>Lab ID:</b> 1404L57-002	<b>Matrix:</b> Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5030B)</b>			
Tetrachloroethene	170	5.0		ug/L	190154	1	04/24/2014 01:44	AR
Surr: 4-Bromofluorobenzene	99	66.2-120		%REC	190154	1	04/24/2014 01:44	AR
Surr: Dibromofluoromethane	104	79.5-121		%REC	190154	1	04/24/2014 01:44	AR
Surr: Toluene-d8	102	77-117		%REC	190154	1	04/24/2014 01:44	AR

**Qualifiers:**

- \* Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value

- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client EMA/BC

Work Order Number 1404657

Checklist completed by Jarom B Signature Date 4/22/14

Carrier name: FedEx  UPS  Courier  Client  US Mail  Other

- Shipping container/cooler in good condition? Yes  No  Not Present
- Custody seals intact on shipping container/cooler? Yes  No  Not Present
- Custody seals intact on sample bottles? Yes  No  Not Present
- Container/Temp Blank temperature in compliance? (4°C±2)\* Yes  No

Cooler #1 3.1 Cooler #2 \_\_\_\_\_ Cooler #3 \_\_\_\_\_ Cooler #4 \_\_\_\_\_ Cooler#5 \_\_\_\_\_ Cooler #6 \_\_\_\_\_

- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Samples in proper container/bottle? Yes  No  *JO 4/22/14*
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No
- All samples received within holding time? Yes  No
- Was TAT marked on the COC? Yes  No
- Proceed with Standard TAT as per project history? Yes  No  Not Applicable
- Water - VOA vials have zero headspace? No VOA vials submitted  Yes  No
- Water - pH acceptable upon receipt? Yes  No  Not Applicable

Adjusted? \_\_\_\_\_ Checked by \_\_\_\_\_

Sample Condition: Good  Other(Explain) \_\_\_\_\_  
(For diffusive samples or AIHA lead) Is a known blank included? Yes  No

See Case Narrative for resolution of the Non-Conformance.

\* Samples do not have to comply with the given range for certain parameters.

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1404L57

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 190154**

Sample ID: <b>MB-190154</b>	Client ID:	Units: <b>ug/L</b>	Prep Date: <b>04/23/2014</b>	Run No: <b>266208</b>							
Sample Type: <b>MBLK</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>190154</b>	Analysis Date: <b>04/23/2014</b>	Seq No: <b>5612756</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1,1-Trichloroethane	BRL	5.0									
1,1,2,2-Tetrachloroethane	BRL	5.0									
1,1,2-Trichloroethane	BRL	5.0									
1,1-Dichloroethane	BRL	5.0									
1,1-Dichloroethene	BRL	5.0									
1,2,4-Trichlorobenzene	BRL	5.0									
1,2-Dibromo-3-chloropropane	BRL	5.0									
1,2-Dibromoethane	BRL	5.0									
1,2-Dichlorobenzene	BRL	5.0									
1,2-Dichloroethane	BRL	5.0									
1,2-Dichloropropane	BRL	5.0									
1,3-Dichlorobenzene	BRL	5.0									
1,4-Dichlorobenzene	BRL	5.0									
2-Butanone	BRL	50									
2-Hexanone	BRL	10									
4-Methyl-2-pentanone	BRL	10									
Acetone	BRL	50									
Benzene	BRL	5.0									
Bromodichloromethane	BRL	5.0									
Bromoform	BRL	5.0									
Bromomethane	BRL	5.0									
Carbon disulfide	BRL	5.0									
Carbon tetrachloride	BRL	5.0									
Chlorobenzene	BRL	5.0									
Chloroethane	BRL	10									
Chloroform	BRL	5.0									
Chloromethane	BRL	10									

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1404L57

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 190154**

Sample ID: <b>MB-190154</b>	Client ID:	Units: <b>ug/L</b>	Prep Date: <b>04/23/2014</b>	Run No: <b>266208</b>							
SampleType: <b>MBLK</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>190154</b>	Analysis Date: <b>04/23/2014</b>	Seq No: <b>5612756</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

cis-1,2-Dichloroethene	BRL	5.0									
cis-1,3-Dichloropropene	BRL	5.0									
Cyclohexane	BRL	5.0									
Dibromochloromethane	BRL	5.0									
Dichlorodifluoromethane	BRL	10									
Ethylbenzene	BRL	5.0									
Freon-113	BRL	10									
Isopropylbenzene	BRL	5.0									
m,p-Xylene	BRL	5.0									
Methyl acetate	BRL	5.0									
Methyl tert-butyl ether	BRL	5.0									
Methylcyclohexane	BRL	5.0									
Methylene chloride	BRL	5.0									
o-Xylene	BRL	5.0									
Styrene	BRL	5.0									
Tetrachloroethene	BRL	5.0									
Toluene	BRL	5.0									
trans-1,2-Dichloroethene	BRL	5.0									
trans-1,3-Dichloropropene	BRL	5.0									
Trichloroethene	BRL	5.0									
Trichlorofluoromethane	BRL	5.0									
Vinyl chloride	BRL	2.0									
Surr: 4-Bromofluorobenzene	46.29	0	50.00		92.6	66.2	120				
Surr: Dibromofluoromethane	51.71	0	50.00		103	79.5	121				
Surr: Toluene-d8	46.99	0	50.00		94.0	77	117				

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1404L57

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 190154**

Sample ID: <b>LCS-190154</b>	Client ID:	Units: <b>ug/L</b>	Prep Date: <b>04/23/2014</b>	Run No: <b>266208</b>							
SampleType: <b>LCS</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>190154</b>	Analysis Date: <b>04/23/2014</b>	Seq No: <b>5612754</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	62.19	5.0	50.00		124	63.1	140				
Benzene	56.76	5.0	50.00		114	74.2	129				
Chlorobenzene	55.40	5.0	50.00		111	70	129				
Toluene	57.79	5.0	50.00		116	74.2	129				
Trichloroethene	64.36	5.0	50.00		129	71.2	135				
Surr: 4-Bromofluorobenzene	57.06	0	50.00		114	66.2	120				
Surr: Dibromofluoromethane	51.61	0	50.00		103	79.5	121				
Surr: Toluene-d8	49.01	0	50.00		98.0	77	117				

Sample ID: <b>1404132-006AMS</b>	Client ID:	Units: <b>ug/L</b>	Prep Date: <b>04/23/2014</b>	Run No: <b>266208</b>							
SampleType: <b>MS</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>190154</b>	Analysis Date: <b>04/23/2014</b>	Seq No: <b>5612760</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	56.28	5.0	50.00		113	60.2	159				
Benzene	51.53	5.0	50.00		103	70.2	138				
Chlorobenzene	50.59	5.0	50.00		101	70.1	133				
Toluene	51.43	5.0	50.00		103	70	139				
Trichloroethene	56.07	5.0	50.00		112	70.1	144				
Surr: 4-Bromofluorobenzene	56.20	0	50.00		112	66.2	120				
Surr: Dibromofluoromethane	53.03	0	50.00		106	79.5	121				
Surr: Toluene-d8	48.57	0	50.00		97.1	77	117				

Sample ID: <b>1404132-006AMSD</b>	Client ID:	Units: <b>ug/L</b>	Prep Date: <b>04/23/2014</b>	Run No: <b>266208</b>							
SampleType: <b>MSD</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>190154</b>	Analysis Date: <b>04/23/2014</b>	Seq No: <b>5612762</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	55.72	5.0	50.00		111	60.2	159	56.28	1.00	19.2	
Benzene	50.76	5.0	50.00		102	70.2	138	51.53	1.51	20	

**Qualifiers:**

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**Client:** Environmental Management Associates, LLC  
**Project Name:** Professional Cleaners  
**Workorder:** 1404L57

