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S&ME

# LIMITED SOIL AND GROUNDWATER ASSESSMENT REPORT
# MARY CHAPPELL SITE
# 1061 HIGHWAY 177 NORTH
# HAMLET, RICHMOND COUNTY, NORTH CAROLINA
# ORPHAN PRIORITY SITE CONTRACT #N10005S

Prepared for:

North Carolina Department of Environment and Natural Resources
Division of Waste Management
Superfund Section
Inactive Hazardous Site Branch

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# 1.0 INTRODUCTION

S&ME's scope of services were performed in general accordance with our proposal P136-10V Rev. 1.0, dated July 29, 2010, and as authorized by NCDENR's Task Authorization No. 1 dated July 29, 2010 and Task Authorization No. 2 dated October 19, 2010 for the Orphan Site Cleanup under Contract No. N10005S.

S&ME's approved scope of services for this task authorization included preparing a site specific health and safety plan, obtaining seven monitor well installation permits for the Richmond County Health Department and the North Carolina Division of Water Quality, gauging the on-site (Mary Chappell) water supply well, installing seven Type II monitor wells, collecting one soil and one groundwater sample from each borehole (GP-1 through GP-7), sampling six water supply wells, surveying the newly installed Type II monitor wells and preparing this report.

S&ME completed the following scope of services:

- Prepared a site specific health and Safety Plan for the site based upon suspected contamination of chlorinated solvents;
- Obtained seven well installation permits (GP-1 through GP-7);
- Gauged the on-site water supply well for total depth, water level and screened interval;
- Installed six Type II monitor wells (GP-5 was abandoned due to insufficient water volume in the well);
- Collected one soil sample and one groundwater sample from each sampling location (no groundwater sample was collected from GP-5);
- Obtained permission and sampled four water supply wells (one property owner refused sampling and one well had been destroyed by a fire at the residence);
- Contracted to survey the top of casing elevations from the newly installed monitor wells;
- Prepared this report.

## 2.0 PROJECT BACKGROUND

The Mary Chappell site is located 1061 NC Highway 177 North in Hamlet, Richmond County, North Carolina. The site and vicinity are shown in **Figure 1**. A private drinking water well at the Mary Chappell residence was found to be contaminated with trichloroethylene (TCE). Previous analytical tests performed on water sampled from the Mary Chappell supply well detected TCE concentrations ranging from 25.7 to 70.6 micrograms per liter (µg/L). No construction records on the Mary Chappell well were available to review, but the well is believed to have been constructed to a depth of possibly 65 to 100 feet below the ground surface. The site –specific lithology at the Mary Chappell property, such as the depth and thickness of confining layers was uncertain prior to this investigation.

Mr. David Wells of S&ME, along with Mr. Keith Snavely, Mr. John Walch, Mr. Sean Boyles, and Mr. David Brown of NCDENR IHSB visited the Mary Chappell site on June 24, 2010. During this site visit, containers such as steel tanks, 55-gallon drums, 5-gallon and 1-gallon plastic containers, paint cans and solvent cans were observed on the property. One wood pallet supported a wooden crate filled with various sized metal containers that had various quantities of unknown contents. The labels on the containers observed were illegible. However, based on the sizes and types of the containers, they appeared to have been used for paint, solvents, or other products. The conditions of the containers were fair to poor or had holes from corrosion. The pallet with the containers was observed near the north end of an existing concrete block building. The building had separate bays similar to a garage or shop building. The concrete block building is located north of the residence within a portion of the parcel surrounded by a chain-link fence. In addition, heavy equipment (tractors) was observed within the fenced-in area of the Mary Chappell property. A site map is shown on **Figure 2**.

Previous investigations that included sampling water supply wells were performed in the area by the North Carolina Division of Water Quality and Richmond County Health Department. Based on information from Mr. Mike Norton of the Richmond County Health Department, water supply wells were sampled to assess potential contaminant concentrations from former peach orchard operations. S&ME is not aware of any additional environment investigations or assessments that may have been completed to date at the Mary Chappell property.

This limited investigation of the Mary Chappell site is intended to assess potential sources for the TCE detected in the water supply well at the subject property. Other potential sources of the constituents detected in the groundwater include the former orchard operations and/or the CSX railroad site that is located about 600 feet to the south.

# 3.0 SITE ACTIVITIES

S&ME personnel performed site activities to clear utilities, sample soil, describe lithology, install monitor wells, sample water supply wells, and sample groundwater from the monitor wells between September 7 and 20, 2010.

## 3.1 Scope Preparation, Health & Safety

The Scope of Services were designed to assess potential soil and groundwater contamination possibly originating on-site or coming from off-site sources by collecting soil and shallow groundwater samples at predetermined locations throughout the site. S&ME prepared a site-specific health and safety plan (HASP), notified North Carolina One-Call to have subsurface utilities marked. Bateman Civil Survey Company (BCSC) to located and marked underground utilities at the site prior to commencing field activities. S&ME also contacted Donald B. McCallum who is a well driller registered in Richmond County North Carolina, to obtain the well construction information and depth to groundwater in the Mary Chappell water supply well (WSW-1).

## 3.2 Limited Soil and Groundwater Sampling

On September 7, 8, 9 and 10, 2010, S&ME utilized direct-push drilling technology to advance 7 soil borings. A photographic log from the S&ME site visit is included in **Appendix I.** Eight soil samples (seven record samples and one duplicate) were selected for analysis. Monitor wells were installed in six of the seven soil borings. One soil boring met refusal and did not intercept the water table. Six groundwater samples were collected for analysis.

### *3.2.1 Soil Assessment*

Soil borings were advanced below the ground surface with the direct-push hydraulic drill rig. Soil samples were field-screened for total organic vapor concentrations using a photo-ionization detector (PID). One portion of each sample was placed in a re-sealable plastic bag. A second portion of the sample was placed in a labeled laboratory-supplied container and placed on ice in an insulated container. The sample headspace PID readings were obtained after waiting approximately 15 minutes to allow the soil sample to reach ambient temperature and to allow the organic vapors from the soil sample to approximately equilibrate with the headspace in the sample bag. After 15 minutes, the PID probe was inserted into the bag to obtain a headspace reading on with the instrument. The results from the PID screening are summarized in **Table 1.**

After recording the PID readings of organic vapor concentrations, one sample from each boring that exhibiting the highest organic vapor concentration, or had visual signs of contamination, was selected for laboratory analysis. The selected soil samples were shipped under standard Chain-of-Custody procedures to Environmental Conservation Laboratories (ENCO) of Cary North Carolina for laboratory analysis following standard EPA Test Methods.

Since the source for the TCE contamination at the Mary Chappell site was not certain, the soil samples were analyzed for metals by EPA Methods 6010B/7470, volatile organic compounds (VOCs) by EPA Method 8260B, semi-volatile organic compounds (SVOCs)

by EPA Method 8270D and pesticides by Method 8081B. A list of the soil samples and their corresponding detections by the laboratory analysis are included as **Table 2. Tables 3 through 5** are constituent specific detection summaries for the soil samples. Subsurface lithology and field screening results for the soil borings are provided in the boring logs in **Appendix II.**

### *3.2.2 Groundwater Assessment*

#### Installation of Monitor Wells

S&ME personnel used the hydraulic direct push drill equipment to attempt to advance borings GP-1, GP-2, GP-3, GP-4, GP-5, GP-6, and GP-7 into the groundwater table after collecting soil samples. The boring for GP-5 met refusal at a depth of 49.6 feet below the ground surface and did not penetrate the groundwater table. At each of the remaining boring locations, monitor wells were installed in the boreholes. Boring locations where monitor wells were installed were given a "GP" designation and are shown on **Figure 2.**

A monitor well was installed in each borehole to allow groundwater to flow from the soil formation and enter the well for sample collection. The monitor wells were constructed by installing approximately ten foot lengths of one-inch diameter polyvinyl chloride (PVC) slotted (0.010-inch) screens that were pre-packed with filter sand and bentonite seals. Sufficient lengths of one-inch diameter PVC riser pipe were added on top of the well screens to bring the monitor wells to elevations that were above ground surface. The monitor wells were completed by hydrating the pre-packed bentonite seals and then filling the boring annulus from the top of the bentonite seal to the ground surface with cement grout. The field notes are included in **Appendix II.** The details of the monitor well construction are depicted on the boring logs included as **Appendix II** and are summarized in **Table 6.**

Monitor well development was performed upon the completion of the well installations using a new disposable PVC bailer and new section of nylon cord in each well. Well development was performed to attempt to remove liquids influenced by drilling and sediment suspended in the water column in the well and in the surrounding sand pack. After well development was performed, the same bailer used to develop the monitor well was also used to collect the groundwater sample from that well.

#### *Depth to Water*

Upon completion of the monitor well installations, the wells were developed and allowed to equilibrate before water levels were measured. S&ME personnel measured the depth to groundwater with an electronic interface probe that was decontaminated before each use. Groundwater elevations were calculated from the water level measurements and the top of the well casing (TOC) elevations surveyed by BCSC. Groundwater was encountered at depths ranging from 37.45 ft-bgs in GP-4 to 46.68 ft-bgs in GP-6. The groundwater elevations are summarized in **Table 7.**

Based upon topographic information and current shallow groundwater elevations, the shallow groundwater beneath the subject site appears to flow generally to the south-southeast toward Highway 177 at a gradient of approximately 0.027. The September 20,

2010 water level measurements were used to prepare the shallow groundwater contour map (**Figure 6**). Calculations are shown in **Appendix III.**

### *Monitor Well Sample Collection*

After measuring the depth-to-water on September 20, 2010, S&ME personnel purged the six newly installed monitor wells using a new PVC disposable bailer and new section of nylon cord. Purge water was evacuated and field parameters (pH, temperature, specific conductance) were measured after each well was purged dry. A summary of the field parameters recorded on September 20, 2010 is included in **Table 8.** A copy of the field groundwater sampling logs is in **Appendix IV.**

After purging each well dry, S&ME personnel collected groundwater samples from each of the six monitor wells by pouring the water from the bailer directly into the laboratory supplied containers (40 ml vials). The groundwater samples were stored in an insulated cooler with ice. Sample management was documented from collection through delivery under chain-of-custody procedures to Environmental Conservation Laboratories, Inc., (ENCO) in Cary, North Carolina. ENCO is a North Carolina certified laboratory who analyzed the groundwater samples by EPA Method 8260B for VOCs.

### *Boring Abandonment / IDW Management*

The boring for GP-5 was permanently abandoned by filling the borehole with bentonite grout after the borehole was left open for several days without measurable infiltration of groundwater. Investigative derived wastes (IDW), such as soil cuttings generated during the soil boring advancement and groundwater sampling, were disposed of in accordance with the procedures specified by NCDENR. Specifically, the soil cuttings were spread and the purged groundwater poured onto the ground surface. The soil boring/monitor well completion reports are included in **Appendix II.**

### *Water Supply Well Sampling*

On September 3, 2010, Mr. McCallum opened the Mary Chappell water supply well, he gauged and recorded a water level of 72.58 feet below the top of the casing. (ft-btoc). The supply well is four inches in diameter and the screened interval was 88.5 ft-btoc to 98.5 ft-btoc. Upon completion, Mr. McCallum shocked the well with chlorine and re-sealed the wellhead. S&ME collected a sample from the well after it was re-sealed and analyzed the water for total coliform which was "absent" and E-coli bacteria which was also "absent" based on the analytical report. On September 8, 2010, the water supply wells at the Mary Chappell (WSW-1), Mark Chappell (WSW-2), William Brown (WSW-5), and Herman Russell (WSW-4) properties were sampled. The water supply wells were purged from the spigot located closest to the wellhead. The spigot was fully opened and water was purged until field parameters stabilized. After the parameters were stable, the flow rate from the spigot was reduced and sample containers provided by ENCO were filled for laboratory analysis. The groundwater samples were stored in an insulated cooler with ice. Sample management was documented from collection through delivery under chain-of-custody procedures to ENCO. The groundwater samples were analyzed for VOCs by EPA Method 8260B, for SVOCs by EPA Method 8270D and for metals by EPA Method 6010C. The water supply well locations are shown on **Figure 8**.

# 4.0 FINDINGS

## 4.1 Lithology

The soil borings at the subject site encountered fine to medium sand separated by clayey sand layers with variable thicknesses. Sandy clay layers were encountered at depths of approximately 5 to 17 ft-bgs, 25 to 29 ft-bgs, and at the termination depths of the borings between 40 and 49 ft-bgs. Where present, groundwater was encountered near the termination depth of the borings. The less permeable sandy clay layers likely act to retard downward migration of groundwater and constituents that may be present in the soil or groundwater. Detailed descriptions of the lithology encountered at the boring locations are presented on the boring logs (Appendix II).

## 4.2 Soil Analyses

*Regulatory Standards*

The Division of Waste Management (DWM), Inactive Hazardous Sites Branch (IHSB) holds regulatory jurisdiction for the site. Therefore, the detected constituents are compared to the IHSB preliminary soil remediation goals (PSRGs). The IHSB has two PSRGs: a "health-based" remediation goal for total concentrations of contaminants, and a "protection of groundwater" remediation goal for leachable concentrations of contaminants.

*Organic Compounds*

No VOC, SVOC, or pesticide concentrations were detected by the analytical tests on the record soil samples or the duplicate soil sample that were above the laboratory method reporting limit (MRL). A concentration of 4-isopropyltouene in soil collected from GP-5 between 0 and 5 ft-bgs and a concentration of di-n-butylphthalate in soil collected from GP-1 between 17 and 21 ft-bgs were detected. Both compound concentrations were above the method detection limit (MDL) but were below the MRL. Tentatively identified compounds (TICs) were also reported by the laboratory in the samples analyzed for VOCs and SVOCs. However, the reported TIC concentrations were below the MRL. Note that the reporting limit for SVOC TIC concentrations is above the IHSB action level for some listed constituent detections (See **Tables 3 and 4**).

*Inorganic Constituents*

Twelve inorganic constituents (metals) were detected in the soil samples collected from the subject site. Some of the PSRGs developed by the IHSB may be more stringent than laboratory practical quantitation limits (PQLs) or naturally-occurring concentrations of metals. For metals only, IHSB remediation guidelines do not require cleanup to below site-specific natural background concentrations or PQLs. The analytical results from the soil samples collected for this limited assessment were compared to the PSRGs **(Table 5)**.

The soil sample from GP-2 collected from the depth of 17 to 21 ft-bgs a concentration of selenium (23.6 mg/Kg) that was above the IHSB groundwater protection PSRG **(Tables 2 and 5)**.

## 4.3 Groundwater Sampling Results

*Regulatory Standards*

Constituent concentrations detected in the groundwater samples that were above the laboratory MDLs are summarized on **Table 9**. As a point of reference, the detected constituents are compared to:

- Groundwater quality protection standards promulgated by Title 15A of the North Carolina Administrative Code, Subchapter 2L (15A NCAC 2L), .0200 Groundwater Quality Standards, hereafter referred to as 2L Standards.
- USEPA Drinking Water Maximum Contamination Level (MCL)
- IHSB Residential Vapor Intrusion Screening Levels-Acceptable Groundwater Concentrations, hereafter referred to as IHSB-VISL.

*Monitor Wells*

No VOC concentrations were detected above the listed State or Federal regulatory standards or the IHSB action levels by the analytical tests on the record or duplicate groundwater samples. Concentrations of acetone in groundwater from GP-3, GP-4, GP-6, and GP-7, 2-butanone in groundwater from GP-3, and chloroform in groundwater from GP-1 and GP-2 were above the MDL. Chloromethane was detected above the MDL but below the MRL in the Equipment Blank. The groundwater analytical results are summarized in **Table 9**, and a Shallow Groundwater Constituent Concentration Map is included as **Figure 7**.

*Water Supply Wells*

### *Organic Compounds*

Groundwater samples were collected on September 8, 2010 from four water supply wells. The laboratory analytical results indicated that TCE was detected at concentrations that were greater than the compound-specific NCAC 2L Standard of 3 µg/L in water from the Mary Chappell supply well (Sample ID WSW-1). TCE was also detected in the water from the William Brown supply well (Sample ID WSW-5) at a concentration of 1.2 µg/L; however, this TCE concentration was below the NCAC 2L Standard. Naphthalene was present at a concentration of 2.8 µg/L in the water analyzed from the Mary Chappell supply well WSW-1, but this concentration was also less than the NCAC 2L Standard for naphthalene. The groundwater analyses from the Mark Chappell water supply well (Sample ID WSW-2) and Herman Russell water supply well (Sample ID WSW-4) did not detect VOCs above the MDL. The sample analyses for SVOCs detected only an estimated concentration of bis(2-ethylhexyl)phthalate in the water analyzed from Herman Russell's supply well WSW-4. The groundwater analytical results are summarized in **Table 9**. The Groundwater Constituent Map for the water supply wells is in **Figure 8**.

Historical groundwater analyses obtained during the state and county file review indicated several water supply wells to the northwest and west of the Mary Chappell site have low levels of TCE in the drinking water. Data from eleven water supply wells was plotted. Two wells were located to the east of the Mary Chappell Site. These two wells had no VOC concentrations detected in samples collected in either October 2008 or March 2009. Six water supply wells were located west of the Mary Chappell site. Three

supply wells sampled had detections of TCE and three supply wells sampled had no VOC detections from monitoring performed between 2008 and 2010. Two supply wells that were sampled were to the northwest of the Mary Chappell site. Both wells located to the northwest had detections of TCE, which were below the NCAC 2L standard. These data is presented on **Figure 9**.

### *Inorganic Compounds*

Based on the analytical testing, the water from the Mary Chappell water supply well WSW-1 had concentrations of beryllium, cadmium, chromium, copper, lead, manganese, thallium and zinc. Only the lead concentration exceeded the compound-specific NCAC 2L Standard of 15 µg/L and USEPA MCL of 15 µg/L. Groundwater from the Mark Chappell water supply well WSW-2 had concentrations of copper, lead, manganese, thallium and zinc; however, none of the metal concentrations exceeded regulatory levels. The water from the William Brown water supply well WSW-5 had concentrations of arsenic, copper, and thallium at levels below regulatory standards. The groundwater from the Herman Russell water supply well WSW-4 had concentrations of copper, thallium, selenium silver, and zinc that were below regulatory standard concentrations.

A summary of the September 8, 2010 groundwater analytical results for water supply wells and a comparison to NCDENR's regulatory standards is included on **Table 10**. The water supply well groundwater constituent concentrations are presented on **Figure 8**, and copy of the laboratory analytical results and chain-of-custody form is included in **Appendix V**.

## 5.0 CONCLUSIONS

A limited soil and groundwater assessment was conducted at the Mary Chappell site located on Highway 177 in Hamlet, North Carolina in an effort to locate potential sources of TCE contamination detected in the on-site water supply well. The assessment reviewed subsurface soils, shallow groundwater quality, groundwater quality from the drinking water supply well on site, and drinking water quality from three supply wells in the area of the subject site. The findings at the site are as follows:

- The lithology at the subject site consists of soil composed of fine to medium sand separated by clayey sand layers with variable thicknesses. Two sandy clay layers were encountered at depths that varied between approximately 5 and 17 ft-bgs, and 25 to 29 ft-bgs. A third sandy clay layer was encountered at the termination depths of the borings between 40 and 49 ft-bgs. Where present, groundwater was encountered near the termination depth of the borings. The less permeable sandy clay layers likely act to retard downward migration of groundwater and constituents that may be present in the soil or groundwater.

- No concentrations of VOCs or SVOCs exceed IHSB action levels in the shallow soil.

- One soil sample (GP-2, 17 to 21 ft-bgs) had concentrations of arsenic and selenium that were above one or both of the IHSB health –based and groundwater protection PSRGs.

- The shallow groundwater appears to flow to the south-southeast toward Highway 177. Based on analytical testing, the shallow groundwater does not appear to be contaminated with TCE at the shallow monitor well locations.

- Laboratory analytical results of the shallow groundwater samples indicated no VOC concentrations were detected above the listed 15A NCAC 2L Standards, or the Federal MCL standards, or the IHSB action levels.

- Analytical results from the September 8, 2010 water supply well samples indicated that TCE and lead were present at concentrations above the NCAC 2L standard in water from the Mary Chappell supply well. The William Brown water supply well west of the site had TCE present at concentrations below the NCAC 2L standard.

- Historical groundwater analyses reviewed during the state and county file review indicated several water supply wells to the northwest and west of the Mary Chappell site have low levels of TCE in the drinking water. The TCE levels detected were below the NCAC 2L Standard.

The data obtained from this assessment did not provide sufficient evidence to indicate that a source of TCE exists on-site. The groundwater aquifer above a confining layers at a depth of approximately 49 feet below the ground surface had no reported

concentrations of TCE that were above the analytical method's detection limit. In addition, the water supply well for the Mary Chappell site is apparently screened at a depth interval between 88.5 feet and 98.5 feet below the top of casing, which is in an aquifer below the confining clay layer encountered at approximately 49 ft-bgs.

Since TCE was not detected in the shallow aquifer above the confining layer at 49 ft-bgs, this evidence indicates that a potential source of TCE may exist elsewhere. Additional evidence supporting this theory exists in historical analytical data reporting low levels of TCE in water supply wells west of the Mary Chappell site. Additional analytical and subsurface data from the groundwater aquifer at elevations that directly correspond to the aquifer zone intersected by the Mary Chappell well is needed to assess and/or approximate the source of TCE in the confined aquifer.

TABLES

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# Table 1
## Soil Field Screening Results
## Mary Chappell Site
## 1061 NC Highway 177 North
## Hamlet, Richmond County, North Carolina
## S&ME Project No. 1054-10-2003
## Soil Samples Collected on September 7, 8, & 9, 2010



| Boring ID | Depth (ft-bgs) | PID (PPM) |
|---|---|---|
| GP-1 | 0-5 | 0.0 |
| GP-1 | 5-9 | 0.0 |
| GP-1 | 9-13 | 0.6 |
| GP-1 | 13-17 | 0.8 |
| **GP-1** | **17-21** | **1.0** |
| GP-1 | 21-25 | 0.6 |
| GP-1 | 25-29 | 0.6 |
| GP-1 | 29-33 | 0.4 |
| GP-1 | 33-37 | 0.2 |
| GP-1 | 37-41 | 0.6 |
| GP-2 | 0-5 | 0.1 |
| GP-2 | 5-9 | 0.0 |
| GP-2 | 9-13 | 0.0 |
| GP-2 | 13-17 | 0.0 |
| **GP-2** | **17-21** | **0.6** |
| GP-2 | 21-25 | 0.0 |
| GP-2 | 25-29 | 0.0 |
| GP-2 | 29-32 | 0.1 |
| GP-2 | 32-37 | 0.0 |
| GP-2 | 37-41 | 0.0 |
| GP-2 | 41-45 | 0.4 |
| GP-3 | 0-5 | 0.2 |
| GP-3 | 5-9 | 1.3 |
| GP-3 | 9-13 | 74.6 |
| **GP-3** | **13-17** | **360** |
| GP-3 | 17-21 | 1.6 |
| GP-3 | 21-25 | 0.2 |
| GP-3 | 25-29 | 0.1 |
| GP-3 | 29-33 | 0.3 |
| GP-3 | 33-37 | 0.2 |
| GP-3 | 37-41 | 0.1 |
| GP-4 | 0-5 | 0.0 |
| GP-4 | 5-9 | 0.0 |
| GP-4 | 9-13 | 0.0 |
| GP-4 | 13-17 | 0.0 |
| GP-4 | 17-21 | 0.1 |
| GP-4 | 21-25 | 0.0 |
| GP-4 | 25-29 | 0.0 |
| **GP-4** | **29-33** | **0.4** |
| GP-4 | 33-37 | 0.0 |
| GP-4 | 37-41 | 0.0 |

**Notes:**

1) ft-bgs = Feet below the ground surface.

2) PID = Photo-ionization detector.

3) PPM = Parts per million, volume in air.

4) Bold face type and shading indicates that the sample was sent the to lab for analysis.

5) See Figure 2 for soil boring locations.

**Table 1**
**Soil Field Screening Results**
**Mary Chappell Site**
**1061 NC Highway 177 North**
**Hamlet, Richmond County, North Carolina**
**S&ME Project No. 1054-10-2003**
**Soil Samples Collected on September 7, 8, & 9, 2010**



| Boring ID | Depth (ft-bgs) | PID (PPM) |
|---|---|---|
| **GP-5** | **0-5** | **30.4** |
| GP-5 | 5-9 | 21.6 |
| GP-5 | 9-13 | 4.6 |
| GP-5 | 13-17 | 4.3 |
| GP-5 | 17-21 | 5.2 |
| GP-5 | 21-25 | 1.4 |
| GP-5 | 25-29 | 0.9 |
| GP-5 | 29-33 | 0.4 |
| GP-5 | 33-37 | 0.1 |
| GP-5 | 37-41 | 1.0 |
| GP-5 | 41-45 | 1.0 |
| GP-6 | 0-5 | 0.8 |
| GP-6 | 5-9 | 1.2 |
| GP-6 | 9-13 | 0.7 |
| GP-6 | 13-17 | 0.8 |
| GP-6 | 17-21 | 0.7 |
| GP-6 | 21-25 | 0.2 |
| **GP-6** | **25-29** | **0.8** |
| GP-6 | 29-32 | 0.8 |
| GP-6 | 32-36 | 0.6 |
| GP-6 | 36-40 | 0.7 |
| GP-7 | 0-5 | 0.0 |
| GP-7 | 5-9 | 0.0 |
| GP-7 | 9-13 | 0.0 |
| GP-7 | 13-17 | 0.2 |
| GP-7 | 17-21 | 0.1 |
| GP-7 | 21-25 | 0.0 |
| **GP-7** | **25-29** | **0.8** |
| GP-7 | 29-32 | 0.0 |
| GP-7 | 32-36 | 0.0 |
| GP-7 | 36-40 | 0.0 |

**Notes:**

1) ft-bgs = Feet below the ground surface.

2) PID = Photo-ionization detector.

3) PPM = Parts per million, volume in air.

4) **Bold** face type and shading indicates that the sample was sent the to lab for analysis.

5) See Figure 2 for soil boring locations.

**Table 2**
**Summary of Soil Sampling Results (mg/Kg)[1]**
**Mary Chappell Site**
**1061 NC Highway 177 North**
**Hamlet, Richmond County, North Carolina**
**S&ME Project No. 1054-10-2003**

| Analytical Method | | | VOC[5] by EPA Method 8260B | | | | | | VOC Tentatively Identified Compounds (TICs) by Method 8260B | | | | | | | | | | | | | | | | | SVOC[4] by EPA Method 8270D | | | | SVOC Tics by EPA Method 8270D | | | | | Metals by EPA Method 6010 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Contaminant of Concern | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample ID | Date Collected (m/dd/yy) | Sample Depth (ft-bgs[2]) | Chloromethane | 4-Isopropyltoluene | Naphthalene | 1,1,2,2,-Tetrachloroethane | 1,1,2,-Trichloroethane | Trichloroethylene | L-Fenchone | Benzoic acid, 4-methyl-2-tr | Bicyclo[2,2,1]heptan-2-ol | Bicyclo[2,2,1]heptan-2-one, | Camphene | Camphor | Carbon Dioxide | Cyclohexene, 1-methyl-4(1- | Cyclohexene, 1-methyl-4(1- | Cyclopentasiloxane, decamet | Cyclotetrasiloxane, octamet | 7H-Dibenzo[b,g]carbazole,7 | 1,3,6-Heptatriene, 2,5,5,-tr | D-Limonene | Limonene | alpha-Pinene | Benzoic Acid | Bis(2-ethylhexyl) phthalate | Di-n-butylphthalate | Naphthalene | Cyclohexanemethanol, 4-hydroxy | 1R-alpha-Pinene | 1,1,2,2,-Tetrachloroethane | 1,1,2,-Trichloroethane | 7-Oxabicyclo[4.1.0]heptane | Arsenic | Beryllium | Cadmium | Chromium | Copper | Lead | Manganese | Mercury | Nickel | Selenium | Thallium | Zinc |
| GP-1 | 9/9/2010 | 17-21 | <0.00016 | <0.00017 | <0.00026 | <0.00021 | <0.00025 | <0.00029 | NR | NR | NR | NR | NR | NR | **0.11J** | NR | NR | **0.0049JB** | **0.010JB** | NR | NR | NR | NR | NR | <0.12 | <0.040 | **0.041J** | <0.027 | NR | NR | **0.28JB** | <0.027 | NR | **0.528J** | <0.0129 | <0.0103 | **0.925** | **0.454J** | **0.473J** | **0.324J** | <0.00515 | <0.386 | **0.207JB** | **0.165J** | <1.18 |
| GP-2 | 9/9/2010 | 17-21 | <0.00017 | <0.00018 | <0.00027 | <0.00022 | <0.00025 | <0.00030 | NR | NR | NR | NR | NR | NR | **0.086J** | NR | NR | **0.0060JB** | **0.015J** | NR | NR | NR | NR | NR | <0.12 | <0.041 | <0.034 | <0.028 | NR | NR | **0.25JB** | <0.028 | NR | **10.7** | **0.0210J** | <0.0106 | **29.2** | **49.2** | **3.17** | **2.61** | <0.00530 | <0.398 | **23.6B** | **0.64** | **3.32** |
| GP-3 | 9/9/2010 | 13-17 | <0.00014 | <0.00015 | <0.00023 | <0.00019 | <0.00022 | <0.00026 | NR | NR | NR | NR | NR | NR | **0.130** | NR | NR | **0.0055JB** | **0.012J** | NR | NR | NR | NR | NR | <0.13 | <0.045 | <0.038 | <0.031 | NR | NR | **0.43JB** | **0.18J** | **0.21J** | **4.04** | <0.0147 | <0.0117 | **7.44** | **5.78** | **1.50** | **3.38** | **0.0242** | <0.440 | **1.12B** | **0.541J** | **2.11J** |
| GP-4 | 9/8/2010 | 29-33 | <0.00016 | <0.00018 | <0.00026 | <0.00022 | <0.00025 | <0.00030 | NR | **0.012J** | NR | NR | NR | NR | **0.16J** | NR | NR | **0.0051JB** | NR | NR | NR | NR | NR | NR | <0.12 | <0.041 | <0.034 | <0.027 | NR | NR | **0.45JB** | **0.19J** | **0.21J** | **1.22** | <0.0132 | <0.0105 | **1.34** | **3.10** | **0.846** | **0.291J** | **0.00765J** | <0.395 | **0.942J** | **0.160J** | <1.21 |
| GP-5 | 9/7/2010 | 0-5 | <0.00016 | **0.00087J** | <0.00025 | <0.00021 | <0.00024 | <0.00028 | **0.0042J** | NR | **0.0076J** | **0.0073J** | **0.014J** | NR | **0.19J** | **0.010J** | **0.011J** | NR | NR | NR | NR | **0.019J** | NR | **0.088J** | <0.11 | <0.038 | <0.032 | <0.026 | **0.14J** | **0.27J** | **0.39JB** | **0.16J** | NR | **0.739** | <0.0124 | <0.00993 | **2.16** | **0.97** | **2.08** | **7.53** | <0.00496 | **0.691J** | **0.144JB** | **0.379J** | **1.62J** |
| GP-6 | 9/8/2010 | 5-9 | <0.00016 | <0.00017 | <0.00026 | <0.00022 | <0.00025 | <0.00029 | NR | NR | NR | NR | NR | NR | **0.21J** | NR | NR | **0.0057JB** | NR | **0.012J** | NR | NR | NR | NR | <0.12 | <0.040 | <0.034 | <0.027 | NR | NR | **0.27JB** | NR | NR | **0.728** | <0.0130 | <0.0104 | **2.48** | **1.18** | **1.19** | **3.51** | <0.00521 | **0.446J** | **0.347JB** | **0.148J** | **1.42J** |
| GP-7 | 9/8/2010 | 25-29 | <0.00017 | <0.00018 | <0.00027 | <0.00023 | <0.00026 | <0.00031 | NR | NR | NR | NR | NR | NR | **0.11J** | NR | NR | **0.0053JB** | **0.013J** | NR | NR | NR | NR | NR | <0.12 | <0.042 | <0.035 | <0.028 | NR | NR | **0.28JB** | NR | NR | **1.56** | <0.0136 | <0.0109 | **1.93** | **4.58** | **0.92** | **0.331J** | <0.00544 | <0.408 | **0.904B** | **0.235J** | <0.408 |
| Dup (GP-1) | 9/8/2010 | 17-21 | <0.00016 | <0.00017 | <0.00026 | <0.00021 | <0.00025 | <0.00029 | NR | NR | NR | NR | NR | NR | **0.26J** | NR | NR | **0.0077JB** | **0.025J** | NR | NR | NR | NR | NR | <0.12 | <0.040 | <0.033 | <0.027 | NR | NR | **0.41JB** | **0.18J** | **0.20J** | **0.418J** | <0.0129 | <0.0103 | **0.939** | **0.598** | **0.438J** | **0.312J** | <0.00515 | <0.386 | **0.309JB** | **0.132J** | **1.38J** |
| Equipment Blank | 09/09/10 | - | <0.00034 | <0.00026 | <0.00039 | <0.00033 | <0.00037 | <0.00038 | NR | NR | NR | NR | NR | NR | **0.110J** | NR | NR | NR | NR | NR | NR | NR | NR | NR | <0.012 | <0.0017 | <0.0015 | <0.0013 | NR | NR | NR | NR | NR | <0.0028 | <0.0001 | <0.00036 | <0.0001 | <0.0016 | <0.0019 | **4.07JB** | <0.00017 | <0.0018 | **4.64J** | <0.00011 | <0.0038 |
| **IHSB Soil Remediation Goal Preliminary HB PSRG[3]** | | | 24 | NL | 3.60 | 0.56 | 1.1 | 2.80 | NL | 49,000 | NL | NL | NL | NL | NL | NL | 120 | NL | NL | NL | NL | NL | NL | NL | 49,000 | 35 | 1,200 | 3.60 | NL | NL | 0.56 | 1.1 | NL | 4.40 | 31 | 14 | 23,000 | 630 | 400 | 370 | 4.7 | 310 | 78 | NL | 4,700 |
| **IHSB Soil Remediation Goal PG PSRG[4]** | | | 0.02 | NL | 0.21 | 0.0012 | NL | 0.02 | NL | 130 | NL | NL | NL | NL | NL | NL | NL | NL | NL | NL | NL | NL | NL | NL | 130 | 72 | 19 | 0.21 | NL | NL | 0.0012 | NL | NL | 5.80 | NL | 3 | 360,000 | 700 | 270 | 65 | 1.0 | 130 | 2.1 | NL | 1,200 |

Notes:
1. All results are listed in milligram per kilogram (mg/kg) = parts per million.
2. ft-bgs = feet below ground surface.
3. HB PSRGs = NDCENR Inactive Hazardous Sites Branch Health-Based Prelimimary Soil Remediation Goals. January 2010.
4. PG PSRGs = NDCENR Inactive Hazardous Sites Branch Health-Based Prelimimary Soil Remediation Goals. January 2010.
5. VOCs = Volatile Organic Compounds.
6. TICs = Tentatively Identified Compounds.
7. SVOVs = Semi Volatile Organic Compounds by EPA Method 8270D.
8. NR - not reported
9. J = concentration detected above the method detection limit but below the sample method reporting limit.
10. B = The analyte was detectred in the associated method blank.
11. < = denotes less than sample detection limit.
12. NL = No Standard Listed.

**Bold** depicts constituents detected above the sample method detection limit.
**Bold** and shaded depicts constituents detected above the IHSB PSRGs.

Table 3
Summary of VOC Concentrations in Soil (mg/Kg)[1]
Mary Chappell Site
1061 NC Highway 177 North
Hamlet, Richmond County, North Carolina
S&ME Project No. 1054-10-2003

| Analytical Method | | | VOC[5] by EPA Method 8260B | | | | | | VOC TICs[6] by Method 8260B | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Contaminant of Concern | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample ID | Date Collected (m/dd/yy) | Sample Depth (ft-bgs[2]) | Chloromethane | 4-Isopropyltoluene | Naphthalene | 1,1,2,2,-Tetrachloroethane | 1,1,2,-Trichloroethane | Trichloroethylene | L-Fenchone | Benzoic acid, 4-methyl-2-tr | Bicyclo[2,2,1]heptan-2-ol | Bicyclo[2,2,1]heptan-2-one, | Camphene | Camphor | Carbon Dioxide | Cyclohexene, 1-methyl-4(1- | Cyclohexene, 1-methyl-4(1- | Cyclopentasiloxane, decamet | Cyclotetrasiloxane, octamet | 7H-Dibenzo[b,g]carbazole,7 | 1,3,6-Heptatriene, 2,5,5,-tr | D-Limonene | Limonene | alpha-Pinene |
| GP-1 | 9/9/2010 | 17-21 | <0.00016 | <0.00017 | <0.00026 | <0.00021 | <0.00025 | <0.00029 | NR | NR | NR | NR | NR | NR | **0.11J** | NR | NR | **0.0049JB** | **0.010JB** | NR | NR | NR | NR | NR |
| GP-2 | 9/9/2010 | 17-21 | <0.00017 | <0.00018 | <0.00027 | <0.00022 | <0.00025 | <0.00030 | NR | NR | NR | NR | NR | NR | **0.086J** | NR | NR | **0.0060JB** | **0.015J** | NR | NR | NR | NR | NR |
| GP-3 | 9/9/2010 | 13-17 | <0.00014 | <0.00015 | <0.00023 | <0.00019 | <0.00022 | <0.00026 | NR | NR | NR | NR | NR | NR | **0.130** | NR | NR | **0.0055JB** | **0.012J** | NR | NR | NR | NR | NR |
| GP-4 | 9/8/2010 | 29-33 | <0.00016 | <0.00018 | <0.00026 | <0.00022 | <0.00025 | <0.00030 | NR | **0.012J** | NR | NR | NR | NR | **0.16J** | NR | NR | **0.0051JB** | NR | NR | NR | NR | NR | NR |
| GP-5 | 9/7/2010 | 0-5 | <0.00016 | **0.00087J** | <0.00025 | <0.00021 | <0.00024 | <0.00028 | **0.0042J** | NR | **0.0076J** | **0.0073J** | **0.014J** | NR | **0.19J** | **0.010J** | **0.011J** | NR | NR | NR | NR | **0.019J** | NR | **0.088J** |
| GP-6 | 9/8/2010 | 5-9 | <0.00016 | <0.00017 | <0.00026 | <0.00022 | <0.00025 | <0.00029 | NR | NR | NR | NR | NR | NR | **0.21J** | NR | NR | **0.0057JB** | NR | **0.012J** | NR | NR | NR | NR |
| GP-7 | 9/8/2010 | 25-29 | <0.00017 | <0.00018 | <0.00027 | <0.00023 | <0.00026 | <0.00031 | NR | NR | NR | NR | NR | NR | **0.11J** | NR | NR | **0.0053JB** | **0.013J** | NR | NR | NR | NR | NR |
| Dup (GP-1) | 9/8/2010 | 17-21 | <0.00016 | <0.00017 | <0.00026 | <0.00021 | <0.00025 | <0.00029 | NR | NR | NR | NR | NR | NR | **0.26J** | NR | NR | **0.0077JB** | **0.025J** | NR | NR | NR | NR | NR |
| Equipment Blank | 09/09/10 | - | <0.00034 | <0.00026 | <0.00039 | <0.00033 | <0.00037 | <0.00038 | NR | NR | NR | NR | NR | NR | **0.110J** | NR | NR | NR | NR | NR | NR | NR | NR | NR |
| **IHSB Soil Remediation Goal Preliminary HB PSRG[3]** | | | 24 | NL | 3.60 | 0.56 | 1.1 | 2.80 | NL | 49,000 | NL | NL | NL | NL | NL | NL | 120 | NL | NL | NL | NL | NL | NL | NL |
| **IHSB Soil Remediation Goal PG PSRG[4]** | | | 0.02 | NL | 0.21 | 0.0012 | NL | 0.02 | NL | 130 | NL | NL | NL | NL | NL | NL | NL | NL | NL | NL | NL | NL | NL | NL |

Notes:
1. All results are listed in milligram per kilogram (mg/kg) = parts per million.
2. ft-bgs = feet below ground surface.
3. HB PSRGs = NDCENR Inactive Hazardous Sites Branch Health-Based Prelimimary Soil Remediation Goals. January 2010.
4. PG PSRGs = NDCENR Inactive Hazardous Sites Branch Health-Based Prelimimary Soil Remediation Goals. January 2010.
5. VOCs = Volatile Organic Compounds.
6. TICs = Tentatively Identified Compounds.
7. NR - not reported
8. J = concentration detected above the method detection limit but below the sample method reporting limit.
9. B = The analyte was detectred in the associated method blank.
10. < = denotes less than sample detection limit.
11. NL = No Standard Listed.

**Bold** depicts constiuents detected above the sample method detection limit.
**Bold** and shaded depicts constiuents detected above the IHSB PSRGs.

## Table 4
## Summary of SVOC Concentrations in Soil (mg/Kg)[1]
## Mary Chappell Site
## 1061 NC Highway 177 North
## Hamlet, Richmond County, North Carolina
## S&ME Project No. 1054-10-2003



| Analytical Method | | | SVOCs[5] 8270D | SVOC TICs[6] by EPA Method 8270D | | | | |
|---|---|---|---|---|---|---|---|---|
| | Contaminant of Concern | | | | | | | |
| Sample ID | Date Collected (m/dd/yy) | Sample Depth (ft-bgs[2]) | Di-n-butylphthalate | Cyclohexanemethanol, 4-hydroxy | 1R-alpha-Pinene | 1,1,2,2,-Tetrachloroethane | 1,1,2,-Trichloroethane | 7-Oxabicyclo[4,1,0]heptane |
| GP-1 | 9/9/2010 | 17-21 | **0.041J** | NR | NR | **0.28JB** | <0.027 | NR |
| GP-2 | 9/9/2010 | 17-21 | <0.034 | NR | NR | **0.25JB** | <0.028 | NR |
| GP-3 | 9/9/2010 | 13-17 | <0.038 | NR | NR | **0.43JB** | **0.18J** | **0.21J** |
| GP-4 | 9/8/2010 | 29-33 | <0.034 | NR | NR | **0.45JB** | **0.19J** | **0.21J** |
| GP-5 | 9/7/2010 | 0-5 | <0.032 | **0.14J** | **0.27J** | **0.39JB** | **0.16J** | NR |
| GP-6 | 9/8/2010 | 5-9 | <0.034 | NR | NR | **0.27JB** | NR | NR |
| GP-7 | 9/8/2010 | 25-29 | <0.035 | NR | NR | **0.28JB** | NR | NR |
| Dup (GP-1) | 9/8/2010 | 17-21 | <0.033 | NR | NR | **0.41JB** | **0.18J** | **0.20J** |
| Equipment Blank | 09/09/10 | - | <0.0015 | NR | NR | NR | NR | NR |
| **IHSB Soil Remediation Goal Preliminary HB PSRG[3]** | | | 1,200 | NL | NL | 0.56 | 1.1 | NL |
| ***IHSB Soil Remediation Goal PG PSRG[4]*** | | | *19* | NL | NL | *0.0012* | NL | NL |

Notes:

1. All results are listed in milligram per kilogram (mg/Kg) = parts per million.
2. ft-bgs = feet below ground surface.
3. HB PSRGs = NDCENR Inactive Hazardous Sites Branch Health-Based Prelimimary Soil Remediation Goals. January 2010.
4. PG PSRGs = NDCENR Inactive Hazardous Sites Branch Health-Based Prelimimary Soil Remediation Goals. January 2010.
5. SVOCs by EPA Method 8270D.
6. TICs = Tentatively Identified Compounds.
7. NR - not reported
8. J = concentration detected above the method detection limit but below the sample method reporting limit.
9. B = The analyte was detectred in the associated method blank.
10. < = denotes less than sample detection limit.
11. NL = No Standard Listed.

**Bold depicts constiuents detected above the sample method detection limit.**

**Bold and shaded depicts constiuents detected above the IHSB PSRGs..**

# Table 5
## Summary of Metal Concentrations in Soil (mg/Kg)[1]
## Mary Chappell Site
## 1061 NC Highway 177 North
## Hamlet, RichmondCounty, North Carolina
## S&ME Project No. 1054-10-2003

| Analytical Method | | | Metals by EPA Method 6010 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Contaminant of Concern | | | | | | | | | | | | | |
| Sample ID | Date Collected (m/dd/yy) | Sample Depth (ft-bgs[2]) | Arsenic | Beryllium | Cadmium | Chromium | Copper | Lead | Manganese | Mercury | Nickel | Selenium | Thallium | Zinc |
| GP-1 | 9/9/2010 | 17-21 | **0.528J** | <0.0129 | <0.0103 | **0.925** | **0.454J** | **0.473J** | **0.324J** | <0.00515 | <0.386 | **0.207JB** | **0.165J** | <1.18 |
| GP-2 | 9/9/2010 | 17-21 | **10.7** | **0.0210J** | <0.0106 | **29.2** | **49.2** | **3.17** | **2.61** | <0.00530 | <0.398 | **23.6B** | **0.64** | **3.32** |
| GP-3 | 9/9/2010 | 13-17 | **4.04** | <0.0147 | <0.0117 | **7.44** | **5.78** | **1.50** | **3.38** | **0.0242** | <0.440 | **1.12B** | **0.541J** | **2.11J** |
| GP-4 | 9/8/2010 | 29-33 | **1.22** | <0.0132 | <0.0105 | **1.34** | **3.10** | **0.846** | **0.291J** | **0.00765J** | <0.395 | **0.942J** | **0.160J** | <1.21 |
| GP-5 | 9/7/2010 | 0-5 | **0.739** | <0.0124 | <0.00993 | **2.16** | **0.97** | **2.08** | **7.53** | <0.00496 | **0.691J** | **0.144JB** | **0.379J** | **1.62J** |
| GP-6 | 9/8/2010 | 5-9 | **0.728** | <0.0130 | <0.0104 | **2.48** | **1.18** | **1.19** | **3.51** | <0.00521 | **0.446J** | **0.347JB** | **0.148J** | **1.42J** |
| GP-7 | 9/8/2010 | 25-29 | **1.56** | <0.0136 | <0.0109 | **1.93** | **4.58** | **0.92** | **0.331J** | <0.00544 | <0.408 | **0.904B** | **0.235J** | <0.408 |
| Dup (GP-1) | 9/8/2010 | 17-21 | **0.418J** | <0.0129 | <0.0103 | **0.939** | **0.598** | **0.438J** | **0.312J** | <0.00515 | <0.386 | **0.309JB** | **0.132J** | **1.38J** |
| Equipment Blank | 09/09/10 | - | <0.0028 | <0.0001 | <0.00036 | <0.0001 | <0.0016 | <0.0019 | **4.07JB** | <0.00017 | <0.0018 | **4.64J** | <0.00011 | <0.0038 |
| **IHSB Soil Remediation Goal Preliminary HB PSRG[3]** | | | 4.40 | 31 | 14 | 23,000 | 630 | 400 | 370 | 4.7 | 310 | 78 | NL | 4,700 |
| **IHSB Soil Remediation Goal PG PSRG[4]** | | | 5.80 | NL | 3 | 360,000 | 700 | 270 | 65 | 1.0 | 130 | 2.1 | NL | 1,200 |

Notes:

1. All results are listed in milligram per kilogram (mg/Kg) = parts per million.
2. ft-bgs = feet below ground surface.
3. HB PSRGs = NDCENR Inactive Hazardous Sites Branch Health-Based Prelimimary Soil Remediation Goals. January 2010
4. PG PSRGs = NDCENR Inactive Hazardous Sites Branch Health-Based Prelimimary Soil Remediation Goals. January 2010
5. J = concentration detected above the method detection limit but below the sample method reporting limit.
6. B = The analyte was detectred in the associated method blank.
7. < = denotes less than sample detection limit.
8. NL = No Standard Listed.

**Bold** depicts constiuents detected above the sample method detection limit.

**Bold** and shaded depicts constiuents detected above the IHSB PSRGs.

**Table 6**
**Monitor Well Construction**
**Mary Chappell Site**
**1061 NC Highway 177 North**
**Hamlet, Richmond County, North Carolina**
**S&ME Project No. 1054-10-2003**

| Well ID | Date Installed (m/dd/yy) | Date Water Level Measured (m/dd/yy) | Well Casing Depth (ft-bgs) | Screen Interval (x to y ft-bgs) | | | Bottom of Well (ft-bgs) | Top of Casing Elevation* (ft) | Depth to Water from Top of Casing (ft-btoc) | Free Product Thickness ** (ft.) | Groundwater Elevation** (ft) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GP-1 | 09/09/10 | 09/20/10 | 38.50 | 38.50 | to | 48.50 | 48.50 | 422.48 | 44.91 | 0.00 | 377.57 | Type II - 1" Sch. 40 PVC casing w/ 0.010 slot screen. |
| GP-2 | 09/09/10 | 09/20/10 | 35.65 | 35.65 | to | 45.65 | 45.65 | 422.38 | 44.56 | 0.00 | 377.82 | Type II - 1" Sch. 40 PVC casing w/ 0.010 slot screen. |
| GP-3 | 09/09/10 | 09/20/10 | 34.72 | 34.72 | to | 44.72 | 44.72 | 420.82 | 42.37 | 0.00 | 378.45 | Type II - 1" Sch. 40 PVC casing w/ 0.010 slot screen. |
| GP-4 | 09/09/10 | 09/20/10 | 29.80 | 29.80 | to | 39.80 | 39.80 | 415.45 | 37.45 | 0.00 | 378.00 | Type II - 1" Sch. 40 PVC casing w/ 0.010 slot screen. |
| GP-5 | 09/08/10 | 09/20/10 | 70.60 | 70.60 | to | 75.60 | 75.60 | Abandoned | NM | NC | NC | Abandoned |
| GP-6 | 09/08/10 | 09/20/10 | 38.50 | 38.50 | to | 48.50 | 48.50 | 417.78 | 46.68 | 0.00 | 371.10 | Type II - 1" Sch. 40 PVC casing w/ 0.010 slot screen. |
| GP-7 | 09/08/10 | 09/20/10 | 29.90 | 29.90 | to | 39.90 | 39.90 | 416.57 | 37.90 | 0.00 | 378.67 | Type II - 1" Sch. 40 PVC casing w/ 0.010 slot screen. |

Notes:
** If Free Product is present in a well, groundwater elevation is calculated by: [Top of Casing Elevation - Depth to Water] + [free product thickness x 0.8581].
ft-bgs = Feet below ground surface.
ft-btoc = Feet below top of well casing.
Elevations from a site survey by Bateman Civil Survey Company dated September 20, 2010.

**Table 7**
**Groundwater Elevations September 20, 2010**
**Mary Chappell Site**
**1061 NC Highway 177 North**
**Hamlet, Richmond County, North Carolina**
**S&ME Project No. 1054-10-2003**

| Well ID | Date Measured | Top of Casing Elevation (ft.) | Depth to Water from Top of Casing (ft.) | Groundwater Elevation* (ft.) |
|---|---|---|---|---|
| GP-1 | 9/20/2010 | 422.48 | 44.91 | 377.57 |
| GP-2 | 9/20/2010 | 422.38 | 44.56 | 377.82 |
| GP-3 | 9/20/2010 | 420.82 | 42.37 | 378.45 |
| GP-4 | 9/20/2010 | 415.45 | 37.45 | 378.00 |
| GP-5 | 9/20/2010 | Abandoned | NM | NC |
| GP-6 | 9/20/2010 | 417.78 | 46.68 | 371.10 |
| GP-7 | 9/20/2010 | 416.57 | 37.90 | 378.67 |

Notes:

NM = Not measured.

NC = Not calculated.

Elevations from a site survey by Bateman Civil Survey Company dated September 20, 2010.

**Table 8**
**Field Parameters**
**Mary Chappell Site**
**1061 NC Highway 177 North**
**Hamlet, Richmond County, North Carolina**
**S&ME Project No. 1054-10-2003**

| Well Number | Field Parameter | | | | | |
|---|---|---|---|---|---|---|
| | pH[1] | Conductivity (mS/cm)[2] | Temperature (°C)[3] | Dissolved Oxygen (mg/L)[4] | Oxygen Reduction Potential (mV)[5] | Turbidity (NTUs)[6] |
| GP-1 | 5.87 | 0.057 | 20.38 | 5.66 | 78.2 | 1339 |
| GP-2 | 5.09 | 0.128 | 21.45 | 9.67 | 228 | 686 |
| GP-3 | 4.11 | 0.154 | 21.95 | 3.61 | 110 | Error 4[7] |
| GP-4 | 5.63 | 0.115 | 23.84 | 5.80 | 79.8 | Error 4 |
| GP-6 | 5.14 | 0.020 | 21.67 | 7.00 | 164 | 1236 |
| GP-7 | 6.26 | 0.042 | 20.32 | 7.06 | 63.1 | 1183 |

1. pH - Standard units
2. $mC/cm^2$ - milliseimens per square centimeter
3. °C - degrees Centigrade
4. mg/L - milligram per liter
5. mV - millivolt
6. NTUs - nephrotelemetric units
7. Error 4 - unit did not read correctly/equipment malfunction or the turbidity exceeded the limits of the instrument.

**Table 9**
**Groundwater Sample Analyses**
**Mary Chappell Site**
**1061 NC Highway 177 North**
**Hamlet, Richmond County, North Carolina**
**S&ME Project No. 1054-10-2003**

| **Analytical Method** | | **EPA Method 8260B** | | | | |
|---|---|---|---|---|---|---|
| **Contaminant of Concern** | | | | | | |
| **Well ID** | **Date Collected (m/dd/yy)** | Acetone | 2-Butanone | Chloroform | Chloromethane | Trichloroethylene |
| GP-1 | 9/20/2010 | <1.5 | <1.0 | **0.49J** | <0.34 | <0.38 |
| GP-2 | 9/20/2010 | <1.5 | <1.0 | **0.92J** | <0.34 | <0.38 |
| GP-3 | 9/20/2010 | **19** | **2.8J** | <0.20 | <0.34 | <0.38 |
| GP-4 | 9/20/2010 | **71** | <1.0 | <0.20 | <0.34 | <0.38 |
| GP-6 | 9/20/2010 | **3.5J** | <1.0 | <0.20 | <0.34 | <0.38 |
| GP-7 | 9/20/2010 | **3.3J** | <1.0 | <0.20 | <0.34 | <0.38 |
| Duplicate (GP-2) | 9/20/2010 | **5.7** | <1.0 | **0.86J** | <0.34 | <0.38 |
| Equipment Blank | 9/20/2010 | <1.5 | <1.0 | <0.20 | **0.56J** | <0.38 |
| Trip Blank | 9/20/2010 | <1.5 | <1.0 | <0.20 | <0.34 | <0.38 |
| **NCAC 2L Groundwater Standard (ug/l)** | | 6,000 | 4,000 | 70 | 3 | 3 |
| **USEPA Drinking Water MCL** | | NL | NL | 70 | NL | 5 |
| **IHSB Vapor Intrusion Screening Level** | | 18,000,000 | 1,900,000 | 35 | 220 | 150 |

Notes:
All sample analytical concentrations are reported in micrograms per liter (µg/l).
Bold depicts constiuents detected above the sample method detection limit.
NCAC 2L Standard = 15A NCAC 2L Groundwater Standard (µg/l).
USEPA Drinking Water MCL = National Primary (or Secondary*) Drinking Water Maximum Contamination Level (µg/l).
NL = Not Listed.
SHADED AND BOLD numbers indicate concentrations above NCAC 2L Groundwater Quality Standard.

# Table 10
## Water Supply Well Sample Analyses
## Mary Chappell Site
## 1061 NC Highway 177 North
## Hamlet, Richmond County, North Carolina
## S&ME Project No. 1054-10-2003

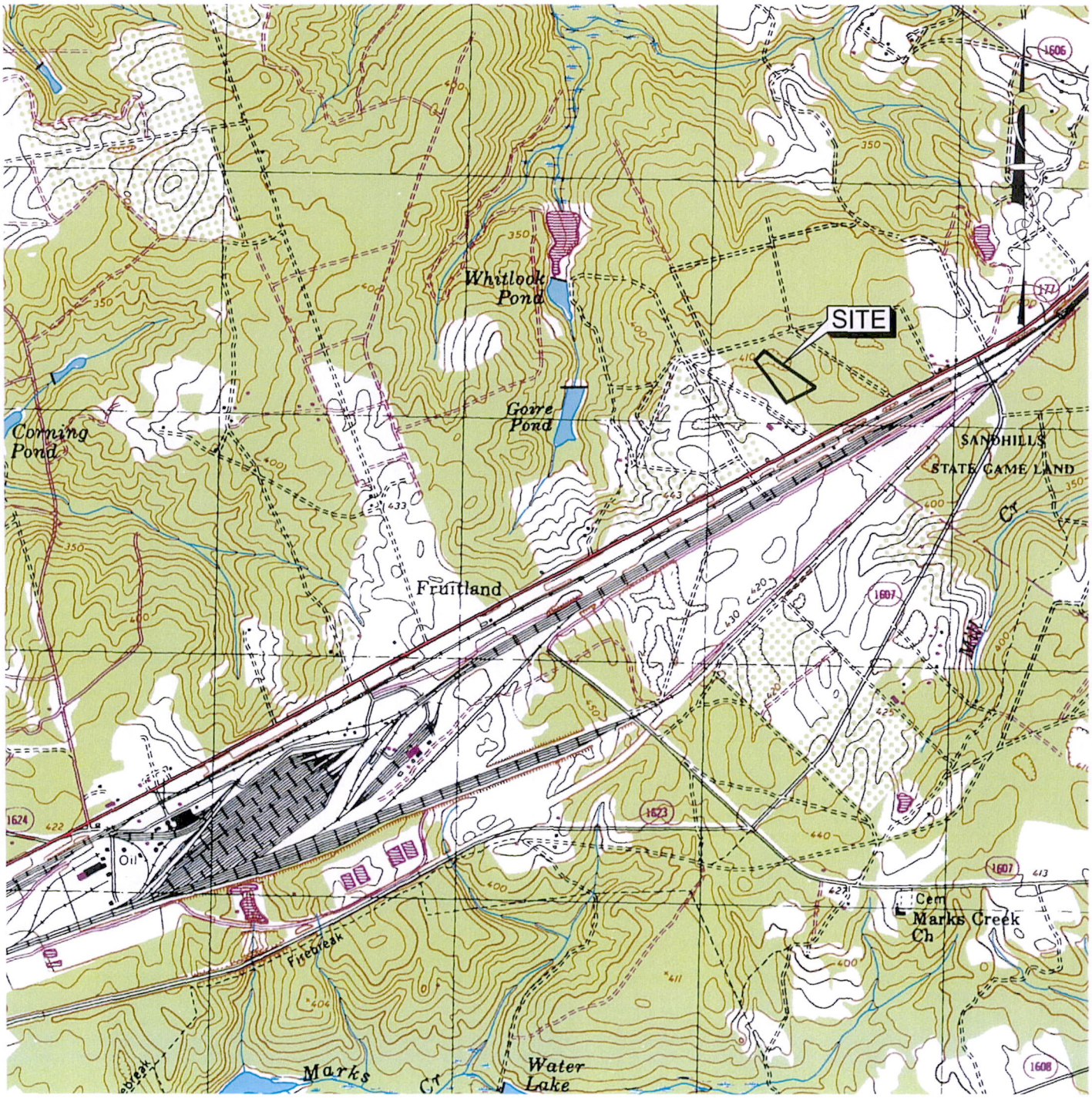
| Analytical Method | | VOCs by EPA 8260B | | | | | | SVOC by EPA 8270D | Metals by EPA 6010C | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Contaminant of Concern | | | | | | | | | | | | | | | | | | | |
| Well ID | Date Collected (m/dd/yy) | Acetone | 2-Butanone | Chloroform | Chloromethane | Trichloroethylene | Naphthalene | Bis(2-ethylhexyl)phthalate | Arsenic | Beryllium | Cadmium | Chromium | Copper | Lead | Manganese | Thallium | Selenium | Silver | Zinc |
| Mary L. Chappell WSW-1 | 9/8/2010 | <1.5 | <1.0 | <0.20 | **0.66J** | **34** | **2.8** | <1.7 | <2.8 | **0.276J** | **0.37J** | **1.86JB** | **108** | **67.7** | **4.30** | **0.612JB** | <2.70 | <1.90 | **32.0** |
| Mark Chappell WSW-2 | 9/8/2010 | <1.5 | <1.0 | <0.20 | <0.34 | <0.38 | <0.39 | <1.7 | <2.8 | <0.1 | <0.360 | <1.0 | **99.4** | **8.28J** | **4.69J** | **0.48JB** | <2.70 | <1.90 | **26.3** |
| William Brown WSW-5 | 9/8/2010 | <1.5 | <1.0 | <0.20 | <0.34 | **1.2** | <0.39 | <1.7 | **3.43J** | <0.1 | <0.360 | <1.0 | **14.3** | <1.90 | <1.10 | **0.402JB** | <2.70 | <1.90 | **5.37J** |
| Herman Russell WSW-4 | 9/8/2010 | <1.5 | <1.0 | <0.20 | <0.34 | <0.38 | <0.39 | **1.8J** | <2.80 | <0.10 | <0.360 | <1.00 | **15** | <1.90 | <1.10 | **0.918JB** | **3.91J** | **1.91J** | **8.40J** |
| **NCAC 2L Groundwater Standard (ug/l)** | | 6,000 | 4,000 | 70 | 3 | 3 | 6 | 3 | 10 | NL | 2 | 10 | 1,000 | 15 | 50 | NL | 20 | 20 | 1,000 |
| **USEPA Drinking Water MCL** | | NL | NL | 70 | NL | 5 | NL | 6 | 10 | 4 | 5 | 100 | 1,300 | 15 | 50* | 2 | 50 | 10* | 5,000* |
| **IHSB Vapor Intrusion Screening Level** | | 18,000,000 | 1,900,000 | 35 | 220 | 150 | 140 | NL | NL | NL | NL | NL | NL | NL | NL | NL | NL | NL | NL |

Notes:
All sample analytical concentrations are reported in micrograms per liter (µg/l).
Bold depicts constiuents detected above the sample method detection limit.
NCAC 2L Standard = 15A NCAC 2L Groundwater Standard (µg/l).
USEPA Drinking Water MCL = National Primary (or Secondary*) Drinking Water Maximum Contamination Level (µg/l).
NL = Not Listed.
SHADED AND BOLD numbers indicate concentrations above NCAC 2L Groundwater Quality Standard.

FIGURES

**Figures**


| | |
|---|---|
| **Figure 1** | Vicinity Map |
| **Figure 2** | Site Map |
| **Figure 3** | VOC Constituents in Soil – September 2010 |
| **Figure 4** | SVOC Constituents in Soil – September 2010 |
| **Figure 5** | Metals in Soil – September 2010 |
| **Figure 6** | Groundwater Contour Map – September 20, 2010 |
| **Figure 7** | Shallow Groundwater Constituents – September 20, 2010 |
| **Figure 8** | Water Supply Well Groundwater Constituents – September 8, 2010 |
| **Figure 9** | Historical Water Supply Well Groundwater Constituents |




GRAPHIC SCALE

1000 0 500 1000 2000

( IN FEET )

TOPO SOURCE: NCGS DRG
HAMLET NC, DATE 2002, CONTOUR INTERVAL 10 FOOT

A-1974

| | | | |
|---|---|---|---|
| SCALE: 1" = 2000' | S&ME WWW.SMEINC.COM | VICINITY MAP | FIGURE NO. |
| DATE: NOV. 2010 | | MARY CHAPPELL PROPERTY | 1 |
| DRAWN BY: BTR | | 1061 HWY 177 N | |
| PROJECT NO: 1054-10-2003 | NC ENGINEER LICENSE #F-0176 3201 SPRING FOREST RD, RALEIGH, NC 27616 | HAMLET, NORTH CAROLINA | |

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| | |
|---|---|
| SCALE: 1' = 60' | DATE: NOV. 2010 |
| PROJECT NUMBER: 1054-10-2003 | DRAWN BY: BTR |
| DRAWING NUMBER: B-1390 | CHECKED BY: |

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WWW.SMEINC.COM
NC ENGINEER LICENSE #F-0176
3201 SPRING FOREST RD, RALEIGH, NC 27616

SITE MAP

MARY CHAPPELL PROPERTY - 1061 HWY 177 N
HAMLET, NORTH CAROLINA

FIGURE NO.
2

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## LEGEND

| | |
|---|---|
| ⊕ | MONITOR WELL LOCATIONS |
| ● | SOIL BORING LOCATION |
| BGS | BELOW GROUND SURFACE IN FEET |
| (0.00087 J) | CONSTITUENT CONCENTRATIONS IN MILLIGRAMS PER KILOGRAM (mg/Kg) |

NOTE: REFER TO TABLE 2 FOR DETAILED SAMPLE DATA AND SAMPLE INTERVALS.

