

# **VOLUNTARY REMEDIATION PLAN**

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

**HSI No. NA**

**SEPTEMBER 2, 2011**

**Prepared for**

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

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Brent Cortelloni, CHMM  
**Project Manager**

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



**EMA**

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

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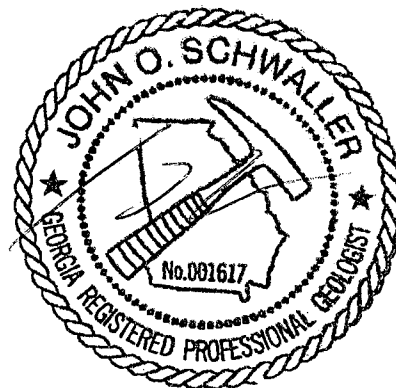


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## 1.0 INTRODUCTION

This Voluntary Remediation Program Application is being submitted on behalf of Indian Trial Assoc., LTD for the property (Property) at 2040 Beaver Ruin Road in Norcross, Georgia. A Voluntary Remediation Program (VRP) Application and Checklist and the Application Fee check are included in Appendix A. Tax map and warranty deed information for the Property is attached in Appendix B.

A topographic map (Property Location Map) of the surrounding area is included as Figure 1. The Site was developed as a retail strip mall located on a parcel of approximately 1.79 acres. The Property is predominantly covered with a building slab and an asphalt parking lot as illustrated on the Site Plan attached as Figure 2.

### 1.1 BACKGROUND

The Crossings Shopping Center is 1.79 acres and was developed as a multi-tenant shopping center since 1984. The surrounding properties are predominantly commercial with some residential to the north. A dry cleaner has operated within one of the tenant spaces (Suite 15) since 1984, Professional Cleaners & Linen Service (EPA ID #GAD981269095). A Phase I and II Environmental Site Assessment (ESA) was completed by GLE in February 2011 for the subject property. During the Phase II ESA activities, a release of tetrachloroethene (PCE) was detected in the subsurface soils and groundwater above the applicable Notification Concentration (NC) referenced in EPD's Hazardous Site Response Act (HSRA) Regulations Chapter 391-3-19, Appendix I. Impacted soils above the NC were removed from the Site within 30 day's of detection. A release notification to groundwater was subsequently submitted to EPD on April 7, 2011.

### 1.2 PROPERTY ELIGIBILITY

The Property meets the eligibility criteria for the VRP. A release of regulated substances on the Property has been confirmed. The Property is not listed on the National Priorities List, is not currently undergoing response activities required by an order of the Regional Administrator of the United States Environmental Protection Agency (EPA), and is not required to have a permit under Code Section 12-8-66. Qualifying the Property under this VRP would not violate the terms and conditions under which the division operates and administers remedial programs by delegation or by similar authorization from the EPA. There are no, and never have been any, outstanding liens filed against the Property pursuant to Code Sections 12-8-96 and 12-13-12.

### 1.3 PARTICIPANT ELIGIBILITY

Indian Trial Assoc., LTD is both the owner of the Property and the VRP applicant. Furthermore, Indian Trial Assoc., LTD is not in violation of any order, judgment, statute, rule, or regulation subject to the enforcement authority of the Director of the EPD.

### 1.4 PREVIOUS REMEDIATION

A Phase II ESA for the Property was completed in February 2011. Soils reported above the NC were detected in borings installed adjacent to the dry cleaning machine in Suite 15 at the Property. PCE soil contamination above the NC was reported in 2 soil samples from hand auger boreholes HA-1-1 and HA-2-1 at 1 foot below ground surface (bgs). A summary of the detected analytes from the Phase II ESA is included in Table 1. The sampling locations are illustrated on Figures 2 and 3.

REM-CON, on behalf of Indian Trail Assoc, LTD, initiated soil removal activities on April 2 and 8, 2011 to address the reported NC exceedances. The concrete floor was removed to allow access to the impacted soils. The impacted soils were excavated by manual methods and were transferred to two 55-gallon drums. The final excavation was approximately 4 feet wide by 4.33 feet long and 1 foot deep.

Confirmatory soil samples were collected from the base of the excavation and one from each of the four sidewalls to determine if all the soils with concentrations of PCE above the NC's had been removed. Following the initial confirmatory sampling, additional soils were removed from the base and sidewall SWA. These two areas were re-sampled. The final confirmatory sampling locations (B-2, SWA-2, SWB-1, SWC-1, and SWD-1) are illustrated on Figure 3 and the associated analytical results are summarized in Table 2.

The soils were disposed of as a listed hazardous waste (F-002) based on the source of the release (used dry cleaning solvents). A total of 2 drums of soils were transported on April 15, 2011 by MCF Systems of Atlanta, Inc. to Giant Resource Recovery - Attalla, Inc. located in Attalla, Alabama. A copy of REM-CON's removal report was previously provided to EPD.

## 2.0 CURRENT SITE CONDITIONS

### 2.1 GEOLOGICAL SETTING

#### 2.1.1 Regional Geology

The Property is located within the Piedmont Physiographic Province. The regional subsurface geologic setting is characterized by a gradational weathering profile with depth from soil to partially weathered rock (PWR) to competent bedrock. Groundwater occurs under unconfined conditions where the potentiometric surface is generally similar to the ground surface topography. Along topographically low areas, the water table typically occurs within the soil to PWR portions of the weathering profile, whereas along topographically high areas, the water table often occurs in the underlying bedrock.

#### 2.1.2 Property Geology and Hydrogeology

The Site is primarily asphalt parking lot. The geologic units encountered during the investigation included:

- native silt with sand, sandy clay;
- saprolite; and
- partially weathered bedrock.

The characteristics of the stratigraphic units encountered beneath the Site are illustrated on geologic cross section location map presented as Figure 4 and perpendicular geologic cross sections presented as Figures 5 and 6.

The native soils encountered beneath the Site at all borings and groundwater monitoring wells consist of silt that is sandy with some clay, and is medium dense, fine to very fine grained, and dry, a sandy clay lense (18 to 22 feet bgs), grading to silt sand to saprolite at approximately 30 feet bgs. The depth to partially weathered bedrock (PWR) is estimated at a depth of approximately 43 feet below ground surface based on refusal during drilling performed at monitoring well MW-4.

Groundwater beneath the Property stabilizes at approximately 15 to 17 feet bgs. The water table at the Property occurs in the soil and PWR zone. The overall groundwater flow direction based on the August 17, 2011 groundwater level measurements included in Table 3 is to the southeast as illustrated on Figure 7.

The hydraulic gradient is approximately 0.024 foot/foot based on the data presented in Table 2. Based on in-situ hydraulic conductivity testing (slug test) performed on monitoring well MW-4, the horizontal hydraulic conductivity is estimated at 1.25E-02 cm/sec.

The PWR typically has a higher sand-size grain content and is therefore more transmissive than the surrounding saprolite, which has a higher clay content. The native soils, saprolite, PWR, and shallow bedrock aquifers are generally assumed to be interconnected.

### 2.1.3 Soils

Based on the results of the Phase II ESA for the Property completed in February 2011, impacted soils under the building slab were removed in April 2011 as detailed previously in Section 1.4. During the Phase II ESA, Geoprobe borings B-1, B-2, and B-3 were also installed at locations surrounding Suite 15 as illustrated on Figure 2. Soils were screened with an organic vapor analyzer and submitted to the project laboratory from target compound list (TCL) volatile organic compounds (VOCs). PCE was detected in the soil sample from B-2 (15 ft bgs) at a concentration of 13.6 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ), which is below the applicable NC and Type 1 RRS (180  $\mu\text{g}/\text{kg}$ ). The soil sample from B-3 (15 ft bgs) was free from detectable levels of TCL VOCs. A summary of the analytical results is included in Table 1.

EMA installed a hand auger boring B-4 to a depth of 1.5 feet bgs at a location where the blow down drain pipes from the boiler discharge at the rear of the building on July 21, 2011. The location of boring B-4 is also illustrated on Figure 2. The soil sample was submitted to the project laboratory for PCE analysis. PCE was reported at 33  $\mu\text{g}/\text{kg}$ , which is also below the NC and Type I RRS for this analyte. The soils at the Property meet the Type I RRS for PCE based on the investigation data.

## 2.2 GROUNDWATER

During the Phase II ESA, three groundwater samples were collected from Geoprobe borings B-1, B-2, and B-3. The groundwater samples were submitted to the project laboratory for TCL VOCs analysis. PCE was reported in the groundwater samples collected from B-2 and B-3 at 1.53 microgram per liter ( $\mu\text{g}/\text{L}$ ) and 16.1  $\mu\text{g}/\text{L}$ , respectively. The sampling locations are illustrated on

Figure 2. The results of this sampling were provided to EPD in the notification correspondence and are included in Table 3.

Based on EPD's correspondence dated June 7, 2011, three groundwater monitoring wells (MW-1, -2, -3) were installed to determine the groundwater flow direction and to delineate the horizontal extent of the PCE contamination. The wells were installed on June 30, 2011 and were sampled for PCE on July 1, 2011. The results of these activities, analytical laboratory report, and stratigraphic and instrumentation logs were provided to EPD in correspondence dated July 12, 2011. Based on the highest PCE level that was reported in the groundwater sample collected from monitoring well MW-2 and the fact that this well is located closest to the source of the release, this sample was also analyzed for trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-DCE, and vinyl chloride. Only PCE was detected above the associated reporting limit.

An additional downgradient well (MW-4) was installed on July 21, 2011 to define the horizontal extent of the PCE contamination in groundwater. The well was sampled on July 22, 2011. The locations of the monitoring wells are illustrated on Figures 2 and 8. The analytical results for the groundwater samples are summarized in Table 3.

### 3.0 PRELIMINARY CONCEPTUAL SITE MODEL

The preliminary Conceptual Site Model (CSM) is intended to establish a common knowledge base about the Property and its environmental condition, to facilitate the development of basic remedial action objectives appropriate for the Property, and to allow an informed decision regarding possible remedial action measures for the Property. This section discusses the extent of the groundwater PCE contamination, the potential receptors and exposure pathways associated with the groundwater contamination, and the fate and transport of PCE.

#### 3.1 EXTENT OF THE GROUNDWATER CONTAMINATION

The horizontal delineation to groundwater was accomplished by installing and sampling four monitoring wells at the Property. In addition, groundwater samples collected from borings during the Phase II ESA was used to aid with the delineation. It should be noted that delineation of what appears to be a relatively small dissolved plume was problematic due to the plumes location under the building slab and the associated limited access. While the number of monitoring wells is limited, cross section interpretations were prepared from the available data. The vertical extent was assumed to be at bedrock, but will be defined in subsequent delineation investigations as detailed later in this report. The horizontal extent of the groundwater contamination was delineated to the Type 1 RRS for PCE. A summary of the groundwater delineation standards for PCE and the associated degradation products is included in Table 5. The cross section location map is attached as Figure 4 and the cross sections are illustrated on Figures 5 and 6. The cross sections include the analytical groundwater results. An Isoconcentration Contour Map for PCE is attached as Figure 8.

Additional delineation information is needed to define the groundwater concentrations of PCE at the source and vertically. A shallow monitoring well is proposed directly adjacent to the former location of the dry cleaner inside the building. This well will need to be a 1-inch PVC well installed by direct push methods based on access limitations. The vertical extent of the groundwater contamination will be determined by installing a telescoping well installed to a depth of approximately 45 feet bgs at a location downgradient of the source area. The well locations will be discussed and agreed upon with EPD prior to installation.



### 3.2 CONCEPTUAL SITE MODEL

A preliminary CSM was developed based on the available Property information. A discussion of the CSM components is presented below, and the CSM is presented as Figure 9.

#### 3.2.1 Source

The source area was the release of PCE to the subsurface soils adjacent to the dry cleaning machine. Since the remaining soils appear to be below the Type I RRS for PCE based on the soil removal activity, the only remaining source is the dissolved groundwater PCE contamination at the Property, and its degradation products. Only PCE has been detected above the applicable reporting limits.

#### 3.2.2 Potential Exposure Pathways

The potential exposure pathways were determined for the Property. These pathways include:

- Contact with constituents in the soil via ingestion, inhalation, or vapor intrusion.
- Contact with constituents in groundwater via ingestion, dermal contact, or vapor intrusion.
- Constituents in the groundwater migrating to surface water and/or sediment.

All exposure pathways are currently incomplete. The soil contamination is below the Type I RRS and therefore does not pose a significant risk to current or future receptors. The groundwater exposure pathway is currently incomplete since the contamination is limited to the property. The Property and adjacent properties obtain potable water from the City of Norcross. The closest downgradient surface water body is Beaver Run Creek which is located approximately 1,850 feet to the southwest. The evaluation of the exposure pathway for off-site residents and migration to a surface water body will be addressed as detailed in Section 3.3.

#### 3.2.3 Potential Receptors

The potential receptors are limited to human receptors. Ecological receptors do not appear possible based on the fact that the remaining soil contamination which is below the Type I RRS and is below the concrete slab and the distance to the closest downgradient surface water body from the Property. The human

receptors include the commercial workers at the Property and off-site residents with private drinking water wells downgradient from the Property. In addition, construction activities could take place in the future. Construction workers could potentially have short-term (<1 year) exposure to contaminants in subsurface soils; however, the risk is minimal since the soils meet the Type I RRS.

The site and surrounding properties are served by a public water supply system. A USGS well search for public and private wells within a one-mile radius was completed to locate any wells within this radius. The well search was limited to a one-mile radius based on the toxicity of the associated contaminants detected and based on if the contaminant exceeded the associated MCLs. Based on the results of the well search and EPD's review of their internal database, six private wells were located at the Jones RV Park at 2200 Willowtrail Parkway, which is approximately 3,000 feet to the south-southwest. The well search correspondence and supporting documentation was provided to EPD in the notification documentation.

The workers at the on-Site strip mall may be subject to vapors emitting from the remaining PCE in subsurface soils below the slab and groundwater. An initial screening evaluation was completed in accordance with the OSWER Draft Guidance for Evaluation the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils, November 2002. Based on the results of the Tier 1 and Tier 2 steps outlined in the Subsurface Vapor Intrusion Guidance, a site-specific pathway assessment was required. The site-specific evaluation was completed to determine the incidental risks resulting from vapor intrusion using USEPA's "User Guide for Evaluating Subsurface Vapor Intrusion into Buildings", dated February 22, 2004. The GW-Screen Version 3.1 was used to assess the groundwater and the SL-ADV Version 3.1 was used to assess the soils. The average of the five post-removal confirmatory soil sample results for PCE was used in the soil model and the highest PCE concentration detected within the groundwater was used in the groundwater model. The space is a commercial dry cleaning operation with an exhaust fan so indoor air exchange rate is high. The results for both the soil and groundwater models indicated that the resulting hazard indices and incremental risk values were within the acceptable range and estimated indoor air concentrations would not exceed OSHA exposure limits for ongoing facility operations. The results of the modeling are included in Appendix C.

### 3.3 FATE AND TRANSPORT MODEL

The Type I RRS's will be the off-site cleanup standards for groundwater at the point of exposure. Since the closest drinking water receptor is approximately

3,000 feet from the Property and all downgradient properties within 1,000 feet are on public water, the point of exposure has been set to 1,000 feet from the Property line. The point of demonstration well will be on-site monitoring well MW-4.

A fate and transport model will be constructed using BIOCHLOR 2.2. The model will incorporate all existing and newly collected Property information concerning hydrogeological and contaminant information. Data will be used to construct a Calibration model from which the following models will be run:

- a model to determine the maximum distance the plume is expected to travel;
- a model to determine when the plume begins to retreat; and
- a model to determine the maximum groundwater PCE concentration at the source at which the Type I RRS is not exceeded at a point 1,000 feet downgradient.

### 3.4 GROUNDWATER CLEANUP STANDARDS

The on-site groundwater cleanup standards for PCE and the associated degradation products will be calculated based on the modeling proposed in the previous section and within the timeline detailed in Section 4.4.

## 4.0 POTENTIAL REMEDIAL OPTIONS

It is Indian Trail Assoc, LLP objective to keep the Property off the HSI by implementing this VRP which will be protective of human health and the environment.

### 4.1 EVALUATION OF POTENTIAL REMEDIAL OPTIONS

EMA screened the following potential remedial options to meet the objective for the Property:

- Groundwater restriction covenant
- In-situ chemical oxidation (ISCO)
- Combination of the above

#### 4.1.1 Groundwater Restriction Covenant

Based on the limited exposure pathways present on site, institutional controls can be utilized at the Property to eliminate any possible future exposure pathways for on-site exposure. A deed notice can be placed on the Property that would prohibit the direct use or extraction of groundwater from anywhere on site. For future off-site exposure, the results of the modeling may indicate that the current groundwater concentrations meet the on-site cleanup standards for off-site exposure to a downgradient receptor 1,000 feet from the Property line. If this is the case, then the institutional control would be the only necessary remedial option required to meet the objective.

#### 4.1.2 ISCO

If the results of the modeling and further source delineation indicate that the current COC concentrations exceed the groundwater cleanup standards, the use of in-situ chemical oxidation (ISCO) reagents such as sodium persulfate could be used to reduce the existing contamination to levels at or below the cleanup standards. Oxidation works directly on the contaminants by immediate dechlorination upon contact (residuals are carbon dioxide and water). The chemical oxidant proposed for this ISCO application will be formed by combining FMC Corporation's Kloxur® sodium persulfate reagent with an alkaline activator (sodium hydroxide) to form powerful sulfate and hydroxyl radicals that can be injected into the aquifer within the source zone areas at the Site. The expected life of the sulfate radical in the subsurface is 2 or 3 months following injection.

The COC could be reduced by ISCO to levels at or below the groundwater cleanup standards or the associated Type 1 RRS.

#### 4.1.3 Combination of the Above

A combination of the two remedial alternatives could be used to meet the objective depending on the post-remediation COC concentrations. If the COC concentrations are higher than the applicable Type 1 RRS but below the groundwater cleanup standards, both remedies would be used to meet the objective.

#### 4.2 COMPLETION OF THE VRP

The steps required for completion of the VRP is going to depend on the remedial option selected. This will be discussed in the updated CSM and final remediation plan.

#### 4.3 COST ESTIMATE

The cost to complete the VRP is going to depend on the remedial option selected. In the interim we have provided a range of estimated costs depending on if ISCO is required included in Appendix D.

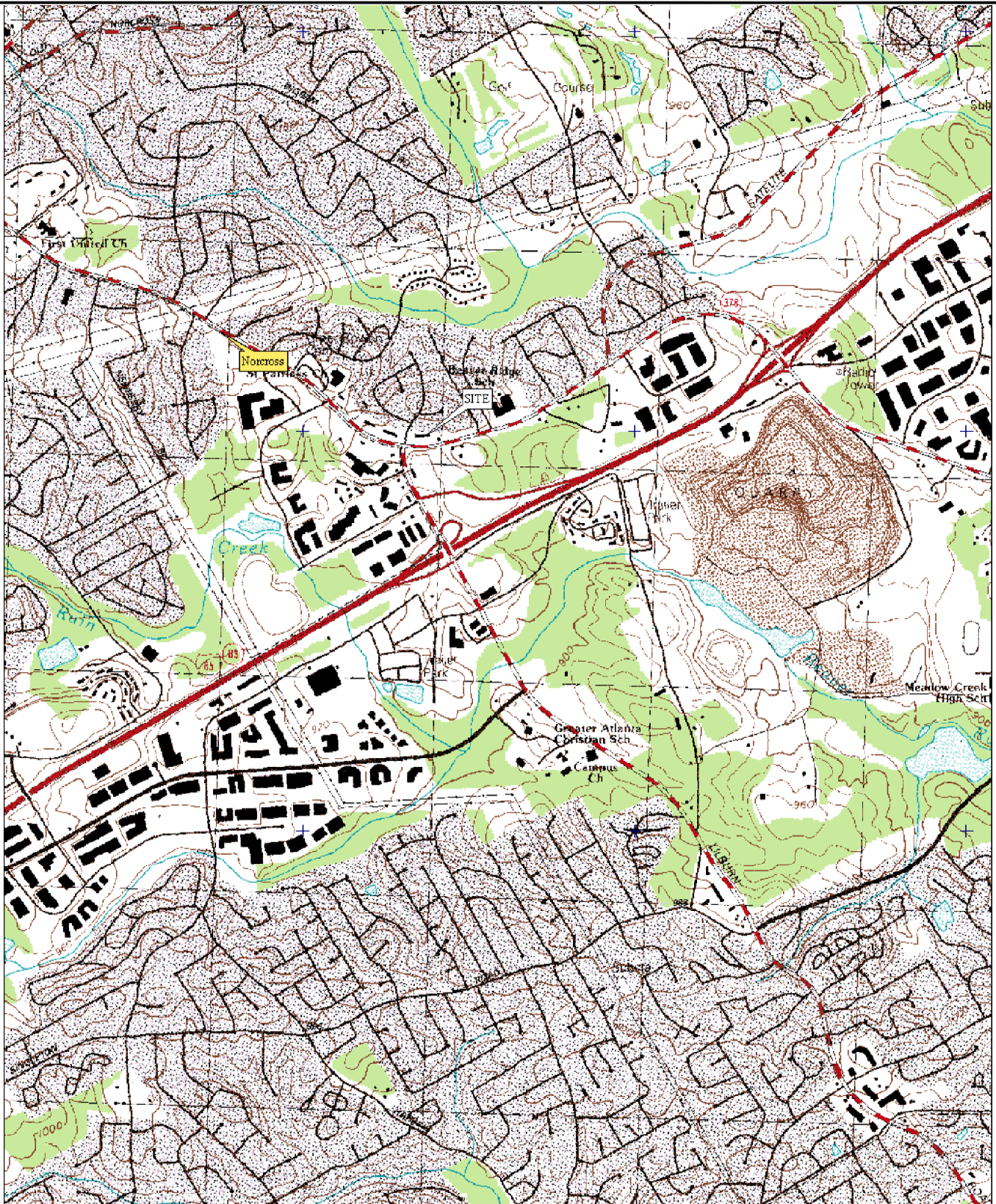
#### 4.4 PROJECTED MILESTONE SCHEDULE

The groundwater delineation investigation will be completed within the first four weeks following receipt of the approval of this Property into the VRP. An updated CSM along with the results of the modeling and development of the groundwater cleanup standards will be submitted within two months following the VRP approval notification. A Projected Milestone Schedule, showing timelines for the following items, is included in Appendix E.

- Groundwater Delineation Investigation
- Semi-Annual Progress Report Submittal
- Updated CSM Submittal with Final Remediation Plan
- File Groundwater Restriction Covenant if required
- ISCO Injection(s) if required
- VRP Compliance Status Report

## FIGURES





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

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



Title

## SITE LOCATION MAP

Site

PROFESSIONAL CLEANERS & LINEN SERVICE  
2040 Beaver Ruin Road, Norcross, Georgia



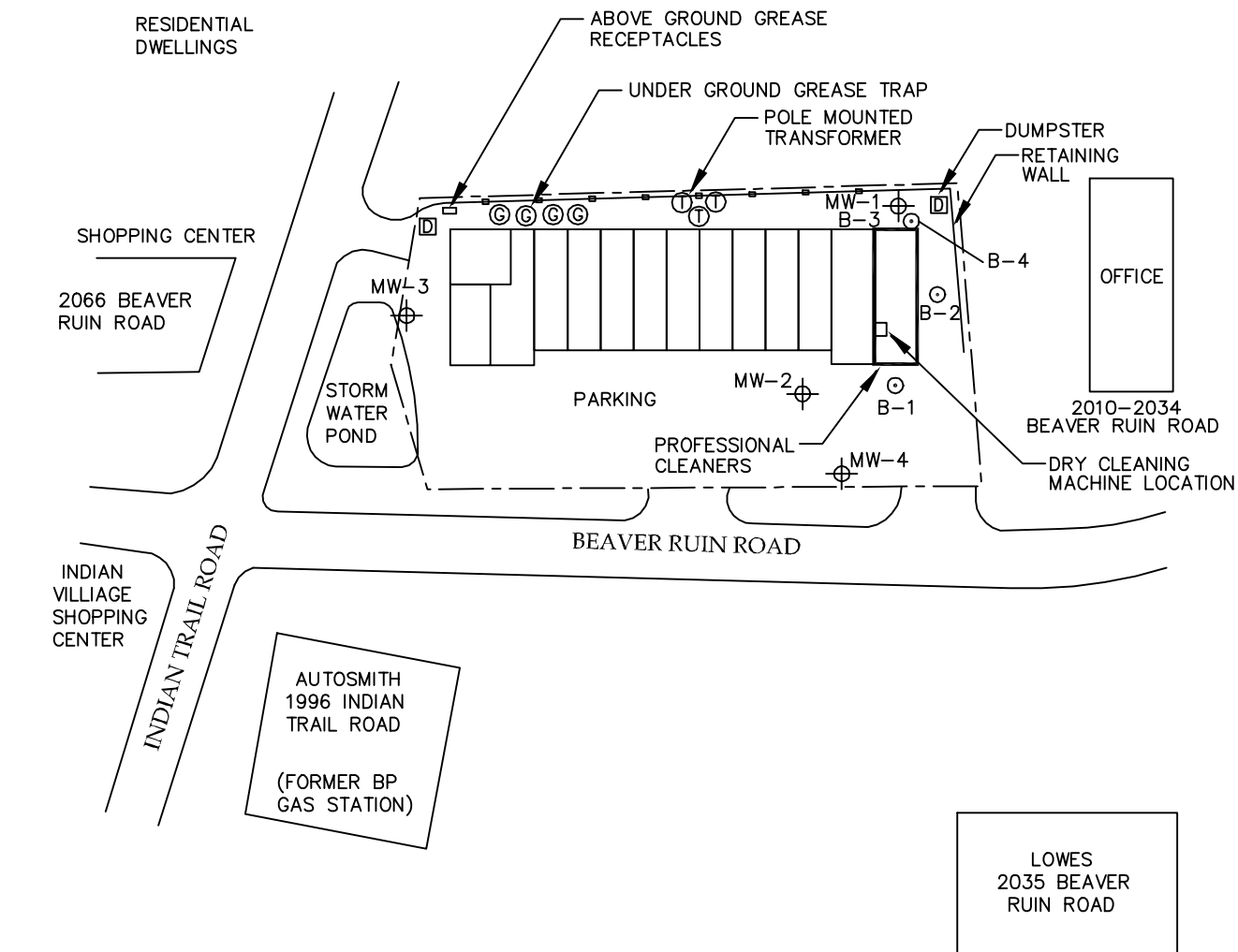
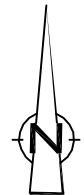
**EMA**

Environmental Management Associates, LLC

Facility ID.

Figure

**1**

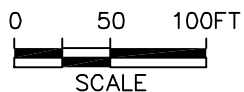


**LEGEND:**

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

**NOTE:**

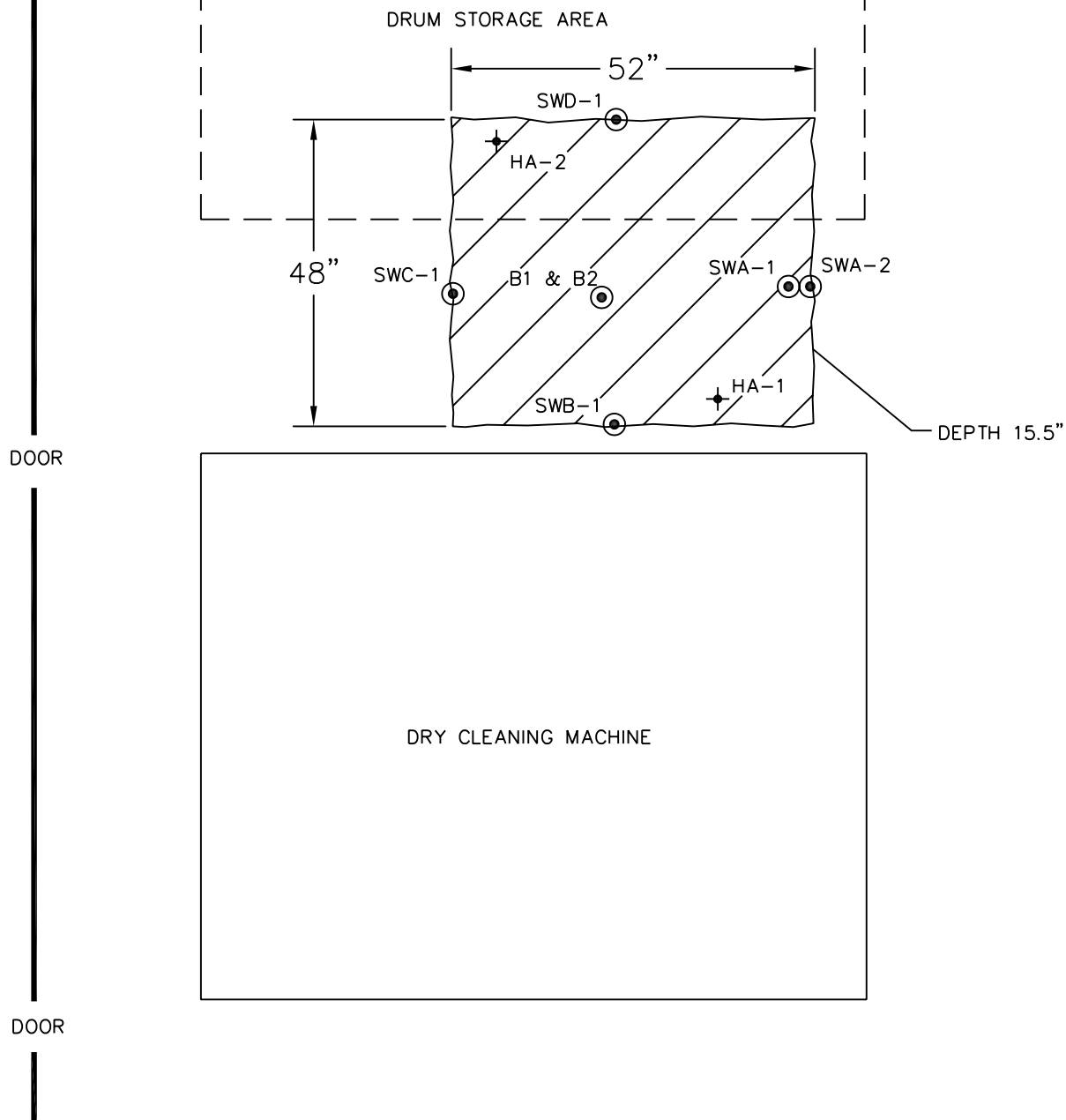
BASE MAP CREATED FROM GLE ASSOCIATES, INC  
DRAWING 11000-11045 SHEET A-3.



Title	SITE PLAN		
Site	PROFESSIONAL CLEANERS & LINEN SERVICE 2040 Beaver Ruin Road, Norcross, Georgia		
	Facility ID.		Figure
	Environmental Management Associates, LLC		2



SUITE 14



## LEGEND

- CONFIRMATORY SAMPLE LOCATION
- ✦ HAND AUGER LOCATIONS

### NOTE:

- 1.) BASED ON GLE ASSOCIATES, INC., FIGURE A-2A HAND AUGER BORING LOCATION MAP, DATED 11/19/2011.

NOT TO SCALE

Title

EXCAVATION SITE PLAN

Site

PROFESSIONAL CLEANERS & LINEN SERVICE  
2040 Beaver Ruin Road, Norcross, Georgia



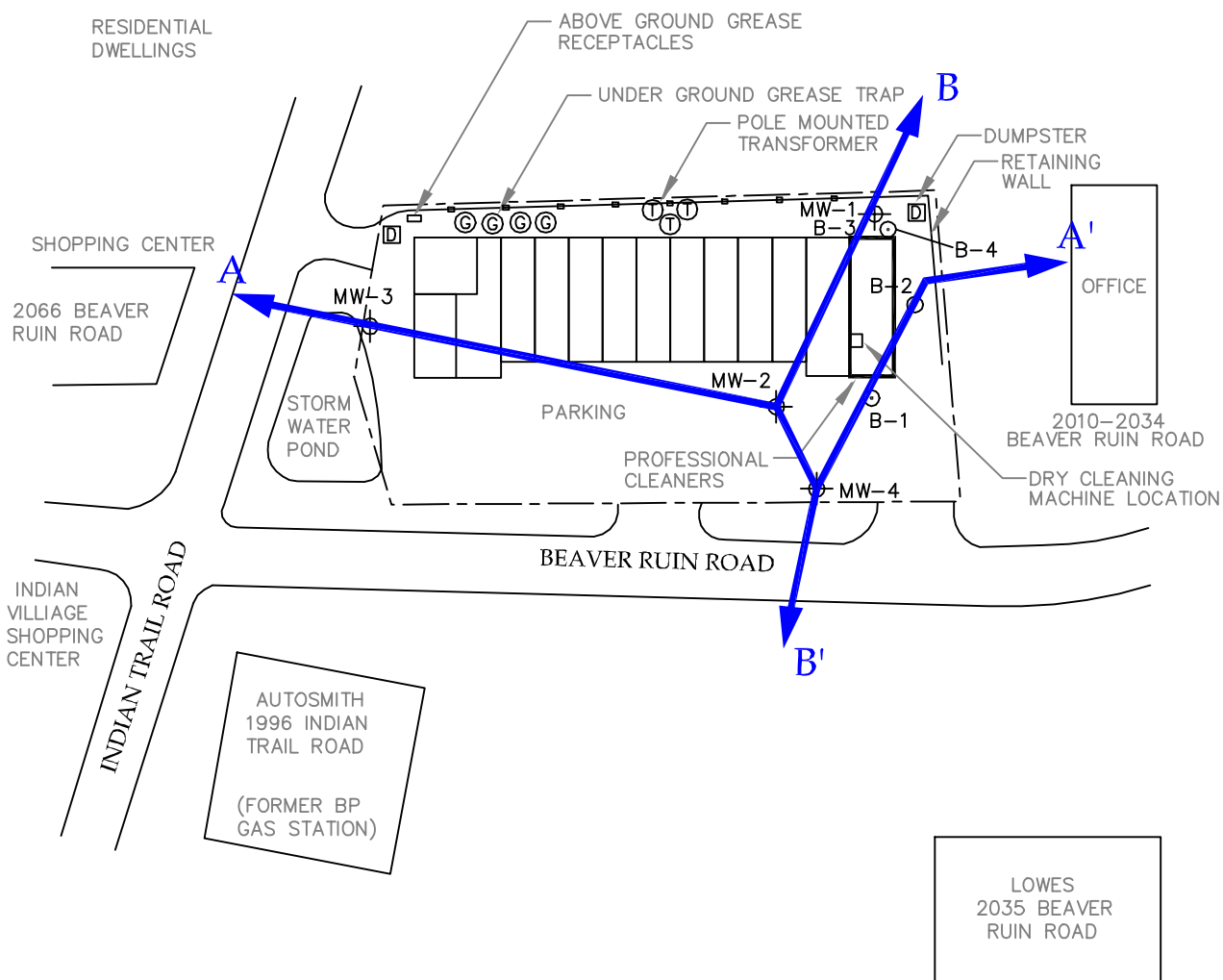
**EMA**

Environmental Management Associates, LLC

Facility ID.

Figure

**3**

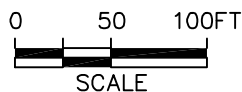


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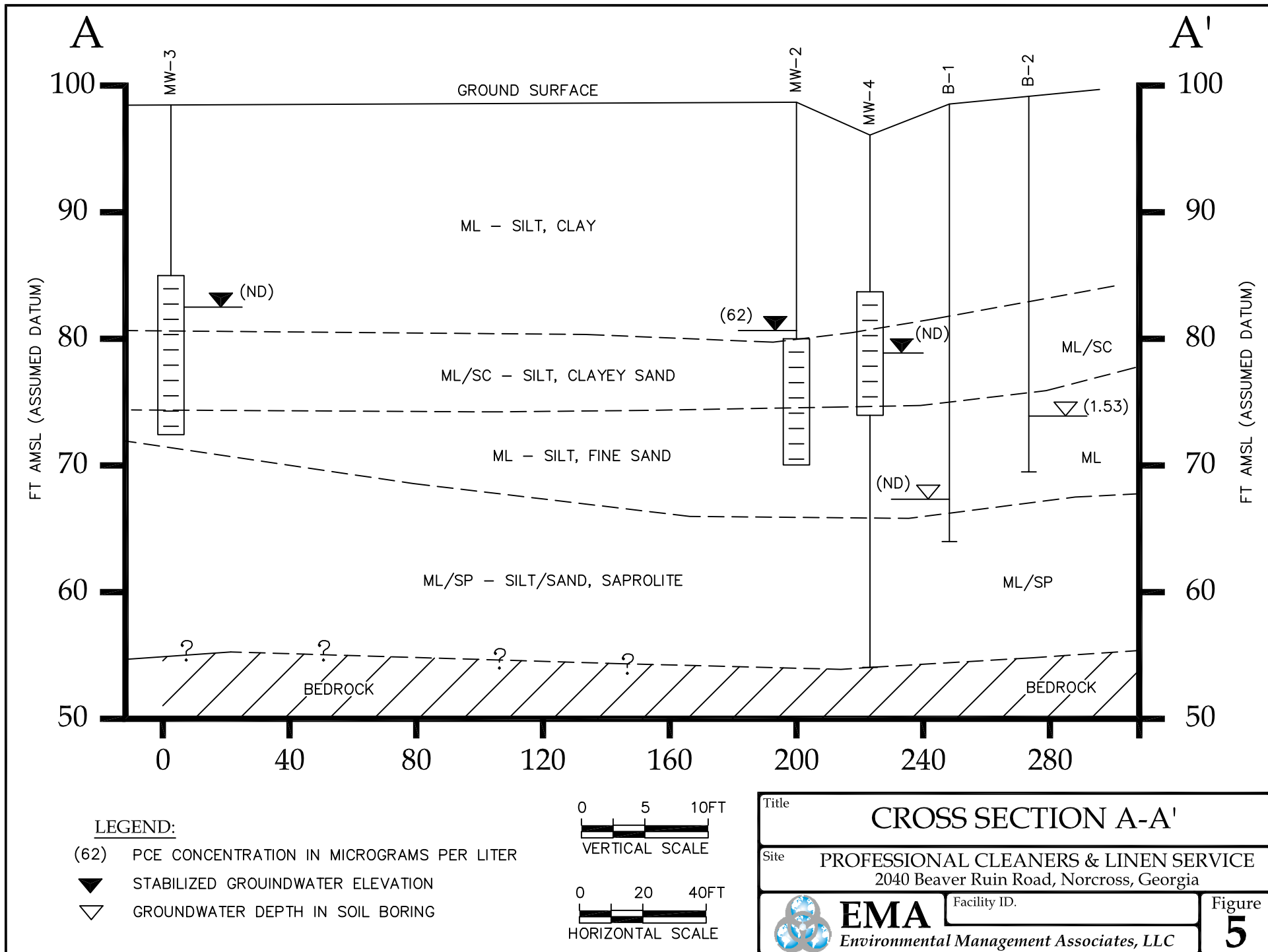
- B-1 ○ BOREHOLE LOCATION
- MW-1 ⊕ MONITORING WELL LOCATION

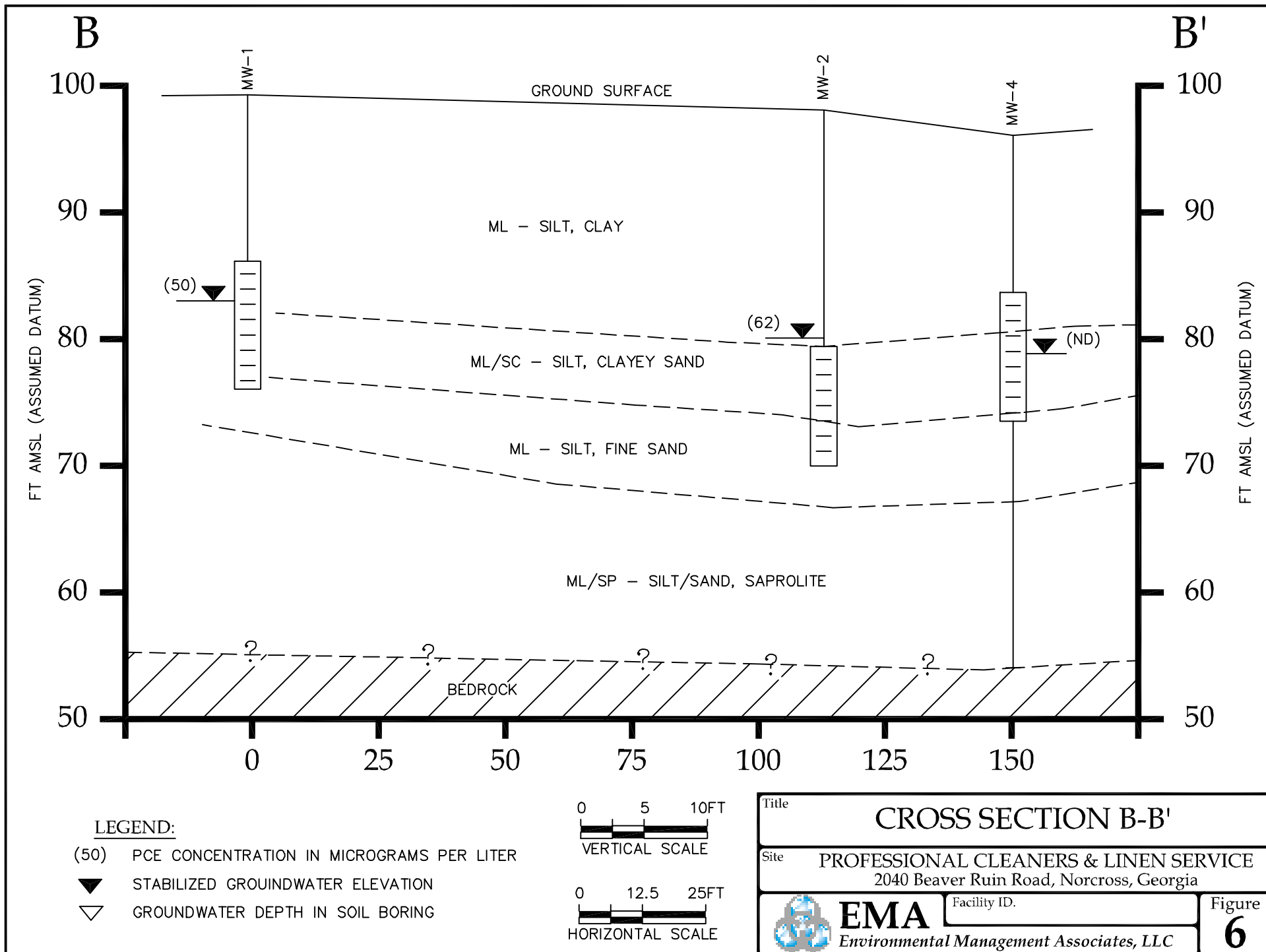
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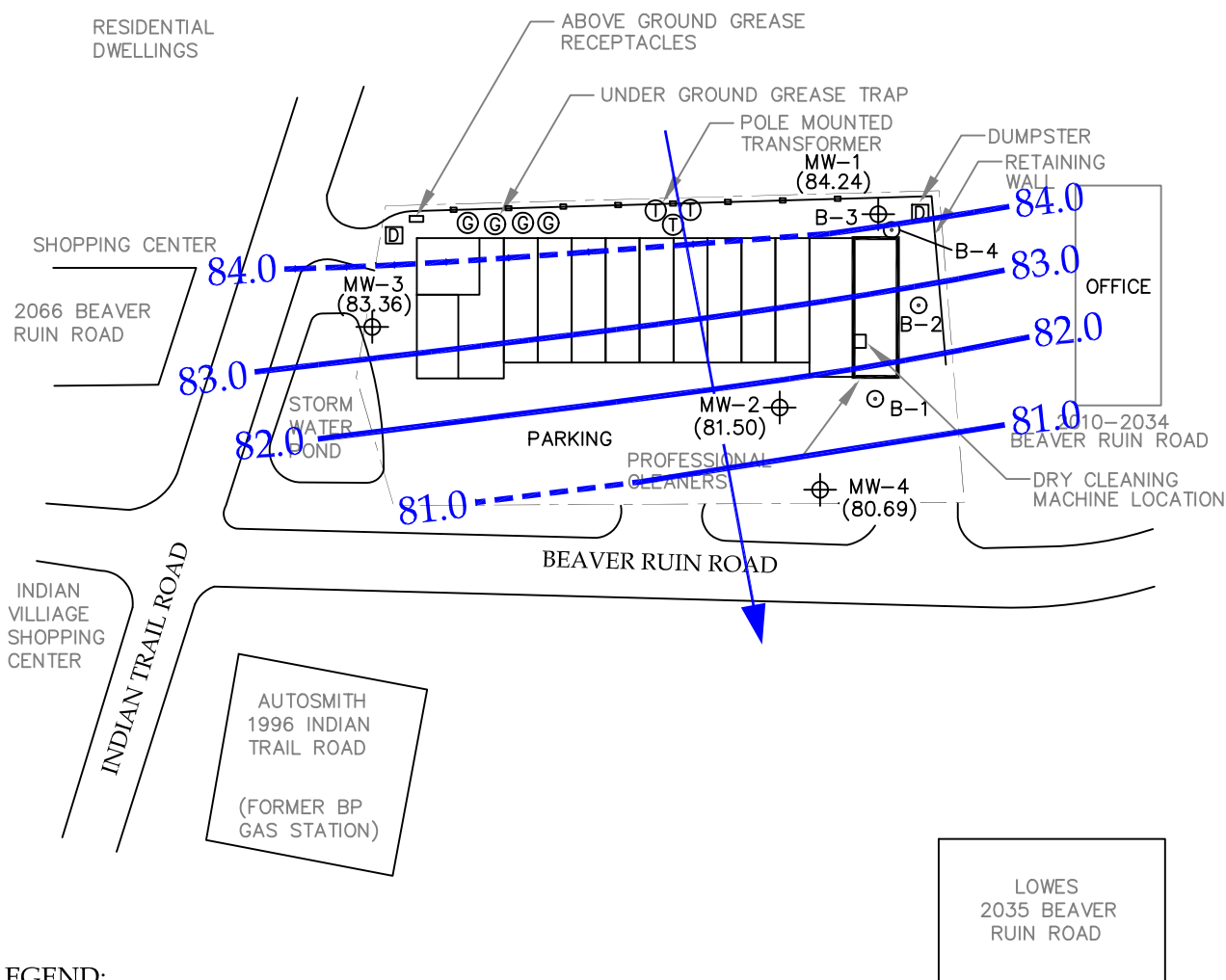
BASE MAP CREATED FROM GLE ASSOCIATES, INC  
DRAWING 11000-11045 SHEET A-3.



Title <b>CROSS-SECTION LOCATION MAP</b>		
Site <b>PROFESSIONAL CLEANERS &amp; LINEN SERVICE</b> 2040 Beaver Ruin Road, Norcross, Georgia		
 <b>EMA</b> Environmental Management Associates, LLC	Facility ID.	Figure <b>4</b>





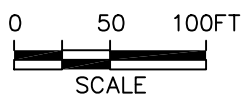



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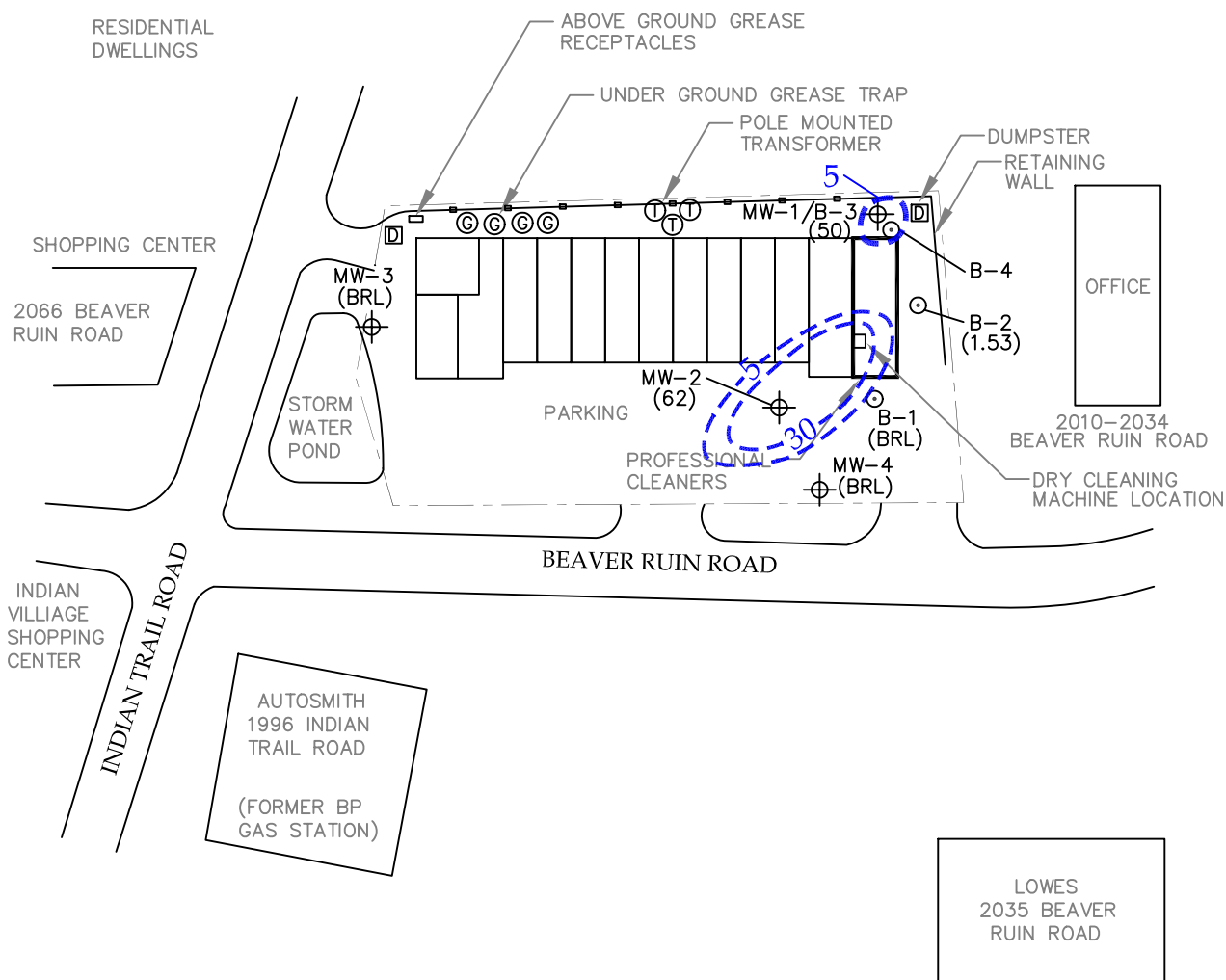
- B-1  
○ BOREHOLE LOCATION
- MW-1  
⊕ MONITORING WELL LOCATION
- (84.08) GROUNDWATER ELEVATION, FT
- 84 GROUNDWATER WATER ELEVATION CONTOUR, FT.
- ➔ GROUNDWATER FLOW DIRECTION

**NOTE:**

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



Title	GROUNDWATER CONTOURS AND FLOW DIRECTION		
Site	PROFESSIONAL CLEANERS & LINEN SERVICE 2040 Beaver Ruin Road, Norcross, Georgia		
 <b>EMA</b> Environmental Management Associates, LLC	Facility ID.		Figure
			7

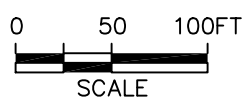



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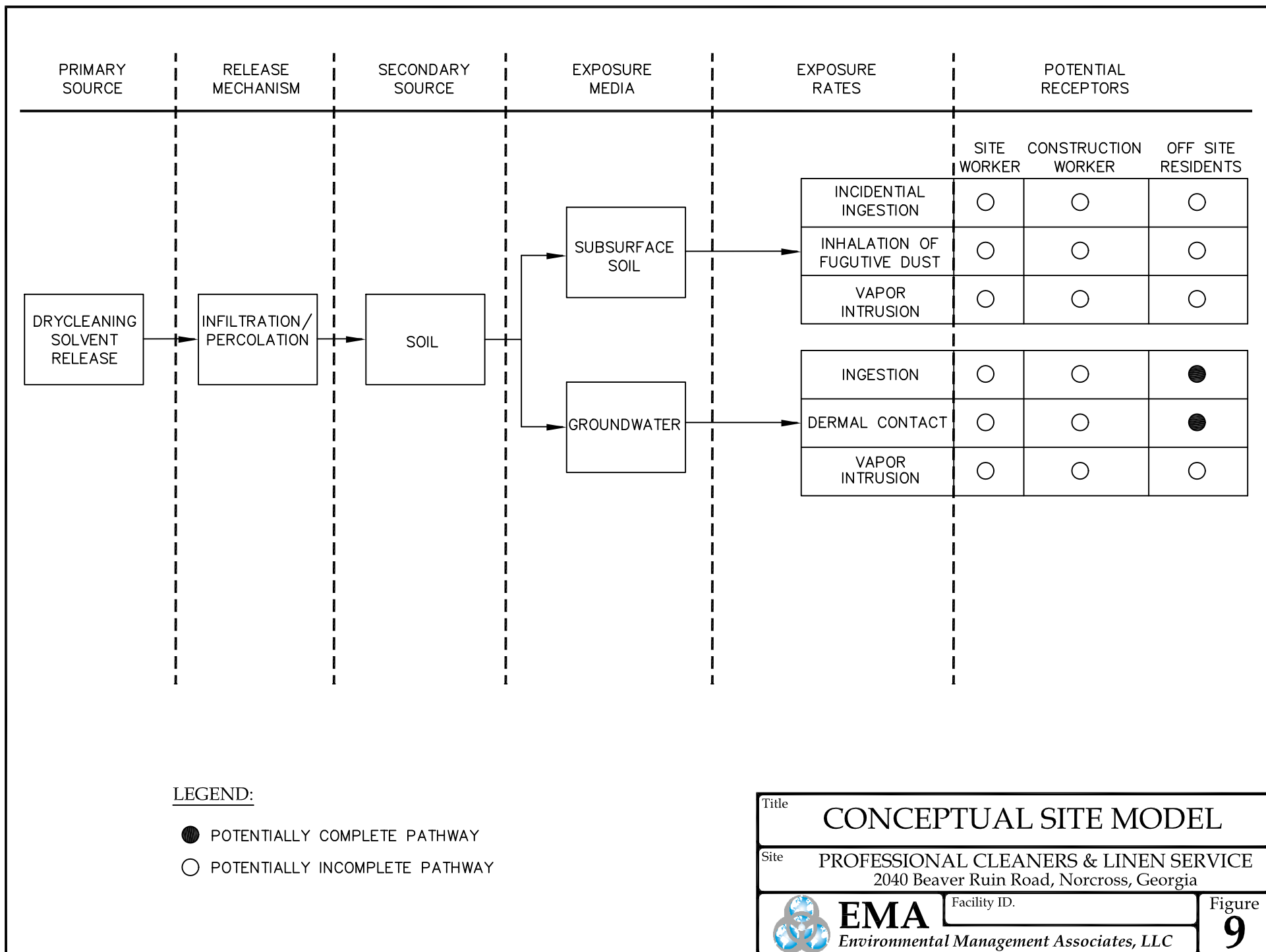
- B-1 ○ BOREHOLE LOCATION  
MW-1 ⊕ MONITORING WELL LOCATION

**NOTES:**

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



Title	ISOCONCENTRATION CONTOUR MAP FOR PCE		
Site	PROFESSIONAL CLEANERS & LINEN SERVICE 2040 Beaver Ruin Road, Norcross, Georgia		
 <b>EMA</b> Environmental Management Associates, LLC	Facility ID. _____		Figure <b>8</b>



## TABLES



**TABLE 1**

**SOIL INVESTIGATION SAMPLING DATA**  
**PROFESSIONAL CLEANERS AND LINEN SERVICE**  
**NORCROSS, GEORGIA**

<i>Sample ID</i>	<i>Sample Date</i>	<i>Sample Depth (ft. bgs)</i>	<i>Analyte</i>	<i>Concentration (μg/kg)<sup>(1)</sup></i>	<i>Standard<sup>(2)</sup> (μg/kg)</i>
B-2-15	2/11/2011	15	PCE	13.6	180
B-3-15	2/11/2011	15	PCE	BRL (5.36) <sup>(3)</sup>	180
HA-1-1	2/11/2011	1	PCE	<b>222</b>	180
			Acetone	277	2740
HA-2-1	2/11/2011	1	PCE	<b>296</b>	180

Notes:

1) μg/kg - micrograms per kilogram

2) Type 1 Risk Reduction Standard for analyte in soil.