**ANALYTICAL QC SUMMARY REPORT**

**BatchID: 190154**

Sample ID: <b>1404132-006AMSD</b>	Client ID:	Units: <b>ug/L</b>	Prep Date: <b>04/23/2014</b>	Run No: <b>266208</b>							
SampleType: <b>MSD</b>	TestCode: <b>TCL VOLATILE ORGANICS SW8260B</b>	BatchID: <b>190154</b>	Analysis Date: <b>04/23/2014</b>	Seq No: <b>5612762</b>							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chlorobenzene	49.03	5.0	50.00		98.1	70.1	133	50.59	3.13	20	
Toluene	49.94	5.0	50.00		99.9	70	139	51.43	2.94	20	
Trichloroethene	55.45	5.0	50.00		111	70.1	144	56.07	1.11	20	
Surr: 4-Bromofluorobenzene	54.63	0	50.00		109	66.2	120	56.20	0	0	
Surr: Dibromofluoromethane	52.13	0	50.00		104	79.5	121	53.03	0	0	
Surr: Toluene-d8	48.73	0	50.00		97.5	77	117	48.57	0	0	

<b>Qualifiers:</b>	>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
	BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
	J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
	Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

**APPENDIX C**  
**MEMBRANE INTERFACE PROBE INVESTIGATION REPORT**

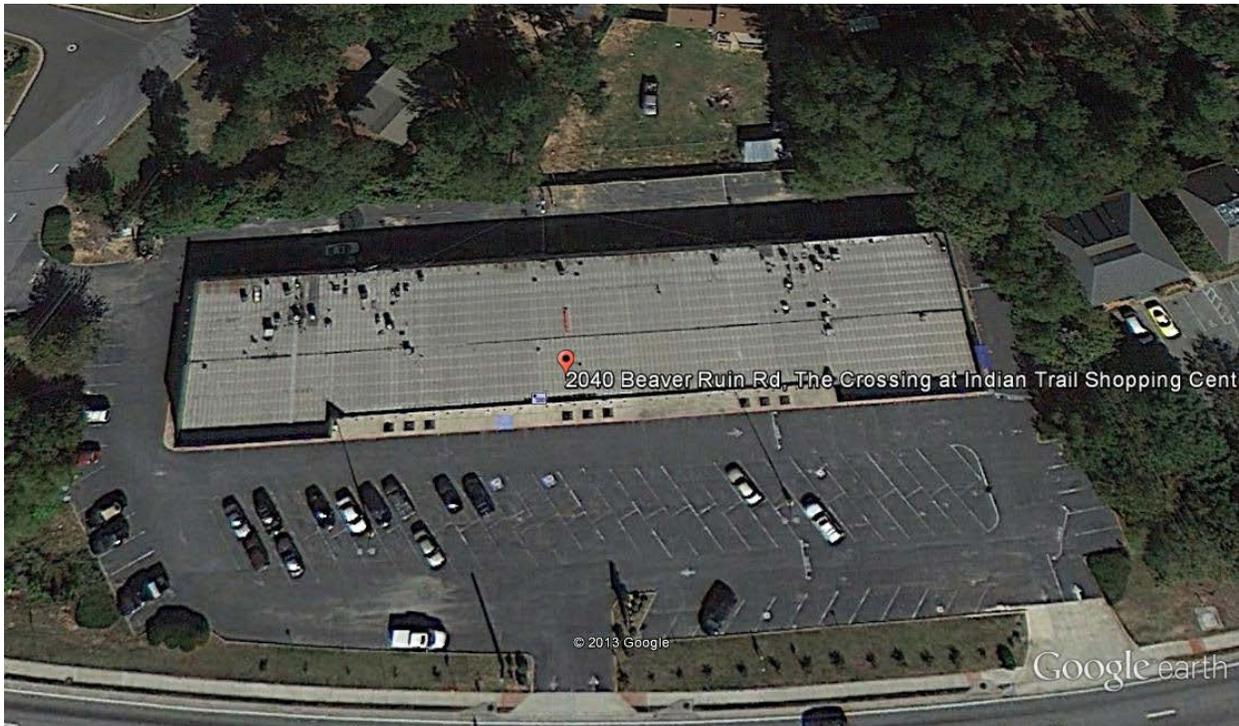


## FINAL DATA REPORT

Membrane Interface Probe (MIP) Logging & Soil Conductivity (SC)

# Professional Cleaners

Norcross, GA



**Performed by:**

**KB Labs, Inc.**

**Prepared for:**

**EMA/Remcon**

**January 2014**

**Acronyms and Abbreviations:**

<b>MIP</b>	-	<b>Membrane Interface Probe</b>
<b>CPT</b>	-	<b>Cone Penetration Test</b>
<b>DPT</b>	-	<b>Direct Push Testing</b>
<b>EC</b>	-	<b>Electrical Conductivity</b>
<b>PID</b>	-	<b>Photoionization Detector</b>
<b>FID</b>	-	<b>Flame Ionization Detector</b>
<b>ECD</b>	-	<b>Electron Capture Detector</b>
<b>String-pot</b>	-	<b>Linear transducer utilized for depth measurements within MIP system</b>
<b>Trunkline</b>	-	<b>An assembly of wires and tubing in a protective jacketing, connecting the down-hole portion of the MIP system to the system controller and detectors</b>
<b>Trip Time</b>	-	<b>A time interval required for the carrier gas to bring a particular VOC from the MIP down-hole membrane to the detectors</b>
<b>Response Test-</b>		<b>ASTM test performed on the MIP system at the beginning and end of each MIP boring to monitor MIP Probe's proper operation</b>
<b>VOC</b>	-	<b>Volatile Organic Compounds</b>
<b>QA/QC</b>	-	<b>Quality Assurance/Quality Control</b>
<b>CVOC</b>	-	<b>Chlorinated Volatile Organic Compounds</b>
<b>GC/MS</b>	-	<b>Gas Chromatograph/Mass Spectrometer</b>
<b>COC</b>	-	<b>Contaminates of Concern</b>

**Introduction:**

As a subcontractor to EMA/Remcon, KB Labs mobilized a Membrane Interface Probe (MIP) unit to Professional Cleaners in Norcross, GA, providing Membrane Interface Probe/Electrical Conductivity (MIP/EC) logging. Geolab provided the DPT pushing services to advance the MIP.

The purpose of the site investigation was to further define the vertical and lateral extent of possible chlorinated solvents based contamination following previous site investigations and monitoring well data. Borings were scheduled to be completed to no more than 40 ft bgs. .

**Equipment utilized on site:**

- **Environmental Data Acquisition Vehicle carrying a custom built Membrane Interface Probe unit**
- **DPT sampling machine: Geoprobe 7720DT (Geolab)**
- **Portable computers and printer**
- **Data processing software**

**MIP equipment description:**

The Membrane Interface Probe (MIP) is a percussion-tolerant down-hole VOC sensor interface that can continuously log volatile organics that diffuse through a semi-permeable membrane. Using a mixture of nitrogen, air, and hydrogen carrier gases, the VOCs are brought to the surface through tubing, which is connected to a laboratory grade Photoionization Detector (PID), Flame Ionization Detector (FID) and Electron Capture Detector (ECD) for immediate analysis. The MIP system utilized at this site uses a Flame Ionization Detector (FID), Photo ionization Detector (PID), and Electron Capture Detector (ECD). The data obtained with the detectors are being logged versus depth utilizing proprietary software.

The MIP system features automatic depth measurement utilizing a linear transducer (“stringpot”) attached to the side of the probe. The MIP system includes the Direct Sensing Soil Conductivity system as an integral part of the equipment package. This system utilizes a simple dipole conductivity array mounted near the tip of the MIP probe. The dipole array is taking continuous measurements of soil conductivity as it is being driven into the ground. The sensing probe is linked to a control box where the signal is received by a field computer. The signal from the probe is matched with precise depth measurements and logged on the screen. The MIP operator is able to read real time data showing changes in soil conductivity. These changes can be used to identify lithology, contaminant plumes, salt-water intrusion, or any other subsurface condition that displays a change in conductivity/resistivity.



