



July 30, 2015

Ms. Antonia Beavers
Georgia Department of Natural Resources
Environmental Protection Division
Response and Remediation Program
2 Martin Luther King Dr., S.E., Suite 1054 East
Atlanta, Georgia, 30334

RE: **3rd SEMI-ANNUAL PROGRESS REPORT
OMNI SOURCE FACILITY (FORMER LOEF COMPANY SITE)
590 OLD HULL ROAD, ATHENS, GEORGIA
HSI SITE NO. 10376
VRP SITE NO. 802705980
Apex Project No.: 510393-002**

Dear Ms. Beavers:

Apex Companies, LLC (Apex) is pleased to submit the 3rd Semi-Annual Progress Report for the OmniSource Facility (Former Loef Company Site). Should you have any questions concerning this, please do not hesitate to contact the undersigned.

Sincerely,

APEX COMPANIES, LLC

A handwritten signature in cursive script that reads 'Kathleen Roush'.

Kathleen Roush, P.G.
Division Manager
GA Registration No. 1799

Enclosure

cc: Peter Pozzo – OmniSource Corporation
Brian Winters – OmniSource Corporation
David Hatchett – Hatchett & Hauck, LLP



**3rd SEMI-ANNUAL PROGRESS REPORT
OMNI SOURCE FACILITY
(FORMER LOEF COMPANY SITE)
590 OLD HULL ROAD
ATHENS, GEORGIA
HSI SITE NO. 10376
VRP SITE NO. 802705980**

Submitted to:

Georgia Department of Natural Resources
Environmental Protection Division
Response and Remediation Program
2 Martin Luther King Dr., S.E., Suite 1054 East
Atlanta, Georgia, 30334

Submitted by:

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Apex Project No. 510393-002

July 30, 2015


Andrew Street, CHMM
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1.0 INTRODUCTION

Apex Companies LLC (Apex) is submitting this Progress Report on behalf of OmniSource Athens Division LLC (OmniSource) for the Former Loef Company Site, an industrial metals recycling facility occupying 21.34 acres of land at 590 Old Hull Road and 305 Athena Drive in Athens, Clarke County, Georgia. The site was listed on the Georgia Hazardous Site Inventory (HSI) on June 9, 1995 (Site Number 10376). The property location is shown on **Figure 1**. A Voluntary Remediation Program (VRP) application was submitted by Peachtree Environmental (Peachtree) on behalf of Hull Real Estate, LLC (Hull) on November 7, 2011. Hull is a previous owner of the site. Hull sold the property to OmniSource and committed to complete the remediation but later reneged on that commitment.

Prior remedial activities at the site include excavation and off-site disposal of approximately 43,000 tons of impacted soil from 2002 through 2003 and an in-situ groundwater treatment event completed in 2003. Hull previously informed the Georgia Environmental Protection Division (GAEPD), that they were no longer willing to complete site remediation work. On March 12, 2015 OmniSource submitted a VRP application with the intent to complete regulatory closure at the referenced site. The application identified site activities to be conducted necessary for site closure. In a letter dated May 8, 2015, GADEP accepted OmniSource as a participant in the VRP for the referenced property.

The primary objective of this report is to document the tasks completed by OmniSource from the period covering January 2015 through June 2015. This included the completion of additional assessment activities, an evaluation of groundwater data to determine the current status of the plume, and an evaluation of a potential path forward for closure.

2.0 ADDITIONAL ASSESSMENT ACTIVITIES

The additional assessment activities described in this report were designed to confirm current site conditions and to guide subsequent actions required for site closure. Field activities completed during this period included repair of monitoring well MW-1; sampling and abandonment of MW-2A; installation, development and sampling of MW-1D; and, slug testing in MW-4A, MW-11 and MW-12.

2.1 Monitoring Well Repair and Abandonment

As proposed in the March 12, 2015 Letter Report for the site and as agreed to by GAEPD, following sample collection monitoring well MW-2A was abandoned by sealing with a cement-bentonite mixture. This well was located in a very active portion of the site and had been damaged and replaced on several occasions. The safety of the well could not be guaranteed and was often covered with piles of scrap metal material. The well was abandoned by a licensed well driller in accordance with applicable requirements.

Monitoring well MW-1 was repaired by removing the damaged portion of above-ground casing and completing the well flush with grade surface. The well was subsequently sampled.

2.2 Monitoring Well Installation

At the request of GAEPD, monitoring well MW-1D was installed at a location downgradient of both monitoring wells MW-11 and recently abandoned monitoring well MW-2A. The well was installed

downgradient of these source area wells and consistent with GAEPD feedback to evaluate deeper groundwater conditions. Monitoring well MW-1D was advanced using hollow stem auger drilling techniques. All drilling equipment was decontaminated before advancing the boring in accordance with the SESD Operating Procedure for Field Equipment Cleaning and Decontamination (SESDPROC-205). The boring was advanced to the target depth using 4.25-inch inside diameter hollow stem augers. Soil samples were collected at five-foot intervals using standard penetration test procedures for geologic classification and field screening. The well was completed at a depth of 74 feet below land surface (bls) with a five-foot section of two-inch diameter 0.010-inch slotted schedule 40 PVC well screen attached to two-inch diameter schedule 40 PVC well casing. A six-inch layer of 20-40 silica sand was placed below the base of the well screen. The 20-40 silica sand pack was placed in the annular space and extended approximately two-feet above the top of the screen. A two-foot bentonite seal was extended from the top of the sand pack and allowed to hydrate for approximately eight hours. The remainder of the annular space around the well was filled with Portland cement grout. Monitoring well MW-1D was completed as a flush mounted well with a two-foot x two-foot by four-inch concrete well pad with a protective manhole cover. A water-tight locking well cap was installed at the top of casing. A soil boring log for MW-1D is included in **Appendix A**.

Monitoring well MW-1D was developed approximately 24-hours following completion by surging and pumping until free of fine particles. Development was considered complete when field turbidity measurements stabilized at less than 10 Nephelometric Turbidity Units (NTUs) and pH, temperature and specific conductivity measurements stabilized within approximately 5%.

Investigation derived wastes (IDW), including drill cuttings, monitoring well purge water and decontamination fluids were containerized in 55-gallon Department of Transportation (DOT)-approved drums. The drums were labelled with the site name and address, contents and date of accumulation. Drums were placed on pallets and stored in a central location pending transportation to an off-site disposal facility.

One liquid sample and one solid sample of IDW were collected for purposes of waste profiling and disposal. Composites samples composed of aliquots were collected from drums of the same source material in order to provide a representative sample. Samples were submitted to a Georgia-certified analytical laboratory for the following analyses:

- Target Compound List VOCs using EPA Method 8260B;
- 8 RCRA metals using toxicity characteristic leaching procedure (TCLP);
- pH using EPA Method 150.1; and
- Ignitability using EPA Method 1030.

IDW was transported and disposed of by A&D Environmental Services of Macon, Georgia. Final waste manifests signed by a representative of the disposal facility were not available at the time of this report submittal.

2.3 Groundwater Sampling

As described in the March 12, 2015 Letter Report for the site, groundwater samples were collected from 11 existing site monitoring wells (MW-3A, MW-4A, MW-6, MW-7A, MW-8A, MW-9 and MW-10 through MW-14) on January 21 through 23, 2015. Monitoring well MW-2A was sampled on May 20, 2015 prior to abandonment. Monitoring well MW-1 and newly installed bedrock monitoring well MW-1D were sampled on June 3, 2015. A Site Plan showing well locations is provided as **Figure 2**.

Upon arriving at the site, all wells were opened and allowed to equilibrate. Wells were then gauged with a clean oil/water interface probe and recorded to the nearest 0.01-feet. The wells were gauged in order of anticipated impact, moving from wells which have historically not exhibited detectable concentrations of regulated constituents to those which have exhibited the highest levels. Recorded depth to groundwater measurements for the January and May 2015 gauging events are provided in **Tables 1A** and **Table 1B**, respectively.

All wells were purged and sampled via low flow protocol using a peristaltic pump with Teflon tubing placed near the middle of the screened interval in accordance with the U.S. EPA Region IV Science & Ecosystem Support Division (SESD) March 6, 2013 Operating Procedure for Groundwater Sampling (SESDPROC-301-R3). The wells were sampled in order of impact, moving from wells which historically have not exhibited detectable concentrations of regulated constituents to those which have exhibited the highest concentrations. During low-flow well purging, groundwater chemistry parameters were recorded at five-minute intervals using a multi-probe meter which measured dissolved oxygen, electric conductivity, temperature, pH, and turbidity. Generally, groundwater samples are collected when water chemistry parameters are stable (e.g., pH values within 0.1 S.U., specific conductance within 5% and turbidity <10 NTUs) for three consecutive five-minute intervals. Groundwater sampling forms documenting the monitored groundwater chemistry parameters are provided in **Appendix B**.

Following purging, groundwater samples from each well were collected into laboratory supplied sample containers using the peristaltic pump. In accordance with SESDPROC-301-R3, samples for volatile organic compounds (VOCs) were collected using the “soda straw” method. The sample containers were labelled with a unique sample number, date and time of collection, sampler’s initials and analyses required. Following collection the samples were placed in a cooler with ice. Chain-of-custody documentation was maintained throughout the sampling event.

In addition to the groundwater samples, quality assurance/quality control (QA/QC) samples were collected in accordance with SESD Procedures. QA/QC Samples include:

- One trip blank per day for VOCs;
- One Field Duplicate per 10 samples; and
- One matrix spike/matrix spike duplicate per 20 samples.

Samples were transported to Analytical Environmental Services of Atlanta, Georgia and analyzed for the following parameters:

- Target Compound List VOCs using EPA Method 8260B (all wells – January, May & June 2015);
- Lead (all wells – January, May and June 2015);
- Total Organic Carbon using EPA Method 9060A (4 wells – January 2015);
- Sulfide using EPA Method 9030B (4 wells – January 2015);
- Chloride, Nitrate and Sulfate using EPA Method 9056A (4 wells – January 2015); and
- Ethane, Ethylene and Methane using Method RSK-175 (4 wells – January 2015).

A discussion of groundwater monitoring and sampling results is provided in Section 3.0.

With the exception of repaired well MW-1 and newly installed well MW-1D, the location and top-of-casing elevations of all monitoring wells was surveyed in January 2015 by a Georgia registered land surveyor in conjunction with groundwater sampling activities to support groundwater flow direction calculations and placement of future monitoring wells.

2.4 Groundwater Analytical Results

A summary of groundwater sampling analytical results are provided in **Tables 2** through **4**. Figures illustrating the site layout, potentiometric surface elevations and extent of dissolved trichloroethene (TCE) in groundwater are provided in **Figures 2** through **4**. Laboratory analytical results are included in **Appendix C**.

Laboratory analytical results remain consistent with that reported in the March 12, 2015 letter report; specifically, 1,1-dichloroethene (1,1-DCE), cis-1,2-dichloroethene (cis-1,2-DCE), tetrachloroethene (PCE), TCE, vinyl chloride and benzene were reported at concentrations exceeding Type 1 Risk Reduction Standards (RRSs) for groundwater in monitoring wells: MW-2A, MW-3A, MW-11, MW-12, and MW-1D. TCE was detected in MW-2A at a concentration of 140 micrograms per liter (ug/L) during the May 20, 2015 sampling event prior to abandoning the well. TCE was previously detected at 43 ug/L during the January 22, 2015 sampling event.

Laboratory analytical results indicate that monitoring well MW-11 continues to have the greatest concentration of TCE with a detected concentration of 1,500 ug/L reported in the January 2015 event. TCE was detected at a concentration of 17 ug/L in newly installed monitoring well MW-1D, completed to a total depth of 74 feet bls and located approximately 185 feet downgradient of source area well MW-11. No regulated constituents were detected in downgradient monitoring wells MW-4A, MW-7A, MW-8A and MW-10, with the exception of xylenes detected at a concentration of 8.6 ug/L in MW-10, well below the Type 1 RRS of 10,000 ug/L. No VOCs were detected in monitoring well MW-9A, previously designated as the site Point of Demonstration (POD) well by Hull. These results support earlier findings indicating that groundwater impacts do not extend off-site.

During the site wide sampling event conducted in January 2015, groundwater was also analyzed for the presence of lead. None of the samples exhibited lead at concentrations exceeding the laboratory practical quantitation limits (PQL). Lead has been shown to be below Type I RRSs and is no longer considered a constituent of interest (COI) at the site.

Duplicate samples were collected during the site wide groundwater sampling event to meet the quality assurance/quality control (QAQC) protocol in accordance with applicable standards. The analytical results for most duplicate samples did not significantly differ from those for the original samples and fall within acceptable ranges for relative percent difference. In cases where a detected concentration for a constituent was greater in a duplicate sample compared to the primary sample, the greater detection was reported in **Tables 3A and 3B**.

2.5 Groundwater Slug Testing

A slug test was performed on monitoring wells MW-4A, MW-11 and MW-12 on May 20, 2015. Slug test data were used to support groundwater contaminant fate and transport modeling efforts by establishing site specific values for hydraulic conductivity. A slug was added and removed, and water level recovery was recorded with a Solinst level logger at one-second intervals until static conditions were attained. Water recovery data was entered into the AQTESOLV program, and hydraulic conductivity values were calculated for each monitoring well using the Bouwer Rice method. Results are provided in **Appendix D**.

The calculated hydraulic conductivities were as follows:

<u>Well</u>	<u>Hydraulic Conductivity (K)</u>	<u>General Location</u>
MW-12	2.299 ft/day	Upgradient of Plume
MW-11	0.9421 ft/day	Source Area
MW-4A	0.3843 ft/day	Downgradient perimeter

3.0 GROUNDWATER GEOCHEMISTRY

Groundwater analysis and geochemical parameters were performed at select monitoring wells within the TCE source area, and upgradient and downgradient of the source area (MW-4A, MW-8A, MW-9A, MW-11 and MW-13) to determine a future closure strategy for the site. Geochemical parameters were collected to determine if monitored natural attenuation (MNA) is a viable remedial alternative for the dissolved chlorinated volatile organic compounds (CVOCs) present in groundwater. Monitoring well MW-13 is located side gradient of the contaminant plume area and acted as a background well for collection of MNA parameters. Monitoring well MW-11 is located within the contaminant plume area and monitoring wells MW-4A, MW-8A and MW-9A are located downgradient of the contaminant plume. The following parameters were evaluated.

- Acidity (pH);
- Dissolved oxygen (DO);
- Oxidation reduction potential (ORP);
- Conductivity;
- Total Organic Carbon (TOC);
- Methane, ethane and ethene; and
- Nitrate, sulfate and chloride electron acceptors.

The additional groundwater parameters listed above were evaluated separately, and in combination, to determine if conditions are favorable for degradation.

Total Organic Carbon

Elevated total organic carbon (TOC) was noted in source area monitoring well MW-11 as well as downgradient monitoring wells MW-8A and MW-9A. The carbon provides the energy source to drive the dechlorination process. The origin of the TOC can be natural and/or anthropogenic. In this case, the historic release of petroleum compounds (including the benzene and xylenes observed in the groundwater) is likely providing at least some of the TOC required by the dechlorinating bacteria.

Dissolved Oxygen

Dissolved oxygen (DO) readings decrease in a downgradient direction at the site and are generally anaerobic in the downgradient plume area with DO concentrations ranging from 0.96 milligrams per liter (mg/L) in MW-4A to 0.56 mg/L in MW-8A. The anaerobic conditions are favorable for reductive dechlorination.

Acidity (pH)

Recorded pH values ranged from 4.26 at monitoring well MW-4A to 6.04 at MW-9A. In general, pH values are acidic within the source area. Although some dechlorination can occur at levels below 5.0, CVOC degrading microbes prefer generally higher pH levels for degradation of cis-

1,2-DCE and vinyl chloride. This drop in pH is likely due to the buildup of hydrochloric acid from the degradation process. The pH of the groundwater increases at the perimeter of the plume with well MW-8A and MW-9A. In these wells the dissolved oxygen levels are also reduced to anaerobic levels.

Inorganic Constituents

Nitrate concentrations ranged from 2.1 mg/L within the plume (MW-11), to below laboratory practical quantitation limits (PQL) (<0.25 mg/L) in wells MW-8A and MW-9A. Concentrations below 1 mg/L are favorable; otherwise, the nitrate could compete with the reductive pathway. Much like the nitrate, lower sulfide concentrations are favorable for reductive dechlorination. At the site, there was no sulfide present at concentrations exceeding the laboratory PQL of 2.0 mg/L. When chloride concentrations exceed double that of background concentrations, the increase is considered to be a direct result of the dechlorination process. At the subject site, the chloride levels increase by an order of magnitude from background levels, to those observed within the plume and in downgradient areas.

The oxidation reduction potential (ORP) values were high across the site. The ORP values drop to within acceptable levels downgradient at monitoring well MW-9A.

Methane, Ethane, and Ethene

During the January 2015 sampling event, methane was detected in source area well MW-11, and downgradient well MW-8A at a concentration of 3,600 ug/L and 830 ug/L, respectively. High methane concentrations indicate that methanogenesis is likely contributing to the biodegradation of TCE and its daughter products within the plume area. Methane concentrations below approximately 500 ug/L (as found in MW-4A, 9A, and 13) are favorable for the oxidation of the vinyl chloride produced during the dechlorination process. The changes observed at the subject site are favorable for the complete biodegradation of the TCE through each of the degradation products.

Dissolved ethene was detected in source area monitoring well MW-11 at a concentration of 330 ug/L. Ethane and ethene were not detected in any of the other four monitoring wells sampled for MNA parameters. The presence of ethene in MW-11 indicates complete breakdown of TCE.

Overall, based on the groundwater data reviewed, conditions are favorable for the natural biodegradation and attenuation of TCE in groundwater, and sampling results confirm that these processes are occurring.

4.0 REVIEW OF SITE CONCEPTUAL MODEL

The initial VRP application submitted by Hull in 2011 included a description of the Site Conceptual Model developed by Peachtree Environmental, Inc. (Peachtree). Based on the data obtained by Apex in both January and May 2015, it has been confirmed that groundwater flows toward the southeast (**Figures 3A and 3B**). A vertical gradient will be established once well MW-1D has been surveyed.

The upper 80 feet or more of the soil column consists of saprolitic soils. Partially weathered rock (PWR) and/or bedrock was not encountered in well MW-1D drilled to approximately 74 feet deep. The plume appears to attenuate in the deeper saprolite, before reaching the PWR unit. This limits the potential seepage velocity of the plume.

Slug test data indicate that the saprolitic material has a hydraulic conductivity (K) ranging from 0.3843 ft/day (downgradient perimeter) to 2.299 ft/day (upgradient). The groundwater flows to the southeast at a gradient ranging from 0.014 ft/ft (side wide) to 0.023 ft/ft across the plume area. Gradients were measured from the January 2015 potentiometric map. Using an effective porosity of 18%, an average K of 0.6632 ft/day (average of values observed in MW-4A and MW-11), and a gradient of 0.023 (measured in the plume area perpendicular to potentiometric lines between MW-11 to MW-4A), the seepage velocity of the plume would be expected to be approximately 30.4 feet per year. Across the site, the seepage velocity could range from 65 to 107 ft/year using the more conservative K value observed in well MW-12, gradients ranging from 0.014 ft/ft (site wide) to 0.023 ft/ft (plume area), and an effective porosity of 18%.

Remedial activities were conducted in 2002 and 2003 to address soil and groundwater. Prior remedial activities at the site include excavation and off-site disposal of approximately 43,000 tons of impacted soil from 2002 through 2003 and an in-situ groundwater treatment event completed in 2003 near MW-2A. Based on this work, the impacts to soil have been addressed, and impacted groundwater is limited to areas within the central portion of the subject site at MW-11. The constituents of interest are now limited to those VOCs shown on Table 2.

The closest surface water body is more than 1,000 feet from the site and groundwater is not being utilized on or near the site for drinking water purposes. There are no structures which overlay the groundwater plume which could result in a vapor intrusion hazard. Since the plume is limited to the subject site and the perimeter of the plume is more than 300 feet from any downgradient structure, the impacts do not pose a vapor intrusion hazard to off-site areas.

5.0 CONTAMINANT TRANSPORT EVALUATION

5.1 General

The initial release of CVOCs was assumed to have occurred several decades ago when metals recycling operations first began at the site. Impacted soils were removed from the site in the early-2000s; therefore, remaining contaminant mass consists of residual dissolved phase concentrations present in the saturated interval. As mentioned above, the elevated concentrations of CVOCs around MW-2A were addressed in 2003 with the injection of HRC to promote the biodegradation of the CVOCs. Peachtree reports that concentrations of the TCE were reduced by 76%. The previous source area remedial activities were conducted to move the site toward a MNA alternative. As these remedial activities were successfully completed, the site data was evaluated to determine if MNA and the use of environmental covenants is an appropriate method to protect human health and the environment in the future.

TCE was addressed in 2003 using active remedial methods at the area around MW-2A. The highest TCE concentrations are now observed at MW-11. During the January 2015 sampling event, TCE was measured at 1,500 ug/L at this well.

In order to evaluate the risk that regulated constituents in groundwater could impact a potential receptor within 1,000 feet of the downgradient extent of the plume, and to establish the time required to achieve compliance with applicable RRSs for groundwater, Apex evaluated the groundwater data associated with the site.

Dependent upon site conditions, groundwater may be allowed to naturally degrade and attenuate over time. In order to consider this option, the following conditions should apply:

- The source of contamination should be controlled or remediated;
- The COIs should have the capacity to degrade or attenuate at the site;
- The time and direction of the contaminant travel should be able to be predicted; and
- The continued migration of the COCs should not impact any foreseeable receptor at concentrations above applicable Standards.

Significant effort was made in the early 2000s to remove impacted soils and address the source area at MW-2A. In addition, the horizontal and vertical limits of the plume have been delineated. To evaluate if the plume will continue to shrink in size and if potential receptors may be impacted, Apex utilized three lines of evidence:

- Primary lines of evidence - historical groundwater monitoring data;
- Secondary lines of evidence - geochemical characteristics of the groundwater; and
- Optional lines of evidence - environmental fate modeling results.

The sections below provide a summary of our evaluation of each.

5.2 Primary Lines of Evidence

In accordance with EPA guidance, the most reliable line of evidence to determine if MNA is appropriate for a site is actual groundwater monitoring data (primary lines of evidence). The primary lines of evidence at this site indicate that the plume has reached steady state conditions and appears to be shrinking in size. This is due to the removal of the source material and the presence of natural and anthropogenic organic carbon in the aquifer to aid in the natural biodegradation process.

The release was initially discovered in 1993 and groundwater monitoring activities have been conducted since 2000. Concentrations of TCE were the highest at well MW-2A which exhibited 9,600 ug/L of TCE in 2003. This was also associated with elevated concentrations of associated breakdown products including cis-1,2-Dichloroethene (cis-1,2-DCE) (1,500 ug/L) and vinyl chloride (130 ug/L). Low concentrations of petroleum fuel related compounds including benzene, toluene, and xylenes have been detected in wells MW-2A, MW-3A, and MW-4A through at least 2011. Petroleum fuels provide organic carbon helpful for the biodegradation of the CVOCs. The historical analytical data is included in **Appendix E**.

HRC injections were conducted in the area around MW-2A in 2003, nearly 12 years ago. These injections decreased concentrations by a reported 76%. There has been little rebounding of concentrations since that time. Due to the known residency time of the HRC material, the continued degradation of the CVOCs across the site since that time is likely not the result of residual HRC material in the groundwater, but is due to ambient conditions (including the TOC) present in the subsurface throughout the plume area.

Over the last 22 years, the TCE plume has remained relatively isolated within the center of the subject property. TCE had previously been detected at MW-4A at concentrations ranging as high as 51 ug/L. No TCE was detected at this well during the January sampling event, and levels have been very near or below the Type I RRS since after the August 2011 sampling event. In addition, as shown by the concentration of TCE present in MW-1D, little of the CVOCs migrated downward. Utilizing the seepage velocities calculated above in section 4.0, at a velocity ranging from 30 to 107 ft per year, the plume would be expected to have migrated a minimum of 660 to 2,350 feet downgradient from the source area over the 22 year known history of the release. In fact, the plume is now limited to a horizontal extent of approximately 250 feet, between MW-11 and MW-

4A. This indicates that with the source reduction and degradation processes at work over that time, the horizontal and vertical extent of the plume has been limited so that it is either stable or shrinking in size.

5.3 Secondary Lines of Evidence

Secondary lines of evidence consist of geochemical data used to evaluate if the conditions within the aquifer are suitable for the biodegradation of the COCs present. As described above in Section 3.0, Apex collected geochemical data to evaluate the potential for continued reduction dechlorination of the CVOCs. All degradation products are present in the groundwater including cis-1,2-DCE, vinyl chloride, and ethene. This is due to the presence of the organic carbon which is providing the necessary elements needed for natural degradation processes. The organic carbon source likely includes both natural and anthropogenic sources. This has played a major role in limiting the movement and decreasing the concentration of the plume. As noted above, the plume has not moved much beyond the center of the subject site in over 22 years. Based on the geochemical data, it is anticipated that this trend should continue, further limiting the movement of the CVOCs from the subject site.

5.4 Optional Lines of Evidence

To determine if MNA is a viable alternative since the source material has been addressed, Apex utilized a one-dimensional screening groundwater contaminant transport model. A screening model can provide a simplified examination of the site and help determine if natural attenuation is a feasible remedial option. The model BIOCHLOR was selected. BIOCHLOR was developed by Groundwater Services, Inc. for the Air Force Center for Environmental Excellence. BIOCHLOR uses a combination of site specific data and published literature values to determine the physical properties of the plume. Information regarding the model, input parameters, aquifer characteristics, etc. is provided in **Appendix F**.

The purpose of the modeling is to predict the migration pattern of a chlorinated solvent plume where no engineering controls have been implemented and MNA is deemed a feasible groundwater remedial option. BIOCHLOR was used to estimate environmental fate of the COIs in the shallow aquifer assuming an overall groundwater flow toward the southeast. Since it is a one dimensional model it is not designed for plume traveling in several directions, or estimating environmental fate within multiple groundwater zones.

BIOCHLOR was determined to be suitable for use at this site because the area to be modeled consists of the area downgradient of MW-11 where groundwater flow is directly toward MW-4A and modeling vertical migration is not warranted. Additional assessment activities conducted confirmed that the majority of the CVOCs are limited to the surficial aquifer system. The well installed at depth (MW-1D) contained TCE at 12 ug/L, only slightly higher than the associated RRS. The most reliable lines of evidence are historical data and this data indicates that steady state conditions have likely been reached without additional source treatment over the last decade. Therefore, the model chosen to evaluate the site and future movement of the plume is appropriate.

The model was calibrated to the current trend of the plume extending to the southeast within the saprolite unit from wells MW-11 to MW-4A. Well MW-4A was assumed to be the POD for modeling purposes since concentrations in the well are below laboratory quantitation limits, and this well would yield a more conservative result than MW-9A. Model input parameters and results are included in **Appendix F**.

The model was calibrated to current site conditions with existing groundwater gradients observed on the property. Based on the current biodegradation rates, the results confirm that with the current biodegradation rates, the CVOC plume should remain steady and limited to the subject site. As discussed in Section 5.2, the primary lines of evidence indicate that steady state conditions have been achieved.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Additional assessment activities were completed at the site, consisting of installation of a deep monitoring well downgradient of the source area, abandonment of monitoring well MW-2A, groundwater sampling and analysis, fate and transport modeling and evaluation of remedial alternatives.

Regulated constituents, 1,1-DCE, cis-1,2-DCE, PCE, TCE, vinyl chloride and benzene were reported at concentrations exceeding Type 1 RRSs for groundwater in one or more of the following monitoring wells: MW-2A, MW-3A, MW-11, MW-12, and MW-1D.

No regulated constituents were detected in downgradient monitoring wells MW-4A, MW-7A, MW-8A, and MW-10, with the exception of a trace detection of xylenes of 8.6 ug/L in MW-10, well below the Type 1 RRS of 10,000 ug/L. MW-9A was designated as the POD well for the site under the initial VRP application submitted by Hull. Based on the confirmed groundwater flow directions, well MW-4A should also be considered a POD well for this site as well. No COIs were observed in either POD well as part of the 2015 groundwater sampling events.

Groundwater sampling analytical results indicate that:

- groundwater impacts are limited to the subject site;
- the TCE (and daughter products) plume is stable and not migrating near the POD wells at concentrations in excess of Type 1 RRSs, and;
- site conditions are favorable for natural biodegradation of TCE as evidenced by the presence of daughter compounds including vinyl chloride and ethene.

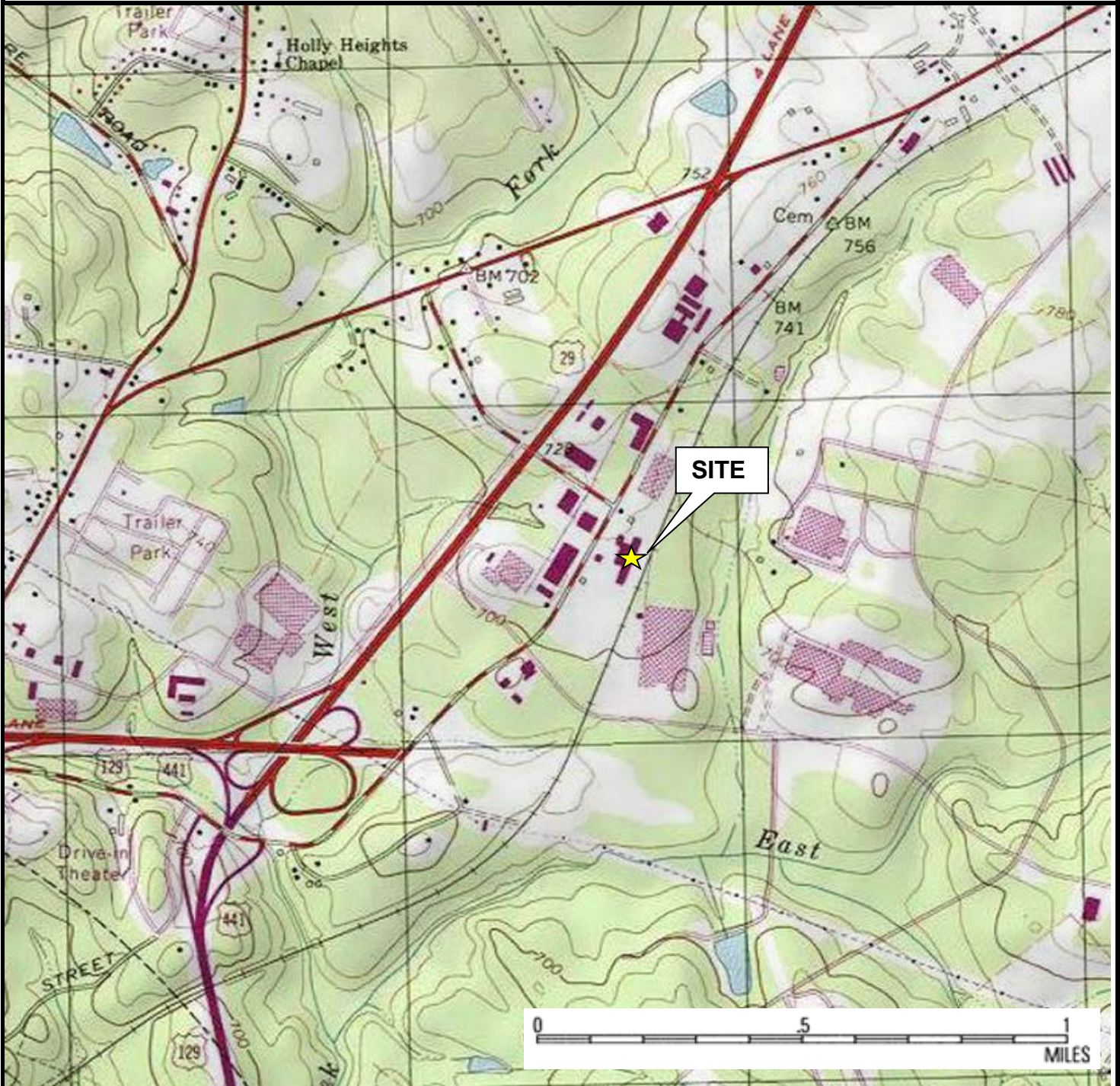
These findings support monitored natural attenuation as a feasible and appropriate remedial approach for the site. Due to the quantity of data that has been collected at the site, Apex recommends that two additional semi-annual groundwater sampling events be conducted to confirm the plume stability prior to site closure utilizing Uniform Environmental Covenants (UECs). These events will include sampling the existing wells in accordance with the procedures previously utilized as part of the January 2015 sampling event and as outlined in the OmniSource VRP application of March 12, 2015. The initial event would be conducted within four weeks of approval. As part of this event, groundwater will be analyzed for the presence of VOCs utilizing EPA Method 8260. Samples will not be analyzed by an off-site laboratory for the presence of natural attenuation parameters. No additional site assessment activities are recommended.

Apex has included a summary of hours invoiced, and the report certification as **Appendices G** and **H**, respectively.

FIGURES

**Figure 1
Site Location Map**

**Former Loef Company Property
590 Old Hull Road
Athens, Georgia**



U.S. Fish and Wildlife Services
National Wetlands Inventory
USGS Topographic Map



10610 Metromont Parkway, Suite 206
Charlotte, NC
Telephone: (704) 799-6390

Project:
OmniSource - VRP

Apex Job #: 510393-002

Date: July 2015



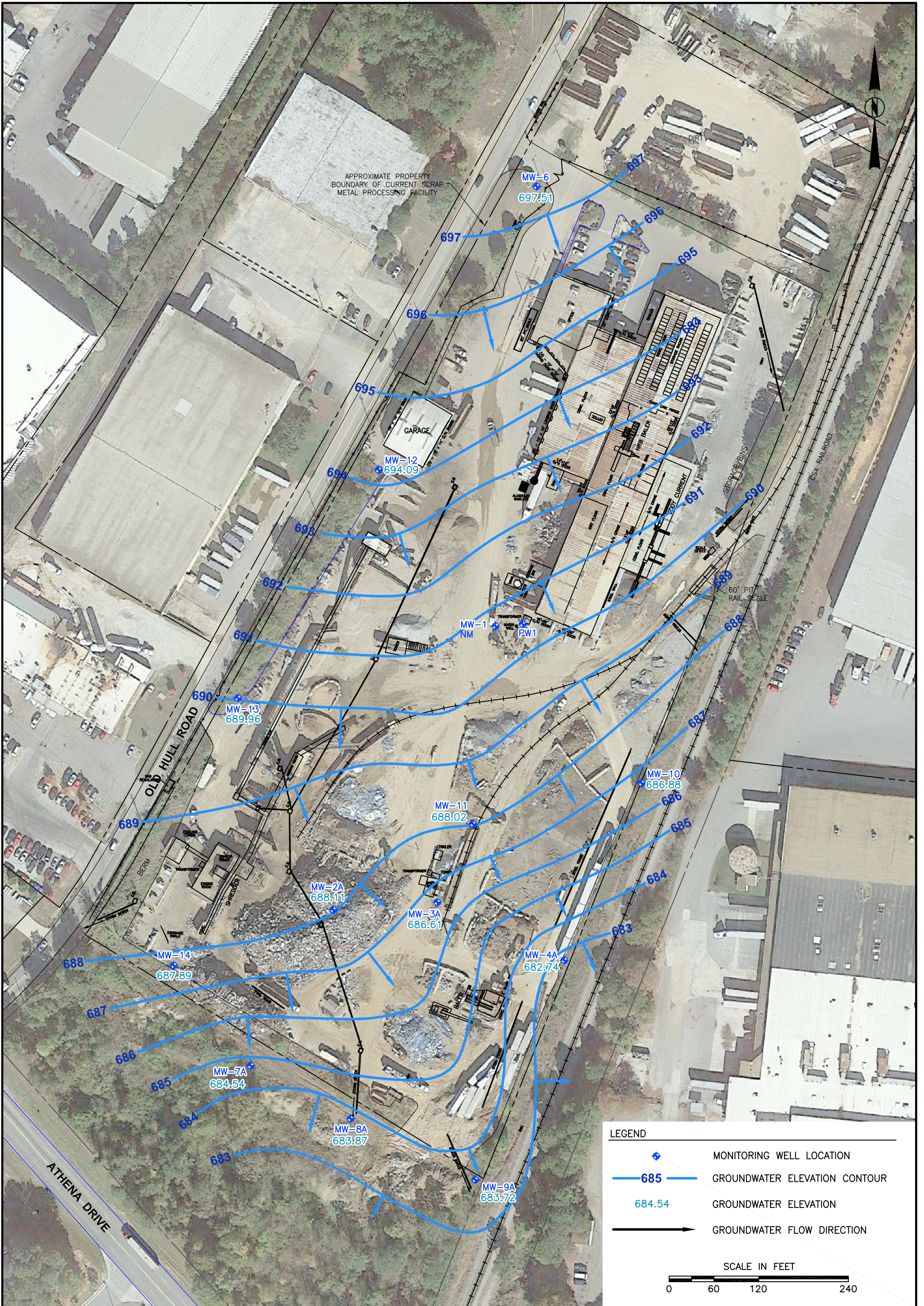


CHECK BY	KL
DRAWN BY	TLH
DATE	7-14-15
SCALE	AS SHOWN
CAD NO.	510393-02B
PRJ NO.	510393-002





SITE PLAN
 FORMER LOEF FACILITY
 590 OLD HULL ROAD
 ATHENS, GEORGIA



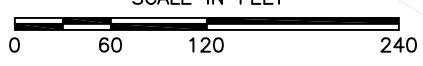
FIGURE
2



LEGEND

-  MONITORING WELL LOCATION
-  **685** GROUNDWATER ELEVATION CONTOUR
-  684.54 GROUNDWATER ELEVATION
-  GROUNDWATER FLOW DIRECTION

SCALE IN FEET



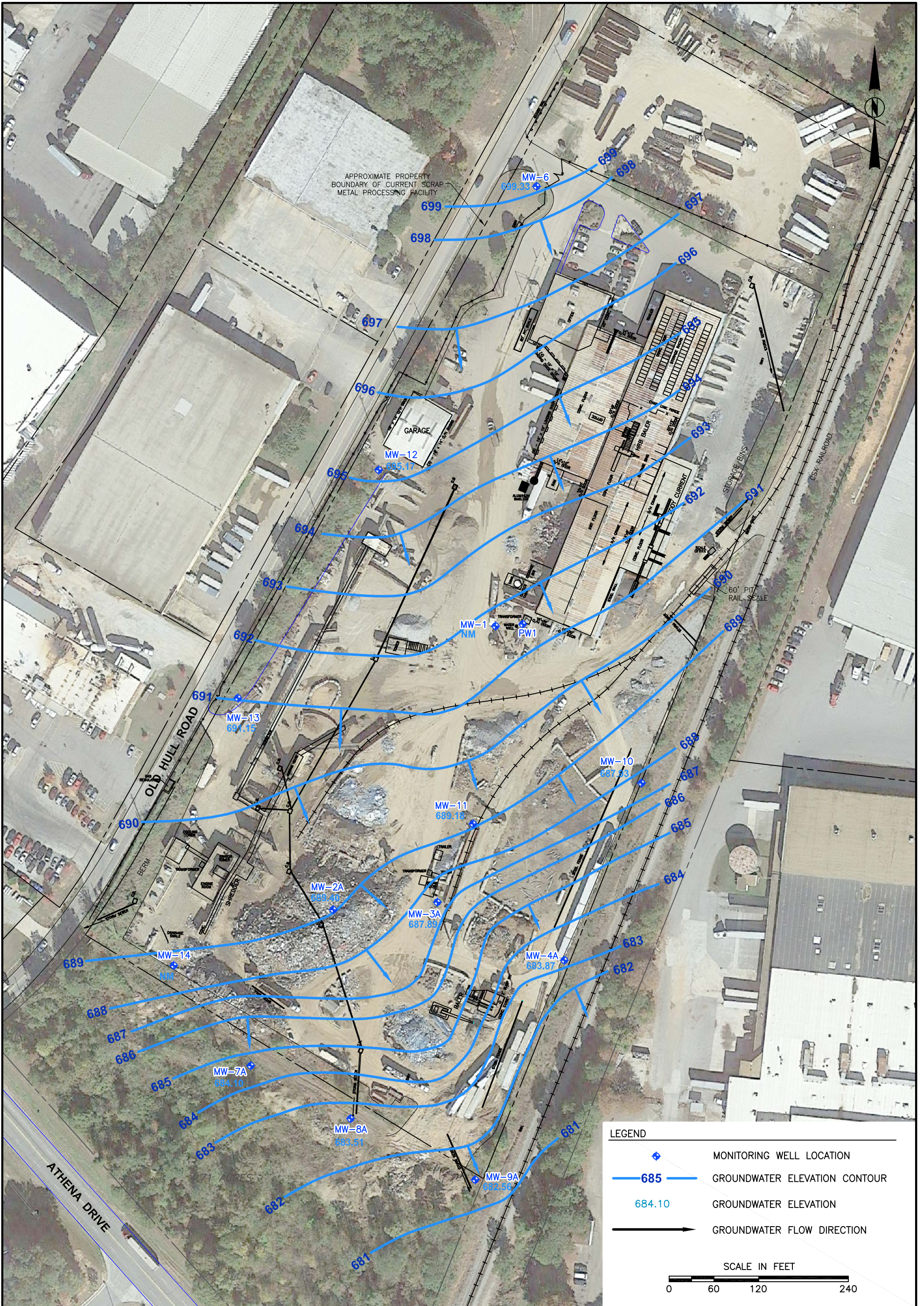
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DRAWN BY	TLH
DATE	7-14-15
SCALE	AS SHOWN
CAD NO.	510393-02B
PRJ NO.	510393-002

POTENTIOMETRIC SURFACE JANUARY 2015

FORMER LOEF FACILITY
590 OLD HULL ROAD
ATHENS, GEORGIA



FIGURE
3A



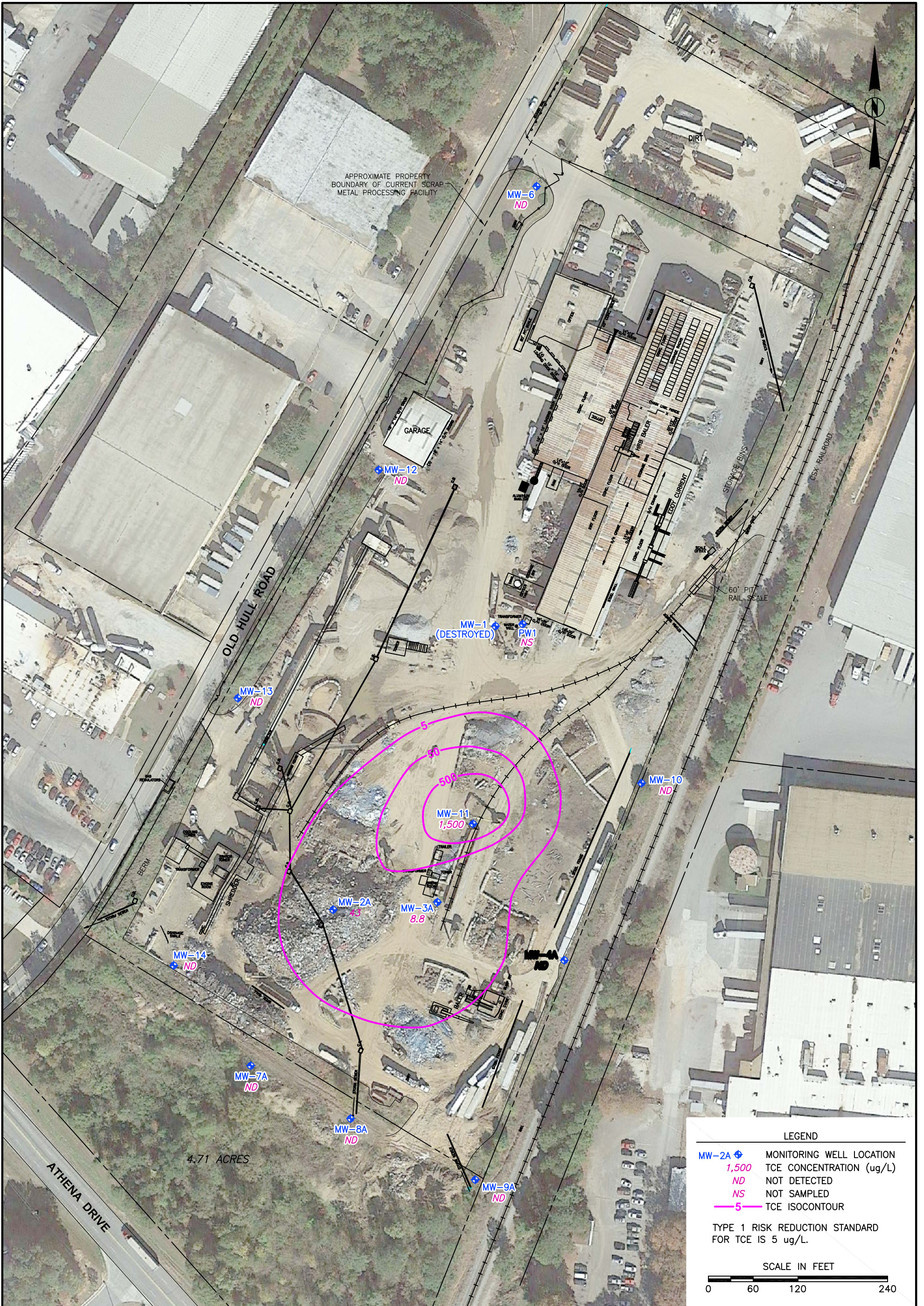
CHECK BY	KL
DRAWN BY	TLH
DATE	7-20-15
SCALE	AS SHOWN
CAD NO.	510393-02E
PRJ NO.	510393-002

POTENTIOMETRIC SURFACE MAY 18, 2015

 FORMER LOEF FACILITY
 590 OLD HULL ROAD
 ATHENS, GEORGIA



FIGURE
3B



LEGEND

- MW-2A \oplus MONITORING WELL LOCATION
- 1,500 TCE CONCENTRATION (ug/L)
- ND NOT DETECTED
- NS NOT SAMPLED
- 5— TCE ISOCONTOUR

TYPE 1 RISK REDUCTION STANDARD FOR TCE IS 5 ug/L.