3) BRL - Below reporting limit

**TABLE 2**

**CONFIRMATORY SOIL SAMPLING DATA**  
**PROFESSIONAL CLEANERS AND LINEN SERVICE**  
**NORCROSS, GEORGIA**

<i>Sample ID</i>	<i>Sample Date</i>	<i>Sample Depth (ft. bgs)</i>	<i>Analyte</i>	<i>Concentration (μg/kg) <sup>(1)</sup></i>	<i>Standard <sup>(2)</sup> (μg/kg)</i>
SWA-1	4/2/2011	0.5	PCE	<b>340</b>	180
SWA-2	4/8/2011	0.5	PCE	38	180
SWB-1	4/2/2011	0.5	PCE	38	180
SWC-1	4/2/2011	0.5	PCE	71	180
SWD-1	4/2/2011	0.5	PCE	26	180
B-1	4/2/2011	1.0	PCE	<b>330</b>	180
B-2	4/8/2011	1..25	PCE	43	180

Notes:

1) μg/kg - micrograms per kilogram

2) Type 1 Risk Reduction Standard for analyte in soil.

3) BRL - Below reporting limit

**TABLE 3**

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

<i>Well Number</i>	<i>Date Measured</i>	<i>Ground Surface Elevation <sup>(1)</sup></i>	<i>TOC Elevation <sup>(1)</sup></i>	<i>Depth to Groundwater (feet BTOC) <sup>(2)</sup></i>	<i>Groundwater Elevation <sup>(1)</sup></i>
MW-1	7/1/2011	99.59	99.18	15.10	84.08
	7/12/2011	99.59	99.18	15.25	83.93
	8/17/2011	100.41	100.00	15.76	84.24
MW-2	7/1/2011	98.53	97.96	16.50	81.46
	7/12/2011	98.53	97.96	16.63	81.33
	8/17/2011	99.37	98.80	17.30	81.50
MW-3	7/1/2011	98.43	98.00	14.39	83.61
	7/12/2011	98.43	98.00	14.75	83.25
	8/17/2011	99.26	98.83	15.47	83.36
MW-4	8/17/2011	97.81	97.39	16.70	80.69

Notes:

(1) Top of casing (TOC), ground surface, and groundwater elevations based on an assumed datum. Re-surveyed on August 17, 2011.

(2) BTOC - below top of casing

**TABLE 4**

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

<i>Sample Location</i>	<i>Sample Date</i>	<i>Analyte</i>	<i>Concentration (µg/L) <sup>(1)</sup></i>	<i>Standard <sup>(2)</sup> (µg/L)</i>
B-1	2/11/2011	Chloroform	2.24	100
B-2	2/11/2011	PCE	1.53	5
B-3	2/11/2011	PCE	16.1	5
MW-1	7/1/2011	PCE	50	5
MW-2	7/1/2011	PCE	62	5
MW-3	7/1/2011	PCE	BRL (0.005) <sup>(3)</sup>	5
MW-4	7/22/2011	PCE	BRL (0.005)	5

Notes:

1) µg/L - micrograms per liter

2) Type 1 Risk Reduction Standard for analyte in groundwater.

3) BRL - Below reporting limit

TABLE 5

**GROUNDWATER DELINEATION STANDARDS  
PROFESSIONAL CLEANERS AND LINEN SERVICE  
NORCROSS, GEORGIA**

<i>Analyte</i>	<i>Delineation Standard (<math>\mu\text{g/L}</math>)</i>
PCE	5.0
TCE	5.0
cis-1,2-DCE	5.0 (D.L.)
trans-1,2-DCE	100
Vinyl Chloride	2.0

Notes:

D.L. - detection limit

**APPENDIX A**  
**VRP APPLICATION AND PAYMENT**

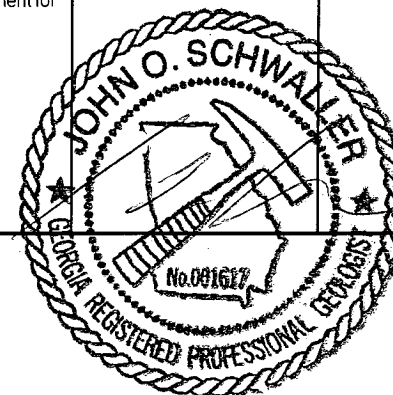
# Voluntary Investigation and Remediation Plan Application Form and Checklist

VRP APPLICANT INFORMATION					
<b>COMPANY NAME</b>	Indian Trail Assoc, LTD				
<b>CONTACT PERSON/TITLE</b>	Craig Harper				
<b>ADDRESS</b>	PO Box 767127, Roswell, GA 30076				
<b>PHONE</b>	404 798-9820	<b>FAX</b>		<b>E-MAIL</b>	jch@harperproperties.com
GEORGIA CERTIFIED PROFESSIONAL GEOLOGIST OR PROFESSIONAL ENGINEER OVERSEEING CLEANUP					
<b>NAME</b>	John O. Schwaller, P.G.		<b>GA PE/PG NUMBER</b>	1617	
<b>COMPANY</b>	Environmental Management Associates, LLC				
<b>ADDRESS</b>	5262 Belle Wood Ct, Suite A, Buford, GA 30518				
<b>PHONE</b>	770 271-4628	<b>FAX</b>	770 271-8944	<b>E-MAIL</b>	jschwaller@emailc.net
APPLICANT'S CERTIFICATION					
<p>In order to be considered a qualifying property for the VRP:</p> <p>(1) The property must have a release of regulated substances into the environment;</p> <p>(2) The property shall not be:</p> <p style="margin-left: 40px;">(A) Listed on the federal National Priorities List pursuant to the federal Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Section 9601.</p> <p style="margin-left: 40px;">(B) Currently undergoing response activities required by an order of the regional administrator of the federal Environmental Protection Agency; or</p> <p style="margin-left: 40px;">(C) A facility required to have a permit under Code Section 12-8-66.</p> <p>(3) Qualifying the property under this part would not violate the terms and conditions under which the division operates and administers remedial programs by delegation or similar authorization from the United States Environmental Protection Agency.</p> <p>(4) Any lien filed under subsection (e) of Code Section 12-8-96 or subsection (b) of Code Section 12-13-12 against the property shall be satisfied or settled and released by the director pursuant to Code Section 12-8-94 or Code Section 12-13-6.</p> <p>In order to be considered a participant under the VRP:</p> <p style="margin-left: 40px;">(1) The participant must be the property owner of the voluntary remediation property or have express permission to enter another's property to perform corrective action.</p> <p style="margin-left: 40px;">(2) The participant must not be in violation of any order, judgment, statute, rule, or regulation subject to the enforcement authority of the director.</p> <p>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</p> <p>I also certify that this property is eligible for the Voluntary Remediation Program (VRP) as defined in Code Section 12-8-105 and I am eligible as a participant as defined in Code Section 12-8-106.</p>					
<b>APPLICANT'S SIGNATURE</b>					
<b>APPLICANT'S NAME/TITLE (PRINT)</b>	Craig Harper/			<b>DATE</b>	9-2-11

QUALIFYING PROPERTY INFORMATION (For additional qualifying properties, please refer to the last page of application form)			
HAZARDOUS SITE INVENTORY INFORMATION (if applicable)			
HSI Number	N/A	Date HSI Site listed	N/A
HSI Facility Name		NAICS CODE	
PROPERTY INFORMATION			
TAX PARCEL ID	6212 036	PROPERTY SIZE (ACRES)	1.79
PROPERTY ADDRESS	2040 Beaver Ruin Rd		
CITY	Norcross	COUNTY	Gwinnett
STATE	GA	ZIPCODE	30003
LATITUDE (decimal format)	N33 55.995'	LONGITUDE (decimal format)	W84 10.647'
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)	Indian Trail Assoc, LTD	PHONE #	404 798-9820
MAILING ADDRESS	PO Box 767127		
CITY	Roswell	STATE/ZIPCODE	GA/30076
ITEM #	DESCRIPTION OF REQUIREMENT	Location in VRP (i.e. pg., Table #, Figure #, etc.)	For EPD Comment Only (Leave Blank)
1.	<b>\$5,000 APPLICATION FEE</b> IN THE FORM OF A CHECK PAYABLE TO THE GEORGIA DEPARTMENT OF NATURAL RESOURCES. (PLEASE LIST CHECK DATE AND CHECK NUMBER IN COLUMN TITLED "LOCATION IN VRP." PLEASE DO NOT INCLUDE A SCANNED COPY OF CHECK IN ELECTRONIC COPY OF APPLICATION.)	App A pg 3 9-10-11	
2.	<b>WARRANTY DEED(S)</b> FOR QUALIFYING PROPERTY.	App B	
3.	<b>TAX PLAT</b> OR OTHER FIGURE INCLUDING QUALIFYING PROPERTY BOUNDARIES, ABUTTING PROPERTIES, AND TAX PARCEL IDENTIFICATION NUMBER(S).	App B	
4.	<b>ONE (1) PAPER COPY AND TWO (2) COMPACT DISC (CD) COPIES</b> OF THE VOLUNTARY REMEDIATION PLAN IN A SEARCHABLE PORTABLE DOCUMENT FORMAT (PDF).	Attached	
5.	The VRP participant's initial plan and application must include, using all reasonably available current information to the extent known at the time of application, a graphic three-dimensional preliminary conceptual site model (CSM) including a preliminary remediation plan with a table of delineation standards, brief supporting text, charts, and figures (no more than 10 pages, total) that illustrates the site's surface and subsurface setting, the known or suspected source(s) of contamination, how contamination might move within the environment, the potential human health and ecological receptors, and the complete or incomplete exposure pathways that may exist at the site; the preliminary CSM must be updated as the investigation and remediation progresses and an up-to-date CSM must be included in each semi-annual status report submitted to the director by the participant; a <b>PROJECTED MILESTONE SCHEDULE</b> for investigation and remediation of the site, and after enrollment as a participant, must update the schedule in each semi-annual status report to the director describing implementation of the plan	Sections 3 and 4, Figures 5 thru 9, APP E	



	<p>during the preceding period. A Gantt chart format is preferred for the milestone schedule.</p> <p>The following four (4) generic milestones are required in all initial plans with the results reported in the participant's next applicable semi-annual reports to the director. The director may extend the time for or waive these or other milestones in the participant's plan where the director determines, based on a showing by the participant, that a longer time period is reasonably necessary:</p>		
5.a.	Within the first 12 months after enrollment, the participant must complete horizontal delineation of the release and associated constituents of concern on property where access is available at the time of enrollment;	App E	
5.b.	Within the first 24 months after enrollment, the participant must complete horizontal delineation of the release and associated constituents of concern extending onto property for which access was not available at the time of enrollment;	App E	
5.c.	Within 30 months after enrollment, the participant must update the site CSM to include vertical delineation, finalize the remediation plan and provide a preliminary cost estimate for implementation of remediation and associated continuing actions; and	App E	
5.d.	Within 60 months after enrollment, the participant must submit the compliance status report required under the VRP, including the requisite certifications.	App E	
6.	<p><b>SIGNED AND SEALED PE/PG CERTIFICATION AND SUPPORTING DOCUMENTATION:</b></p> <p>"I certify under penalty of law that this report and all attachments were prepared by me or under my direct supervision in accordance with the Voluntary Remediation Program Act (O.C.G.A. Section 12-8-101, et seq.). I am a professional engineer/professional geologist who is registered with the Georgia State Board of Registration for Professional Engineers and Land Surveyors/Georgia State Board of Registration for Professional Geologists and I have the necessary experience and am in charge of the investigation and remediation of this release of regulated substances.</p> <p>Furthermore, to document my direct oversight of the Voluntary Remediation Plan development, implementation of corrective action, and long term monitoring, I have attached a monthly summary of hours invoiced and description of services provided by me to the Voluntary Remediation Program participant since the previous submittal to the Georgia Environmental Protection Division.</p> <p>The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."</p> <p><u>JOHN O. SCHWALLER / 1617</u> Printed Name and GA PE/PG Number</p> <p><u>9/2/11</u> Date</p> <p><u>[Signature]</u> Signature and Stamp</p>	App A	



**ADDITIONAL QUALIFYING PROPERTIES (COPY THIS PAGE AS NEEDED)**

PROPERTY INFORMATION			
TAX PARCEL ID		PROPERTY SIZE (ACRES)	
PROPERTY ADDRESS			
CITY		COUNTY	
STATE		ZIPCODE	
LATITUDE (decimal format)		LONGITUDE (decimal format)	
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)		PHONE #	
MAILING ADDRESS			
CITY		STATE/ZIPCODE	

PROPERTY INFORMATION			
TAX PARCEL ID		PROPERTY SIZE (ACRES)	
PROPERTY ADDRESS			
CITY		COUNTY	
STATE		ZIPCODE	
LATITUDE (decimal format)		LONGITUDE (decimal format)	
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)		PHONE #	
MAILING ADDRESS			
CITY		STATE/ZIPCODE	

PROPERTY INFORMATION			
TAX PARCEL ID		PROPERTY SIZE (ACRES)	
PROPERTY ADDRESS			
CITY		COUNTY	
STATE		ZIPCODE	
LATITUDE (decimal format)		LONGITUDE (decimal format)	
PROPERTY OWNER INFORMATION			
PROPERTY OWNER(S)		PHONE #	
MAILING ADDRESS			
CITY		STATE/ZIPCODE	

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

***PG Summary of Time<sup>(1)</sup>***

8/1/11 to 8/31/11

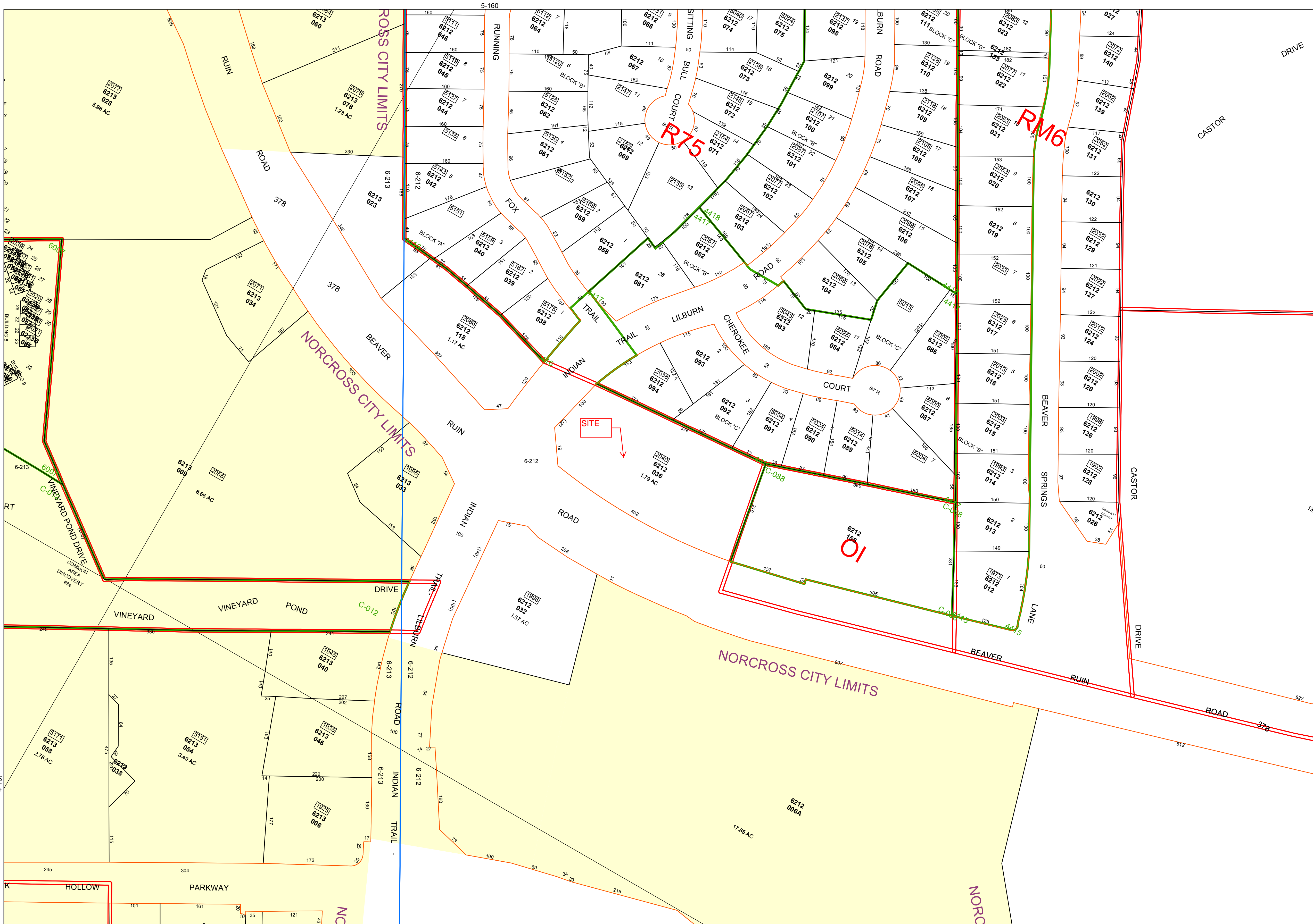
	<b><i>Units</i></b>	<b><i>Unit Cost</i></b>	<b><i>Sub-Total</i></b>
Install Well	3	\$ 85.00	\$ 255.00
VRP Report/Figures/Tables	25	\$ 85.00	\$ 2,125.00
	sub-total		\$ 2,380.00

Notes:

(1) This summary does not include time spent installing initial three wells requested by EPD and submitted under report dated July 12, 2011.

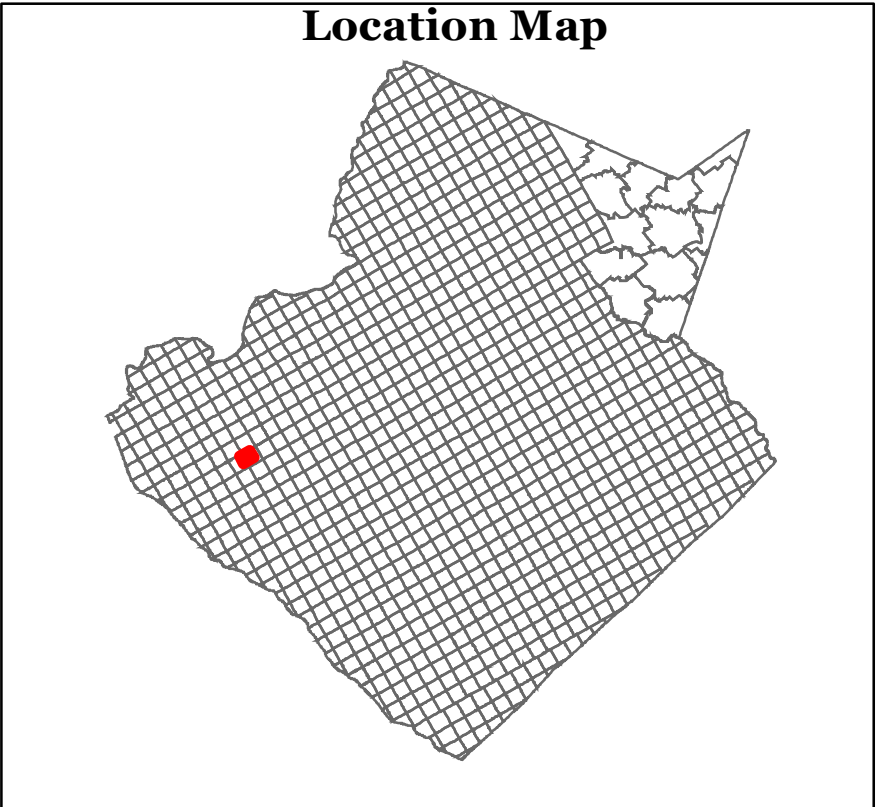
**APPENDIX B**  
**TAX MAP AND WARRANTY DEED**





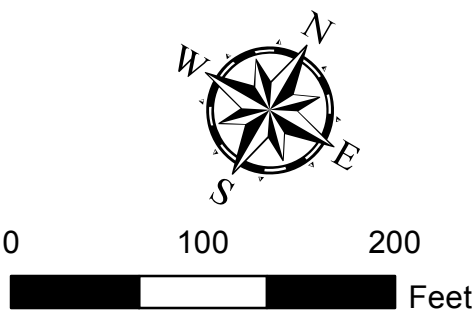
**GWINNETT COUNTY,  
GEORGIA**

**PROPERTY MAP**



**Legend**

- Property Line
- Development Area
- Zoning Area
- Private Easement
- City Limits
- County Boundary
- Ownership Hook
- Landlot



Georgia State Plane Coordinate System  
GA West Zone  
North American Datum 1983

This map is a graphical representation of data obtained from aerial photography, recorded deeds, plats, engineering drawings and other public records and data. Gwinnett County does not warrant the accuracy or currency of the data it has provided and does not guarantee the suitability of the data for any purpose, expressed or implied. ALL DATA IS PROVIDED AS IS, WITH ALL FAULTS, WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. This map is the proprietary product of Gwinnett County and in no event will Gwinnett County be liable for damages, including any loss of profits, lost savings, or other incidental or consequential damages arising out of the use of or inability to use this map.

Map Produced by Gwinnett County GIS

Map Printed:

FILED & RECORDED  
CLERK SUPERIOR COURT  
GWINNETT COUNTY, GA.LIMITED WARRANTY DEED

1987 APR 23 PM 4:30

STATE OF GEORGIA

GARY R. YATES, CLERK

COUNTY OF GWINNETT

THIS INDENTURE, made this 20<sup>th</sup> day of April, in the Year of Our Lord One Thousand Nine Hundred and Eighty-Seven, between THE CROSSINGS AT INDIAN TRAIL, LTD., a Georgia limited partnership whose sole general partner is Robert C. Crim, hereinafter called "Grantor", and INDIAN TRAIL RETAIL ASSOCIATES, LTD., a Georgia limited partnership whose sole general partner is COMMODORE REALTY INVESTMENTS, INC., a Georgia corporation, hereinafter called the "Grantee".

W I T N E S S E T H:

THAT the said Grantor, for and in consideration of the sum of Ten and no/100 Dollars (\$10.00) in hand paid and other good and valuable consideration delivered to Grantor by Grantee at and before the execution, sealing and delivery of these presents, the receipt and sufficiency of which is hereby acknowledged, has granted, bargained, sold and conveyed, and by these presents does grant, bargain, sell and convey unto the said Grantee, and the legal representatives, successors and assigns of Grantee, the following described real property, to wit:

All that tract or parcel of land lying and being in Land Lot 212 of the 6th District of Gwinnett County, Georgia, and being more particularly described on Exhibit "A" attached hereto and incorporated herein by reference.

TO HAVE AND TO HOLD the said tract or parcel of land, with all and singular the rights, members, and appurtenances thereof, to the same being, belonging, or in anywise appertaining, to the only proper use, benefit and behoof of the said Grantee, and the legal representatives, successors and assigns of said Grantee, forever, in Fee Simple.

AND THE SAID Grantor, for itself, its legal representatives, successors and assigns, will warrant and forever defend the right and title to the above described Property, unto said Grantee, and the legal representatives,

GWINNETT CO. GEORGIA  
REAL ESTATE TRANSFER TAX

\$2,299.90

Date 4-23-87

Clerk of Superior Court

NALL, MILLER, OWENS, HOCUTT &amp; HOWARD

ATTORNEYS AT LAW

SUITE 200

PEACHTREE &amp; BROAD BUILDING

ATLANTA, GEORGIA 30303

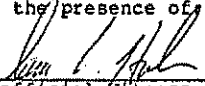
successors and assigns of said Grantee, against the claims of all persons owning, holding or claiming by, through or under the said Grantor.


IN WITNESS WHEREOF, the said Grantor has caused this instrument to be executed in its name by its duly authorized officer, the day, month and year first above written.

THE CROSSINGS AT INDIAN TRAIL,  
LTD.

By:   
Robert C. Crim  
General Partner

Signed, sealed and delivered  
this 20th day of April, 1987  
in the presence of

  
Unofficial Witness

  
Notary Public

(NOTARY SEAL)

My commission expires:

Notary Public, Georgia, State at Large  
My Commission Expires March 26, 1991



EXHIBIT "A"

Legal Description

ALL THAT TRACT OR PARCEL OF LAND lying and being in Land lot 212 of the 6th District, Gwinnett County, Georgia and being more particularly described as follows:

BEGINNING at a point at the intersection of the southeasterly Right-Of-Way line of Indian Trail-Lilburn Road (100 foot Right-Of-Way) and the northerly Right-Of-Way line of Beaver Ruin Road (130 foot Right-Of-Way) as shown on a plat of Indian Crossing Subdivision, Unit 2, recorded at Plat Book 12, Page 293, Gwinnett County, Georgia Records; running thence north 08 degrees 49 minutes 42 seconds east 86.96 feet along the southeasterly Right-Of-Way line of Indian Trail-Lilburn Road to an iron pin set; thence along the arc of the southeasterly Right-Of-Way line of Indian Trail-Lilburn Road for an arc distance of 100.65 feet, said arc being subtended by a chord bearing north 15 degrees 09 minutes 56 seconds east 100.41 feet, to an iron pin set at the southwesterly corner of Lot 1 of the above referenced recorded plat; thence leaving said Right-Of-Way and running north 85 degrees 38 minutes 33 seconds east 376.96 feet along the southwesterly lines of Lots 1, 3, and 4 of the above-referenced subdivision to an iron pin found; thence leaving said lot lines and running south 10 degrees 27 minutes 42 seconds east 210.31 feet to a point on the northerly Right-Of-Way of Beaver Ruin Road (130 foot Right-Of-Way); thence in a westerly direction along the arc of the northerly Right-Of-Way line of Beaver Ruin Road 455.55 feet, said arc being subtended by a chord bearing south 89 degrees 24 minutes 37 seconds west for a chord distance of 453.70 feet to an iron pin set at the intersection of the northeasterly Right-Of-Way line of Beaver Ruin Road and the southeasterly Right-Of-Way line of Indian Trail-Lilburn Road and the POINT OF BEGINNING, as per property survey for Center Concepts, Inc., dated August 18, 1983, revised November 15, 1983, prepared by Lowe Engineers and bearing the certification of T. M. Lowe, Jr., G.R.L.S. #1193.

The above described property constitutes all of the property and improvements used in a shopping center known as The Crossings at Indian Trail.



**APPENDIX C**  
**INDOOR AIR QUALITY MODELING**

SL-ADV  
Version 3.1; 02/04Reset to  
Defaults

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES

X

ENTER  
Chemical  
CAS No.  
(numbers only,  
no dashes)ENTER  
Initial  
soil  
conc.,  
 $C_R$   
( $\mu\text{g/kg}$ )

Chemica

127184

4.32E+01

Tetrachloroethylene

MORE  
↓

ENTER Average soil temperature, $T_s$ ( $^{\circ}\text{C}$ )	ENTER Depth below grade to bottom of enclosed space floor, $L_f$ (cm)	ENTER Depth below grade to top of contamination, $L_t$ (cm)	ENTER Depth below grade to bottom of contamination, (enter value of 0 if value is unknown) $L_b$ (cm)	ENTER Thickness of soil stratum A, $h_A$ (cm)	ENTER Thickness of soil stratum B, (Enter value or 0) $h_B$ (cm)	ENTER Thickness of soil stratum C, (Enter value or 0) $h_C$ (cm)	ENTER Soil stratum A SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined stratum A soil vapor permeability, $k_v$ ( $\text{cm}^2$ )
19.4	15	45	503	45	0	0	SIC		

MORE  
↓

ENTER Stratum A SCS soil type  Lookup Soil Parameters	ENTER Stratum A soil dry bulk density, $\rho_b^A$ ( $\text{g/cm}^3$ )	ENTER Stratum A soil total porosity, $n^A$ (unitless)	ENTER Stratum A soil water-filled porosity, $\theta_w^A$ ( $\text{cm}^3/\text{cm}^3$ )	ENTER Stratum A soil organic carbon fraction, $f_{oc}^A$ (unitless)	ENTER Stratum B SCS soil type  Lookup Soil Parameters	ENTER Stratum B soil dry bulk density, $\rho_b^B$ ( $\text{g/cm}^3$ )	ENTER Stratum B soil total porosity, $n^B$ (unitless)	ENTER Stratum B soil water-filled porosity, $\theta_w^B$ ( $\text{cm}^3/\text{cm}^3$ )	ENTER Stratum B soil organic carbon fraction, $f_{oc}^B$ (unitless)	ENTER Stratum C SCS soil type  Lookup Soil Parameters	ENTER Stratum C soil dry bulk density, $\rho_b^C$ ( $\text{g/cm}^3$ )	ENTER Stratum C soil total porosity, $n^C$ (unitless)	ENTER Stratum C soil water-filled porosity, $\theta_w^C$ ( $\text{cm}^3/\text{cm}^3$ )	ENTER Stratum C soil organic carbon fraction, $f_{oc}^C$ (unitless)
SIC	1.38	0.481	0.216	0.002		1.5	0.43		0.002		1.5	0.43		0.002

MORE  
↓

ENTER Enclosed space floor thickness, $L_{ORRCK}$ (cm)	ENTER Soil-bldg. pressure differential, $\Delta P$ ( $\text{g/cm}^2$ )	ENTER Enclosed space floor length, $L_B$ (cm)	ENTER Enclosed space floor width, $W_B$ (cm)	ENTER Enclosed space height, $H_B$ (cm)	ENTER Floor-wall seam crack width, $w$ (cm)	ENTER Indoor air exchange rate, $ER$ (1/h)	ENTER Average vapor flow rate into bldg. OR Leave blank to calculate $Q_{soil}$ (L/m)
25.4	40	2286	762	487	0.1	1	5

ENTER Averaging time for carcinogens, $AT_C$ (yrs)	ENTER Averaging time for noncarcinogens, $AT_{NC}$ (yrs)	ENTER Exposure duration, $ED$ (yrs)	ENTER Exposure frequency, $EF$ (days/yr)	ENTER Target risk for carcinogens, $TR$ (unitless)	ENTER Target hazard quotient for noncarcinogens, $THQ$ (unitless)
70	25	25	250	1.0E-06	1

END

Used to calculate risk-based  
soil concentration.

# CHEMICAL PROPERTIES SHEET

Diffusivity in air, $D_a$ (cm <sup>2</sup> /s)	Diffusivity in water, $D_w$ (cm <sup>2</sup> /s)	Henry's law constant at reference temperature, H (atm-m <sup>3</sup> /mol)	Henry's law constant reference temperature, $T_R$ (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, $T_B$ (°K)	Critical temperature, $T_C$ (°K)	Organic carbon partition coefficient, $K_{oc}$ (cm <sup>3</sup> /g)	Pure component water solubility, S (mg/L)	Unit risk factor, URF (µg/m <sup>3</sup> ) <sup>-1</sup>	Reference conc., RfC (mg/m <sup>3</sup> )	Physical state at soil temperature, (S,L,G)
7.20E-02	8.20E-06	1.84E-02	25	8,288	394.40	620.20	1.55E+02	2.00E+02	5.9E-06	6.0E-01	L

END

INTERMEDIATE CALCULATIONS SHEET

Exposure duration, $\tau$ (sec)	Source-building separation, $L_T$ (cm)	Stratum A soil air-filled porosity, $\theta_a^A$ (cm <sup>3</sup> /cm <sup>3</sup> )	Stratum B soil air-filled porosity, $\theta_a^B$ (cm <sup>3</sup> /cm <sup>3</sup> )	Stratum C soil air-filled porosity, $\theta_a^C$ (cm <sup>3</sup> /cm <sup>3</sup> )	Stratum A effective total fluid saturation, $S_{fe}$ (cm <sup>3</sup> /cm <sup>3</sup> )	Stratum A soil intrinsic permeability, $k_i$ (cm <sup>2</sup> )	Stratum A soil relative air permeability, $k_{rg}$ (cm <sup>2</sup> )	Stratum A soil effective vapor permeability, $k_v$ (cm <sup>2</sup> )	Floor-wall seam perimeter, $X_{crack}$ (cm)	Initial soil concentration used, $C_R$ (μg/kg)	Bldg. ventilation rate, $Q_{building}$ (cm <sup>3</sup> /s)
7.88E+08	30	0.265	ERROR	ERROR	0.284	1.51E-09	0.844	1.27E-09	6,096	4.32E+01	2.36E+05

Area of enclosed space below grade, $A_B$ (cm <sup>2</sup> )	Crack-to-total area ratio, $\eta$ (unitless)	Crack depth below grade, $Z_{crack}$ (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, $H_{TS}$ (atm-m <sup>3</sup> /mol)	Henry's law constant at ave. soil temperature, $H'_{TS}$ (unitless)	Vapor viscosity at ave. soil temperature, $\mu_{TS}$ (g/cm-s)	Stratum A effective diffusion coefficient, $D^{eff}_A$ (cm <sup>2</sup> /s)	Stratum B effective diffusion coefficient, $D^{eff}_B$ (cm <sup>2</sup> /s)	Stratum C effective diffusion coefficient, $D^{eff}_C$ (cm <sup>2</sup> /s)	Total overall effective diffusion coefficient, $D^{eff}_T$ (cm <sup>2</sup> /s)	Diffusion path length, $L_d$ (cm)	Convection path length, $L_p$ (cm)
1.74E+06	3.50E-04	15	9,458	1.35E-02	5.63E-01	1.78E-04	3.74E-03	0.00E+00	0.00E+00	3.74E-03	30	15

Soil-water partition coefficient, $K_d$ (cm <sup>3</sup> /g)	Source vapor conc., $C_{source}$ (μg/m <sup>3</sup> )	Crack radius, $r_{crack}$ (cm)	Average vapor flow rate into bldg., $Q_{soil}$ (cm <sup>3</sup> /s)	Crack effective diffusion coefficient, $D^{crack}$ (cm <sup>2</sup> /s)	Area of crack, $A_{crack}$ (cm <sup>2</sup> )	Exponent of equivalent Peclet number, $\exp(Pe^d)$ (unitless)	Infinite source indoor attenuation coefficient, $\alpha$ (unitless)	Infinite source bldg. conc., $C_{building}$ (μg/m <sup>3</sup> )	Finite source $\beta$ term (unitless)	Finite source $\psi$ term (sec) <sup>-1</sup>	Time for source depletion, $\tau_D$ (sec)	Exposure duration > time for source depletion (YES/NO)
3.10E-01	4.23E+04	0.10	8.33E+01	3.74E-03	6.10E+02	#NUM!	NA	NA	3.60E+00	2.95E-06	5.82E+07	YES

Finite source indoor attenuation coefficient, < $\alpha$ > (unitless)	Mass limit bldg. conc., $C_{building}$ (μg/m <sup>3</sup> )	Finite source bldg. conc., $C_{building}$ (μg/m <sup>3</sup> )	Final finite source bldg. conc., $C_{building}$ (μg/m <sup>3</sup> )	Unit risk factor, URF (μg/m <sup>3</sup> ) <sup>-1</sup>	Reference conc., RfC (mg/m <sup>3</sup> )
NA	2.56E-01	NA	2.56E-01	5.9E-06	6.0E-01

END

# RESULTS SHEET

## RISK-BASED SOIL CONCENTRATION CALCULATIONS:

Indoor exposure soil conc., carcinogen (µg/kg)	Indoor exposure soil conc., noncarcinogen (µg/kg)	Risk-based indoor exposure soil conc., (µg/kg)	Soil saturation conc., C <sub>sat</sub> (µg/kg)	Final indoor exposure soil conc., (µg/kg)
NA	NA	NA	1.15E+05	NA

## INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
3.7E-07	2.9E-04

MESSAGE AND ERROR SUMMARY BELOW: (DO NOT USE RESULTS IF ERRORS ARE PRESENT)

SCROLL  
DOWN  
TO "END"

END

# DATA ENTRY SHEET

GW-SCREEN  
Version 3.1; 02/04

Reset to  
Defaults

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION  
(enter "X" in "YES" box and initial groundwater conc. below)

YES

X

ENTER

Chemical  
CAS No.  
(numbers only,  
no dashes)

ENTER

Initial  
groundwater  
conc.,  
 $C_w$   
( $\mu\text{g/L}$ )

Chemical

127184

6.20E+01

Tetrachloroethylene

MORE  
↓

ENTER

Depth  
below grade  
to bottom  
of enclosed  
space floor,  
 $L_F$   
(cm)

ENTER

Depth  
below grade  
to water table,  
 $L_{WT}$   
(cm)

ENTER

SCS  
soil type  
directly above  
water table

ENTER

Average  
soil/  
groundwater  
temperature,  
 $T_s$   
( $^{\circ}\text{C}$ )

ENTER

Average vapor  
flow rate into bldg.  
(Leave blank to calculate)

$Q_{soil}$   
(L/m)

15

503

SIC

10

5

MORE  
↓

ENTER

Vadose zone  
SCS  
soil type  
(used to estimate  
soil vapor  
permeability)

OR

ENTER

User-defined  
vadose zone  
soil vapor  
permeability,  
 $k_v$   
( $\text{cm}^2$ )

ENTER  
Vadose zone  
SCS  
soil type

Lookup Soil  
Parameters

ENTER  
Vadose zone  
soil dry  
bulk density,  
 $\rho_b^V$   
( $\text{g/cm}^3$ )

ENTER  
Vadose zone  
soil total  
porosity,  
 $n^V$   
(unitless)

ENTER  
Vadose zone  
soil water-filled  
porosity,  
 $\theta_w^V$   
( $\text{cm}^3/\text{cm}^3$ )

SIC

1.00E-08

SIC

1.38

0.481

0.216

Enter either a vadose zone SCS soil type OR a user-defined permeability.

MORE  
↓

ENTER

Target  
risk for  
carcinogens,  
TR  
(unitless)

ENTER

Target hazard  
quotient for  
noncarcinogens,  
THQ  
(unitless)

ENTER

Averaging  
time for  
carcinogens,  
 $AT_C$   
(yrs)

ENTER

Averaging  
time for  
noncarcinogens,  
 $AT_{NC}$   
(yrs)

ENTER

Exposure  
duration,  
ED  
(yrs)

ENTER

Exposure  
frequency,  
EF  
(days/yr)

1.0E-06

1

70

25

25

250

Used to calculate risk-based

groundwater concentration.

DATA ENTRY SHEET

# CHEMICAL PROPERTIES SHEET

ABC

Diffusivity in air, $D_a$ (cm <sup>2</sup> /s)	Diffusivity in water, $D_w$ (cm <sup>2</sup> /s)	Henry's law constant at reference temperature, $H$ (atm-m <sup>3</sup> /mol)	Henry's law constant reference temperature, $T_R$ (°C)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, $T_B$ (°K)	Critical temperature, $T_C$ (°K)	Organic carbon partition coefficient, $K_{oc}$ (cm <sup>3</sup> /g)	Pure component water solubility, $S$ (mg/L)	Unit risk factor, URF (µg/m <sup>3</sup> ) <sup>-1</sup>	Reference conc., RfC (mg/m <sup>3</sup> )
7.20E-02	8.20E-06	1.84E-02	25	8,288	394.40	620.20	1.55E+02	2.00E+02	5.9E-06	6.0E-01

END



INTERMEDIATE CALCULATIONS SHEET

Source-building separation, $L_T$ (cm)	Vadose zone soil air-filled porosity, $\theta_a^V$ (cm <sup>3</sup> /cm <sup>3</sup> )	Vadose zone effective total fluid saturation, $S_{ie}$ (cm <sup>3</sup> /cm <sup>3</sup> )	Vadose zone soil intrinsic permeability, $k_i$ (cm <sup>2</sup> )	Vadose zone soil relative air permeability, $k_{rg}$ (cm <sup>2</sup> )	Vadose zone soil effective vapor permeability, $k_v$ (cm <sup>2</sup> )	Thickness of capillary zone, $L_{cz}$ (cm)	Total porosity in capillary zone, $n_{cz}$ (cm <sup>3</sup> /cm <sup>3</sup> )	Air-filled porosity in capillary zone, $\theta_{a,cz}$ (cm <sup>3</sup> /cm <sup>3</sup> )	Water-filled porosity in capillary zone, $\theta_{w,cz}$ (cm <sup>3</sup> /cm <sup>3</sup> )	Floor-wall seam perimeter, $X_{crack}$ (cm)
488	0.265	0.284	1.48E-09	0.844	ERROR	192.31	0.481	0.057	0.424	4,000

Bldg. ventilation rate, $Q_{building}$ (cm <sup>3</sup> /s)	Area of enclosed space below grade, $A_B$ (cm <sup>2</sup> )	Crack-to-total area ratio, $\eta$ (unitless)	Crack depth below grade, $Z_{crack}$ (cm)	Enthalpy of vaporization at ave. groundwater temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. groundwater temperature, $H_{TS}$ (atm-m <sup>3</sup> /mol)	Henry's law constant at ave. groundwater temperature, $H'_{TS}$ (unitless)	Vapor viscosity at ave. soil temperature, $\mu_{TS}$ (g/cm-s)	Vadose zone effective diffusion coefficient, $D_v^{eff}$ (cm <sup>2</sup> /s)	Capillary zone effective diffusion coefficient, $D_{cz}^{eff}$ (cm <sup>2</sup> /s)	Total overall effective diffusion coefficient, $D_T^{eff}$ (cm <sup>2</sup> /s)
1.69E+04	1.00E+06	4.00E-04	15	9,553	7.81E-03	3.36E-01	1.75E-04	3.74E-03	2.89E-05	7.25E-05

Diffusion path length, $L_d$ (cm)	Convection path length, $L_p$ (cm)	Source vapor conc., $C_{source}$ (µg/m <sup>3</sup> )	Crack radius, $r_{crack}$ (cm)	Average vapor flow rate into bldg., $Q_{soil}$ (cm <sup>3</sup> /s)	Crack effective diffusion coefficient, $D^{crack}$ (cm <sup>2</sup> /s)	Area of crack, $A_{crack}$ (cm <sup>2</sup> )	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, $\alpha$ (unitless)	Infinite source bldg. conc., $C_{building}$ (µg/m <sup>3</sup> )	Unit risk factor, URF (µg/m <sup>3</sup> ) <sup>-1</sup>	Reference conc., RfC (mg/m <sup>3</sup> )
488	15	2.08E+04	0.10	8.33E+01	3.74E-03	4.00E+02	1.30E+242	8.75E-06	1.82E-01	5.9E-06	6.0E-01

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

Indoor exposure groundwater conc., carcinogen (µg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (µg/L)	Final indoor exposure groundwater conc., (µg/L)
NA	NA	NA	2.00E+05	NA

MESSAGE SUMMARY BELOW:

END

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
2.6E-07	2.1E-04

**APPENDIX D**  
**COST ESTIMATE**

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

<b>Activity</b>	<b>Units</b>	<b>Unit Cost</b>	<b>Sub-Total</b>
<u>Consulting</u>			
VRP Application/Report			\$ 3,300.00
Additional Groundwater Delineation Investigation <sup>(1)</sup>			\$ 10,000.00
Semiannual Sampling/Progress Reports	4	\$ 2,500.00	\$ 10,000.00
File Deed Restriction (if required)			\$ 2,500.00
Voluntary CSR Report			\$ 6,800.00
			<hr/>
	sub-total		\$ 32,600.00
<u>Remediation</u>			
ISCO Remediation (if required)			\$ 34,000.00 -- \$ 46,000.00
			<hr/>
<b>Total Estimate Range</b>			<b>\$ 66,600.00 -- \$ 78,600.00</b>

Notes:

(1) Based on only two additional wells.

**APPENDIX E**  
**MILESTONE SCHEDULE**

**MILESTONE SCHEDULE  
PROFESSIONAL CLEANERS AND LINEN SERVICE  
2040 BEAVER RUIN ROAD  
NORCROSS, GEORGIA**

First Year																																																
	Month 1				Month 2				Month 3				Month 4				Month 5				Month 6				Month 7				Month 8				Month 9				Month 10				Month 11				Month 12			
Corrective Action Activity	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Groundwater Delineation Inv.																																																
Updated CSM/Final Remedial Plan								√																																								
Semiannual Sampling/Progress Reports																					√																											
File GW Restriction Covenant (if required)																						√																										
ISCO Injection (if required)																																																

Second Year																																																					
	Month 1				Month 2				Month 3				Month 4				Month 5				Month 6				Month 7				Month 8				Month 9				Month 10				Month 11				Month 12								
Corrective Action Activity	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4					
Semiannual Sampling/Progress Reports																						√																															
VRP Compliance Status Report																																																					



**EMA**

*Environmental Management Associates, LLC*

September 13, 2011

Reference No. 559

Ms. Kristen Ritter Rivera  
Georgia Environmental Protection Division  
Hazardous Sites Response Program  
Floyd Towers East, Suite #1462  
2 Martin Luther King Jr. Drive, SE  
Atlanta, Georgia 30334-9000

Dear Ms. Ritter Rivera:

Re: Voluntary Remediation Plan  
Professional Cleaners & Linen Service  
2040 Beaver Ruin Road, Norcross, GA

On behalf of Indian Trail Assoc, LTD, Environmental Management Associates, LLC (EMA) has enclosed one hard copy and two electronic versions of the Voluntary Remediation Plan (VRP) for the above-referenced site. The VRP checklist and application fee are included in Appendix A of the VRP Report. We certify that to the best of our knowledge that the electronic copies are complete, identical in content to the paper copy, and virus free.

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

Yours truly,

Environmental Management Associates, LLC

Brent Cortelloni, CHMM

Encl.

cc: Craig Harper - Indian Trail Assoc., LTD

# RELEASE NOTIFICATION/REPORTING FORM



Mail to: GEORGIA ENVIRONMENTAL PROTECTION DIVISION  
Hazardous Sites Response Program  
Suite 1462, Floyd Tower East  
2 Martin Luther King Jr. Drive, SE  
Atlanta, Georgia 30334-9000

RECEIVED  
Georgia EPD  
DEC 15 2010  
Hazardous Sites  
Response Program

1. The information provided in this form is for:
- ☐ Initial Release Notification  
☒ Supplemental Notification

## PART I -- PROPERTY INFORMATION

(Please type or print legibly)

2	EPA ID NUMBER (if applicable)	Not applicable				
3	Tax Map and Parcel ID Number:	17-0230-0007-007-4	Acreage	6.97		
4	Site or Facility Name	Moores Mill Village Apartments				
5	Site Street Address	2453 Coronet Way NW				
6	Site City	Atlanta	County	Fulton	Zip	30318
7	Property Owner	Peppermill Partners, L.P.				
8	Property Owner Mailing Address	235 Peachtree Street NE, North Tower, Suite 2000 - 20 <sup>th</sup> Floor				
9	Property Owner City	Atlanta	State	GA	Zip	30303
10	Property Owner Telephone No.	404-420-1607				
11	Site Contact Person	Ms. Tayani Suma	Title	Dir. Housing Development		
12	Site Contact Company Name	Atlanta Neighborhood Development Partnership, Inc.				
13	Site Contact Mailing Address	235 Peachtree Street NE, North Tower, Suite 2000 - 20 <sup>th</sup> Floor				
14	Site Contact City	Atlanta	State	GA	Zip	30303
15	Site Contact Telephone No.	404-420-1607				
16	Facility Operator Contact Person	Ms. Tayani Suma	Title	Dir. Housing Development		
17	Facility Operator Company Name	Atlanta Neighborhood Development Partnership, Inc.				
18	Facility Operator Mailing Address	235 Peachtree Street NE, North Tower, Suite 2000 - 20 <sup>th</sup> Floor				
19	Facility Operator City	Atlanta	State	GA	Zip	30303
20	Facility Operator Telephone No.	404-420-1607				

**21. CERTIFICATION** --I certify under penalty of law that I am the owner of the real property described in this Release Notification and I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

JOHN O'CALLAGHAN  
NAME (Please type or print)  
  
SIGNATURE

PRESIDENT & CEO  
TITLE  
12-9-2010  
DATE



## PART II -- RELEASE INFORMATION

Page 2 of \_\_\_\_

***Please provide the following information for EACH release at the site. If additional space is needed to answer any of the following questions, attach additional pages, as necessary.***

- 1. Source of this release (i.e., drums, tanks, spills, wastepile etc.). Provide specific information on the suspected or known source of the release, including the source of this information:**

The suspected source of the release is a former dry cleaning business located at 1936 Moores Mill Road, adjacent to the west of the site. This facility formerly operated as a full-service dry cleaner for approximately 23 years (1968-91). The specific vessel from which the release occurred on the facility (drum, tank, etc.) is not known.

- 2. Release date(s) and any known information about the history of the release, including the physical state of the material (solid, powder/ash, liquid/gas, sludge) and the quantity of material released (lbs, cubic yards, etc.):**

The release date(s) and history of the release are unknown. The physical state and quantity of the released material are also unknown, but since the assumed source property is a dry cleaner then based on the nature of dry cleaning operations, the physical state of the released material is assumed to be a liquid.

- 3. Describe those actions that have been taken to investigate, cleanup or otherwise remediate this release (e.g., removal of source of contamination; soil or water sampling performed; and monitoring wells installed and sampled).**

Four permanent groundwater monitoring wells were installed at the site (three additional borings were advanced at the site, but only one of these produced groundwater). Soil and groundwater samples were collected from the site. Site soil samples did not indicate the presence of chlorinated solvents in site soil, but chlorinated solvents were identified in site groundwater. Shallow groundwater flow maps prepared for the site indicate that the former dry cleaning business and assumed source is located upgradient from the site.

- 4. Access to the area affected by the release. Check the appropriate box:**

- ☒ Inaccessible: A 24-hour surveillance system, or a completely closed barrier or fence to prevent entry.  
☐ Limited Access: Less than 24-hour surveillance system, and/or a barrier or fence that is partially open.  
☐ Unlimited Access: No surveillance, and no barrier or fence.

If the site is inaccessible or has limited access, then describe site surveillance systems, fences, security personnel or other barriers that would restrict access to the release.