Figure 1. The MIP data acquisition system

## Summary of Site Activities

### MIP logging and data pre-processing

At each location, a MIP probe was advanced to a specified depth as the data were recorded by the system’s data acquisition hardware and software.

The logging was performed using “high sensitivity” mode in accordance with ASTM Standard Operating Procedures for MIP Logging in order to ensure consistency and repeatability of the data. Decontamination of down-hole components of the MIP system was performed using Alconox lab-grade detergent and potable water. In addition to QA/QC and maintenance procedures recommended by the detector manufacturers and ASTM, on-site Quality Control/Quality Assurance (QA/QC) procedures included performing pre- and post-boring standard sensitivity Response Tests using solutions of CVOC and BTEX compounds.

Upon completion of the logging, the push rod assembly was extracted from the ground and cleaned. When necessary, the membrane and the trunkline are cleaned using hexane, methanol and purged with nitrogen in order to remove residual contamination.



Figure 2: MIP Probe.

Raw MIP data logs were printed out immediately upon completion of a logging location and posted to the website the same day.

### Detector Sensitivity

The PID, FID, and ECD are detectors used in an array to recognize possible VOC contamination. Each detector is more or less sensitive to different chemical VOC compositions.

Detector	Sensitivity
ECD	Primary: CVOCs (TCE, PCE)
PID	Primary: Aromatic Compounds (BTEX); Secondary: CVOCs at higher contamination levels
FID	Primary: Ethane, Methane, Ethene; Secondary: CVOCs & Aromatic Compounds at higher contamination levels

### MIP Data Processing

Field data were transferred to a Data Processing Specialist upon completion of field activities. The raw MIP logs and data were internally reviewed. The summary of the MIP logging results as recorded (non-normalized, including all location information, logging depths, individual detector, and summary data graphs) is presented in the PDF Formatted Data Sets (see attached files).

### Data Narrative

MIP/EC logging operations took place on January 23, 2014. Nine (9) MIP borings were logged ranging from 13' to 29'. A total actual MIP footage of about 189' was logged. All borings were started at different depths and pushed at 2' increments at the request of EMA/Remcon PM. All MIP log borings were emailed to EMA/Remcon POC for offsite viewing.

The ECD detector patterns determined possible low level chlorinated solvent compounds in all borings. MIP06 had the highest responses for CVOCs out of all borings. A few MIP borings had PID and/or FID readings not necessarily associated to the CVOCs but possible use of a previous injection substrate.

Please refer to the MIP Log Summary for **individual boring descriptions**.

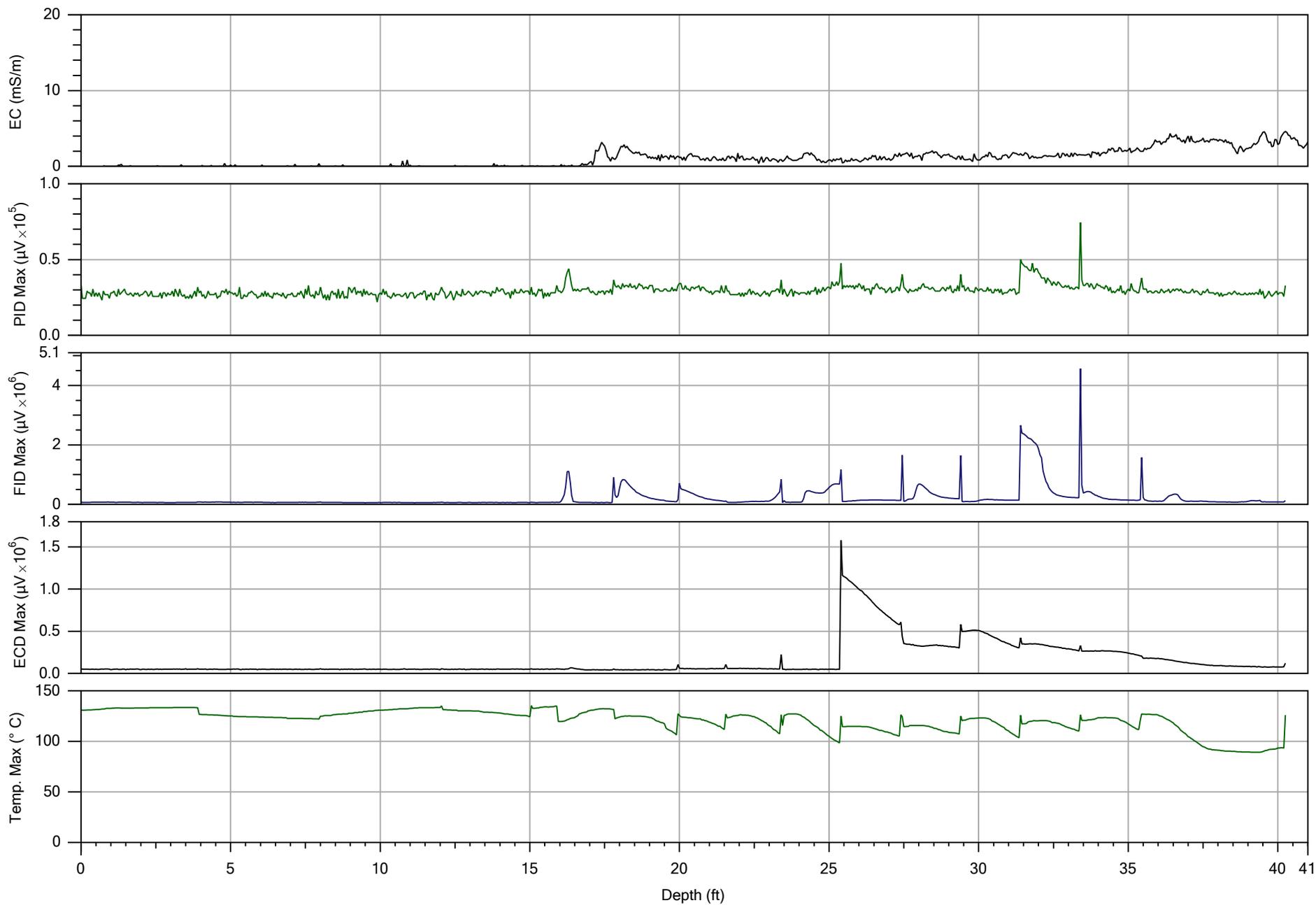
# MIP Log Summary

MIP Boring ID	Date	Logging Depth (ft)	MIP Detector Response			Comment
			ECD	PID	FID	
MIP01	1/23/2014	25	Yes	Slight	Yes	ECD responses from 25' to 35' indicate low level CVOCs. Slight PID and elevated FID response near 33' indicates possible VOCs not associated with dry cleaner CVOCs. Started logging at 15' in 2' increments to 40'.
MIP02	1/23/2014	13	Yes	Slight	Yes	ECD responses from 17' to 25' indicate low level CVOCs. Started logging at 15' in 2' increments to 28'.
MIP03	1/23/2014	24	Yes	Slight	Yes	ECD responses from 12' to 26' indicate low level CVOCs. Started logging at 10' in 2' increments to 32'.
MIP04	1/23/2014	20	Yes	Slight	Yes	ECD responses from 7' to 23' indicate low level CVOCs. Started logging at 5' in 2' increments to 25'.
MIP05	1/23/2014	29	Yes	Slight	Yes	ECD responses from 5' to 25' indicate low level CVOCs. FID response near end of boring indicates possible VOCs not associated with dry cleaner CVOCs. Started logging at 3' in 2' increments to 27' and then straight to 32'.
MIP06	1/23/2014	18	Yes	Yes	Yes	ECD responses from 6' to 14' indicate the highest level CVOCs onsite saturating ECD detector near 10'. Slight PID and elevated FID response near 18' indicates possible VOCs not associated with dry cleaner CVOCs. Started logging at 3' in 2' increments to 21'. EC levels very high near end of boring, possible sodium hydroxide persulfate effect.
MIP07	1/23/2014	18	Yes	Slight	Yes	ECD responses from 11' to 15' indicate low level CVOCs. Slight PID and elevated FID response near 19' indicates possible VOCs not associated with dry cleaner CVOCs. Started logging at 3' in 2' increments to 21'.