SCALE IN FEET

CHECK BY	KL
DRAWN BY	TLH
DATE	7-14-15
SCALE	AS SHOWN
CAD NO.	510393-02C
PRJ NO.	510393-002

TCE in GROUNDWATER
 JANUARY 2015
 FORMER LOEF FACILITY
 590 OLD HULL ROAD
 ATHENS, GEORGIA



FIGURE
 4

TABLES

Table 1A
 Summary of Depth to Groundwater and Groundwater Elevations
 January 2015 Groundwater Sampling Event
 Former Loef Facility
 590 Old Hull Road, Athens, Georgia
 HSI Site #10376

Well I.D.	Top of Casing Elevation (Feet MSL)	Depth to Groundwater (Feet MSL)	Groundwater Elevation (Feet MSL)
MW-2A	706.26	18.15	688.11
MW-3A	712.20	25.59	686.61
MW-4A	706.08	23.34	682.74
MW-6	719.87	22.36	697.51
MW-7A	697.15	12.61	684.54
MW-8A	695.26	11.39	683.87
MW-9A	696.14	12.42	683.72
MW-10*	708.16	21.28	686.88
MW-11	713.32	25.30	688.02
MW-12	712.70	18.61	694.09
MW-13	707.45	17.49	689.96
MW-14	707.07	19.18	687.89

Notes:
 * - Top of casing cut by Apex prior to survey
 Top of casing elevations based on survey conducted on January 22 and 26, 2015
 MSL - Mean Sea Level

Table 1B
 Summary of Depth to Groundwater and Groundwater Elevations
 May 18, 2015 Groundwater Sampling Event
 Former Loef Facility
 590 Old Hull Road, Athens, Georgia
 HSI Site #10376

Well I.D.	Top of Casing Elevation (Feet MSL)	Depth to Groundwater (Feet MSL)	Groundwater Elevation (Feet MSL)
MW-1D	NM	26.75	--
MW-2A	706.26	16.86	689.40
MW-3A	712.20	24.31	687.89
MW-4A	706.08	22.21	683.87
MW-6	719.87	20.54	699.33
MW-7A	697.15	13.05	684.10
MW-8A	695.26	11.75	683.51
MW-9A	696.14	13.58	682.56
MW-10*	708.16	20.23	687.93
MW-11	713.32	24.14	689.18
MW-12	712.70	17.53	695.17
MW-13	707.45	16.30	691.15
MW-14	707.07	NM	--

Notes:

* - Top of casing cut by Apex prior to survey

Top of casing elevations based on survey conducted on January 22 and 26, 2015

MSL - Mean Sea Level

NM - Not Measured

Table 2
 Summary of Detections in Groundwater Samples
 Groundwater Sampling Events
 Former Loef Facility
 590 Old Hull Road, Athens, Georgia
 HSI Site #10376

Well I.D.	Date	Constituents detected
MW-1	6/3/2015	No Detections
MW-1D	6/3/2015	TCE
MW-2A/ FD012215B	1/22/2015	cis-1,2-Dichloroethene, Benzene, MTBE, TCE, Vinyl Chloride
	5/20/2015	1,1-Dichloroethane, cis-1,2-Dichloroethene, Benzene, Vinyl Chloride, TCE, MTBE
MW-3A	1/22/2015	Benzene, TCE
MW-4A	1/22/2015	No Detections
MW-6	1/22/2015	No Detections
MW-7A	1/22/2015	No Detections
MW-8A	1/22/2015	No Detections
MW-9A	1/22/2015	No Detections
MW-10	1/22/2015	Xylene
MW-11	1/22/2015	1,1-Dichloroethene, Benzene, cis-1,2-Dichloroethene, PCE, TCE
MW-12/ FD012215A	1/22/2015	Chloroform, 1,1-Dichloroethene
MW-13	1/22/2015	No Detections
MW-14	1/22/2015	No Detections

Notes:
 MTBE - Methyl Tert Butyl Ether
 PCE - Tetrachloroethene
 TCE - Trichloroethene

Table 3
 Groundwater Analytical Results
 Former Loef Facility
 590 Old Hull Road, Athens, Georgia
 HSI Site #10376

Well I.D.	Date:	1,1-Dichloroethane (ug/L)	1,1-Dichloroethene (ug/L)	cis-1,2-dichloroethene (ug/L)	Chloroform (ug/L)	PCE (ug/L)	TCE (ug/L)	Vinyl Chloride (ug/L)	Benzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)
Type 1 RRS (ug/L)		4000	7	70	80	5	5	2	5	10,000	NR
MW-1	6/3/2015	<5.0	<5.0	<5.0	17	<5.0	<5.0	<2.0	<5.0	<10	<5.0
MW-1D	6/3/2015	<5.0	<5.0	<5.0	<5.0	<5.0	17	<2.0	<5.0	<10	<5.0
MW-2A*	1/22/2015	<5.0	<5.0	21	<5.0	<5.0	23	29	<5.0	<10	5.4
	5/20/2015	6.1	<5.0	130	<5.0	<5.0	140	49	8.7	<10	7.6
MW-3A	1/22/2015	<5.0	<5.0	<5.0	<5.0	<5.0	8.8	<2.0	22	<10	<5.0
MW-4A	1/22/2015	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<10	<5.0
MW-6	1/21/2015	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<10	<5.0
MW-7A	1/22/2015	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<10	<5.0
MW-8A	1/22/2015	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<10	<5.0
MW-9A	1/22/2015	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<10	<5.0
MW-10	1/22/2015	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	8.6	<5.0
MW-11	1/22/2015	<5.0	13	12	<5.0	15	1500	<2.0	27	<10	<5.0
MW-12*	1/22/2015	<5.0	45	<5.0	5.0	<5.0	<5.0	<2.0	<5.0	<10	<5.0
MW-13	1/22/2015	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<10	<5.0
MW-14	1/21/2015	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<2.0	<5.0	<10	<5.0
Duplicate Samples											
FD012215A (Duplicate of MW-12)	1/22/2015	<5.0	43	<5.0	5.4*	<5.0	<5.0	<2.0	<5.0	<10	<5.0
FD012215B (Duplicate of MW-2A)	1/22/2015	<5.0	<5.0	33*	<5.0	<5.0	43*	29	5.2*	<10	6.0*

Notes:
 * - result of field duplicate sample is higher than primary sample
 Results shown **bolded** exceed laboratory reporting limits
 Results shown shaded and **bolded** exceed RRS
 RRS - Risk Reduction Standard
 NR - Not Regulated
 ug/L - micrograms per Liter

Table 4
 Monitored Natural Attenuation Groundwater Data
 January 2015 Groundwater Sampling Event
 Former Loef Facility
 590 Old Hull Road Athens, Georgia
 HSI Site #10376

Well ID	Well Location in Relation to Plume	Date of Sampling	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	pH (SU)	Conductivity (µS/cm)	TOC (mg/L)	Sulfide (mg/L)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Methane (ug/L)	Dissolved Ethane (ug/L)	Dissolved Ethene (ug/L)
MW-13	Side Gradient	1/22/15	1.36	120.2	4.48	0.049	<1.0	<2.00	5.0	0.78	<1.0	95	<9	<7
MW-11	Plume Area	1/22/15	1.85	120.6	4.31	0.052	2.50	<2.00	4.8	2.1	<1.0	3600	330	<7
MW-4A	Downgradient	1/22/15	0.96	126.3	4.26	0.196	<1.0	<2.00	44	1.0	1.3	<4	<9	<7
MW-8A	Downgradient	1/22/15	0.56	130.7	5.72	0.714	12.2	<2.00	23	<0.25	210	830	<9	<7
MW-9A	Downgradient	1/22/15	0.71	14.3	6.04	0.658	8.69	<2.00	12	<0.25	97	11	<9	<7

Notes:
 ug/L = Micrograms per liter
 mg/L = Milligrams per liter
 mV = Millivolts
 SU = Standard Units
 µS/cm = Microsiemens per centimeter

APPENDIX A
SOIL BORING AND WELL CONSTRUCTION DIAGRAMS



BORING LOG - Type II Monitoring Well

Drill Rig: CME 75	Date Drilled: 5/19/2015	Well Permit #:
Drilling Method: Hollow Stem Auger	Latitude	
Drillers: Betts Environmental	Longitude	Boring ID: MW-1D
Boring Dia: 7.5 Inches	Logged By: Tommy Fisher	

Sample	Blow Counts	Completion	Recovery	Depth Feet	Lithology	Description
	not taken		2%	5		Reddish orange silty CLAY, slightly stiff plastic
	6, 9, 8		20%	10		Grading to a dark reddish brown silty CLAY
	2, 5, 9		5%	15		
	2, 4, 5		100%	20		Light orange clayey SILT Tan fine sandy SILT saprolite material present, micaceous, with traces of medium sand, slightly moist
	2, 3, 7		100%	25		Dark brown fine sand SILT (saprolite), very micaceous, slight vertical layering, with white slit deposits
	3, 6, 10		100%	30		
	4, 8, 12		50%	35		Tan fine sandy SILT with some white medium sand deposits saprolite, slight loose Dark brown fine SAND (saprolite), micaceous, with weathered manganese seams
	4, 8, 21		50%	40		Brown and white silty SAND (saprolite) fine micaceous flakes
	4, 9, 18		50%	45		Brown SILT with fine micaceous flakes, moist, slight loose, fine orange layering, (auger cuttings becoming sloppy) increase in coarse sand fraction @ 50'
	7, 12, 15		50%	50		
	7, 14, 20		50%	55		
	7, 11, 14		50%	60		Dark brown and orange fine layered SILT (saprolite), weathered manganese seams, micaceous, grading to white and dark brown layers with few coarse rock fragments 1" quartz (9, 11, 27), 50% fragment at 71'
	7, 17, 23		50%	65		
	7, 13, 20		50%	70		
				75		Monitoring Well Set @ 75'
				80		
				85		

Completion Notes:

Boring Terminated @ 75' and Monitoring Well set @ 75'
 2" dia. PVC Monitoring Well
 - Installed with 5' SCH 20 PVC with .010 slot/gauge 75'-70'
 - Completed with solid riser from 70' - 0' Finished to Surface
 - #2 sand 75' - 68'
 - Betonite 68'-63'
 - Grout 63' - 0'

Client:

OmniSource Corporation
 7575 West Jefferson Boulevard
 Fort Wayne, Indiana

Site:

Former Loef Facility
 590 Old Hull Road
 Athens, Georgia

Project #: 510393-002 Static Water: 19 Feet

APPENDIX B
GROUNDWATER SAMPLING FORMS



**APEX COMPANIES, LLC
WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM**

Date: 1-22-15 Well Condition: Good Page 1 of 1

Location (Site/Facility Name): _____ Depth to 1' (top)/ 2' (bottom) of screen

Well Number: MW-1 A Date: 1-22-15 Weather/Temp: Clear 40°

Field Personnel: Dwayne Viles Pump Intake at (ft. below MP): 2' off bottom

Identify Monitoring Point (top of casing or land surface): _____ Purging/Sampling Device: (pump type): Peristaltic pump to draw with Straw method

Clock Time	Water Depth Below MP Feet	Pump Dial	Purge Rate gal/min	Cum. Volume Purged gallons	3%	3%	+/-0.1	+/-10mv	10%	<10	Comments
					Temp. C	Spec. Cond. uS/cm	pH	ORP/ Eh3 mv	DO mg/l	Turbidity NTU	
Initial	12.05	--	--	--	--	--	--	--	--	--	--
0844	12.96				14.02	0.666	6.09	10.1	6.0	1.17	Clear
0947	13.02				14.73	0.659	6.07	8.0	1.08	0.42	Clear
0950	13.07				14.77	0.660	6.05	10.6	1.11	0.34	Clear
0953	13.11				14.73	0.660	6.01	12.9	1.06	0.32	Clear
0956	13.14				14.72	0.659	6.01	15.2	1.08	0.30	Clear
0959	13.20				14.73	0.659	6.02	17.2	1.11	0.27	Clear
1002	13.26				14.85	0.658	6.03	14.8	0.88	0.30	Clear
1005	13.30				14.90	0.658	6.03	13.6	0.78	0.26	Clear
1008	13.35				14.90	0.658	6.04	14.2	0.72	0.27	Clear
1011	13.36			1	14.91	0.658	6.04	14.3	0.71	0.24	Clear
1015											Collected Samples

Purge Volume Conversions: 1" = 0.04, 1.5" = 0.09, 2" = 0.17, 3" = 0.38, 4" = 0.66, 6" = 1.5, 8" = 2.6, 10" = 4.1

Stabilized (circle) YES NO If no, why? _____

Sampler(s): Dwayne Viles Date: 1-22-15

Sample Collected (Method/# of bottles): _____

well column thickness · 18.95 × 0.17 = 3.22 (one well volume)
 Purge rate · 0.037 gpm



APEX COMPANIES, LLC
WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Date: 01-22-15 Well Condition: Case-damaged Flush Page of

Location (Site/Facility Name): Omni Source Depth to (top)/ 30 (bottom) of screen

Well Number: MW-2A Date: 01-22-15 Weather/Temp: 50° Cloudy

Field Personnel: Gregory O Toole Pump Intake at (ft. below MP): 28'

Identify Monitoring Point (top of casing or land surface): yes Purging/Sampling Device: (pump type): Geo Pump
"Straw method"

Clock Time	Water Depth Below MP Feet	Pump Dial	Purge Rate gal/min	Cum. Volume Purged gallons	Temp. C	Spec. Cond. $\mu\text{S/cm}$	pH	ORP/ Eh3 mv	DO mg/l	Turbidity NTU	Comments
Initial	18.11	--	--	--	--	--	--	--	--	--	
17:00	18.23				17.0	0.549	4.50	111.6	2.17	0.3	Clear
17:03	18.26				17.5	0.566	4.66	86.4	0.85	8.7	Clear
17:06	18.26				17.5	0.566	4.69	86.6	0.83	9.9	Clear
17:09	18.26				17.4	0.566	4.71	85.0	0.67	9.9	Clear
17:12	18.26				17.4	0.566	4.69	78.9	0.65	7.2	Clear
17:15	18.26				17.4	0.567	4.73	74.9	0.65	7.0	Clear
17:18	18.26			1.0	17.3	0.565	4.76	73.5	0.58	6.0	Clear

Purge Volume Conversions: 1" = 0.04, 1.5" = 0.09, 2" = 0.17, 3" = 0.38, 4" = 0.66, 6" = 1.5, 8" = 2.6, 10" = 4.1

Stabilized (circle) YES NO If no, why? _____

Sampler(s): Gregory O Toole Date: 01-22-15

Sample Collected (Method/# of bottles): Geo Pump (17:20)

Purge Begin 16:56
Purge End 17:18

* Collected 2nd Field Duplicate
labeled FDC1221513

Well column thickness 11.89' x 0.17 = 2.02 (pre well volume)
purge rate 0.056 gpm



**APEX COMPANIES, LLC
WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM**

Date: 1-22-15 Well Condition: Good Page of

Location (Site/Facility Name): Grand Summit Depth to 20 (top)/ 30 (bottom) of screen

Well Number: Mini-3A Date: 1-22-15 Weather/Temp: Cloudy 80

Field Personnel: Dwayne Yates Pump Intake at (ft. below MP): 1' off bottom

Identify Monitoring Point (top of casing or land surface): Purging/Sampling Device: (pump type): Peristaltic with bottom tubing "straw method"

Clock Time	Water Depth Below MP Feet	Pump Dial	Purge Rate gal/min	Cum. Volume Purged gallons	Temp. C	Spec. Cond. uS/cm	pH	ORP/Eh3 mv	DO mg/l	Turbidity NTU	Comments
Initial	25.65	--	--	--	--	--	--	--	--	--	
1203	25.87				19.46	0.094	5.71	69.0	3.07	0.48	Clear
1206	25.91				19.59	0.096	5.48	90.4	1.84	0.31	Clear
1209	25.93				19.59	0.096	5.19	96.8	1.30	0.35	Clear
1212	25.96				19.68	0.097	5.2	105.7	1.06	0.36	Clear
1215	25.99				19.74	0.092	4.97	108.8	0.86	0.43	Clear
1218	25.99				19.76	0.093	4.90	108.5	0.72	1.18	Clear
1221	26.00				19.74	0.092	4.82	107.9	0.64	0.34	Clear
1224	26.00				19.56	0.074	4.77	106.5	0.55	0.20	Clear
1227	26.00				19.52	0.077	4.69	106.2	0.54	0.54	Clear
1230	26.00				19.51	0.075	4.65	106.1	0.50	0.42	Clear
1233	26.00				19.57	0.075	4.63	106.2	0.50	0.38	Clear
1234				1.25							Purge Stop
1235											Collecting Sample

Purge Volume Conversions: 1" = 0.04, 1.5" = 0.09, 2" = 0.17, 3" = 0.38, 4" = 0.66, 6" = 1.5, 8" = 2.6, 10" = 4.1

Stabilized (circle) YES NO If no, why?

Sampler(s): Dwayne Yates Date: 1-22-15

Sample Collected (Method/# of bottles): Yes + head

Well Column thickness - $4.35 \times 0.17 = 0.740$
 Purge rate 0.040 gpm



**APEX COMPANIES, LLC
WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM**

Date: 1-22-15 Well Condition: Good Page 1 of 1

Location (Site/Facility Name): Crini Source Depth to 19.5 (top)/ 31.5 (bottom) of screen

Well Number: MW-4A Date: 1-22-15 Weather/Temp: Overcast 50°

Field Personnel: Dwayne Yates Pump Intake at (ft. below MP): 2' off bottom

Identify Monitoring Point (top of casing or land surface): _____ Purging/Sampling Device: (pump type): Peristaltic with 1/2" tubing "straw method"

Clock Time	Water Depth Below MP Feet	Pump Dial	Purge Rate gal/min	Cum. Volume Purged gallons	3%	3%	+/-0.1	+/-10mv	10%	<10	Comments
					Temp. C	Spec. Cond. uS/cm	pH	ORP/ Eh3 mv	DO mg/l	Turbidity NTU	
Initial	23.92	--	--	--	--	--	--	--	--	--	
1459	23.62				18.19	0.203	4.48	135.0	2.88	19.8	Clear
1502	23.70				18.22	0.203	4.45	138.0	1.53	15.1	Clear
1505	23.75				18.18	0.204	4.38	136.2	1.24	8.74	Clear
1508	23.76				18.15	0.201	4.33	132.8	1.14	4.46	Clear
1511	23.75				18.00	0.201	4.31	131.8	1.12	3.43	Clear
1514	23.75				18.14	0.198	4.29	129.0	1.01	2.82	Clear
1517	23.75				18.11	0.197	4.28	128.3	0.97	2.00	Clear
1520	23.75				18.06	0.196	4.27	126.9	0.94	1.82	Clear
1522	23.75				18.04	0.196	4.26	126.5	0.96	1.66	Clear
1526	23.75			<u>1</u>	18.06	0.196	4.26	126.3	0.96	1.61	Clear
1533											Strawed Pump
1537											Collected samples

Purge Volume Conversions: 1" = 0.04, 1.5" = 0.09, 2" = 0.17, 3" = 0.38, 4" = 0.66, 6" = 1.5, 8" = 2.6, 10" = 4.1

Stabilized (circle) YES NO If no, why? _____

Sampler(s): Dwayne Yates Date: 1-22-15

Sample Collected (Method/# of bottles): _____

well column thickness $16.08 \times 0.17 = 2.73$ (one well volume)
 purge rate. 0.037 gpm



APEX COMPANIES, LLC
WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Date: 1-21-15 Well Condition: Good Page of

Location (Site/Facility Name): Omnisource Depth to 20 (top)/ 30 (bottom) of screen

Well Number: MW-6 Date: Weather/Temp: Clear 65°

Field Personnel: Gordon O'Toole / Danyne Yates Pump Intake at (ft. below MP): 1' from bottom

Identify Monitoring Point (top of casing or land surface): Purging/Sampling Device; (pump type): Peristaltic with teflon tubing w/ Straw method

Clock Time	Water Depth Below MP Feet	Pump Dial	Purge Rate gal/min	Cum. Volume Purged gallons	Temp. C	Spec. Cond. uS/cm	pH	ORP/ Eh3	DO	Turbidity	Comments
								mv	mg/l	NTU	
Initial	22.36	--	--	--	--	--	--	--	--	--	
1429	22.76				19.7	0.012 ^{4%}	5.02	84.8	4	6.36	Clear
1432	22.73				19.61	0.059	4.77	100.2	3.8 3.6	3.65	Clear
1435	22.73				19.5	0.053	4.7	95	3.8	2.83	Clear
1439	22.72				19.5	0.050	4.63	110.7	3.5	2.65	Clear
1442	22.72				19.5	0.052	4.57	120.5	3.4	1.43	Clear
1445	22.72				19.5	0.053	4.54	122	3.6	1.42	Clear
1448	22.72			1	19.5	0.048	4.48	123.6	3.53	0.92	Clear
1450											Collected Sample

Purge Volume Conversions: 1" = 0.04, 1.5" = 0.09, 2" = 0.17, 3" = 0.38, 4" = 0.66, 6" = 1.5, 8" = 2.6, 10" = 4.1

Stabilized (circle) YES NO If no, why?

Sampler(s): Gordon O'Toole Date: 1-21-15

Sample Collected (Method/# of bottles): VOCs + Lead

well column thickness $7.64 \times 0.17 = 1.30$ (one well volume)
 purge rate - 0.053 gpm



**APEX COMPANIES, LLC
WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM**

Date: 01-22-15 Well Condition: Outer Lid needs repaired Page of
 Location (Site/Facility Name): Omni Source Depth to (top)/ 19.5 (bottom) of screen
 Well Number: MU-7A Date: 01-22-15 Weather/Temp: 50° Sunny
 Field Personnel: Gordon O'Toole Pump Intake at (ft. below MP): 2' off bottom
 Identify Monitoring Point (top of casing or land surface): yes Purging/Sampling Device: (pump type): Geo Pump
"straw method"

Clock Time	Water Depth Below MP Feet	Pump Dial	Purge Rate gal/min	Cum. Volume Purged gallons	Temp. C	Spec. Cond. $\mu S/cm$	pH	ORP/ Eh3 mv	DO mg/l	Turbidity NTU	Comments
Initial	12.79	-	-	-	-	-	-	-	-	-	-
9:28	13.10				13.4	0.439	4.35	228.7	2.49	4.49	Clear
9:31	13.21				14.5	0.442	4.60	217.7	1.74	3.41	Clear
9:34	13.16				14.8	0.442	4.71	211.0	1.13	3.09	Clear
9:37	13.16				14.8	0.443	4.79	206.1	1.06	3.50	Clear
9:40	13.16				14.9	0.443	4.86	200.4	0.81	3.07	Clear
9:43	13.16				14.9	0.444	4.87	197.4	0.71	2.93	Clear
9:46	13.16			0.80	14.9	0.445	4.89	195.3	0.61	3.13	Clear

Purge Volume Conversions: 1" = 0.04, 1.5" = 0.09, 2" = 0.17, 3" = 0.38, 4" = 0.66, 6" = 1.5, 8" = 2.6, 10" = 4.1

Stabilized (circle) YES NO If no, why? _____

Sampler(s): Gordon O'Toole Date: 01-22-15

Sample Collected (Method/# of bottles): VOC's Lead / 09:50

Purge Began 9:25

Purge End 9:46

well column thickness $6.71 \times 0.17 = 1.14$ (one well volume)
 purge rate 0.044 gpm



**APEX COMPANIES, LLC
WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM**

Date: 01-22-15 Well Condition: (good) Page of

Location (Site/Facility Name): Omni Source Depth to (top) 19.5 (bottom) of screen

Well Number: MW-8A Date: 01-22-15 Weather/Temp: 50° Sunny

Field Personnel: Gordon O Tuite Pump Intake at (ft. below MP): 2' (ft. bottom)

Identify Monitoring Point (top of casing or land surface): 125 Purging/Sampling Device: (pump type): Geo Pump

Clock Time	Water Depth Below MP Feet	Pump Dial	Purge Rate gal/min	Cum. Volume Purged gallons	Temp. C	Spec. Cond. <small>MS/cm uS/cm</small>	pH	ORP/ Eh3 mv	DO mg/l	Turbidity NTU	Comments
Initial	<u>11.58</u>	--	--	--	--	--	--	--	--	--	
10:25	<u>11.69</u>				<u>16.1</u>	<u>0.710</u>	<u>5.54</u>	<u>156.5</u>	<u>1.60</u>	<u>20.2</u>	<u>Clear</u>
10:28	<u>11.66</u>				<u>16.3</u>	<u>0.711</u>	<u>5.62</u>	<u>149.2</u>	<u>1.28</u>	<u>21.2</u>	<u>Clear</u>
10:31	<u>11.67</u>				<u>16.3</u>	<u>0.712</u>	<u>5.66</u>	<u>143.0</u>	<u>0.99</u>	<u>13.2</u>	<u>Clear</u>
10:34	<u>11.68</u>				<u>16.4</u>	<u>0.714</u>	<u>5.49</u>	<u>138.6</u>	<u>0.62</u>	<u>9.6</u>	<u>Clear</u>
10:37	<u>11.68</u>				<u>16.4</u>	<u>0.714</u>	<u>5.70</u>	<u>135.4</u>	<u>0.59</u>	<u>8.4</u>	<u>Clear</u>
10:40	<u>11.68</u>				<u>16.5</u>	<u>0.714</u>	<u>5.70</u>	<u>133.9</u>	<u>0.60</u>	<u>11.8</u>	<u>Clear</u>
10:43	<u>11.68</u>				<u>16.5</u>	<u>0.715</u>	<u>5.71</u>	<u>132.0</u>	<u>0.66</u>	<u>5.9</u>	<u>Clear</u>
10:46	<u>11.68</u>				<u>16.5</u>	<u>0.714</u>	<u>5.72</u>	<u>131.2</u>	<u>0.67</u>	<u>7.6</u>	<u>Clear</u>
10:49	<u>11.68</u>			<u>125</u>	<u>16.6</u>	<u>0.714</u>	<u>5.72</u>	<u>130.7</u>	<u>0.56</u>	<u>5.7</u>	<u>Clear</u>

Purge Volume Conversions: 1" = 0.04, 1.5" = 0.09, 2" = 0.17, 3" = 0.38, 4" = 0.66, 6" = 1.5, 8" = 2.6, 10" = 4.1

Stabilized (circle) YES NO If no, why? _____

Sampler(s): Gordon O Tuite Date: 01-22-15

Sample Collected (Method/# of bottles): DOC, Lead, nit, Geo Pump 10:50

Purge start 10:21
Purge End 10:49

Well column thickness $7.92 \times 0.17 = 1.35$ (one well volume)
Purge rate 0.052 gpm



**APEX COMPANIES, LLC
WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM**

Date: 01-22-15 Well Condition: Good Page of
 Location (Site/Facility Name): Omnisource Depth to 20' (top)/ 35' (bottom) of screen
 Well Number: MW-10 Date: 01-22-15 Weather/Temp: 50° Cloudy
 Field Personnel: Gordon O'Toole Pump Intake at (ft. below MP): 30'
 Identify Monitoring Point (top of casing or land surface): yes Purging/Sampling Device; (pump type): Geo Pump via strainer method

Clock Time	Water Depth Below MP Feet	Pump Dial	Purge Rate gal/min	Cum. Volume Purged gallons	Temp. C	Spec. Cond. M/cm uS/cm	pH	ORP/ Eh3	DO	Turbidity	Comments
								mv	mg/l	NTU	
Initial	21.26	--	--	--	--	--	--	--	--	--	
15:16	21.62				17.7	0.152	4.87	59.5	2.53	8.1	
15:19	21.55				17.5	0.144	4.26	80.8	2.18	8.2	
15:22	21.56				17.6	0.145	4.28	84.2	1.83	7.8	
15:25	21.58				17.6	0.144	4.23	89.0	1.44	7.8	
15:28	21.60				17.7	0.144	4.20	95.1	1.34	5.1	
15:31	21.58				17.7	0.142	4.21	100.8	1.01	4.7	
15:34	21.58				17.7	0.141	4.18	104.7	1.04	4.1	
15:37	21.58			4	17.7	0.143	4.18	106.3	1.06	4.0	

Purge Volume Conversions: 1" = 0.04, 1.5" = 0.09, 2" = 0.17, 3" = 0.38, 4" = 0.66, 6" = 1.5, 8" = 2.6, 10" = 4.1

Stabilized (circle) YES NO If no, why? _____
 Sampler(s): Gordon O'Toole Date: 01-22-15
 Sample Collected (Method/# of bottles): Geo Pump JUC's Lead 15:40

Purge began 15:14
 Purge End 15:37

water column thickness - $13.74' \times 0.17 = 2.34$ (one well vol.)
 purge rate 0.048 gpm



APEX COMPANIES, LLC
WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Date: 01-22-15 Well Condition: Good Page of

Location (Site/Facility Name): Omni Source Depth to 20 (top)/ 35 (bottom) of screen

Well Number: MW-11 Date: 01-22-15 Weather/Temp: 50' Sunny

Field Personnel: Gordon O Toole Pump Intake at (ft. below MP): 30'

Identify Monitoring Point (top of casing or land surface): yes Purging/Sampling Device: (pump type): Geo Pump via straw method

Clock Time	Water Depth Below MP Feet	Pump Dial	Purge Rate gal/min	Cum. Volume Purged gallons	Temp. C	Spec. Cond. (mS/cm) -uS/cm-	pH	ORP/ Eh3 mv	DO mg/l	Turbidity NTU	Comments
Initial	25.34	-	-	-	-	-	-	-	-	-	-
12:40	25.52				18.4	0.038	6.15	79.1	4.86	2.4	Clear
12:43	25.53				18.4	0.038	4.64	91.9	4.67	5.4	Clear
12:46	25.57				18.5	0.037	4.59	92.1	4.02	4.1	Clear
12:49	25.59				18.5	0.037	4.54	99.0	3.57	2.8	Clear
12:52	25.59				18.5	0.036	4.51	101.4	3.40	2.6	Clear
12:55	25.59				18.6	0.035	4.47	107.3	3.06	2.11	Clear
12:58	25.59				18.5	0.033	4.41	110.9	2.59	1.60	Clear
13:01	25.59				18.5	0.033	4.36	112.6	2.37	1.10	Clear
13:04	25.59				18.5	0.033	4.34	115.2	2.15	0.81	Clear
13:07	25.59				18.5	0.032	4.34	117.8	1.99	0.87	Clear
13:10	25.59				18.5	0.032	4.31	119.9	1.87	0.97	Clear
13:13	25.58			12.5	18.5	0.032	4.31	120.6	1.82	0.65	Clear

Purge Volume Conversions: 1" = 0.04, 1.5" = 0.09, 2" = 0.17, 3" = 0.38, 4" = 0.66, 6" = 1.5, 8" = 2.6, 10" = 4.1

Stabilized (circle) YES NO If no, why? _____

Sampler(s): Gordon O Toole Date: 01-22-15

Sample Collected (Method/# of bottles): Geo Pump 3-15 13:50

MNA, UAS, Lead

Pump Begin 12:01
Purge End 13:10

Collected (MNA, UAS)

water column thickness 9.66 x 0.17 = 1.64 (one well volume)
purge rate 0.038 gpm



**APEX COMPANIES, LLC
WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM**

Date: 1-22-15 Well Condition: Pad has shifted Needs repaired Page 1 of 2

Location (Site/Facility Name): Own - Source Depth to 25 (top)/ 35 (bottom) of screen

Well Number: MW-12 Date: 1-22-15 Weather/Temp: Clear 35°

Field Personnel: Gordon O'Toole / Dwayne Yates Pump Intake at (ft. below MP): 30'

Identify Monitoring Point (top of casing or land surface): _____ Purging/Sampling Device: (pump type): Peristaltic with teflon tubing "straw method"

Clock Time	Water Depth Below MP Feet	Pump Dial	Purge Rate gal/min	Cum. Volume Purged gallons	Temp.	Spec. Cond.	pH	ORP/ Eh3	DO	Turbidity NTU	Comments
					C	uS/cm		mv	mg/l		
Initial	18.71	--	--	--	--	--	--	--	--	--	
0748	19.36				16.53	0.051	5.42	187	4.70	1.82	Clear
0751	19.50				17.62	0.051	5.15	189.6	3.80	1.71	Clear
0754	19.30				17.48	0.051	5.07	193.7	3.47	4.35	Clear
0757	19.30				17.38	0.052	5.02	191.1	3.51	8.00	Clear
0800	19.30				17.47	0.053	5.02	191.8	3.59	6.46	Clear
0803	19.30				17.54	0.051	4.96	191.4	3.65	4.20	Clear
0806	19.30				17.61	0.048	4.92	192.8	3.72	2.65	Clear
0809	19.30				17.65	0.048	4.90	192.4	3.62	2.68	Clear
0812	19.30			2	17.63	0.048	4.90	192.8	3.59	2.01	Clear
0815											Collected Samples

0746
0748

Purge Volume Conversions: 1" = 0.04, 1.5" = 0.09, 2" = 0.17, 3" = 0.38, 4" = 0.66, 6" = 1.5, 8" = 2.6, 10" = 4.1

Stabilized (circle) YES NO If no, why? _____

Sampler(s): Gordon O'Toole / Dwayne Yates Date: 1-22-15

Sample Collected (Method/# of bottles): VOCs - Lead

Collected field duplicate labeled fd012215A

well column thickness - $16.29 \times 0.17 = 2.77$ (one well volume)
Purge rate 0.083 gpm



**APEX COMPANIES, LLC
WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM**

Date: 1-22-15 Well Condition: Good Page of

Location (Site/Facility Name): Omni Source Depth to 25' (top)/ 35' (bottom) of screen

Well Number: MW-13 Date: 1-22-15 Weather/Temp: Overcast 50°

Field Personnel: D. Jones Pump Intake at (ft. below MP): 30'

Identify Monitoring Point (top of casing or land surface): Purging/Sampling Device; (pump type): Peristaltic pump with tubing "straw method"

Clock Time	Water Depth Below MP Feet	Pump Dial	Purge Rate gal/min	Cum. Volume Purged gallons	3%	3%	+/-0.1	+/-10mv	10%	<10	Comments
					Temp. C	Spec. Cond. uS/cm	pH	ORP/ Eh3 mv	DO mg/l	Turbidity NTU	
Initial	17.52	--	--	--	--	--	--	--	--	--	
1631	18.52				18.35	0.049	4.81	124.4	2.49	16.5	Clear
1634	18.42				18.46	0.050	4.55	133.5	1.42	13.5	Clear
1637	18.52				18.58	0.049	4.42	134.8	1.51	11.9	Clear
1640	18.52				18.61	0.049	4.49	130.3	1.33	11.1	Clear
1643	18.52				18.64	0.049	4.48	127.7	1.40	8.59	Clear
1646	18.52				18.71	0.049	4.47	126.9	1.37	6.25	Clear
1649	18.52				18.71	0.049	4.48	124.7	1.34	5.00	Clear
1652	18.52				18.71	0.049	4.49	121.7	1.35	4.65	Clear
1655	18.52			1.5	18.71	0.049	4.48	120.2	1.36	3.67	Clear
1656											Pump Stopped
1700											Collected samples

Purge Volume Conversions: 1" = 0.04, 1.5" = 0.09, 2" = 0.17, 3" = 0.38, 4" = 0.66, 6" = 1.5, 8" = 2.6, 10" = 4.1

Stabilized (circle) YES NO If no, why?

Sampler(s): D. Jones Date: 1-22-15

Sample Collected (Method/# of bottles):

Well column thickness · 17.48' x 0.17 = 2.97 one well volume
Purge rate. 0.063 gpm



APEX COMPANIES, LLC
WELL PURGING-FIELD WATER QUALITY MEASUREMENTS FORM

Date: 1-21-15 Well Condition: Outer hole needs work Page of
 Location (Site/Facility Name): On-site Source Depth to 25 (top)/ 35 (bottom) of screen
 Well Number: MW-14 Date: 1-21-15 Weather/Temp: Clear 65°
 Field Personnel: Dwayne Yates Pump Intake at (ft. below MP): 30'
 Identify Monitoring Point (top of casing or land surface): Purging/Sampling Device; (pump type): Peristaltic with teflon tubing
'Straw method'

Clock Time	Water Depth Below MP Feet	Pump Dial	Purge Rate gal/min	Cum. Volume Purged gallons	Temp. C	Spec. Cond. uS/cm	pH	ORP/ Eh3	DO	Turbidity	Comments
								mv	mg/l	NTU	
Initial	19.50	--	--	--	--	--	--	--	--	--	
1645	19.92				19.05	0.620	5.45	110.7	3.21	8.02	Clear
1648	19.94				19.02	0.631	5.41	114.1	1.65	5.92	Clear
1651	19.94				18.90	0.627	5.40	116.9	1.13	6.15	Clear
1654	19.96				18.87	0.631	5.41	114.2	1.02	3.81	Clear
1657	19.96				18.84	0.635	5.43	111.2	0.92	3.46	Clear
1700	19.96				18.81	0.638	5.45	111.9	0.84	2.97	Clear
1703	19.96				18.78	0.647	5.46	111.7	0.73	1.88	Clear
1706	19.92				18.70	0.649	5.47	111.7	0.65	2.14	Clear
1709	19.90				18.65	0.652	5.46	110.7	0.57	1.94	Clear
1712	19.90				18.60	0.659	5.47	110.5	0.53	1.79	Clear
1715	19.90			2	18.57	0.657	5.47	109.9	0.51	1.66	Clear
1720											Collected Samples

Purge Volume Conversions: 1" = 0.04, 1.5" = 0.09, 2" = 0.17, 3" = 0.38, 4" = 0.66, 6" = 1.5, 8" = 2.6, 10" = 4.1

Stabilized (circle) YES NO If no, why?

Sampler(s): Dwayne Yates Date: 1-21-15

Sample Collected (Method/# of bottles): VOCs + Lead (3 bottles)

*Well column thickness - 15.5' x 0.17 = 2.64 one well volume
 purge rate 0.067 gpm*

**APEX COMPANIES, LLC
GROUND-WATER SAMPLING LOG**

Date: 5/15/15 Time: 7:35 Monitor Well Number: MW-1
 Apex Personnel: J. Fisher Purpose of Sampling Event: Well repair per report
 Location (Site/Facility Name): Commercial - Hillside, CA Weather/Temp: Sunny

Measuring Point (MP): top of casing, top of ground Well Type: surface completion, above grade
 Depth to Product (MP): NA Well Screen Length: 15, 20 feet
 Depth to Water (MP): 22.87 Pump Intake depth below water (MP): 25
 Total Depth of Well (MP): 30 (0.1') Purging/Sampling Device: Bailer, Peristaltic, Monsoon, Grundfos,
 Water Column thickness (ft): 7.13 OTHER: Teflon tubing
 Well Material: Stainless Steel, Other Noticeable Odor: none noticed
 Well pad condition: Good Cracked, Replace Sample Color: Clear

Time	Depth to Water (MP)	Well volume Bailed	Low Flow Vol Purged	Temp. °C	Spec. Cond. µS/cm	pH	ORP mv	DO mg/L	Turbidity NTU	Water Quality Comments	Field Comments/Site Conditions, etc.
Initial	20.75	-	0.5	20.75	0.196	6.37	-122	12.71	12		
5	22.78	-	1.0	20.92	0.083	5.70	-84	2.94	5		VOCs collected via soda straw method
10	22.94	-	1.5	20.94	0.082	5.68	-83	2.92	5		
15	22.79	-	2.0	21.02	0.077	5.66	-80	1.94	5		
20	22.79	-	2.5	21.02	0.078	5.66	-80	1.40	5		7.13 x .17 = 1.21 one well vol.
25	23.06	-	3.0	21.62	0.078	5.66	-80	1.87	5		0.1 L per min purge rate
Criteria	0.33'	0.2-0.5 L/min			+/- 3%	+/- 0.1	+/- 10 mV	+/- 0.3 mg/L	+/- 10%		

Purge Volume Conversions: 1" = 0.04, 1.5" = 0.09, 2" = 0.17, 3" = 0.38, 4" = 0.68, 6" = 1.5, 8" = 2.6, 10" = 4.1

Water quality parameters Collected with: YSI 550 Horiba U-52, Hanna turbidity Other:

Parameter's Stabilized (circle): YES NO If no, why?

Samples collected: 1 Lab: AKES Sample date: 5/15/15 Sample Time: 8:30
 Bottle Type: 40ml vial Preservative: HCl
250µl plastic AKES
Lead AKES

**APEX COMPANIES, LLC
GROUND-WATER SAMPLING LOG**

Date: 5/20/15 Time: 1100
 Apex Personnel: T. Fisher
 Location (Site/Facility Name): OmniSource
 Monitor Well Number: MW-2A
 Purpose of Sampling Event: Well abandonment - see abandon
 Weather/Temp: Sunny 84°F

Well Type: Surface completion above grade
 Well Screen Length: 5.0/15, 20 feet;
 Pump Intake depth below water (MP): 25
 Purging/Sampling Device: Peristaltic Monsoon, Grundfos;
 OTHER: Teflon tubing
 Noticeable Odor: None noticed
 Sample Color: clear

Time min.	Depth to Water (MP) Feet	Well volume Bailed gallons	Low Flow Vol Purged Liters	Temp. °C	Spec. Cond. µS/cm	pH	ORP mv	DO mg/L	Turbidity NTU	Water Quality Comments	Field Comments/Site Conditions, etc.
Initial	16.96	-	0.5	23.92	0.604	5.35	-40.1	-	4		
5	16.98	-	1.0	23.38	0.582	5.33	-42	3.29	8		
10	16.98	-	1.5	23.27	0.575	5.33	-42	1.85	8		
15	16.98	-	2.0	22.91	0.572	5.34	-39	1.73	8		
20	16.98	-	2.5	22.87	0.568	5.32	-37	1.33	8		
25	16.98	-	3.0	22.90	0.569	5.35	-37	1.32	8		
30	16.98	-	3.5	22.88	0.568	5.34	-36	1.31	8		
Criteria	0.33'	0.2-0.5 L/min			+/- 3%	+/- 0.1	+/- 10 mV	+/- 0.3mg/L	+/- 10%		

Purge Volume Conversions: 1" = 0.04, 1.5" = 0.09, 2" = 0.17, 3" = 0.38, 4" = 0.66, 6" = 1.3, 8" = 2.0, 10" = 3.1
 Water quality parameters Collected with YSI 556; Horiba U-52; Gamma turbidity; Other:
 Parameters Stabilized (circle) YES NO If no, why?
 Samples collected: UVC Analysis: Lead
 Bottle Type: 40mL BOD Preservative: HCl Lab: AES Sample date: 5/20/15 Sample Time: 1155
250 plastic HNO3

100s collected via garden Stray method of sample collection.
 13.13 x .17 = 2.23 one well Vol.
 0.1 L per min. purge rate



Development Ground-Water Sampling Log

Date: 5/21/15 Time: 8:05 Monitor Well Number: DAW-1D
 Apex Personnel: T. Fisher Purpose of Sampling Event: Well Development
 Location (Site/Facility Name): Amnisource Weather/Temp: Sunny 80°F

Measuring Point (MP): top of casing-top of ground
 Depth to Product (MP): NA Low Flow purge rate: NA mL/min
 Depth to Water (MP): 22.18 Well Cover Boiled: Yes No
 Total Depth of Well (MP): 74.5 (0.1') bgs Well Cap Condition: Good
 Water Column thickness (ft): 51.82 Well Cap Locked: Yes No
 Well Tag Present: Yes No
 Well material: PVC, Stainless Steel, Other: None
 Well pad condition: Good, Cracked, Replace

Time	Depth to Water (MP)	Feet	Well volume purged	Low Flow Vol Purged	Temp. °C	Spec. Cond. µS/cm	pH	ORP mv	DO mg/L	Turbidity NTU	Water Quality Comments	Field Comments/Site Conditions, etc.	
												min.	initial
												Surface stress removed Groundwater is clear	
8:20	44.10	10	-	-	27.53	0.110	6.46	-27	14.86	7999		Volume - 8.8 gallons	
8:30	49.28	20	-	-	22.46	0.082	5.80	-9.9	13.54	7999		S vol - 45 gallons	
8:43	49.58	30	-	-	20.07	0.062	5.35	17	4.94	7999	Well starts to rise		
8:50	stopped				19.66	0.063	5.30	31	4.34	7999			
8:58	49.13	30	5100		to allow pump to start								
9:05	48.78	45.5			20.40	0.060	5.30	49	4.24				
9:13	51.65	55			19.56	0.055	5.29	41	4.51	5.7	cloudy		
9:23	52.32	65			19.52	0.055	5.31	41	4.13	7.1	surged after cleaning quickly		
9:31	62.38	75			19.47	0.053	5.30	42	4.06	10.5	surged after readings		
9:41	51.98	85			19.42	0.052	5.28	42	4.05	10.8	surged after readings		
Criteria	0.33'		0.2-0.5 L/min				+/- 0.1	+/- 10 mV	+/- 0.3 mg/L	+/- 10%			

Purge Volume Conversions: 1" = 0.04, 1.5" = 0.17, 2" = 0.36, 3" = 0.60, 4" = 0.80, 6" = 1.5, 8" = 2.6, 10" = 4.1
 Water quality parameters Collected with YSI 556, Horiba U-52, Helina turbidity, Other: None
 Parameters Stabilized (circle) YES NO If no, why? None

Samples Collected: None Analysis: None Bottle Type: None Preservative: None Lab: None Sample date: None Sample Time: None

No samples collected



Development APEX COMPANIES, LLC GROUND-WATER SAMPLING LOG

pg 2 of 2

Date: 5/21/15 Time: 8:05 Monitor Well Number: MW-10

Apex Personnel: T. Fisher Purpose of Sampling Event: Well Development

Location (Site/Facility Name): Conn. Service Weather/Temp: _____

Crucial: _____

Measuring Point (MP): top of casing, top of ground Well Type: surface completion, above grade

Depth to Product (MP): NA Well Screen Length: 10, 15, 20 feet

Depth to Water (MP): 22.18 Pump Intake depth below water (MP): 70-74 surging well

Total Depth of Well (MP): 74.5 (0.1') Purging/Sampling Device: Bailer, Peristaltic, Monsoon, Grundfos;

Water Column thickness (ft): 51.82 OTHER: _____

Well Material: PVC, Stainless Steel, Other: Noticeable Odor: None

Well pad condition: Good, Cracked, Replace Sample Color: clear

Well diameter Inches: 2, 4, 6, other:

Time	min.	Depth to Water (MP)	Feet	Well volume Bailed	gallons	Low Flow Vol Purged	Liters	Temp. °C	Spec. Cond. µS/cm	pH	ORP mv	DO mg/L	Turbidity NTU	Water Quality Comments	Field Comments/Site Conditions, etc.