Although no compounds were identified in site soils, the site is surrounded by a fence with a gate. However, the site is an apartment complex, so residents live within the fenced area.

- 5. For soil releases, indicate the type of material covering this release, by checking the appropriate box below.**

- ☐ A permanent or otherwise maintained, essentially impenetrable non-earthen material such as concrete or asphalt  
☐ An engineered and maintained earthen material or compacted fill or a high density synthetic material  
☐ Loose earthen fill or native soil  
☐ No cover  
☒ Other

**Describe the type and thickness of the material covering the contaminated soil or wastes.**

Not applicable - no compounds identified in site soil.

## PART II -- RELEASE INFORMATION

(Continued)

Page 3 of       

6. Indicate the approximate distance from the edge of the area affected by the release to the nearest residence, playground, day care, school or nursing home.

☒ Less than 300 feet      ☐ 1001 to 3000 feet      ☐ Greater than 1 mile  
☐ 301 to 1000 feet      ☐ 3001 to 5280 feet

Provide the name and address of the nearest residence, playground, day care, school or nursing home.

Name: Site is an apartment complex; residents are located on-site

Address: 2453 Coronet Way NW, Atlanta, GA

7. Indicate the distance between the area affected by the release and the nearest drinking water well (including wells located on the site).

☐ Less than 0.5 miles      ☒ 1 to 2 miles      ☐ Greater than 3 miles  
☐ 0.5 to 1 mile      ☐ 2 to 3 miles

Provide the name of the property owner and address of the location of the closest drinking water well.

Name: Wells were not identified within one mile of the site

Address: A search for wells located greater than one mile away from the site was not conducted.

8. Is there any evidence to suspect that a person or a sensitive environment has been exposed to this release?

☐ Yes      ☒ No

If yes, provide details on the potentially affected humans or sensitive environments.

## REQUIRED ATTACHMENTS

### 9. SITE SUMMARY

A. Attach a summary (no longer than one page) that gives a general description of the property, the areas affected by the release both within and beyond the property boundaries, and any actions taken to investigate, clean up or otherwise remediate the property. The summary shall include a description of the property boundaries of the site and adjacent properties as well as a detailed description of the nature and known or estimated extent of the area of contamination. Describe any additional relevant information concerning the nature of the release. In addition to the one page summary, other information concerning the property may also be attached.

B. Attach a site map that shows known or suspected sources as well as the locations of all samples collected at the site. The site map should include outlines of buildings as well as covered ground areas (e.g., parking lots or other paved areas). A legend should be provided to explain any symbols used on the map.

### 10. U.S.G.S. Topographic Map

Along with this form, you **MUST** submit an original U.S.G.S. topographical map (1:24000) with the geographic center of the site clearly marked. U.S.G.S. topographic maps are available for purchase on-line at <http://ggsstore.dnr.state.ga.us>.

### PART III -- SOIL RELEASE INFORMATION

Page \_\_\_\_ of \_\_\_\_

***Please provide the following information for EACH regulated substance released to the soil at the site and submit the laboratory analytical sheets for all samples analyzed from the site. Use additional sheets if necessary.***

[illegible]

## PART IV -- GROUNDWATER RELEASE INFORMATION

Page \_\_\_\_ of \_\_\_\_

***Please provide the following information for EACH regulated substance released to the groundwater at the site and submit the laboratory analytical sheets for all samples analyzed from the site. Use additional sheets if necessary.***

Regulated Substance	CAS Registry Number	Highest Detected Concentration (Specify Units)	Sample Depth Below Ground Surface (Feet)
Cis-1,2-dichloroethene	156-59-2	1,700 ug/L	43
Tetrachloroethene	127-18-4	1,700 ug/L	43
Trans-1,2-dichloroethene	156-60-5	30 ug/L	43
Trichloroethene	79-01-6	830 ug/L	43

**Site Summary**  
**Moore's Mill Village Apartments**  
**2453 Coronet Way, NW**  
**Atlanta, Fulton County, Georgia**

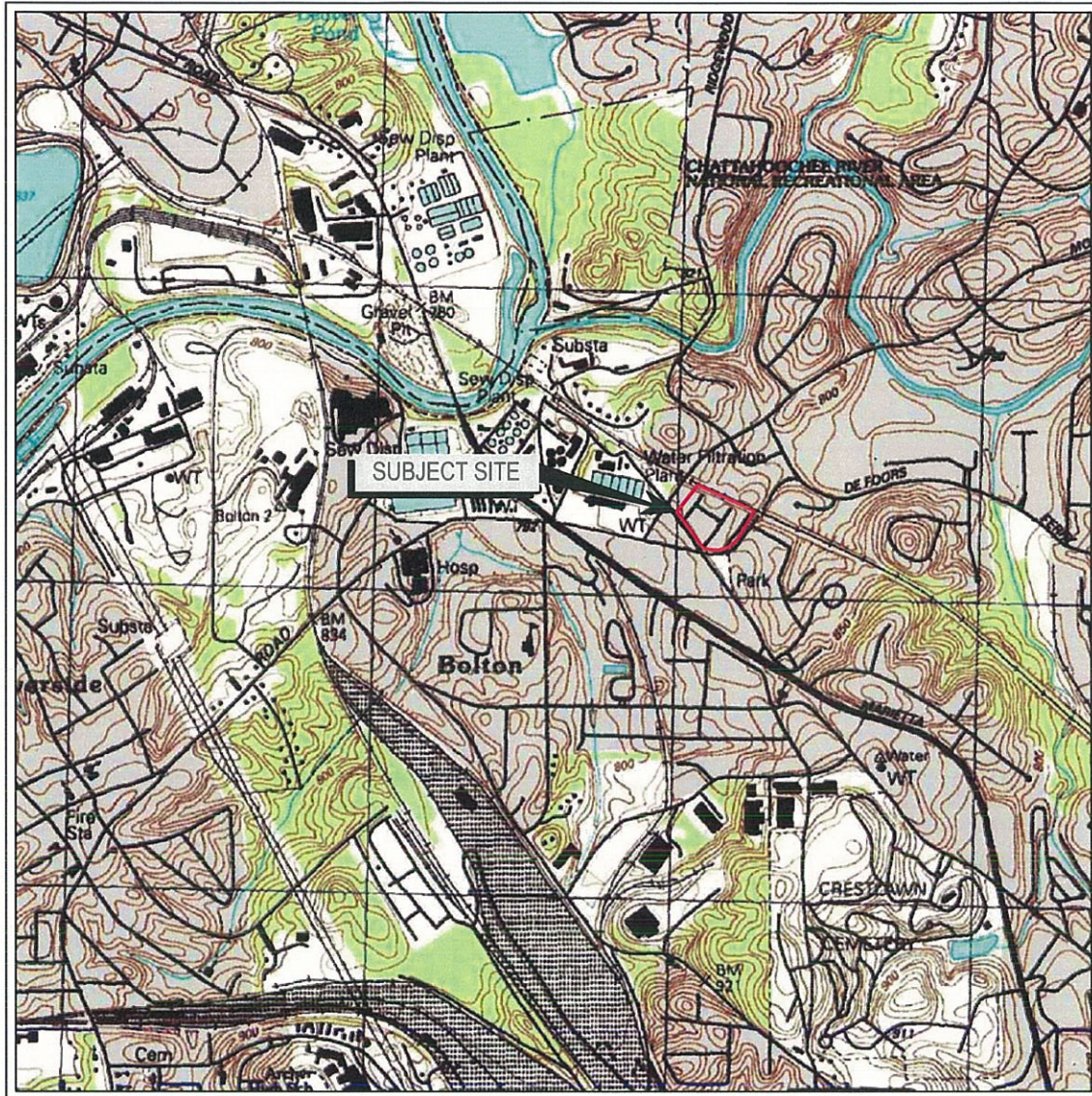
Due to a pending property transaction involving the site, an environmental site assessment (ESA) was conducted by Terracon Consultants, Inc. (Terracon) in November 2009. Available information indicates that the approximately 6.97-acre site (Fulton County Tax Parcel ID 17-0230-00007-007-4) was wooded and single-family residential land until the early 1960s, when the apartment buildings currently located on the site were constructed. Available information at the time the ESA was performed indicated that a dry cleaner (Moore's Mill Cleaners, 1936 Moore's Mill Road) was formerly located adjacent to the west of the site from approximately 1968 to 1991 (23 years). Based upon the proximity of the former Moore's Mill Cleaners, the duration of operations there, and other historical concerns, Terracon conducted a subsurface investigation at the site.

Terracon conducted limited site investigations (LSIs) at the site in June and September 2010. Soil and groundwater samples were collected for analysis, and shallow groundwater flow direction was determined. Two soil borings were advanced at the site in June 2010 at locations along the western property boundary adjacent to the former Moore's Mill Cleaners using direct-push (Geoprobe™) drilling equipment. Only one of the two borings advanced in June 2010 yielded groundwater, but chlorinated solvents were identified in that groundwater sample. Subsequent investigation was performed in September 2010 to delineate the presence of chlorinated solvents in groundwater. Five soil borings were advanced, and one of the borings was converted to a temporary monitoring well while the others were converted to permanent monitoring wells. Three permanent wells were installed along the western property boundary and a fourth in the central portion of the site. The temporary well installed did not produce water. Borings for permanent wells were advanced to depths ranging from 50 to 55 feet below ground surface (bgs) with hollow-stem auger drilling equipment. The temporary well boring was refused at 39 feet bgs. Analytical results from soil samples collected did not indicate the presence of detectable concentrations of volatile organic compounds (VOCs) or polynuclear aromatic hydrocarbons (PAHs). Groundwater analytical results indicated the presence of detectable concentrations of chlorinated solvents in two of four permanent wells. The horizontal extent of chlorinated solvent impact on site was delineated; however, the chlorinated solvent plume extends off-site downgradient of the site's northwest corner and downgradient horizontal delineation of the off-site chlorinated solvent plume was not performed.

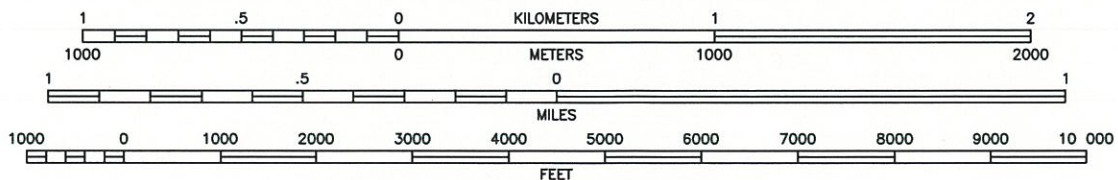
Shallow groundwater flow at the site was measured to the northeast. Based on the fact that the regulated substances identified in site groundwater were not identified in site soils (no source area was identified) and the presence of the adjacent off-site former Moore's Mill Cleaners, Terracon concludes that the compounds identified in groundwater originated from one or more offsite sources.

Terracon conducted a potable water well survey within a one-mile radius of the site. No wells were identified. Terracon did not search areas greater than one mile from the site. Preliminary Reportable Quantities Screening Method (RQSM) site screening was performed by Terracon, and RQSM results indicated that the site also would not be listed on the Hazardous Sites Inventory (HSI).





SCALE 1:24 000



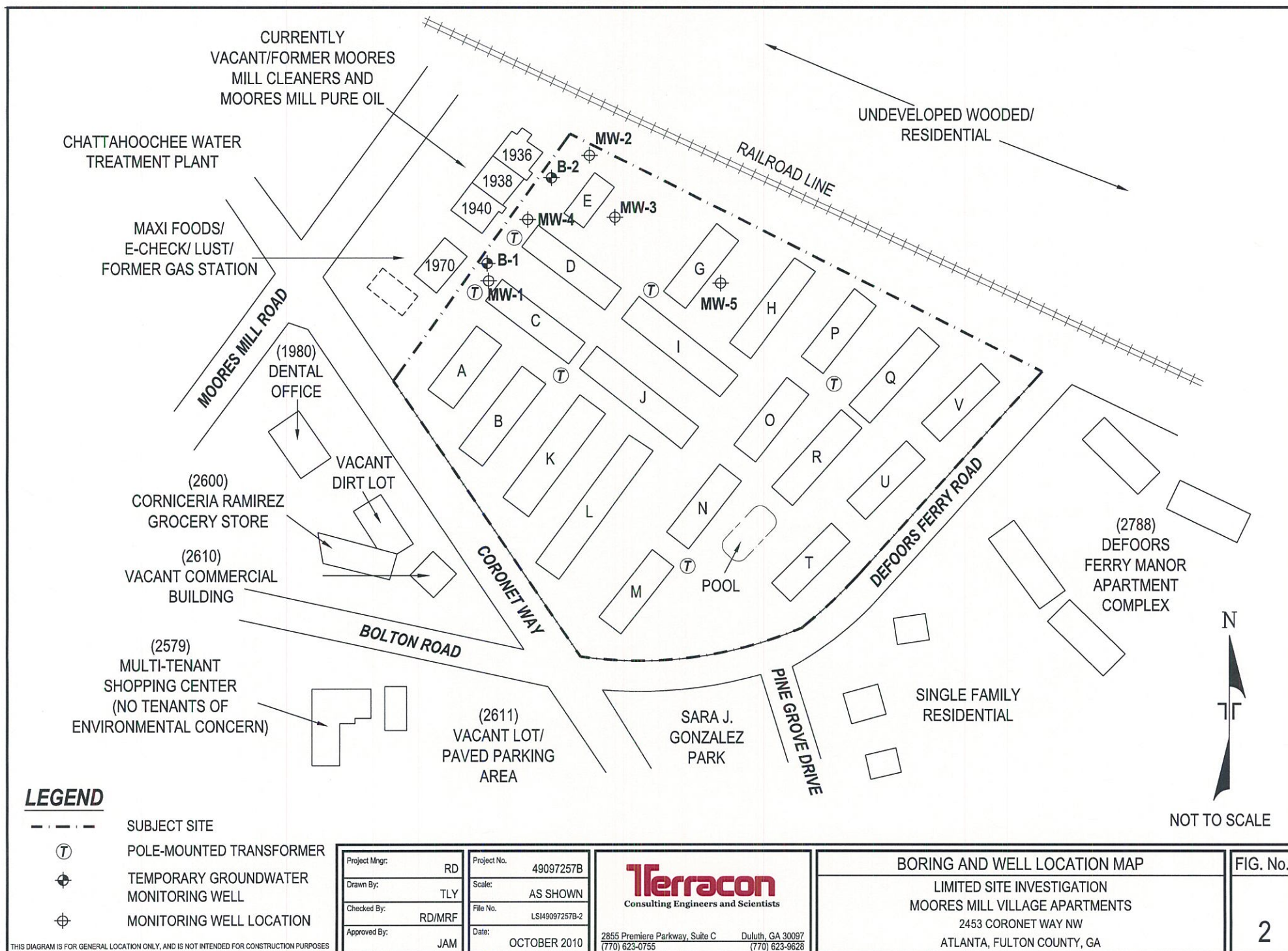
CONTOUR INTERVAL 10 FEET  
NATIONAL GEODETIC VERTICAL DATUM OF 1929  
TOPO LINES REPRESENT 10-FOOT CONTOURS

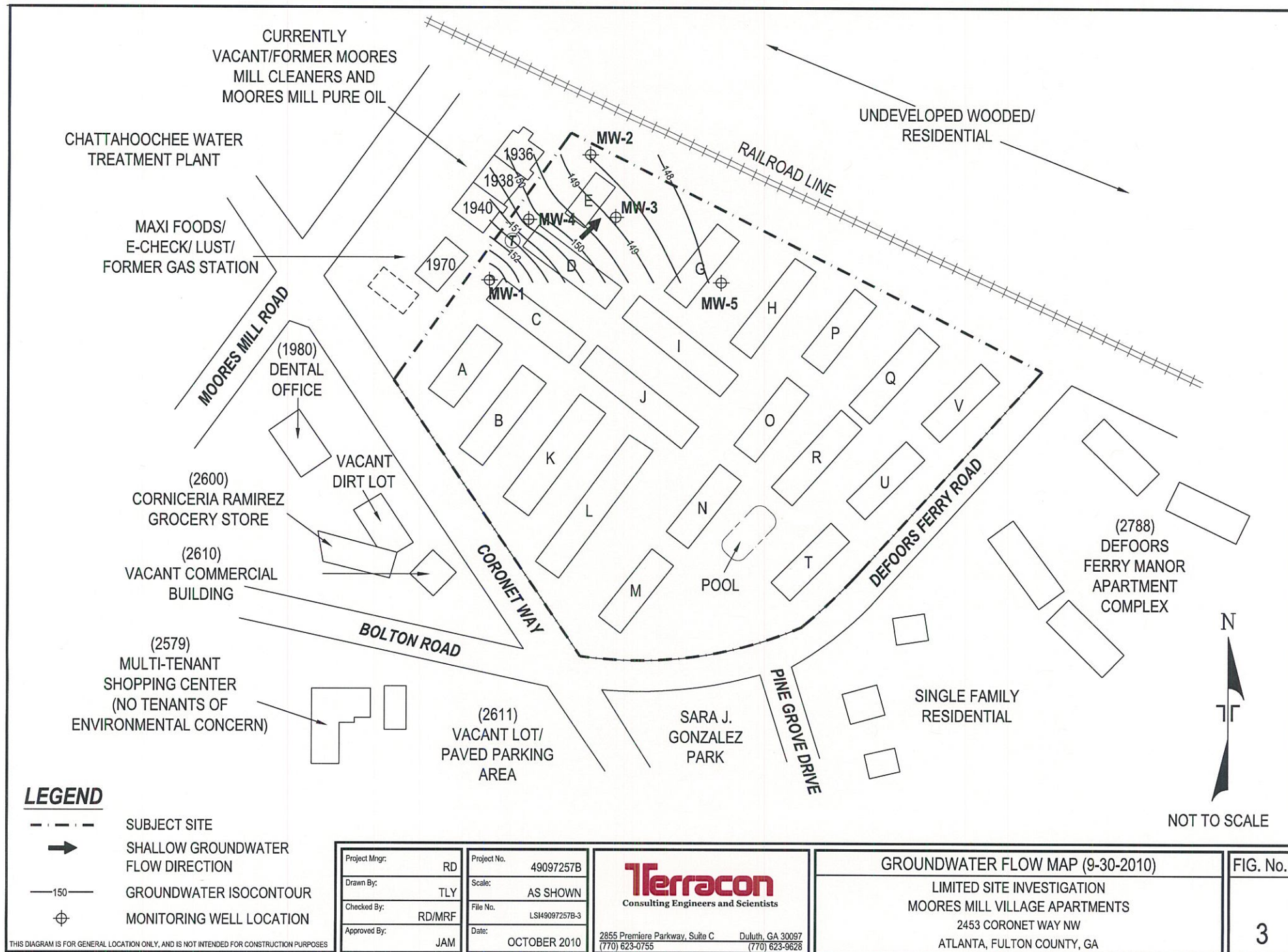
QUADRANGLE  
NORTHWEST ATLANTA, GA  
1997  
7.5 MINUTE SERIES (TOPOGRAPHIC)



Project Mngr: RD	Project No. 49097257B	 <b>Terracon</b> Consulting Engineers and Scientists 2855 Premiere Parkway, Suite C Duluth, GA 30097 (770) 623-0755 (770) 623-9628	TOPOGRAPHIC VICINITY MAP	FIG. No.
Drawn By: TLY	Scale: AS SHOWN		LIMITED SITE INVESTIGATION	1
Checked By: RD/MRF	File No. LSI49097257B-1		MOORES MILL VILLAGE APARTMENTS	
Approved By: JAM	Date: OCTOBER 2010		2453 CORONET WAY NW	
			ATLANTA, FULTON COUNTY, GA	









# Georgia Department of Natural Resources

2 Martin Luther King, Jr. Dr, Suite 1462 East Atlanta, Georgia 30334-9000

**Reply To:**

Response and Remediation Program  
2 Martin Luther King, Jr. Drive, S.E.  
Suite 1462, East Tower  
Atlanta, Georgia 30334-9000  
Office 404/657-8600 Fax 404-657-0807

Mark Williams, Commissioner  
Environmental Protection Division  
F. Allen Barnes, Director  
Land Protection Branch  
Mark Smith, Branch Chief

February 15, 2011

**FILE COPY**

Mr. John O'Callaghan, President and CEO  
Peppermill Partners, L.P.  
235 Peachtree Street NE, North Tower, Suite 2000-20<sup>th</sup> Floor  
Atlanta, GA 30303

Release Notification  
Moores Mill Village Apartments  
2453 Coronet Way NW  
Atlanta, GA 30318

Dear Mr. O'Callaghan:

Pursuant to the Rules for Hazardous Site Response, specifically Rule 391-3-19-.05(1) "Listing on the Hazardous Site Inventory," the Environmental Protection Division (EPD) has evaluated the above referenced property to determine whether a release exceeding a reportable quantity has occurred.

Based upon the information available to EPD at the time this evaluation was done, including your notification dated December 9, 2010, EPD has no reason to believe that a release exceeding a reportable quantity has occurred at this property. The property was evaluated as having unlimited access, residential use with the nearest drinking water well located greater than one miles from the site. Enclosed is a copy of our inspection report, recommendation memorandum, and Reportable Quantities Screening Method (RQSM) score sheet that summarize the conditions used to evaluate this property. Based on this information, this property will not be listed on the Hazardous Site Inventory.

As provided for in Section 391-3-9-.04(4) of the Rules, the owner of the property must notify EPD if they become aware of any information not provided in the notification that should have been provided, or if they become aware of any information or events that suggest changes may have occurred in any of the conditions referenced in the attached documents. Please provide a copy of this letter and the attached documents to any person to which title or an interest in this property is transferred.

Please direct questions regarding this matter to Mr. Yue Han of the Response and Remediation Program at (404) 657-8600.

Sincerely



David Brownlee  
Unit Coordinator  
Response and Remediation Program

c: Tayani Suma, Atlanta Neighborhood Development Partnership

File: Non-HSI (2453 Coronet Way NW, Atlanta, Fulton County)  
Encl.: Release Notification form  
RQSM Score sheet  
Recommendation Memorandum


# Georgia Department of Natural Resources

2 Martin Luther King, Jr. Drive, Suite 1462 East, Atlanta, Georgia 30334

Mark Williams, Commissioner  
Environmental Protection Division  
F. Allen Barnes, Director  
Land Protection Branch  
Mark Smith, Branch Chief

February 9, 2011

## TRIP REPORT

SITE NAME: Moores Mill Village Apartments  
LOCATION: 2453 Coronet Way NW, Fulton County, GA  
TRIP BY: Yue Han, Environmental Engineer 


DATE OF TRIP: January 28, 2011  
REFERENCES: Moores Mill Village Apartments

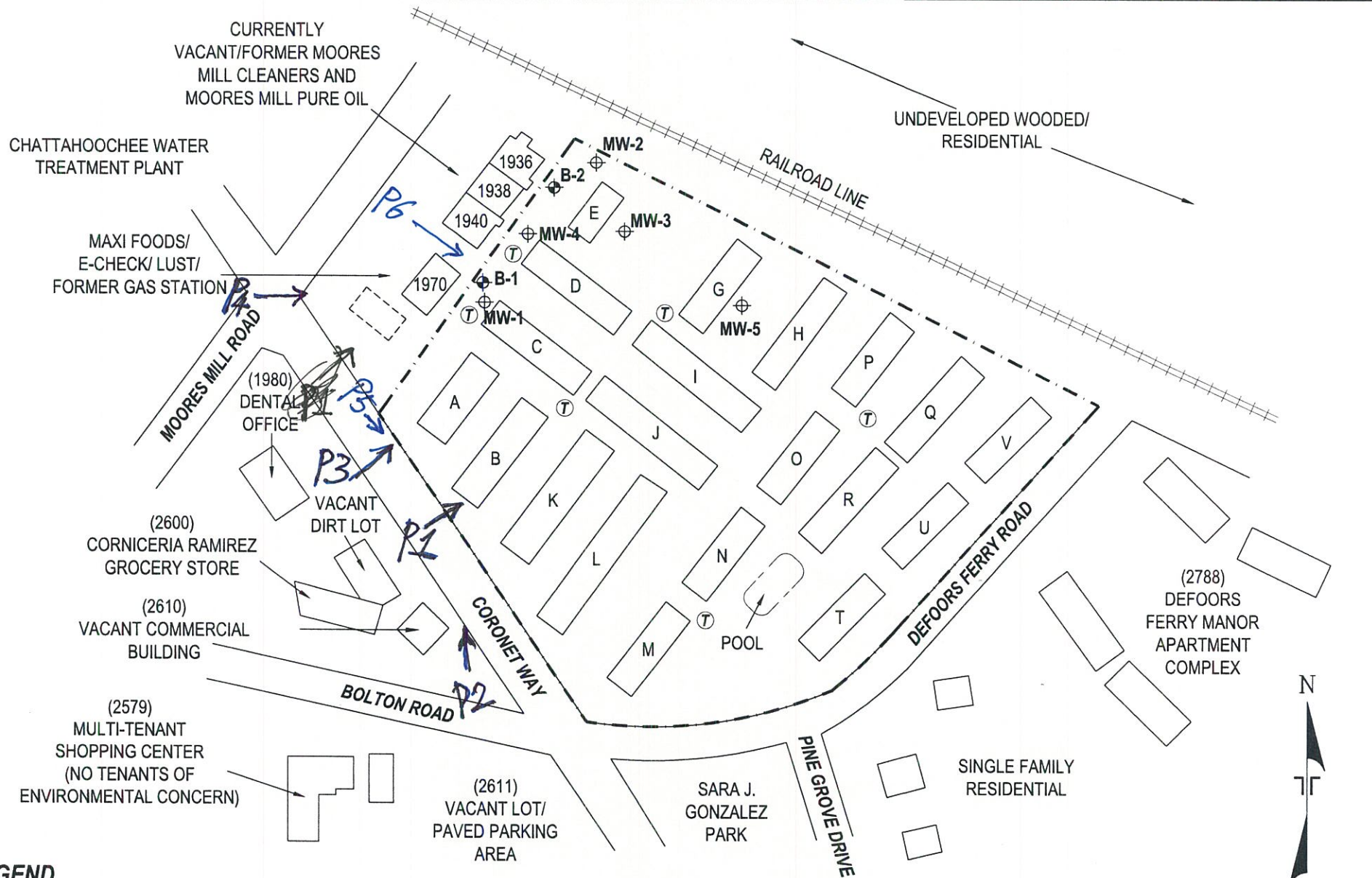
### BACKGROUND:

Peppermill Partners, L.P. submitted a release notification for Moores Mill Village Apartments site on December 9, 2010. The purpose of this trip was to verify the information provided in the RN and collect information needed to complete EPD's evaluation of the site.

### SITE INSPECTION:

I arrived at the site at around 2 pm on January 28, 2011. I walked around the site and took several pictures. I observed a small opening gate of the fence as shown in picture 6. I then conducted a windshield well survey in one mile areas of the site. No drinking water wells were found during my survey.

CONCLUSIONS: None  
PHOTOGRAPHS: Six  
REVIEWED BY: David Brownlee   
ATTACHMENTS: One Figure Showing Site Plan



# LEGEND

- SUBJECT SITE
- ⊕ POLE-MOUNTED TRANSFORMER
- ⊕ TEMPORARY GROUNDWATER MONITORING WELL
- ⊕ MONITORING WELL LOCATION

Project Mng:	RD	Project No.	49097257B
Drawn By:	TLY	Scale:	AS SHOWN
Checked By:	RD/MRF	File No.	LSH49097257B-2
Approved By:	JAM	Date:	OCTOBER 2010

**Terracon**  
Consulting Engineers and Scientists

2855 Premiere Parkway, Suite C Duluth, GA 30097  
(770) 623-0755 (770) 623-9628

BORING AND WELL LOCATION MAP  
LIMITED SITE INVESTIGATION  
MOORES MILL VILLAGE APARTMENTS  
2453 CORONET WAY NW  
ATLANTA, FULTON COUNTY, GA

FIG. No.  
2

THIS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

NOT TO SCALE





Figure 1 Front view of Moores Mill Village Apartments towards northeast



Figure 2 View of Moores Mill Village Apartments site towards northwest on Coronet Way





Figure 3 View of the front gate for Moores Mill Village Apartments towards northeast



Figure 4 View of northwestern corner of Moores Mill Village Apartments towards northeast





Figure 5 View of Moores Mill Village Apartments toward southeast along Coronet Way



Figure 6 A small opening gate of the fence towards southeast



**HAZARDOUS WASTE MANAGEMENT BRANCH  
HAZARDOUS SITES RESPONSE PROGRAM  
REPORTABLE QUANTITIES SCREENING METHOD**

SCORED BY:	Yue Han <i>YHC</i>	DATE:	2/14/2011
GROUNDWATER PATHWAY SCORE:	6.50	CLEANUP HISTORY: <input checked="" type="checkbox"/> NO CLEANUP INITIATED AT SITE <input type="checkbox"/> SOME CLEANUP UNDERWAY AT SITE <input type="checkbox"/> CLEANUP HAS BEEN COMPLETED	
ON-SITE PATHWAY SCORE:	19.75		

EPA ID NUMBER:	N/A				
SITE OR FACILITY NAME:	Moores Mill Village Apartments				
SITE STREET ADDRESS:	2453 Coronet Way NW				
SITE CITY:	Atlanta	SITE COUNTY:	Fulton	Zip	30318

IF SITE SCORES ABOVE THE THRESHOLD VALUE FOR EITHER PATHWAY, PROVIDE THE FOLLOWING INFORMATION. ALL REGULATED SUBSTANCES DETECTED AT THE SITE SHOULD ALSO BE LISTED ON PAGE 2, EXCLUDING THOSE USED TO SCORE THE SITE.

PROPERTY OWNER:					
MAILING ADDRESS:					
CITY:		STATE:		ZIP CODE:	
TELEPHONE NUMBER:					
SITE CONTACT PERSON:					
COMPANY NAME:					
MAILING ADDRESS:					
CITY:		STATE:		ZIP CODE:	
TELEPHONE NUMBER:					
SITE OWNER/OPERATOR:					
COMPANY NAME:					
MAILING ADDRESS:					
CITY:		STATE:		ZIP CODE:	
TELEPHONE NUMBER:					

## LIST OF OTHER REGULATED SUBSTANCES AT THE SITE

THIS TABLE SHOULD ONLY BE COMPLETED IF THE SITE IS BEING LISTED ON THE HSI. ALL REGULATED SUBSTANCES AT THE SITE SHOULD BE PRESENTED ON THIS TABLE, EXCEPT THOSE USED TO SCORE THE SITE. NOTE THE CAS NUMBER FOR THE REGULATED SUBSTANCE, AND WHETHER THE SUBSTANCE IS PRESENT IN SOIL AND/OR GROUNDWATER.

[illegible]



## GROUNDWATER PATHWAY

HAS A RELEASE TO GROUNDWATER OCCURRED?		SCORE	
<b>Known (45)</b> Suspected (10)      Potential Future (5) (If 45, go to D)		A.	45
<b>SUSCEPTIBILITY RATING:</b> Higher (6)      Average (3)      Lower (0)		1B.	
<b>PHYSICAL STATE:</b> Stable Solid (0)      Unstable Solid (1) Powder/Ash (2)      Liquid/Gas/Sludge (3)		2B.	
<b>CONTAINMENT:</b> Very Good (0)    Good (1)      Fair (2)      Poor (3)		C.	
<b>REGULATED SUBSTANCE:</b>	tetrachloroethene CAS# 127-18-4	1D.	
<b>TOXICITY:</b> None (1)    Low (1)      (2)      (4)      (8)      (16)		2D.	4
<b>QUANTITY:</b> (1)    (2)    (3)    (4)    (5)    (6)    (7)    (8)		3D.	4
<b>EXPOSURE TO GROUNDWATER RELEASE:</b> (choose only one) <div style="margin-top: 5px;">                     Known release ≥ MCL and known human exposure ≥ MCL (25)                      Known release ≥ MCL and suspected human exposure (20)                      Known release, no MCL exists, and known human exposure (18)                      Known release ≥ MCL, and known human exposure &lt; MCL (15)                      Known release, no MCL exists, and human exposure is suspected (12)                      Suspected release and human exposure is suspected (8)                      Known release ≥ MCL, no human exposure is suspected (4)                      Known release, no MCL exists, and no human exposure is suspected (3)                      Suspected release, no human exposure is suspected (2)                      Potential future release (1)                      Known release less than MCL (0)                 </div>		1E.	4
<b>DISTANCE TO WELL OR SPRING:</b> <1/2 mile (16)    1/2 - 1 mile (9)    1 - 2 miles (4)    2 - 3 miles (1)    > 3 miles (0)		2E.	4
<b>GROUNDWATER PATHWAY SCORE:</b>		<b>6.50</b>	

$$S_{gw} = M \times (2D + 3D) \times (1E + 2E) / 442.8$$

where  $M = A + [(1B + 2B) \times C]$

If A = 45, then M = 45

If 2D is unknown, then 2D = 4

If 3D is unknown, then 3D = 4

If 1E includes known or suspected human exposure, then  $1E + 2E = 16$

**If 1E = 0, then 2E = 1**

Note: The denominator of 442.8 normalizes the groundwater score to a value between 0 and 100.

## ON-SITE EXPOSURE PATHWAY

<b>ACCESS TO THE SITE:</b>		A.	4
Inaccessible (0)      Limited Access (2) <i>Unlimited Access (4)</i>			
<b>HAS THERE BEEN A RELEASE?</b>		B.	15
Yes (25) <i>Suspected (15)</i> No (0)			
<b>CONTAINMENT:</b>		C.	5
Soil Releases (very good to poor)      (0) (1) (2) (3) (4) (5)			
Aboveground Releases:      (0) (1) (2) (3)			
<b>REGULATED SUBSTANCE:</b>	tetrachloroethene CAS# 127-18-4	1D.	
<b>TOXICITY:</b>		2D.	4
None (1)      Low (1) (2) (4) (8) (16)			
<b>QUANTITY:</b>		3D.	4
(1) (2) (3) (4) (5) (6) (7) (8)			
<b>DISTANCE TO NEAREST RESIDENT INDIVIDUAL:</b>		1E.	8
<300' (8)      301-1000' (6)      1001-3000' (4)      3001-5280' (2)      > 1 Mile (1)			
<b>IS THERE AN ON-SITE SENSITIVE ENVIRONMENT?</b>		2E.	0
Yes (1)      No (0)			
<b>ON-SITE EXPOSURE PATHWAY SCORE:</b>		<b>19.75</b>	

$$So = A \times (B + C) \times (2D + 3D) \times (1E + 2E) / 259.2$$

If A or B = 0, then So = 0

If 2D is unknown, then 2D = 4

If 3D is unknown, then 3D = 4

Note: The denominator of 259.2 normalizes the score to a value between 0 and 100

Calculated and Pri 2/14/11 2:48 PM

S:\RDRIVE\YUEH\ReleaseNotification\RQSM\Moore


# Georgia Department of Natural Resources


2 Martin Luther King, Jr. Drive, S.E., Floyd Towers East, Suite 1462, Atlanta, Georgia 30334

Mark Williams, Commissioner  
Environmental Protection Division

F. Allen Barnes, Director  
Land Protection Branch  
Mark Smith

## MEMORANDUM

**TO:** David Brownlee, Unit Coordinator 

**FROM:** Yue Han, Compliance Officer 

**SUBJECT:** Release Notification  
Moores Mill Village Apartments  
2453 Coronet Way NW  
Atlanta, Georgia 30318

**DATE:** February 14, 2011

### BACKGROUND:

A Release Notification (RN) dated December 9, 2010 was received by EPD for the above referenced site located at 2453 Coronet Way NW, Atlanta, Fulton County, Georgia. The RN reported the detection of tetrachloroethene (PCE), trichloroethene (TCE), and cis-1,2-dichloroethene (cis-1,2-DCE) in groundwater samples at concentrations exceeding their MCLs. Trans-1,2-dichloroethene (trans-1,2-DCE) was detected too but its concentration was below its MCL. The site was scored using Reportable Quantities Screening Method (RQSM).

### GROUNDWATER PATHWAY:

The groundwater exposure pathway for this site was scored as having a known release of PCE to groundwater based on its presence in groundwater at the site. The amount of release is unknown and the toxicity value for PCE is 4. The concentration of PCE detected in groundwater exceeds its MCL. No drinking water well was identified within one mile of the site. There is no human exposure suspected. The resulting score is 6.50, which is less than threshold value of 10.

### ON-SITE PATHWAY:

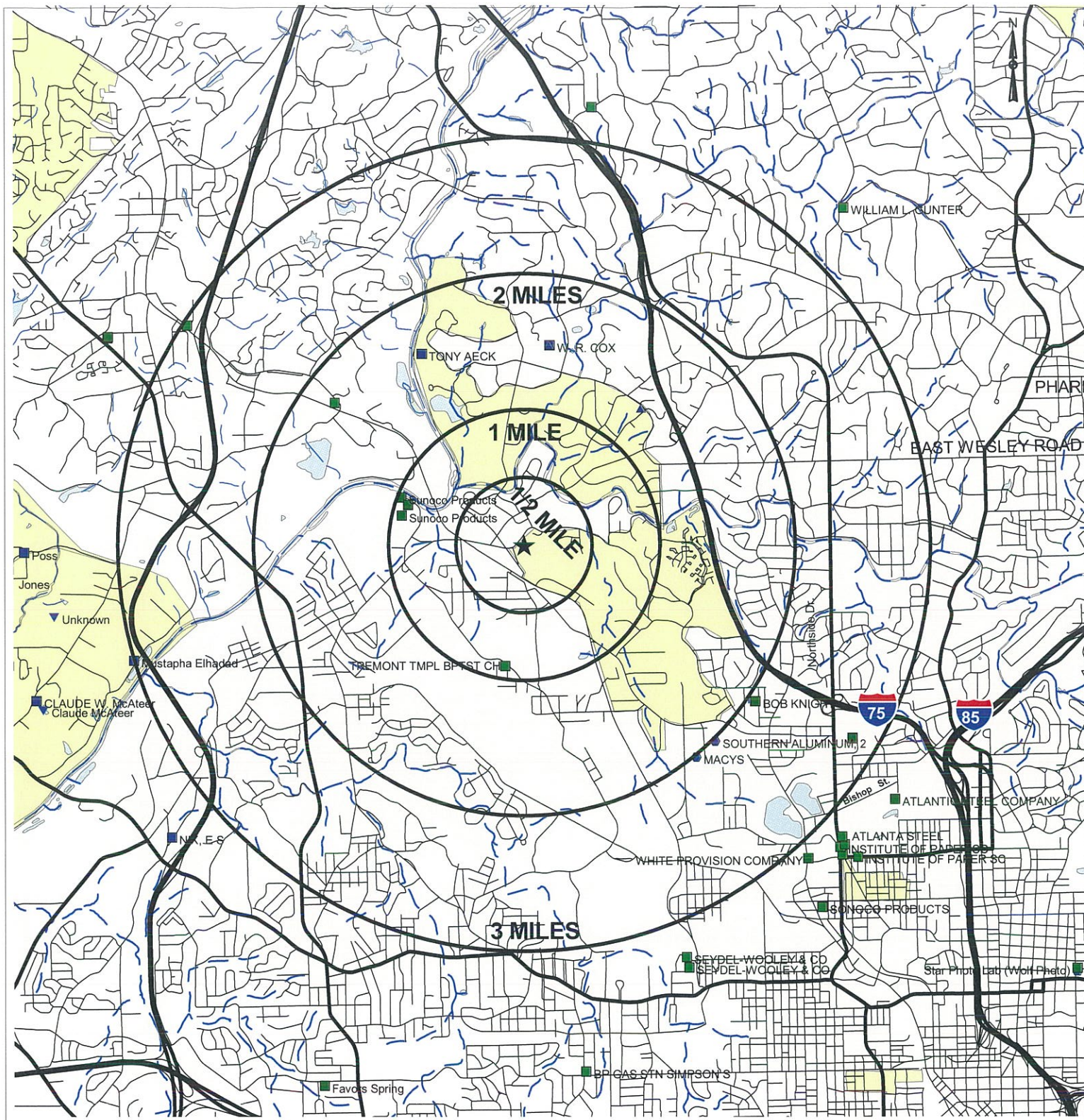
The site has unlimited access. The on-site pathway for the site was scored as having a suspected release of PCE to soil due to its detection in groundwater at the site. The amount of release is unknown and the toxicity value for PCE is 4. The containment value was chosen as 5 as some portions of the site is covered with native soil. There are residential houses at the site. The resulting score is 19.75, less than threshold value of 20.

### RECOMMENDATION:

Based on the above scores, this site is not recommended for listing on the Hazardous Site Inventory.

Groundwater Pathway Score/Threshold: 6.50/10  
Onsite Exposure Pathway Score/Threshold: 19.75/20





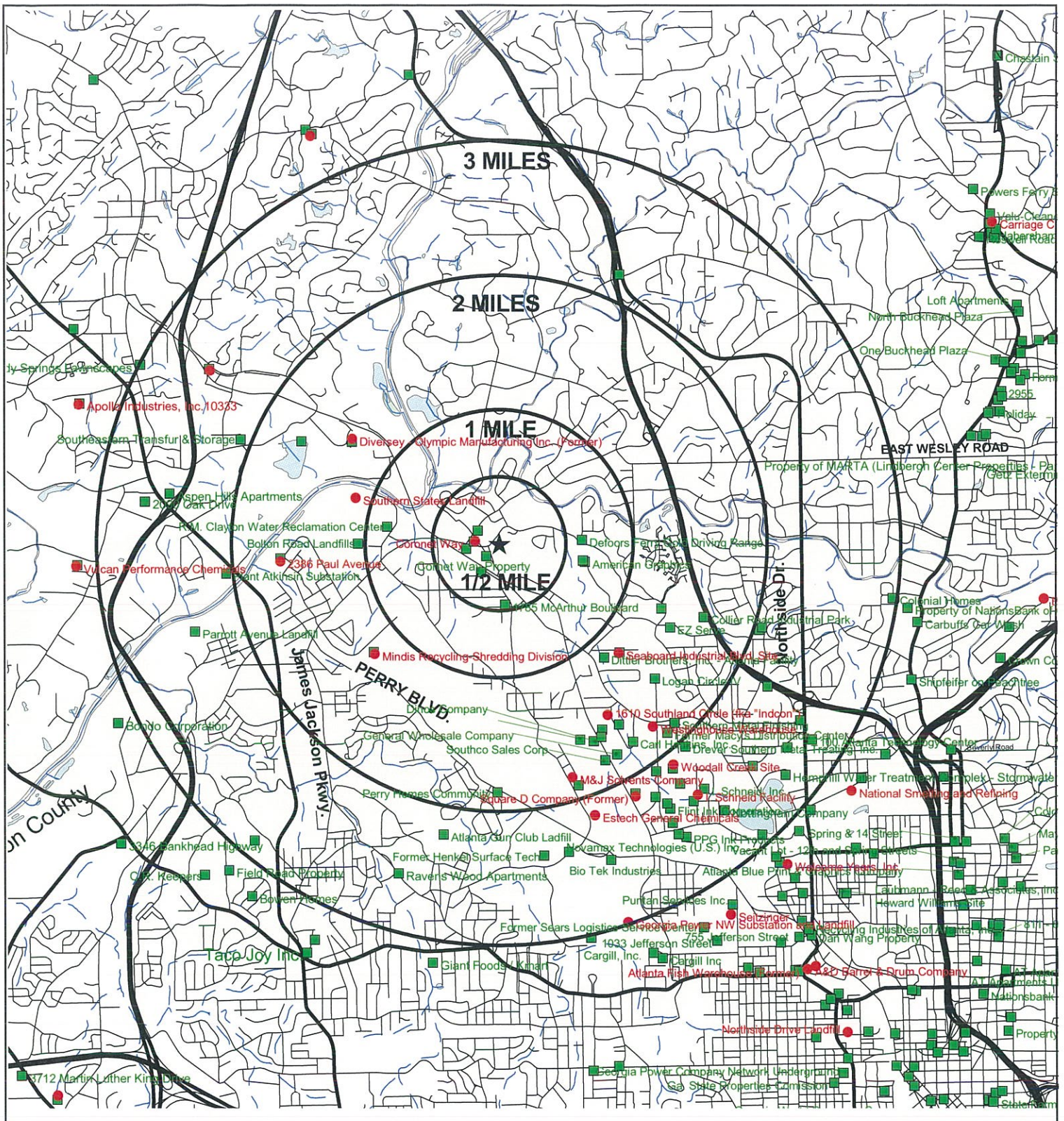
- |  |  |  |            |
|--|--|--|------------|
|  | Roads                                  |  | Unused     |
|  | State and US Highways                  |  | Irrigation |
|  | Interstate Highways                    |  | DeWatering |
|  | Rivers/Streams                         |  | Household  |
|  | Lake/Pond                              |  | COMMERCIAL |
|  | Swamp/Marsh                            |  |            |
|  | Census Block Group Boundaries          |  |            |
|  | Census Block Groups > 0 Domestic Wells |  |            |

**Moores Mill Village Apartments**  
**2453 Coronet Way NW**  
**Atlanta, Fulton County**

Scale: 1 inch = 1 Mile  
 33 49' 15" 84 26' 49"

Sources: Wells from USGS GWSI (1999); EPD WRB Non-Municipal Wells (1997);  
 EPD HWMB field surveys (2009); Surface Water Intakes from EPD GSB DR96-27(1996);  
 Roads, Rivers, Wetlands from Georgia DOT (2001); Census data from U.S. Bureau of Census (1990)

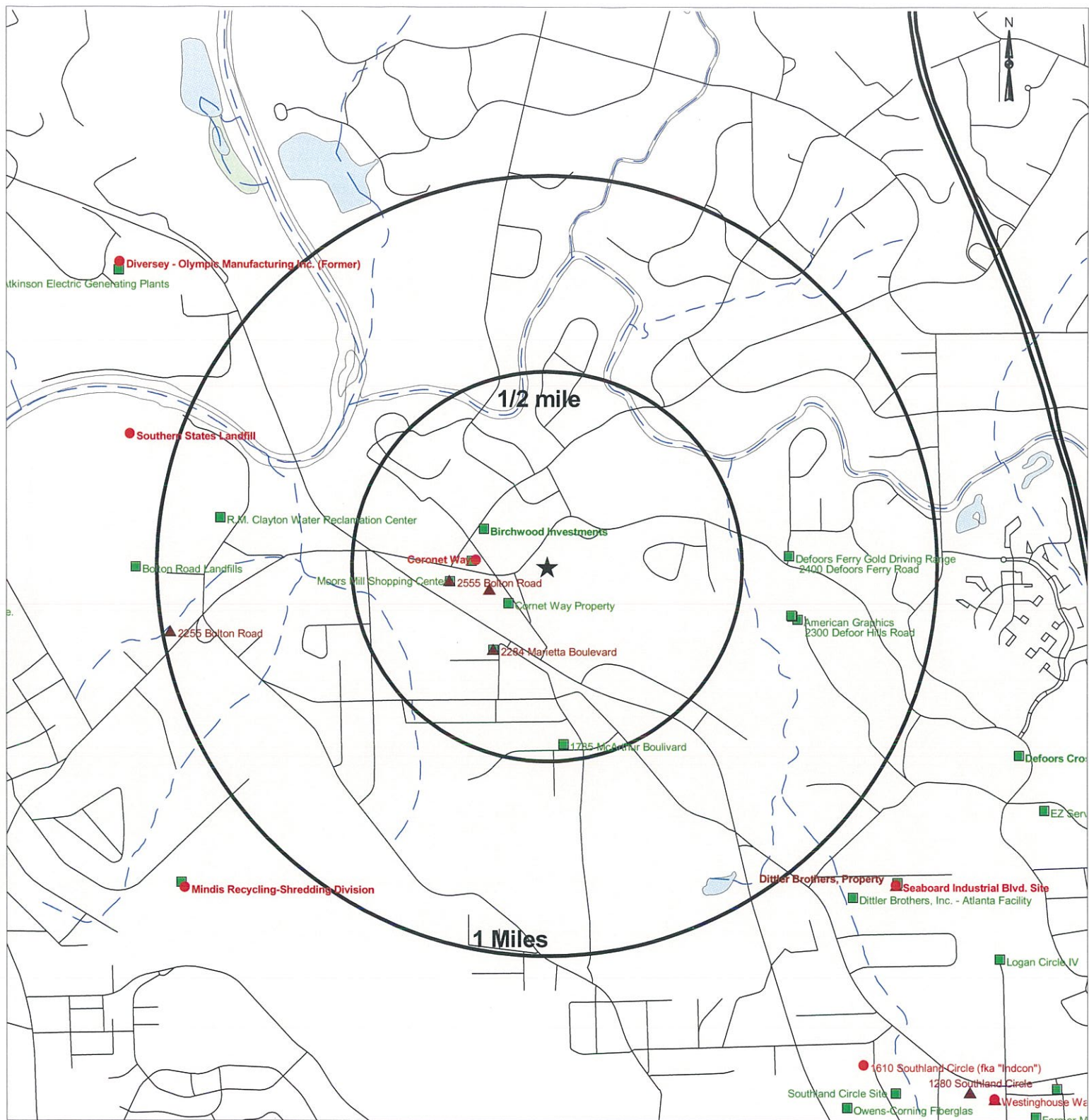




- Roads
- State and US Highways
- Interstate Highways
- Rivers/Streams
- Lake/Pond
- Swamp/Marsh
- HSI Site Location
- NON-HSI Site Location

**Moores Mill Village Apartments**  
**2453 Coronet Way NW**  
**Atlanta, Fulton County**  
**1/2, 1, 2, and 3 mile Radii - HSI & NON-HSI Site Locations**





- Roads
- State and US Highways
- Interstate Highways
- Rivers/Streams
- Lake/Pond
- Swamp/Marsh
- Census Block Group Boundaries
- Census Block Groups > 0 Domestic Wells

- HSI Site**
- Non - HSI Site Locations**
- Brownfield Application**

**Moores Mill Village Apartments**  
**2453 Coronet Way NW**  
**Atlanta, Fulton County**  
**1/2 & 1 mile Radii HSI, NON-HSI**  
**, & Brownfield Site Locations**

0.1 0 0.1 0.2 Miles  
  
84 26' 49" 33 49' 15"



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

June 22, 2010

John Meadow  
Terracon  
2855 Premiere Parkway  
Duluth GA 30097

TEL: (770) 623-0755

FAX: (770) 623-9628

RE: Moores Mill

Dear John Meadow:

Order No: 1006C69

Analytical Environmental Services, Inc. received 4 samples on 6/14/2010 3:15:00 PM for the analyses presented in following report.

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

AES' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/09-06/30/10.
- AIHA Certification ID #100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/11.

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.

Brian Rohr  
Project Manager



ANALYTICAL ENVIRONMENTAL SERVICES, INC.  
3785 Presidential Parkway, Atlanta GA 30340-3704  
AES TEL: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

# CHAIN OF CUSTODY

Work Order: 1006C69

Date: 6/13/10 Page 1 of 1

COMPANY:		ADDRESS:		ANALYSIS REQUESTED		REMARKS		No # of Containers	
1erracon		2855 Premiere Pkwy Su-Lora CA 30072		VOC / PHT		Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.			
PHONE 770-623-0755		FAX 770-623-9622		PRESERVATION (See codes)		REMARKS			
SAMPLED BY: J. M. GARDIN		SIGNATURE:							
#	SAMPLE ID	DATE	TIME	SAMPLED	Grab	Composite	Matrix (See codes)		
1	B-1	6/9/10	11 AM	✓	✓	✓	SOIL	5	
2	B-2	6/9/10	2 PM	✓	✓	✓	SOIL	5	
3	B-2	6/13/10	8 AM	✓	✓	✓	GW	1	ONE 40oz VAT ONLY
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
RELINQUISHED BY		DATE/TIME RECEIVED		PROJECT INFORMATION		RECEIPT			
1:		6/13/10 3:15 PM		PROJECT NAME: MOONES MILL		Total # of Containers			
2:		6/14/10 7:15		PROJECT #:		Turnaround Time Request			
3:				SITE ADDRESS: MOONES MILL ROAD		Standard 5 Business Days			
				SEND REPORT TO: J. M. GARDIN		2 Business Day Rush			
				INVOICE TO (IF DIFFERENT FROM ABOVE)		Next Business Day Rush			
				QUOTE #:		Same Day Rush (with req.)			
				SHIPMENT METHOD		Other			
				OUT IN		STATE PROGRAM (if any):			
				CLIENT FedEx UPS MAIL COURIER		E-mail? Y/N			
				GREYHOUND OTHER		Fax? Y/N			
						DATA PACKAGE: I II III IV			

SPECIAL INSTRUCTIONS/COMMENTS: DATE DATE 15 6/13

SAMPLES RECEIVED AFTER 3PM OR SATURDAY ARE CONSIDERED AS RECEIVED ON THE NEXT BUSINESS DAY; IF NO TAT IS MARKED ON COC AES WILL PROCEED AS STANDARD TAT.

SAMPLES ARE DISPOSED OF 30 DAYS AFTER COMPLETION OF REPORT 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



**Client:** Terracon  
**Project:** Moores Mill  
**Lab ID:** 1006C69

**Case Narrative**

**Sample Receiving Nonconformance:**

A Trip Blank was provided but not listed on the Chain of Custody. The trip blank was analyzed at no cost to the client.