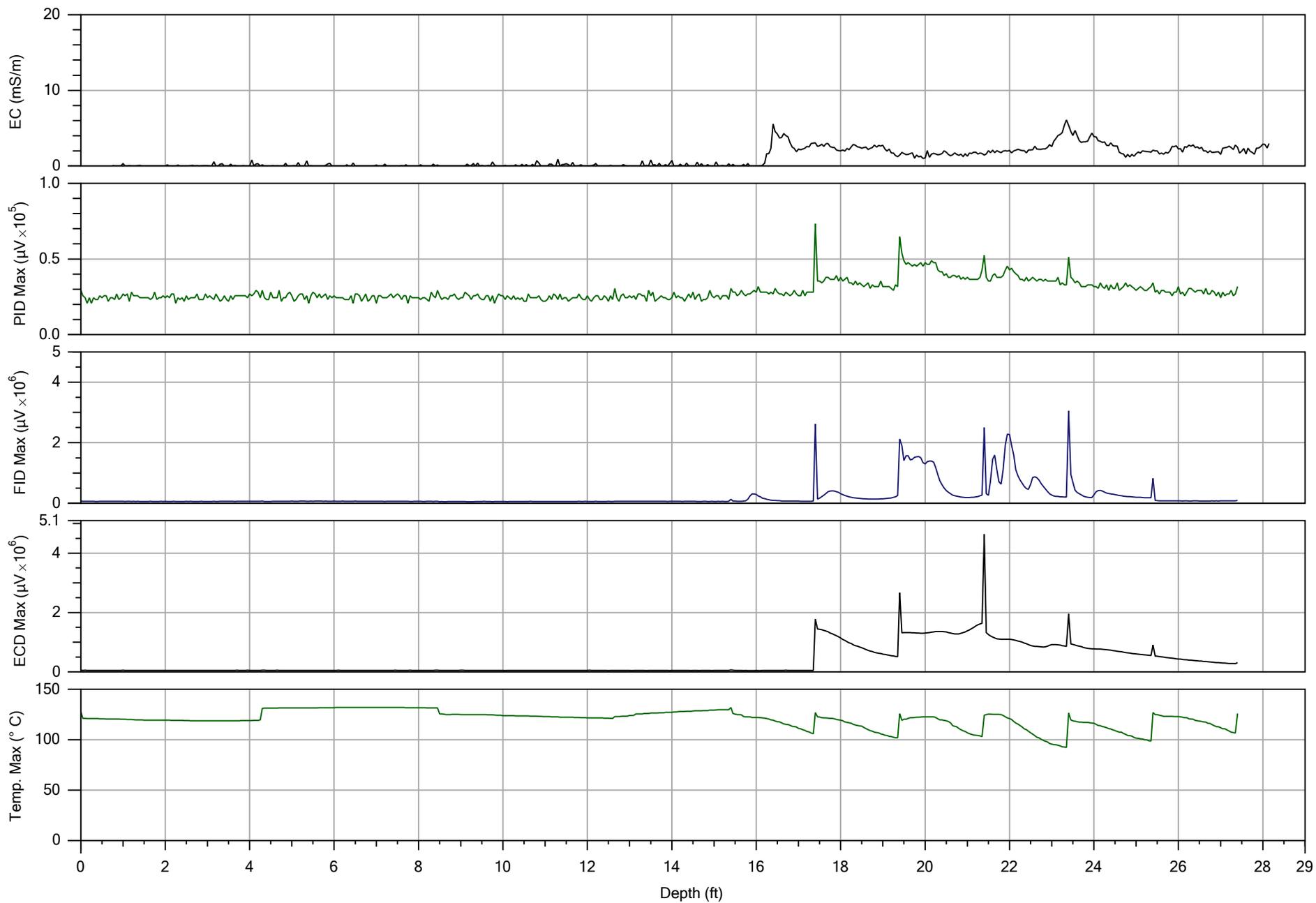
# MIP Log Summary

MIP Boring ID	Date	Logging Depth (ft)	MIP Detector Response			Comment
			ECD	PID	FID	
MIP08b	1/23/2014	14	Yes	Slight	Yes	ECD responses from 17' to 29' indicate low level CVOCs. Started logging at 15' in 2' increments to 29'.
MIP09	1/23/2014	28	Yes	Slight	Yes	ECD responses from 25' to 38' indicate low level CVOCs. Started logging at 13' in 2' increments to 41'.

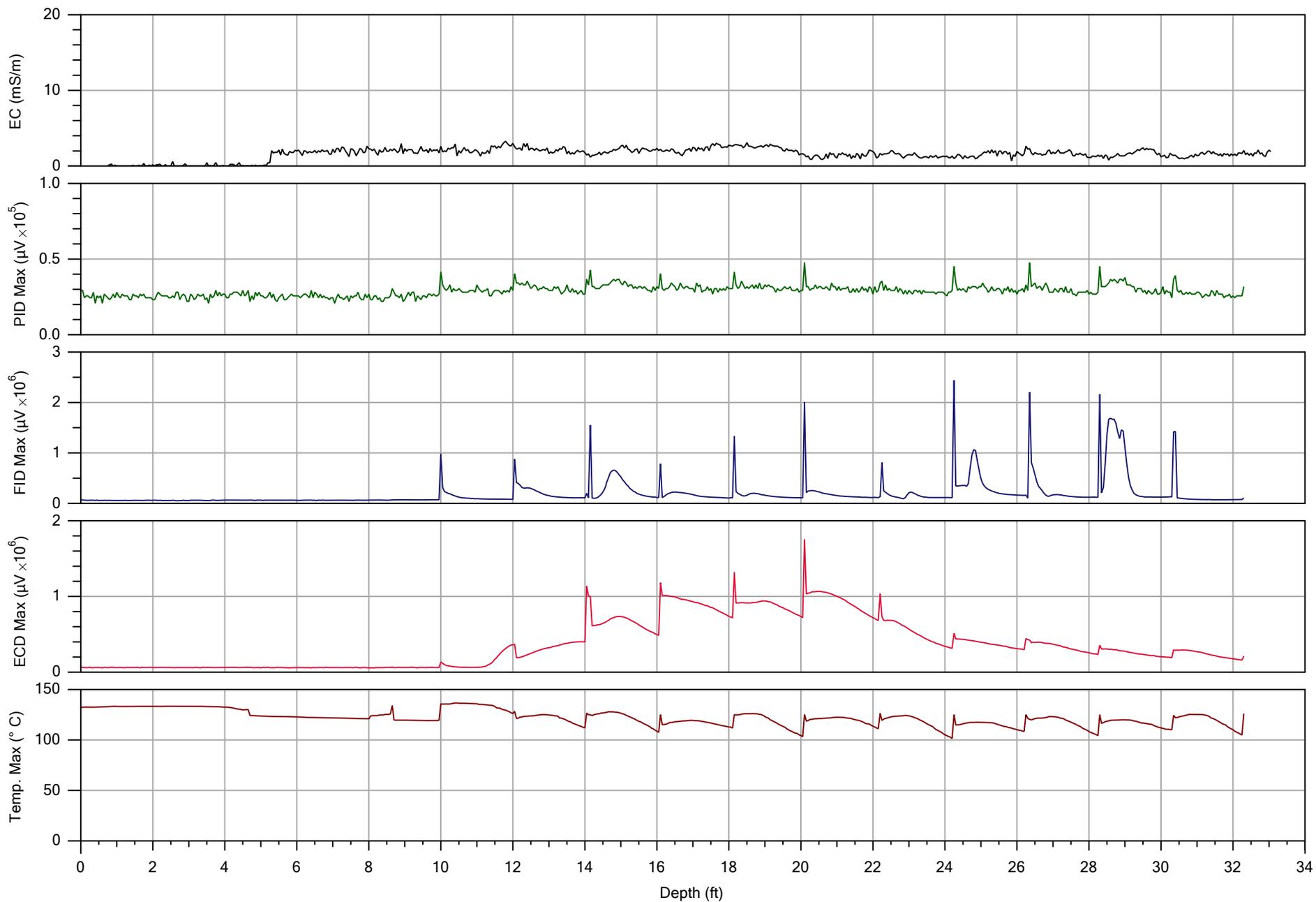
**Total Depth Logged:**           **189 feet**  
**Maximum Depth:**               **29 feet**  
**Minimum Depth:**               **13 feet**