Water quality parameters Collected with: YSI 536, Horiba U-52, Hanna turbidity; Other:

Parameters Stabilized (circle): YES NO If no, why? _____

Analysis: _____ Bottle Type: _____ Lab: _____ Sample date: _____ Sample Time: _____

No sample collected

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**APEX COMPANIES, LLC
GROUND-WATER SAMPLING LOG**

Development

Date: 02/11/15 Time: 1450 Monitor Well Number: MW-1
 Apex Personnel: J.F. Purpose of Sampling Event: Redevelopment
 Location (Site/Facility Name): Onnisource Athens Weather/Temp: Sunny/82

Measuring Point (MP): top of ground Well Type: surface completion above grade
 Depth to Product (MP): 18.52 Well Cover Bailed: Yes No Replaced
 Depth to Water (MP): 18.52 Well Cap Condition: Good Replaced
 Total Depth of Well (MP): 30 Well Cap Locked: Yes No, Replaced
 Water Column thickness (ft): 11.52 Well Tag Present: Yes NO
 Well Material: PVC Stainless Steel. Other:
 Well pad condition: Good, Cracked, Replace
 Well diameter inches: 2, 4, 6, other:
 Purging/Sampling Device: Peristaltic Monsoon Grundfos:
 OTHER:
 Noticeable Odor: None Noticed
 Sample Color: clear

Time	Depth to Water (MP)	Well volume Bailed (gallons)	Low Flow Vol Purged (Liters)	Temp. °C	Spec. Cond. µS/cm	pH	ORP mV	DO mg/L	Turbidity NTU	Water Quality Comments	Field Comments/Site Conditions, etc.
	26.30	2	-	21.49	0.086	6.97	103	3.48	>999		
1500	26.30	10	-	21.52	0.043	5.35	4	2.39	799	surge clears quick	26.30 - top of pump.
1506	26.30	16	-	22.15	0.051	5.46	42	1.73	799	surge clears quick	
1515	26.30	20	-	22.60	0.055	5.42	43	1.51	799	surge clears quick	
1523	26.30	25	-	21.78	0.042	5.17	43	1.49	27	"	11.52
1534	26.30	36	-	21.99	0.040	5.13	60	1.51	9	"	X, 1.17
1542	26.30	43	-	21.71	0.043	5.09	77	1.53	7	"	1.91 one well volume
1550	26.30	55	-	21.73	0.040	5.07	87	1.53	5	"	
Criteria	0.33	0.2-0.5 L/min			+/- 3%	+/- 0.1	+/- 10 mV	+/- 0.3 mg/L	+/- 10%		

Purge Volume Converters: 1" = 0.04, 1.5" = 0.69, 2" = 0.17, 3" = 0.38, 4" = 0.66, 6" = 1.5, 8" = 2.6, 10" = 4.1
 Water quality parameters Collected with: ES-600 Horiba U52, Hanna turbidity, Other:
 Parameters Stabilized (circle) YES NO If no, why?
 Samples collected: No sample collected
 Analysis: Horiba U52, Hanna turbidity
 Bottle Type: Horiba U52, Hanna turbidity
 Preservative:
 Lab:
 Sample date:
 Sample Time:

**APEX COMPANIES, LLC
GROUND-WATER SAMPLING LOG**

Date: 4/3/15 Time: 1500 Monitor Well Number: mw-1
 Apex Personnel: J. Fisher Purpose of Sampling Event: Asessment
 Location (Site/Facility Name): OmniSource, Athens, GA Weather/Temp: Sunny, 78

Measuring Point (MP): top of casing, top of ground Low Flow purge rate: 100 mL/min
 Depth to Product (MP): - Well Cover Bolted: Yes No -
 Depth to Water (MP): 19.53 Well Cap Condition: Good Replaced -
 Total Depth of Well (MP): 30 (0.1') Well Cap Locked: Yes, No, Replaced -
 Water Column thickness (ft): 10.47 Well Tag Present: Yes NO No NO
 Well Material: PVC Stainless Steel, Other: - Well Info. On Tag: Yes NO No NO
 Well pad condition: Good Cracked, Replace - Noticeable Odor: None Noticed
 Sample Color: Clear

Time	Depth to Water (MP)	Feet	Well volume Bailed	gallons	Low Flow Vol Purged	Liters	Temp.	°C	Spec. Cond.	µS/cm	pH	ORP	mV	DO	mg/L	Turbidity	NTU	Water Quality Comments	Field Comments/Site Conditions, etc.:
Initial	19.58	-	-	0.5	0.062	5.21	114	7.74	0.4										
5	19.59	-	-	1.0	0.062	5.18	106	1.07	0.7										10.47
10	19.59	-	-	1.5	0.062	5.18	102	0.94	0.8										X.117
15	19.60	-	-	2.0	0.061	5.17	101	0.94	0.7										1.777 one well volume
20	19.60	-	-	2.5	0.061	5.17	101	0.86	0.7										
25	19.60	-	-	3.0	0.061	5.16	101	0.81	0.9										0.1 LPM purge rate
Criteria	0.33'		0.2-0.5 L/min																

Purge Volume Conversions: 1" = 0.04, 1 1/2" = 0.06, 2" = 0.11, 3" = 0.38, 4" = 0.68, 6" = 1.5, 8" = 2.6, 10" = 4.1
 Water quality parameters Collected with: YSI 556, Hanna U-52 Hanna turbidity, Other: -
 Parameters Stabilized (circle): YES NO If no, why? -
 Samples collected: 1 Analysis: VOC Bottle Type: 40ml VOA Preservative: HCl Lab: HRD3 Sample date: 6/3/15 Sample Time: 1540
1 Lead

**APEX COMPANIES, LLC
GROUND-WATER SAMPLING LOG**

Date: 6/3/15 Time: 1340 Monitor Well Number: AW-1D
 Apex Personnel: T. Fisher Purpose of Sampling Event: Assessment
 Location (Site/Facility Name): Onisovice, Athens, GA Weather/Temp: cloudy, 74

Well Type: surface completion, above grade
 Well Screen Length: 10, 15, 20 feet
 Pump Intake depth below water (MP): 72.5
 Purging/Sampling Device: Batter Monsoon: None
 OTHER: None
 Noticeable Odor: None
 Sample Color: None

Time	Depth to Water (MP)	Feet	Well volume Bailed	gallons	Low Flow Vol Purged	Liters	Temp. °C	Spec. Cond. µS/cm	pH	ORP mV	DO mg/L	Turbidity NTU	Water Quality Comments
Initial	27.00	-	-	0.5	0.158	5.53	120	4.60	5.3				
5	27.00	-	-	1.0	0.152	5.31	158	2.08	3.2				
10	27.00	-	-	1.5	0.156	5.34	159	2.17	3.1				
15	27.00	-	-	2.0	0.156	5.33	162	2.07	3.2				
20	27.00	-	-	2.5	0.157	5.35	161	2.03	2.4				
25	27.00	-	-	3.0	0.157	5.35	161	2.02	2.7				
Criteria	0.33'		0.2-0.5 L/min		+/- 3%	+/- 0.1	+/- 10 mV	+/- 0.3mg/L	+/- 10%				

Field Comments/Site Conditions, etc.:
Geo collected via soda stream method
47.75
X.17
8.1 one well volume
0.1 cpm
purge rate

Measuring Point (MP): top of casing, top of ground Low Flow purge rate: 100 mL/min
 Well Cover Bailed: Yes No N/A
 Well Cap Condition: Good Replaced
 Well Cap Locked: Yes, No, Replaced
 Well Tag Present: Yes No
 Well Info. On Tag: Yes No
 Well diameter Inches: 2, 4, 6, other:

Water quality parameters Collected with: YSI 556 Hanna turbidity: Other:
 Parameter's Stabilized (circle): (YES) NO If no, why?
 Samples collected: 1
 Analysis: VOC lead
 Bottle Type: VCA Preservative: None
250 mL
 Lab: MBG Sample date: 6/3/15 Sample Time: 1430

*Large Volume Conversions: 1" = 0.04, 1.5" = 0.09, 2" = 0.17, 3" = 0.38, 4" = 0.86, 6" = 1.5, 8" = 2.6, 10" = 4.1

APPENDIX C

**LABORATORY ANALYTICAL REPORTS –
GROUNDWATER MONITORING & MNA SAMPLES**



January 30, 2015

Jim Morrison
APEX Compaines, LLC
312 Cherokee Place, SE
Atlanta GA 30312

TEL: (404) 408-6916
FAX: (704) 799-6395

RE: Former Loef Com

Dear Jim Morrison:

Order No: 1501G91

Analytical Environmental Services, Inc. received 10 samples on 1/22/2015 4:20:00 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 07/01/14-06/30/15.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, 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.

Tara Esbeck
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: 1501691

Date: Page of

COMPANY: Apex		ADDRESS: Apex 312 Cherokee Place SE Atlanta, GA 30312				ANALYSIS REQUESTED										Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.		No # of Containers
PHONE: 404-408-6916		FAX:				8260	Lead	TOC	Sulfide	Chloride	Nitrate	Sulfate	Ethane	Ethylene	Methane			
SAMPLED BY: Gordon Toole / Duayne Yates		SIGNATURE: Gordon Toole				PRESERVATION (See codes)										REMARKS		
#	SAMPLE ID	DATE	TIME	Grab	Composite	Matrix (See codes)	#1	N										
1	MW-6	1-21-15	17:10	X		GW	X	X										
2	MW-14	1-21-15	17:20	X		GW	X	X										
3	TB012115	1-21-15		X		W	X											
4	MW-12	1-22-15	09:15	X		GW	X	X										
5	F1012215 A	1-22-15	09:15	X		GW	X	X										
6	MW-7A	1-22-15	0950	X		GW	X	X										
7	MW-8A	1-22-15	1050	X		GW	X	X	X	X	X	X	X	X	X	X		
8	MW-9A	1-22-15	1015	X		GW	X	X	X	X	X	X	X	X	X	X		
9	MW-3A	1-22-15	1235	X		GW	X	X										
10	MW-11	1-22-15	13:50	X		GW	X	X	X	X	X	X	X	X	X	X		Collected MS/MSI
11																		
12																		
13																		
14																		
RELINQUISHED BY: Gordon Toole		DATE/TIME: 1-22-15 16:00	RECEIVED BY: [Signature]		DATE/TIME: 1-22-15 15:00	PROJECT INFORMATION										RECEIPT		
1:		2:		3:		PROJECT NAME:										Total # of Containers		
2:		3:		3:		PROJECT #:										Turnaround Time Request		
3:		3:		3:		SITE ADDRESS:										<input type="radio"/> Standard 5 Business Days <input type="radio"/> 2 Business Day Rush <input type="radio"/> Next Business Day Rush <input type="radio"/> Same Day Rush (auth req.) <input type="radio"/> Other		
SPECIAL INSTRUCTIONS/COMMENTS:		SHIPMENT METHOD				INVOICE TO:										STATE PROGRAM (if any):		
		OUT / / VIA: IN / / VIA: CLIENT FedEx UPS MAIL <u>COURIER</u> GREYHOUND OTHER				(IF DIFFERENT FROM ABOVE)										E-mail? Y/N; Fax? Y/N		
						QUOTE #:										DATA PACKAGE: I II III IV		
						PO#:												

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-6
Project Name: Former Loef Com	Collection Date: 1/21/2015 2:50:00 PM
Lab ID: 1501G91-001	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
1,1,2-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
1,1-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
1,1-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
1,2-Dibromoethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
1,2-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
1,2-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
1,2-Dichloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
1,3-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
1,4-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
2-Butanone	BRL	50		ug/L	202128	1	01/23/2015 14:28	GC
2-Hexanone	BRL	10		ug/L	202128	1	01/23/2015 14:28	GC
4-Methyl-2-pentanone	BRL	10		ug/L	202128	1	01/23/2015 14:28	GC
Acetone	BRL	50		ug/L	202128	1	01/23/2015 14:28	GC
Benzene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Bromodichloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Bromoform	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Bromomethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Carbon disulfide	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Carbon tetrachloride	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Chlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Chloroethane	BRL	10		ug/L	202128	1	01/23/2015 14:28	GC
Chloroform	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Chloromethane	BRL	10		ug/L	202128	1	01/23/2015 14:28	GC
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
cis-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Cyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Dibromochloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Dichlorodifluoromethane	BRL	10		ug/L	202128	1	01/23/2015 14:28	GC
Ethylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Freon-113	BRL	10		ug/L	202128	1	01/23/2015 14:28	GC
Isopropylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
m,p-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Methyl acetate	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Methyl tert-butyl ether	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Methylcyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Methylene chloride	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
o-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-6
Project Name: Former Loef Com	Collection Date: 1/21/2015 2:50:00 PM
Lab ID: 1501G91-001	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B					(SW5030B)			
Styrene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Tetrachloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Toluene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
trans-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Trichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Trichlorofluoromethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:28	GC
Vinyl chloride	BRL	2.0		ug/L	202128	1	01/23/2015 14:28	GC
Surr: 4-Bromofluorobenzene	93.3	70.6-123		%REC	202128	1	01/23/2015 14:28	GC
Surr: Dibromofluoromethane	105	78.7-124		%REC	202128	1	01/23/2015 14:28	GC
Surr: Toluene-d8	98.9	81.3-120		%REC	202128	1	01/23/2015 14:28	GC
METALS, TOTAL SW6010C					(SW3010A)			
Lead	BRL	0.0100		mg/L	202302	1	01/28/2015 18:51	JL

Qualifiers:	* 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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-14
Project Name: Former Loef Com	Collection Date: 1/21/2015 5:20:00 PM
Lab ID: 1501G91-002	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
1,1,2-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
1,1-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
1,1-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
1,2-Dibromoethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
1,2-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
1,2-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
1,2-Dichloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
1,3-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
1,4-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
2-Butanone	BRL	50		ug/L	202128	1	01/23/2015 14:53	GC
2-Hexanone	BRL	10		ug/L	202128	1	01/23/2015 14:53	GC
4-Methyl-2-pentanone	BRL	10		ug/L	202128	1	01/23/2015 14:53	GC
Acetone	BRL	50		ug/L	202128	1	01/23/2015 14:53	GC
Benzene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Bromodichloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Bromoform	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Bromomethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Carbon disulfide	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Carbon tetrachloride	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Chlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Chloroethane	BRL	10		ug/L	202128	1	01/23/2015 14:53	GC
Chloroform	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Chloromethane	BRL	10		ug/L	202128	1	01/23/2015 14:53	GC
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
cis-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Cyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Dibromochloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Dichlorodifluoromethane	BRL	10		ug/L	202128	1	01/23/2015 14:53	GC
Ethylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Freon-113	BRL	10		ug/L	202128	1	01/23/2015 14:53	GC
Isopropylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
m,p-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Methyl acetate	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Methyl tert-butyl ether	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Methylcyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Methylene chloride	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
o-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-14
Project Name: Former Loef Com	Collection Date: 1/21/2015 5:20:00 PM
Lab ID: 1501G91-002	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B					(SW5030B)			
Styrene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Tetrachloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Toluene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
trans-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Trichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Trichlorofluoromethane	BRL	5.0		ug/L	202128	1	01/23/2015 14:53	GC
Vinyl chloride	BRL	2.0		ug/L	202128	1	01/23/2015 14:53	GC
Surr: 4-Bromofluorobenzene	95.7	70.6-123		%REC	202128	1	01/23/2015 14:53	GC
Surr: Dibromofluoromethane	106	78.7-124		%REC	202128	1	01/23/2015 14:53	GC
Surr: Toluene-d8	98.4	81.3-120		%REC	202128	1	01/23/2015 14:53	GC
METALS, TOTAL SW6010C					(SW3010A)			
Lead	BRL	0.0100		mg/L	202302	1	01/28/2015 18:55	JL

Qualifiers:	* 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

Client: APEX Compaines, LLC	Client Sample ID: TB012115
Project Name: Former Loef Com	Collection Date: 1/21/2015
Lab ID: 1501G91-003	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
1,1,2-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
1,1-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
1,1-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
1,2-Dibromoethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
1,2-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
1,2-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
1,2-Dichloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
1,3-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
1,4-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
2-Butanone	BRL	50		ug/L	202128	1	01/23/2015 15:17	GC
2-Hexanone	BRL	10		ug/L	202128	1	01/23/2015 15:17	GC
4-Methyl-2-pentanone	BRL	10		ug/L	202128	1	01/23/2015 15:17	GC
Acetone	BRL	50		ug/L	202128	1	01/23/2015 15:17	GC
Benzene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Bromodichloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Bromoform	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Bromomethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Carbon disulfide	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Carbon tetrachloride	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Chlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Chloroethane	BRL	10		ug/L	202128	1	01/23/2015 15:17	GC
Chloroform	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Chloromethane	BRL	10		ug/L	202128	1	01/23/2015 15:17	GC
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
cis-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Cyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Dibromochloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Dichlorodifluoromethane	BRL	10		ug/L	202128	1	01/23/2015 15:17	GC
Ethylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Freon-113	BRL	10		ug/L	202128	1	01/23/2015 15:17	GC
Isopropylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
m,p-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Methyl acetate	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Methyl tert-butyl ether	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Methylcyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Methylene chloride	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
o-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC

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

Client: APEX Compaines, LLC	Client Sample ID: TB012115
Project Name: Former Loef Com	Collection Date: 1/21/2015
Lab ID: 1501G91-003	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				(SW5030B)				
Styrene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Tetrachloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Toluene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
trans-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Trichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Trichlorofluoromethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:17	GC
Vinyl chloride	BRL	2.0		ug/L	202128	1	01/23/2015 15:17	GC
Surr: 4-Bromofluorobenzene	94	70.6-123		%REC	202128	1	01/23/2015 15:17	GC
Surr: Dibromofluoromethane	107	78.7-124		%REC	202128	1	01/23/2015 15:17	GC
Surr: Toluene-d8	99.7	81.3-120		%REC	202128	1	01/23/2015 15:17	GC

Qualifiers:	* 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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-12
Project Name: Former Loef Com	Collection Date: 1/22/2015 8:15:00 AM
Lab ID: 1501G91-004	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
1,1,2-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
1,1-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
1,1-Dichloroethene	45	5.0		ug/L	202128	1	01/23/2015 15:42	GC
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
1,2-Dibromoethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
1,2-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
1,2-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
1,2-Dichloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
1,3-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
1,4-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
2-Butanone	BRL	50		ug/L	202128	1	01/23/2015 15:42	GC
2-Hexanone	BRL	10		ug/L	202128	1	01/23/2015 15:42	GC
4-Methyl-2-pentanone	BRL	10		ug/L	202128	1	01/23/2015 15:42	GC
Acetone	BRL	50		ug/L	202128	1	01/23/2015 15:42	GC
Benzene	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Bromodichloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Bromoform	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Bromomethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Carbon disulfide	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Carbon tetrachloride	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Chlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Chloroethane	BRL	10		ug/L	202128	1	01/23/2015 15:42	GC
Chloroform	5.0	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Chloromethane	BRL	10		ug/L	202128	1	01/23/2015 15:42	GC
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
cis-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Cyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Dibromochloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Dichlorodifluoromethane	BRL	10		ug/L	202128	1	01/23/2015 15:42	GC
Ethylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Freon-113	BRL	10		ug/L	202128	1	01/23/2015 15:42	GC
Isopropylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
m,p-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Methyl acetate	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Methyl tert-butyl ether	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Methylcyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Methylene chloride	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
o-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-12
Project Name: Former Loef Com	Collection Date: 1/22/2015 8:15:00 AM
Lab ID: 1501G91-004	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B			(SW5030B)					
Styrene	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Tetrachloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Toluene	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
trans-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Trichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Trichlorofluoromethane	BRL	5.0		ug/L	202128	1	01/23/2015 15:42	GC
Vinyl chloride	BRL	2.0		ug/L	202128	1	01/23/2015 15:42	GC
Surr: 4-Bromofluorobenzene	92.6	70.6-123		%REC	202128	1	01/23/2015 15:42	GC
Surr: Dibromofluoromethane	104	78.7-124		%REC	202128	1	01/23/2015 15:42	GC
Surr: Toluene-d8	98.8	81.3-120		%REC	202128	1	01/23/2015 15:42	GC
METALS, TOTAL SW6010C			(SW3010A)					
Lead	BRL	0.0100		mg/L	202302	1	01/28/2015 19:05	JL

Qualifiers:	* 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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: FD012215 A
Project Name: Former Loef Com	Collection Date: 1/22/2015 8:15:00 AM
Lab ID: 1501G91-005	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
1,1,2-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
1,1-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
1,1-Dichloroethene	43	5.0		ug/L	202128	1	01/23/2015 16:12	GC
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
1,2-Dibromoethane	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
1,2-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
1,2-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
1,2-Dichloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
1,3-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
1,4-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
2-Butanone	BRL	50		ug/L	202128	1	01/23/2015 16:12	GC
2-Hexanone	BRL	10		ug/L	202128	1	01/23/2015 16:12	GC
4-Methyl-2-pentanone	BRL	10		ug/L	202128	1	01/23/2015 16:12	GC
Acetone	BRL	50		ug/L	202128	1	01/23/2015 16:12	GC
Benzene	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Bromodichloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Bromoform	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Bromomethane	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Carbon disulfide	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Carbon tetrachloride	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Chlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Chloroethane	BRL	10		ug/L	202128	1	01/23/2015 16:12	GC
Chloroform	5.4	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Chloromethane	BRL	10		ug/L	202128	1	01/23/2015 16:12	GC
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
cis-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Cyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Dibromochloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Dichlorodifluoromethane	BRL	10		ug/L	202128	1	01/23/2015 16:12	GC
Ethylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Freon-113	BRL	10		ug/L	202128	1	01/23/2015 16:12	GC
Isopropylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
m,p-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Methyl acetate	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Methyl tert-butyl ether	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Methylcyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Methylene chloride	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
o-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: FD012215 A
Project Name: Former Loef Com	Collection Date: 1/22/2015 8:15:00 AM
Lab ID: 1501G91-005	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B			(SW5030B)					
Styrene	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Tetrachloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Toluene	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
trans-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Trichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Trichlorofluoromethane	BRL	5.0		ug/L	202128	1	01/23/2015 16:12	GC
Vinyl chloride	BRL	2.0		ug/L	202128	1	01/23/2015 16:12	GC
Surr: 4-Bromofluorobenzene	93.4	70.6-123		%REC	202128	1	01/23/2015 16:12	GC
Surr: Dibromofluoromethane	108	78.7-124		%REC	202128	1	01/23/2015 16:12	GC
Surr: Toluene-d8	99.8	81.3-120		%REC	202128	1	01/23/2015 16:12	GC
METALS, TOTAL SW6010C			(SW3010A)					
Lead	BRL	0.0100		mg/L	202302	1	01/28/2015 19:09	JL

Qualifiers:	* 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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-7A
Project Name: Former Loef Com	Collection Date: 1/22/2015 9:50:00 AM
Lab ID: 1501G91-006	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
1,1,2-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
1,1-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
1,1-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
1,2-Dibromoethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
1,2-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
1,2-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
1,2-Dichloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
1,3-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
1,4-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
2-Butanone	BRL	50		ug/L	202128	1	01/23/2015 17:02	GC
2-Hexanone	BRL	10		ug/L	202128	1	01/23/2015 17:02	GC
4-Methyl-2-pentanone	BRL	10		ug/L	202128	1	01/23/2015 17:02	GC
Acetone	BRL	50		ug/L	202128	1	01/23/2015 17:02	GC
Benzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Bromodichloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Bromoform	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Bromomethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Carbon disulfide	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Carbon tetrachloride	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Chlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Chloroethane	BRL	10		ug/L	202128	1	01/23/2015 17:02	GC
Chloroform	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Chloromethane	BRL	10		ug/L	202128	1	01/23/2015 17:02	GC
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
cis-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Cyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Dibromochloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Dichlorodifluoromethane	BRL	10		ug/L	202128	1	01/23/2015 17:02	GC
Ethylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Freon-113	BRL	10		ug/L	202128	1	01/23/2015 17:02	GC
Isopropylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
m,p-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Methyl acetate	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Methyl tert-butyl ether	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Methylcyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Methylene chloride	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
o-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-7A
Project Name: Former Loef Com	Collection Date: 1/22/2015 9:50:00 AM
Lab ID: 1501G91-006	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B					(SW5030B)			
Styrene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Tetrachloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Toluene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
trans-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Trichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Trichlorofluoromethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:02	GC
Vinyl chloride	BRL	2.0		ug/L	202128	1	01/23/2015 17:02	GC
Surr: 4-Bromofluorobenzene	90.5	70.6-123		%REC	202128	1	01/23/2015 17:02	GC
Surr: Dibromofluoromethane	109	78.7-124		%REC	202128	1	01/23/2015 17:02	GC
Surr: Toluene-d8	99.2	81.3-120		%REC	202128	1	01/23/2015 17:02	GC
METALS, TOTAL SW6010C					(SW3010A)			
Lead	BRL	0.0100		mg/L	202302	1	01/28/2015 19:12	JL

Qualifiers:	* 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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-8A
Project Name: Former Loef Com	Collection Date: 1/22/2015 10:50:00 AM
Lab ID: 1501G91-007	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) SW9060A								
Organic Carbon, Total	12.2	1.00		mg/L	R284517	1	01/26/2015 11:22	YS
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
1,1,2-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
1,1-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
1,1-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
1,2-Dibromoethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
1,2-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
1,2-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
1,2-Dichloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
1,3-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
1,4-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
2-Butanone	BRL	50		ug/L	202128	1	01/23/2015 17:27	GC
2-Hexanone	BRL	10		ug/L	202128	1	01/23/2015 17:27	GC
4-Methyl-2-pentanone	BRL	10		ug/L	202128	1	01/23/2015 17:27	GC
Acetone	BRL	50		ug/L	202128	1	01/23/2015 17:27	GC
Benzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Bromodichloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Bromoform	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Bromomethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Carbon disulfide	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Carbon tetrachloride	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Chlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Chloroethane	BRL	10		ug/L	202128	1	01/23/2015 17:27	GC
Chloroform	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Chloromethane	BRL	10		ug/L	202128	1	01/23/2015 17:27	GC
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
cis-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Cyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Dibromochloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Dichlorodifluoromethane	BRL	10		ug/L	202128	1	01/23/2015 17:27	GC
Ethylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Freon-113	BRL	10		ug/L	202128	1	01/23/2015 17:27	GC
Isopropylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
m,p-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Methyl acetate	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Methyl tert-butyl ether	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-8A
Project Name: Former Loef Com	Collection Date: 1/22/2015 10:50:00 AM
Lab ID: 1501G91-007	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B			(SW5030B)					
Methylcyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Methylene chloride	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
o-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Styrene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Tetrachloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Toluene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
trans-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Trichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Trichlorofluoromethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:27	GC
Vinyl chloride	BRL	2.0		ug/L	202128	1	01/23/2015 17:27	GC
Surr: 4-Bromofluorobenzene	92.5	70.6-123		%REC	202128	1	01/23/2015 17:27	GC
Surr: Dibromofluoromethane	107	78.7-124		%REC	202128	1	01/23/2015 17:27	GC
Surr: Toluene-d8	101	81.3-120		%REC	202128	1	01/23/2015 17:27	GC
Sulfide by SW9030B/9034			(SW9030B)					
Sulfide	BRL	2.00		mg/L	202195	1	01/26/2015 08:45	AB
ION SCAN SW9056A								
Chloride	23	1.0		mg/L	R284482	1	01/23/2015 11:32	JW
Nitrate	BRL	0.25		mg/L	R284482	1	01/23/2015 11:32	JW
Sulfate	210	10		mg/L	R284482	10	01/23/2015 14:20	JW
GC Analysis of Gaseous Samples SOP-RSK 175			(RSK175)					
Ethane	BRL	9		ug/L	202307	1	01/30/2015 11:38	SH
Ethylene	BRL	7		ug/L	202307	1	01/30/2015 11:38	SH
Methane	830	40		ug/L	202307	10	01/30/2015 12:26	SH
METALS, TOTAL SW6010C			(SW3010A)					
Lead	BRL	0.0100		mg/L	202302	1	01/28/2015 19:16	JL

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-9A
Project Name: Former Loef Com	Collection Date: 1/22/2015 10:15:00 AM
Lab ID: 1501G91-008	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) SW9060A								
Organic Carbon, Total	8.69	1.00		mg/L	R284517	1	01/26/2015 11:50	YS
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
1,1,2-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
1,1-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
1,1-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
1,2-Dibromoethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
1,2-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
1,2-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
1,2-Dichloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
1,3-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
1,4-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
2-Butanone	BRL	50		ug/L	202128	1	01/23/2015 17:52	GC
2-Hexanone	BRL	10		ug/L	202128	1	01/23/2015 17:52	GC
4-Methyl-2-pentanone	BRL	10		ug/L	202128	1	01/23/2015 17:52	GC
Acetone	BRL	50		ug/L	202128	1	01/23/2015 17:52	GC
Benzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Bromodichloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Bromoform	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Bromomethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Carbon disulfide	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Carbon tetrachloride	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Chlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Chloroethane	BRL	10		ug/L	202128	1	01/23/2015 17:52	GC
Chloroform	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Chloromethane	BRL	10		ug/L	202128	1	01/23/2015 17:52	GC
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
cis-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Cyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Dibromochloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Dichlorodifluoromethane	BRL	10		ug/L	202128	1	01/23/2015 17:52	GC
Ethylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Freon-113	BRL	10		ug/L	202128	1	01/23/2015 17:52	GC
Isopropylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
m,p-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Methyl acetate	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Methyl tert-butyl ether	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-9A
Project Name: Former Loef Com	Collection Date: 1/22/2015 10:15:00 AM
Lab ID: 1501G91-008	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B			(SW5030B)					
Methylcyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Methylene chloride	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
o-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Styrene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Tetrachloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Toluene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
trans-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Trichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Trichlorofluoromethane	BRL	5.0		ug/L	202128	1	01/23/2015 17:52	GC
Vinyl chloride	BRL	2.0		ug/L	202128	1	01/23/2015 17:52	GC
Surr: 4-Bromofluorobenzene	91.3	70.6-123		%REC	202128	1	01/23/2015 17:52	GC
Surr: Dibromofluoromethane	105	78.7-124		%REC	202128	1	01/23/2015 17:52	GC
Surr: Toluene-d8	97.1	81.3-120		%REC	202128	1	01/23/2015 17:52	GC
Sulfide by SW9030B/9034			(SW9030B)					
Sulfide	BRL	2.00		mg/L	202195	1	01/26/2015 08:45	AB
ION SCAN SW9056A								
Chloride	12	1.0		mg/L	R284482	1	01/23/2015 11:47	JW
Nitrate	BRL	0.25		mg/L	R284482	1	01/23/2015 11:47	JW
Sulfate	97	1.0		mg/L	R284482	1	01/23/2015 11:47	JW
GC Analysis of Gaseous Samples SOP-RSK 175			(RSK175)					
Ethane	BRL	9		ug/L	202307	1	01/30/2015 11:44	SH
Ethylene	BRL	7		ug/L	202307	1	01/30/2015 11:44	SH
Methane	11	4		ug/L	202307	1	01/30/2015 11:44	SH
METALS, TOTAL SW6010C			(SW3010A)					
Lead	BRL	0.0100		mg/L	202302	1	01/28/2015 19:20	JL

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-3A
Project Name: Former Loef Com	Collection Date: 1/22/2015 12:35:00 PM
Lab ID: 1501G91-009	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
1,1,2-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
1,1-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
1,1-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
1,2-Dibromoethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
1,2-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
1,2-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
1,2-Dichloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
1,3-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
1,4-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
2-Butanone	BRL	50		ug/L	202128	1	01/23/2015 18:16	GC
2-Hexanone	BRL	10		ug/L	202128	1	01/23/2015 18:16	GC
4-Methyl-2-pentanone	BRL	10		ug/L	202128	1	01/23/2015 18:16	GC
Acetone	BRL	50		ug/L	202128	1	01/23/2015 18:16	GC
Benzene	22	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Bromodichloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Bromoform	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Bromomethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Carbon disulfide	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Carbon tetrachloride	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Chlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Chloroethane	BRL	10		ug/L	202128	1	01/23/2015 18:16	GC
Chloroform	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Chloromethane	BRL	10		ug/L	202128	1	01/23/2015 18:16	GC
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
cis-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Cyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Dibromochloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Dichlorodifluoromethane	BRL	10		ug/L	202128	1	01/23/2015 18:16	GC
Ethylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Freon-113	BRL	10		ug/L	202128	1	01/23/2015 18:16	GC
Isopropylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
m,p-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Methyl acetate	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Methyl tert-butyl ether	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Methylcyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Methylene chloride	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
o-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-3A
Project Name: Former Loef Com	Collection Date: 1/22/2015 12:35:00 PM
Lab ID: 1501G91-009	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B			(SW5030B)					
Styrene	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Tetrachloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Toluene	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
trans-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Trichloroethene	8.8	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Trichlorofluoromethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:16	GC
Vinyl chloride	BRL	2.0		ug/L	202128	1	01/23/2015 18:16	GC
Surr: 4-Bromofluorobenzene	93.4	70.6-123		%REC	202128	1	01/23/2015 18:16	GC
Surr: Dibromofluoromethane	107	78.7-124		%REC	202128	1	01/23/2015 18:16	GC
Surr: Toluene-d8	99	81.3-120		%REC	202128	1	01/23/2015 18:16	GC
METALS, TOTAL SW6010C			(SW3010A)					
Lead	BRL	0.0100		mg/L	202302	1	01/28/2015 19:23	JL

Qualifiers:	* 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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-11
Project Name: Former Loef Com	Collection Date: 1/22/2015 1:50:00 PM
Lab ID: 1501G91-010	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) SW9060A								
Organic Carbon, Total	2.50	1.00		mg/L	R284517	1	01/26/2015 12:15	YS
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
1,1,2-Trichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
1,1-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
1,1-Dichloroethene	13	5.0		ug/L	202128	1	01/23/2015 18:41	GC
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
1,2-Dibromoethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
1,2-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
1,2-Dichloroethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
1,2-Dichloropropane	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
1,3-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
1,4-Dichlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
2-Butanone	BRL	50		ug/L	202128	1	01/23/2015 18:41	GC
2-Hexanone	BRL	10		ug/L	202128	1	01/23/2015 18:41	GC
4-Methyl-2-pentanone	BRL	10		ug/L	202128	1	01/23/2015 18:41	GC
Acetone	BRL	50		ug/L	202128	1	01/23/2015 18:41	GC
Benzene	27	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Bromodichloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Bromoform	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Bromomethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Carbon disulfide	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Carbon tetrachloride	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Chlorobenzene	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Chloroethane	BRL	10		ug/L	202128	1	01/23/2015 18:41	GC
Chloroform	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Chloromethane	BRL	10		ug/L	202128	1	01/23/2015 18:41	GC
cis-1,2-Dichloroethene	12	5.0		ug/L	202128	1	01/23/2015 18:41	GC
cis-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Cyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Dibromochloromethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Dichlorodifluoromethane	BRL	10		ug/L	202128	1	01/23/2015 18:41	GC
Ethylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Freon-113	BRL	10		ug/L	202128	1	01/23/2015 18:41	GC
Isopropylbenzene	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
m,p-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Methyl acetate	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Methyl tert-butyl ether	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-11
Project Name: Former Loef Com	Collection Date: 1/22/2015 1:50:00 PM
Lab ID: 1501G91-010	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
Methylcyclohexane	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Methylene chloride	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
o-Xylene	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Styrene	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Tetrachloroethene	15	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Toluene	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
trans-1,3-Dichloropropene	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Trichloroethene	1500	500		ug/L	202128	100	01/26/2015 13:11	GC
Trichlorofluoromethane	BRL	5.0		ug/L	202128	1	01/23/2015 18:41	GC
Vinyl chloride	BRL	2.0		ug/L	202128	1	01/23/2015 18:41	GC
Surr: 4-Bromofluorobenzene	92	70.6-123		%REC	202128	1	01/23/2015 18:41	GC
Surr: 4-Bromofluorobenzene	94.3	70.6-123		%REC	202128	100	01/26/2015 13:11	GC
Surr: Dibromofluoromethane	105	78.7-124		%REC	202128	1	01/23/2015 18:41	GC
Surr: Dibromofluoromethane	113	78.7-124		%REC	202128	100	01/26/2015 13:11	GC
Surr: Toluene-d8	97.8	81.3-120		%REC	202128	1	01/23/2015 18:41	GC
Surr: Toluene-d8	102	81.3-120		%REC	202128	100	01/26/2015 13:11	GC
Sulfide by SW9030B/9034 (SW9030B)								
Sulfide	BRL	2.00		mg/L	202195	1	01/26/2015 08:45	AB
ION SCAN SW9056A								
Chloride	4.8	1.0		mg/L	R284482	1	01/23/2015 13:21	JW
Nitrate	2.1	0.25		mg/L	R284482	1	01/23/2015 13:21	JW
Sulfate	BRL	1.0		mg/L	R284482	1	01/23/2015 13:21	JW
GC Analysis of Gaseous Samples SOP-RSK 175 (RSK175)								
Ethane	330	9		ug/L	202307	1	01/30/2015 11:51	SH
Ethylene	BRL	7		ug/L	202307	1	01/30/2015 11:51	SH
Methane	3600	200		ug/L	202307	50	01/30/2015 12:43	SH
METALS, TOTAL SW6010C (SW3010A)								
Lead	BRL	0.0100		mg/L	202302	1	01/28/2015 18:29	JL

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
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- E Estimated (value above quantitation range)
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- 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 Apex

Work Order Number 1501691

Checklist completed by M. S. ELL 1/22/15
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? (0°≤6°C)* 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 MTC

Sample Condition: Good Other(Explain) _____

(For diffusive samples or AIIA 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: APEX Compaines, LLC
 Project Name: Former Loef Com
 Lab Order: 1501G91

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1501G91-001A	MW-6	1/21/2015 2:50:00PM	Groundwater	TCL VOLATILE ORGANICS		1/23/2015 12:29:00PM	01/23/2015
1501G91-001B	MW-6	1/21/2015 2:50:00PM	Groundwater	TOTAL METALS BY ICP		1/28/2015 11:30:00AM	01/28/2015
1501G91-002A	MW-14	1/21/2015 5:20:00PM	Groundwater	TCL VOLATILE ORGANICS		1/23/2015 12:29:00PM	01/23/2015
1501G91-002B	MW-14	1/21/2015 5:20:00PM	Groundwater	TOTAL METALS BY ICP		1/28/2015 11:30:00AM	01/28/2015
1501G91-003A	TB012115	1/21/2015 12:00:00AM	Aqueous	TCL VOLATILE ORGANICS		1/23/2015 12:29:00PM	01/23/2015
1501G91-004A	MW-12	1/22/2015 8:15:00AM	Groundwater	TCL VOLATILE ORGANICS		1/23/2015 12:29:00PM	01/23/2015
1501G91-004B	MW-12	1/22/2015 8:15:00AM	Groundwater	TOTAL METALS BY ICP		1/28/2015 11:30:00AM	01/28/2015
1501G91-005A	FD012215 A	1/22/2015 8:15:00AM	Groundwater	TCL VOLATILE ORGANICS		1/23/2015 12:29:00PM	01/23/2015
1501G91-005B	FD012215 A	1/22/2015 8:15:00AM	Groundwater	TOTAL METALS BY ICP		1/28/2015 11:30:00AM	01/28/2015
1501G91-006A	MW-7A	1/22/2015 9:50:00AM	Groundwater	TCL VOLATILE ORGANICS		1/23/2015 12:29:00PM	01/23/2015
1501G91-006B	MW-7A	1/22/2015 9:50:00AM	Groundwater	TOTAL METALS BY ICP		1/28/2015 11:30:00AM	01/28/2015
1501G91-007A	MW-8A	1/22/2015 10:50:00AM	Groundwater	TCL VOLATILE ORGANICS		1/23/2015 12:29:00PM	01/23/2015
1501G91-007B	MW-8A	1/22/2015 10:50:00AM	Groundwater	GC Analysis of Gaseous Samples		1/30/2015 10:30:58AM	01/30/2015
1501G91-007C	MW-8A	1/22/2015 10:50:00AM	Groundwater	TOTAL METALS BY ICP		1/28/2015 11:30:00AM	01/28/2015
1501G91-007D	MW-8A	1/22/2015 10:50:00AM	Groundwater	Total Organic Carbon (TOC)			01/26/2015
1501G91-007E	MW-8A	1/22/2015 10:50:00AM	Groundwater	Sulfide by SW9030/9034		1/26/2015 8:45:00AM	01/26/2015
1501G91-007F	MW-8A	1/22/2015 10:50:00AM	Groundwater	ION SCAN			01/23/2015
1501G91-008A	MW-9A	1/22/2015 10:15:00AM	Groundwater	TCL VOLATILE ORGANICS		1/23/2015 12:29:00PM	01/23/2015
1501G91-008B	MW-9A	1/22/2015 10:15:00AM	Groundwater	GC Analysis of Gaseous Samples		1/30/2015 10:30:58AM	01/30/2015
1501G91-008C	MW-9A	1/22/2015 10:15:00AM	Groundwater	TOTAL METALS BY ICP		1/28/2015 11:30:00AM	01/28/2015
1501G91-008D	MW-9A	1/22/2015 10:15:00AM	Groundwater	Total Organic Carbon (TOC)			01/26/2015
1501G91-008E	MW-9A	1/22/2015 10:15:00AM	Groundwater	Sulfide by SW9030/9034		1/26/2015 8:45:00AM	01/26/2015
1501G91-008F	MW-9A	1/22/2015 10:15:00AM	Groundwater	ION SCAN			01/23/2015
1501G91-009A	MW-3A	1/22/2015 12:35:00PM	Groundwater	TCL VOLATILE ORGANICS		1/23/2015 12:29:00PM	01/23/2015
1501G91-009B	MW-3A	1/22/2015 12:35:00PM	Groundwater	TOTAL METALS BY ICP		1/28/2015 11:30:00AM	01/28/2015
1501G91-010A	MW-11	1/22/2015 1:50:00PM	Groundwater	TCL VOLATILE ORGANICS		1/23/2015 12:29:00PM	01/23/2015
1501G91-010A	MW-11	1/22/2015 1:50:00PM	Groundwater	TCL VOLATILE ORGANICS		1/23/2015 12:29:00PM	01/26/2015
1501G91-010B	MW-11	1/22/2015 1:50:00PM	Groundwater	GC Analysis of Gaseous Samples		1/30/2015 10:30:58AM	01/30/2015
1501G91-010C	MW-11	1/22/2015 1:50:00PM	Groundwater	TOTAL METALS BY ICP		1/28/2015 11:30:00AM	01/28/2015

Client: APEX Compaines, LLC
 Project Name: Former Loef Com
 Lab Order: 1501G91

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1501G91-010D	MW-11	1/22/2015 1:50:00PM	Groundwater	Total Organic Carbon (TOC)			01/26/2015
1501G91-010E	MW-11	1/22/2015 1:50:00PM	Groundwater	Sulfide by SW9030/9034		1/26/2015 8:45:00AM	01/26/2015
1501G91-010F	MW-11	1/22/2015 1:50:00PM	Groundwater	ION SCAN			01/23/2015

Client: APEX Compaines, LLC
Project Name: Former Loef Com
Workorder: 1501G91

ANALYTICAL QC SUMMARY REPORT

BatchID: 202128

Sample ID: MB-202128	Client ID:	Units: ug/L	Prep Date: 01/23/2015	Run No: 284317							
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 202128	Analysis Date: 01/23/2015	Seq No: 6027580							
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									

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: APEX Compaines, LLC
Project Name: Former Loef Com
Workorder: 1501G91

ANALYTICAL QC SUMMARY REPORT

BatchID: 202128

Sample ID: MB-202128	Client ID:	Units: ug/L	Prep Date: 01/23/2015	Run No: 284317							
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 202128	Analysis Date: 01/23/2015	Seq No: 6027580							
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	46.67	0	50.00		93.3	70.6	123				
Surr: Dibromofluoromethane	50.51	0	50.00		101	78.7	124				
Surr: Toluene-d8	48.88	0	50.00		97.8	81.3	120				

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: APEX Compaines, LLC
Project Name: Former Loef Com
Workorder: 1501G91

ANALYTICAL QC SUMMARY REPORT

BatchID: 202128

Sample ID: LCS-202128	Client ID:	Units: ug/L	Prep Date: 01/23/2015	Run No: 284317							
SampleType: LCS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 202128	Analysis Date: 01/23/2015	Seq No: 6027575							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	53.18	5.0	50.00		106	64.2	137				
Benzene	47.77	5.0	50.00		95.5	72.8	128				
Chlorobenzene	44.97	5.0	50.00		89.9	72.3	126				
Toluene	48.47	5.0	50.00		96.9	74.9	127				
Trichloroethene	51.06	5.0	50.00		102	70.5	134				
Surr: 4-Bromofluorobenzene	46.21	0	50.00		92.4	70.6	123				
Surr: Dibromofluoromethane	51.17	0	50.00		102	78.7	124				
Surr: Toluene-d8	48.49	0	50.00		97.0	81.3	120				

Sample ID: 1501G91-010AMS	Client ID: MW-11	Units: ug/L	Prep Date: 01/23/2015	Run No: 284361							
SampleType: MS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 202128	Analysis Date: 01/26/2015	Seq No: 6031248							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	5867	500	5000	13.05	117	60.5	156				
Benzene	5629	500	5000	26.82	112	70	135				
Chlorobenzene	5216	500	5000		104	70.5	132				
Toluene	5430	500	5000		109	70.5	137				
Trichloroethene	7050	500	5000	1542	110	71.8	139				
Surr: 4-Bromofluorobenzene	4117	0	5000		82.3	70.6	123				
Surr: Dibromofluoromethane	4658	0	5000		93.2	78.7	124				
Surr: Toluene-d8	4534	0	5000		90.7	81.3	120				

Sample ID: 1501G91-010AMSD	Client ID: MW-11	Units: ug/L	Prep Date: 01/23/2015	Run No: 284361							
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 202128	Analysis Date: 01/26/2015	Seq No: 6031249							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	5433	500	5000	13.05	108	60.5	156	5867	7.68	20	
Benzene	5447	500	5000	26.82	108	70	135	5629	3.29	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: APEX Compaines, LLC
Project Name: Former Loef Com
Workorder: 1501G91

ANALYTICAL QC SUMMARY REPORT

BatchID: 202128

Sample ID: 1501G91-010AMSD	Client ID: MW-11	Units: ug/L	Prep Date: 01/23/2015	Run No: 284361							
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 202128	Analysis Date: 01/26/2015	Seq No: 6031249							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chlorobenzene	5331	500	5000		107	70.5	132	5216	2.18	20	
Toluene	5304	500	5000		106	70.5	137	5430	2.35	20	
Trichloroethene	6807	500	5000	1542	105	71.8	139	7050	3.51	20	
Surr: 4-Bromofluorobenzene	4228	0	5000		84.6	70.6	123	4117	0	0	
Surr: Dibromofluoromethane	4938	0	5000		98.8	78.7	124	4658	0	0	
Surr: Toluene-d8	4517	0	5000		90.3	81.3	120	4534	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		

Client: APEX Compaines, LLC
Project Name: Former Loef Com
Workorder: 1501G91

ANALYTICAL QC SUMMARY REPORT

BatchID: 202195

Sample ID: MB-202195	Client ID:	Units: mg/L	Prep Date: 01/26/2015	Run No: 284412							
SampleType: MBLK	TestCode: Sulfide by SW9030B/9034	BatchID: 202195	Analysis Date: 01/26/2015	Seq No: 6029796							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide BRL 2.00

Sample ID: LCS-202195	Client ID:	Units: mg/L	Prep Date: 01/26/2015	Run No: 284412							
SampleType: LCS	TestCode: Sulfide by SW9030B/9034	BatchID: 202195	Analysis Date: 01/26/2015	Seq No: 6029797							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 396.0 2.00 396.0 100 40 120

Sample ID: 1501G91-010EMS	Client ID: MW-11	Units: mg/L	Prep Date: 01/26/2015	Run No: 284412							
SampleType: MS	TestCode: Sulfide by SW9030B/9034	BatchID: 202195	Analysis Date: 01/26/2015	Seq No: 6029808							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 19.60 2.00 19.80 99.0 73.7 120

Sample ID: 1501G91-010EMSD	Client ID: MW-11	Units: mg/L	Prep Date: 01/26/2015	Run No: 284412							
SampleType: MSD	TestCode: Sulfide by SW9030B/9034	BatchID: 202195	Analysis Date: 01/26/2015	Seq No: 6029810							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 19.80 2.00 19.80 100 73.7 120 19.60 1.02 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: APEX Compaines, LLC
Project Name: Former Loef Com
Workorder: 1501G91

ANALYTICAL QC SUMMARY REPORT

BatchID: 202302

Sample ID: MB-202302	Client ID:	Units: mg/L	Prep Date: 01/28/2015	Run No: 284669							
SampleType: MBLK	TestCode: METALS, TOTAL SW6010C	BatchID: 202302	Analysis Date: 01/28/2015	Seq No: 6035340							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Lead BRL 0.0100

Sample ID: LCS-202302	Client ID:	Units: mg/L	Prep Date: 01/28/2015	Run No: 284669							
SampleType: LCS	TestCode: METALS, TOTAL SW6010C	BatchID: 202302	Analysis Date: 01/28/2015	Seq No: 6035341							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Lead 1.015 0.0100 1.000 102 80 120

Sample ID: 1501G91-010CMS	Client ID: MW-11	Units: mg/L	Prep Date: 01/28/2015	Run No: 284669							
SampleType: MS	TestCode: METALS, TOTAL SW6010C	BatchID: 202302	Analysis Date: 01/28/2015	Seq No: 6035344							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Lead 0.9894 0.0100 1.000 98.9 75 125

Sample ID: 1501G91-010CMSD	Client ID: MW-11	Units: mg/L	Prep Date: 01/28/2015	Run No: 284669							
SampleType: MSD	TestCode: METALS, TOTAL SW6010C	BatchID: 202302	Analysis Date: 01/28/2015	Seq No: 6035345							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Lead 0.9966 0.0100 1.000 99.7 75 125 0.9894 0.724 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: APEX Compaines, LLC
Project Name: Former Loef Com
Workorder: 1501G91

ANALYTICAL QC SUMMARY REPORT

BatchID: 202307

Sample ID: MB-202307	Client ID:	Units: ug/L	Prep Date: 01/30/2015	Run No: 284790							
SampleType: MBLK	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 202307	Analysis Date: 01/30/2015	Seq No: 6038980							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Ethane	BRL	9									
Ethylene	BRL	7									
Methane	BRL	4									

Sample ID: LCS-202307	Client ID:	Units: ug/L	Prep Date: 01/30/2015	Run No: 284790							
SampleType: LCS	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 202307	Analysis Date: 01/30/2015	Seq No: 6038981							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Ethane	148.7	9	200.0		74.3	41.2	115				
Ethylene	98.65	7	200.0		49.3	26.5	115				
Methane	153.0	4	200.0		76.5	45.1	115				

Sample ID: LCSD-202307	Client ID:	Units: ug/L	Prep Date: 01/30/2015	Run No: 284790							
SampleType: LCSD	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 202307	Analysis Date: 01/30/2015	Seq No: 6038983							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Ethane	145.0	9	200.0		72.5	41.2	115	148.7	2.48	20	
Ethylene	95.67	7	200.0		47.8	26.5	115	98.65	3.07	20	
Methane	149.6	4	200.0		74.8	45.1	115	153.0	2.28	20	

Sample ID: 1501G91-010BMS	Client ID: MW-11	Units: ug/L	Prep Date: 01/30/2015	Run No: 284790							
SampleType: MS	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 202307	Analysis Date: 01/30/2015	Seq No: 6038988							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Ethylene	96.80	7	200.0		48.4	25.1	115				
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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: APEX Compaines, LLC
Project Name: Former Loef Com
Workorder: 1501G91

ANALYTICAL QC SUMMARY REPORT

BatchID: 202307

Sample ID: 1501G91-010BMS	Client ID: MW-11	Units: ug/L	Prep Date: 01/30/2015	Run No: 284790							
SampleType: MS	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 202307	Analysis Date: 01/30/2015	Seq No: 6038995							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Ethane	404.1	18	200.0	361.0	21.5	40.5	115				S
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Sample ID: 1501G91-010BMS	Client ID: MW-11	Units: ug/L	Prep Date: 01/30/2015	Run No: 284790							
SampleType: MS	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 202307	Analysis Date: 01/30/2015	Seq No: 6038997							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane	7787	200	200.0	8134	-174	40.4	115				S
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Sample ID: 1501G91-010BMSD	Client ID: MW-11	Units: ug/L	Prep Date: 01/30/2015	Run No: 284790							
SampleType: MSD	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 202307	Analysis Date: 01/30/2015	Seq No: 6038990							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Ethane	495.8	9	200.0	361.0	67.4	40.5	115	517.3	4.24	20	
Ethylene	91.99	7	200.0		46.0	25.1	115	96.80	5.10	20	

Sample ID: 1501G91-010BMSD	Client ID: MW-11	Units: ug/L	Prep Date: 01/30/2015	Run No: 284790							
SampleType: MSD	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 202307	Analysis Date: 01/30/2015	Seq No: 6039001							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane	7874	200	200.0	8134	-130	40.4	115	7787	1.11	20	S
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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: APEX Compaines, LLC
Project Name: Former Loef Com
Workorder: 1501G91

ANALYTICAL QC SUMMARY REPORT

BatchID: R284482

Sample ID: MB-R284482	Client ID:	Units: mg/L	Prep Date:	Run No: 284482							
SampleType: MBLK	TestCode: ION SCAN SW9056A	BatchID: R284482	Analysis Date: 01/23/2015	Seq No: 6031340							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride	BRL	1.0									
Nitrate	BRL	0.25									
Sulfate	BRL	1.0									

Sample ID: LCS-R284482	Client ID:	Units: mg/L	Prep Date:	Run No: 284482							
SampleType: LCS	TestCode: ION SCAN SW9056A	BatchID: R284482	Analysis Date: 01/23/2015	Seq No: 6031339							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride	9.998	1.0	10.00		100.0	90	110				
Nitrate	4.982	0.25	5.000		99.6	90	110				
Sulfate	25.74	1.0	25.00		103	90	110				

Sample ID: 1501G91-010FMS	Client ID: MW-11	Units: mg/L	Prep Date:	Run No: 284482							
SampleType: MS	TestCode: ION SCAN SW9056A	BatchID: R284482	Analysis Date: 01/23/2015	Seq No: 6031356							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride	104.1	10	100.0	9.499	94.6	90	110				
Nitrate	51.62	2.5	50.00	2.276	98.7	90	110				
Sulfate	265.6	10	250.0		106	90	110				

Sample ID: 1501H19-001BMS	Client ID:	Units: mg/L	Prep Date:	Run No: 284482							
SampleType: MS	TestCode: ION SCAN SW9056A	BatchID: R284482	Analysis Date: 01/23/2015	Seq No: 6031362							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride	134.5	10	100.0	34.15	100	90	110				
Nitrate	68.06	2.5	50.00	16.82	102	90	110				
Sulfate	301.0	10	250.0	33.67	107	90	110				

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: APEX Compaines, LLC
Project Name: Former Loef Com
Workorder: 1501G91

ANALYTICAL QC SUMMARY REPORT

BatchID: R284482

Sample ID: 1501G91-010FMSD	Client ID: MW-11	Units: mg/L	Prep Date:	Run No: 284482							
SampleType: MSD	TestCode: ION SCAN SW9056A	BatchID: R284482	Analysis Date: 01/23/2015	Seq No: 6031357							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride	106.4	10	100.0	9.499	96.9	90	110	104.1	2.14	20	
Nitrate	52.28	2.5	50.00	2.276	100	90	110	51.62	1.27	20	
Sulfate	264.2	10	250.0		106	90	110	265.6	0.539	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: APEX Compaines, LLC
Project Name: Former Loef Com
Workorder: 1501G91

ANALYTICAL QC SUMMARY REPORT

BatchID: R284517

Sample ID: MB-R284517	Client ID:	Units: mg/L	Prep Date:	Run No: 284517							
SampleType: MBLK	TestCode: Total Organic Carbon (TOC) SW9060A	BatchID: R284517	Analysis Date: 01/26/2015	Seq No: 6031973							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Organic Carbon, Total

BRL 1.00

Sample ID: LCS-R284517	Client ID:	Units: mg/L	Prep Date:	Run No: 284517							
SampleType: LCS	TestCode: Total Organic Carbon (TOC) SW9060A	BatchID: R284517	Analysis Date: 01/26/2015	Seq No: 6031972							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Organic Carbon, Total

25.00 1.00 25.00 100 90 110

Sample ID: 1501G91-010DMS	Client ID: MW-11	Units: mg/L	Prep Date:	Run No: 284517							
SampleType: MS	TestCode: Total Organic Carbon (TOC) SW9060A	BatchID: R284517	Analysis Date: 01/26/2015	Seq No: 6031989							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Organic Carbon, Total

25.13 1.00 25.00 2.504 90.5 80 120

Sample ID: 1501G91-010DMSD	Client ID: MW-11	Units: mg/L	Prep Date:	Run No: 284517							
SampleType: MSD	TestCode: Total Organic Carbon (TOC) SW9060A	BatchID: R284517	Analysis Date: 01/27/2015	Seq No: 6031990							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Organic Carbon, Total

25.82 1.00 25.00 2.504 93.3 80 120 25.13 2.71 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	



January 30, 2015

Jim Morrison
APEX Compaines, LLC
312 Cherokee Place, SE
Atlanta GA 30312

TEL: (404) 408-6916
FAX: (704) 799-6395

RE: Omni Source, Athens GA

Dear Jim Morrison:

Order No: 1501H99

Analytical Environmental Services, Inc. received 6 samples on 1/23/2015 2:50:00 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 07/01/14-06/30/15.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, 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.