## Analytical Environmental Services, Inc

Date: 22-Jun-10

Client: Terracon  
Project: Moores Mill  
Lab ID: 1006C69-001

Client Sample ID: B-1  
Collection Date: 6/9/2010 10:00:00 AM  
Matrix: Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5035)</b>			
1,1,1-Trichloroethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,1,2,2-Tetrachloroethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,1,2-Trichloroethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,1-Dichloroethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,1-Dichloroethene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,2,4-Trichlorobenzene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,2-Dibromo-3-chloropropane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,2-Dibromoethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,2-Dichlorobenzene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,2-Dichloroethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,2-Dichloropropane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,3-Dichlorobenzene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,4-Dichlorobenzene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
2-Butanone	BRL	0.045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
2-Hexanone	BRL	0.0090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
4-Methyl-2-pentanone	BRL	0.0090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Acetone	BRL	0.090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Benzene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Bromodichloromethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Bromoform	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Bromomethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Carbon disulfide	BRL	0.0090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Carbon tetrachloride	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Chlorobenzene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Chloroethane	BRL	0.0090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Chloroform	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Chloromethane	BRL	0.0090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
cis-1,2-Dichloroethene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
cis-1,3-Dichloropropene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Cyclohexane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Dibromochloromethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Dichlorodifluoromethane	BRL	0.0090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Ethylbenzene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Freon-113	BRL	0.0090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Isopropylbenzene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
m,p-Xylene	BRL	0.0090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Methyl acetate	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Methyl tert-butyl ether	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Methylcyclohexane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Methylene chloride	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
o-Xylene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE

**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

## Analytical Environmental Services, Inc

Date: 22-Jun-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1006C69-001

Client Sample ID: B-1  
 Collection Date: 6/9/2010 10:00:00 AM  
 Matrix: Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>		<b>(SW5035)</b>						
Styrene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Tetrachloroethene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Toluene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
trans-1,2-Dichloroethene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
trans-1,3-Dichloropropene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Trichloroethene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Trichlorofluoromethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Vinyl chloride	BRL	0.0090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Surr: 4-Bromofluorobenzene	103	58.2-140		%REC	131091	1	06/18/2010 00:29	JE
Surr: Dibromofluoromethane	108	71.1-132		%REC	131091	1	06/18/2010 00:29	JE
Surr: Toluene-d8	98.4	77.6-119		%REC	131091	1	06/18/2010 00:29	JE
<b>POLYAROMATIC HYDROCARBONS SW8270D</b>		<b>(SW3550C)</b>						
Naphthalene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Acenaphthylene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
1-Methylnaphthalene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
2-Methylnaphthalene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Acenaphthene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Fluorene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Phenanthrene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Anthracene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Fluoranthene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Pyrene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Benz(a)anthracene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Chrysene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Benzo(b)fluoranthene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Benzo(k)fluoranthene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Benzo(a)pyrene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Dibenz(a,h)anthracene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Benzo(g,h,i)perylene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Indeno(1,2,3-cd)pyrene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Surr: 2-Fluorobiphenyl	71.5	52.6-120		%REC	130921	1	06/18/2010 19:40	NE
Surr: 4-Terphenyl-d14	81.6	65-120		%REC	130921	1	06/18/2010 19:40	NE
Surr: Nitrobenzene-d5	59.9	35.2-120		%REC	130921	1	06/18/2010 19:40	NE
<b>PERCENT MOISTURE D2216</b>								
Percent Moisture	12.5	0		wt%	R174244	1	06/17/2010 19:00	AS

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

## Analytical Environmental Services, Inc

Date: 22-Jun-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1006C69-002

Client Sample ID: B-2  
 Collection Date: 6/9/2010 2:00:00 PM  
 Matrix: Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>			<b>(SW5035)</b>					
1,1,1-Trichloroethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,1,2,2-Tetrachloroethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,1,2-Trichloroethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,1-Dichloroethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,1-Dichloroethene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,2,4-Trichlorobenzene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,2-Dibromo-3-chloropropane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,2-Dibromoethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,2-Dichlorobenzene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,2-Dichloroethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,2-Dichloropropane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,3-Dichlorobenzene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,4-Dichlorobenzene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
2-Butanone	BRL	0.050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
2-Hexanone	BRL	0.010		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
4-Methyl-2-pentanone	BRL	0.010		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Acetone	BRL	0.10		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Benzene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Bromodichloromethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Bromoform	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Bromomethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Carbon disulfide	BRL	0.010		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Carbon tetrachloride	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Chlorobenzene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Chloroethane	BRL	0.010		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Chloroform	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Chloromethane	BRL	0.010		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
cis-1,2-Dichloroethene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
cis-1,3-Dichloropropene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Cyclohexane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Dibromochloromethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Dichlorodifluoromethane	BRL	0.010		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Ethylbenzene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Freon-113	BRL	0.010		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Isopropylbenzene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
m,p-Xylene	BRL	0.010		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Methyl acetate	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Methyl tert-butyl ether	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Methylcyclohexane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Methylene chloride	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
o-Xylene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE

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

## Analytical Environmental Services, Inc

Date: 22-Jun-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1006C69-002

Client Sample ID: B-2  
 Collection Date: 6/9/2010 2:00:00 PM  
 Matrix: Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>		<b>(SW5035)</b>						
Styrene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Tetrachloroethene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Toluene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
trans-1,2-Dichloroethene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
trans-1,3-Dichloropropene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Trichloroethene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Trichlorofluoromethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Vinyl chloride	BRL	0.010		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Surr: 4-Bromofluorobenzene	100	58.2-140		%REC	131091	1	06/18/2010 05:08	JE
Surr: Dibromofluoromethane	106	71.1-132		%REC	131091	1	06/18/2010 05:08	JE
Surr: Toluene-d8	98.6	77.6-119		%REC	131091	1	06/18/2010 05:08	JE
<b>POLYAROMATIC HYDROCARBONS SW8270D</b>		<b>(SW3550C)</b>						
Naphthalene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Acenaphthylene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
1-Methylnaphthalene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
2-Methylnaphthalene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Acenaphthene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Fluorene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Phenanthrene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Anthracene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Fluoranthene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Pyrene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Benz(a)anthracene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Chrysene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Benzo(b)fluoranthene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Benzo(k)fluoranthene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Benzo(a)pyrene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Dibenz(a,h)anthracene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Benzo(g,h,i)perylene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Indeno(1,2,3-cd)pyrene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Surr: 2-Fluorobiphenyl	73.1	52.6-120		%REC	130921	1	06/17/2010 18:03	NE
Surr: 4-Terphenyl-d14	84	65-120		%REC	130921	1	06/17/2010 18:03	NE
Surr: Nitrobenzene-d5	60.8	35.2-120		%REC	130921	1	06/17/2010 18:03	NE
<b>PERCENT MOISTURE D2216</b>								
Percent Moisture	9.93	0		wt%	R174244	1	06/17/2010 19:00	AS

**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

**Analytical Environmental Services, Inc**
**Date:** 22-Jun-10

**Client:** Terracon  
**Project:** Moores Mill  
**Lab ID:** 1006C69-003

**Client Sample ID:** B-2  
**Collection Date:** 6/13/2010 3:00:00 PM  
**Matrix:** Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>				<b>(SW5030B)</b>				
1,1,1-Trichloroethane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,1,2-Trichloroethane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,1-Dichloroethane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,1-Dichloroethene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,2-Dibromoethane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,2-Dichlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,2-Dichloroethane	BRL	1.0		ug/L	131193	1	06/22/2010 13:09	NH
1,2-Dichloropropane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,3-Dichlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,4-Dichlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
2-Butanone	BRL	50		ug/L	131193	1	06/22/2010 13:09	NH
2-Hexanone	BRL	10		ug/L	131193	1	06/22/2010 13:09	NH
4-Methyl-2-pentanone	BRL	10		ug/L	131193	1	06/22/2010 13:09	NH
Acetone	BRL	50		ug/L	131193	1	06/22/2010 13:09	NH
Benzene	BRL	1.0		ug/L	131193	1	06/22/2010 13:09	NH
Bromodichloromethane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Bromoform	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Bromomethane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Carbon disulfide	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Carbon tetrachloride	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Chlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Chloroethane	BRL	10		ug/L	131193	1	06/22/2010 13:09	NH
Chloroform	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Chloromethane	BRL	10		ug/L	131193	1	06/22/2010 13:09	NH
cis-1,2-Dichloroethene	34	5.0		ug/L	131193	1	06/22/2010 13:09	NH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Cyclohexane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Dibromochloromethane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Dichlorodifluoromethane	BRL	10		ug/L	131193	1	06/22/2010 13:09	NH
Ethylbenzene	BRL	1.0		ug/L	131193	1	06/22/2010 13:09	NH
Freon-113	BRL	10		ug/L	131193	1	06/22/2010 13:09	NH
Isopropylbenzene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
m,p-Xylene	BRL	1.0		ug/L	131193	1	06/22/2010 13:09	NH
Methyl acetate	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Methyl tert-butyl ether	BRL	1.0		ug/L	131193	1	06/22/2010 13:09	NH
Methylcyclohexane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Methylene chloride	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
o-Xylene	BRL	1.0		ug/L	131193	1	06/22/2010 13:09	NH

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

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

## Analytical Environmental Services, Inc

Date: 22-Jun-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1006C69-003

Client Sample ID: B-2  
 Collection Date: 6/13/2010 3:00:00 PM  
 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	131193	1	06/22/2010 13:09	NH
Tetrachloroethene	54	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Toluene	BRL	1.0		ug/L	131193	1	06/22/2010 13:09	NH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Trichloroethene	23	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Trichlorofluoromethane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Vinyl chloride	BRL	2.0		ug/L	131193	1	06/22/2010 13:09	NH
Surr: 4-Bromofluorobenzene	101	60.1-127		%REC	131193	1	06/22/2010 13:09	NH
Surr: Dibromofluoromethane	100	79.6-126		%REC	131193	1	06/22/2010 13:09	NH
Surr: Toluene-d8	98.8	78-116		%REC	131193	1	06/22/2010 13:09	NH

**Qualifiers:**

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

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

## Analytical Environmental Services, Inc

Date: 22-Jun-10

Client: Terracon  
Project: Moores Mill  
Lab ID: 1006C69-004

Client Sample ID: TRIP BLANK  
Collection Date: 6/14/2010  
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	131193	1	06/22/2010 12:18	NH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,1,2-Trichloroethane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,1-Dichloroethane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,1-Dichloroethene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,2-Dibromoethane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,2-Dichlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,2-Dichloroethane	BRL	1.0		ug/L	131193	1	06/22/2010 12:18	NH
1,2-Dichloropropane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,3-Dichlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,4-Dichlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
2-Butanone	BRL	50		ug/L	131193	1	06/22/2010 12:18	NH
2-Hexanone	BRL	10		ug/L	131193	1	06/22/2010 12:18	NH
4-Methyl-2-pentanone	BRL	10		ug/L	131193	1	06/22/2010 12:18	NH
Acetone	BRL	50		ug/L	131193	1	06/22/2010 12:18	NH
Benzene	BRL	1.0		ug/L	131193	1	06/22/2010 12:18	NH
Bromodichloromethane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Bromoform	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Bromomethane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Carbon disulfide	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Carbon tetrachloride	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Chlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Chloroethane	BRL	10		ug/L	131193	1	06/22/2010 12:18	NH
Chloroform	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Chloromethane	BRL	10		ug/L	131193	1	06/22/2010 12:18	NH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Cyclohexane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Dibromochloromethane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Dichlorodifluoromethane	BRL	10		ug/L	131193	1	06/22/2010 12:18	NH
Ethylbenzene	BRL	1.0		ug/L	131193	1	06/22/2010 12:18	NH
Freon-113	BRL	10		ug/L	131193	1	06/22/2010 12:18	NH
Isopropylbenzene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
m,p-Xylene	BRL	1.0		ug/L	131193	1	06/22/2010 12:18	NH
Methyl acetate	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Methyl tert-butyl ether	BRL	1.0		ug/L	131193	1	06/22/2010 12:18	NH
Methylcyclohexane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Methylene chloride	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
o-Xylene	BRL	1.0		ug/L	131193	1	06/22/2010 12:18	NH

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

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



## Analytical Environmental Services, Inc

Date: 22-Jun-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1006C69-004

Client Sample ID: TRIP BLANK  
 Collection Date: 6/14/2010  
 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	131193	1	06/22/2010 12:18	NH
Tetrachloroethene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Toluene	BRL	1.0		ug/L	131193	1	06/22/2010 12:18	NH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Trichloroethene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Trichlorofluoromethane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Vinyl chloride	BRL	2.0		ug/L	131193	1	06/22/2010 12:18	NH
Surr: 4-Bromofluorobenzene	97.6	60.1-127		%REC	131193	1	06/22/2010 12:18	NH
Surr: Dibromofluoromethane	106	79.6-126		%REC	131193	1	06/22/2010 12:18	NH
Surr: Toluene-d8	94.4	78-116		%REC	131193	1	06/22/2010 12:18	NH

Qualifiers:

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

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

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client TERRACON Work Order Number 1006C69

Checklist completed by PLT Date 6/14/10

Carrier name: FedEx ☐ UPS ☐ Courier ☐ Client ☒ US Mail ☐ Other ☐

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

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

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

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

Cooler #1 3.4°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 ☐

Adjusted? ☐ Checked by ☐

Sample Condition: Good ☒ Other(Explain) ☐

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

See Case Narrative for resolution of the Non-Conformance.

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

\\Quality Assurance\\Checklists Procedures Sign-Off Templates\\Checklists\\Sample Receipt Checklists\\Sample\_Cooler\_Receipt\_Checklist

## ANALYTICAL QC SUMMARY REPORT

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1006C69

BatchID: 130921

Sample ID: MB-130921	Client ID:					Units: mg/Kg	Prep Date: 06/16/2010	Run No: 174126			
SampleType: MBLK	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 130921				Analysis Date: 06/16/2010	Seq No: 3620896			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1-Methylnaphthalene	BRL	0.33	0	0	0	0	0	0	0	0	
2-Methylnaphthalene	BRL	0.33	0	0	0	0	0	0	0	0	
Acenaphthene	BRL	0.33	0	0	0	0	0	0	0	0	
Acenaphthylene	BRL	0.33	0	0	0	0	0	0	0	0	
Anthracene	BRL	0.33	0	0	0	0	0	0	0	0	
Benz(a)anthracene	BRL	0.33	0	0	0	0	0	0	0	0	
Benzo(a)pyrene	BRL	0.33	0	0	0	0	0	0	0	0	
Benzo(b)fluoranthene	BRL	0.33	0	0	0	0	0	0	0	0	
Benzo(g,h,i)perylene	BRL	0.33	0	0	0	0	0	0	0	0	
Benzo(k)fluoranthene	BRL	0.33	0	0	0	0	0	0	0	0	
Chrysene	BRL	0.33	0	0	0	0	0	0	0	0	
Dibenz(a,h)anthracene	BRL	0.33	0	0	0	0	0	0	0	0	
Fluoranthene	BRL	0.33	0	0	0	0	0	0	0	0	
Fluorene	BRL	0.33	0	0	0	0	0	0	0	0	
Indeno(1,2,3-cd)pyrene	BRL	0.33	0	0	0	0	0	0	0	0	
Naphthalene	BRL	0.33	0	0	0	0	0	0	0	0	
Phenanthrene	BRL	0.33	0	0	0	0	0	0	0	0	
Pyrene	BRL	0.33	0	0	0	0	0	0	0	0	
Surr: 2-Fluorobiphenyl	1.241	0	1.667	0	74.5	52.6	120	0	0	0	
Surr: 4-Terphenyl-d14	1.352	0	1.667	0	81.1	65	120	0	0	0	
Surr: Nitrobenzene-d5	1.040	0	1.667	0	62.4	35.2	120	0	0	0	

Sample ID: LCS-130921	Client ID:					Units: mg/Kg	Prep Date: 06/16/2010	Run No: 174126			
SampleType: LCS	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 130921				Analysis Date: 06/16/2010	Seq No: 3620902			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Acenaphthene	1.196	0.33	1.667	0	71.8	56.2	120	0	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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1006C69

## ANALYTICAL QC SUMMARY REPORT

BatchID: 130921

Sample ID: LCS-130921	Client ID:		Units: mg/Kg	Prep Date: 06/16/2010	Run No: 174126						
SampleType: LCS	TestCode: POLYAROMATIC HYDROCARBONS SW8270D		BatchID: 130921	Analysis Date: 06/16/2010	Seq No: 3620902						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthylene	1.205	0.33	1.667	0	72.3	56	120	0	0	0	
Anthracene	1.202	0.33	1.667	0	72.1	58.8	120	0	0	0	
Benz(a)anthracene	1.252	0.33	1.667	0	75.1	64.8	120	0	0	0	
Benzo(a)pyrene	1.193	0.33	1.667	0	71.6	59.3	120	0	0	0	
Benzo(b)fluoranthene	1.360	0.33	1.667	0	81.6	63	120	0	0	0	
Benzo(g,h,i)perylene	1.345	0.33	1.667	0	80.7	62.6	120	0	0	0	
Benzo(k)fluoranthene	1.298	0.33	1.667	0	77.9	63.3	120	0	0	0	
Chrysene	1.277	0.33	1.667	0	76.6	66.7	120	0	0	0	
Dibenz(a,h)anthracene	1.363	0.33	1.667	0	81.8	60.7	120	0	0	0	
Fluoranthene	1.449	0.33	1.667	0	86.9	63.4	120	0	0	0	
Fluorene	1.339	0.33	1.667	0	80.4	59.6	120	0	0	0	
Indeno(1,2,3-cd)pyrene	1.481	0.33	1.667	0	88.9	61.9	120	0	0	0	
Naphthalene	1.163	0.33	1.667	0	69.8	50.1	120	0	0	0	
Phenanthrene	1.399	0.33	1.667	0	83.9	60.6	120	0	0	0	
Pyrene	1.232	0.33	1.667	0	73.9	63.1	120	0	0	0	
Surr: 2-Fluorobiphenyl	1.286	0	1.667	0	77.2	52.6	120	0	0	0	
Surr: 4-Terphenyl-d14	1.349	0	1.667	0	81	65	120	0	0	0	
Surr: Nitrobenzene-d5	1.046	0	1.667	0	62.8	35.2	120	0	0	0	

Sample ID: 1006C69-002CMS	Client ID: B-2	Units: mg/Kg-dry				Prep Date: 06/16/2010	Run No: 174216				
SampleType: MS	TestCode: POLYAROMATIC HYDROCARBONS SW8270D	BatchID: 130921				Analysis Date: 06/17/2010	Seq No: 3622799				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	1.334	0.37	1.849	0	72.2	48.7	120	0	0	0	
Acenaphthylene	1.346	0.37	1.849	0	72.8	50.2	120	0	0	0	
Anthracene	1.363	0.37	1.849	0	73.7	51.8	120	0	0	0	
Benz(a)anthracene	1.387	0.37	1.849	0	75	59.1	120	0	0	0	
Benzo(a)pyrene	1.358	0.37	1.849	0	73.5	54.8	120	0	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		

## ANALYTICAL QC SUMMARY REPORT

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1006C69

BatchID: 130921

Sample ID: 1006C69-002CMS	Client ID: B-2	Units: mg/Kg-dry		Prep Date: 06/16/2010	Run No: 174216						
SampleType: MS	TestCode: POLYAROMATIC HYDROCARBONS SW8270D	BatchID: 130921		Analysis Date: 06/17/2010	Seq No: 3622799						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzo(b)fluoranthene	1.557	0.37	1.849	0	84.2	56.6	120	0	0	0	
Benzo(g,h,i)perylene	1.557	0.37	1.849	0	84.2	53.1	120	0	0	0	
Benzo(k)fluoranthene	1.387	0.37	1.849	0	75	56.2	120	0	0	0	
Chrysene	1.418	0.37	1.849	0	76.7	61.3	120	0	0	0	
Dibenz(a,h)anthracene	1.460	0.37	1.849	0	79	54.2	120	0	0	0	
Fluoranthene	1.574	0.37	1.849	0	85.1	55.1	120	0	0	0	
Fluorene	1.474	0.37	1.849	0	79.7	53.9	120	0	0	0	
Indeno(1,2,3-cd)pyrene	1.572	0.37	1.849	0	85	52.9	120	0	0	0	
Naphthalene	1.358	0.37	1.849	0	73.4	41.8	120	0	0	0	
Phenanthrene	1.571	0.37	1.849	0	85	54.2	120	0	0	0	
Pyrene	1.382	0.37	1.849	0	74.8	54.8	120	0	0	0	
Surr: 2-Fluorobiphenyl	1.454	0	1.849	0	78.7	52.6	120	0	0	0	
Surr: 4-Terphenyl-d14	1.532	0	1.849	0	82.9	65	120	0	0	0	
Surr: Nitrobenzene-d5	1.127	0	1.849	0	61	35.2	120	0	0	0	

Sample ID: 1006C69-002CMSD	Client ID: B-2					Units: mg/Kg-dry	Prep Date: 06/16/2010	Run No: 174216			
SampleType: MSD	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 130921				Analysis Date: 06/17/2010	Seq No: 3622804			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Acenaphthene	1.399	0.37	1.849	0	75.7	48.7	120	1.334	4.76	20.9	
Acenaphthylene	1.405	0.37	1.849	0	76	50.2	120	1.346	4.27	20	
Anthracene	1.384	0.37	1.849	0	74.9	51.8	120	1.363	1.53	17.1	
Benz(a)anthracene	1.442	0.37	1.849	0	78	59.1	120	1.387	3.87	15.8	
Benzo(a)pyrene	1.406	0.37	1.849	0	76.1	54.8	120	1.358	3.48	19.1	
Benzo(b)fluoranthene	1.581	0.37	1.849	0	85.5	56.6	120	1.557	1.53	19	
Benzo(g,h,i)perylene	1.462	0.37	1.849	0	79.1	53.1	120	1.557	6.32	17	
Benzo(k)fluoranthene	1.482	0.37	1.849	0	80.2	56.2	120	1.387	6.62	15.5	
Chrysene	1.520	0.37	1.849	0	82.2	61.3	120	1.418	6.95	16	

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 QC SUMMARY REPORT

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1006C69

BatchID: 130921

Sample ID: 1006C69-002CMSD	Client ID: B-2	Units: mg/Kg-dry	Prep Date: 06/16/2010	Run No: 174216
SampleType: MSD	TestCode: POLYAROMATIC HYDROCARBONS SW8270D	BatchID: 130921	Analysis Date: 06/17/2010	Seq No: 3622804

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Dibenz(a,h)anthracene	1.542	0.37	1.849	0	83.4	54.2	120	1.460	5.47	19.7	
Fluoranthene	1.627	0.37	1.849	0	88	55.1	120	1.574	3.35	17.2	
Fluorene	1.529	0.37	1.849	0	82.7	53.9	120	1.474	3.67	15.3	
Indeno(1,2,3-cd)pyrene	1.652	0.37	1.849	0	89.4	52.9	120	1.572	4.95	16.2	
Naphthalene	1.367	0.37	1.849	0	73.9	41.8	120	1.358	0.651	23.1	
Phenanthrene	1.616	0.37	1.849	0	87.4	54.2	120	1.571	2.78	15.2	
Pyrene	1.441	0.37	1.849	0	77.9	54.8	120	1.382	4.14	16.6	
Surr: 2-Fluorobiphenyl	1.514	0	1.849	0	81.9	52.6	120	1.454	0	0	
Surr: 4-Terphenyl-d14	1.589	0	1.849	0	86	65	120	1.532	0	0	
Surr: Nitrobenzene-d5	1.225	0	1.849	0	66.3	35.2	120	1.127	0	0	

Qualifiers: > Greater than Result value  
 BRL Below reporting limit  
 J Estimated value detected below Reporting Limit  
 Rpt Lim Reporting Limit

< Less than Result value  
 E Estimated (value above quantitation range)  
 N Analyte not NELAC certified  
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank  
 H Holding times for preparation or analysis exceeded  
 R RPD outside limits due to matrix

## ANALYTICAL QC SUMMARY REPORT

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1006C69

BatchID: 131091

Sample ID: MB-131091	Client ID:					Units: mg/Kg	Prep Date: 06/17/2010	Run No: 174240			
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B					BatchID: 131091	Analysis Date: 06/17/2010	Seq No: 3623409			
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	0.0050	0	0	0	0	0	0	0	0	
1,1,2,2-Tetrachloroethane	BRL	0.0050	0	0	0	0	0	0	0	0	
1,1,2-Trichloroethane	BRL	0.0050	0	0	0	0	0	0	0	0	
1,1-Dichloroethane	BRL	0.0050	0	0	0	0	0	0	0	0	
1,1-Dichloroethene	BRL	0.0050	0	0	0	0	0	0	0	0	
1,2,4-Trichlorobenzene	BRL	0.0050	0	0	0	0	0	0	0	0	
1,2-Dibromo-3-chloropropane	BRL	0.0050	0	0	0	0	0	0	0	0	
1,2-Dibromoethane	BRL	0.0050	0	0	0	0	0	0	0	0	
1,2-Dichlorobenzene	BRL	0.0050	0	0	0	0	0	0	0	0	
1,2-Dichloroethane	BRL	0.0050	0	0	0	0	0	0	0	0	
1,2-Dichloropropane	BRL	0.0050	0	0	0	0	0	0	0	0	
1,3-Dichlorobenzene	BRL	0.0050	0	0	0	0	0	0	0	0	
1,4-Dichlorobenzene	BRL	0.0050	0	0	0	0	0	0	0	0	
2-Butanone	BRL	0.050	0	0	0	0	0	0	0	0	
2-Hexanone	BRL	0.010	0	0	0	0	0	0	0	0	
4-Methyl-2-pentanone	BRL	0.010	0	0	0	0	0	0	0	0	
Acetone	BRL	0.10	0	0	0	0	0	0	0	0	
Benzene	BRL	0.0050	0	0	0	0	0	0	0	0	
Bromodichloromethane	BRL	0.0050	0	0	0	0	0	0	0	0	
Bromoform	BRL	0.0050	0	0	0	0	0	0	0	0	
Bromomethane	BRL	0.0050	0	0	0	0	0	0	0	0	
Carbon disulfide	BRL	0.010	0	0	0	0	0	0	0	0	
Carbon tetrachloride	BRL	0.0050	0	0	0	0	0	0	0	0	
Chlorobenzene	BRL	0.0050	0	0	0	0	0	0	0	0	
Chloroethane	BRL	0.010	0	0	0	0	0	0	0	0	
Chloroform	BRL	0.0050	0	0	0	0	0	0	0	0	
Chloromethane	BRL	0.010	0	0	0	0	0	0	0	0	

Qualifiers: > Greater than Result value  
 BRL Below reporting limit  
 J Estimated value detected below Reporting Limit  
 Rpt Lim Reporting Limit

< Less than Result value  
 E Estimated (value above quantitation range)  
 N Analyte not NELAC certified  
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank  
 H Holding times for preparation or analysis exceeded  
 R RPD outside limits due to matrix

## ANALYTICAL QC SUMMARY REPORT

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1006C69

BatchID: 131091

Sample ID: MB-131091	Client ID:	Units: mg/Kg	Prep Date: 06/17/2010	Run No: 174240							
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 131091	Analysis Date: 06/17/2010	Seq No: 3623409							
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	0.0050	0	0	0	0	0	0	0	0	
cis-1,3-Dichloropropene	BRL	0.0050	0	0	0	0	0	0	0	0	
Cyclohexane	BRL	0.0050	0	0	0	0	0	0	0	0	
Dibromochloromethane	BRL	0.0050	0	0	0	0	0	0	0	0	
Dichlorodifluoromethane	BRL	0.010	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	0.0050	0	0	0	0	0	0	0	0	
Freon-113	BRL	0.010	0	0	0	0	0	0	0	0	
Isopropylbenzene	BRL	0.0050	0	0	0	0	0	0	0	0	
m,p-Xylene	BRL	0.010	0	0	0	0	0	0	0	0	
Methyl acetate	BRL	0.0050	0	0	0	0	0	0	0	0	
Methyl tert-butyl ether	BRL	0.0050	0	0	0	0	0	0	0	0	
Methylcyclohexane	BRL	0.0050	0	0	0	0	0	0	0	0	
Methylene chloride	BRL	0.0050	0	0	0	0	0	0	0	0	
o-Xylene	BRL	0.0050	0	0	0	0	0	0	0	0	
Styrene	BRL	0.0050	0	0	0	0	0	0	0	0	
Tetrachloroethene	BRL	0.0050	0	0	0	0	0	0	0	0	
Toluene	BRL	0.0050	0	0	0	0	0	0	0	0	
trans-1,2-Dichloroethene	BRL	0.0050	0	0	0	0	0	0	0	0	
trans-1,3-Dichloropropene	BRL	0.0050	0	0	0	0	0	0	0	0	
Trichloroethene	BRL	0.0050	0	0	0	0	0	0	0	0	
Trichlorofluoromethane	BRL	0.0050	0	0	0	0	0	0	0	0	
Vinyl chloride	BRL	0.010	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	0.05073	0	0.05	0	101	58.2	140	0	0	0	
Surr: Dibromofluoromethane	0.05193	0	0.05	0	104	71.1	132	0	0	0	
Surr: Toluene-d8	0.04935	0	0.05	0	98.7	77.6	119	0	0	0	

Qualifiers: > Greater than Result value  
 BRL Below reporting limit  
 J Estimated value detected below Reporting Limit  
 Rpt Lim Reporting Limit

< Less than Result value  
 E Estimated (value above quantitation range)  
 N Analyte not NELAC certified  
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank  
 H Holding times for preparation or analysis exceeded  
 R RPD outside limits due to matrix



## ANALYTICAL QC SUMMARY REPORT

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1006C69

BatchID: 131091

Sample ID: LCS-131091	Client ID:	Units: mg/Kg	Prep Date: 06/17/2010	Run No: 174240							
SampleType: LCS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 131091	Analysis Date: 06/17/2010	Seq No: 3623424							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	0.06200	0.0050	0.05	0	124	66.1	158	0	0	0	
Benzene	0.06111	0.0050	0.05	0	122	68.7	139	0	0	0	
Chlorobenzene	0.06162	0.0050	0.05	0	123	74.1	136	0	0	0	
Toluene	0.06058	0.0050	0.05	0	121	68.5	139	0	0	0	
Trichloroethene	0.06399	0.0050	0.05	0	128	74.5	137	0	0	0	
Surr: 4-Bromofluorobenzene	0.05002	0	0.05	0	100	58.2	140	0	0	0	
Surr: Dibromofluoromethane	0.05358	0	0.05	0	107	71.1	132	0	0	0	
Surr: Toluene-d8	0.04952	0	0.05	0	99	77.6	119	0	0	0	

Sample ID: 1006C75-002AMS	Client ID:	Units: mg/Kg-dry	Prep Date: 06/17/2010	Run No: 174240							
SampleType: MS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 131091	Analysis Date: 06/17/2010	Seq No: 3623427							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	0.07632	0.0061	0.0606	0	126	60.6	160	0	0	0	
Benzene	0.07581	0.0061	0.0606	0	125	64	142	0	0	0	
Chlorobenzene	0.07588	0.0061	0.0606	0	125	70.6	140	0	0	0	
Toluene	0.07706	0.0061	0.0606	0	127	61.6	143	0	0	0	
Trichloroethene	0.07980	0.0061	0.0606	0	132	70.3	147	0	0	0	
Surr: 4-Bromofluorobenzene	0.06201	0	0.0606	0	102	58.2	140	0	0	0	
Surr: Dibromofluoromethane	0.06429	0	0.0606	0	106	71.1	132	0	0	0	
Surr: Toluene-d8	0.06052	0	0.0606	0	99.8	77.6	119	0	0	0	

Sample ID: 1006C75-002AMSD	Client ID:				Units: mg/Kg-dry	Prep Date: 06/17/2010	Run No: 174240				
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B				BatchID: 131091	Analysis Date: 06/17/2010	Seq No: 3623432				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	0.07569	0.0061	0.0606	0	125	60.6	160	0.07632	0.83	30.9	
Benzene	0.07559	0.0061	0.0606	0	125	64	142	0.07581	0.288	22.5	

Qualifiers: > Greater than Result value  
 BRL Below reporting limit  
 J Estimated value detected below Reporting Limit  
 Rpt Lim Reporting Limit

< Less than Result value  
 E Estimated (value above quantitation range)  
 N Analyte not NELAC certified  
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank  
 H Holding times for preparation or analysis exceeded  
 R RPD outside limits due to matrix

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1006C69

## ANALYTICAL QC SUMMARY REPORT

BatchID: 131091

Sample ID: 1006C75-002AMSD	Client ID:					Units: mg/Kg-dry	Prep Date: 06/17/2010	Run No: 174240			
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B					BatchID: 131091	Analysis Date: 06/17/2010	Seq No: 3623432			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chlorobenzene	0.07399	0.0061	0.0606	0	122	70.6	140	0.07588	2.52	21.9	
Toluene	0.07602	0.0061	0.0606	0	125	61.6	143	0.07706	1.36	25.8	
Trichloroethene	0.07922	0.0061	0.0606	0	131	70.3	147	0.07980	0.732	28	
Surr: 4-Bromofluorobenzene	0.06035	0	0.0606	0	99.5	58.2	140	0.06201	0	0	
Surr: Dibromofluoromethane	0.06490	0	0.0606	0	107	71.1	132	0.06429	0	0	
Surr: Toluene-d8	0.06086	0	0.0606	0	100	77.6	119	0.06052	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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1006C69

## ANALYTICAL QC SUMMARY REPORT

BatchID: 131193

Sample ID: MB-131193	Client ID:	Units: ug/L				Prep Date: 06/17/2010	Run No: 174401				
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 131193				Analysis Date: 06/21/2010	Seq No: 3627211				
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	0	0	0	0	0	0	0	0	
1,1,2,2-Tetrachloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1,2-Trichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1-Dichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2,4-Trichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dibromo-3-chloropropane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dibromoethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichloroethane	BRL	1.0	0	0	0	0	0	0	0	0	
1,2-Dichloropropane	BRL	5.0	0	0	0	0	0	0	0	0	
1,3-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,4-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
2-Butanone	BRL	50	0	0	0	0	0	0	0	0	
2-Hexanone	BRL	10	0	0	0	0	0	0	0	0	
4-Methyl-2-pentanone	BRL	10	0	0	0	0	0	0	0	0	
Acetone	BRL	50	0	0	0	0	0	0	0	0	
Benzene	BRL	1.0	0	0	0	0	0	0	0	0	
Bromodichloromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Bromoform	BRL	5.0	0	0	0	0	0	0	0	0	
Bromomethane	BRL	5.0	0	0	0	0	0	0	0	0	
Carbon disulfide	BRL	5.0	0	0	0	0	0	0	0	0	
Carbon tetrachloride	BRL	5.0	0	0	0	0	0	0	0	0	
Chlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Chloroethane	BRL	10	0	0	0	0	0	0	0	0	
Chloroform	BRL	5.0	0	0	0	0	0	0	0	0	
Chloromethane	BRL	10	0	0	0	0	0	0	0	0	

Qualifiers: > Greater than Result value  
 BRL Below reporting limit  
 J Estimated value detected below Reporting Limit  
 Rpt Lim Reporting Limit

< Less than Result value  
 E Estimated (value above quantitation range)  
 N Analyte not NELAC certified  
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank  
 H Holding times for preparation or analysis exceeded  
 R RPD outside limits due to matrix

## ANALYTICAL QC SUMMARY REPORT

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1006C69

BatchID: 131193

Sample ID: MB-131193		Client ID:				Units: ug/L		Prep Date: 06/17/2010		Run No: 174401	
SampleType: MBLK		TestCode: TCL VOLATILE ORGANICS SW8260B				BatchID: 131193		Analysis Date: 06/21/2010		Seq No: 3627211	
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	0	0	0	0	0	0	0	0	
cis-1,3-Dichloropropene	BRL	5.0	0	0	0	0	0	0	0	0	
Cyclohexane	BRL	5.0	0	0	0	0	0	0	0	0	
Dibromochloromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Dichlorodifluoromethane	BRL	10	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	1.0	0	0	0	0	0	0	0	0	
Freon-113	BRL	10	0	0	0	0	0	0	0	0	
Isopropylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
m,p-Xylene	BRL	1.0	0	0	0	0	0	0	0	0	
Methyl acetate	BRL	5.0	0	0	0	0	0	0	0	0	
Methyl tert-butyl ether	BRL	1.0	0	0	0	0	0	0	0	0	
Methylcyclohexane	BRL	5.0	0	0	0	0	0	0	0	0	
Methylene chloride	BRL	5.0	0	0	0	0	0	0	0	0	
o-Xylene	BRL	1.0	0	0	0	0	0	0	0	0	
Styrene	BRL	5.0	0	0	0	0	0	0	0	0	
Tetrachloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	1.0	0	0	0	0	0	0	0	0	
trans-1,2-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
trans-1,3-Dichloropropene	BRL	5.0	0	0	0	0	0	0	0	0	
Trichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
Trichlorofluoromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Vinyl chloride	BRL	2.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	49.91	0	50	0	99.8	60.1	127	0	0	0	
Surr: Dibromofluoromethane	52.42	0	50	0	105	79.6	126	0	0	0	
Surr: Toluene-d8	47.47	0	50	0	94.9	78	116	0	0	0	

Qualifiers: > Greater than Result value  
 BRL Below reporting limit  
 J Estimated value detected below Reporting Limit  
 Rpt Lim Reporting Limit

< Less than Result value  
 E Estimated (value above quantitation range)  
 N Analyte not NELAC certified  
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank  
 H Holding times for preparation or analysis exceeded  
 R RPD outside limits due to matrix

## ANALYTICAL QC SUMMARY REPORT

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1006C69

BatchID: 131193

Sample ID: LCS-131193		Client ID:				Units: ug/L		Prep Date: 06/17/2010		Run No: 174401	
SampleType: LCS		TestCode: TCL VOLATILE ORGANICS SW8260B				BatchID: 131193		Analysis Date: 06/21/2010		Seq No: 3627209	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	52.86	5.0	50	0	106	61.4	146	0	0	0	
Benzene	48.40	1.0	50	0	96.8	72.8	131	0	0	0	
Chlorobenzene	48.58	5.0	50	0	97.2	76	123	0	0	0	
Toluene	45.11	1.0	50	0	90.2	74.7	128	0	0	0	
Trichloroethene	45.70	5.0	50	0	91.4	74.4	130	0	0	0	
Surr: 4-Bromofluorobenzene	50.76	0	50	0	102	60.1	127	0	0	0	
Surr: Dibromofluoromethane	50.00	0	50	0	100	79.6	126	0	0	0	
Surr: Toluene-d8	47.20	0	50	0	94.4	78	116	0	0	0	

Sample ID: 1006D41-001AMS		Client ID:				Units: ug/L		Prep Date: 06/17/2010		Run No: 174401	
SampleType: MS		TestCode: TCL VOLATILE ORGANICS SW8260B				BatchID: 131193		Analysis Date: 06/21/2010		Seq No: 3627215	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	69.02	5.0	50	1.890	134	48.8	172	0	0	0	
Benzene	58.90	1.0	50	0	118	64.5	143	0	0	0	
Chlorobenzene	53.74	5.0	50	0	107	74.5	129	0	0	0	
Toluene	56.89	1.0	50	0	114	62	145	0	0	0	
Trichloroethene	57.66	5.0	50	0	115	70.3	140	0	0	0	
Surr: 4-Bromofluorobenzene	48.41	0	50	0	96.8	60.1	127	0	0	0	
Surr: Dibromofluoromethane	49.99	0	50	0	100	79.6	126	0	0	0	
Surr: Toluene-d8	49.13	0	50	0	98.3	78	116	0	0	0	

Sample ID: 1006D41-001AMSD		Client ID:				Units: ug/L		Prep Date: 06/17/2010		Run No: 174401	
SampleType: MSD		TestCode: TCL VOLATILE ORGANICS SW8260B				BatchID: 131193		Analysis Date: 06/21/2010		Seq No: 3627217	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1,1-Dichloroethene	70.14	5.0	50	1.890	136	48.8	172	69.02	1.61	21.6	
Benzene	57.02	1.0	50	0	114	64.5	143	58.90	3.24	18.3	

Qualifiers: > Greater than Result value  
 BRL Below reporting limit  
 J Estimated value detected below Reporting Limit  
 Rpt Lim Reporting Limit

< Less than Result value  
 E Estimated (value above quantitation range)  
 N Analyte not NELAC certified  
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank  
 H Holding times for preparation or analysis exceeded  
 R RPD outside limits due to matrix

## ANALYTICAL QC SUMMARY REPORT

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1006C69

BatchID: 131193

Sample ID: 1006D41-001AMSD	Client ID:					Units: ug/L	Prep Date: 06/17/2010	Run No: 174401			
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B					BatchID: 131193	Analysis Date: 06/21/2010	Seq No: 3627217			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chlorobenzene	53.70	5.0	50	0	107	74.5	129	53.74	0.074	19.2	
Toluene	54.41	1.0	50	0	109	62	145	56.89	4.46	21.2	
Trichloroethene	56.72	5.0	50	0	113	70.3	140	57.66	1.64	20.3	
Surr: 4-Bromofluorobenzene	49.55	0	50	0	99.1	60.1	127	48.41	0	0	
Surr: Dibromofluoromethane	51.37	0	50	0	103	79.6	126	49.99	0	0	
Surr: Toluene-d8	48.08	0	50	0	96.2	78	116	49.13	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		



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

September 20, 2010

Rob Deal  
Terracon  
2855 Premiere Parkway  
Duluth GA 30097

TEL: (770) 623-0755  
FAX: (770) 623-9628

RE: Moores Mill

Dear Rob Deal:

Order No: 1009880

Analytical Environmental Services, Inc. received 4 samples on September 10, 2010 5:06 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 07/01/10-06/30/11.
- AIHA Certification ID #100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/11.

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.

Brian Rohr  
Project Manager





## ANALYTICAL ENVIRONMENTAL SERVICES, INC

3785 Presidential Parkway, Atlanta GA 30340-3704

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

## CHAIN OF CUSTODY

Work Order: 1009880

Date: \_\_\_\_\_ Page 1 of \_\_\_\_\_

COMPANY: 2 of 20 Terracon		ADDRESS: 2855 Premiere Pkwy Ste C, Duluth, GA 30097		ANALYSIS REQUESTED										Visit our website <a href="http://www.aesatlanta.com">www.aesatlanta.com</a> to check on the status of your results, place bottle orders, etc.		No # of Containers			
PHONE: 770-623-0755		FAX: 770-623-9628		PRESERVATION (See codes)															
SAMPLED BY: Rob Deal		SIGNATURE: <i>[Signature]</i>												REMARKS					
#	SAMPLE ID	SAMPLED		Grab	Composite	Matrix (See codes)													
		DATE	TIME																
1	MW-1, 1	9-9-10	0934	✓		SO											5		
2	MW-1, 1	"	1049	✓		"											5		
3	MW-2, 1	"	1336	✓		"											5		
4	MW-3, 9	9-10-10	1015	✓		"											5		
5	MW-4, 1	"	1232	✓		"											5		
6	MW-2	"	1532	✓		GW	X	X									4		
7	MW-1	"	1545	✓		GW	X	X									4		
8	MW-4	"	1500	✓		"	X	X									4		
9	Trip Blank	+	-				X										2		
10	MW-3, 1	9-10-10		✓		SO			X								5		
11																			
12																			
13																			
14																			
RELINQUISHED BY		DATE/TIME		RECEIVED BY		DATE/TIME		PROJECT INFORMATION										RECEIPT	
1: <i>[Signature]</i>		9-10-10 1706		1: <i>[Signature]</i>		9-10-10 1706		PROJECT NAME: Moores Mill										Total # of Containers	
2:				2:				PROJECT #: 490972578										Turnaround Time Request <input checked="" 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: Cornet Way											
SPECIAL INSTRUCTIONS/COMMENTS:				SHIPMENT METHOD				SEND REPORT TO: Rob Deal										STATE PROGRAM (if any): _____	
				OUT / / VIA:				INVOICE TO: (IF DIFFERENT FROM ABOVE)										E-mail? Y/N; Fax? Y/N	
				IN / / VIA:				QUOTE #: _____ PO#: _____										DATA PACKAGE: I II III IV	
				CLIENT <input checked="" type="radio"/> FedEx <input type="radio"/> UPS <input type="radio"/> MAIL <input type="radio"/> COURIER GREYHOUND <input type="radio"/> OTHER _____															

SAMPLES RECEIVED AFTER 3PM OR SATURDAY ARE CONSIDERED AS RECEIVED ON THE NEXT BUSINESS DAY; IF NO TAT IS MARKED ON COC AES WILL PROCEED AS STANDARD TAT.  
 SAMPLES ARE DISPOSED OF 30 DAYS AFTER COMPLETION OF REPORT 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

White Copy - Original; Yellow Copy - Client

**Client:** Terracon  
**Project:** Moores Mill  
**Lab ID:** 1009880

**Case Narrative**

**Sample Receiving Nonconformance:**

An extra sample, MW-4,10, was received at the lab, but not listed on the COC. The sample was placed on hold per Rob Deal.

## Analytical Environmental Services, Inc

Date: 20-Sep-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1009880-006

Client Sample ID: MW-2  
 Collection Date: 9/10/2010 3:32:00 PM  
 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	135018	1	09/16/2010 11:36	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,1-Dichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,1-Dichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,2-Dibromoethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,2-Dichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,2-Dichloropropane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
2-Butanone	BRL	50		ug/L	135018	1	09/16/2010 11:36	SB
2-Hexanone	BRL	10		ug/L	135018	1	09/16/2010 11:36	SB
4-Methyl-2-pentanone	BRL	10		ug/L	135018	1	09/16/2010 11:36	SB
Acetone	BRL	50		ug/L	135018	1	09/16/2010 11:36	SB
Benzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Bromodichloromethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Bromoform	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Bromomethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Carbon disulfide	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Carbon tetrachloride	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Chlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Chloroethane	BRL	10		ug/L	135018	1	09/16/2010 11:36	SB
Chloroform	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Chloromethane	BRL	10		ug/L	135018	1	09/16/2010 11:36	SB
cis-1,2-Dichloroethene	1700	50		ug/L	135018	10	09/16/2010 12:31	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Cyclohexane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Dibromochloromethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Dichlorodifluoromethane	BRL	10		ug/L	135018	1	09/16/2010 11:36	SB
Ethylbenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Freon-113	BRL	10		ug/L	135018	1	09/16/2010 11:36	SB
Isopropylbenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
m,p-Xylene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Methyl acetate	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Methylcyclohexane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Methylene chloride	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
o-Xylene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB

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

## Analytical Environmental Services, Inc

Date: 20-Sep-10

Client: Terracon  
Project: Moores Mill  
Lab ID: 1009880-006

Client Sample ID: MW-2  
Collection Date: 9/10/2010 3:32:00 PM  
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>		<b>(SW5030B)</b>						
Styrene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Tetrachloroethene	1700	50		ug/L	135018	10	09/16/2010 12:31	SB
Toluene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
trans-1,2-Dichloroethene	30	5.0		ug/L	135018	1	09/16/2010 11:36	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Trichloroethene	830	50		ug/L	135018	10	09/16/2010 12:31	SB
Trichlorofluoromethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Vinyl chloride	BRL	2.0		ug/L	135018	1	09/16/2010 11:36	SB
Surr: 4-Bromofluorobenzene	85.3	60.1-127		%REC	135018	1	09/16/2010 11:36	SB
Surr: 4-Bromofluorobenzene	85.6	60.1-127		%REC	135018	10	09/16/2010 12:31	SB
Surr: Dibromofluoromethane	101	79.6-126		%REC	135018	1	09/16/2010 11:36	SB
Surr: Dibromofluoromethane	100	79.6-126		%REC	135018	10	09/16/2010 12:31	SB
Surr: Toluene-d8	91.7	78-116		%REC	135018	1	09/16/2010 11:36	SB
Surr: Toluene-d8	91.2	78-116		%REC	135018	10	09/16/2010 12:31	SB
<b>POLYAROMATIC HYDROCARBONS SW8270D</b>		<b>(SW3535A)</b>						
Naphthalene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Acenaphthylene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
1-Methylnaphthalene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
2-Methylnaphthalene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Accenaphthene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Fluorene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Phenanthrene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Anthracene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Fluoranthene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Pyrene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Benz(a)anthracene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Chrysene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Benzo(b)fluoranthene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Benzo(k)fluoranthene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Benzo(a)pyrene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Dibenz(a,h)anthracene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Benzo(g,h,i)perylene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Indeno(1,2,3-cd)pyrene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Surr: Nitrobenzene-d5	81.4	26.9-116		%REC	134953	1	09/17/2010 12:06	NE
Surr: 2-Fluorobiphenyl	75.5	41.6-111		%REC	134953	1	09/17/2010 12:06	NE
Surr: 4-Terphenyl-d14	83.8	61.5-129		%REC	134953	1	09/17/2010 12:06	NE

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

**Analytical Environmental Services, Inc**
**Date:** 20-Sep-10

**Client:** Terracon  
**Project:** Moores Mill  
**Lab ID:** 1009880-007

**Client Sample ID:** MW-1  
**Collection Date:** 9/10/2010 3:45:00 PM  
**Matrix:** Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>		<b>(SW5030B)</b>						
1,1,1-Trichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,1-Dichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,1-Dichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,2-Dibromoethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,2-Dichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,2-Dichloropropane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
2-Butanone	BRL	50		ug/L	135018	1	09/16/2010 12:03	SB
2-Hexanone	BRL	10		ug/L	135018	1	09/16/2010 12:03	SB
4-Methyl-2-pentanone	BRL	10		ug/L	135018	1	09/16/2010 12:03	SB
Acetone	BRL	50		ug/L	135018	1	09/16/2010 12:03	SB
Benzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Bromodichloromethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Bromoform	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Bromomethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Carbon disulfide	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Carbon tetrachloride	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Chlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Chloroethane	BRL	10		ug/L	135018	1	09/16/2010 12:03	SB
Chloroform	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Chloromethane	BRL	10		ug/L	135018	1	09/16/2010 12:03	SB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Cyclohexane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Dibromochloromethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Dichlorodifluoromethane	BRL	10		ug/L	135018	1	09/16/2010 12:03	SB
Ethylbenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Freon-113	BRL	10		ug/L	135018	1	09/16/2010 12:03	SB
Isopropylbenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
m,p-Xylene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Methyl acetate	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Methylcyclohexane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Methylene chloride	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
o-Xylene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB

**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

## Analytical Environmental Services, Inc

Date: 20-Sep-10

Client: Terracon  
Project: Moores Mill  
Lab ID: 1009880-007

Client Sample ID: MW-1  
Collection Date: 9/10/2010 3:45:00 PM  
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>		<b>(SW5030B)</b>						
Styrene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Tetrachloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Toluene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Trichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Trichlorofluoromethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Vinyl chloride	BRL	2.0		ug/L	135018	1	09/16/2010 12:03	SB
Surr: 4-Bromofluorobenzene	86.2	60.1-127		%REC	135018	1	09/16/2010 12:03	SB
Surr: Dibromofluoromethane	104	79.6-126		%REC	135018	1	09/16/2010 12:03	SB
Surr: Toluene-d8	95.2	78-116		%REC	135018	1	09/16/2010 12:03	SB
<b>POLYAROMATIC HYDROCARBONS SW8270D</b>		<b>(SW3535A)</b>						
Naphthalene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Acenaphthylene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
1-Methylnaphthalene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
2-Methylnaphthalene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Acenaphthene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Fluorene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Phenanthrene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Anthracene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Fluoranthene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Pyrene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Benz(a)anthracene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Chrysene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Benzo(b)fluoranthene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Benzo(k)fluoranthene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Benzo(a)pyrene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Dibenz(a,h)anthracene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Benzo(g,h,i)perylene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Indeno(1,2,3-cd)pyrene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Surr: Nitrobenzene-d5	76.6	26.9-116		%REC	134953	1	09/17/2010 12:31	NE
Surr: 2-Fluorobiphenyl	67.3	41.6-111		%REC	134953	1	09/17/2010 12:31	NE
Surr: 4-Terphenyl-d14	83	61.5-129		%REC	134953	1	09/17/2010 12:31	NE

**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

## Analytical Environmental Services, Inc

Date: 20-Sep-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1009880-008

Client Sample ID: MW-4  
 Collection Date: 9/10/2010 3:55:00 PM  
 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	135018	1	09/16/2010 12:58	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,1-Dichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,1-Dichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,2-Dibromoethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,2-Dichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,2-Dichloropropane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
2-Butanone	BRL	50		ug/L	135018	1	09/16/2010 12:58	SB
2-Hexanone	BRL	10		ug/L	135018	1	09/16/2010 12:58	SB
4-Methyl-2-pentanone	BRL	10		ug/L	135018	1	09/16/2010 12:58	SB
Acetone	BRL	50		ug/L	135018	1	09/16/2010 12:58	SB
Benzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Bromodichloromethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Bromoform	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Bromomethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Carbon disulfide	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Carbon tetrachloride	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Chlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Chloroethane	BRL	10		ug/L	135018	1	09/16/2010 12:58	SB
Chloroform	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Chloromethane	BRL	10		ug/L	135018	1	09/16/2010 12:58	SB
cis-1,2-Dichloroethene	8.2	5.0		ug/L	135018	1	09/16/2010 12:58	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Cyclohexane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Dibromochloromethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Dichlorodifluoromethane	BRL	10		ug/L	135018	1	09/16/2010 12:58	SB
Ethylbenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Freon-113	BRL	10		ug/L	135018	1	09/16/2010 12:58	SB
Isopropylbenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
m,p-Xylene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Methyl acetate	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Methylcyclohexane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Methylene chloride	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
o-Xylene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB

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



**Analytical Environmental Services, Inc**
**Date:** 20-Sep-10

**Client:** Terracon  
**Project:** Moores Mill  
**Lab ID:** 1009880-008

**Client Sample ID:** MW-4  
**Collection Date:** 9/10/2010 3:55:00 PM  
**Matrix:** Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>		<b>(SW5030B)</b>						
Styrene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Tetrachloroethene	86	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Toluene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Trichloroethene	20	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Trichlorofluoromethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Vinyl chloride	BRL	2.0		ug/L	135018	1	09/16/2010 12:58	SB
Surr: 4-Bromofluorobenzene	89.5	60.1-127		%REC	135018	1	09/16/2010 12:58	SB
Surr: Dibromofluoromethane	108	79.6-126		%REC	135018	1	09/16/2010 12:58	SB
Surr: Toluene-d8	95.8	78-116		%REC	135018	1	09/16/2010 12:58	SB
<b>POLYAROMATIC HYDROCARBONS SW8270D</b>		<b>(SW3535A)</b>						
Naphthalene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Acenaphthylene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
1-Methylnaphthalene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
2-Methylnaphthalene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Acenaphthene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Fluorene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Phenanthrene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Anthracene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Fluoranthene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Pyrene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Benz(a)anthracene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Chrysene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Benzo(b)fluoranthene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Benzo(k)fluoranthene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Benzo(a)pyrene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Dibenz(a,h)anthracene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Benzo(g,h,i)perylene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Indeno(1,2,3-cd)pyrene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Surr: Nitrobenzene-d5	74.7	26.9-116		%REC	134953	1	09/17/2010 12:57	NE
Surr: 2-Fluorobiphenyl	66.3	41.6-111		%REC	134953	1	09/17/2010 12:57	NE
Surr: 4-Terphenyl-d14	85.5	61.5-129		%REC	134953	1	09/17/2010 12:57	NE

**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

## Analytical Environmental Services, Inc

Date: 20-Sep-10

Client: Terracon  
Project: Moores Mill  
Lab ID: 1009880-009

Client Sample ID: TRIP BLANK  
Collection Date: 9/10/2010  
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	135018	1	09/16/2010 11:09	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,1-Dichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,1-Dichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,2-Dibromoethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,2-Dichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,2-Dichloropropane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
2-Butanone	BRL	50		ug/L	135018	1	09/16/2010 11:09	SB
2-Hexanone	BRL	10		ug/L	135018	1	09/16/2010 11:09	SB
4-Methyl-2-pentanone	BRL	10		ug/L	135018	1	09/16/2010 11:09	SB
Acetone	BRL	50		ug/L	135018	1	09/16/2010 11:09	SB
Benzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Bromodichloromethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Bromoform	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Bromomethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Carbon disulfide	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Carbon tetrachloride	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Chlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Chloroethane	BRL	10		ug/L	135018	1	09/16/2010 11:09	SB
Chloroform	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Chloromethane	BRL	10		ug/L	135018	1	09/16/2010 11:09	SB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Cyclohexane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Dibromochloromethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Dichlorodifluoromethane	BRL	10		ug/L	135018	1	09/16/2010 11:09	SB
Ethylbenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Freon-113	BRL	10		ug/L	135018	1	09/16/2010 11:09	SB
Isopropylbenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
m,p-Xylene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Methyl acetate	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Methylcyclohexane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Methylene chloride	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
o-Xylene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB

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

## Analytical Environmental Services, Inc

Date: 20-Sep-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1009880-009

Client Sample ID: TRIP BLANK  
 Collection Date: 9/10/2010  
 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	135018	1	09/16/2010 11:09	SB
Tetrachloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Toluene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Trichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Trichlorofluoromethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Vinyl chloride	BRL	2.0		ug/L	135018	1	09/16/2010 11:09	SB
Surr: 4-Bromofluorobenzene	88.4	60.1-127		%REC	135018	1	09/16/2010 11:09	SB
Surr: Dibromofluoromethane	104	79.6-126		%REC	135018	1	09/16/2010 11:09	SB
Surr: Toluene-d8	95.5	78-116		%REC	135018	1	09/16/2010 11:09	SB

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

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Terracotta

Work Order Number 1009880

Checklist completed by ML 9/11/10  
Signature Date

Carrier name: FedEx ☐ UPS ☐ Courier ☐ Client ☒ US Mail ☐ Other ☐

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

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

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Container/Temp. Blank temperature in compliance? ( $4^{\circ}\text{C} \pm 2$ )\* Yes ☒ No ☐

Cooler #1 3.8°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 ☐

Adjusted? ☐ Checked by ML

Sample Condition: Good ☒ Other(Explain) ☐

(For diffusive samples or AIIIA 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.