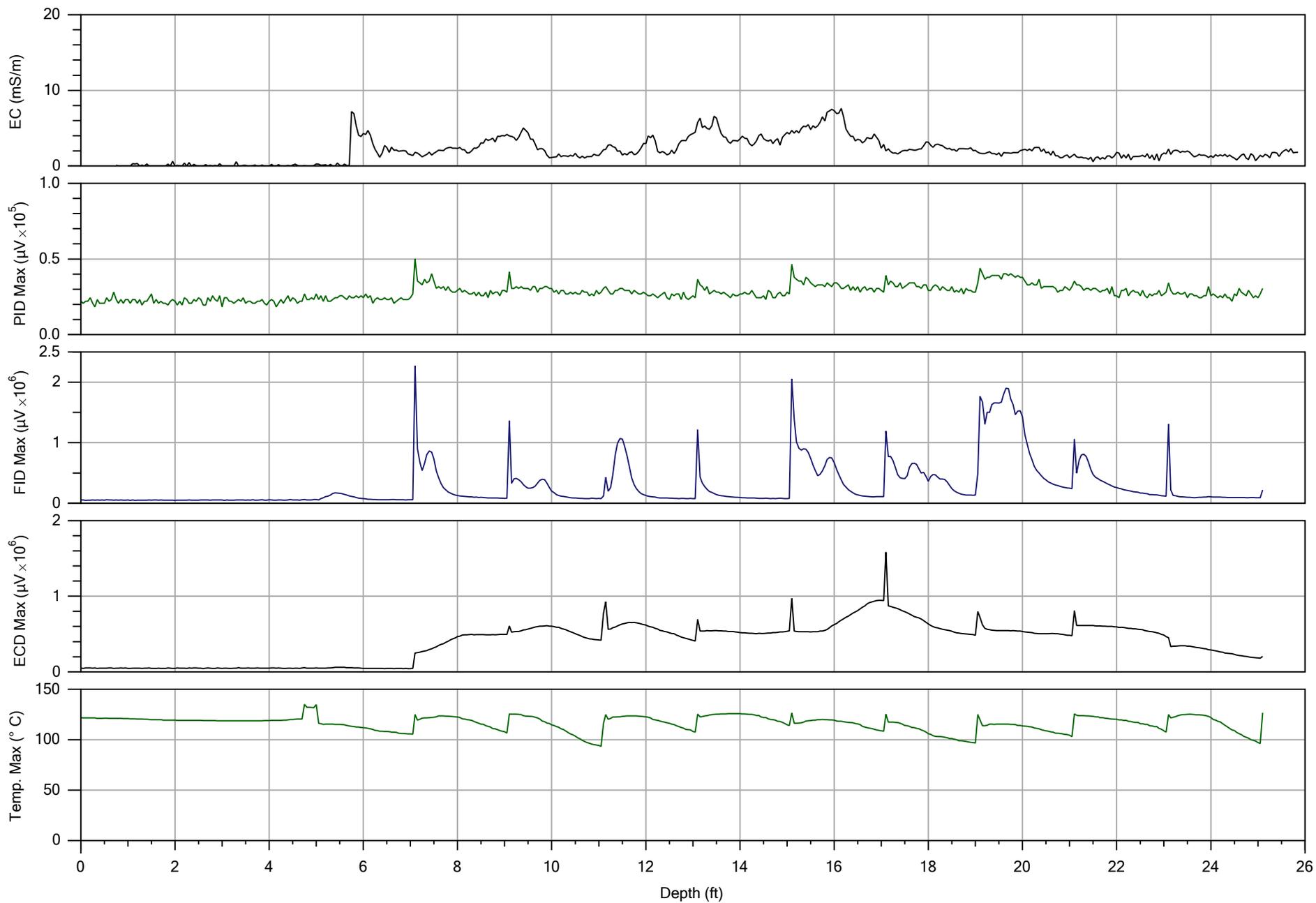
Company:	KB Labs	Operator:	Tim Nelson	File:	MIP01.MIP
Project ID:	Professional Cleaners Norcross	Client:	EMA/Rem-Con	Date:	1/23/2014
			Location:		



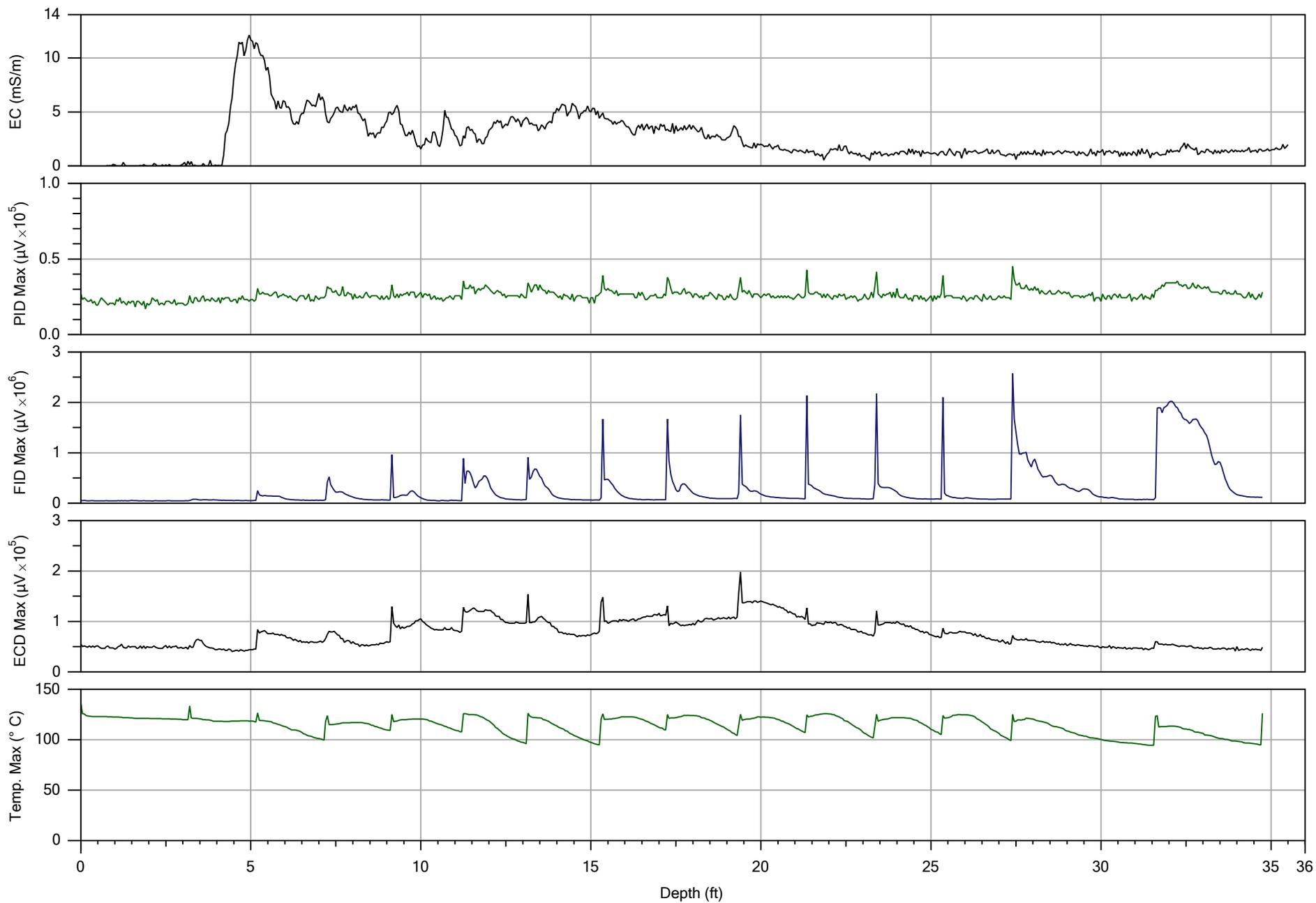
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Project ID:	Professional Cleaners Norcross	Client:	EMA/Rem-Con	Date:	1/23/2014
				Location:	