Tara Esbeck
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: 1501499

Date: _____ Page _____ of _____

COMPANY: Apex		ADDRESS: Apex 312 Cherokee Place SE Atlanta, GA 30312					ANALYSIS REQUESTED										Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.		No # of Containers													
PHONE: 404-408-6916		FAX:					<table style="width:100%; text-align: center;"> <tr> <td style="width: 20px;">B260</td> <td style="width: 20px;">Lead</td> <td style="width: 20px;">TUC</td> <td style="width: 20px;">Sulfide</td> <td style="width: 20px;">Chloride</td> <td style="width: 20px;">Nitrate</td> <td style="width: 20px;">Sulfate</td> <td style="width: 20px;">Ethane</td> <td style="width: 20px;">Ethylene</td> <td style="width: 20px;">Methane</td> <td style="width: 20px;"></td> <td style="width: 20px;"></td> <td style="width: 20px;"></td> <td style="width: 20px;"></td> <td style="width: 20px;"></td> <td style="width: 20px;"></td> </tr> </table>													B260	Lead	TUC	Sulfide	Chloride	Nitrate	Sulfate	Ethane	Ethylene	Methane			
B260	Lead	TUC	Sulfide	Chloride	Nitrate	Sulfate	Ethane	Ethylene	Methane																							
SAMPLED BY: Groundwater/Dwayne Yates		SIGNATURE: <i>[Signature]</i>					PRESERVATION (See codes)										REMARKS															
#	SAMPLE ID	SAMPLED		Grab	Composite	Matrix (See codes)	#	N	S+	O	I	I	I	H	H	H																
		DATE	TIME																													
1	MW-13	1-22-15	17:00	X		GW	X	X	X	X	X	X	X	X	X	X																
2	MW-4A	1-22-15	15:30	X		GW	X	X	X	X	X	X	X	X	X	X																
3	MW-10	1-22-15	15:40	X		GW	X	X																								
4	MW-2A	1-22-15	17:10	X		GW	X	X																								
5	TB012215	1-22-15	---	X		W	X																									
6	FD012215 B	1-22-15	17:10	X		GW	X	X																								
7																																
8																																
9																																
10																																
11																																
12																																
13																																
14																																

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME	PROJECT INFORMATION	RECEIPT
1: <i>[Signature]</i>		1: <i>[Signature]</i>	1/23/15 1:15	PROJECT NAME: Omi Source, Athens GA	Total # of Containers
2: <i>[Signature]</i>	1/23/15 2:50	2: <i>[Signature]</i>	1/23/15 2:50	PROJECT #: 510343-001	<input type="radio"/> Turnaround Time Request <input type="radio"/> Standard 5 Business Days <input type="radio"/> 2 Business Day Rush <input type="radio"/> Next Business Day Rush <input type="radio"/> Same Day Rush (auth req.) <input type="radio"/> Other _____
3:		3:		SITE ADDRESS:	

SPECIAL INSTRUCTIONS/COMMENTS:	SHIPMENT METHOD	INVOICE TO:
	OUT / / VIA: IN / / VIA: CLIENT FedEx UPS MAIL COURIER GREYHOUND OTHER _____	(IF DIFFERENT FROM ABOVE) QUOTE #: _____ PO#: _____

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-13
Project Name: Omni Source, Athens GA	Collection Date: 1/22/2015 5:00:00 PM
Lab ID: 1501H99-001	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) SW9060A								
Organic Carbon, Total	BRL	1.00		mg/L	R284517	1	01/26/2015 12:36	YS
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
1,1,2-Trichloroethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
1,1-Dichloroethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
1,1-Dichloroethene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
1,2-Dibromoethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
1,2-Dichlorobenzene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
1,2-Dichloroethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
1,2-Dichloropropane	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
1,3-Dichlorobenzene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
1,4-Dichlorobenzene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
2-Butanone	BRL	50		ug/L	202196	1	01/26/2015 21:32	GC
2-Hexanone	BRL	10		ug/L	202196	1	01/26/2015 21:32	GC
4-Methyl-2-pentanone	BRL	10		ug/L	202196	1	01/26/2015 21:32	GC
Acetone	BRL	50		ug/L	202196	1	01/26/2015 21:32	GC
Benzene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Bromodichloromethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Bromoform	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Bromomethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Carbon disulfide	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Carbon tetrachloride	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Chlorobenzene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Chloroethane	BRL	10		ug/L	202196	1	01/26/2015 21:32	GC
Chloroform	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Chloromethane	BRL	10		ug/L	202196	1	01/26/2015 21:32	GC
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
cis-1,3-Dichloropropene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Cyclohexane	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Dibromochloromethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Dichlorodifluoromethane	BRL	10		ug/L	202196	1	01/26/2015 21:32	GC
Ethylbenzene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Freon-113	BRL	10		ug/L	202196	1	01/26/2015 21:32	GC
Isopropylbenzene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
m,p-Xylene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Methyl acetate	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Methyl tert-butyl ether	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-13
Project Name: Omni Source, Athens GA	Collection Date: 1/22/2015 5:00:00 PM
Lab ID: 1501H99-001	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B			(SW5030B)					
Methylcyclohexane	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Methylene chloride	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
o-Xylene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Styrene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Tetrachloroethene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Toluene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
trans-1,3-Dichloropropene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Trichloroethene	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Trichlorofluoromethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:32	GC
Vinyl chloride	BRL	2.0		ug/L	202196	1	01/26/2015 21:32	GC
Surr: 4-Bromofluorobenzene	93.2	70.6-123		%REC	202196	1	01/26/2015 21:32	GC
Surr: Dibromofluoromethane	109	78.7-124		%REC	202196	1	01/26/2015 21:32	GC
Surr: Toluene-d8	99.1	81.3-120		%REC	202196	1	01/26/2015 21:32	GC
Sulfide by SW9030B/9034			(SW9030B)					
Sulfide	BRL	2.00		mg/L	202195	1	01/26/2015 08:45	AB
ION SCAN SW9056A								
Chloride	5.0	1.0		mg/L	R284482	1	01/23/2015 18:04	JW
Nitrate	0.78	0.25		mg/L	R284482	1	01/23/2015 18:04	JW
Sulfate	BRL	1.0		mg/L	R284482	1	01/23/2015 18:04	JW
GC Analysis of Gaseous Samples SOP-RSK 175			(RSK175)					
Ethane	BRL	9		ug/L	202307	1	01/30/2015 13:13	SH
Ethylene	BRL	7		ug/L	202307	1	01/30/2015 13:13	SH
Methane	95	4		ug/L	202307	1	01/30/2015 13:13	SH
METALS, TOTAL SW6010C			(SW3010A)					
Lead	BRL	0.0100		mg/L	202302	1	01/28/2015 19:48	JL

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-4A
Project Name: Omni Source, Athens GA	Collection Date: 1/22/2015 3:30:00 PM
Lab ID: 1501H99-002	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Organic Carbon (TOC) SW9060A								
Organic Carbon, Total	BRL	1.00		mg/L	R284517	1	01/26/2015 13:01	YS
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
1,1,2-Trichloroethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
1,1-Dichloroethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
1,1-Dichloroethene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
1,2-Dibromoethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
1,2-Dichlorobenzene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
1,2-Dichloroethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
1,2-Dichloropropane	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
1,3-Dichlorobenzene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
1,4-Dichlorobenzene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
2-Butanone	BRL	50		ug/L	202196	1	01/26/2015 21:57	GC
2-Hexanone	BRL	10		ug/L	202196	1	01/26/2015 21:57	GC
4-Methyl-2-pentanone	BRL	10		ug/L	202196	1	01/26/2015 21:57	GC
Acetone	BRL	50		ug/L	202196	1	01/26/2015 21:57	GC
Benzene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Bromodichloromethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Bromoform	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Bromomethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Carbon disulfide	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Carbon tetrachloride	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Chlorobenzene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Chloroethane	BRL	10		ug/L	202196	1	01/26/2015 21:57	GC
Chloroform	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Chloromethane	BRL	10		ug/L	202196	1	01/26/2015 21:57	GC
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
cis-1,3-Dichloropropene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Cyclohexane	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Dibromochloromethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Dichlorodifluoromethane	BRL	10		ug/L	202196	1	01/26/2015 21:57	GC
Ethylbenzene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Freon-113	BRL	10		ug/L	202196	1	01/26/2015 21:57	GC
Isopropylbenzene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
m,p-Xylene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Methyl acetate	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Methyl tert-butyl ether	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-4A
Project Name: Omni Source, Athens GA	Collection Date: 1/22/2015 3:30:00 PM
Lab ID: 1501H99-002	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B			(SW5030B)					
Methylcyclohexane	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Methylene chloride	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
o-Xylene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Styrene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Tetrachloroethene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Toluene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
trans-1,3-Dichloropropene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Trichloroethene	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Trichlorofluoromethane	BRL	5.0		ug/L	202196	1	01/26/2015 21:57	GC
Vinyl chloride	BRL	2.0		ug/L	202196	1	01/26/2015 21:57	GC
Surr: 4-Bromofluorobenzene	92.9	70.6-123		%REC	202196	1	01/26/2015 21:57	GC
Surr: Dibromofluoromethane	110	78.7-124		%REC	202196	1	01/26/2015 21:57	GC
Surr: Toluene-d8	98.8	81.3-120		%REC	202196	1	01/26/2015 21:57	GC
Sulfide by SW9030B/9034			(SW9030B)					
Sulfide	BRL	2.00		mg/L	202195	1	01/26/2015 08:45	AB
ION SCAN SW9056A								
Chloride	44	1.0		mg/L	R284482	1	01/23/2015 18:18	JW
Nitrate	1.0	0.25		mg/L	R284482	1	01/23/2015 18:18	JW
Sulfate	1.3	1.0		mg/L	R284482	1	01/23/2015 18:18	JW
GC Analysis of Gaseous Samples SOP-RSK 175			(RSK175)					
Ethane	BRL	9		ug/L	202307	1	01/30/2015 13:21	SH
Ethylene	BRL	7		ug/L	202307	1	01/30/2015 13:21	SH
Methane	BRL	4		ug/L	202307	1	01/30/2015 13:21	SH
METALS, TOTAL SW6010C			(SW3010A)					
Lead	BRL	0.0100		mg/L	202302	1	01/28/2015 19:52	JL

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-10
Project Name: Omni Source, Athens GA	Collection Date: 1/22/2015 3:40:00 PM
Lab ID: 1501H99-003	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
1,1-Dichloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
1,1-Dichloroethene	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
1,2-Dibromoethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
1,2-Dichlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
1,2-Dichloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
1,2-Dichloropropane	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
1,3-Dichlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
1,4-Dichlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
2-Butanone	BRL	50		ug/L	202196	1	01/27/2015 14:07	NP
2-Hexanone	BRL	10		ug/L	202196	1	01/27/2015 14:07	NP
4-Methyl-2-pentanone	BRL	10		ug/L	202196	1	01/27/2015 14:07	NP
Acetone	BRL	50		ug/L	202196	1	01/27/2015 14:07	NP
Benzene	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Bromodichloromethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Bromoform	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Bromomethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Carbon disulfide	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Carbon tetrachloride	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Chlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Chloroethane	BRL	10		ug/L	202196	1	01/27/2015 14:07	NP
Chloroform	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Chloromethane	BRL	10		ug/L	202196	1	01/27/2015 14:07	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
cis-1,3-Dichloropropene	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Cyclohexane	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Dibromochloromethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Dichlorodifluoromethane	BRL	10		ug/L	202196	1	01/27/2015 14:07	NP
Ethylbenzene	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Freon-113	BRL	10		ug/L	202196	1	01/27/2015 14:07	NP
Isopropylbenzene	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
m,p-Xylene	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Methyl acetate	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Methyl tert-butyl ether	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Methylcyclohexane	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Methylene chloride	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
o-Xylene	8.6	5.0		ug/L	202196	1	01/27/2015 14:07	NP

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-10
Project Name: Omni Source, Athens GA	Collection Date: 1/22/2015 3:40:00 PM
Lab ID: 1501H99-003	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B			(SW5030B)					
Styrene	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Tetrachloroethene	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Toluene	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
trans-1,3-Dichloropropene	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Trichloroethene	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Trichlorofluoromethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:07	NP
Vinyl chloride	BRL	2.0		ug/L	202196	1	01/27/2015 14:07	NP
Surr: 4-Bromofluorobenzene	99.5	70.6-123		%REC	202196	1	01/27/2015 14:07	NP
Surr: Dibromofluoromethane	101	78.7-124		%REC	202196	1	01/27/2015 14:07	NP
Surr: Toluene-d8	98.2	81.3-120		%REC	202196	1	01/27/2015 14:07	NP
METALS, TOTAL SW6010C			(SW3010A)					
Lead	BRL	0.0100		mg/L	202302	1	01/28/2015 19:55	JL

Qualifiers:	* 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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-2A
Project Name: Omni Source, Athens GA	Collection Date: 1/22/2015 5:10:00 PM
Lab ID: 1501H99-004	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
1,1-Dichloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
1,1-Dichloroethene	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
1,2-Dibromoethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
1,2-Dichlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
1,2-Dichloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
1,2-Dichloropropane	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
1,3-Dichlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
1,4-Dichlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
2-Butanone	BRL	50		ug/L	202196	1	01/27/2015 14:33	NP
2-Hexanone	BRL	10		ug/L	202196	1	01/27/2015 14:33	NP
4-Methyl-2-pentanone	BRL	10		ug/L	202196	1	01/27/2015 14:33	NP
Acetone	BRL	50		ug/L	202196	1	01/27/2015 14:33	NP
Benzene	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Bromodichloromethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Bromoform	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Bromomethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Carbon disulfide	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Carbon tetrachloride	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Chlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Chloroethane	BRL	10		ug/L	202196	1	01/27/2015 14:33	NP
Chloroform	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Chloromethane	BRL	10		ug/L	202196	1	01/27/2015 14:33	NP
cis-1,2-Dichloroethene	21	5.0		ug/L	202196	1	01/27/2015 14:33	NP
cis-1,3-Dichloropropene	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Cyclohexane	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Dibromochloromethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Dichlorodifluoromethane	BRL	10		ug/L	202196	1	01/27/2015 14:33	NP
Ethylbenzene	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Freon-113	BRL	10		ug/L	202196	1	01/27/2015 14:33	NP
Isopropylbenzene	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
m,p-Xylene	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Methyl acetate	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Methyl tert-butyl ether	5.4	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Methylcyclohexane	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Methylene chloride	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
o-Xylene	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP

Qualifiers:	* 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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: MW-2A
Project Name: Omni Source, Athens GA	Collection Date: 1/22/2015 5:10:00 PM
Lab ID: 1501H99-004	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B					(SW5030B)			
Styrene	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Tetrachloroethene	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Toluene	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
trans-1,3-Dichloropropene	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Trichloroethene	23	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Trichlorofluoromethane	BRL	5.0		ug/L	202196	1	01/27/2015 14:33	NP
Vinyl chloride	29	2.0		ug/L	202196	1	01/27/2015 14:33	NP
Surr: 4-Bromofluorobenzene	97.4	70.6-123		%REC	202196	1	01/27/2015 14:33	NP
Surr: Dibromofluoromethane	101	78.7-124		%REC	202196	1	01/27/2015 14:33	NP
Surr: Toluene-d8	99.5	81.3-120		%REC	202196	1	01/27/2015 14:33	NP
METALS, TOTAL SW6010C					(SW3010A)			
Lead	BRL	0.0100		mg/L	202302	1	01/28/2015 19:59	JL

Qualifiers:	* 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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: TB 012215
Project Name: Omni Source, Athens GA	Collection Date: 1/22/2015
Lab ID: 1501H99-005	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
1,1,2-Trichloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
1,1-Dichloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
1,1-Dichloroethene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
1,2-Dibromoethane	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
1,2-Dichlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
1,2-Dichloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
1,2-Dichloropropane	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
1,3-Dichlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
1,4-Dichlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
2-Butanone	BRL	50		ug/L	202196	1	01/27/2015 19:55	GC
2-Hexanone	BRL	10		ug/L	202196	1	01/27/2015 19:55	GC
4-Methyl-2-pentanone	BRL	10		ug/L	202196	1	01/27/2015 19:55	GC
Acetone	BRL	50		ug/L	202196	1	01/27/2015 19:55	GC
Benzene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Bromodichloromethane	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Bromoform	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Bromomethane	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Carbon disulfide	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Carbon tetrachloride	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Chlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Chloroethane	BRL	10		ug/L	202196	1	01/27/2015 19:55	GC
Chloroform	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Chloromethane	BRL	10		ug/L	202196	1	01/27/2015 19:55	GC
cis-1,2-Dichloroethene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
cis-1,3-Dichloropropene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Cyclohexane	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Dibromochloromethane	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Dichlorodifluoromethane	BRL	10		ug/L	202196	1	01/27/2015 19:55	GC
Ethylbenzene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Freon-113	BRL	10		ug/L	202196	1	01/27/2015 19:55	GC
Isopropylbenzene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
m,p-Xylene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Methyl acetate	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Methyl tert-butyl ether	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Methylcyclohexane	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Methylene chloride	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
o-Xylene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: TB 012215
Project Name: Omni Source, Athens GA	Collection Date: 1/22/2015
Lab ID: 1501H99-005	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B					(SW5030B)			
Styrene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Tetrachloroethene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Toluene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
trans-1,3-Dichloropropene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Trichloroethene	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Trichlorofluoromethane	BRL	5.0		ug/L	202196	1	01/27/2015 19:55	GC
Vinyl chloride	BRL	2.0		ug/L	202196	1	01/27/2015 19:55	GC
Surr: 4-Bromofluorobenzene	93.8	70.6-123		%REC	202196	1	01/27/2015 19:55	GC
Surr: Dibromofluoromethane	114	78.7-124		%REC	202196	1	01/27/2015 19:55	GC
Surr: Toluene-d8	100	81.3-120		%REC	202196	1	01/27/2015 19:55	GC

Qualifiers:	* 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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: FD 012215 B
Project Name: Omni Source, Athens GA	Collection Date: 1/22/2015 5:10:00 PM
Lab ID: 1501H99-006	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
1,1,2-Trichloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
1,1-Dichloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
1,1-Dichloroethene	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
1,2-Dibromoethane	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
1,2-Dichlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
1,2-Dichloroethane	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
1,2-Dichloropropane	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
1,3-Dichlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
1,4-Dichlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
2-Butanone	BRL	50		ug/L	202196	1	01/27/2015 20:20	GC
2-Hexanone	BRL	10		ug/L	202196	1	01/27/2015 20:20	GC
4-Methyl-2-pentanone	BRL	10		ug/L	202196	1	01/27/2015 20:20	GC
Acetone	BRL	50		ug/L	202196	1	01/27/2015 20:20	GC
Benzene	5.2	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Bromodichloromethane	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Bromoform	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Bromomethane	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Carbon disulfide	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Carbon tetrachloride	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Chlorobenzene	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Chloroethane	BRL	10		ug/L	202196	1	01/27/2015 20:20	GC
Chloroform	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Chloromethane	BRL	10		ug/L	202196	1	01/27/2015 20:20	GC
cis-1,2-Dichloroethene	33	5.0		ug/L	202196	1	01/27/2015 20:20	GC
cis-1,3-Dichloropropene	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Cyclohexane	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Dibromochloromethane	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Dichlorodifluoromethane	BRL	10		ug/L	202196	1	01/27/2015 20:20	GC
Ethylbenzene	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Freon-113	BRL	10		ug/L	202196	1	01/27/2015 20:20	GC
Isopropylbenzene	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
m,p-Xylene	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Methyl acetate	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Methyl tert-butyl ether	6.0	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Methylcyclohexane	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Methylene chloride	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
o-Xylene	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC

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: 30-Jan-15

Client: APEX Compaines, LLC	Client Sample ID: FD 012215 B
Project Name: Omni Source, Athens GA	Collection Date: 1/22/2015 5:10:00 PM
Lab ID: 1501H99-006	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B			(SW5030B)					
Styrene	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Tetrachloroethene	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Toluene	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
trans-1,2-Dichloroethene	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
trans-1,3-Dichloropropene	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Trichloroethene	43	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Trichlorofluoromethane	BRL	5.0		ug/L	202196	1	01/27/2015 20:20	GC
Vinyl chloride	29	2.0		ug/L	202196	1	01/27/2015 20:20	GC
Surr: 4-Bromofluorobenzene	94.9	70.6-123		%REC	202196	1	01/27/2015 20:20	GC
Surr: Dibromofluoromethane	110	78.7-124		%REC	202196	1	01/27/2015 20:20	GC
Surr: Toluene-d8	100	81.3-120		%REC	202196	1	01/27/2015 20:20	GC
METALS, TOTAL SW6010C			(SW3010A)					
Lead	BRL	0.0100		mg/L	202302	1	01/28/2015 20:03	JL

Qualifiers:	* 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 Apex

Work Order Number 1501499

Checklist completed by [Signature] Date 1/23/15

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? (0°≤6°C)* Yes No ___

Cooler #1 3.3 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 MJ

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: APEX Compaines, LLC
 Project Name: Omni Source, Athens GA
 Lab Order: 1501H99

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1501H99-001A	MW-13	1/22/2015 5:00:00PM	Groundwater	TCL VOLATILE ORGANICS		1/26/2015 12:19:00PM	01/26/2015
1501H99-001B	MW-13	1/22/2015 5:00:00PM	Groundwater	GC Analysis of Gaseous Samples		1/30/2015 10:30:58AM	01/30/2015
1501H99-001C	MW-13	1/22/2015 5:00:00PM	Groundwater	TOTAL METALS BY ICP		1/28/2015 11:30:00AM	01/28/2015
1501H99-001D	MW-13	1/22/2015 5:00:00PM	Groundwater	Total Organic Carbon (TOC)			01/26/2015
1501H99-001E	MW-13	1/22/2015 5:00:00PM	Groundwater	Sulfide by SW9030/9034		1/26/2015 8:45:00AM	01/26/2015
1501H99-001F	MW-13	1/22/2015 5:00:00PM	Groundwater	ION SCAN			01/23/2015
1501H99-002A	MW-4A	1/22/2015 3:30:00PM	Groundwater	TCL VOLATILE ORGANICS		1/26/2015 12:19:00PM	01/26/2015
1501H99-002B	MW-4A	1/22/2015 3:30:00PM	Groundwater	GC Analysis of Gaseous Samples		1/30/2015 10:30:58AM	01/30/2015
1501H99-002C	MW-4A	1/22/2015 3:30:00PM	Groundwater	TOTAL METALS BY ICP		1/28/2015 11:30:00AM	01/28/2015
1501H99-002D	MW-4A	1/22/2015 3:30:00PM	Groundwater	Total Organic Carbon (TOC)			01/26/2015
1501H99-002E	MW-4A	1/22/2015 3:30:00PM	Groundwater	Sulfide by SW9030/9034		1/26/2015 8:45:00AM	01/26/2015
1501H99-002F	MW-4A	1/22/2015 3:30:00PM	Groundwater	ION SCAN			01/23/2015
1501H99-003A	MW-10	1/22/2015 3:40:00PM	Groundwater	TCL VOLATILE ORGANICS		1/26/2015 12:19:00PM	01/27/2015
1501H99-003B	MW-10	1/22/2015 3:40:00PM	Groundwater	TOTAL METALS BY ICP		1/28/2015 11:30:00AM	01/28/2015
1501H99-004A	MW-2A	1/22/2015 5:10:00PM	Groundwater	TCL VOLATILE ORGANICS		1/26/2015 12:19:00PM	01/27/2015
1501H99-004B	MW-2A	1/22/2015 5:10:00PM	Groundwater	TOTAL METALS BY ICP		1/28/2015 11:30:00AM	01/28/2015
1501H99-005A	TB 012215	1/22/2015 12:00:00AM	Aqueous	TCL VOLATILE ORGANICS		1/26/2015 12:19:00PM	01/27/2015
1501H99-006A	FD 012215 B	1/22/2015 5:10:00PM	Groundwater	TCL VOLATILE ORGANICS		1/26/2015 12:19:00PM	01/27/2015
1501H99-006B	FD 012215 B	1/22/2015 5:10:00PM	Groundwater	TOTAL METALS BY ICP		1/28/2015 11:30:00AM	01/28/2015

Client: APEX Compaines, LLC
Project Name: Omni Source, Athens GA
Workorder: 1501H99

ANALYTICAL QC SUMMARY REPORT

BatchID: 202195

Sample ID: MB-202195	Client ID:	Units: mg/L	Prep Date: 01/26/2015	Run No: 284412							
SampleType: MBLK	TestCode: Sulfide by SW9030B/9034	BatchID: 202195	Analysis Date: 01/26/2015	Seq No: 6029796							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide BRL 2.00

Sample ID: LCS-202195	Client ID:	Units: mg/L	Prep Date: 01/26/2015	Run No: 284412							
SampleType: LCS	TestCode: Sulfide by SW9030B/9034	BatchID: 202195	Analysis Date: 01/26/2015	Seq No: 6029797							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 396.0 2.00 396.0 100 40 120

Sample ID: 1501G91-010EMS	Client ID:	Units: mg/L	Prep Date: 01/26/2015	Run No: 284412							
SampleType: MS	TestCode: Sulfide by SW9030B/9034	BatchID: 202195	Analysis Date: 01/26/2015	Seq No: 6029808							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 19.60 2.00 19.80 99.0 73.7 120

Sample ID: 1501G91-010EMSD	Client ID:	Units: mg/L	Prep Date: 01/26/2015	Run No: 284412							
SampleType: MSD	TestCode: Sulfide by SW9030B/9034	BatchID: 202195	Analysis Date: 01/26/2015	Seq No: 6029810							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Sulfide 19.80 2.00 19.80 100 73.7 120 19.60 1.02 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: APEX Compaines, LLC
Project Name: Omni Source, Athens GA
Workorder: 1501H99

ANALYTICAL QC SUMMARY REPORT

BatchID: 202196

Sample ID: MB-202196	Client ID:	Units: ug/L	Prep Date: 01/26/2015	Run No: 284416							
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 202196	Analysis Date: 01/26/2015	Seq No: 6029878							
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									

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: APEX Compaines, LLC
Project Name: Omni Source, Athens GA
Workorder: 1501H99

ANALYTICAL QC SUMMARY REPORT

BatchID: 202196

Sample ID: MB-202196	Client ID:	Units: ug/L	Prep Date: 01/26/2015	Run No: 284416							
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 202196	Analysis Date: 01/26/2015	Seq No: 6029878							
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	47.41	0	50.00		94.8	70.6	123				
Surr: Dibromofluoromethane	52.37	0	50.00		105	78.7	124				
Surr: Toluene-d8	49.80	0	50.00		99.6	81.3	120				

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: APEX Compaines, LLC
Project Name: Omni Source, Athens GA
Workorder: 1501H99

ANALYTICAL QC SUMMARY REPORT

BatchID: 202196

Sample ID: LCS-202196	Client ID:	Units: ug/L	Prep Date: 01/26/2015	Run No: 284527							
SampleType: LCS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 202196	Analysis Date: 01/27/2015	Seq No: 6032363							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	57.58	5.0	50.00		115	64.2	137				
Benzene	50.99	5.0	50.00		102	72.8	128				
Chlorobenzene	51.92	5.0	50.00		104	72.3	126				
Toluene	53.57	5.0	50.00		107	74.9	127				
Trichloroethene	55.57	5.0	50.00		111	70.5	134				
Surr: 4-Bromofluorobenzene	46.12	0	50.00		92.2	70.6	123				
Surr: Dibromofluoromethane	54.34	0	50.00		109	78.7	124				
Surr: Toluene-d8	49.75	0	50.00		99.5	81.3	120				

Sample ID: 1501H99-002AMS	Client ID: MW-4A	Units: ug/L	Prep Date: 01/26/2015	Run No: 284527							
SampleType: MS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 202196	Analysis Date: 01/27/2015	Seq No: 6033226							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	77.26	5.0	50.00		155	60.5	156				
Benzene	59.79	5.0	50.00		120	70	135				
Chlorobenzene	60.69	5.0	50.00		121	70.5	132				
Toluene	62.53	5.0	50.00		125	70.5	137				
Trichloroethene	69.22	5.0	50.00		138	71.8	139				
Surr: 4-Bromofluorobenzene	47.65	0	50.00		95.3	70.6	123				
Surr: Dibromofluoromethane	55.33	0	50.00		111	78.7	124				
Surr: Toluene-d8	49.76	0	50.00		99.5	81.3	120				

Sample ID: 1501H99-002AMSD	Client ID: MW-4A	Units: ug/L	Prep Date: 01/26/2015	Run No: 284527							
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 202196	Analysis Date: 01/27/2015	Seq No: 6033227							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	75.52	5.0	50.00		151	60.5	156	77.26	2.28	20	
Benzene	61.22	5.0	50.00		122	70	135	59.79	2.36	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: APEX Compaines, LLC
Project Name: Omni Source, Athens GA
Workorder: 1501H99

ANALYTICAL QC SUMMARY REPORT

BatchID: 202196

Sample ID: 1501H99-002AMSD	Client ID: MW-4A	Units: ug/L	Prep Date: 01/26/2015	Run No: 284527
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 202196	Analysis Date: 01/27/2015	Seq No: 6033227

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlorobenzene	59.21	5.0	50.00		118	70.5	132	60.69	2.47	20	
Toluene	61.64	5.0	50.00		123	70.5	137	62.53	1.43	20	
Trichloroethene	67.65	5.0	50.00		135	71.8	139	69.22	2.29	20	
Surr: 4-Bromofluorobenzene	46.11	0	50.00		92.2	70.6	123	47.65	0	0	
Surr: Dibromofluoromethane	56.01	0	50.00		112	78.7	124	55.33	0	0	
Surr: Toluene-d8	49.72	0	50.00		99.4	81.3	120	49.76	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		

Client: APEX Compaines, LLC
Project Name: Omni Source, Athens GA
Workorder: 1501H99

ANALYTICAL QC SUMMARY REPORT

BatchID: 202302

Sample ID: MB-202302	Client ID:	Units: mg/L	Prep Date: 01/28/2015	Run No: 284669							
SampleType: MBLK	TestCode: METALS, TOTAL SW6010C	BatchID: 202302	Analysis Date: 01/28/2015	Seq No: 6035340							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Lead BRL 0.0100

Sample ID: LCS-202302	Client ID:	Units: mg/L	Prep Date: 01/28/2015	Run No: 284669							
SampleType: LCS	TestCode: METALS, TOTAL SW6010C	BatchID: 202302	Analysis Date: 01/28/2015	Seq No: 6035341							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Lead 1.015 0.0100 1.000 102 80 120

Sample ID: 1501G91-010CMS	Client ID:	Units: mg/L	Prep Date: 01/28/2015	Run No: 284669							
SampleType: MS	TestCode: METALS, TOTAL SW6010C	BatchID: 202302	Analysis Date: 01/28/2015	Seq No: 6035344							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Lead 0.9894 0.0100 1.000 98.9 75 125

Sample ID: 1501G91-010CMSD	Client ID:	Units: mg/L	Prep Date: 01/28/2015	Run No: 284669							
SampleType: MSD	TestCode: METALS, TOTAL SW6010C	BatchID: 202302	Analysis Date: 01/28/2015	Seq No: 6035345							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Lead 0.9966 0.0100 1.000 99.7 75 125 0.9894 0.724 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: APEX Compaines, LLC
Project Name: Omni Source, Athens GA
Workorder: 1501H99

ANALYTICAL QC SUMMARY REPORT

BatchID: 202307

Sample ID: MB-202307	Client ID:	Units: ug/L	Prep Date: 01/30/2015	Run No: 284790							
SampleType: MBLK	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 202307	Analysis Date: 01/30/2015	Seq No: 6038980							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Ethane	BRL	9									
Ethylene	BRL	7									
Methane	BRL	4									

Sample ID: LCS-202307	Client ID:	Units: ug/L	Prep Date: 01/30/2015	Run No: 284790							
SampleType: LCS	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 202307	Analysis Date: 01/30/2015	Seq No: 6038981							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Ethane	148.7	9	200.0		74.3	41.2	115				
Ethylene	98.65	7	200.0		49.3	26.5	115				
Methane	153.0	4	200.0		76.5	45.1	115				

Sample ID: LCSD-202307	Client ID:	Units: ug/L	Prep Date: 01/30/2015	Run No: 284790							
SampleType: LCSD	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 202307	Analysis Date: 01/30/2015	Seq No: 6038983							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Ethane	145.0	9	200.0		72.5	41.2	115	148.7	2.48	20	
Ethylene	95.67	7	200.0		47.8	26.5	115	98.65	3.07	20	
Methane	149.6	4	200.0		74.8	45.1	115	153.0	2.28	20	

Sample ID: 1501G91-010BMS	Client ID:	Units: ug/L	Prep Date: 01/30/2015	Run No: 284790							
SampleType: MS	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 202307	Analysis Date: 01/30/2015	Seq No: 6038988							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Ethylene	96.80	7	200.0		48.4	25.1	115				
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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: APEX Compaines, LLC
Project Name: Omni Source, Athens GA
Workorder: 1501H99

ANALYTICAL QC SUMMARY REPORT

BatchID: 202307

Sample ID: 1501G91-010BMS	Client ID:	Units: ug/L	Prep Date: 01/30/2015	Run No: 284790							
SampleType: MS	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 202307	Analysis Date: 01/30/2015	Seq No: 6038995							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Ethane	404.1	18	200.0	361.0	21.5	40.5	115				S
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Sample ID: 1501G91-010BMS	Client ID:	Units: ug/L	Prep Date: 01/30/2015	Run No: 284790							
SampleType: MS	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 202307	Analysis Date: 01/30/2015	Seq No: 6038997							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane	7787	200	200.0	8134	-174	40.4	115				S
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Sample ID: 1501G91-010BMSD	Client ID:	Units: ug/L	Prep Date: 01/30/2015	Run No: 284790							
SampleType: MSD	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 202307	Analysis Date: 01/30/2015	Seq No: 6038990							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Ethane	495.8	9	200.0	361.0	67.4	40.5	115	517.3	4.24	20	
Ethylene	91.99	7	200.0		46.0	25.1	115	96.80	5.10	20	

Sample ID: 1501G91-010BMSD	Client ID:	Units: ug/L	Prep Date: 01/30/2015	Run No: 284790							
SampleType: MSD	TestCode: GC Analysis of Gaseous Samples SOP-RSK 175	BatchID: 202307	Analysis Date: 01/30/2015	Seq No: 6039001							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Methane	7874	200	200.0	8134	-130	40.4	115	7787	1.11	20	S
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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: APEX Compaines, LLC
Project Name: Omni Source, Athens GA
Workorder: 1501H99

ANALYTICAL QC SUMMARY REPORT

BatchID: R284482

Sample ID: MB-R284482	Client ID:	Units: mg/L	Prep Date:	Run No: 284482							
SampleType: MBLK	TestCode: ION SCAN SW9056A	BatchID: R284482	Analysis Date: 01/23/2015	Seq No: 6031340							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride	BRL	1.0									
Nitrate	BRL	0.25									
Sulfate	BRL	1.0									

Sample ID: LCS-R284482	Client ID:	Units: mg/L	Prep Date:	Run No: 284482							
SampleType: LCS	TestCode: ION SCAN SW9056A	BatchID: R284482	Analysis Date: 01/23/2015	Seq No: 6031339							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride	9.998	1.0	10.00		100.0	90	110				
Nitrate	4.982	0.25	5.000		99.6	90	110				
Sulfate	25.74	1.0	25.00		103	90	110				

Sample ID: 1501G91-010FMS	Client ID:	Units: mg/L	Prep Date:	Run No: 284482							
SampleType: MS	TestCode: ION SCAN SW9056A	BatchID: R284482	Analysis Date: 01/23/2015	Seq No: 6031356							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride	104.1	10	100.0	9.499	94.6	90	110				
Nitrate	51.62	2.5	50.00	2.276	98.7	90	110				
Sulfate	265.6	10	250.0		106	90	110				

Sample ID: 1501H19-001BMS	Client ID:	Units: mg/L	Prep Date:	Run No: 284482							
SampleType: MS	TestCode: ION SCAN SW9056A	BatchID: R284482	Analysis Date: 01/23/2015	Seq No: 6031362							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride	134.5	10	100.0	34.15	100	90	110				
Nitrate	68.06	2.5	50.00	16.82	102	90	110				
Sulfate	301.0	10	250.0	33.67	107	90	110				

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: APEX Compaines, LLC
 Project Name: Omni Source, Athens GA
 Workorder: 1501H99

ANALYTICAL QC SUMMARY REPORT

BatchID: R284482

Sample ID: 1501G91-010FMSD	Client ID:	Units: mg/L	Prep Date:	Run No: 284482							
SampleType: MSD	TestCode: ION SCAN SW9056A	BatchID: R284482	Analysis Date: 01/23/2015	Seq No: 6031357							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chloride	106.4	10	100.0	9.499	96.9	90	110	104.1	2.14	20	
Nitrate	52.28	2.5	50.00	2.276	100	90	110	51.62	1.27	20	
Sulfate	264.2	10	250.0		106	90	110	265.6	0.539	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: APEX Compaines, LLC
Project Name: Omni Source, Athens GA
Workorder: 1501H99

ANALYTICAL QC SUMMARY REPORT

BatchID: R284517

Sample ID: MB-R284517	Client ID:	Units: mg/L	Prep Date:	Run No: 284517							
SampleType: MBLK	TestCode: Total Organic Carbon (TOC) SW9060A	BatchID: R284517	Analysis Date: 01/26/2015	Seq No: 6031973							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Organic Carbon, Total

BRL 1.00

Sample ID: LCS-R284517	Client ID:	Units: mg/L	Prep Date:	Run No: 284517							
SampleType: LCS	TestCode: Total Organic Carbon (TOC) SW9060A	BatchID: R284517	Analysis Date: 01/26/2015	Seq No: 6031972							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Organic Carbon, Total

25.00 1.00 25.00 100 90 110

Sample ID: 1501G91-010DMS	Client ID:	Units: mg/L	Prep Date:	Run No: 284517							
SampleType: MS	TestCode: Total Organic Carbon (TOC) SW9060A	BatchID: R284517	Analysis Date: 01/26/2015	Seq No: 6031989							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Organic Carbon, Total

25.13 1.00 25.00 2.504 90.5 80 120

Sample ID: 1501G91-010DMSD	Client ID:	Units: mg/L	Prep Date:	Run No: 284517							
SampleType: MSD	TestCode: Total Organic Carbon (TOC) SW9060A	BatchID: R284517	Analysis Date: 01/27/2015	Seq No: 6031990							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Organic Carbon, Total

25.82 1.00 25.00 2.504 93.3 80 120 25.13 2.71 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	



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

May 29, 2015

Jim Morrison
APEX Compaines, LLC
312 Cherokee Place, SE
Atlanta GA 30312

TEL: (404) 408-6916
FAX:

RE: OmniSource Athens

Dear Jim Morrison:

Order No: 1505K95

Analytical Environmental Services, Inc. received 4 samples on 5/21/2015 10:30:00 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 07/01/14-06/30/15.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, 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.

Tara Esbeck
Project Manager



COMPANY: <u>Apex Companies LLC</u> <u>312 Cherokee Place, SE</u> <u>Atlanta, GA 30312</u>		ADDRESS: <u>10610 Metromont Pkwy Ste 206</u> <u>Charlotte, NC</u> <u>28269</u>		ANALYSIS REQUESTED Vol Lead Target 8360 B 8 PCRA METALS PCRA METALS ALL CPM METALS 150 TOXICITY ETR 103D 18101 PCRA Metal PCB										Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.		No # of Containers						
PHONE: <u>404-408-6916</u>		FAX:		PRESERVATION (See codes)										REMARKS								
SAMPLED BY: <u>Thomas Fisher</u>		SIGNATURE: <u>[Signature]</u>		#		SAMPLE ID		SAMPLED DATE TIME		Grab Composite Matrix (See codes)												
				1		MW-2A		5/20/15 1155		X		X X										3
				2		MW-ID CMP		5/20/15 1530		X		X X X X X										6
				3		IDW-CMP		5/21/15 1500		X		X X X X X										5
				4		Trip Blank				X		X										2
				5																		
				6																		
				7																		
				8																		
				9																		
				10																		
				11																		
				12																		
				13																		
				14																		
RELINQUISHED BY: <u>[Signature]</u>		DATE/TIME: <u>5/21/15/1600</u>		RECEIVED BY: <u>[Signature]</u>		DATE/TIME: <u>5/21/15 10:30</u>		PROJECT INFORMATION PROJECT NAME: <u>Dmaigorce Athens, GA</u> PROJECT #: <u>510393-002</u> SITE ADDRESS: <u>590 Old Hull Rd, Athens, GA</u> SEND REPORT TO: <u>Smorrison@apexcos.com</u>										RECEIPT Total # of Containers				
SPECIAL INSTRUCTIONS/COMMENTS: <u>APR</u>		SHIPMENT METHOD OUT <u>5/21/15</u> VIA: <u>FedEx</u> IN <u>1</u> VIA: <u>[Signature]</u> CLIENT: <u>FedEx</u> UPS MAIL COURIER GREYHOUND OTHER		INVOICE TO: (IF DIFFERENT FROM ABOVE)										Turnaround Time Request Standard 5 Business Days 2 Business Day Rush Next Business Day Rush Same Day Rush (auth req.) Other								
								QUOTE #: _____ PO#: _____										STATE PROGRAM (if any): _____ E-mail? Y/N; Fax? Y/N DATA PACKAGE: I II III IV				

Client: APEX Compaines, LLC

Project: OmniSource Athens

Lab ID: 1505K95

Case Narrative

Sample Receiving Nonconformance:

Samples for pH analysis by Method [E150.1/SM4500 H+ B/SW9040C/SW9045D] were received and analyzed outside Method specified holding time of "immediate or 15 minutes".