\\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample\_Cooler\_Receipt\_Checklist

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009880

## ANALYTICAL QC SUMMARY REPORT

BatchID: 134953

Sample ID: MB-134953	Client ID:					Units: ug/L	Prep Date: 09/14/2010	Run No: 180210			
SampleType: MBLK	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 134953				Analysis Date: 09/15/2010	Seq No: 3750720			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1-Methylnaphthalene	BRL	10	0	0	0	0	0	0	0	0	
2-Methylnaphthalene	BRL	10	0	0	0	0	0	0	0	0	
Acenaphthene	BRL	10	0	0	0	0	0	0	0	0	
Acenaphthylene	BRL	10	0	0	0	0	0	0	0	0	
Anthracene	BRL	10	0	0	0	0	0	0	0	0	
Benz(a)anthracene	BRL	10	0	0	0	0	0	0	0	0	
Benzo(a)pyrene	BRL	10	0	0	0	0	0	0	0	0	
Benzo(b)fluoranthene	BRL	10	0	0	0	0	0	0	0	0	
Benzo(g,h,i)perylene	BRL	10	0	0	0	0	0	0	0	0	
Benzo(k)fluoranthene	BRL	10	0	0	0	0	0	0	0	0	
Chrysene	BRL	10	0	0	0	0	0	0	0	0	
Dibenz(a,h)anthracene	BRL	10	0	0	0	0	0	0	0	0	
Fluoranthene	BRL	10	0	0	0	0	0	0	0	0	
Fluorene	BRL	10	0	0	0	0	0	0	0	0	
Indeno(1,2,3-cd)pyrene	BRL	10	0	0	0	0	0	0	0	0	
Naphthalene	BRL	10	0	0	0	0	0	0	0	0	
Phenanthrene	BRL	10	0	0	0	0	0	0	0	0	
Pyrene	BRL	10	0	0	0	0	0	0	0	0	
Surr: 2-Fluorobiphenyl	35.02	0	50	0	70	41.6	111	0	0	0	
Surr: 4-Terphenyl-d14	39.41	0	50	0	78.8	61.5	129	0	0	0	
Surr: Nitrobenzene-d5	37.99	0	50	0	76	26.9	116	0	0	0	

Sample ID: LCS-134953	Client ID:					Units: ug/L	Prep Date: 09/14/2010	Run No: 180210			
SampleType: LCS	TestCode: POLYAROMATIC HYDROCARBONS SW8270D					BatchID: 134953	Analysis Date: 09/15/2010	Seq No: 3750727			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Acenaphthene	36.11	10	50	0	72.2	54.6	120	0	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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009880

## ANALYTICAL QC SUMMARY REPORT

BatchID: 134953

Sample ID: LCS-134953	Client ID:				Units: ug/L	Prep Date: 09/14/2010	Run No: 180210				
SampleType: LCS	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 134953			Analysis Date: 09/15/2010	Seq No: 3750727				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthylene	41.01	10	50	0	82	55.9	120	0	0	0	
Anthracene	42.01	10	50	0	84	61.2	120	0	0	0	
Benz(a)anthracene	40.96	10	50	0	81.9	66.5	120	0	0	0	
Benzo(a)pyrene	37.29	10	50	0	74.6	66	120	0	0	0	
Benzo(b)fluoranthene	44.36	10	50	0	88.7	65.3	115	0	0	0	
Benzo(g,h,i)perylene	39.84	10	50	0	79.7	59.9	115	0	0	0	
Benzo(k)fluoranthene	35.49	10	50	0	71	67.4	115	0	0	0	
Chrysene	38.50	10	50	0	77	67.7	120	0	0	0	
Dibenz(a,h)anthracene	43.00	10	50	0	86	61	117	0	0	0	
Fluoranthene	42.88	10	50	0	85.8	64.8	120	0	0	0	
Fluorene	38.29	10	50	0	76.6	59.3	120	0	0	0	
Indeno(1,2,3-cd)pyrene	42.12	10	50	0	84.2	59.9	120	0	0	0	
Naphthalene	35.45	10	50	0	70.9	47.8	120	0	0	0	
Phenanthrene	43.29	10	50	0	86.6	63	120	0	0	0	
Pyrene	39.55	10	50	0	79.1	65.8	120	0	0	0	
Surr: 2-Fluorobiphenyl	36.97	0	50	0	73.9	41.6	111	0	0	0	
Surr: 4-Terphenyl-d14	41.99	0	50	0	84	61.5	129	0	0	0	
Surr: Nitrobenzene-d5	39.70	0	50	0	79.4	26.9	116	0	0	0	

Sample ID: 1009815-005AMS	Client ID:				Units: ug/L	Prep Date: 09/14/2010	Run No: 180210				
SampleType: MS	TestCode: POLYAROMATIC HYDROCARBONS SW8270D				BatchID: 134953	Analysis Date: 09/15/2010	Seq No: 3751968				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	30.95	10	50	0	61.9	49.3	120	0	0	0	
Acenaphthylene	34.15	10	50	0	68.3	50.3	120	0	0	0	
Anthracene	32.24	10	50	0	64.5	48.9	120	0	0	0	
Benz(a)anthracene	31.91	10	50	0	63.8	61.7	120	0	0	0	
Benzo(a)pyrene	30.55	10	50	0	61.1	58.2	120	0	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	

## ANALYTICAL QC SUMMARY REPORT

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009880

BatchID: 134953

Sample ID: 1009815-005AMS	Client ID:					Units: ug/L	Prep Date: 09/14/2010	Run No: 180210			
SampleType: MS	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 134953				Analysis Date: 09/15/2010	Seq No: 3751968			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzo(b)fluoranthene	37.08	10	50	0	74.2	59	120	0	0	0	
Benzo(g,h,i)perylene	25.60	10	50	0	51.2	55.2	120	0	0	0	S
Benzo(k)fluoranthene	29.82	10	50	0	59.6	59.1	120	0	0	0	
Chrysene	30.51	10	50	0	61	62	120	0	0	0	S
Dibenz(a,h)anthracene	31.04	10	50	0	62.1	56.9	120	0	0	0	
Fluoranthene	32.97	10	50	0	65.9	54.5	120	0	0	0	
Fluorene	33.26	10	50	0	66.5	52.8	120	0	0	0	
Indeno(1,2,3-cd)pyrene	29.70	10	50	0	59.4	57.6	120	0	0	0	
Naphthalene	30.57	10	50	0	61.1	34	120	0	0	0	
Phenanthrene	34.74	10	50	0	69.5	54.6	120	0	0	0	
Pyrene	32.02	10	50	0	64	59.2	120	0	0	0	
Surr: 2-Fluorobiphenyl	30.73	0	50	0	61.5	41.6	111	0	0	0	
Surr: 4-Terphenyl-d14	33.64	0	50	0	67.3	61.5	129	0	0	0	
Surr: Nitrobenzene-d5	31.18	0	50	0	62.4	26.9	116	0	0	0	

Sample ID: 1009815-005AMSD	Client ID:					Units: ug/L	Prep Date: 09/14/2010	Run No: 180210			
SampleType: MSD	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 134953				Analysis Date: 09/15/2010	Seq No: 3751971			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Acenaphthene	33.97	10	50	0	67.9	49.3	120	30.95	9.3	27.8	
Acenaphthylene	36.07	10	50	0	72.1	50.3	120	34.15	5.47	27.7	
Anthracene	36.56	10	50	0	73.1	48.9	120	32.24	12.6	17	
Benz(a)anthracene	36.84	10	50	0	73.7	61.7	120	31.91	14.3	17.7	
Benzo(a)pyrene	33.55	10	50	0	67.1	58.2	120	30.55	9.36	18.7	
Benzo(b)fluoranthene	40.06	10	50	0	80.1	59	120	37.08	7.73	19.3	
Benzo(g,h,i)perylene	29.83	10	50	0	59.7	55.2	120	25.60	15.3	19.9	
Benzo(k)fluoranthene	32.20	10	50	0	64.4	59.1	120	29.82	7.67	19.3	
Chrysene	34.55	10	50	0	69.1	62	120	30.51	12.4	17.5	

Qualifiers: > Greater than Result value  
 BRL Below reporting limit  
 J Estimated value detected below Reporting Limit  
 Rpt Lim Reporting Limit

< Less than Result value  
 E Estimated (value above quantitation range)  
 N Analyte not NELAC certified  
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank  
 H Holding times for preparation or analysis exceeded  
 R RPD outside limits due to matrix



## ANALYTICAL QC SUMMARY REPORT

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009880

BatchID: 134953

Sample ID: 1009815-005AMSD	Client ID:					Units: ug/L	Prep Date: 09/14/2010	Run No: 180210			
SampleType: MSD	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 134953				Analysis Date: 09/15/2010	Seq No: 3751971			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Dibenz(a,h)anthracene	35.02	10	50	0	70	56.9	120	31.04	12	20	
Fluoranthene	37.42	10	50	0	74.8	54.5	120	32.97	12.6	17.3	
Fluorene	35.69	10	50	0	71.4	52.8	120	33.26	7.05	23.4	
Indeno(1,2,3-cd)pyrene	33.50	10	50	0	67	57.6	120	29.70	12	20.6	
Naphthalene	29.94	10	50	0	59.9	34	120	30.57	2.08	36.1	
Phenanthrene	39.20	10	50	0	78.4	54.6	120	34.74	12.1	17.3	
Pyrene	35.95	10	50	0	71.9	59.2	120	32.02	11.6	16.1	
Surr: 2-Fluorobiphenyl	31.95	0	50	0	63.9	41.6	111	30.73	0	0	
Surr: 4-Terphenyl-d14	38.14	0	50	0	76.3	61.5	129	33.64	0	0	
Surr: Nitrobenzene-d5	32.04	0	50	0	64.1	26.9	116	31.18	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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009880

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135018

Sample ID: MB-135018	Client ID:				Units: ug/L	Prep Date: 09/14/2010		Run No: 180158			
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B				BatchID: 135018	Analysis Date: 09/14/2010		Seq No: 3750028			
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	0	0	0	0	0	0	0	0	
1,1,2,2-Tetrachloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1,2-Trichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1-Dichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2,4-Trichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dibromo-3-chloropropane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dibromoethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichloropropane	BRL	5.0	0	0	0	0	0	0	0	0	
1,3-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,4-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
2-Butanone	BRL	50	0	0	0	0	0	0	0	0	
2-Hexanone	BRL	10	0	0	0	0	0	0	0	0	
4-Methyl-2-pentanone	BRL	10	0	0	0	0	0	0	0	0	
Acetone	BRL	50	0	0	0	0	0	0	0	0	
Benzene	BRL	5.0	0	0	0	0	0	0	0	0	
Bromodichloromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Bromoform	BRL	5.0	0	0	0	0	0	0	0	0	
Bromomethane	BRL	5.0	0	0	0	0	0	0	0	0	
Carbon disulfide	BRL	5.0	0	0	0	0	0	0	0	0	
Carbon tetrachloride	BRL	5.0	0	0	0	0	0	0	0	0	
Chlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Chloroethane	BRL	10	0	0	0	0	0	0	0	0	
Chloroform	BRL	5.0	0	0	0	0	0	0	0	0	
Chloromethane	BRL	10	0	0	0	0	0	0	0	0	

Qualifiers: > Greater than Result value  
 BRL Below reporting limit  
 J Estimated value detected below Reporting Limit  
 Rpt Lim Reporting Limit

< Less than Result value  
 E Estimated (value above quantitation range)  
 N Analyte not NELAC certified  
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank  
 H Holding times for preparation or analysis exceeded  
 R RPD outside limits due to matrix

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009880

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135018

Sample ID: MB-135018	Client ID:					Units: ug/L	Prep Date: 09/14/2010	Run No: 180158			
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS	SW8260B	BatchID: 135018				Analysis Date: 09/14/2010	Seq No: 3750028			
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	0	0	0	0	0	0	0	0	
cis-1,3-Dichloropropene	BRL	5.0	0	0	0	0	0	0	0	0	
Cyclohexane	BRL	5.0	0	0	0	0	0	0	0	0	
Dibromochloromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Dichlorodifluoromethane	BRL	10	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Freon-113	BRL	10	0	0	0	0	0	0	0	0	
Isopropylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
m,p-Xylene	BRL	5.0	0	0	0	0	0	0	0	0	
Methyl acetate	BRL	5.0	0	0	0	0	0	0	0	0	
Methyl tert-butyl ether	BRL	5.0	0	0	0	0	0	0	0	0	
Methylcyclohexane	BRL	5.0	0	0	0	0	0	0	0	0	
Methylene chloride	BRL	5.0	0	0	0	0	0	0	0	0	
o-Xylene	BRL	5.0	0	0	0	0	0	0	0	0	
Styrene	BRL	5.0	0	0	0	0	0	0	0	0	
Tetrachloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	5.0	0	0	0	0	0	0	0	0	
trans-1,2-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
trans-1,3-Dichloropropene	BRL	5.0	0	0	0	0	0	0	0	0	
Trichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
Trichlorofluoromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Vinyl chloride	BRL	2.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	52.68	0	50	0	105	60.1	127	0	0	0	
Surr: Dibromofluoromethane	58.31	0	50	0	117	79.6	126	0	0	0	
Surr: Toluene-d8	50.45	0	50	0	101	78	116	0	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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009880

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135018

Sample ID: LCS-135018	Client ID:	Units: ug/L	Prep Date: 09/14/2010	Run No: 180158							
SampleType: LCS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 135018	Analysis Date: 09/14/2010	Seq No: 3750027							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	54.61	5.0	50	0	109	61.4	146	0	0	0	
Benzene	47.12	5.0	50	0	94.2	72.8	131	0	0	0	
Chlorobenzene	50.88	5.0	50	0	102	76	123	0	0	0	
Toluene	50.53	5.0	50	0	101	74.7	128	0	0	0	
Trichloroethene	53.30	5.0	50	0	107	74.4	130	0	0	0	
Surr: 4-Bromofluorobenzene	54.83	0	50	0	110	60.1	127	0	0	0	
Surr: Dibromofluoromethane	55.68	0	50	0	111	79.6	126	0	0	0	
Surr: Toluene-d8	50.99	0	50	0	102	78	116	0	0	0	

Sample ID: 1009704-001AMS	Client ID:				Units: ug/L	Prep Date: 09/14/2010	Run No: 180158				
SampleType: MS	TestCode: TCL VOLATILE ORGANICS SW8260B				BatchID: 135018	Analysis Date: 09/14/2010	Seq No: 3750030				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	50.38	5.0	50	0	101	48.8	172	0	0	0	
Benzene	60.98	5.0	50	12.96	96	64.5	143	0	0	0	
Chlorobenzene	129.3	5.0	50	77.81	103	74.5	129	0	0	0	
Toluene	55.53	5.0	50	6.870	97.3	62	145	0	0	0	
Trichloroethene	83.70	5.0	50	28.57	110	70.3	140	0	0	0	
Surr: 4-Bromofluorobenzene	53.72	0	50	0	107	60.1	127	0	0	0	
Surr: Dibromofluoromethane	56.37	0	50	0	113	79.6	126	0	0	0	
Surr: Toluene-d8	48.70	0	50	0	97.4	78	116	0	0	0	

Sample ID: 1009704-001AMSD	Client ID:	Units: ug/L	Prep Date: 09/14/2010	Run No: 180158							
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 135018	Analysis Date: 09/14/2010	Seq No: 3750031							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	53.99	5.0	50	0	108	48.8	172	50.38	6.92	21.6	
Benzene	61.30	5.0	50	12.96	96.7	64.5	143	60.98	0.523	18.3	

Qualifiers: > Greater than Result value  
 BRL Below reporting limit  
 J Estimated value detected below Reporting Limit  
 Rpt Lim Reporting Limit

< Less than Result value  
 E Estimated (value above quantitation range)  
 N Analyte not NELAC certified  
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank  
 H Holding times for preparation or analysis exceeded  
 R RPD outside limits due to matrix

## ANALYTICAL QC SUMMARY REPORT

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009880

BatchID: 135018

Sample ID: 1009704-001AMSD	Client ID:					Units: ug/L	Prep Date: 09/14/2010	Run No: 180158			
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B					BatchID: 135018	Analysis Date: 09/14/2010	Seq No: 3750031			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chlorobenzene	125.7	5.0	50	77.81	95.8	74.5	129	129.3	2.78	19.2	
Toluene	55.82	5.0	50	6.870	97.9	62	145	55.53	0.521	21.2	
Trichloroethene	79.47	5.0	50	28.57	102	70.3	140	83.70	5.18	20.3	
Surr: 4-Bromofluorobenzene	50.22	0	50	0	100	60.1	127	53.72	0	0	
Surr: Dibromofluoromethane	53.11	0	50	0	106	79.6	126	56.37	0	0	
Surr: Toluene-d8	48.19	0	50	0	96.4	78	116	48.70	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		



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

October 04, 2010

Rob Deal  
Terracon  
2855 Premiere Parkway  
Duluth GA 30097

TEL: (770) 623-0755  
FAX: (770) 623-9628

RE: Moores Mill

Dear Rob Deal:

Order No: 1009M35

Analytical Environmental Services, Inc. received 2 samples on 9/29/2010 3:40:00 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 07/01/10-06/30/11.
- AIHA Certification ID #100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/11.

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.

Brian Rohr  
Project Manager



3785 Presidential Parkway, Atlanta GA 30340-3704

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

## CHAIN OF CUSTODY

Work Order: 1009 M35

Date: 9-29-10 Page 1 of     

COMPANY: <b>Terracon</b>		ADDRESS: <b>2855 Premiere Pkwy Ste C, Duluth, GA 30097</b>		ANALYSIS REQUESTED						Visit our website <b>www.aesatlanta.com</b> to check on the status of your results, place bottle orders, etc.		No # of Containers			
PHONE: <b>770-623-0755</b>		FAX: <b>770-623-9628</b>													
SAMPLED BY: <b>Rob Deal</b>		SIGNATURE: <i>[Signature]</i>													
#	SAMPLE ID	SAMPLED		Grab	Composite	Matrix (See codes)	PRESERVATION (See codes)						REMARKS		
		DATE	TIME												
1	MMS	9-29-10	1453	✓		GLW	X	X							4
2	trip blank	-	-			AQ	X								2
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
RELINQUISHED BY:		DATE/TIME	RECEIVED BY		DATE/TIME	PROJECT INFORMATION						RECEIPT		Total # of Containers	6
1: <i>[Signature]</i>		9-29-10 1540	1: <i>[Signature]</i>		9-29-10 1540	PROJECT NAME: <b>Moore's MWH</b>									
2:			2:			PROJECT #: <b>4909725FB</b>									
3:			3:			SITE ADDRESS: <b>Coronet Way</b>									
						SEND REPORT TO: <b>Rob Deal</b>									
SPECIAL INSTRUCTIONS/COMMENTS:		SHIPMENT METHOD				INVOICE TO:									
		OUT / VIA:				(IF DIFFERENT FROM ABOVE)									
		IN / VIA:													
		CLIENT FedEx UPS MAIL COURIER													
		OR KEYHOUND OTHER													
						QUOTE #:						PO#:		DATA PACKAGE: I II III IV	
SAMPLES RECEIVED AFTER 3PM OR SATURDAY ARE CONSIDERED AS RECEIVED ON THE NEXT BUSINESS DAY; IF NO TAT IS MARKED ON COC AES WILL PROCEED AS STANDARD TAT. SAMPLES ARE DISPOSED OF 30 DAYS AFTER COMPLETION OF REPORT 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

White Copy - Original; Yellow Copy - Client



## Analytical Environmental Services, Inc

Date: 4-Oct-10

Client: Terracon  
Project: Moores Mill  
Lab ID: 1009M35-001

Client Sample ID: MW-5  
Collection Date: 9/29/2010 2:53:00 PM  
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	135865	1	10/01/2010 14:05	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,1-Dichloroethane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,1-Dichloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,2-Dibromoethane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,2-Dichloroethane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,2-Dichloropropane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
2-Butanone	BRL	50		ug/L	135865	1	10/01/2010 14:05	SB
2-Hexanone	BRL	10		ug/L	135865	1	10/01/2010 14:05	SB
4-Methyl-2-pentanone	BRL	10		ug/L	135865	1	10/01/2010 14:05	SB
Acetone	BRL	50		ug/L	135865	1	10/01/2010 14:05	SB
Benzene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Bromodichloromethane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Bromoform	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Bromomethane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Carbon disulfide	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Carbon tetrachloride	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Chlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Chloroethane	BRL	10		ug/L	135865	1	10/01/2010 14:05	SB
Chloroform	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Chloromethane	BRL	10		ug/L	135865	1	10/01/2010 14:05	SB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Cyclohexane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Dibromochloromethane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Dichlorodifluoromethane	BRL	10		ug/L	135865	1	10/01/2010 14:05	SB
Ethylbenzene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Freon-113	BRL	10		ug/L	135865	1	10/01/2010 14:05	SB
Isopropylbenzene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
m,p-Xylene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Methyl acetate	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Methylcyclohexane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Methylene chloride	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
o-Xylene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB

**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

## Analytical Environmental Services, Inc

Date: 4-Oct-10

Client: Terracon  
Project: Moores Mill  
Lab ID: 1009M35-001

Client Sample ID: MW-5  
Collection Date: 9/29/2010 2:53:00 PM  
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>		<b>(SW5030B)</b>						
Styrene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Tetrachloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Toluene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Trichloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Trichlorofluoromethane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Vinyl chloride	BRL	2.0		ug/L	135865	1	10/01/2010 14:05	SB
Surr: 4-Bromofluorobenzene	93.4	60.1-127		%REC	135865	1	10/01/2010 14:05	SB
Surr: Dibromofluoromethane	99.2	79.6-126		%REC	135865	1	10/01/2010 14:05	SB
Surr: Toluene-d8	89	78-116		%REC	135865	1	10/01/2010 14:05	SB
<b>POLYAROMATIC HYDROCARBONS SW8270D</b>		<b>(SW3535A)</b>						
Naphthalene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Acenaphthylene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
1-Methylnaphthalene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
2-Methylnaphthalene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Acenaphthene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Fluorene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Phenanthrene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Anthracene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Fluoranthene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Pyrene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Benz(a)anthracene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Chrysene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Benzo(b)fluoranthene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Benzo(k)fluoranthene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Benzo(a)pyrene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Dibenz(a,h)anthracene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Benzo(g,h,i)perylene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Indeno(1,2,3-cd)pyrene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Surr: Nitrobenzene-d5	56.9	26.9-116		%REC	135894	1	10/04/2010 10:29	NE
Surr: 2-Fluorobiphenyl	66	41.6-111		%REC	135894	1	10/04/2010 10:29	NE
Surr: 4-Terphenyl-d14	77.4	61.5-129		%REC	135894	1	10/04/2010 10:29	NE

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

**Analytical Environmental Services, Inc**
**Date:** 4-Oct-10

<b>Client:</b> Terracon	<b>Client Sample ID:</b> TRIP BLANK
<b>Project:</b> Moores Mill	<b>Collection Date:</b> 9/29/2010
<b>Lab ID:</b> 1009M35-002	<b>Matrix:</b> Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>		<b>(SW5030B)</b>						
1,1,1-Trichloroethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,1-Dichloroethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,1-Dichloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,2-Dibromoethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,2-Dichloroethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,2-Dichloropropane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
2-Butanone	BRL	50		ug/L	135865	1	10/01/2010 12:16	SB
2-Hexanone	BRL	10		ug/L	135865	1	10/01/2010 12:16	SB
4-Methyl-2-pentanone	BRL	10		ug/L	135865	1	10/01/2010 12:16	SB
Acetone	BRL	50		ug/L	135865	1	10/01/2010 12:16	SB
Benzene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Bromodichloromethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Bromoform	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Bromomethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Carbon disulfide	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Carbon tetrachloride	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Chlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Chloroethane	BRL	10		ug/L	135865	1	10/01/2010 12:16	SB
Chloroform	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Chloromethane	BRL	10		ug/L	135865	1	10/01/2010 12:16	SB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Cyclohexane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Dibromochloromethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Dichlorodifluoromethane	BRL	10		ug/L	135865	1	10/01/2010 12:16	SB
Ethylbenzene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Freon-113	BRL	10		ug/L	135865	1	10/01/2010 12:16	SB
Isopropylbenzene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
m,p-Xylene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Methyl acetate	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Methylcyclohexane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Methylene chloride	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
o-Xylene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB

**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

**Analytical Environmental Services, Inc**
**Date:** 4-Oct-10

<b>Client:</b>	Terracon	<b>Client Sample ID:</b>	TRIP BLANK
<b>Project:</b>	Moore's Mill	<b>Collection Date:</b>	9/29/2010
<b>Lab ID:</b>	1009M35-002	<b>Matrix:</b>	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>				<b>(SW5030B)</b>				
Styrene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Tetrachloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Toluene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Trichloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Trichlorofluoromethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Vinyl chloride	BRL	2.0		ug/L	135865	1	10/01/2010 12:16	SB
Surr: 4-Bromofluorobenzene	86.4	60.1-127		%REC	135865	1	10/01/2010 12:16	SB
Surr: Dibromofluoromethane	93.4	79.6-126		%REC	135865	1	10/01/2010 12:16	SB
Surr: Toluene-d8	93	78-116		%REC	135865	1	10/01/2010 12:16	SB

**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

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Terraco Work Order Number 1009M35

Checklist completed by M. D. 9/29/10  
Signature Date

Carrier name: FedEx ☐ UPS ☐ Courier ☐ Client ☒ US Mail ☐ Other ☐

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

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

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

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

Cooler #1 36° 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? ☐ Checked by M.D.  
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.

\\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample\_Cooler\_Receipt\_Checklist

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009M35

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135865

Sample ID: MB-135865	Client ID:					Units: ug/L	Prep Date: 10/01/2010	Run No: 181388			
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B					BatchID: 135865	Analysis Date: 10/01/2010	Seq No: 3773754			
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	0	0	0	0	0	0	0	0	
1,1,2,2-Tetrachloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1,2-Trichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1-Dichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2,4-Trichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dibromo-3-chloropropane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dibromoethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichloropropane	BRL	5.0	0	0	0	0	0	0	0	0	
1,3-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,4-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
2-Butanone	BRL	50	0	0	0	0	0	0	0	0	
2-Hexanone	BRL	10	0	0	0	0	0	0	0	0	
4-Methyl-2-pentanone	BRL	10	0	0	0	0	0	0	0	0	
Acetone	BRL	50	0	0	0	0	0	0	0	0	
Benzene	BRL	5.0	0	0	0	0	0	0	0	0	
Bromodichloromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Bromoform	BRL	5.0	0	0	0	0	0	0	0	0	
Bromomethane	BRL	5.0	0	0	0	0	0	0	0	0	
Carbon disulfide	BRL	5.0	0	0	0	0	0	0	0	0	
Carbon tetrachloride	BRL	5.0	0	0	0	0	0	0	0	0	
Chlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Chloroethane	BRL	10	0	0	0	0	0	0	0	0	
Chloroform	BRL	5.0	0	0	0	0	0	0	0	0	
Chloromethane	BRL	10	0	0	0	0	0	0	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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009M35

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135865

Sample ID: MB-135865	Client ID:					Units: ug/L	Prep Date: 10/01/2010	Run No: 181388			
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B					BatchID: 135865	Analysis Date: 10/01/2010	Seq No: 3773754			
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	0	0	0	0	0	0	0	0	
cis-1,3-Dichloropropene	BRL	5.0	0	0	0	0	0	0	0	0	
Cyclohexane	BRL	5.0	0	0	0	0	0	0	0	0	
Dibromochloromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Dichlorodifluoromethane	BRL	10	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Freon-113	BRL	10	0	0	0	0	0	0	0	0	
Isopropylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
m,p-Xylene	BRL	5.0	0	0	0	0	0	0	0	0	
Methyl acetate	BRL	5.0	0	0	0	0	0	0	0	0	
Methyl tert-butyl ether	BRL	5.0	0	0	0	0	0	0	0	0	
Methylcyclohexane	BRL	5.0	0	0	0	0	0	0	0	0	
Methylene chloride	BRL	5.0	0	0	0	0	0	0	0	0	
o-Xylene	BRL	5.0	0	0	0	0	0	0	0	0	
Styrene	BRL	5.0	0	0	0	0	0	0	0	0	
Tetrachloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	5.0	0	0	0	0	0	0	0	0	
trans-1,2-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
trans-1,3-Dichloropropene	BRL	5.0	0	0	0	0	0	0	0	0	
Trichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
Trichlorofluoromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Vinyl chloride	BRL	2.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	43.36	0	50	0	86.7	60.1	127	0	0	0	
Surr: Dibromofluoromethane	47.68	0	50	0	95.4	79.6	126	0	0	0	
Surr: Toluene-d8	44.51	0	50	0	89	78	116	0	0	0	

Qualifiers: > Greater than Result value  
 BRL Below reporting limit  
 J Estimated value detected below Reporting Limit  
 Rpt Lim Reporting Limit

< Less than Result value  
 E Estimated (value above quantitation range)  
 N Analyte not NELAC certified  
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank  
 H Holding times for preparation or analysis exceeded  
 R RPD outside limits due to matrix



Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009M35

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135865

Sample ID: LCS-135865	Client ID:	Units: ug/L	Prep Date: 10/01/2010	Run No: 181388							
SampleType: LCS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 135865	Analysis Date: 10/01/2010	Seq No: 3773753							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	52.15	5.0	50	0	104	61.4	146	0	0	0	
Benzene	50.44	5.0	50	0	101	72.8	131	0	0	0	
Chlorobenzene	49.45	5.0	50	0	98.9	76	123	0	0	0	
Toluene	49.95	5.0	50	0	99.9	74.7	128	0	0	0	
Trichloroethene	52.13	5.0	50	0	104	74.4	130	0	0	0	
Surr: 4-Bromofluorobenzene	49.45	0	50	0	98.9	60.1	127	0	0	0	
Surr: Dibromofluoromethane	44.41	0	50	0	88.8	79.6	126	0	0	0	
Surr: Toluene-d8	47.88	0	50	0	95.8	78	116	0	0	0	

Sample ID: 1009M35-001AMS	Client ID: MW-5	Units: ug/L	Prep Date: 10/01/2010	Run No: 181388							
SampleType: MS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 135865	Analysis Date: 10/01/2010	Seq No: 3774100							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	65.09	5.0	50	0	130	48.8	172	0	0	0	
Benzene	60.27	5.0	50	0	121	64.5	143	0	0	0	
Chlorobenzene	55.05	5.0	50	0	110	74.5	129	0	0	0	
Toluene	60.56	5.0	50	0	121	62	145	0	0	0	
Trichloroethene	65.54	5.0	50	0	131	70.3	140	0	0	0	
Surr: 4-Bromofluorobenzene	52.11	0	50	0	104	60.1	127	0	0	0	
Surr: Dibromofluoromethane	49.60	0	50	0	99.2	79.6	126	0	0	0	
Surr: Toluene-d8	52.74	0	50	0	105	78	116	0	0	0	

Sample ID: 1009M35-001AMSD	Client ID: MW-5	Units: ug/L	Prep Date: 10/01/2010	Run No: 181388							
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 135865	Analysis Date: 10/01/2010	Seq No: 3774102							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	64.67	5.0	50	0	129	48.8	172	65.09	0.647	21.6	
Benzene	60.12	5.0	50	0	120	64.5	143	60.27	0.249	18.3	

Qualifiers: > Greater than Result value  
 BRL Below reporting limit  
 J Estimated value detected below Reporting Limit  
 Rpt Lim Reporting Limit

< Less than Result value  
 E Estimated (value above quantitation range)  
 N Analyte not NELAC certified  
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank  
 H Holding times for preparation or analysis exceeded  
 R RPD outside limits due to matrix

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009M35

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135865

Sample ID: 1009M35-001AMSD	Client ID: MW-5	Units: ug/L			Prep Date: 10/01/2010	Run No: 181388					
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 135865			Analysis Date: 10/01/2010	Seq No: 3774102					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlorobenzene	53.87	5.0	50	0	108	74.5	129	55.05	2.17	19.2	
Toluene	58.79	5.0	50	0	118	62	145	60.56	2.97	21.2	
Trichloroethene	61.44	5.0	50	0	123	70.3	140	65.54	6.46	20.3	
Surr: 4-Bromofluorobenzene	50.37	0	50	0	101	60.1	127	52.11	0	0	
Surr: Dibromofluoromethane	48.49	0	50	0	97	79.6	126	49.60	0	0	
Surr: Toluene-d8	49.56	0	50	0	99.1	78	116	52.74	0	0	

Qualifiers: > Greater than Result value  
 BRL Below reporting limit  
 J Estimated value detected below Reporting Limit  
 Rpt.Lim Reporting Limit

< Less than Result value  
 E Estimated (value above quantitation range)  
 N Analyte not NELAC certified  
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank  
 H Holding times for preparation or analysis exceeded  
 R RPD outside limits due to matrix

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009M35

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135894

Sample ID: MB-135894	Client ID:	Units: ug/L		Prep Date: 10/02/2010	Run No: 181475						
SampleType: MBLK	TestCode: POLYAROMATIC HYDROCARBONS SW8270D	BatchID: 135894		Analysis Date: 10/04/2010	Seq No: 3775842						
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
1-Methylnaphthalene	BRL	10	0	0	0	0	0	0	0	0	
2-Methylnaphthalene	BRL	10	0	0	0	0	0	0	0	0	
Acenaphthene	BRL	10	0	0	0	0	0	0	0	0	
Acenaphthylene	BRL	10	0	0	0	0	0	0	0	0	
Anthracene	BRL	10	0	0	0	0	0	0	0	0	
Benz(a)anthracene	BRL	10	0	0	0	0	0	0	0	0	
Benzo(a)pyrene	BRL	10	0	0	0	0	0	0	0	0	
Benzo(b)fluoranthene	BRL	10	0	0	0	0	0	0	0	0	
Benzo(g,h,i)perylene	BRL	10	0	0	0	0	0	0	0	0	
Benzo(k)fluoranthene	BRL	10	0	0	0	0	0	0	0	0	
Chrysene	BRL	10	0	0	0	0	0	0	0	0	
Dibenz(a,h)anthracene	BRL	10	0	0	0	0	0	0	0	0	
Fluoranthene	BRL	10	0	0	0	0	0	0	0	0	
Fluorene	BRL	10	0	0	0	0	0	0	0	0	
Indeno(1,2,3-cd)pyrene	BRL	10	0	0	0	0	0	0	0	0	
Naphthalene	BRL	10	0	0	0	0	0	0	0	0	
Phenanthrene	BRL	10	0	0	0	0	0	0	0	0	
Pyrene	BRL	10	0	0	0	0	0	0	0	0	
Surr: 2-Fluorobiphenyl	32.81	0	50	0	65.6	41.6	111	0	0	0	
Surr: 4-Terphenyl-d14	38.83	0	50	0	77.7	61.5	129	0	0	0	
Surr: Nitrobenzene-d5	30.16	0	50	0	60.3	26.9	116	0	0	0	

Sample ID: LCS-135894	Client ID:					Units: ug/L	Prep Date: 10/02/2010	Run No: 181475			
SampleType: LCS	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 135894				Analysis Date: 10/04/2010	Seq No: 3775844			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Acenaphthene	36.06	10	50	0	72.1	54.6	120	0	0	0	
Acenaphthylene	35.99	10	50	0	72	55.9	120	0	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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009M35

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135894

Sample ID: LCS-135894	Client ID:				Units: ug/L	Prep Date: 10/02/2010		Run No: 181475			
SampleType: LCS	TestCode: POLYAROMATIC HYDROCARBONS SW8270D				BatchID: 135894		Analysis Date: 10/04/2010		Seq No: 3775844		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Anthracene	37.58	10	50	0	75.2	61.2	120	0	0	0	
Benz(a)anthracene	34.46	10	50	0	68.9	66.5	120	0	0	0	
Benzo(a)pyrene	36.85	10	50	0	73.7	66	120	0	0	0	
Benzo(b)fluoranthene	34.70	10	50	0	69.4	65.3	115	0	0	0	
Benzo(g,h,i)perylene	35.60	10	50	0	71.2	59.9	115	0	0	0	
Benzo(k)fluoranthene	36.60	10	50	0	73.2	67.4	115	0	0	0	
Chrysene	36.25	10	50	0	72.5	67.7	120	0	0	0	
Dibenz(a,h)anthracene	35.34	10	50	0	70.7	61	117	0	0	0	
Fluoranthene	37.61	10	50	0	75.2	64.8	120	0	0	0	
Fluorene	36.64	10	50	0	73.3	59.3	120	0	0	0	
Indeno(1,2,3-cd)pyrene	34.13	10	50	0	68.3	59.9	120	0	0	0	
Naphthalene	34.00	10	50	0	68	47.8	120	0	0	0	
Phenanthrene	39.61	10	50	0	79.2	63	120	0	0	0	
Pyrene	38.08	10	50	0	76.2	65.8	120	0	0	0	
Surr: 2-Fluorobiphenyl	34.89	0	50	0	69.8	41.6	111	0	0	0	
Surr: 4-Terphenyl-d14	36.42	0	50	0	72.8	61.5	129	0	0	0	
Surr: Nitrobenzene-d5	31.59	0	50	0	63.2	26.9	116	0	0	0	

Sample ID: 1009M35-001BMS	Client ID: MW-5				Units: ug/L		Prep Date: 10/02/2010		Run No: 181475		
SampleType: MS	TestCode: POLYAROMATIC HYDROCARBONS SW8270D				BatchID: 135894		Analysis Date: 10/04/2010		Seq No: 3776181		
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Acenaphthene	28.80	10	50	0	57.6	49.3	120	0	0	0	
Acenaphthylene	30.76	10	50	0	61.5	50.3	120	0	0	0	
Anthracene	34.33	10	50	0	68.7	48.9	120	0	0	0	
Benz(a)anthracene	35.56	10	50	0	71.1	61.7	120	0	0	0	
Benzo(a)pyrene	36.57	10	50	0	73.1	58.2	120	0	0	0	
Benzo(b)fluoranthene	36.05	10	50	0	72.1	59	120	0	0	0	

Qualifiers: > Greater than Result value  
 BRL Below reporting limit  
 J Estimated value detected below Reporting Limit  
 Rpt Lim Reporting Limit

< Less than Result value  
 E Estimated (value above quantitation range)  
 N Analyte not NELAC certified  
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank  
 H Holding times for preparation or analysis exceeded  
 R RPD outside limits due to matrix

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009M35

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135894

Sample ID: 1009M35-001BMS	Client ID: MW-5	Units: ug/L			Prep Date: 10/02/2010	Run No: 181475					
SampleType: MS	TestCode: POLYAROMATIC HYDROCARBONS SW8270D	BatchID: 135894			Analysis Date: 10/04/2010	Seq No: 3776181					
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzo(g,h,i)perylene	33.04	10	50	0	66.1	55.2	120	0	0	0	
Benzo(k)fluoranthene	36.82	10	50	0	73.6	59.1	120	0	0	0	
Chrysene	36.97	10	50	0	73.9	62	120	0	0	0	
Dibenz(a,h)anthracene	34.12	10	50	0	68.2	56.9	120	0	0	0	
Fluoranthene	36.44	10	50	0	72.9	54.5	120	0	0	0	
Fluorene	31.13	10	50	0	62.3	52.8	120	0	0	0	
Indeno(1,2,3-cd)pyrene	33.98	10	50	0	68	57.6	120	0	0	0	
Naphthalene	27.73	10	50	0	55.5	34	120	0	0	0	
Phenanthrene	35.32	10	50	0	70.6	54.6	120	0	0	0	
Pyrene	37.33	10	50	0	74.7	59.2	120	0	0	0	
Surr: 2-Fluorobiphenyl	29.41	0	50	0	58.8	41.6	111	0	0	0	
Surr: 4-Terphenyl-d14	37.92	0	50	0	75.8	61.5	129	0	0	0	
Surr: Nitrobenzene-d5	26.44	0	50	0	52.9	26.9	116	0	0	0	

Sample ID: 1009M35-001BMSD	Client ID: MW-5					Units: ug/L		Prep Date: 10/02/2010		Run No: 181475	
SampleType: MSD	TestCode: POLYAROMATIC HYDROCARBONS SW8270D					BatchID: 135894		Analysis Date: 10/04/2010		Seq No: 3776183	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Acenaphthene	25.31	10	50	0	50.6	49.3	120	28.80	12.9	27.8	
Acenaphthylene	26.40	10	50	0	52.8	50.3	120	30.76	15.3	27.7	
Anthracene	31.65	10	50	0	63.3	48.9	120	34.33	8.12	17	
Benz(a)anthracene	31.24	10	50	0	62.5	61.7	120	35.56	12.9	17.7	
Benzo(a)pyrene	34.19	10	50	0	68.4	58.2	120	36.57	6.73	18.7	
Benzo(b)fluoranthene	31.43	10	50	0	62.9	59	120	36.05	13.7	19.3	
Benzo(g,h,i)perylene	32.41	10	50	0	64.8	55.2	120	33.04	1.93	19.9	
Benzo(k)fluoranthene	33.03	10	50	0	66.1	59.1	120	36.82	10.9	19.3	
Chrysene	33.75	10	50	0	67.5	62	120	36.97	9.11	17.5	
Dibenz(a,h)anthracene	31.27	10	50	0	62.5	56.9	120	34.12	8.72	20	

Qualifiers: > Greater than Result value  
 BRL Below reporting limit  
 J Estimated value detected below Reporting Limit  
 Rpt Lim Reporting Limit

< Less than Result value  
 E Estimated (value above quantitation range)  
 N Analyte not NELAC certified  
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank  
 H Holding times for preparation or analysis exceeded  
 R RPD outside limits due to matrix

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009M35

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135894

Sample ID: 1009M35-001BMSD		Client ID: MW-5		Units: ug/L		Prep Date: 10/02/2010		Run No: 181475			
SampleType: MSD		TestCode: POLYAROMATIC HYDROCARBONS SW8270D		BatchID: 135894		Analysis Date: 10/04/2010		Seq No: 3776183			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoranthene	34.85	10	50	0	69.7	54.5	120	36.44	4.46	17.3	
Fluorene	27.93	10	50	0	55.9	52.8	120	31.13	10.8	23.4	
Indeno(1,2,3-cd)pyrene	30.97	10	50	0	61.9	57.6	120	33.98	9.27	20.6	
Naphthalene	20.40	10	50	0	40.8	34	120	27.73	30.5	36.1	
Phenanthrene	34.13	10	50	0	68.3	54.6	120	35.32	3.43	17.3	
Pyrene	34.14	10	50	0	68.3	59.2	120	37.33	8.93	16.1	
Surr: 2-Fluorobiphenyl	24.01	0	50	0	48	41.6	111	29.41	0	0	
Surr: 4-Terphenyl-d14	32.51	0	50	0	65	61.5	129	37.92	0	0	
Surr: Nitrobenzene-d5	18.47	0	50	0	36.9	26.9	116	26.44	0	0	

Qualifiers: > Greater than Result value  
 BRL Below reporting limit  
 J Estimated value detected below Reporting Limit  
 Rpt Lim Reporting Limit

< Less than Result value  
 E Estimated (value above quantitation range)  
 N Analyte not NELAC certified  
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank  
 H Holding times for preparation or analysis exceeded  
 R RPD outside limits due to matrix

**RQSM SCREEN: GROUNDWATER PATHWAY**

A. Has a release to groundwater occurred?	Known	45
If A=45, then go to D	Suspected	10
A: <input type="text" value="45"/>	Potential Future	5

B. Route Characteristics (1b from Hydrologic Atlas 20)		
1b. Susceptibility Rating:	Higher	6
	Average	3
1b: <input type="text" value="0"/>	Lower	0
2b. Physical State:	Stable Solid	0
	Unstable Solid	1
2b: <input type="text" value="3"/>	Powder, Ash	2
	Liquid, Gas, Sludge	3

C. Containment	Very Good	0
	Good	1
C: <input type="text" value="3"/>	Fair	2
	Poor	3

D. Release Characteristics		
1d. Regulated Substance:	<input type="text" value="Cis-1,2-dichloroethene"/>	
2d. Toxicity	None	0
2d: <input type="text" value="4"/>	Low = 1, 2, 4, 8, 16 = High	
If 2d is unknown then 2d=4		
3d. Quantity	Threshold = 1, 2, 3, 4, 5, 6, 7, 8 = Very Large	
3d: <input type="text" value="4"/>		
If 3d is unknown then 3d=4		

E. Targets		
1e. Exposure to groundwater release:		
Known release >= MCL, and known human exposure >= MCL		25
Known release >= MCL, and suspected human exposure		20
Known release, no MCL exists, and known human exposure		18
Known release >= MCL, and known human exposure < MCL		15
Known release, no MCL exists, and suspected human exposure		12
Suspected release and human exposure suspected		8
Known release >= MCL, but no human exposure suspected		4
Known release, no MCL exists, and no human exposure suspected		3
Suspected release but no human exposure suspected		2
Potential future release		1
Known release less than MCL		0
ONE CHOICE ONLY ALLOWED		
1e: <input type="text" value="4"/>		

2e. Distance to well or spring (miles)

2e:

<1/2	16
1/2 to 1	9
1 to 2	4
2 to 3	1
>3	0

**If 1e includes known or suspected human exposure then 2e=16**

If 1e=0 then 2e=1

---

The groundwater pathway score (Sgw) is calculated as follows:

**M = A + ((1b + 2b) x C) [If A=45 then M=45]**

**Sgw = M x (2d + 3d) x (1e + 2e) / 442.8**

Score should be a value between 0 and 100. If >10, site is recommended for HSI listing

**M:** 45

**Sgw:**



**RQSM SCREEN: ON-SITE EXPOSURE PATHWAY***Don't score this pathway UNLESS soil concentration exceeds NCs in Appendix I*

A. Access to site		Inaccessible	0
		Limited Access	2
A: <input type="text" value="0"/>		Unlimited Access	4
B. Has there been a release?		Yes	25
		Suspected	15
B: <input type="text" value="0"/>		No	0
C. Containment			
Soil Releases		Very Good = 0, 1, 2, 3, 4, 5 = Poor	
Aboveground Releases		Very Good = 0, 1, 2, 3 = Poor	
C: <input type="text" value="2"/>			
D. Release Characteristics			
1d. Regulated Substance:		<input type="text" value="Cis-1,2-dichloroethene"/>	
2d. Toxicity		None	0
2d: <input type="text" value="4"/>		Low = 1, 2, 4, 8, 16 = High	
If 2d is unknown then 2d=4			
3d. Quantity		Threshold = 1, 2, 3, 4, 5, 6, 7, 8 = Very Large	
3d: <input type="text" value="4"/>			
If 3d is unknown then 3d=4			
E. Targets			
1e. Distance in feet to nearest resident individual		<300	8
		301 to 1000	6
1e: <input type="text" value="8"/>		1001 to 3001	4
		3001 to 1 mile	2
		>1 mile	1
2e. Is there an on-site sensitive environment?		Yes	1
2e: <input type="text" value="0"/>		No	0

The on-site pathway score (So) is calculated as follows:

$$So = (A \times (B + C) \times (2d + 3d) \times (1e + 2e)) / 259.2 \quad \text{[If A or B = 0 then So = 0]}$$

So: 0.00

GROUNDWATER PATHWAY SCORE:	<input type="text" value="6.50"/>	<u>Listing Threshold</u> 10
ON-SITE PATHWAY SCORE:	<input type="text" value="0.00"/>	20

**RQSM SCREEN: GROUNDWATER PATHWAY**

A. Has a release to groundwater occurred?	Known	45
If A=45, then go to D	Suspected	10
A: <input type="text" value="45"/>	Potential Future	5

---

B. Route Characteristics (1b from Hydrologic Atlas 20)		
1b. Susceptibility Rating:	Higher	6
	Average	3
1b: <input type="text" value="0"/>	Lower	0
2b. Physical State:	Stable Solid	0
	Unstable Solid	1
2b: <input type="text" value="3"/>	Powder, Ash	2
	Liquid, Gas, Sludge	3