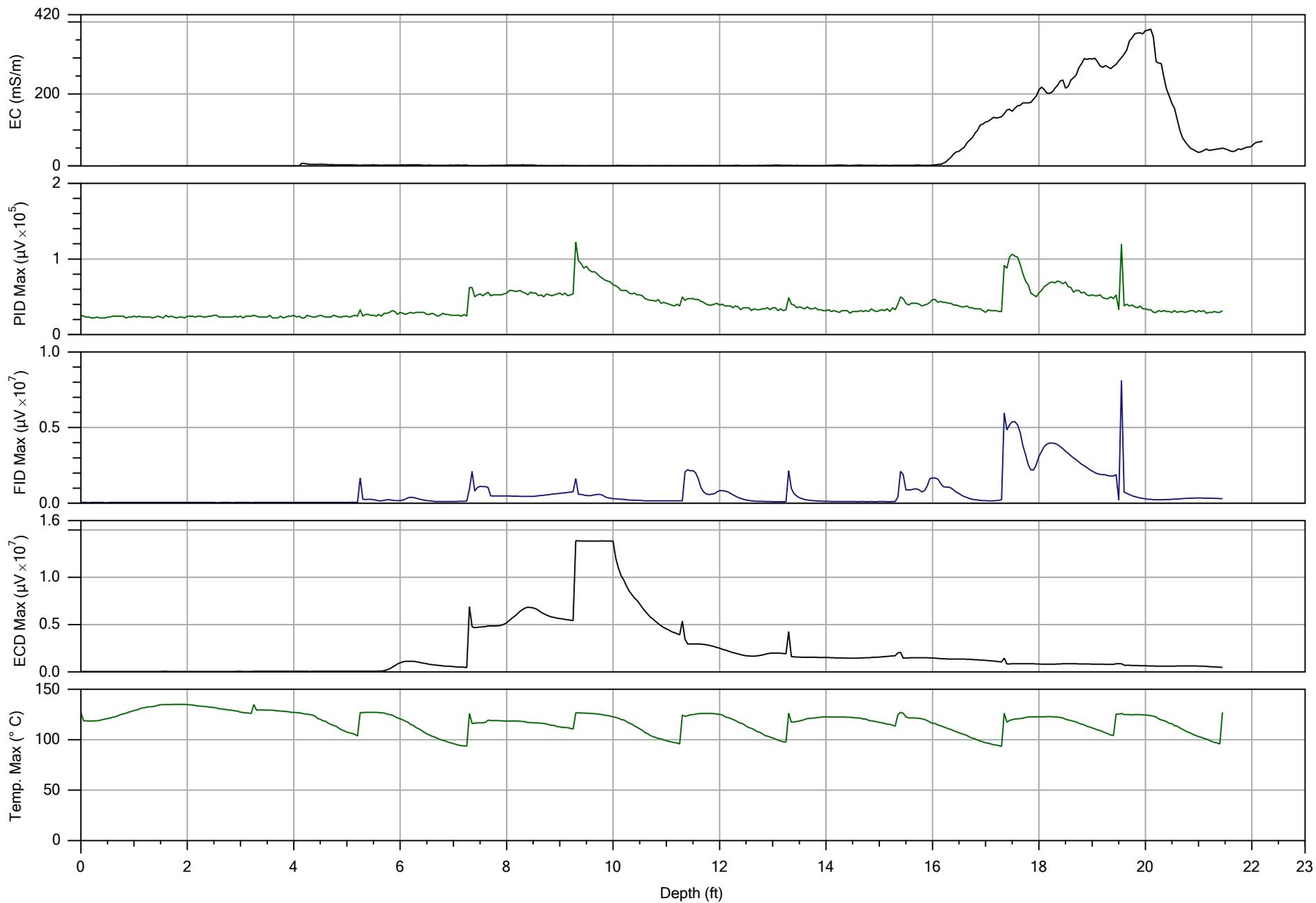
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Project ID:	Professional Cleaners Norcross	Client:	EMA/Rem-Con	Date:	1/23/2014
				Location:	



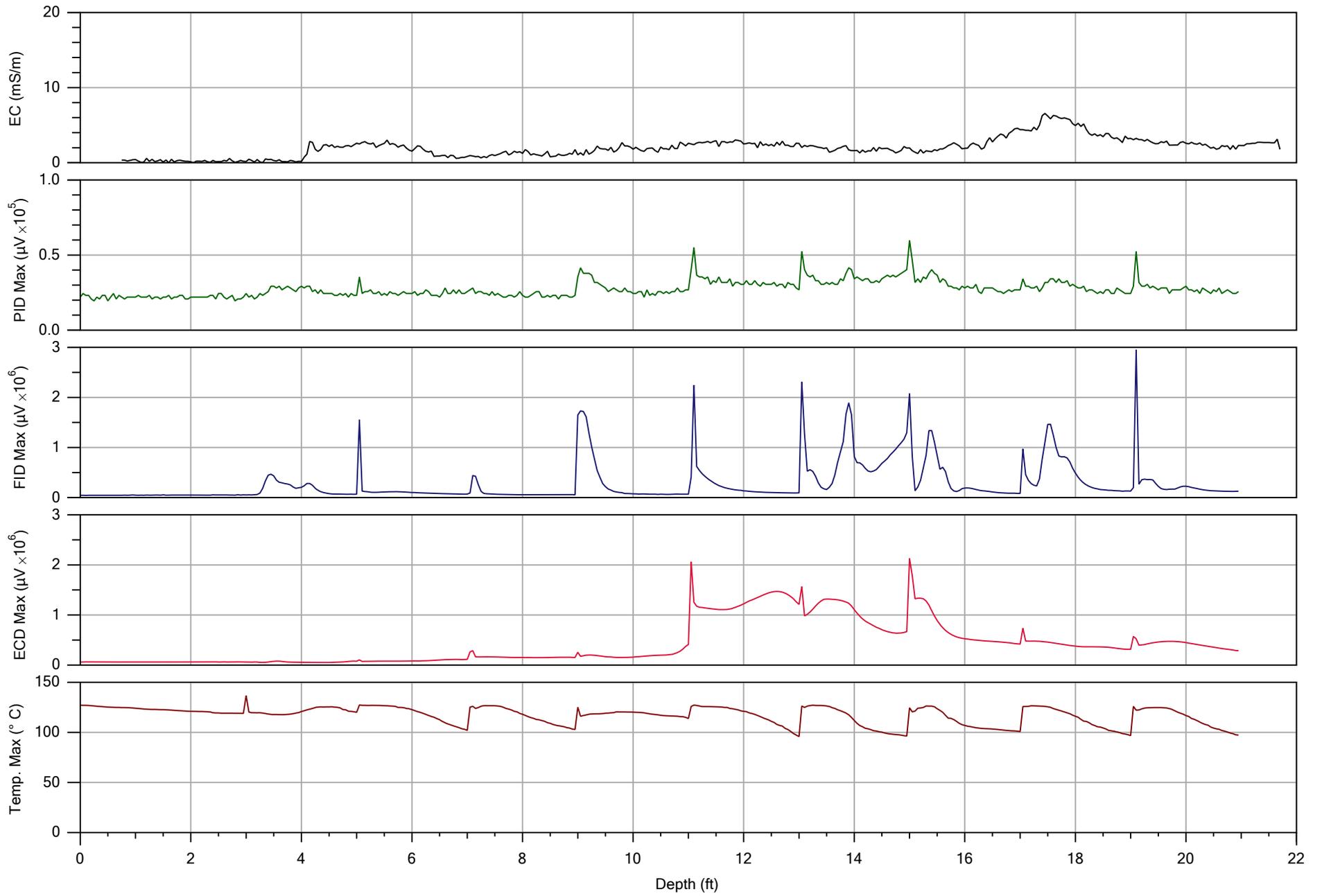
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Project ID:	Professional Cleaners Norcross	Client:	EMA/Rem-Con	Date:	1/23/2014
			Location:		