GRAPHIC SCALE

60 0 30 60

( IN FEET )

| | |
|---|---|
| SCALE: 1" = 60' | DATE: NOV. 2010 |
| PROJECT NUMBER: 1054-10-2003 | DRAWN BY: BTR |
| DRAWING NUMBER: B-1391 | CHECKED BY: |

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NC ENGINEER LICENSE #F-0176
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VOC CONSTITUENTS IN SOIL
SEPTEMBER 2010

MARY CHAPPELL PROPERTY - 1061 HWY 177 N
HAMLET, NORTH CAROLINA

FIGURE NO.
3

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SCALE: 1' = 60'

DATE: NOV. 2010

PROJECT NUMBER: 1054-10-2003

DRAWN BY: BTR

DRAWING NUMBER: B-1392

CHECKED BY:

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NC ENGINEER LICENSE #F-0176
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SVOC CONSTITUENTS IN SOIL
SEPTEMBER 2010

MARY CHAPPELL PROPERTY - 1061 HWY 177 N
HAMLET, NORTH CAROLINA

FIGURE NO.
4

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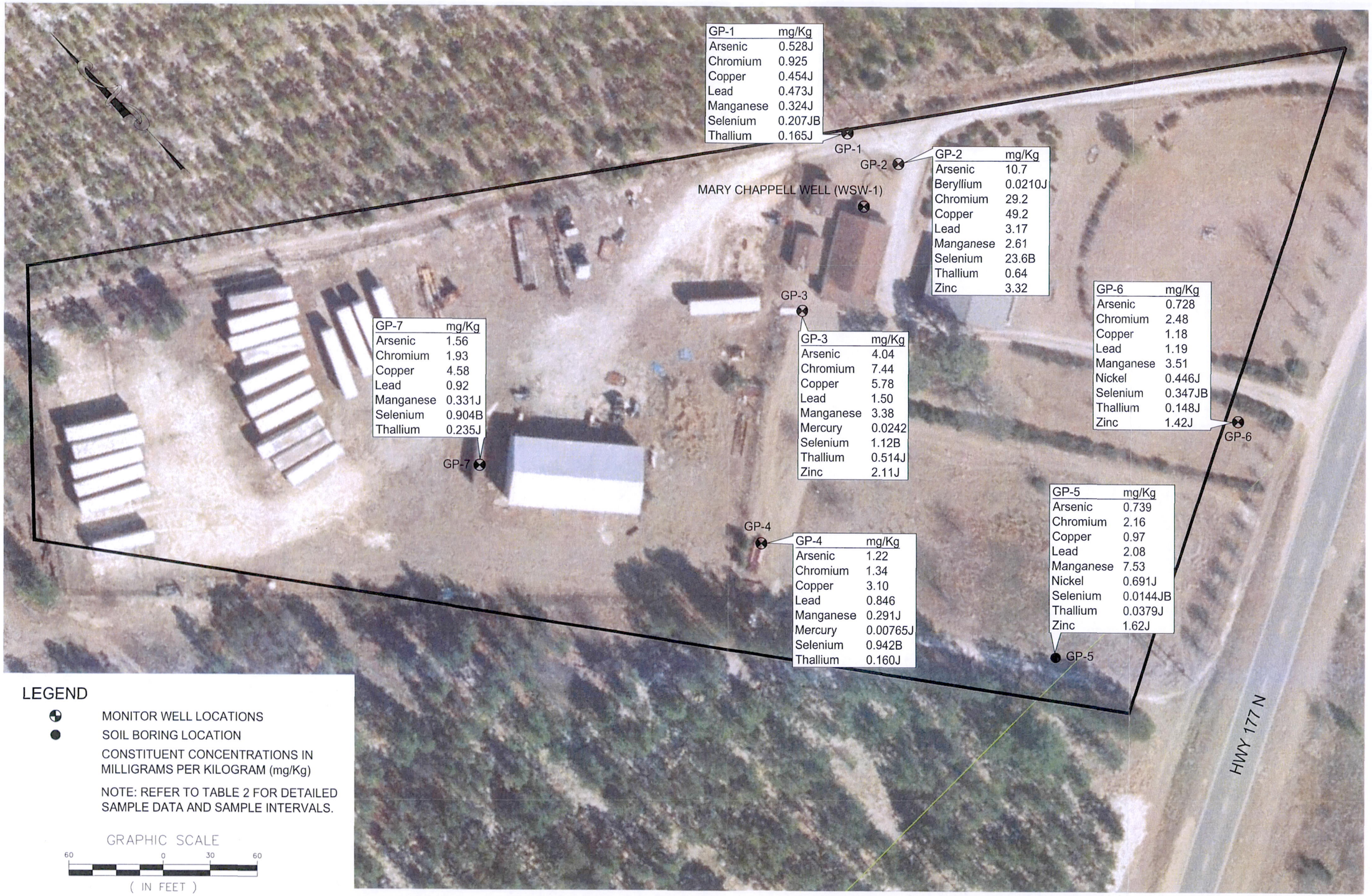


| | |
|---|---|
| SCALE: 1' = 60' | DATE: NOV. 2010 |
| PROJECT NUMBER: 1054-10-2003 | DRAWN BY: BTR |
| DRAWING NUMBER: B-1393 | CHECKED BY: |

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METALS IN SOIL
SEPTEMBER 2010

MARY CHAPPELL PROPERTY - 1061 HWY 177 N
HAMLET, NORTH CAROLINA

FIGURE NO.
5

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| | |
|---|---|
| SCALE: 1' = 60' | DATE: NOV. 2010 |
| PROJECT NUMBER: 1054-10-2003 | DRAWN BY: BTR |
| DRAWING NUMBER: B-1394 | CHECKED BY: |

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GROUNDWATER CONTOUR MAP
SEPTEMBER 2010

MARY CHAPPELL PROPERTY - 1061 HWY 177 N
HAMLET, NORTH CAROLINA

FIGURE NO.
6

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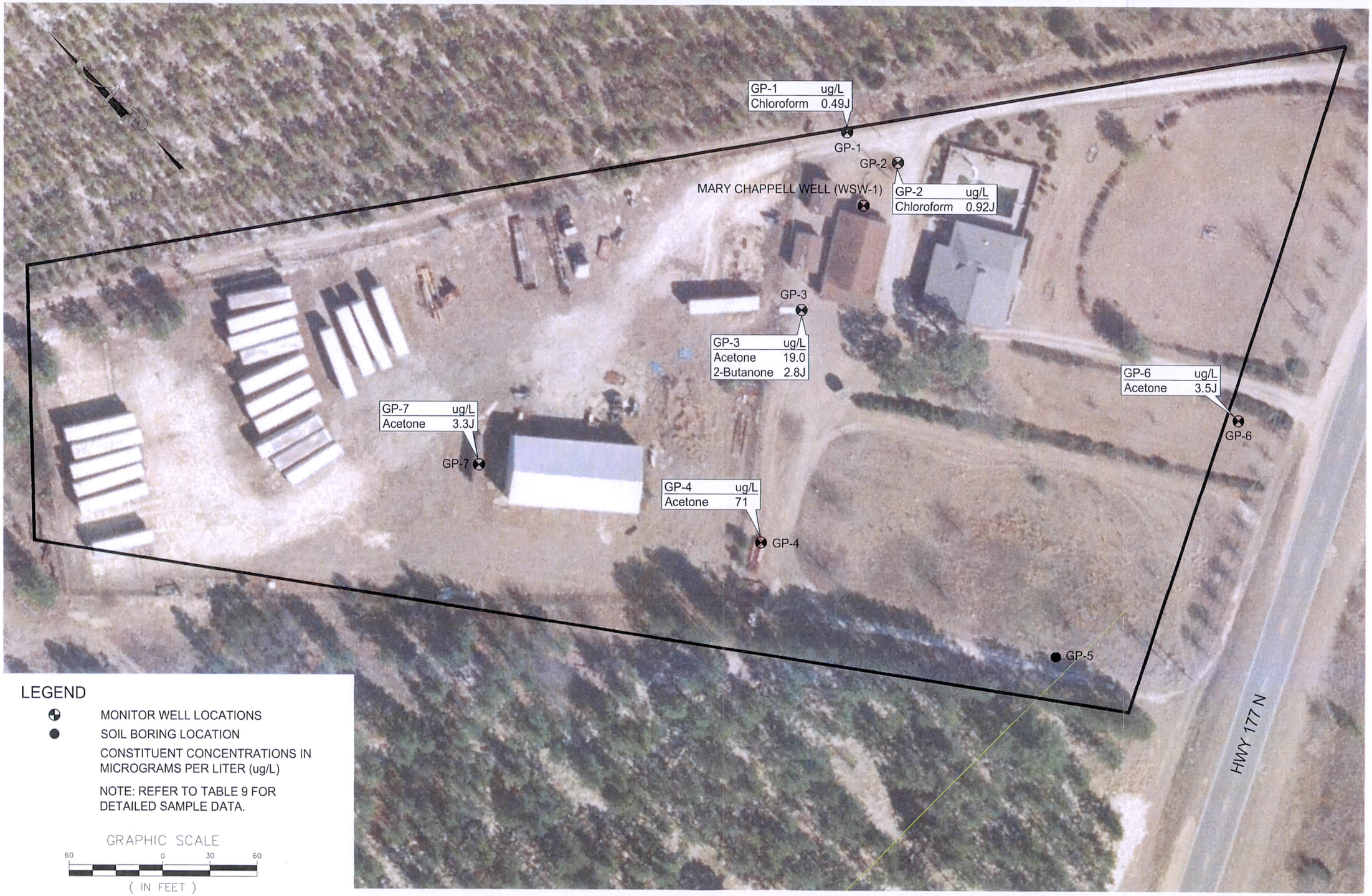


SCALE: 1' = 60'
DATE: NOV. 2010
PROJECT NUMBER: 1054-10-2003
DRAWN BY: BTR
DRAWING NUMBER: B-1395
CHECKED BY:

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NC ENGINEER LICENSE #F-0176
3201 SPRING FOREST RD, RALEIGH, NC 27616

SHALLOW GROUNDWATER CONSTITUENTS
SEPTEMBER 2010

MARY CHAPPELL PROPERTY - 1061 HWY 177 N
HAMLET, NORTH CAROLINA

FIGURE NO.
7

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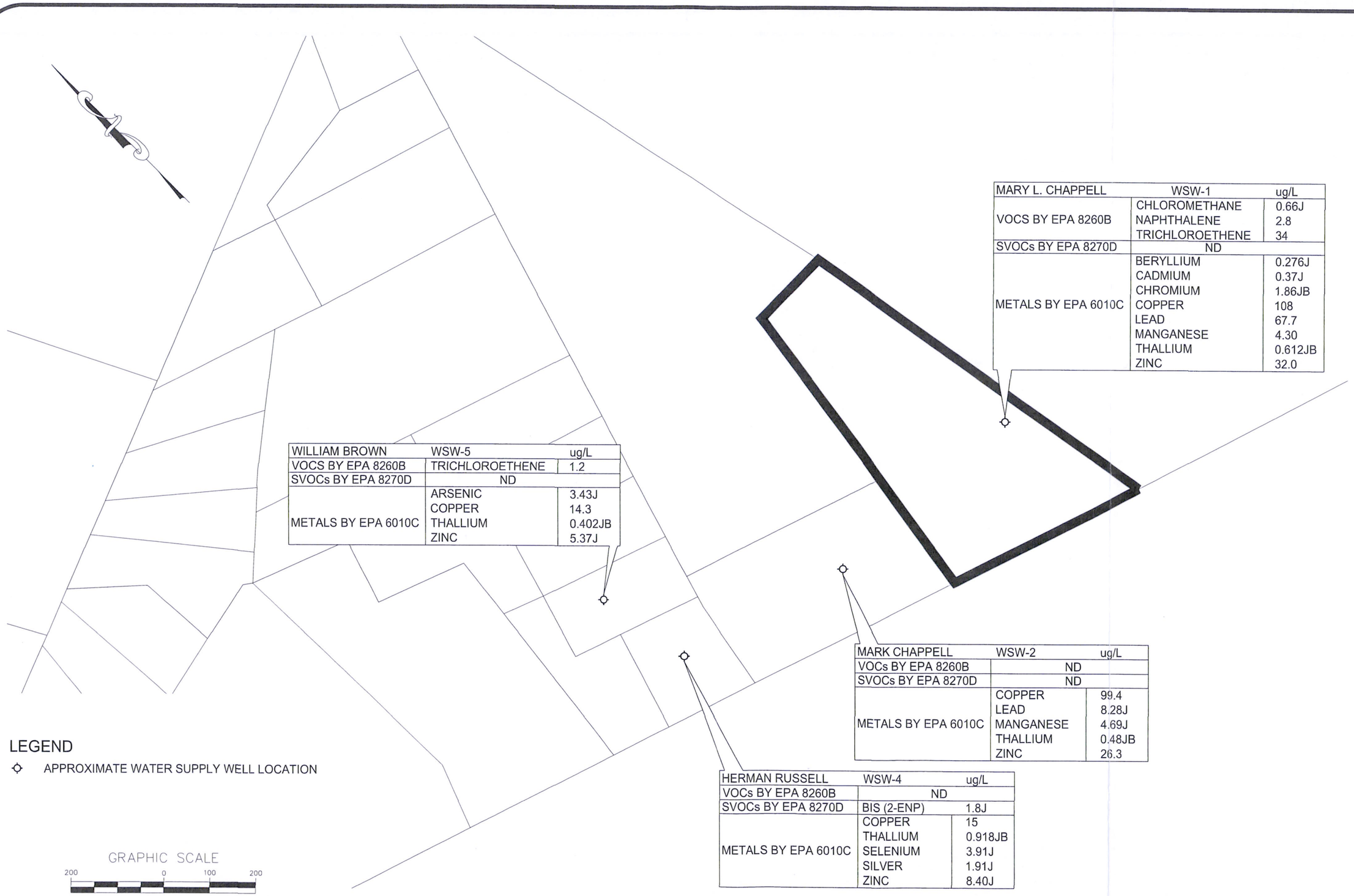


| MARY L. CHAPPELL | WSW-1 | ug/L |
|---|---|---|
| VOCS BY EPA 8260B | CHLOROMETHANE | 0.66J |
| | NAPHTHALENE | 2.8 |
| | TRICHLOROETHENE | 34 |
| SVOCs BY EPA 8270D | ND | |
| METALS BY EPA 6010C | BERYLLIUM | 0.276J |
| | CADMIUM | 0.37J |
| | CHROMIUM | 1.86JB |
| | COPPER | 108 |
| | LEAD | 67.7 |
| | MANGANESE | 4.30 |
| | THALLIUM | 0.612JB |
| | ZINC | 32.0 |

| WILLIAM BROWN | WSW-5 | ug/L |
|---|---|---|
| VOCS BY EPA 8260B | TRICHLOROETHENE | 1.2 |
| SVOCs BY EPA 8270D | ND | |
| METALS BY EPA 6010C | ARSENIC | 3.43J |
| | COPPER | 14.3 |
| | THALLIUM | 0.402JB |
| | ZINC | 5.37J |

| MARK CHAPPELL | WSW-2 | ug/L |
|---|---|---|
| VOCs BY EPA 8260B | ND | |
| SVOCs BY EPA 8270D | ND | |
| METALS BY EPA 6010C | COPPER | 99.4 |
| | LEAD | 8.28J |
| | MANGANESE | 4.69J |
| | THALLIUM | 0.48JB |
| | ZINC | 26.3 |

| HERMAN RUSSELL | WSW-4 | ug/L |
|---|---|---|
| VOCs BY EPA 8260B | ND | |
| SVOCs BY EPA 8270D | BIS (2-ENP) | 1.8J |
| METALS BY EPA 6010C | COPPER | 15 |
| | THALLIUM | 0.918JB |
| | SELENIUM | 3.91J |
| | SILVER | 1.91J |
| | ZINC | 8.40J |

SCALE: 1' = 200'
DATE: NOV. 2010
PROJECT NUMBER: 1054-10-2003
DRAWN BY: BTR
DRAWING NUMBER: B-1396
CHECKED BY:

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NC ENGINEER LICENSE #F-0176
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WATER SUPPLY WELL
GROUNDWATER CONSTITUENTS

MARY CHAPPELL PROPERTY - 1061 HWY 177 N
HAMLET, NORTH CAROLINA

FIGURE NO.
8

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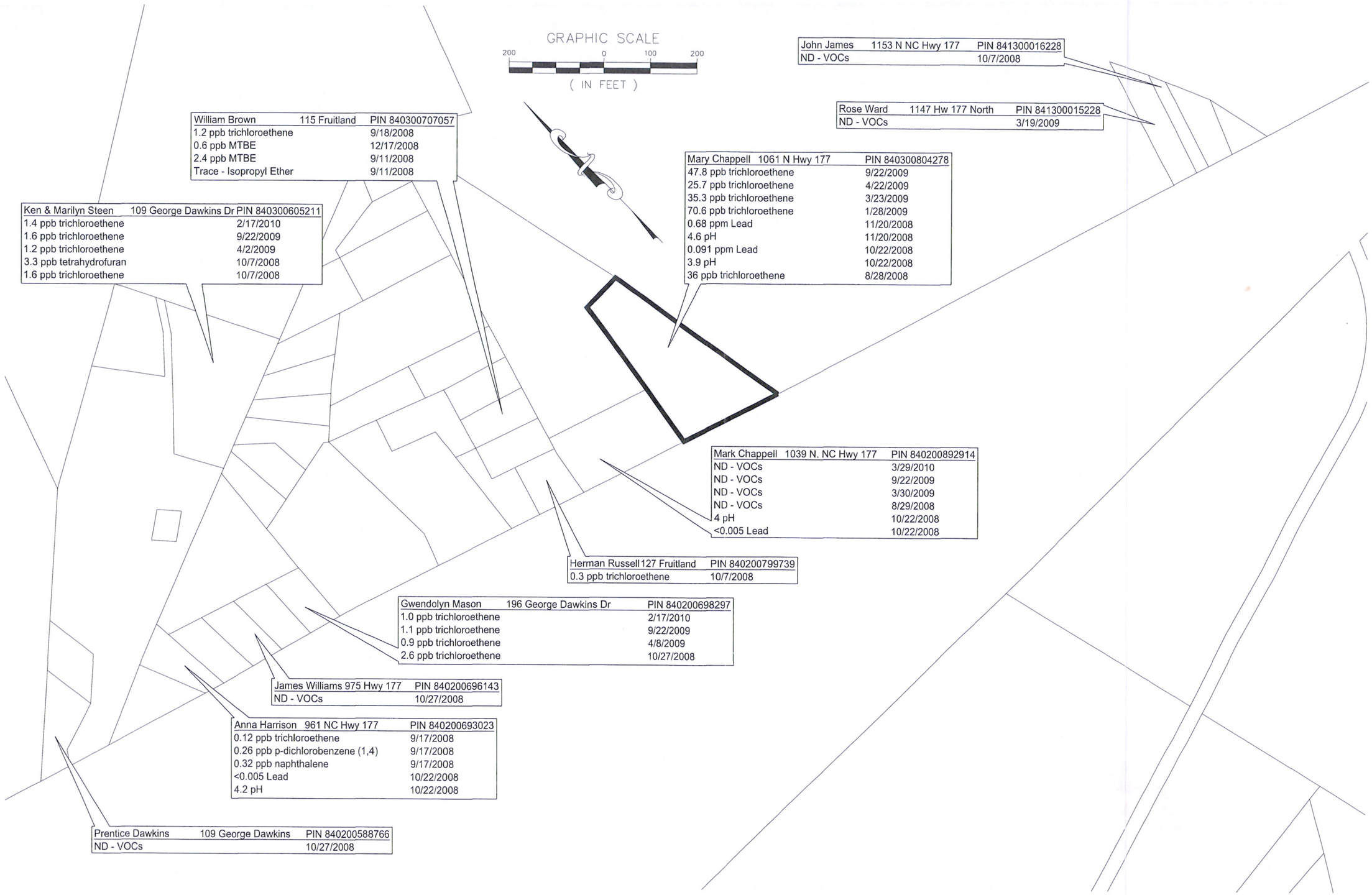


DATE: NOV. 2010

DRAWN BY: BTR

CHECKED BY:

SCALE: 1' = 200'

PROJECT NUMBER: 1054-10-2003

DRAWING NUMBER: B-1400

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NC ENGINEER LICENSE #F-0176
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HISTORICAL
WATER SUPPLY WELL CONSTITUENTS

MARY CHAPPELL PROPERTY - 1061 HWY 177 N
HAMLET, NORTH CAROLINA

FIGURE NO.

9

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APPENDIX

## Appendices

**Appendix I** Photographic Log
**Appendix II** Boring Logs and Well Construction Records and Field Notes
**Appendix III** Calculations
**Appendix IV** Field Groundwater Sampling Logs
**Appendix V** Laboratory Analytical Report and Chain of Custody Form

**Appendix I**

Photographic Log

1 View to the southwest of Mary Chappell site with supply well WSW-1 on the right.

2 View to the west from in front of supply well of buildings on the site.

3 View water supply well WSW-1 on Mary Chappell site.

4 View of boring GP-3 location marked for utility clearance (orange flag).

| | | | |
|---|---|---|---|
| S&ME | **Limited Soil and Groundwater Assessment Report**<br>**Mary Chappell Site – Hamlet, North Carolina** | S&ME Project No. 1054-09-2003 | |
| | | Taken by: GP / DW | Date Taken: 9/9-13/2010 |

5 View to the west of boring GP-4 location.

6 View to the south of boring GP-5 location marked for utility clearance.

7 View to the northeast of boring GP-6 location (orange flag) marked for utility clearance.

8 View to the northeast of the water supply well WSW-2 on the Mark Chappell property.

| | | | |
|---|---|---|---|
| S&ME | **Limited Soil and Groundwater Assessment Report**<br>**Mary Chappell Site – Hamlet, North Carolina** | S&ME Project No. 1054-09-2003 | |
| | | Taken by: GP / DW | Date Taken: 9/9-13/2010 |

9 View to the southwest of the William Brown water supply well WSW-5 at 115 Fruitland.

10 View to the northwest of the Geoprobe set up on GP-6.

11 View of pre-packed screen and gravel / filter.

12 Pre-packed bentonite seal with foam bridge at the top of the seal.

**13** View to the northwest of completed well no. GP-2 .

**14** Westward view of completed well GP-1.

**15** View to the southeast of completed well GP 7 next to pallet of discarded containers with unknown contents.

**16** View to the west of completed well GP-3.

**Appendix II**

Boring Logs and Well Construction Records and Field Notes

# COMPLETION REPORT OF PEIZOMETER NO. GP-1

| | | | |
|---|---|---|---|
| PROJECT: | Mary Chappell Site | APPROXIMATE ELEVATION: | 422.5 |
| PROJECT NO: | 1054-10-2003 | BORING DEPTH (FT.): | 48.5 |
| PROJECT LOCATION: | Hamlet, North Carolina | LOGGED BY: | JP |
| DRILLING CONTRACTOR: | S&ME | | |
| DRILLING METHOD: | Macrocore | | |
| DATE DRILLED: | 9/9/2010 | | |

| STRATA DESCRIPTION | SYMBOL | DEPTH (feet) | WELL DETAILS | DEPTH (feet) | LEGEND | SPT (N-value) | ELEVATION (feet) | FID (ppm) | PID (ppm) |
|---|---|---|---|---|---|---|---|---|---|
| Ground Surface | | | | | | | 422.50 | | |
| Tan/ brown medium SAND | | 0.0 | | 0.2 | | | | | 0.0 |
| | | 5.0 | | | | | 417.50 | | 0.0 |
| | | 10.0 | | | | | 412.50 | | 0.6 |
| Medium large grain orange clayey SAND | | | | | | | | | |
| Orange/ tan fine clayey SAND | | | | | | | 407.50 | | 0.8 |
| Tan/ white fine SAND | | 15.0 | | | | | | | |
| Tan/ white/ pink med grain SAND (moist), band of oxidized SAND @ 24' bgs | | 20.0 | | | | | 402.50 | | 1.0 |
| | | | | | | | 397.50 | | 0.6 |
| Large clayey SAND, white to 28', then tan to orange silty clayey SAND | | 25.0 | | | | | | | 0.6 |
| | | | | | | | 392.50 | | |
| Tan/ white fine silty SAND (moist), alternating colors | | 30.0 | | | | | | | 0.4 |
| | | | | | | | 387.50 | | |
| | | 35.0 | | 36 | CG | | | | 0.2 |
| Tan/ white to 38' then tan/ brown large sand, band of white silty CLAY @40' bgs | | | | 38.5 | BS | | 382.50 | | 0.6 |
| | | 40.0 | | | | | | | |
| | | | | | | | 377.50 | | |
| | | 45.0 | | | | | | | |
| | | | | 48.5 | FP | | | | |
| Boring terminated at refusal at 49' | | | | 49 | BSC | | | | |

WELL CONSTRUCTION DETAILS

PROTECTIVE CASING
Diameter:
Type:
Interval:

OUTER CASING
Diameter:
Type:
Length:

RISER CASING
Diameter:
Type:
Interval:

GROUT
Type: **cement**
Interval: **0-36**

SEAL
Type: **bentonite pre-packed**
Interval: **36 - 38.5**

FILTERPACK
Type: **silica pre-packaged**
Interval: **38.5 - 48.5**

SCREEN
Diameter: **1"**
Type: **pvc pre-packed**
Interval: **38.5 - 48.5**

LEGEND
- ▽ = Water Level At Termination of Boring (TOB)
- ▼ = Water Level After ~24 Hours
- BS = Bentonite Seal
- FP = Filter Pack
- CG = Cement Grout
- BSC = Bottom of Screen
- REC = Core Recovery
- RQD = Rock Quality Designation

NOTES:

S&ME
ENGINEERING • TESTING
ENVIRONMENTAL SERVICES
3201 Spring Forest Road
Raleigh, NC 27616

COMPLETION REPORT
OF PEIZOMETER NO. GP-1

# COMPLETION REPORT OF PEIZOMETER NO. GP-2

| | | | |
|---|---|---|---|
| PROJECT: | Mary Chappell Site | APPROXIMATE ELEVATION: | 422.4 |
| PROJECT NO: | 1054-10-2003 | BORING DEPTH (FT.): | 45.7 |
| PROJECT LOCATION: | Hamlet, North Carolina | LOGGED BY: | JP |
| DRILLING CONTRACTOR: | S&ME | | |
| DRILLING METHOD: | Macrocore | | |
| DATE DRILLED: | 9/9/2010 | | |

| STRATA DESCRIPTION | SYMBOL | DEPTH (feet) | WELL DETAILS | DEPTH (feet) | LEGEND | SPT (N-value) | ELEVATION (feet) | FID (ppm) | PID (ppm) |
|---|---|---|---|---|---|---|---|---|---|
| Ground Surface | | | | | | | 422.40 | | |
| Tan medium SAND | | 0.0 | | 0.2 | | | | | 0.1 |
| | | 5.0 | | | | | 417.40 | | 0.0 |
| Tan/ orange clayey SAND (med grain) | | 10.0 | | | | | 412.40 | | 0.0 |
| | | 15.0 | | | | | 407.40 | | 0.0 |
| Tan/ orange/ brown hard silty CLAY to 19.5', then fine tan silty SAND | | 20.0 | | | | | 402.40 | | 0.6 |
| Tan/ orange silty SAND | | 25.0 | | | | | 397.40 | | 0.0 |
| Tan/ white large grain silty SAND (moist), to 30', then fine tan silty SAND, tight tan/white silty CLAY @32.5' | | 30.0 | | | | | 392.40 | | 0.0 |
| | | | | 33.2 | CG | | 387.40 | | 0.1 |
| Medium tan/ light brown silty SAND (moist), 1" thick band of white silty CLAY @ 38' and 40' | | 35.0 | | 35.7 | BS | | | | 0.0 |
| | | 40.0 | | | | | 382.40 | | 0.0 |
| Tan/ brown silty SAND (wet), wet bands | | 45.0 | | 45.7 | BSC | | 377.40 | | 0.4 |
| Boring terminated at 46' bgs - refusal, well set at 45.65' in CLAY | | | | 46 | FP | | | | |

**WELL CONSTRUCTION DETAILS**

PROTECTIVE CASING
- Diameter:
- Type:
- Interval:

OUTER CASING
- Diameter:
- Type:
- Length:

RISER CASING
- Diameter:
- Type:
- Interval:

GROUT
- Type: **cement**
- Interval: **0 - 33.15**

SEAL
- Type: **bentonite pre-packed**
- Interval: **33.2 - 35.7**

FILTERPACK
- Type: **silica pre-packaged**
- Interval: **35.7 - 45.7**

SCREEN
- Diameter: **1"**
- Type: **pvc pre-packed**
- Interval: **35.7 - 45.7**

LEGEND
- ▽ = Water Level At Termination of Boring (TOB)
- ▼ = Water Level After ~24 Hours
- BS = Bentonite Seal
- FP = Filter Pack
- CG = Cement Grout
- BSC = Bottom of Screen
- REC = Core Recovery
- RQD = Rock Quality Designation

NOTES:

S&ME
ENGINEERING • TESTING
ENVIRONMENTAL SERVICES
3201 Spring Forest Road
Raleigh, NC 27616

COMPLETION REPORT
OF PEIZOMETER NO. GP-2

# COMPLETION REPORT OF PEIZOMETER NO. GP-3

| | | | |
|---|---|---|---|
| PROJECT: | Mary Chappell Site | APPROXIMATE ELEVATION: | 420.8 |
| PROJECT NO: | 1054-10-2003 | BORING DEPTH (FT.): | 44.7 |
| PROJECT LOCATION: | Hamlet, North Carolina | LOGGED BY: | JP |
| DRILLING CONTRACTOR: | S&ME | | |
| DRILLING METHOD: | Macrocore | | |
| DATE DRILLED: | 9/9/2010 | | |

| STRATA DESCRIPTION | SYMBOL | DEPTH (feet) | WELL DETAILS | DEPTH (feet) | LEGEND | SPT (N-value) | ELEVATION (feet) | FID (ppm) | PID (ppm) |
|---|---|---|---|---|---|---|---|---|---|
| Ground Surface | | | | | | | 420.80 | | |
| Tan fine/medium SAND | | 0.0 | | 0.2 | | | | | 0.2 |
| | | 5.0 | | | | | 415.80 | | 1.3 |
| Red/ tan clayey SAND, med/ lg to 14', then tan/ grey silty CLAY to 16', then tan fine SAND to 17' | | 10.0 | | | | | 410.80 | | 74.6 |
| | | 15.0 | | | | | 405.80 | | 360 |
| Fine to med tan SAND, slightly clayey (moist) | | 20.0 | | | | | 400.80 | | 1.6 |
| Medium tan clayey SAND (moist) | | | | | | | | | 0.2 |
| Tan to light brown large SAND (moist) | | 25.0 | | | | | 395.80 | | 0.1 |
| Fine tan/ brown silty SAND (moist), with bands of silty CLAY @39' & 40' | | 30.0 | | 32.7 | CG | | 390.80 | | 0.3 |
| | | 35.0 | | 34.7 | BS | | 385.80 | | 0.2 |
| | | 40.0 | | | | | 380.80 | | 0.1 |
| Fine tan silty SAND | | | | | | | | | |
| Grey very stiff silty CLAY | | | | 44.7 | FP | | | | |
| Boring terminated at 45' bgs, well set at 44.7' bgs | | | | 45 | BSC | | | | |

**WELL CONSTRUCTION DETAILS**

PROTECTIVE CASING
Diameter:
Type:
Interval:

OUTER CASING
Diameter:
Type:
Length:

RISER CASING
Diameter:
Type:
Interval:

GROUT
Type: **cement**
Interval: **0 - 32.7**

SEAL
Type: **bentonite pre-packed**
Interval: **32.2 - 34.7**

FILTERPACK
Type: **silica pre-packaged**
Interval: **34.7 - 44.7**

SCREEN
Diameter: **1"**
Type: **pvc pre-packed**
Interval: **34.7 - 44.7**

LEGEND
- ▽ = Water Level At Termination of Boring (TOB)
- ▼ = Water Level After ~24 Hours
- BS = Bentonite Seal
- FP = Filter Pack
- CG = Cement Grout
- BSC = Bottom of Screen
- REC = Core Recovery
- RQD = Rock Quality Designation

NOTES:

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3201 Spring Forest Road
Raleigh, NC 27616

COMPLETION REPORT
OF PEIZOMETER NO. GP-3

# COMPLETION REPORT OF PEIZOMETER NO. GP-4

| | | | |
|---|---|---|---|
| PROJECT: | Mary Chappell Site | APPROXIMATE ELEVATION: | 415.5 |
| PROJECT NO: | 1054-10-2003 | BORING DEPTH (FT.): | 39.8 |
| PROJECT LOCATION: | Hamlet, North Carolina | LOGGED BY: | JP |
| DRILLING CONTRACTOR: | S&ME | | |
| DRILLING METHOD: | Macrocore | | |
| DATE DRILLED: | 9/9/2010 | | |

| STRATA DESCRIPTION | SYMBOL | DEPTH (feet) | WELL DETAILS | DEPTH (feet) | LEGEND | SPT (N-value) | ELEVATION (feet) | FID (ppm) | PID (ppm) |
|---|---|---|---|---|---|---|---|---|---|
| Ground Surface | | | | | | | 415.50 | | |
| Brown medium SAND, 6" TOPSOIL | | 0.0 | | 0.2 | | | 410.50 | | 0.0 |
| Orange/ tan clayey SAND, med | | 5.0 | | | | | 405.50 | | 0.0 |
| | | 10.0 | | | | | 400.50 | | 0.0 |
| Orange/ tan fine SAND | | 15.0 | | | | | 395.50 | | 0.0 |
| Light tan/ white medium SAND (moist) | | 20.0 | | | | | 390.50 | | 0.1 |
| Med/ lg grain brown/ tan SAND, 2" layer of white clayey SILT@ 23.5' (dry) | | 25.0 | | | | | 385.50 | | 0.0 |
| White clayey SILT | | | | | | | 380.50 | | 0.0 |
| Tan/ white fine to medium SAND (moist), @31.5' water bearing zone (wet) | | 30.0 | | 27.3 | CG | | | | 0.0 |
| Tan/ pink fine SAND (moist) large grain @ 34', dark oxidized layer of brown SAND | | 35.0 | | 29.8 | BS | | | | 0.4 |
| Tan to light brown medium clayey SAND (moist) | | | | | | | | | 0.0 |
| Very hard white silty CLAY, confining layer, refusal | | | | 39.8 | FP | | | | 0.0 |
| Boring terminated at 40', well set @ 39.8' bgs | | | | 39.9 | BSC | | | | |
| | | | | 40 | | | | | |

WELL CONSTRUCTION DETAILS

PROTECTIVE CASING
Diameter:
Type:
Interval:

OUTER CASING
Diameter:
Type:
Length:

RISER CASING
Diameter:
Type:
Interval:

GROUT
Type: **cement**
Interval: **0 - 27.3**

SEAL
Type: **bentonite pre-packed**
Interval: **27.3 - 29.8**

FILTERPACK
Type: **silica pre-packaged**
Interval: **29.8 - 39.8**

SCREEN
Diameter: **1"**
Type: **pvc pre-packed**
Interval: **29.8 - 39.8**

LEGEND
▽ = Water Level At Termination of Boring (TOB)
▼ = Water Level After ~24 Hours
BS = Bentonite Seal
FP = Filter Pack
CG = Cement Grout
BSC = Bottom of Screen
REC = Core Recovery
RQD = Rock Quality Designation

NOTES:

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3201 Spring Forest Road
Raleigh, NC 27616

COMPLETION REPORT
OF PEIZOMETER NO. GP-4

# COMPLETION REPORT OF PEIZOMETER NO. GP-5

| | | | |
|---|---|---|---|
| PROJECT: | Mary Chappell Site | APPROXIMATE ELEVATION: | |
| PROJECT NO: | 1054-10-2003 | BORING DEPTH (FT.): | 46 |
| PROJECT LOCATION: | Hamlet, North Carolina | LOGGED BY: | JP |
| DRILLING CONTRACTOR: | S&ME | | |
| DRILLING METHOD: | Macrocore | | |
| DATE DRILLED: | 9/7/2010 | | |

| STRATA DESCRIPTION | SYMBOL | DEPTH (feet) | WELL DETAILS | DEPTH (feet) | LEGEND | SPT (N-value) | ELEVATION (feet) | FID (ppm) | PID (ppm) |
|---|---|---|---|---|---|---|---|---|---|
| Ground Surface | | 0.0 | | | | | | | |
| Light tan SAND | | | | | | | | | |
| Light to dark brown clayey SAND | | 5.0 | | | | | | | |
| Orange brown clayey SAND | | | | | | | | | |
| Medium gray SAND | | | | | | | | | |
| Tan orange clayey SAND, very dense | | 10.0 | | | | | | | |
| Tan orange with brown mixed SAND with clayey SAND | | | | | | | | | |
| Gray red clayey medium SAND, very dense | | 15.0 | | | | | | | |
| Tan coarse SAND with quartz and orange clayey SAND | | | | | | | | | |
| Light tan fine SAND | | 20.0 | | | | | | | |
| White to brown clayey SAND with oxidized zone at 23.5' | | 25.0 | | | | | | | |
| Tan quartz fine SAND | | | | | | | | | |
| Brown clayey SAND | | 30.0 | | | | | | | |
| Pink sity fine SAND | | 35.0 | | | | | | | |
| Tan gray with pink sity fine SAND | | | | | | | | | |
| White silty fine SAND | | | | | | | | | |
| Tan medium to fine SAND | | 40.0 | | | | | | | |
| White medium to fine silty SAND | | 45.0 | | 46 | | | | | |
| Boring terminated at 46 feet below the ground surface. | | | | | | | | | |

WELL CONSTRUCTION DETAILS

PROTECTIVE CASING
Diameter:
Type:
Interval:

OUTER CASING
Diameter:
Type:
Length:

RISER CASING
Diameter:
Type:
Interval:

GROUT
Type:
Interval:

SEAL
Type: **bentonite**
Interval: **0-46**

FILTERPACK
Type:
Interval:

SCREEN
Diameter:
Type:
Interval:

LEGEND
▽ = Water Level At Termination of Boring (TOB)
▼ = Water Level After ~24 Hours
BS = Bentonite Seal
FP = Filter Pack
CG = Cement Grout
BSC = Bottom of Screen
REC = Core Recovery
RQD = Rock Quality Designation

NOTES:

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Raleigh, NC 27616

COMPLETION REPORT
OF PEIZOMETER NO. GP-5

# COMPLETION REPORT OF PEIZOMETER NO. GP-6

| | | | |
|---|---|---|---|
| PROJECT: | Mary Chappell Site | APPROXIMATE ELEVATION: | 417.8 |
| PROJECT NO: | 1054-10-2003 | BORING DEPTH (FT.): | 48.5 |
| PROJECT LOCATION: | Hamlet, North Carolina | LOGGED BY: | JP |
| DRILLING CONTRACTOR: | S&ME | | |
| DRILLING METHOD: | Macrocore | | |
| DATE DRILLED: | 9/8/2010 | | |

| STRATA DESCRIPTION | SYMBOL | DEPTH (feet) | WELL DETAILS | DEPTH (feet) | LEGEND | SPT (N-value) | ELEVATION (feet) | FID (ppm) | PID (ppm) |
|---|---|---|---|---|---|---|---|---|---|
| Ground Surface | | | | | | | 417.80 | | |
| Topsoil 4", light brown/ tan fine/ medium SAND | | 0.0 | | 0.2 | | | 412.80 | | 0.8 |
| Light brown clayey SAND, tan/ orange at 9', medium grain | | 5.0 | | | | | 407.80 | | 1.2 |
| | | 10.0 | | | | | 402.80 | | 0.7 |
| Tan/ grey/ white clayey SILT (very hard) | | 15.0 | | | | | | | 0.8 |
| Tan/ orange clayey medium SAND | | | | | | | | | |
| Tan/ orange medium silty SAND (damp) | | | | | | | 397.80 | | 0.7 |
| | | 20.0 | | | | | 392.80 | | 0.2 |
| | | 25.0 | | | | | | | 0.8 |
| | | | | | | | 387.80 | | |
| Tan medium silty SAND, 31-32' silty fine SAND tan/ light brown w/ pink | | 30.0 | | | | | | | 0.8 |
| Light tan/ brown silty fine SAND | | | | | | | 382.80 | | 0.6 |
| Brown/ tan well graded silty SAND w/ medium white silty SAND | | 35.0 | | 36 | CG | | | | |
| | | | | 38.5 | BS | | 377.80 | | 0.7 |
| Pink to tan medium to large grain SAND | | 40.0 | | | | | | | |
| Red/ tan fine silty SAND, (wet) saturated | | | | | | | 372.80 | | |
| | | 45.0 | | 48.5 | FP | | | | |
| Boring terminated at 49' bgs, well | | | | 49 | BSC | | | | |

**WELL CONSTRUCTION DETAILS**

PROTECTIVE CASING
- Diameter:
- Type:
- Interval:

OUTER CASING
- Diameter:
- Type:
- Length:

RISER CASING
- Diameter:
- Type:
- Interval:

GROUT
- Type: **cement**
- Interval: **0 - 36**

SEAL
- Type: **bentonite pre-packed**
- Interval: **36 - 38.5**

FILTERPACK
- Type: **silica pre-packaged**
- Interval: **38.5 - 48.5**

SCREEN
- Diameter: **1"**
- Type: **pvc pre-packed**
- Interval: **38.5 - 48.5**

LEGEND
- ▽ = Water Level At Termination of Boring (TOB)
- ▼ = Water Level After ~24 Hours
- BS = Bentonite Seal
- FP = Filter Pack
- CG = Cement Grout
- BSC = Bottom of Screen
- REC = Core Recovery
- RQD = Rock Quality Designation

NOTES:

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3201 Spring Forest Road
Raleigh, NC 27616

COMPLETION REPORT
OF PEIZOMETER NO. GP-6

# COMPLETION REPORT OF PEIZOMETER NO. GP-7

| | | | |
|---|---|---|---|
| PROJECT: | Mary Chappell Site | APPROXIMATE ELEVATION: | 416.6 |
| PROJECT NO: | 1054-10-2003 | BORING DEPTH (FT.): | 39.9 |
| PROJECT LOCATION: | Hamlet, North Carolina | LOGGED BY: | JP |
| DRILLING CONTRACTOR: | S&ME | | |
| DRILLING METHOD: | Macrocore | | |
| DATE DRILLED: | 9/8/2010 | | |

| STRATA DESCRIPTION | SYMBOL | DEPTH (feet) | WELL DETAILS | DEPTH (feet) | LEGEND | SPT (N-value) | ELEVATION (feet) | FID (ppm) | PID (ppm) |
|---|---|---|---|---|---|---|---|---|---|
| Ground Surface | | | | | | | 416.60 | | |
| Tan/ brown medium SAND | | 0.0 | | 0.2 | | | 411.60 | | 0.0 |
| Tan/ orange medium clayey SAND, very firm | | 5.0 | | | | | 406.60 | | 0.0 |
| | | 10.0 | | | | | | | 0.0 |
| Tan SAND medium (moist), tan/ white fluffy @ 18' bgs | | | | | | | 401.60 | | 0.2 |
| | | 15.0 | | | | | 396.60 | | 0.1 |
| | | 20.0 | | | | | | | |
| White arge grain clayey SAND to yellow/ tan | | | | | | | 391.60 | | 0.0 |
| Tan clayey SAND, medium- large grain to 27' then fine silty SAND | | 25.0 | | 27.4 | CG | | 386.60 | | 0.8 |
| Fine tan silty SAND - dark layer w/quartz @ 31' | | 30.0 | | 29.9 | BS | | | | 0.0 |
| Tan clayey SAND to 33' then dark brown clayey SAND w/ quartz to 35', then tan fine SAND | | | | | | | 381.60 | | 0.0 |
| | | 35.0 | | | | | | | |
| Medium to fine white/ tan CLAY, wet | | | | | | | | | 0.0 |
| Red to red/ grey very tight silty CLAY, red to purple marble clay @40', wet | | | | 39.9<br>41 | FP<br>BSC | | | | |
| Boring terminated at 41' bgs, well set @ 39.90' bgs | | | | | | | | | |

**WELL CONSTRUCTION DETAILS**

PROTECTIVE CASING
Diameter:
Type:
Interval:

OUTER CASING
Diameter:
Type:
Length:

RISER CASING
Diameter:
Type:
Interval:

GROUT
Type: **cement**
Interval: **0 - 27.4**

SEAL
Type: **bentonite pre-packed**
Interval: **27.4 - 29.9**

FILTERPACK
Type: **silica pre-packaged**
Interval: **29.9 - 39.9**

SCREEN
Diameter: **1"**
Type: **pvc pre-packed**
Interval: **29.9 - 39.9**

LEGEND
- ▽ = Water Level At Termination of Boring (TOB)
- ▼ = Water Level After ~24 Hours
- BS = Bentonite Seal
- FP = Filter Pack
- CG = Cement Grout
- BSC = Bottom of Screen
- REC = Core Recovery
- RQD = Rock Quality Designation

NOTES:

S&ME
ENGINEERING • TESTING
ENVIRONMENTAL SERVICES
3201 Spring Forest Road
Raleigh, NC 27616

COMPLETION REPORT
OF PEIZOMETER NO. GP-7

# NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 2907

**1. WELL CONTRACTOR:**

Tom Whitehead
Well Contractor (Individual) Name

S&ME, Inc.
Well Contractor Company Name

3201 Spring Forest Road
Street Address

Raleigh NC 27616
City or Town State Zip Code

(919) 872-2660
Area code Phone number

**2. WELL INFORMATION:**

WELL CONSTRUCTION PERMIT# WM0600824

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) GP-1

**3. WELL USE** (Check One Box) Monitoring ☑ Municipal/Public ☐

Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐

Irrigation ☐ Other ☐ (list use)

DATE DRILLED 9/9/2010

**4. WELL LOCATION:**

1061 Highway 177 North - 28345
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: Hamlet COUNTY Richmond

TOPOGRAPHIC / LAND SETTING: (check appropriate box)

☐Slope ☐Valley ☑Flat ☐Ridge ☐Other

LATITUDE 34 ° 55 ' 50.7100 " DMS OR 3x.xxxxxxxxx DD

LONGITUDE 79 ° 38 ' 18.3100 " DMS OR 7x.xxxxxxxxx DD

Latitude/longitude source: ☑GPS ☐Topographic map

*(location of well must be shown on a USGS topo map andattached to this form if not using GPS)*

**5. FACILITY** (Name of the business where the well is located.)

Mary Chappell Site NONCD000286
Facility Name Facility ID# (if applicable)

1061 Highway 177 North
Street Address

Hamlet NC 28345
City or Town State Zip Code

Mr. Sean Boyles (NCDENR-Project Mgr.)
Contact Name

225 Green Street, Suite 714
Mailing Address

Fayetteville NC 28301
City or Town State Zip Code

(910) 433-3345
Area code Phone number

**6. WELL DETAILS:**

a. **TOTAL DEPTH:** 48.5

b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑

c. **WATER LEVEL** Below Top of Casing: 44.91 FT
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** -0.2 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** _____ **METHOD OF TEST** _____

f. **DISINFECTION: Type** _____ **Amount** _____

g. **WATER ZONES** (depth):

Top ____ Bottom ____ Top ____ Bottom ____
Top ____ Bottom ____ Top ____ Bottom ____
Top ____ Bottom ____ Top ____ Bottom ____

| 7. CASING: | Depth | | Diameter | Thickness/ Weight | Material |
|---|---|---|---|---|---|
| Top -0.2 | Bottom 38.5 | Ft. | 1" | sch 40 | PVC |
| Top | Bottom | Ft. | | | |
| Top | Bottom | Ft. | | | |

| 8. GROUT: | Depth | | Material | Method |
|---|---|---|---|---|
| Top 36.0 | Bottom 38.5 | Ft. | Bentonite | pre-packed |
| Top -0.4 | Bottom 36.0 | Ft. | Cement | Tremie |
| Top | Bottom | Ft. | | |

| 9. SCREEN: | Depth | | Diameter | | Slot Size | | Material |
|---|---|---|---|---|---|---|---|
| Top 38.5 | Bottom 48.5 | Ft. | 1 | in. | .010 | in. | PVC |
| Top | Bottom | Ft. | | in. | | in. | pre-packed |
| Top | Bottom | Ft. | | in. | | in. | |

**10. SAND/GRAVEL PACK:**

| | Depth | | Size | Material |
|---|---|---|---|---|
| Top 38.5 | Bottom 48.5 | Ft. | #2 | Silica pre-packed |
| Top | Bottom | Ft. | | |
| Top | Bottom | Ft. | | |

11. DRILLING LOG

| Top | Bottom | Formation Description |
|---|---|---|
| 0 | 11.0 | Tan/brown medium sand |
| 11.0 | 15.0 | Orange clayey sand |
| 15.0 | 17.0 | Tan/White fine sand |
| 17.0 | 25.0 | Tan/white medium sand |
| 25.0 | 29.0 | White large clayey sand |
| 29.0 | 33.0 | Tan/white fine silty sa |
| 33.0 | 49.0 | Tan/lt brown large grain sand |
| 49.0 | - | hit refusal on silty white clay |
| | | |
| | | |
| | | |

**12. REMARKS:**

~~Pre-packaged well screens and bentonite seal~~

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

[signature] 10/20/10
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

Thomas Whitehead
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

**Submit within 30 days of completion to: Division of Water Quality - Information Processing, 1617 Mail Service Center, Raleigh, NC 27699-161, Phone : (919) 807-6300**

Form GW-1b
Rev. 2/09

# NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

**WELL CONTRACTOR CERTIFICATION #** 2907

**1. WELL CONTRACTOR:**

Tom Whitehead
Well Contractor (Individual) Name

S&ME, Inc.
Well Contractor Company Name

3201 Spring Forest Road
Street Address

Raleigh NC 27616
City or Town State Zip Code

(919) 872-2660
Area code Phone number

**2. WELL INFORMATION:**

WELL CONSTRUCTION PERMIT# WM0600824

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) GP-2

**3. WELL USE** (Check One Box) Monitoring ☑ Municipal/Public ☐

Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐

Irrigation ☐ Other ☐ (list use)

**DATE DRILLED** 9/9/2010

**4. WELL LOCATION:**

1061 Highway 177 North - 28345
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: Hamlet COUNTY Richmond

TOPOGRAPHIC / LAND SETTING: (check appropriate box)

☐ Slope ☐ Valley ☑ Flat ☐ Ridge ☐ Other

LATITUDE 34 ° 55 ' 50.3100 " DMS OR 3x.xxxxxxxxx DD

LONGITUDE 79 ° 38 ' 18.2200 " DMS OR 7x.xxxxxxxxx DD

Latitude/longitude source: ☑ GPS ☐ Topographic map

*(location of well must be shown on a USGS topo map andattached to this form if not using GPS)*

**5. FACILITY** (Name of the business where the well is located.)

Mary Chappell Site NONCD000286
Facility Name Facility ID# (if applicable)

1061 Highway 177 North
Street Address

Hamlet NC 28345
City or Town State Zip Code

Mr. Sean Boyles (NCDENR-Project Mgr.)
Contact Name

225 Green Street, Suite 714
Mailing Address

Fayetteville NC 28301
City or Town State Zip Code

(910) 433-3345
Area code Phone number

**6. WELL DETAILS:**

a. **TOTAL DEPTH:** 45.65

b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑

c. **WATER LEVEL** Below Top of Casing: 44.56 FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** -0.2 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** _____ **METHOD OF TEST** _____

f. **DISINFECTION: Type** _____ **Amount** _____

g. **WATER ZONES** (depth):

Top ____ Bottom ____ Top ____ Bottom ____
Top ____ Bottom ____ Top ____ Bottom ____
Top ____ Bottom ____ Top ____ Bottom ____

**7. CASING:**

| Depth | | Diameter | Thickness/ Weight | Material |
|---|---|---|---|---|
| Top -0.2 | Bottom 35.65 Ft. | 1" | sch 40 | PVC |
| Top | Bottom Ft. | | | |
| Top | Bottom Ft. | | | |

**8. GROUT:**

| Depth | | Material | Method |
|---|---|---|---|
| Top 33.15 | Bottom 35.65 Ft. | Bentonite | pre-packed |
| Top -0.4 | Bottom 33.15 Ft. | Cement | Tremie |
| Top | Bottom Ft. | | |

**9. SCREEN:**

| Depth | | Diameter | Slot Size | Material |
|---|---|---|---|---|
| Top 35.65 | Bottom 45.65 Ft. | 1 in. | .010 in. | PVC |
| Top | Bottom Ft. | in. | in. | pre-packed |
| Top | Bottom Ft. | in. | in. | |

**10. SAND/GRAVEL PACK:**

| Depth | | Size | Material |
|---|---|---|---|
| Top 35.65 | Bottom 45.65 Ft. | #2 | Silica pre-packed |
| Top | Bottom Ft. | | |
| Top | Bottom Ft. | | |

11. DRILLING LOG

| Top | Bottom | Formation Description |
|---|---|---|
| 0 | 9.0 | Tan medium sand |
| 9.0 | 17.0 | Tan/orange clayey sand |
| 17.0 | 21.0 | Tan/orange silty fine sand |
| 21.0 | 25.0 | Tan/orange silty sand |
| 25.0 | 30.0 | Tan/white large silty sand |
| 30.0 | 33.0 | fine tan silty sand |
| 33.0 | 41.0 | Tan/lt brown silty sand |
| 41.0 | 46.0 | Tan/brown silty sand |
| 46.0 | - | hit refusal on hard white silty clay |
| | | |
| | | |

**12. REMARKS:**

~~Pre-packaged well screens and bentonite seal~~

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Thomas Whitehead 10/20/10
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

Thomas Whitehead
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

**Submit within 30 days of completion to: Division of Water Quality - Information Processing, 1617 Mail Service Center, Raleigh, NC 27699-161, Phone : (919) 807-6300**

Form GW-1b
Rev. 2/09

# NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 2907

**1. WELL CONTRACTOR:**

Tom Whitehead
Well Contractor (Individual) Name

S&ME, Inc.
Well Contractor Company Name

3201 Spring Forest Road
Street Address

Raleigh NC 27616
City or Town State Zip Code

(919) 872-2660
Area code Phone number

**2. WELL INFORMATION:**

WELL CONSTRUCTION PERMIT# WM0600824

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) GP-3

**3. WELL USE** (Check One Box) Monitoring ☑ Municipal/Public ☐

Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐

Irrigation ☐ Other ☐ (list use)

DATE DRILLED 9/9/2010

**4. WELL LOCATION:**

1061 Highway 177 North - 28345
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: Hamlet COUNTY Richmond

TOPOGRAPHIC / LAND SETTING: (check appropriate box)

☐ Slope ☐ Valley ☑ Flat ☐ Ridge ☐ Other

LATITUDE 34 ° 55 ' 50.1800 " DMS OR 3x.xxxxxxxx DD

LONGITUDE 79 ° 38 ' 19.5100 " DMS OR 7x.xxxxxxxx DD

Latitude/longitude source: ☑ GPS ☐ Topographic map

*(location of well must be shown on a USGS topo map andattached to this form if not using GPS)*

**5. FACILITY** (Name of the business where the well is located.)

Mary Chappell Site NONCD000286
Facility Name Facility ID# (if applicable)

1061 Highway 177 North
Street Address

Hamlet NC 28345
City or Town State Zip Code

Mr. Sean Boyles (NCDENR-Project Mgr.)
Contact Name

225 Green Street, Suite 714
Mailing Address

Fayetteville NC 28301
City or Town State Zip Code

(910) 433-3345
Area code Phone number

**6. WELL DETAILS:**

a. **TOTAL DEPTH:** 44.72

b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑

c. **WATER LEVEL** Below Top of Casing: 42.37 FT
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** -0.2 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** _____ **METHOD OF TEST** _____

f. **DISINFECTION: Type** _____ **Amount** _____

g. **WATER ZONES** (depth):

| | | | |
|---|---|---|---|
| Top | Bottom | Top | Bottom |
| Top | Bottom | Top | Bottom |
| Top | Bottom | Top | Bottom |

**7. CASING:**

| Depth | | Diameter | Thickness/ Weight | Material |
|---|---|---|---|---|
| Top -0.2 | Bottom 34.72 Ft. | 1" | sch 40 | PVC |
| Top | Bottom Ft. | | | |
| Top | Bottom Ft. | | | |

**8. GROUT:**

| Depth | | Material | Method |
|---|---|---|---|
| Top 32.22 | Bottom 34.72 Ft. | Bentonite | pre-packed |
| Top -0.4 | Bottom 32.72 Ft. | Cement | Tremie |
| Top | Bottom Ft. | | |

**9. SCREEN:**

| Depth | | Diameter | Slot Size | Material |
|---|---|---|---|---|
| Top 34.72 | Bottom 44.72 Ft. | 1 in. | .010 in. | PVC |
| Top | Bottom Ft. | in. | in. | pre-packed |
| Top | Bottom Ft. | in. | in. | |

**10. SAND/GRAVEL PACK:**

| Depth | | Size | Material |
|---|---|---|---|
| Top 34.72 | Bottom 44.72 Ft. | #2 | Silica pre-packed |
| Top | Bottom Ft. | | |
| Top | Bottom Ft. | | |

11. DRILLING LOG

| Top | Bottom | Formation Description |
|---|---|---|
| 0 | 9.0 | Tan fine/medium sand |
| 9.0 | 17.0 | Red/tan clayey sand |
| 17.0 | 21.0 | Tan fine to medium sand |
| 21.0 | 23.0 | Tan med clayey sand |
| 23.0 | 29.0 | Tan/lt brown large silty sand |
| 29.0 | 45.0 | Grey silty clay |
| 45.0 | - | hit refusal on grey silty clay |
| | | |
| | | |
| | | |
| | | |

**12. REMARKS:**

~~Pre-packaged well screens and bentonite seal~~

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

[signature] 10/20/10
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

Thomas Whitehead
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

**Submit within 30 days of completion to: Division of Water Quality - Information Processing, 1617 Mail Service Center, Raleigh, NC 27699-161, Phone : (919) 807-6300**

Form GW-1b
Rev. 2/09

# NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 2907

**1. WELL CONTRACTOR:**

Tom Whitehead
Well Contractor (Individual) Name

S&ME, Inc.
Well Contractor Company Name

3201 Spring Forest Road
Street Address

Raleigh NC 27616
City or Town State Zip Code

(919) 872-2660
Area code Phone number

**2. WELL INFORMATION:**

WELL CONSTRUCTION PERMIT# WM0600824

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) GP-4

**3. WELL USE** (Check One Box) Monitoring ☑ Municipal/Public ☐

Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐

Irrigation ☐ Other ☐ (list use)

DATE DRILLED 9/9/2010

**4. WELL LOCATION:**

1061 Highway 177 North - 28345
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: Hamlet COUNTY Richmond

TOPOGRAPHIC / LAND SETTING: (check appropriate box)

☐ Slope ☐ Valley ☑ Flat ☐ Ridge ☐ Other

LATITUDE 34 ° 55 ' 49.2000 " DMS OR 3x.xxxxxxxxx DD

LONGITUDE 79 ° 38 ' 21.0100 " DMS OR 7x.xxxxxxxxx DD

Latitude/longitude source: ☑ GPS ☐ Topographic map

*(location of well must be shown on a USGS topo map andattached to this form if not using GPS)*

**5. FACILITY** (Name of the business where the well is located.)

Mary Chappell Site NONCD000286
Facility Name Facility ID# (if applicable)

1061 Highway 177 North
Street Address

Hamlet NC 28345
City or Town State Zip Code

Mr. Sean Boyles (NCDENR-Project Mgr.)
Contact Name

225 Green Street, Suite 714
Mailing Address

Fayetteville NC 28301
City or Town State Zip Code

(910) 433-3345
Area code Phone number

**6. WELL DETAILS:**

a. **TOTAL DEPTH:** 39.80

b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑

c. **WATER LEVEL** Below Top of Casing: 37.45 FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** -0.2 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** _____ **METHOD OF TEST** _____

f. **DISINFECTION: Type** _____ **Amount** _____

g. **WATER ZONES** (depth):

| | | | |
|---|---|---|---|
| Top | Bottom | Top | Bottom |
| Top | Bottom | Top | Bottom |
| Top | Bottom | Top | Bottom |

**7. CASING:**

| Depth | | Diameter | Thickness/ Weight | Material |
|---|---|---|---|---|
| Top -0.2 | Bottom 29.80 Ft. | 1" | sch 40 | PVC |
| Top | Bottom Ft. | | | |
| Top | Bottom Ft. | | | |

**8. GROUT:**

| Depth | | Material | Method |
|---|---|---|---|
| Top 27.30 | Bottom 29.80 Ft. | Bentonite | pre-packed |
| Top -0.4 | Bottom 27.30 Ft. | Cement | Tremie |
| Top | Bottom Ft. | | |

**9. SCREEN:**

| Depth | | Diameter | Slot Size | Material |
|---|---|---|---|---|
| Top 29.90 | Bottom 39.80 Ft. | 1 in. | .010 in. | PVC |
| Top | Bottom Ft. | in. | in. | pre-packed |
| Top | Bottom Ft. | in. | in. | |

**10. SAND/GRAVEL PACK:**

| Depth | | Size | Material |
|---|---|---|---|
| Top 29.80 | Bottom 39.80 Ft. | #2 | Silica pre-packed |
| Top | Bottom Ft. | | |
| Top | Bottom Ft. | | |

11. DRILLING LOG

| Top | Bottom | Formation Description |
|---|---|---|
| 0 | 5.0 | Brown medium sand |
| 5.0 | 13.0 | Orange/tan clayey sand |
| 13.0 | 17.0 | Orange/tan fine sand |
| 17.0 | 25.0 | Lt tan/white med sand |
| 25.0 | 26.0 | White clayey silt |
| 2.60 | 31.5 | Tan/white fine med sand |
| 31.5 | 33.0 | Tan/pink fine sand |
| 33.0 | 39.0 | Tan/lt brown large sand |
| 39.0 | 40.0 | White silty clay very hard |
| 40.0 | - | hit refusal on white silty clay |
| | | |

**12. REMARKS:**

~~Pre-packaged well screens and bentonite seal~~

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

[signature] 10/20/10
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

Thomas Whitehead
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

**Submit within 30 days of completion to: Division of Water Quality - Information Processing, 1617 Mail Service Center, Raleigh, NC 27699-161, Phone : (919) 807-6300**

Form GW-1b
Rev. 2/09

# NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 2907

**1. WELL CONTRACTOR:**

Tom Whitehead
Well Contractor (Individual) Name

S&ME, Inc.
Well Contractor Company Name

3201 Spring Forest Road
Street Address

Raleigh NC 27616
City or Town State Zip Code

(919) 872-2660
Area code Phone number

**2. WELL INFORMATION:**

WELL CONSTRUCTION PERMIT# WM0600824

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) GP-6

**3. WELL USE** (Check One Box) Monitoring ☑ Municipal/Public ☐

Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐

Irrigation ☐ Other ☐ (list use)

DATE DRILLED 9/8/2010

**4. WELL LOCATION:**

1061 Highway 177 North - 28345
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: Hamlet COUNTY Richmond

TOPOGRAPHIC / LAND SETTING: (check appropriate box)

☐ Slope ☐ Valley ☑ Flat ☐ Ridge ☐ Other

LATITUDE 34 ° 55 ' 47.7000 " DMS OR 3x.xxxxxxxxx DD

LONGITUDE 79 ° 38 ' 17.7200 " DMS OR 7x.xxxxxxxxx DD

Latitude/longitude source: ☑ GPS ☐ Topographic map

*(location of well must be shown on a USGS topo map andattached to this form if not using GPS)*

**5. FACILITY** (Name of the business where the well is located.)

Mary Chappell Site NONCD000286
Facility Name Facility ID# (if applicable)

1061 Highway 177 North
Street Address

Hamlet NC 28345
City or Town State Zip Code

Mr. Sean Boyles (NCDENR-Project Mgr.)
Contact Name

225 Green Street, Suite 714
Mailing Address

Fayetteville NC 28301
City or Town State Zip Code

(910) 433-3345
Area code Phone number

**6. WELL DETAILS:**

a. **TOTAL DEPTH:** 48.50

b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑

c. **WATER LEVEL** Below Top of Casing: 46.68 FT.
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** -0.2 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** _____ **METHOD OF TEST** _____

f. **DISINFECTION: Type** _____ **Amount** _____

g. **WATER ZONES** (depth):

Top ____ Bottom ____ Top ____ Bottom ____
Top ____ Bottom ____ Top ____ Bottom ____
Top ____ Bottom ____ Top ____ Bottom ____

**7. CASING:**

| | Depth | | Diameter | Thickness/ Weight | Material |
|---|---|---|---|---|---|
| Top -0.2 | Bottom 38.5 | Ft. | 1" | sch 40 | PVC |
| Top | Bottom | Ft. | | | |
| Top | Bottom | Ft. | | | |

**8. GROUT:**

| | Depth | | Material | Method |
|---|---|---|---|---|
| Top 36.0 | Bottom 38.5 | Ft. | Bentonite | pre-packed |
| Top -0.4 | Bottom 36.0 | Ft. | Cement | Tremie |
| Top | Bottom | Ft. | | |

**9. SCREEN:**

| | Depth | | Diameter | Slot Size | Material |
|---|---|---|---|---|---|
| Top 38.5 | Bottom 48.5 | Ft. | 1 in. | .010 in. | PVC |
| Top | Bottom | Ft. | in. | in. | pre-packed |
| Top | Bottom | Ft. | in. | in. | |

**10. SAND/GRAVEL PACK:**

| | Depth | | Size | Material |
|---|---|---|---|---|
| Top 38.5 | Bottom 48.5 | Ft. | #2 | Silica pre-packed |
| Top | Bottom | Ft. | | |
| Top | Bottom | Ft. | | |

**11. DRILLING LOG**

| Top | Bottom | Formation Description |
|---|---|---|
| 0 | 5.0 | Lt brown/tan fine sand |
| 5.0 | 8.0 | Lt brown/tan clayey sand |
| 8.0 | 14.0 | Orange/tan clayey sand |
| 14.0 | 16.0 | Lt tan/white clayey silt |
| 16.0 | 17.0 | Tan/orange clayey sand medium |
| 17.0 | 29.0 | Tan/orange medium silty sand |
| 29.0 | 38.0 | Lt tan/brown silty sand |
| 38.0 | 42.0 | Pink/tan medium/lg sand |
| 42.0 | 49.0 | Red/tan fine silty sand |
| | | |
| | | |

**12. REMARKS:**

~~Pre-packaged well screens and bentonite seal~~

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

[signature] 10/20/10
SIGNATURE OF CERTIFIED WELL CONTRACTOR DATE

Thomas L. Whitehead
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

**Submit within 30 days of completion to: Division of Water Quality - Information Processing, 1617 Mail Service Center, Raleigh, NC 27699-161, Phone : (919) 807-6300**