---

C. Containment	Very Good	0
	Good	1
C: <input type="text" value="3"/>	Fair	2
	Poor	3

---

D. Release Characteristics		
1d. Regulated Substance:	<input type="text" value="Tetrachloroethene"/>	
2d. Toxicity	None	0
2d: <input type="text" value="4"/>	Low = 1, 2, 4, 8, 16 = High	
If 2d is unknown then 2d=4		
3d. Quantity	Threshold = 1, 2, 3, 4, 5, 6, 7, 8 = Very Large	
3d: <input type="text" value="4"/>		
If 3d is unknown then 3d=4		

---

E. Targets		
1e. Exposure to groundwater release:		
Known release >= MCL, and known human exposure >= MCL		25
Known release >= MCL, and suspected human exposure		20
Known release, no MCL exists, and known human exposure		18
Known release >= MCL, and known human exposure < MCL		15
Known release, no MCL exists, and suspected human exposure		12
Suspected release and human exposure suspected		8
Known release >= MCL, but no human exposure suspected		4
Known release, no MCL exists, and no human exposure suspected		3
Suspected release but no human exposure suspected		2
Potential future release		1
Known release less than MCL		0
ONE CHOICE ONLY ALLOWED		
1e: <input type="text" value="4"/>		

2e. Distance to well or spring (miles)

2e:

<1/2	16
1/2 to 1	9
1 to 2	4
2 to 3	1
>3	0

**If 1e includes known or suspected human exposure then 2e=16**

If 1e=0 then 2e=1

---

The groundwater pathway score (Sgw) is calculated as follows:

**M = A + ((1b + 2b) x C) [If A=45 then M=45]**

**Sgw = M x (2d + 3d) x (1e + 2e) / 442.8**

Score should be a value between 0 and 100. If >10, site is recommended for HSI listing

**M:** 45

**Sgw:**



**RQSM SCREEN: ON-SITE EXPOSURE PATHWAY***Don't score this pathway UNLESS soil concentration exceeds NCs in Appendix I*

A. Access to site		Inaccessible	0
		Limited Access	2
A: <input type="text" value="0"/>		Unlimited Access	4
B. Has there been a release?		Yes	25
		Suspected	15
B: <input type="text" value="0"/>		No	0
C. Containment			
Soil Releases		Very Good = 0, 1, 2, 3, 4, 5 = Poor	
Aboveground Releases		Very Good = 0, 1, 2, 3 = Poor	
C: <input type="text" value="2"/>			
D. Release Characteristics			
1d. Regulated Substance:		<input type="text" value="Tetrachloroethene"/>	
2d. Toxicity		None	0
2d: <input type="text" value="4"/>		Low = 1, 2, 4, 8, 16 = High	
If 2d is unknown then 2d=4			
3d. Quantity		Threshold = 1, 2, 3, 4, 5, 6, 7, 8 = Very Large	
3d: <input type="text" value="4"/>			
If 3d is unknown then 3d=4			
E. Targets			
1e. Distance in feet to nearest resident individual		<300	8
		301 to 1000	6
1e: <input type="text" value="8"/>		1001 to 3001	4
		3001 to 1 mile	2
		>1 mile	1
2e. Is there an on-site sensitive environment?		Yes	1
		No	0
2e: <input type="text" value="0"/>			

The on-site pathway score (So) is calculated as follows:

$$So = (A \times (B + C) \times (2d + 3d) \times (1e + 2e)) / 259.2 \quad \text{[If A or B = 0 then So = 0]}$$

So: 0.00

GROUNDWATER PATHWAY SCORE:	<input type="text" value="6.50"/>	<u>Listing Threshold</u> 10
ON-SITE PATHWAY SCORE:	<input type="text" value="0.00"/>	20

**RQSM SCREEN: GROUNDWATER PATHWAY**

A. Has a release to groundwater occurred?	Known	45
If A=45, then go to D	Suspected	10
A: <input type="text" value="45"/>	Potential Future	5

---

B. Route Characteristics (1b from Hydrologic Atlas 20)		
1b. Susceptibility Rating:	Higher	6
	Average	3
1b: <input type="text" value="0"/>	Lower	0
2b. Physical State:	Stable Solid	0
	Unstable Solid	1
2b: <input type="text" value="3"/>	Powder, Ash	2
	Liquid, Gas, Sludge	3

---

C. Containment	Very Good	0
	Good	1
C: <input type="text" value="3"/>	Fair	2
	Poor	3

---

D. Release Characteristics		
1d. Regulated Substance:	<input type="text" value="Trans-1,2-dichloroethene"/>	
2d. Toxicity	None	0
2d: <input type="text" value="4"/>	Low = 1, 2, 4, 8, 16 = High	
If 2d is unknown then 2d=4		
3d. Quantity	Threshold = 1, 2, 3, 4, 5, 6, 7, 8 = Very Large	
3d: <input type="text" value="4"/>		
If 3d is unknown then 3d=4		

---

E. Targets		
1e. Exposure to groundwater release:		
Known release >= MCL, and known human exposure >= MCL		25
Known release >= MCL, and suspected human exposure		20
Known release, no MCL exists, and known human exposure		18
Known release >= MCL, and known human exposure < MCL		15
Known release, no MCL exists, and suspected human exposure		12
Suspected release and human exposure suspected		8
Known release >= MCL, but no human exposure suspected		4
Known release, no MCL exists, and no human exposure suspected		3
Suspected release but no human exposure suspected		2
Potential future release		1
Known release less than MCL		0
ONE CHOICE ONLY ALLOWED		
1e: <input type="text" value="4"/>		

2e. Distance to well or spring (miles)

2e:

<1/2	16
1/2 to 1	9
1 to 2	4
2 to 3	1
>3	0

**If 1e includes known or suspected human exposure then 2e=16**  
If 1e=0 then 2e=1

---

The groundwater pathway score (Sgw) is calculated as follows:

**M = A + ((1b + 2b) x C) [If A=45 then M=45]**

**Sgw = M x (2d + 3d) x (1e + 2e) / 442.8**

Score should be a value between 0 and 100. If >10, site is recommended for HSI listing

**M:** 45

**Sgw:**

**RQSM SCREEN: ON-SITE EXPOSURE PATHWAY***Don't score this pathway UNLESS soil concentration exceeds NCs in Appendix I*

A. Access to site		Inaccessible	0
		Limited Access	2
		Unlimited Access	4
A: <input type="text" value="0"/>			
B. Has there been a release?		Yes	25
		Suspected	15
		No	0
B: <input type="text" value="0"/>			
C. Containment			
Soil Releases		Very Good = 0, 1, 2, 3, 4, 5 = Poor	
Aboveground Releases		Very Good = 0, 1, 2, 3 = Poor	
C: <input type="text" value="2"/>			
D. Release Characteristics			
1d. Regulated Substance:		<input type="text" value="Trans-1,2-dichloroethene"/>	
2d. Toxicity		None	0
2d: <input type="text" value="4"/>		Low = 1, 2, 4, 8, 16 = High	
If 2d is unknown then 2d=4			
3d. Quantity		Threshold = 1, 2, 3, 4, 5, 6, 7, 8 = Very Large	
3d: <input type="text" value="4"/>			
If 3d is unknown then 3d=4			
E. Targets			
1e. Distance in feet to nearest resident individual		<300	8
		301 to 1000	6
		1001 to 3001	4
		3001 to 1 mile	2
		>1 mile	1
1e: <input type="text" value="8"/>			
2e. Is there an on-site sensitive environment?		Yes	1
		No	0
2e: <input type="text" value="0"/>			

The on-site pathway score (So) is calculated as follows:

$$So = (A \times (B + C) \times (2d + 3d) \times (1e + 2e)) / 259.2 \quad \text{[If A or B = 0 then So = 0]}$$

So: 0.00

GROUNDWATER PATHWAY SCORE:	<input type="text" value="6.50"/>	<u>Listing Threshold</u> 10
ON-SITE PATHWAY SCORE:	<input type="text" value="0.00"/>	20



**RQSM SCREEN: GROUNDWATER PATHWAY**

A. Has a release to groundwater occurred?	Known	45
If A=45, then go to D	Suspected	10
A: <input type="text" value="45"/>	Potential Future	5

---

B. Route Characteristics (1b from Hydrologic Atlas 20)		
1b. Susceptibility Rating:	Higher	6
	Average	3
1b: <input type="text" value="0"/>	Lower	0
2b. Physical State:	Stable Solid	0
	Unstable Solid	1
2b: <input type="text" value="3"/>	Powder, Ash	2
	Liquid, Gas, Sludge	3

---

C. Containment	Very Good	0
	Good	1
C: <input type="text" value="3"/>	Fair	2
	Poor	3

---

D. Release Characteristics		
1d. Regulated Substance:	<input type="text" value="Trichloroethene"/>	
2d. Toxicity	None	0
2d: <input type="text" value="2"/>	Low = 1, 2, 4, 8, 16 = High	
If 2d is unknown then 2d=4		
3d. Quantity	Threshold = 1, 2, 3, 4, 5, 6, 7, 8 = Very Large	
3d: <input type="text" value="4"/>		
If 3d is unknown then 3d=4		

---

E. Targets		
1e. Exposure to groundwater release:		
Known release >= MCL, and known human exposure >= MCL		25
Known release >= MCL, and suspected human exposure		20
Known release, no MCL exists, and known human exposure		18
Known release >= MCL, and known human exposure < MCL		15
Known release, no MCL exists, and suspected human exposure		12
Suspected release and human exposure suspected		8
Known release >= MCL, but no human exposure suspected		4
Known release, no MCL exists, and no human exposure suspected		3
Suspected release but no human exposure suspected		2
Potential future release		1
Known release less than MCL		0
ONE CHOICE ONLY ALLOWED		
1e: <input type="text" value="4"/>		



2e. Distance to well or spring (miles)

2e:

<1/2	16
1/2 to 1	9
1 to 2	4
2 to 3	1
>3	0

**If 1e includes known or suspected human exposure then 2e=16**

If 1e=0 then 2e=1

---

The groundwater pathway score (Sgw) is calculated as follows:

$$M = A + ((1b + 2b) \times C) \quad [\text{If } A=45 \text{ then } M=45]$$

$$S_{gw} = M \times (2d + 3d) \times (1e + 2e) / 442.8$$

Score should be a value between 0 and 100. If >10, site is recommended for HSI listing

M: 45

Sgw:

**RQSM SCREEN: ON-SITE EXPOSURE PATHWAY***Don't score this pathway UNLESS soil concentration exceeds NCs in Appendix I*

A. Access to site		Inaccessible	0
		Limited Access	2
		Unlimited Access	4
A: <input type="text" value="0"/>			
B. Has there been a release?		Yes	25
		Suspected	15
		No	0
B: <input type="text" value="0"/>			
C. Containment			
Soil Releases		Very Good = 0, 1, 2, 3, 4, 5 = Poor	
Aboveground Releases		Very Good = 0, 1, 2, 3 = Poor	
C: <input type="text" value="2"/>			
D. Release Characteristics			
1d. Regulated Substance:		<input type="text" value="Trichloroethene"/>	
2d. Toxicity		None	0
2d: <input type="text" value="2"/>		Low = 1, 2, 4, 8, 16 = High	
If 2d is unknown then 2d=4			
3d. Quantity		Threshold = 1, 2, 3, 4, 5, 6, 7, 8 = Very Large	
3d: <input type="text" value="4"/>			
If 3d is unknown then 3d=4			
E. Targets			
1e. Distance in feet to nearest resident individual		<300	8
		301 to 1000	6
		1001 to 3001	4
		3001 to 1 mile	2
		>1 mile	1
1e: <input type="text" value="8"/>			
2e. Is there an on-site sensitive environment?		Yes	1
		No	0
2e: <input type="text" value="0"/>			

The on-site pathway score (So) is calculated as follows:

$$So = (A \times (B + C) \times (2d + 3d) \times (1e + 2e)) / 259.2 \quad \text{[If A or B = 0 then So = 0]}$$

So: 0.00

GROUNDWATER PATHWAY SCORE:	<input type="text" value="4.88"/>	<u>Listing Threshold</u>
		10
ON-SITE PATHWAY SCORE:	<input type="text" value="0.00"/>	20

LETTER OF TRANSMITTAL

**Terracon**

2855 Premiere Parkway, Suite C  
Duluth, GA 30097  
770-623-0755 fax: 770-623-9628

Date: December 14, 2010

To:

Mr. David Reuland

Georgia Environmental Protection Division

Hazardous Sites Response Program

Suite 1462, Floyd Tower East

2 Martin Luther King Jr Drive SE

Atlanta, GA 30334-9000

RECEIVED  
Georgia EPD  
DEC 15 2010  
Hazardous Sites  
Response Program

We are transmitting

☒ herewith

☐ under separate cover

Item	Date	Description
1 copy	12/9/2010	Revised Release Notification Reporting Form, Moores Mill Village Apartments, 2453 Coronet Way NW, Atlanta, Fulton County, Georgia.

Remarks:

David, attached is a revised release notification for the Moores Mill Village Apartments site. The property owner's name was listed incorrectly on the original submission (it should have read Peppermill Partners, L.P. and not Peppermill LTD Partners, L.P.). Please call if you have questions. Thanks.

Yours truly,  
**TERRACON**

By

cc:

LETTER OF TRANSMITTAL

**Terracon**

2855 Premiere Parkway, Suite C  
Duluth, GA 30097  
770-623-0755 fax: 770-623-9628

Date: November 18, 2010

To:

Mr. David Reuland

Georgia Environmental Protection Division

Hazardous Sites Response Program

Suite 1462, Floyd Tower East

2 Martin Luther King Jr Drive SE

Atlanta, GA 30334-9000

**RECEIVED**

Georgia EPD

**NOV 22 2010**

Hazardous Sites  
Response Program

We are transmitting

☒ herewith

☐ under separate cover

Item	Date	Description
1 copy	11/18/2010	Release Notification Reporting Form, Moores Mill Village Apartments, 2453 Coronet Way NW, Atlanta, Fulton County, Georgia.

Remarks:

David, attached is a release notification for the Moores Mill Village Apartments site. We found impact to groundwater there but no indications of soil impact. Terracon believes that the source is a former dry cleaner adjacent to the west of the site (see figures). Please call if you have questions. Thanks.

Yours truly,  
**TERRACON**

By

cc:



5481

# RELEASE NOTIFICATION/REPORTING FORM



Mail to: GEORGIA ENVIRONMENTAL PROTECTION DIVISION  
Hazardous Sites Response Program  
Suite 1462, Floyd Tower East  
2 Martin Luther King Jr. Drive, SE  
Atlanta, Georgia 30334-9000

RECEIVED  
Georgia EPD

NOV 22 2010

Hazardous Sites  
Response Program

1. The information provided in this form is for:

- ☒ Initial Release Notification  
☐ Supplemental Notification

## PART I -- PROPERTY INFORMATION

(Please type or print legibly)

2	EPA ID NUMBER (if applicable)	Not applicable			
3	Tax Map and Parcel ID Number:	17-0230-0007-007-4	Acreage	6.97	
4	Site or Facility Name	Moore's Mill Village Apartments			
5	Site Street Address	2453 Coronet Way NW			
6	Site City	Atlanta	County	Fulton	Zip 30318
7	Property Owner	Peppermill LTD Partners L.P.			
8	Property Owner Mailing Address	235 Peachtree Street NE, North Tower, Suite 2000 - 20 <sup>th</sup> Floor			
9	Property Owner City	Atlanta	State	GA	Zip 30303
10	Property Owner Telephone No.	404-420-1607			
11	Site Contact Person	Ms. Tayani Suma	Title	Dir. Housing Development	
12	Site Contact Company Name	Atlanta Neighborhood Development Partnership, Inc.			
13	Site Contact Mailing Address	235 Peachtree Street NE, North Tower, Suite 2000 - 20 <sup>th</sup> Floor			
14	Site Contact City	Atlanta	State	GA	Zip 30303
15	Site Contact Telephone No.	404-420-1607			
16	Facility Operator Contact Person	Ms. Tayani Suma	Title	Dir. Housing Development	
17	Facility Operator Company Name	Atlanta Neighborhood Development Partnership, Inc.			
18	Facility Operator Mailing Address	235 Peachtree Street NE, North Tower, Suite 2000 - 20 <sup>th</sup> Floor			
19	Facility Operator City	Atlanta	State	GA	Zip 30303
20	Facility Operator Telephone No.	404-420-1607			

**21. CERTIFICATION** --I certify under penalty of law that I am the owner of the real property described in this Release Notification and I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME (Please type or print)

SIGNATURE

TITLE

DATE

## PART II -- RELEASE INFORMATION

Page 2 of 80

***Please provide the following information for EACH release at the site. If additional space is needed to answer any of the following questions, attach additional pages, as necessary.***

- 1. Source of this release (i.e., drums, tanks, spills, wastepile etc.). Provide specific information on the suspected or known source of the release, including the source of this information:**

The suspected source of the release is a former dry cleaning business located at 1936 Moores Mill Road, adjacent to the west of the site. This facility formerly operated as a full-service dry cleaner for approximately 23 years (1968-91). The specific vessel from which the release occurred on the facility (drum, tank, etc.) is not known.

- 2. Release date(s) and any known information about the history of the release, including the physical state of the material (solid, powder/ash, liquid/gas, sludge) and the quantity of material released (lbs, cubic yards, etc.):**

The release date(s) and history of the release are unknown. The physical state and quantity of the released material are also unknown, but since the assumed source property is a dry cleaner then based on the nature of dry cleaning operations, the physical state of the released material is assumed to be a liquid.

- 3. Describe those actions that have been taken to investigate, cleanup or otherwise remediate this release (e.g., removal of source of contamination; soil or water sampling performed; and monitoring wells installed and sampled).**

Four permanent groundwater monitoring wells were installed at the site (three additional borings were advanced at the site, but only one of these produced groundwater). Soil and groundwater samples were collected from the site. Site soil samples did not indicate the presence of chlorinated solvents in site soil, but chlorinated solvents were identified in site groundwater. Shallow groundwater flow maps prepared for the site indicate that the former dry cleaning business and assumed source is located upgradient from the site.

- 4. Access to the area affected by the release. Check the appropriate box:**

- ☒ Inaccessible: A 24-hour surveillance system, or a completely closed barrier or fence to prevent entry.  
☐ Limited Access: Less than 24-hour surveillance system, and/or a barrier or fence that is partially open.  
☐ Unlimited Access: No surveillance, and no barrier or fence.

**If the site is inaccessible or has limited access, then describe site surveillance systems, fences, security personnel or other barriers that would restrict access to the release.**

**Although no compounds were identified in site soils, the site is surrounded by a fence with a gate. However, the site is an apartment complex, so residents live within the fenced area.**

- 5. For soil releases, indicate the type of material covering this release, by checking the appropriate box below.**

- ☐ A permanent or otherwise maintained, essentially impenetrable non-earthen material such as concrete or asphalt  
☐ An engineered and maintained earthen material or compacted fill or a high density synthetic material  
☐ Loose earthen fill or native soil  
☐ No cover  
☒ Other

**Describe the type and thickness of the material covering the contaminated soil or wastes.**

**Not applicable - no compounds identified in site soil.**



## PART II -- RELEASE INFORMATION

(Continued)

Page 3 of 80

6. Indicate the approximate distance from the edge of the area affected by the release to the nearest residence, playground, day care, school or nursing home.

☒ Less than 300 feet      ☐ 1001 to 3000 feet      ☐ Greater than 1 mile  
☐ 301 to 1000 feet      ☐ 3001 to 5280 feet

Provide the name and address of the nearest residence, playground, day care, school or nursing home.

Name: Site is an apartment complex; residents are located on-site

Address: 2453 Coronet Way NW, Atlanta, GA

7. Indicate the distance between the area affected by the release and the nearest drinking water well (including wells located on the site).

☐ Less than 0.5 miles      ☒ 1 to 2 miles      ☐ Greater than 3 miles  
☐ 0.5 to 1 mile      ☐ 2 to 3 miles

Provide the name of the property owner and address of the location of the closest drinking water well.

Name: Wells were not identified within one mile of the site

Address: A search for wells located greater than one mile away from the site was not conducted.

8. Is there any evidence to suspect that a person or a sensitive environment has been exposed to this release?

☐ Yes      ☒ No

If yes, provide details on the potentially affected humans or sensitive environments.

## REQUIRED ATTACHMENTS

### 9. SITE SUMMARY

A. Attach a summary (no longer than one page) that gives a general description of the property, the areas affected by the release both within and beyond the property boundaries, and any actions taken to investigate, clean up or otherwise remediate the property. The summary shall include a description of the property boundaries of the site and adjacent properties as well as a detailed description of the nature and known or estimated extent of the area of contamination. Describe any additional relevant information concerning the nature of the release. In addition to the one page summary, other information concerning the property may also be attached.

B. Attach a site map that shows known or suspected sources as well as the locations of all samples collected at the site. The site map should include outlines of buildings as well as covered ground areas (e.g., parking lots or other paved areas). A legend should be provided to explain any symbols used on the map.

### 10. U.S.G.S. Topographic Map

Along with this form, you **MUST** submit an original U.S.G.S. topographical map (1:24000) with the geographic center of the site clearly marked. U.S.G.S. topographic maps are available for purchase on-line at <http://ggsstore.dnr.state.ga.us>.



### PART III -- SOIL RELEASE INFORMATION

Page 4 of 80

*Please provide the following information for EACH regulated substance released to the soil at the site and submit the laboratory analytical sheets for all samples analyzed from the site. Use additional sheets if necessary.*

Regulated Substance	CAS Registry Number	Highest Concentration Detected Between 0-6 Inches (Specify Units)	Highest Concentration Detected Between 6-24 Inches (Specify Units)	Highest Concentration Detected Greater Than 24 Inches (Specify Units)
No compounds identified				

## PART IV -- GROUNDWATER RELEASE INFORMATION

Page 5 of 80

***Please provide the following information for EACH regulated substance released to the groundwater at the site and submit the laboratory analytical sheets for all samples analyzed from the site. Use additional sheets if necessary.***

[illegible]

**Site Summary**  
**Moores Mill Village Apartments**  
**2453 Coronet Way, NW**  
**Atlanta, Fulton County, Georgia**

Due to a pending property transaction involving the site, an environmental site assessment (ESA) was conducted by Terracon Consultants, Inc. (Terracon) in November 2009. Available information indicates that the approximately 6.97-acre site (Fulton County Tax Parcel ID 17-0230-00007-007-4) was wooded and single-family residential land until the early 1960s, when the apartment buildings currently located on the site were constructed. Available information at the time the ESA was performed indicated that a dry cleaner (Moores Mill Cleaners, 1936 Moores Mill Road) was formerly located adjacent to the west of the site from approximately 1968 to 1991 (23 years). Based upon the proximity of the former Moores Mill Cleaners, the duration of operations there, and other historical concerns, Terracon conducted a subsurface investigation at the site.

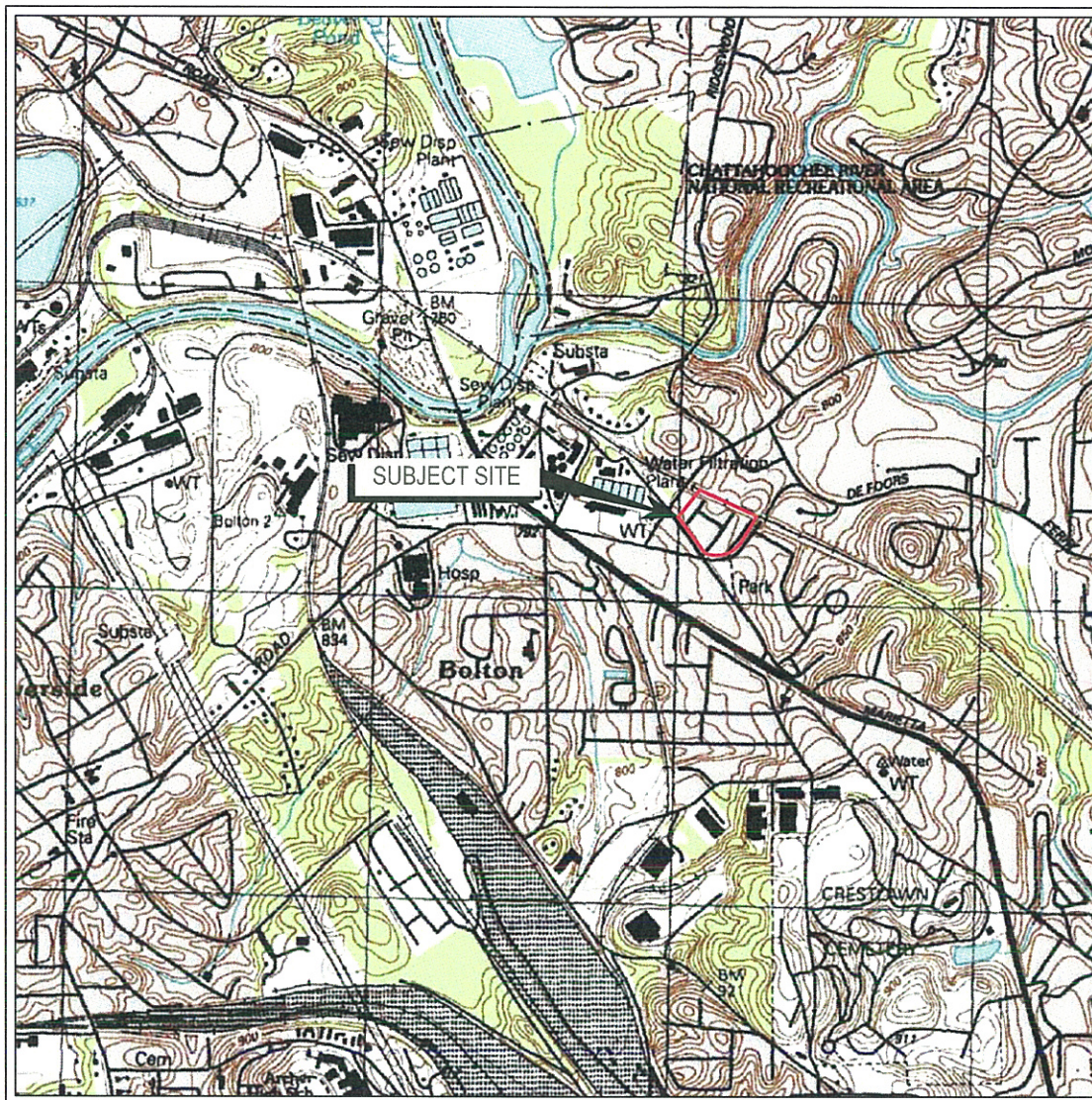
Terracon conducted limited site investigations (LSIs) at the site in June and September 2010. Soil and groundwater samples were collected for analysis, and shallow groundwater flow direction was determined. Two soil borings were advanced at the site in June 2010 at locations along the western property boundary adjacent to the former Moores Mill Cleaners using direct-push (Geoprobe™) drilling equipment. Only one of the two borings advanced in June 2010 yielded groundwater, but chlorinated solvents were identified in that groundwater sample. Subsequent investigation was performed in September 2010 to delineate the presence of chlorinated solvents in groundwater. Five soil borings were advanced, and one of the borings was converted to a temporary monitoring well while the others were converted to permanent monitoring wells. Three permanent wells were installed along the western property boundary and a fourth in the central portion of the site. The temporary well installed did not produce water. Borings for permanent wells were advanced to depths ranging from 50 to 55 feet below ground surface (bgs) with hollow-stem auger drilling equipment. The temporary well boring was refused at 39 feet bgs. Analytical results from soil samples collected did not indicate the presence of detectable concentrations of volatile organic compounds (VOCs) or polynuclear aromatic hydrocarbons (PAHs). Groundwater analytical results indicated the presence of detectable concentrations of chlorinated solvents in two of four permanent wells. The horizontal extent of chlorinated solvent impact on site was delineated; however, the chlorinated solvent plume extends off-site downgradient of the site's northwest corner and downgradient horizontal delineation of the off-site chlorinated solvent plume was not performed.

Shallow groundwater flow at the site was measured to the northeast. Based on the fact that the regulated substances identified in site groundwater were not identified in site soils (no source area was identified) and the presence of the adjacent off-site former Moores Mill Cleaners, Terracon concludes that the compounds identified in groundwater originated from one or more offsite sources.

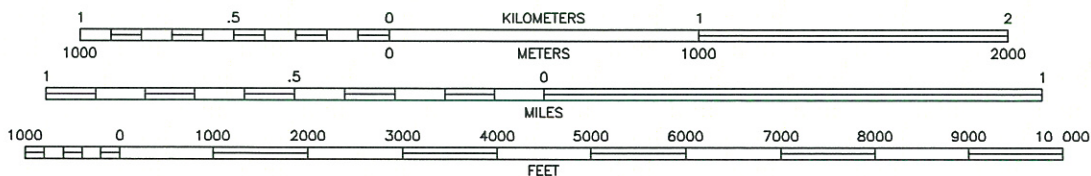
Terracon conducted a potable water well survey within a one-mile radius of the site. No wells were identified. Terracon did not search areas greater than one mile from the site. Preliminary Reportable Quantities Screening Method (RQSM) site screening was performed by Terracon, and RSQM results indicated that the site also would not be listed on the Hazardous Sites Inventory (HSI).



UNITED STATES – DEPARTMENT OF THE INTERIOR – GEOLOGICAL SURVEY




SCALE 1:24 000



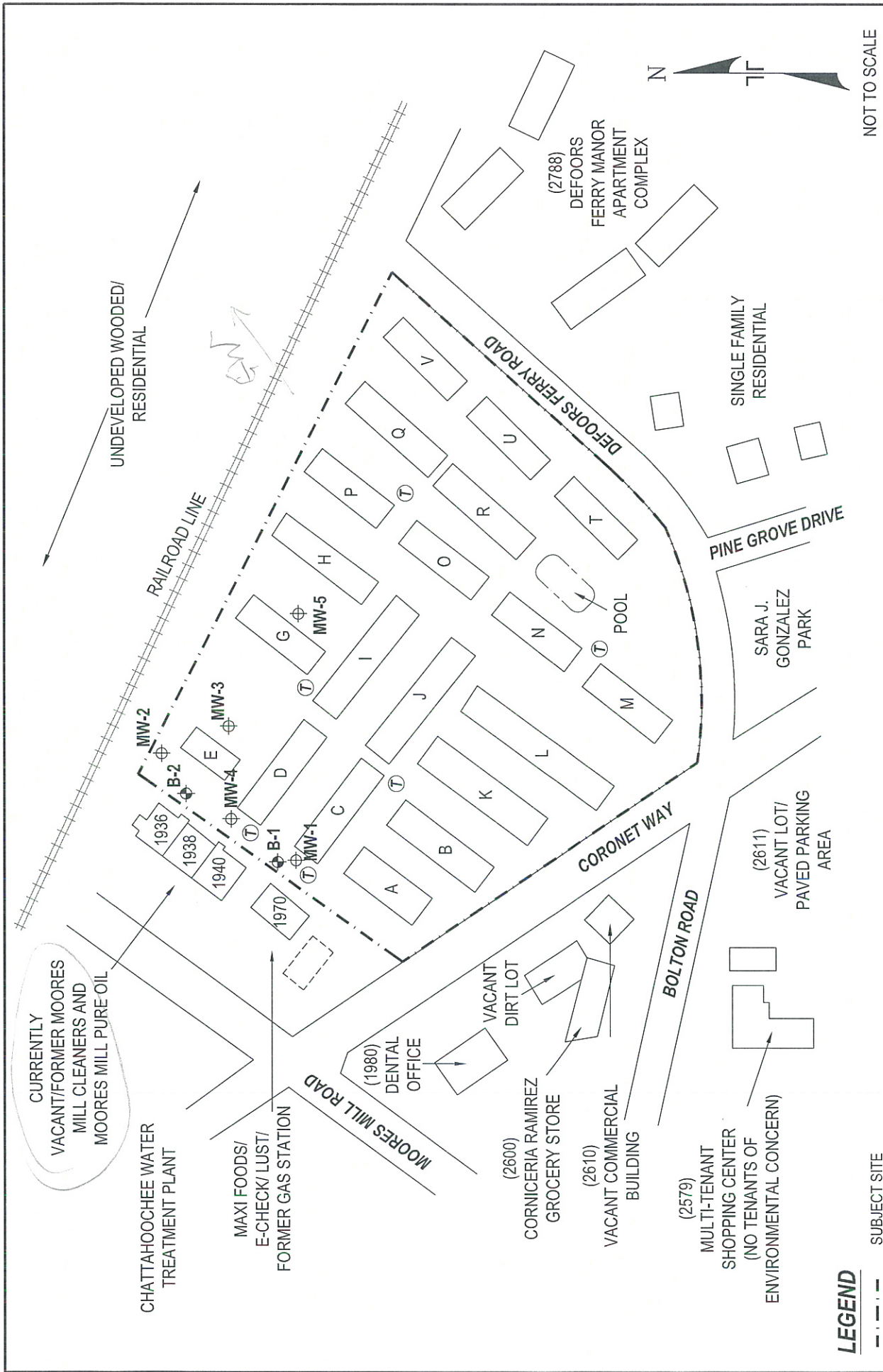
CONTOUR INTERVAL 10 FEET  
NATIONAL GEODETIC VERTICAL DATUM OF 1929  
TOPO LINES REPRESENT 10-FOOT CONTOURS

QUADRANGLE  
NORTHWEST ATLANTA, GA  
1997  
7.5 MINUTE SERIES (TOPOGRAPHIC)



Project Mgr: RD	Project No. 49097257B	 Consulting Engineers and Scientists 2855 Premiere Parkway, Suite C Duluth, GA 30097 (770) 623-0755 (770) 623-9628	TOPOGRAPHIC VICINITY MAP	FIG. No.  1
Drawn By: TLY	Scale: AS SHOWN		LIMITED SITE INVESTIGATION	
Checked By: RD/MRF	File No. LS49097257B-1		MOORES MILL VILLAGE APARTMENTS	
Approved By: JAM	Date: OCTOBER 2010		2453 CORONET WAY NW	
			ATLANTA, FULTON COUNTY, GA	





NOT TO SCALE

**LEGEND**

- SUBJECT SITE
- ⊕ POLE-MOUNTED TRANSFORMER
- ⊕ TEMPORARY GROUNDWATER MONITORING WELL
- ⊕ MONITORING WELL LOCATION

**FIG. No.**

2

**BORING AND WELL LOCATION MAP**

LIMITED SITE INVESTIGATION

MOORES MILL VILLAGE APARTMENTS

2453 CORONET WAY NW

ATLANTA, FULTON COUNTY, GA

**Terracon**

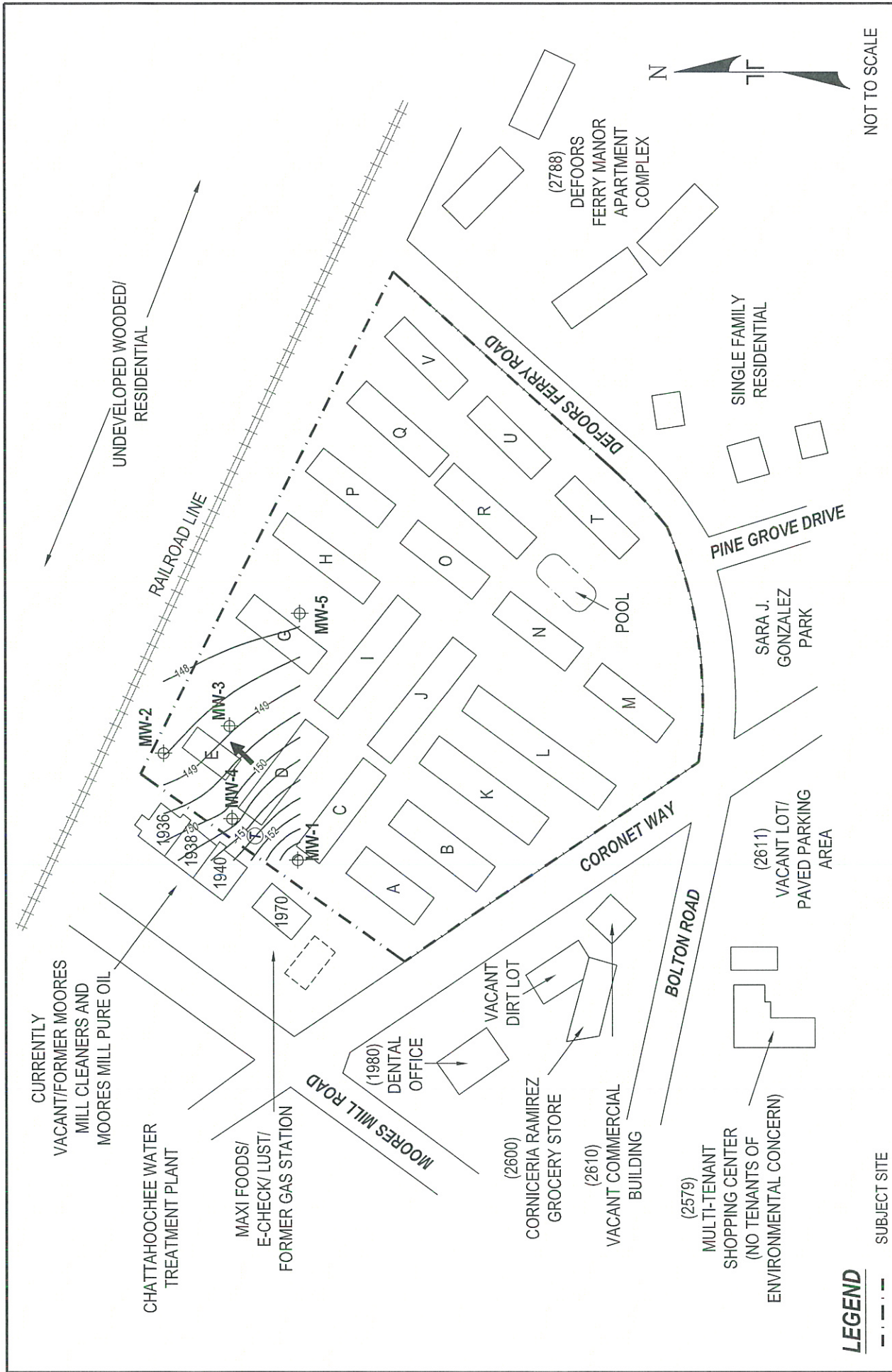
Consulting Engineers and Scientists

2855 Premiere Parkway, Suite C Duluth, GA 30097

(770) 623-0755 (770) 623-9526

Project No.	49097257B	Date:	OCTOBER 2010
Drawn By:	AS SHOWN	File No.	LSN0097257B-2
Checked By:	RDMRF	Approved By:	JAM
Project Mgr:	RD		
Drawn By:	TLY		

THIS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES



<b>FIG. No.</b> 3	
GROUNDWATER FLOW MAP (9-30-2010) LIMITED SITE INVESTIGATION MOORES MILL VILLAGE APARTMENTS 2453 CORONET WAY NW ATLANTA, FULTON COUNTY, GA	
<b>Terracon</b> Consulting Engineers and Scientists 2855 Premiere Parkway, Suite C Duluth, GA 30097 (770) 623-0755	
Project No. 49097/257B	Scale AS SHOWN
Drawn By TLY	File No. LSA4907/257B-3
Checked By RDM/RF	Date OCTOBER 2010
Project Mgr RD	Approved By JAM

THIS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES





ANALYTICAL ENVIRONMENTAL SERVICES, INC.

June 22, 2010

John Meadow  
Terracon  
2855 Premiere Parkway  
Duluth GA 30097

TEL: (770) 623-0755  
FAX: (770) 623-9628

RE: Moores Mill

Dear John Meadow:

Order No: 1006C69

Analytical Environmental Services, Inc. received 4 samples on 6/14/2010 3:15:00 PM for the analyses presented in following report.

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

AES' certifications are as follows:

- NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/09-06/30/10.
- AIHA Certification ID #100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/11.

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.

Brian Rohr  
Project Manager





ANALYTICAL ENVIRONMENTAL SERVICES, INC  
3785 Presidential Parkway, Atlanta GA 30340-3704  
TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

# CHAIN OF CUSTODY

Work Order: **1006C69**  
Date: **6/13/10** Page **1** of **1**

COMPANY: <b>Terracon</b>		ADDRESS: <b>2855 Premiere Pkwy ST. C Duluth GA 30097</b>		ANALYSIS REQUESTED										Visit our website <a href="http://www.aesatlanta.com">www.aesatlanta.com</a> to check on the status of your results, place bottle orders, etc.		No # of Containers	
PHONE: <b>770-623-0755</b>		FAX: <b>770-623-9622</b>		<div style="display: flex; justify-content: space-between;"> <div>VOC / PAH</div> <div>VOC</div> </div>													
SAMPLED BY: <b>J. MEADOW</b>		SIGNATURE:		PRESERVATION (See codes)										REMARKS			
#	SAMPLE ID	DATE	TIME	Grab	Composite	Matrix (See codes)											
1	B-1	6/9/10	10AM	✓		SOIL	✓										5
2	B-2	6/9/10	2PM	✓		SOIL	✓										5
3	B-2	6/13/10	12PM	✓		TW											1
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
RELINQUISHED BY		DATE/TIME	RECEIVED BY	DATE/TIME	PROJECT INFORMATION										RECEIPT		
1.		6/13/10 3:15 PM		6/14/10 3:15 PM	PROJECT NAME: <b>MOONES MILL</b>										Total # of Containers		
2.					PROJECT #:										<input checked="" type="checkbox"/> Turnaround Time Request <input type="checkbox"/> Standard 5 Business Days <input type="checkbox"/> 2 Business Day Rush <input type="checkbox"/> Next Business Day Rush <input type="checkbox"/> Same Day Rush (auth req.) <input type="checkbox"/> Other		
3.					SITE ADDRESS: <b>MOONES MILL ROAD</b>												
					SEND REPORT TO: <b>J. MEADOW</b>												
SPECIAL INSTRUCTIONS/COMMENTS: <b>Boite DATE IS 6/13</b>		SHIPMENT METHOD		INVOICE TO (IF DIFFERENT FROM ABOVE)										STATE PROGRAM (if any):			
		OUT 1 1 VIA:												E-mail? <input checked="" type="checkbox"/> Fax? <input type="checkbox"/>			
		IN 1 1 VIA:												DATA PACKAGE: I II III IV			
		CLIENT FedEx UPS MAIL COURIER															
		GREYHOUND OTHER															

SAMPLES RECEIVED AFTER 3PM OR SATURDAY ARE CONSIDERED AS RECEIVED ON THE NEXT BUSINESS DAY; IF NO TAT IS MARKED ON COC AES WILL PROCEED AS STANDARD TAT.  
SAMPLES ARE DISPOSED OF 30 DAYS AFTER COMPLETION OF REPORT UNLESS OTHER ARRANGEMENTS ARE MADE.

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

White Copy - Original; Yellow Copy - Client

**Client:** Terracon  
**Project:** Moores Mill  
**Lab ID:** 1006C69

**Case Narrative**

Sample Receiving Nonconformance:

A Trip Blank was provided but not listed on the Chain of Custody. The trip blank was analyzed at no cost to the client.

## Analytical Environmental Services, Inc

Date: 22-Jun-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1006C69-001

Client Sample ID: B-1  
 Collection Date: 6/9/2010 10:00:00 AM  
 Matrix: Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>			<b>(SW5035)</b>					
1,1,1-Trichloroethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,1,2,2-Tetrachloroethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,1,2-Trichloroethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,1-Dichloroethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,1-Dichloroethene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,2,4-Trichlorobenzene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,2-Dibromo-3-chloropropane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,2-Dibromoethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,2-Dichlorobenzene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,2-Dichloroethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,2-Dichloropropane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,3-Dichlorobenzene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
1,4-Dichlorobenzene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
2-Butanone	BRL	0.045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
2-Hexanone	BRL	0.0090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
4-Methyl-2-pentanone	BRL	0.0090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Acetone	BRL	0.090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Benzene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Bromodichloromethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Bromoform	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Bromomethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Carbon disulfide	BRL	0.0090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Carbon tetrachloride	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Chlorobenzene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Chloroethane	BRL	0.0090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Chloroform	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Chloromethane	BRL	0.0090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
cis-1,2-Dichloroethene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
cis-1,3-Dichloropropene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Cyclohexane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Dibromochloromethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Dichlorodifluoromethane	BRL	0.0090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Ethylbenzene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Freon-113	BRL	0.0090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Isopropylbenzene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
m,p-Xylene	BRL	0.0090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Methyl acetate	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Methyl tert-butyl ether	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Methylcyclohexane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Methylene chloride	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
o-Xylene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE

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

## Analytical Environmental Services, Inc

Date: 22-Jun-10

<b>Client:</b> Terracon	<b>Client Sample ID:</b> B-1
<b>Project:</b> Moores Mill	<b>Collection Date:</b> 6/9/2010 10:00:00 AM
<b>Lab ID:</b> 1006C69-001	<b>Matrix:</b> Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>		<b>(SW5035)</b>						
Styrene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Tetrachloroethene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Toluene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
trans-1,2-Dichloroethene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
trans-1,3-Dichloropropene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Trichloroethene	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Trichlorofluoromethane	BRL	0.0045		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Vinyl chloride	BRL	0.0090		mg/Kg-dry	131091	1	06/18/2010 00:29	JE
Surr: 4-Bromofluorobenzene	103	58.2-140		%REC	131091	1	06/18/2010 00:29	JE
Surr: Dibromofluoromethane	108	71.1-132		%REC	131091	1	06/18/2010 00:29	JE
Surr: Toluene-d8	98.4	77.6-119		%REC	131091	1	06/18/2010 00:29	JE
<b>POLYAROMATIC HYDROCARBONS SW8270D</b>		<b>(SW3550C)</b>						
Naphthalene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Acenaphthylene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
1-Methylnaphthalene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
2-Methylnaphthalene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Acenaphthene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Fluorene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Phenanthrene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Anthracene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Fluoranthene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Pyrene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Benz(a)anthracene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Chrysene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Benzo(b)fluoranthene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Benzo(k)fluoranthene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Benzo(a)pyrene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Dibenz(a,h)anthracene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Benzo(g,h,i)perylene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Indeno(1,2,3-cd)pyrene	BRL	0.38		mg/Kg-dry	130921	1	06/18/2010 19:40	NE
Surr: 2-Fluorobiphenyl	71.5	52.6-120		%REC	130921	1	06/18/2010 19:40	NE
Surr: 4-Terphenyl-d14	81.6	65-120		%REC	130921	1	06/18/2010 19:40	NE
Surr: Nitrobenzene-d5	59.9	35.2-120		%REC	130921	1	06/18/2010 19:40	NE
<b>PERCENT MOISTURE D2216</b>								
Percent Moisture	12.5	0		wt%	R174244	1	06/17/2010 19:00	AS

<b>Qualifiers:</b>	<ul style="list-style-type: none"> <li>* Value exceeds maximum contaminant level</li> <li>BRL Below reporting limit</li> <li>H Holding times for preparation or analysis exceeded</li> <li>N Analyte not NELAC certified</li> <li>B Analyte detected in the associated method blank</li> <li>&gt; Greater than Result value</li> </ul>	<ul style="list-style-type: none"> <li>E Estimated (value above quantitation range)</li> <li>S Spike Recovery outside limits due to matrix</li> <li>Narr See case narrative</li> <li>NC Not confirmed</li> <li>&lt; Less than Result value</li> </ul>
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## Analytical Environmental Services, Inc

Date: 22-Jun-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1006C69-002

Client Sample ID: B-2  
 Collection Date: 6/9/2010 2:00:00 PM  
 Matrix: Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
TCL VOLATILE ORGANICS SW8260B				(SW5035)				
1,1,1-Trichloroethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,1,2,2-Tetrachloroethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,1,2-Trichloroethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,1-Dichloroethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,1-Dichloroethene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,2,4-Trichlorobenzene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,2-Dibromo-3-chloropropane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,2-Dibromoethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,2-Dichlorobenzene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,2-Dichloroethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,2-Dichloropropane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,3-Dichlorobenzene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
1,4-Dichlorobenzene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
2-Butanone	BRL	0.050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
2-Hexanone	BRL	0.010		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
4-Methyl-2-pentanone	BRL	0.010		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Acetone	BRL	0.10		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Benzene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Bromodichloromethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Bromoform	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Bromomethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Carbon disulfide	BRL	0.010		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Carbon tetrachloride	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Chlorobenzene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Chloroethane	BRL	0.010		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Chloroform	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Chloromethane	BRL	0.010		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
cis-1,2-Dichloroethene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
cis-1,3-Dichloropropene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Cyclohexane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Dibromochloromethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Dichlorodifluoromethane	BRL	0.010		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Ethylbenzene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Freon-113	BRL	0.010		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Isopropylbenzene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
m,p-Xylene	BRL	0.010		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Methyl acetate	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Methyl tert-butyl ether	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Methylcyclohexane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Methylene chloride	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
o-Xylene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE

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

## Analytical Environmental Services, Inc

Date: 22-Jun-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1006C69-002

Client Sample ID: B-2  
 Collection Date: 6/9/2010 2:00:00 PM  
 Matrix: Soil

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>		<b>(SW5035)</b>						
Styrene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Tetrachloroethene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Toluene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
trans-1,2-Dichloroethene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
trans-1,3-Dichloropropene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Trichloroethene	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Trichlorofluoromethane	BRL	0.0050		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Vinyl chloride	BRL	0.010		mg/Kg-dry	131091	1	06/18/2010 05:08	JE
Surr: 4-Bromofluorobenzene	100	58.2-140		%REC	131091	1	06/18/2010 05:08	JE
Surr: Dibromofluoromethane	106	71.1-132		%REC	131091	1	06/18/2010 05:08	JE
Surr: Toluene-d8	98.6	77.6-119		%REC	131091	1	06/18/2010 05:08	JE
<b>POLYAROMATIC HYDROCARBONS SW8270D</b>		<b>(SW3550C)</b>						
Naphthalene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Acenaphthylene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
1-Methylnaphthalene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
2-Methylnaphthalene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Acenaphthene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Fluorene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Phenanthrene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Anthracene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Fluoranthene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Pyrene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Benz(a)anthracene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Chrysene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Benzo(b)fluoranthene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Benzo(k)fluoranthene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Benzo(a)pyrene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Dibenz(a,h)anthracene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Benzo(g,h,i)perylene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Indeno(1,2,3-cd)pyrene	BRL	0.37		mg/Kg-dry	130921	1	06/17/2010 18:03	NE
Surr: 2-Fluorobiphenyl	73.1	52.6-120		%REC	130921	1	06/17/2010 18:03	NE
Surr: 4-Terphenyl-d14	84	65-120		%REC	130921	1	06/17/2010 18:03	NE
Surr: Nitrobenzene-d5	60.8	35.2-120		%REC	130921	1	06/17/2010 18:03	NE
<b>PERCENT MOISTURE D2216</b>								
Percent Moisture	9.93	0		wt%	R174244	1	06/17/2010 19:00	AS

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

## Analytical Environmental Services, Inc

Date: 22-Jun-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1006C69-003

Client Sample ID: B-2  
 Collection Date: 6/13/2010 3:00:00 PM  
 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	131193	1	06/22/2010 13:09	NH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,1,2-Trichloroethane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,1-Dichloroethane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,1-Dichloroethene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,2-Dibromoethane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,2-Dichlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,2-Dichloroethane	BRL	1.0		ug/L	131193	1	06/22/2010 13:09	NH
1,2-Dichloropropane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,3-Dichlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
1,4-Dichlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
2-Butanone	BRL	50		ug/L	131193	1	06/22/2010 13:09	NH
2-Hexanone	BRL	10		ug/L	131193	1	06/22/2010 13:09	NH
4-Methyl-2-pentanone	BRL	10		ug/L	131193	1	06/22/2010 13:09	NH
Acetone	BRL	50		ug/L	131193	1	06/22/2010 13:09	NH
Benzene	BRL	1.0		ug/L	131193	1	06/22/2010 13:09	NH
Bromodichloromethane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Bromoform	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Bromomethane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Carbon disulfide	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Carbon tetrachloride	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Chlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Chloroethane	BRL	10		ug/L	131193	1	06/22/2010 13:09	NH
Chloroform	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Chloromethane	BRL	10		ug/L	131193	1	06/22/2010 13:09	NH
cis-1,2-Dichloroethene	34	5.0		ug/L	131193	1	06/22/2010 13:09	NH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Cyclohexane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Dibromochloromethane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Dichlorodifluoromethane	BRL	10		ug/L	131193	1	06/22/2010 13:09	NH
Ethylbenzene	BRL	1.0		ug/L	131193	1	06/22/2010 13:09	NH
Freon-113	BRL	10		ug/L	131193	1	06/22/2010 13:09	NH
Isopropylbenzene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
m,p-Xylene	BRL	1.0		ug/L	131193	1	06/22/2010 13:09	NH
Methyl acetate	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Methyl tert-butyl ether	BRL	1.0		ug/L	131193	1	06/22/2010 13:09	NH
Methylcyclohexane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Methylene chloride	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
o-Xylene	BRL	1.0		ug/L	131193	1	06/22/2010 13:09	NH

Qualifiers:

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

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



## Analytical Environmental Services, Inc

Date: 22-Jun-10

<b>Client:</b> Terracon	<b>Client Sample ID:</b> B-2
<b>Project:</b> Moores Mill	<b>Collection Date:</b> 6/13/2010 3:00:00 PM
<b>Lab ID:</b> 1006C69-003	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>				<b>(SW5030B)</b>				
Styrene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Tetrachloroethene	54	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Toluene	BRL	1.0		ug/L	131193	1	06/22/2010 13:09	NH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Trichloroethene	23	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Trichlorofluoromethane	BRL	5.0		ug/L	131193	1	06/22/2010 13:09	NH
Vinyl chloride	BRL	2.0		ug/L	131193	1	06/22/2010 13:09	NH
Surr: 4-Bromofluorobenzene	101	60.1-127		%REC	131193	1	06/22/2010 13:09	NH
Surr: Dibromofluoromethane	100	79.6-126		%REC	131193	1	06/22/2010 13:09	NH
Surr: Toluene-d8	98.8	78-116		%REC	131193	1	06/22/2010 13:09	NH

Qualifiers:

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

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

## Analytical Environmental Services, Inc

Date: 22-Jun-10

<b>Client:</b> Terracon	<b>Client Sample ID:</b> TRIP BLANK
<b>Project:</b> Moores Mill	<b>Collection Date:</b> 6/14/2010
<b>Lab ID:</b> 1006C69-004	<b>Matrix:</b> Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>				<b>(SW5030B)</b>				
1,1,1-Trichloroethane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,1,2-Trichloroethane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,1-Dichloroethane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,1-Dichloroethene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,2-Dibromoethane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,2-Dichlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,2-Dichloroethane	BRL	1.0		ug/L	131193	1	06/22/2010 12:18	NH
1,2-Dichloropropane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,3-Dichlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
1,4-Dichlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
2-Butanone	BRL	50		ug/L	131193	1	06/22/2010 12:18	NH
2-Hexanone	BRL	10		ug/L	131193	1	06/22/2010 12:18	NH
4-Methyl-2-pentanone	BRL	10		ug/L	131193	1	06/22/2010 12:18	NH
Acetone	BRL	50		ug/L	131193	1	06/22/2010 12:18	NH
Benzene	BRL	1.0		ug/L	131193	1	06/22/2010 12:18	NH
Bromodichloromethane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Bromoform	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Bromomethane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Carbon disulfide	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Carbon tetrachloride	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Chlorobenzene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Chloroethane	BRL	10		ug/L	131193	1	06/22/2010 12:18	NH
Chloroform	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Chloromethane	BRL	10		ug/L	131193	1	06/22/2010 12:18	NH
cis-1,2-Dichloroethene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
cis-1,3-Dichloropropene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Cyclohexane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Dibromochloromethane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Dichlorodifluoromethane	BRL	10		ug/L	131193	1	06/22/2010 12:18	NH
Ethylbenzene	BRL	1.0		ug/L	131193	1	06/22/2010 12:18	NH
Freon-113	BRL	10		ug/L	131193	1	06/22/2010 12:18	NH
Isopropylbenzene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
m,p-Xylene	BRL	1.0		ug/L	131193	1	06/22/2010 12:18	NH
Methyl acetate	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Methyl tert-butyl ether	BRL	1.0		ug/L	131193	1	06/22/2010 12:18	NH
Methylcyclohexane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Methylene chloride	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
o-Xylene	BRL	1.0		ug/L	131193	1	06/22/2010 12:18	NH

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

## Analytical Environmental Services, Inc

Date: 22-Jun-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1006C69-004

Client Sample ID: TRIP BLANK  
 Collection Date: 6/14/2010  
 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	131193	1	06/22/2010 12:18	NH
Tetrachloroethene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Toluene	BRL	1.0		ug/L	131193	1	06/22/2010 12:18	NH
trans-1,2-Dichloroethene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
trans-1,3-Dichloropropene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Trichloroethene	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Trichlorofluoromethane	BRL	5.0		ug/L	131193	1	06/22/2010 12:18	NH
Vinyl chloride	BRL	2.0		ug/L	131193	1	06/22/2010 12:18	NH
Surr: 4-Bromofluorobenzene	97.6	60.1-127		%REC	131193	1	06/22/2010 12:18	NH
Surr: Dibromofluoromethane	106	79.6-126		%REC	131193	1	06/22/2010 12:18	NH
Surr: Toluene-d8	94.4	78-116		%REC	131193	1	06/22/2010 12:18	NH

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

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

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client TERRACON Work Order Number 1006C69

Checklist completed by PLT Date 6/14/10  
Signature Date

Carrier name: FedEx ☐ UPS ☐ Courier ☐ Client ☒ US Mail ☐ Other ☐

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

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

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

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

Cooler #1 3.4°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 ☐

Adjusted? ☐ Checked by ☐

Sample Condition: Good ☒ Other(Explain) ☐

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

See Case Narrative for resolution of the Non-Conformance.