Client: APEX Compaines, LLC	Client Sample ID: MW-2A
Project Name: OmniSource Athens	Collection Date: 5/20/2015 11:55:00 AM
Lab ID: 1505K95-001	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
1,1-Dichloroethane	6.1	5.0		ug/L	207884	1	05/23/2015 21:13	NP
1,1-Dichloroethene	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
1,2-Dibromoethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
1,2-Dichlorobenzene	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
1,2-Dichloroethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
1,2-Dichloropropane	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
1,3-Dichlorobenzene	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
1,4-Dichlorobenzene	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
2-Butanone	BRL	50		ug/L	207884	1	05/23/2015 21:13	NP
2-Hexanone	BRL	10		ug/L	207884	1	05/23/2015 21:13	NP
4-Methyl-2-pentanone	BRL	10		ug/L	207884	1	05/23/2015 21:13	NP
Acetone	BRL	50		ug/L	207884	1	05/23/2015 21:13	NP
Benzene	8.7	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Bromodichloromethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Bromoform	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Bromomethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Carbon disulfide	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Carbon tetrachloride	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Chlorobenzene	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Chloroethane	BRL	10		ug/L	207884	1	05/23/2015 21:13	NP
Chloroform	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Chloromethane	BRL	10		ug/L	207884	1	05/23/2015 21:13	NP
cis-1,2-Dichloroethene	130	5.0		ug/L	207884	1	05/23/2015 21:13	NP
cis-1,3-Dichloropropene	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Cyclohexane	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Dibromochloromethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Dichlorodifluoromethane	BRL	10		ug/L	207884	1	05/23/2015 21:13	NP
Ethylbenzene	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Freon-113	BRL	10		ug/L	207884	1	05/23/2015 21:13	NP
Isopropylbenzene	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
m,p-Xylene	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Methyl acetate	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Methyl tert-butyl ether	7.6	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Methylcyclohexane	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Methylene chloride	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
o-Xylene	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP

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: 29-May-15

Client: APEX Compaines, LLC	Client Sample ID: MW-2A
Project Name: OmniSource Athens	Collection Date: 5/20/2015 11:55:00 AM
Lab ID: 1505K95-001	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B			(SW5030B)					
Styrene	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Tetrachloroethene	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Toluene	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
trans-1,3-Dichloropropene	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Trichloroethene	140	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Trichlorofluoromethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:13	NP
Vinyl chloride	49	2.0		ug/L	207884	1	05/23/2015 21:13	NP
Surr: 4-Bromofluorobenzene	92.3	70.6-123		%REC	207884	1	05/23/2015 21:13	NP
Surr: Dibromofluoromethane	99.7	78.7-124		%REC	207884	1	05/23/2015 21:13	NP
Surr: Toluene-d8	97.4	81.3-120		%REC	207884	1	05/23/2015 21:13	NP
METALS, TOTAL SW6010C			(SW3010A)					
Lead	BRL	0.0100		mg/L	207865	1	05/27/2015 21:21	IO

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: 29-May-15

Client: APEX Compaines, LLC	Client Sample ID: MW-1D CMP
Project Name: OmniSource Athens	Collection Date: 5/20/2015 3:30:00 PM
Lab ID: 1505K95-002	Matrix: Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TOTAL MERCURY SW7471B					(SW7471B)			
Mercury	BRL	0.134		mg/Kg-dry	207930	1	05/27/2015 17:12	TA
TCL VOLATILE ORGANICS SW8260B					(SW5035)			
1,1,1-Trichloroethane	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
1,1,2-Trichloroethane	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
1,1-Dichloroethane	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
1,1-Dichloroethene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
1,2,4-Trichlorobenzene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
1,2-Dibromoethane	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
1,2-Dichlorobenzene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
1,2-Dichloroethane	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
1,2-Dichloropropane	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
1,3-Dichlorobenzene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
1,4-Dichlorobenzene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
2-Butanone	BRL	50		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
2-Hexanone	BRL	10		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
4-Methyl-2-pentanone	BRL	10		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Acetone	BRL	100		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Benzene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Bromodichloromethane	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Bromoform	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Bromomethane	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Carbon disulfide	BRL	10		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Carbon tetrachloride	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Chlorobenzene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Chloroethane	BRL	10		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Chloroform	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Chloromethane	BRL	10		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
cis-1,2-Dichloroethene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
cis-1,3-Dichloropropene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Cyclohexane	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Dibromochloromethane	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Dichlorodifluoromethane	BRL	10		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Ethylbenzene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Freon-113	BRL	10		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Isopropylbenzene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
m,p-Xylene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Methyl acetate	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Methyl tert-butyl ether	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG

Qualifiers:

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- > 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

Client: APEX Compaines, LLC	Client Sample ID: MW-1D CMP
Project Name: OmniSource Athens	Collection Date: 5/20/2015 3:30:00 PM
Lab ID: 1505K95-002	Matrix: Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B		(SW5035)						
Methylcyclohexane	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Methylene chloride	26	20		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
o-Xylene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Styrene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Tetrachloroethene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Toluene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
trans-1,2-Dichloroethene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
trans-1,3-Dichloropropene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Trichloroethene	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Trichlorofluoromethane	BRL	5.0		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Vinyl chloride	BRL	10		ug/Kg-dry	207849	1	05/27/2015 12:39	CG
Surr: 4-Bromofluorobenzene	82.4	70-128		%REC	207849	1	05/27/2015 12:39	CG
Surr: Dibromofluoromethane	90.1	78.2-128		%REC	207849	1	05/27/2015 12:39	CG
Surr: Toluene-d8	92	76.5-116		%REC	207849	1	05/27/2015 12:39	CG
MERCURY, TCLP SW1311/7470A		(SW7470A)						
Mercury	BRL	0.00400		mg/L	207948	1	05/27/2015 18:53	TA
Laboratory Hydrogen Ion (pH) SW9045D		(SW9045D)						
pH	6.35	0.01	H	pH Units	207958	1	05/27/2015 11:00	JS
Ignitability SW1010A								
Ignitability	180	0	>	°F	R292557	1	05/26/2015 12:10	JC
ICP METALS, TCLP SW1311/6010C		(SW3010A)						
Arsenic	BRL	0.250		mg/L	207945	1	05/27/2015 23:06	IO
Barium	0.748	0.500		mg/L	207945	1	05/27/2015 23:06	IO
Cadmium	BRL	0.0250		mg/L	207945	1	05/27/2015 23:06	IO
Chromium	BRL	0.0500		mg/L	207945	1	05/27/2015 23:06	IO
Lead	BRL	0.0500		mg/L	207945	1	05/27/2015 23:06	IO
Selenium	BRL	0.100		mg/L	207945	1	05/27/2015 23:06	IO
Silver	BRL	0.0250		mg/L	207945	1	05/27/2015 23:06	IO
METALS, TOTAL SW6010C		(SW3050B)						
Arsenic	BRL	6.72		mg/Kg-dry	207875	1	05/26/2015 21:04	IO
Barium	154	6.72		mg/Kg-dry	207875	1	05/26/2015 21:04	IO
Cadmium	BRL	3.36		mg/Kg-dry	207875	1	05/26/2015 21:04	IO
Chromium	38.0	3.36		mg/Kg-dry	207875	1	05/26/2015 21:04	IO
Lead	11.3	6.72		mg/Kg-dry	207875	1	05/26/2015 21:04	IO
Selenium	BRL	6.72		mg/Kg-dry	207875	1	05/26/2015 21:04	IO
Silver	BRL	3.36		mg/Kg-dry	207875	1	05/26/2015 21:04	IO

Qualifiers:

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- 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: 29-May-15

Client: APEX Compaines, LLC	Client Sample ID: MW-1D CMP
Project Name: OmniSource Athens	Collection Date: 5/20/2015 3:30:00 PM
Lab ID: 1505K95-002	Matrix: Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
PERCENT MOISTURE D2216								
Percent Moisture	25.9	0		wt%	R292631	1	05/27/2015 10:00	PF

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- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Client: APEX Compaines, LLC	Client Sample ID: IDW-CMP
Project Name: OmniSource Athens	Collection Date: 5/21/2015 3:00:00 PM
Lab ID: 1505K95-003	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
1,1-Dichloroethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
1,1-Dichloroethene	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
1,2-Dibromoethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
1,2-Dichlorobenzene	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
1,2-Dichloroethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
1,2-Dichloropropane	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
1,3-Dichlorobenzene	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
1,4-Dichlorobenzene	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
2-Butanone	BRL	50		ug/L	207884	1	05/23/2015 21:36	NP
2-Hexanone	BRL	10		ug/L	207884	1	05/23/2015 21:36	NP
4-Methyl-2-pentanone	BRL	10		ug/L	207884	1	05/23/2015 21:36	NP
Acetone	BRL	50		ug/L	207884	1	05/23/2015 21:36	NP
Benzene	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Bromodichloromethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Bromoform	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Bromomethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Carbon disulfide	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Carbon tetrachloride	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Chlorobenzene	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Chloroethane	BRL	10		ug/L	207884	1	05/23/2015 21:36	NP
Chloroform	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Chloromethane	BRL	10		ug/L	207884	1	05/23/2015 21:36	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
cis-1,3-Dichloropropene	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Cyclohexane	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Dibromochloromethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Dichlorodifluoromethane	BRL	10		ug/L	207884	1	05/23/2015 21:36	NP
Ethylbenzene	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Freon-113	BRL	10		ug/L	207884	1	05/23/2015 21:36	NP
Isopropylbenzene	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
m,p-Xylene	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Methyl acetate	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Methyl tert-butyl ether	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Methylcyclohexane	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Methylene chloride	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
o-Xylene	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP

Qualifiers:

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- 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

Client: APEX Compaines, LLC	Client Sample ID: IDW-CMP
Project Name: OmniSource Athens	Collection Date: 5/21/2015 3:00:00 PM
Lab ID: 1505K95-003	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B		(SW5030B)						
Styrene	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Tetrachloroethene	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Toluene	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
trans-1,3-Dichloropropene	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Trichloroethene	10.0	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Trichlorofluoromethane	BRL	5.0		ug/L	207884	1	05/23/2015 21:36	NP
Vinyl chloride	BRL	2.0		ug/L	207884	1	05/23/2015 21:36	NP
Surr: 4-Bromofluorobenzene	86.2	70.6-123		%REC	207884	1	05/23/2015 21:36	NP
Surr: Dibromofluoromethane	104	78.7-124		%REC	207884	1	05/23/2015 21:36	NP
Surr: Toluene-d8	98	81.3-120		%REC	207884	1	05/23/2015 21:36	NP
Mercury, Total SW7470A		(SW7470A)						
Mercury	BRL	0.00020		mg/L	207853	1	05/27/2015 12:05	TA
MERCURY, TCLP SW1311/7470A		(SW7470A)						
Mercury	BRL	0.00400		mg/L	207948	1	05/27/2015 18:55	TA
Laboratory Hydrogen Ion (pH) SW9040C								
pH	6.21	0.01	H	pH Units	R292605	1	05/24/2015 09:30	JS
Ignitability SW1010								
Ignitability	180	0	>	°F	R292557	1	05/26/2015 12:10	JC
ICP METALS, TCLP SW1311/6010C		(SW3010A)						
Arsenic	BRL	0.250		mg/L	207945	1	05/27/2015 23:13	IO
Barium	BRL	0.500		mg/L	207945	1	05/27/2015 23:13	IO
Cadmium	BRL	0.0250		mg/L	207945	1	05/27/2015 23:13	IO
Chromium	BRL	0.0500		mg/L	207945	1	05/27/2015 23:13	IO
Lead	BRL	0.0500		mg/L	207945	1	05/27/2015 23:13	IO
Selenium	BRL	0.100		mg/L	207945	1	05/27/2015 23:13	IO
Silver	BRL	0.0250		mg/L	207945	1	05/27/2015 23:13	IO
METALS, TOTAL SW6010C		(SW3010A)						
Arsenic	BRL	0.0500		mg/L	207865	1	05/27/2015 21:26	IO
Barium	0.114	0.0200		mg/L	207865	1	05/27/2015 21:26	IO
Cadmium	BRL	0.0050		mg/L	207865	1	05/27/2015 21:26	IO
Chromium	BRL	0.0100		mg/L	207865	1	05/27/2015 21:26	IO
Lead	BRL	0.0100		mg/L	207865	1	05/27/2015 21:26	IO
Selenium	BRL	0.0200		mg/L	207865	1	05/27/2015 21:26	IO
Silver	BRL	0.0100		mg/L	207865	1	05/27/2015 21:26	IO

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- E Estimated (value above quantitation range)
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- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Client: APEX Compaines, LLC	Client Sample ID: TRIP BLANK
Project Name: OmniSource Athens	Collection Date: 5/21/2015
Lab ID: 1505K95-004	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
1,1-Dichloroethane	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
1,1-Dichloroethene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
1,2-Dibromoethane	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
1,2-Dichlorobenzene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
1,2-Dichloroethane	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
1,2-Dichloropropane	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
1,3-Dichlorobenzene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
1,4-Dichlorobenzene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
2-Butanone	BRL	50		ug/L	207884	1	05/23/2015 14:35	NP
2-Hexanone	BRL	10		ug/L	207884	1	05/23/2015 14:35	NP
4-Methyl-2-pentanone	BRL	10		ug/L	207884	1	05/23/2015 14:35	NP
Acetone	BRL	50		ug/L	207884	1	05/23/2015 14:35	NP
Benzene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Bromodichloromethane	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Bromoform	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Bromomethane	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Carbon disulfide	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Carbon tetrachloride	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Chlorobenzene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Chloroethane	BRL	10		ug/L	207884	1	05/23/2015 14:35	NP
Chloroform	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Chloromethane	BRL	10		ug/L	207884	1	05/23/2015 14:35	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
cis-1,3-Dichloropropene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Cyclohexane	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Dibromochloromethane	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Dichlorodifluoromethane	BRL	10		ug/L	207884	1	05/23/2015 14:35	NP
Ethylbenzene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Freon-113	BRL	10		ug/L	207884	1	05/23/2015 14:35	NP
Isopropylbenzene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
m,p-Xylene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Methyl acetate	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Methyl tert-butyl ether	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Methylcyclohexane	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Methylene chloride	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
o-Xylene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP

Qualifiers:

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- 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

Client: APEX Compaines, LLC	Client Sample ID: TRIP BLANK
Project Name: OmniSource Athens	Collection Date: 5/21/2015
Lab ID: 1505K95-004	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B					(SW5030B)			
Styrene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Tetrachloroethene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Toluene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
trans-1,3-Dichloropropene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Trichloroethene	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Trichlorofluoromethane	BRL	5.0		ug/L	207884	1	05/23/2015 14:35	NP
Vinyl chloride	BRL	2.0		ug/L	207884	1	05/23/2015 14:35	NP
Surr: 4-Bromofluorobenzene	89.8	70.6-123		%REC	207884	1	05/23/2015 14:35	NP
Surr: Dibromofluoromethane	107	78.7-124		%REC	207884	1	05/23/2015 14:35	NP
Surr: Toluene-d8	95.9	81.3-120		%REC	207884	1	05/23/2015 14:35	NP

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)
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- 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 Apex Companies

Work Order Number 1505K95

Checklist completed by Jamun B Signature Date 5/22/15

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? ($0^{\circ} \leq 6^{\circ}C$)* Yes No

Cooler #1 3.10 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 JB

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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Lab Order: 1505K95

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1505K95-001A	MW-2A	5/20/2015 11:55:00AM	Groundwater	TCL VOLATILE ORGANICS		5/23/2015 11:12:00 AM	05/23/2015
1505K95-001B	MW-2A	5/20/2015 11:55:00AM	Groundwater	TOTAL METALS BY ICP		5/26/2015 10:47:00 AM	05/27/2015
1505K95-002A	MW-1D CMP	5/20/2015 3:30:00PM	Soil	TCL VOLATILE ORGANICS		5/26/2015 3:49:00 PM	05/27/2015
1505K95-002B	MW-1D CMP	5/20/2015 3:30:00PM	Soil	PERCENT MOISTURE			05/27/2015
1505K95-002C	MW-1D CMP	5/20/2015 3:30:00PM	Soil	IGNITABILITY			05/26/2015
1505K95-002C	MW-1D CMP	5/20/2015 3:30:00PM	Soil	Laboratory Hydrogen Ion (pH)		5/27/2015 11:00:00 AM	05/27/2015
1505K95-002D	MW-1D CMP	5/20/2015 3:30:00PM	Soil	MERCURY, TCLP Leached	05/26/2015	5/27/2015 12:50:00 PM	05/27/2015
1505K95-002D	MW-1D CMP	5/20/2015 3:30:00PM	Soil	ICP METALS, TCLP Leached	05/26/2015	5/27/2015 12:07:00 PM	05/27/2015
1505K95-002D	MW-1D CMP	5/20/2015 3:30:00PM	Soil	TOTAL METALS BY ICP		5/26/2015 1:30:00 PM	05/26/2015
1505K95-002D	MW-1D CMP	5/20/2015 3:30:00PM	Soil	MERCURY		5/27/2015 10:30:00 AM	05/27/2015
1505K95-003A	IDW-CMP	5/21/2015 3:00:00PM	Groundwater	TCL VOLATILE ORGANICS		5/23/2015 11:12:00 AM	05/23/2015
1505K95-003B	IDW-CMP	5/21/2015 3:00:00PM	Groundwater	TOTAL METALS BY ICP		5/26/2015 10:47:00 AM	05/27/2015
1505K95-003B	IDW-CMP	5/21/2015 3:00:00PM	Groundwater	TOTAL MERCURY		5/26/2015 10:40:00 AM	05/27/2015
1505K95-003C	IDW-CMP	5/21/2015 3:00:00PM	Groundwater	IGNITABILITY			05/26/2015
1505K95-003C	IDW-CMP	5/21/2015 3:00:00PM	Groundwater	Laboratory Hydrogen Ion (pH)			05/24/2015
1505K95-003D	IDW-CMP	5/21/2015 3:00:00PM	Groundwater	MERCURY, TCLP Leached	05/26/2015	5/27/2015 12:50:00 PM	05/27/2015
1505K95-003D	IDW-CMP	5/21/2015 3:00:00PM	Groundwater	ICP METALS, TCLP Leached	05/26/2015	5/27/2015 12:07:00 PM	05/27/2015
1505K95-004A	TRIP BLANK	5/21/2015 12:00:00AM	Aqueous	TCL VOLATILE ORGANICS		5/23/2015 11:12:00 AM	05/23/2015

Client: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207849

Sample ID: MB-207849	Client ID:	Units: ug/Kg	Prep Date: 05/26/2015	Run No: 292582								
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 207849	Seq No: 6229085									
		Analysis Date / Time: May 26 2015 5:02PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	BRL	5.8	27									
1,1,2,2-Tetrachloroethane	BRL	9.5	34									
1,1,2-Trichloroethane	BRL	6.5	27									
1,1-Dichloroethane	BRL	5.2	20									
1,1-Dichloroethene	BRL	4.5	20									
1,2,4-Trichlorobenzene	BRL	12	37									
1,2-Dibromo-3-chloropropane	BRL	1.8	5.0									
1,2-Dibromoethane	BRL	8.6	38									
1,2-Dichlorobenzene	BRL	5.8	30									
1,2-Dichloroethane	BRL	2.6	20									
1,2-Dichloropropane	BRL	9.1	23									
1,3-Dichlorobenzene	BRL	4.9	30									
1,4-Dichlorobenzene	BRL	5.4	30									
2-Butanone	BRL	16	150									
2-Hexanone	BRL	19	41									
4-Methyl-2-pentanone	BRL	13	41									
Acetone	BRL	18	240									
Benzene	BRL	3.9	16									
Bromodichloromethane	BRL	5.0	33									
Bromoform	BRL	15	52									
Bromomethane	BRL	6.2	19									
Carbon disulfide	BRL	6.3	31									
Carbon tetrachloride	BRL	7.9	31									
Chlorobenzene	BRL	5.3	23									
Chloroethane	BRL	4.5	26									
Chloroform	BRL	4.8	24									
Chloromethane	BRL	2.5	21									
cis-1,2-Dichloroethene	BRL	5.5	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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207849

Sample ID: MB-207849	Client ID:	Units: ug/Kg	Prep Date: 05/26/2015	Run No: 292582								
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 207849	Analysis Date / Time: May 26 2015 5:02PM	Seq No: 6229085								
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,3-Dichloropropene	BRL	4.4	23									
Cyclohexane	BRL	6.3	17									
Dibromochloromethane	BRL	10	43									
Dichlorodifluoromethane	BRL	5.1	49									
Ethylbenzene	BRL	2.2	22									
Freon-113	BRL	8.5	77									
Isopropylbenzene	BRL	0.80	5.0									
m,p-Xylene	BRL	6.3	22									
Methyl acetate	BRL	3.0	5.0									
Methyl tert-butyl ether	BRL	4.9	18									
Methylcyclohexane	BRL	1.6	5.0									
Methylene chloride	BRL	9.6	69									
o-Xylene	BRL	4.8	22									
Styrene	BRL	3.2	21									
Tetrachloroethene	BRL	5.6	34									
Toluene	BRL	2.9	19									
trans-1,2-Dichloroethene	BRL	7.8	20									
trans-1,3-Dichloropropene	BRL	2.9	23									
Trichloroethene	BRL	6.2	27									
Trichlorofluoromethane	BRL	6.0	28									
Vinyl chloride	BRL	4.5	26									
Surr: 4-Bromofluorobenzene	41.04	0	0	50.00		82.1	70	128				
Surr: Dibromofluoromethane	44.77	0	0	50.00		89.5	78.2	128				
Surr: Toluene-d8	46.02	0	0	50.00		92.0	76.5	116				
1,1,1-Trichloroethane	BRL	5.8	27									
1,1,2,2-Tetrachloroethane	BRL	9.5	34									
1,1,2-Trichloroethane	BRL	6.5	27									
1,1-Dichloroethane	BRL	5.2	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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207849

Sample ID: MB-207849	Client ID:	Units: ug/m3	Prep Date: 05/26/2015	Run No: 292582								
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 207849	Seq No: 6229085									
		Analysis Date / Time: May 26 2015 5:02PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	BRL	4.5	20									
1,2,4-Trichlorobenzene	BRL	12	37									
1,2-Dibromo-3-chloropropane	BRL	1.8	5.0									
1,2-Dibromoethane	BRL	8.6	38									
1,2-Dichlorobenzene	BRL	5.8	30									
1,2-Dichloroethane	BRL	2.6	20									
1,2-Dichloropropane	BRL	9.1	23									
1,3-Dichlorobenzene	BRL	4.9	30									
1,4-Dichlorobenzene	BRL	5.4	30									
2-Butanone	BRL	16	150									
2-Hexanone	BRL	19	41									
4-Methyl-2-pentanone	BRL	13	41									
Acetone	BRL	18	240									
Benzene	BRL	3.9	16									
Bromodichloromethane	BRL	5.0	33									
Bromoform	BRL	15	52									
Bromomethane	BRL	6.2	19									
Carbon disulfide	BRL	6.3	31									
Carbon tetrachloride	BRL	7.9	31									
Chlorobenzene	BRL	5.3	23									
Chloroethane	BRL	4.5	26									
Chloroform	BRL	4.8	24									
Chloromethane	BRL	2.5	21									
cis-1,2-Dichloroethene	BRL	5.5	20									
cis-1,3-Dichloropropene	BRL	4.4	23									
Cyclohexane	BRL	6.3	17									
Dibromochloromethane	BRL	10	43									
Dichlorodifluoromethane	BRL	5.1	49									

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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207849

Sample ID: MB-207849	Client ID:	Units: ug/m3	Prep Date: 05/26/2015	Run No: 292582								
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 207849		Seq No: 6229085								
		Analysis Date / Time: May 26 2015 5:02PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Ethylbenzene	BRL	2.2	22									
Freon-113	BRL	8.5	77									
Isopropylbenzene	BRL	0.80	5.0									
m,p-Xylene	BRL	6.3	22									
Methyl acetate	BRL	3.0	5.0									
Methyl tert-butyl ether	BRL	4.9	18									
Methylcyclohexane	BRL	1.6	5.0									
Methylene chloride	BRL	9.6	69									
o-Xylene	BRL	4.8	22									
Styrene	BRL	3.2	21									
Tetrachloroethene	BRL	5.6	34									
Toluene	BRL	2.9	19									
trans-1,2-Dichloroethene	BRL	7.8	20									
trans-1,3-Dichloropropene	BRL	2.9	23									
Trichloroethene	BRL	6.2	27									
Trichlorofluoromethane	BRL	6.0	28									
Vinyl chloride	BRL	4.5	26									
Surr: 4-Bromofluorobenzene	41.04	0	0	50.00		82.1	70	128				
Surr: Dibromofluoromethane	44.77	0	0	50.00		89.5	78.2	128				
Surr: Toluene-d8	46.02	0	0	50.00		92.0	76.5	116				

Sample ID: LCS-207849	Client ID:	Units: ug/Kg	Prep Date: 05/26/2015	Run No: 292582								
SampleType: LCS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 207849		Seq No: 6229082								
		Analysis Date / Time: May 26 2015 3:50PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	180.2	4.5	20	198.2		90.9	69.9	145				
Benzene	131.5	3.9	16	159.7		82.3	72.3	130				
Chlorobenzene	202.8	5.3	23	230.3		88.1	69	130				

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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207849

Sample ID: LCS-207849	Client ID:	Units: ug/Kg	Prep Date: 05/26/2015	Run No: 292582								
SampleType: LCS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 207849		Seq No: 6229082								
		Analysis Date / Time: May 26 2015 3:50PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Toluene	163.2	2.9	19	188.4		86.6	71.1	130				
Trichloroethene	238.8	6.2	27	268.7		88.9	71.7	136				
Surr: 4-Bromofluorobenzene	41.95	0	0	50.00		83.9	70	128				
Surr: Dibromofluoromethane	44.50	0	0	50.00		89.0	78.2	128				
Surr: Toluene-d8	45.76	0	0	50.00		91.5	76.5	116				
1,1-Dichloroethene	180.2	4.5	20	198.2		90.9	69.9	145				
Benzene	131.5	3.9	16	159.7		82.3	72.3	130				
Chlorobenzene	202.8	5.3	23	230.3		88.1	69	130				
Toluene	163.2	2.9	19	188.4		86.6	71.1	130				
Trichloroethene	238.8	6.2	27	268.7		88.9	71.7	136				
Surr: 4-Bromofluorobenzene	41.95	0	0	50.00		83.9	70	128				
Surr: Dibromofluoromethane	44.50	0	0	50.00		89.0	78.2	128				
Surr: Toluene-d8	45.76	0	0	50.00		91.5	76.5	116				

Sample ID: 1505M29-001AMS	Client ID:	Units: ug/Kg-dry	Prep Date: 05/26/2015	Run No: 292582								
SampleType: MS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 207849		Seq No: 6229083								
		Analysis Date / Time: May 26 2015 4:13PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	189.5	4.8	22	217.3		87.2	56.6	151				
Benzene	140.5	4.2	18	175.1		80.3	70.4	130				
Chlorobenzene	209.1	5.5	25	252.4		82.8	67.5	132				
Toluene	170.1	3.2	21	206.5		82.4	70.4	130				
Trichloroethene	253.2	7.0	30	294.5		86.0	70.1	137				
Surr: 4-Bromofluorobenzene	46.00	0	0	54.80		83.9	70	128				
Surr: Dibromofluoromethane	49.68	0	0	54.80		90.7	78.2	128				
Surr: Toluene-d8	49.49	0	0	54.80		90.3	76.5	116				
1,1-Dichloroethene	189.5	4.8	22	217.3		87.2	56.6	151				
Benzene	140.5	4.2	18	175.1		80.3	70.4	130				

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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207849

Sample ID: 1505M29-001AMS	Client ID:	Units: ug/m3	Prep Date: 05/26/2015	Run No: 292582								
SampleType: MS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 207849		Seq No: 6229083								
		Analysis Date / Time: May 26 2015 4:13PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlorobenzene	209.1	5.5	25	252.4		82.8	67.5	132				
Toluene	170.1	3.2	21	206.5		82.4	70.4	130				
Trichloroethene	253.2	7.0	30	294.5		86.0	70.1	137				
Surr: 4-Bromofluorobenzene	46.00	0	0	54.80		83.9	70	128				
Surr: Dibromofluoromethane	49.68	0	0	54.80		90.7	78.2	128				
Surr: Toluene-d8	49.49	0	0	54.80		90.3	76.5	116				

Sample ID: 1505M29-001AMSD	Client ID:	Units: ug/Kg-dry	Prep Date: 05/26/2015	Run No: 292582								
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 207849		Seq No: 6229084								
		Analysis Date / Time: May 26 2015 4:38PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	180.5	4.8	22	217.3		83.1	56.6	151	47.79	4.84	20.4	
Benzene	134.4	4.2	18	175.1		76.8	70.4	130	43.98	4.41	16.9	
Chlorobenzene	206.1	5.5	25	252.4		81.7	67.5	132	45.39	1.43	14.6	
Toluene	165.0	3.2	21	206.5		79.9	70.4	130	45.13	3.01	16.6	
Trichloroethene	238.2	7.0	30	294.5		80.9	70.1	137	47.12	6.09	17	
Surr: 4-Bromofluorobenzene	45.44	0	0	54.80		82.9	70	128	46.00	0	0	
Surr: Dibromofluoromethane	48.16	0	0	54.80		87.9	78.2	128	49.68	0	0	
Surr: Toluene-d8	49.73	0	0	54.80		90.8	76.5	116	49.49	0	0	
1,1-Dichloroethene	180.5	4.8	22	217.3		83.1	56.6	151	47.79	4.84	20.4	
Benzene	134.4	4.2	18	175.1		76.8	70.4	130	43.98	4.41	16.9	
Chlorobenzene	206.1	5.5	25	252.4		81.7	67.5	132	45.39	1.43	14.6	
Toluene	165.0	3.2	21	206.5		79.9	70.4	130	45.13	3.01	16.6	
Trichloroethene	238.2	7.0	30	294.5		80.9	70.1	137	47.12	6.09	17	
Surr: 4-Bromofluorobenzene	45.44	0	0	54.80		82.9	70	128	46.00	0	0	
Surr: Dibromofluoromethane	48.16	0	0	54.80		87.9	78.2	128	49.68	0	0	
Surr: Toluene-d8	49.73	0	0	54.80		90.8	76.5	116	49.49	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

Client: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207853

Sample ID: MB-207853	Client ID:	Units: mg/L	Prep Date: 05/26/2015	Run No: 292684								
SampleType: MBLK	TestCode: Mercury, Total SW7470A	BatchID: 207853		Seq No: 6231895								
		Analysis Date / Time: May 27 2015 11:14AM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury BRL 0.00004 0.00020

Sample ID: LCS-207853	Client ID:	Units: mg/L	Prep Date: 05/26/2015	Run No: 292684								
SampleType: LCS	TestCode: Mercury, Total SW7470A	BatchID: 207853		Seq No: 6231896								
		Analysis Date / Time: May 27 2015 11:16AM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.005101 0.00004 0.00020 0.0050 102 80 120

Sample ID: 1505107-001DMS	Client ID:	Units: mg/L	Prep Date: 05/26/2015	Run No: 292684								
SampleType: MS	TestCode: Mercury, Total SW7470A	BatchID: 207853		Seq No: 6231900								
		Analysis Date / Time: May 27 2015 11:24AM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.005025 0.00004 0.00020 0.0050 0.0001400 97.7 70 130

Sample ID: 1505107-001DMSD	Client ID:	Units: mg/L	Prep Date: 05/26/2015	Run No: 292684								
SampleType: MSD	TestCode: Mercury, Total SW7470A	BatchID: 207853		Seq No: 6231901								
		Analysis Date / Time: May 27 2015 11:26AM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.005332 0.00004 0.00020 0.0050 0.0001400 104 70 130 0.005025 5.94 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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207865

Sample ID: MB-207865	Client ID:	Units: mg/L	Prep Date: 05/26/2015	Run No: 292677								
SampleType: MBLK	TestCode: METALS, TOTAL SW6010C	BatchID: 207865	Analysis Date / Time: May 28 2015 12:16PM	Seq No: 6233415								
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	BRL	0.0031	0.0500									
Barium	BRL	0.0013	0.0200									
Cadmium	BRL	0.0003	0.0050									
Chromium	BRL	0.0003	0.0100									
Lead	BRL	0.0025	0.0100									
Selenium	BRL	0.0025	0.0200									
Silver	BRL	0.0006	0.0100									

Sample ID: LCS-207865	Client ID:	Units: mg/L	Prep Date: 05/26/2015	Run No: 292677								
SampleType: LCS	TestCode: METALS, TOTAL SW6010C	BatchID: 207865	Analysis Date / Time: May 27 2015 7:39PM	Seq No: 6231553								
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	1.008	0.0031	0.0500	1.000		101	80	120				
Barium	1.010	0.0013	0.0200	1.000		101	80	120				
Cadmium	1.027	0.0003	0.0050	1.000		103	80	120				
Chromium	1.001	0.0003	0.0100	1.000		100	80	120				
Lead	0.9834	0.0025	0.0100	1.000		98.3	80	120				
Selenium	0.9647	0.0025	0.0200	1.000	0.004306	96.0	80	120				
Silver	0.1010	0.0006	0.0100	0.1000		101	80	120				

Sample ID: 1505J51-001EMS	Client ID:	Units: mg/L	Prep Date: 05/26/2015	Run No: 292677								
SampleType: MS	TestCode: METALS, TOTAL SW6010C	BatchID: 207865	Analysis Date / Time: May 27 2015 7:46PM	Seq No: 6231555								
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	1.016	0.0031	0.0500	1.000		102	75	125				
Barium	1.060	0.0013	0.0200	1.000	0.05224	101	75	125				
Cadmium	1.030	0.0003	0.0050	1.000		103	75	125				
Chromium	1.009	0.0003	0.0100	1.000	0.001200	101	75	125				
Lead	0.9801	0.0025	0.0100	1.000		98.0	75	125				

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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207865

Sample ID: 1505J51-001EMS	Client ID:	Units: mg/L	Prep Date: 05/26/2015	Run No: 292677								
SampleType: MS	TestCode: METALS, TOTAL SW6010C	BatchID: 207865	Seq No: 6231555									
		Analysis Date / Time: May 27 2015 7:46PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Selenium	0.9891	0.0025	0.0200	1.000	0.02810	96.1	75	125				
Silver	0.1015	0.0006	0.0100	0.1000		102	75	125				

Sample ID: 1505J51-001EMSD	Client ID:	Units: mg/L	Prep Date: 05/26/2015	Run No: 292677								
SampleType: MSD	TestCode: METALS, TOTAL SW6010C	BatchID: 207865	Seq No: 6231556									
		Analysis Date / Time: May 27 2015 7:50PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	1.046	0.0031	0.0500	1.000		105	75	125	1.016	2.92	20	
Barium	1.082	0.0013	0.0200	1.000	0.05224	103	75	125	1.060	1.99	20	
Cadmium	1.050	0.0003	0.0050	1.000		105	75	125	1.030	1.93	20	
Chromium	1.032	0.0003	0.0100	1.000	0.001200	103	75	125	1.009	2.19	20	
Lead	1.004	0.0025	0.0100	1.000		100	75	125	0.9801	2.39	20	
Selenium	1.037	0.0025	0.0200	1.000	0.02810	101	75	125	0.9891	4.70	20	
Silver	0.1033	0.0006	0.0100	0.1000		103	75	125	0.1015	1.77	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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207875

Sample ID: MB-207875	Client ID:	Units: mg/Kg	Prep Date: 05/26/2015	Run No: 292577								
SampleType: MBLK	TestCode: METALS, TOTAL SW6010C	BatchID: 207875	Seq No: 6228973									
		Analysis Date / Time: May 26 2015 7:08PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	BRL	0.148	5.00									
Barium	BRL	0.0757	5.00									
Cadmium	BRL	0.0176	2.50									
Chromium	BRL	0.0223	2.50									
Lead	BRL	0.0779	5.00									
Selenium	BRL	0.326	5.00									
Silver	BRL	0.0217	2.50									

Sample ID: LCS-207875	Client ID:	Units: mg/Kg	Prep Date: 05/26/2015	Run No: 292577								
SampleType: LCS	TestCode: METALS, TOTAL SW6010C	BatchID: 207875	Seq No: 6228976									
		Analysis Date / Time: May 26 2015 7:19PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	46.78	0.148	5.00	50.00		93.6	80	120				
Barium	47.03	0.0757	5.00	50.00		94.1	80	120				
Cadmium	46.61	0.0176	2.50	50.00		93.2	80	120				
Chromium	47.14	0.0223	2.50	50.00	0.09063	94.1	80	120				
Lead	46.99	0.0779	5.00	50.00		94.0	80	120				
Selenium	46.11	0.326	5.00	50.00		92.2	80	120				
Silver	4.648	0.0217	2.50	5.000		93.0	80	120				

Sample ID: 1505L95-001BMS	Client ID:	Units: mg/Kg-dry	Prep Date: 05/26/2015	Run No: 292577								
SampleType: MS	TestCode: METALS, TOTAL SW6010C	BatchID: 207875	Seq No: 6228978									
		Analysis Date / Time: May 26 2015 7:28PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	255.9	0.172	5.82	58.17	179.5	131	75	125				S
Barium	156.1	0.0881	5.82	58.17	104.3	89.1	75	125				
Cadmium	54.03	0.0205	2.91	58.17	1.336	90.6	75	125				
Chromium	78.75	0.0259	2.91	58.17	27.40	88.3	75	125				
Lead	78.21	0.0906	5.82	58.17	32.73	78.2	75	125				

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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207875

Sample ID: 1505L95-001BMS	Client ID:	Units: mg/Kg-dry	Prep Date: 05/26/2015	Run No: 292577								
SampleType: MS	TestCode: METALS, TOTAL SW6010C	BatchID: 207875		Seq No: 6228978								
		Analysis Date / Time: May 26 2015 7:28PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Selenium	47.97	0.379	5.82	58.17		82.5	75	125				
Silver	5.014	0.0252	2.91	5.817	0.06596	85.1	75	125				

Sample ID: 1505L95-001BMSD	Client ID:	Units: mg/Kg-dry	Prep Date: 05/26/2015	Run No: 292577								
SampleType: MSD	TestCode: METALS, TOTAL SW6010C	BatchID: 207875		Seq No: 6228979								
		Analysis Date / Time: May 26 2015 7:32PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	215.5	0.173	5.83	58.29	179.5	61.6	75	125	255.9	17.1	20	S
Barium	155.6	0.0883	5.83	58.29	104.3	87.9	75	125	156.1	0.370	20	
Cadmium	53.93	0.0205	2.91	58.29	1.336	90.2	75	125	54.03	0.187	20	
Chromium	87.22	0.0260	2.91	58.29	27.40	103	75	125	78.75	10.2	20	
Lead	81.92	0.0908	5.83	58.29	32.73	84.4	75	125	78.21	4.64	20	
Selenium	47.78	0.380	5.83	58.29		82.0	75	125	47.97	0.398	20	
Silver	5.049	0.0253	2.91	5.829	0.06596	85.5	75	125	5.014	0.687	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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207884

Sample ID: MB-207884	Client ID:	Units: ug/L	Prep Date: 05/23/2015	Run No: 292461								
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 207884	Analysis Date / Time: May 23 2015 11:35AM	Seq No: 6227737								
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	BRL	3.6	27									
1,1,2,2-Tetrachloroethane	BRL	6.4	34									
1,1,2-Trichloroethane	BRL	7.0	27									
1,1-Dichloroethane	BRL	3.7	20									
1,1-Dichloroethene	BRL	6.0	20									
1,2,4-Trichlorobenzene	BRL	5.9	37									
1,2-Dibromo-3-chloropropane	BRL	0.25	5.0									
1,2-Dibromoethane	BRL	4.0	38									
1,2-Dichlorobenzene	BRL	4.1	30									
1,2-Dichloroethane	BRL	3.2	20									
1,2-Dichloropropane	BRL	3.9	23									
1,3-Dichlorobenzene	BRL	3.6	30									
1,4-Dichlorobenzene	BRL	5.0	30									
2-Butanone	BRL	24	150									
2-Hexanone	BRL	14	41									
4-Methyl-2-pentanone	BRL	7.9	41									
Acetone	BRL	7.7	120									
Benzene	BRL	2.0	16									
Bromodichloromethane	BRL	5.2	33									
Bromoform	BRL	6.9	52									
Bromomethane	BRL	4.1	19									
Carbon disulfide	BRL	5.9	16									
Carbon tetrachloride	BRL	2.6	31									
Chlorobenzene	BRL	1.6	23									
Chloroethane	BRL	2.4	26									
Chloroform	BRL	3.8	24									
Chloromethane	BRL	2.6	21									
cis-1,2-Dichloroethene	BRL	3.2	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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207884

Sample ID: MB-207884	Client ID:	Units: ug/L	Prep Date: 05/23/2015	Run No: 292461								
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 207884	Analysis Date / Time: May 23 2015 11:35AM	Seq No: 6227737								
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
cis-1,3-Dichloropropene	BRL	5.0	23									
Cyclohexane	BRL	4.3	17									
Dibromochloromethane	BRL	5.8	43									
Dichlorodifluoromethane	BRL	3.5	49									
Ethylbenzene	BRL	1.3	22									
Freon-113	BRL	7.9	77									
Isopropylbenzene	BRL	0.72	5.0									
m,p-Xylene	BRL	1.8	22									
Methyl acetate	BRL	0.60	5.0									
Methyl tert-butyl ether	BRL	2.2	18									
Methylcyclohexane	BRL	0.70	5.0									
Methylene chloride	BRL	3.2	17									
o-Xylene	BRL	1.0	22									
Styrene	BRL	2.4	21									
Tetrachloroethene	BRL	6.3	34									
Toluene	BRL	1.8	19									
trans-1,2-Dichloroethene	BRL	3.5	20									
trans-1,3-Dichloropropene	BRL	4.8	23									
Trichloroethene	BRL	4.3	27									
Trichlorofluoromethane	BRL	5.5	28									
Vinyl chloride	BRL	1.9	5.1									
Surr: 4-Bromofluorobenzene	44.03	0	0	50.00		88.1	70.6	123				
Surr: Dibromofluoromethane	52.88	0	0	50.00		106	78.7	124				
Surr: Toluene-d8	47.25	0	0	50.00		94.5	81.3	120				
1,1,1-Trichloroethane	BRL	3.6	27									
1,1,2,2-Tetrachloroethane	BRL	6.4	34									
1,1,2-Trichloroethane	BRL	7.0	27									
1,1-Dichloroethane	BRL	3.7	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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207884

Sample ID: MB-207884	Client ID:	Units: ug/m3	Prep Date: 05/23/2015	Run No: 292461								
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 207884	Analysis Date / Time: May 23 2015 11:35AM	Seq No: 6227737								
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	BRL	6.0	20									
1,2,4-Trichlorobenzene	BRL	5.9	37									
1,2-Dibromo-3-chloropropane	BRL	0.25	5.0									
1,2-Dibromoethane	BRL	4.0	38									
1,2-Dichlorobenzene	BRL	4.1	30									
1,2-Dichloroethane	BRL	3.2	20									
1,2-Dichloropropane	BRL	3.9	23									
1,3-Dichlorobenzene	BRL	3.6	30									
1,4-Dichlorobenzene	BRL	5.0	30									
2-Butanone	BRL	24	150									
2-Hexanone	BRL	14	41									
4-Methyl-2-pentanone	BRL	7.9	41									
Acetone	BRL	7.7	120									
Benzene	BRL	2.0	16									
Bromodichloromethane	BRL	5.2	33									
Bromoform	BRL	6.9	52									
Bromomethane	BRL	4.1	19									
Carbon disulfide	BRL	5.9	16									
Carbon tetrachloride	BRL	2.6	31									
Chlorobenzene	BRL	1.6	23									
Chloroethane	BRL	2.4	26									
Chloroform	BRL	3.8	24									
Chloromethane	BRL	2.6	21									
cis-1,2-Dichloroethene	BRL	3.2	20									
cis-1,3-Dichloropropene	BRL	5.0	23									
Cyclohexane	BRL	4.3	17									
Dibromochloromethane	BRL	5.8	43									
Dichlorodifluoromethane	BRL	3.5	49									

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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207884

Sample ID: MB-207884	Client ID:	Units: ug/m3	Prep Date: 05/23/2015	Run No: 292461								
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 207884	Analysis Date / Time: May 23 2015 11:35AM	Seq No: 6227737								
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Ethylbenzene	BRL	1.3	22									
Freon-113	BRL	7.9	77									
Isopropylbenzene	BRL	0.72	5.0									
m,p-Xylene	BRL	1.8	22									
Methyl acetate	BRL	0.60	5.0									
Methyl tert-butyl ether	BRL	2.2	18									
Methylcyclohexane	BRL	0.70	5.0									
Methylene chloride	BRL	3.2	17									
o-Xylene	BRL	1.0	22									
Styrene	BRL	2.4	21									
Tetrachloroethene	BRL	6.3	34									
Toluene	BRL	1.8	19									
trans-1,2-Dichloroethene	BRL	3.5	20									
trans-1,3-Dichloropropene	BRL	4.8	23									
Trichloroethene	BRL	4.3	27									
Trichlorofluoromethane	BRL	5.5	28									
Vinyl chloride	BRL	1.9	5.1									
Surr: 4-Bromofluorobenzene	44.03	0	0	50.00		88.1	70.6	123				
Surr: Dibromofluoromethane	52.88	0	0	50.00		106	78.7	124				
Surr: Toluene-d8	47.25	0	0	50.00		94.5	81.3	120				

Sample ID: LCS-207884	Client ID:	Units: ug/L	Prep Date: 05/23/2015	Run No: 292461								
SampleType: LCS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 207884	Analysis Date / Time: May 23 2015 11:13AM	Seq No: 6227736								
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	258.4	6.0	20	198.2		130	64.2	137				
Benzene	175.1	2.0	16	159.7		110	72.8	128				
Chlorobenzene	263.3	1.6	23	230.3		114	72.3	126				

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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207884

Sample ID: LCS-207884		Client ID:				Units: ug/L		Prep Date: 05/23/2015		Run No: 292461		
SampleType: LCS		TestCode: TCL VOLATILE ORGANICS SW8260B				BatchID: 207884				Seq No: 6227736		
						Analysis Date / Time: May 23 2015 11:13AM						
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Toluene	200.6	1.8	19	188.4		106	74.9	127				
Trichloroethene	286.8	4.3	27	268.7		107	70.5	134				
Surr: 4-Bromofluorobenzene	44.57	0	0	50.00		89.1	70.6	123				
Surr: Dibromofluoromethane	50.61	0	0	50.00		101	78.7	124				
Surr: Toluene-d8	46.37	0	0	50.00		92.7	81.3	120				
1,1-Dichloroethene	258.4	6.0	20	198.2		130	64.2	137				
Benzene	175.1	2.0	16	159.7		110	72.8	128				
Chlorobenzene	263.3	1.6	23	230.3		114	72.3	126				
Toluene	200.6	1.8	19	188.4		106	74.9	127				
Trichloroethene	286.8	4.3	27	268.7		107	70.5	134				
Surr: 4-Bromofluorobenzene	44.57	0	0	50.00		89.1	70.6	123				
Surr: Dibromofluoromethane	50.61	0	0	50.00		101	78.7	124				
Surr: Toluene-d8	46.37	0	0	50.00		92.7	81.3	120				

Sample ID: 1505K02-001AMS		Client ID:				Units: ug/L		Prep Date: 05/23/2015		Run No: 292492		
SampleType: MS		TestCode: TCL VOLATILE ORGANICS SW8260B				BatchID: 207884				Seq No: 6228897		
						Analysis Date / Time: May 26 2015 3:53PM						
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	2177000	60000	200000	1.98241e+006		110	60.5	156				
Benzene	1468000	20000	160000	1.59734e+006		91.9	70	135				
Chlorobenzene	2189000	16000	230000	2.30266e+006		95.1	70.5	132				
Toluene	2335000	18000	190000	1.88425e+006	15.57	124	70.5	137				
Trichloroethene	2385000	43000	270000	2.68712e+006		88.8	71.8	139				
Surr: 4-Bromofluorobenzene	450000	0	0	500000		90.0	70.6	123				
Surr: Dibromofluoromethane	497400	0	0	500000		99.5	78.7	124				
Surr: Toluene-d8	468500	0	0	500000		93.7	81.3	120				
1,1-Dichloroethene	2177000	60000	200000	1.98241e+006		110	60.5	156				
Benzene	1468000	20000	160000	1.59734e+006		91.9	70	135				