Form GW-1b
Rev. 2/09

# NON RESIDENTIAL WELL CONSTRUCTION RECORD

North Carolina Department of Environment and Natural Resources- Division of Water Quality

WELL CONTRACTOR CERTIFICATION # 2907

**1. WELL CONTRACTOR:**

Tom Whitehead
Well Contractor (Individual) Name

S&ME, Inc.
Well Contractor Company Name

3201 Spring Forest Road
Street Address

Raleigh NC 27616
City or Town State Zip Code

(919) 872-2660
Area code Phone number

**2. WELL INFORMATION:**

WELL CONSTRUCTION PERMIT# WM0600824

OTHER ASSOCIATED PERMIT#(if applicable)

SITE WELL ID #(if applicable) GP-7

**3. WELL USE** (Check One Box) Monitoring ☑ Municipal/Public ☐

Industrial/Commercial ☐ Agricultural ☐ Recovery ☐ Injection ☐

Irrigation ☐ Other ☐ (list use)

DATE DRILLED 9/8/2010

**4. WELL LOCATION:**

1061 Highway 177 North - 28345
(Street Name, Numbers, Community, Subdivision, Lot No., Parcel, Zip Code)

CITY: Hamlet COUNTY Richmond

TOPOGRAPHIC / LAND SETTING: (check appropriate box)

☐ Slope ☐ Valley ☑ Flat ☐ Ridge ☐ Other

LATITUDE 34 ° 55 ' 50.8600 " DMS OR 3x.xxxxxxxx DD

LONGITUDE 79 ° 38 ' 22.1000 " DMS OR 7x.xxxxxxxx DD

Latitude/longitude source: ☑ GPS ☐ Topographic map

*(location of well must be shown on a USGS topo map andattached to this form if not using GPS)*

**5. FACILITY** (Name of the business where the well is located.)

Mary Chappell Site NONCD000286
Facility Name Facility ID# (if applicable)

1061 Highway 177 North
Street Address

Hamlet NC 28345
City or Town State Zip Code

Mr. Sean Boyles (NCDENR-Project Mgr.)
Contact Name

225 Green Street, Suite 714
Mailing Address

Fayetteville NC 28301
City or Town State Zip Code

(910) 433-3345
Area code Phone number

**6. WELL DETAILS:**

a. **TOTAL DEPTH:** 39.90

b. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☑

c. **WATER LEVEL** Below Top of Casing: 37.90 FT
(Use "+" if Above Top of Casing)

d. **TOP OF CASING IS** -0.2 FT. Above Land Surface*
*Top of casing terminated at/or below land surface may require a variance in accordance with 15A NCAC 2C .0118.

e. **YIELD (gpm):** _____ **METHOD OF TEST** _____

f. **DISINFECTION: Type** _____ **Amount** _____

g. **WATER ZONES** (depth):

| | | | |
|---|---|---|---|
| Top | Bottom | Top | Bottom |
| Top | Bottom | Top | Bottom |
| Top | Bottom | Top | Bottom |

**7. CASING:**

| Depth | | Diameter | Thickness/ Weight | Material |
|---|---|---|---|---|
| Top -0.2 | Bottom 29.90 Ft. | 1" | sch 40 | PVC |
| Top | Bottom Ft. | | | |
| Top | Bottom Ft. | | | |

**8. GROUT:**

| Depth | | Material | Method |
|---|---|---|---|
| Top 27.40 | Bottom 29.90 Ft. | Bentonite | pre-packed |
| Top -0.4 | Bottom 27.40 Ft. | Cement | Tremie |
| Top | Bottom Ft. | | |

**9. SCREEN:**

| Depth | | Diameter | Slot Size | Material |
|---|---|---|---|---|
| Top 29.90 | Bottom 39.90 Ft. | 1 in. | .010 in. | PVC |
| Top | Bottom Ft. | in. | in. | pre-packed |
| Top | Bottom Ft. | in. | in. | |

**10. SAND/GRAVEL PACK:**

| Depth | | Size | Material |
|---|---|---|---|
| Top 29.90 | Bottom 39.90 Ft. | #2 | Silica pre-packed |
| Top | Bottom Ft. | | |
| Top | Bottom Ft. | | |

**11. DRILLING LOG**

| Top | Bottom | Formation Description |
|---|---|---|
| 0 | 5.0 | Brown/tan medium sand |
| 5.0 | 9.0 | Tan/orange medium clayey sand |
| 9.0 | 13.0 | Tan clayey sand |
| 13.0 | 21.0 | Tan medium sand |
| 21.0 | 25.0 | White large grain clayey sand |
| 25.0 | 29.0 | Tan clayey sand med-lg grain |
| 29.0 | 32.0 | Tan fine silty sand |
| 32.0 | 36.0 | Tan clayey sand |
| 36.0 | 38.5 | Medium to fine white/tan clay |
| 38.5 | 41.0 | Red/purple marbled silty clay |
| | | |

**12. REMARKS:**

~~Pre-packaged well screens and bentonite seal~~

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

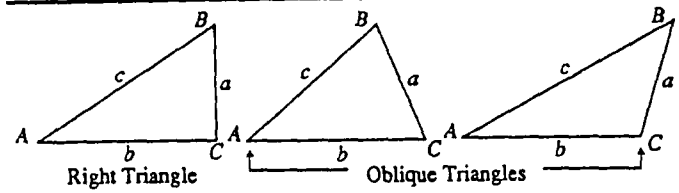
SIGNATURE OF CERTIFIED WELL CONTRACTOR — DATE 10/20/10

Thomas Whitehead
PRINTED NAME OF PERSON CONSTRUCTING THE WELL

**Submit within 30 days of completion to: Division of Water Quality - Information Processing, 1617 Mail Service Center, Raleigh, NC 27699-161, Phone : (919) 807-6300**

Form GW-1b
Rev. 2/09

## TRIGONOMETRIC FORMULÆ




### Solution of Right Triangles

For Angle $A$. $\sin = \frac{a}{c}$, $\cos = \frac{b}{c}$, $\tan = \frac{a}{b}$, $\cot = \frac{b}{a}$, $\sec = \frac{c}{b}$, $\text{cosec} = \frac{c}{a}$

| Given | Required | |
|---|---|---|
| $a, b$ | $A, B, c$ | $\tan A = \frac{a}{b} = \cot B,\ c = \sqrt{a^2+b^2} = a\sqrt{1+\frac{b^2}{a^2}}$ |
| $a, c$ | $A, B, b$ | $\sin A = \frac{a}{c} = \cos B,\ b = \sqrt{(c+a)(c-a)} = c\sqrt{1-\frac{a^2}{c^2}}$ |
| $A, a$ | $B, b, c$ | $B = 90° - A,\ b = a \cot A,\ c = \frac{a}{\sin A}.$ |
| $A, b$ | $B, a, c$ | $B = 90° - A,\ a = b \tan A,\ c = \frac{b}{\cos A}.$ |
| $A, c$ | $B, a, b$ | $B = 90° - A,\ a = c \sin A,\ b = c \cos A,$ |

### Solution of Oblique Triangles

| Given | Required | |
|---|---|---|
| $A, B, a$ | $b, c, C$ | $b = \frac{a \sin B}{\sin A},\ C = 180°-(A+B),\ c = \frac{a \sin C}{\sin A}$ |
| $A, a, b$ | $B, c, C$ | $\sin B = \frac{b \sin A}{a},\ C = 180° - (A+B),\ c = \frac{a \sin C}{\sin A}$ |
| $a, b, C$ | $A, B, c$ | $A + B = 180° - C,\ \tan \frac{1}{2}(A-B) = \frac{(a-b)\tan\frac{1}{2}(A+B)}{a+b},$ $c = \frac{a \sin C}{\sin A}$ |
| $a, b, c$ | $A, B, C$ | $s = \frac{a+b+c}{2},\ \sin\frac{1}{2}A = \sqrt{\frac{(s-b)(s-c)}{bc}},$ $\sin\frac{1}{2}B = \sqrt{\frac{(s-a)(s-c)}{ac}},\ C = 180° - (A+B)$ |
| $a, b, c$ | Area | $s = \frac{a+b+c}{2},\ \text{area} = \sqrt{s(s-a)(s-b)(s-c)}$ |
| $A, b, c$ | Area | $\text{area} = \frac{bc \sin A}{2}$ |
| $A, B, C, a$ | Area | $\text{area} = \frac{a^2 \sin B \sin C}{2 \sin A}$ |

Hamlet, NC

(1)

9/7/10 1054-10-2003

Sunny 90's MARY Chappel Site

On Site David Wells
Gerald Paul
Keith Snavely NCDENR
Mike Norton Health Dept
David Brown NCDENR
SEAN Boyle NCDENR R.M

0830 - Arrived on Site
0845 - David Wells On Site
- laid out borings / Site photos
0915 - Bateman on site to locate utilities
Re positioned GP-7 6' closer to bldg / cars
1130 - 5 + ME Drillers on Site
1155 - Started Drilling after Hts meeting

GP-5

0-5 light tan Sand (topsoil 6") 2' Rec
5-6 H brown to dark brown Clayey Sand
6-7 Or to brown Clayey Sand
7-7.5 - grey Sand. (med)
7.5-10 - tan/or Clayey Sand (Very hard) sand
10-12 - tan/or w/brown Sand mixed w/ clayey
12-14 grey / red Clayey Sand (med) Very hard
14-18 large grain Sand w/ or clayey Sand (gtk)
18-20 - " "
20-22 - fine light tan Sand (moist)

GP-5 Cont (2)

22-26 mixed layers of firm white Sand to brown Clayey Sand. Zone of oxidation @ 23.5 to 24' bgs Poss Seasonal high Water table?
26-30 Fine tan Sand w/qtz (moist)
30-31 " "
31-34 Brown Clayey Sand wet @ 32' med Sand to 34' 32.5 - Dark brown oxi layers
34-35 Silty fine Sand pink to lt brown
35-37.5 - Silty fine/med Sand banded w/pink to tan layers
37.5-38 lt tan to grey silty Sand pink @ 37.5
38-40 white Silty Fine grained Sand.
40-42 tan med to Fine grained Sand
42-44 white med to fine Sand (Silty)
44-46 " "

Set Screen to 36-46' bgs Pre Packed
Pre Packed Bentonite 33.5-36

* 1630 Set up on GP-4
Utilities too close to boring - moved 4' beyond Utilities to North east.
0.5 brown med Sand 6" topsoil - 3' Rec
5-9-13 OR/tan Clayey Sand med
13-17 - OR/tan fine Sand
17-21 Lt tan/white med Sand (moist)
21-25 med/Lg grain brown/tan Sand. 2" layer of white Clayey Silt @ 23.5 (DRY)

GP-4 cont. (3)

25-26 - white Clayey Silt
26-31.5 - tan/white fine to med Sand (moist)
31.5 water Bearing zone (wet)
31.5-33 - Tan/pink fine Sand (moist)
33-34 tan/brown large Sand (moist)
34 - Dark oxidized layer Brown Sand
34-37 tan to lt brown med Sand Clayey (moist)
37-39 " "
39-41 Very hard white Silty Clay * Con layer
1830 No water in GP-5 2" in GP-4
Cleaned up left Site

9/8/10

0800 Called David wells - No water in GP-5 to Redrill GP-5 to 49'
0815 - H&S meeting
0830 - Set up on GP-5 to 49'
Screen 39-49 Bent 36.5-39
1010 - Sampled mark chappell WSW - at well house
1050 - Sampled William Brown WSW - 2 wells only one in operation. Sampled Brown well @ Spicket on side of home.
Caddell Residence Abandoned - No Power
Second well (house burned down)
1100 Set up on GP-6
0-5 lt brown/tan Fine/med Sand 4" topsoil
3' Rec

(4)

GP-6 cont

5-8- lt brown/tan Clayey Sand
9-14 tan/OR clayey Sand (med grain)
14-16 tan/grey/white Clayey silt (very hard)
16-17 tan/OR Clayey Sand med
17-21 tan/OR med Silty Sand (Damp)
21-25 " "
25-29 " "
29-31 tan/med Silty Sand - 31-32 Silty
Fine Sand tan/lt brown with pink
32-34.8- lt tan/brown Silty Sand Fine
34.8-36 Brown/tan well graded Silty Sand
36-38 brown/tan w/white Silty Sand (med)
38-40 Pink to tan med to lg grain Sand.
40-42 " "
42-44 Red/tan Fine silty Sand (wet) Saturated.
to Drive well to 49' After lunch
1310 - Sampled mary Chappell well
1330-14b - lunch
Set well GP-6 to 49' Screen 39-49
Bent 36.5-39
1630 - Set up on GP-7
0-5 tan/brown med Sand
5-9 tan/OR med Clayey Sand (very firm)
9-13 tan clayey Sand - less clay @ 13'
13-17 tan Sand (med) moist
17-21 tan Sand to 18' Dark band "then
tan/white Fluffy Sand (moist)

(5)

GP7 cont

21-25 White lg grain Clayey Sand to yellow/tan
25-29 tan Clayey Sand med-lg to 27 then fine silty Sand.
29-32 Fine tan silty Sand - Dark layer w/qtz @ 31'
32-36 - tan Clayey Sand to 33 then dark brown
Clayey Sand w/qtz to 35 then tan fine Sand.
36-38.5 - med to fine white/tan Clay (wet)
38.5-40 - Red to Red/grey Very tight Silty Clay
40-41 Very tight Red to purple marbled clay.
Very wet on top of clay
Set GP-7 to 46
9/9/10 on site 0800 Same people on site
X 90's lot Continue drilling
0850 Set up on GP-3 begin drilling - Relocated
GP-3 Due to mult utilities.
0-5 - tan Fine/med sand (6" topsoil)
5-9 - " "
9-13 - Red/tan Clayey Sand med/lg
13-17 Red/tan Clayey Sand to 14' then tan/grey
Silty Clay to 16 then tan fine Sand to 17.
17-21 - fine to med tan Sand slightly clayey (moist)
21-23 - med tan Clayey Sand (moist)
23-25 - tan/lt brown lg Sand (moist)
25-29 - tan to lt brown lg Sand
29-33 - fine tan/brown Silty Sand (moist)
33-37 Very little Recovery Same as above

(6) GP-3 Cont.

37-41 Fine tan Silty Sand w/bars of silty clay @39' + 40' (No Signs of Water.)
Refusal @ 45' bgs Set well to 45'
41-43 Fine tan silty Sand
43-45 Very Stiff Silty gray clay.
1215 lunch
1245 Set up on GP-1
0-5 tan/brown med Sand
5-9 " "
9-11 " "
11-13 med/lg. orange Clayey Sand
13-15 dk/tan Fine clayey Sand "
15-17 tan/white Fine Sand.
17-21 tan/white/pink med grain Sand (moist)
21-25 tan/white med Sand (moist)
Band of oxy Sand @ 24'
25-29 lg. clayey Sand white to 28' then tan to orange Silty clayey Sand.
29-33 tan/white Fine Silty Sand (moist)
33-37 " " Alternating Color white/tan
37-41 " " to 38 then tan/lt brown lg Sand
band of white Silty clay @ 40'
Set GP-1 to 49' bgs
1510 - Set up on GP-2
0-5 tan med Sand
5-9 " "
9-13 tan/or clayey Sand (med grain)

Cont. GP-2 (7)

13-17 tan/or clayey Sand (med grain)
17-21 tan/or/brown hard Silty clay to 19.5 then Fine tan Silty Sand
21-25 tan/or Silty Sand
25-29 tan/white lg Silty Sand (moist)
29-33 " " to 30 then Fine tan Silty Sand
tight tan/white Silty clay @ 32.5'
33-37 - med tan/lt brown Silty Sand (moist)
1" thick band of white Silty clay wet
37-41 - med tan/lt brown Silty Sand
1" thick band white Silty clay @ 38+40
41-45 - tan/brown Silty Sand (wet) wet bands
Set well on clay to 46 Refusal

| | PID GP-3 | | PID GP-1 | |
|---|---|---|---|---|
| 0-5 | 0.2 | ——— | 0.0 | |
| 5-9 | 1.3 | | 0.0 | |
| 9-13 | 74.6 | | 0.6 | |
| 13-17 | 360 | Sampled @ 1250 9/9/10 | 6.8 | |
| 17-21 | 1.6 | | 1.0 | Sampled @ 1345 9/9/10 |
| 21-25 | 0.2 | | 0.6 | |
| 25-29 | 0.1 | | 6.6 | |
| 29-33 | 0.3 | | 6.4 | Collected |
| 33-37 | 0.2 | | 0.2 | Duplicate |
| 37-41 | 0.1 | | 0.6 | Sample on GP-1 |
| 41-45 | — | | — | |

(8)

| PID | GP-6 | GP-7 |
|---|---|---|
| 0-5 | 0.8 | 0.0 |
| 5-9 | 1.2 | 0.0 |
| 9-13 | 0.7 | 0.0 |
| 13-17 | 0.8 | 0.2 |
| 17-21 | 0.7 | 0.1 |
| 21-25 | 0.2 | 0.0 |
| 25-29 | 0.8 | 0.8 |
| 29-32 | 0.8 | 0.0 |
| 32-36 | 0.6 | 0.0 |
| 36-40 | 0.7 | 0.0 |

Sampled @ 1840 9/8/10

| GP-2 | | GP-5 |
|---|---|---|
| 0-5 | 0.1 | 30.4 |
| 5-9 | 0.0 | 21.6 |
| 9-13 | 0.0 | 4.6 |
| 13-17 | 0.0 | 4.3 |
| 17-21 | 0.6 | 5.2 |
| 21-25 | 0.0 | 1.4 |
| 25-29 | 0.0 | 0.9 |
| 29-33 | 0.1 | 0.4 |
| 32-37 | 0.0 | 0.1 |
| 37-41 | 0.0 | 1.0 |
| 41-45 | 0.4 | 1.0 |

Sampled @ 1320 9/7/10

Sampled 1645 9/9/10

Rinse blank Sample @ 1800 9/9/10
on Sleeves

(9)

| GP4 | PID |
|---|---|
| 0-5 | 0.0 |
| 5-9 | 0.0 |
| 9-13 | 0.0 |
| 13-17 | 0.0 |
| 17-21 | 0.1 |
| 21-25 | 0.0 |
| 25-29 | 0.0 |
| 29-33 | 0.4 |
| 33-37 | 0.0 |
| 37-41 | 0.0 |

Sampled @ 0938 9/8/10

9/10/10

| | TWD | Stick up | TWD BGS | $H_2O$ BGS | $H_2O$ BTOC |
|---|---|---|---|---|---|
| GP-1 | 50.60 | 2.1 | 48.5 | 44.83 | 46.93 |
| GP-2 | 46.65 | 1.0 | 45.65 | 44.56 | 45.56 |
| GP-3 | 47.52 | 2.80 | 44.72 | 42.46 | 45.26 |
| GP-4 | 41.2 | 1.4 | 39.80 | 37.50 | 38.90 |
| GP-5 | ~~ABANDONED~~ | | | | |
| GP-6 | 50.0 | 1.5 | 48.50 | 47.0 | 48.23 |
| GP-7 | 42.50 | 2.60 | 39.90 | 38.01 | 40.61 |

9/20/10 on site to Sample many chapell

Water levels

| | |
|---|---|
| GP-3 | 42.37 |
| GP-4 | 37.45 |
| GP-6 | 46.68 |
| GP-1 | 44.91 |
| GP-7 | 37.90 |
| GP-2 | 44.56 |

(10)

GP-3 – Sample time 1115

| temp(C) | Cond(ms/cm) | DO(mg/L) | PH | ORP | Turb |
|---|---|---|---|---|---|
| 21.95 | 0.154 | 3.61 | 4.11 | 110 | ERROR 4 |

GP-4 – Sample time 1145

| | | | | | |
|---|---|---|---|---|---|
| 23.84 | 0.115 | 5.80 | 5.63 | 79.8 | ERROR 4 |

GP-6 Sample time 1230

| | | | | | |
|---|---|---|---|---|---|
| 21.67 | 0.020 | 7.00 | 5.14 | 164 | 1236 |

GP-7 Sample time 1415

| | | | | | |
|---|---|---|---|---|---|
| 20.32 | 0.042 | 7.06 | 6.26 | 63.1 | 1188 |

GP-1 Sample time 1430

| | | | | | |
|---|---|---|---|---|---|
| 20.38 | 0.057 | 5.66 | 5.87 | 78.2 | 1339 |

GP-2 Sample time 1500 *collected Duplicate *

| | | | | | |
|---|---|---|---|---|---|
| 21.45 | 0.128 | 9.67 | 5.09 | 228 | 686 |

Sampled equip blank @ 1800

9/2/11 SAMPLED RUSSELL W.S.W @ 1430

(11)

FINAL WELL DIMENSIONS

GP-1

TWD: 48.5 (~~-5 - CAP~~)

10' Screen 38.5 - 48.5

2.5' Bentonite 36 - 38.5

Riser 0 - 36 TOB Water: 44.83' bgs

Additional Sand to Seal well then Hydrate the prepacked Bentonite seal then grout to Surface, flush-mount

GP-2

TWD: 45.65

Screen: 10' 35.65 - 45.65 Additional Sand around Pre Pack Screen

Bentonite: 2.5' 33.15 - 35.65

grout to Surface – Flushmount. TOB water: 44.56' bgs

GP-3

TWD: 44.72

Screen: 10' 34.72 - 44.72 Add Sand, hyd Bent

Bent: 2.5' 32.22 - 34.72

grout to Surface – Flushmount TOB water: 42.46' bgs

GP-4

TWD: 39.80

Screen: 10' 29.80 - 39.80 Add sand, hyd bent

Grout to Surface – Flushmount

GP-5 TWD: 46' bgs TBD: 46

Screen: 36 - 46' TOB Water: NO WATER IN well

Bent: 33.5 - 36

No grout added – PIPE Pulled From Boring.

GP-6

TWD: 48.50 TBD:

Screen: 38.50 - 48.50

Bent: 36 - 38.50 ToBWater: 47' bgs

Grout to Surface - Flushmount

GP-7

TWD: 39.90

Screen: 29.90 - 39.90

Bent: 27.4 - 29.90 ToB Water: 38.01' bgs

Grout to Surface - Flush mount.

Drilling totals

| | | | | | |
|---|---|---|---|---|---|
| GP-5 | Boring | 46 | Redrill to 49 | Well | 48 - Removed well |
| GP-7 | Boring | 41 | | Well | 39.90 |
| GP-6 | Boring | 49 | | Well | 48.5 |
| GP-4 | Boring | 41 | | Well | 39.80 |
| GP-3 | Boring | 45 | | Well | 44.72 |
| GP-2 | Boring | 46 | | Well | 45.65 |
| GP-1 | Boring | 49 | | Well | 48.5 |
| | | 320 | | | 316.07 |

Mary Chappell WSW 98' 6" TWD

Water 72' 7"

**Appendix III**

Calculations

Mary Chappell Site
IHSB No.
177 Highway
Hamlet, North Carolina
S&ME Project No. 1054-10-2002

**Groundwater Contour Calculations**

| Elevation GP-7 | | Elevation GP-1 | Distance | Gradient | 378 | 377 | 376 | Contour 375 | 374 | 373 | 372 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 378.67 | | 377.57 | 300 | 0.00367 | 182.7 | | | | | | |
| GP-7 | | GP-3 | | | 378 | | | | | | |
| 378.67 | | 378.45 | 217 | 0.00101 | 660.9 | | | | | | |
| GP-7 | | GP-4 | | | 378 | | | | | | |
| 378.67 | | 378.00 | 177 | 0.00379 | 177.0 | | | | | | |
| GP-3 | | GP-4 | | | 378.0 | 377.0 | 376.0 | 375.0 | 374.0 | 373.0 | 372.0 |
| 378.45 | | 378.00 | 142 | 0.00317 | 142.0 | 457.6 | | | | | |
| GP-4 | | GP-6 | | | 378.0 | 377.0 | 376.0 | 375.0 | 374.0 | 373.0 | 372.0 |
| 378.00 | | 371.10 | 298 | 0.02315 | 0.0 | 43.2 | 86.4 | 129.6 | 172.8 | 215.9 | 259.1 |
| GP-3 | | GP-1 | | | 378.0 | 377.0 | 376.0 | 375.0 | 374.0 | 373.0 | 372.0 |
| 378.45 | | 377.57 | 110 | 0.008 | 56.2 | | | | | | |
| GP-3 | | GP-2 | | | 378.0 | 377.0 | 376.0 | 375.0 | 374.0 | 373.0 | 372.0 |
| 378.45 | | 377.82 | 106 | 0.00594 | 75.7 | 244.0 | | | | | |
| GP-3 | | GP-6 | | | 378.0 | 377.0 | 376.0 | 375.0 | 374.0 | 373.0 | 372.0 |
| 378.45 | | 371.10 | 272 | 0.02702 | 16.7 | 53.7 | 90.7 | 127.7 | 164.7 | 201.7 | 238.7 |
| GP-2 | | GP-6 | | | 377.0 | 376.0 | 375.0 | 374.0 | 373.0 | 372.0 | 371.0 |
| 377.82 | | 371.10 | 258 | 0.02605 | 31.5 | 69.9 | 108.3 | 146.7 | 185.1 | 223.4 | 261.8 |

| | | TOC | DTW | Prod | Elev |
|---|---|---|---|---|---|
| GP-1 | 9/20/2010 | 422.48 | 44.91 | 0.00 | 377.57 |
| GP-2 | 9/20/2010 | 422.38 | 44.56 | 0.00 | 377.82 |
| GP-3 | 9/20/2010 | 420.82 | 42.37 | 0.00 | 378.45 |
| GP-4 | 9/20/2010 | 415.45 | 37.45 | 0.00 | 378.00 |
| GP-5 | 9/20/2010 | Abandoned | NM | NC | NC |
| GP-6 | 9/20/2010 | 417.78 | 46.68 | 0.00 | 371.10 |
| GP-7 | 9/20/2010 | 416.57 | 37.90 | 0.00 | 378.67 |

IV

**Appendix IV**

Field Groundwater Sampling Logs

S&ME

# GROUNDWATER SAMPLING LOG

Groundwater Samling Form

| | | | |
|---|---|---|---|
| Site Name: | MARY CHAPPELL | S&ME Project No.: | 1054-10-2003 |
| Well No: | GP-1 | Sample ID: GP-1 | Date: 9-20-2010 |

**PURGING DATA**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well Dia. (in): | 1 | Well Depth (ft): | 48.5 | Depth Top of Screen: | 38.0 | Depth Bottom of Screen (ft): | 48.0 | Depth to Water from TOC (ft): | 44.91 | Purge Equipment or Bailer: | BAILER |

Well Volume Purge = (total well depth - static water depth) (ft) - (ft) x well capacity (gal/ft) = gal. Well condition: NEW

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Initial Pump or Tubing Depth in Well (ft): | | Final Pump or Tubing Depth in Well (ft): | | Purging Initiated at: | | Purging Ended at: | | Total Volume Purged (Gal): | .5 |

| Time | Volume Purged (gal) | Cumul Vol Purged (gal) | pH (Std Units) | Temperature (°C) | Cond. (µmhos/cm or µS/cm) | Turbidity (NTUs) | Diss. Oxygen (mg/L) | ORP (mV) | Color - describe | Odor describe |
|---|---|---|---|---|---|---|---|---|---|---|
| 1430 | .5 | .5 | 5.87 | 20.38 | 0.057 | 1339 | 5.66 | 78.2 | BROWN | NONE |
| | | | | | | | | | | |
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1430 <----- Time that record sample was collected Sampling equipment:

**Well Capacity (Gal/ft): 0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88

**Purging Equipment Codes: B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

**Sampling Equipment Codes: APP** = After Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (tubing gravity drain)

Remarks: VERY little volume - TURBID

Sampler (print name): GERALD PAUL Sampler (Signature): [signature]

Samples Analyses: ☒ VOCs 8260B ☐ 8 RCRA Metals ☐ PCBs ☐ Herbicides Refernce Chain of Custody dated:
☐ SVOCs 8270D ☐ 14 Priority Pollutant Metals ☐ Pesticidse
☐ Other:

Notes: pH: +/- 0.2 units Temp: =/- 0.2°C Specific Cond: +/- 5% Dissolved Oxygen: all readings </= 20% saturation (see Table FS 2200-2); optionally, +/- 0.2 mg/L or +/- 10% (whichever is greater) Turbidity: all readings </= 20 NTU; optionally +/- 5 NTU or +/- 10% (whichever is greater)

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S&ME

# GROUNDWATER SAMPLING LOG

Groundwater Samling Form

| | | | |
|---|---|---|---|
| Site Name: | MARY CHAPELL | S&ME Project No.: | 1054-10-2003 |
| Well No: | GP-2 | Sample ID: GP-2 | Date: 9-20-2010 |

**PURGING DATA**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well Dia. (in): | 1 | Well Depth (ft): | 45.65 | Depth Top of Screen: | 35.15 | Depth Bottom of Screen (ft): | 45.15 | Depth to Water from TOC (ft): | 44.56 | Purge Equipment or Bailer: | BAILER |

(total well depth - static water depth) x well capacity

Well Volume Purge = ____ (ft) - ____ (ft) x ____ (gal/ft) = ____ gal. Well condition: NEW

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Initial Pump or Tubing Depth in Well (ft): | | Final Pump or Tubing Depth in Well (ft): | | Purging Initiated at: | | Purging Ended at: | | Total Volume Purged (Gal): | .5 |

| Time | Volume Purged (gal) | Cumul Vol Purged (gal) | pH (Std Units) | Temperature (°C) | Cond. (µmhos/cm or µS/cm) | Turbidity (NTUs) | Diss. Oxygen (mg/L) | ORP (mV) | Color - describe | Odor describe |
|---|---|---|---|---|---|---|---|---|---|---|
| 1500 | .5 | .5 | 5.09 | 21.45 | 0.128 | 686 | 9.67 | 228 | Brown | NONE |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |
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| | | | | | | | | | | |

1500 <----- Time that record sample was collected Sampling equipment:

**Well Capacity (Gal/ft): 0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88

**Purging Equipment Codes: B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

**Sampling Equipment Codes: APP** = After Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (tubing gravity drain)

Remarks: VERY LITTLE WATER - VERY TURBID COLLECTED DUPLICATE on GP2

Sampler (print name): GERALD PAUL Sampler (Signature): [signature]

Samples Analyses: ☒ VOCs 8260B ☐ 8 RCRA Metals ☐ PCBs ☐ Herbicides Refernce Chain of Custody dated:

☐ SVOCs 8270D ☐ 14 Priority Pollutant Metals ☐ Pesticidse

☐ Other:

Notes: pH: +/- 0.2 units Temp: =/- 0.2°C Specific Cond: +/- 5% Dissolved Oxygen: all readings </= 20% saturation (see Table FS 2200-2); optionally, +/- 0.2 mg/L or +/- 10% (whichever is greater) Turbidity: all readings </= 20 NTU; optionally +/- 5 NTU or +/- 10% (whichever is greater)

capturx COMPATIBLE WITH Auto FUNCTIONALITY

16.R22.14.0 - Groundwater Sampling Log - Page ID 9000-24 Final / Groundwater Sampling Form-(13) - Printed 6/19/2010 11:30 AM from ZGOLD5320-6410

S&ME

# GROUNDWATER SAMPLING LOG

## Groundwater Samling Form

| | | | |
|---|---|---|---|
| Site Name: | MARY CHAPPELL | S&ME Project No.: | 1054-10-2003 |
| Well No: | GP-3 | Sample ID: GP-3 | Date: 9-20-2010 |

**PURGING DATA**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well Dia. (in): | 1 | Well Depth (ft): | 44.72 | Depth Top of Screen: | 34.22 | Depth Bottom of Screen (ft): | 44.22 | Depth to Water from TOC (ft): | 42.37 | Purge Equipment or Bailer: | BAILER |

Well Volume Purge = (total well depth - static water depth) (ft) - (ft) x well capacity (gal/ft) = gal.

Well condition: NEW

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Initial Pump or Tubing Depth in Well (ft): | | Final Pump or Tubing Depth in Well (ft): | | Purging Initiated at: | | Purging Ended at: | 1115 | Total Volume Purged (Gal): | .5 |

| Time | Volume Purged (gal) | Cumul Vol Purged (gal) | pH (Std Units) | Temperature (°C) | Cond. (µmhos/cm or µS/cm) | Turbidity (NTUs) | Diss. Oxygen (mg/L) | ORP (mV) | Color - describe | Odor describe |
|---|---|---|---|---|---|---|---|---|---|---|
| 1115 | .5 | .5 | 4.11 | 21.95 | 0.154 | ERROR | 3.61 | 110 | BROWN | NONE |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

1115 <----- Time that record sample was collected Sampling equipment:

**Well Capacity (Gal/ft): 0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88

**Purging Equipment Codes: B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

**Sampling Equipment Codes: APP** = After Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (tubing gravity drain)

Remarks: VERY LITTLE VOLUME - TURBID

Sampler (print name): GERALD Paul

Sampler (Signature): [signature]

Samples Analyses:
- ☒ VOCs 8260B
- ☐ SVOCs 8270D
- ☐ 8 RCRA Metals
- ☐ 14 Priority Pollutant Metals
- ☐ PCBs
- ☐ Pesticidse
- ☐ Herbicides
- ☐ Other:

Refernce Chain of Custody dated:

Notes: pH: +/- 0.2 units Temp: =/- 0.2°C Specific Cond: +/- 5% Dissolved Oxygen: all readings </= 20% saturation (see Table FS 2200-2); optionally, +/- 0.2 mg/L or +/- 10% (whichever is greater) Turbidity: all readings </= 20 NTU; optionally +/- 5 NTU or +/- 10% (whichever is greater)

capturx COMPATIBLE WITH Anoto FUNCTIONALITY

# S&ME GROUNDWATER SAMPLING LOG

Groundwater Samling Form

| | | | |
|---|---|---|---|
| Site Name: | MARY CHAPPELL | S&ME Project No.: | 1054-10-2003 |
| Well No: | GP-4 | Sample ID: GP-4 | Date: 9-20-2010 |

**PURGING DATA**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well Dia. (in): | 1 | Well Depth (ft): | 39.80 | Depth Top of Screen: | 29.30 | Depth Bottom of Screen (ft): | 39.30 | Depth to Water from TOC (ft): | 37.45 | Purge Equipment or Bailer: | BAILER |

(total well depth - static water depth) x well capacity

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well Volume Purge = | + | (ft) - | | (ft) x | | (gal/ft) = | | gal. | Well condition: | NEW | |
| Initial Pump or Tubing Depth in Well (ft): | | Final Pump or Tubing Depth in Well (ft): | | Purging Initiated at: | | Purging Ended at: | | Total Volume Purged (Gal): | .5 | | |

| Time | Volume Purged (gal) | Cumul Vol Purged (gal) | pH (Std Units) | Temperature (°C) | Cond. (µmhos/cm or µS/cm) | Turbidity (NTUs) | Diss. Oxygen (mg/L) | ORP (mV) | Color - describe | Odor describe |
|---|---|---|---|---|---|---|---|---|---|---|
| | .5 | .5 | 5.63 | 23.84 | 0.115 | ERROR 4 | 5.80 | 79.8 | Brown | NONE |
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<----- Time that record sample was collected  Sampling equipment:

**Well Capacity (Gal/ft)**: **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88

**Purging Equipment Codes: B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

**Sampling Equipment Codes: APP** = After Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (tubing gravity drain)

Remarks:

Sampler (print name): GERALD PAUL  Sampler (Signature): G. Pl

Samples Analyses: ☒ VOCs 8260B ☐ 8 RCRA Metals ☐ PCBs ☐ Herbicides Refernce Chain of Custody dated:

☐ SVOCs 8270D ☐ 14 Priority Pollutant Metals ☐ Pesticidse

☐ Other:

Notes: pH: +/- 0.2 units Temp: =/- 0.2°C Specific Cond: +/- 5% Dissolved Oxygen: all readings </= 20% saturation (see Table FS 2200-2); optionally, +/- 0.2 mg/L or +/- 10% (whichever is greater) Turbidity: all readings </= 20 NTU; optionally +/- 5 NTU or +/- 10% (whichever is greater)

capturx COMPATIBLE WITH Anoto FUNCTIONALITY

S&ME

# GROUNDWATER SAMPLING LOG

Groundwater Samling Form

| | | | |
|---|---|---|---|
| Site Name: | MARY CHAPPELL | S&ME Project No.: | 1054-10-2003 |
| Well No: | GP-6 | Sample ID: GP-6 | Date: 9-20-2010 |

**PURGING DATA**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well Dia. (in): | 1 | Well Depth (ft): | 48.50 | Depth Top of Screen: | 38.0 | Depth Bottom of Screen (ft): | 48.0 | Depth to Water from TOC (ft): | 46.68 | Purge Equipment or Bailer: | BAILER |

(total well depth - static water depth) x well capacity

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well Volume Purge = | | (ft) - | | (ft) x | | (gal/ft) = | | gal. | Well condition: | NEW | |
| Initial Pump or Tubing Depth in Well (ft): | | Final Pump or Tubing Depth in Well (ft): | | Purging Initiated at: | | Purging Ended at: | | Total Volume Purged (Gal): | .5 | | |

| Time | Volume Purged (gal) | Cumul Vol Purged (gal) | pH (Std Units) | Temperature (°C) | Cond. (µmhos/cm or µS/cm) | Turbidity (NTUs) | Diss. Oxygen (mg/L) | ORP (mV) | Color - describe | Odor describe |
|---|---|---|---|---|---|---|---|---|---|---|
| 1230 | .5 | .5 | 5.14 | 21.67 | 0.020 | 1236 | 7.00 | 164 | BROWN | NONE |
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1230 <----- Time that record sample was collected Sampling equipment:

**Well Capacity (Gal/ft):** 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

**Purging Equipment Codes:** B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

**Sampling Equipment Codes:** APP = After Peristaltic Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (tubing gravity drain)

Remarks: VERY LITTLE WATER - TURBID

Sampler (print name): GERALD PAUL Sampler (Signature): [signature]

Samples Analyses: ☒ VOCs 8260B ☐ 8 RCRA Metals ☐ PCBs ☐ Herbicides Refernce Chain of Custody dated:
☐ SVOCs 8270D ☐ 14 Priority Pollutant Metals ☐ Pesticidse
☐ Other:

Notes: pH: +/- 0.2 units Temp: =/- 0.2°C Specific Cond: +/- 5% Dissolved Oxygen: all readings <= 20% saturation (see Table FS 2200-2); optionally, +/- 0.2 mg/L or +/- 10% (whichever is greater) Turbidity: all readings <= 20 NTU; optionally +/- 5 NTU or +/- 10% (whichever is greater)

capturx COMPATIBLE WITH Arcto FUNCTIONALITY

IK 672.1.6 - Groundwater Sampling Log - Form FD 9000.24 Final / Groundwater Sampling Form-1? - Printed 9/19/2010 10:41 AM from BOLLOSSM-4410

S&ME

# GROUNDWATER SAMPLING LOG

Groundwater Samling Form

| | | | |
|---|---|---|---|
| Site Name: | MARY CHAPPELL | S&ME Project No.: | 1054-10-2003 |
| Well No: | GP-7 | Sample ID: GP-7 | Date: 9-20-2010 |

**PURGING DATA**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Well Dia. (in): | 1 | Well Depth (ft): | 39.90 | Depth Top of Screen: | 29.4 | Depth Bottom of Screen (ft): | 39.4 | Depth to Water from TOC (ft): | 37.90 | Purge Equipment or Bailer: | BAILER |

Well Volume Purge = ____ (ft) - ____ (ft) x ____ (gal/ft) = ____ gal. (total well depth - static water depth) x well capacity

Well condition: NEW

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Initial Pump or Tubing Depth in Well (ft): | | Final Pump or Tubing Depth in Well (ft): | | Purging Initiated at: | | Purging Ended at: | | Total Volume Purged (Gal): | .5 |

| Time | Volume Purged (gal) | Cumul Vol Purged (gal) | pH (Std Units) | Temperature (°C) | Cond. (µmhos/cm or µS/cm) | Turbidity (NTUs) | Diss. Oxygen (mg/L) | ORP (mV) | Color - describe | Odor describe |
|---|---|---|---|---|---|---|---|---|---|---|
| 1415 | .5 | .5 | 6.26 | 20.32 | 0.042 | 1188 | 7.06 | 63.1 | Brown | NONE |
| | | | | | | | | | | |
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1415 <----- Time that record sample was collected Sampling equipment:

**Well Capacity (Gal/ft)**: **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88

**Purging Equipment Codes: B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

**Sampling Equipment Codes: APP** = After Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (tubing gravity drain)

Remarks: VERY LITTLE WATER - TURBID

Sampler (print name): GERALD PAUL

Sampler (Signature): [signature]

Samples Analyses: ☒ VOCs 8260B ☐ 8 RCRA Metals ☐ PCBs ☐ Herbicides Refernce Chain of Custody dated:

☐ SVOCs 8270D ☐ 14 Priority Pollutant Metals ☐ Pesticidse

☐ Other:

Notes: pH: +/- 0.2 units Temp: =/- 0.2°C Specific Cond: +/- 5% Dissolved Oxygen: all readings </= 20% saturation (see Table FS 2200-2); optionally, +/- 0.2 mg/L or +/- 10% (whichever is greater) Turbidity: all readings </= 20 NTU; optionally +/- 5 NTU or +/- 10% (whichever is greater)

capturx COMPATIBLE WITH Acrobat FUNCTIONALITY

16.672.16.0 - Groundwater Sampling Log - Form RD 9000-24 Final / Groundwater Sampling Form-(15) - Printed 9/13/2010 11:20 AM from EDOLOGYSP-6410

**Appendix V**

Laboratory Analytical Report and Chain of Custody Form

**Environmental Conservation Laboratories, Inc.**
**102-A Woodwinds Industrial Court**
**Cary NC, 27511**
**Phone: 919.467.3090 FAX: 919.467.3515**
**www.encolabs.com**

Thursday, September 23, 2010

S&ME, Inc. (SM001)

Attn: Ed Woloszyn

3201 Spring Forest Road

Raleigh, NC 27616

**RE: Laboratory Results for**
**Project Number: 1054-10-2003, Project Name/Desc: Mary Chappell Site**
**ENCO Workorder: C010226**

Dear Ed Woloszyn,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Wednesday, September 8, 2010.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Chuck Smith

Chuck Smith

Project Manager

Enclosure(s)

The total number of pages in this report, including this page is 81.

www.encolabs.com

## SAMPLE SUMMARY/LABORATORY CHRONICLE

**Client ID:** Mary L. Chappell - WSW-1 **Lab ID:** C010226-01 **Sampled:** 09/08/10 13:10 **Received:** 09/08/10 15:25

| Parameter | Hold Date/Time(s) | | Prep Date/Time(s) | | Analysis Date/Time(s) |
|---|---|---|---|---|---|
| Colilert 18-9223B | 09/09/10 19:10 | 09/09/10 15:01 | 09/08/10 | 16:57 | 9/9/2010 12:14 |
| E. coli, Colilert 18 9223B | 09/09/10 19:10 | 09/09/10 15:01 | 09/08/10 | 16:57 | 9/9/2010 12:14 |
| EPA 6010C | 03/07/11 | | 09/09/10 | 12:08 | 9/10/2010 12:39 |
| EPA 6020A | 03/07/11 | | 09/10/10 | 14:42 | 9/14/2010 12:47 |
| EPA 7470A | 10/06/10 | | 09/15/10 | 08:56 | 9/15/2010 17:11 |
| EPA 8081B | 09/15/10 | 10/20/10 | 09/10/10 | 09:11 | 9/10/2010 21:15 |
| EPA 8260B | 09/22/10 | | 09/10/10 | 08:38 | 9/10/2010 19:31 |
| EPA 8270D | 09/15/10 | 10/20/10 | 09/10/10 | 06:21 | 9/10/2010 14:23 |

**Client ID:** Mark Chappell - WSW-2 **Lab ID:** C010226-02 **Sampled:** 09/08/10 10:10 **Received:** 09/08/10 15:25

| Parameter | Hold Date/Time(s) | | Prep Date/Time(s) | | Analysis Date/Time(s) |
|---|---|---|---|---|---|
| EPA 6010C | 03/07/11 | | 09/09/10 | 12:08 | 9/10/2010 12:36 |
| EPA 6020A | 03/07/11 | | 09/10/10 | 14:42 | 9/14/2010 12:50 |
| EPA 7470A | 10/06/10 | | 09/15/10 | 08:56 | 9/15/2010 17:15 |
| EPA 8081B | 09/15/10 | 10/20/10 | 09/10/10 | 09:11 | 9/10/2010 21:28 |
| EPA 8260B | 09/22/10 | | 09/10/10 | 08:38 | 9/10/2010 20:00 |
| EPA 8270D | 09/15/10 | 10/20/10 | 09/10/10 | 06:21 | 9/10/2010 14:56 |

**Client ID:** William Brown WSW-5 **Lab ID:** C010226-03 **Sampled:** 09/08/10 10:50 **Received:** 09/08/10 15:25

| Parameter | Hold Date/Time(s) | | Prep Date/Time(s) | | Analysis Date/Time(s) |
|---|---|---|---|---|---|
| EPA 6010C | 03/07/11 | | 09/09/10 | 12:08 | 9/10/2010 12:44 |
| EPA 6020A | 03/07/11 | | 09/10/10 | 14:42 | 9/14/2010 12:54 |
| EPA 7470A | 10/06/10 | | 09/15/10 | 08:56 | 9/15/2010 17:18 |
| EPA 8081B | 09/15/10 | 10/20/10 | 09/10/10 | 09:11 | 9/10/2010 21:42 |
| EPA 8270D | 09/15/10 | 10/20/10 | 09/10/10 | 06:21 | 9/10/2010 15:28 |

**Client ID:** William Brown WSW-5 **Lab ID:** C010226-03RE1 **Sampled:** 09/08/10 10:50 **Received:** 09/08/10 15:25

| Parameter | Hold Date/Time(s) | | Prep Date/Time(s) | | Analysis Date/Time(s) |
|---|---|---|---|---|---|
| EPA 8260B | 09/22/10 | | 09/11/10 | 10:21 | 9/11/2010 20:59 |

**Client ID:** GP-5 (0-5') **Lab ID:** C010226-04 **Sampled:** 09/07/10 13:20 **Received:** 09/08/10 15:25

| Parameter | Hold Date/Time(s) | | Prep Date/Time(s) | | Analysis Date/Time(s) |
|---|---|---|---|---|---|
| EPA 6010C | 03/06/11 | | 09/14/10 | 11:05 | 9/15/2010 10:38 |
| EPA 7471B | 10/05/10 | | 09/14/10 | 10:54 | 9/14/2010 16:44 |
| EPA 8081B | 09/21/10 | 10/24/10 | 09/14/10 | 09:57 | 9/16/2010 20:33 |
| EPA 8260B | 09/21/10 | | 09/09/10 | 10:19 | 9/9/2010 18:00 |
| EPA 8270D | 09/21/10 | 10/26/10 | 09/16/10 | 14:49 | 9/20/2010 18:57 |

| Client ID: GP-5 (0-5') | Lab ID: C010226-04RE1 | Sampled: 09/07/10 13:20 | Received: 09/08/10 15:25 |
|---|---|---|---|

| Parameter | Hold Date/Time(s) | | Prep Date/Time(s) | | Analysis Date/Time(s) |
|---|---|---|---|---|---|
| EPA 8260B | 09/21/10 | | 09/15/10 | 08:26 | 9/15/2010 17:41 |

| Client ID: GP-4 (29-33') | Lab ID: C010226-05 | Sampled: 09/08/10 09:38 | Received: 09/08/10 15:25 |
|---|---|---|---|

| Parameter | Hold Date/Time(s) | | Prep Date/Time(s) | | Analysis Date/Time(s) |
|---|---|---|---|---|---|
| EPA 6010C | 03/07/11 | | 09/14/10 | 11:05 | 9/15/2010 10:40 |
| EPA 7471B | 10/06/10 | | 09/14/10 | 10:54 | 9/14/2010 16:47 |
| EPA 8081B | 09/22/10 | 10/24/10 | 09/14/10 | 09:57 | 9/16/2010 20:46 |
| EPA 8260B | 09/22/10 | | 09/09/10 | 10:19 | 9/9/2010 18:29 |
| EPA 8270D | 09/22/10 | 10/26/10 | 09/16/10 | 14:49 | 9/20/2010 19:27 |

| Client ID: GP-4 (29-33') | Lab ID: C010226-05RE1 | Sampled: 09/08/10 09:38 | Received: 09/08/10 15:25 |
|---|---|---|---|

| Parameter | Hold Date/Time(s) | | Prep Date/Time(s) | | Analysis Date/Time(s) |
|---|---|---|---|---|---|
| EPA 8260B | 09/22/10 | | 09/15/10 | 08:26 | 9/15/2010 18:09 |

| Client ID: GP-6 (5-9') | Lab ID: C010226-06 | Sampled: 09/08/10 13:30 | Received: 09/08/10 15:25 |
|---|---|---|---|

| Parameter | Hold Date/Time(s) | | Prep Date/Time(s) | | Analysis Date/Time(s) |
|---|---|---|---|---|---|
| EPA 6010C | 03/07/11 | | 09/14/10 | 11:05 | 9/15/2010 10:43 |
| EPA 7471B | 10/06/10 | | 09/14/10 | 10:54 | 9/14/2010 16:50 |
| EPA 8081B | 09/22/10 | 10/24/10 | 09/14/10 | 09:57 | 9/16/2010 21:00 |
| EPA 8260B | 09/22/10 | | 09/09/10 | 10:19 | 9/9/2010 18:57 |
| EPA 8270D | 09/22/10 | 10/26/10 | 09/16/10 | 14:49 | 9/20/2010 19:56 |

| Client ID: GP-6 (5-9') | Lab ID: C010226-06RE1 | Sampled: 09/08/10 13:30 | Received: 09/08/10 15:25 |
|---|---|---|---|

| Parameter | Hold Date/Time(s) | | Prep Date/Time(s) | | Analysis Date/Time(s) |
|---|---|---|---|---|---|
| EPA 8260B | 09/22/10 | | 09/15/10 | 08:26 | 9/15/2010 18:38 |

## SAMPLE DETECTION SUMMARY

**Client ID: Mary L. Chappell - WSW-1** **Lab ID: C010226-01**

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| Beryllium - Total | 0.276 | J | 0.100 | 1.00 | ug/L | EPA 6010C | |
| Cadmium - Total | 0.370 | J | 0.360 | 1.00 | ug/L | EPA 6010C | |
| Chloromethane | 0.66 | J | 0.34 | 1.0 | ug/L | EPA 8260B | |
| Chromium - Total | 1.86 | JB | 1.00 | 10.0 | ug/L | EPA 6010C | J-01 |
| Copper - Total | 108 | | 1.60 | 10.0 | ug/L | EPA 6010C | |
| Lead - Total | 67.7 | | 1.90 | 10.0 | ug/L | EPA 6010C | |
| Manganese - Total | 4.30 | J | 1.10 | 10.0 | ug/L | EPA 6010C | |
| Naphthalene | 2.8 | | 0.39 | 1.0 | ug/L | EPA 8260B | |
| Thallium - Total | 0.612 | JB | 0.110 | 1.00 | ug/L | EPA 6020A | J-01 |
| Trichloroethene | 34 | | 0.38 | 1.0 | ug/L | EPA 8260B | |
| Zinc - Total | 32.0 | | 3.80 | 10.0 | ug/L | EPA 6010C | |

**Client ID: Mark Chappell - WSW-2** **Lab ID: C010226-02**

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| Copper - Total | 99.4 | | 1.60 | 10.0 | ug/L | EPA 6010C | |
| Lead - Total | 8.28 | J | 1.90 | 10.0 | ug/L | EPA 6010C | |
| Manganese - Total | 4.69 | J | 1.10 | 10.0 | ug/L | EPA 6010C | |
| Thallium - Total | 0.480 | JB | 0.110 | 1.00 | ug/L | EPA 6020A | J-01 |
| Zinc - Total | 26.3 | | 3.80 | 10.0 | ug/L | EPA 6010C | |

**Client ID: William Brown WSW-5** **Lab ID: C010226-03**

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic - Total | 3.43 | J | 2.80 | 10.0 | ug/L | EPA 6010C | |
| Copper - Total | 14.3 | | 1.60 | 10.0 | ug/L | EPA 6010C | |
| Thallium - Total | 0.402 | JB | 0.110 | 1.00 | ug/L | EPA 6020A | J-01 |
| Zinc - Total | 5.37 | J | 3.80 | 10.0 | ug/L | EPA 6010C | |

**Client ID: William Brown WSW-5** **Lab ID: C010226-03RE1**

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| Trichloroethene | 1.2 | | 0.38 | 1.0 | ug/L | EPA 8260B | |

**Client ID: GP-5 (0-5')** **Lab ID: C010226-04**

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| .alpha.-Pinene | 0.088 | J | | | mg/kg dry | EPA 8260B | |
| 1R-.alpha.-Pinene | 0.27 | J | | | mg/kg dry | EPA 8270D | |
| Arsenic - Total | 0.739 | | 0.103 | 0.517 | mg/kg dry | EPA 6010C | |
| Bicyclo[2.2.1]heptan-2-ol, ... | 0.0076 | J | | | mg/kg dry | EPA 8260B | |
| Bicyclo[2.2.1]heptan-2-one,... | 0.0073 | J | | | mg/kg dry | EPA 8260B | |
| Camphene | 0.014 | J | | | mg/kg dry | EPA 8260B | |
| Carbon Dioxide | 0.19 | J | | | mg/kg dry | EPA 8260B | |
| Chromium - Total | 2.16 | | 0.103 | 0.517 | mg/kg dry | EPA 6010C | |
| Copper - Total | 0.970 | | 0.197 | 0.517 | mg/kg dry | EPA 6010C | |
| Cyclohexanemethanol, 4-hydroxy | 0.14 | J | | | mg/kg dry | EPA 8270D | |
| Cyclohexene, 1-methyl-4-(1-... (01) | 0.010 | J | | | mg/kg dry | EPA 8260B | |
| Cyclohexene, 1-methyl-4-(1-... (02) | 0.011 | J | | | mg/kg dry | EPA 8260B | |
| D-Limonene | 0.019 | J | | | mg/kg dry | EPA 8260B | |
| Ethane, 1,1,2,2-tetrachloro- | 0.39 | JB | | | mg/kg dry | EPA 8270D | B |
| Ethane, 1,1,2-trichloro- | 0.16 | J | | | mg/kg dry | EPA 8270D | |
| Lead - Total | 2.08 | | 0.124 | 0.517 | mg/kg dry | EPA 6010C | |

**Client ID: GP-5 (0-5')** **Lab ID: C010226-04**

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| L-Fenchone | 0.0042 | J | | | mg/kg dry | EPA 8260B | |
| Manganese - Total | 7.53 | | 0.103 | 0.517 | mg/kg dry | EPA 6010C | |
| Nickel - Total | 0.691 | J | 0.372 | 2.59 | mg/kg dry | EPA 6010C | |
| Selenium - Total | 0.144 | JB | 0.103 | 0.517 | mg/kg dry | EPA 6010C | J-01 |
| Thallium - Total | 0.379 | J | 0.103 | 0.517 | mg/kg dry | EPA 6010C | |
| Unknown (01) | 0.53 | JB | | | mg/kg dry | EPA 8270D | B |
| Unknown (02) | 0.17 | J | | | mg/kg dry | EPA 8270D | |
| Unknown (03) | 0.32 | J | | | mg/kg dry | EPA 8270D | |
| Zinc - Total | 1.62 | J | 1.14 | 2.59 | mg/kg dry | EPA 6010C | |

**Client ID: GP-5 (0-5')** **Lab ID: C010226-04RE1**

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| 1,3,6-Heptatriene, 2,5,5-tr... | 0.0046 | J | | | mg/kg dry | EPA 8260B | |
| 1R-.alpha.-Pinene | 0.049 | J | | | mg/kg dry | EPA 8260B | |
| 4-Isopropyltoluene | 0.00087 | J | 0.00017 | 0.0010 | mg/kg dry | EPA 8260B | |
| Bicyclo[2.2.1]heptan-2-ol, ... | 0.0066 | J | | | mg/kg dry | EPA 8260B | |
| Bicyclo[4.1.0]hept-2-ene, 3... | 0.010 | J | | | mg/kg dry | EPA 8260B | |
| Camphor | 0.0068 | J | | | mg/kg dry | EPA 8260B | |
| Carbon Dioxide | 0.19 | J | | | mg/kg dry | EPA 8260B | |
| Cyclopentasiloxane, decamet... | 0.0067 | J | | | mg/kg dry | EPA 8260B | |
| Limonene | 0.0050 | J | | | mg/kg dry | EPA 8260B | |

**Client ID: GP-4 (29-33')** **Lab ID: C010226-05**

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| 7-Oxabicyclo[4.1.0]heptane | 0.21 | J | | | mg/kg dry | EPA 8270D | |
| Arsenic - Total | 1.22 | | 0.110 | 0.549 | mg/kg dry | EPA 6010C | |
| Benzoic acid, 4-methyl-2-tr... | 0.012 | J | | | mg/kg dry | EPA 8260B | |
| Carbon Dioxide | 0.16 | J | | | mg/kg dry | EPA 8260B | |
| Chromium - Total | 1.34 | | 0.110 | 0.549 | mg/kg dry | EPA 6010C | |
| Copper - Total | 3.10 | | 0.209 | 0.549 | mg/kg dry | EPA 6010C | |
| Cyclopentasiloxane, decamet... | 0.0051 | JB | | | mg/kg dry | EPA 8260B | |
| Ethane, 1,1,2,2-tetrachloro- | 0.45 | JB | | | mg/kg dry | EPA 8270D | B |
| Ethane, 1,1,2-trichloro- | 0.19 | J | | | mg/kg dry | EPA 8270D | |
| Lead - Total | 0.846 | | 0.132 | 0.549 | mg/kg dry | EPA 6010C | |
| Manganese - Total | 0.291 | J | 0.110 | 0.549 | mg/kg dry | EPA 6010C | |
| Mercury - Total | 0.00765 | J | 0.00527 | 0.0110 | mg/kg dry | EPA 7471B | |
| Selenium - Total | 0.942 | B | 0.110 | 0.549 | mg/kg dry | EPA 6010C | J-01 |
| Thallium - Total | 0.160 | J | 0.110 | 0.549 | mg/kg dry | EPA 6010C | |
| Unknown | 0.56 | JB | | | mg/kg dry | EPA 8270D | B |

**Client ID: GP-4 (29-33')** **Lab ID: C010226-05RE1**

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| Carbon Dioxide | 0.097 | J | | | mg/kg dry | EPA 8260B | |
| Cyclopentasiloxane, decamet... | 0.0048 | J | | | mg/kg dry | EPA 8260B | |
| Cyclotetrasiloxane, octamet... | 0.013 | J | | | mg/kg dry | EPA 8260B | |

**Client ID: GP-6 (5-9')** **Lab ID: C010226-06**

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| 7H-Dibenzo[b,g]carbazole, 7... | 0.012 | J | | | mg/kg dry | EPA 8260B | |
| Arsenic - Total | 0.728 | | 0.109 | 0.543 | mg/kg dry | EPA 6010C | |
| Carbon Dioxide | 0.21 | J | | | mg/kg dry | EPA 8260B | |

| Client ID: GP-6 (5-9') | | | Lab ID: C010226-06 | | | | |
|---|---|---|---|---|---|---|---|
| **Analyte** | **Results** | **Flag** | **MDL** | **PQL** | **Units** | **Method** | **Notes** |
| Chromium - Total | 2.48 | | 0.109 | 0.543 | mg/kg dry | EPA 6010C | |
| Copper - Total | 1.18 | | 0.206 | 0.543 | mg/kg dry | EPA 6010C | |
| Cyclopentasiloxane, decamet... | 0.0057 | JB | | | mg/kg dry | EPA 8260B | |
| Ethane, 1,1,2,2-tetrachloro- | 0.27 | JB | | | mg/kg dry | EPA 8270D | B |
| Lead - Total | 1.19 | | 0.130 | 0.543 | mg/kg dry | EPA 6010C | |
| Manganese - Total | 3.51 | | 0.109 | 0.543 | mg/kg dry | EPA 6010C | |
| Nickel - Total | 0.446 | J | 0.391 | 2.71 | mg/kg dry | EPA 6010C | |
| Selenium - Total | 0.347 | JB | 0.109 | 0.543 | mg/kg dry | EPA 6010C | J-01 |
| Thallium - Total | 0.148 | J | 0.109 | 0.543 | mg/kg dry | EPA 6010C | |
| Unknown | 0.59 | JB | | | mg/kg dry | EPA 8270D | B |
| Zinc - Total | 1.42 | J | 1.19 | 2.71 | mg/kg dry | EPA 6010C | |

| Client ID: GP-6 (5-9') | | | Lab ID: C010226-06RE1 | | | | |
|---|---|---|---|---|---|---|---|
| **Analyte** | **Results** | **Flag** | **MDL** | **PQL** | **Units** | **Method** | **Notes** |
| Carbon Dioxide | 0.12 | J | | | mg/kg dry | EPA 8260B | |
| Cyclopentasiloxane, decamet... | 0.0051 | J | | | mg/kg dry | EPA 8260B | |
| Cyclotetrasiloxane, octamet... | 0.014 | J | | | mg/kg dry | EPA 8260B | |

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## ANALYTICAL RESULTS

**Description:** Mary L. Chappell - WSW-1
**Matrix:** Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-01
**Sampled:** 09/08/10 13:10
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

### Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.48 | U | ug/L | 1 | 0.48 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.65 | U | ug/L | 1 | 0.65 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 2-Butanone [78-93-3] ^ | 1.0 | U | ug/L | 1 | 1.0 | 5.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.94 | U | ug/L | 1 | 0.94 | 5.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.69 | U | ug/L | 1 | 0.69 | 5.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 5.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Acetone [67-64-1] ^ | 1.5 | U | ug/L | 1 | 1.5 | 5.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Benzene [71-43-2] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Bromoform [75-25-2] ^ | 0.71 | U | ug/L | 1 | 0.71 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Bromomethane [74-83-9] ^ | 0.49 | U | ug/L | 1 | 0.49 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.54 | U | ug/L | 1 | 0.54 | 5.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Carbon tetrachloride [56-23-5] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Chloroethane [75-00-3] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Chloroform [67-66-3] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| **Chloromethane [74-87-3] ^** | **0.66** | J | ug/L | 1 | 0.34 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.35 | U | ug/L | 1 | 0.35 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |

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**Description:** Mary L. Chappell - WSW-1
**Matrix:** Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-01
**Sampled:** 09/08/10 13:10
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Isopropylbenzene [98-82-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.48 | U | ug/L | 1 | 0.48 | 2.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Methylene chloride [75-09-2] ^ | 0.53 | U | ug/L | 1 | 0.53 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| **Naphthalene [91-20-3] ^** | **2.8** | | ug/L | 1 | 0.39 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| o-Xylene [95-47-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Styrene [100-42-5] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Toluene [108-88-3] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| **Trichloroethene [79-01-6] ^** | **34** | | ug/L | 1 | 0.38 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 19:31 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *52* | *1* | *50.0* | *104 %* | *51-122* | *0I10007* | *EPA 8260B* | *09/10/10 19:31* | *JKG* | |
| *Dibromofluoromethane* | *48* | *1* | *50.0* | *96 %* | *68-117* | *0I10007* | *EPA 8260B* | *09/10/10 19:31* | *JKG* | |
| *Toluene-d8* | *50* | *1* | *50.0* | *100 %* | *69-110* | *0I10007* | *EPA 8260B* | *09/10/10 19:31* | *JKG* | |

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**Description:** Mary L. Chappell - WSW-1
**Matrix:** Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-01
**Sampled:** 09/08/10 13:10
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 1-Methylnaphthalene [90-12-0] ^ | 1.7 | U | ug/L | 1 | 1.7 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 2,4,5-Trichlorophenol [95-95-4] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 2,4,6-Trichlorophenol [88-06-2] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 2,4-Dichlorophenol [120-83-2] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 2,4-Dimethylphenol [105-67-9] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 2,4-Dinitrophenol [51-28-5] ^ | 2.6 | U | ug/L | 1 | 2.6 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 2,4-Dinitrotoluene [121-14-2] ^ | 2.4 | U | ug/L | 1 | 2.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 2,6-Dinitrotoluene [606-20-2] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 2-Chloronaphthalene [91-58-7] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 2-Chlorophenol [95-57-8] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 2-Methyl-4,6-dinitrophenol [534-52-1] ^ | 2.9 | U | ug/L | 1 | 2.9 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 2-Methylnaphthalene [91-57-6] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 2-Methylphenol [95-48-7] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 2-Nitroaniline [88-74-4] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 2-Nitrophenol [88-75-5] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 3 & 4-Methylphenol [108-39-4/106-44-5] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 3,3'-Dichlorobenzidine [91-94-1] ^ | 3.3 | U | ug/L | 1 | 3.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 3-Nitroaniline [99-09-2] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 4-Bromophenyl-phenylether [101-55-3] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 4-Chloro-3-methylphenol [59-50-7] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 4-Chloroaniline [106-47-8] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 4-Chlorophenyl-phenylether [7005-72-3] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 4-Nitroaniline [100-01-6] ^ | 3.2 | U | ug/L | 1 | 3.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| 4-Nitrophenol [100-02-7] ^ | 2.0 | U | ug/L | 1 | 2.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Acenaphthene [83-32-9] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Acenaphthylene [208-96-8] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Anthracene [120-12-7] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Benzidine [92-87-5] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Benzo(a)anthracene [56-55-3] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Benzo(a)pyrene [50-32-8] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Benzo(b)fluoranthene [205-99-2] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Benzo(g,h,i)perylene [191-24-2] ^ | 2.4 | U | ug/L | 1 | 2.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Benzo(k)fluoranthene [207-08-9] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Benzoic acid [65-85-0] ^ | 1.0 | U | ug/L | 1 | 1.0 | 50 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | QV-02 |
| Benzyl alcohol [100-51-6] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Bis(2-chloroethoxy)methane [111-91-1] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Bis(2-chloroethyl)ether [111-44-4] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Bis(2-chloroisopropyl)ether [108-60-1] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Bis(2-ethylhexyl)phthalate [117-81-7] ^ | 1.7 | U | ug/L | 1 | 1.7 | 5.0 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Butylbenzylphthalate [85-68-7] ^ | 2.0 | U | ug/L | 1 | 2.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Chrysene [218-01-9] ^ | 2.0 | U | ug/L | 1 | 2.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Dibenzo(a,h)anthracene [53-70-3] ^ | 2.3 | U | ug/L | 1 | 2.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Dibenzofuran [132-64-9] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Diethylphthalate [84-66-2] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Dimethylphthalate [131-11-3] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Di-n-butylphthalate [84-74-2] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Di-n-octylphthalate [117-84-0] ^ | 3.1 | U | ug/L | 1 | 3.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |