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

\\Quality Assurance\\Checklists Procedures Sign-Off Templates\\Checklists\\Sample Receipt Checklists\\Sample\_Cooler\_Receipt\_Checklist

# Analytical Environmental Services, Inc

Date: 22-Jun-10

## ANALYTICAL QC SUMMARY REPORT

Client: Terracon  
Project Name: Moores Mill  
Workorder: 1006C69

BatchID: 130921

Sample ID: MB-130921	Client ID:	Units: mg/Kg										Prep Date: 06/16/2010	Run No: 174126
Sample Type: MBLK	Test Code: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 130921										Seq No: 3620896
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual		
1-Methylnaphthalene	BRL	0.33	0	0	0	0	0	0	0	0	0		
2-Methylnaphthalene	BRL	0.33	0	0	0	0	0	0	0	0	0		
Acenaphthene	BRL	0.33	0	0	0	0	0	0	0	0	0		
Acenaphthylene	BRL	0.33	0	0	0	0	0	0	0	0	0		
Anthracene	BRL	0.33	0	0	0	0	0	0	0	0	0		
Benz(a)anthracene	BRL	0.33	0	0	0	0	0	0	0	0	0		
Benzo(a)pyrene	BRL	0.33	0	0	0	0	0	0	0	0	0		
Benzo(b)fluoranthene	BRL	0.33	0	0	0	0	0	0	0	0	0		
Benzo(g,h,i)perylene	BRL	0.33	0	0	0	0	0	0	0	0	0		
Benzo(k)fluoranthene	BRL	0.33	0	0	0	0	0	0	0	0	0		
Chrysene	BRL	0.33	0	0	0	0	0	0	0	0	0		
Dibenz(a,h)anthracene	BRL	0.33	0	0	0	0	0	0	0	0	0		
Fluoranthene	BRL	0.33	0	0	0	0	0	0	0	0	0		
Fluorene	BRL	0.33	0	0	0	0	0	0	0	0	0		
Indeno(1,2,3-cd)pyrene	BRL	0.33	0	0	0	0	0	0	0	0	0		
Naphthalene	BRL	0.33	0	0	0	0	0	0	0	0	0		
Phenanthrene	BRL	0.33	0	0	0	0	0	0	0	0	0		
Pyrene	BRL	0.33	0	0	0	0	0	0	0	0	0		
Surr: 2-Fluorobiphenyl	1.241	0	1.667	0	74.5	52.6	120	0	0	0	0		
Surr: 4-Terphenyl-d14	1.352	0	1.667	0	81.1	65	120	0	0	0	0		
Surr: Nitrobenzene-d5	1.040	0	1.667	0	62.4	35.2	120	0	0	0	0		

Sample ID: LCS-130921	Client ID:	Units: mg/Kg										Prep Date: 06/16/2010	Run No: 174126
Sample Type: LCS	Test Code: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 130921										Seq No: 3620902
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual		
Acenaphthene	1.196	0.33	1.667	0	71.8	56.2	120	0	0	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		

# Analytical Environmental Services, Inc

Date: 22-Jun-10

Client: Terracon  
Project Name: Moores Mill  
Workorder: 1006C69

## ANALYTICAL QC SUMMARY REPORT

BatchID: 130921

Sample ID: LCS-130921		Client ID:		POLYAROMATIC HYDROCARBONS		Units: mg/Kg		Prep Date: 06/16/2010		Run No: 174126	
Sample Type: LCS		Test Code:		SW8270D		BatchID: 130921		Analysis Date: 06/16/2010		Seq No: 3620902	
Analyte	Result	RPT Limit	SPK value	SPK RefVal	%REC	Low Limit	High Limit	RPD RefVal	%RPD	RPD Limit	Qual
Acenaphthylene	1.205	0.33	1.667	0	72.3	56	120	0	0	0	0
Anthracene	1.202	0.33	1.667	0	72.1	58.8	120	0	0	0	0
Benz(a)anthracene	1.252	0.33	1.667	0	75.1	64.8	120	0	0	0	0
Benzo(a)pyrene	1.193	0.33	1.667	0	71.6	59.3	120	0	0	0	0
Benzo(b)fluoranthene	1.360	0.33	1.667	0	81.6	63	120	0	0	0	0
Benzo(g,h,i)perylene	1.345	0.33	1.667	0	80.7	62.6	120	0	0	0	0
Benzo(k)fluoranthene	1.298	0.33	1.667	0	77.9	63.3	120	0	0	0	0
Chrysene	1.277	0.33	1.667	0	76.6	66.7	120	0	0	0	0
Dibenz(a,h)anthracene	1.363	0.33	1.667	0	81.8	60.7	120	0	0	0	0
Fluoranthene	1.449	0.33	1.667	0	86.9	63.4	120	0	0	0	0
Fluorene	1.339	0.33	1.667	0	80.4	59.6	120	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.481	0.33	1.667	0	88.9	61.9	120	0	0	0	0
Naphthalene	1.163	0.33	1.667	0	69.8	50.1	120	0	0	0	0
Phenanthrene	1.399	0.33	1.667	0	83.9	60.6	120	0	0	0	0
Pyrene	1.232	0.33	1.667	0	73.9	63.1	120	0	0	0	0
Surr: 2-Fluorobiphenyl	1.286	0	1.667	0	77.2	52.6	120	0	0	0	0
Surr: 4-Terphenyl-d14	1.349	0	1.667	0	81	65	120	0	0	0	0
Surr: Nitrobenzene-d5	1.046	0	1.667	0	62.8	35.2	120	0	0	0	0

Sample ID: 1006C69-002CMS		Client ID: B-2		POLYAROMATIC HYDROCARBONS		Units: mg/Kg-dry		Prep Date: 06/16/2010		Run No: 174216	
Sample Type: MS		Test Code:		SW8270D		BatchID: 130921		Analysis Date: 06/17/2010		Seq No: 3622799	
Analyte	Result	RPT Limit	SPK value	SPK RefVal	%REC	Low Limit	High Limit	RPD RefVal	%RPD	RPD Limit	Qual
Acenaphthene	1.334	0.37	1.849	0	72.2	48.7	120	0	0	0	0
Acenaphthylene	1.346	0.37	1.849	0	72.8	50.2	120	0	0	0	0
Anthracene	1.363	0.37	1.849	0	73.7	51.8	120	0	0	0	0
Benz(a)anthracene	1.387	0.37	1.849	0	75	59.1	120	0	0	0	0
Benzo(a)pyrene	1.358	0.37	1.849	0	73.5	54.8	120	0	0	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		R RPD outside limits due to matrix	
J	Estimated value detected below Reporting Limit	N Analyte not NELAC certified		S Spike Recovery outside limits due to matrix			
Rpt Lim Reporting Limit							

## Analytical Environmental Services, Inc

Date: 22-Jun-10

Client: Terracon  
Project Name: Moores Mill  
Workorder: 1006C69

## ANALYTICAL QC SUMMARY REPORT

BatchID: 130921

Sample ID: 1006C69-002CMS	Client ID: B-2	Units: mg/Kg-dry	Prep Date: 06/16/2010	Run No: 174216							
SampleType: MS	TestCode: POLYAROMATIC HYDROCARBONS	BatchID: 130921	Analysis Date: 06/17/2010	Seq No: 3622799							
Analyte	Result	RPT Limit	SPK value	SPK RefVal	%REC	Low Limit	High Limit	RPD RefVal	%RPD	RPD Limit	Qual

Benzo(b)fluoranthene	1.557	0.37	1.849	0	84.2	56.6	120	0	0	0	0
Benzo(g,h,i)perylene	1.557	0.37	1.849	0	84.2	53.1	120	0	0	0	0
Benzo(k)fluoranthene	1.387	0.37	1.849	0	75	56.2	120	0	0	0	0
Chrysene	1.418	0.37	1.849	0	76.7	61.3	120	0	0	0	0
Dibenz(a,h)anthracene	1.460	0.37	1.849	0	79	54.2	120	0	0	0	0
Fluoranthene	1.574	0.37	1.849	0	85.1	55.1	120	0	0	0	0
Fluorene	1.474	0.37	1.849	0	79.7	53.9	120	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.572	0.37	1.849	0	85	52.9	120	0	0	0	0
Naphthalene	1.358	0.37	1.849	0	73.4	41.8	120	0	0	0	0
Phenanthrene	1.571	0.37	1.849	0	85	54.2	120	0	0	0	0
Pyrene	1.382	0.37	1.849	0	74.8	54.8	120	0	0	0	0
Surr: 2-Fluorobiphenyl	1.454	0	1.849	0	78.7	52.6	120	0	0	0	0
Surr: 4-Terphenyl-d14	1.532	0	1.849	0	82.9	65	120	0	0	0	0
Surr: Nitrobenzene-d5	1.127	0	1.849	0	61	35.2	120	0	0	0	0

Sample ID: 1006C69-002CMSD	Client ID: B-2	Units: mg/Kg-dry	Prep Date: 06/16/2010	Run No: 174216							
Sample Type: MSD	Test Code: POLYAROMATIC HYDROCARBONS	Batch ID: 130921	Analysis Date: 06/17/2010	Seq No: 3622804							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	1.399	0.37	1.849	0	75.7	48.7	120	1.334	4.76	20.9	
Acenaphthylene	1.405	0.37	1.849	0	76	50.2	120	1.346	4.27	20	
Anthracene	1.384	0.37	1.849	0	74.9	51.8	120	1.363	1.53	17.1	
Benz(a)anthracene	1.442	0.37	1.849	0	78	59.1	120	1.387	3.87	15.8	
Benzo(a)pyrene	1.406	0.37	1.849	0	76.1	54.8	120	1.358	3.48	19.1	
Benzo(b)fluoranthene	1.581	0.37	1.849	0	85.5	56.6	120	1.557	1.53	19	
Benzo(g,h,i)perylene	1.462	0.37	1.849	0	79.1	53.1	120	1.557	6.32	17	
Benzo(k)fluoranthene	1.482	0.37	1.849	0	80.2	56.2	120	1.387	6.62	15.5	
Chrysene	1.520	0.37	1.849	0	82.2	61.3	120	1.418	6.95	16	

Qualifiers: > Greater than Result value  
BRL Below reporting limit  
J Estimated value detected below Reporting Limit  
Rpt Lim Reporting Limit

< Less than Result value  
E Estimated (value above quantitation range)  
N Analyte not NELAC certified  
S Spike Recovery outside limits due to matrix

D Analyte detected in the associated method blank  
H Holding times for preparation or analysis exceeded  
R RPD outside limits due to matrix



# Analytical Environmental Services, Inc

Date: 22-Jun-10

## ANALYTICAL QC SUMMARY REPORT

Client: Terracon  
Project Name: Moores Mill  
Workorder: 1006C69

BatchID: 130921

Sample ID: 1006C69-002CMSD	Client ID: B-2	Units: mg/Kg-dry	Prep Date: 06/16/2010	Run No: 174216							
Sample Type: MSD	Test Code: POLYAROMATIC HYDROCARBONS	BatchID: 130921	Analysis Date: 06/17/2010	Seq No: 3622804							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Dibenz(a,h)anthracene	1.542	0.37	1.849	0	83.4	54.2	120	1.460	5.47	19.7	
Fluoranthene	1.627	0.37	1.849	0	88	55.1	120	1.574	3.35	17.2	
Fluorene	1.529	0.37	1.849	0	82.7	53.9	120	1.474	3.67	15.3	
Indeno(1,2,3-cd)pyrene	1.652	0.37	1.849	0	89.4	52.9	120	1.572	4.95	16.2	
Naphthalene	1.367	0.37	1.849	0	73.9	41.8	120	1.358	0.651	23.1	
Phenanthrene	1.616	0.37	1.849	0	87.4	54.2	120	1.571	2.78	15.2	
Pyrene	1.441	0.37	1.849	0	77.9	54.8	120	1.382	4.14	16.6	
Surr: 2-Fluorobiphenyl	1.514	0	1.849	0	81.9	52.6	120	1.454	0	0	
Surr: 4-Terphenyl-d14	1.589	0	1.849	0	86	65	120	1.532	0	0	
Surr: Nitrobenzene-d5	1.225	0	1.849	0	66.3	35.2	120	1.127	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		

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Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1006C69

## ANALYTICAL QC SUMMARY REPORT

BatchID: 131091

Sample ID: MB-131091	Client ID:					Units: mg/Kg	Prep Date: 06/17/2010	Run No: 174240			
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS	SW8260B	BatchID: 131091				Analysis Date: 06/17/2010	Seq No: 3623409			
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	0.0050	0	0	0	0	0	0	0	0	
1,1,2,2-Tetrachloroethane	BRL	0.0050	0	0	0	0	0	0	0	0	
1,1,2-Trichloroethane	BRL	0.0050	0	0	0	0	0	0	0	0	
1,1-Dichloroethane	BRL	0.0050	0	0	0	0	0	0	0	0	
1,1-Dichloroethene	BRL	0.0050	0	0	0	0	0	0	0	0	
1,2,4-Trichlorobenzene	BRL	0.0050	0	0	0	0	0	0	0	0	
1,2-Dibromo-3-chloropropane	BRL	0.0050	0	0	0	0	0	0	0	0	
1,2-Dibromoethane	BRL	0.0050	0	0	0	0	0	0	0	0	
1,2-Dichlorobenzene	BRL	0.0050	0	0	0	0	0	0	0	0	
1,2-Dichloroethane	BRL	0.0050	0	0	0	0	0	0	0	0	
1,2-Dichloropropane	BRL	0.0050	0	0	0	0	0	0	0	0	
1,3-Dichlorobenzene	BRL	0.0050	0	0	0	0	0	0	0	0	
1,4-Dichlorobenzene	BRL	0.0050	0	0	0	0	0	0	0	0	
2-Butanone	BRL	0.050	0	0	0	0	0	0	0	0	
2-Hexanone	BRL	0.010	0	0	0	0	0	0	0	0	
4-Methyl-2-pentanone	BRL	0.010	0	0	0	0	0	0	0	0	
Acetone	BRL	0.10	0	0	0	0	0	0	0	0	
Benzene	BRL	0.0050	0	0	0	0	0	0	0	0	
Bromodichloromethane	BRL	0.0050	0	0	0	0	0	0	0	0	
Bromoform	BRL	0.0050	0	0	0	0	0	0	0	0	
Bromomethane	BRL	0.0050	0	0	0	0	0	0	0	0	
Carbon disulfide	BRL	0.010	0	0	0	0	0	0	0	0	
Carbon tetrachloride	BRL	0.0050	0	0	0	0	0	0	0	0	
Chlorobenzene	BRL	0.0050	0	0	0	0	0	0	0	0	
Chloroethane	BRL	0.010	0	0	0	0	0	0	0	0	
Chloroform	BRL	0.0050	0	0	0	0	0	0	0	0	
Chloromethane	BRL	0.010	0	0	0	0	0	0	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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1006C69

## ANALYTICAL QC SUMMARY REPORT

BatchID: 131091

Sample ID: MB-131091	Client ID:					Units: mg/Kg	Prep Date: 06/17/2010	Run No: 174240			
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS	SW8260B	BatchID: 131091				Analysis Date: 06/17/2010	Seq No: 3623409			
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	0.0050	0	0	0	0	0	0	0	0	
cis-1,3-Dichloropropene	BRL	0.0050	0	0	0	0	0	0	0	0	
Cyclohexane	BRL	0.0050	0	0	0	0	0	0	0	0	
Dibromochloromethane	BRL	0.0050	0	0	0	0	0	0	0	0	
Dichlorodifluoromethane	BRL	0.010	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	0.0050	0	0	0	0	0	0	0	0	
Freon-113	BRL	0.010	0	0	0	0	0	0	0	0	
Isopropylbenzene	BRL	0.0050	0	0	0	0	0	0	0	0	
m,p-Xylene	BRL	0.010	0	0	0	0	0	0	0	0	
Methyl acetate	BRL	0.0050	0	0	0	0	0	0	0	0	
Methyl tert-butyl ether	BRL	0.0050	0	0	0	0	0	0	0	0	
Methylcyclohexane	BRL	0.0050	0	0	0	0	0	0	0	0	
Methylene chloride	BRL	0.0050	0	0	0	0	0	0	0	0	
o-Xylene	BRL	0.0050	0	0	0	0	0	0	0	0	
Styrene	BRL	0.0050	0	0	0	0	0	0	0	0	
Tetrachloroethene	BRL	0.0050	0	0	0	0	0	0	0	0	
Toluene	BRL	0.0050	0	0	0	0	0	0	0	0	
trans-1,2-Dichloroethene	BRL	0.0050	0	0	0	0	0	0	0	0	
trans-1,3-Dichloropropene	BRL	0.0050	0	0	0	0	0	0	0	0	
Trichloroethene	BRL	0.0050	0	0	0	0	0	0	0	0	
Trichlorofluoromethane	BRL	0.0050	0	0	0	0	0	0	0	0	
Vinyl chloride	BRL	0.010	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	0.05073	0	0.05	0	101	58.2	140	0	0	0	
Surr: Dibromofluoromethane	0.05193	0	0.05	0	104	71.1	132	0	0	0	
Surr: Toluene-d8	0.04935	0	0.05	0	98.7	77.6	119	0	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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1006C69

## ANALYTICAL QC SUMMARY REPORT

BatchID: 131091

Sample ID: LCS-131091	Client ID:	Units: mg/Kg	Prep Date: 06/17/2010	Run No: 174240							
SampleType: LCS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 131091	Analysis Date: 06/17/2010	Seq No: 3623424							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	0.06200	0.0050	0.05	0	124	66.1	158	0	0	0	
Benzene	0.06111	0.0050	0.05	0	122	68.7	139	0	0	0	
Chlorobenzene	0.06162	0.0050	0.05	0	123	74.1	136	0	0	0	
Toluene	0.06058	0.0050	0.05	0	121	68.5	139	0	0	0	
Trichloroethene	0.06399	0.0050	0.05	0	128	74.5	137	0	0	0	
Surr: 4-Bromofluorobenzene	0.05002	0	0.05	0	100	58.2	140	0	0	0	
Surr: Dibromofluoromethane	0.05358	0	0.05	0	107	71.1	132	0	0	0	
Surr: Toluene-d8	0.04952	0	0.05	0	99	77.6	119	0	0	0	

Sample ID: 1006C75-002AMS	Client ID:					Units: mg/Kg-dry	Prep Date: 06/17/2010	Run No: 174240			
SampleType: MS	TestCode: TCL VOLATILE ORGANICS SW8260B					BatchID: 131091	Analysis Date: 06/17/2010	Seq No: 3623427			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	0.07632	0.0061	0.0606	0	126	60.6	160	0	0	0	
Benzene	0.07581	0.0061	0.0606	0	125	64	142	0	0	0	
Chlorobenzene	0.07588	0.0061	0.0606	0	125	70.6	140	0	0	0	
Toluene	0.07706	0.0061	0.0606	0	127	61.6	143	0	0	0	
Trichloroethene	0.07980	0.0061	0.0606	0	132	70.3	147	0	0	0	
Surr: 4-Bromofluorobenzene	0.06201	0	0.0606	0	102	58.2	140	0	0	0	
Surr: Dibromofluoromethane	0.06429	0	0.0606	0	106	71.1	132	0	0	0	
Surr: Toluene-d8	0.06052	0	0.0606	0	99.8	77.6	119	0	0	0	

Sample ID: 1006C75-002AMSD	Client ID:	Units: mg/Kg-dry	Prep Date: 06/17/2010	Run No: 174240							
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 131091	Analysis Date: 06/17/2010	Seq No: 3623432							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	0.07569	0.0061	0.0606	0	125	60.6	160	0.07632	0.83	30.9	
Benzene	0.07559	0.0061	0.0606	0	125	64	142	0.07581	0.288	22.5	

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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1006C69

## ANALYTICAL QC SUMMARY REPORT

BatchID: 131091

Sample ID: 1006C75-002AMSD		Client ID:				Units: mg/Kg-dry		Prep Date: 06/17/2010		Run No: 174240	
SampleType: MSD		TestCode: TCL VOLATILE ORGANICS SW8260B				BatchID: 131091		Analysis Date: 06/17/2010		Seq No: 3623432	
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlorobenzene	0.07399	0.0061	0.0606	0	122	70.6	140	0.07588	2.52	21.9	
Toluene	0.07602	0.0061	0.0606	0	125	61.6	143	0.07706	1.36	25.8	
Trichloroethene	0.07922	0.0061	0.0606	0	131	70.3	147	0.07980	0.732	28	
Surr: 4-Bromofluorobenzene	0.06035	0	0.0606	0	99.5	58.2	140	0.06201	0	0	
Surr: Dibromofluoromethane	0.06490	0	0.0606	0	107	71.1	132	0.06429	0	0	
Surr: Toluene-d8	0.06086	0	0.0606	0	100	77.6	119	0.06052	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		

# Analytical Environmental Services, Inc

Date: 22-Jun-10

Client: Terracon  
Project Name: Moores Mill  
Workorder: 1006C69

## ANALYTICAL QC SUMMARY REPORT

BatchID: 131193

Sample ID: MB-131193	Client ID:	Units: ug/L										Prep Date: 06/17/2010	Run No: 174401
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 131193										Analysis Date: 06/21/2010	Seq No: 3627211
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	0	0	0	0	0	0	0	0	0		
1,1,2,2-Tetrachloroethane	BRL	5.0	0	0	0	0	0	0	0	0	0		
1,1,2-Trichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	0		
1,1-Dichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	0		
1,1-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	0		
1,2,4-Trichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	0		
1,2-Dibromo-3-chloropropane	BRL	5.0	0	0	0	0	0	0	0	0	0		
1,2-Dibromoethane	BRL	5.0	0	0	0	0	0	0	0	0	0		
1,2-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	0		
1,2-Dichloroethane	BRL	1.0	0	0	0	0	0	0	0	0	0		
1,2-Dichloropropane	BRL	5.0	0	0	0	0	0	0	0	0	0		
1,3-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	0		
1,4-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	0		
2-Butanone	BRL	50	0	0	0	0	0	0	0	0	0		
2-Hexanone	BRL	10	0	0	0	0	0	0	0	0	0		
4-Methyl-2-pentanone	BRL	10	0	0	0	0	0	0	0	0	0		
Acetone	BRL	50	0	0	0	0	0	0	0	0	0		
Benzene	BRL	1.0	0	0	0	0	0	0	0	0	0		
Bromodichloromethane	BRL	5.0	0	0	0	0	0	0	0	0	0		
Bromoform	BRL	5.0	0	0	0	0	0	0	0	0	0		
Bromomethane	BRL	5.0	0	0	0	0	0	0	0	0	0		
Carbon disulfide	BRL	5.0	0	0	0	0	0	0	0	0	0		
Carbon tetrachloride	BRL	5.0	0	0	0	0	0	0	0	0	0		
Chlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	0		
Chloroethane	BRL	10	0	0	0	0	0	0	0	0	0		
Chloroform	BRL	5.0	0	0	0	0	0	0	0	0	0		
Chloromethane	BRL	10	0	0	0	0	0	0	0	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		

# Analytical Environmental Services, Inc

Date: 22-Jun-10

Client: Terracon  
Project Name: Moores Mill  
Workorder: 1006C69

## ANALYTICAL QC SUMMARY REPORT

BatchID: 131193

Sample ID: MB-131193		Client ID:		TCL VOLATILE ORGANICS		SW8260B		Units: ug/L		Prep Date: 06/17/2010		Run No: 174401	
SampleType: MBLK		TestCode:		RPT Limit		SPK value		BatchID: 131193		Analysis Date: 06/21/2010		Seq No: 3627211	
Analyte	Result	RPT Limit	SPK value	SPK RefVal	%REC	Low Limit	High Limit	RPD RefVal	%RPD	RPD Limit	Qual		
cis-1,2-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	0		
cis-1,3-Dichloropropene	BRL	5.0	0	0	0	0	0	0	0	0	0		
Cyclohexane	BRL	5.0	0	0	0	0	0	0	0	0	0		
Dibromochloromethane	BRL	5.0	0	0	0	0	0	0	0	0	0		
Dichlorodifluoromethane	BRL	10	0	0	0	0	0	0	0	0	0		
Ethylbenzene	BRL	1.0	0	0	0	0	0	0	0	0	0		
Freon-113	BRL	10	0	0	0	0	0	0	0	0	0		
Isopropylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	0		
m,p-Xylene	BRL	1.0	0	0	0	0	0	0	0	0	0		
Methyl acetate	BRL	5.0	0	0	0	0	0	0	0	0	0		
Methyl tert-butyl ether	BRL	1.0	0	0	0	0	0	0	0	0	0		
Methylcyclohexane	BRL	5.0	0	0	0	0	0	0	0	0	0		
Methylene chloride	BRL	5.0	0	0	0	0	0	0	0	0	0		
o-Xylene	BRL	1.0	0	0	0	0	0	0	0	0	0		
Styrene	BRL	5.0	0	0	0	0	0	0	0	0	0		
Tetrachloroethene	BRL	5.0	0	0	0	0	0	0	0	0	0		
Toluene	BRL	1.0	0	0	0	0	0	0	0	0	0		
trans-1,2-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	0		
trans-1,3-Dichloropropene	BRL	5.0	0	0	0	0	0	0	0	0	0		
Trichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	0		
Trichlorofluoromethane	BRL	5.0	0	0	0	0	0	0	0	0	0		
Vinyl chloride	BRL	2.0	0	0	0	0	0	0	0	0	0		
Surr: 4-Bromofluorobenzene	49.91	0	50	0	99.8	60.1	127	0	0	0	0		
Surr: Dibromofluoromethane	52.42	0	50	0	105	79.6	126	0	0	0	0		
Surr: Toluene-d8	47.47	0	50	0	94.9	78	116	0	0	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 quantization 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		
			Reporting Limit			S	Spike Recovery outside limits due to matrix						



# Analytical Environmental Services, Inc

Date: 22-Jun-10

## ANALYTICAL QC SUMMARY REPORT

Client: Terracon  
Project Name: Moores Mill  
Workorder: 1006C69

BatchID: 131193

Sample ID: LCS-131193	Client ID:	Units: ug/L	Prep Date: 06/17/2010	Run No: 174401							
SampleType: LCS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 131193	Analysis Date: 06/21/2010	Seq No: 3627209							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	52.86	5.0	50	0	106	61.4	146	0	0	0	0
Benzene	48.40	1.0	50	0	96.8	72.8	131	0	0	0	0
Chlorobenzene	48.58	5.0	50	0	97.2	76	123	0	0	0	0
Toluene	45.11	1.0	50	0	90.2	74.7	128	0	0	0	0
Trichloroethene	45.70	5.0	50	0	91.4	74.4	130	0	0	0	0
Surr: 4-Bromofluorobenzene	50.76	0	50	0	102	60.1	127	0	0	0	0
Surr: Dibromofluoromethane	50.00	0	50	0	100	79.6	126	0	0	0	0
Surr: Toluene-d8	47.20	0	50	0	94.4	78	116	0	0	0	0

Sample ID: 1006D41-001AMS	Client ID:	Units: ug/L	Prep Date: 06/17/2010	Run No: 174401							
SampleType: MS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 131193	Analysis Date: 06/21/2010	Seq No: 3627215							
Analyte	Result	RPT Limit	SPK value	SPK RefVal	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	69.02	5.0	50	1.890	134	48.8	172	0	0	0	0
Benzene	58.90	1.0	50	0	118	64.5	143	0	0	0	0
Chlorobenzene	53.74	5.0	50	0	107	74.5	129	0	0	0	0
Toluene	56.89	1.0	50	0	114	62	145	0	0	0	0
Trichloroethene	57.66	5.0	50	0	115	70.3	140	0	0	0	0
Surr: 4-Bromofluorobenzene	48.41	0	50	0	96.8	60.1	127	0	0	0	0
Surr: Dibromofluoromethane	49.99	0	50	0	100	79.6	126	0	0	0	0
Surr: Toluene-d8	49.13	0	50	0	98.3	78	116	0	0	0	0

Sample ID: 1006D41-001AMSD	Client ID:	Units: ug/L	Prep Date: 06/17/2010	Run No: 174401							
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 131193	Analysis Date: 06/21/2010	Seq No: 3627217							
Analyte	Result	RPT Limit	SPK value	SPK RefVal	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	70.14	5.0	50	1.890	136	48.8	172	69.02	1.61	21.6	
Benzene	57.02	1.0	50	0	114	64.5	143	58.90	3.24	18.3	

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

Date: 22-Jun-10

## ANALYTICAL QC SUMMARY REPORT

Client: Terracon  
Project Name: Moores Mill  
Workorder: 1006C69

BatchID: 131193

Sample ID: 1006D41-001AMSD		Client ID:		Units: ug/L		Prep Date: 06/17/2010		Run No: 174401			
Sample Type: MSD		Test Code: MSD		BatchID: 131193		Analysis Date: 06/21/2010		Seq No: 3627217			
		TCL VOLATILE ORGANICS		SW8260B							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlorobenzene	53.70	5.0	50	0	107	74.5	129	53.74	0.074	19.2	
Toluene	54.41	1.0	50	0	109	62	145	56.89	4.46	21.2	
Trichloroethene	56.72	5.0	50	0	113	70.3	140	57.66	1.64	20.3	
Surr: 4-Bromo fluorobenzene	49.55	0	50	0	99.1	60.1	127	48.41	0	0	
Surr: Dibromofluoromethane	51.37	0	50	0	103	79.6	126	49.99	0	0	
Surr: Toluene-d8	48.08	0	50	0	96.2	78	116	49.13	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			



ANALYTICAL ENVIRONMENTAL SERVICES, INC.

September 20, 2010

Rob Deal  
Terracon  
2855 Premiere Parkway  
Duluth GA 30097

TEL: (770) 623-0755

FAX: (770) 623-9628

RE: Moores Mill

Dear Rob Deal:

Order No: 1009880

Analytical Environmental Services, Inc. received 4 samples on September 10, 2010 5:06 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 07/01/10-06/30/11.
- AIHA Certification ID #100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/11.

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.

Brian Rohr  
Project Manager



3785 Presidential Parkway, Atlanta GA 30340-3704

Work Order: 1009880

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

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

[illegible]

SAMPLES RECEIVED AFTER 3PM OR SATURDAY ARE CONSIDERED AS RECEIVED ON THE NEXT BUSINESS DAY; IF NO TAT IS MARKED ON COC AES WILL PROCEED AS STANDARD TAT.

SAMPLES ARE DISPOSED OF 30 DAYS AFTER COMPLETION OF REPORT 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

White Copy - Original; Yellow Copy - Client

**Client:** Terracon  
**Project:** Moores Mill  
**Lab ID:** 1009880

**Case Narrative**

**Sample Receiving Nonconformance:**

An extra sample, MW-4,10, was received at the lab, but not listed on the COC. The sample was placed on hold per Rob Deal.

## Analytical Environmental Services, Inc

Date: 20-Sep-10

<b>Client:</b> Terracon	<b>Client Sample ID:</b> MW-2
<b>Project:</b> Moores Mill	<b>Collection Date:</b> 9/10/2010 3:32:00 PM
<b>Lab ID:</b> 1009880-006	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>				<b>(SW5030B)</b>				
1,1,1-Trichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,1-Dichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,1-Dichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,2-Dibromoethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,2-Dichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,2-Dichloropropane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
2-Butanone	BRL	50		ug/L	135018	1	09/16/2010 11:36	SB
2-Hexanone	BRL	10		ug/L	135018	1	09/16/2010 11:36	SB
4-Methyl-2-pentanone	BRL	10		ug/L	135018	1	09/16/2010 11:36	SB
Acetone	BRL	50		ug/L	135018	1	09/16/2010 11:36	SB
Benzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Bromodichloromethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Bromoform	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Bromomethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Carbon disulfide	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Carbon tetrachloride	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Chlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Chloroethane	BRL	10		ug/L	135018	1	09/16/2010 11:36	SB
Chloroform	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Chloromethane	BRL	10		ug/L	135018	1	09/16/2010 11:36	SB
cis-1,2-Dichloroethene	1700	50		ug/L	135018	10	09/16/2010 12:31	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Cyclohexane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Dibromochloromethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Dichlorodifluoromethane	BRL	10		ug/L	135018	1	09/16/2010 11:36	SB
Ethylbenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Freon-113	BRL	10		ug/L	135018	1	09/16/2010 11:36	SB
Isopropylbenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
m,p-Xylene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Methyl acetate	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Methylcyclohexane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Methylene chloride	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
o-Xylene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB

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

## Analytical Environmental Services, Inc

Date: 20-Sep-10

Client: Terracon  
Project: Moores Mill  
Lab ID: 1009880-006

Client Sample ID: MW-2  
Collection Date: 9/10/2010 3:32:00 PM  
Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>				<b>(SW5030B)</b>				
Styrene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Tetrachloroethene	1700	50		ug/L	135018	10	09/16/2010 12:31	SB
Toluene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
trans-1,2-Dichloroethene	30	5.0		ug/L	135018	1	09/16/2010 11:36	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Trichloroethene	830	50		ug/L	135018	10	09/16/2010 12:31	SB
Trichlorofluoromethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:36	SB
Vinyl chloride	BRL	2.0		ug/L	135018	1	09/16/2010 11:36	SB
Surr: 4-Bromofluorobenzene	85.3	60.1-127		%REC	135018	1	09/16/2010 11:36	SB
Surr: 4-Bromofluorobenzene	85.6	60.1-127		%REC	135018	10	09/16/2010 12:31	SB
Surr: Dibromofluoromethane	101	79.6-126		%REC	135018	1	09/16/2010 11:36	SB
Surr: Dibromofluoromethane	100	79.6-126		%REC	135018	10	09/16/2010 12:31	SB
Surr: Toluene-d8	91.7	78-116		%REC	135018	1	09/16/2010 11:36	SB
Surr: Toluene-d8	91.2	78-116		%REC	135018	10	09/16/2010 12:31	SB
<b>POLYAROMATIC HYDROCARBONS SW8270D</b>				<b>(SW3535A)</b>				
Naphthalene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Acenaphthylene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
1-Methylnaphthalene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
2-Methylnaphthalene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Acenaphthene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Fluorene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Phenanthrene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Anthracene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Fluoranthene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Pyrene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Benz(a)anthracene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Chrysene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Benzo(b)fluoranthene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Benzo(k)fluoranthene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Benzo(a)pyrene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Dibenz(a,h)anthracene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Benzo(g,h,i)perylene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Indeno(1,2,3-cd)pyrene	BRL	10		ug/L	134953	1	09/17/2010 12:06	NE
Surr: Nitrobenzene-d5	81.4	26.9-116		%REC	134953	1	09/17/2010 12:06	NE
Surr: 2-Fluorobiphenyl	75.5	41.6-111		%REC	134953	1	09/17/2010 12:06	NE
Surr: 4-Terphenyl-d14	83.8	61.5-129		%REC	134953	1	09/17/2010 12:06	NE

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



## Analytical Environmental Services, Inc

Date: 20-Sep-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1009880-007

Client Sample ID: MW-1  
 Collection Date: 9/10/2010 3:45:00 PM  
 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	135018	1	09/16/2010 12:03	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,1-Dichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,1-Dichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,2-Dibromoethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,2-Dichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,2-Dichloropropane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
2-Butanone	BRL	50		ug/L	135018	1	09/16/2010 12:03	SB
2-Hexanone	BRL	10		ug/L	135018	1	09/16/2010 12:03	SB
4-Methyl-2-pentanone	BRL	10		ug/L	135018	1	09/16/2010 12:03	SB
Acetone	BRL	50		ug/L	135018	1	09/16/2010 12:03	SB
Benzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Bromodichloromethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Bromoform	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Bromomethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Carbon disulfide	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Carbon tetrachloride	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Chlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Chloroethane	BRL	10		ug/L	135018	1	09/16/2010 12:03	SB
Chloroform	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Chloromethane	BRL	10		ug/L	135018	1	09/16/2010 12:03	SB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Cyclohexane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Dibromochloromethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Dichlorodifluoromethane	BRL	10		ug/L	135018	1	09/16/2010 12:03	SB
Ethylbenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Freon-113	BRL	10		ug/L	135018	1	09/16/2010 12:03	SB
Isopropylbenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
m,p-Xylene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Methyl acetate	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Methylcyclohexane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Methylene chloride	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
o-Xylene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB

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

## Analytical Environmental Services, Inc

Date: 20-Sep-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1009880-007

Client Sample ID: MW-1  
 Collection Date: 9/10/2010 3:45:00 PM  
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>				<b>(SW5030B)</b>				
Styrene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Tetrachloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Toluene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Trichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Trichlorofluoromethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:03	SB
Vinyl chloride	BRL	2.0		ug/L	135018	1	09/16/2010 12:03	SB
Surr: 4-Bromofluorobenzene	86.2	60.1-127		%REC	135018	1	09/16/2010 12:03	SB
Surr: Dibromofluoromethane	104	79.6-126		%REC	135018	1	09/16/2010 12:03	SB
Surr: Toluene-d8	95.2	78-116		%REC	135018	1	09/16/2010 12:03	SB
<b>POLYAROMATIC HYDROCARBONS SW8270D</b>				<b>(SW3535A)</b>				
Naphthalene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Acenaphthylene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
1-Methylnaphthalene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
2-Methylnaphthalene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Acenaphthene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Fluorene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Phenanthrene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Anthracene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Fluoranthene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Pyrene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Benz(a)anthracene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Chrysene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Benzo(b)fluoranthene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Benzo(k)fluoranthene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Benzo(a)pyrene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Dibenz(a,h)anthracene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Benzo(g,h,i)perylene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Indeno(1,2,3-cd)pyrene	BRL	10		ug/L	134953	1	09/17/2010 12:31	NE
Surr: Nitrobenzene-d5	76.6	26.9-116		%REC	134953	1	09/17/2010 12:31	NE
Surr: 2-Fluorobiphenyl	67.3	41.6-111		%REC	134953	1	09/17/2010 12:31	NE
Surr: 4-Terphenyl-d14	83	61.5-129		%REC	134953	1	09/17/2010 12:31	NE

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

## Analytical Environmental Services, Inc

Date: 20-Sep-10

<b>Client:</b> Terracon	<b>Client Sample ID:</b> MW-4
<b>Project:</b> Moores Mill	<b>Collection Date:</b> 9/10/2010 3:55:00 PM
<b>Lab ID:</b> 1009880-008	<b>Matrix:</b> Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>				<b>(SW5030B)</b>				
1,1,1-Trichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,1-Dichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,1-Dichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,2-Dibromoethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,2-Dichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,2-Dichloropropane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
2-Butanone	BRL	50		ug/L	135018	1	09/16/2010 12:58	SB
2-Hexanone	BRL	10		ug/L	135018	1	09/16/2010 12:58	SB
4-Methyl-2-pentanone	BRL	10		ug/L	135018	1	09/16/2010 12:58	SB
Acetone	BRL	50		ug/L	135018	1	09/16/2010 12:58	SB
Benzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Bromodichloromethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Bromoform	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Bromomethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Carbon disulfide	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Carbon tetrachloride	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Chlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Chloroethane	BRL	10		ug/L	135018	1	09/16/2010 12:58	SB
Chloroform	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Chloromethane	BRL	10		ug/L	135018	1	09/16/2010 12:58	SB
cis-1,2-Dichloroethene	8.2	5.0		ug/L	135018	1	09/16/2010 12:58	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Cyclohexane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Dibromochloromethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Dichlorodifluoromethane	BRL	10		ug/L	135018	1	09/16/2010 12:58	SB
Ethylbenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Freon-113	BRL	10		ug/L	135018	1	09/16/2010 12:58	SB
Isopropylbenzene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
m,p-Xylene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Methyl acetate	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Methylcyclohexane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Methylene chloride	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
o-Xylene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB

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

## Analytical Environmental Services, Inc

Date: 20-Sep-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1009880-008

Client Sample ID: MW-4  
 Collection Date: 9/10/2010 3:55:00 PM  
 Matrix: Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>				<b>(SW5030B)</b>				
Styrene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Tetrachloroethene	86	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Toluene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Trichloroethene	20	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Trichlorofluoromethane	BRL	5.0		ug/L	135018	1	09/16/2010 12:58	SB
Vinyl chloride	BRL	2.0		ug/L	135018	1	09/16/2010 12:58	SB
Surr: 4-Bromofluorobenzene	89.5	60.1-127		%REC	135018	1	09/16/2010 12:58	SB
Surr: Dibromofluoromethane	108	79.6-126		%REC	135018	1	09/16/2010 12:58	SB
Surr: Toluene-d8	95.8	78-116		%REC	135018	1	09/16/2010 12:58	SB
<b>POLYAROMATIC HYDROCARBONS SW8270D</b>				<b>(SW3535A)</b>				
Naphthalene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Acenaphthylene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
1-Methylnaphthalene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
2-Methylnaphthalene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Acenaphthene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Fluorene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Phenanthrene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Anthracene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Fluoranthene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Pyrene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Benz(a)anthracene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Chrysene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Benzo(b)fluoranthene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Benzo(k)fluoranthene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Benzo(a)pyrene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Dibenz(a,h)anthracene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Benzo(g,h,i)perylene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Indeno(1,2,3-cd)pyrene	BRL	10		ug/L	134953	1	09/17/2010 12:57	NE
Surr: Nitrobenzene-d5	74.7	26.9-116		%REC	134953	1	09/17/2010 12:57	NE
Surr: 2-Fluorobiphenyl	66.3	41.6-111		%REC	134953	1	09/17/2010 12:57	NE
Surr: 4-Terphenyl-d14	85.5	61.5-129		%REC	134953	1	09/17/2010 12:57	NE

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

## Analytical Environmental Services, Inc

Date: 20-Sep-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1009880-009

Client Sample ID: TRIP BLANK  
 Collection Date: 9/10/2010  
 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	135018	1	09/16/2010 11:09	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,1-Dichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,1-Dichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,2-Dibromoethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,2-Dichloroethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,2-Dichloropropane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
2-Butanone	BRL	50		ug/L	135018	1	09/16/2010 11:09	SB
2-Hexanone	BRL	10		ug/L	135018	1	09/16/2010 11:09	SB
4-Methyl-2-pentanone	BRL	10		ug/L	135018	1	09/16/2010 11:09	SB
Acetone	BRL	50		ug/L	135018	1	09/16/2010 11:09	SB
Benzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Bromodichloromethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Bromoform	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Bromomethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Carbon disulfide	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Carbon tetrachloride	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Chlorobenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Chloroethane	BRL	10		ug/L	135018	1	09/16/2010 11:09	SB
Chloroform	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Chloromethane	BRL	10		ug/L	135018	1	09/16/2010 11:09	SB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Cyclohexane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Dibromochloromethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Dichlorodifluoromethane	BRL	10		ug/L	135018	1	09/16/2010 11:09	SB
Ethylbenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Freon-113	BRL	10		ug/L	135018	1	09/16/2010 11:09	SB
Isopropylbenzene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
m,p-Xylene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Methyl acetate	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Methylcyclohexane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Methylene chloride	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
o-Xylene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB

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

## Analytical Environmental Services, Inc

Date: 20-Sep-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1009880-009

Client Sample ID: TRIP BLANK  
 Collection Date: 9/10/2010  
 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	135018	1	09/16/2010 11:09	SB
Tetrachloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Toluene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Trichloroethene	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Trichlorofluoromethane	BRL	5.0		ug/L	135018	1	09/16/2010 11:09	SB
Vinyl chloride	BRL	2.0		ug/L	135018	1	09/16/2010 11:09	SB
Surr: 4-Bromofluorobenzene	88.4	60.1-127		%REC	135018	1	09/16/2010 11:09	SB
Surr: Dibromofluoromethane	104	79.6-126		%REC	135018	1	09/16/2010 11:09	SB
Surr: Toluene-d8	95.5	78-116		%REC	135018	1	09/16/2010 11:09	SB

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

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Terracotta

Work Order Number 1009880

Checklist completed by Muh 9/11/10  
Signature Date

Carrier name: FedEx ☐ UPS ☐ Courier ☐ Client ☒ US Mail ☐ Other ☐

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

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

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Container/Temp Blank temperature in compliance? ( $4^{\circ}\text{C} \pm 2$ )\* Yes ☒ No ☐

Cooler #1 3.8°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 - pII acceptable upon receipt? Yes ☒ No ☐ Not Applicable ☐

Adjusted? ☐ Checked by MC

Sample Condition: Good ☒ Other(Explain) ☐

(For diffusive samples or AIIIA 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.