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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207884

Sample ID: 1505K02-001AMS	Client ID:	Units: ug/m3	Prep Date: 05/23/2015	Run No: 292492								
SampleType: MS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 207884		Seq No: 6228897								
		Analysis Date / Time: May 26 2015 3:53PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chlorobenzene	2189000	16000	230000	2.30266e+006		95.1	70.5	132				
Toluene	2335000	18000	190000	1.88425e+006	15.57	124	70.5	137				
Trichloroethene	2385000	43000	270000	2.68712e+006		88.8	71.8	139				
Surr: 4-Bromofluorobenzene	450000	0	0	500000		90.0	70.6	123				
Surr: Dibromofluoromethane	497400	0	0	500000		99.5	78.7	124				
Surr: Toluene-d8	468500	0	0	500000		93.7	81.3	120				

Sample ID: 1505K02-001AMSD	Client ID:	Units: ug/L	Prep Date: 05/23/2015	Run No: 292492								
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 207884		Seq No: 6228898								
		Analysis Date / Time: May 26 2015 4:16PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	2330000	60000	200000	1.98241e+006		118	60.5	156	549000	6.79	20	
Benzene	1644000	20000	160000	1.59734e+006		103	70	135	459500	11.3	20	
Chlorobenzene	2460000	16000	230000	2.30266e+006		107	70.5	132	475400	11.6	20	
Toluene	2534000	18000	190000	1.88425e+006	15.57	134	70.5	137	619600	8.19	20	
Trichloroethene	2658000	43000	270000	2.68712e+006		98.9	71.8	139	443800	10.8	20	
Surr: 4-Bromofluorobenzene	446200	0	0	500000		89.2	70.6	123	450000	0	0	
Surr: Dibromofluoromethane	493400	0	0	500000		98.7	78.7	124	497400	0	0	
Surr: Toluene-d8	462300	0	0	500000		92.5	81.3	120	468500	0	0	
1,1-Dichloroethene	2330000	60000	200000	1.98241e+006		118	60.5	156	549000	6.79	20	
Benzene	1644000	20000	160000	1.59734e+006		103	70	135	459500	11.3	20	
Chlorobenzene	2460000	16000	230000	2.30266e+006		107	70.5	132	475400	11.6	20	
Toluene	2534000	18000	190000	1.88425e+006	15.57	134	70.5	137	619600	8.19	20	
Trichloroethene	2658000	43000	270000	2.68712e+006		98.9	71.8	139	443800	10.8	20	
Surr: 4-Bromofluorobenzene	446200	0	0	500000		89.2	70.6	123	450000	0	0	
Surr: Dibromofluoromethane	493400	0	0	500000		98.7	78.7	124	497400	0	0	
Surr: Toluene-d8	462300	0	0	500000		92.5	81.3	120	468500	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		

Client: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207930

Sample ID: MB-207930	Client ID:	Units: mg/Kg	Prep Date: 05/27/2015	Run No: 292646								
SampleType: MBLK	TestCode: TOTAL MERCURY SW7471B	BatchID: 207930		Seq No: 6230746								
		Analysis Date / Time: May 27 2015 4:24PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury BRL 0.00790 0.100

Sample ID: LCS-207930	Client ID:	Units: mg/Kg	Prep Date: 05/27/2015	Run No: 292646								
SampleType: LCS	TestCode: TOTAL MERCURY SW7471B	BatchID: 207930		Seq No: 6230747								
		Analysis Date / Time: May 27 2015 4:26PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.4147 0.00790 0.100 0.4000 104 80 120

Sample ID: 1505190-007CMS	Client ID:	Units: mg/Kg-dry	Prep Date: 05/28/2015	Run No: 292646								
SampleType: MS	TestCode: TOTAL MERCURY SW7471B	BatchID: 207930		Seq No: 6231926								
		Analysis Date / Time: May 28 2015 10:56AM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.5074 0.00835 0.106 0.4226 0.03008 113 70 130

Sample ID: 1505K87-001AMS	Client ID:	Units: mg/Kg-dry	Prep Date: 05/27/2015	Run No: 292646								
SampleType: MS	TestCode: TOTAL MERCURY SW7471B	BatchID: 207930		Seq No: 6230751								
		Analysis Date / Time: May 27 2015 4:35PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.3934 0.00744 0.0942 0.3768 104 70 130

Sample ID: 1505190-007CMSD	Client ID:	Units: mg/Kg-dry	Prep Date: 05/28/2015	Run No: 292646								
SampleType: MSD	TestCode: TOTAL MERCURY SW7471B	BatchID: 207930		Seq No: 6231927								
		Analysis Date / Time: May 28 2015 10:59AM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.4853 0.00838 0.106 0.4243 0.03008 107 70 130 0.5074 4.45 30

Sample ID: 1505K87-001AMSD	Client ID:	Units: mg/Kg-dry	Prep Date: 05/27/2015	Run No: 292646								
SampleType: MSD	TestCode: TOTAL MERCURY SW7471B	BatchID: 207930		Seq No: 6230752								
		Analysis Date / Time: May 27 2015 4:37PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207930

Sample ID: 1505K87-001AMSD	Client ID:	Units: mg/Kg-dry	Prep Date: 05/27/2015	Run No: 292646								
SampleType: MSD	TestCode: TOTAL MERCURY SW7471B	BatchID: 207930	Analysis Date / Time: May 27 2015 4:37PM	Seq No: 6230752								
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Mercury	0.3916	0.00747	0.0946	0.3782		104	70	130	0.3934	0.468	30	

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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207945

Sample ID: MB-207945	Client ID:	Units: mg/L	Prep Date: 05/27/2015	Run No: 292633								
SampleType: MBLK	TestCode: ICP METALS, TCLP SW1311/6010C	BatchID: 207945		Seq No: 6230091								
		Analysis Date / Time: May 27 2015 2:02PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	BRL	0.0155	0.250									
Barium	BRL	0.00650	0.500									
Cadmium	BRL	0.00150	0.0250									
Chromium	BRL	0.00150	0.0500									
Lead	BRL	0.0125	0.0500									
Selenium	BRL	0.0125	0.100									
Silver	BRL	0.00300	0.0250									

Sample ID: LCS-207945	Client ID:	Units: mg/L	Prep Date: 05/27/2015	Run No: 292633								
SampleType: LCS	TestCode: ICP METALS, TCLP SW1311/6010C	BatchID: 207945		Seq No: 6230092								
		Analysis Date / Time: May 27 2015 2:06PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	5.039	0.0155	0.250	5.000		101	80	120				
Barium	4.781	0.00650	0.500	5.000	0.05962	94.4	80	120				
Cadmium	4.965	0.00150	0.0250	5.000		99.3	80	120				
Chromium	4.778	0.00150	0.0500	5.000	0.002464	95.5	80	120				
Lead	4.671	0.0125	0.0500	5.000		93.4	80	120				
Selenium	4.875	0.0125	0.100	5.000	0.01438	97.2	80	120				
Silver	0.4820	0.00300	0.0250	0.5000		96.4	80	120				

Sample ID: 1505K51-001BMS	Client ID:	Units: mg/L	Prep Date: 05/27/2015	Run No: 292633								
SampleType: MS	TestCode: ICP METALS, TCLP SW1311/6010C	BatchID: 207945		Seq No: 6230095								
		Analysis Date / Time: May 27 2015 2:18PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Arsenic	4.956	0.0155	0.250	5.000		99.1	50	150				
Barium	5.005	0.00650	0.500	5.000	0.3296	93.5	50	150				
Cadmium	4.903	0.00150	0.0250	5.000		98.1	50	150				
Chromium	4.724	0.00150	0.0500	5.000	0.002335	94.4	50	150				
Lead	4.612	0.0125	0.0500	5.000		92.2	50	150				

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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207945

Sample ID: 1505K51-001BMS	Client ID:	Units: mg/L	Prep Date: 05/27/2015	Run No: 292633								
SampleType: MS	TestCode: ICP METALS, TCLP SW1311/6010C	BatchID: 207945		Seq No: 6230095								
		Analysis Date / Time: May 27 2015 2:18PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Selenium	4.812	0.0125	0.100	5.000	0.1214	93.8	50	150				
Silver	0.4757	0.00300	0.0250	0.5000		95.1	50	150				

Sample ID: 1505K51-001BMSD	Client ID:	Units: mg/L	Prep Date: 05/27/2015	Run No: 292633								
SampleType: MSD	TestCode: ICP METALS, TCLP SW1311/6010C	BatchID: 207945		Seq No: 6230096								
		Analysis Date / Time: May 27 2015 2:22PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	5.021	0.0155	0.250	5.000		100	50	150	4.956	1.30	30	
Barium	5.036	0.00650	0.500	5.000	0.3296	94.1	50	150	5.005	0.618	30	
Cadmium	4.942	0.00150	0.0250	5.000		98.8	50	150	4.903	0.796	30	
Chromium	4.760	0.00150	0.0500	5.000	0.002335	95.2	50	150	4.724	0.769	30	
Lead	4.635	0.0125	0.0500	5.000		92.7	50	150	4.612	0.506	30	
Selenium	5.041	0.0125	0.100	5.000	0.1214	98.4	50	150	4.812	4.66	30	
Silver	0.4793	0.00300	0.0250	0.5000		95.9	50	150	0.4757	0.749	30	

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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207948

Sample ID: MB-207948	Client ID:	Units: mg/L	Prep Date: 05/27/2015	Run No: 292662								
SampleType: MBLK	TestCode: MERCURY, TCLP SW1311/7470A	BatchID: 207948		Seq No: 6231279								
		Analysis Date / Time: May 27 2015 6:29PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury BRL 0.000288 0.00400

Sample ID: LCS-207948	Client ID:	Units: mg/L	Prep Date: 05/27/2015	Run No: 292662								
SampleType: LCS	TestCode: MERCURY, TCLP SW1311/7470A	BatchID: 207948		Seq No: 6231280								
		Analysis Date / Time: May 27 2015 6:31PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.04024 0.000288 0.00400 0.0400 101 80 120

Sample ID: 1505K87-001BMS	Client ID:	Units: mg/L	Prep Date: 05/27/2015	Run No: 292662								
SampleType: MS	TestCode: MERCURY, TCLP SW1311/7470A	BatchID: 207948		Seq No: 6231282								
		Analysis Date / Time: May 27 2015 6:35PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.03930 0.000288 0.00400 0.0400 0.0004332 97.2 80 120

Sample ID: 1505K87-001BMSD	Client ID:	Units: mg/L	Prep Date: 05/27/2015	Run No: 292662								
SampleType: MSD	TestCode: MERCURY, TCLP SW1311/7470A	BatchID: 207948		Seq No: 6231283								
		Analysis Date / Time: May 27 2015 6:37PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Mercury 0.03950 0.000288 0.00400 0.0400 0.0004332 97.7 80 120 0.03930 0.490 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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: 207958

Sample ID: LCS-207958	Client ID:	Units: pH Units	Prep Date: 05/27/2015	Run No: 292641								
SampleType: LCS	TestCode: Laboratory Hydrogen Ion (pH) SW9045D	BatchID: 207958		Seq No: 6230193								
		Analysis Date / Time: May 27 2015 11:00AM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

pH 6.970 0.01 0.01 7.000 99.6 90 110

Sample ID: 1505J42-003BDUP	Client ID:	Units: pH Units	Prep Date: 05/27/2015	Run No: 292641								
SampleType: DUP	TestCode: Laboratory Hydrogen Ion (pH) SW9045D	BatchID: 207958		Seq No: 6230215								
		Analysis Date / Time: May 27 2015 11:00AM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

pH 7.190 0.01 0.01 7.170 0.279 10 H

Sample ID: 1505L03-006ADUP	Client ID:	Units: pH Units	Prep Date: 05/27/2015	Run No: 292641								
SampleType: DUP	TestCode: Laboratory Hydrogen Ion (pH) SW9045D	BatchID: 207958		Seq No: 6230216								
		Analysis Date / Time: May 27 2015 11:00AM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

pH 6.920 0.01 0.01 6.940 0.289 10 H

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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: R292557

Sample ID: LCS-R292557	Client ID:	Units: °F	Prep Date:	Run No: 292557								
SampleType: LCS	TestCode: Ignitability SW1010A	BatchID: R292557		Seq No: 6228321								
		Analysis Date / Time: May 26 2015 12:10PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Ignitability 80.00 0 0 80.00 100 93.8 106.2

Sample ID: LCS-R292557	Client ID:	Units: °F	Prep Date:	Run No: 292557								
SampleType: LCS	TestCode: Ignitability SW1010	BatchID: R292557		Seq No: 6229410								
		Analysis Date / Time: May 26 2015 12:10PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Ignitability 80.00 0 0 80.00 100 93.8 106.2

Sample ID: 1505K33-001CDUP	Client ID:	Units: °F	Prep Date:	Run No: 292557								
SampleType: DUP	TestCode: Ignitability SW1010	BatchID: R292557		Seq No: 6228334								
		Analysis Date / Time: May 26 2015 12:10PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Ignitability 180.0 0 0 180.0 0 20 >

Sample ID: 1505K95-002CDUP	Client ID: MW-1D CMP	Units: °F	Prep Date:	Run No: 292557								
SampleType: DUP	TestCode: Ignitability SW1010A	BatchID: R292557		Seq No: 6228327								
		Analysis Date / Time: May 26 2015 12:10PM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Ignitability 180.0 0 0 180.0 0 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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1505K95

ANALYTICAL QC SUMMARY REPORT

BatchID: R292605

Sample ID: LCS-R292605	Client ID:	Units: pH Units	Prep Date:	Run No: 292605								
SampleType: LCS	TestCode: Laboratory Hydrogen Ion (pH) SW9040C	BatchID: R292605		Seq No: 6229549								
		Analysis Date / Time: May 24 2015 9:30AM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

pH 6.970 0.01 0.01 7.000 99.6 90 110

Sample ID: 1505K95-003CDUP	Client ID: IDW-CMP	Units: pH Units	Prep Date:	Run No: 292605								
SampleType: DUP	TestCode: Laboratory Hydrogen Ion (pH) SW9040C	BatchID: R292605		Seq No: 6229552								
		Analysis Date / Time: May 24 2015 9:30AM										
Analyte	Result	MDL	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

pH 6.190 0.01 0.01 6.210 0.323 10 H

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	



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

June 11, 2015

Kathy Roush
APEX Compaines, LLC
312 Cherokee Place, SE
Atlanta GA 30312

TEL: (404) 408-6916
FAX:

RE: OmniSource Athens

Dear Kathy Roush:

Order No: 1506655

Analytical Environmental Services, Inc. received 3 samples on 6/5/2015 10:25:00 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 07/01/14-06/30/15.
- AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, 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.

Tara Esbeck
Project Manager

Client: APEX Compaines, LLC	Client Sample ID: MW-1
Project Name: OmniSource Athens	Collection Date: 6/3/2015 3:40:00 PM
Lab ID: 1506655-001	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
1,1-Dichloroethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
1,1-Dichloroethene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
1,2-Dibromoethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
1,2-Dichlorobenzene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
1,2-Dichloroethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
1,2-Dichloropropane	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
1,3-Dichlorobenzene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
1,4-Dichlorobenzene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
2-Butanone	BRL	50		ug/L	208537	1	06/09/2015 02:16	NP
2-Hexanone	BRL	10		ug/L	208537	1	06/09/2015 02:16	NP
4-Methyl-2-pentanone	BRL	10		ug/L	208537	1	06/09/2015 02:16	NP
Acetone	BRL	50		ug/L	208537	1	06/09/2015 02:16	NP
Benzene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Bromodichloromethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Bromoform	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Bromomethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Carbon disulfide	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Carbon tetrachloride	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Chlorobenzene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Chloroethane	BRL	10		ug/L	208537	1	06/09/2015 02:16	NP
Chloroform	17	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Chloromethane	BRL	10		ug/L	208537	1	06/09/2015 02:16	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
cis-1,3-Dichloropropene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Cyclohexane	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Dibromochloromethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Dichlorodifluoromethane	BRL	10		ug/L	208537	1	06/09/2015 02:16	NP
Ethylbenzene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Freon-113	BRL	10		ug/L	208537	1	06/09/2015 02:16	NP
Isopropylbenzene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
m,p-Xylene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Methyl acetate	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Methyl tert-butyl ether	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Methylcyclohexane	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Methylene chloride	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
o-Xylene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP

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

Client: APEX Compaines, LLC	Client Sample ID: MW-1
Project Name: OmniSource Athens	Collection Date: 6/3/2015 3:40:00 PM
Lab ID: 1506655-001	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B			(SW5030B)					
Styrene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Tetrachloroethene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Toluene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
trans-1,3-Dichloropropene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Trichloroethene	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Trichlorofluoromethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:16	NP
Vinyl chloride	BRL	2.0		ug/L	208537	1	06/09/2015 02:16	NP
Surr: 4-Bromofluorobenzene	87.9	70.6-123		%REC	208537	1	06/09/2015 02:16	NP
Surr: Dibromofluoromethane	102	78.7-124		%REC	208537	1	06/09/2015 02:16	NP
Surr: Toluene-d8	94.7	81.3-120		%REC	208537	1	06/09/2015 02:16	NP
METALS, TOTAL SW6010C			(SW3010A)					
Lead	BRL	0.0100		mg/L	208418	1	06/09/2015 23:48	TA

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: 11-Jun-15

Client: APEX Compaines, LLC	Client Sample ID: MW-1D
Project Name: OmniSource Athens	Collection Date: 6/3/2015 2:30:00 PM
Lab ID: 1506655-002	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
1,1-Dichloroethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
1,1-Dichloroethene	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
1,2-Dibromoethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
1,2-Dichlorobenzene	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
1,2-Dichloroethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
1,2-Dichloropropane	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
1,3-Dichlorobenzene	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
1,4-Dichlorobenzene	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
2-Butanone	BRL	50		ug/L	208537	1	06/09/2015 02:39	NP
2-Hexanone	BRL	10		ug/L	208537	1	06/09/2015 02:39	NP
4-Methyl-2-pentanone	BRL	10		ug/L	208537	1	06/09/2015 02:39	NP
Acetone	BRL	50		ug/L	208537	1	06/09/2015 02:39	NP
Benzene	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Bromodichloromethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Bromoform	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Bromomethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Carbon disulfide	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Carbon tetrachloride	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Chlorobenzene	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Chloroethane	BRL	10		ug/L	208537	1	06/09/2015 02:39	NP
Chloroform	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Chloromethane	BRL	10		ug/L	208537	1	06/09/2015 02:39	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
cis-1,3-Dichloropropene	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Cyclohexane	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Dibromochloromethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Dichlorodifluoromethane	BRL	10		ug/L	208537	1	06/09/2015 02:39	NP
Ethylbenzene	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Freon-113	BRL	10		ug/L	208537	1	06/09/2015 02:39	NP
Isopropylbenzene	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
m,p-Xylene	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Methyl acetate	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Methyl tert-butyl ether	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Methylcyclohexane	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Methylene chloride	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
o-Xylene	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
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- N Analyte not NELAC certified
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- 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

Client: APEX Compaines, LLC	Client Sample ID: MW-1D
Project Name: OmniSource Athens	Collection Date: 6/3/2015 2:30:00 PM
Lab ID: 1506655-002	Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B			(SW5030B)					
Styrene	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Tetrachloroethene	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Toluene	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
trans-1,3-Dichloropropene	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Trichloroethene	17	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Trichlorofluoromethane	BRL	5.0		ug/L	208537	1	06/09/2015 02:39	NP
Vinyl chloride	BRL	2.0		ug/L	208537	1	06/09/2015 02:39	NP
Surr: 4-Bromofluorobenzene	87	70.6-123		%REC	208537	1	06/09/2015 02:39	NP
Surr: Dibromofluoromethane	105	78.7-124		%REC	208537	1	06/09/2015 02:39	NP
Surr: Toluene-d8	95.8	81.3-120		%REC	208537	1	06/09/2015 02:39	NP
METALS, TOTAL SW6010C			(SW3010A)					
Lead	BRL	0.0100		mg/L	208418	1	06/09/2015 23:51	TA

Qualifiers:

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- 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: 11-Jun-15

Client: APEX Compaines, LLC	Client Sample ID: TRIP BLANK
Project Name: OmniSource Athens	Collection Date: 6/5/2015
Lab ID: 1506655-003	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B (SW5030B)								
1,1,1-Trichloroethane	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
1,1,2-Trichloroethane	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
1,1-Dichloroethane	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
1,1-Dichloroethene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
1,2-Dibromoethane	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
1,2-Dichlorobenzene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
1,2-Dichloroethane	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
1,2-Dichloropropane	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
1,3-Dichlorobenzene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
1,4-Dichlorobenzene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
2-Butanone	BRL	50		ug/L	208537	1	06/08/2015 23:16	NP
2-Hexanone	BRL	10		ug/L	208537	1	06/08/2015 23:16	NP
4-Methyl-2-pentanone	BRL	10		ug/L	208537	1	06/08/2015 23:16	NP
Acetone	BRL	50		ug/L	208537	1	06/08/2015 23:16	NP
Benzene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Bromodichloromethane	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Bromoform	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Bromomethane	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Carbon disulfide	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Carbon tetrachloride	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Chlorobenzene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Chloroethane	BRL	10		ug/L	208537	1	06/08/2015 23:16	NP
Chloroform	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Chloromethane	BRL	10		ug/L	208537	1	06/08/2015 23:16	NP
cis-1,2-Dichloroethene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
cis-1,3-Dichloropropene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Cyclohexane	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Dibromochloromethane	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Dichlorodifluoromethane	BRL	10		ug/L	208537	1	06/08/2015 23:16	NP
Ethylbenzene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Freon-113	BRL	10		ug/L	208537	1	06/08/2015 23:16	NP
Isopropylbenzene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
m,p-Xylene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Methyl acetate	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Methyl tert-butyl ether	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Methylcyclohexane	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Methylene chloride	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
o-Xylene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP

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

Client: APEX Compaines, LLC	Client Sample ID: TRIP BLANK
Project Name: OmniSource Athens	Collection Date: 6/5/2015
Lab ID: 1506655-003	Matrix: Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				(SW5030B)				
Styrene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Tetrachloroethene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Toluene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
trans-1,2-Dichloroethene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
trans-1,3-Dichloropropene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Trichloroethene	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Trichlorofluoromethane	BRL	5.0		ug/L	208537	1	06/08/2015 23:16	NP
Vinyl chloride	BRL	2.0		ug/L	208537	1	06/08/2015 23:16	NP
Surr: 4-Bromofluorobenzene	89.4	70.6-123		%REC	208537	1	06/08/2015 23:16	NP
Surr: Dibromofluoromethane	102	78.7-124		%REC	208537	1	06/08/2015 23:16	NP
Surr: Toluene-d8	95.6	81.3-120		%REC	208537	1	06/08/2015 23:16	NP

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
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- > 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 APEX

Work Order Number 1506655

Checklist completed by [Signature] Date 6/5/15
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? ($0^{\circ} \leq 6^{\circ}C$)* Yes No

Cooler #1 3.6°C 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

Sample Condition: Good Adjusted? _____ Other(Explain) _____
Checked by [Signature]
(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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1506655

ANALYTICAL QC SUMMARY REPORT

BatchID: 208418

Sample ID: MB-208418	Client ID:	Units: mg/L	Prep Date: 06/05/2015	Run No: 293509							
SampleType: MBLK	TestCode: METALS, TOTAL SW6010C	BatchID: 208418	Analysis Date: 06/09/2015	Seq No: 6252793							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Lead BRL 0.0100

Sample ID: LCS-208418	Client ID:	Units: mg/L	Prep Date: 06/05/2015	Run No: 293509							
SampleType: LCS	TestCode: METALS, TOTAL SW6010C	BatchID: 208418	Analysis Date: 06/09/2015	Seq No: 6252794							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Lead 0.9984 0.0100 1.000 99.8 80 120

Sample ID: 1506375-001BMS	Client ID:	Units: mg/L	Prep Date: 06/05/2015	Run No: 293509							
SampleType: MS	TestCode: METALS, TOTAL SW6010C	BatchID: 208418	Analysis Date: 06/09/2015	Seq No: 6252796							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Lead 0.9652 0.0100 1.000 96.5 75 125

Sample ID: 1506375-001BMSD	Client ID:	Units: mg/L	Prep Date: 06/05/2015	Run No: 293509							
SampleType: MSD	TestCode: METALS, TOTAL SW6010C	BatchID: 208418	Analysis Date: 06/09/2015	Seq No: 6252797							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Lead 0.9746 0.0100 1.000 97.5 75 125 0.9652 0.962 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: APEX Compaines, LLC
Project Name: OmniSource Athens
Workorder: 1506655

ANALYTICAL QC SUMMARY REPORT

BatchID: 208537

Sample ID: MB-208537	Client ID:	Units: ug/L	Prep Date: 06/08/2015	Run No: 293423
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 208537	Analysis Date: 06/08/2015	Seq No: 6250326

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									

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: APEX Compaines, LLC
Project Name: OmniSource Athens
Workorder: 1506655

ANALYTICAL QC SUMMARY REPORT

BatchID: 208537

Sample ID: MB-208537	Client ID:	Units: ug/L	Prep Date: 06/08/2015	Run No: 293423							
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 208537	Analysis Date: 06/08/2015	Seq No: 6250326							
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	44.20	0	50.00		88.4	70.6	123				
Surr: Dibromofluoromethane	50.30	0	50.00		101	78.7	124				
Surr: Toluene-d8	46.09	0	50.00		92.2	81.3	120				

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: APEX Compaines, LLC
Project Name: OmniSource Athens
Workorder: 1506655

ANALYTICAL QC SUMMARY REPORT

BatchID: 208537

Sample ID: LCS-208537	Client ID:	Units: ug/L	Prep Date: 06/08/2015	Run No: 293471							
SampleType: LCS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 208537	Analysis Date: 06/09/2015	Seq No: 6251520							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	61.96	5.0	50.00		124	64.2	137				
Benzene	50.20	5.0	50.00		100	72.8	128				
Chlorobenzene	50.68	5.0	50.00		101	72.3	126				
Toluene	49.60	5.0	50.00		99.2	74.9	127				
Trichloroethene	50.08	5.0	50.00		100	70.5	134				
Surr: 4-Bromofluorobenzene	44.16	0	50.00		88.3	70.6	123				
Surr: Dibromofluoromethane	50.48	0	50.00		101	78.7	124				
Surr: Toluene-d8	45.66	0	50.00		91.3	81.3	120				

Sample ID: 1506840-001AMS	Client ID:	Units: ug/L	Prep Date: 06/08/2015	Run No: 293423							
SampleType: MS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 208537	Analysis Date: 06/09/2015	Seq No: 6250333							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	58.18	5.0	50.00		116	60.5	156				
Benzene	49.62	5.0	50.00		99.2	70	135				
Chlorobenzene	51.62	5.0	50.00		103	70.5	132				
Toluene	50.21	5.0	50.00		100	70.5	137				
Trichloroethene	49.25	5.0	50.00		98.5	71.8	139				
Surr: 4-Bromofluorobenzene	44.81	0	50.00		89.6	70.6	123				
Surr: Dibromofluoromethane	48.90	0	50.00		97.8	78.7	124				
Surr: Toluene-d8	46.38	0	50.00		92.8	81.3	120				

Sample ID: 1506840-001AMSD	Client ID:	Units: ug/L	Prep Date: 06/08/2015	Run No: 293423							
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 208537	Analysis Date: 06/09/2015	Seq No: 6250334							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	59.13	5.0	50.00		118	60.5	156	58.18	1.62	20	
Benzene	50.69	5.0	50.00		101	70	135	49.62	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: APEX Compaines, LLC
 Project Name: OmniSource Athens
 Workorder: 1506655

ANALYTICAL QC SUMMARY REPORT

BatchID: 208537

Sample ID: 1506840-001AMSD	Client ID:	Units: ug/L	Prep Date: 06/08/2015	Run No: 293423							
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 208537	Analysis Date: 06/09/2015	Seq No: 6250334							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chlorobenzene	52.90	5.0	50.00		106	70.5	132	51.62	2.45	20	
Toluene	50.63	5.0	50.00		101	70.5	137	50.21	0.833	20	
Trichloroethene	49.87	5.0	50.00		99.7	71.8	139	49.25	1.25	20	
Surr: 4-Bromofluorobenzene	43.63	0	50.00		87.3	70.6	123	44.81	0	0	
Surr: Dibromofluoromethane	49.56	0	50.00		99.1	78.7	124	48.90	0	0	
Surr: Toluene-d8	46.27	0	50.00		92.5	81.3	120	46.38	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		

APPENDIX D
AQTESOLV MODEL RESULTS

Data Set:
 Date: 07/17/15
 Time: 15:50:00

PROJECT INFORMATION

Company: Apex Companies
 Client: OmniSource
 Project: 510393-002
 Location: Athens, Georgia
 Test Date: 5/20/15
 Test Well: MW-4A

AQUIFER DATA

Saturated Thickness: 62.5 ft
 Anisotropy Ratio (Kz/Kr): 0.1

SLUG TEST WELL DATA

Test Well: MW-4A

X Location: 0. ft
 Y Location: 0. ft

Initial Displacement: 1.334 ft
 Static Water Column Height: 7.26 ft
 Casing Radius: 0.083 ft
 Well Radius: 0.083 ft
 Well Skin Radius: 0.604 ft
 Screen Length: 10. ft
 Total Well Penetration Depth: 10. ft
 Corrected Casing Radius (Bouwer-Rice Method): 0.083 ft
 Gravel Pack Porosity: 0.25

No. of Observations: 337

Observation Data			
<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
1.	1.334	170.	0.1624
2.	1.172	171.	0.1628
3.	0.6342	172.	0.1579
4.	0.5649	173.	0.1614
5.	0.4431	174.	0.1585
6.	0.4921	175.	0.1597
7.	0.4138	176.	0.1602
8.	0.3703	177.	0.1587
9.	0.3056	178.	0.1621
10.	0.3266	179.	0.16
11.	0.3079	180.	0.1596
12.	0.3513	181.	0.1557
13.	0.3239	182.	0.1598
14.	0.2952	183.	0.1602
15.	0.2888	184.	0.1565
16.	0.2823	185.	0.1549
17.	0.2764	186.	0.155
18.	0.2775	187.	0.1559
19.	0.2747	188.	0.1557
20.	0.2678	189.	0.1558
21.	0.2841	190.	0.1543
22.	0.3579	191.	0.1525
23.	0.2261	192.	0.154
24.	0.2567	193.	0.1552
25.	0.2664	194.	0.1522
26.	0.2423	195.	0.1552
27.	0.2584	196.	0.1535
28.	0.2633	197.	0.154

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
29.	0.2492	198.	0.154
30.	0.2084	199.	0.1515
31.	0.2526	200.	0.1476
32.	0.2586	201.	0.15
33.	0.2603	202.	0.1563
34.	0.2486	203.	0.1475
35.	0.2588	204.	0.1523
36.	0.2227	205.	0.1511
37.	0.267	206.	0.147
38.	0.2458	207.	0.1501
39.	0.2454	208.	0.1523
40.	0.2462	209.	0.1464
41.	0.2439	210.	0.148
42.	0.2414	211.	0.146
43.	0.2407	212.	0.1448
44.	0.2398	213.	0.1473
45.	0.2426	214.	0.1457
46.	0.2384	215.	0.1476
47.	0.2344	216.	0.1457
48.	0.2346	217.	0.1433
49.	0.2371	218.	0.1428
50.	0.2369	219.	0.1433
51.	0.2338	220.	0.1467
52.	0.2345	221.	0.1415
53.	0.2337	222.	0.1466
54.	0.2317	223.	0.1408
55.	0.2331	224.	0.146
56.	0.2299	225.	0.1442
57.	0.225	226.	0.143
58.	0.2269	227.	0.1392
59.	0.2262	228.	0.1421
60.	0.2251	229.	0.144
61.	0.2255	230.	0.1386
62.	0.2255	231.	0.1358
63.	0.2209	232.	0.1402
64.	0.2228	233.	0.138
65.	0.2218	234.	0.1425
66.	0.2182	235.	0.1382
67.	0.2169	236.	0.1394
68.	0.2231	237.	0.1403
69.	0.2147	238.	0.1381
70.	0.22	239.	0.136
71.	0.2151	240.	0.1367
72.	0.2161	241.	0.1367
73.	0.218	242.	0.1384
74.	0.2129	243.	0.1365
75.	0.2145	244.	0.1336
76.	0.2113	245.	0.1363
77.	0.2152	246.	0.1369
78.	0.2117	247.	0.1357
79.	0.2115	248.	0.1341
80.	0.2118	249.	0.137
81.	0.213	250.	0.134
82.	0.2077	251.	0.1379
83.	0.209	252.	0.1316
84.	0.2102	253.	0.1316
85.	0.2105	254.	0.1327
86.	0.2038	255.	0.1346
87.	0.2061	256.	0.1352
88.	0.2058	257.	0.131
89.	0.2056	258.	0.1297
90.	0.2058	259.	0.1309
91.	0.2039	260.	0.1368
92.	0.201	261.	0.1303
93.	0.1997	262.	0.1336
94.	0.2022	263.	0.131

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
95.	0.2018	264.	0.1323
96.	0.1991	265.	0.1329
97.	0.203	266.	0.128
98.	0.1988	267.	0.1303
99.	0.1999	268.	0.1319
100.	0.1939	269.	0.1296
101.	0.1967	270.	0.1337
102.	0.198	271.	0.1269
103.	0.1979	272.	0.1309
104.	0.1971	273.	0.1299
105.	0.1946	274.	0.1297
106.	0.1952	275.	0.1281
107.	0.1954	276.	0.1263
108.	0.1949	277.	0.1279
109.	0.1936	278.	0.1283
110.	0.1926	279.	0.1275
111.	0.1923	280.	0.1257
112.	0.1921	281.	0.1262
113.	0.1923	282.	0.1238
114.	0.1863	283.	0.1287
115.	0.1858	284.	0.126
116.	0.1877	285.	0.1269
117.	0.191	286.	0.1267
118.	0.1891	287.	0.1276
119.	0.1761	288.	0.1243
120.	0.1827	289.	0.1256
121.	0.1876	290.	0.1269
122.	0.185	291.	0.1257
123.	0.1843	292.	0.1257
124.	0.1794	293.	0.1257
125.	0.1839	294.	0.125
126.	0.185	295.	0.1254
127.	0.1808	296.	0.1242
128.	0.1797	297.	0.1212
129.	0.1823	298.	0.1256
130.	0.1847	299.	0.1256
131.	0.1807	300.	0.1252
132.	0.1793	301.	0.125
133.	0.1785	302.	0.1216
134.	0.1762	303.	0.1234
135.	0.1755	304.	0.1225
136.	0.1752	305.	0.1249
137.	0.1742	306.	0.1199
138.	0.1755	307.	0.1224
139.	0.1742	308.	0.1208
140.	0.173	309.	0.1216
141.	0.1713	310.	0.1235
142.	0.1719	311.	0.1212
143.	0.1708	312.	0.1194
144.	0.1744	313.	0.1186
145.	0.1696	314.	0.1215
146.	0.1697	315.	0.1221
147.	0.1725	316.	0.1208
148.	0.1738	317.	0.1203
149.	0.169	318.	0.121
150.	0.1701	319.	0.1193
151.	0.1689	320.	0.1142
152.	0.1676	321.	0.1174
153.	0.1693	322.	0.1214
154.	0.1678	323.	0.1217
155.	0.1713	324.	0.1172
156.	0.1656	325.	0.1184
157.	0.1664	326.	0.1197
158.	0.1664	327.	0.1199
159.	0.1671	328.	0.117
160.	0.1634	329.	0.1169

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
161.	0.1675	330.	0.1169
162.	0.1655	331.	0.1185
163.	0.1652	332.	0.116
164.	0.1623	333.	0.113
165.	0.1651	334.	0.1169
166.	0.166	335.	0.1137
167.	0.1667	336.	0.1179
168.	0.1625	337.	0.1144
169.	0.1645		

SOLUTION

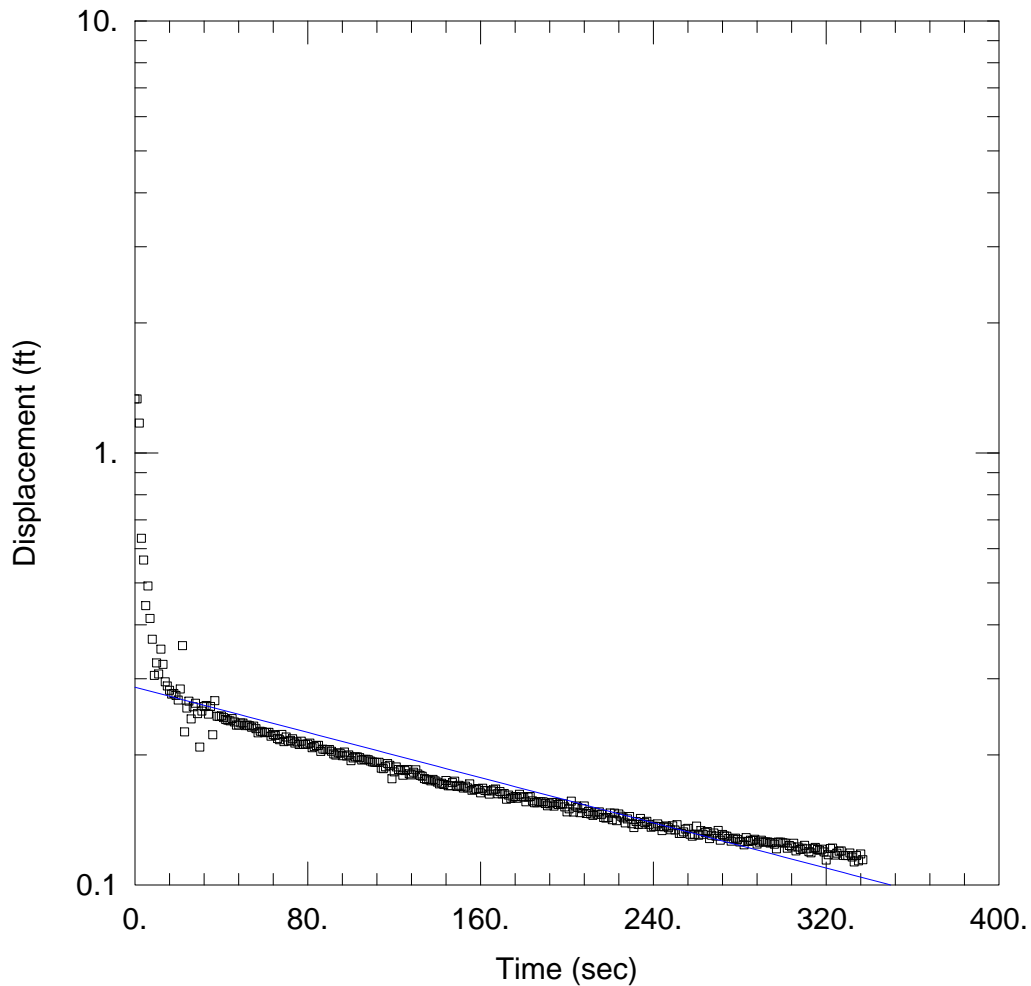
Slug Test
 Aquifer Model: Unconfined
 Solution Method: Bouwer-Rice
 ln(Re/rw): 4.287

VISUAL ESTIMATION RESULTS

Estimated Parameters

<u>Parameter</u>	<u>Estimate</u>	
K	0.3843	ft/day
y0	0.2868	ft

K = 0.0001356 cm/sec
 T = K*b = 24.02 ft²/day (0.2583 sq. cm/sec)



WELL TEST ANALYSIS

Data Set:

Date: 07/17/15

Time: 15:49:22

PROJECT INFORMATION

Company: Apex Companies

Client: OmniSource

Project: 510393-002

Location: Athens, Georgia

Test Well: MW-4A

Test Date: 5/20/15

AQUIFER DATA

Saturated Thickness: 62.5 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW-4A)

Initial Displacement: 1.334 ft

Static Water Column Height: 7.26 ft

Total Well Penetration Depth: 10. ft

Screen Length: 10. ft

Casing Radius: 0.083 ft

Well Radius: 0.083 ft

Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined

Solution Method: Bower-Rice

K = 0.3843 ft/day

y0 = 0.2868 ft

Data Set:
 Date: 07/17/15
 Time: 15:58:47

PROJECT INFORMATION

Company: Apex Companies
 Client: OmniSource
 Project: 510393-002
 Location: Athens, Georgia
 Test Date: 5/20/15
 Test Well: MW-11

AQUIFER DATA

Saturated Thickness: 62.5 ft
 Anisotropy Ratio (Kz/Kr): 0.1

SLUG TEST WELL DATA

Test Well: MW-11

X Location: 0. ft
 Y Location: 0. ft

Initial Displacement: 1.685 ft
 Static Water Column Height: 10.87 ft
 Casing Radius: 0.083 ft
 Well Radius: 0.083 ft
 Well Skin Radius: 0.604 ft
 Screen Length: 10. ft
 Total Well Penetration Depth: 10.87 ft
 Corrected Casing Radius (Bouwer-Rice Method): 0.083 ft
 Gravel Pack Porosity: 0.25

No. of Observations: 162

Observation Data			
<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
1.	0.5486	82.	0.5699
2.	1.47	83.	0.5636
3.	1.685	84.	0.5565
4.	0.4631	85.	0.5507
5.	1.147	86.	0.5473
6.	0.7708	87.	0.5441
7.	1.255	88.	0.5461
8.	1.104	89.	0.5371
9.	1.236	90.	0.5354
10.	1.113	91.	0.5338
11.	1.118	92.	0.5273
12.	1.086	93.	0.5192
13.	1.072	94.	0.523
14.	1.034	95.	0.5175
15.	1.275	96.	0.5157
16.	0.8848	97.	0.512
17.	1.022	98.	0.5093
18.	1.007	99.	0.5084
19.	0.9928	100.	0.5014
20.	0.9824	101.	0.5004
21.	0.9713	102.	0.493
22.	0.959	103.	0.4943
23.	0.9516	104.	0.4851
24.	0.94	105.	0.4872
25.	0.9292	106.	0.4854
26.	0.9204	107.	0.4802
27.	0.9086	108.	0.4786
28.	0.9023	109.	0.4739

<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
29.	0.8851	110.	0.4737
30.	0.8842	111.	0.4674
31.	0.8725	112.	0.4658
32.	0.8676	113.	0.4624
33.	0.855	114.	0.4593
34.	0.8444	115.	0.4597
35.	0.8386	116.	0.4583
36.	0.8293	117.	0.4536
37.	0.8251	118.	0.4494
38.	0.8123	119.	0.4496
39.	0.811	120.	0.448
40.	0.7986	121.	0.4494
41.	0.8075	122.	0.4391
42.	0.7816	123.	0.4398
43.	0.7835	124.	0.4352
44.	0.7667	125.	0.4356
45.	0.7648	126.	0.4326
46.	0.7622	127.	0.4288
47.	0.7528	128.	0.4267
48.	0.746	129.	0.4251
49.	0.7385	130.	0.4206
50.	0.7689	131.	0.4163
51.	0.7218	132.	0.4167
52.	0.7148	133.	0.4153
53.	0.7095	134.	0.4167
54.	0.7031	135.	0.4131
55.	0.7004	136.	0.409
56.	0.7095	137.	0.4085
57.	0.6882	138.	0.4058
58.	0.6783	139.	0.4023
59.	0.6749	140.	0.404
60.	0.6703	141.	0.4008
61.	0.665	142.	0.397
62.	0.6598	143.	0.3948
63.	0.6506	144.	0.394
64.	0.6463	145.	0.3923
65.	0.6406	146.	0.3886
66.	0.6359	147.	0.3899
67.	0.6343	148.	0.3864
68.	0.6282	149.	0.3893
69.	0.6245	150.	0.3836
70.	0.6201	151.	0.3783
71.	0.6092	152.	0.3777
72.	0.6065	153.	0.3795
73.	0.6032	154.	0.3765
74.	0.6003	155.	0.3745
75.	0.6001	156.	0.3694
76.	0.5866	157.	0.3684
77.	0.5829	158.	0.3688
78.	0.5803	159.	0.3673
79.	0.5791	160.	0.3681
80.	0.573	161.	0.3641
81.	0.5697	162.	0.3614

SOLUTION

Slug Test
 Aquifer Model: Unconfined
 Solution Method: Bouwer-Rice
 ln(Re/rw): 4.335

VISUAL ESTIMATION RESULTS

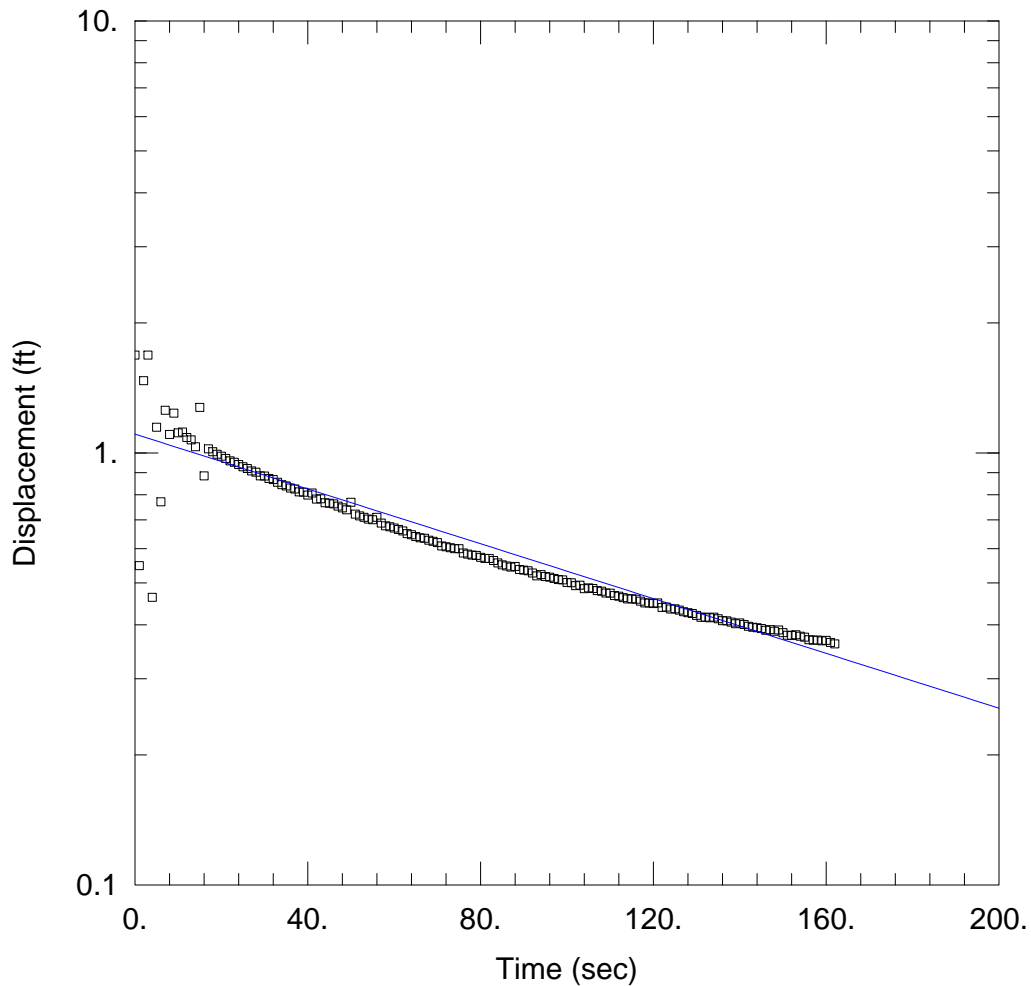
Estimated Parameters

<u>Parameter</u>	<u>Estimate</u>
------------------	-----------------

K	0.9421	ft/day
y0	1.105	ft

$K = 0.0003324$ cm/sec

$T = K \cdot b = 58.88$ ft²/day (0.6332 sq. cm/sec)