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**Description:** Mary L. Chappell - WSW-1
**Matrix:** Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-01
**Sampled:** 09/08/10 13:10
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene [206-44-0] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Fluorene [86-73-7] ^ | 1.7 | U | ug/L | 1 | 1.7 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Hexachlorobenzene [118-74-1] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Hexachlorobutadiene [87-68-3] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Hexachlorocyclopentadiene [77-47-4] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | QV-02 |
| Hexachloroethane [67-72-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Indeno(1,2,3-cd)pyrene [193-39-5] ^ | 2.2 | U | ug/L | 1 | 2.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Isophorone [78-59-1] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Naphthalene [91-20-3] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Nitrobenzene [98-95-3] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| N-Nitrosodimethylamine [62-75-9] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| N-Nitroso-di-n-propylamine [621-64-7] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| N-nitrosodiphenylamine/Diphenylamine [86-30-6/122-39-4] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Pentachlorophenol [87-86-5] ^ | 1.8 | U | ug/L | 1 | 1.8 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Phenanthrene [85-01-8] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Phenol [108-95-2] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Pyrene [129-00-0] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |
| Pyridine [110-86-1] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:23 | DFM | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *54* | *1* | *100* | *54 %* | *10-179* | *0I10001* | *EPA 8270D* | *09/10/10 14:23* | *DFM* | |
| *2-Fluorobiphenyl* | *30* | *1* | *50.0* | *60 %* | *10-149* | *0I10001* | *EPA 8270D* | *09/10/10 14:23* | *DFM* | |
| *2-Fluorophenol* | *39* | *1* | *100* | *39 %* | *10-110* | *0I10001* | *EPA 8270D* | *09/10/10 14:23* | *DFM* | |
| *Nitrobenzene-d5* | *29* | *1* | *50.0* | *58 %* | *10-149* | *0I10001* | *EPA 8270D* | *09/10/10 14:23* | *DFM* | |
| *Phenol-d5* | *34* | *1* | *100* | *34 %* | *10-88* | *0I10001* | *EPA 8270D* | *09/10/10 14:23* | *DFM* | |
| *Terphenyl-d14* | *51* | *1* | *50.0* | *101 %* | *10-188* | *0I10001* | *EPA 8270D* | *09/10/10 14:23* | *DFM* | |

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**Description:** Mary L. Chappell - WSW-1
**Matrix:** Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-01
**Sampled:** 09/08/10 13:10
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Organochlorine Pesticides by GC

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD [72-54-8] ^ | 0.013 | U | ug/L | 1 | 0.013 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| 4,4'-DDE [72-55-9] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| 4,4'-DDT [50-29-3] ^ | 0.015 | U | ug/L | 1 | 0.015 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| Aldrin [309-00-2] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| alpha-BHC [319-84-6] ^ | 0.015 | U | ug/L | 1 | 0.015 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| beta-BHC [319-85-7] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| Chlordane (tech) [12789-03-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 0.50 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| Chlordane-alpha [5103-71-9] ^ | 0.014 | U | ug/L | 1 | 0.014 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| Chlordane-gamma [5566-34-7] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| delta-BHC [319-86-8] ^ | 0.014 | U | ug/L | 1 | 0.014 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| Dieldrin [60-57-1] ^ | 0.0089 | U | ug/L | 1 | 0.0089 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| Endosulfan I [959-98-8] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| Endosulfan II [33213-65-9] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| Endosulfan sulfate [1031-07-8] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| Endrin [72-20-8] ^ | 0.013 | U | ug/L | 1 | 0.013 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| Endrin aldehyde [7421-93-4] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| Endrin ketone [53494-70-5] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| gamma-BHC [58-89-9] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| Heptachlor [76-44-8] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| Heptachlor epoxide [1024-57-3] ^ | 0.0089 | U | ug/L | 1 | 0.0089 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| Isodrin [465-73-6] ^ | 0.013 | U | ug/L | 1 | 0.013 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| Methoxychlor [72-43-5] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| Mirex [2385-85-5] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |
| Toxaphene [8001-35-2] ^ | 0.22 | U | ug/L | 1 | 0.22 | 0.50 | 0I10009 | EPA 8081B | 09/10/10 21:15 | REF | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,5,6-TCMX* | *1.2* | *1* | *1.00* | *120 %* | *44-134* | *0I10009* | *EPA 8081B* | *09/10/10 21:15* | *REF* | |
| *Decachlorobiphenyl* | *1.1* | *1* | *1.00* | *110 %* | *37-149* | *0I10009* | *EPA 8081B* | *09/10/10 21:15* | *REF* | |

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**Description:** Mary L. Chappell - WSW-1
**Matrix:** Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-01
**Sampled:** 09/08/10 13:10
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Metals by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury [7439-97-6] ^ | 0.170 | U | ug/L | 1 | 0.170 | 0.200 | 0I15010 | EPA 7470A | 09/15/10 17:11 | NLH | |

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**Description:** Mary L. Chappell - WSW-1
**Matrix:** Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-01
**Sampled:** 09/08/10 13:10
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Metals (total recoverable) by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony [7440-36-0] ^ | 0.220 | U | ug/L | 1 | 0.220 | 2.00 | 0I10040 | EPA 6020A | 09/14/10 12:47 | VLO | |
| Arsenic [7440-38-2] ^ | 2.80 | U | ug/L | 1 | 2.80 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:39 | JDH | |
| **Beryllium [7440-41-7] ^** | **0.276** | J | ug/L | 1 | 0.100 | 1.00 | 0I09018 | EPA 6010C | 09/10/10 12:39 | JDH | |
| **Cadmium [7440-43-9] ^** | **0.370** | J | ug/L | 1 | 0.360 | 1.00 | 0I09018 | EPA 6010C | 09/10/10 12:39 | JDH | |
| **Chromium [7440-47-3] ^** | **1.86** | JB | ug/L | 1 | 1.00 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:39 | JDH | J-01 |
| **Copper [7440-50-8] ^** | **108** | | ug/L | 1 | 1.60 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:39 | JDH | |
| **Manganese [7439-96-5] ^** | **4.30** | J | ug/L | 1 | 1.10 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:39 | JDH | |
| Nickel [7440-02-0] ^ | 1.80 | U | ug/L | 1 | 1.80 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:39 | JDH | |
| Selenium [7782-49-2] ^ | 2.70 | U | ug/L | 1 | 2.70 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:39 | JDH | |
| Silver [7440-22-4] ^ | 1.90 | U | ug/L | 1 | 1.90 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:39 | JDH | |
| **Thallium [7440-28-0] ^** | **0.612** | JB | ug/L | 1 | 0.110 | 1.00 | 0I10040 | EPA 6020A | 09/14/10 12:47 | VLO | J-01 |
| **Zinc [7440-66-6] ^** | **32.0** | | ug/L | 1 | 3.80 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:39 | JDH | |

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**Description:** Mary L. Chappell - WSW-1
**Matrix:** Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-01
**Sampled:** 09/08/10 13:10
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Metals (acid extractable) by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Lead [7439-92-1] ^** | **67.7** | | ug/L | 1 | 1.90 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:39 | JDH | |

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**Description:** Mary L. Chappell - WSW-1
**Matrix:** Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-01
**Sampled:** 09/08/10 13:10
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Microbiological Parameters

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| Coliform, Total [ECL-0039] ^ | Absent | | [blank] | 1 | 1.0 | 0I09013 | Colilert 18-9223B | 09/09/10 12:14 | ALT | |
| Escherichia coli [68583-22-2] ^ | Absent | | [blank] | 1 | 1.0 | 0I09013 | coli, Colilert 18 922: | 09/09/10 12:14 | ALT | |

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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**Description:** Mark Chappell - WSW-2
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-02
**Sampled:** 09/08/10 10:10
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.48 | U | ug/L | 1 | 0.48 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.65 | U | ug/L | 1 | 0.65 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 2-Butanone [78-93-3] ^ | 1.0 | U | ug/L | 1 | 1.0 | 5.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.94 | U | ug/L | 1 | 0.94 | 5.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.69 | U | ug/L | 1 | 0.69 | 5.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 5.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Acetone [67-64-1] ^ | 1.5 | U | ug/L | 1 | 1.5 | 5.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Benzene [71-43-2] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Bromoform [75-25-2] ^ | 0.71 | U | ug/L | 1 | 0.71 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Bromomethane [74-83-9] ^ | 0.49 | U | ug/L | 1 | 0.49 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.54 | U | ug/L | 1 | 0.54 | 5.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Carbon tetrachloride [56-23-5] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Chloroethane [75-00-3] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Chloroform [67-66-3] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Chloromethane [74-87-3] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.35 | U | ug/L | 1 | 0.35 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Isopropylbenzene [98-82-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.48 | U | ug/L | 1 | 0.48 | 2.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Methylene chloride [75-09-2] ^ | 0.53 | U | ug/L | 1 | 0.53 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |

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**Description:** Mark Chappell - WSW-2
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-02
**Sampled:** 09/08/10 10:10
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Naphthalene [91-20-3] ^ | 0.39 | U | ug/L | 1 | 0.39 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| o-Xylene [95-47-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Styrene [100-42-5] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Toluene [108-88-3] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I10007 | EPA 8260B | 09/10/10 20:00 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *52* | *1* | *50.0* | *103 %* | *51-122* | *0I10007* | *EPA 8260B* | *09/10/10 20:00* | *JKG* | |
| *Dibromofluoromethane* | *48* | *1* | *50.0* | *95 %* | *68-117* | *0I10007* | *EPA 8260B* | *09/10/10 20:00* | *JKG* | |
| *Toluene-d8* | *49* | *1* | *50.0* | *97 %* | *69-110* | *0I10007* | *EPA 8260B* | *09/10/10 20:00* | *JKG* | |

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**Description:** Mark Chappell - WSW-2
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-02
**Sampled:** 09/08/10 10:10
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 1-Methylnaphthalene [90-12-0] ^ | 1.7 | U | ug/L | 1 | 1.7 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 2,4,5-Trichlorophenol [95-95-4] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 2,4,6-Trichlorophenol [88-06-2] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 2,4-Dichlorophenol [120-83-2] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 2,4-Dimethylphenol [105-67-9] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 2,4-Dinitrophenol [51-28-5] ^ | 2.6 | U | ug/L | 1 | 2.6 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 2,4-Dinitrotoluene [121-14-2] ^ | 2.4 | U | ug/L | 1 | 2.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 2,6-Dinitrotoluene [606-20-2] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 2-Chloronaphthalene [91-58-7] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 2-Chlorophenol [95-57-8] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 2-Methyl-4,6-dinitrophenol [534-52-1] ^ | 2.9 | U | ug/L | 1 | 2.9 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 2-Methylnaphthalene [91-57-6] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 2-Methylphenol [95-48-7] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 2-Nitroaniline [88-74-4] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 2-Nitrophenol [88-75-5] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 3 & 4-Methylphenol [108-39-4/106-44-5] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 3,3'-Dichlorobenzidine [91-94-1] ^ | 3.3 | U | ug/L | 1 | 3.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 3-Nitroaniline [99-09-2] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 4-Bromophenyl-phenylether [101-55-3] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 4-Chloro-3-methylphenol [59-50-7] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 4-Chloroaniline [106-47-8] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 4-Chlorophenyl-phenylether [7005-72-3] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 4-Nitroaniline [100-01-6] ^ | 3.2 | U | ug/L | 1 | 3.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| 4-Nitrophenol [100-02-7] ^ | 2.0 | U | ug/L | 1 | 2.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Acenaphthene [83-32-9] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Acenaphthylene [208-96-8] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Anthracene [120-12-7] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Benzidine [92-87-5] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Benzo(a)anthracene [56-55-3] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Benzo(a)pyrene [50-32-8] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Benzo(b)fluoranthene [205-99-2] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Benzo(g,h,i)perylene [191-24-2] ^ | 2.4 | U | ug/L | 1 | 2.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Benzo(k)fluoranthene [207-08-9] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Benzoic acid [65-85-0] ^ | 1.0 | U | ug/L | 1 | 1.0 | 50 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | QV-02 |
| Benzyl alcohol [100-51-6] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Bis(2-chloroethoxy)methane [111-91-1] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Bis(2-chloroethyl)ether [111-44-4] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Bis(2-chloroisopropyl)ether [108-60-1] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Bis(2-ethylhexyl)phthalate [117-81-7] ^ | 1.7 | U | ug/L | 1 | 1.7 | 5.0 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Butylbenzylphthalate [85-68-7] ^ | 2.0 | U | ug/L | 1 | 2.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Chrysene [218-01-9] ^ | 2.0 | U | ug/L | 1 | 2.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Dibenzo(a,h)anthracene [53-70-3] ^ | 2.3 | U | ug/L | 1 | 2.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Dibenzofuran [132-64-9] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Diethylphthalate [84-66-2] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Dimethylphthalate [131-11-3] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Di-n-butylphthalate [84-74-2] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Di-n-octylphthalate [117-84-0] ^ | 3.1 | U | ug/L | 1 | 3.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |

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**Description:** Mark Chappell - WSW-2
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-02
**Sampled:** 09/08/10 10:10
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene [206-44-0] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Fluorene [86-73-7] ^ | 1.7 | U | ug/L | 1 | 1.7 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Hexachlorobenzene [118-74-1] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Hexachlorobutadiene [87-68-3] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Hexachlorocyclopentadiene [77-47-4] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | QV-02 |
| Hexachloroethane [67-72-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Indeno(1,2,3-cd)pyrene [193-39-5] ^ | 2.2 | U | ug/L | 1 | 2.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Isophorone [78-59-1] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Naphthalene [91-20-3] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Nitrobenzene [98-95-3] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| N-Nitrosodimethylamine [62-75-9] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| N-Nitroso-di-n-propylamine [621-64-7] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| N-nitrosodiphenylamine/Diphenylamine [86-30-6/122-39-4] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Pentachlorophenol [87-86-5] ^ | 1.8 | U | ug/L | 1 | 1.8 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Phenanthrene [85-01-8] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Phenol [108-95-2] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Pyrene [129-00-0] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |
| Pyridine [110-86-1] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 14:56 | DFM | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *49* | *1* | *100* | *49 %* | *10-179* | *0I10001* | *EPA 8270D* | *09/10/10 14:56* | *DFM* | |
| *2-Fluorobiphenyl* | *27* | *1* | *50.0* | *53 %* | *10-149* | *0I10001* | *EPA 8270D* | *09/10/10 14:56* | *DFM* | |
| *2-Fluorophenol* | *36* | *1* | *100* | *36 %* | *10-110* | *0I10001* | *EPA 8270D* | *09/10/10 14:56* | *DFM* | |
| *Nitrobenzene-d5* | *26* | *1* | *50.0* | *52 %* | *10-149* | *0I10001* | *EPA 8270D* | *09/10/10 14:56* | *DFM* | |
| *Phenol-d5* | *31* | *1* | *100* | *31 %* | *10-88* | *0I10001* | *EPA 8270D* | *09/10/10 14:56* | *DFM* | |
| *Terphenyl-d14* | *45* | *1* | *50.0* | *91 %* | *10-188* | *0I10001* | *EPA 8270D* | *09/10/10 14:56* | *DFM* | |

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**Description:** Mark Chappell - WSW-2
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-02
**Sampled:** 09/08/10 10:10
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Organochlorine Pesticides by GC

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD [72-54-8] ^ | 0.013 | U | ug/L | 1 | 0.013 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| 4,4'-DDE [72-55-9] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| 4,4'-DDT [50-29-3] ^ | 0.015 | U | ug/L | 1 | 0.015 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| Aldrin [309-00-2] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| alpha-BHC [319-84-6] ^ | 0.015 | U | ug/L | 1 | 0.015 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| beta-BHC [319-85-7] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| Chlordane (tech) [12789-03-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 0.50 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| Chlordane-alpha [5103-71-9] ^ | 0.014 | U | ug/L | 1 | 0.014 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| Chlordane-gamma [5566-34-7] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| delta-BHC [319-86-8] ^ | 0.014 | U | ug/L | 1 | 0.014 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| Dieldrin [60-57-1] ^ | 0.0089 | U | ug/L | 1 | 0.0089 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| Endosulfan I [959-98-8] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| Endosulfan II [33213-65-9] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| Endosulfan sulfate [1031-07-8] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| Endrin [72-20-8] ^ | 0.013 | U | ug/L | 1 | 0.013 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| Endrin aldehyde [7421-93-4] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| Endrin ketone [53494-70-5] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| gamma-BHC [58-89-9] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| Heptachlor [76-44-8] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| Heptachlor epoxide [1024-57-3] ^ | 0.0089 | U | ug/L | 1 | 0.0089 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| Isodrin [465-73-6] ^ | 0.013 | U | ug/L | 1 | 0.013 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| Methoxychlor [72-43-5] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| Mirex [2385-85-5] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |
| Toxaphene [8001-35-2] ^ | 0.22 | U | ug/L | 1 | 0.22 | 0.50 | 0I10009 | EPA 8081B | 09/10/10 21:28 | REF | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,5,6-TCMX* | *1.3* | *1* | *1.00* | *129 %* | *44-134* | *0I10009* | *EPA 8081B* | *09/10/10 21:28* | *REF* | |
| *Decachlorobiphenyl* | *1.0* | *1* | *1.00* | *103 %* | *37-149* | *0I10009* | *EPA 8081B* | *09/10/10 21:28* | *REF* | |

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**Description:** Mark Chappell - WSW-2
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-02
**Sampled:** 09/08/10 10:10
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Metals by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury [7439-97-6] ^ | 0.170 | U | ug/L | 1 | 0.170 | 0.200 | 0I15010 | EPA 7470A | 09/15/10 17:15 | NLH | |

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**Description:** Mark Chappell - WSW-2
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-02
**Sampled:** 09/08/10 10:10
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Metals (total recoverable) by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony [7440-36-0] ^ | 0.220 | U | ug/L | 1 | 0.220 | 2.00 | 0I10040 | EPA 6020A | 09/14/10 12:50 | VLO | |
| Arsenic [7440-38-2] ^ | 2.80 | U | ug/L | 1 | 2.80 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:36 | JDH | |
| Beryllium [7440-41-7] ^ | 0.100 | U | ug/L | 1 | 0.100 | 1.00 | 0I09018 | EPA 6010C | 09/10/10 12:36 | JDH | |
| Cadmium [7440-43-9] ^ | 0.360 | U | ug/L | 1 | 0.360 | 1.00 | 0I09018 | EPA 6010C | 09/10/10 12:36 | JDH | |
| Chromium [7440-47-3] ^ | 1.00 | U | ug/L | 1 | 1.00 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:36 | JDH | |
| **Copper [7440-50-8] ^** | **99.4** | | ug/L | 1 | 1.60 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:36 | JDH | |
| **Manganese [7439-96-5] ^** | **4.69** | J | ug/L | 1 | 1.10 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:36 | JDH | |
| Nickel [7440-02-0] ^ | 1.80 | U | ug/L | 1 | 1.80 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:36 | JDH | |
| Selenium [7782-49-2] ^ | 2.70 | U | ug/L | 1 | 2.70 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:36 | JDH | |
| Silver [7440-22-4] ^ | 1.90 | U | ug/L | 1 | 1.90 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:36 | JDH | |
| **Thallium [7440-28-0] ^** | **0.480** | JB | ug/L | 1 | 0.110 | 1.00 | 0I10040 | EPA 6020A | 09/14/10 12:50 | VLO | J-01 |
| **Zinc [7440-66-6] ^** | **26.3** | | ug/L | 1 | 3.80 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:36 | JDH | |

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**Description:** Mark Chappell - WSW-2
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-02
**Sampled:** 09/08/10 10:10
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Metals (acid extractable) by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Lead [7439-92-1] ^** | **8.28** | J | ug/L | 1 | 1.90 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:36 | JDH | |

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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**Description:** William Brown WSW-5
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-03
**Sampled:** 09/08/10 10:50
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.48 | U | ug/L | 1 | 0.48 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.65 | U | ug/L | 1 | 0.65 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 2-Butanone [78-93-3] ^ | 1.0 | U | ug/L | 1 | 1.0 | 5.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.94 | U | ug/L | 1 | 0.94 | 5.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.69 | U | ug/L | 1 | 0.69 | 5.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 5.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Acetone [67-64-1] ^ | 1.5 | U | ug/L | 1 | 1.5 | 5.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Benzene [71-43-2] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Bromoform [75-25-2] ^ | 0.71 | U | ug/L | 1 | 0.71 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Bromomethane [74-83-9] ^ | 0.49 | U | ug/L | 1 | 0.49 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.54 | U | ug/L | 1 | 0.54 | 5.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Carbon tetrachloride [56-23-5] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Chloroethane [75-00-3] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Chloroform [67-66-3] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Chloromethane [74-87-3] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.35 | U | ug/L | 1 | 0.35 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Isopropylbenzene [98-82-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.48 | U | ug/L | 1 | 0.48 | 2.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Methylene chloride [75-09-2] ^ | 0.53 | U | ug/L | 1 | 0.53 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |

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**Description:** William Brown WSW-5
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-03
**Sampled:** 09/08/10 10:50
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Naphthalene [91-20-3] ^ | 0.39 | U | ug/L | 1 | 0.39 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| o-Xylene [95-47-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Styrene [100-42-5] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Toluene [108-88-3] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| **Trichloroethene [79-01-6] ^** | **1.2** | | ug/L | 1 | 0.38 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I11006 | EPA 8260B | 09/11/10 20:59 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *52* | *1* | *50.0* | *104 %* | *51-122* | *0I11006* | *EPA 8260B* | *09/11/10 20:59* | *JKG* | |
| *Dibromofluoromethane* | *51* | *1* | *50.0* | *102 %* | *68-117* | *0I11006* | *EPA 8260B* | *09/11/10 20:59* | *JKG* | |
| *Toluene-d8* | *49* | *1* | *50.0* | *98 %* | *69-110* | *0I11006* | *EPA 8260B* | *09/11/10 20:59* | *JKG* | |

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**Description:** William Brown WSW-5 | **Lab Sample ID:** C010226-03 | **Received:** 09/08/10 15:25

**Matrix:** Ground Water | **Sampled:** 09/08/10 10:50 | **Work Order:** C010226

**Project:** Mary Chappell Site | **Sampled By:** Gerald Paul

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 1-Methylnaphthalene [90-12-0] ^ | 1.7 | U | ug/L | 1 | 1.7 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 2,4,5-Trichlorophenol [95-95-4] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 2,4,6-Trichlorophenol [88-06-2] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 2,4-Dichlorophenol [120-83-2] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 2,4-Dimethylphenol [105-67-9] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 2,4-Dinitrophenol [51-28-5] ^ | 2.6 | U | ug/L | 1 | 2.6 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 2,4-Dinitrotoluene [121-14-2] ^ | 2.4 | U | ug/L | 1 | 2.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 2,6-Dinitrotoluene [606-20-2] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 2-Chloronaphthalene [91-58-7] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 2-Chlorophenol [95-57-8] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 2-Methyl-4,6-dinitrophenol [534-52-1] ^ | 2.9 | U | ug/L | 1 | 2.9 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 2-Methylnaphthalene [91-57-6] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 2-Methylphenol [95-48-7] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 2-Nitroaniline [88-74-4] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 2-Nitrophenol [88-75-5] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 3 & 4-Methylphenol [108-39-4/106-44-5] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 3,3'-Dichlorobenzidine [91-94-1] ^ | 3.3 | U | ug/L | 1 | 3.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 3-Nitroaniline [99-09-2] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 4-Bromophenyl-phenylether [101-55-3] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 4-Chloro-3-methylphenol [59-50-7] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 4-Chloroaniline [106-47-8] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 4-Chlorophenyl-phenylether [7005-72-3] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 4-Nitroaniline [100-01-6] ^ | 3.2 | U | ug/L | 1 | 3.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| 4-Nitrophenol [100-02-7] ^ | 2.0 | U | ug/L | 1 | 2.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Acenaphthene [83-32-9] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Acenaphthylene [208-96-8] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Anthracene [120-12-7] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Benzidine [92-87-5] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Benzo(a)anthracene [56-55-3] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Benzo(a)pyrene [50-32-8] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Benzo(b)fluoranthene [205-99-2] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Benzo(g,h,i)perylene [191-24-2] ^ | 2.4 | U | ug/L | 1 | 2.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Benzo(k)fluoranthene [207-08-9] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Benzoic acid [65-85-0] ^ | 1.0 | U | ug/L | 1 | 1.0 | 50 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | QV-02 |
| Benzyl alcohol [100-51-6] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Bis(2-chloroethoxy)methane [111-91-1] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Bis(2-chloroethyl)ether [111-44-4] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Bis(2-chloroisopropyl)ether [108-60-1] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Bis(2-ethylhexyl)phthalate [117-81-7] ^ | 1.7 | U | ug/L | 1 | 1.7 | 5.0 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Butylbenzylphthalate [85-68-7] ^ | 2.0 | U | ug/L | 1 | 2.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Chrysene [218-01-9] ^ | 2.0 | U | ug/L | 1 | 2.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Dibenzo(a,h)anthracene [53-70-3] ^ | 2.3 | U | ug/L | 1 | 2.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Dibenzofuran [132-64-9] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Diethylphthalate [84-66-2] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Dimethylphthalate [131-11-3] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Di-n-butylphthalate [84-74-2] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Di-n-octylphthalate [117-84-0] ^ | 3.1 | U | ug/L | 1 | 3.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |

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**Description:** William Brown WSW-5
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-03
**Sampled:** 09/08/10 10:50
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene [206-44-0] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Fluorene [86-73-7] ^ | 1.7 | U | ug/L | 1 | 1.7 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Hexachlorobenzene [118-74-1] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Hexachlorobutadiene [87-68-3] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Hexachlorocyclopentadiene [77-47-4] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | QV-02 |
| Hexachloroethane [67-72-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Indeno(1,2,3-cd)pyrene [193-39-5] ^ | 2.2 | U | ug/L | 1 | 2.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Isophorone [78-59-1] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Naphthalene [91-20-3] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Nitrobenzene [98-95-3] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| N-Nitrosodimethylamine [62-75-9] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| N-Nitroso-di-n-propylamine [621-64-7] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| N-nitrosodiphenylamine/Diphenylamine [86-30-6/122-39-4] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Pentachlorophenol [87-86-5] ^ | 1.8 | U | ug/L | 1 | 1.8 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Phenanthrene [85-01-8] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Phenol [108-95-2] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Pyrene [129-00-0] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |
| Pyridine [110-86-1] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I10001 | EPA 8270D | 09/10/10 15:28 | DFM | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *51* | *1* | *100* | *51 %* | *10-179* | *0I10001* | *EPA 8270D* | *09/10/10 15:28* | *DFM* | |
| *2-Fluorobiphenyl* | *29* | *1* | *50.0* | *57 %* | *10-149* | *0I10001* | *EPA 8270D* | *09/10/10 15:28* | *DFM* | |
| *2-Fluorophenol* | *36* | *1* | *100* | *36 %* | *10-110* | *0I10001* | *EPA 8270D* | *09/10/10 15:28* | *DFM* | |
| *Nitrobenzene-d5* | *27* | *1* | *50.0* | *54 %* | *10-149* | *0I10001* | *EPA 8270D* | *09/10/10 15:28* | *DFM* | |
| *Phenol-d5* | *32* | *1* | *100* | *32 %* | *10-88* | *0I10001* | *EPA 8270D* | *09/10/10 15:28* | *DFM* | |
| *Terphenyl-d14* | *50* | *1* | *50.0* | *99 %* | *10-188* | *0I10001* | *EPA 8270D* | *09/10/10 15:28* | *DFM* | |

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**Description:** William Brown WSW-5
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-03
**Sampled:** 09/08/10 10:50
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Organochlorine Pesticides by GC

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD [72-54-8] ^ | 0.013 | U | ug/L | 1 | 0.013 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| 4,4'-DDE [72-55-9] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| 4,4'-DDT [50-29-3] ^ | 0.015 | U | ug/L | 1 | 0.015 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| Aldrin [309-00-2] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| alpha-BHC [319-84-6] ^ | 0.015 | U | ug/L | 1 | 0.015 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| beta-BHC [319-85-7] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| Chlordane (tech) [12789-03-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 0.50 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| Chlordane-alpha [5103-71-9] ^ | 0.014 | U | ug/L | 1 | 0.014 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| Chlordane-gamma [5566-34-7] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| delta-BHC [319-86-8] ^ | 0.014 | U | ug/L | 1 | 0.014 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| Dieldrin [60-57-1] ^ | 0.0089 | U | ug/L | 1 | 0.0089 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| Endosulfan I [959-98-8] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| Endosulfan II [33213-65-9] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| Endosulfan sulfate [1031-07-8] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| Endrin [72-20-8] ^ | 0.013 | U | ug/L | 1 | 0.013 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| Endrin aldehyde [7421-93-4] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| Endrin ketone [53494-70-5] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| gamma-BHC [58-89-9] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| Heptachlor [76-44-8] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| Heptachlor epoxide [1024-57-3] ^ | 0.0089 | U | ug/L | 1 | 0.0089 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| Isodrin [465-73-6] ^ | 0.013 | U | ug/L | 1 | 0.013 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| Methoxychlor [72-43-5] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| Mirex [2385-85-5] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |
| Toxaphene [8001-35-2] ^ | 0.22 | U | ug/L | 1 | 0.22 | 0.50 | 0I10009 | EPA 8081B | 09/10/10 21:42 | REF | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,5,6-TCMX* | *1.2* | *1* | *1.00* | *118 %* | *44-134* | *0I10009* | *EPA 8081B* | *09/10/10 21:42* | *REF* | |
| *Decachlorobiphenyl* | *1.2* | *1* | *1.00* | *116 %* | *37-149* | *0I10009* | *EPA 8081B* | *09/10/10 21:42* | *REF* | |

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**Description:** William Brown WSW-5
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-03
**Sampled:** 09/08/10 10:50
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Metals by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury [7439-97-6] ^ | 0.170 | U | ug/L | 1 | 0.170 | 0.200 | 0I15010 | EPA 7470A | 09/15/10 17:18 | NLH | |

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**Description:** William Brown WSW-5
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-03
**Sampled:** 09/08/10 10:50
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Metals (total recoverable) by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony [7440-36-0] ^ | 0.220 | U | ug/L | 1 | 0.220 | 2.00 | 0I10040 | EPA 6020A | 09/14/10 12:54 | VLO | |
| **Arsenic [7440-38-2] ^** | **3.43** | J | ug/L | 1 | 2.80 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:44 | JDH | |
| Beryllium [7440-41-7] ^ | 0.100 | U | ug/L | 1 | 0.100 | 1.00 | 0I09018 | EPA 6010C | 09/10/10 12:44 | JDH | |
| Cadmium [7440-43-9] ^ | 0.360 | U | ug/L | 1 | 0.360 | 1.00 | 0I09018 | EPA 6010C | 09/10/10 12:44 | JDH | |
| Chromium [7440-47-3] ^ | 1.00 | U | ug/L | 1 | 1.00 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:44 | JDH | |
| **Copper [7440-50-8] ^** | **14.3** | | ug/L | 1 | 1.60 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:44 | JDH | |
| Manganese [7439-96-5] ^ | 1.10 | U | ug/L | 1 | 1.10 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:44 | JDH | |
| Nickel [7440-02-0] ^ | 1.80 | U | ug/L | 1 | 1.80 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:44 | JDH | |
| Selenium [7782-49-2] ^ | 2.70 | U | ug/L | 1 | 2.70 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:44 | JDH | |
| Silver [7440-22-4] ^ | 1.90 | U | ug/L | 1 | 1.90 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:44 | JDH | |
| **Thallium [7440-28-0] ^** | **0.402** | JB | ug/L | 1 | 0.110 | 1.00 | 0I10040 | EPA 6020A | 09/14/10 12:54 | VLO | J-01 |
| **Zinc [7440-66-6] ^** | **5.37** | J | ug/L | 1 | 3.80 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:44 | JDH | |

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**Description:** William Brown WSW-5
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-03
**Sampled:** 09/08/10 10:50
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226

## Metals (acid extractable) by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead [7439-92-1] ^ | 1.90 | U | ug/L | 1 | 1.90 | 10.0 | 0I09018 | EPA 6010C | 09/10/10 12:44 | JDH | |

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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**Description:** GP-5 (0-5')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-04
**Sampled:** 09/07/10 13:20
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 96.7

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.00017 | U | mg/kg dry | 1 | 0.00017 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.00031 | U | mg/kg dry | 1 | 0.00031 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.00035 | U | mg/kg dry | 1 | 0.00035 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.00028 | U | mg/kg dry | 1 | 0.00028 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.00082 | U | mg/kg dry | 1 | 0.00082 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.00048 | U | mg/kg dry | 1 | 0.00048 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.00028 | U | mg/kg dry | 1 | 0.00028 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.00039 | U | mg/kg dry | 1 | 0.00039 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.00027 | U | mg/kg dry | 1 | 0.00027 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.00030 | U | mg/kg dry | 1 | 0.00030 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 2-Butanone [78-93-3] ^ | 0.00081 | U | mg/kg dry | 1 | 0.00081 | 0.0052 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.00051 | U | mg/kg dry | 1 | 0.00051 | 0.0052 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.00078 | U | mg/kg dry | 1 | 0.00078 | 0.0052 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.00027 | U | mg/kg dry | 1 | 0.00027 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| **4-Isopropyltoluene [99-87-6] ^** | **0.00087** | J | mg/kg dry | 1 | 0.00017 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 0.00059 | U | mg/kg dry | 1 | 0.00059 | 0.0052 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Acetone [67-64-1] ^ | 0.0012 | U | mg/kg dry | 1 | 0.0012 | 0.0052 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Benzene [71-43-2] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Bromoform [75-25-2] ^ | 0.00047 | U | mg/kg dry | 1 | 0.00047 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Bromomethane [74-83-9] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.00040 | U | mg/kg dry | 1 | 0.00040 | 0.0052 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Carbon Tetrachloride [56-23-5] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Chloroethane [75-00-3] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Chloroform [67-66-3] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Chloromethane [74-87-3] ^ | 0.00016 | U | mg/kg dry | 1 | 0.00016 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.00013 | U | mg/kg dry | 1 | 0.00013 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.00036 | U | mg/kg dry | 1 | 0.00036 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.00032 | U | mg/kg dry | 1 | 0.00032 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.00047 | U | mg/kg dry | 1 | 0.00047 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.00036 | U | mg/kg dry | 1 | 0.00036 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Isopropylbenzene [98-82-8] ^ | 0.00016 | U | mg/kg dry | 1 | 0.00016 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.00038 | U | mg/kg dry | 1 | 0.00038 | 0.0021 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Methylene Chloride [75-09-2] ^ | 0.00058 | U | mg/kg dry | 1 | 0.00058 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |

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**Description:** GP-5 (0-5')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-04
**Sampled:** 09/07/10 13:20
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 96.7

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.00031 | U | mg/kg dry | 1 | 0.00031 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Naphthalene [91-20-3] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| o-Xylene [95-47-6] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Styrene [100-42-5] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.00017 | U | mg/kg dry | 1 | 0.00017 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Toluene [108-88-3] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.00038 | U | mg/kg dry | 1 | 0.00038 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.00040 | U | mg/kg dry | 1 | 0.00040 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.00028 | U | mg/kg dry | 1 | 0.00028 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.00027 | U | mg/kg dry | 1 | 0.00027 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.00058 | U | mg/kg dry | 1 | 0.00058 | 0.0010 | 0I15005 | EPA 8260B | 09/15/10 17:41 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *57* | *1* | *50.0* | *113 %* | *61-118* | *0I15005* | *EPA 8260B* | *09/15/10 17:41* | *JKG* | |
| *Dibromofluoromethane* | *51* | *1* | *50.0* | *101 %* | *66-114* | *0I15005* | *EPA 8260B* | *09/15/10 17:41* | *JKG* | |
| *Toluene-d8* | *51* | *1* | *50.0* | *102 %* | *63-118* | *0I15005* | *EPA 8260B* | *09/15/10 17:41* | *JKG* | |

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**Description:** GP-5 (0-5')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-04
**Sampled:** 09/07/10 13:20
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 96.7

## Tentatively Identified Compounds by Volatile GCMS

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .alpha.-Pinene [000080-56-8] | 0.088 | J | mg/kg dry | 1 | | | OI09003 | EPA 8260B | 09/09/10 18:00 | JKG | |
| 1,3,6-Heptatriene, 2,5,5-tr... [029548-02-5] | 0.0046 | J | mg/kg dry | 1 | | | OI15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| 1R-.alpha.-Pinene [007785-70-8] | 0.049 | J | mg/kg dry | 1 | | | OI15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Bicyclo[2.2.1]heptan-2-ol, ... [002217-02-9] | 0.0076 | J | mg/kg dry | 1 | | | OI09003 | EPA 8260B | 09/09/10 18:00 | JKG | |
| Bicyclo[2.2.1]heptan-2-ol, ... [002217-02-9] | 0.0066 | J | mg/kg dry | 1 | | | OI15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Bicyclo[2.2.1]heptan-2-one,... [000464-48-2] | 0.0073 | J | mg/kg dry | 1 | | | OI09003 | EPA 8260B | 09/09/10 18:00 | JKG | |
| Bicyclo[4.1.0]hept-2-ene, 3... [000554-61-0] | 0.010 | J | mg/kg dry | 1 | | | OI15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Camphene [000079-92-5] | 0.014 | J | mg/kg dry | 1 | | | OI09003 | EPA 8260B | 09/09/10 18:00 | JKG | |
| Camphor [000076-22-2] | 0.0068 | J | mg/kg dry | 1 | | | OI15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Carbon Dioxide [124-38-9] | 0.19 | J | mg/kg dry | 1 | | | OI09003 | EPA 8260B | 09/09/10 18:00 | JKG | |
| Carbon Dioxide [124-38-9] | 0.19 | J | mg/kg dry | 1 | | | OI15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| Cyclohexene, 1-methyl-4-(1-... (01) [000586-62-9] | 0.010 | J | mg/kg dry | 1 | | | OI09003 | EPA 8260B | 09/09/10 18:00 | JKG | |
| Cyclohexene, 1-methyl-4-(1-... (02) [000586-62-9] | 0.011 | J | mg/kg dry | 1 | | | OI09003 | EPA 8260B | 09/09/10 18:00 | JKG | |
| Cyclopentasiloxane, decamet... [000541-02-6] | 0.0067 | J | mg/kg dry | 1 | | | OI15005 | EPA 8260B | 09/15/10 17:41 | JKG | |
| D-Limonene [5989-27-5] | 0.019 | J | mg/kg dry | 1 | | | OI09003 | EPA 8260B | 09/09/10 18:00 | JKG | |
| L-Fenchone [000126-21-6] | 0.0042 | J | mg/kg dry | 1 | | | OI09003 | EPA 8260B | 09/09/10 18:00 | JKG | |
| Limonene [000138-86-3] | 0.0050 | J | mg/kg dry | 1 | | | OI15005 | EPA 8260B | 09/15/10 17:41 | JKG | |

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**Description:** GP-5 (0-5')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-04
**Sampled:** 09/07/10 13:20
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 96.7

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.024 | U | mg/kg dry | 1 | 0.024 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 1-Methylnaphthalene [90-12-0] ^ | 0.036 | U | mg/kg dry | 1 | 0.036 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 2,4,5-Trichlorophenol [95-95-4] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 2,4,6-Trichlorophenol [88-06-2] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 2,4-Dichlorophenol [120-83-2] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 2,4-Dimethylphenol [105-67-9] ^ | 0.061 | U | mg/kg dry | 1 | 0.061 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 2,4-Dinitrophenol [51-28-5] ^ | 0.049 | U | mg/kg dry | 1 | 0.049 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 2,4-Dinitrotoluene [121-14-2] ^ | 0.032 | U | mg/kg dry | 1 | 0.032 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 2,6-Dinitrotoluene [606-20-2] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 2-Chloronaphthalene [91-58-7] ^ | 0.025 | U | mg/kg dry | 1 | 0.025 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 2-Chlorophenol [95-57-8] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 2-Methyl-4,6-dinitrophenol [534-52-1] ^ | 0.052 | U | mg/kg dry | 1 | 0.052 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 2-Methylnaphthalene [91-57-6] ^ | 0.038 | U | mg/kg dry | 1 | 0.038 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 2-Methylphenol [95-48-7] ^ | 0.039 | U | mg/kg dry | 1 | 0.039 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 2-Nitroaniline [88-74-4] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 2-Nitrophenol [88-75-5] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 3 & 4-Methylphenol [108-39-4/106-44-5] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 3,3'-Dichlorobenzidine [91-94-1] ^ | 0.043 | U | mg/kg dry | 1 | 0.043 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 3-Nitroaniline [99-09-2] ^ | 0.046 | U | mg/kg dry | 1 | 0.046 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 4-Bromophenyl-phenylether [101-55-3] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 4-Chloro-3-methylphenol [59-50-7] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 4-Chloroaniline [106-47-8] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 4-Chlorophenyl-phenylether [7005-72-3] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 4-Nitroaniline [100-01-6] ^ | 0.061 | U | mg/kg dry | 1 | 0.061 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| 4-Nitrophenol [100-02-7] ^ | 0.043 | U | mg/kg dry | 1 | 0.043 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Acenaphthene [83-32-9] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Acenaphthylene [208-96-8] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Anthracene [120-12-7] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Benzidine [92-87-5] ^ | 0.11 | U | mg/kg dry | 1 | 0.11 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | QV-01 |
| Benzo(a)anthracene [56-55-3] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Benzo(a)pyrene [50-32-8] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Benzo(b)fluoranthene [205-99-2] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Benzo(g,h,i)perylene [191-24-2] ^ | 0.040 | U | mg/kg dry | 1 | 0.040 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Benzo(k)fluoranthene [207-08-9] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Benzoic acid [65-85-0] ^ | 0.11 | U | mg/kg dry | 1 | 0.11 | 1.8 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Benzyl alcohol [100-51-6] ^ | 0.068 | U | mg/kg dry | 1 | 0.068 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Bis(2-chloroethoxy)methane [111-91-1] ^ | 0.022 | U | mg/kg dry | 1 | 0.022 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Bis(2-chloroethyl)ether [111-44-4] ^ | 0.052 | U | mg/kg dry | 1 | 0.052 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Bis(2-chloroisopropyl)ether [108-60-1] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Bis(2-ethylhexyl)phthalate [117-81-7] ^ | 0.038 | U | mg/kg dry | 1 | 0.038 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Butylbenzylphthalate [85-68-7] ^ | 0.035 | U | mg/kg dry | 1 | 0.035 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | QV-02 |
| Chrysene [218-01-9] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Dibenzo(a,h)anthracene [53-70-3] ^ | 0.042 | U | mg/kg dry | 1 | 0.042 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Dibenzofuran [132-64-9] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Diethylphthalate [84-66-2] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Dimethylphthalate [131-11-3] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Di-n-butylphthalate [84-74-2] ^ | 0.032 | U | mg/kg dry | 1 | 0.032 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Di-n-octylphthalate [117-84-0] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |

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**Description:** GP-5 (0-5')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-04
**Sampled:** 09/07/10 13:20
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 96.7

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene [206-44-0] ^ | 0.044 | U | mg/kg dry | 1 | 0.044 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Fluorene [86-73-7] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Hexachlorobenzene [118-74-1] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Hexachlorobutadiene [87-68-3] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Hexachlorocyclopentadiene [77-47-4] ^ | 0.044 | U | mg/kg dry | 1 | 0.044 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Hexachloroethane [67-72-1] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Indeno(1,2,3-cd)pyrene [193-39-5] ^ | 0.039 | U | mg/kg dry | 1 | 0.039 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Isophorone [78-59-1] ^ | 0.017 | U | mg/kg dry | 1 | 0.017 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Naphthalene [91-20-3] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Nitrobenzene [98-95-3] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| N-Nitrosodimethylamine [62-75-9] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| N-Nitroso-di-n-propylamine [621-64-7] ^ | 0.018 | U | mg/kg dry | 1 | 0.018 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| N-nitrosodiphenylamine/Diphenylamine [86-30-6/122-39-4] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Pentachlorophenol [87-86-5] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Phenanthrene [85-01-8] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Phenol [108-95-2] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Pyrene [129-00-0] ^ | 0.050 | U | mg/kg dry | 1 | 0.050 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Pyridine [110-86-1] ^ | 0.12 | U | mg/kg dry | 1 | 0.12 | 0.34 | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *3.0* | *1* | *3.45* | *87 %* | *28-130* | *0I16021* | *EPA 8270D* | *09/20/10 18:57* | *DFM* | |
| *2-Fluorobiphenyl* | *1.5* | *1* | *1.72* | *85 %* | *56-120* | *0I16021* | *EPA 8270D* | *09/20/10 18:57* | *DFM* | |
| *2-Fluorophenol* | *2.5* | *1* | *3.45* | *71 %* | *49-126* | *0I16021* | *EPA 8270D* | *09/20/10 18:57* | *DFM* | |
| *Nitrobenzene-d5* | *1.4* | *1* | *1.72* | *79 %* | *50-117* | *0I16021* | *EPA 8270D* | *09/20/10 18:57* | *DFM* | |
| *Phenol-d5* | *2.7* | *1* | *3.45* | *79 %* | *56-120* | *0I16021* | *EPA 8270D* | *09/20/10 18:57* | *DFM* | |
| *Terphenyl-d14* | *1.9* | *1* | *1.72* | *108 %* | *36-151* | *0I16021* | *EPA 8270D* | *09/20/10 18:57* | *DFM* | |

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**Description:** GP-5 (0-5')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-04
**Sampled:** 09/07/10 13:20
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 96.7

## Tentatively Identified Compounds by Semivolatile GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **1R-.alpha.-Pinene [007785-70-8]** | **0.27** | J | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| **Cyclohexanemethanol, 4-hydroxy [000080-53-5]** | **0.14** | J | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| **Ethane, 1,1,2,2-tetrachloro- [000079-34-5]** | **0.39** | JB | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | B |
| **Ethane, 1,1,2-trichloro- [000079-00-5]** | **0.16** | J | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| Tentatively Identified Compounds [NA] ^ | 0.0 | U | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| **Unknown (01) [NA]** | **0.53** | JB | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | B |
| **Unknown (02) [NA]** | **0.17** | J | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |
| **Unknown (03) [NA]** | **0.32** | J | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 18:57 | DFM | |

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**Description:** GP-5 (0-5')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-04
**Sampled:** 09/07/10 13:20
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 96.7

## Organochlorine Pesticides by GC

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD [72-54-8] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| 4,4'-DDE [72-55-9] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| 4,4'-DDT [50-29-3] ^ | 0.00054 | U | mg/kg dry | 1 | 0.00054 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| Aldrin [309-00-2] ^ | 0.00037 | U | mg/kg dry | 1 | 0.00037 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| alpha-BHC [319-84-6] ^ | 0.00051 | U | mg/kg dry | 1 | 0.00051 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| beta-BHC [319-85-7] ^ | 0.00073 | U | mg/kg dry | 1 | 0.00073 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| Chlordane (tech) [12789-03-6] ^ | 0.0012 | U | mg/kg dry | 1 | 0.0012 | 0.034 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| Chlordane-alpha [5103-71-9] ^ | 0.00048 | U | mg/kg dry | 1 | 0.00048 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| Chlordane-gamma [5566-34-7] ^ | 0.00062 | U | mg/kg dry | 1 | 0.00062 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| delta-BHC [319-86-8] ^ | 0.00031 | U | mg/kg dry | 1 | 0.00031 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| Dieldrin [60-57-1] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| Endosulfan I [959-98-8] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| Endosulfan II [33213-65-9] ^ | 0.00040 | U | mg/kg dry | 1 | 0.00040 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| Endosulfan sulfate [1031-07-8] ^ | 0.00050 | U | mg/kg dry | 1 | 0.00050 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| Endrin [72-20-8] ^ | 0.00040 | U | mg/kg dry | 1 | 0.00040 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| Endrin aldehyde [7421-93-4] ^ | 0.00035 | U | mg/kg dry | 1 | 0.00035 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| Endrin ketone [53494-70-5] ^ | 0.00031 | U | mg/kg dry | 1 | 0.00031 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| gamma-BHC [58-89-9] ^ | 0.00043 | U | mg/kg dry | 1 | 0.00043 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| Heptachlor [76-44-8] ^ | 0.00048 | U | mg/kg dry | 1 | 0.00048 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| Heptachlor epoxide [1024-57-3] ^ | 0.00044 | U | mg/kg dry | 1 | 0.00044 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| Isodrin [465-73-6] ^ | 0.00037 | U | mg/kg dry | 1 | 0.00037 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| Methoxychlor [72-43-5] ^ | 0.00043 | U | mg/kg dry | 1 | 0.00043 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| Mirex [2385-85-5] ^ | 0.00058 | U | mg/kg dry | 1 | 0.00058 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |
| Toxaphene [8001-35-2] ^ | 0.010 | U | mg/kg dry | 1 | 0.010 | 0.018 | OI14011 | EPA 8081B | 09/16/10 20:33 | REF | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,5,6-TCMX* | *0.054* | *1* | *0.0345* | *156 %* | *59-137* | *OI14011* | *EPA 8081B* | *09/16/10 20:33* | *REF* | *QS-03* |
| *Decachlorobiphenyl* | *0.046* | *1* | *0.0345* | *134 %* | *60-140* | *OI14011* | *EPA 8081B* | *09/16/10 20:33* | *REF* | |

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**Description:** GP-5 (0-5')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-04
**Sampled:** 09/07/10 13:20
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 96.7

## Metals by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony [7440-36-0] ^ | 0.114 | U | mg/kg dry | 1 | 0.114 | 1.03 | 0I14018 | EPA 6010C | 09/15/10 10:38 | JDH | |
| **Arsenic [7440-38-2] ^** | **0.739** | | mg/kg dry | 1 | 0.103 | 0.517 | 0I14018 | EPA 6010C | 09/15/10 10:38 | JDH | |
| Beryllium [7440-41-7] ^ | 0.0124 | U | mg/kg dry | 1 | 0.0124 | 0.0517 | 0I14018 | EPA 6010C | 09/15/10 10:38 | JDH | |
| Cadmium [7440-43-9] ^ | 0.00993 | U | mg/kg dry | 1 | 0.00993 | 0.0517 | 0I14018 | EPA 6010C | 09/15/10 10:38 | JDH | |
| **Chromium [7440-47-3] ^** | **2.16** | | mg/kg dry | 1 | 0.103 | 0.517 | 0I14018 | EPA 6010C | 09/15/10 10:38 | JDH | |
| **Copper [7440-50-8] ^** | **0.970** | | mg/kg dry | 1 | 0.197 | 0.517 | 0I14018 | EPA 6010C | 09/15/10 10:38 | JDH | |
| **Lead [7439-92-1] ^** | **2.08** | | mg/kg dry | 1 | 0.124 | 0.517 | 0I14018 | EPA 6010C | 09/15/10 10:38 | JDH | |
| **Manganese [7439-96-5] ^** | **7.53** | | mg/kg dry | 1 | 0.103 | 0.517 | 0I14018 | EPA 6010C | 09/15/10 10:38 | JDH | |
| Mercury [7439-97-6] ^ | 0.00496 | U | mg/kg dry | 1 | 0.00496 | 0.0103 | 0I14017 | EPA 7471B | 09/14/10 16:44 | NLH | |
| **Nickel [7440-02-0] ^** | **0.691** | J | mg/kg dry | 1 | 0.372 | 2.59 | 0I14018 | EPA 6010C | 09/15/10 10:38 | JDH | |
| **Selenium [7782-49-2] ^** | **0.144** | JB | mg/kg dry | 1 | 0.103 | 0.517 | 0I14018 | EPA 6010C | 09/15/10 10:38 | JDH | J-01 |
| Silver [7440-22-4] ^ | 0.103 | U | mg/kg dry | 1 | 0.103 | 0.517 | 0I14018 | EPA 6010C | 09/15/10 10:38 | JDH | |
| **Thallium [7440-28-0] ^** | **0.379** | J | mg/kg dry | 1 | 0.103 | 0.517 | 0I14018 | EPA 6010C | 09/15/10 10:38 | JDH | |
| **Zinc [7440-66-6] ^** | **1.62** | J | mg/kg dry | 1 | 1.14 | 2.59 | 0I14018 | EPA 6010C | 09/15/10 10:38 | JDH | |

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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**Description:** GP-4 (29-33')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-05
**Sampled:** 09/08/10 09:38
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 91.1

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.00020 | U | mg/kg dry | 1 | 0.00020 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.00027 | U | mg/kg dry | 1 | 0.00027 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.00035 | U | mg/kg dry | 1 | 0.00035 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.00037 | U | mg/kg dry | 1 | 0.00037 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.00030 | U | mg/kg dry | 1 | 0.00030 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.00087 | U | mg/kg dry | 1 | 0.00087 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.00051 | U | mg/kg dry | 1 | 0.00051 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.00030 | U | mg/kg dry | 1 | 0.00030 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.00032 | U | mg/kg dry | 1 | 0.00032 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 2-Butanone [78-93-3] ^ | 0.00086 | U | mg/kg dry | 1 | 0.00086 | 0.0055 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.00054 | U | mg/kg dry | 1 | 0.00054 | 0.0055 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.00020 | U | mg/kg dry | 1 | 0.00020 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.00082 | U | mg/kg dry | 1 | 0.00082 | 0.0055 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 0.00063 | U | mg/kg dry | 1 | 0.00063 | 0.0055 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Acetone [67-64-1] ^ | 0.0013 | U | mg/kg dry | 1 | 0.0013 | 0.0055 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Benzene [71-43-2] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.00045 | U | mg/kg dry | 1 | 0.00045 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Bromoform [75-25-2] ^ | 0.00049 | U | mg/kg dry | 1 | 0.00049 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Bromomethane [74-83-9] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.00043 | U | mg/kg dry | 1 | 0.00043 | 0.0055 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Carbon Tetrachloride [56-23-5] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Chloroethane [75-00-3] ^ | 0.00027 | U | mg/kg dry | 1 | 0.00027 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Chloroform [67-66-3] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Chloromethane [74-87-3] ^ | 0.00016 | U | mg/kg dry | 1 | 0.00016 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.00014 | U | mg/kg dry | 1 | 0.00014 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.00038 | U | mg/kg dry | 1 | 0.00038 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.00034 | U | mg/kg dry | 1 | 0.00034 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.00049 | U | mg/kg dry | 1 | 0.00049 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.00038 | U | mg/kg dry | 1 | 0.00038 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Isopropylbenzene [98-82-8] ^ | 0.00016 | U | mg/kg dry | 1 | 0.00016 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.00041 | U | mg/kg dry | 1 | 0.00041 | 0.0022 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Methylene Chloride [75-09-2] ^ | 0.00061 | U | mg/kg dry | 1 | 0.00061 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |

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**Description:** GP-4 (29-33')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-05
**Sampled:** 09/08/10 09:38
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 91.1

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Naphthalene [91-20-3] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.00020 | U | mg/kg dry | 1 | 0.00020 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| o-Xylene [95-47-6] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Styrene [100-42-5] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.00031 | U | mg/kg dry | 1 | 0.00031 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Toluene [108-88-3] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.00041 | U | mg/kg dry | 1 | 0.00041 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.00043 | U | mg/kg dry | 1 | 0.00043 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.00030 | U | mg/kg dry | 1 | 0.00030 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.00061 | U | mg/kg dry | 1 | 0.00061 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *54* | *1* | *50.0* | *109 %* | *61-118* | *0I15005* | *EPA 8260B* | *09/15/10 18:09* | *JKG* | |
| *Dibromofluoromethane* | *50* | *1* | *50.0* | *100 %* | *66-114* | *0I15005* | *EPA 8260B* | *09/15/10 18:09* | *JKG* | |
| *Toluene-d8* | *51* | *1* | *50.0* | *102 %* | *63-118* | *0I15005* | *EPA 8260B* | *09/15/10 18:09* | *JKG* | |

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**Description:** GP-4 (29-33')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-05
**Sampled:** 09/08/10 09:38
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 91.1

## Tentatively Identified Compounds by Volatile GCMS

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzoic acid, 4-methyl-2-tr... [1000153-59-3] | 0.012 | J | mg/kg dry | 1 | | | 0I09003 | EPA 8260B | 09/09/10 18:29 | JKG | |
| Carbon Dioxide [124-38-9] | 0.16 | J | mg/kg dry | 1 | | | 0I09003 | EPA 8260B | 09/09/10 18:29 | JKG | |
| Carbon Dioxide [124-38-9] | 0.097 | J | mg/kg dry | 1 | | | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Cyclopentasiloxane, decamet... [000541-02-6] | 0.0051 | JB | mg/kg dry | 1 | | | 0I09003 | EPA 8260B | 09/09/10 18:29 | JKG | |
| Cyclopentasiloxane, decamet... [000541-02-6] | 0.0048 | J | mg/kg dry | 1 | | | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |
| Cyclotetrasiloxane, octamet... [000556-67-2] | 0.013 | J | mg/kg dry | 1 | | | 0I15005 | EPA 8260B | 09/15/10 18:09 | JKG | |

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**Description:** GP-4 (29-33')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-05
**Sampled:** 09/08/10 09:38
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 91.1

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.025 | U | mg/kg dry | 1 | 0.025 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.035 | U | mg/kg dry | 1 | 0.035 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 1-Methylnaphthalene [90-12-0] ^ | 0.038 | U | mg/kg dry | 1 | 0.038 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 2,4,5-Trichlorophenol [95-95-4] ^ | 0.036 | U | mg/kg dry | 1 | 0.036 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 2,4,6-Trichlorophenol [88-06-2] ^ | 0.035 | U | mg/kg dry | 1 | 0.035 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 2,4-Dichlorophenol [120-83-2] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 2,4-Dimethylphenol [105-67-9] ^ | 0.065 | U | mg/kg dry | 1 | 0.065 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 2,4-Dinitrophenol [51-28-5] ^ | 0.052 | U | mg/kg dry | 1 | 0.052 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 2,4-Dinitrotoluene [121-14-2] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 2,6-Dinitrotoluene [606-20-2] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 2-Chloronaphthalene [91-58-7] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 2-Chlorophenol [95-57-8] ^ | 0.032 | U | mg/kg dry | 1 | 0.032 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 2-Methyl-4,6-dinitrophenol [534-52-1] ^ | 0.055 | U | mg/kg dry | 1 | 0.055 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 2-Methylnaphthalene [91-57-6] ^ | 0.041 | U | mg/kg dry | 1 | 0.041 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 2-Methylphenol [95-48-7] ^ | 0.042 | U | mg/kg dry | 1 | 0.042 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 2-Nitroaniline [88-74-4] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 2-Nitrophenol [88-75-5] ^ | 0.036 | U | mg/kg dry | 1 | 0.036 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 3 & 4-Methylphenol [108-39-4/106-44-5] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 3,3'-Dichlorobenzidine [91-94-1] ^ | 0.046 | U | mg/kg dry | 1 | 0.046 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 3-Nitroaniline [99-09-2] ^ | 0.048 | U | mg/kg dry | 1 | 0.048 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 4-Bromophenyl-phenylether [101-55-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 4-Chloro-3-methylphenol [59-50-7] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 4-Chloroaniline [106-47-8] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 4-Chlorophenyl-phenylether [7005-72-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 4-Nitroaniline [100-01-6] ^ | 0.065 | U | mg/kg dry | 1 | 0.065 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| 4-Nitrophenol [100-02-7] ^ | 0.046 | U | mg/kg dry | 1 | 0.046 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Acenaphthene [83-32-9] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Acenaphthylene [208-96-8] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Anthracene [120-12-7] ^ | 0.036 | U | mg/kg dry | 1 | 0.036 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Benzidine [92-87-5] ^ | 0.12 | U | mg/kg dry | 1 | 0.12 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | QV-01 |
| Benzo(a)anthracene [56-55-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Benzo(a)pyrene [50-32-8] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Benzo(b)fluoranthene [205-99-2] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Benzo(g,h,I)perylene [191-24-2] ^ | 0.043 | U | mg/kg dry | 1 | 0.043 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Benzo(k)fluoranthene [207-08-9] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Benzoic acid [65-85-0] ^ | 0.12 | U | mg/kg dry | 1 | 0.12 | 1.9 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Benzyl alcohol [100-51-6] ^ | 0.072 | U | mg/kg dry | 1 | 0.072 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Bis(2-chloroethoxy)methane [111-91-1] ^ | 0.023 | U | mg/kg dry | 1 | 0.023 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Bis(2-chloroethyl)ether [111-44-4] ^ | 0.055 | U | mg/kg dry | 1 | 0.055 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Bis(2-chloroisopropyl)ether [108-60-1] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Bis(2-ethylhexyl)phthalate [117-81-7] ^ | 0.041 | U | mg/kg dry | 1 | 0.041 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Butylbenzylphthalate [85-68-7] ^ | 0.037 | U | mg/kg dry | 1 | 0.037 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | QV-02 |
| Chrysene [218-01-9] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Dibenzo(a,h)anthracene [53-70-3] ^ | 0.045 | U | mg/kg dry | 1 | 0.045 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Dibenzofuran [132-64-9] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Diethylphthalate [84-66-2] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Dimethylphthalate [131-11-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Di-n-butylphthalate [84-74-2] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Di-n-octylphthalate [117-84-0] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |

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**Description:** GP-4 (29-33')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-05
**Sampled:** 09/08/10 09:38
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 91.1

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene [206-44-0] ^ | 0.047 | U | mg/kg dry | 1 | 0.047 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Fluorene [86-73-7] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Hexachlorobenzene [118-74-1] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Hexachlorobutadiene [87-68-3] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Hexachlorocyclopentadiene [77-47-4] ^ | 0.047 | U | mg/kg dry | 1 | 0.047 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Hexachloroethane [67-72-1] ^ | 0.036 | U | mg/kg dry | 1 | 0.036 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Indeno(1,2,3-cd)pyrene [193-39-5] ^ | 0.042 | U | mg/kg dry | 1 | 0.042 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Isophorone [78-59-1] ^ | 0.018 | U | mg/kg dry | 1 | 0.018 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Naphthalene [91-20-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Nitrobenzene [98-95-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| N-Nitrosodimethylamine [62-75-9] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| N-Nitroso-di-n-propylamine [621-64-7] ^ | 0.019 | U | mg/kg dry | 1 | 0.019 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| N-nitrosodiphenylamine/Diphenylamine [86-30-6/122-39-4] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Pentachlorophenol [87-86-5] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Phenanthrene [85-01-8] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Phenol [108-95-2] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Pyrene [129-00-0] ^ | 0.053 | U | mg/kg dry | 1 | 0.053 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Pyridine [110-86-1] ^ | 0.13 | U | mg/kg dry | 1 | 0.13 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *3.1* | *1* | *3.66* | *84 %* | *28-130* | *0I16021* | *EPA 8270D* | *09/20/10 19:27* | *DFM* | |
| *2-Fluorobiphenyl* | *1.5* | *1* | *1.83* | *83 %* | *56-120* | *0I16021* | *EPA 8270D* | *09/20/10 19:27* | *DFM* | |
| *2-Fluorophenol* | *2.6* | *1* | *3.66* | *71 %* | *49-126* | *0I16021* | *EPA 8270D* | *09/20/10 19:27* | *DFM* | |
| *Nitrobenzene-d5* | *1.5* | *1* | *1.83* | *82 %* | *50-117* | *0I16021* | *EPA 8270D* | *09/20/10 19:27* | *DFM* | |
| *Phenol-d5* | *2.9* | *1* | *3.66* | *79 %* | *56-120* | *0I16021* | *EPA 8270D* | *09/20/10 19:27* | *DFM* | |
| *Terphenyl-d14* | *1.9* | *1* | *1.83* | *103 %* | *36-151* | *0I16021* | *EPA 8270D* | *09/20/10 19:27* | *DFM* | |

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**Description:** GP-4 (29-33')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-05
**Sampled:** 09/08/10 09:38
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 91.1

## Tentatively Identified Compounds by Semivolatile GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **7-Oxabicyclo[4.1.0]heptane [000286-20-4]** | **0.21** | J | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| **Ethane, 1,1,2,2-tetrachloro- [000079-34-5]** | **0.45** | JB | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | B |
| **Ethane, 1,1,2-trichloro- [000079-00-5]** | **0.19** | J | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| Tentatively Identified Compounds [NA] ^ | 0.0 | U | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | |
| **Unknown [NA]** | **0.56** | JB | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 19:27 | DFM | B |

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**Description:** GP-4 (29-33')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-05
**Sampled:** 09/08/10 09:38
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 91.1