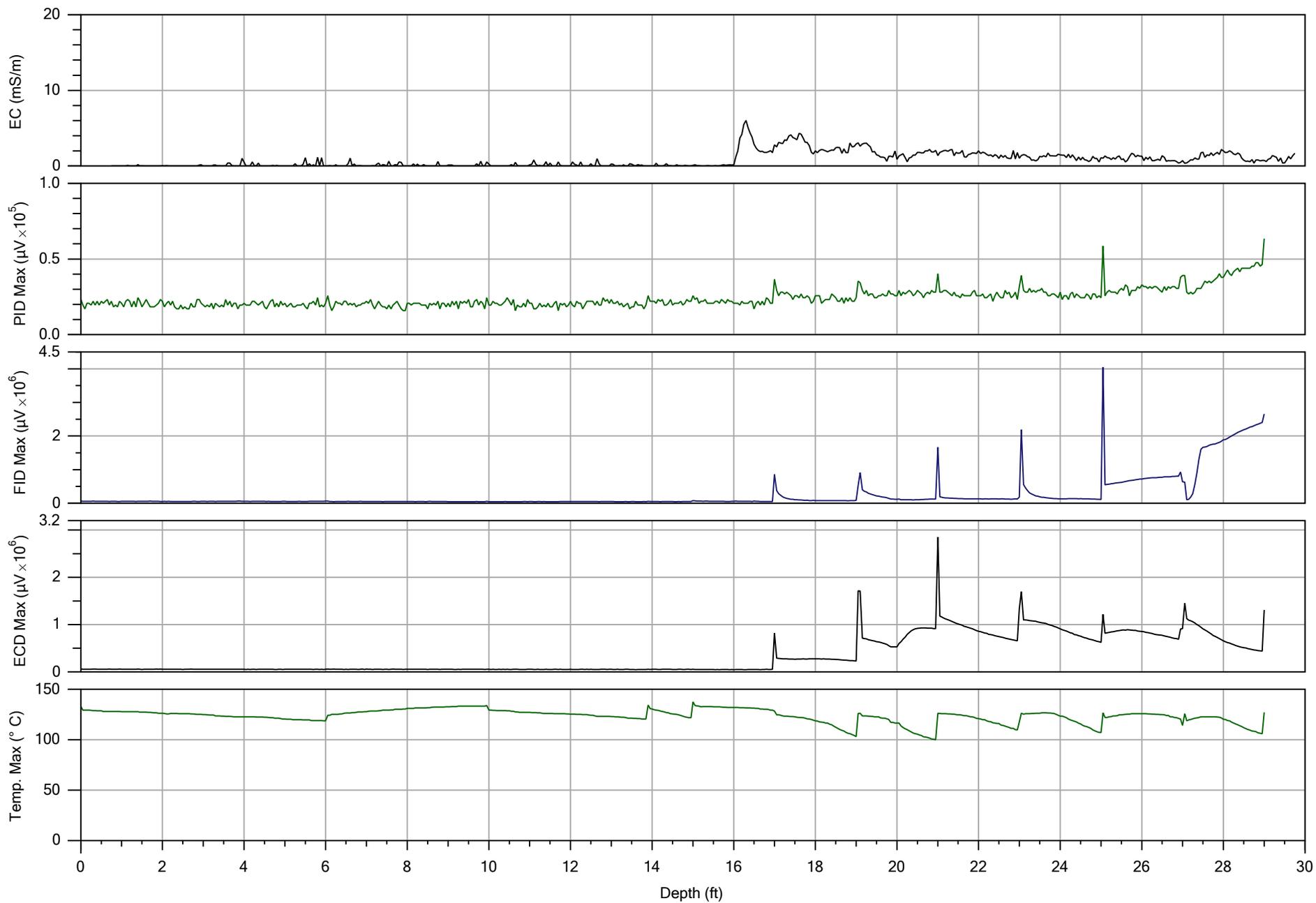
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Project ID:	Professional Cleaners Norcross	Client:	EMA/Rem-Con	Date:	1/23/2014
				Location:	



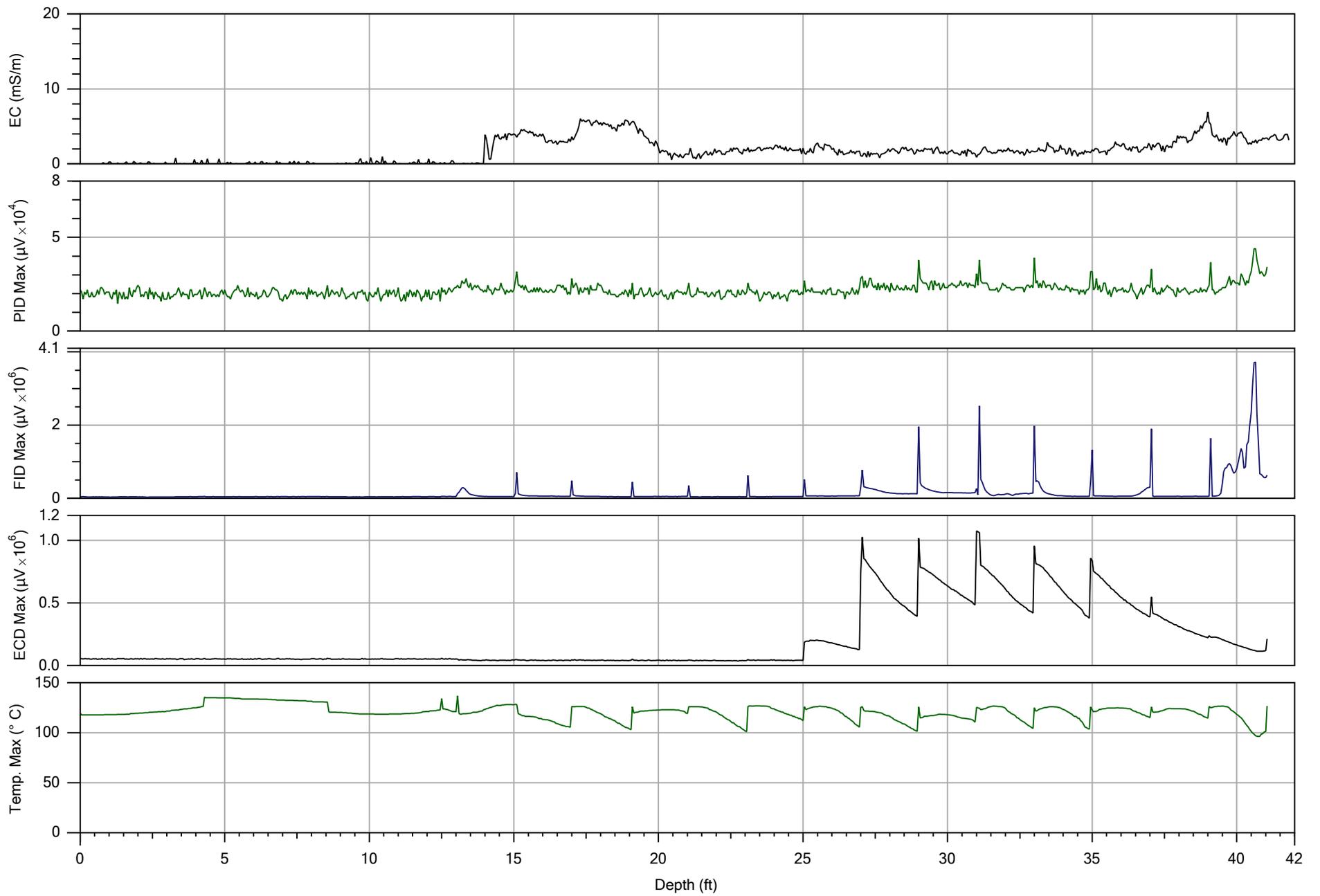
Company:	KB Labs	Operator:	Tim Nelson	File:	MIP06.MIP
Project ID:	Professional Cleaners Norcross	Client:	EMA/Rem-Con	Date:	1/23/2014
				Location:	