WELL TEST ANALYSIS

Data Set:

Date: 07/17/15

Time: 15:58:02

PROJECT INFORMATION

Company: Apex Companies

Client: OmniSource

Project: 510393-002

Location: Athens, Georgia

Test Well: MW-11

Test Date: 5/20/15

AQUIFER DATA

Saturated Thickness: 62.5 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW-11)

Initial Displacement: 1.685 ft

Static Water Column Height: 10.87 ft

Total Well Penetration Depth: 10.87 ft

Screen Length: 10 ft

Casing Radius: 0.083 ft

Well Radius: 0.083 ft

Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 0.9421 ft/day

y0 = 1.105 ft

Data Set: C:\Users\Andrew.Street\Desktop\Slug Test Data\AQTESOLV Output\MW-12.aqt
 Date: 07/17/15
 Time: 15:38:46

PROJECT INFORMATION

Company: Apex Companies
 Client: OmniSource
 Project: 510393-002
 Location: Athens, Georgia
 Test Date: 5/20/15
 Test Well: MW-12

AQUIFER DATA

Saturated Thickness: 62.5 ft
 Anisotropy Ratio (Kz/Kr): 0.1

SLUG TEST WELL DATA

Test Well: MW-12

X Location: 0. ft
 Y Location: 0. ft

Initial Displacement: 1.79 ft
 Static Water Column Height: 17.5 ft
 Casing Radius: 0.083 ft
 Well Radius: 0.083 ft
 Well Skin Radius: 0.604 ft
 Screen Length: 10. ft
 Total Well Penetration Depth: 17.5 ft
 Corrected Casing Radius (Bouwer-Rice Method): 0.083 ft
 Gravel Pack Porosity: 0.25

No. of Observations: 152

Observation Data			
<u>Time (sec)</u>	<u>Displacement (ft)</u>	<u>Time (sec)</u>	<u>Displacement (ft)</u>
1.	1.648	77.	0.3055
2.	1.79	78.	0.303
3.	0.777	79.	0.2963
4.	1.462	80.	0.2915
5.	1.551	81.	0.2859
6.	1.111	82.	0.2816
7.	0.9732	83.	0.2744
8.	0.8562	84.	0.2691
9.	1.029	85.	0.2675
10.	0.9949	86.	0.26
11.	0.9731	87.	0.2572
12.	0.9573	88.	0.2542
13.	0.9387	89.	0.2487
14.	0.9078	90.	0.2428
15.	0.9055	91.	0.2379
16.	0.7999	92.	0.2329
17.	0.791	93.	0.2339
18.	0.846	94.	0.2295
19.	0.6941	95.	0.227
20.	0.8128	96.	0.2199
21.	0.6533	97.	0.2136
22.	0.7808	98.	0.2121
23.	0.7681	99.	0.2081
24.	0.7539	100.	0.2034
25.	0.7385	101.	0.201
26.	0.7253	102.	0.1962
27.	0.718	103.	0.1928
28.	0.7017	104.	0.1906

Time (sec)	Displacement (ft)	Time (sec)	Displacement (ft)
29.	0.6907	105.	0.1853
30.	0.6781	106.	0.1836
31.	0.6636	107.	0.179
32.	0.6542	108.	0.1759
33.	0.6403	109.	0.1722
34.	0.6319	110.	0.1693
35.	0.632	111.	0.1638
36.	0.6113	112.	0.163
37.	0.599	113.	0.1628
38.	0.5829	114.	0.1578
39.	0.5392	115.	0.1547
40.	0.6449	116.	0.1529
41.	0.5621	117.	0.1507
42.	0.5505	118.	0.1453
43.	0.531	119.	0.1434
44.	0.6134	120.	0.1313
45.	0.5234	121.	0.1391
46.	0.5151	122.	0.1334
47.	0.5047	123.	0.1324
48.	0.498	124.	0.1329
49.	0.491	125.	0.1258
50.	0.4812	126.	0.1243
51.	0.4713	127.	0.1221
52.	0.4631	128.	0.1197
53.	0.4579	129.	0.1174
54.	0.4502	130.	0.1219
55.	0.4425	131.	0.1096
56.	0.4346	132.	0.1068
57.	0.431	133.	0.1079
58.	0.4213	134.	0.1018
59.	0.4129	135.	0.101
60.	0.4069	136.	0.1
61.	0.3962	137.	0.0932
62.	0.3926	138.	0.0952
63.	0.3865	139.	0.0894
64.	0.3803	140.	0.092
65.	0.3788	141.	0.0928
66.	0.367	142.	0.0861
67.	0.366	143.	0.0855
68.	0.3602	144.	0.0815
69.	0.3461	145.	0.0819
70.	0.345	146.	0.08
71.	0.3392	147.	0.0774
72.	0.3329	148.	0.0687
73.	0.3273	149.	0.0729
74.	0.3227	150.	0.0674
75.	0.3172	151.	0.0675
76.	0.3127	152.	0.067

SOLUTION

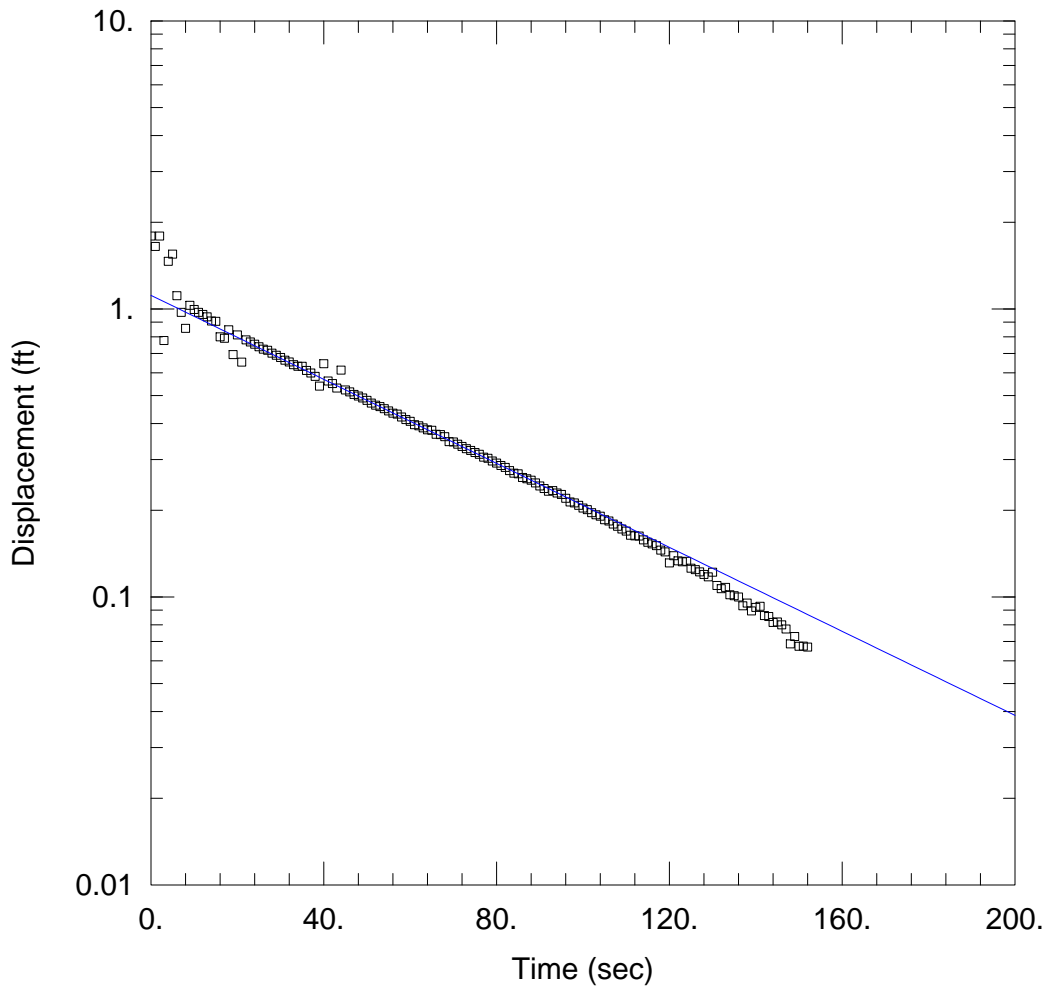
Slug Test
 Aquifer Model: Unconfined
 Solution Method: Bouwer-Rice
 ln(Re/rw): 4.601

VISUAL ESTIMATION RESULTS

Estimated Parameters

Parameter	Estimate	
K	2.299	ft/day
y0	1.115	ft

K = 0.000811 cm/sec
 T = K*b = 143.7 ft²/day (1.545 sq. cm/sec)



WELL TEST ANALYSIS

Data Set: C:\Users\Andrew.Street\Desktop\Slug Test Data\AQTESOLV Output\MW-12.aqt
 Date: 07/17/15 Time: 15:38:05

PROJECT INFORMATION

Company: Apex Companies
 Client: OmniSource
 Project: 510393-002
 Location: Athens, Georgia
 Test Well: MW-12
 Test Date: 5/20/15

AQUIFER DATA

Saturated Thickness: 62.5 ft Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW-12)

Initial Displacement: 1.79 ft Static Water Column Height: 17.5 ft
 Total Well Penetration Depth: 17.5 ft Screen Length: 10 ft
 Casing Radius: 0.083 ft Well Radius: 0.083 ft
 Gravel Pack Porosity: 0.25

SOLUTION

Aquifer Model: Unconfined Solution Method: Bower-Rice
 K = 2.299 ft/day y0 = 1.115 ft

APPENDIX E
HISTORICAL ANALYTICAL DATA TABLES

**VOLUNTARY REMEDIATION PLAN APPLICATION
FORMER LOEF FACILITY
ATHENS, CLARKE COUNTY, GEORGIA**

**TABLE 1
SUMMARY OF GROUNDWATER ELEVATION MEASUREMENTS**

Well Number	Date Measured	TOC Elevation	Screen Interval (BGS)	Depth to Water (BTOC)	Water Table Elevation
MW-2A*	6/17/2009	710.20	33.15 to 23.15 FT	22.87	687.33
	6/24/2010			21.00	689.20
	2/24/2011			18.05	692.15
	8/4/2011*			18.00	688.70
MW-3A	6/17/2009	712.23	20.0 to 30.0 FT	26.79	685.44
	6/24/2010			24.82	687.41
	2/24/2011			25.15	687.08
	8/4/2011			26.15	686.08
MW-4A	6/17/2009	709.18	29.5 to 19.5 FT	24.76	684.42
	6/24/2010			23.21	685.97
	2/24/2011			22.94	686.24
	8/4/2011			25.49	683.69
MW-6	6/17/2009	720.15	30.0 to 20.0 FT	23.00	697.15
	6/24/2010			20.42	699.73
	2/24/2011			20.62	699.53
	8/4/2011			20.50	699.65
MW-7A	6/17/2009	696.08	19.5 to 9.5 FT	15.47	680.61
	6/24/2010			12.46	683.62
	2/24/2011			12.81	683.27
	8/4/2011			18.05	678.03
MW-8A	6/17/2009	695.23	19.5 to 9.5 FT	14.02	681.21
	6/24/2010			11.3	683.93
	2/24/2011			11.54	683.69
	8/4/2011			16.87	678.36
MW-9A	6/17/2009	697.13	10.0 to 20.0 FT	16.51	680.62
	6/24/2010			12.79	684.34
	2/24/2010			12.65	684.48
	8/4/2011			19.80	677.33

Notes:

TOC = Top of Casing
 BTOC = Below Top of Casing
 BGS = Below Ground Surface

VOLUNTARY REMEDIATION PLAN APPLICATION
 FORMER LOEF FACILITY (HULL)
 ATHENS, CLARKE COUNTY, GEORGIA
 HSI#10376

TABLE 2
 SUMMARY OF HISTORIC GROUNDWATER ANALYTICAL RESULTS

Peachtree Well/Sample ID	Date	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	4-Methyl-2-Pentanone	2-Butanone	2-Hexanone	Acetone	Benzene	Carbon Disulfide	Chloroform	Toluene	Ethylbenzene	Xylenes (o)	Xylenes (m,p)	MTBE**	Trichloroethene	Tetrachloroethene	Trichlorofluoromethane	Cis-1,2-Dichloroethene	Vinyl Chloride	
		ANALYTICAL RESULTS (ug/L)																					
Permanent Monitoring Wells																							
MW-1*	6/23/2000	<1	<1	1.5	<1	-	-	-	-	1.5	-	-	<1	<1	<3	-	<1	8.2	<1	-	<1	<3	
	6/23/2000	<10	<10	12	26	-	-	-	-	<10	-	-	<10	<10	<30	-	42	570	<5	-	100	31	
MW-2A	6/26/2003	9.7	<5	30	43	-	-	-	-	11	-	-	43	<5	11	-	150	1800	<5	-	250	52	
	8/12/2003	32	<5	110	78	-	-	-	-	18	-	-	8.9	<5	17	-	250	6500	<5	-	1300	170	
	9/19/2003	28	<5	70	65	-	-	-	-	17	-	-	9.3	<5	18	-	200	4700	<5	-	700	98	
	10/22/2003	28	<5	90	80	-	-	-	-	36	-	-	13	6.4	26	-	250	3000	<5	-	590	140	
	11/18/2003	21	<5	71	58	-	-	-	-	18	-	-	9.1	<5	17	-	250	8100	<5	-	1000	110	
	12/24/2003	34	<5	91	70	-	-	-	-	16	-	-	9.4	<5	22	-	280	9600	<5	-	1500	130	
	1/23/2004	<50	<5	55	60	-	-	-	-	<50	-	-	<50	<5	<50	-	370	4000	<5	-	560	130	
	3/29/2004	16	<5	54	46	-	-	-	-	22	-	-	6.9	<5	14	-	250	4000	<5	-	790	83	
	5/7/2004	11	<5	34	42	-	-	-	-	20	-	-	<5	5.8	14	-	210	2500	<5	-	420	54	
	7/15/2004	11	<5	38	32	-	-	-	-	25	-	-	7.1	8.5	18	-	280	1900	<5	-	420	67	
	9/30/2004	<5	<5	10	23	-	-	-	-	21	-	-	130	46	58	-	190	430	<5	-	130	32	
	5/9/2006	9.4	<5	54	38	-	-	-	-	13	-	-	<5	<5	10	-	77	2600	<5	-	720	51	
	6/17/2009	<5	<5	<5	<5	-	-	-	-	14	-	-	<5	<5	<10	-	<5	70	<5	-	31	7	
	6/24/2010	<5	<5	23	17	-	-	-	-	12	-	-	<5	<5	1.9	-	15	710	<5	-	300	54	
	2/24/2011	<5	<5	19	14	11	-	-	90	7.2	-	-	<5	<5	<5	-	20	730	<5	120	370	33	
	3/18/2011***	<5	<5	6	10	11	-	-	<50	7.8	-	7	<5	<5	<5	-	9.4	210	<5	<5	120	19	
	8/4/2011	<5	<5	21	19	90	210	12	670	13	9	<5	13	<5	7.6	7.8	43	810	<5	<5	390	61	
	8/4/2011 (DUP)	<5	<5	21	18	79	150	10	630	11	7.2	<5	11	<5	6.8	7.1	38	680	<5	<5	310	55	
	MW-3A	6/23/2000	<1	<5	<1	<1	-	-	-	-	36	-	-	<1	<1	<3	-	<1	30	<5	-	<1	<3
5/7/2004		<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	11	<5	-	<5	<2	
5/9/2006		<5	<5	<5	<5	-	-	-	-	7.4	-	-	<5	<5	<5	-	<5	22	<5	-	<5	<2	
6/17/2009		<5	<5	<5	<5	-	-	-	-	13	-	-	<5	<5	<5	-	<5	15	<5	-	<5	<2	
6/24/2010		<5	<5	<5	<5	-	-	-	-	16	-	-	<5	<5	<5	-	<5	17	<5	-	<5	<2	
2/24/2011		<5	<5	<5	<5	<10	<50	<10	<50	14	<5	<5	<5	<5	<5	<5	<5	13	<5	<5	<5	<2	
8/4/2011		<5	<5	<5	<5	<10	<50	<10	<50	13	<5	<5	<5	<5	<5	<5	<5	11	<5	<5	<5	<2	
MW-4A	6/23/2000	<1	<5	<1	<1	-	-	-	-	12	-	-	<1	<1	<1	-	<1	<1	2.7	-	<1	<1	
	5/7/2004	<5	<5	<5	<5	-	-	-	-	27	-	-	<5	<5	<5	-	<5	29	<5	-	<5	<5	
	5/9/2006	<5	<5	<5	<5	-	-	-	-	37	-	-	<5	<5	<5	-	<5	51	<5	-	<5	<2	
	6/17/2009	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	7.2	<5	-	<5	<2	
	6/24/2010	<5	<5	<5	<5	-	-	-	-	4.9	-	-	<5	<5	<5	-	<5	6.1	<5	-	<5	<2	
	2/24/2011	<5	<5	<5	<5	<10	<50	<10	<50	7	<5	<5	<5	<5	<5	<5	<5	13	<5	<5	<5	<2	
8/4/2011	<5	<5	<5	<5	<10	<50	<10	<50	29	<5	<5	<5	<5	<5	<5	<5	51	<5	<5	9.5	<2		
MW-5	6/23/2000	1.5	<1	<1	<1	-	-	-	-	<1	-	-	<1	<1	<1	-	<1	<1	<1	-	<1	<1	
	11/5/2000	NT	<5	<1	NT	-	-	-	-	<1	-	-	NT	NT	NT	-	NT	<1	<1	-	<1	NT	
MW-6	6/17/2009	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	<5	<5	-	<5	<2	
	6/24/2010	<5	<5	<5	<5	-	-	-	-	<5	-	-	<5	<5	<5	-	<5	<5	<5	-	<5	<2	
	2/24/2011	<5	<5	<5	<5	<10	<50	<10	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	
	8/4/2011	<5	<5	<5	<5	<10	<50	<10	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<2	

VOLUNTARY REMEDIATION PLAN APPLICATION
 FORMER LOEF FACILITY (HULL)
 ATHENS, CLARKE COUNTY, GEORGIA
 HSI#10376

TABLE 2
 SUMMARY OF HISTORIC GROUNDWATER ANALYTICAL RESULTS

Peachtree Well/Sample ID	Date	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	4-Methyl-2-Pentanone	2-Butanone	2-Hexanone	Acetone	Benzene	Carbon Disulfide	Chloroform	Toluene	Ethylbenzene	Xylenes (o)	Xylenes (m,p)	MTBE**	Trichloroethene	Tetrachloroethene	Trichlorofluoromethane	Cis-1,2-Dichloroethene	Vinyl Chloride
		ANALYTICAL RESULTS (ug/L)																				
MW-7A	11/5/2000	NT	NT	<1	NT	-	-	-	-	Δ	-	-	NT	NT	NT	-	NT	5.4	<1	-	2.1	NT
	5/7/2004	Δ	Δ	Δ	Δ	-	-	-	-	Δ	-	-	Δ	Δ	Δ	-	Δ	Δ	Δ	Δ	Δ	Δ
	5/9/2006	Δ	Δ	Δ	Δ	-	-	-	-	Δ	-	-	Δ	Δ	Δ	-	Δ	Δ	Δ	Δ	Δ	Δ
	6/17/2009	Δ	Δ	Δ	Δ	-	-	-	-	Δ	-	-	Δ	Δ	Δ	-	Δ	Δ	Δ	Δ	Δ	Δ
	6/24/2010	Δ	Δ	Δ	Δ	-	-	-	-	Δ	-	-	Δ	Δ	Δ	-	Δ	Δ	Δ	Δ	Δ	Δ
	2/24/2011	Δ	Δ	Δ	Δ	<10	Δ	Δ	<10	<50	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
8/4/2011	Δ	Δ	Δ	Δ	<10	Δ	Δ	Δ	<50	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
MW-8A	11/5/2000	NT	NT	<1	NT	-	-	-	-	Δ	-	-	NT	NT	NT	-	NT	15	<1	-	Δ	NT
	5/7/2004	Δ	Δ	Δ	Δ	-	-	-	-	Δ	-	-	Δ	Δ	Δ	-	Δ	Δ	Δ	Δ	Δ	Δ
	5/9/2006	Δ	Δ	Δ	Δ	-	-	-	-	Δ	-	-	Δ	Δ	Δ	-	Δ	Δ	Δ	Δ	Δ	Δ
	6/17/2009	Δ	Δ	Δ	Δ	-	-	-	-	Δ	-	-	Δ	Δ	Δ	-	Δ	Δ	Δ	Δ	Δ	Δ
	6/24/2010	Δ	Δ	Δ	Δ	-	-	-	-	Δ	-	-	Δ	Δ	Δ	-	Δ	Δ	Δ	Δ	Δ	Δ
	2/24/2011	Δ	Δ	Δ	Δ	<10	Δ	Δ	<10	<50	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
8/4/2011	Δ	Δ	Δ	Δ	<10	Δ	Δ	<10	<50	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
MW-9A	5/7/2004	Δ	Δ	Δ	Δ	-	-	-	-	Δ	-	-	Δ	Δ	Δ	-	Δ	Δ	Δ	Δ	Δ	Δ
	5/9/2006	Δ	Δ	Δ	Δ	-	-	-	-	Δ	-	-	Δ	Δ	Δ	-	Δ	Δ	Δ	Δ	Δ	Δ
	6/17/2009	Δ	Δ	Δ	Δ	-	-	-	-	Δ	-	-	Δ	Δ	Δ	-	Δ	Δ	Δ	Δ	Δ	Δ
	6/24/2010	Δ	Δ	Δ	Δ	-	-	-	-	Δ	-	-	Δ	Δ	Δ	-	Δ	Δ	Δ	Δ	Δ	Δ
	2/24/2011	Δ	Δ	Δ	Δ	<10	Δ	Δ	<10	<50	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
	8/4/2011	Δ	Δ	Δ	Δ	<10	Δ	Δ	<10	<50	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
Temporary Monitoring Well Data																						
TW-1	5/4/2006	Δ	Δ	Δ	Δ	-	-	-	-	38	-	-	Δ	Δ	Δ	-	Δ	10	Δ	-	Δ	Δ
TW-2	5/4/2006	Δ	Δ	Δ	Δ	-	-	-	-	100	-	-	Δ	Δ	Δ	-	Δ	15	6.6	-	Δ	Δ
TW-3	5/4/2006	Δ	Δ	Δ	29	-	-	-	-	Δ	-	-	Δ	Δ	Δ	-	Δ	8.2	Δ	-	Δ	Δ
TW-4	5/4/2006	Δ	5.9	Δ	150	-	-	-	-	Δ	-	-	Δ	Δ	Δ	-	Δ	Δ	Δ	-	Δ	Δ
TW-5	5/4/2006	Δ	Δ	Δ	Δ	-	-	-	-	24	-	-	Δ	Δ	Δ	-	Δ	Δ	Δ	-	Δ	Δ
Equipment Blank	2/24/2011	Δ	Δ	Δ	Δ	<10	Δ	<10	59	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
Trip Blank	8/5/2011	Δ	Δ	Δ	Δ	<10	Δ	<10	<50	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ

NOTES:
 250 - Numbers in bold exceed the applicable Risk Reduction Standard criteria.
 * - Casing for MW-1 is damaged. Sampling access is not available.
 ** - Currently, there is no Type 1/3 Groundwater Risk Reduction Standard.
 *** - MW-2A overdrilled and replaced 3/18/11.
 NT - Not Tested.

VOLUNTARY REMEDIATION PLAN APPLICATION
 FORMER LOEF FACILITY (HULL)
 ATHENS, CLARKE COUNTY, GEORGIA
 HSI#10376

**TABLE 3
 SUMMARY OF MONITORED NATURAL ATTENUATION PARAMETER RESULTS**

Well/Sample ID	Date	pH	Temperature (°C)	Conductivity (uS/cm)	Total Dissolved Solids (g/L)	Oxidation-Reduction Potential (mV)	Ethane	Ethene	Methane	Dissolved Oxygen	Total Organic Carbon	Iron II	Nitrate	Sulfate	Sulfide
MW-2A	6/24/2010	4.65	18.1	0.581	0.037	450	0.16	<0.007	3.2	10.2	8.2	7.25	0.49	<1	<2
	8/4/2011	5.45	20.78	0.295	NM	10	0.78	<0.007	3.1	0.54	60.8	47	<0.25	<1	<2
MW-3A	6/24/2010	4.63	19.2	0.852	0.054	398	0.36	<0.007	4.2	9.64	2.34	<0.1	1.8	2	<2
	8/4/2011	4.4	20.94	0.57	NM	301	0.12	<0.007	1.7	1.34	1.42	<0.1	1.7	<1	<2
MW-4A	6/24/2010	4.66	18.8	0.164	0.11	414	0.029	<0.007	0.34	9.54	2.98	<0.1	0.88	1.9	<2
	8/4/2011	4.62	21.76	0.093	NM	330	0.026	<0.007	0.44	2.1	<5	<.1	0.84	1.7	<2
MW-6*	6/24/2010	4.9	19.7	0.044	0.03	443	<0.009	<0.007	<0.004	10.5	1.79	<0.1	0.44	<1	<2
	8/4/2011	4.25	19.7	0.03	NM	366	<0.009	<0.007	<0.004	8.51	<1	<0.1	0.43	<1	<2

NOTES:
 * - Background Well

VOLUNTARY REMEDIATION PLAN APPLICATION
HULL (FORMER LOEF FACILITY)
ATHENS, CLARKE COUNTY, GEORGIA
HSI SITE #10376

TABLE 4
SUMMARY OF AQUIFER SLUG TESTING DATA

Well Number	Test Date	Well Depth (Feet Below TOC)	Water Level (Feet Below TOC)	Screened Interval (Feet Below TOC)	Hydraulic Conductivity (Ft/Day)
Shallow Wells					
MW-2A	6/24/10	33.15	21.00	23.15 - 33.15	2.160
MW-4A	6/24/10	29.50	23.21	19.50 - 29.50	0.360
MW-9A	6/24/10	30.00	12.79	20.00 - 30.00	0.002
Combined Hydraulic Conductivity Average of Shallow Wells =>					1.261

NOTES:

TOC = Top of Casing

GROUNDWATER FLOW VELOCITY CALCULATIONS

$V = k \cdot i / n_e$ Where:
V = groundwater flow velocity
k = hydraulic conductivity
i = hydraulic gradient
 n_e = effective porosity

Groundwater Flow Velocity Calculations - Shallow Aquifer

Hydraulic gradient between MW-2A and MW-8A and average hydraulic conductivity for the shallow aquifer => $689.20' - 683.93' / 364.59' = 0.0145$ feet/foot.

1. $V = k \cdot i / n_e$

$V = 1.261 \cdot 0.0145 / 0.2 = 0.091$

V = 0.091 feet/day or 33.215 feet/year

APPENDIX F
BIOCHLOR OUTPUT SHEETS

BIOCHLOR SCREENING MODEL INPUT PARAMETERS

Former Loef Facility
590 Old Hull Road
Athens, Georgia

Initial Calibration

Model was calibrated to the current trend of the plume extending directly downgradient to the southeast within the saprolite unit from MW-11 to MW-4A.

Hydraulic Conductivity 2.3 x 10⁻⁴ cm/sec

- Value based on average of slug test results from MW-4A and MW-11. The values average to 0.6632 ft/day (2.3 x 10⁻⁴ cm/sec)

Gradient 0.023 ft/ft

- Gradient was measured on the January 2015 potentiometric map, utilizing potentiometric contours between MW-11 and MW-4A

Effective Porosity 18%

- Effective porosity cannot be measured but is taken as generally equivalent to specific yield. Apex used an average specific yield for silts. (Fetter, Applied Hydrogeology)

Dispersion Coefficient (Dx) 29

- Distance between assumed source area and MW-4A located at property line. Concentrations at MW-4A vary between BQL and some detections of the COCs and was assumed to be the approximate limit of the plume. Source was assumed to be 70 feet upgradient of MW-11.
- Dy (2.9) and Dz (0.29) were assumed to each be an order of magnitude less as is the standard convention.

Soil Bulk Density (rho) 1.7 Kg/L (default value)

Fraction Organic Carbon (f_{oc}) 0.002 (conservative default value)

Partitioning Coefficient (K_{oc}) – Taken from EPA Region 9 Screening Tables

- PCE 95 L/Kg
- TCE 61 L/Kg
- DCE 40 L/Kg
- VC 22 L/Kg

Decay – Based on biodegradation documented at the site, the half-lives of the constituents were used to calibrate the model to current conditions. Apex used values approximately double the standard default values to calibrate the model.

	<u>Model input (yrs)</u>	<u>Default (yrs)</u>
PCE to TCE	1.6	0.79
TCE to DCE	2.0	0.74
DCE to Vinyl Chloride	1.3	0.64

Source Concentrations

- Calibrated to wells MW-11 (1,500 µg/L), MW-3A (10 ug/L) and MW-4A which ranged from BQL to 50 ug/L. MW-3A was measured as 85 feet downgradient and approximately 100 feet side gradient of MW-11.
- Model was initially calibrated at run for 22 years with anticipated spill and/or movement of COCs to groundwater in approximately 1993.
- The source area was assumed to be approximately 70 feet upgradient of MW-11 and be approximately 40 feet wide. Placing the source at MW-11 did not create the biodegradation products in the model run that we see in this well. This pointed to an upgradient source area. In evaluating the remedial activities conducted by Hull, soils contaminated with TCE were removed upgradient of MW-11. With this as the assumed source area, the model was more easily calibrated, including degradation products of 1,2-cis-dichloroethene and ethene.
- Degradation was necessary to calibrate the model. Without any degradation, the model shows that the TCE should have extended approximately 300 feet off-site and be at concentrations of exceeding 100 ug/L at the property boundary.
- The model shows the generation of lower concentrations of ethene at MW-11 than what was observed. Ethene was present at concentrations of 330 ug/L in MW-11, but the model predicts concentrations of approximately 50 ug/L. Decreasing the half-life increases concentrations slightly but also results in higher predicted concentrations downgradient at MW-4A. Ethene was not observed in MW-4A.

Results

Once calibrated, the simulation was run for a 50 year period assuming a constant source. With no degradation, the plume will reach the MCL approximately 650 feet from the source area, or 400 feet from the property boundary. The historic data indicates that the plume is at steady state conditions with the current biodegradation rate. If this trend continues, the model indicates there will be little forward progression of the plume from its current location.

Model Sensitivity

The model was calibrated primarily utilizing source concentrations and degradation half-lives. Slight variations in K values have a significant impact on the predicted downgradient limit of the plume. Modifications to dispersion values impact the shape of the concentration versus time output, but aid little in overall calibration. Modifications were not made to bulk density, TOC or porportioning coefficient. Standard default values were relied upon for these parameters.

BIOCHLOR Natural Attenuation Decision Support System

Version 2.2
Excel 2000

OmniSource

Former Loef Site

Run Name

Data Input Instructions:

1. Enter value directly....or
 2. Calculate by filling in gray cells. Press Enter, then **C**
- (To restore formulas, hit "Restore Formulas" button)
Variable* → Data used directly in model.

Test if Biotransformation is Occurring → Natural Attenuation Screening Protocol

TYPE OF CHLORINATED SOLVENT: Ethenes Ethanes

1. ADVECTION

Seepage Velocity* Vs (ft/yr)
 Hydraulic Conductivity K (cm/sec)
 Hydraulic Gradient i (ft/ft)
 Effective Porosity n (-)

2. DISPERSION

Alpha x* (ft) Calc. Alpha x
 (Alpha y) / (Alpha x)* (-)
 (Alpha z) / (Alpha x)* (-)

3. ADSORPTION

Retardation Factor* R
 Soil Bulk Density, rho (kg/L)
 Fraction Organic Carbon, foc (-)
 Partition Coefficient Koc
 PCE (L/kg) (-)
 TCE (L/kg) (-)
 DCE (L/kg) (-)
 VC (L/kg) (-)
 ETH (L/kg) (-)
Common R (used in model)* =

4. BIOTRANSFORMATION

-1st Order Decay Coefficient*

Zone	Reaction	λ (1/yr)	half-life (yrs)	Yield
Zone 1	PCE → TCE	<input type="text" value="0.433"/>	<input type="text" value="1.60"/>	0.79
	TCE → DCE	<input type="text" value="0.347"/>	<input type="text" value="2.00"/>	0.74
	DCE → VC	<input type="text" value="0.533"/>	<input type="text" value="1.30"/>	0.64
	VC → ETH	<input type="text" value="0.693"/>	<input type="text" value="1.00"/>	0.45
Zone 2	PCE → TCE	<input type="text" value="0.000"/>	<input type="text" value=""/>	
	TCE → DCE	<input type="text" value="0.000"/>	<input type="text" value=""/>	
	DCE → VC	<input type="text" value="0.000"/>	<input type="text" value=""/>	
	VC → ETH	<input type="text" value="0.000"/>	<input type="text" value=""/>	

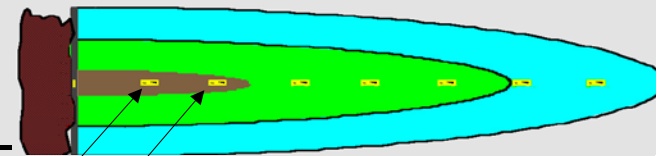
5. GENERAL

Simulation Time* (yr)
 Modeled Area Width* (ft)
 Modeled Area Length* (ft)
 Zone 1 Length* (ft)
 Zone 2 Length* (ft)
 Zone 2 =

6. SOURCE DATA

TYPE: Continuous Single Planar
 Source Options
 Source Thickness in Sat. Zone* (ft)
 Width* (ft)
 Conc. (mg/L)* C1
 PCE
 TCE
 DCE
 VC
 ETH

Vertical Plane Source: Determine Source Well Location and Input Solvent Concentrations



7. FIELD DATA FOR COMPARISON

Conc. (mg/L)	70	290												
PCE Conc. (mg/L)	.015	.0												
TCE Conc. (mg/L)	1.5	.002												
DCE Conc. (mg/L)	.015	.005												
VC Conc. (mg/L)														
ETH Conc. (mg/L)	0.3													
Distance from Source (ft)	70	290												
Date Data Collected	2013													

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE

RUN ARRAY

Help

Restore

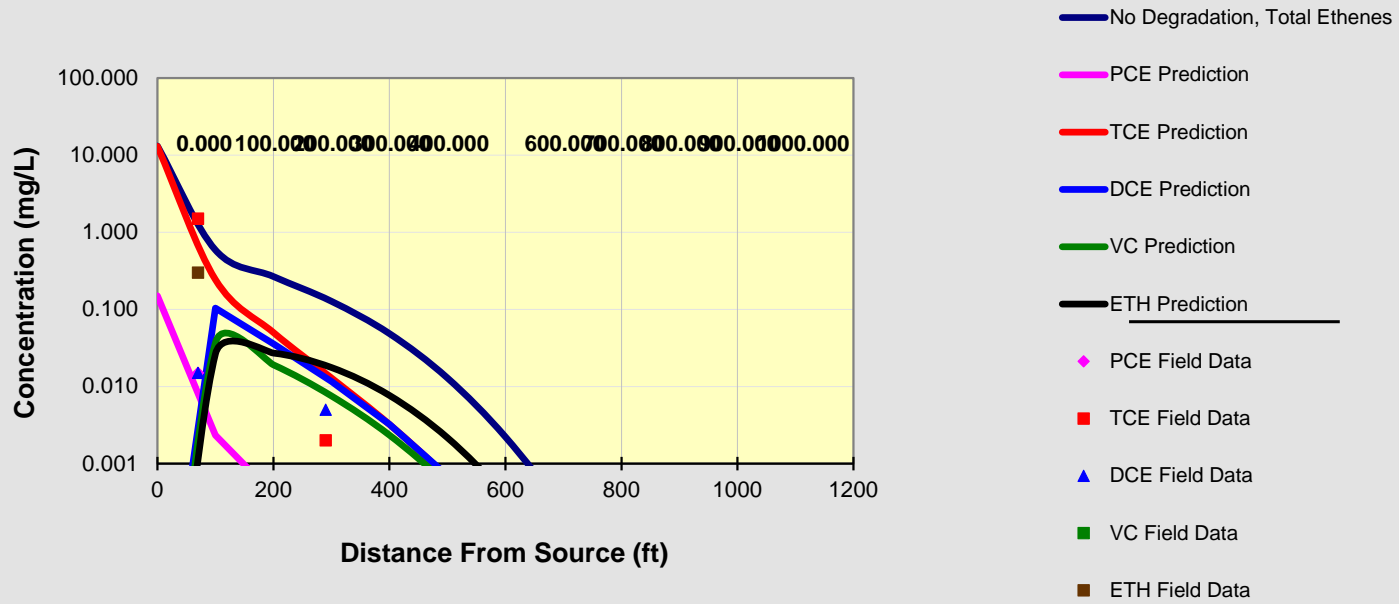
RESET

SEE OUTPUT

Paste

λ HELP

DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE



Log Linear

Time:

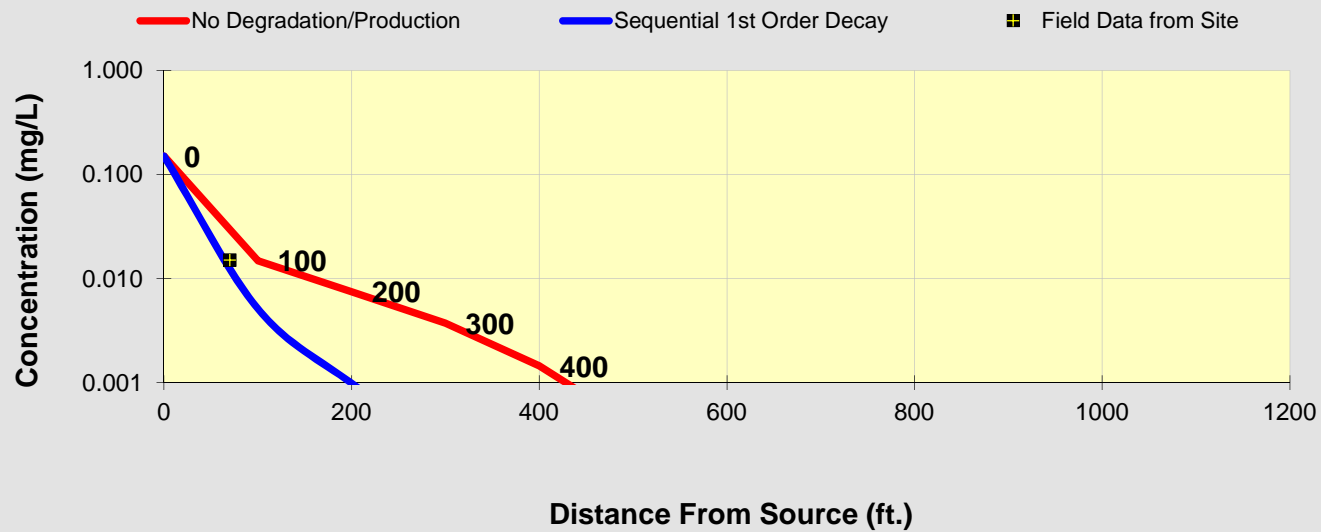
To Input

To Individual Compounds

DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

	Distance from Source (ft)										
	0	100	200	300	400	500	600	700	800	900	1000
PCE											
No Degradation	0.150	0.015	0.008	0.004	0.001	0.000	0.000	0.000	0.000	0.000	0.000
Biotransformation	0.1500	0.005	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Monitoring Well Locations (ft)											
	70	290									
Field Data from Site	0.015										



- See PCE
- See TCE
- See DCE
- See VC
- See ETH

Prepare Animation

Time:

22.0 Years

Log ↔ Linear

Return to Input

To All

To Array

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

Start Here →

- PCE
- TCE
- DCE
- VC
- ETH

Transverse
Distance (ft)

Distance from Source (ft)

	0	100	200	300	400	500	600	700	800	900	1000
120	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.150	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-60	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-120	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Show No

Show
Biotransformation

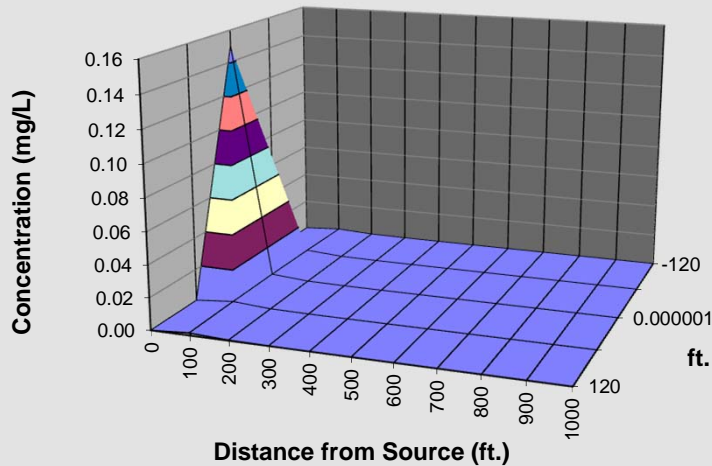
MASS
RATE
(mg/day)

Time: yr

Target Level: mg/L

Displayed Model:

Displayed Compound



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons Plume Mass If No Degradation (Kg)

- Plume Mass If Biotransformation/Production (Kg)

Mass Removed (Kg)

If "Can't Calc.",
make model area
longer

% Biotransformed =
% Change in Mass Rate = #VALUE! (source to edge)

See acre-ft Current Volume of Ground Water in Plume MGal
Flow Rate of Water Through Source Area MGD

Compare to Pump and Treat Pumping Rate (gpm)
Pore Volumes Removed Per Yr.
Pore Volumes to Clean-Up
Clean-Up Time (yr)

Plot All Data

Plot Data > Target

Mass HELP

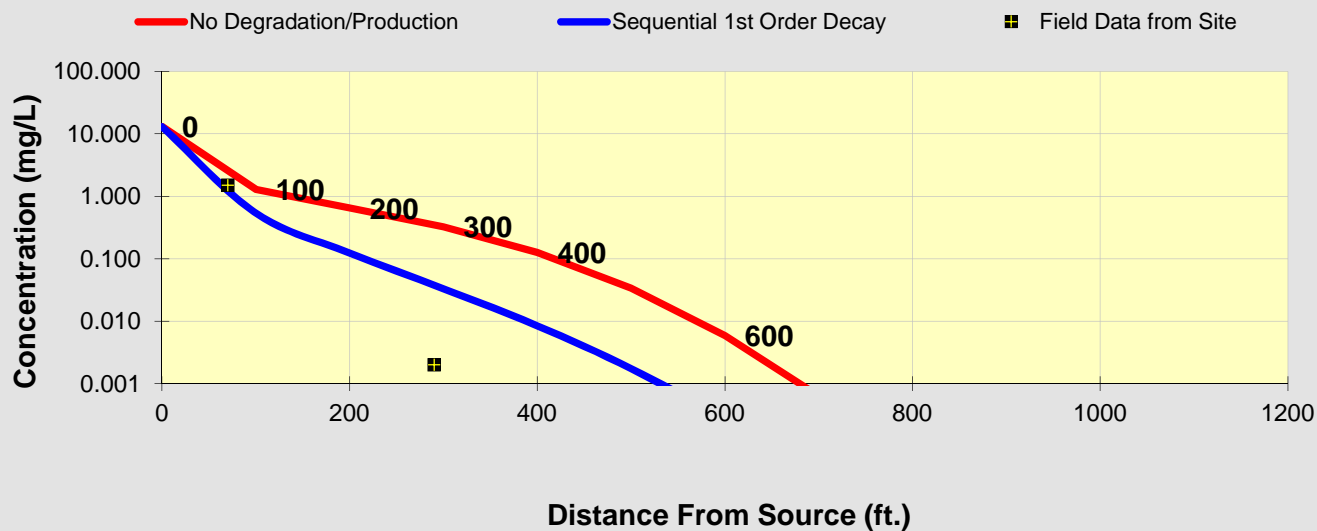
To Centerline

Return to Input

DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

TCE	Distance from Source (ft)										
	0	100	200	300	400	500	600	700	800	900	1000
No Degradation	13.000	1.288	0.651	0.323	0.126	0.034	0.006	0.001	0.000	0.000	0.000
Biotransformation	13.0000	0.538	0.124	0.033	0.008	0.002	0.000	0.000	0.000	0.000	0.000

	Monitoring Well Locations (ft)										
	70	290									
Field Data from Site	1.500	0.002									



- See PCE
- See TCE
- See DCE
- See VC
- See ETH

Prepare Animation

Time:

22.0 Years

Log ↔ Linear

Return to Input

To All

To Array

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

- Start Here** → PCE
 TCE
 DCE
 VC
 ETH

Transverse
Distance (ft)

	Distance from Source (ft)										
	0	100	200	300	400	500	600	700	800	900	1000
120	0.000	0.159	0.041	0.011	0.003	0.001	0.000	0.000	0.000	0.000	0.000
60	0.000	0.219	0.048	0.012	0.003	0.001	0.000	0.000	0.000	0.000	0.000
0	13.000	0.243	0.050	0.013	0.003	0.001	0.000	0.000	0.000	0.000	0.000
-60	0.000	0.219	0.048	0.012	0.003	0.001	0.000	0.000	0.000	0.000	0.000
-120	0.000	0.159	0.041	0.011	0.003	0.001	0.000	0.000	0.000	0.000	0.000

Show No

Show Biotransformation

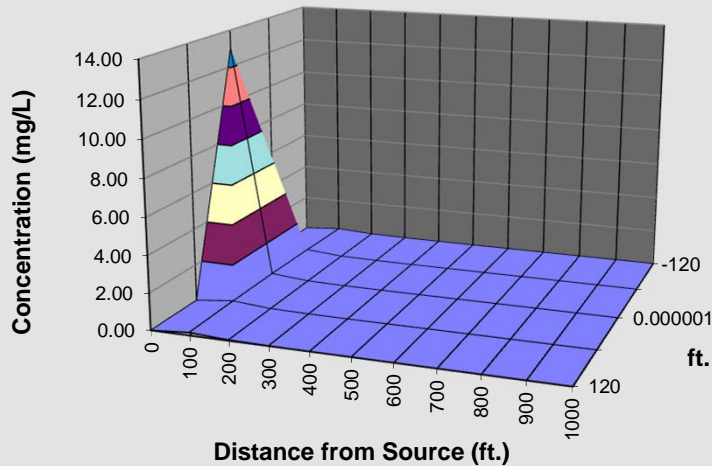
MASS RATE
(mg/day)

Time: yr

Target Level: mg/L

Displayed Model:

Displayed Compound



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons Plume Mass If No Degradation (Kg)
 - Plume Mass If Biotransformation/Production (Kg)

 Mass Removed (Kg)
 If "Can't Calc.", make model area longer
 % Biotransformed =
 % Change in Mass Rate = #VALUE! (source to edge)

See acre-ft Current Volume of Ground Water in Plume MGal
 Flow Rate of Water Through Source Area MGD

Compare to Pump and Treat Pumping Rate (gpm)
 # Pore Volumes Removed Per Yr.
 # Pore Volumes to Clean-Up
 Clean-Up Time (yr)

Plot All Data

Plot Data > Target

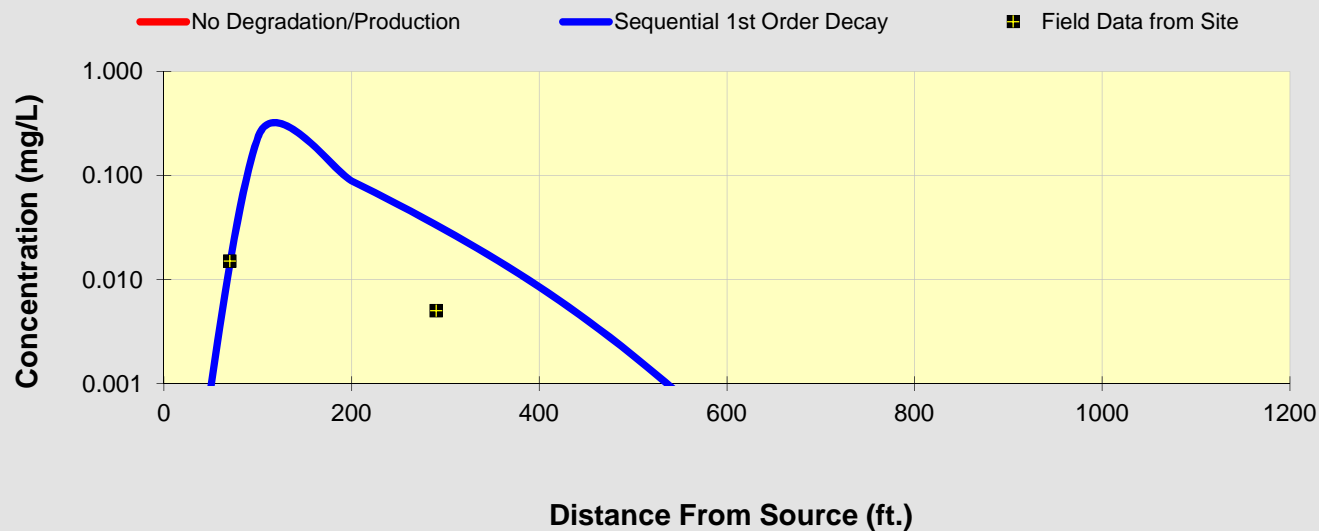
Mass HELP

To Centerline

Return to Input

DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

	Distance from Source (ft)										
	0	100	200	300	400	500	600	700	800	900	1000
DCE											
No Degradation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Biotransformation	0.0000	0.230	0.088	0.030	0.009	0.002	0.000	0.000	0.000	0.000	0.000
Monitoring Well Locations (ft)											
	70	290									
Field Data from Site	0.015	0.005									



- See PCE
- See TCE
- See DCE
- See VC
- See ETH

Prepare Animation

Time:

22.0 Years

Log ↔ Linear

Return to Input

To All

To Array

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

- Start Here
- PCE
 - TCE
 - DCE
 - VC
 - ETH

Transverse
Distance (ft)

Distance from Source (ft)

Distance (ft)	0	100	200	300	400	500	600	700	800	900	1000
120	0.000	0.068	0.029	0.010	0.003	0.001	0.000	0.000	0.000	0.000	0.000
60	0.000	0.094	0.034	0.011	0.003	0.001	0.000	0.000	0.000	0.000	0.000
0	0.000	0.104	0.036	0.012	0.003	0.001	0.000	0.000	0.000	0.000	0.000
-60	0.000	0.094	0.034	0.011	0.003	0.001	0.000	0.000	0.000	0.000	0.000
-120	0.000	0.068	0.029	0.010	0.003	0.001	0.000	0.000	0.000	0.000	0.000

Show No

Show
Biotransformation

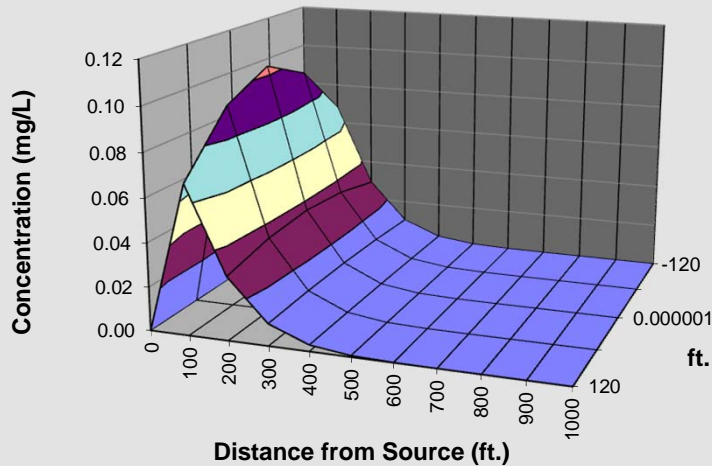
MASS RATE
(mg/day)

Time: yr

Target Level: mg/L

Displayed Model:

Displayed Compound



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons Plume Mass If No Degradation (Kg)

- Plume Mass If Biotransformation/Production (Kg)

Mass Removed (Kg)

If "Can't Calc.", make model area longer

% Biotransformed =

% Change in Mass Rate = #VALUE! (source to edge)

See acre-ft Current Volume of Ground Water in Plume MGal

Flow Rate of Water Through Source Area MGD

Compare to Pump and Treat Pumping Rate (gpm)

Pore Volumes Removed Per Yr.