## Organochlorine Pesticides by GC

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD [72-54-8] ^ | 0.00035 | U | mg/kg dry | 1 | 0.00035 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| 4,4'-DDE [72-55-9] ^ | 0.00045 | U | mg/kg dry | 1 | 0.00045 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| 4,4'-DDT [50-29-3] ^ | 0.00057 | U | mg/kg dry | 1 | 0.00057 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| Aldrin [309-00-2] ^ | 0.00040 | U | mg/kg dry | 1 | 0.00040 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| alpha-BHC [319-84-6] ^ | 0.00054 | U | mg/kg dry | 1 | 0.00054 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| beta-BHC [319-85-7] ^ | 0.00078 | U | mg/kg dry | 1 | 0.00078 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| Chlordane (tech) [12789-03-6] ^ | 0.0012 | U | mg/kg dry | 1 | 0.0012 | 0.036 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| Chlordane-alpha [5103-71-9] ^ | 0.00051 | U | mg/kg dry | 1 | 0.00051 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| Chlordane-gamma [5566-34-7] ^ | 0.00066 | U | mg/kg dry | 1 | 0.00066 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| delta-BHC [319-86-8] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| Dieldrin [60-57-1] ^ | 0.00035 | U | mg/kg dry | 1 | 0.00035 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| Endosulfan I [959-98-8] ^ | 0.00045 | U | mg/kg dry | 1 | 0.00045 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| Endosulfan II [33213-65-9] ^ | 0.00043 | U | mg/kg dry | 1 | 0.00043 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| Endosulfan sulfate [1031-07-8] ^ | 0.00053 | U | mg/kg dry | 1 | 0.00053 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| Endrin [72-20-8] ^ | 0.00043 | U | mg/kg dry | 1 | 0.00043 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| Endrin aldehyde [7421-93-4] ^ | 0.00037 | U | mg/kg dry | 1 | 0.00037 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| Endrin ketone [53494-70-5] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| gamma-BHC [58-89-9] ^ | 0.00046 | U | mg/kg dry | 1 | 0.00046 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| Heptachlor [76-44-8] ^ | 0.00051 | U | mg/kg dry | 1 | 0.00051 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| Heptachlor epoxide [1024-57-3] ^ | 0.00047 | U | mg/kg dry | 1 | 0.00047 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| Isodrin [465-73-6] ^ | 0.00040 | U | mg/kg dry | 1 | 0.00040 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| Methoxychlor [72-43-5] ^ | 0.00046 | U | mg/kg dry | 1 | 0.00046 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| Mirex [2385-85-5] ^ | 0.00061 | U | mg/kg dry | 1 | 0.00061 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |
| Toxaphene [8001-35-2] ^ | 0.011 | U | mg/kg dry | 1 | 0.011 | 0.019 | 0I14011 | EPA 8081B | 09/16/10 20:46 | REF | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,5,6-TCMX* | *0.057* | *1* | *0.0366* | *154 %* | *59-137* | *0I14011* | *EPA 8081B* | *09/16/10 20:46* | *REF* | *QS-03* |
| *Decachlorobiphenyl* | *0.047* | *1* | *0.0366* | *129 %* | *60-140* | *0I14011* | *EPA 8081B* | *09/16/10 20:46* | *REF* | |

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**Description:** GP-4 (29-33')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-05
**Sampled:** 09/08/10 09:38
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 91.1

## Metals by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony [7440-36-0] ^ | 0.121 | U | mg/kg dry | 1 | 0.121 | 1.10 | 0I14018 | EPA 6010C | 09/15/10 10:40 | JDH | |
| **Arsenic [7440-38-2] ^** | **1.22** | | mg/kg dry | 1 | 0.110 | 0.549 | 0I14018 | EPA 6010C | 09/15/10 10:40 | JDH | |
| Beryllium [7440-41-7] ^ | 0.0132 | U | mg/kg dry | 1 | 0.0132 | 0.0549 | 0I14018 | EPA 6010C | 09/15/10 10:40 | JDH | |
| Cadmium [7440-43-9] ^ | 0.0105 | U | mg/kg dry | 1 | 0.0105 | 0.0549 | 0I14018 | EPA 6010C | 09/15/10 10:40 | JDH | |
| **Chromium [7440-47-3] ^** | **1.34** | | mg/kg dry | 1 | 0.110 | 0.549 | 0I14018 | EPA 6010C | 09/15/10 10:40 | JDH | |
| **Copper [7440-50-8] ^** | **3.10** | | mg/kg dry | 1 | 0.209 | 0.549 | 0I14018 | EPA 6010C | 09/15/10 10:40 | JDH | |
| **Lead [7439-92-1] ^** | **0.846** | | mg/kg dry | 1 | 0.132 | 0.549 | 0I14018 | EPA 6010C | 09/15/10 10:40 | JDH | |
| **Manganese [7439-96-5] ^** | **0.291** | J | mg/kg dry | 1 | 0.110 | 0.549 | 0I14018 | EPA 6010C | 09/15/10 10:40 | JDH | |
| ***Mercury [7439-97-6] ^*** | ***0.00765*** | J | *mg/kg dry* | 1 | 0.00527 | 0.0110 | 0I14017 | EPA 7471B | 09/14/10 16:47 | NLH | |
| Nickel [7440-02-0] ^ | 0.395 | U | mg/kg dry | 1 | 0.395 | 2.75 | 0I14018 | EPA 6010C | 09/15/10 10:40 | JDH | |
| **Selenium [7782-49-2] ^** | **0.942** | B | mg/kg dry | 1 | 0.110 | 0.549 | 0I14018 | EPA 6010C | 09/15/10 10:40 | JDH | J-01 |
| Silver [7440-22-4] ^ | 0.110 | U | mg/kg dry | 1 | 0.110 | 0.549 | 0I14018 | EPA 6010C | 09/15/10 10:40 | JDH | |
| **Thallium [7440-28-0] ^** | **0.160** | J | mg/kg dry | 1 | 0.110 | 0.549 | 0I14018 | EPA 6010C | 09/15/10 10:40 | JDH | |
| Zinc [7440-66-6] ^ | 1.21 | U | mg/kg dry | 1 | 1.21 | 2.75 | 0I14018 | EPA 6010C | 09/15/10 10:40 | JDH | |

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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**Description:** GP-6 (5-9')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-06
**Sampled:** 09/08/10 13:30
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 92.1

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.00017 | U | mg/kg dry | 1 | 0.00017 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.00020 | U | mg/kg dry | 1 | 0.00020 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.00027 | U | mg/kg dry | 1 | 0.00027 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.00035 | U | mg/kg dry | 1 | 0.00035 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.00037 | U | mg/kg dry | 1 | 0.00037 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.00086 | U | mg/kg dry | 1 | 0.00086 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.00050 | U | mg/kg dry | 1 | 0.00050 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.00041 | U | mg/kg dry | 1 | 0.00041 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.00028 | U | mg/kg dry | 1 | 0.00028 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.00031 | U | mg/kg dry | 1 | 0.00031 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 2-Butanone [78-93-3] ^ | 0.00085 | U | mg/kg dry | 1 | 0.00085 | 0.0054 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.00053 | U | mg/kg dry | 1 | 0.00053 | 0.0054 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.00020 | U | mg/kg dry | 1 | 0.00020 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.00081 | U | mg/kg dry | 1 | 0.00081 | 0.0054 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.00028 | U | mg/kg dry | 1 | 0.00028 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.00017 | U | mg/kg dry | 1 | 0.00017 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 0.00062 | U | mg/kg dry | 1 | 0.00062 | 0.0054 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Acetone [67-64-1] ^ | 0.0013 | U | mg/kg dry | 1 | 0.0013 | 0.0054 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Benzene [71-43-2] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.00045 | U | mg/kg dry | 1 | 0.00045 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Bromoform [75-25-2] ^ | 0.00049 | U | mg/kg dry | 1 | 0.00049 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Bromomethane [74-83-9] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0054 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Carbon Tetrachloride [56-23-5] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Chloroethane [75-00-3] ^ | 0.00027 | U | mg/kg dry | 1 | 0.00027 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Chloroform [67-66-3] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Chloromethane [74-87-3] ^ | 0.00016 | U | mg/kg dry | 1 | 0.00016 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.00014 | U | mg/kg dry | 1 | 0.00014 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.00038 | U | mg/kg dry | 1 | 0.00038 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.00034 | U | mg/kg dry | 1 | 0.00034 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.00049 | U | mg/kg dry | 1 | 0.00049 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.00038 | U | mg/kg dry | 1 | 0.00038 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Isopropylbenzene [98-82-8] ^ | 0.00016 | U | mg/kg dry | 1 | 0.00016 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.00040 | U | mg/kg dry | 1 | 0.00040 | 0.0022 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Methylene Chloride [75-09-2] ^ | 0.00061 | U | mg/kg dry | 1 | 0.00061 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |

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**Description:** GP-6 (5-9')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-06
**Sampled:** 09/08/10 13:30
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 92.1

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Naphthalene [91-20-3] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.00020 | U | mg/kg dry | 1 | 0.00020 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| o-Xylene [95-47-6] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Styrene [100-42-5] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.00017 | U | mg/kg dry | 1 | 0.00017 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.00030 | U | mg/kg dry | 1 | 0.00030 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Toluene [108-88-3] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.00040 | U | mg/kg dry | 1 | 0.00040 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.00028 | U | mg/kg dry | 1 | 0.00028 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.00061 | U | mg/kg dry | 1 | 0.00061 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *56* | *1* | *50.0* | *112 %* | *61-118* | *0I15005* | *EPA 8260B* | *09/15/10 18:38* | *JKG* | |
| *Dibromofluoromethane* | *54* | *1* | *50.0* | *107 %* | *66-114* | *0I15005* | *EPA 8260B* | *09/15/10 18:38* | *JKG* | |
| *Toluene-d8* | *51* | *1* | *50.0* | *101 %* | *63-118* | *0I15005* | *EPA 8260B* | *09/15/10 18:38* | *JKG* | |

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**Description:** GP-6 (5-9')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-06
**Sampled:** 09/08/10 13:30
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 92.1

## Tentatively Identified Compounds by Volatile GCMS

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7H-Dibenzo[b,g]carbazole, 7... [003557-49-1] | 0.012 | J | mg/kg dry | 1 | | | 0I09003 | EPA 8260B | 09/09/10 18:57 | JKG | |
| Carbon Dioxide [124-38-9] | 0.21 | J | mg/kg dry | 1 | | | 0I09003 | EPA 8260B | 09/09/10 18:57 | JKG | |
| Carbon Dioxide [124-38-9] | 0.12 | J | mg/kg dry | 1 | | | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Cyclopentasiloxane, decamet... [000541-02-6] | 0.0057 | JB | mg/kg dry | 1 | | | 0I09003 | EPA 8260B | 09/09/10 18:57 | JKG | |
| Cyclopentasiloxane, decamet... [000541-02-6] | 0.0051 | J | mg/kg dry | 1 | | | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |
| Cyclotetrasiloxane, octamet... [000556-67-2] | 0.014 | J | mg/kg dry | 1 | | | 0I15005 | EPA 8260B | 09/15/10 18:38 | JKG | |

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**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 92.1

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.025 | U | mg/kg dry | 1 | 0.025 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.035 | U | mg/kg dry | 1 | 0.035 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 1-Methylnaphthalene [90-12-0] ^ | 0.038 | U | mg/kg dry | 1 | 0.038 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 2,4,5-Trichlorophenol [95-95-4] ^ | 0.036 | U | mg/kg dry | 1 | 0.036 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 2,4,6-Trichlorophenol [88-06-2] ^ | 0.035 | U | mg/kg dry | 1 | 0.035 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 2,4-Dichlorophenol [120-83-2] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 2,4-Dimethylphenol [105-67-9] ^ | 0.064 | U | mg/kg dry | 1 | 0.064 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 2,4-Dinitrophenol [51-28-5] ^ | 0.051 | U | mg/kg dry | 1 | 0.051 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 2,4-Dinitrotoluene [121-14-2] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 2,6-Dinitrotoluene [606-20-2] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 2-Chloronaphthalene [91-58-7] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 2-Chlorophenol [95-57-8] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 2-Methyl-4,6-dinitrophenol [534-52-1] ^ | 0.054 | U | mg/kg dry | 1 | 0.054 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 2-Methylnaphthalene [91-57-6] ^ | 0.040 | U | mg/kg dry | 1 | 0.040 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 2-Methylphenol [95-48-7] ^ | 0.041 | U | mg/kg dry | 1 | 0.041 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 2-Nitroaniline [88-74-4] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 2-Nitrophenol [88-75-5] ^ | 0.036 | U | mg/kg dry | 1 | 0.036 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 3 & 4-Methylphenol [108-39-4/106-44-5] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 3,3'-Dichlorobenzidine [91-94-1] ^ | 0.046 | U | mg/kg dry | 1 | 0.046 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 3-Nitroaniline [99-09-2] ^ | 0.048 | U | mg/kg dry | 1 | 0.048 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 4-Bromophenyl-phenylether [101-55-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 4-Chloro-3-methylphenol [59-50-7] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 4-Chloroaniline [106-47-8] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 4-Chlorophenyl-phenylether [7005-72-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 4-Nitroaniline [100-01-6] ^ | 0.064 | U | mg/kg dry | 1 | 0.064 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| 4-Nitrophenol [100-02-7] ^ | 0.046 | U | mg/kg dry | 1 | 0.046 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Acenaphthene [83-32-9] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Acenaphthylene [208-96-8] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Anthracene [120-12-7] ^ | 0.036 | U | mg/kg dry | 1 | 0.036 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Benzidine [92-87-5] ^ | 0.12 | U | mg/kg dry | 1 | 0.12 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | QV-01 |
| Benzo(a)anthracene [56-55-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Benzo(a)pyrene [50-32-8] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Benzo(b)fluoranthene [205-99-2] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Benzo(g,h,i)perylene [191-24-2] ^ | 0.042 | U | mg/kg dry | 1 | 0.042 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Benzo(k)fluoranthene [207-08-9] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Benzoic acid [65-85-0] ^ | 0.12 | U | mg/kg dry | 1 | 0.12 | 1.8 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Benzyl alcohol [100-51-6] ^ | 0.072 | U | mg/kg dry | 1 | 0.072 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Bis(2-chloroethoxy)methane [111-91-1] ^ | 0.023 | U | mg/kg dry | 1 | 0.023 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Bis(2-chloroethyl)ether [111-44-4] ^ | 0.054 | U | mg/kg dry | 1 | 0.054 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Bis(2-chloroisopropyl)ether [108-60-1] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Bis(2-ethylhexyl)phthalate [117-81-7] ^ | 0.040 | U | mg/kg dry | 1 | 0.040 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Butylbenzylphthalate [85-68-7] ^ | 0.037 | U | mg/kg dry | 1 | 0.037 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | QV-02 |
| Chrysene [218-01-9] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Dibenzo(a,h)anthracene [53-70-3] ^ | 0.045 | U | mg/kg dry | 1 | 0.045 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Dibenzofuran [132-64-9] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Diethylphthalate [84-66-2] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Dimethylphthalate [131-11-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Di-n-butylphthalate [84-74-2] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Di-n-octylphthalate [117-84-0] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |

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**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-06
**Sampled:** 09/08/10 13:30
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 92.1

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene [206-44-0] ^ | 0.047 | U | mg/kg dry | 1 | 0.047 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Fluorene [86-73-7] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Hexachlorobenzene [118-74-1] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Hexachlorobutadiene [87-68-3] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Hexachlorocyclopentadiene [77-47-4] ^ | 0.047 | U | mg/kg dry | 1 | 0.047 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Hexachloroethane [67-72-1] ^ | 0.036 | U | mg/kg dry | 1 | 0.036 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Indeno(1,2,3-cd)pyrene [193-39-5] ^ | 0.041 | U | mg/kg dry | 1 | 0.041 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Isophorone [78-59-1] ^ | 0.017 | U | mg/kg dry | 1 | 0.017 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Naphthalene [91-20-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Nitrobenzene [98-95-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| N-Nitrosodimethylamine [62-75-9] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| N-Nitroso-di-n-propylamine [621-64-7] ^ | 0.018 | U | mg/kg dry | 1 | 0.018 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| N-nitrosodiphenylamine/Diphenylamine [86-30-6/122-39-4] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Pentachlorophenol [87-86-5] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Phenanthrene [85-01-8] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Phenol [108-95-2] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Pyrene [129-00-0] ^ | 0.052 | U | mg/kg dry | 1 | 0.052 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| Pyridine [110-86-1] ^ | 0.13 | U | mg/kg dry | 1 | 0.13 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *3.1* | *1* | *3.62* | *86 %* | *28-130* | *0I16021* | *EPA 8270D* | *09/20/10 19:56* | *DFM* | |
| *2-Fluorobiphenyl* | *1.5* | *1* | *1.81* | *85 %* | *56-120* | *0I16021* | *EPA 8270D* | *09/20/10 19:56* | *DFM* | |
| *2-Fluorophenol* | *2.6* | *1* | *3.62* | *72 %* | *49-126* | *0I16021* | *EPA 8270D* | *09/20/10 19:56* | *DFM* | |
| *Nitrobenzene-d5* | *1.5* | *1* | *1.81* | *84 %* | *50-117* | *0I16021* | *EPA 8270D* | *09/20/10 19:56* | *DFM* | |
| *Phenol-d5* | *2.9* | *1* | *3.62* | *79 %* | *56-120* | *0I16021* | *EPA 8270D* | *09/20/10 19:56* | *DFM* | |
| *Terphenyl-d14* | *1.9* | *1* | *1.81* | *104 %* | *36-151* | *0I16021* | *EPA 8270D* | *09/20/10 19:56* | *DFM* | |

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**Description:** GP-6 (5-9')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-06
**Sampled:** 09/08/10 13:30
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 92.1

## Tentatively Identified Compounds by Semivolatile GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Ethane, 1,1,2,2-tetrachloro- [000079-34-5]** | **0.27** | JB | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | B |
| Tentatively Identified Compounds [NA] ^ | 0.0 | U | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | |
| **Unknown [NA]** | **0.59** | JB | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 19:56 | DFM | B |

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**Description:** GP-6 (5-9')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-06
**Sampled:** 09/08/10 13:30
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 92.1

## Organochlorine Pesticides by GC

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD [72-54-8] ^ | 0.00035 | U | mg/kg dry | 1 | 0.00035 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| 4,4'-DDE [72-55-9] ^ | 0.00045 | U | mg/kg dry | 1 | 0.00045 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| 4,4'-DDT [50-29-3] ^ | 0.00056 | U | mg/kg dry | 1 | 0.00056 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| Aldrin [309-00-2] ^ | 0.00039 | U | mg/kg dry | 1 | 0.00039 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| alpha-BHC [319-84-6] ^ | 0.00053 | U | mg/kg dry | 1 | 0.00053 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| beta-BHC [319-85-7] ^ | 0.00077 | U | mg/kg dry | 1 | 0.00077 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| Chlordane (tech) [12789-03-6] ^ | 0.0012 | U | mg/kg dry | 1 | 0.0012 | 0.036 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| Chlordane-alpha [5103-71-9] ^ | 0.00050 | U | mg/kg dry | 1 | 0.00050 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| Chlordane-gamma [5566-34-7] ^ | 0.00065 | U | mg/kg dry | 1 | 0.00065 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| delta-BHC [319-86-8] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| Dieldrin [60-57-1] ^ | 0.00035 | U | mg/kg dry | 1 | 0.00035 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| Endosulfan I [959-98-8] ^ | 0.00045 | U | mg/kg dry | 1 | 0.00045 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| Endosulfan II [33213-65-9] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| Endosulfan sulfate [1031-07-8] ^ | 0.00052 | U | mg/kg dry | 1 | 0.00052 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| Endrin [72-20-8] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| Endrin aldehyde [7421-93-4] ^ | 0.00037 | U | mg/kg dry | 1 | 0.00037 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| Endrin ketone [53494-70-5] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| gamma-BHC [58-89-9] ^ | 0.00046 | U | mg/kg dry | 1 | 0.00046 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| Heptachlor [76-44-8] ^ | 0.00050 | U | mg/kg dry | 1 | 0.00050 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| Heptachlor epoxide [1024-57-3] ^ | 0.00047 | U | mg/kg dry | 1 | 0.00047 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| Isodrin [465-73-6] ^ | 0.00039 | U | mg/kg dry | 1 | 0.00039 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| Methoxychlor [72-43-5] ^ | 0.00046 | U | mg/kg dry | 1 | 0.00046 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| Mirex [2385-85-5] ^ | 0.00061 | U | mg/kg dry | 1 | 0.00061 | 0.0018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |
| Toxaphene [8001-35-2] ^ | 0.011 | U | mg/kg dry | 1 | 0.011 | 0.018 | OI14011 | EPA 8081B | 09/16/10 21:00 | REF | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,5,6-TCMX* | *0.053* | *1* | *0.0362* | *148 %* | *59-137* | *OI14011* | *EPA 8081B* | *09/16/10 21:00* | *REF* | *QS-03* |
| *Decachlorobiphenyl* | *0.046* | *1* | *0.0362* | *127 %* | *60-140* | *OI14011* | *EPA 8081B* | *09/16/10 21:00* | *REF* | |

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**Description:** GP-6 (5-9')
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010226-06
**Sampled:** 09/08/10 13:30
**Sampled By:** Gerald Paul

**Received:** 09/08/10 15:25
**Work Order:** C010226
**% Solids:** 92.1

## Metals by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony [7440-36-0] ^ | 0.119 | U | mg/kg dry | 1 | 0.119 | 1.09 | 0I14018 | EPA 6010C | 09/15/10 10:43 | JDH | |
| **Arsenic [7440-38-2] ^** | **0.728** | | mg/kg dry | 1 | 0.109 | 0.543 | 0I14018 | EPA 6010C | 09/15/10 10:43 | JDH | |
| Beryllium [7440-41-7] ^ | 0.0130 | U | mg/kg dry | 1 | 0.0130 | 0.0543 | 0I14018 | EPA 6010C | 09/15/10 10:43 | JDH | |
| Cadmium [7440-43-9] ^ | 0.0104 | U | mg/kg dry | 1 | 0.0104 | 0.0543 | 0I14018 | EPA 6010C | 09/15/10 10:43 | JDH | |
| **Chromium [7440-47-3] ^** | **2.48** | | mg/kg dry | 1 | 0.109 | 0.543 | 0I14018 | EPA 6010C | 09/15/10 10:43 | JDH | |
| **Copper [7440-50-8] ^** | **1.18** | | mg/kg dry | 1 | 0.206 | 0.543 | 0I14018 | EPA 6010C | 09/15/10 10:43 | JDH | |
| **Lead [7439-92-1] ^** | **1.19** | | mg/kg dry | 1 | 0.130 | 0.543 | 0I14018 | EPA 6010C | 09/15/10 10:43 | JDH | |
| **Manganese [7439-96-5] ^** | **3.51** | | mg/kg dry | 1 | 0.109 | 0.543 | 0I14018 | EPA 6010C | 09/15/10 10:43 | JDH | |
| Mercury [7439-97-6] ^ | 0.00521 | U | mg/kg dry | 1 | 0.00521 | 0.0109 | 0I14017 | EPA 7471B | 09/14/10 16:50 | NLH | |
| **Nickel [7440-02-0] ^** | **0.446** | J | mg/kg dry | 1 | 0.391 | 2.71 | 0I14018 | EPA 6010C | 09/15/10 10:43 | JDH | |
| **Selenium [7782-49-2] ^** | **0.347** | JB | mg/kg dry | 1 | 0.109 | 0.543 | 0I14018 | EPA 6010C | 09/15/10 10:43 | JDH | J-01 |
| Silver [7440-22-4] ^ | 0.109 | U | mg/kg dry | 1 | 0.109 | 0.543 | 0I14018 | EPA 6010C | 09/15/10 10:43 | JDH | |
| **Thallium [7440-28-0] ^** | **0.148** | J | mg/kg dry | 1 | 0.109 | 0.543 | 0I14018 | EPA 6010C | 09/15/10 10:43 | JDH | |
| **Zinc [7440-66-6] ^** | **1.42** | J | mg/kg dry | 1 | 1.19 | 2.71 | 0I14018 | EPA 6010C | 09/15/10 10:43 | JDH | |

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

## QUALITY CONTROL

### Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I09003 - EPA 5035_MS*

**Blank (0I09003-BLK1)** Prepared: 09/09/2010 07:19 Analyzed: 09/09/2010 10:50

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.00016 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | 0.00018 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | 0.00023 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethane | 0.00025 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethene | 0.00030 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1-Dichloropropene | 0.00032 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | 0.00021 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | 0.00034 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.00027 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dibromo-3-chloropropane | 0.00079 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dibromoethane | 0.00046 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | 0.00027 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dichloroethane | 0.00038 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dichloropropane | 0.00026 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,3-Dichloropropane | 0.00029 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| 2,2-Dichloropropane | 0.00023 | U | 0.0010 | mg/kg wet | | | | | | | |
| 2-Butanone | 0.00078 | U | 0.0050 | mg/kg wet | | | | | | | |
| 2-Chloroethyl Vinyl Ether | 0.00049 | U | 0.0050 | mg/kg wet | | | | | | | |
| 2-Chlorotoluene | 0.00018 | U | 0.0010 | mg/kg wet | | | | | | | |
| 2-Hexanone | 0.00075 | U | 0.0050 | mg/kg wet | | | | | | | |
| 4-Chlorotoluene | 0.00026 | U | 0.0010 | mg/kg wet | | | | | | | |
| 4-Isopropyltoluene | 0.00016 | U | 0.0010 | mg/kg wet | | | | | | | |
| 4-Methyl-2-pentanone | 0.00057 | U | 0.0050 | mg/kg wet | | | | | | | |
| Acetone | 0.0012 | U | 0.0050 | mg/kg wet | | | | | | | |
| Benzene | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromobenzene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromochloromethane | 0.00041 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromodichloromethane | 0.00024 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromoform | 0.00045 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromomethane | 0.00023 | U | 0.0010 | mg/kg wet | | | | | | | |
| Carbon disulfide | 0.00039 | U | 0.0050 | mg/kg wet | | | | | | | |
| Carbon Tetrachloride | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| Chlorobenzene | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| Chloroethane | 0.00025 | U | 0.0010 | mg/kg wet | | | | | | | |
| Chloroform | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| Chloromethane | 0.00015 | U | 0.0010 | mg/kg wet | | | | | | | |
| cis-1,2-Dichloroethene | 0.00023 | U | 0.0010 | mg/kg wet | | | | | | | |
| cis-1,3-Dichloropropene | 0.00013 | U | 0.0010 | mg/kg wet | | | | | | | |
| Dibromochloromethane | 0.00035 | U | 0.0010 | mg/kg wet | | | | | | | |
| Dibromomethane | 0.00031 | U | 0.0010 | mg/kg wet | | | | | | | |
| Dichlorodifluoromethane | 0.00045 | U | 0.0010 | mg/kg wet | | | | | | | |
| Ethylbenzene | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | 0.00035 | U | 0.0010 | mg/kg wet | | | | | | | |
| Isopropylbenzene | 0.00015 | U | 0.0010 | mg/kg wet | | | | | | | |

## QUALITY CONTROL

### Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I09003 - EPA 5035_MS*

**Blank (0I09003-BLK1) Continued** Prepared: 09/09/2010 07:19 Analyzed: 09/09/2010 10:50

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| m,p-Xylenes | 0.00037 | U | 0.0020 | mg/kg wet | | | | | | | |
| Methylene Chloride | 0.00056 | U | 0.0010 | mg/kg wet | | | | | | | |
| Methyl-tert-Butyl Ether | 0.00030 | U | 0.0010 | mg/kg wet | | | | | | | |
| Naphthalene | 0.00024 | U | 0.0010 | mg/kg wet | | | | | | | |
| n-Butyl Benzene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| n-Propyl Benzene | 0.00018 | U | 0.0010 | mg/kg wet | | | | | | | |
| o-Xylene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| sec-Butylbenzene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| Styrene | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| tert-Butylbenzene | 0.00016 | U | 0.0010 | mg/kg wet | | | | | | | |
| Tetrachloroethene | 0.00028 | U | 0.0010 | mg/kg wet | | | | | | | |
| **Toluene** | **0.00062** | **J** | 0.0010 | mg/kg wet | | | | | | | |
| trans-1,2-Dichloroethene | 0.00037 | U | 0.0010 | mg/kg wet | | | | | | | |
| trans-1,3-Dichloropropene | 0.00039 | U | 0.0010 | mg/kg wet | | | | | | | |
| Trichloroethene | 0.00027 | U | 0.0010 | mg/kg wet | | | | | | | |
| Trichlorofluoromethane | 0.00026 | U | 0.0010 | mg/kg wet | | | | | | | |
| Vinyl chloride | 0.00024 | U | 0.0010 | mg/kg wet | | | | | | | |
| Xylenes (Total) | 0.00056 | U | 0.0010 | mg/kg wet | | | | | | | |
| *Surrogate: 4-Bromofluorobenzene* | *53* | | | *ug/L* | *50.0* | | *106* | *61-118* | | | |
| *Surrogate: Dibromofluoromethane* | *50* | | | *ug/L* | *50.0* | | *100* | *66-114* | | | |
| *Surrogate: Toluene-d8* | *51* | | | *ug/L* | *50.0* | | *102* | *63-118* | | | |

**LCS (0I09003-BS1)** Prepared: 09/09/2010 07:19 Analyzed: 09/09/2010 11:18

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 21 | | 1.0 | ug/L | 20.0 | | 105 | 64-133 | | | |
| Benzene | 20 | | 1.0 | ug/L | 20.0 | | 102 | 79-129 | | | |
| Chlorobenzene | 21 | | 1.0 | ug/L | 20.0 | | 104 | 79-121 | | | |
| Toluene | 22 | B | 1.0 | ug/L | 20.0 | | 110 | 77-120 | | | |
| Trichloroethene | 22 | | 1.0 | ug/L | 20.0 | | 108 | 78-118 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *51* | | | *ug/L* | *50.0* | | *101* | *61-118* | | | |
| *Surrogate: Dibromofluoromethane* | *47* | | | *ug/L* | *50.0* | | *94* | *66-114* | | | |
| *Surrogate: Toluene-d8* | *51* | | | *ug/L* | *50.0* | | *103* | *63-118* | | | |

**Matrix Spike (0I09003-MS1)** Prepared: 09/09/2010 07:19 Analyzed: 09/09/2010 11:47

**Source: C010313-09**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 21 | | 1.0 | ug/L | 20.0 | 0.30 U | 106 | 64-133 | | | |
| Benzene | 20 | | 1.0 | ug/L | 20.0 | 0.17 U | 102 | 79-129 | | | |
| Chlorobenzene | 22 | | 1.0 | ug/L | 20.0 | 0.17 U | 108 | 79-121 | | | |
| Toluene | 22 | B | 1.0 | ug/L | 20.0 | 0.59 | 107 | 77-120 | | | |
| Trichloroethene | 21 | | 1.0 | ug/L | 20.0 | 0.27 U | 106 | 78-118 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *53* | | | *ug/L* | *50.0* | | *106* | *61-118* | | | |
| *Surrogate: Dibromofluoromethane* | *49* | | | *ug/L* | *50.0* | | *97* | *66-114* | | | |
| *Surrogate: Toluene-d8* | *53* | | | *ug/L* | *50.0* | | *106* | *63-118* | | | |

# QUALITY CONTROL

## Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I09003 - EPA 5035_MS*

**Matrix Spike Dup (0I09003-MSD1)** Prepared: 09/09/2010 07:19 Analyzed: 09/09/2010 12:16

**Source: C010313-09**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 22 | | 1.0 | ug/L | 20.0 | 0.30 U | 108 | 64-133 | 2 | 23 | |
| Benzene | 21 | | 1.0 | ug/L | 20.0 | 0.17 U | 105 | 79-129 | 3 | 23 | |
| Chlorobenzene | 22 | | 1.0 | ug/L | 20.0 | 0.17 U | 108 | 79-121 | 0.05 | 25 | |
| Toluene | 22 | B | 1.0 | ug/L | 20.0 | 0.59 | 108 | 77-120 | 0.9 | 23 | |
| Trichloroethene | 22 | | 1.0 | ug/L | 20.0 | 0.27 U | 109 | 78-118 | 2 | 24 | |
| *Surrogate: 4-Bromofluorobenzene* | *53* | | | *ug/L* | *50.0* | | *107* | *61-118* | | | |
| *Surrogate: Dibromofluoromethane* | *50* | | | *ug/L* | *50.0* | | *101* | *66-114* | | | |
| *Surrogate: Toluene-d8* | *54* | | | *ug/L* | *50.0* | | *107* | *63-118* | | | |

*Batch 0I10007 - EPA 5030B_MS*

**Blank (0I10007-BLK1)** Prepared: 09/10/2010 08:38 Analyzed: 09/10/2010 12:20

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.40 | U | 1.0 | ug/L | | | | | | | |
| 1,1,1-Trichloroethane | 0.27 | U | 1.0 | ug/L | | | | | | | |
| 1,1,2,2-Tetrachloroethane | 0.33 | U | 1.0 | ug/L | | | | | | | |
| 1,1,2-Trichloroethane | 0.37 | U | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloroethane | 0.33 | U | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloroethene | 0.24 | U | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloropropene | 0.32 | U | 1.0 | ug/L | | | | | | | |
| 1,2,3-Trichlorobenzene | 0.25 | U | 1.0 | ug/L | | | | | | | |
| 1,2,3-Trichloropropane | 0.55 | U | 1.0 | ug/L | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.36 | U | 1.0 | ug/L | | | | | | | |
| 1,2,4-Trimethylbenzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dibromo-3-chloropropane | 0.48 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dibromoethane | 0.42 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dichlorobenzene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dichloroethane | 0.65 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dichloropropane | 0.20 | U | 1.0 | ug/L | | | | | | | |
| 1,3,5-Trimethylbenzene | 0.25 | U | 1.0 | ug/L | | | | | | | |
| 1,3-Dichlorobenzene | 0.30 | U | 1.0 | ug/L | | | | | | | |
| 1,3-Dichloropropane | 0.32 | U | 1.0 | ug/L | | | | | | | |
| 1,4-Dichlorobenzene | 0.38 | U | 1.0 | ug/L | | | | | | | |
| 2,2-Dichloropropane | 0.55 | U | 1.0 | ug/L | | | | | | | |
| 2-Butanone | 1.0 | U | 5.0 | ug/L | | | | | | | |
| 2-Chloroethyl Vinyl Ether | 0.94 | U | 5.0 | ug/L | | | | | | | |
| 2-Chlorotoluene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| 2-Hexanone | 0.69 | U | 5.0 | ug/L | | | | | | | |
| 4-Chlorotoluene | 0.25 | U | 1.0 | ug/L | | | | | | | |
| 4-Isopropyltoluene | 0.26 | U | 1.0 | ug/L | | | | | | | |
| 4-Methyl-2-pentanone | 1.1 | U | 5.0 | ug/L | | | | | | | |
| Acetone | 1.5 | U | 5.0 | ug/L | | | | | | | |
| Benzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| Bromobenzene | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Bromochloromethane | 0.42 | U | 1.0 | ug/L | | | | | | | |
| Bromodichloromethane | 0.37 | U | 1.0 | ug/L | | | | | | | |

## QUALITY CONTROL

### Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I10007 - EPA 5030B_MS*

**Blank (0I10007-BLK1) Continued** Prepared: 09/10/2010 08:38 Analyzed: 09/10/2010 12:20

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bromoform | 0.71 | U | 1.0 | ug/L | | | | | | | |
| Bromomethane | 0.49 | U | 1.0 | ug/L | | | | | | | |
| Carbon disulfide | 0.54 | U | 5.0 | ug/L | | | | | | | |
| Carbon tetrachloride | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Chlorobenzene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| Chloroethane | 0.30 | U | 1.0 | ug/L | | | | | | | |
| Chloroform | 0.20 | U | 1.0 | ug/L | | | | | | | |
| Chloromethane | 0.34 | U | 1.0 | ug/L | | | | | | | |
| *cis-1,2-Dichloroethene* | *0.36* | *U* | *1.0* | *ug/L* | | | | | | | |
| cis-1,3-Dichloropropene | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Dibromochloromethane | 0.32 | U | 1.0 | ug/L | | | | | | | |
| Dibromomethane | 0.37 | U | 1.0 | ug/L | | | | | | | |
| Dichlorodifluoromethane | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Ethylbenzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| Hexachlorobutadiene | 0.35 | U | 1.0 | ug/L | | | | | | | |
| Isopropylbenzene | 0.24 | U | 1.0 | ug/L | | | | | | | |
| m,p-Xylenes | 0.48 | U | 2.0 | ug/L | | | | | | | |
| Methylene chloride | 0.53 | U | 1.0 | ug/L | | | | | | | |
| Methyl-tert-Butyl Ether | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Naphthalene | 0.39 | U | 1.0 | ug/L | | | | | | | |
| n-Butyl Benzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| n-Propyl Benzene | 0.30 | U | 1.0 | ug/L | | | | | | | |
| o-Xylene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| sec-Butylbenzene | 0.24 | U | 1.0 | ug/L | | | | | | | |
| Styrene | 0.26 | U | 1.0 | ug/L | | | | | | | |
| tert-Butylbenzene | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Tetrachloroethene | 0.36 | U | 1.0 | ug/L | | | | | | | |
| Toluene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| trans-1,2-Dichloroethene | 0.34 | U | 1.0 | ug/L | | | | | | | |
| trans-1,3-Dichloropropene | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Trichloroethene | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Trichlorofluoromethane | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Vinyl chloride | 0.30 | U | 1.0 | ug/L | | | | | | | |
| Xylenes (Total) | 0.40 | U | 1.0 | ug/L | | | | | | | |
| *Surrogate: 4-Bromofluorobenzene* | *51* | | | *ug/L* | *50.0* | | *102* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *46* | | | *ug/L* | *50.0* | | *93* | *68-117* | | | |
| *Surrogate: Toluene-d8* | *49* | | | *ug/L* | *50.0* | | *98* | *69-110* | | | |

**LCS (0I10007-BS1)** Prepared: 09/10/2010 08:38 Analyzed: 09/10/2010 12:49

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 18 | | 1.0 | ug/L | 20.0 | | 88 | 75-133 | | | |
| Benzene | 19 | | 1.0 | ug/L | 20.0 | | 93 | 81-134 | | | |
| Chlorobenzene | 19 | | 1.0 | ug/L | 20.0 | | 97 | 83-117 | | | |
| Toluene | 20 | | 1.0 | ug/L | 20.0 | | 101 | 71-118 | | | |
| Trichloroethene | 19 | | 1.0 | ug/L | 20.0 | | 93 | 75-115 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *51* | | | *ug/L* | *50.0* | | *102* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *46* | | | *ug/L* | *50.0* | | *92* | *68-117* | | | |

# QUALITY CONTROL

## Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I10007 - EPA 5030B_MS*

**LCS (0I10007-BS1) Continued** Prepared: 09/10/2010 08:38 Analyzed: 09/10/2010 12:49

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Surrogate: Toluene-d8* | *49* | | | *ug/L* | *50.0* | | *98* | *69-110* | | | |

**Matrix Spike (0I10007-MS1)** Prepared: 09/10/2010 08:38 Analyzed: 09/10/2010 13:18

**Source: C010180-06**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 19 | | 1.0 | ug/L | 20.0 | 0.24 U | 95 | 75-133 | | | |
| Benzene | 20 | | 1.0 | ug/L | 20.0 | 0.20 U | 98 | 81-134 | | | |
| Chlorobenzene | 21 | | 1.0 | ug/L | 20.0 | 0.27 U | 103 | 83-117 | | | |
| Toluene | 21 | | 1.0 | ug/L | 20.0 | 0.27 U | 106 | 71-118 | | | |
| Trichloroethene | 20 | | 1.0 | ug/L | 20.0 | 0.38 U | 98 | 75-115 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *52* | | | *ug/L* | *50.0* | | *103* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *47* | | | *ug/L* | *50.0* | | *93* | *68-117* | | | |
| *Surrogate: Toluene-d8* | *51* | | | *ug/L* | *50.0* | | *101* | *69-110* | | | |

**Matrix Spike Dup (0I10007-MSD1)** Prepared: 09/10/2010 08:38 Analyzed: 09/10/2010 13:47

**Source: C010180-06**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 18 | | 1.0 | ug/L | 20.0 | 0.24 U | 92 | 75-133 | 3 | 20 | |
| Benzene | 19 | | 1.0 | ug/L | 20.0 | 0.20 U | 95 | 81-134 | 2 | 17 | |
| Chlorobenzene | 20 | | 1.0 | ug/L | 20.0 | 0.27 U | 101 | 83-117 | 2 | 16 | |
| Toluene | 21 | | 1.0 | ug/L | 20.0 | 0.27 U | 104 | 71-118 | 1 | 17 | |
| Trichloroethene | 19 | | 1.0 | ug/L | 20.0 | 0.38 U | 97 | 75-115 | 1 | 18 | |
| *Surrogate: 4-Bromofluorobenzene* | *52* | | | *ug/L* | *50.0* | | *103* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *46* | | | *ug/L* | *50.0* | | *93* | *68-117* | | | |
| *Surrogate: Toluene-d8* | *50* | | | *ug/L* | *50.0* | | *99* | *69-110* | | | |

*Batch 0I11006 - EPA 5030B_MS*

**Blank (0I11006-BLK1)** Prepared: 09/11/2010 10:21 Analyzed: 09/11/2010 14:49

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.40 | U | 1.0 | ug/L | | | | | | | |
| 1,1,1-Trichloroethane | 0.27 | U | 1.0 | ug/L | | | | | | | |
| 1,1,2,2-Tetrachloroethane | 0.33 | U | 1.0 | ug/L | | | | | | | |
| 1,1,2-Trichloroethane | 0.37 | U | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloroethane | 0.33 | U | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloroethene | 0.24 | U | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloropropene | 0.32 | U | 1.0 | ug/L | | | | | | | |
| 1,2,3-Trichlorobenzene | 0.25 | U | 1.0 | ug/L | | | | | | | |
| 1,2,3-Trichloropropane | 0.55 | U | 1.0 | ug/L | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.36 | U | 1.0 | ug/L | | | | | | | |
| 1,2,4-Trimethylbenzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dibromo-3-chloropropane | 0.48 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dibromoethane | 0.42 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dichlorobenzene | 0.27 | U | 1.0 | ug/L | | | | | | | |

## QUALITY CONTROL

### Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I11006 - EPA 5030B_MS*

**Blank (0I11006-BLK1) Continued** Prepared: 09/11/2010 10:21 Analyzed: 09/11/2010 14:49

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | 0.65 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dichloropropane | 0.20 | U | 1.0 | ug/L | | | | | | | |
| 1,3,5-Trimethylbenzene | 0.25 | U | 1.0 | ug/L | | | | | | | |
| 1,3-Dichlorobenzene | 0.30 | U | 1.0 | ug/L | | | | | | | |
| 1,3-Dichloropropane | 0.32 | U | 1.0 | ug/L | | | | | | | |
| 1,4-Dichlorobenzene | 0.38 | U | 1.0 | ug/L | | | | | | | |
| 2,2-Dichloropropane | 0.55 | U | 1.0 | ug/L | | | | | | | |
| 2-Butanone | 1.0 | U | 5.0 | ug/L | | | | | | | |
| 2-Chloroethyl Vinyl Ether | 0.94 | U | 5.0 | ug/L | | | | | | | |
| 2-Chlorotoluene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| 2-Hexanone | 0.69 | U | 5.0 | ug/L | | | | | | | |
| 4-Chlorotoluene | 0.25 | U | 1.0 | ug/L | | | | | | | |
| 4-Isopropyltoluene | 0.26 | U | 1.0 | ug/L | | | | | | | |
| 4-Methyl-2-pentanone | 1.1 | U | 5.0 | ug/L | | | | | | | |
| Acetone | 1.5 | U | 5.0 | ug/L | | | | | | | |
| Benzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| Bromobenzene | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Bromochloromethane | 0.42 | U | 1.0 | ug/L | | | | | | | |
| Bromodichloromethane | 0.37 | U | 1.0 | ug/L | | | | | | | |
| Bromoform | 0.71 | U | 1.0 | ug/L | | | | | | | |
| Bromomethane | 0.49 | U | 1.0 | ug/L | | | | | | | |
| Carbon disulfide | 0.54 | U | 5.0 | ug/L | | | | | | | |
| Carbon tetrachloride | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Chlorobenzene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| Chloroethane | 0.30 | U | 1.0 | ug/L | | | | | | | |
| Chloroform | 0.20 | U | 1.0 | ug/L | | | | | | | |
| Chloromethane | 0.34 | U | 1.0 | ug/L | | | | | | | |
| cis-1,2-Dichloroethene | 0.36 | U | 1.0 | ug/L | | | | | | | |
| cis-1,3-Dichloropropene | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Dibromochloromethane | 0.32 | U | 1.0 | ug/L | | | | | | | |
| Dibromomethane | 0.37 | U | 1.0 | ug/L | | | | | | | |
| Dichlorodifluoromethane | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Ethylbenzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| Hexachlorobutadiene | 0.35 | U | 1.0 | ug/L | | | | | | | |
| Isopropylbenzene | 0.24 | U | 1.0 | ug/L | | | | | | | |
| m,p-Xylenes | 0.48 | U | 2.0 | ug/L | | | | | | | |
| Methylene chloride | 0.53 | U | 1.0 | ug/L | | | | | | | |
| Methyl-tert-Butyl Ether | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Naphthalene | 0.39 | U | 1.0 | ug/L | | | | | | | |
| n-Butyl Benzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| n-Propyl Benzene | 0.30 | U | 1.0 | ug/L | | | | | | | |
| o-Xylene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| sec-Butylbenzene | 0.24 | U | 1.0 | ug/L | | | | | | | |
| Styrene | 0.26 | U | 1.0 | ug/L | | | | | | | |
| tert-Butylbenzene | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Tetrachloroethene | 0.36 | U | 1.0 | ug/L | | | | | | | |
| Toluene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| trans-1,2-Dichloroethene | 0.34 | U | 1.0 | ug/L | | | | | | | |
| trans-1,3-Dichloropropene | 0.38 | U | 1.0 | ug/L | | | | | | | |

## QUALITY CONTROL

### Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I11006 - EPA 5030B_MS*

**Blank (0I11006-BLK1) Continued** Prepared: 09/11/2010 10:21 Analyzed: 09/11/2010 14:49

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Trichloroethene | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Trichlorofluoromethane | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Vinyl chloride | 0.30 | U | 1.0 | ug/L | | | | | | | |
| Xylenes (Total) | 0.40 | U | 1.0 | ug/L | | | | | | | |
| *Surrogate: 4-Bromofluorobenzene* | *52* | | | *ug/L* | *50.0* | | *104* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *51* | | | *ug/L* | *50.0* | | *102* | *68-117* | | | |
| *Surrogate: Toluene-d8* | *50* | | | *ug/L* | *50.0* | | *99* | *69-110* | | | |

**LCS (0I11006-BS1)** Prepared: 09/11/2010 10:21 Analyzed: 09/11/2010 16:43

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 20 | | 1.0 | ug/L | 20.0 | | 100 | 75-133 | | | |
| Benzene | 18 | | 1.0 | ug/L | 20.0 | | 92 | 81-134 | | | |
| Chlorobenzene | 20 | | 1.0 | ug/L | 20.0 | | 99 | 83-117 | | | |
| Toluene | 20 | | 1.0 | ug/L | 20.0 | | 101 | 71-118 | | | |
| Trichloroethene | 20 | | 1.0 | ug/L | 20.0 | | 99 | 75-115 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *54* | | | *ug/L* | *50.0* | | *108* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *48* | | | *ug/L* | *50.0* | | *96* | *68-117* | | | |
| *Surrogate: Toluene-d8* | *50* | | | *ug/L* | *50.0* | | *100* | *69-110* | | | |

**Matrix Spike (0I11006-MS1)** Prepared: 09/11/2010 10:21 Analyzed: 09/11/2010 15:46

**Source: C010549-03**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 18 | | 1.0 | ug/L | 20.0 | 0.24 U | 91 | 75-133 | | | |
| Benzene | 18 | | 1.0 | ug/L | 20.0 | 0.20 U | 92 | 81-134 | | | |
| Chlorobenzene | 19 | | 1.0 | ug/L | 20.0 | 0.27 U | 97 | 83-117 | | | |
| Toluene | 20 | | 1.0 | ug/L | 20.0 | 0.27 U | 99 | 71-118 | | | |
| Trichloroethene | 19 | | 1.0 | ug/L | 20.0 | 0.38 U | 97 | 75-115 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *53* | | | *ug/L* | *50.0* | | *106* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *49* | | | *ug/L* | *50.0* | | *98* | *68-117* | | | |
| *Surrogate: Toluene-d8* | *51* | | | *ug/L* | *50.0* | | *102* | *69-110* | | | |

**Matrix Spike Dup (0I11006-MSD1)** Prepared: 09/11/2010 10:21 Analyzed: 09/11/2010 16:15

**Source: C010549-03**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 19 | | 1.0 | ug/L | 20.0 | 0.24 U | 97 | 75-133 | 6 | 20 | |
| Benzene | 18 | | 1.0 | ug/L | 20.0 | 0.20 U | 89 | 81-134 | 3 | 17 | |
| Chlorobenzene | 19 | | 1.0 | ug/L | 20.0 | 0.27 U | 95 | 83-117 | 2 | 16 | |
| Toluene | 19 | | 1.0 | ug/L | 20.0 | 0.27 U | 97 | 71-118 | 2 | 17 | |
| Trichloroethene | 19 | | 1.0 | ug/L | 20.0 | 0.38 U | 94 | 75-115 | 3 | 18 | |
| *Surrogate: 4-Bromofluorobenzene* | *52* | | | *ug/L* | *50.0* | | *105* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *49* | | | *ug/L* | *50.0* | | *98* | *68-117* | | | |
| *Surrogate: Toluene-d8* | *50* | | | *ug/L* | *50.0* | | *100* | *69-110* | | | |

# QUALITY CONTROL

## Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I15005 - EPA 5035_MS*

**Blank (0I15005-BLK1)** Prepared: 09/15/2010 08:26 Analyzed: 09/15/2010 14:19

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.00016 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | 0.00018 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | 0.00023 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethane | 0.00025 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethene | 0.00030 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1-Dichloropropene | 0.00032 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | 0.00021 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | 0.00034 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.00027 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dibromo-3-chloropropane | 0.00079 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dibromoethane | 0.00046 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | 0.00027 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dichloroethane | 0.00038 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dichloropropane | 0.00026 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,3-Dichloropropane | 0.00029 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| 2,2-Dichloropropane | 0.00023 | U | 0.0010 | mg/kg wet | | | | | | | |
| 2-Butanone | 0.00078 | U | 0.0050 | mg/kg wet | | | | | | | |
| 2-Chloroethyl Vinyl Ether | 0.00049 | U | 0.0050 | mg/kg wet | | | | | | | |
| 2-Chlorotoluene | 0.00018 | U | 0.0010 | mg/kg wet | | | | | | | |
| 2-Hexanone | 0.00075 | U | 0.0050 | mg/kg wet | | | | | | | |
| 4-Chlorotoluene | 0.00026 | U | 0.0010 | mg/kg wet | | | | | | | |
| 4-Isopropyltoluene | 0.00016 | U | 0.0010 | mg/kg wet | | | | | | | |
| 4-Methyl-2-pentanone | 0.00057 | U | 0.0050 | mg/kg wet | | | | | | | |
| Acetone | 0.0012 | U | 0.0050 | mg/kg wet | | | | | | | |
| Benzene | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromobenzene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromochloromethane | 0.00041 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromodichloromethane | 0.00024 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromoform | 0.00045 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromomethane | 0.00023 | U | 0.0010 | mg/kg wet | | | | | | | |
| Carbon disulfide | 0.00039 | U | 0.0050 | mg/kg wet | | | | | | | |
| Carbon Tetrachloride | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| Chlorobenzene | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| Chloroethane | 0.00025 | U | 0.0010 | mg/kg wet | | | | | | | |
| Chloroform | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| Chloromethane | 0.00015 | U | 0.0010 | mg/kg wet | | | | | | | |
| cis-1,2-Dichloroethene | 0.00023 | U | 0.0010 | mg/kg wet | | | | | | | |
| cis-1,3-Dichloropropene | 0.00013 | U | 0.0010 | mg/kg wet | | | | | | | |
| Dibromochloromethane | 0.00035 | U | 0.0010 | mg/kg wet | | | | | | | |
| Dibromomethane | 0.00031 | U | 0.0010 | mg/kg wet | | | | | | | |
| Dichlorodifluoromethane | 0.00045 | U | 0.0010 | mg/kg wet | | | | | | | |
| Ethylbenzene | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | 0.00035 | U | 0.0010 | mg/kg wet | | | | | | | |
| Isopropylbenzene | 0.00015 | U | 0.0010 | mg/kg wet | | | | | | | |

## QUALITY CONTROL

### Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I15005 - EPA 5035_MS*

**Blank (0I15005-BLK1) Continued** Prepared: 09/15/2010 08:26 Analyzed: 09/15/2010 14:19

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| m,p-Xylenes | 0.00037 | U | 0.0020 | mg/kg wet | | | | | | | |
| Methylene Chloride | 0.00056 | U | 0.0010 | mg/kg wet | | | | | | | |
| Methyl-tert-Butyl Ether | 0.00030 | U | 0.0010 | mg/kg wet | | | | | | | |
| Naphthalene | 0.00024 | U | 0.0010 | mg/kg wet | | | | | | | |
| n-Butyl Benzene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| n-Propyl Benzene | 0.00018 | U | 0.0010 | mg/kg wet | | | | | | | |
| o-Xylene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| sec-Butylbenzene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| Styrene | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| tert-Butylbenzene | 0.00016 | U | 0.0010 | mg/kg wet | | | | | | | |
| Tetrachloroethene | 0.00028 | U | 0.0010 | mg/kg wet | | | | | | | |
| Toluene | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| trans-1,2-Dichloroethene | 0.00037 | U | 0.0010 | mg/kg wet | | | | | | | |
| trans-1,3-Dichloropropene | 0.00039 | U | 0.0010 | mg/kg wet | | | | | | | |
| Trichloroethene | 0.00027 | U | 0.0010 | mg/kg wet | | | | | | | |
| Trichlorofluoromethane | 0.00026 | U | 0.0010 | mg/kg wet | | | | | | | |
| Vinyl chloride | 0.00024 | U | 0.0010 | mg/kg wet | | | | | | | |
| Xylenes (Total) | 0.00056 | U | 0.0010 | mg/kg wet | | | | | | | |
| *Surrogate: 4-Bromofluorobenzene* | *52* | | | *ug/L* | *50.0* | | *104* | *61-118* | | | |
| *Surrogate: Dibromofluoromethane* | *50* | | | *ug/L* | *50.0* | | *101* | *66-114* | | | |
| *Surrogate: Toluene-d8* | *51* | | | *ug/L* | *50.0* | | *101* | *63-118* | | | |

**LCS (0I15005-BS1)** Prepared: 09/15/2010 08:26 Analyzed: 09/15/2010 14:47

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 22 | | 1.0 | ug/L | 20.0 | | 108 | 64-133 | | | |
| Benzene | 19 | | 1.0 | ug/L | 20.0 | | 94 | 79-129 | | | |
| Chlorobenzene | 21 | | 1.0 | ug/L | 20.0 | | 107 | 79-121 | | | |
| Toluene | 21 | | 1.0 | ug/L | 20.0 | | 107 | 77-120 | | | |
| Trichloroethene | 22 | | 1.0 | ug/L | 20.0 | | 111 | 78-118 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *54* | | | *ug/L* | *50.0* | | *107* | *61-118* | | | |
| *Surrogate: Dibromofluoromethane* | *50* | | | *ug/L* | *50.0* | | *101* | *66-114* | | | |
| *Surrogate: Toluene-d8* | *51* | | | *ug/L* | *50.0* | | *102* | *63-118* | | | |

**Matrix Spike (0I15005-MS1)** Prepared: 09/15/2010 08:26 Analyzed: 09/15/2010 15:16

**Source: C010771-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 21 | | 1.0 | ug/L | 20.0 | 0.30 U | 106 | 64-133 | | | |
| Benzene | 19 | | 1.0 | ug/L | 20.0 | 0.17 U | 95 | 79-129 | | | |
| Chlorobenzene | 21 | | 1.0 | ug/L | 20.0 | 0.17 U | 107 | 79-121 | | | |
| Toluene | 21 | | 1.0 | ug/L | 20.0 | 0.20 U | 104 | 77-120 | | | |
| Trichloroethene | 24 | | 1.0 | ug/L | 20.0 | 0.27 U | 119 | 78-118 | | | QM-07 |
| *Surrogate: 4-Bromofluorobenzene* | *54* | | | *ug/L* | *50.0* | | *108* | *61-118* | | | |
| *Surrogate: Dibromofluoromethane* | *50* | | | *ug/L* | *50.0* | | *100* | *66-114* | | | |
| *Surrogate: Toluene-d8* | *52* | | | *ug/L* | *50.0* | | *103* | *63-118* | | | |

# QUALITY CONTROL

## Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I15005 - EPA 5035_MS*

**Matrix Spike Dup (0I15005-MSD1)** Prepared: 09/15/2010 08:26 Analyzed: 09/15/2010 15:45

**Source: C010771-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 21 | | 1.0 | ug/L | 20.0 | 0.30 U | 104 | 64-133 | 2 | 23 | |
| Benzene | 19 | | 1.0 | ug/L | 20.0 | 0.17 U | 93 | 79-129 | 3 | 23 | |
| Chlorobenzene | 21 | | 1.0 | ug/L | 20.0 | 0.17 U | 104 | 79-121 | 3 | 25 | |
| Toluene | 21 | | 1.0 | ug/L | 20.0 | 0.20 U | 105 | 77-120 | 0.5 | 23 | |
| Trichloroethene | 22 | | 1.0 | ug/L | 20.0 | 0.27 U | 108 | 78-118 | 10 | 24 | |
| *Surrogate: 4-Bromofluorobenzene* | *53* | | | *ug/L* | *50.0* | | *107* | *61-118* | | | |
| *Surrogate: Dibromofluoromethane* | *47* | | | *ug/L* | *50.0* | | *95* | *66-114* | | | |
| *Surrogate: Toluene-d8* | *50* | | | *ug/L* | *50.0* | | *101* | *63-118* | | | |

## Tentatively Identified Compounds by Volatile GCMS - Quality Control

*Batch 0I09003 - EPA 5035_MS*

**Blank (0I09003-BLK1)** Prepared: 09/09/2010 07:19 Analyzed: 09/09/2010 10:50

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Carbon Dioxide** | **0.10** | **J** | | mg/kg wet | | | | | | | |
| **Cyclopentasiloxane, decamet...** | **0.0053** | **J** | | mg/kg wet | | | | | | | |
| **Cyclotetrasiloxane, octamet...** | **0.018** | **J** | | mg/kg wet | | | | | | | |

*Batch 0I15005 - EPA 5035_MS*

**Blank (0I15005-BLK1)** Prepared: 09/15/2010 08:26 Analyzed: 09/15/2010 14:19

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Carbon Dioxide** | **0.053** | **J** | | mg/kg wet | | | | | | | |
| **Cyclopentasiloxane, decamet...** | **0.0070** | **J** | | mg/kg wet | | | | | | | |
| **Cyclotetrasiloxane, octamet...** | **0.017** | **J** | | mg/kg wet | | | | | | | |

## Semivolatile Organic Compounds by GCMS - Quality Control

*Batch 0I10001 - EPA 3510C_MS*

**Blank (0I10001-BLK1)** Prepared: 09/10/2010 06:21 Analyzed: 09/10/2010 11:08

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 1.2 | U | 10 | ug/L | | | | | | | |
| 1,2-Dichlorobenzene | 1.1 | U | 10 | ug/L | | | | | | | |
| 1,3-Dichlorobenzene | 1.1 | U | 10 | ug/L | | | | | | | |
| 1,4-Dichlorobenzene | 1.0 | U | 10 | ug/L | | | | | | | |
| 1-Methylnaphthalene | 1.7 | U | 10 | ug/L | | | | | | | |
| 2,4,5-Trichlorophenol | 1.0 | U | 10 | ug/L | | | | | | | |
| 2,4,6-Trichlorophenol | 1.1 | U | 10 | ug/L | | | | | | | |
| 2,4-Dichlorophenol | 1.4 | U | 10 | ug/L | | | | | | | |
| 2,4-Dimethylphenol | 1.3 | U | 10 | ug/L | | | | | | | |
| 2,4-Dinitrophenol | 2.6 | U | 10 | ug/L | | | | | | | |
| 2,4-Dinitrotoluene | 2.4 | U | 10 | ug/L | | | | | | | |
| 2,6-Dinitrotoluene | 1.5 | U | 10 | ug/L | | | | | | | |

## QUALITY CONTROL

### Semivolatile Organic Compounds by GCMS - Quality Control

*Batch 0I10001 - EPA 3510C_MS*

**Blank (0I10001-BLK1) Continued** Prepared: 09/10/2010 06:21 Analyzed: 09/10/2010 11:08

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Chloronaphthalene | 1.0 | U | 10 | ug/L | | | | | | | |
| 2-Chlorophenol | 1.2 | U | 10 | ug/L | | | | | | | |
| 2-Methyl-4,6-dinitrophenol | 2.9 | U | 10 | ug/L | | | | | | | |
| 2-Methylnaphthalene | 1.5 | U | 10 | ug/L | | | | | | | |
| 2-Methylphenol | 1.4 | U | 10 | ug/L | | | | | | | |
| 2-Nitroaniline | 1.5 | U | 10 | ug/L | | | | | | | |
| 2-Nitrophenol | 1.1 | U | 10 | ug/L | | | | | | | |
| 3 & 4-Methylphenol | 1.6 | U | 10 | ug/L | | | | | | | |
| 3,3'-Dichlorobenzidine | 3.3 | U | 10 | ug/L | | | | | | | |
| 3-Nitroaniline | 2.1 | U | 10 | ug/L | | | | | | | |
| 4-Bromophenyl-phenylether | 1.0 | U | 10 | ug/L | | | | | | | |
| 4-Chloro-3-methylphenol | 1.5 | U | 10 | ug/L | | | | | | | |
| 4-Chloroaniline | 1.2 | U | 10 | ug/L | | | | | | | |
| 4-Chlorophenyl-phenylether | 1.6 | U | 10 | ug/L | | | | | | | |
| 4-Nitroaniline | 3.2 | U | 10 | ug/L | | | | | | | |
| 4-Nitrophenol | 2.0 | U | 10 | ug/L | | | | | | | |
| Acenaphthene | 1.4 | U | 10 | ug/L | | | | | | | |
| Acenaphthylene | 1.2 | U | 10 | ug/L | | | | | | | |
| Anthracene | 1.6 | U | 10 | ug/L | | | | | | | |
| Benzidine | 1.6 | U | 10 | ug/L | | | | | | | |
| Benzo(a)anthracene | 1.3 | U | 10 | ug/L | | | | | | | |
| Benzo(a)pyrene | 1.3 | U | 10 | ug/L | | | | | | | |
| Benzo(b)fluoranthene | 1.0 | U | 10 | ug/L | | | | | | | |
| Benzo(g,h,i)perylene | 2.4 | U | 10 | ug/L | | | | | | | |
| Benzo(k)fluoranthene | 1.3 | U | 10 | ug/L | | | | | | | |
| Benzoic acid | 1.0 | U | 50 | ug/L | | | | | | | QV-02 |
| Benzyl alcohol | 1.4 | U | 10 | ug/L | | | | | | | |
| Bis(2-chloroethoxy)methane | 1.4 | U | 10 | ug/L | | | | | | | |
| Bis(2-chloroethyl)ether | 1.2 | U | 10 | ug/L | | | | | | | |
| Bis(2-chloroisopropyl)ether | 1.3 | U | 10 | ug/L | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 1.7 | U | 5.0 | ug/L | | | | | | | |
| Butylbenzylphthalate | 2.0 | U | 10 | ug/L | | | | | | | |
| Chrysene | 2.0 | U | 10 | ug/L | | | | | | | |
| Dibenzo(a,h)anthracene | 2.3 | U | 10 | ug/L | | | | | | | |
| Dibenzofuran | 1.4 | U | 10 | ug/L | | | | | | | |
| Diethylphthalate | 2.1 | U | 10 | ug/L | | | | | | | |
| Dimethylphthalate | 1.4 | U | 10 | ug/L | | | | | | | |
| Di-n-butylphthalate | 1.5 | U | 10 | ug/L | | | | | | | |
| Di-n-octylphthalate | 3.1 | U | 10 | ug/L | | | | | | | |
| Fluoranthene | 2.1 | U | 10 | ug/L | | | | | | | |
| Fluorene | 1.7 | U | 10 | ug/L | | | | | | | |
| Hexachlorobenzene | 1.0 | U | 10 | ug/L | | | | | | | |
| Hexachlorobutadiene | 1.2 | U | 10 | ug/L | | | | | | | |
| Hexachlorocyclopentadiene | 1.3 | U | 10 | ug/L | | | | | | | QV-02 |
| Hexachloroethane | 1.1 | U | 10 | ug/L | | | | | | | |
| Indeno(1,2,3-cd)pyrene | 2.2 | U | 10 | ug/L | | | | | | | |
| Isophorone | 1.3 | U | 10 | ug/L | | | | | | | |
| Naphthalene | 1.3 | U | 10 | ug/L | | | | | | | |
| Nitrobenzene | 1.2 | U | 10 | ug/L | | | | | | | |

## QUALITY CONTROL

### Semivolatile Organic Compounds by GCMS - Quality Control

*Batch 0I10001 - EPA 3510C_MS*

**Blank (0I10001-BLK1) Continued** Prepared: 09/10/2010 06:21 Analyzed: 09/10/2010 11:08

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N-Nitrosodimethylamine | 1.3 | U | 10 | ug/L | | | | | | | |
| N-Nitroso-di-n-propylamine | 1.5 | U | 10 | ug/L | | | | | | | |
| N-nitrosodiphenylamine/Diphenylamine | 2.1 | U | 10 | ug/L | | | | | | | |
| Pentachlorophenol | 1.8 | U | 10 | ug/L | | | | | | | |
| Phenanthrene | 1.4 | U | 10 | ug/L | | | | | | | |
| Phenol | 1.4 | U | 10 | ug/L | | | | | | | |
| Pyrene | 2.1 | U | 10 | ug/L | | | | | | | |
| Pyridine | 1.3 | U | 10 | ug/L | | | | | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *58* | | | *ug/L* | *100* | | *58* | *10-179* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *30* | | | *ug/L* | *50.0* | | *60* | *10-149* | | | |
| *Surrogate: 2-Fluorophenol* | *47* | | | *ug/L* | *100* | | *47* | *10-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *31* | | | *ug/L* | *50.0* | | *63* | *10-149* | | | |
| *Surrogate: Phenol-d5* | *41* | | | *ug/L* | *100* | | *41* | *10-88* | | | |
| *Surrogate: Terphenyl-d14* | *47* | | | *ug/L* | *50.0* | | *94* | *10-188* | | | |