\\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample\_Cooler\_Receipt\_Checklist



Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009880

## ANALYTICAL QC SUMMARY REPORT

BatchID: 134953

Sample ID: MB-134953	Client ID:				Units: ug/L	Prep Date: 09/14/2010	Run No: 180210				
SampleType: MBLK	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 134953			Analysis Date: 09/15/2010	Seq No: 3750720				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1-Methylnaphthalene	BRL	10	0	0	0	0	0	0	0	0	
2-Methylnaphthalene	BRL	10	0	0	0	0	0	0	0	0	
Acenaphthene	BRL	10	0	0	0	0	0	0	0	0	
Acenaphthylene	BRL	10	0	0	0	0	0	0	0	0	
Anthracene	BRL	10	0	0	0	0	0	0	0	0	
Benz(a)anthracene	BRL	10	0	0	0	0	0	0	0	0	
Benzo(a)pyrene	BRL	10	0	0	0	0	0	0	0	0	
Benzo(b)fluoranthene	BRL	10	0	0	0	0	0	0	0	0	
Benzo(g,h,i)perylene	BRL	10	0	0	0	0	0	0	0	0	
Benzo(k)fluoranthene	BRL	10	0	0	0	0	0	0	0	0	
Chrysene	BRL	10	0	0	0	0	0	0	0	0	
Dibenz(a,h)anthracene	BRL	10	0	0	0	0	0	0	0	0	
Fluoranthene	BRL	10	0	0	0	0	0	0	0	0	
Fluorene	BRL	10	0	0	0	0	0	0	0	0	
Indeno(1,2,3-cd)pyrene	BRL	10	0	0	0	0	0	0	0	0	
Naphthalene	BRL	10	0	0	0	0	0	0	0	0	
Phenanthrene	BRL	10	0	0	0	0	0	0	0	0	
Pyrene	BRL	10	0	0	0	0	0	0	0	0	
Surr: 2-Fluorobiphenyl	35.02	0	50	0	70	41.6	111	0	0	0	
Surr: 4-Terphenyl-d14	39.41	0	50	0	78.8	61.5	129	0	0	0	
Surr: Nitrobenzene-d5	37.99	0	50	0	76	26.9	116	0	0	0	

Sample ID: LCS-134953	Client ID:					Units: ug/L	Prep Date: 09/14/2010	Run No: 180210			
SampleType: LCS	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 134953				Analysis Date: 09/15/2010	Seq No: 3750727			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	36.11	10	50	0	72.2	54.6	120	0	0	0	
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Qualifiers: > Greater than Result value  
 BRL Below reporting limit  
 J Estimated value detected below Reporting Limit  
 Rpt Lim Reporting Limit

< Less than Result value  
 E Estimated (value above quantitation range)  
 N Analyte not NELAC certified  
 S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank  
 H Holding times for preparation or analysis exceeded  
 R RPD outside limits due to matrix

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009880

## ANALYTICAL QC SUMMARY REPORT

BatchID: 134953

Sample ID: LCS-134953	Client ID:					Units: ug/L	Prep Date: 09/14/2010	Run No: 180210			
SampleType: LCS	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 134953				Analysis Date: 09/15/2010	Seq No: 3750727			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthylene	41.01	10	50	0	82	55.9	120	0	0	0	
Anthracene	42.01	10	50	0	84	61.2	120	0	0	0	
Benz(a)anthracene	40.96	10	50	0	81.9	66.5	120	0	0	0	
Benzo(a)pyrene	37.29	10	50	0	74.6	66	120	0	0	0	
Benzo(b)fluoranthene	44.36	10	50	0	88.7	65.3	115	0	0	0	
Benzo(g,h,i)perylene	39.84	10	50	0	79.7	59.9	115	0	0	0	
Benzo(k)fluoranthene	35.49	10	50	0	71	67.4	115	0	0	0	
Chrysene	38.50	10	50	0	77	67.7	120	0	0	0	
Dibenz(a,h)anthracene	43.00	10	50	0	86	61	117	0	0	0	
Fluoranthene	42.88	10	50	0	85.8	64.8	120	0	0	0	
Fluorene	38.29	10	50	0	76.6	59.3	120	0	0	0	
Indeno(1,2,3-cd)pyrene	42.12	10	50	0	84.2	59.9	120	0	0	0	
Naphthalene	35.45	10	50	0	70.9	47.8	120	0	0	0	
Phenanthrene	43.29	10	50	0	86.6	63	120	0	0	0	
Pyrene	39.55	10	50	0	79.1	65.8	120	0	0	0	
Surr: 2-Fluorobiphenyl	36.97	0	50	0	73.9	41.6	111	0	0	0	
Surr: 4-Terphenyl-d14	41.99	0	50	0	84	61.5	129	0	0	0	
Surr: Nitrobenzene-d5	39.70	0	50	0	79.4	26.9	116	0	0	0	

Sample ID: 1009815-005AMS	Client ID:					Units: ug/L	Prep Date: 09/14/2010	Run No: 180210			
SampleType: MS	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 134953				Analysis Date: 09/15/2010	Seq No: 3751968			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	30.95	10	50	0	61.9	49.3	120	0	0	0	
Acenaphthylene	34.15	10	50	0	68.3	50.3	120	0	0	0	
Anthracene	32.24	10	50	0	64.5	48.9	120	0	0	0	
Benz(a)anthracene	31.91	10	50	0	63.8	61.7	120	0	0	0	
Benzo(a)pyrene	30.55	10	50	0	61.1	58.2	120	0	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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009880

## ANALYTICAL QC SUMMARY REPORT

BatchID: 134953

Sample ID: 1009815-005AMS	Client ID:				Units: ug/L	Prep Date: 09/14/2010	Run No: 180210				
SampleType: MS	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 134953			Analysis Date: 09/15/2010	Seq No: 3751968				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Benzo(b)fluoranthene	37.08	10	50	0	74.2	59	120	0	0	0	
Benzo(g,h,i)perylene	25.60	10	50	0	51.2	55.2	120	0	0	0	S
Benzo(k)fluoranthene	29.82	10	50	0	59.6	59.1	120	0	0	0	
Chrysene	30.51	10	50	0	61	62	120	0	0	0	S
Dibenz(a,h)anthracene	31.04	10	50	0	62.1	56.9	120	0	0	0	
Fluoranthene	32.97	10	50	0	65.9	54.5	120	0	0	0	
Fluorene	33.26	10	50	0	66.5	52.8	120	0	0	0	
Indeno(1,2,3-cd)pyrene	29.70	10	50	0	59.4	57.6	120	0	0	0	
Naphthalene	30.57	10	50	0	61.1	34	120	0	0	0	
Phenanthrene	34.74	10	50	0	69.5	54.6	120	0	0	0	
Pyrene	32.02	10	50	0	64	59.2	120	0	0	0	
Surr: 2-Fluorobiphenyl	30.73	0	50	0	61.5	41.6	111	0	0	0	
Surr: 4-Terphenyl-d14	33.64	0	50	0	67.3	61.5	129	0	0	0	
Surr: Nitrobenzene-d5	31.18	0	50	0	62.4	26.9	116	0	0	0	

Sample ID: 1009815-005AMSD	Client ID:					Units: ug/L	Prep Date: 09/14/2010	Run No: 180210			
SampleType: MSD	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 134953				Analysis Date: 09/15/2010	Seq No: 3751971			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	33.97	10	50	0	67.9	49.3	120	30.95	9.3	27.8	
Acenaphthylene	36.07	10	50	0	72.1	50.3	120	34.15	5.47	27.7	
Anthracene	36.56	10	50	0	73.1	48.9	120	32.24	12.6	17	
Benz(a)anthracene	36.84	10	50	0	73.7	61.7	120	31.91	14.3	17.7	
Benzo(a)pyrene	33.55	10	50	0	67.1	58.2	120	30.55	9.36	18.7	
Benzo(b)fluoranthene	40.06	10	50	0	80.1	59	120	37.08	7.73	19.3	
Benzo(g,h,i)perylene	29.83	10	50	0	59.7	55.2	120	25.60	15.3	19.9	
Benzo(k)fluoranthene	32.20	10	50	0	64.4	59.1	120	29.82	7.67	19.3	
Chrysene	34.55	10	50	0	69.1	62	120	30.51	12.4	17.5	

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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009880

## ANALYTICAL QC SUMMARY REPORT

BatchID: 134953

Sample ID: 1009815-005AMSD	Client ID:					Units: ug/L	Prep Date: 09/14/2010	Run No: 180210			
SampleType: MSD	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 134953				Analysis Date: 09/15/2010	Seq No: 3751971			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Dibenz(a,h)anthracene	35.02	10	50	0	70	56.9	120	31.04	12	20	
Fluoranthene	37.42	10	50	0	74.8	54.5	120	32.97	12.6	17.3	
Fluorene	35.69	10	50	0	71.4	52.8	120	33.26	7.05	23.4	
Indeno(1,2,3-cd)pyrene	33.50	10	50	0	67	57.6	120	29.70	12	20.6	
Naphthalene	29.94	10	50	0	59.9	34	120	30.57	2.08	36.1	
Phenanthrene	39.20	10	50	0	78.4	54.6	120	34.74	12.1	17.3	
Pyrene	35.95	10	50	0	71.9	59.2	120	32.02	11.6	16.1	
Surr: 2-Fluorobiphenyl	31.95	0	50	0	63.9	41.6	111	30.73	0	0	
Surr: 4-Terphenyl-d14	38.14	0	50	0	76.3	61.5	129	33.64	0	0	
Surr: Nitrobenzene-d5	32.04	0	50	0	64.1	26.9	116	31.18	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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009880

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135018

Sample ID: MB-135018	Client ID:					Units: ug/L	Prep Date: 09/14/2010	Run No: 180158			
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS	SW8260B				BatchID: 135018	Analysis Date: 09/14/2010	Seq No: 3750028			
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	0	0	0	0	0	0	0	0	
1,1,2,2-Tetrachloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1,2-Trichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1-Dichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2,4-Trichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dibromo-3-chloropropane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dibromoethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichloropropane	BRL	5.0	0	0	0	0	0	0	0	0	
1,3-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,4-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
2-Butanone	BRL	50	0	0	0	0	0	0	0	0	
2-Hexanone	BRL	10	0	0	0	0	0	0	0	0	
4-Methyl-2-pentanone	BRL	10	0	0	0	0	0	0	0	0	
Acetone	BRL	50	0	0	0	0	0	0	0	0	
Benzene	BRL	5.0	0	0	0	0	0	0	0	0	
Bromodichloromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Bromoform	BRL	5.0	0	0	0	0	0	0	0	0	
Bromomethane	BRL	5.0	0	0	0	0	0	0	0	0	
Carbon disulfide	BRL	5.0	0	0	0	0	0	0	0	0	
Carbon tetrachloride	BRL	5.0	0	0	0	0	0	0	0	0	
Chlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Chloroethane	BRL	10	0	0	0	0	0	0	0	0	
Chloroform	BRL	5.0	0	0	0	0	0	0	0	0	
Chloromethane	BRL	10	0	0	0	0	0	0	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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009880

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135018

Sample ID: MB-135018	Client ID:					Units: ug/L	Prep Date: 09/14/2010	Run No: 180158			
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS	SW8260B				BatchID: 135018	Analysis Date: 09/14/2010	Seq No: 3750028			
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	0	0	0	0	0	0	0	0	
cis-1,3-Dichloropropene	BRL	5.0	0	0	0	0	0	0	0	0	
Cyclohexane	BRL	5.0	0	0	0	0	0	0	0	0	
Dibromochloromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Dichlorodifluoromethane	BRL	10	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Freon-113	BRL	10	0	0	0	0	0	0	0	0	
Isopropylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
m,p-Xylene	BRL	5.0	0	0	0	0	0	0	0	0	
Methyl acetate	BRL	5.0	0	0	0	0	0	0	0	0	
Methyl tert-butyl ether	BRL	5.0	0	0	0	0	0	0	0	0	
Methylcyclohexane	BRL	5.0	0	0	0	0	0	0	0	0	
Methylene chloride	BRL	5.0	0	0	0	0	0	0	0	0	
o-Xylene	BRL	5.0	0	0	0	0	0	0	0	0	
Styrene	BRL	5.0	0	0	0	0	0	0	0	0	
Tetrachloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	5.0	0	0	0	0	0	0	0	0	
trans-1,2-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
trans-1,3-Dichloropropene	BRL	5.0	0	0	0	0	0	0	0	0	
Trichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
Trichlorofluoromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Vinyl chloride	BRL	2.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	52.68	0	50	0	105	60.1	127	0	0	0	
Surr: Dibromofluoromethane	58.31	0	50	0	117	79.6	126	0	0	0	
Surr: Toluene-d8	50.45	0	50	0	101	78	116	0	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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009880

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135018

Sample ID: LCS-135018	Client ID:	Units: ug/L	Prep Date: 09/14/2010	Run No: 180158							
SampleType: LCS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 135018	Analysis Date: 09/14/2010	Seq No: 3750027							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	54.61	5.0	50	0	109	61.4	146	0	0	0	
Benzene	47.12	5.0	50	0	94.2	72.8	131	0	0	0	
Chlorobenzene	50.88	5.0	50	0	102	76	123	0	0	0	
Toluene	50.53	5.0	50	0	101	74.7	128	0	0	0	
Trichloroethene	53.30	5.0	50	0	107	74.4	130	0	0	0	
Surr: 4-Bromofluorobenzene	54.83	0	50	0	110	60.1	127	0	0	0	
Surr: Dibromofluoromethane	55.68	0	50	0	111	79.6	126	0	0	0	
Surr: Toluene-d8	50.99	0	50	0	102	78	116	0	0	0	

Sample ID: 1009704-001AMS	Client ID:	Units: ug/L	Prep Date: 09/14/2010	Run No: 180158							
SampleType: MS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 135018	Analysis Date: 09/14/2010	Seq No: 3750030							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	50.38	5.0	50	0	101	48.8	172	0	0	0	
Benzene	60.98	5.0	50	12.96	96	64.5	143	0	0	0	
Chlorobenzene	129.3	5.0	50	77.81	103	74.5	129	0	0	0	
Toluene	55.53	5.0	50	6.870	97.3	62	145	0	0	0	
Trichloroethene	83.70	5.0	50	28.57	110	70.3	140	0	0	0	
Surr: 4-Bromofluorobenzene	53.72	0	50	0	107	60.1	127	0	0	0	
Surr: Dibromofluoromethane	56.37	0	50	0	113	79.6	126	0	0	0	
Surr: Toluene-d8	48.70	0	50	0	97.4	78	116	0	0	0	

Sample ID: 1009704-001AMSD	Client ID:	Units: ug/L	Prep Date: 09/14/2010	Run No: 180158							
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 135018	Analysis Date: 09/14/2010	Seq No: 3750031							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	53.99	5.0	50	0	108	48.8	172	50.38	6.92	21.6	
Benzene	61.30	5.0	50	12.96	96.7	64.5	143	60.98	0.523	18.3	

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)	II 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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009880

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135018

Sample ID: 1009704-001AMSD	Client ID:	Units: ug/L	Prep Date: 09/14/2010	Run No: 180158							
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 135018	Analysis Date: 09/14/2010	Seq No: 3750031							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chlorobenzene	125.7	5.0	50	77.81	95.8	74.5	129	129.3	2.78	19.2	
Toluene	55.82	5.0	50	6.870	97.9	62	145	55.53	0.521	21.2	
Trichloroethene	79.47	5.0	50	28.57	102	70.3	140	83.70	5.18	20.3	
Surr: 4-Bromofluorobenzene	50.22	0	50	0	100	60.1	127	53.72	0	0	
Surr: Dibromofluoromethane	53.11	0	50	0	106	79.6	126	56.37	0	0	
Surr: Toluene-d8	48.19	0	50	0	96.4	78	116	48.70	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		





ANALYTICAL ENVIRONMENTAL SERVICES, INC.

October 04, 2010

Rob Deal  
Terracon  
2855 Premiere Parkway  
Duluth GA 30097

TEL: (770) 623-0755  
FAX: (770) 623-9628

RE: Moores Mill

Dear Rob Deal:

Order No: 1009M35

Analytical Environmental Services, Inc. received 2 samples on 9/29/2010 3:40:00 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 07/01/10-06/30/11.
- AIHA Certification ID #100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/11.

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.

Brian Rohr  
Project Manager

Date: 9-29-10 Page 1 of 1

COMPANY:		ADDRESS:		ANALYSIS REQUESTED												Visit our website <a href="http://www.aesatlanta.com">www.aesatlanta.com</a> to check on the status of your results, place bottle orders, etc.		No # of Containers			
PHONE:		FAX:		PRESERVATION (See codes)												REMARKS					
SAMPLED BY:		SIGNATURE:		SAMPLED		Grab	Composite	Matrix (See codes)													
#	SAMPLE ID	DATE	TIME																		
1	MMS	9-29-10	1453	✓		GLW	X	X												4	
2	trp blank	—	—			AR	X													2	
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
RELINQUISHED BY:		DATE/TIME		RECEIVED BY		DATE/TIME		PROJECT INFORMATION												RECEIPT	
1: [Signature]		9-29-10 1540		1: [Signature]		9-29-10 1540		PROJECT NAME: Moores MWH												Total # of Containers 6	
2:				2:				PROJECT #: 49097257B												<input checked="" 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: Cornet Way													
								SEND REPORT TO: Rob Deal													
SPECIAL INSTRUCTIONS/COMMENTS:				SHIPMENT METHOD				INVOICE TO (IF DIFFERENT FROM ABOVE)												STATE PROGRAM (if any): _____	
				OUT <input checked="" type="radio"/> IN <input type="radio"/> CLIENT <input type="radio"/> FedEx <input type="radio"/> UPS <input type="radio"/> MAIL <input type="radio"/> COURIER <input type="radio"/> GROUND <input type="radio"/> OTHER _____																E-mail? Y/N; Fax? Y/N	
								QUOTE #: _____ POW: _____												DATA PACKAGE: I II III IV	

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

White Copy - Original; Yellow Copy - Client

## Analytical Environmental Services, Inc

Date: 4-Oct-10

Client: Terracon  
 Project: Moores Mill  
 Lab ID: 1009M35-001

Client Sample ID: MW-5  
 Collection Date: 9/29/2010 2:53:00 PM  
 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	135865	1	10/01/2010 14:05	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,1-Dichloroethane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,1-Dichloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,2-Dibromoethane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,2-Dichloroethane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,2-Dichloropropane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
2-Butanone	BRL	50		ug/L	135865	1	10/01/2010 14:05	SB
2-Hexanone	BRL	10		ug/L	135865	1	10/01/2010 14:05	SB
4-Methyl-2-pentanone	BRL	10		ug/L	135865	1	10/01/2010 14:05	SB
Acetone	BRL	50		ug/L	135865	1	10/01/2010 14:05	SB
Benzene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Bromodichloromethane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Bromoform	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Bromomethane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Carbon disulfide	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Carbon tetrachloride	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Chlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Chloroethane	BRL	10		ug/L	135865	1	10/01/2010 14:05	SB
Chloroform	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Chloromethane	BRL	10		ug/L	135865	1	10/01/2010 14:05	SB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Cyclohexane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Dibromochloromethane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Dichlorodifluoromethane	BRL	10		ug/L	135865	1	10/01/2010 14:05	SB
Ethylbenzene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Freon-113	BRL	10		ug/L	135865	1	10/01/2010 14:05	SB
Isopropylbenzene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
m,p-Xylene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Methyl acetate	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Methylcyclohexane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Methylene chloride	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
o-Xylene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB

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

**Analytical Environmental Services, Inc**
**Date:** 4-Oct-10

**Client:** Terracon  
**Project:** Moores Mill  
**Lab ID:** 1009M35-001

**Client Sample ID:** MW-5  
**Collection Date:** 9/29/2010 2:53:00 PM  
**Matrix:** Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>					<b>(SW5030B)</b>			
Styrene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Tetrachloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Toluene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Trichloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Trichlorofluoromethane	BRL	5.0		ug/L	135865	1	10/01/2010 14:05	SB
Vinyl chloride	BRL	2.0		ug/L	135865	1	10/01/2010 14:05	SB
Surr: 4-Bromofluorobenzene	93.4	60.1-127		%REC	135865	1	10/01/2010 14:05	SB
Surr: Dibromofluoromethane	99.2	79.6-126		%REC	135865	1	10/01/2010 14:05	SB
Surr: Toluene-d8	89	78-116		%REC	135865	1	10/01/2010 14:05	SB
<b>POLYAROMATIC HYDROCARBONS SW8270D</b>					<b>(SW3535A)</b>			
Naphthalene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Acenaphthylene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
1-Methylnaphthalene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
2-Methylnaphthalene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Acenaphthene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Fluorene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Phenanthrene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Anthracene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Fluoranthene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Pyrene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Benz(a)anthracene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Chrysene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Benzo(b)fluoranthene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Benzo(k)fluoranthene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Benzo(a)pyrene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Dibenz(a,h)anthracene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Benzo(g,h,i)perylene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Indeno(1,2,3-cd)pyrene	BRL	10		ug/L	135894	1	10/04/2010 10:29	NE
Surr: Nitrobenzene-d5	56.9	26.9-116		%REC	135894	1	10/04/2010 10:29	NE
Surr: 2-Fluorobiphenyl	66	41.6-111		%REC	135894	1	10/04/2010 10:29	NE
Surr: 4-Terphenyl-d14	77.4	61.5-129		%REC	135894	1	10/04/2010 10:29	NE

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

## Analytical Environmental Services, Inc

Date: 4-Oct-10

Client: Terracon  
Project: Moores Mill  
Lab ID: I009M35-002

Client Sample ID: TRIP BLANK  
Collection Date: 9/29/2010  
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	135865	1	10/01/2010 12:16	SB
1,1,2,2-Tetrachloroethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,1,2-Trichloroethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,1-Dichloroethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,1-Dichloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,2,4-Trichlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,2-Dibromo-3-chloropropane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,2-Dibromoethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,2-Dichlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,2-Dichloroethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,2-Dichloropropane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,3-Dichlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
1,4-Dichlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
2-Butanone	BRL	50		ug/L	135865	1	10/01/2010 12:16	SB
2-Hexanone	BRL	10		ug/L	135865	1	10/01/2010 12:16	SB
4-Methyl-2-pentanone	BRL	10		ug/L	135865	1	10/01/2010 12:16	SB
Acetone	BRL	50		ug/L	135865	1	10/01/2010 12:16	SB
Benzene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Bromodichloromethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Bromoform	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Bromomethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Carbon disulfide	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Carbon tetrachloride	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Chlorobenzene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Chloroethane	BRL	10		ug/L	135865	1	10/01/2010 12:16	SB
Chloroform	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Chloromethane	BRL	10		ug/L	135865	1	10/01/2010 12:16	SB
cis-1,2-Dichloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
cis-1,3-Dichloropropene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Cyclohexane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Dibromochloromethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Dichlorodifluoromethane	BRL	10		ug/L	135865	1	10/01/2010 12:16	SB
Ethylbenzene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Freon-113	BRL	10		ug/L	135865	1	10/01/2010 12:16	SB
Isopropylbenzene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
m,p-Xylene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Methyl acetate	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Methyl tert-butyl ether	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Methylcyclohexane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Methylene chloride	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
o-Xylene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB

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

## Analytical Environmental Services, Inc

Date: 4-Oct-10

<b>Client:</b>	Terracon	<b>Client Sample ID:</b>	TRIP BLANK
<b>Project:</b>	Moore's Mill	<b>Collection Date:</b>	9/29/2010
<b>Lab ID:</b>	1009M35-002	<b>Matrix:</b>	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
<b>TCL VOLATILE ORGANICS SW8260B</b>				<b>(SW5030B)</b>				
Styrene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Tetrachloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Toluene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
trans-1,2-Dichloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
trans-1,3-Dichloropropene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Trichloroethene	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Trichlorofluoromethane	BRL	5.0		ug/L	135865	1	10/01/2010 12:16	SB
Vinyl chloride	BRL	2.0		ug/L	135865	1	10/01/2010 12:16	SB
Surr: 4-Bromofluorobenzene	86.4	60.1-127		%REC	135865	1	10/01/2010 12:16	SB
Surr: Dibromofluoromethane	93.4	79.6-126		%REC	135865	1	10/01/2010 12:16	SB
Surr: Toluene-d8	93	78-116		%REC	135865	1	10/01/2010 12:16	SB

**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

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client Terraco

Work Order Number 1009M35

Checklist completed by M. J. Date 9/29/10  
Signature Date

Carrier name: FedEx ☐ UPS ☐ Courier ☐ Client ☒ US Mail ☐ Other ☐

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

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

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Container/Temp Blank temperature in compliance? ( $4^{\circ}\text{C} \pm 2$ )\* Yes ☒ No ☐

Cooler #1 3.6° 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 M.D.

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.

\\Quality Assurance\Checklists Procedures Sign-Off Templates\Checklists\Sample Receipt Checklists\Sample\_Cooler\_Receipt\_Checklist

Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009M35

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135865

Sample ID: MB-135865	Client ID:					Units: ug/L	Prep Date: 10/01/2010	Run No: 181388			
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS	SW8260B				BatchID: 135865	Analysis Date: 10/01/2010	Seq No: 3773754			
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	0	0	0	0	0	0	0	0	
1,1,2,2-Tetrachloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1,2-Trichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1-Dichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,1-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2,4-Trichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dibromo-3-chloropropane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dibromoethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichloroethane	BRL	5.0	0	0	0	0	0	0	0	0	
1,2-Dichloropropane	BRL	5.0	0	0	0	0	0	0	0	0	
1,3-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
1,4-Dichlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
2-Butanone	BRL	50	0	0	0	0	0	0	0	0	
2-Hexanone	BRL	10	0	0	0	0	0	0	0	0	
4-Methyl-2-pentanone	BRL	10	0	0	0	0	0	0	0	0	
Acetone	BRL	50	0	0	0	0	0	0	0	0	
Benzene	BRL	5.0	0	0	0	0	0	0	0	0	
Bromodichloromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Bromoform	BRL	5.0	0	0	0	0	0	0	0	0	
Bromomethane	BRL	5.0	0	0	0	0	0	0	0	0	
Carbon disulfide	BRL	5.0	0	0	0	0	0	0	0	0	
Carbon tetrachloride	BRL	5.0	0	0	0	0	0	0	0	0	
Chlorobenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Chloroethane	BRL	10	0	0	0	0	0	0	0	0	
Chloroform	BRL	5.0	0	0	0	0	0	0	0	0	
Chloromethane	BRL	10	0	0	0	0	0	0	0	0	

Qualifiers: &gt; Greater than Result value

BRL Below reporting limit

J Estimated value detected below Reporting Limit

Rpt Lim Reporting Limit

&lt; Less than Result value

E Estimated (value above quantitation range)

N Analyte not NELAC certified

S Spike Recovery outside limits due to matrix

B Analyte detected in the associated method blank

H Holding times for preparation or analysis exceeded

R RPD outside limits due to matrix



Client: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009M35

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135865

Sample ID: MB-135865	Client ID:					Units: ug/L	Prep Date: 10/01/2010	Run No: 181388			
SampleType: MBLK	TestCode: TCL VOLATILE ORGANICS	SW8260B				BatchID: 135865	Analysis Date: 10/01/2010	Seq No: 3773754			
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	0	0	0	0	0	0	0	0	
cis-1,3-Dichloropropene	BRL	5.0	0	0	0	0	0	0	0	0	
Cyclohexane	BRL	5.0	0	0	0	0	0	0	0	0	
Dibromochloromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Dichlorodifluoromethane	BRL	10	0	0	0	0	0	0	0	0	
Ethylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
Freon-113	BRL	10	0	0	0	0	0	0	0	0	
Isopropylbenzene	BRL	5.0	0	0	0	0	0	0	0	0	
m,p-Xylene	BRL	5.0	0	0	0	0	0	0	0	0	
Methyl acetate	BRL	5.0	0	0	0	0	0	0	0	0	
Methyl tert-butyl ether	BRL	5.0	0	0	0	0	0	0	0	0	
Methylcyclohexane	BRL	5.0	0	0	0	0	0	0	0	0	
Methylene chloride	BRL	5.0	0	0	0	0	0	0	0	0	
o-Xylene	BRL	5.0	0	0	0	0	0	0	0	0	
Styrene	BRL	5.0	0	0	0	0	0	0	0	0	
Tetrachloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
Toluene	BRL	5.0	0	0	0	0	0	0	0	0	
trans-1,2-Dichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
trans-1,3-Dichloropropene	BRL	5.0	0	0	0	0	0	0	0	0	
Trichloroethene	BRL	5.0	0	0	0	0	0	0	0	0	
Trichlorofluoromethane	BRL	5.0	0	0	0	0	0	0	0	0	
Vinyl chloride	BRL	2.0	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	43.36	0	50	0	86.7	60.1	127	0	0	0	
Surr: Dibromofluoromethane	47.68	0	50	0	95.4	79.6	126	0	0	0	
Surr: Toluene-d8	44.51	0	50	0	89	78	116	0	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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009M35

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135865

Sample ID: LCS-135865	Client ID:	Units: ug/L	Prep Date: 10/01/2010	Run No: 181388							
SampleType: LCS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 135865	Analysis Date: 10/01/2010	Seq No: 3773753							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	52.15	5.0	50	0	104	61.4	146	0	0	0	
Benzene	50.44	5.0	50	0	101	72.8	131	0	0	0	
Chlorobenzene	49.45	5.0	50	0	98.9	76	123	0	0	0	
Toluene	49.95	5.0	50	0	99.9	74.7	128	0	0	0	
Trichloroethene	52.13	5.0	50	0	104	74.4	130	0	0	0	
Surr: 4-Bromofluorobenzene	49.45	0	50	0	98.9	60.1	127	0	0	0	
Surr: Dibromofluoromethane	44.41	0	50	0	88.8	79.6	126	0	0	0	
Surr: Toluene-d8	47.88	0	50	0	95.8	78	116	0	0	0	

Sample ID: 1009M35-001AMS	Client ID: MW-5	Units: ug/L	Prep Date: 10/01/2010	Run No: 181388							
SampleType: MS	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 135865	Analysis Date: 10/01/2010	Seq No: 3774100							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	65.09	5.0	50	0	130	48.8	172	0	0	0	
Benzene	60.27	5.0	50	0	121	64.5	143	0	0	0	
Chlorobenzene	55.05	5.0	50	0	110	74.5	129	0	0	0	
Toluene	60.56	5.0	50	0	121	62	145	0	0	0	
Trichloroethene	65.54	5.0	50	0	131	70.3	140	0	0	0	
Surr: 4-Bromofluorobenzene	52.11	0	50	0	104	60.1	127	0	0	0	
Surr: Dibromofluoromethane	49.60	0	50	0	99.2	79.6	126	0	0	0	
Surr: Toluene-d8	52.74	0	50	0	105	78	116	0	0	0	

Sample ID: 1009M35-001AMSD	Client ID: MW-5	Units: ug/L	Prep Date: 10/01/2010	Run No: 181388							
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 135865	Analysis Date: 10/01/2010	Seq No: 3774102							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1,1-Dichloroethene	64.67	5.0	50	0	129	48.8	172	65.09	0.647	21.6	
Benzene	60.12	5.0	50	0	120	64.5	143	60.27	0.249	18.3	

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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009M35

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135865

Sample ID: 1009M35-001AMSD	Client ID: MW-5	Units: ug/L	Prep Date: 10/01/2010	Run No: 181388							
SampleType: MSD	TestCode: TCL VOLATILE ORGANICS SW8260B	BatchID: 135865	Analysis Date: 10/01/2010	Seq No: 3774102							
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Chlorobenzene	53.87	5.0	50	0	108	74.5	129	55.05	2.17	19.2	
Toluene	58.79	5.0	50	0	118	62	145	60.56	2.97	21.2	
Trichloroethene	61.44	5.0	50	0	123	70.3	140	65.54	6.46	20.3	
Surr: 4-Bromofluorobenzene	50.37	0	50	0	101	60.1	127	52.11	0	0	
Surr: Dibromofluoromethane	48.49	0	50	0	97	79.6	126	49.60	0	0	
Surr: Toluene-d8	49.56	0	50	0	99.1	78	116	52.74	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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009M35

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135894

Sample ID: MB-135894	Client ID:					Units: ug/L	Prep Date: 10/02/2010	Run No: 181475			
SampleType: MBLK	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 135894				Analysis Date: 10/04/2010	Seq No: 3775842			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

1-Methylnaphthalene	BRL	10	0	0	0	0	0	0	0	0	
2-Methylnaphthalene	BRL	10	0	0	0	0	0	0	0	0	
Acenaphthene	BRL	10	0	0	0	0	0	0	0	0	
Acenaphthylene	BRL	10	0	0	0	0	0	0	0	0	
Anthracene	BRL	10	0	0	0	0	0	0	0	0	
Benz(a)anthracene	BRL	10	0	0	0	0	0	0	0	0	
Benzo(a)pyrene	BRL	10	0	0	0	0	0	0	0	0	
Benzo(b)fluoranthene	BRL	10	0	0	0	0	0	0	0	0	
Benzo(g,h,i)perylene	BRL	10	0	0	0	0	0	0	0	0	
Benzo(k)fluoranthene	BRL	10	0	0	0	0	0	0	0	0	
Chrysene	BRL	10	0	0	0	0	0	0	0	0	
Dibenz(a,h)anthracene	BRL	10	0	0	0	0	0	0	0	0	
Fluoranthene	BRL	10	0	0	0	0	0	0	0	0	
Fluorene	BRL	10	0	0	0	0	0	0	0	0	
Indeno(1,2,3-cd)pyrene	BRL	10	0	0	0	0	0	0	0	0	
Naphthalene	BRL	10	0	0	0	0	0	0	0	0	
Phenanthrene	BRL	10	0	0	0	0	0	0	0	0	
Pyrene	BRL	10	0	0	0	0	0	0	0	0	
Surr: 2-Fluorobiphenyl	32.81	0	50	0	65.6	41.6	111	0	0	0	
Surr: 4-Terphenyl-d14	38.83	0	50	0	77.7	61.5	129	0	0	0	
Surr: Nitrobenzene-d5	30.16	0	50	0	60.3	26.9	116	0	0	0	

Sample ID: LCS-135894	Client ID:				Units: ug/L	Prep Date: 10/02/2010	Run No: 181475				
SampleType: LCS	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 135894			Analysis Date: 10/04/2010	Seq No: 3775844				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual

Acenaphthene	36.06	10	50	0	72.1	54.6	120	0	0	0	
Acenaphthylene	35.99	10	50	0	72	55.9	120	0	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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009M35

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135894

Sample ID: LCS-135894	Client ID:				Units: ug/L	Prep Date: 10/02/2010	Run No: 181475				
SampleType: LCS	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 135894			Analysis Date: 10/04/2010	Seq No: 3775844				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Anthracene	37.58	10	50	0	75.2	61.2	120	0	0	0	
Benz(a)anthracene	34.46	10	50	0	68.9	66.5	120	0	0	0	
Benzo(a)pyrene	36.85	10	50	0	73.7	66	120	0	0	0	
Benzo(b)fluoranthene	34.70	10	50	0	69.4	65.3	115	0	0	0	
Benzo(g,h,i)perylene	35.60	10	50	0	71.2	59.9	115	0	0	0	
Benzo(k)fluoranthene	36.60	10	50	0	73.2	67.4	115	0	0	0	
Chrysene	36.25	10	50	0	72.5	67.7	120	0	0	0	
Dibenz(a,h)anthracene	35.34	10	50	0	70.7	61	117	0	0	0	
Fluoranthene	37.61	10	50	0	75.2	64.8	120	0	0	0	
Fluorene	36.64	10	50	0	73.3	59.3	120	0	0	0	
Indeno(1,2,3-cd)pyrene	34.13	10	50	0	68.3	59.9	120	0	0	0	
Naphthalene	34.00	10	50	0	68	47.8	120	0	0	0	
Phenanthrene	39.61	10	50	0	79.2	63	120	0	0	0	
Pyrene	38.08	10	50	0	76.2	65.8	120	0	0	0	
Surr: 2-Fluorobiphenyl	34.89	0	50	0	69.8	41.6	111	0	0	0	
Surr: 4-Terphenyl-d14	36.42	0	50	0	72.8	61.5	129	0	0	0	
Surr: Nitrobenzene-d5	31.59	0	50	0	63.2	26.9	116	0	0	0	

Sample ID: 1009M35-001BMS	Client ID: MW-5				Units: ug/L	Prep Date: 10/02/2010	Run No: 181475				
SampleType: MS	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 135894			Analysis Date: 10/04/2010	Seq No: 3776181				
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Acenaphthene	28.80	10	50	0	57.6	49.3	120	0	0	0	
Acenaphthylene	30.76	10	50	0	61.5	50.3	120	0	0	0	
Anthracene	34.33	10	50	0	68.7	48.9	120	0	0	0	
Benz(a)anthracene	35.56	10	50	0	71.1	61.7	120	0	0	0	
Benzo(a)pyrene	36.57	10	50	0	73.1	58.2	120	0	0	0	
Benzo(b)fluoranthene	36.05	10	50	0	72.1	59	120	0	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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009M35

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135894

Sample ID: 1009M35-001BMS	Client ID: MW-5				Units: ug/L	Prep Date: 10/02/2010		Run No: 181475			
SampleType: MS	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 135894			Analysis Date: 10/04/2010		Seq No: 3776181			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Benzo(g,h,i)perylene	33.04	10	50	0	66.1	55.2	120	0	0	0	
Benzo(k)fluoranthene	36.82	10	50	0	73.6	59.1	120	0	0	0	
Chrysene	36.97	10	50	0	73.9	62	120	0	0	0	
Dibenz(a,h)anthracene	34.12	10	50	0	68.2	56.9	120	0	0	0	
Fluoranthene	36.44	10	50	0	72.9	54.5	120	0	0	0	
Fluorene	31.13	10	50	0	62.3	52.8	120	0	0	0	
Indeno(1,2,3-cd)pyrene	33.98	10	50	0	68	57.6	120	0	0	0	
Naphthalene	27.73	10	50	0	55.5	34	120	0	0	0	
Phenanthrene	35.32	10	50	0	70.6	54.6	120	0	0	0	
Pyrene	37.33	10	50	0	74.7	59.2	120	0	0	0	
Surr: 2-Fluorobiphenyl	29.41	0	50	0	58.8	41.6	111	0	0	0	
Surr: 4-Terphenyl-d14	37.92	0	50	0	75.8	61.5	129	0	0	0	
Surr: Nitrobenzene-d5	26.44	0	50	0	52.9	26.9	116	0	0	0	

Sample ID: 1009M35-001BMSD	Client ID: MW-5					Units: ug/L	Prep Date: 10/02/2010	Run No: 181475			
SampleType: MSD	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 135894				Analysis Date: 10/04/2010	Seq No: 3776183			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Acenaphthene	25.31	10	50	0	50.6	49.3	120	28.80	12.9	27.8	
Acenaphthylene	26.40	10	50	0	52.8	50.3	120	30.76	15.3	27.7	
Anthracene	31.65	10	50	0	63.3	48.9	120	34.33	8.12	17	
Benz(a)anthracene	31.24	10	50	0	62.5	61.7	120	35.56	12.9	17.7	
Benzo(a)pyrene	34.19	10	50	0	68.4	58.2	120	36.57	6.73	18.7	
Benzo(b)fluoranthene	31.43	10	50	0	62.9	59	120	36.05	13.7	19.3	
Benzo(g,h,i)perylene	32.41	10	50	0	64.8	55.2	120	33.04	1.93	19.9	
Benzo(k)fluoranthene	33.03	10	50	0	66.1	59.1	120	36.82	10.9	19.3	
Chrysene	33.75	10	50	0	67.5	62	120	36.97	9.11	17.5	
Dibenz(a,h)anthracene	31.27	10	50	0	62.5	56.9	120	34.12	8.72	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: Terracon  
 Project Name: Moores Mill  
 Workorder: 1009M35

## ANALYTICAL QC SUMMARY REPORT

BatchID: 135894

Sample ID: 1009M35-001BMSD	Client ID: MW-5					Units: ug/L	Prep Date: 10/02/2010	Run No: 181475			
SampleType: MSD	TestCode: POLYAROMATIC HYDROCARBONS	SW8270D	BatchID: 135894				Analysis Date: 10/04/2010	Seq No: 3776183			
Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Fluoranthene	34.85	10	50	0	69.7	54.5	120	36.44	4.46	17.3	
Fluorene	27.93	10	50	0	55.9	52.8	120	31.13	10.8	23.4	
Indeno(1,2,3-cd)pyrene	30.97	10	50	0	61.9	57.6	120	33.98	9.27	20.6	
Naphthalene	20.40	10	50	0	40.8	34	120	27.73	30.5	36.1	
Phenanthrene	34.13	10	50	0	68.3	54.6	120	35.32	3.43	17.3	
Pyrene	34.14	10	50	0	68.3	59.2	120	37.33	8.93	16.1	
Surr: 2-Fluorobiphenyl	24.01	0	50	0	48	41.6	111	29.41	0	0	
Surr: 4-Terphenyl-d14	32.51	0	50	0	65	61.5	129	37.92	0	0	
Surr: Nitrobenzene-d5	18.47	0	50	0	36.9	26.9	116	26.44	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		

**RQSM SCREEN: GROUNDWATER PATHWAY**

A. Has a release to groundwater occurred?	Known	45
If A=45, then go to D	Suspected	10
A: <input type="text" value="45"/>	Potential Future	5

B. Route Characteristics (1b from Hydrologic Atlas 20)		
1b. Susceptibility Rating:	Higher	6
	Average	3
1b: <input type="text" value="0"/>	Lower	0
2b. Physical State:	Stable Solid	0
	Unstable Solid	1
2b: <input type="text" value="3"/>	Powder, Ash	2
	Liquid, Gas, Sludge	3

C. Containment	Very Good	0
	Good	1
C: <input type="text" value="3"/>	Fair	2
	Poor	3

D. Release Characteristics		
1d. Regulated Substance:	<input type="text" value="Cis-1,2-dichloroethene"/>	
2d. Toxicity	None	0
2d: <input type="text" value="4"/>	Low = 1, 2, 4, 8, 16 = High	
	If 2d is unknown then 2d=4	
3d. Quantity	Threshold = 1, 2, 3, 4, 5, 6, 7, 8 = Very Large	
3d: <input type="text" value="4"/>		
	If 3d is unknown then 3d=4	

E. Targets		
1e. Exposure to groundwater release:		
Known release >= MCL, and known human exposure >= MCL		25
Known release >= MCL, and suspected human exposure		20
Known release, no MCL exists, and known human exposure		18
Known release >= MCL, and known human exposure < MCL		15
Known release, no MCL exists, and suspected human exposure		12
Suspected release and human exposure suspected		8
Known release >= MCL, but no human exposure suspected		4
Known release, no MCL exists, and no human exposure suspected		3
Suspected release but no human exposure suspected		2
Potential future release		1
Known release less than MCL		0
ONE CHOICE ONLY ALLOWED		
1e: <input type="text" value="4"/>		



2e. Distance to well or spring (miles)

2e:

<1/2	16
1/2 to 1	9
1 to 2	4
2 to 3	1
>3	0

**If 1e includes known or suspected human exposure then 2e=16**

If 1e=0 then 2e=1

---

The groundwater pathway score (Sgw) is calculated as follows:

$$M = A + ((1b + 2b) \times C) \quad [\text{If } A=45 \text{ then } M=45]$$

$$Sgw = M \times (2d + 3d) \times (1e + 2e) / 442.8$$

Score should be a value between 0 and 100. If >10, site is recommended for HSI listing

M: 45

Sgw:

**RQSM SCREEN: ON-SITE EXPOSURE PATHWAY***Don't score this pathway UNLESS soil concentration exceeds NCs in Appendix I*

A. Access to site		Inaccessible	0
		Limited Access	2
		Unlimited Access	4
A: <input type="text" value="0"/>			
B. Has there been a release?		Yes	25
		Suspected	15
		No	0
B: <input type="text" value="0"/>			
C. Containment			
Soil Releases		Very Good = 0, 1, 2, 3, 4, 5 = Poor	
Aboveground Releases		Very Good = 0, 1, 2, 3 = Poor	
C: <input type="text" value="2"/>			
D. Release Characteristics			
1d. Regulated Substance:		<input type="text" value="Cis-1,2-dichloroethene"/>	
2d. Toxicity		None	0
2d: <input type="text" value="4"/>		Low = 1, 2, 4, 8, 16 = High	
If 2d is unknown then 2d=4			
3d. Quantity		Threshold = 1, 2, 3, 4, 5, 6, 7, 8 = Very Large	
3d: <input type="text" value="4"/>			
If 3d is unknown then 3d=4			
E. Targets			
1e. Distance in feet to nearest resident individual		<300	8
		301 to 1000	6
		1001 to 3001	4
		3001 to 1 mile	2
		>1 mile	1
1e: <input type="text" value="8"/>			
2e. Is there an on-site sensitive environment?		Yes	1
		No	0
2e: <input type="text" value="0"/>			

The on-site pathway score (So) is calculated as follows:

$$So = (A \times (B + C) \times (2d + 3d) \times (1e + 2e)) / 259.2 \quad \text{[If A or B = 0 then So = 0]}$$

So: 0.00

GROUNDWATER PATHWAY SCORE:	<input type="text" value="6.50"/>	<u>Listing Threshold</u> 10
ON-SITE PATHWAY SCORE:	<input type="text" value="0.00"/>	20

**RQSM SCREEN: GROUNDWATER PATHWAY**

A. Has a release to groundwater occurred?	Known	45
If A=45, then go to D	Suspected	10
A: <input type="text" value="45"/>	Potential Future	5

---

B. Route Characteristics (1b from Hydrologic Atlas 20)		
1b. Susceptibility Rating:	Higher	6
	Average	3
1b: <input type="text" value="0"/>	Lower	0
2b. Physical State:		
	Stable Solid	0
	Unstable Solid	1
2b: <input type="text" value="3"/>	Powder, Ash	2
	Liquid, Gas, Sludge	3

---

C. Containment	Very Good	0
	Good	1
C: <input type="text" value="3"/>	Fair	2
	Poor	3

---

D. Release Characteristics		
1d. Regulated Substance:	<input type="text" value="Tetrachloroethene"/>	
2d. Toxicity	None	0
2d: <input type="text" value="4"/>	Low = 1, 2, 4, 8, 16 = High	
If 2d is unknown then 2d=4		
3d. Quantity	Threshold = 1, 2, 3, 4, 5, 6, 7, 8 = Very Large	
3d: <input type="text" value="4"/>		
If 3d is unknown then 3d=4		

---

E. Targets		
1e. Exposure to groundwater release:		
Known release >= MCL, and known human exposure >= MCL		25
Known release >= MCL, and suspected human exposure		20
Known release, no MCL exists, and known human exposure		18
Known release >= MCL, and known human exposure < MCL		15
Known release, no MCL exists, and suspected human exposure		12
Suspected release and human exposure suspected		8
Known release >= MCL, but no human exposure suspected		4
Known release, no MCL exists, and no human exposure suspected		3
Suspected release but no human exposure suspected		2
Potential future release		1
Known release less than MCL		0
ONE CHOICE ONLY ALLOWED		
1e: <input type="text" value="4"/>		

2e. Distance to well or spring (miles)

2e:

<1/2	16
1/2 to 1	9
1 to 2	4
2 to 3	1
>3	0

**If 1e includes known or suspected human exposure then 2e=16**

If 1e=0 then 2e=1

---

The groundwater pathway score (Sgw) is calculated as follows:

$$M = A + ((1b + 2b) \times C) \quad [\text{If } A=45 \text{ then } M=45]$$

$$Sgw = M \times (2d + 3d) \times (1e + 2e) / 442.8$$

Score should be a value between 0 and 100. If >10, site is recommended for HSI listing

M: 45

Sgw:

**RQSM SCREEN: ON-SITE EXPOSURE PATHWAY***Don't score this pathway UNLESS soil concentration exceeds NCs in Appendix I*

A. Access to site		Inaccessible	0
		Limited Access	2
A: <input type="text" value="0"/>		Unlimited Access	4
<hr/>			
B. Has there been a release?		Yes	25
		Suspected	15
B: <input type="text" value="0"/>		No	0
<hr/>			
C. Containment			
Soil Releases		Very Good = 0, 1, 2, 3, 4, 5 = Poor	
Aboveground Releases		Very Good = 0, 1, 2, 3 = Poor	
C: <input type="text" value="2"/>			
<hr/>			
D. Release Characteristics			
1d. Regulated Substance:		<input type="text" value="Tetrachloroethene"/>	
2d. Toxicity		None	0
2d: <input type="text" value="4"/>		Low = 1, 2, 4, 8, 16 = High	
		If 2d is unknown then 2d=4	
3d. Quantity		Threshold = 1, 2, 3, 4, 5, 6, 7, 8 = Very Large	
3d: <input type="text" value="4"/>			
		If 3d is unknown then 3d=4	
<hr/>			
E. Targets			
1e. Distance in feet to nearest resident individual		<300	8
		301 to 1000	6
1e: <input type="text" value="8"/>		1001 to 3001	4
		3001 to 1 mile	2
		>1 mile	1
2e. Is there an on-site sensitive environment?		Yes	1
		No	0
2e: <input type="text" value="0"/>			

The on-site pathway score (So) is calculated as follows:

$$So = (A \times (B + C) \times (2d + 3d) \times (1e + 2e)) / 259.2 \quad \text{[If A or B = 0 then So = 0]}$$

So: 0.00

GROUNDWATER PATHWAY SCORE:	<input type="text" value="6.50"/>	<u>Listing Threshold</u> 10
ON-SITE PATHWAY SCORE:	<input type="text" value="0.00"/>	20



**RQSM SCREEN: GROUNDWATER PATHWAY**

A. Has a release to groundwater occurred?	Known	45
If A=45, then go to D	Suspected	10
A: <input type="text" value="45"/>	Potential Future	5

B. Route Characteristics (1b from Hydrologic Atlas 20)		
1b. Susceptibility Rating:	Higher	6
1b: <input type="text" value="0"/>	Average	3
	Lower	0
2b. Physical State:	Stable Solid	0
2b: <input type="text" value="3"/>	Unstable Solid	1
	Powder, Ash	2
	Liquid, Gas, Sludge	3

C. Containment	Very Good	0
C: <input type="text" value="3"/>	Good	1
	Fair	2
	Poor	3

**D. Release Characteristics**

1d. Regulated Substance:

2d. Toxicity  None 0  
Low = 1, 2, 4, 8, 16 = High

If 2d is unknown then 2d=4

3d. Quantity  Threshold = 1, 2, 3, 4, 5, 6, 7, 8 = Very Large

If 3d is unknown then 3d=4

**E. Targets**

1e. Exposure to groundwater release:

Known release >= MCL, and known human exposure >= MCL	25
Known release >= MCL, and suspected human exposure	20
Known release, no MCL exists, and known human exposure	18
Known release >= MCL, and known human exposure < MCL	15
Known release, no MCL exists, and suspected human exposure	12
Suspected release and human exposure suspected	8
Known release >= MCL, but no human exposure suspected	4
Known release, no MCL exists, and no human exposure suspected	3
Suspected release but no human exposure suspected	2
Potential future release	1
Known release less than MCL	0

ONE CHOICE ONLY ALLOWED

1e:

2e. Distance to well or spring (miles)

2e:

<1/2	16
1/2 to 1	9
1 to 2	4
2 to 3	1
>3	0

**If 1e includes known or suspected human exposure then 2e=16**

If 1e=0 then 2e=1

---

The groundwater pathway score (Sgw) is calculated as follows:

**M = A + ((1b + 2b) x C) [If A=45 then M=45]**

**Sgw = M x (2d + 3d) x (1e + 2e) / 442.8**

Score should be a value between 0 and 100. If >10, site is recommended for HSI listing

**M:** 45

**Sgw:**

**RQSM SCREEN: ON-SITE EXPOSURE PATHWAY***Don't score this pathway UNLESS soil concentration exceeds NCs in Appendix I*

A. Access to site	Inaccessible	0
	Limited Access	2
	Unlimited Access	4
	A: <input type="text" value="0"/>	

B. Has there been a release?	Yes	25
	Suspected	15
	No	0
B: <input type="text" value="0"/>		

C. Containment	
Soil Releases	Very Good = 0, 1, 2, 3, 4, 5 = Poor
Aboveground Releases	Very Good = 0, 1, 2, 3 = Poor
C: <div>2</div>	

D. Release Characteristics		
1d. Regulated Substance:	<div>Trans-1,2-dichloroethene</div>	
2d. Toxicity	None	0
2d:	<div>4</div>	Low = 1, 2, 4, 8, 16 = High
If 2d is unknown then 2d=4		
3d. Quantity	Threshold = 1, 2, 3, 4, 5, 6, 7, 8 = Very Large	
3d:	<div>4</div>	
If 3d is unknown then 3d=4		

E. Targets		
1e. Distance in feet to nearest resident individual	<300	8
	301 to 1000	6
	1001 to 3001	4
	3001 to 1 mile	2
	>1 mile	1
	1e: <input type="text" value="8"/>	
2e. Is there an on-site sensitive environment?	Yes	1
	No	0
	2e: <input type="text" value="0"/>	

The on-site pathway score (So) is calculated as follows:

$$So = (A \times (B + C) \times (2d + 3d) \times (1e + 2e)) / 259.2 \quad \text{[If A or B = 0 then So = 0]}$$

So: 0.00

GROUNDWATER PATHWAY SCORE:	<input type="text" value="6.50"/>	<u>Listing Threshold</u>
		10
ON-SITE PATHWAY SCORE:	<input type="text" value="0.00"/>	20



**RQSM SCREEN: GROUNDWATER PATHWAY**

A. Has a release to groundwater occurred?	Known	45
If A=45, then go to D	Suspected	10
A: <input type="text" value="45"/>	Potential Future	5

**B. Route Characteristics (1b from Hydrologic Atlas 20)**

1b. Susceptibility Rating:	Higher	6
	Average	3
1b: <input type="text" value="0"/>	Lower	0
2b. Physical State:	Stable Solid	0
	Unstable Solid	1
2b: <input type="text" value="3"/>	Powder, Ash	2
	Liquid, Gas, Sludge	3

C. Containment	Very Good	0
	Good	1
C: <input type="text" value="3"/>	Fair	2
	Poor	3

**D. Release Characteristics**

1d. Regulated Substance:	<div>Trichloroethene</div>	
2d. Toxicity	None	0
2d: <div>2</div>	Low = 1, 2, 4, 8, 16 = High	
If 2d is unknown then 2d=4		
3d. Quantity	Threshold = 1, 2, 3, 4, 5, 6, 7, 8 = Very Large	
3d: <div>4</div>		
If 3d is unknown then 3d=4		

**E. Targets**

1e. Exposure to groundwater release:	
Known release >= MCL, and known human exposure >= MCL	25
Known release >= MCL, and suspected human exposure	20
Known release, no MCL exists, and known human exposure	18
Known release >= MCL, and known human exposure < MCL	15
Known release, no MCL exists, and suspected human exposure	12
Suspected release and human exposure suspected	8
Known release >= MCL, but no human exposure suspected	4
Known release, no MCL exists, and no human exposure suspected	3
Suspected release but no human exposure suspected	2
Potential future release	1
Known release less than MCL	0
ONE CHOICE ONLY ALLOWED	
1e: <input type="text" value="4"/>	

2e. Distance to well or spring (miles)

2e:

<1/2	16
1/2 to 1	9
1 to 2	4
2 to 3	1
>3	0

**If 1e includes known or suspected human exposure then 2e=16**

If 1e=0 then 2e=1

---

The groundwater pathway score (Sgw) is calculated as follows:

$$M = A + ((1b + 2b) \times C) \quad [\text{If } A=45 \text{ then } M=45]$$

$$Sgw = M \times (2d + 3d) \times (1e + 2e) / 442.8$$

Score should be a value between 0 and 100. If >10, site is recommended for HSI listing

M: 45

Sgw:

**RQSM SCREEN: ON-SITE EXPOSURE PATHWAY***Don't score this pathway UNLESS soil concentration exceeds NCs in Appendix I*

A. Access to site	Inaccessible	0
	Limited Access	2
A: <input type="text" value="0"/>	Unlimited Access	4

B. Has there been a release?	Yes	25
	Suspected	15
B: <input type="text" value="0"/>	No	0

C. Containment		
Soil Releases	Very Good = 0, 1, 2, 3, 4, 5 = Poor	
Aboveground Releases	Very Good = 0, 1, 2, 3 = Poor	
C: <input type="text" value="2"/>		

D. Release Characteristics		
1d. Regulated Substance:	<input type="text" value="Trichloroethene"/>	
2d. Toxicity	None	0
2d: <input type="text" value="2"/>	Low = 1, 2, 4, 8, 16 = High	
	If 2d is unknown then 2d=4	
3d. Quantity	Threshold = 1, 2, 3, 4, 5, 6, 7, 8 = Very Large	
3d: <input type="text" value="4"/>		
	If 3d is unknown then 3d=4	

E. Targets		
1e. Distance in feet to nearest resident individual	<300	8
	301 to 1000	6
1e: <input type="text" value="8"/>	1001 to 3001	4
	3001 to 1 mile	2
	>1 mile	1
2e. Is there an on-site sensitive environment?	Yes	1
	No	0
2e: <input type="text" value="0"/>		

The on-site pathway score (So) is calculated as follows:

$$So = (A \times (B + C) \times (2d + 3d) \times (1e + 2e)) / 259.2 \quad \text{[If A or B = 0 then So = 0]}$$

So: 0.00

GROUNDWATER PATHWAY SCORE:	<input type="text" value="4.88"/>	<u>Listing Threshold</u> 10
ON-SITE PATHWAY SCORE:	<input type="text" value="0.00"/>	20