Company:	KB Labs	Operator:	Tim Nelson	File:	MIP07.MIP
Project ID:	Professional Cleaners Norcross	Client:	EMA/Rem-Con	Date:	1/23/2014
				Location:	



Company:	KB Labs	Operator:	Tim Nelson	File:	MIP08B.MIP
Project ID:	Professional Cleaners Norcross	Client:	EMA/Rem-Con	Date:	1/23/2014
				Location:	



Company:	KB Labs	Operator:	Tim Nelson	File:	MIP09.MIP
Project ID:	Professional Cleaners Norcross	Client:	EMA/Rem-Con	Date:	1/23/2014
				Location:	

**APPENDIX D**  
**STRATIGRAPHIC AND INSTRUMENTATION LOG FOR MW-11**

EMA, LLC  
5262 Belle Wood Court, Ste A  
Buford, GA 30518

# Stratigraphic & Instrumentation Log MW-11

(Page 1 of 1)

2040 Beaver Ruin Rd  
Norcross, GA

Date Completed : 4-21-14 @ 1200  
Northing Coordinate :  
Easting Coordinate :  
Survey By : EMA, LLC

Driller/Equipment : GeoLab/GeoProbe 7822 DT  
Surface Elev. : ft AMSL  
Top of Casing elev. : ft. AMSL  
Logged By : B. Cortelloni

Project # 559

Depth in Feet	Surf. Elev.	USCS	GRAPHIC	Water Levels		Sample ID	Blow Count	PID Reading (ppm)	Lab No.	Well Construction Information
				▼ During Drilling	▽ After Completion					
DESCRIPTION										
0				ML- SILT, some fine sand, loose, brown dry						<p>Bolt Down Cover w/ plug 2' x 2' Sloping Concrete Pad Bentonite Seal/Annular Seal Casing Silica Sand Pack 0.01-inch slot Screen</p>
2										
4										
6										
8		ML								
10										
12										
14										
16										
18				increasing clay content, gray						
20		ML								
22				increasing sand content, fine to coarse, wet at 22						
24		ML								
26										
28				End of boring						
30										

### WELL CONSTRUCTION

Drilling Method : 4.25-inch HSA  
Hole Diameter : Nominal 8-inch

### WELL CASING

Material : SCH 40 ASTM D1784/5 F480 NSF Rated  
Diameter : 2-inch  
Joints : Flush Treaded  
Interval (ft. bgs) : 0-16

### WELL SCREEN

Material : SCH 40 ASTM D1784/5 F480 NSF Rated  
Diameter : 2-inch  
Joints : Flush Treaded  
Opening : 0.01-inch  
Interval (ft. bgs) : 16-26

### FILTER PACK

Material : 20/40 NSF Silica Sand  
Placement Method : Gravity  
Volume : 2.0 cubic feet  
Interval (ft. bgs) : 14-27

### ANNULUS SEAL

Material : Bentonite Pellets  
Placement Method : Gravity Fed/Hydrate  
Volume : 2.0 cubic feet  
Interval (ft. bgs) : 0.3-14

### PROTECTIVE CASING

Above/Flush : Flush mount bolt down/sloping pad  
Cap : Locking Expansion Plug

### DEVELOPMENT

: Surge/bail -sediment free

### NOTES:

All equipment steam cleaned prior to use or new.  
This monitoring well installation complies with EPD Manual for Groundwater Monitoring Manual, September 1991

**APPENDIX E**  
**UPDATED COST ESTIMATE**

**PG OVERSIGHT SUMMARY  
PROFESSIONAL CLEANERS AND LINEN SERVICE  
NORCROSS, GEORGIA**

*PG Summary of Time*

3/1/14 to 5/1/14

Install Well (MW-11)/Complete Log

Prepare Progress Report 3

*Units Unit Cost Sub-Total*

10 \$ 85.00 \$ 850.00

12 \$ 85.00 \$ 1,020.00

sub-total \$ 1,870.00

**ESTIMATED COSTS  
PROFESSIONAL CLEANERS AND LINEN SERVICE  
NORCROSS, GEORGIA**

<b>Activity</b>	<b>Initial Estimate</b>			<b>Cost to Date</b>	<b>Updated Remaining Costs</b>		
	<b>Units</b>	<b>Unit Cost</b>	<b>Sub-Total</b>		<b>Units</b>	<b>Unit Cost</b>	<b>Sub-Total</b>
<i>Consulting</i>							
VRP Application/Report (completed)			\$ 3,300.00				\$ -
Additional Groundwater Delineation Investigations <sup>(1)</sup>			\$ 10,000.00				\$ 3,500.00
Semiannual Sampling/Progress Reports <sup>(2)</sup>			\$ 10,000.00				\$ 4,000.00
File Deed Restriction			\$ 2,500.00				\$ 1,000.00
Voluntary CSR Report			\$ 6,800.00				\$ -
		sub-total	\$ 32,600.00			sub-total	\$ 8,500.00
 <i>Remediation</i>							
ISCO Remediation			\$ 34,000.00 -- \$ 46,000.00				\$ 35,000.00
		<b>Total Estimate Range</b>	<b>\$ 66,600.00 -- \$ 78,600.00</b>		<b>\$ 93,730.00</b>		<b>\$ 43,500.00</b>

Notes:

- 1) Originally based on only six wells. A total of 12 wells installed.
- 2) This assumes only one more progress report will be required

**INVOICE SUMMARY SINCE LAST SUBMITTAL  
PROFESSIONAL CLEANERS AND LINEN SERVICE  
NORCROSS, GEORGIA**

<i>Invoice</i>	<i>Amount</i>	<i>Scope of Work</i>
559-0214	\$ 6,880.00	Conduct Soil Investigation and MIP Investigation
559-0414	\$ 7,500.00	Install MW-11 Prepare Progress Report 3
	<hr/>	
	\$ 14,380.00	<b>TOTAL</b>