**LCS (0I10001-BS1)** Prepared: 09/10/2010 06:21 Analyzed: 09/10/2010 11:40

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 24 | | 10 | ug/L | 50.0 | | 48 | 27-90 | | | |
| 1,4-Dichlorobenzene | 23 | | 10 | ug/L | 50.0 | | 45 | 23-84 | | | |
| 2,4-Dinitrotoluene | 48 | | 10 | ug/L | 50.0 | | 95 | 67-132 | | | |
| 2-Chlorophenol | 28 | | 10 | ug/L | 50.0 | | 56 | 40-109 | | | |
| 4-Chloro-3-methylphenol | 38 | | 10 | ug/L | 50.0 | | 75 | 58-121 | | | |
| 4-Nitrophenol | 37 | | 10 | ug/L | 50.0 | | 75 | 33-105 | | | |
| Acenaphthene | 34 | | 10 | ug/L | 50.0 | | 68 | 39-125 | | | |
| N-Nitroso-di-n-propylamine | 32 | | 10 | ug/L | 50.0 | | 63 | 48-126 | | | |
| Pentachlorophenol | 27 | | 10 | ug/L | 50.0 | | 53 | 51-135 | | | |
| Phenol | 19 | | 10 | ug/L | 50.0 | | 38 | 19-78 | | | |
| Pyrene | 49 | | 10 | ug/L | 50.0 | | 98 | 44-137 | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *86* | | | *ug/L* | *100* | | *86* | *10-179* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *33* | | | *ug/L* | *50.0* | | *65* | *10-149* | | | |
| *Surrogate: 2-Fluorophenol* | *46* | | | *ug/L* | *100* | | *46* | *10-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *31* | | | *ug/L* | *50.0* | | *63* | *10-149* | | | |
| *Surrogate: Phenol-d5* | *40* | | | *ug/L* | *100* | | *40* | *10-88* | | | |
| *Surrogate: Terphenyl-d14* | *50* | | | *ug/L* | *50.0* | | *101* | *10-188* | | | |

**Matrix Spike (0I10001-MS1)** Prepared: 09/10/2010 06:21 Analyzed: 09/10/2010 12:45

**Source: C010313-10**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 30 | | 10 | ug/L | 50.0 | 1.2 U | 59 | 27-90 | | | |
| 1,4-Dichlorobenzene | 28 | | 10 | ug/L | 50.0 | 1.0 U | 56 | 23-84 | | | |
| 2,4-Dinitrotoluene | 49 | | 10 | ug/L | 50.0 | 2.4 U | 98 | 67-132 | | | |
| 2-Chlorophenol | 32 | | 10 | ug/L | 50.0 | 1.2 U | 65 | 40-109 | | | |
| 4-Chloro-3-methylphenol | 41 | | 10 | ug/L | 50.0 | 1.5 U | 82 | 58-121 | | | |
| 4-Nitrophenol | 34 | | 10 | ug/L | 50.0 | 2.0 U | 69 | 33-105 | | | |
| Acenaphthene | 35 | | 10 | ug/L | 50.0 | 1.4 U | 71 | 39-125 | | | |

## QUALITY CONTROL

### Semivolatile Organic Compounds by GCMS - Quality Control

*Batch 0I10001 - EPA 3510C_MS*

**Matrix Spike (0I10001-MS1) Continued** Prepared: 09/10/2010 06:21 Analyzed: 09/10/2010 12:45

**Source: C010313-10**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N-Nitroso-di-n-propylamine | 37 | | 10 | ug/L | 50.0 | 1.5 U | 74 | 48-126 | | | |
| Pentachlorophenol | 28 | | 10 | ug/L | 50.0 | 1.8 U | 55 | 51-135 | | | |
| Phenol | 22 | | 10 | ug/L | 50.0 | 1.4 U | 43 | 19-78 | | | |
| Pyrene | 48 | | 10 | ug/L | 50.0 | 2.1 U | 96 | 44-137 | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *87* | | | *ug/L* | *100* | | *87* | *10-179* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *36* | | | *ug/L* | *50.0* | | *72* | *10-149* | | | |
| *Surrogate: 2-Fluorophenol* | *53* | | | *ug/L* | *100* | | *53* | *10-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *34* | | | *ug/L* | *50.0* | | *68* | *10-149* | | | |
| *Surrogate: Phenol-d5* | *45* | | | *ug/L* | *100* | | *45* | *10-88* | | | |
| *Surrogate: Terphenyl-d14* | *51* | | | *ug/L* | *50.0* | | *102* | *10-188* | | | |

**Matrix Spike Dup (0I10001-MSD1)** Prepared: 09/10/2010 06:21 Analyzed: 09/10/2010 13:18

**Source: C010313-10**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 28 | | 10 | ug/L | 50.0 | 1.2 U | 56 | 27-90 | 6 | 43 | |
| 1,4-Dichlorobenzene | 28 | | 10 | ug/L | 50.0 | 1.0 U | 55 | 23-84 | 2 | 39 | |
| 2,4-Dinitrotoluene | 47 | | 10 | ug/L | 50.0 | 2.4 U | 94 | 67-132 | 4 | 17 | |
| 2-Chlorophenol | 32 | | 10 | ug/L | 50.0 | 1.2 U | 64 | 40-109 | 2 | 22 | |
| 4-Chloro-3-methylphenol | 40 | | 10 | ug/L | 50.0 | 1.5 U | 80 | 58-121 | 2 | 22 | |
| 4-Nitrophenol | 34 | | 10 | ug/L | 50.0 | 2.0 U | 69 | 33-105 | 0.6 | 27 | |
| Acenaphthene | 35 | | 10 | ug/L | 50.0 | 1.4 U | 70 | 39-125 | 0.8 | 25 | |
| N-Nitroso-di-n-propylamine | 35 | | 10 | ug/L | 50.0 | 1.5 U | 70 | 48-126 | 7 | 23 | |
| Pentachlorophenol | 27 | | 10 | ug/L | 50.0 | 1.8 U | 53 | 51-135 | 4 | 11 | |
| Phenol | 24 | | 10 | ug/L | 50.0 | 1.4 U | 48 | 19-78 | 11 | 18 | |
| Pyrene | 46 | | 10 | ug/L | 50.0 | 2.1 U | 92 | 44-137 | 5 | 24 | |
| *Surrogate: 2,4,6-Tribromophenol* | *87* | | | *ug/L* | *100* | | *87* | *10-179* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *35* | | | *ug/L* | *50.0* | | *71* | *10-149* | | | |
| *Surrogate: 2-Fluorophenol* | *51* | | | *ug/L* | *100* | | *51* | *10-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *35* | | | *ug/L* | *50.0* | | *71* | *10-149* | | | |
| *Surrogate: Phenol-d5* | *44* | | | *ug/L* | *100* | | *44* | *10-88* | | | |
| *Surrogate: Terphenyl-d14* | *47* | | | *ug/L* | *50.0* | | *94* | *10-188* | | | |

*Batch 0I16021 - EPA 3550C_MS*

**Blank (0I16021-BLK1)** Prepared: 09/16/2010 14:49 Analyzed: 09/20/2010 16:28

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 0.023 | U | 0.33 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | 0.032 | U | 0.33 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | 0.030 | U | 0.33 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | 0.027 | U | 0.33 | mg/kg wet | | | | | | | |
| 1-Methylnaphthalene | 0.035 | U | 0.33 | mg/kg wet | | | | | | | |
| 2,4,5-Trichlorophenol | 0.033 | U | 0.33 | mg/kg wet | | | | | | | |
| 2,4,6-Trichlorophenol | 0.032 | U | 0.33 | mg/kg wet | | | | | | | |
| 2,4-Dichlorophenol | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |

## QUALITY CONTROL

### Semivolatile Organic Compounds by GCMS - Quality Control

*Batch 0I16021 - EPA 3550C_MS*

**Blank (0I16021-BLK1) Continued** Prepared: 09/16/2010 14:49 Analyzed: 09/20/2010 16:28

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,4-Dimethylphenol | 0.059 | U | 0.33 | mg/kg wet | | | | | | | |
| 2,4-Dinitrophenol | 0.047 | U | 0.33 | mg/kg wet | | | | | | | |
| 2,4-Dinitrotoluene | 0.031 | U | 0.33 | mg/kg wet | | | | | | | |
| 2,6-Dinitrotoluene | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| 2-Chloronaphthalene | 0.024 | U | 0.33 | mg/kg wet | | | | | | | |
| 2-Chlorophenol | 0.029 | U | 0.33 | mg/kg wet | | | | | | | |
| 2-Methyl-4,6-dinitrophenol | 0.050 | U | 0.33 | mg/kg wet | | | | | | | |
| 2-Methylnaphthalene | 0.037 | U | 0.33 | mg/kg wet | | | | | | | |
| 2-Methylphenol | 0.038 | U | 0.33 | mg/kg wet | | | | | | | |
| 2-Nitroaniline | 0.030 | U | 0.33 | mg/kg wet | | | | | | | |
| 2-Nitrophenol | 0.033 | U | 0.33 | mg/kg wet | | | | | | | |
| 3 & 4-Methylphenol | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| 3,3'-Dichlorobenzidine | 0.042 | U | 0.33 | mg/kg wet | | | | | | | |
| 3-Nitroaniline | 0.044 | U | 0.33 | mg/kg wet | | | | | | | |
| 4-Bromophenyl-phenylether | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| 4-Chloro-3-methylphenol | 0.028 | U | 0.33 | mg/kg wet | | | | | | | |
| 4-Chloroaniline | 0.030 | U | 0.33 | mg/kg wet | | | | | | | |
| 4-Chlorophenyl-phenylether | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| 4-Nitroaniline | 0.059 | U | 0.33 | mg/kg wet | | | | | | | |
| 4-Nitrophenol | 0.042 | U | 0.33 | mg/kg wet | | | | | | | |
| Acenaphthene | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Acenaphthylene | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Anthracene | 0.033 | U | 0.33 | mg/kg wet | | | | | | | |
| Benzidine | 0.11 | U | 0.33 | mg/kg wet | | | | | | | QV-01 |
| Benzo(a)anthracene | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Benzo(a)pyrene | 0.027 | U | 0.33 | mg/kg wet | | | | | | | |
| Benzo(b)fluoranthene | 0.027 | U | 0.33 | mg/kg wet | | | | | | | |
| Benzo(g,h,i)perylene | 0.039 | U | 0.33 | mg/kg wet | | | | | | | |
| Benzo(k)fluoranthene | 0.027 | U | 0.33 | mg/kg wet | | | | | | | |
| Benzoic acid | 0.11 | U | 1.7 | mg/kg wet | | | | | | | |
| Benzyl alcohol | 0.066 | U | 0.33 | mg/kg wet | | | | | | | |
| Bis(2-chloroethoxy)methane | 0.021 | U | 0.33 | mg/kg wet | | | | | | | |
| Bis(2-chloroethyl)ether | 0.050 | U | 0.33 | mg/kg wet | | | | | | | |
| Bis(2-chloroisopropyl)ether | 0.026 | U | 0.33 | mg/kg wet | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 0.037 | U | 0.33 | mg/kg wet | | | | | | | |
| Butylbenzylphthalate | 0.034 | U | 0.33 | mg/kg wet | | | | | | | QV-02 |
| Chrysene | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Dibenzo(a,h)anthracene | 0.041 | U | 0.33 | mg/kg wet | | | | | | | |
| Dibenzofuran | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Diethylphthalate | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Dimethylphthalate | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Di-n-butylphthalate | 0.031 | U | 0.33 | mg/kg wet | | | | | | | |
| Di-n-octylphthalate | 0.027 | U | 0.33 | mg/kg wet | | | | | | | |
| Fluoranthene | 0.043 | U | 0.33 | mg/kg wet | | | | | | | |
| Fluorene | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | 0.028 | U | 0.33 | mg/kg wet | | | | | | | |
| Hexachlorocyclopentadiene | 0.043 | U | 0.33 | mg/kg wet | | | | | | | |
| Hexachloroethane | 0.033 | U | 0.33 | mg/kg wet | | | | | | | |

# QUALITY CONTROL

## Semivolatile Organic Compounds by GCMS - Quality Control

*Batch 0I16021 - EPA 3550C_MS*

**Blank (0I16021-BLK1) Continued** Prepared: 09/16/2010 14:49 Analyzed: 09/20/2010 16:28

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Indeno(1,2,3-cd)pyrene | 0.038 | U | 0.33 | mg/kg wet | | | | | | | |
| Isophorone | 0.016 | U | 0.33 | mg/kg wet | | | | | | | |
| Naphthalene | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Nitrobenzene | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| N-Nitrosodimethylamine | 0.027 | U | 0.33 | mg/kg wet | | | | | | | |
| N-Nitroso-di-n-propylamine | 0.017 | U | 0.33 | mg/kg wet | | | | | | | |
| N-nitrosodiphenylamine/Diphenylamine | 0.026 | U | 0.33 | mg/kg wet | | | | | | | |
| Pentachlorophenol | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Phenanthrene | 0.026 | U | 0.33 | mg/kg wet | | | | | | | |
| Phenol | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Pyrene | 0.048 | U | 0.33 | mg/kg wet | | | | | | | |
| Pyridine | 0.12 | U | 0.33 | mg/kg wet | | | | | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *2.1* | | | *mg/kg wet* | *3.33* | | *64* | *28-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *1.4* | | | *mg/kg wet* | *1.67* | | *84* | *56-120* | | | |
| *Surrogate: 2-Fluorophenol* | *2.5* | | | *mg/kg wet* | *3.33* | | *75* | *49-126* | | | |
| *Surrogate: Nitrobenzene-d5* | *1.4* | | | *mg/kg wet* | *1.67* | | *86* | *50-117* | | | |
| *Surrogate: Phenol-d5* | *2.7* | | | *mg/kg wet* | *3.33* | | *80* | *56-120* | | | |
| *Surrogate: Terphenyl-d14* | *1.8* | | | *mg/kg wet* | *1.67* | | *108* | *36-151* | | | |

**LCS (0I16021-BS1)** Prepared: 09/16/2010 14:49 Analyzed: 09/20/2010 16:58

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 1.4 | | 0.33 | mg/kg wet | 1.67 | | 85 | 51-121 | | | |
| 1,4-Dichlorobenzene | 1.4 | | 0.33 | mg/kg wet | 1.67 | | 84 | 48-118 | | | |
| 2,4-Dinitrotoluene | 1.7 | | 0.33 | mg/kg wet | 1.67 | | 103 | 63-127 | | | |
| 2-Chlorophenol | 1.4 | | 0.33 | mg/kg wet | 1.67 | | 86 | 56-120 | | | |
| 4-Chloro-3-methylphenol | 1.6 | | 0.33 | mg/kg wet | 1.67 | | 94 | 59-121 | | | |
| 4-Nitrophenol | 1.8 | | 0.33 | mg/kg wet | 1.67 | | 107 | 73-147 | | | |
| Acenaphthene | 1.4 | | 0.33 | mg/kg wet | 1.67 | | 87 | 64-131 | | | |
| N-Nitroso-di-n-propylamine | 1.5 | | 0.33 | mg/kg wet | 1.67 | | 90 | 55-135 | | | |
| Pentachlorophenol | 1.1 | | 0.33 | mg/kg wet | 1.67 | | 64 | 45-117 | | | |
| Phenol | 1.5 | | 0.33 | mg/kg wet | 1.67 | | 87 | 54-121 | | | |
| Pyrene | 1.6 | | 0.33 | mg/kg wet | 1.67 | | 97 | 65-146 | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *3.0* | | | *mg/kg wet* | *3.33* | | *91* | *28-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *1.4* | | | *mg/kg wet* | *1.67* | | *84* | *56-120* | | | |
| *Surrogate: 2-Fluorophenol* | *2.7* | | | *mg/kg wet* | *3.33* | | *80* | *49-126* | | | |
| *Surrogate: Nitrobenzene-d5* | *1.5* | | | *mg/kg wet* | *1.67* | | *89* | *50-117* | | | |
| *Surrogate: Phenol-d5* | *2.8* | | | *mg/kg wet* | *3.33* | | *83* | *56-120* | | | |
| *Surrogate: Terphenyl-d14* | *1.7* | | | *mg/kg wet* | *1.67* | | *100* | *36-151* | | | |

**Matrix Spike (0I16021-MS1)** Prepared: 09/16/2010 14:49 Analyzed: 09/20/2010 17:57

**Source: C010147-03**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 1.5 | | 0.37 | mg/kg dry | 1.89 | 0.026 U | 82 | 51-121 | | | |
| 1,4-Dichlorobenzene | 1.5 | | 0.37 | mg/kg dry | 1.89 | 0.031 U | 77 | 48-118 | | | |
| 2,4-Dinitrotoluene | 1.9 | | 0.37 | mg/kg dry | 1.89 | 0.035 U | 98 | 63-127 | | | |

# QUALITY CONTROL

## Semivolatile Organic Compounds by GCMS - Quality Control

*Batch 0I16021 - EPA 3550C_MS*

**Matrix Spike (0I16021-MS1) Continued** Prepared: 09/16/2010 14:49 Analyzed: 09/20/2010 17:57

**Source: C010147-03**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Chlorophenol | 1.6 | | 0.37 | mg/kg dry | 1.89 | 0.033 U | 83 | 56-120 | | | |
| 4-Chloro-3-methylphenol | 1.7 | | 0.37 | mg/kg dry | 1.89 | 0.032 U | 90 | 59-121 | | | |
| 4-Nitrophenol | 2.1 | | 0.37 | mg/kg dry | 1.89 | 0.048 U | 112 | 73-147 | | | |
| Acenaphthene | 1.7 | | 0.37 | mg/kg dry | 1.89 | 0.028 U | 87 | 64-131 | | | |
| N-Nitroso-di-n-propylamine | 1.6 | | 0.37 | mg/kg dry | 1.89 | 0.019 U | 86 | 55-135 | | | |
| Pentachlorophenol | 1.3 | | 0.37 | mg/kg dry | 1.89 | 0.028 U | 68 | 45-117 | | | |
| Phenol | 1.6 | | 0.37 | mg/kg dry | 1.89 | 0.028 U | 87 | 54-121 | | | |
| Pyrene | 1.6 | | 0.37 | mg/kg dry | 1.89 | 0.054 U | 87 | 65-146 | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *3.5* | | | *mg/kg dry* | *3.78* | | *94* | *28-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *1.6* | | | *mg/kg dry* | *1.89* | | *84* | *56-120* | | | |
| *Surrogate: 2-Fluorophenol* | *2.9* | | | *mg/kg dry* | *3.78* | | *75* | *49-126* | | | |
| *Surrogate: Nitrobenzene-d5* | *1.6* | | | *mg/kg dry* | *1.89* | | *86* | *50-117* | | | |
| *Surrogate: Phenol-d5* | *3.1* | | | *mg/kg dry* | *3.78* | | *82* | *56-120* | | | |
| *Surrogate: Terphenyl-d14* | *1.7* | | | *mg/kg dry* | *1.89* | | *88* | *36-151* | | | |

**Matrix Spike Dup (0I16021-MSD1)** Prepared: 09/16/2010 14:49 Analyzed: 09/20/2010 18:27

**Source: C010147-03**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 1.6 | | 0.37 | mg/kg dry | 1.89 | 0.026 U | 82 | 51-121 | 0.9 | 10 | |
| 1,4-Dichlorobenzene | 1.5 | | 0.37 | mg/kg dry | 1.89 | 0.031 U | 78 | 48-118 | 1 | 13 | |
| 2,4-Dinitrotoluene | 1.9 | | 0.37 | mg/kg dry | 1.89 | 0.035 U | 98 | 63-127 | 0.4 | 10 | |
| 2-Chlorophenol | 1.6 | | 0.37 | mg/kg dry | 1.89 | 0.033 U | 84 | 56-120 | 1 | 11 | |
| 4-Chloro-3-methylphenol | 1.7 | | 0.37 | mg/kg dry | 1.89 | 0.032 U | 91 | 59-121 | 0.7 | 10 | |
| 4-Nitrophenol | 2.1 | | 0.37 | mg/kg dry | 1.89 | 0.048 U | 113 | 73-147 | 0.7 | 10 | |
| Acenaphthene | 1.7 | | 0.37 | mg/kg dry | 1.89 | 0.028 U | 88 | 64-131 | 0.4 | 19 | |
| N-Nitroso-di-n-propylamine | 1.7 | | 0.37 | mg/kg dry | 1.89 | 0.019 U | 89 | 55-135 | 3 | 10 | |
| Pentachlorophenol | 1.3 | | 0.37 | mg/kg dry | 1.89 | 0.028 U | 69 | 45-117 | 1 | 10 | |
| Phenol | 1.7 | | 0.37 | mg/kg dry | 1.89 | 0.028 U | 88 | 54-121 | 0.5 | 13 | |
| Pyrene | 1.6 | | 0.37 | mg/kg dry | 1.89 | 0.054 U | 87 | 65-146 | 0.5 | 50 | |
| *Surrogate: 2,4,6-Tribromophenol* | *3.5* | | | *mg/kg dry* | *3.78* | | *92* | *28-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *1.6* | | | *mg/kg dry* | *1.89* | | *85* | *56-120* | | | |
| *Surrogate: 2-Fluorophenol* | *2.8* | | | *mg/kg dry* | *3.78* | | *75* | *49-126* | | | |
| *Surrogate: Nitrobenzene-d5* | *1.6* | | | *mg/kg dry* | *1.89* | | *86* | *50-117* | | | |
| *Surrogate: Phenol-d5* | *3.1* | | | *mg/kg dry* | *3.78* | | *82* | *56-120* | | | |
| *Surrogate: Terphenyl-d14* | *1.6* | | | *mg/kg dry* | *1.89* | | *86* | *36-151* | | | |

## Tentatively Identified Compounds by Semivolatile GCMS - Quality Control

*Batch 0I16021 - EPA 3550C_MS*

**Blank (0I16021-BLK1)** Prepared: 09/16/2010 14:49 Analyzed: 09/20/2010 16:28

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **2-Chlorocyclohexanol** | **0.14** | **J** | | mg/kg wet | | | | | | | |
| **Ethane, 1,1,2,2-tetrachloro-** | **0.30** | **J** | | mg/kg wet | | | | | | | |
| **Tentatively Identified Compounds** | **0.0** | **U** | | mg/kg wet | | | | | | | |

# QUALITY CONTROL

## Tentatively Identified Compounds by Semivolatile GCMS - Quality Control

*Batch 0I16021 - EPA 3550C_MS*

**Blank (0I16021-BLK1) Continued** Prepared: 09/16/2010 14:49 Analyzed: 09/20/2010 16:28

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Unknown** | **0.47** | **J** | | mg/kg wet | | | | | | | |

## Organochlorine Pesticides by GC - Quality Control

*Batch 0I10009 - EPA 3510C*

**Blank (0I10009-BLK1)** Prepared: 09/10/2010 09:11 Analyzed: 09/10/2010 19:55

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD | 0.013 | U | 0.050 | ug/L | | | | | | | |
| 4,4'-DDE | 0.012 | U | 0.050 | ug/L | | | | | | | |
| 4,4'-DDT | 0.015 | U | 0.050 | ug/L | | | | | | | |
| Aldrin | 0.012 | U | 0.050 | ug/L | | | | | | | |
| alpha-BHC | 0.015 | U | 0.050 | ug/L | | | | | | | |
| beta-BHC | 0.012 | U | 0.050 | ug/L | | | | | | | |
| Chlordane (tech) | 0.20 | U | 0.50 | ug/L | | | | | | | |
| Chlordane-alpha | 0.014 | U | 0.050 | ug/L | | | | | | | |
| Chlordane-gamma | 0.012 | U | 0.050 | ug/L | | | | | | | |
| delta-BHC | 0.014 | U | 0.050 | ug/L | | | | | | | |
| Dieldrin | 0.0089 | U | 0.050 | ug/L | | | | | | | |
| Endosulfan I | 0.016 | U | 0.050 | ug/L | | | | | | | |
| Endosulfan II | 0.012 | U | 0.050 | ug/L | | | | | | | |
| Endosulfan sulfate | 0.012 | U | 0.050 | ug/L | | | | | | | |
| Endrin | 0.013 | U | 0.050 | ug/L | | | | | | | |
| Endrin aldehyde | 0.012 | U | 0.050 | ug/L | | | | | | | |
| Endrin ketone | 0.012 | U | 0.050 | ug/L | | | | | | | |
| gamma-BHC | 0.016 | U | 0.050 | ug/L | | | | | | | |
| Heptachlor | 0.012 | U | 0.050 | ug/L | | | | | | | |
| Heptachlor epoxide | 0.0089 | U | 0.050 | ug/L | | | | | | | |
| Isodrin | 0.013 | U | 0.050 | ug/L | | | | | | | |
| Methoxychlor | 0.016 | U | 0.050 | ug/L | | | | | | | |
| Mirex | 0.016 | U | 0.050 | ug/L | | | | | | | |
| Toxaphene | 0.22 | U | 0.50 | ug/L | | | | | | | |
| *Surrogate: 2,4,5,6-TCMX* | *1.3* | | | *ug/L* | *1.00* | | *133* | *44-134* | | | |
| *Surrogate: Decachlorobiphenyl* | *1.2* | | | *ug/L* | *1.00* | | *120* | *37-149* | | | |

**LCS (0I10009-BS1)** Prepared: 09/10/2010 09:11 Analyzed: 09/10/2010 20:09

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDT | 1.4 | | 0.050 | ug/L | 1.00 | | 141 | 37-139 | | | QL-02 |
| Dieldrin | 1.3 | | 0.050 | ug/L | 1.00 | | 126 | 46-132 | | | |
| Endrin | 1.3 | | 0.050 | ug/L | 1.00 | | 130 | 43-133 | | | |
| *Surrogate: 2,4,5,6-TCMX* | *1.3* | | | *ug/L* | *1.00* | | *131* | *44-134* | | | |
| *Surrogate: Decachlorobiphenyl* | *1.2* | | | *ug/L* | *1.00* | | *121* | *37-149* | | | |

**Matrix Spike (0I10009-MS1)** Prepared: 09/10/2010 09:11 Analyzed: 09/10/2010 20:22

**Source: C010313-11**

# QUALITY CONTROL

## Organochlorine Pesticides by GC - Quality Control

*Batch 0I10009 - EPA 3510C*

**Matrix Spike (0I10009-MS1) Continued** Prepared: 09/10/2010 09:11 Analyzed: 09/10/2010 20:22

**Source: C010313-11**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDT | 1.4 | | 0.050 | ug/L | 1.00 | 0.015 U | 144 | 37-139 | | | QM-07 |
| Dieldrin | 1.2 | | 0.050 | ug/L | 1.00 | 0.0089 U | 119 | 46-132 | | | |
| Endrin | 1.2 | | 0.050 | ug/L | 1.00 | 0.013 U | 125 | 43-133 | | | |
| *Surrogate: 2,4,5,6-TCMX* | *1.2* | | | *ug/L* | *1.00* | | *123* | *44-134* | | | |
| *Surrogate: Decachlorobiphenyl* | *1.1* | | | *ug/L* | *1.00* | | *114* | *37-149* | | | |

**Matrix Spike Dup (0I10009-MSD1)** Prepared: 09/10/2010 09:11 Analyzed: 09/10/2010 20:35

**Source: C010313-11**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDT | 1.4 | | 0.050 | ug/L | 1.00 | 0.015 U | 145 | 37-139 | 0.6 | 26 | QM-07 |
| Dieldrin | 1.2 | | 0.050 | ug/L | 1.00 | 0.0089 U | 116 | 46-132 | 2 | 27 | |
| Endrin | 1.2 | | 0.050 | ug/L | 1.00 | 0.013 U | 121 | 43-133 | 3 | 26 | |
| *Surrogate: 2,4,5,6-TCMX* | *1.2* | | | *ug/L* | *1.00* | | *120* | *44-134* | | | |
| *Surrogate: Decachlorobiphenyl* | *1.1* | | | *ug/L* | *1.00* | | *112* | *37-149* | | | |

*Batch 0I14011 - EPA 3550C*

**Blank (0I14011-BLK1)** Prepared: 09/14/2010 09:57 Analyzed: 09/16/2010 18:06

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD | 0.00032 | U | 0.0017 | mg/kg wet | | | | | | | |
| 4,4'-DDE | 0.00041 | U | 0.0017 | mg/kg wet | | | | | | | |
| 4,4'-DDT | 0.00052 | U | 0.0017 | mg/kg wet | | | | | | | |
| Aldrin | 0.00036 | U | 0.0017 | mg/kg wet | | | | | | | |
| alpha-BHC | 0.00049 | U | 0.0017 | mg/kg wet | | | | | | | |
| beta-BHC | 0.00071 | U | 0.0017 | mg/kg wet | | | | | | | |
| Chlordane (tech) | 0.0011 | U | 0.033 | mg/kg wet | | | | | | | |
| Chlordane-alpha | 0.00046 | U | 0.0017 | mg/kg wet | | | | | | | |
| Chlordane-gamma | 0.00060 | U | 0.0017 | mg/kg wet | | | | | | | |
| delta-BHC | 0.00030 | U | 0.0017 | mg/kg wet | | | | | | | |
| Dieldrin | 0.00032 | U | 0.0017 | mg/kg wet | | | | | | | |
| Endosulfan I | 0.00041 | U | 0.0017 | mg/kg wet | | | | | | | |
| Endosulfan II | 0.00039 | U | 0.0017 | mg/kg wet | | | | | | | |
| Endosulfan sulfate | 0.00048 | U | 0.0017 | mg/kg wet | | | | | | | |
| Endrin | 0.00039 | U | 0.0017 | mg/kg wet | | | | | | | |
| Endrin aldehyde | 0.00034 | U | 0.0017 | mg/kg wet | | | | | | | |
| Endrin ketone | 0.00030 | U | 0.0017 | mg/kg wet | | | | | | | |
| gamma-BHC | 0.00042 | U | 0.0017 | mg/kg wet | | | | | | | |
| Heptachlor | 0.00046 | U | 0.0017 | mg/kg wet | | | | | | | |
| Heptachlor epoxide | 0.00043 | U | 0.0017 | mg/kg wet | | | | | | | |
| Isodrin | 0.00036 | U | 0.0017 | mg/kg wet | | | | | | | |
| Methoxychlor | 0.00042 | U | 0.0017 | mg/kg wet | | | | | | | |
| Mirex | 0.00056 | U | 0.0017 | mg/kg wet | | | | | | | |
| Toxaphene | 0.010 | U | 0.017 | mg/kg wet | | | | | | | |
| *Surrogate: 2,4,5,6-TCMX* | *0.048* | | | *mg/kg wet* | *0.0333* | | *145* | *59-137* | | | *QS-03* |

# QUALITY CONTROL

## Organochlorine Pesticides by GC - Quality Control

*Batch 0I14011 - EPA 3550C*

**Blank (0I14011-BLK1) Continued** Prepared: 09/14/2010 09:57 Analyzed: 09/16/2010 18:06

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *0.043* | | | *mg/kg wet* | *0.0333* | | *130* | *60-140* | | | |

**LCS (0I14011-BS1)** Prepared: 09/14/2010 09:57 Analyzed: 09/16/2010 18:19

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDT | 0.057 | | 0.0017 | mg/kg wet | 0.0333 | | 170 | 38-142 | | | QL-02 |
| Dieldrin | 0.045 | | 0.0017 | mg/kg wet | 0.0333 | | 134 | 51-129 | | | QL-02 |
| Endrin | 0.047 | | 0.0017 | mg/kg wet | 0.0333 | | 140 | 51-126 | | | QL-02 |
| *Surrogate: 2,4,5,6-TCMX* | *0.051* | | | *mg/kg wet* | *0.0333* | | *152* | *59-137* | | | *QS-03* |
| *Surrogate: Decachlorobiphenyl* | *0.045* | | | *mg/kg wet* | *0.0333* | | *135* | *60-140* | | | |

**Matrix Spike (0I14011-MS1)** Prepared: 09/14/2010 09:57 Analyzed: 09/16/2010 18:33

**Source: C010080-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDT | 0.073 | | 0.0019 | mg/kg dry | 0.0379 | 0.00059 U | 194 | 38-142 | | | QM-07 |
| Dieldrin | 0.15 | | 0.0019 | mg/kg dry | 0.0379 | 0.12 | 74 | 51-129 | | | |
| Endrin | 0.053 | | 0.0019 | mg/kg dry | 0.0379 | 0.00044 U | 139 | 51-126 | | | QM-07 |
| *Surrogate: 2,4,5,6-TCMX* | *0.058* | | | *mg/kg dry* | *0.0379* | | *153* | *59-137* | | | *QS-03* |
| *Surrogate: Decachlorobiphenyl* | *0.049* | | | *mg/kg dry* | *0.0379* | | *129* | *60-140* | | | |

**Matrix Spike Dup (0I14011-MSD1)** Prepared: 09/14/2010 09:57 Analyzed: 09/16/2010 18:46

**Source: C010080-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDT | 0.072 | | 0.0019 | mg/kg dry | 0.0379 | 0.00059 U | 190 | 38-142 | 2 | 42 | QM-07 |
| Dieldrin | 0.14 | | 0.0019 | mg/kg dry | 0.0379 | 0.12 | 48 | 51-129 | 7 | 40 | QM-07 |
| Endrin | 0.051 | | 0.0019 | mg/kg dry | 0.0379 | 0.00044 U | 135 | 51-126 | 3 | 33 | QM-07 |
| *Surrogate: 2,4,5,6-TCMX* | *0.054* | | | *mg/kg dry* | *0.0379* | | *143* | *59-137* | | | *QS-03* |
| *Surrogate: Decachlorobiphenyl* | *0.046* | | | *mg/kg dry* | *0.0379* | | *123* | *60-140* | | | |

## Metals by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I14017 - EPA 7471B*

**Blank (0I14017-BLK1)** Prepared: 09/14/2010 10:54 Analyzed: 09/14/2010 16:05

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.00480 | U | 0.0100 | mg/kg wet | | | | | | | |

**LCS (0I14017-BS1)** Prepared: 09/14/2010 10:54 Analyzed: 09/14/2010 16:08

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.259 | | 0.0100 | mg/kg wet | 0.246 | | 105 | 85-115 | | | |

**Matrix Spike (0I14017-MS1)** Prepared: 09/14/2010 10:54 Analyzed: 09/14/2010 16:14

## QUALITY CONTROL

### Metals by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I14017 - EPA 7471B*

**Matrix Spike (0I14017-MS1) Continued** Prepared: 09/14/2010 10:54 Analyzed: 09/14/2010 16:14

**Source: C010147-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.283 | | 0.0107 | mg/kg dry | 0.264 | 0.00515 U | 107 | 85-115 | | | |

**Matrix Spike Dup (0I14017-MSD1)** Prepared: 09/14/2010 10:54 Analyzed: 09/14/2010 16:17

**Source: C010147-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.269 | | 0.0107 | mg/kg dry | 0.268 | 0.00515 U | 100 | 85-115 | 5 | 15 | |

**Post Spike (0I14017-PS1)** Prepared: 09/14/2010 10:54 Analyzed: 09/14/2010 16:20

**Source: C010147-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 4.98 | | 0.200 | ug/L | 5.00 | -0.420 | 108 | 75-125 | | | |

*Batch 0I14018 - EPA 3050B*

**Blank (0I14018-BLK1)** Prepared: 09/14/2010 11:05 Analyzed: 09/15/2010 10:18

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Antimony** | **0.196** | **J** | 1.00 | mg/kg wet | | | | | | | |
| Arsenic | 0.100 | U | 0.500 | mg/kg wet | | | | | | | |
| Beryllium | 0.0120 | U | 0.0500 | mg/kg wet | | | | | | | |
| Cadmium | 0.00960 | U | 0.0500 | mg/kg wet | | | | | | | |
| Chromium | 0.100 | U | 0.500 | mg/kg wet | | | | | | | |
| Copper | 0.190 | U | 0.500 | mg/kg wet | | | | | | | |
| Lead | 0.120 | U | 0.500 | mg/kg wet | | | | | | | |
| Manganese | 0.100 | U | 0.500 | mg/kg wet | | | | | | | |
| Nickel | 0.360 | U | 2.50 | mg/kg wet | | | | | | | |
| **Selenium** | **0.137** | **J** | 0.500 | mg/kg wet | | | | | | | |
| Silver | 0.100 | U | 0.500 | mg/kg wet | | | | | | | |
| Thallium | 0.100 | U | 0.500 | mg/kg wet | | | | | | | |
| Zinc | 1.10 | U | 2.50 | mg/kg wet | | | | | | | |

**LCS (0I14018-BS1)** Prepared: 09/14/2010 11:05 Analyzed: 09/15/2010 10:22

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 13.0 | B | 1.00 | mg/kg wet | 12.5 | | 104 | 80-120 | | | |
| Arsenic | 25.8 | | 0.500 | mg/kg wet | 25.0 | | 103 | 80-120 | | | |
| Beryllium | 13.2 | | 0.0500 | mg/kg wet | 12.5 | | 105 | 80-120 | | | |
| Cadmium | 13.1 | | 0.0500 | mg/kg wet | 12.5 | | 104 | 80-120 | | | |
| Chromium | 26.5 | | 0.500 | mg/kg wet | 25.0 | | 106 | 80-120 | | | |
| Copper | 14.1 | | 0.500 | mg/kg wet | 12.5 | | 112 | 80-120 | | | |
| Lead | 26.0 | | 0.500 | mg/kg wet | 25.0 | | 104 | 80-120 | | | |
| Manganese | 13.1 | | 0.500 | mg/kg wet | 12.5 | | 105 | 80-120 | | | |
| Nickel | 26.1 | | 2.50 | mg/kg wet | 25.0 | | 104 | 80-120 | | | |
| Selenium | 25.7 | B | 0.500 | mg/kg wet | 25.0 | | 103 | 80-120 | | | |

## QUALITY CONTROL

### Metals by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I14018 - EPA 3050B*

**LCS (0I14018-BS1) Continued** Prepared: 09/14/2010 11:05 Analyzed: 09/15/2010 10:22

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Silver | 13.3 | | 0.500 | mg/kg wet | 12.5 | | 107 | 80-120 | | | |
| Thallium | 13.0 | | 0.500 | mg/kg wet | 12.5 | | 104 | 80-120 | | | |
| Zinc | 26.1 | | 2.50 | mg/kg wet | 25.0 | | 104 | 80-120 | | | |

**Matrix Spike (0I14018-MS1)** Prepared: 09/14/2010 11:05 Analyzed: 09/15/2010 10:27

**Source: C010324-12**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 10.6 | B | 1.32 | mg/kg dry | 16.5 | 0.145 U | 64 | 75-125 | | | QM-07 |
| Arsenic | 36.3 | | 0.661 | mg/kg dry | 33.0 | 1.83 | 104 | 75-125 | | | |
| Beryllium | 16.1 | | 0.0661 | mg/kg dry | 16.5 | 0.161 | 97 | 75-125 | | | |
| Cadmium | 14.5 | | 0.0661 | mg/kg dry | 16.5 | 0.240 | 86 | 75-125 | | | |
| Chromium | 45.3 | | 0.661 | mg/kg dry | 33.0 | 11.2 | 103 | 75-125 | | | |
| Copper | 25.6 | | 0.661 | mg/kg dry | 16.5 | 8.14 | 105 | 75-125 | | | |
| Lead | 28.3 | | 0.661 | mg/kg dry | 33.0 | 0.159 U | 86 | 75-125 | | | |
| Manganese | 177 | | 0.661 | mg/kg dry | 16.5 | 160 | 101 | 75-125 | | | |
| Nickel | 35.0 | | 3.30 | mg/kg dry | 33.0 | 5.96 | 88 | 75-125 | | | |
| Selenium | 34.0 | B | 0.661 | mg/kg dry | 33.0 | 0.132 U | 103 | 75-125 | | | |
| Silver | 18.5 | | 0.661 | mg/kg dry | 16.5 | 1.04 | 106 | 75-125 | | | |
| Thallium | 19.3 | | 0.661 | mg/kg dry | 16.5 | 4.27 | 91 | 75-125 | | | |
| Zinc | 42.8 | | 3.30 | mg/kg dry | 33.0 | 13.7 | 88 | 75-125 | | | |

**Matrix Spike Dup (0I14018-MSD1)** Prepared: 09/14/2010 11:05 Analyzed: 09/15/2010 10:29

**Source: C010324-12**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 10.9 | B | 1.32 | mg/kg dry | 16.5 | 0.145 U | 66 | 75-125 | 2 | 20 | QM-07 |
| Arsenic | 36.2 | | 0.661 | mg/kg dry | 33.0 | 1.83 | 104 | 75-125 | 0.1 | 20 | |
| Beryllium | 16.0 | | 0.0661 | mg/kg dry | 16.5 | 0.161 | 96 | 75-125 | 0.5 | 20 | |
| Cadmium | 14.4 | | 0.0661 | mg/kg dry | 16.5 | 0.240 | 86 | 75-125 | 0.7 | 20 | |
| Chromium | 45.9 | | 0.661 | mg/kg dry | 33.0 | 11.2 | 105 | 75-125 | 1 | 20 | |
| Copper | 25.8 | | 0.661 | mg/kg dry | 16.5 | 8.14 | 107 | 75-125 | 0.9 | 20 | |
| Lead | 28.3 | | 0.661 | mg/kg dry | 33.0 | 0.159 U | 86 | 75-125 | 0.1 | 20 | |
| Manganese | 177 | | 0.661 | mg/kg dry | 16.5 | 160 | 104 | 75-125 | 0.3 | 20 | |
| Nickel | 35.0 | | 3.30 | mg/kg dry | 33.0 | 5.96 | 88 | 75-125 | 0.05 | 20 | |
| Selenium | 34.2 | B | 0.661 | mg/kg dry | 33.0 | 0.132 U | 104 | 75-125 | 0.6 | 20 | |
| Silver | 18.6 | | 0.661 | mg/kg dry | 16.5 | 1.04 | 107 | 75-125 | 0.6 | 20 | |
| Thallium | 19.8 | | 0.661 | mg/kg dry | 16.5 | 4.27 | 94 | 75-125 | 3 | 20 | |
| Zinc | 42.8 | | 3.30 | mg/kg dry | 33.0 | 13.7 | 88 | 75-125 | 0.03 | 20 | |

**Post Spike (0I14018-PS1)** Prepared: 09/14/2010 11:05 Analyzed: 09/15/2010 10:32

**Source: C010324-12**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 0.522 | B | 0.0200 | mg/L | 0.500 | -0.00562 | 106 | 80-120 | | | |
| Arsenic | 1.11 | | 0.0100 | mg/L | 1.00 | 0.0277 | 108 | 80-120 | | | |
| Beryllium | 0.510 | | 0.00100 | mg/L | 0.500 | 0.00243 | 102 | 80-120 | | | |

## QUALITY CONTROL

### Metals by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I14018 - EPA 3050B*

**Post Spike (0I14018-PS1) Continued** Prepared: 09/14/2010 11:05 Analyzed: 09/15/2010 10:32

**Source: C010324-12**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cadmium | 0.464 | | 0.00100 | mg/L | 0.500 | 0.00363 | 92 | 80-120 | | | |
| Chromium | 1.13 | | 0.0100 | mg/L | 1.00 | 0.169 | 96 | 80-120 | | | |
| Copper | 0.710 | | 0.0100 | mg/L | 0.500 | 0.123 | 117 | 80-120 | | | |
| Lead | 0.901 | | 0.0100 | mg/L | 1.00 | -0.0238 | 92 | 80-120 | | | |
| Manganese | 2.87 | | 0.0100 | mg/L | 0.500 | 2.42 | 89 | 80-120 | | | |
| Nickel | 0.990 | | 0.0500 | mg/L | 1.00 | 0.0901 | 90 | 80-120 | | | |
| Selenium | 1.06 | B | 0.0100 | mg/L | 1.00 | -0.00884 | 107 | 80-120 | | | |
| Silver | 0.568 | | 0.0100 | mg/L | 0.500 | 0.0157 | 110 | 80-120 | | | |
| Thallium | 0.541 | | 0.0100 | mg/L | 0.500 | 0.0646 | 95 | 80-120 | | | |
| Zinc | 1.09 | | 0.0500 | mg/L | 1.00 | 0.207 | 89 | 80-120 | | | |

*Batch 0I15010 - EPA 245.1*

**Blank (0I15010-BLK1)** Prepared: 09/15/2010 08:56 Analyzed: 09/15/2010 16:17

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.170 | U | 0.200 | ug/L | | | | | | | |

**LCS (0I15010-BS1)** Prepared: 09/15/2010 08:56 Analyzed: 09/15/2010 16:21

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 4.99 | | 0.200 | ug/L | 5.00 | | 100 | 85-115 | | | |

**Matrix Spike (0I15010-MS1)** Prepared: 09/15/2010 08:56 Analyzed: 09/15/2010 16:27

**Source: C010137-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 4.86 | | 0.200 | ug/L | 5.00 | 0.170 U | 97 | 85-115 | | | |

**Matrix Spike Dup (0I15010-MSD1)** Prepared: 09/15/2010 08:56 Analyzed: 09/15/2010 16:30

**Source: C010137-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 4.47 | | 0.200 | ug/L | 5.00 | 0.170 U | 89 | 85-115 | 8 | 15 | |

**Post Spike (0I15010-PS1)** Prepared: 09/15/2010 08:56 Analyzed: 09/15/2010 16:33

**Source: C010137-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 3.91 | | 0.200 | ug/L | 5.00 | -0.211 | 82 | 75-125 | | | |

### Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I09018 - EPA 3030C*

**Blank (0I09018-BLK1)** Prepared: 09/09/2010 12:08 Analyzed: 09/10/2010 12:23

## QUALITY CONTROL

### Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I09018 - EPA 3030C*

**Blank (0I09018-BLK1) Continued** Prepared: 09/09/2010 12:08 Analyzed: 09/10/2010 12:23

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 2.80 | U | 10.0 | ug/L | | | | | | | |
| Beryllium | 0.100 | U | 1.00 | ug/L | | | | | | | |
| Cadmium | 0.360 | U | 1.00 | ug/L | | | | | | | |
| **Chromium** | **1.34** | **J** | 10.0 | ug/L | | | | | | | |
| Copper | 1.60 | U | 10.0 | ug/L | | | | | | | |
| Manganese | 1.10 | U | 10.0 | ug/L | | | | | | | |
| Nickel | 1.80 | U | 10.0 | ug/L | | | | | | | |
| Selenium | 2.70 | U | 10.0 | ug/L | | | | | | | |
| Silver | 1.90 | U | 10.0 | ug/L | | | | | | | |
| Zinc | 3.80 | U | 10.0 | ug/L | | | | | | | |

**LCS (0I09018-BS1)** Prepared: 09/09/2010 12:08 Analyzed: 09/10/2010 12:28

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 508 | | 10.0 | ug/L | 500 | | 102 | 80-120 | | | |
| Beryllium | 248 | | 1.00 | ug/L | 250 | | 99 | 80-120 | | | |
| Cadmium | 245 | | 1.00 | ug/L | 250 | | 98 | 80-120 | | | |
| Chromium | 487 | B | 10.0 | ug/L | 500 | | 97 | 80-120 | | | |
| Copper | 244 | | 10.0 | ug/L | 250 | | 98 | 80-120 | | | |
| Manganese | 239 | | 10.0 | ug/L | 250 | | 95 | 80-120 | | | |
| Nickel | 486 | | 10.0 | ug/L | 500 | | 97 | 80-120 | | | |
| Selenium | 526 | | 10.0 | ug/L | 500 | | 105 | 80-120 | | | |
| Silver | 249 | | 10.0 | ug/L | 250 | | 100 | 80-120 | | | |
| Zinc | 492 | | 10.0 | ug/L | 500 | | 98 | 80-120 | | | |

**LCS Dup (0I09018-BSD1)** Prepared: 09/09/2010 12:08 Analyzed: 09/10/2010 12:30

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 496 | | 10.0 | ug/L | 500 | | 99 | 80-120 | 2 | 20 | |
| Beryllium | 243 | | 1.00 | ug/L | 250 | | 97 | 80-120 | 2 | 20 | |
| Cadmium | 245 | | 1.00 | ug/L | 250 | | 98 | 80-120 | 0.02 | 20 | |
| Chromium | 487 | B | 10.0 | ug/L | 500 | | 97 | 80-120 | 0.06 | 20 | |
| Copper | 244 | | 10.0 | ug/L | 250 | | 98 | 80-120 | 0.1 | 20 | |
| Manganese | 240 | | 10.0 | ug/L | 250 | | 96 | 80-120 | 0.4 | 20 | |
| Nickel | 487 | | 10.0 | ug/L | 500 | | 97 | 80-120 | 0.2 | 20 | |
| Selenium | 515 | | 10.0 | ug/L | 500 | | 103 | 80-120 | 2 | 20 | |
| Silver | 247 | | 10.0 | ug/L | 250 | | 99 | 80-120 | 0.9 | 20 | |
| Zinc | 498 | | 10.0 | ug/L | 500 | | 100 | 80-120 | 1 | 20 | |

*Batch 0I10040 - EPA 3030C*

**Blank (0I10040-BLK1)** Prepared: 09/10/2010 14:42 Analyzed: 09/14/2010 12:36

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 0.220 | U | 2.00 | ug/L | | | | | | | |
| **Thallium** | **0.338** | **J** | 1.00 | ug/L | | | | | | | |

**LCS (0I10040-BS1)** Prepared: 09/10/2010 14:42 Analyzed: 09/14/2010 12:40

# QUALITY CONTROL

## Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I10040 - EPA 3030C*

**LCS (0I10040-BS1) Continued** Prepared: 09/10/2010 14:42 Analyzed: 09/14/2010 12:40

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 24.5 | | 2.00 | ug/L | 25.0 | | 98 | 80-120 | | | |
| Thallium | 26.1 | B | 1.00 | ug/L | 25.0 | | 104 | 80-120 | | | |

**LCS Dup (0I10040-BSD1)** Prepared: 09/10/2010 14:42 Analyzed: 09/14/2010 12:43

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 25.5 | | 2.00 | ug/L | 25.0 | | 102 | 80-120 | 4 | 20 | |
| Thallium | 27.0 | B | 1.00 | ug/L | 25.0 | | 108 | 80-120 | 4 | 20 | |

## Metals (acid extractable) by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I09018 - EPA 3030C*

**Blank (0I09018-BLK1)** Prepared: 09/09/2010 12:08 Analyzed: 09/10/2010 12:23

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 1.90 | U | 10.0 | ug/L | | | | | | | |

**LCS (0I09018-BS1)** Prepared: 09/09/2010 12:08 Analyzed: 09/10/2010 12:28

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 503 | | 10.0 | ug/L | 500 | | 101 | 80-120 | | | |

**LCS Dup (0I09018-BSD1)** Prepared: 09/09/2010 12:08 Analyzed: 09/10/2010 12:30

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 493 | | 10.0 | ug/L | 500 | | 99 | 80-120 | 2 | 20 | |

## FLAGS/NOTES AND DEFINITIONS

| | |
|---|---|
| B | The analyte was detected in the associated method blank. |
| D | The sample was analyzed at dilution. |
| J | The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable. |
| U | The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable. |
| E | The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate. |
| MRL | Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content. |
| J-01 | Result is estimated due to positive results in the associated method blank. |
| QL-02 | The associated laboratory control sample exhibited high bias; since the result is ND, the impact on data quality is minimal. |
| QM-07 | The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery. |
| QS-03 | Surrogate recovery outside acceptance limits |
| QV-01 | The associated continuing calibration verification standard exhibited high bias; since the result is ND, the impact on data quality is minimal. |
| QV-02 | The associated continuing calibration verification standard exhibited low bias; the reported result should be considered to be a minimum estimate. |

# ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

10775 Central Port Dr
Orlando FL 32824
(407) 858-5314 Fax (407) 850-6945

4810 Executive Park Court, Suite 211
Jacksonville FL 32216-6099
(904) 296-3007 Fax (904) 296-6210

102 A Woodwards Industrial Ct
Cary NC 27511
(919) 467-3696 Fax (919) 467-3515

Page 1 of 1

| | |
|---|---|
| Client Name: STME INC (Smool) | Project Number: 1054-10-2003 |
| Address: 7201 Spring Forest Rd | Project Name/Desc: MARY Chappell Site |
| City/St/Zip: Raleigh NC 27616 | PO # / Billing Info: |
| Tel: 919 872 2660 Fax: | Reporting Contact: ED Wolosczyn |
| Sampler(s) Name, Affiliation (Print): Gerald Paul | Billing Contact: Acct Payable |
| Sampler(s) Signature: [signature] | Facility # (if required): |

Requested Analyses: 8081B, PCTOD; 8260B; As, Ba, Cd, Cr, Cu, Mn, Ni, Pb, Zn, Sb, Se, Tl, Zn; Hg; Fecal (total); 8260B +Tics; 8081B, 8270D +Tics; Metals (14)

Requested Turnaround Times

Note: Rush requests subject to acceptance by the facility

___ Standard

___ Expedited

Due __/__/__

Lab Workorder: C010226

Preservation (See Codes) (Combine as necessary)

| Item # | Sample ID (Field Identification) | Collection Date | Collection Time | Comp / Grab | Matrix (see codes) | Total # of Containers | 8081B, PCTOD | 8260B | As, Ba, Cd, Cr, Cu, Mn, Ni, Pb, Zn, Sb, Se, Tl, Zn | Hg | Fecal (total) | 8260B +Tics | 8081B, 8270D +Tics | Metals (14) | | | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MARY L. CHAPPELL WSW-1 | 9/8/10 | 1310 | GRAB | DW | 7 | X | X | X | X | X | | | | | | |
| | MARK Chappell WSW-2 | ↓ | 1010 | ↓ | ↓ | 6 | X | X | X | X | | | | | | | |
| | William Brown WSW-5 | ↓ | 1050 | ↓ | ↓ | 6 | X | X | X | X | | | | | | | |
| | GP-5 (0-5') | 9/7/10 | 1320 | ↓ | SO | 4 | | | | | | X | X | X | | | |
| | GP-4 (29-33') | 9/8/10 | 0938 | ↓ | SO | 4 | | | | | | X | X | X | | | |
| | GP-4 (5-9) | 9/8/10 | 1330 | ↓ | SO | 4 | | | | | | X | X | X | | | |

<-- Total # of Containers

| Sample Rel Received By | Date/Time | Relinquished By | Date/Time | Received By | Date/Time |
|---|---|---|---|---|---|
| | | [signature] | 9/8/10 1355 | [signature] | 9/8/10 1355 |
| Comments: | | Relinquished By | Date/Time | Received By | Date/Time |
| | | | | [signature] | 9/8/10 1525 |
| | | Relinquished By | Date/Time | Received By | Date/Time |
| | | | | | |

Cooler # & Temps on Receipt: C-539 1.6°C Blue 2.8°C

Condition Upon Receipt: X Acceptable ___ Unacceptable

Matrix: GW Groundwater, SO Soil, SE Sediment, SW Surface Water, WW Wastewater, A/Air, O Other (List in comments)

Preservation: 1 Ice, 2 HNO3, 3 H2SO4, 4 NaOH, 5 Other (List in comments)

Note: All samples submitted to ENCO subject to conditions set forth in the current standard conditions, which are available upon request. Unless otherwise written agreement exists.

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**Environmental Conservation Laboratories, Inc.**
**102-A Woodwinds Industrial Court**
**Cary NC, 27511**
**Phone: 919.467.3090 FAX: 919.467.3515**
**www.encolabs.com**

Thursday, September 30, 2010

S&ME, Inc. (SM001)

Attn: Ed Woloszyn

3201 Spring Forest Road

Raleigh, NC 27616

**RE: Laboratory Results for**
**Project Number: 1054-10-2003, Project Name/Desc: Mary Chappell Site**
**ENCO Workorder: C011558**

Dear Ed Woloszyn,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Tuesday, September 21, 2010.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Chuck Smith

Chuck Smith
Project Manager

Enclosure(s)

The total number of pages in this report, including this page is 46.