Pore Volumes to Clean-Up

Clean-Up Time (yr)

Plot All Data

Plot Data > Target

Mass HELP

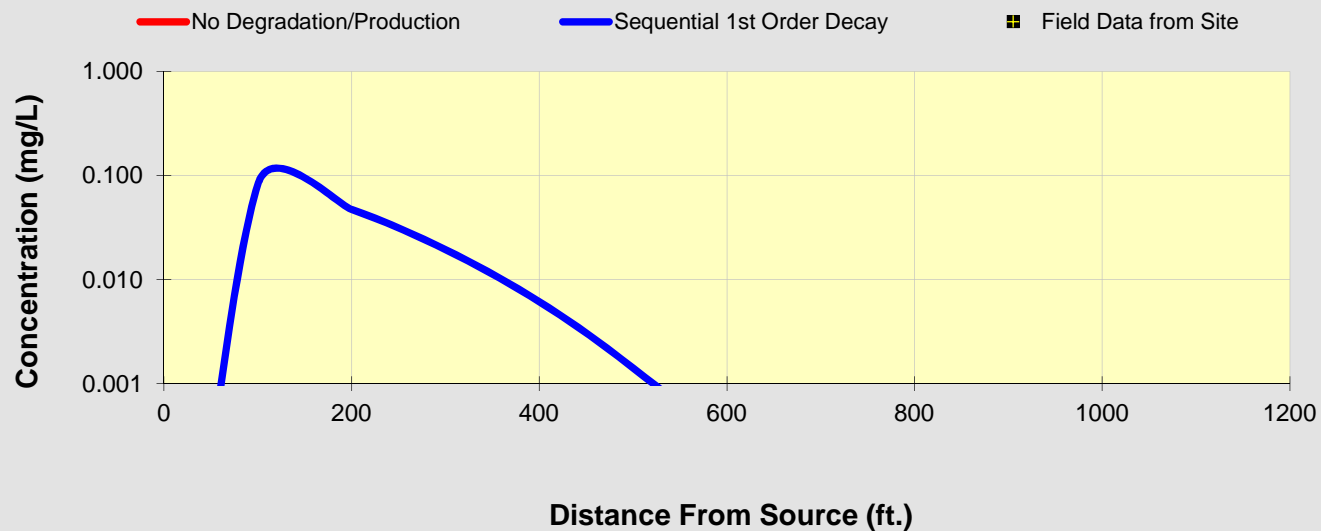
To Centerline

Return to Input

DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

VC	Distance from Source (ft)										
	0	100	200	300	400	500	600	700	800	900	1000
No Degradation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Biotransformation	0.0000	0.082	0.047	0.019	0.006	0.001	0.000	0.000	0.000	0.000	0.000

Monitoring Well Locations (ft)										
70	290									
Field Data from Site										



- [See PCE](#)
- [See TCE](#)
- [See DCE](#)
- [See VC](#)
- [See ETH](#)

Prepare Animation

Time:

22.0 Years

Log ↔ Linear

Return to Input

To All

To Array

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

- Start Here
- PCE
 - TCE
 - DCE
 - VC
 - ETH

Transverse
Distance (ft)

Distance from Source (ft)

	0	100	200	300	400	500	600	700	800	900	1000
120	0.000	0.024	0.015	0.007	0.002	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.033	0.018	0.007	0.002	0.001	0.000	0.000	0.000	0.000	0.000
0	0.000	0.037	0.019	0.008	0.002	0.001	0.000	0.000	0.000	0.000	0.000
-60	0.000	0.033	0.018	0.007	0.002	0.001	0.000	0.000	0.000	0.000	0.000
-120	0.000	0.024	0.015	0.007	0.002	0.000	0.000	0.000	0.000	0.000	0.000

Show No

Show
Biotransformation

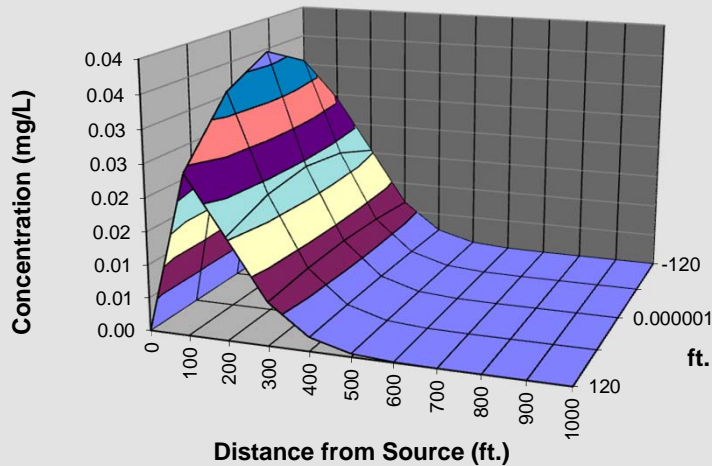
MASS
RATE
(mg/day)

Time: yr

Target Level: mg/L

Displayed Model:

Displayed Compound



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons Plume Mass If No Degradation (Kg)

- Plume Mass If Biotransformation/Production (Kg)

Mass Removed (Kg)

If "Can't Calc.", make model area longer

% Biotransformed =

% Change in Mass Rate = #VALUE! (source to edge)

See acre-ft Current Volume of Ground Water in Plume MGal

Flow Rate of Water Through Source Area MGD

Compare to Pump and Treat Pumping Rate

Pore Volumes Removed Per Yr.

Pore Volumes to Clean-Up

Clean-Up Time (yr)

Plot All Data

Plot Data > Target

Mass HELP

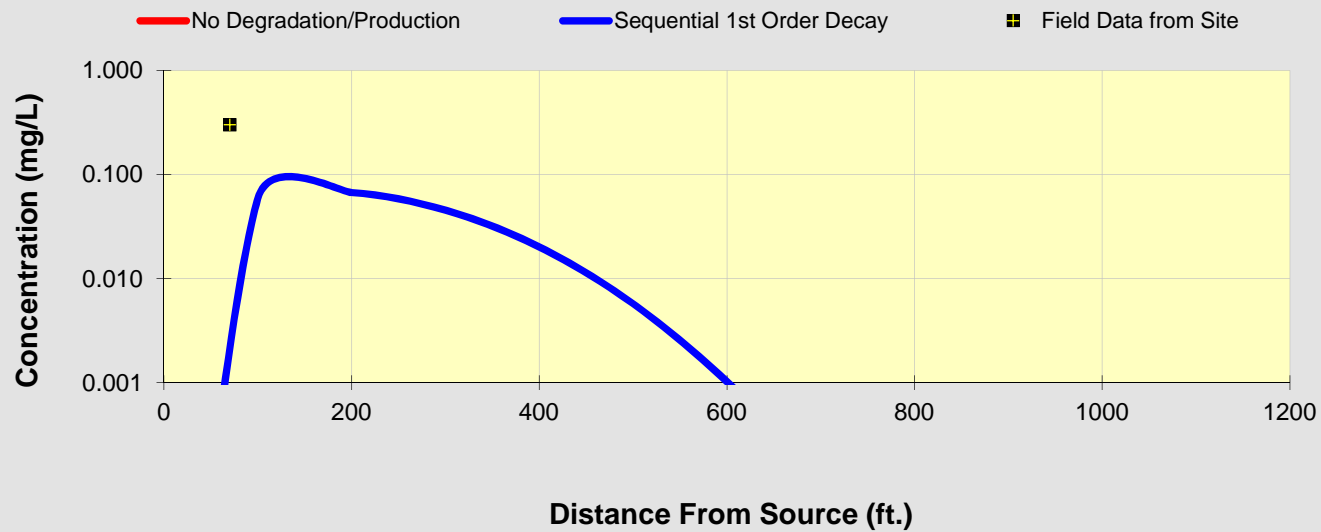
To Centerline

Return to Input

DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

ETH	Distance from Source (ft)										
	0	100	200	300	400	500	600	700	800	900	1000
No Degradation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Biotransformation	0.0000	0.059	0.067	0.045	0.020	0.006	0.001	0.000	0.000	0.000	0.000

Field Data from Site	Monitoring Well Locations (ft)										
	70	290									
	0.300										



- [See PCE](#)
- [See TCE](#)
- [See DCE](#)
- [See VC](#)
- [See ETH](#)

Time:
 Linear

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

- Start Here** → PCE
 TCE
 DCE
 VC
 ETH

Transverse
Distance (ft)

Distance from Source (ft)

	0	100	200	300	400	500	600	700	800	900	1000
120	0.000	0.017	0.022	0.015	0.007	0.002	0.000	0.000	0.000	0.000	0.000
60	0.000	0.024	0.026	0.017	0.007	0.002	0.000	0.000	0.000	0.000	0.000
0	0.000	0.026	0.027	0.018	0.008	0.002	0.000	0.000	0.000	0.000	0.000
-60	0.000	0.024	0.026	0.017	0.007	0.002	0.000	0.000	0.000	0.000	0.000
-120	0.000	0.017	0.022	0.015	0.007	0.002	0.000	0.000	0.000	0.000	0.000

Show No

Show Biotransformation

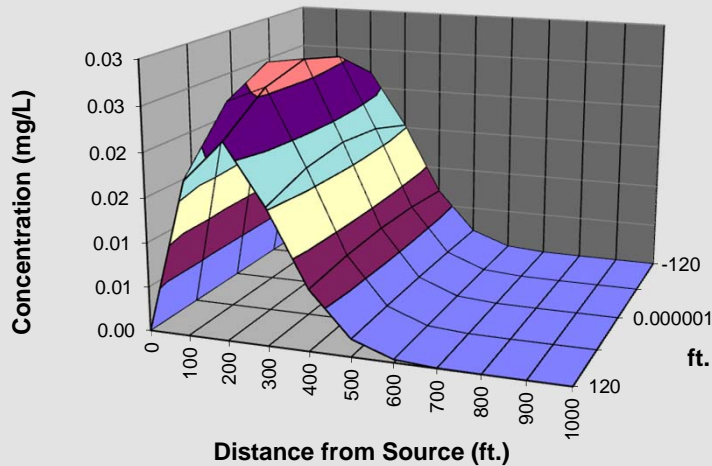
MASS RATE
(mg/day)

Time: yr

Target Level: mg/L

Displayed Model:

Displayed Compound



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons Plume Mass If No Degradation (Kg)

- Plume Mass If Biotransformation/Production (Kg)

Mass Removed (Kg)

If "Can't Calc.", make model area longer

% Biotransformed =

% Change in Mass Rate = #VALUE! (source to edge)

See acre-ft Current Volume of Ground Water in Plume MGal

Flow Rate of Water Through Source Area MGD

Compare to Pump and Treat Pumping Rate (gpm)

Pore Volumes Removed Per Yr.

Pore Volumes to Clean-Up

Clean-Up Time (yr)

BIOCHLOR Natural Attenuation Decision Support System

Version 2.2
Excel 2000

OmniSource

Former Loef Site

Run Name

Data Input Instructions:

- 115 → 1. Enter value directly....or
 ↑ or 0.02 → 2. Calculate by filling in gray cells. Press Enter, then **C**
 (To restore formulas, hit "Restore Formulas" button)
 Variable* → Data used directly in model.

Test if Biotransformation is Occurring → Natural Attenuation Screening Protocol

TYPE OF CHLORINATED SOLVENT:

Ethenes
 Ethanes

1. ADVECTION

Seepage Velocity* Vs (ft/yr)
 or
 Hydraulic Conductivity K (cm/sec)
 Hydraulic Gradient i (ft/ft)
 Effective Porosity n (-)



2. DISPERSION

Alpha x* (ft)
 (Alpha y) / (Alpha x)* (-)
 (Alpha z) / (Alpha x)* (-)

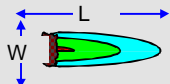
3. ADSORPTION

Retardation Factor* → R
 or
 Soil Bulk Density, rho (kg/L)
 Fraction Organic Carbon, foc (-)
 Partition Coefficient Koc (L/kg) → (-)
 PCE (L/kg) → (-)
 TCE (L/kg) → (-)
 VC (L/kg) → (-)
 ETH (L/kg) → (-)
Common R (used in model)* =

4. BIOTRANSFORMATION

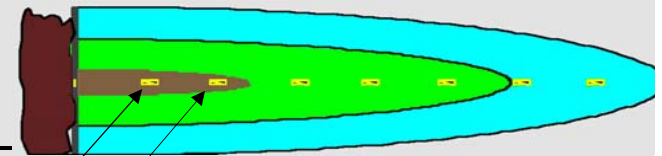
Zone 1 
 PCE → TCE ← half-life (yrs) Yield 0.79
 TCE → DCE ← half-life (yrs) Yield 0.74
 DCE → VC ← half-life (yrs) Yield 0.64
 VC → ETH ← half-life (yrs) Yield 0.45
Zone 2 
 PCE → TCE ← half-life (yrs)
 TCE → DCE ←
 DCE → VC ←
 VC → ETH ←

5. GENERAL

Simulation Time* (yr) 
 Modeled Area Width* (ft)
 Modeled Area Length* (ft)
 Zone 1 Length* (ft)
 Zone 2 Length* (ft) Zone 2=

6. SOURCE DATA

Source Options
 TYPE: Continuous Single Planar
 Vertical Plane Source: Determine Source Well Location and Input Solvent Concentrations
 Source Thickness in Sat. Zone* (ft)
 Width* (ft)
 Conc. (mg/L)* C1
 PCE
 TCE
 DCE
 VC
 ETH
 k_s* (1/yr)
 PCE
 TCE
 DCE
 VC
 ETH



View of Plume Looking Down

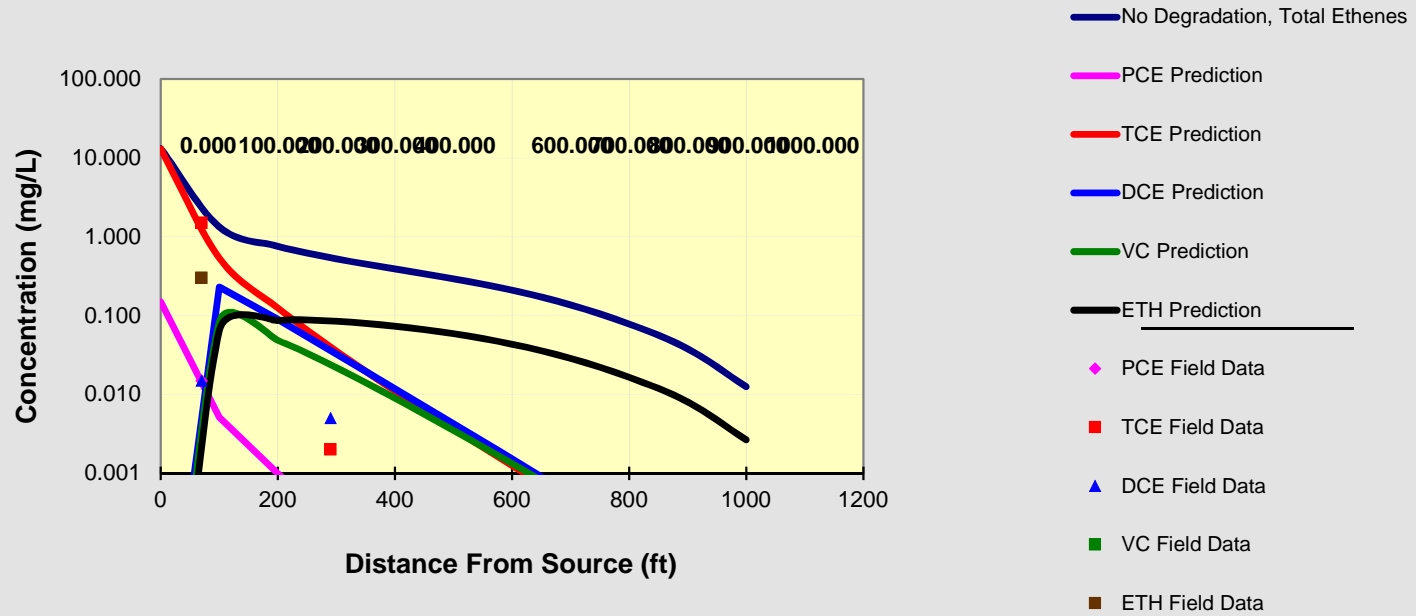
Observed Centerline Conc. at Monitoring Wells

7. FIELD DATA FOR COMPARISON

Conc. (mg/L)	70	290								
PCE Conc. (mg/L)	.015	.0								
TCE Conc. (mg/L)	1.5	.002								
DCE Conc. (mg/L)	.015	.005								
VC Conc. (mg/L)										
ETH Conc. (mg/L)	0.3									
Distance from Source (ft)	70	290								
Date Data Collected	2013									

8. CHOOSE TYPE OF OUTPUT TO SEE:

DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE

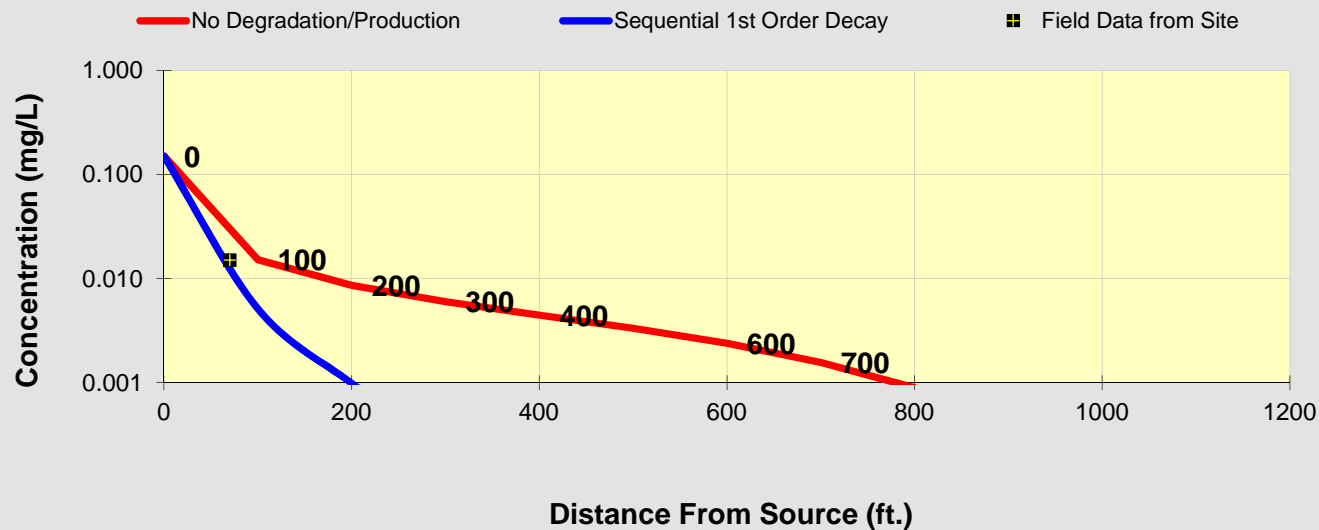


Log Linear

Time:

DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

	Distance from Source (ft)										
	0	100	200	300	400	500	600	700	800	900	1000
PCE											
No Degradation	0.150	0.015	0.009	0.006	0.004	0.003	0.002	0.002	0.001	0.000	0.000
Biotransformation	0.1500	0.005	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Monitoring Well Locations (ft)											
	70	290									
Field Data from Site	0.015										



- See PCE
- See TCE
- See DCE
- See VC
- See ETH

Prepare Animation

Time:

50.0 Years

Log ↔ Linear

Return to Input

To All

To Array

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

- Start Here** → PCE
 TCE
 DCE
 VC
 ETH

Transverse
Distance (ft)

	Distance from Source (ft)											
	0	100	200	300	400	500	600	700	800	900	1000	
120	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
60	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.150	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-60	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
-120	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

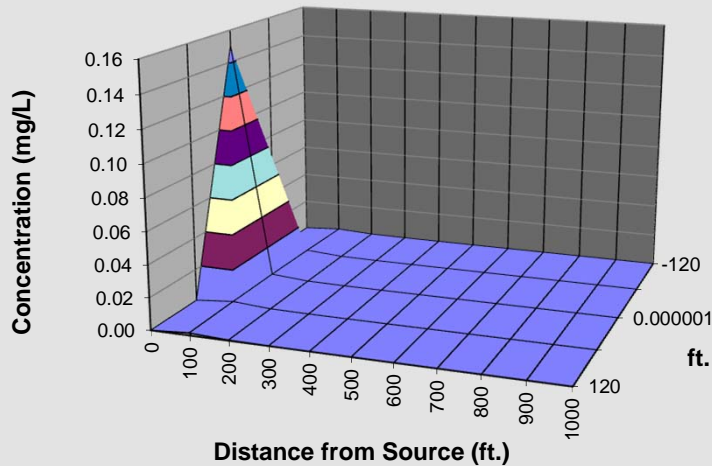
Show No
Show Biotransformation

MASS RATE
(mg/day)

Time: yr Target Level: mg/L

Displayed Model:

Displayed Compound



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons Plume Mass If No Degradation (Kg)
 - Plume Mass If Biotransformation/Production (Kg)

Mass Removed (Kg)

If "Can't Calc.", make model area longer % Biotransformed =
 % Change in Mass Rate = #VALUE! (source to edge)

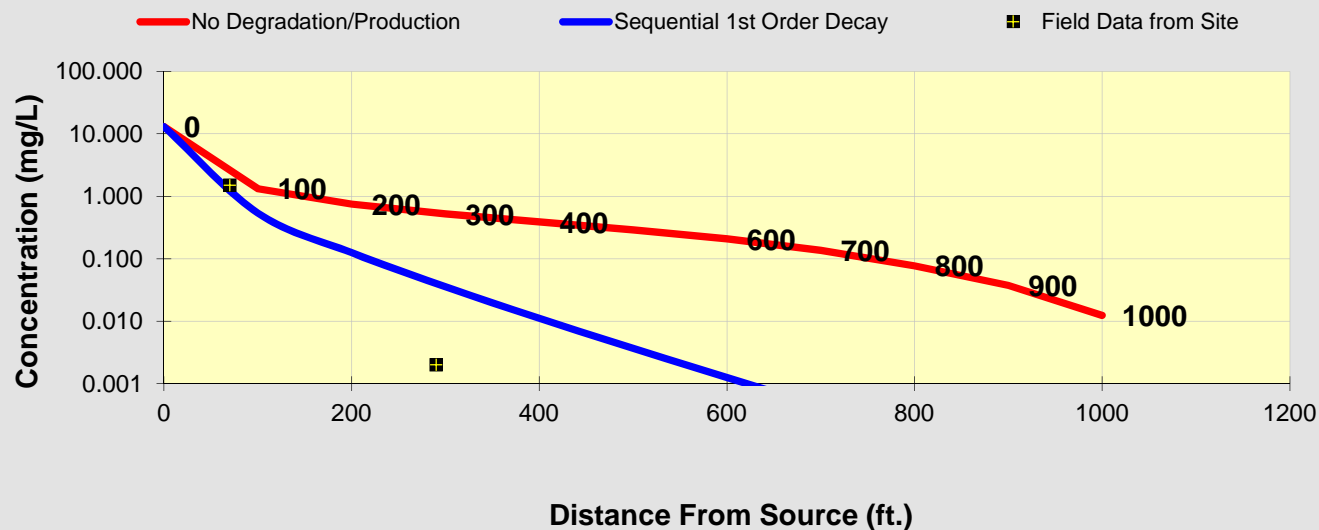
See acre-ft Current Volume of Ground Water in Plume MGal
 Flow Rate of Water Through Source Area MGD

Compare to Pump and Treat Pumping Rate (gpm)
 # Pore Volumes Removed Per Yr.
 # Pore Volumes to Clean-Up
 Clean-Up Time (yr)

DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

TCE	Distance from Source (ft)										
	0	100	200	300	400	500	600	700	800	900	1000
No Degradation	13.000	1.319	0.750	0.519	0.386	0.290	0.208	0.136	0.077	0.038	0.012
Biotransformation	13.0000	0.539	0.125	0.036	0.011	0.004	0.001	0.000	0.000	0.000	0.000

	Monitoring Well Locations (ft)										
	70	290									
Field Data from Site	1.500	0.002									



- See PCE
- See TCE
- See DCE
- See VC
- See ETH

Prepare Animation

Time:

50.0 Years

Log ↔ Linear

Return to Input

To All

To Array

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

- Start Here** → PCE
 TCE
 DCE
 VC
 ETH

Transverse
Distance (ft)

	Distance from Source (ft)										
	0	100	200	300	400	500	600	700	800	900	1000
120	0.000	0.159	0.041	0.012	0.004	0.001	0.000	0.000	0.000	0.000	0.000
60	0.000	0.219	0.048	0.013	0.004	0.001	0.000	0.000	0.000	0.000	0.000
0	13.000	0.243	0.051	0.014	0.004	0.001	0.000	0.000	0.000	0.000	0.000
-60	0.000	0.219	0.048	0.013	0.004	0.001	0.000	0.000	0.000	0.000	0.000
-120	0.000	0.159	0.041	0.012	0.004	0.001	0.000	0.000	0.000	0.000	0.000

Show No

Show Biotransformation

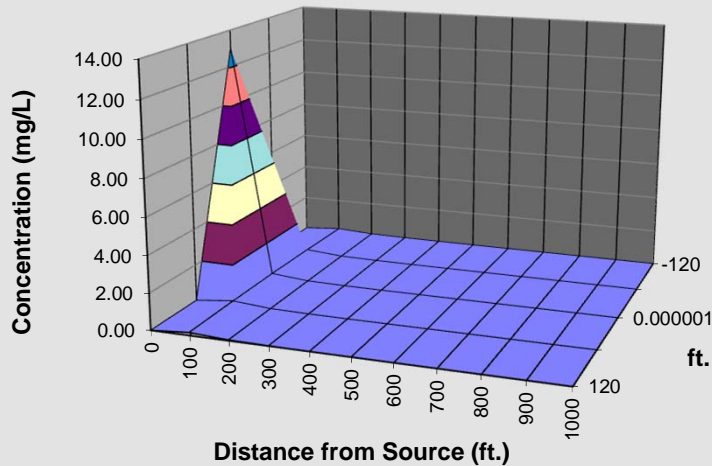
MASS RATE
(mg/day)

Time: yr

Target Level: mg/L

Displayed Model:

Displayed Compound



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons Plume Mass If No Degradation (Kg)

- Plume Mass If Biotransformation/Production (Kg)

Mass Removed (Kg)

If "Can't Calc.", make model area longer

% Biotransformed =

% Change in Mass Rate = #VALUE! (source to edge)

See acre-ft Current Volume of Ground Water in Plume MGal

Flow Rate of Water Through Source Area MGD

Compare to Pump and Treat Pumping Rate (gpm)

Pore Volumes Removed Per Yr.

Pore Volumes to Clean-Up

Clean-Up Time (yr)

Plot All Data

Plot Data > Target

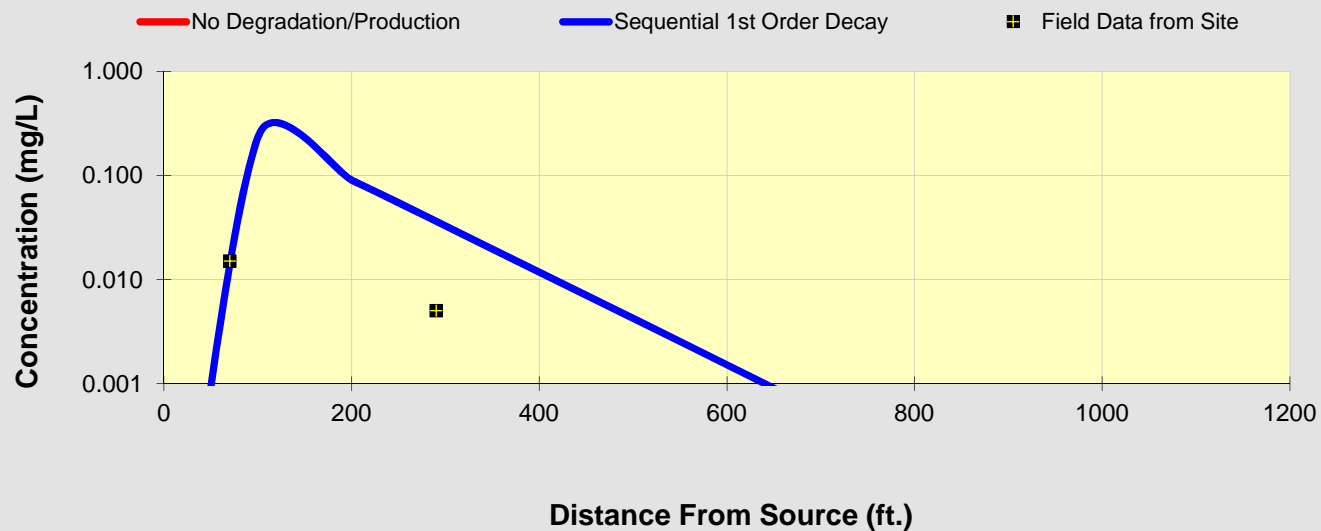
Mass HELP

To Centerline

Return to Input

DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

	Distance from Source (ft)										
	0	100	200	300	400	500	600	700	800	900	1000
DCE											
No Degradation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Biotransformation	0.0000	0.231	0.090	0.033	0.012	0.004	0.002	0.001	0.000	0.000	0.000
Monitoring Well Locations (ft)											
	70	290									
Field Data from Site	0.015	0.005									



- See PCE
- See TCE
- See DCE
- See VC
- See ETH

Prepare Animation

Time:

50.0 Years

Log ↔ Linear

Return to Input

To All

To Array

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

- Start Here
- PCE
 - TCE
 - DCE
 - VC
 - ETH

Transverse
Distance (ft)

Distance from Source (ft)

Distance (ft)	0	100	200	300	400	500	600	700	800	900	1000
120	0.000	0.068	0.030	0.011	0.004	0.001	0.001	0.000	0.000	0.000	0.000
60	0.000	0.094	0.035	0.012	0.004	0.002	0.001	0.000	0.000	0.000	0.000
0	0.000	0.104	0.037	0.013	0.004	0.002	0.001	0.000	0.000	0.000	0.000
-60	0.000	0.094	0.035	0.012	0.004	0.002	0.001	0.000	0.000	0.000	0.000
-120	0.000	0.068	0.030	0.011	0.004	0.001	0.001	0.000	0.000	0.000	0.000

Show No

Show
Biotransformation

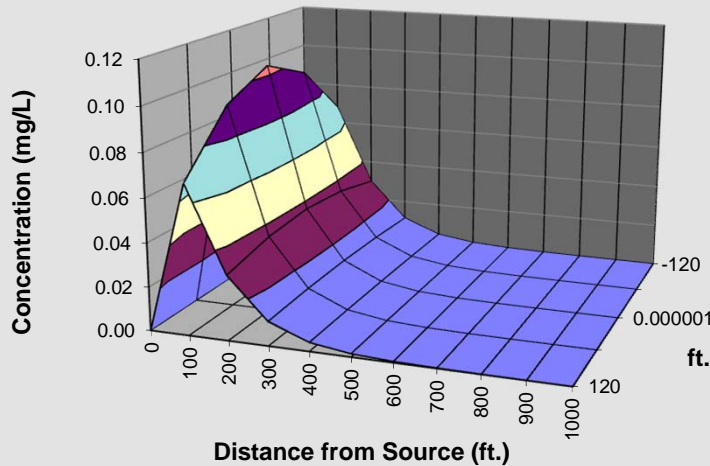
MASS RATE
(mg/day)

Time: yr

Target Level: mg/L

Displayed Model:

Displayed Compound



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons Plume Mass If No Degradation (Kg)

- Plume Mass If Biotransformation/Production (Kg)

Mass Removed (Kg)

If "Can't Calc.", make model area longer

% Biotransformed =

% Change in Mass Rate = #VALUE! (source to edge)

See acre-ft Current Volume of Ground Water in Plume MGal

Flow Rate of Water Through Source Area MGD

Compare to Pump and Treat Pumping Rate (gpm)

Pore Volumes Removed Per Yr.

Pore Volumes to Clean-Up

Clean-Up Time (yr)

Plot All Data

Plot Data > Target

Mass HELP

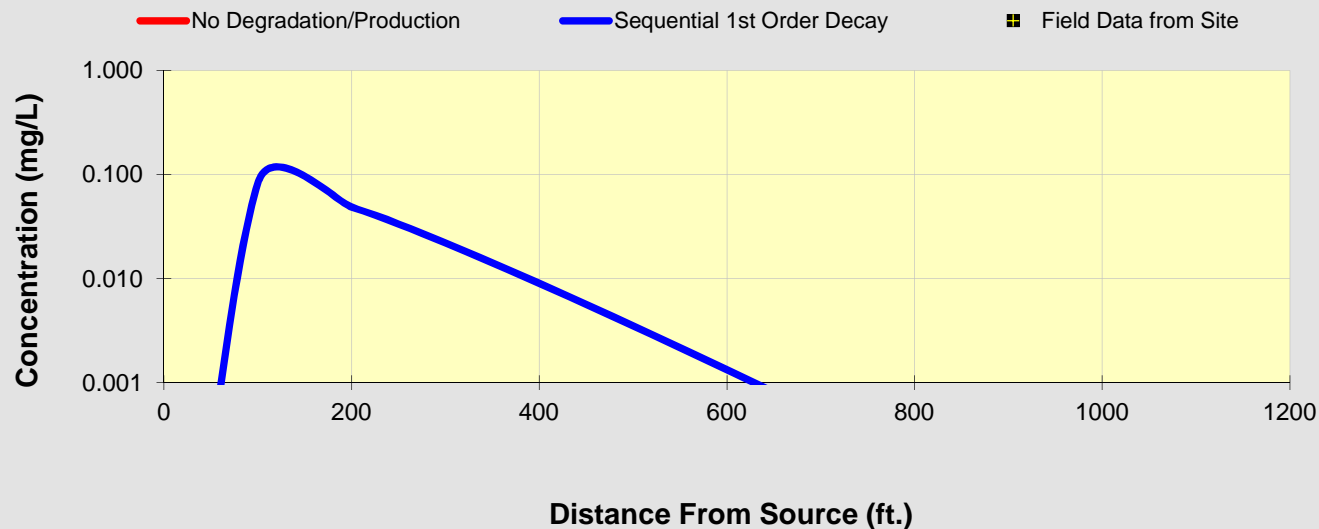
To Centerline

Return to Input

DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

VC	Distance from Source (ft)										
	0	100	200	300	400	500	600	700	800	900	1000
No Degradation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Biotransformation	0.0000	0.082	0.049	0.022	0.009	0.004	0.001	0.000	0.000	0.000	0.000

Monitoring Well Locations (ft)										
70	290									
Field Data from Site										



- See PCE
- See TCE
- See DCE
- See VC
- See ETH

Time:

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

- Start Here
- PCE
 - TCE
 - DCE
 - VC
 - ETH

Transverse
Distance (ft)

Distance from Source (ft)

Distance (ft)	0	100	200	300	400	500	600	700	800	900	1000
120	0.000	0.024	0.016	0.007	0.003	0.001	0.000	0.000	0.000	0.000	0.000
60	0.000	0.033	0.019	0.008	0.003	0.001	0.000	0.000	0.000	0.000	0.000
0	0.000	0.037	0.020	0.009	0.003	0.001	0.000	0.000	0.000	0.000	0.000
-60	0.000	0.033	0.019	0.008	0.003	0.001	0.000	0.000	0.000	0.000	0.000
-120	0.000	0.024	0.016	0.007	0.003	0.001	0.000	0.000	0.000	0.000	0.000

Show No

Show
Biotransformation

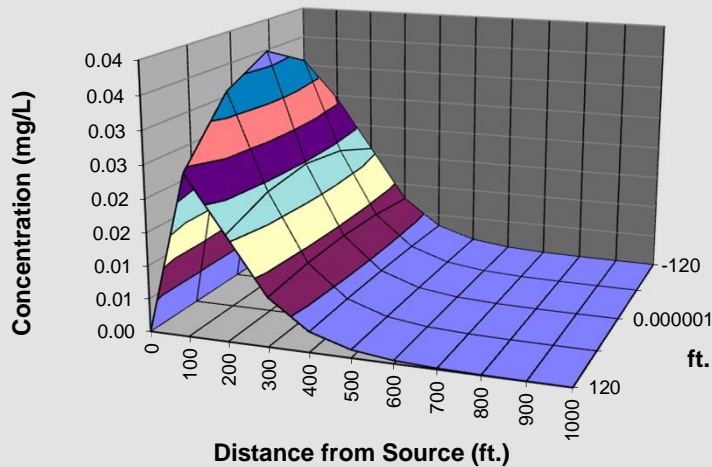
MASS
RATE
(mg/day)

Time: yr

Target Level: mg/L

Displayed Model:

Displayed Compound



Plot All Data

Plot Data > Target

Plume Mass (Order-of-Magnitude Accuracy)

See Gallons

Plume Mass If No Degradation (Kg)

- Plume Mass If Biotransformation/Production (Kg)

Mass Removed (Kg)

If "Can't Calc.", make model area longer

% Biotransformed =

% Change in Mass Rate = #VALUE! (source to edge)

See acre-ft

Current Volume of Ground Water in Plume MGal

Flow Rate of Water Through Source Area MGD

Compare to Pump and Treat

Pumping Rate (gpm)

Pore Volumes Removed Per Yr.

Pore Volumes to Clean-Up

Clean-Up Time (yr)

Mass HELP

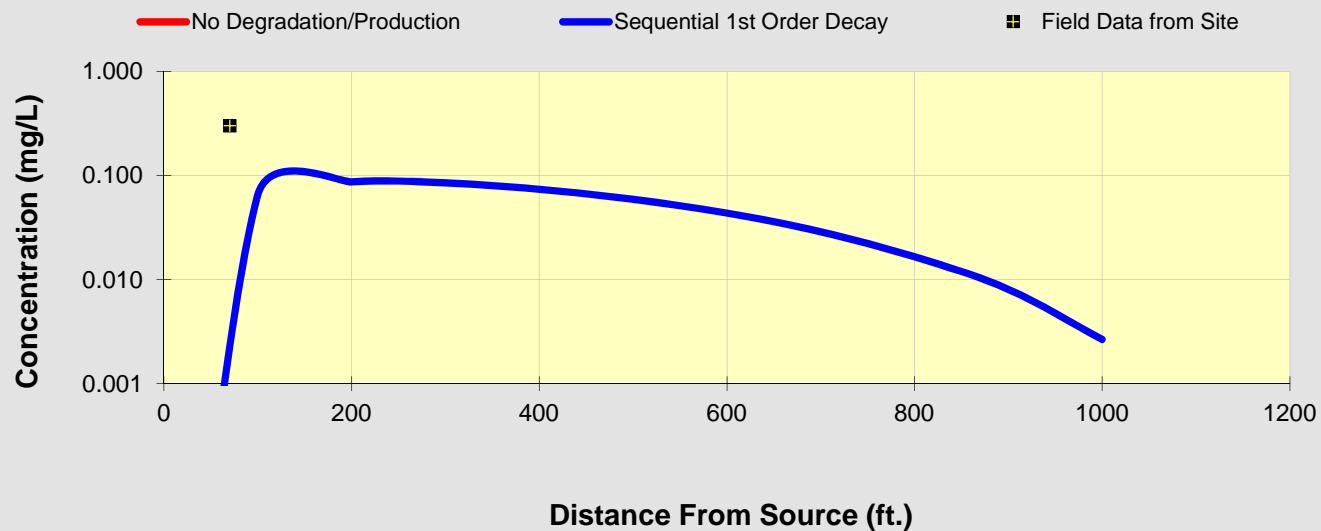
To Centerline

Return to Input

DISSOLVED CHLORINATED SOLVENT CONCENTRATIONS ALONG PLUME CENTERLINE (mg/L) at Z=0

ETH	Distance from Source (ft)										
	0	100	200	300	400	500	600	700	800	900	1000
No Degradation	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Biotransformation	0.0000	0.065	0.087	0.085	0.074	0.059	0.044	0.029	0.017	0.008	0.003

Monitoring Well Locations (ft)											
	70	290									
Field Data from Site	0.300										



- [See PCE](#)
- [See TCE](#)
- [See DCE](#)
- [See VC](#)
- [See ETH](#)

Time:

DISSOLVED SOLVENT CONCENTRATIONS IN PLUME

- Start Here
- PCE
 - TCE
 - DCE
 - VC
 - ETH

Transverse
Distance (ft)

Distance from Source (ft)

Distance (ft)	0	100	200	300	400	500	600	700	800	900	1000
120	0.000	0.019	0.028	0.029	0.025	0.020	0.015	0.010	0.006	0.003	0.001
60	0.000	0.026	0.033	0.032	0.027	0.022	0.016	0.011	0.006	0.003	0.001
0	0.000	0.029	0.035	0.033	0.028	0.022	0.016	0.011	0.006	0.003	0.001
-60	0.000	0.026	0.033	0.032	0.027	0.022	0.016	0.011	0.006	0.003	0.001
-120	0.000	0.019	0.028	0.029	0.025	0.020	0.015	0.010	0.006	0.003	0.001

Show No

Show
Biotransformation

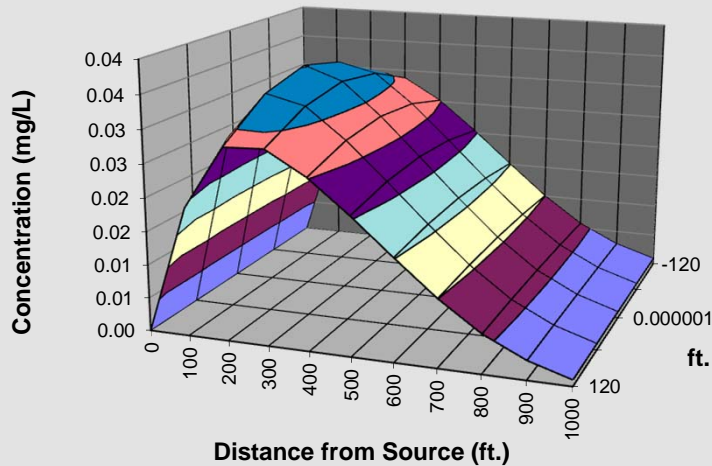
MASS RATE
(mg/day)

Time: yr

Target Level: mg/L

Displayed Model:

Displayed Compound



Plume Mass (Order-of-Magnitude Accuracy)

See Gallons Plume Mass If No Degradation (Kg)

- Plume Mass If Biotransformation/Production (Kg)

Mass Removed (Kg)

If "Can't Calc.", make model area longer

% Biotransformed =

% Change in Mass Rate = #VALUE! (source to edge)

See acre-ft Current Volume of Ground Water in Plume MGal

Flow Rate of Water Through Source Area MGD

Compare to Pump and Treat Pumping Rate

Pore Volumes Removed Per Yr.

Pore Volumes to Clean-Up

Clean-Up Time (yr)

Plot All Data

Plot Data > Target

Mass HELP

To Centerline

Return to Input

APPENDIX G
SUMMARY OF HOURS INVOICED

APPENDIX G

Monthly Summary and Description of Professional Geologist Hours

Former Loef Facility
Athens, Georgia

Kathleen Roush, P.G.		
Time Period	Total Hours	Description of Work
December 2014	12.0	Site Visit, Meeting with GADEP
February 2015	3.0	Scope or work for next phase, potentiometric map
April 2015	2.75	Review well placement request from GADEP, call with GADEP, Project Management
June 2015	0.75	Review lab results, IDW disposal
July 2015	13.5	3rd Progress Report review, BIOCHLOR Modeling and review

APPENDIX H
REGISTERED PROFESSIONAL SUPPORTING DOCUMENTATION

CERTIFICATION

"I certify that I am a qualified groundwater scientist who has received a baccalaureate or post graduate degree in the natural sciences or engineering, and have sufficient training and experience in groundwater hydrology and related fields, as demonstrated by state registration and completion of accredited university courses, that enable me to make sound professional judgements regarding groundwater monitoring and contaminant fate and transport. I further certify that this report was prepared by me or by my subordinate working under my direction."

Kathleen Roush

Kathleen Roush, P.G.

Georgia Registration No. 1799