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## SAMPLE SUMMARY/LABORATORY CHRONICLE

| Client ID: GP-1 | Lab ID: C011558-01 | Sampled: 09/20/10 14:30 | Received: 09/21/10 15:50 |
|---|---|---|---|
| **Parameter** | **Hold Date/Time(s)** | **Prep Date/Time(s)** | **Analysis Date/Time(s)** |
| EPA 8260B | 10/04/10 | 09/28/10 12:57 | 9/29/2010 06:56 |

| Client ID: GP-2 | Lab ID: C011558-02 | Sampled: 09/20/10 15:00 | Received: 09/21/10 15:50 |
|---|---|---|---|
| **Parameter** | **Hold Date/Time(s)** | **Prep Date/Time(s)** | **Analysis Date/Time(s)** |
| EPA 8260B | 10/04/10 | 09/28/10 12:57 | 9/29/2010 07:25 |

| Client ID: GP-3 | Lab ID: C011558-03 | Sampled: 09/20/10 11:15 | Received: 09/21/10 15:50 |
|---|---|---|---|
| **Parameter** | **Hold Date/Time(s)** | **Prep Date/Time(s)** | **Analysis Date/Time(s)** |
| EPA 8260B | 10/04/10 | 09/28/10 12:57 | 9/29/2010 07:53 |

| Client ID: GP-4 | Lab ID: C011558-04 | Sampled: 09/20/10 11:45 | Received: 09/21/10 15:50 |
|---|---|---|---|
| **Parameter** | **Hold Date/Time(s)** | **Prep Date/Time(s)** | **Analysis Date/Time(s)** |
| EPA 8260B | 10/04/10 | 09/28/10 12:57 | 9/29/2010 08:21 |

| Client ID: GP-6 | Lab ID: C011558-05 | Sampled: 09/20/10 12:30 | Received: 09/21/10 15:50 |
|---|---|---|---|
| **Parameter** | **Hold Date/Time(s)** | **Prep Date/Time(s)** | **Analysis Date/Time(s)** |
| EPA 8260B | 10/04/10 | 09/28/10 12:57 | 9/29/2010 08:50 |

| Client ID: GP-7 | Lab ID: C011558-06 | Sampled: 09/20/10 14:15 | Received: 09/21/10 15:50 |
|---|---|---|---|
| **Parameter** | **Hold Date/Time(s)** | **Prep Date/Time(s)** | **Analysis Date/Time(s)** |
| EPA 8260B | 10/04/10 | 09/28/10 12:57 | 9/29/2010 09:18 |

| Client ID: Herman Russell - WSW-4 | Lab ID: C011558-07 | Sampled: 09/21/10 14:30 | Received: 09/21/10 15:50 |
|---|---|---|---|
| **Parameter** | **Hold Date/Time(s)** | **Prep Date/Time(s)** | **Analysis Date/Time(s)** |
| EPA 6010C | 03/20/11 | 09/23/10 10:00 | 9/24/2010 12:00 |
| EPA 6020A | 03/20/11 | 09/23/10 10:02 | 9/27/2010 10:47 |
| EPA 7470A | 10/19/10 | 09/24/10 10:23 | 9/24/2010 16:31 |
| EPA 8081B | 09/28/10 11/06/10 | 09/27/10 07:10 | 9/27/2010 17:16 |
| EPA 8260B | 10/05/10 | 09/29/10 09:21 | 9/29/2010 16:40 |
| EPA 8270D | 09/28/10 11/03/10 | 09/24/10 06:57 | 9/24/2010 23:00 |

| Client ID: Duplicate | Lab ID: C011558-08 | Sampled: 09/20/10 00:00 | Received: 09/21/10 15:50 |
|---|---|---|---|
| **Parameter** | **Hold Date/Time(s)** | **Prep Date/Time(s)** | **Analysis Date/Time(s)** |
| EPA 8260B | 10/04/10 | 09/29/10 09:21 | 9/29/2010 17:09 |

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| Client ID: Equipment Blank | Lab ID: C011558-09 | Sampled: 09/20/10 18:00 | Received: 09/21/10 15:50 |
|---|---|---|---|

| Parameter | Hold Date/Time(s) | Prep Date/Time(s) | Analysis Date/Time(s) |
|---|---|---|---|
| EPA 8260B | 10/04/10 | 09/28/10 12:57 | 9/29/2010 09:46 |

| Client ID: Trip Blank | Lab ID: C011558-10 | Sampled: 09/21/10 00:00 | Received: 09/21/10 15:50 |
|---|---|---|---|

| Parameter | Hold Date/Time(s) | Prep Date/Time(s) | Analysis Date/Time(s) |
|---|---|---|---|
| EPA 8260B | 10/05/10 | 09/28/10 12:57 | 9/29/2010 10:15 |

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## SAMPLE DETECTION SUMMARY

**Client ID: GP-1** Lab ID: C011558-01

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| Chloroform | 0.49 | J | 0.20 | 1.0 | ug/L | EPA 8260B | |

**Client ID: GP-2** Lab ID: C011558-02

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| Chloroform | 0.92 | J | 0.20 | 1.0 | ug/L | EPA 8260B | |

**Client ID: GP-3** Lab ID: C011558-03

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| 2-Butanone | 2.8 | J | 1.0 | 5.0 | ug/L | EPA 8260B | |
| Acetone | 19 | | 1.5 | 5.0 | ug/L | EPA 8260B | |

**Client ID: GP-4** Lab ID: C011558-04

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| Acetone | 71 | | 1.5 | 5.0 | ug/L | EPA 8260B | |

**Client ID: GP-6** Lab ID: C011558-05

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| Acetone | 3.5 | J | 1.5 | 5.0 | ug/L | EPA 8260B | |

**Client ID: GP-7** Lab ID: C011558-06

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| Acetone | 3.3 | J | 1.5 | 5.0 | ug/L | EPA 8260B | |

**Client ID: Herman Russell - WSW-4** Lab ID: C011558-07

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| Bis(2-ethylhexyl)phthalate | 1.8 | J | 1.7 | 5.0 | ug/L | EPA 8270D | |
| Copper - Total | 15.0 | | 1.60 | 10.0 | ug/L | EPA 6010C | |
| Selenium - Total | 3.91 | J | 2.70 | 10.0 | ug/L | EPA 6010C | |
| Silver - Total | 1.91 | J | 1.90 | 10.0 | ug/L | EPA 6010C | |
| Thallium - Total | 0.918 | JB | 0.110 | 1.00 | ug/L | EPA 6020A | J-01 |
| Zinc - Total | 8.40 | J | 3.80 | 10.0 | ug/L | EPA 6010C | |

**Client ID: Duplicate** Lab ID: C011558-08

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| Acetone | 5.7 | | 1.5 | 5.0 | ug/L | EPA 8260B | |
| Chloroform | 0.86 | J | 0.20 | 1.0 | ug/L | EPA 8260B | |

**Client ID: Equipment Blank** Lab ID: C011558-09

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| Chloromethane | 0.56 | J | 0.34 | 1.0 | ug/L | EPA 8260B | |

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## ANALYTICAL RESULTS

**Description:** GP-1
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-01
**Sampled:** 09/20/10 14:30
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

### Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.48 | U | ug/L | 1 | 0.48 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.65 | U | ug/L | 1 | 0.65 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 2-Butanone [78-93-3] ^ | 1.0 | U | ug/L | 1 | 1.0 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.94 | U | ug/L | 1 | 0.94 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.69 | U | ug/L | 1 | 0.69 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Acetone [67-64-1] ^ | 1.5 | U | ug/L | 1 | 1.5 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Benzene [71-43-2] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Bromoform [75-25-2] ^ | 0.71 | U | ug/L | 1 | 0.71 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Bromomethane [74-83-9] ^ | 0.49 | U | ug/L | 1 | 0.49 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.54 | U | ug/L | 1 | 0.54 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Carbon tetrachloride [56-23-5] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Chloroethane [75-00-3] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| **Chloroform [67-66-3] ^** | **0.49** | J | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Chloromethane [74-87-3] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.35 | U | ug/L | 1 | 0.35 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |

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**Description:** GP-1
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-01
**Sampled:** 09/20/10 14:30
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Isopropylbenzene [98-82-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.48 | U | ug/L | 1 | 0.48 | 2.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Methylene chloride [75-09-2] ^ | 0.53 | U | ug/L | 1 | 0.53 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Naphthalene [91-20-3] ^ | 0.39 | U | ug/L | 1 | 0.39 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| o-Xylene [95-47-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Styrene [100-42-5] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Toluene [108-88-3] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 06:56 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *48* | *1* | *50.0* | *96 %* | *51-122* | *0I28027* | *EPA 8260B* | *09/29/10 06:56* | *JKG* | |
| *Dibromofluoromethane* | *47* | *1* | *50.0* | *93 %* | *68-117* | *0I28027* | *EPA 8260B* | *09/29/10 06:56* | *JKG* | |
| *Toluene-d8* | *49* | *1* | *50.0* | *97 %* | *69-110* | *0I28027* | *EPA 8260B* | *09/29/10 06:56* | *JKG* | |

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**Description:** GP-2
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-02
**Sampled:** 09/20/10 15:00
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.48 | U | ug/L | 1 | 0.48 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.65 | U | ug/L | 1 | 0.65 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 2-Butanone [78-93-3] ^ | 1.0 | U | ug/L | 1 | 1.0 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.94 | U | ug/L | 1 | 0.94 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.69 | U | ug/L | 1 | 0.69 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Acetone [67-64-1] ^ | 1.5 | U | ug/L | 1 | 1.5 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Benzene [71-43-2] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Bromoform [75-25-2] ^ | 0.71 | U | ug/L | 1 | 0.71 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Bromomethane [74-83-9] ^ | 0.49 | U | ug/L | 1 | 0.49 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.54 | U | ug/L | 1 | 0.54 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Carbon tetrachloride [56-23-5] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Chloroethane [75-00-3] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| **Chloroform [67-66-3] ^** | **0.92** | J | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Chloromethane [74-87-3] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.35 | U | ug/L | 1 | 0.35 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Isopropylbenzene [98 82-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.48 | U | ug/L | 1 | 0.48 | 2.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Methylene chloride [75-09-2] ^ | 0.53 | U | ug/L | 1 | 0.53 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |

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**Description:** GP-2
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-02
**Sampled:** 09/20/10 15:00
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Naphthalene [91-20-3] ^ | 0.39 | U | ug/L | 1 | 0.39 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| o-Xylene [95-47-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Styrene [100-42-5] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Toluene [108-88-3] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:25 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *47* | *1* | *50.0* | *95 %* | *51-122* | *0I28027* | *EPA 8260B* | *09/29/10 07:25* | *JKG* | |
| *Dibromofluoromethane* | *48* | *1* | *50.0* | *96 %* | *68-117* | *0I28027* | *EPA 8260B* | *09/29/10 07:25* | *JKG* | |
| *Toluene-d8* | *48* | *1* | *50.0* | *97 %* | *69-110* | *0I28027* | *EPA 8260B* | *09/29/10 07:25* | *JKG* | |

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**Description:** GP-3
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-03
**Sampled:** 09/20/10 11:15
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.48 | U | ug/L | 1 | 0.48 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.65 | U | ug/L | 1 | 0.65 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| **2-Butanone [78-93-3] ^** | **2.8** | J | ug/L | 1 | 1.0 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.94 | U | ug/L | 1 | 0.94 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.69 | U | ug/L | 1 | 0.69 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| **Acetone [67-64-1] ^** | **19** | | ug/L | 1 | 1.5 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Benzene [71-43-2] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Bromoform [75-25-2] ^ | 0.71 | U | ug/L | 1 | 0.71 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Bromomethane [74-83-9] ^ | 0.49 | U | ug/L | 1 | 0.49 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.54 | U | ug/L | 1 | 0.54 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Carbon tetrachloride [56-23-5] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Chloroethane [75-00-3] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Chloroform [67-66-3] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Chloromethane [74-87-3] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.35 | U | ug/L | 1 | 0.35 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Isopropylbenzene [98-82-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.48 | U | ug/L | 1 | 0.48 | 2.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Methylene chloride [75-09-2] ^ | 0.53 | U | ug/L | 1 | 0.53 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |

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**Description:** GP-3
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-03
**Sampled:** 09/20/10 11:15
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Naphthalene [91-20-3] ^ | 0.39 | U | ug/L | 1 | 0.39 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| o-Xylene [95-47-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Styrene [100-42-5] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Toluene [108-88-3] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 07:53 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *49* | *1* | *50.0* | *97 %* | *51-122* | *0I28027* | *EPA 8260B* | *09/29/10 07:53* | *JKG* | |
| *Dibromofluoromethane* | *47* | *1* | *50.0* | *95 %* | *68-117* | *0I28027* | *EPA 8260B* | *09/29/10 07:53* | *JKG* | |
| *Toluene-d8* | *49* | *1* | *50.0* | *97 %* | *69-110* | *0I28027* | *EPA 8260B* | *09/29/10 07:53* | *JKG* | |

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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**Description:** GP-4
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-04
**Sampled:** 09/20/10 11:45
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.48 | U | ug/L | 1 | 0.48 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.65 | U | ug/L | 1 | 0.65 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 2-Butanone [78-93-3] ^ | 1.0 | U | ug/L | 1 | 1.0 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.94 | U | ug/L | 1 | 0.94 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.69 | U | ug/L | 1 | 0.69 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| **Acetone [67-64-1] ^** | **71** | | ug/L | 1 | 1.5 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Benzene [71-43-2] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Bromoform [75-25-2] ^ | 0.71 | U | ug/L | 1 | 0.71 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Bromomethane [74-83-9] ^ | 0.49 | U | ug/L | 1 | 0.49 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.54 | U | ug/L | 1 | 0.54 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Carbon tetrachloride [56-23-5] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Chloroethane [75-00-3] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Chloroform [67-66-3] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Chloromethane [74-87-3] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.35 | U | ug/L | 1 | 0.35 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Isopropylbenzene [98-82-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.48 | U | ug/L | 1 | 0.48 | 2.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Methylene chloride [75-09-2] ^ | 0.53 | U | ug/L | 1 | 0.53 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |

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**Description:** GP-4
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-04
**Sampled:** 09/20/10 11:45
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Naphthalene [91-20-3] ^ | 0.39 | U | ug/L | 1 | 0.39 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| o-Xylene [95-47-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Styrene [100-42-5] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Toluene [108-88-3] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:21 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *50* | *1* | *50.0* | *99 %* | *51-122* | *0I28027* | *EPA 8260B* | *09/29/10 08:21* | *JKG* | |
| *Dibromofluoromethane* | *47* | *1* | *50.0* | *93 %* | *68-117* | *0I28027* | *EPA 8260B* | *09/29/10 08:21* | *JKG* | |
| *Toluene-d8* | *50* | *1* | *50.0* | *100 %* | *69-110* | *0I28027* | *EPA 8260B* | *09/29/10 08:21* | *JKG* | |

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**Description:** GP-6
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-05
**Sampled:** 09/20/10 12:30
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.48 | U | ug/L | 1 | 0.48 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.65 | U | ug/L | 1 | 0.65 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 2-Butanone [78-93-3] ^ | 1.0 | U | ug/L | 1 | 1.0 | 5.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.94 | U | ug/L | 1 | 0.94 | 5.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.69 | U | ug/L | 1 | 0.69 | 5.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 5.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| **Acetone [67-64-1] ^** | **3.5** | J | ug/L | 1 | 1.5 | 5.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Benzene [71-43-2] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Bromoform [75-25-2] ^ | 0.71 | U | ug/L | 1 | 0.71 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Bromomethane [74-83-9] ^ | 0.49 | U | ug/L | 1 | 0.49 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.54 | U | ug/L | 1 | 0.54 | 5.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Carbon tetrachloride [56-23-5] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Chloroethane [75-00-3] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Chloroform [67-66-3] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Chloromethane [74-87-3] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.35 | U | ug/L | 1 | 0.35 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Isopropylbenzene [98-82-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.48 | U | ug/L | 1 | 0.48 | 2.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Methylene chloride [75-09-2] ^ | 0.53 | U | ug/L | 1 | 0.53 | 1.0 | OI28027 | EPA 8260B | 09/29/10 08:50 | JKG | |

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**Description:** GP-6
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-05
**Sampled:** 09/20/10 12:30
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Naphthalene [91-20-3] ^ | 0.39 | U | ug/L | 1 | 0.39 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| o-Xylene [95-47-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Styrene [100-42-5] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Toluene [108-88-3] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:50 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 08:50 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *50* | *1* | *50.0* | *99 %* | *51-122* | *0I28027* | *EPA 8260B* | *09/29/10 08:50* | *JKG* | |
| *Dibromofluoromethane* | *48* | *1* | *50.0* | *96 %* | *68-117* | *0I28027* | *EPA 8260B* | *09/29/10 08:50* | *JKG* | |
| *Toluene-d8* | *49* | *1* | *50.0* | *99 %* | *69-110* | *0I28027* | *EPA 8260B* | *09/29/10 08:50* | *JKG* | |

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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**Description:** GP-7
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-06
**Sampled:** 09/20/10 14:15
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.48 | U | ug/L | 1 | 0.48 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.65 | U | ug/L | 1 | 0.65 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 2-Butanone [78-93-3] ^ | 1.0 | U | ug/L | 1 | 1.0 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.94 | U | ug/L | 1 | 0.94 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.69 | U | ug/L | 1 | 0.69 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| **Acetone [67-64-1] ^** | **3.3** | J | ug/L | 1 | 1.5 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Benzene [71-43-2] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Bromoform [75-25-2] ^ | 0.71 | U | ug/L | 1 | 0.71 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Bromomethane [74-83-9] ^ | 0.49 | U | ug/L | 1 | 0.49 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.54 | U | ug/L | 1 | 0.54 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Carbon tetrachloride [56-23-5] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Chloroethane [75-00-3] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Chloroform [67-66-3] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Chloromethane [74-87-3] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.35 | U | ug/L | 1 | 0.35 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Isopropylbenzene [98-82-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.48 | U | ug/L | 1 | 0.48 | 2.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Methylene chloride [75-09-2] ^ | 0.53 | U | ug/L | 1 | 0.53 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |

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**Description:** GP-7
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-06
**Sampled:** 09/20/10 14:15
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Naphthalene [91-20-3] ^ | 0.39 | U | ug/L | 1 | 0.39 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| o-Xylene [95-47-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Styrene [100-42-5] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Toluene [108-88-3] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:18 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *48* | *1* | *50.0* | *97 %* | *51-122* | *0I28027* | *EPA 8260B* | *09/29/10 09:18* | *JKG* | |
| *Dibromofluoromethane* | *46* | *1* | *50.0* | *92 %* | *68-117* | *0I28027* | *EPA 8260B* | *09/29/10 09:18* | *JKG* | |
| *Toluene-d8* | *49* | *1* | *50.0* | *98 %* | *69-110* | *0I28027* | *EPA 8260B* | *09/29/10 09:18* | *JKG* | |

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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**Description:** Herman Russell - WSW-4
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-07
**Sampled:** 09/21/10 14:30
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.48 | U | ug/L | 1 | 0.48 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.65 | U | ug/L | 1 | 0.65 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 2-Butanone [78-93-3] ^ | 1.0 | U | ug/L | 1 | 1.0 | 5.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.94 | U | ug/L | 1 | 0.94 | 5.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.69 | U | ug/L | 1 | 0.69 | 5.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 5.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Acetone [67-64-1] ^ | 1.5 | U | ug/L | 1 | 1.5 | 5.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Benzene [71-43-2] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Bromoform [75-25-2] ^ | 0.71 | U | ug/L | 1 | 0.71 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Bromomethane [74-83-9] ^ | 0.49 | U | ug/L | 1 | 0.49 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.54 | U | ug/L | 1 | 0.54 | 5.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Carbon tetrachloride [56-23-5] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Chloroethane [75-00-3] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Chloroform [67-66-3] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Chloromethane [74-87-3] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.35 | U | ug/L | 1 | 0.35 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Isopropylbenzene [98-82-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.48 | U | ug/L | 1 | 0.48 | 2.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Methylene chloride [75-09-2] ^ | 0.53 | U | ug/L | 1 | 0.53 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |

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**Description:** Herman Russell - WSW-4
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-07
**Sampled:** 09/21/10 14:30
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Naphthalene [91-20-3] ^ | 0.39 | U | ug/L | 1 | 0.39 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| o-Xylene [95-47-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Styrene [100-42-5] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Toluene [108-88-3] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 16:40 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *52* | *1* | *50.0* | *103 %* | *51-122* | *0I29013* | *EPA 8260B* | *09/29/10 16:40* | *JKG* | |
| *Dibromofluoromethane* | *34* | *1* | *50.0* | *68 %* | *68-117* | *0I29013* | *EPA 8260B* | *09/29/10 16:40* | *JKG* | |
| *Toluene-d8* | *37* | *1* | *50.0* | *75 %* | *69-110* | *0I29013* | *EPA 8260B* | *09/29/10 16:40* | *JKG* | |

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**Description:** Herman Russell - WSW-4
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-07
**Sampled:** 09/21/10 14:30
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 1-Methylnaphthalene [90-12-0] ^ | 1.7 | U | ug/L | 1 | 1.7 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 2,4,5-Trichlorophenol [95-95-4] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 2,4,6-Trichlorophenol [88-06-2] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 2,4-Dichlorophenol [120-83-2] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 2,4-Dimethylphenol [105-67-9] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 2,4-Dinitrophenol [51-28-5] ^ | 2.6 | U | ug/L | 1 | 2.6 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 2,4-Dinitrotoluene [121-14-2] ^ | 2.4 | U | ug/L | 1 | 2.4 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 2,6-Dinitrotoluene [606-20-2] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 2-Chloronaphthalene [91-58-7] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 2-Chlorophenol [95-57-8] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 2-Methyl-4,6-dinitrophenol [534-52-1] ^ | 2.9 | U | ug/L | 1 | 2.9 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 2-Methylnaphthalene [91-57-6] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 2-Methylphenol [95-48-7] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 2-Nitroaniline [88-74-4] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 2-Nitrophenol [88-75-5] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 3 & 4-Methylphenol [108-39-4/106-44-5] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 3,3'-Dichlorobenzidine [91-94-1] ^ | 3.3 | U | ug/L | 1 | 3.3 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 3-Nitroaniline [99-09-2] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 4-Bromophenyl-phenylether [101-55-3] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 4-Chloro-3-methylphenol [59-50-7] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 4-Chloroaniline [106-47-8] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 4-Chlorophenyl-phenylether [7005-72-3] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 4-Nitroaniline [100-01-6] ^ | 3.2 | U | ug/L | 1 | 3.2 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| 4-Nitrophenol [100-02-7] ^ | 2.0 | U | ug/L | 1 | 2.0 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Acenaphthene [83-32-9] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Acenaphthylene [208-96-8] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Anthracene [120-12-7] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Benzidine [92-87-5] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Benzo(a)anthracene [56-55-3] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Benzo(a)pyrene [50-32-8] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Benzo(b)fluoranthene [205-99-2] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Benzo(g,h,i)perylene [191-24-2] ^ | 2.4 | U | ug/L | 1 | 2.4 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Benzo(k)fluoranthene [207-08-9] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Benzoic acid [65-85-0] ^ | 1.0 | U | ug/L | 1 | 1.0 | 50 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Benzyl alcohol [100-51-6] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Bis(2-chloroethoxy)methane [111-91-1] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Bis(2-chloroethyl)ether [111-44-4] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Bis(2-chloroisopropyl)ether [108-60-1] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| **Bis(2-ethylhexyl)phthalate [117-81-7] ^** | **1.8** | J | ug/L | 1 | 1.7 | 5.0 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Butylbenzylphthalate [85-68-7] ^ | 2.0 | U | ug/L | 1 | 2.0 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Chrysene [218-01-9] ^ | 2.0 | U | ug/L | 1 | 2.0 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Dibenzo(a,h)anthracene [53-70-3] ^ | 2.3 | U | ug/L | 1 | 2.3 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Dibenzofuran [132-64-9] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Diethylphthalate [84-66-2] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Dimethylphthalate [131-11-3] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Di-n-butylphthalate [84-74-2] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Di-n-octylphthalate [117-84-0] ^ | 3.1 | U | ug/L | 1 | 3.1 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |

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**Description:** Herman Russell - WSW-4
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-07
**Sampled:** 09/21/10 14:30
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene [206-44-0] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Fluorene [86-73-7] ^ | 1.7 | U | ug/L | 1 | 1.7 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Hexachlorobenzene [118-74-1] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Hexachlorobutadiene [87-68-3] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Hexachlorocyclopentadiene [77-47-4] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Hexachloroethane [67-72-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Indeno(1,2,3-cd)pyrene [193-39-5] ^ | 2.2 | U | ug/L | 1 | 2.2 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Isophorone [78-59-1] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Naphthalene [91-20-3] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Nitrobenzene [98-95-3] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| N-Nitrosodimethylamine [62-75-9] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| N-Nitroso-di-n-propylamine [621-64-7] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| N-nitrosodiphenylamine/Diphenylamine [86-30-6/122-39-4] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Pentachlorophenol [87-86-5] ^ | 1.8 | U | ug/L | 1 | 1.8 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Phenanthrene [85-01-8] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Phenol [108-95-2] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Pyrene [129-00-0] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |
| Pyridine [110-86-1] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I24001 | EPA 8270D | 09/24/10 23:00 | DFM | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *87* | *1* | *100* | *87 %* | *10-179* | *0I24001* | *EPA 8270D* | *09/24/10 23:00* | *DFM* | |
| *2-Fluorobiphenyl* | *38* | *1* | *50.0* | *76 %* | *10-149* | *0I24001* | *EPA 8270D* | *09/24/10 23:00* | *DFM* | |
| *2-Fluorophenol* | *56* | *1* | *100* | *56 %* | *10-110* | *0I24001* | *EPA 8270D* | *09/24/10 23:00* | *DFM* | |
| *Nitrobenzene-d5* | *40* | *1* | *50.0* | *79 %* | *10-149* | *0I24001* | *EPA 8270D* | *09/24/10 23:00* | *DFM* | |
| *Phenol-d5* | *46* | *1* | *100* | *46 %* | *10-88* | *0I24001* | *EPA 8270D* | *09/24/10 23:00* | *DFM* | |
| *Terphenyl-d14* | *52* | *1* | *50.0* | *103 %* | *10-188* | *0I24001* | *EPA 8270D* | *09/24/10 23:00* | *DFM* | |

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**Description:** Herman Russell - WSW-4
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-07
**Sampled:** 09/21/10 14:30
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Organochlorine Pesticides by GC

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD [72-54-8] ^ | 0.013 | U | ug/L | 1 | 0.013 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| 4,4'-DDE [72-55-9] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| 4,4'-DDT [50-29-3] ^ | 0.015 | U | ug/L | 1 | 0.015 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| Aldrin [309-00-2] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| alpha-BHC [319-84-6] ^ | 0.015 | U | ug/L | 1 | 0.015 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| beta-BHC [319-85-7] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| Chlordane (tech) [12789-03-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 0.50 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| Chlordane-alpha [5103-71-9] ^ | 0.014 | U | ug/L | 1 | 0.014 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| Chlordane-gamma [5566-34-7] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| delta-BHC [319-86-8] ^ | 0.014 | U | ug/L | 1 | 0.014 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| Dieldrin [60-57-1] ^ | 0.0089 | U | ug/L | 1 | 0.0089 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| Endosulfan I [959-98-8] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| Endosulfan II [33213-65-9] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| Endosulfan sulfate [1031-07-8] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| Endrin [72-20-8] ^ | 0.013 | U | ug/L | 1 | 0.013 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| Endrin aldehyde [7421-93-4] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| Endrin ketone [53494-70-5] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| gamma-BHC [58-89-9] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| Heptachlor [76-44-8] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| Heptachlor epoxide [1024-57-3] ^ | 0.0089 | U | ug/L | 1 | 0.0089 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| Isodrin [465-73-6] ^ | 0.013 | U | ug/L | 1 | 0.013 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| Methoxychlor [72-43-5] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| Mirex [2385-85-5] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |
| Toxaphene [8001-35-2] ^ | 0.22 | U | ug/L | 1 | 0.22 | 0.50 | 0I27004 | EPA 8081B | 09/27/10 17:16 | DFM | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,5,6-TCMX* | *0.94* | *1* | *1.00* | *94 %* | *44-134* | *0I27004* | *EPA 8081B* | *09/27/10 17:16* | *DFM* | |
| *Decachlorobiphenyl* | *1.1* | *1* | *1.00* | *108 %* | *37-149* | *0I27004* | *EPA 8081B* | *09/27/10 17:16* | *DFM* | |

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**Description:** Herman Russell - WSW-4
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-07
**Sampled:** 09/21/10 14:30
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Metals by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury [7439-97-6] ^ | 0.170 | U | ug/L | 1 | 0.170 | 0.200 | 0I24018 | EPA 7470A | 09/24/10 16:31 | NLH | |

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**Description:** Herman Russell - WSW-4
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-07
**Sampled:** 09/21/10 14:30
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Metals (total recoverable) by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony [7440-36-0] ^ | 0.220 | U | ug/L | 1 | 0.220 | 2.00 | 0I23013 | EPA 6020A | 09/27/10 10:47 | JDH | |
| Arsenic [7440-38-2] ^ | 2.80 | U | ug/L | 1 | 2.80 | 10.0 | 0I23011 | EPA 6010C | 09/24/10 12:00 | JDH | |
| Beryllium [7440-41-7] ^ | 0.100 | U | ug/L | 1 | 0.100 | 1.00 | 0I23011 | EPA 6010C | 09/24/10 12:00 | JDH | |
| Cadmium [7440-43-9] ^ | 0.360 | U | ug/L | 1 | 0.360 | 1.00 | 0I23011 | EPA 6010C | 09/24/10 12:00 | JDH | |
| Chromium [7440-47-3] ^ | 1.00 | U | ug/L | 1 | 1.00 | 10.0 | 0I23011 | EPA 6010C | 09/24/10 12:00 | JDH | |
| **Copper [7440-50-8] ^** | **15.0** | | ug/L | 1 | 1.60 | 10.0 | 0I23011 | EPA 6010C | 09/24/10 12:00 | JDH | |
| Manganese [7439-96-5] ^ | 1.10 | U | ug/L | 1 | 1.10 | 10.0 | 0I23011 | EPA 6010C | 09/24/10 12:00 | JDH | |
| Nickel [7440-02-0] ^ | 1.80 | U | ug/L | 1 | 1.80 | 10.0 | 0I23011 | EPA 6010C | 09/24/10 12:00 | JDH | |
| **Selenium [7782-49-2] ^** | **3.91** | J | ug/L | 1 | 2.70 | 10.0 | 0I23011 | EPA 6010C | 09/24/10 12:00 | JDH | |
| **Silver [7440-22-4] ^** | **1.91** | J | ug/L | 1 | 1.90 | 10.0 | 0I23011 | EPA 6010C | 09/24/10 12:00 | JDH | |
| **Thallium [7440-28-0] ^** | **0.918** | JB | ug/L | 1 | 0.110 | 1.00 | 0I23013 | EPA 6020A | 09/27/10 10:47 | JDH | J-01 |
| **Zinc [7440-66-6] ^** | **8.40** | J | ug/L | 1 | 3.80 | 10.0 | 0I23011 | EPA 6010C | 09/24/10 12:00 | JDH | |

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**Description:** Herman Russell - WSW-4
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-07
**Sampled:** 09/21/10 14:30
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Metals (acid extractable) by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead [7439-92-1] ^ | 1.90 | U | ug/L | 1 | 1.90 | 10.0 | 0I23011 | EPA 6010C | 09/24/10 12:00 | JDH | |

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**Description:** Duplicate
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-08
**Sampled:** 09/20/10 00:00
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.48 | U | ug/L | 1 | 0.48 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.65 | U | ug/L | 1 | 0.65 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 2-Butanone [78-93-3] ^ | 1.0 | U | ug/L | 1 | 1.0 | 5.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.94 | U | ug/L | 1 | 0.94 | 5.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.69 | U | ug/L | 1 | 0.69 | 5.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 5.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| **Acetone [67-64-1] ^** | **5.7** | | ug/L | 1 | 1.5 | 5.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Benzene [71-43-2] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Bromoform [75-25-2] ^ | 0.71 | U | ug/L | 1 | 0.71 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Bromomethane [74-83-9] ^ | 0.49 | U | ug/L | 1 | 0.49 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.54 | U | ug/L | 1 | 0.54 | 5.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Carbon tetrachloride [56-23-5] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Chloroethane [75-00-3] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| **Chloroform [67-66-3] ^** | **0.86** | J | ug/L | 1 | 0.20 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Chloromethane [74-87-3] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.35 | U | ug/L | 1 | 0.35 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Isopropylbenzene [98-82-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.48 | U | ug/L | 1 | 0.48 | 2.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Methylene chloride [75-09-2] ^ | 0.53 | U | ug/L | 1 | 0.53 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |

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**Description:** Duplicate
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-08
**Sampled:** 09/20/10 00:00
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Naphthalene [91-20-3] ^ | 0.39 | U | ug/L | 1 | 0.39 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| o-Xylene [95-47-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Styrene [100-42-5] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Toluene [108-88-3] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I29013 | EPA 8260B | 09/29/10 17:09 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *52* | *1* | *50.0* | *104 %* | *51-122* | *0I29013* | *EPA 8260B* | *09/29/10 17:09* | *JKG* | |
| *Dibromofluoromethane* | *35* | *1* | *50.0* | *69 %* | *68-117* | *0I29013* | *EPA 8260B* | *09/29/10 17:09* | *JKG* | |
| *Toluene-d8* | *37* | *1* | *50.0* | *75 %* | *69-110* | *0I29013* | *EPA 8260B* | *09/29/10 17:09* | *JKG* | |

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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**Description:** Equipment Blank
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-09
**Sampled:** 09/20/10 18:00
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.48 | U | ug/L | 1 | 0.48 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.65 | U | ug/L | 1 | 0.65 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 2-Butanone [78-93-3] ^ | 1.0 | U | ug/L | 1 | 1.0 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.94 | U | ug/L | 1 | 0.94 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.69 | U | ug/L | 1 | 0.69 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Acetone [67-64-1] ^ | 1.5 | U | ug/L | 1 | 1.5 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Benzene [71-43-2] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Bromoform [75-25-2] ^ | 0.71 | U | ug/L | 1 | 0.71 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Bromomethane [74-83-9] ^ | 0.49 | U | ug/L | 1 | 0.49 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.54 | U | ug/L | 1 | 0.54 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Carbon tetrachloride [56-23-5] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Chloroethane [75-00-3] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Chloroform [67-66-3] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| **Chloromethane [74-87-3] ^** | **0.56** | J | ug/L | 1 | 0.34 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.35 | U | ug/L | 1 | 0.35 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Isopropylbenzene [98-82-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.48 | U | ug/L | 1 | 0.48 | 2.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Methylene chloride [75-09-2] ^ | 0.53 | U | ug/L | 1 | 0.53 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |

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**Description:** Equipment Blank
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-09
**Sampled:** 09/20/10 18:00
**Sampled By:** Gerald Paul

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Naphthalene [91-20-3] ^ | 0.39 | U | ug/L | 1 | 0.39 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| o-Xylene [95-47-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Styrene [100-42-5] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Toluene [108-88-3] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 09:46 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *49* | *1* | *50.0* | *97 %* | *51-122* | *0I28027* | *EPA 8260B* | *09/29/10 09:46* | *JKG* | |
| *Dibromofluoromethane* | *48* | *1* | *50.0* | *95 %* | *68-117* | *0I28027* | *EPA 8260B* | *09/29/10 09:46* | *JKG* | |
| *Toluene-d8* | *50* | *1* | *50.0* | *100 %* | *69-110* | *0I28027* | *EPA 8260B* | *09/29/10 09:46* | *JKG* | |

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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**Description:** Trip Blank
**Matrix:** Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-10
**Sampled:** 09/21/10 00:00
**Sampled By:** ENCO

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.48 | U | ug/L | 1 | 0.48 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.65 | U | ug/L | 1 | 0.65 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 2-Butanone [78-93-3] ^ | 1.0 | U | ug/L | 1 | 1.0 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.94 | U | ug/L | 1 | 0.94 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.69 | U | ug/L | 1 | 0.69 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Acetone [67-64-1] ^ | 1.5 | U | ug/L | 1 | 1.5 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Benzene [71-43-2] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Bromoform [75-25-2] ^ | 0.71 | U | ug/L | 1 | 0.71 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Bromomethane [74-83-9] ^ | 0.49 | U | ug/L | 1 | 0.49 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.54 | U | ug/L | 1 | 0.54 | 5.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Carbon tetrachloride [56-23-5] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Chloroethane [75-00-3] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Chloroform [67-66-3] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Chloromethane [74-87-3] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.35 | U | ug/L | 1 | 0.35 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Isopropylbenzene [98-82-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.48 | U | ug/L | 1 | 0.48 | 2.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Methylene chloride [75-09-2] ^ | 0.53 | U | ug/L | 1 | 0.53 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |

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**Description:** Trip Blank
**Matrix:** Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C011558-10
**Sampled:** 09/21/10 00:00
**Sampled By:** ENCO

**Received:** 09/21/10 15:50
**Work Order:** C011558

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Naphthalene [91-20-3] ^ | 0.39 | U | ug/L | 1 | 0.39 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| o-Xylene [95-47-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Styrene [100-42-5] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Toluene [108-88-3] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I28027 | EPA 8260B | 09/29/10 10:15 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *49* | *1* | *50.0* | *98 %* | *51-122* | *0I28027* | *EPA 8260B* | *09/29/10 10:15* | *JKG* | |
| *Dibromofluoromethane* | *49* | *1* | *50.0* | *98 %* | *68-117* | *0I28027* | *EPA 8260B* | *09/29/10 10:15* | *JKG* | |
| *Toluene-d8* | *50* | *1* | *50.0* | *101 %* | *69-110* | *0I28027* | *EPA 8260B* | *09/29/10 10:15* | *JKG* | |

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

## QUALITY CONTROL

### Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I28027 - EPA 5030B_MS*

**Blank (0I28027-BLK1)** Prepared: 09/28/2010 13:40 Analyzed: 09/29/2010 00:48

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.40 | U | 1.0 | ug/L | | | | | | | |
| 1,1,1-Trichloroethane | 0.27 | U | 1.0 | ug/L | | | | | | | |
| 1,1,2,2-Tetrachloroethane | 0.33 | U | 1.0 | ug/L | | | | | | | |
| 1,1,2-Trichloroethane | 0.37 | U | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloroethane | 0.33 | U | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloroethene | 0.24 | U | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloropropene | 0.32 | U | 1.0 | ug/L | | | | | | | |
| 1,2,3-Trichlorobenzene | 0.25 | U | 1.0 | ug/L | | | | | | | |
| 1,2,3-Trichloropropane | 0.55 | U | 1.0 | ug/L | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.36 | U | 1.0 | ug/L | | | | | | | |
| 1,2,4-Trimethylbenzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dibromo-3-chloropropane | 0.48 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dibromoethane | 0.42 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dichlorobenzene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dichloroethane | 0.65 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dichloropropane | 0.20 | U | 1.0 | ug/L | | | | | | | |
| 1,3,5-Trimethylbenzene | 0.25 | U | 1.0 | ug/L | | | | | | | |
| 1,3-Dichlorobenzene | 0.30 | U | 1.0 | ug/L | | | | | | | |
| 1,3-Dichloropropane | 0.32 | U | 1.0 | ug/L | | | | | | | |
| 1,4-Dichlorobenzene | 0.38 | U | 1.0 | ug/L | | | | | | | |
| 2,2-Dichloropropane | 0.55 | U | 1.0 | ug/L | | | | | | | |
| 2-Butanone | 1.0 | U | 5.0 | ug/L | | | | | | | |
| 2-Chloroethyl Vinyl Ether | 0.94 | U | 5.0 | ug/L | | | | | | | |
| 2-Chlorotoluene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| 2-Hexanone | 0.69 | U | 5.0 | ug/L | | | | | | | |
| 4-Chlorotoluene | 0.25 | U | 1.0 | ug/L | | | | | | | |
| 4-Isopropyltoluene | 0.26 | U | 1.0 | ug/L | | | | | | | |
| 4-Methyl-2-pentanone | 1.1 | U | 5.0 | ug/L | | | | | | | |
| Acetone | 1.5 | U | 5.0 | ug/L | | | | | | | |
| Benzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| Bromobenzene | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Bromochloromethane | 0.42 | U | 1.0 | ug/L | | | | | | | |
| Bromodichloromethane | 0.37 | U | 1.0 | ug/L | | | | | | | |
| Bromoform | 0.71 | U | 1.0 | ug/L | | | | | | | |
| Bromomethane | 0.49 | U | 1.0 | ug/L | | | | | | | |
| Carbon disulfide | 0.54 | U | 5.0 | ug/L | | | | | | | |
| Carbon tetrachloride | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Chlorobenzene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| Chloroethane | 0.30 | U | 1.0 | ug/L | | | | | | | |
| Chloroform | 0.20 | U | 1.0 | ug/L | | | | | | | |
| Chloromethane | 0.34 | U | 1.0 | ug/L | | | | | | | |
| cis-1,2-Dichloroethene | 0.36 | U | 1.0 | ug/L | | | | | | | |
| cis-1,3-Dichloropropene | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Dibromochloromethane | 0.32 | U | 1.0 | ug/L | | | | | | | |
| Dibromomethane | 0.37 | U | 1.0 | ug/L | | | | | | | |
| Dichlorodifluoromethane | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Ethylbenzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| Hexachlorobutadiene | 0.35 | U | 1.0 | ug/L | | | | | | | |
| Isopropylbenzene | 0.24 | U | 1.0 | ug/L | | | | | | | |

## QUALITY CONTROL

### Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I28027 - EPA 5030B_MS*

**Blank (0I28027-BLK1) Continued** Prepared: 09/28/2010 13:40 Analyzed: 09/29/2010 00:48

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| m,p-Xylenes | 0.48 | U | 2.0 | ug/L | | | | | | | |
| Methylene chloride | 0.53 | U | 1.0 | ug/L | | | | | | | |
| Methyl-tert-Butyl Ether | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Naphthalene | 0.39 | U | 1.0 | ug/L | | | | | | | |
| n-Butyl Benzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| n-Propyl Benzene | 0.30 | U | 1.0 | ug/L | | | | | | | |
| o-Xylene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| sec-Butylbenzene | 0.24 | U | 1.0 | ug/L | | | | | | | |
| Styrene | 0.26 | U | 1.0 | ug/L | | | | | | | |
| tert-Butylbenzene | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Tetrachloroethene | 0.36 | U | 1.0 | ug/L | | | | | | | |
| Toluene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| trans-1,2-Dichloroethene | 0.34 | U | 1.0 | ug/L | | | | | | | |
| trans-1,3-Dichloropropene | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Trichloroethene | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Trichlorofluoromethane | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Vinyl chloride | 0.30 | U | 1.0 | ug/L | | | | | | | |
| Xylenes (Total) | 0.40 | U | 1.0 | ug/L | | | | | | | |
| *Surrogate: 4-Bromofluorobenzene* | *47* | | | *ug/L* | *50.0* | | *94* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *46* | | | *ug/L* | *50.0* | | *92* | *68-117* | | | |
| *Surrogate: Toluene-d8* | *48* | | | *ug/L* | *50.0* | | *97* | *69-110* | | | |

**LCS (0I28027-BS1)** Prepared: 09/28/2010 13:40 Analyzed: 09/29/2010 01:16

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 18 | | 1.0 | ug/L | 20.0 | | 89 | 75-133 | | | |
| Benzene | 19 | | 1.0 | ug/L | 20.0 | | 93 | 81-134 | | | |
| Chlorobenzene | 20 | | 1.0 | ug/L | 20.0 | | 99 | 83-117 | | | |
| Toluene | 19 | | 1.0 | ug/L | 20.0 | | 95 | 71-118 | | | |
| Trichloroethene | 19 | | 1.0 | ug/L | 20.0 | | 95 | 75-115 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *48* | | | *ug/L* | *50.0* | | *96* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *46* | | | *ug/L* | *50.0* | | *93* | *68-117* | | | |
| *Surrogate: Toluene-d8* | *49* | | | *ug/L* | *50.0* | | *98* | *69-110* | | | |

**Matrix Spike (0I28027-MS1)** Prepared: 09/28/2010 13:40 Analyzed: 09/29/2010 01:44

**Source: C011560-06**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 18 | | 1.0 | ug/L | 20.0 | 0.24 U | 88 | 75-133 | | | |
| Benzene | 19 | | 1.0 | ug/L | 20.0 | 0.20 U | 93 | 81-134 | | | |
| Chlorobenzene | 20 | | 1.0 | ug/L | 20.0 | 0.27 U | 98 | 83-117 | | | |
| Toluene | 19 | | 1.0 | ug/L | 20.0 | 0.27 U | 94 | 71-118 | | | |
| Trichloroethene | 19 | | 1.0 | ug/L | 20.0 | 0.38 U | 95 | 75-115 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *48* | | | *ug/L* | *50.0* | | *96* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *46* | | | *ug/L* | *50.0* | | *91* | *68-117* | | | |
| *Surrogate: Toluene-d8* | *50* | | | *ug/L* | *50.0* | | *100* | *69-110* | | | |

# QUALITY CONTROL

## Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I28027 - EPA 5030B_MS*

**Matrix Spike Dup (0I28027-MSD1)** Prepared: 09/28/2010 13:40 Analyzed: 09/29/2010 02:13

**Source: C011560-06**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 18 | | 1.0 | ug/L | 20.0 | 0.24 U | 90 | 75-133 | 2 | 20 | |
| Benzene | 18 | | 1.0 | ug/L | 20.0 | 0.20 U | 92 | 81-134 | 0.9 | 17 | |
| Chlorobenzene | 19 | | 1.0 | ug/L | 20.0 | 0.27 U | 96 | 83-117 | 2 | 16 | |
| Toluene | 19 | | 1.0 | ug/L | 20.0 | 0.27 U | 93 | 71-118 | 1 | 17 | |
| Trichloroethene | 19 | | 1.0 | ug/L | 20.0 | 0.38 U | 94 | 75-115 | 2 | 18 | |
| *Surrogate: 4-Bromofluorobenzene* | *48* | | | *ug/L* | *50.0* | | *96* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *47* | | | *ug/L* | *50.0* | | *93* | *68-117* | | | |
| *Surrogate: Toluene-d8* | *49* | | | *ug/L* | *50.0* | | *99* | *69-110* | | | |

*Batch 0I29013 - EPA 5030B_MS*

**Blank (0I29013-BLK1)** Prepared: 09/29/2010 09:21 Analyzed: 09/29/2010 12:41

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.40 | U | 1.0 | ug/L | | | | | | | |
| 1,1,1-Trichloroethane | 0.27 | U | 1.0 | ug/L | | | | | | | |
| 1,1,2,2-Tetrachloroethane | 0.33 | U | 1.0 | ug/L | | | | | | | |
| 1,1,2-Trichloroethane | 0.37 | U | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloroethane | 0.33 | U | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloroethene | 0.24 | U | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloropropene | 0.32 | U | 1.0 | ug/L | | | | | | | |
| 1,2,3-Trichlorobenzene | 0.25 | U | 1.0 | ug/L | | | | | | | |
| 1,2,3-Trichloropropane | 0.55 | U | 1.0 | ug/L | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.36 | U | 1.0 | ug/L | | | | | | | |
| 1,2,4-Trimethylbenzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dibromo-3-chloropropane | 0.48 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dibromoethane | 0.42 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dichlorobenzene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dichloroethane | 0.65 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dichloropropane | 0.20 | U | 1.0 | ug/L | | | | | | | |
| 1,3,5-Trimethylbenzene | 0.25 | U | 1.0 | ug/L | | | | | | | |
| 1,3-Dichlorobenzene | 0.30 | U | 1.0 | ug/L | | | | | | | |
| 1,3-Dichloropropane | 0.32 | U | 1.0 | ug/L | | | | | | | |
| 1,4-Dichlorobenzene | 0.38 | U | 1.0 | ug/L | | | | | | | |
| 2,2-Dichloropropane | 0.55 | U | 1.0 | ug/L | | | | | | | |
| 2-Butanone | 1.0 | U | 5.0 | ug/L | | | | | | | |
| 2-Chloroethyl Vinyl Ether | 0.94 | U | 5.0 | ug/L | | | | | | | |
| 2-Chlorotoluene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| 2-Hexanone | 0.69 | U | 5.0 | ug/L | | | | | | | |
| 4-Chlorotoluene | 0.25 | U | 1.0 | ug/L | | | | | | | |
| 4-Isopropyltoluene | 0.26 | U | 1.0 | ug/L | | | | | | | |
| 4-Methyl-2-pentanone | 1.1 | U | 5.0 | ug/L | | | | | | | |
| Acetone | 1.5 | U | 5.0 | ug/L | | | | | | | |
| Benzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| Bromobenzene | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Bromochloromethane | 0.42 | U | 1.0 | ug/L | | | | | | | |
| Bromodichloromethane | 0.37 | U | 1.0 | ug/L | | | | | | | |

## QUALITY CONTROL

### Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I29013 - EPA 5030B_MS*

**Blank (0I29013-BLK1) Continued** Prepared: 09/29/2010 09:21 Analyzed: 09/29/2010 12:41

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bromoform | 0.71 | U | 1.0 | ug/L | | | | | | | |
| Bromomethane | 0.49 | U | 1.0 | ug/L | | | | | | | |
| Carbon disulfide | 0.54 | U | 5.0 | ug/L | | | | | | | |
| Carbon tetrachloride | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Chlorobenzene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| Chloroethane | 0.30 | U | 1.0 | ug/L | | | | | | | |
| Chloroform | 0.20 | U | 1.0 | ug/L | | | | | | | |
| Chloromethane | 0.34 | U | 1.0 | ug/L | | | | | | | |
| cis-1,2-Dichloroethene | 0.36 | U | 1.0 | ug/L | | | | | | | |
| cis-1,3-Dichloropropene | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Dibromochloromethane | 0.32 | U | 1.0 | ug/L | | | | | | | |
| Dibromomethane | 0.37 | U | 1.0 | ug/L | | | | | | | |
| Dichlorodifluoromethane | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Ethylbenzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| Hexachlorobutadiene | 0.35 | U | 1.0 | ug/L | | | | | | | |
| Isopropylbenzene | 0.24 | U | 1.0 | ug/L | | | | | | | |
| m,p-Xylenes | 0.48 | U | 2.0 | ug/L | | | | | | | |
| Methylene chloride | 0.53 | U | 1.0 | ug/L | | | | | | | |
| Methyl-tert-Butyl Ether | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Naphthalene | 0.39 | U | 1.0 | ug/L | | | | | | | |
| n-Butyl Benzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| n-Propyl Benzene | 0.30 | U | 1.0 | ug/L | | | | | | | |
| o-Xylene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| sec-Butylbenzene | 0.24 | U | 1.0 | ug/L | | | | | | | |
| Styrene | 0.26 | U | 1.0 | ug/L | | | | | | | |
| tert-Butylbenzene | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Tetrachloroethene | 0.36 | U | 1.0 | ug/L | | | | | | | |
| Toluene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| trans-1,2-Dichloroethene | 0.34 | U | 1.0 | ug/L | | | | | | | |
| trans-1,3-Dichloropropene | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Trichloroethene | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Trichlorofluoromethane | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Vinyl chloride | 0.30 | U | 1.0 | ug/L | | | | | | | |
| Xylenes (Total) | 0.40 | U | 1.0 | ug/L | | | | | | | |
| *Surrogate: 4-Bromofluorobenzene* | *51* | | | *ug/L* | *50.0* | | *102* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *34* | | | *ug/L* | *50.0* | | *68* | *68-117* | | | |
| *Surrogate: Toluene-d8* | *38* | | | *ug/L* | *50.0* | | *75* | *69-110* | | | |

**LCS (0I29013-BS1)** Prepared: 09/29/2010 09:21 Analyzed: 09/29/2010 13:10

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 18 | | 1.0 | ug/L | 20.0 | | 92 | 75-133 | | | |
| Benzene | 23 | | 1.0 | ug/L | 20.0 | | 116 | 81-134 | | | |
| Chlorobenzene | 19 | | 1.0 | ug/L | 20.0 | | 95 | 83-117 | | | |
| Toluene | 18 | | 1.0 | ug/L | 20.0 | | 92 | 71-118 | | | |
| Trichloroethene | 19 | | 1.0 | ug/L | 20.0 | | 97 | 75-115 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *54* | | | *ug/L* | *50.0* | | *108* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *35* | | | *ug/L* | *50.0* | | *69* | *68-117* | | | |

## QUALITY CONTROL

### Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I29013 - EPA 5030B_MS*

**LCS (0I29013-BS1) Continued** Prepared: 09/29/2010 09:21 Analyzed: 09/29/2010 13:10

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Surrogate: Toluene-d8* | *39* | | | *ug/L* | *50.0* | | *78* | *69-110* | | | |

**Matrix Spike (0I29013-MS1)** Prepared: 09/29/2010 09:21 Analyzed: 09/29/2010 13:40

**Source: C011709-08**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 19 | | 1.0 | ug/L | 20.0 | 0.24 U | 95 | 75-133 | | | |
| Benzene | 24 | | 1.0 | ug/L | 20.0 | 0.20 U | 118 | 81-134 | | | |
| Chlorobenzene | 19 | | 1.0 | ug/L | 20.0 | 0.27 U | 95 | 83-117 | | | |
| Toluene | 18 | | 1.0 | ug/L | 20.0 | 0.27 U | 92 | 71-118 | | | |
| Trichloroethene | 19 | | 1.0 | ug/L | 20.0 | 0.38 U | 97 | 75-115 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *53* | | | *ug/L* | *50.0* | | *105* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *34* | | | *ug/L* | *50.0* | | *68* | *68-117* | | | |
| *Surrogate: Toluene-d8* | *38* | | | *ug/L* | *50.0* | | *76* | *69-110* | | | |

**Matrix Spike Dup (0I29013-MSD1)** Prepared: 09/29/2010 09:21 Analyzed: 09/29/2010 14:10

**Source: C011709-08**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 19 | | 1.0 | ug/L | 20.0 | 0.24 U | 93 | 75-133 | 2 | 20 | |
| Benzene | 23 | | 1.0 | ug/L | 20.0 | 0.20 U | 116 | 81-134 | 2 | 17 | |
| Chlorobenzene | 19 | | 1.0 | ug/L | 20.0 | 0.27 U | 94 | 83-117 | 1 | 16 | |
| Toluene | 18 | | 1.0 | ug/L | 20.0 | 0.27 U | 89 | 71-118 | 3 | 17 | |
| Trichloroethene | 19 | | 1.0 | ug/L | 20.0 | 0.38 U | 95 | 75-115 | 3 | 18 | |
| *Surrogate: 4-Bromofluorobenzene* | *53* | | | *ug/L* | *50.0* | | *105* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *34* | | | *ug/L* | *50.0* | | *68* | *68-117* | | | |
| *Surrogate: Toluene-d8* | *38* | | | *ug/L* | *50.0* | | *76* | *69-110* | | | |

### Semivolatile Organic Compounds by GCMS - Quality Control

*Batch 0I24001 - EPA 3510C_MS*

**Blank (0I24001-BLK1)** Prepared: 09/24/2010 06:57 Analyzed: 09/24/2010 20:33

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 1.2 | U | 10 | ug/L | | | | | | | |
| 1,2-Dichlorobenzene | 1.1 | U | 10 | ug/L | | | | | | | |
| 1,3-Dichlorobenzene | 1.1 | U | 10 | ug/L | | | | | | | |
| 1,4-Dichlorobenzene | 1.0 | U | 10 | ug/L | | | | | | | |
| 1-Methylnaphthalene | 1.7 | U | 10 | ug/L | | | | | | | |
| 2,4,5-Trichlorophenol | 1.0 | U | 10 | ug/L | | | | | | | |
| 2,4,6-Trichlorophenol | 1.1 | U | 10 | ug/L | | | | | | | |
| 2,4-Dichlorophenol | 1.4 | U | 10 | ug/L | | | | | | | |
| 2,4-Dimethylphenol | 1.3 | U | 10 | ug/L | | | | | | | |
| 2,4-Dinitrophenol | 2.6 | U | 10 | ug/L | | | | | | | |
| 2,4-Dinitrotoluene | 2.4 | U | 10 | ug/L | | | | | | | |
| 2,6-Dinitrotoluene | 1.5 | U | 10 | ug/L | | | | | | | |
| 2-Chloronaphthalene | 1.0 | U | 10 | ug/L | | | | | | | |

## QUALITY CONTROL

### Semivolatile Organic Compounds by GCMS - Quality Control

*Batch 0I24001 - EPA 3510C_MS*

**Blank (0I24001-BLK1) Continued** Prepared: 09/24/2010 06:57 Analyzed: 09/24/2010 20:33

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Chlorophenol | 1.2 | U | 10 | ug/L | | | | | | | |
| 2-Methyl-4,6-dinitrophenol | 2.9 | U | 10 | ug/L | | | | | | | |
| 2-Methylnaphthalene | 1.5 | U | 10 | ug/L | | | | | | | |
| 2-Methylphenol | 1.4 | U | 10 | ug/L | | | | | | | |
| 2-Nitroaniline | 1.5 | U | 10 | ug/L | | | | | | | |
| 2-Nitrophenol | 1.1 | U | 10 | ug/L | | | | | | | |
| 3 & 4-Methylphenol | 1.6 | U | 10 | ug/L | | | | | | | |
| 3,3'-Dichlorobenzidine | 3.3 | U | 10 | ug/L | | | | | | | |
| 3-Nitroaniline | 2.1 | U | 10 | ug/L | | | | | | | |
| 4-Bromophenyl-phenylether | 1.0 | U | 10 | ug/L | | | | | | | |
| 4-Chloro-3-methylphenol | 1.5 | U | 10 | ug/L | | | | | | | |
| 4-Chloroaniline | 1.2 | U | 10 | ug/L | | | | | | | |
| 4-Chlorophenyl-phenylether | 1.6 | U | 10 | ug/L | | | | | | | |
| 4-Nitroaniline | 3.2 | U | 10 | ug/L | | | | | | | |
| 4-Nitrophenol | 2.0 | U | 10 | ug/L | | | | | | | |
| Acenaphthene | 1.4 | U | 10 | ug/L | | | | | | | |
| Acenaphthylene | 1.2 | U | 10 | ug/L | | | | | | | |
| Anthracene | 1.6 | U | 10 | ug/L | | | | | | | |
| Benzidine | 1.6 | U | 10 | ug/L | | | | | | | |
| Benzo(a)anthracene | 1.3 | U | 10 | ug/L | | | | | | | |
| Benzo(a)pyrene | 1.3 | U | 10 | ug/L | | | | | | | |
| Benzo(b)fluoranthene | 1.0 | U | 10 | ug/L | | | | | | | |
| Benzo(g,h,i)perylene | 2.4 | U | 10 | ug/L | | | | | | | |
| Benzo(k)fluoranthene | 1.3 | U | 10 | ug/L | | | | | | | |
| Benzoic acid | 1.0 | U | 50 | ug/L | | | | | | | |
| Benzyl alcohol | 1.4 | U | 10 | ug/L | | | | | | | |
| Bis(2-chloroethoxy)methane | 1.4 | U | 10 | ug/L | | | | | | | |
| Bis(2-chloroethyl)ether | 1.2 | U | 10 | ug/L | | | | | | | |
| Bis(2-chloroisopropyl)ether | 1.3 | U | 10 | ug/L | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 1.7 | U | 5.0 | ug/L | | | | | | | |
| Butylbenzylphthalate | 2.0 | U | 10 | ug/L | | | | | | | |
| Chrysene | 2.0 | U | 10 | ug/L | | | | | | | |
| Dibenzo(a,h)anthracene | 2.3 | U | 10 | ug/L | | | | | | | |
| Dibenzofuran | 1.4 | U | 10 | ug/L | | | | | | | |
| Diethylphthalate | 2.1 | U | 10 | ug/L | | | | | | | |
| Dimethylphthalate | 1.4 | U | 10 | ug/L | | | | | | | |
| **Di-n-butylphthalate** | **1.5** | **J** | 10 | ug/L | | | | | | | |
| Di-n-octylphthalate | 3.1 | U | 10 | ug/L | | | | | | | |
| Fluoranthene | 2.1 | U | 10 | ug/L | | | | | | | |
| Fluorene | 1.7 | U | 10 | ug/L | | | | | | | |
| Hexachlorobenzene | 1.0 | U | 10 | ug/L | | | | | | | |
| Hexachlorobutadiene | 1.2 | U | 10 | ug/L | | | | | | | |
| Hexachlorocyclopentadiene | 1.3 | U | 10 | ug/L | | | | | | | |
| Hexachloroethane | 1.1 | U | 10 | ug/L | | | | | | | |
| Indeno(1,2,3-cd)pyrene | 2.2 | U | 10 | ug/L | | | | | | | |
| Isophorone | 1.3 | U | 10 | ug/L | | | | | | | |
| Naphthalene | 1.3 | U | 10 | ug/L | | | | | | | |
| Nitrobenzene | 1.2 | U | 10 | ug/L | | | | | | | |
| N-Nitrosodimethylamine | 1.3 | U | 10 | ug/L | | | | | | | |

## QUALITY CONTROL

### Semivolatile Organic Compounds by GCMS - Quality Control

*Batch 0I24001 - EPA 3510C_MS*

**Blank (0I24001-BLK1) Continued** Prepared: 09/24/2010 06:57 Analyzed: 09/24/2010 20:33

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| N-Nitroso-di-n-propylamine | 1.5 | U | 10 | ug/L | | | | | | | |
| N-nitrosodiphenylamine/Diphenylamine | 2.1 | U | 10 | ug/L | | | | | | | |
| Pentachlorophenol | 1.8 | U | 10 | ug/L | | | | | | | |
| Phenanthrene | 1.4 | U | 10 | ug/L | | | | | | | |
| Phenol | 1.4 | U | 10 | ug/L | | | | | | | |
| Pyrene | 2.1 | U | 10 | ug/L | | | | | | | |
| Pyridine | 1.3 | U | 10 | ug/L | | | | | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *86* | | | *ug/L* | *100* | | *86* | *10-179* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *38* | | | *ug/L* | *50.0* | | *76* | *10-149* | | | |
| *Surrogate: 2-Fluorophenol* | *62* | | | *ug/L* | *100* | | *62* | *10-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *41* | | | *ug/L* | *50.0* | | *83* | *10-149* | | | |
| *Surrogate: Phenol-d5* | *54* | | | *ug/L* | *100* | | *54* | *10-88* | | | |
| *Surrogate: Terphenyl-d14* | *54* | | | *ug/L* | *50.0* | | *109* | *10-188* | | | |

**LCS (0I24001-BS1)** Prepared: 09/24/2010 06:57 Analyzed: 09/24/2010 21:03

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 33 | | 10 | ug/L | 50.0 | | 67 | 27-90 | | | |
| 1,4-Dichlorobenzene | 32 | | 10 | ug/L | 50.0 | | 64 | 23-84 | | | |
| 2,4-Dinitrotoluene | 48 | | 10 | ug/L | 50.0 | | 96 | 67-132 | | | |
| 2-Chlorophenol | 40 | | 10 | ug/L | 50.0 | | 80 | 40-109 | | | |
| 4-Chloro-3-methylphenol | 43 | | 10 | ug/L | 50.0 | | 87 | 58-121 | | | |
| 4-Nitrophenol | 41 | | 10 | ug/L | 50.0 | | 83 | 33-105 | | | |
| Acenaphthene | 36 | | 10 | ug/L | 50.0 | | 72 | 39-125 | | | |
| N-Nitroso-di-n-propylamine | 39 | | 10 | ug/L | 50.0 | | 79 | 48-126 | | | |
| Pentachlorophenol | 35 | | 10 | ug/L | 50.0 | | 70 | 51-135 | | | |
| Phenol | 30 | | 10 | ug/L | 50.0 | | 60 | 19-78 | | | |
| Pyrene | 44 | | 10 | ug/L | 50.0 | | 87 | 44-137 | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *92* | | | *ug/L* | *100* | | *92* | *10-179* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *39* | | | *ug/L* | *50.0* | | *78* | *10-149* | | | |
| *Surrogate: 2-Fluorophenol* | *64* | | | *ug/L* | *100* | | *64* | *10-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *42* | | | *ug/L* | *50.0* | | *84* | *10-149* | | | |
| *Surrogate: Phenol-d5* | *53* | | | *ug/L* | *100* | | *53* | *10-88* | | | |
| *Surrogate: Terphenyl-d14* | *44* | | | *ug/L* | *50.0* | | *89* | *10-188* | | | |

**Matrix Spike (0I24001-MS1)** Prepared: 09/24/2010 06:57 Analyzed: 09/24/2010 22:01

**Source: C011560-08**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 33 | | 10 | ug/L | 50.0 | 1.2 U | 66 | 27-90 | | | |
| 1,4-Dichlorobenzene | 32 | | 10 | ug/L | 50.0 | 1.0 U | 64 | 23-84 | | | |
| 2,4-Dinitrotoluene | 48 | | 10 | ug/L | 50.0 | 2.4 U | 95 | 67-132 | | | |
| 2-Chlorophenol | 37 | | 10 | ug/L | 50.0 | 1.2 U | 75 | 40-109 | | | |
| 4-Chloro-3-methylphenol | 41 | | 10 | ug/L | 50.0 | 1.5 U | 82 | 58-121 | | | |
| 4-Nitrophenol | 41 | | 10 | ug/L | 50.0 | 2.0 U | 82 | 33-105 | | | |
| Acenaphthene | 35 | | 10 | ug/L | 50.0 | 1.4 U | 69 | 39-125 | | | |
| N-Nitroso-di-n-propylamine | 39 | | 10 | ug/L | 50.0 | 1.5 U | 77 | 48-126 | | | |

## QUALITY CONTROL

### Semivolatile Organic Compounds by GCMS - Quality Control

*Batch 0I24001 - EPA 3510C_MS*

**Matrix Spike (0I24001-MS1) Continued** Prepared: 09/24/2010 06:57 Analyzed: 09/24/2010 22:01

**Source: C011560-08**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Pentachlorophenol | 37 | | 10 | ug/L | 50.0 | 1.8 U | 74 | 51-135 | | | |
| Phenol | 28 | | 10 | ug/L | 50.0 | 1.4 U | 57 | 19-78 | | | |
| Pyrene | 39 | | 10 | ug/L | 50.0 | 2.1 U | 77 | 44-137 | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *90* | | | *ug/L* | *100* | | *90* | *10-179* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *38* | | | *ug/L* | *50.0* | | *76* | *10-149* | | | |
| *Surrogate: 2-Fluorophenol* | *59* | | | *ug/L* | *100* | | *59* | *10-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *40* | | | *ug/L* | *50.0* | | *80* | *10-149* | | | |
| *Surrogate: Phenol-d5* | *49* | | | *ug/L* | *100* | | *49* | *10-88* | | | |
| *Surrogate: Terphenyl-d14* | *40* | | | *ug/L* | *50.0* | | *80* | *10-188* | | | |

**Matrix Spike Dup (0I24001-MSD1)** Prepared: 09/24/2010 06:57 Analyzed: 09/24/2010 22:31

**Source: C011560-08**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 32 | | 10 | ug/L | 50.0 | 1.2 U | 64 | 27-90 | 3 | 43 | |
| 1,4-Dichlorobenzene | 31 | | 10 | ug/L | 50.0 | 1.0 U | 63 | 23-84 | 2 | 39 | |
| 2,4-Dinitrotoluene | 47 | | 10 | ug/L | 50.0 | 2.4 U | 93 | 67-132 | 2 | 17 | |
| 2-Chlorophenol | 36 | | 10 | ug/L | 50.0 | 1.2 U | 73 | 40-109 | 3 | 22 | |
| 4-Chloro-3-methylphenol | 42 | | 10 | ug/L | 50.0 | 1.5 U | 83 | 58-121 | 1 | 22 | |
| 4-Nitrophenol | 43 | | 10 | ug/L | 50.0 | 2.0 U | 85 | 33-105 | 4 | 27 | |
| Acenaphthene | 35 | | 10 | ug/L | 50.0 | 1.4 U | 71 | 39-125 | 2 | 25 | |
| N-Nitroso-di-n-propylamine | 37 | | 10 | ug/L | 50.0 | 1.5 U | 74 | 48-126 | 4 | 23 | |
| Pentachlorophenol | 37 | | 10 | ug/L | 50.0 | 1.8 U | 74 | 51-135 | 0.5 | 11 | |
| Phenol | 27 | | 10 | ug/L | 50.0 | 1.4 U | 54 | 19-78 | 5 | 18 | |
| Pyrene | 41 | | 10 | ug/L | 50.0 | 2.1 U | 83 | 44-137 | 7 | 24 | |
| *Surrogate: 2,4,6-Tribromophenol* | *90* | | | *ug/L* | *100* | | *90* | *10-179* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *38* | | | *ug/L* | *50.0* | | *77* | *10-149* | | | |
| *Surrogate: 2-Fluorophenol* | *58* | | | *ug/L* | *100* | | *58* | *10-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *39* | | | *ug/L* | *50.0* | | *79* | *10-149* | | | |
| *Surrogate: Phenol-d5* | *48* | | | *ug/L* | *100* | | *48* | *10-88* | | | |
| *Surrogate: Terphenyl-d14* | *42* | | | *ug/L* | *50.0* | | *84* | *10-188* | | | |

### Organochlorine Pesticides by GC - Quality Control

*Batch 0I27004 - EPA 3510C*

**Blank (0I27004-BLK1)** Prepared: 09/27/2010 07:10 Analyzed: 09/27/2010 16:09

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD | 0.013 | U | 0.050 | ug/L | | | | | | | |
| 4,4'-DDE | 0.012 | U | 0.050 | ug/L | | | | | | | |
| 4,4'-DDT | 0.015 | U | 0.050 | ug/L | | | | | | | |
| Aldrin | 0.012 | U | 0.050 | ug/L | | | | | | | |
| alpha-BHC | 0.015 | U | 0.050 | ug/L | | | | | | | |
| beta-BHC | 0.012 | U | 0.050 | ug/L | | | | | | | |
| Chlordane (tech) | 0.20 | U | 0.50 | ug/L | | | | | | | |
| Chlordane-alpha | 0.014 | U | 0.050 | ug/L | | | | | | | |

## QUALITY CONTROL

### Organochlorine Pesticides by GC - Quality Control

*Batch 0I27004 - EPA 3510C*

**Blank (0I27004-BLK1) Continued** Prepared: 09/27/2010 07:10 Analyzed: 09/27/2010 16:09

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chlordane-gamma | 0.012 | U | 0.050 | ug/L | | | | | | | |
| delta-BHC | 0.014 | U | 0.050 | ug/L | | | | | | | |
| Dieldrin | 0.0089 | U | 0.050 | ug/L | | | | | | | |
| Endosulfan I | 0.016 | U | 0.050 | ug/L | | | | | | | |
| Endosulfan II | 0.012 | U | 0.050 | ug/L | | | | | | | |
| Endosulfan sulfate | 0.012 | U | 0.050 | ug/L | | | | | | | |
| Endrin | 0.013 | U | 0.050 | ug/L | | | | | | | |
| Endrin aldehyde | 0.012 | U | 0.050 | ug/L | | | | | | | |
| Endrin ketone | 0.012 | U | 0.050 | ug/L | | | | | | | |
| gamma-BHC | 0.016 | U | 0.050 | ug/L | | | | | | | |
| Heptachlor | 0.012 | U | 0.050 | ug/L | | | | | | | |
| Heptachlor epoxide | 0.0089 | U | 0.050 | ug/L | | | | | | | |
| Isodrin | 0.013 | U | 0.050 | ug/L | | | | | | | |
| Methoxychlor | 0.016 | U | 0.050 | ug/L | | | | | | | |
| Mirex | 0.016 | U | 0.050 | ug/L | | | | | | | |
| Toxaphene | 0.22 | U | 0.50 | ug/L | | | | | | | |
| *Surrogate: 2,4,5,6-TCMX* | *1.1* | | | *ug/L* | *1.00* | | *105* | *44-134* | | | |
| *Surrogate: Decachlorobiphenyl* | *1.1* | | | *ug/L* | *1.00* | | *115* | *37-149* | | | |

**LCS (0I27004-BS1)** Prepared: 09/27/2010 07:10 Analyzed: 09/27/2010 16:22

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDT | 0.92 | | 0.050 | ug/L | 1.00 | | 92 | 37-139 | | | |
| Dieldrin | 0.92 | | 0.050 | ug/L | 1.00 | | 92 | 46-132 | | | |
| Endrin | 0.94 | | 0.050 | ug/L | 1.00 | | 94 | 43-133 | | | |
| *Surrogate: 2,4,5,6-TCMX* | *0.83* | | | *ug/L* | *1.00* | | *83* | *44-134* | | | |
| *Surrogate: Decachlorobiphenyl* | *0.96* | | | *ug/L* | *1.00* | | *96* | *37-149* | | | |

**Matrix Spike (0I27004-MS1)** Prepared: 09/27/2010 07:10 Analyzed: 09/27/2010 16:49

**Source: C011622-07**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDT | 1.1 | | 0.050 | ug/L | 1.00 | 0.015 U | 111 | 37-139 | | | |
| Dieldrin | 1.1 | | 0.050 | ug/L | 1.00 | 0.0089 U | 106 | 46-132 | | | |
| Endrin | 1.1 | | 0.050 | ug/L | 1.00 | 0.013 U | 106 | 43-133 | | | |
| *Surrogate: 2,4,5,6-TCMX* | *0.94* | | | *ug/L* | *1.00* | | *94* | *44-134* | | | |
| *Surrogate: Decachlorobiphenyl* | *1.1* | | | *ug/L* | *1.00* | | *108* | *37-149* | | | |

**Matrix Spike Dup (0I27004-MSD1)** Prepared: 09/27/2010 07:10 Analyzed: 09/27/2010 17:02

**Source: C011622-07**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDT | 1.1 | | 0.050 | ug/L | 1.00 | 0.015 U | 112 | 37-139 | 0.5 | 26 | |
| Dieldrin | 1.1 | | 0.050 | ug/L | 1.00 | 0.0089 U | 106 | 46-132 | 0 | 27 | |
| Endrin | 1.1 | | 0.050 | ug/L | 1.00 | 0.013 U | 106 | 43-133 | 0.2 | 26 | |
| *Surrogate: 2,4,5,6-TCMX* | *0.91* | | | *ug/L* | *1.00* | | *91* | *44-134* | | | |

# QUALITY CONTROL

## Organochlorine Pesticides by GC - Quality Control

*Batch 0I27004 - EPA 3510C*

**Matrix Spike Dup (0I27004-MSD1) Continued** Prepared: 09/27/2010 07:10 Analyzed: 09/27/2010 17:02

**Source: C011622-07**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Surrogate: Decachlorobiphenyl* | *1.1* | | | *ug/L* | *1.00* | | *109* | *37-149* | | | |

## Metals by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I24018 - EPA 245.1*

**Blank (0I24018-BLK1)** Prepared: 09/24/2010 10:23 Analyzed: 09/24/2010 16:02

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.170 | U | 0.200 | ug/L | | | | | | | |

**LCS (0I24018-BS1)** Prepared: 09/24/2010 10:23 Analyzed: 09/24/2010 16:05

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 5.41 | | 0.200 | ug/L | 5.00 | | 108 | 85-115 | | | |

**Matrix Spike (0I24018-MS1)** Prepared: 09/24/2010 10:23 Analyzed: 09/24/2010 16:11

**Source: C009406-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 5.12 | | 0.200 | ug/L | 5.00 | 0.170 U | 102 | 85-115 | | | |

**Matrix Spike Dup (0I24018-MSD1)** Prepared: 09/24/2010 10:23 Analyzed: 09/24/2010 16:22

**Source: C009406-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 4.87 | | 0.200 | ug/L | 5.00 | 0.170 U | 97 | 85-115 | 5 | 15 | |

**Post Spike (0I24018-PS1)** Prepared: 09/24/2010 10:23 Analyzed: 09/24/2010 16:25

**Source: C009406-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 4.60 | | 0.200 | ug/L | 5.00 | -0.430 | 101 | 75-125 | | | |

## Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I23011 - SM18 3030C*

**Blank (0I23011-BLK1)** Prepared: 09/23/2010 10:00 Analyzed: 09/24/2010 11:03

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 2.80 | U | 10.0 | ug/L | | | | | | | |
| Beryllium | 0.100 | U | 1.00 | ug/L | | | | | | | |
| Cadmium | 0.360 | U | 1.00 | ug/L | | | | | | | |
| Chromium | 1.00 | U | 10.0 | ug/L | | | | | | | |
| Copper | 1.60 | U | 10.0 | ug/L | | | | | | | |
| Manganese | 1.10 | U | 10.0 | ug/L | | | | | | | |

## QUALITY CONTROL

### Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I23011 - SM18 3030C*

**Blank (0I23011-BLK1) Continued** Prepared: 09/23/2010 10:00 Analyzed: 09/24/2010 11:03

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nickel | 1.80 | U | 10.0 | ug/L | | | | | | | |
| Selenium | 2.70 | U | 10.0 | ug/L | | | | | | | |
| Silver | 1.90 | U | 10.0 | ug/L | | | | | | | |
| Zinc | 3.80 | U | 10.0 | ug/L | | | | | | | |

**LCS (0I23011-BS1)** Prepared: 09/23/2010 10:00 Analyzed: 09/24/2010 13:40

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 553 | | 10.0 | ug/L | 500 | | 111 | 80-120 | | | |
| Beryllium | 277 | | 1.00 | ug/L | 250 | | 111 | 80-120 | | | |
| Cadmium | 272 | | 1.00 | ug/L | 250 | | 109 | 80-120 | | | |
| Chromium | 547 | | 10.0 | ug/L | 500 | | 109 | 80-120 | | | |
| Copper | 278 | | 10.0 | ug/L | 250 | | 111 | 80-120 | | | |
| Manganese | 274 | | 10.0 | ug/L | 250 | | 110 | 80-120 | | | |
| Nickel | 544 | | 10.0 | ug/L | 500 | | 109 | 80-120 | | | |
| Selenium | 576 | | 10.0 | ug/L | 500 | | 115 | 80-120 | | | |
| Silver | 280 | | 10.0 | ug/L | 250 | | 112 | 80-120 | | | |
| Zinc | 555 | | 10.0 | ug/L | 500 | | 111 | 80-120 | | | |

**Matrix Spike (0I23011-MS1)** Prepared: 09/23/2010 10:00 Analyzed: 09/24/2010 11:14

**Source: C010911-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 577 | | 10.0 | ug/L | 500 | 2.80 U | 115 | 75-125 | | | |
| Beryllium | 299 | | 1.00 | ug/L | 250 | 0.177 | 119 | 75-125 | | | |
| Cadmium | 286 | | 1.00 | ug/L | 250 | 0.360 U | 115 | 75-125 | | | |
| Chromium | 578 | | 10.0 | ug/L | 500 | 3.04 | 115 | 75-125 | | | |
| Copper | 294 | | 10.0 | ug/L | 250 | 4.29 | 116 | 75-125 | | | |
| Manganese | 335 | | 10.0 | ug/L | 250 | 48.4 | 115 | 75-125 | | | |
| Nickel | 579 | | 10.0 | ug/L | 500 | 1.80 U | 116 | 75-125 | | | |
| Selenium | 580 | | 10.0 | ug/L | 500 | 3.49 | 115 | 75-125 | | | |
| Silver | 290 | | 10.0 | ug/L | 250 | 1.90 U | 116 | 75-125 | | | |
| Zinc | 618 | | 10.0 | ug/L | 500 | 32.4 | 117 | 75-125 | | | |

**Matrix Spike Dup (0I23011-MSD1)** Prepared: 09/23/2010 10:00 Analyzed: 09/24/2010 11:16

**Source: C010911-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 588 | | 10.0 | ug/L | 500 | 2.80 U | 118 | 75-125 | 2 | 20 | |
| Beryllium | 296 | | 1.00 | ug/L | 250 | 0.177 | 119 | 75-125 | 0.7 | 20 | |
| Cadmium | 291 | | 1.00 | ug/L | 250 | 0.360 U | 116 | 75-125 | 2 | 20 | |
| Chromium | 592 | | 10.0 | ug/L | 500 | 3.04 | 118 | 75-125 | 2 | 20 | |
| Copper | 303 | | 10.0 | ug/L | 250 | 4.29 | 120 | 75-125 | 3 | 20 | |
| Manganese | 344 | | 10.0 | ug/L | 250 | 48.4 | 118 | 75-125 | 3 | 20 | |
| Nickel | 584 | | 10.0 | ug/L | 500 | 1.80 U | 117 | 75-125 | 0.8 | 20 | |
| Selenium | 598 | | 10.0 | ug/L | 500 | 3.49 | 119 | 75-125 | 3 | 20 | |
| Silver | 301 | | 10.0 | ug/L | 250 | 1.90 U | 121 | 75-125 | 4 | 20 | |

## QUALITY CONTROL

### Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I23011 - SM18 3030C*

**Matrix Spike Dup (0I23011-MSD1) Continued** Prepared: 09/23/2010 10:00 Analyzed: 09/24/2010 11:16

**Source: C010911-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Zinc | 623 | | 10.0 | ug/L | 500 | 32.4 | 118 | 75-125 | 0.8 | 20 | |

**Post Spike (0I23011-PS1)** Prepared: 09/23/2010 10:00 Analyzed: 09/24/2010 11:19

**Source: C010911-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 1.18 | | 0.0100 | mg/L | 1.00 | 0.00122 | 118 | 80-120 | | | |
| Beryllium | 0.601 | | 0.00100 | mg/L | 0.500 | 0.000177 | 120 | 80-120 | | | |
| Cadmium | 0.586 | | 0.00100 | mg/L | 0.500 | 7.95E-5 | 117 | 80-120 | | | |
| Chromium | 1.18 | | 0.0100 | mg/L | 1.00 | 0.00304 | 118 | 80-120 | | | |
| Copper | 0.606 | | 0.0100 | mg/L | 0.500 | 0.00429 | 120 | 80-120 | | | |
| Manganese | 0.632 | | 0.0100 | mg/L | 0.500 | 0.0484 | 117 | 80-120 | | | |
| Nickel | 1.17 | | 0.0100 | mg/L | 1.00 | 0.000608 | 117 | 80-120 | | | |
| Selenium | 1.22 | | 0.0100 | mg/L | 1.00 | 0.00349 | 122 | 80-120 | | | QM-08 |
| Silver | 0.535 | | 0.0100 | mg/L | 0.500 | 0.00145 | 107 | 80-120 | | | |
| Zinc | 1.22 | | 0.0100 | mg/L | 1.00 | 0.0324 | 119 | 80-120 | | | |

*Batch 0I23013 - SM18 3030C*

**Blank (0I23013-BLK1)** Prepared: 09/23/2010 10:02 Analyzed: 09/27/2010 10:40

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 0.220 | U | 2.00 | ug/L | | | | | | | |
| **Thallium** | **0.182** | **J** | 1.00 | ug/L | | | | | | | |

**LCS (0I23013-BS1)** Prepared: 09/23/2010 10:02 Analyzed: 09/27/2010 10:44

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 26.2 | | 2.00 | ug/L | 25.0 | | 105 | 80-120 | | | |
| Thallium | 28.1 | B | 1.00 | ug/L | 25.0 | | 112 | 80-120 | | | |

**Matrix Spike (0I23013-MS1)** Prepared: 09/23/2010 10:02 Analyzed: 09/27/2010 10:50

**Source: C011558-07**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 27.0 | | 2.00 | ug/L | 25.0 | 0.220 U | 108 | 75-125 | | | |
| Thallium | 29.2 | B | 1.00 | ug/L | 25.0 | 0.918 | 113 | 75-125 | | | |

**Matrix Spike Dup (0I23013-MSD1)** Prepared: 09/23/2010 10:02 Analyzed: 09/27/2010 10:54

**Source: C011558-07**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 27.4 | | 2.00 | ug/L | 25.0 | 0.220 U | 110 | 75-125 | 1 | 20 | |
| Thallium | 29.4 | B | 1.00 | ug/L | 25.0 | 0.918 | 114 | 75-125 | 0.9 | 20 | |

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## QUALITY CONTROL

### Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I23013 - SM18 3030C*

**Post Spike (0I23013-PS1)** Prepared: 09/23/2010 10:02 Analyzed: 09/27/2010 10:57

**Source: C011558-07**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 27.0 | | 2.00 | ug/L | 25.0 | 0.0959 | 108 | 80-120 | | | |
| Thallium | 29.0 | B | 1.00 | ug/L | 25.0 | 0.918 | 112 | 80-120 | | | |

### Metals (acid extractable) by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I23011 - SM18 3030C*

**Blank (0I23011-BLK1)** Prepared: 09/23/2010 10:00 Analyzed: 09/24/2010 11:03

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 1.90 | U | 10.0 | ug/L | | | | | | | |

**LCS (0I23011-BS1)** Prepared: 09/23/2010 10:00 Analyzed: 09/24/2010 13:40

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 553 | | 10.0 | ug/L | 500 | | 111 | 80-120 | | | |

**Matrix Spike (0I23011-MS1)** Prepared: 09/23/2010 10:00 Analyzed: 09/24/2010 11:14

**Source: C010911-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 597 | | 10.0 | ug/L | 500 | 7.48 | 118 | 75-125 | | | |

**Matrix Spike Dup (0I23011-MSD1)** Prepared: 09/23/2010 10:00 Analyzed: 09/24/2010 11:16

**Source: C010911-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 599 | | 10.0 | ug/L | 500 | 7.48 | 118 | 75-125 | 0.4 | 20 | |

**Post Spike (0I23011-PS1)** Prepared: 09/23/2010 10:00 Analyzed: 09/24/2010 11:19

**Source: C010911-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 1.18 | | 0.00935 | mg/L | 1.00 | 0.00748 | 117 | 80-120 | | | |

## FLAGS/NOTES AND DEFINITIONS

| | |
|---|---|
| B | The analyte was detected in the associated method blank. |
| D | The sample was analyzed at dilution. |
| J | The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable. |
| U | The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable. |
| E | The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate. |
| MRL | Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content. |
| J-01 | Result is estimated due to positive results in the associated method blank. |
| QM-08 | Post-digestion spike did not meet method requirements due to confirmed matrix effects (dilution test). |

**ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD** www.encolabs.com

10775 Central Port Dr. Orlando, FL 32824 (407) 826-5314 Fax (407) 850-6945
4810 Executive Park Court, Suite 211 Jacksonville, FL 32216-6069 (904) 296-3007 Fax (904) 296-6210
132-A Woodwinds Industrial Ct. Cary, NC 27511 (919) 467-3090 Fax (919) 467-3515

Page 1 of 2

| | |
|---|---|
| Client Name: S&ME, Inc. (SM001) | Project Number: 1054-10-2003 |
| Address: 3201 Spring Forest Road | Project Name/Desc: Mary Chappell Site |
| City/St/Zip: Raleigh, NC 27616 | PO # / Billing Info: |
| Tel: (919) 872-2660 Fax: (919) 876-3958 | Reporting Contact: Ed Woloszyn |
| Sampler(s) Name, Affiliation (Print): Gerald Paul S&ME | Billing Contact: Accounts Payable |
| Sampler(s) Signature: [signature] | Site Location / Time Zone: HAMLET, NC |

Requested Analyses: 8081B,8270D; 8260B; Ag,As,Ba,Cd,Cr,Cu,Mn,Ni,Pb; Hg

Requested Turnaround Times: Note: Rush requests subject to acceptance by the facility. X Standard ___ Expedited Due __/__/__

Lab Workorder: C010658 ~~C010226~~

Preservation (See Codes) (Combine as necessary)

| Item # | Sample ID (Field Identification) | Collection Date | Collection Time | Comp / Grab | Matrix (see codes) | Total # of Containers | 8081B,8270D | 8260B | Ag,As,Ba,Cd,Cr,Cu,Mn,Ni,Pb | Hg | | | | | | | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GP-1 | 9/20 | 1430 | Grab | GW | 3 6 | X | X | X | X | | | | | | | Vocs only |
| | GP-2 | ~~[illegible]~~ | ~~[illegible]~~ | Grab | GW | 3 6 | X | X | X | X | | | | | | | Vocs only |
| | GP-3 | 9/20 | 1115 | | GW | 3 6 | X | X | X | X | | | | | | | Vocs only |
| | GP-4 | 9/20 | 1145 | | GW | 3 6 | X | X | X | X | | | | | | | Vocs only |
| | ~~GP-5~~ | | | | ~~GW~~ | 6 | X | X | X | X | | | | | | | No Sample |
| | GP-6 | 9/20 | 1230 | | GW | 3 6 | X | X | X | X | | | | | | | Vocs only |
| | GP-7 | 9/20 | 1415 | | GW | 3 6 | X | X | X | X | | | | | | | Vocs only |
| | ~~Mary L. Chappell - WSW-1~~ | | | | ~~GW~~ | 6 | X | X | X | X | | | | | | | No SAMPLE |
| | ~~Mark Chappell - WSW-2~~ | | | | ~~GW~~ | 6 | X | X | X | X | | | | | | | No SAMPLE |
| | ~~Anne Harrison - WSW-3~~ | | | | ~~GW~~ | 6 | X | X | X | X | | | | | | | No SAMPLE |
| | Herman Russell - WSW-4 | 9/21/10 | 1430 | GRAB | GW | 6 | X | X | X | X | | | | | | | |
| | ~~William Brown - WSW-5~~ | | | | ~~GW~~ | 6 | X | X | X | X | | | | | | | No SAMPLE |
| | | | | | | | <-- Total # of Containers | | | | | | | | | | |

| | | | |
|---|---|---|---|
| Sample Kit Prepared By: BJG | Date/Time: 9/1/10 | Relinquished By: [signature] | Date/Time: 9/21/10 1550 |
| Relinquished By: | Date/Time: | Received By: [signature] | Date/Time: 9/21/10 1550 |
| Relinquished By: | Date/Time: | Received By: | Date/Time: |
| Relinquished By: | Date/Time: | Received By: | Date/Time: |

Comments/Special Reporting Requirements: Samples GP-1 – GP-7 Dates & times taken from sample containers JT

Cooler #s & Temps on Receipt: ~~Blue~~ ~~C-734~~ ~~C-744~~ ~~C-539~~ 2.1°C

Condition Upon Receipt: ✓ Acceptable ___ Unacceptable

Matrix: GW-Groundwater SO-Soil DW-Drinking Water SE-Sediment SW-Surface Water WW-Wastewater A-Air O-Other (detail in comments) Preservation: I-Ice H-HCl N-HNO3 S-H2SO4 NO-NaOH O-Other (detail in comments)

Note: All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreements exist

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# ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

10775 Central Port Dr.
Orlando, FL 32824
(407) 826-5314 Fax (407) 850 6945

4810 Executive Park Court, Suite 211
Jacksonville, FL 32216-6069
(904) 296-3007 Fax (904) 296-6210

102-A Woodwinds Industrial Ct.
Cary, NC 27511
(919) 467-3090 Fax (919) 467-3519



| | |
|---|---|
| Client Name: STME | Project Number: 1054-10-2003 |
| Address: 3201 Spring Forest Road | Project Name/Desc: MARY Chappell Site |
| City/ST/Zip: Raleigh, NC 27616 | PO # / Billing Info: |
| Tel: (919) 872-2660 Fax: 919-876 3958 | Reporting Contact: ED Wolosyn |
| Sampler(s) Name, Affiliation (Print): Gerald Paul STME | Billing Contact: Accts Payable |
| Sampler(s) Signature: | Facility # (if required): |

Requested Analyses: 8260 B

Requested Turnaround Times
Note: Rush requests subject to acceptance by the facility
X Standard
___ Expedited
Due ___/___/___

Lab Workorder: C011558

Preservation (See Codes) (Combine as necessary)

| Item # | Sample ID (Field Identification) | Collection Date | Collection Time | Comp / Grab | Matrix (see codes) | Total # of Containers | 8260 B | | | | | | | | | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Duplicate | 9/20/10 | — | GRAB | GW | 3 | X | | | | | | | | | |
| | Equipment Blank | 9/20/10 | 1800 | GRAB | GW | 3 | X | | | | | | | | | |
| | TRIP | — | — | — | WA | 2 | X | | | | | | | | | |

← Total # of Containers

| | | | | | |
|---|---|---|---|---|---|
| Sample Id Prepared By | Date/Time | Relinquished By | Date/Time 9/21/10 1550 | Received By | Date/Time 9/21/10 1550 |
| Comments | | Relinquished By | Date/Time | Received By | Date/Time |
| | | Relinquished By | Date/Time | Received By | Date/Time |
| | | Cooler #'s & Temps on Receipt: 2.1°C | | Condition Upon Receipt: ✓ Acceptable ___ Unacceptable | |

Matrix: GW Groundwater SO-Soil SE Sediment SW Surface Water WW Wastewater A Air O Other (detail in comments) Preservation: Ice H HCl N HNO3 S H2SO4 NO NaOH O Other (detail in comments)

Note: All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form, unless prior written agreements exist

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**Environmental Conservation Laboratories, Inc.**
**102-A Woodwinds Industrial Court**
**Cary NC, 27511**
**Phone: 919.467.3090 FAX: 919.467.3515**
**www.encolabs.com**

Monday, September 27, 2010

S&ME, Inc. (SM001)

Attn: Ed Woloszyn

3201 Spring Forest Road

Raleigh, NC 27616

**RE: Laboratory Results for**
**Project Number: 1054-10-2003, Project Name/Desc: Mary Chappell Site**
**ENCO Workorder: C010147**

Dear Ed Woloszyn,

Enclosed is a copy of your laboratory report for test samples received by our laboratory on Friday, September 10, 2010.

Unless otherwise noted in an attached project narrative, all samples were received in acceptable condition and processed in accordance with the referenced methods/procedures. Results for these procedures apply only to the samples as submitted.

The analytical results contained in this report are in compliance with NELAC standards, except as noted in the project narrative. This report shall not be reproduced except in full, without the written approval of the Laboratory.

This report contains only those analyses performed by Environmental Conservation Laboratories. Unless otherwise noted, all analyses were performed at ENCO Cary. Data from outside organizations will be reported under separate cover.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,

Chuck Smith

Chuck Smith
Project Manager

Enclosure(s)

The total number of pages in this report, including this page is 79.

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## SAMPLE SUMMARY/LABORATORY CHRONICLE

**Client ID: GP-1 (17-21)** | **Lab ID: C010147-01** | **Sampled: 09/09/10 13:45** | **Received: 09/10/10 17:30**

| Parameter | Hold Date/Time(s) | | Prep Date/Time(s) | | Analysis Date/Time(s) |
|---|---|---|---|---|---|
| EPA 6010C | 03/08/11 | | 09/20/10 | 10:28 | 9/21/2010 14:22 |
| EPA 7471B | 10/07/10 | | 09/14/10 | 10:54 | 9/14/2010 16:11 |
| EPA 8081B | 09/23/10 | 10/24/10 | 09/14/10 | 09:57 | 9/16/2010 19:26 |
| EPA 8270D | 09/23/10 | 10/26/10 | 09/16/10 | 14:49 | 9/20/2010 20:26 |

**Client ID: GP-1 (17-21)** | **Lab ID: C010147-01RE1** | **Sampled: 09/09/10 13:45** | **Received: 09/10/10 17:30**

| Parameter | Hold Date/Time(s) | | Prep Date/Time(s) | | Analysis Date/Time(s) |
|---|---|---|---|---|---|
| EPA 8260B | 09/23/10 | | 09/21/10 | 08:21 | 9/21/2010 13:07 |

**Client ID: GP-2 (17-21)** | **Lab ID: C010147-02** | **Sampled: 09/09/10 16:45** | **Received: 09/10/10 17:30**

| Parameter | Hold Date/Time(s) | | Prep Date/Time(s) | | Analysis Date/Time(s) |
|---|---|---|---|---|---|
| EPA 6010C | 03/08/11 | | 09/20/10 | 10:28 | 9/21/2010 14:36 |
| EPA 7471B | 10/07/10 | | 09/14/10 | 10:54 | 9/14/2010 16:26 |
| EPA 8081B | 09/23/10 | 10/24/10 | 09/14/10 | 09:57 | 9/16/2010 19:40 |
| EPA 8260B | 09/23/10 | | 09/15/10 | 08:26 | 9/15/2010 21:59 |
| EPA 8270D | 09/23/10 | 10/26/10 | 09/16/10 | 14:49 | 9/20/2010 20:56 |

**Client ID: GP-7 (25-29)** | **Lab ID: C010147-03** | **Sampled: 09/08/10 18:40** | **Received: 09/10/10 17:30**

| Parameter | Hold Date/Time(s) | | Prep Date/Time(s) | | Analysis Date/Time(s) |
|---|---|---|---|---|---|
| EPA 6010C | 03/07/11 | | 09/20/10 | 10:28 | 9/21/2010 14:39 |
| EPA 7471B | 10/06/10 | | 09/14/10 | 10:54 | 9/14/2010 16:29 |
| EPA 8081B | 09/22/10 | 10/24/10 | 09/14/10 | 09:57 | 9/16/2010 19:53 |
| EPA 8260B | 09/22/10 | | 09/15/10 | 08:26 | 9/15/2010 22:28 |
| EPA 8270D | 09/22/10 | 10/26/10 | 09/16/10 | 14:49 | 9/20/2010 17:28 |

**Client ID: GP-3 (13-17)** | **Lab ID: C010147-04** | **Sampled: 09/09/10 12:30** | **Received: 09/10/10 17:30**

| Parameter | Hold Date/Time(s) | | Prep Date/Time(s) | | Analysis Date/Time(s) |
|---|---|---|---|---|---|
| EPA 6010C | 03/08/11 | | 09/20/10 | 10:28 | 9/21/2010 14:42 |
| EPA 7471B | 10/07/10 | | 09/14/10 | 10:54 | 9/14/2010 16:32 |
| EPA 8081B | 09/23/10 | 10/24/10 | 09/14/10 | 09:57 | 9/16/2010 20:06 |
| EPA 8260B | 09/23/10 | | 09/15/10 | 08:26 | 9/15/2010 22:56 |
| EPA 8270D | 09/23/10 | 10/26/10 | 09/16/10 | 14:49 | 9/20/2010 21:26 |

**Client ID: Dup** | **Lab ID: C010147-05** | **Sampled: 09/08/10 00:00** | **Received: 09/10/10 17:30**

| Parameter | Hold Date/Time(s) | | Prep Date/Time(s) | | Analysis Date/Time(s) |
|---|---|---|---|---|---|
| EPA 6010C | 03/07/11 | | 09/20/10 | 10:28 | 9/21/2010 14:54 |
| EPA 7471B | 10/06/10 | | 09/14/10 | 10:54 | 9/14/2010 16:41 |
| EPA 8081B | 09/22/10 | 10/24/10 | 09/14/10 | 09:57 | 9/16/2010 20:20 |
| EPA 8260B | 09/22/10 | | 09/15/10 | 08:26 | 9/15/2010 23:25 |
| EPA 8270D | 09/22/10 | 10/26/10 | 09/16/10 | 14:49 | 9/20/2010 21:55 |

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| Client ID: Equipment Blank | Lab ID: C010147-06 | Sampled: 09/09/10 18:00 | Received: 09/10/10 17:30 |
|---|---|---|---|

| Parameter | Hold Date/Time(s) | | Prep Date/Time(s) | | Analysis Date/Time(s) |
|---|---|---|---|---|---|
| EPA 6010C | 03/08/11 | | 09/13/10 | 09:47 | 9/14/2010 12:45 |
| EPA 6020A | 03/08/11 | | 09/14/10 | 16:20 | 9/22/2010 16:10 |
| EPA 7470A | 10/07/10 | | 09/15/10 | 08:56 | 9/15/2010 17:08 |
| EPA 8081B | 09/16/10 | 10/24/10 | 09/14/10 | 07:47 | 9/22/2010 00:46 |
| EPA 8260B | 09/23/10 | | 09/14/10 | 09:59 | 9/14/2010 15:57 |
| EPA 8270D | 09/16/10 | 10/24/10 | 09/14/10 | 12:33 | 9/23/2010 02:54 |

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## SAMPLE DETECTION SUMMARY

**Client ID: GP-1 (17-21)** **Lab ID: C010147-01**

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic - Total | 0.528 | J | 0.107 | 0.537 | mg/kg dry | EPA 6010C | |
| Chromium - Total | 0.925 | | 0.107 | 0.537 | mg/kg dry | EPA 6010C | |
| Copper - Total | 0.454 | J | 0.204 | 0.537 | mg/kg dry | EPA 6010C | |
| Di-n-butylphthalate | 0.041 | J | 0.033 | 0.35 | mg/kg dry | EPA 8270D | |
| Ethane, 1,1,2,2-tetrachloro- | 0.28 | JB | | | mg/kg dry | EPA 8270D | B |
| Lead - Total | 0.473 | J | 0.129 | 0.537 | mg/kg dry | EPA 6010C | |
| Manganese - Total | 0.324 | J | 0.107 | 0.537 | mg/kg dry | EPA 6010C | |
| Selenium - Total | 0.207 | JB | 0.107 | 0.537 | mg/kg dry | EPA 6010C | J-01 |
| Thallium - Total | 0.165 | J | 0.107 | 0.537 | mg/kg dry | EPA 6010C | |
| Unknown | 0.54 | JB | | | mg/kg dry | EPA 8270D | B |

**Client ID: GP-1 (17-21)** **Lab ID: C010147-01RE1**

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| Carbon Dioxide | 0.11 | J | | | mg/kg dry | EPA 8260B | |
| Cyclopentasiloxane, decamet... | 0.0049 | JB | | | mg/kg dry | EPA 8260B | |
| Cyclotetrasiloxane, octamet... | 0.010 | JB | | | mg/kg dry | EPA 8260B | |

**Client ID: GP-2 (17-21)** **Lab ID: C010147-02**

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic - Total | 10.7 | | 0.110 | 0.552 | mg/kg dry | EPA 6010C | |
| Beryllium - Total | 0.0210 | J | 0.0133 | 0.0552 | mg/kg dry | EPA 6010C | |
| Carbon Dioxide | 0.086 | J | | | mg/kg dry | EPA 8260B | |
| Chromium - Total | 29.2 | | 0.110 | 0.552 | mg/kg dry | EPA 6010C | |
| Copper - Total | 49.2 | | 0.210 | 0.552 | mg/kg dry | EPA 6010C | |
| Cyclopentasiloxane, decamet... | 0.0060 | JB | | | mg/kg dry | EPA 8260B | |
| Cyclotetrasiloxane, octamet... | 0.015 | J | | | mg/kg dry | EPA 8260B | |
| Ethane, 1,1,2,2-tetrachloro- | 0.25 | JB | | | mg/kg dry | EPA 8270D | B |
| Lead - Total | 3.17 | | 0.133 | 0.552 | mg/kg dry | EPA 6010C | |
| Manganese - Total | 2.61 | | 0.110 | 0.552 | mg/kg dry | EPA 6010C | |
| Selenium - Total | 23.6 | B | 0.110 | 0.552 | mg/kg dry | EPA 6010C | QB-01 |
| Thallium - Total | 0.637 | | 0.110 | 0.552 | mg/kg dry | EPA 6010C | |
| Unknown | 0.51 | JB | | | mg/kg dry | EPA 8270D | B |
| Zinc - Total | 3.32 | | 1.22 | 2.76 | mg/kg dry | EPA 6010C | |

**Client ID: GP-7 (25-29)** **Lab ID: C010147-03**

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| Arsenic - Total | 1.56 | | 0.113 | 0.566 | mg/kg dry | EPA 6010C | |
| Carbon Dioxide | 0.11 | J | | | mg/kg dry | EPA 8260B | |
| Chromium - Total | 1.93 | | 0.113 | 0.566 | mg/kg dry | EPA 6010C | |
| Copper - Total | 4.58 | | 0.215 | 0.566 | mg/kg dry | EPA 6010C | |
| Cyclopentasiloxane, decamet... | 0.0053 | JB | | | mg/kg dry | EPA 8260B | |
| Cyclotetrasiloxane, octamet... | 0.013 | J | | | mg/kg dry | EPA 8260B | |
| Ethane, 1,1,2,2-tetrachloro- | 0.28 | JB | | | mg/kg dry | EPA 8270D | B |
| Lead - Total | 0.917 | | 0.136 | 0.566 | mg/kg dry | EPA 6010C | |
| Manganese - Total | 0.331 | J | 0.113 | 0.566 | mg/kg dry | EPA 6010C | |
| Selenium - Total | 0.904 | B | 0.113 | 0.566 | mg/kg dry | EPA 6010C | J-01 |
| Thallium - Total | 0.235 | J | 0.113 | 0.566 | mg/kg dry | EPA 6010C | |
| Unknown | 0.56 | JB | | | mg/kg dry | EPA 8270D | B |

**Client ID: GP-3 (13-17)** **Lab ID: C010147-04**

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| 7-Oxabicyclo[4.1.0]heptane | 0.21 | J | | | mg/kg dry | EPA 8270D | |
| Arsenic - Total | 4.04 | | 0.122 | 0.611 | mg/kg dry | EPA 6010C | |
| Carbon Dioxide | 0.13 | J | | | mg/kg dry | EPA 8260B | |
| Chromium - Total | 7.44 | | 0.122 | 0.611 | mg/kg dry | EPA 6010C | |
| Copper - Total | 5.78 | | 0.232 | 0.611 | mg/kg dry | EPA 6010C | |
| Cyclopentasiloxane, decamet... | 0.0055 | JB | | | mg/kg dry | EPA 8260B | |
| Cyclotetrasiloxane, octamet... | 0.012 | J | | | mg/kg dry | EPA 8260B | |
| Ethane, 1,1,2,2-tetrachloro- | 0.43 | JB | | | mg/kg dry | EPA 8270D | B |
| Ethane, 1,1,2-trichloro- | 0.18 | J | | | mg/kg dry | EPA 8270D | |
| Lead - Total | 1.50 | | 0.147 | 0.611 | mg/kg dry | EPA 6010C | |
| Manganese - Total | 3.38 | | 0.122 | 0.611 | mg/kg dry | EPA 6010C | |
| Mercury - Total | 0.0242 | | 0.00586 | 0.0122 | mg/kg dry | EPA 7471B | |
| Selenium - Total | 1.12 | B | 0.122 | 0.611 | mg/kg dry | EPA 6010C | QB-01 |
| Thallium - Total | 0.541 | J | 0.122 | 0.611 | mg/kg dry | EPA 6010C | |
| Unknown | 0.63 | JB | | | mg/kg dry | EPA 8270D | B |
| Zinc - Total | 2.11 | J | 1.34 | 3.05 | mg/kg dry | EPA 6010C | |

**Client ID: Dup** **Lab ID: C010147-05**

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| 7-Oxabicyclo[4.1.0]heptane | 0.20 | J | | | mg/kg dry | EPA 8270D | |
| Arsenic - Total | 0.418 | J | 0.107 | 0.536 | mg/kg dry | EPA 6010C | |
| Carbon Dioxide | 0.26 | J | | | mg/kg dry | EPA 8260B | |
| Chromium - Total | 0.939 | | 0.107 | 0.536 | mg/kg dry | EPA 6010C | |
| Copper - Total | 0.598 | | 0.204 | 0.536 | mg/kg dry | EPA 6010C | |
| Cyclopentasiloxane, decamet... | 0.0077 | JB | | | mg/kg dry | EPA 8260B | |
| Cyclotetrasiloxane, octamet... | 0.025 | J | | | mg/kg dry | EPA 8260B | |
| Ethane, 1,1,2,2-tetrachloro- | 0.41 | JB | | | mg/kg dry | EPA 8270D | B |
| Ethane, 1,1,2-trichloro- | 0.18 | J | | | mg/kg dry | EPA 8270D | |
| Lead - Total | 0.438 | J | 0.129 | 0.536 | mg/kg dry | EPA 6010C | |
| Manganese - Total | 0.312 | J | 0.107 | 0.536 | mg/kg dry | EPA 6010C | |
| Selenium - Total | 0.309 | JB | 0.107 | 0.536 | mg/kg dry | EPA 6010C | J-01 |
| Thallium - Total | 0.132 | J | 0.107 | 0.536 | mg/kg dry | EPA 6010C | |
| Unknown | 0.55 | JB | | | mg/kg dry | EPA 8270D | B |
| Zinc - Total | 1.38 | J | 1.18 | 2.68 | mg/kg dry | EPA 6010C | |

**Client ID: Equipment Blank** **Lab ID: C010147-06**

| Analyte | Results | Flag | MDL | PQL | Units | Method | Notes |
|---|---|---|---|---|---|---|---|
| Carbon Dioxide | 110 | J | | | ug/L | EPA 8260B | |
| Manganese - Total | 4.07 | JB | 1.10 | 10.0 | ug/L | EPA 6010C | J-01 |
| Selenium - Total | 4.64 | J | 2.70 | 10.0 | ug/L | EPA 6010C | |
| Unknown (01) | 9.7 | JB | | | ug/L | EPA 8270D | B |
| Unknown (02) | 11 | JB | | | ug/L | EPA 8270D | B |

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## ANALYTICAL RESULTS

**Description:** GP-1 (17-21)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-01
**Sampled:** 09/09/10 13:45
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 93.2

### Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.00017 | U | mg/kg dry | 1 | 0.00017 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.00027 | U | mg/kg dry | 1 | 0.00027 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.00032 | U | mg/kg dry | 1 | 0.00032 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.00034 | U | mg/kg dry | 1 | 0.00034 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.00036 | U | mg/kg dry | 1 | 0.00036 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.00085 | U | mg/kg dry | 1 | 0.00085 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.00049 | U | mg/kg dry | 1 | 0.00049 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.00041 | U | mg/kg dry | 1 | 0.00041 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.00028 | U | mg/kg dry | 1 | 0.00028 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.00031 | U | mg/kg dry | 1 | 0.00031 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 2-Butanone [78-93-3] ^ | 0.00084 | U | mg/kg dry | 1 | 0.00084 | 0.0054 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.00053 | U | mg/kg dry | 1 | 0.00053 | 0.0054 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.00080 | U | mg/kg dry | 1 | 0.00080 | 0.0054 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.00028 | U | mg/kg dry | 1 | 0.00028 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.00017 | U | mg/kg dry | 1 | 0.00017 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 0.00061 | U | mg/kg dry | 1 | 0.00061 | 0.0054 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Acetone [67-64-1] ^ | 0.0013 | U | mg/kg dry | 1 | 0.0013 | 0.0054 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Benzene [71-43-2] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.00044 | U | mg/kg dry | 1 | 0.00044 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Bromoform [75-25-2] ^ | 0.00048 | U | mg/kg dry | 1 | 0.00048 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Bromomethane [74-83-9] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0054 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Carbon Tetrachloride [56-23-5] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Chloroethane [75-00-3] ^ | 0.00027 | U | mg/kg dry | 1 | 0.00027 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Chloroform [67-66-3] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Chloromethane [74-87-3] ^ | 0.00016 | U | mg/kg dry | 1 | 0.00016 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.00014 | U | mg/kg dry | 1 | 0.00014 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.00038 | U | mg/kg dry | 1 | 0.00038 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.00048 | U | mg/kg dry | 1 | 0.00048 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.00038 | U | mg/kg dry | 1 | 0.00038 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |

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**Description:** GP-1 (17-21)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-01
**Sampled:** 09/09/10 13:45
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 93.2

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Isopropylbenzene [98-82-8] ^ | 0.00016 | U | mg/kg dry | 1 | 0.00016 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.00040 | U | mg/kg dry | 1 | 0.00040 | 0.0021 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Methylene Chloride [75-09-2] ^ | 0.00060 | U | mg/kg dry | 1 | 0.00060 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.00032 | U | mg/kg dry | 1 | 0.00032 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Naphthalene [91-20-3] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| o-Xylene [95-47-6] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Styrene [100-42-5] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.00017 | U | mg/kg dry | 1 | 0.00017 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.00030 | U | mg/kg dry | 1 | 0.00030 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Toluene [108-88-3] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.00040 | U | mg/kg dry | 1 | 0.00040 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.00028 | U | mg/kg dry | 1 | 0.00028 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.00060 | U | mg/kg dry | 1 | 0.00060 | 0.0011 | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *48* | *1* | *50.0* | *95 %* | *61-118* | *0I21004* | *EPA 8260B* | *09/21/10 13:07* | *JKG* | |
| *Dibromofluoromethane* | *46* | *1* | *50.0* | *93 %* | *66-114* | *0I21004* | *EPA 8260B* | *09/21/10 13:07* | *JKG* | |
| *Toluene-d8* | *47* | *1* | *50.0* | *93 %* | *63-118* | *0I21004* | *EPA 8260B* | *09/21/10 13:07* | *JKG* | |

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**Description:** GP-1 (17-21)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-01
**Sampled:** 09/09/10 13:45
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 93.2

## Tentatively Identified Compounds by Volatile GCMS

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Carbon Dioxide [124-38-9]** | **0.11** | J | mg/kg dry | 1 | | | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| **Cyclopentasiloxane, decamet... [000541-02-6]** | **0.0049** | JB | mg/kg dry | 1 | | | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |
| **Cyclotetrasiloxane, octamet... [000556-67-2]** | **0.010** | JB | mg/kg dry | 1 | | | 0I21004 | EPA 8260B | 09/21/10 13:07 | JKG | |

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**Description:** GP-1 (17-21)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-01
**Sampled:** 09/09/10 13:45
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 93.2

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.025 | U | mg/kg dry | 1 | 0.025 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.032 | U | mg/kg dry | 1 | 0.032 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 1-Methylnaphthalene [90-12-0] ^ | 0.038 | U | mg/kg dry | 1 | 0.038 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 2,4,5-Trichlorophenol [95-95-4] ^ | 0.035 | U | mg/kg dry | 1 | 0.035 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 2,4,6-Trichlorophenol [88-06-2] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 2,4-Dichlorophenol [120-83-2] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 2,4-Dimethylphenol [105-67-9] ^ | 0.063 | U | mg/kg dry | 1 | 0.063 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 2,4-Dinitrophenol [51-28-5] ^ | 0.050 | U | mg/kg dry | 1 | 0.050 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 2,4-Dinitrotoluene [121-14-2] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 2,6-Dinitrotoluene [606-20-2] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 2-Chloronaphthalene [91-58-7] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 2-Chlorophenol [95-57-8] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 2-Methyl-4,6-dinitrophenol [534-52-1] ^ | 0.054 | U | mg/kg dry | 1 | 0.054 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 2-Methylnaphthalene [91-57-6] ^ | 0.040 | U | mg/kg dry | 1 | 0.040 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 2-Methylphenol [95-48-7] ^ | 0.041 | U | mg/kg dry | 1 | 0.041 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 2-Nitroaniline [88-74-4] ^ | 0.032 | U | mg/kg dry | 1 | 0.032 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 2-Nitrophenol [88-75-5] ^ | 0.035 | U | mg/kg dry | 1 | 0.035 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 3 & 4-Methylphenol [108-39-4/106-44-5] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 3,3'-Dichlorobenzidine [91-94-1] ^ | 0.045 | U | mg/kg dry | 1 | 0.045 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 3-Nitroaniline [99-09-2] ^ | 0.047 | U | mg/kg dry | 1 | 0.047 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 4-Bromophenyl-phenylether [101-55-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 4-Chloro-3-methylphenol [59-50-7] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 4-Chloroaniline [106-47-8] ^ | 0.032 | U | mg/kg dry | 1 | 0.032 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 4-Chlorophenyl-phenylether [7005-72-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 4-Nitroaniline [100-01-6] ^ | 0.063 | U | mg/kg dry | 1 | 0.063 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| 4-Nitrophenol [100-02-7] ^ | 0.045 | U | mg/kg dry | 1 | 0.045 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Acenaphthene [83-32-9] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Acenaphthylene [208-96-8] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Anthracene [120-12-7] ^ | 0.035 | U | mg/kg dry | 1 | 0.035 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Benzidine [92-87-5] ^ | 0.12 | U | mg/kg dry | 1 | 0.12 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | QV-01 |
| Benzo(a)anthracene [56-55-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Benzo(a)pyrene [50-32-8] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Benzo(b)fluoranthene [205-99-2] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Benzo(g,h,i)perylene [191-24-2] ^ | 0.042 | U | mg/kg dry | 1 | 0.042 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Benzo(k)fluoranthene [207-08-9] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Benzoic acid [65-85-0] ^ | 0.12 | U | mg/kg dry | 1 | 0.12 | 1.8 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Benzyl alcohol [100-51-6] ^ | 0.071 | U | mg/kg dry | 1 | 0.071 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Bis(2-chloroethoxy)methane [111-91-1] ^ | 0.023 | U | mg/kg dry | 1 | 0.023 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Bis(2-chloroethyl)ether [111-44-4] ^ | 0.054 | U | mg/kg dry | 1 | 0.054 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Bis(2-chloroisopropyl)ether [108-60-1] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Bis(2-ethylhexyl)phthalate [117-81-7] ^ | 0.040 | U | mg/kg dry | 1 | 0.040 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Butylbenzylphthalate [85-68-7] ^ | 0.036 | U | mg/kg dry | 1 | 0.036 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | QV-02 |
| Chrysene [218-01-9] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Dibenzo(a,h)anthracene [53-70-3] ^ | 0.044 | U | mg/kg dry | 1 | 0.044 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Dibenzofuran [132-64-9] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Diethylphthalate [84-66-2] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Dimethylphthalate [131-11-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| **Di-n-butylphthalate [84-74-2] ^** | **0.041** | J | mg/kg dry | 1 | 0.033 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Di-n-octylphthalate [117-84-0] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |

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**Description:** GP-1 (17-21)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-01
**Sampled:** 09/09/10 13:45
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 93.2

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene [206-44-0] ^ | 0.046 | U | mg/kg dry | 1 | 0.046 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Fluorene [86-73-7] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Hexachlorobenzene [118-74-1] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Hexachlorobutadiene [87-68-3] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Hexachlorocyclopentadiene [77-47-4] ^ | 0.046 | U | mg/kg dry | 1 | 0.046 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Hexachloroethane [67-72-1] ^ | 0.035 | U | mg/kg dry | 1 | 0.035 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Indeno(1,2,3-cd)pyrene [193-39-5] ^ | 0.041 | U | mg/kg dry | 1 | 0.041 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Isophorone [78-59-1] ^ | 0.017 | U | mg/kg dry | 1 | 0.017 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Naphthalene [91-20-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Nitrobenzene [98-95-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| N-Nitrosodimethylamine [62-75-9] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| N-Nitroso-di-n-propylamine [621-64-7] ^ | 0.018 | U | mg/kg dry | 1 | 0.018 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| N-nitrosodiphenylamine/Diphenylamine [86-30-6/122-39-4] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Pentachlorophenol [87-86-5] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Phenanthrene [85-01-8] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Phenol [108-95-2] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Pyrene [129-00-0] ^ | 0.052 | U | mg/kg dry | 1 | 0.052 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |
| Pyridine [110-86-1] ^ | 0.13 | U | mg/kg dry | 1 | 0.13 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *2.9* | *1* | *3.58* | *80 %* | *28-130* | *0I16021* | *EPA 8270D* | *09/20/10 20:26* | *DFM* | |
| *2-Fluorobiphenyl* | *1.5* | *1* | *1.79* | *83 %* | *56-120* | *0I16021* | *EPA 8270D* | *09/20/10 20:26* | *DFM* | |
| *2-Fluorophenol* | *2.4* | *1* | *3.58* | *68 %* | *49-126* | *0I16021* | *EPA 8270D* | *09/20/10 20:26* | *DFM* | |
| *Nitrobenzene-d5* | *1.4* | *1* | *1.79* | *80 %* | *50-117* | *0I16021* | *EPA 8270D* | *09/20/10 20:26* | *DFM* | |
| *Phenol-d5* | *2.8* | *1* | *3.58* | *78 %* | *56-120* | *0I16021* | *EPA 8270D* | *09/20/10 20:26* | *DFM* | |
| *Terphenyl-d14* | *1.8* | *1* | *1.79* | *103 %* | *36-151* | *0I16021* | *EPA 8270D* | *09/20/10 20:26* | *DFM* | |

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**Description:** GP-1 (17-21)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-01
**Sampled:** 09/09/10 13:45
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 93.2

## Tentatively Identified Compounds by Semivolatile GCMS

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethane, 1,1,2,2-tetrachloro- [000079-34-5] | 0.28 | JB | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | B |
| Unknown [NA] | 0.54 | JB | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 20:26 | DFM | B |

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**Description:** GP-1 (17-21)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-01
**Sampled:** 09/09/10 13:45
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 93.2

## Organochlorine Pesticides by GC

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD [72-54-8] ^ | 0.00034 | U | mg/kg dry | 1 | 0.00034 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| 4,4'-DDE [72-55-9] ^ | 0.00044 | U | mg/kg dry | 1 | 0.00044 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| 4,4'-DDT [50-29-3] ^ | 0.00056 | U | mg/kg dry | 1 | 0.00056 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| Aldrin [309-00-2] ^ | 0.00039 | U | mg/kg dry | 1 | 0.00039 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| alpha-BHC [319-84-6] ^ | 0.00053 | U | mg/kg dry | 1 | 0.00053 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| beta-BHC [319-85-7] ^ | 0.00076 | U | mg/kg dry | 1 | 0.00076 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| Chlordane (tech) [12789-03-6] ^ | 0.0012 | U | mg/kg dry | 1 | 0.0012 | 0.035 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| Chlordane-alpha [5103-71-9] ^ | 0.00049 | U | mg/kg dry | 1 | 0.00049 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| Chlordane-gamma [5566-34-7] ^ | 0.00064 | U | mg/kg dry | 1 | 0.00064 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| delta-BHC [319-86-8] ^ | 0.00032 | U | mg/kg dry | 1 | 0.00032 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| Dieldrin [60-57-1] ^ | 0.00034 | U | mg/kg dry | 1 | 0.00034 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| Endosulfan I [959-98-8] ^ | 0.00044 | U | mg/kg dry | 1 | 0.00044 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| Endosulfan II [33213-65-9] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| Endosulfan sulfate [1031-07-8] ^ | 0.00052 | U | mg/kg dry | 1 | 0.00052 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| Endrin [72-20-8] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| Endrin aldehyde [7421-93-4] ^ | 0.00036 | U | mg/kg dry | 1 | 0.00036 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| Endrin ketone [53494-70-5] ^ | 0.00032 | U | mg/kg dry | 1 | 0.00032 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| gamma-BHC [58-89-9] ^ | 0.00045 | U | mg/kg dry | 1 | 0.00045 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| Heptachlor [76-44-8] ^ | 0.00049 | U | mg/kg dry | 1 | 0.00049 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| Heptachlor epoxide [1024-57-3] ^ | 0.00046 | U | mg/kg dry | 1 | 0.00046 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| Isodrin [465-73-6] ^ | 0.00039 | U | mg/kg dry | 1 | 0.00039 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| Methoxychlor [72-43-5] ^ | 0.00045 | U | mg/kg dry | 1 | 0.00045 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| Mirex [2385-85-5] ^ | 0.00060 | U | mg/kg dry | 1 | 0.00060 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |
| Toxaphene [8001-35-2] ^ | 0.011 | U | mg/kg dry | 1 | 0.011 | 0.018 | 0I14011 | EPA 8081B | 09/16/10 19:26 | REF | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,5,6-TCMX* | *0.055* | *1* | *0.0358* | *152 %* | *59-137* | *0I14011* | *EPA 8081B* | *09/16/10 19:26* | *REF* | *QS-03* |
| *Decachlorobiphenyl* | *0.044* | *1* | *0.0358* | *123 %* | *60-140* | *0I14011* | *EPA 8081B* | *09/16/10 19:26* | *REF* | |

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**Description:** GP-1 (17-21)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-01
**Sampled:** 09/09/10 13:45
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 93.2

## Metals by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony [7440-36-0] ^ | 0.118 | U | mg/kg dry | 1 | 0.118 | 1.07 | 0I20010 | EPA 6010C | 09/21/10 14:22 | JDH | |
| **Arsenic [7440-38-2] ^** | **0.528** | J | mg/kg dry | 1 | 0.107 | 0.537 | 0I20010 | EPA 6010C | 09/21/10 14:22 | JDH | |
| Beryllium [7440-41-7] ^ | 0.0129 | U | mg/kg dry | 1 | 0.0129 | 0.0537 | 0I20010 | EPA 6010C | 09/21/10 14:22 | JDH | |
| Cadmium [7440-43-9] ^ | 0.0103 | U | mg/kg dry | 1 | 0.0103 | 0.0537 | 0I20010 | EPA 6010C | 09/21/10 14:22 | JDH | |
| **Chromium [7440-47-3] ^** | **0.925** | | mg/kg dry | 1 | 0.107 | 0.537 | 0I20010 | EPA 6010C | 09/21/10 14:22 | JDH | |
| **Copper [7440-50-8] ^** | **0.454** | J | mg/kg dry | 1 | 0.204 | 0.537 | 0I20010 | EPA 6010C | 09/21/10 14:22 | JDH | |
| **Lead [7439-92-1] ^** | **0.473** | J | mg/kg dry | 1 | 0.129 | 0.537 | 0I20010 | EPA 6010C | 09/21/10 14:22 | JDH | |
| **Manganese [7439-96-5] ^** | **0.324** | J | mg/kg dry | 1 | 0.107 | 0.537 | 0I20010 | EPA 6010C | 09/21/10 14:22 | JDH | |
| Mercury [7439-97-6] ^ | 0.00515 | U | mg/kg dry | 1 | 0.00515 | 0.0107 | 0I14017 | EPA 7471B | 09/14/10 16:11 | NLH | |
| Nickel [7440-02-0] ^ | 0.386 | U | mg/kg dry | 1 | 0.386 | 2.68 | 0I20010 | EPA 6010C | 09/21/10 14:22 | JDH | |
| **Selenium [7782-49-2] ^** | **0.207** | JB | mg/kg dry | 1 | 0.107 | 0.537 | 0I20010 | EPA 6010C | 09/21/10 14:22 | JDH | J-01 |
| Silver [7440-22-4] ^ | 0.107 | U | mg/kg dry | 1 | 0.107 | 0.537 | 0I20010 | EPA 6010C | 09/21/10 14:22 | JDH | |
| **Thallium [7440-28-0] ^** | **0.165** | J | mg/kg dry | 1 | 0.107 | 0.537 | 0I20010 | EPA 6010C | 09/21/10 14:22 | JDH | |
| Zinc [7440-66-6] ^ | 1.18 | U | mg/kg dry | 1 | 1.18 | 2.68 | 0I20010 | EPA 6010C | 09/21/10 14:22 | JDH | |

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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**Description:** GP-2 (17-21)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-02
**Sampled:** 09/09/10 16:45
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 90.5

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.00020 | U | mg/kg dry | 1 | 0.00020 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.00028 | U | mg/kg dry | 1 | 0.00028 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.00035 | U | mg/kg dry | 1 | 0.00035 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.00038 | U | mg/kg dry | 1 | 0.00038 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.00030 | U | mg/kg dry | 1 | 0.00030 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.00087 | U | mg/kg dry | 1 | 0.00087 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.00051 | U | mg/kg dry | 1 | 0.00051 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.00030 | U | mg/kg dry | 1 | 0.00030 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.00032 | U | mg/kg dry | 1 | 0.00032 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 2-Butanone [78-93-3] ^ | 0.00086 | U | mg/kg dry | 1 | 0.00086 | 0.0055 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.00054 | U | mg/kg dry | 1 | 0.00054 | 0.0055 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.00020 | U | mg/kg dry | 1 | 0.00020 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.00083 | U | mg/kg dry | 1 | 0.00083 | 0.0055 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 0.00063 | U | mg/kg dry | 1 | 0.00063 | 0.0055 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Acetone [67-64-1] ^ | 0.0013 | U | mg/kg dry | 1 | 0.0013 | 0.0055 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Benzene [71-43-2] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.00045 | U | mg/kg dry | 1 | 0.00045 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.00027 | U | mg/kg dry | 1 | 0.00027 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Bromoform [75-25-2] ^ | 0.00050 | U | mg/kg dry | 1 | 0.00050 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Bromomethane [74-83-9] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.00043 | U | mg/kg dry | 1 | 0.00043 | 0.0055 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Carbon Tetrachloride [56-23-5] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Chloroethane [75-00-3] ^ | 0.00028 | U | mg/kg dry | 1 | 0.00028 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Chloroform [67-66-3] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Chloromethane [74-87-3] ^ | 0.00017 | U | mg/kg dry | 1 | 0.00017 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.00014 | U | mg/kg dry | 1 | 0.00014 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.00039 | U | mg/kg dry | 1 | 0.00039 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.00034 | U | mg/kg dry | 1 | 0.00034 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.00050 | U | mg/kg dry | 1 | 0.00050 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.00039 | U | mg/kg dry | 1 | 0.00039 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Isopropylbenzene [98-82-8] ^ | 0.00017 | U | mg/kg dry | 1 | 0.00017 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.00041 | U | mg/kg dry | 1 | 0.00041 | 0.0022 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Methylene Chloride [75-09-2] ^ | 0.00062 | U | mg/kg dry | 1 | 0.00062 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |

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**Description:** GP-2 (17-21)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-02
**Sampled:** 09/09/10 16:45
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 90.5

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Naphthalene [91-20-3] ^ | 0.00027 | U | mg/kg dry | 1 | 0.00027 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.00020 | U | mg/kg dry | 1 | 0.00020 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| o-Xylene [95-47-6] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Styrene [100-42-5] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.00031 | U | mg/kg dry | 1 | 0.00031 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Toluene [108-88-3] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.00041 | U | mg/kg dry | 1 | 0.00041 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.00043 | U | mg/kg dry | 1 | 0.00043 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.00030 | U | mg/kg dry | 1 | 0.00030 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.00027 | U | mg/kg dry | 1 | 0.00027 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.00062 | U | mg/kg dry | 1 | 0.00062 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *50* | *1* | *50.0* | *100 %* | *61-118* | *0I15005* | *EPA 8260B* | *09/15/10 21:59* | *JKG* | |
| *Dibromofluoromethane* | *46* | *1* | *50.0* | *93 %* | *66-114* | *0I15005* | *EPA 8260B* | *09/15/10 21:59* | *JKG* | |
| *Toluene-d8* | *52* | *1* | *50.0* | *103 %* | *63-118* | *0I15005* | *EPA 8260B* | *09/15/10 21:59* | *JKG* | |

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**Description:** GP-2 (17-21)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-02
**Sampled:** 09/09/10 16:45
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 90.5

## Tentatively Identified Compounds by Volatile GCMS

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Carbon Dioxide [124-38-9]** | **0.086** | J | mg/kg dry | 1 | | | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| **Cyclopentasiloxane, decamet... [000541-02-6]** | **0.0060** | JB | mg/kg dry | 1 | | | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |
| **Cyclotetrasiloxane, octamet... [000556-67-2]** | **0.015** | J | mg/kg dry | 1 | | | 0I15005 | EPA 8260B | 09/15/10 21:59 | JKG | |

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**Project:** Mary Chappell Site

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**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 90.5

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.025 | U | mg/kg dry | 1 | 0.025 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.035 | U | mg/kg dry | 1 | 0.035 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 1-Methylnaphthalene [90-12-0] ^ | 0.039 | U | mg/kg dry | 1 | 0.039 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 2,4,5-Trichlorophenol [95-95-4] ^ | 0.036 | U | mg/kg dry | 1 | 0.036 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 2,4,6-Trichlorophenol [88-06-2] ^ | 0.035 | U | mg/kg dry | 1 | 0.035 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 2,4-Dichlorophenol [120-83-2] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 2,4-Dimethylphenol [105-67-9] ^ | 0.065 | U | mg/kg dry | 1 | 0.065 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 2,4-Dinitrophenol [51-28-5] ^ | 0.052 | U | mg/kg dry | 1 | 0.052 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 2,4-Dinitrotoluene [121-14-2] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 2,6-Dinitrotoluene [606-20-2] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 2-Chloronaphthalene [91-58-7] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 2-Chlorophenol [95-57-8] ^ | 0.032 | U | mg/kg dry | 1 | 0.032 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 2-Methyl-4,6-dinitrophenol [534-52-1] ^ | 0.055 | U | mg/kg dry | 1 | 0.055 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 2-Methylnaphthalene [91-57-6] ^ | 0.041 | U | mg/kg dry | 1 | 0.041 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 2-Methylphenol [95-48-7] ^ | 0.042 | U | mg/kg dry | 1 | 0.042 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 2-Nitroaniline [88-74-4] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 2-Nitrophenol [88-75-5] ^ | 0.036 | U | mg/kg dry | 1 | 0.036 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 3 & 4-Methylphenol [108-39-4/106-44-5] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 3,3'-Dichlorobenzidine [91-94-1] ^ | 0.046 | U | mg/kg dry | 1 | 0.046 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 3-Nitroaniline [99-09-2] ^ | 0.049 | U | mg/kg dry | 1 | 0.049 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 4-Bromophenyl-phenylether [101-55-3] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 4-Chloro-3-methylphenol [59-50-7] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 4-Chloroaniline [106-47-8] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 4-Chlorophenyl-phenylether [7005-72-3] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 4-Nitroaniline [100-01-6] ^ | 0.065 | U | mg/kg dry | 1 | 0.065 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| 4-Nitrophenol [100-02-7] ^ | 0.046 | U | mg/kg dry | 1 | 0.046 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Acenaphthene [83-32-9] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Acenaphthylene [208-96-8] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Anthracene [120-12-7] ^ | 0.036 | U | mg/kg dry | 1 | 0.036 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Benzidine [92-87-5] ^ | 0.12 | U | mg/kg dry | 1 | 0.12 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | QV-01 |
| Benzo(a)anthracene [56-55-3] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Benzo(a)pyrene [50-32-8] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Benzo(b)fluoranthene [205-99-2] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Benzo(g,h,i)perylene [191-24-2] ^ | 0.043 | U | mg/kg dry | 1 | 0.043 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Benzo(k)fluoranthene [207-08-9] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Benzoic acid [65-85-0] ^ | 0.12 | U | mg/kg dry | 1 | 0.12 | 1.9 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Benzyl alcohol [100-51-6] ^ | 0.073 | U | mg/kg dry | 1 | 0.073 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Bis(2-chloroethoxy)methane [111-91-1] ^ | 0.023 | U | mg/kg dry | 1 | 0.023 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Bis(2-chloroethyl)ether [111-44-4] ^ | 0.055 | U | mg/kg dry | 1 | 0.055 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Bis(2-chloroisopropyl)ether [108-60-1] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Bis(2-ethylhexyl)phthalate [117-81-7] ^ | 0.041 | U | mg/kg dry | 1 | 0.041 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Butylbenzylphthalate [85-68-7] ^ | 0.038 | U | mg/kg dry | 1 | 0.038 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | QV-02 |
| Chrysene [218-01-9] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Dibenzo(a,h)anthracene [53-70-3] ^ | 0.045 | U | mg/kg dry | 1 | 0.045 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Dibenzofuran [132-64-9] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Diethylphthalate [84-66-2] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Dimethylphthalate [131-11-3] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Di-n-butylphthalate [84-74-2] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Di-n-octylphthalate [117-84-0] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |

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**Description:** GP-2 (17-21)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-02
**Sampled:** 09/09/10 16:45
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 90.5

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene [206-44-0] ^ | 0.048 | U | mg/kg dry | 1 | 0.048 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Fluorene [86-73-7] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Hexachlorobenzene [118-74-1] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Hexachlorobutadiene [87-68-3] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Hexachlorocyclopentadiene [77-47-4] ^ | 0.048 | U | mg/kg dry | 1 | 0.048 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Hexachloroethane [67-72-1] ^ | 0.036 | U | mg/kg dry | 1 | 0.036 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Indeno(1,2,3-cd)pyrene [193-39-5] ^ | 0.042 | U | mg/kg dry | 1 | 0.042 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Isophorone [78-59-1] ^ | 0.018 | U | mg/kg dry | 1 | 0.018 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Naphthalene [91-20-3] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Nitrobenzene [98-95-3] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| N-Nitrosodimethylamine [62-75-9] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| N-Nitroso-di-n-propylamine [621-64-7] ^ | 0.019 | U | mg/kg dry | 1 | 0.019 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| N-nitrosodiphenylamine/Diphenylamine [86-30-6/122-39-4] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Pentachlorophenol [87-86-5] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Phenanthrene [85-01-8] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Phenol [108-95-2] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Pyrene [129-00-0] ^ | 0.053 | U | mg/kg dry | 1 | 0.053 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |
| Pyridine [110-86-1] ^ | 0.13 | U | mg/kg dry | 1 | 0.13 | 0.36 | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *2.5* | *1* | *3.68* | *69 %* | *28-130* | *0I16021* | *EPA 8270D* | *09/20/10 20:56* | *DFM* | |
| *2-Fluorobiphenyl* | *1.4* | *1* | *1.84* | *77 %* | *56-120* | *0I16021* | *EPA 8270D* | *09/20/10 20:56* | *DFM* | |
| *2-Fluorophenol* | *2.4* | *1* | *3.68* | *66 %* | *49-126* | *0I16021* | *EPA 8270D* | *09/20/10 20:56* | *DFM* | |
| *Nitrobenzene-d5* | *1.4* | *1* | *1.84* | *77 %* | *50-117* | *0I16021* | *EPA 8270D* | *09/20/10 20:56* | *DFM* | |
| *Phenol-d5* | *2.7* | *1* | *3.68* | *73 %* | *56-120* | *0I16021* | *EPA 8270D* | *09/20/10 20:56* | *DFM* | |
| *Terphenyl-d14* | *2.0* | *1* | *1.84* | *108 %* | *36-151* | *0I16021* | *EPA 8270D* | *09/20/10 20:56* | *DFM* | |

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**Description:** GP-2 (17-21)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-02
**Sampled:** 09/09/10 16:45
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 90.5

## Tentatively Identified Compounds by Semivolatile GCMS

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethane, 1,1,2,2-tetrachloro- [000079-34-5] | 0.25 | JB | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | B |
| Unknown [NA] | 0.51 | JB | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 20:56 | DFM | B |

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**Description:** GP-2 (17-21)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-02
**Sampled:** 09/09/10 16:45
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 90.5

## Organochlorine Pesticides by GC

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD [72-54-8] ^ | 0.00035 | U | mg/kg dry | 1 | 0.00035 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| 4,4'-DDE [72-55-9] ^ | 0.00045 | U | mg/kg dry | 1 | 0.00045 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| 4,4'-DDT [50-29-3] ^ | 0.00057 | U | mg/kg dry | 1 | 0.00057 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| Aldrin [309-00-2] ^ | 0.00040 | U | mg/kg dry | 1 | 0.00040 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| alpha-BHC [319-84-6] ^ | 0.00054 | U | mg/kg dry | 1 | 0.00054 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| beta-BHC [319-85-7] ^ | 0.00078 | U | mg/kg dry | 1 | 0.00078 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| Chlordane (tech) [12789-03-6] ^ | 0.0012 | U | mg/kg dry | 1 | 0.0012 | 0.036 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| Chlordane-alpha [5103-71-9] ^ | 0.00051 | U | mg/kg dry | 1 | 0.00051 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| Chlordane-gamma [5566-34-7] ^ | 0.00066 | U | mg/kg dry | 1 | 0.00066 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| delta-BHC [319-86-8] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| Dieldrin [60-57-1] ^ | 0.00035 | U | mg/kg dry | 1 | 0.00035 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| Endosulfan I [959-98-8] ^ | 0.00045 | U | mg/kg dry | 1 | 0.00045 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| Endosulfan II [33213-65-9] ^ | 0.00043 | U | mg/kg dry | 1 | 0.00043 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| Endosulfan sulfate [1031-07-8] ^ | 0.00053 | U | mg/kg dry | 1 | 0.00053 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| Endrin [72-20-8] ^ | 0.00043 | U | mg/kg dry | 1 | 0.00043 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| Endrin aldehyde [7421-93-4] ^ | 0.00038 | U | mg/kg dry | 1 | 0.00038 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| Endrin ketone [53494-70-5] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| gamma-BHC [58-89-9] ^ | 0.00046 | U | mg/kg dry | 1 | 0.00046 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| Heptachlor [76-44-8] ^ | 0.00051 | U | mg/kg dry | 1 | 0.00051 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| Heptachlor epoxide [1024-57-3] ^ | 0.00048 | U | mg/kg dry | 1 | 0.00048 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| Isodrin [465-73-6] ^ | 0.00040 | U | mg/kg dry | 1 | 0.00040 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| Methoxychlor [72-43-5] ^ | 0.00046 | U | mg/kg dry | 1 | 0.00046 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| Mirex [2385-85-5] ^ | 0.00062 | U | mg/kg dry | 1 | 0.00062 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |
| Toxaphene [8001-35-2] ^ | 0.011 | U | mg/kg dry | 1 | 0.011 | 0.019 | 0I14011 | EPA 8081B | 09/16/10 19:40 | REF | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,5,6-TCMX* | *0.056* | *1* | *0.0368* | *151 %* | *59-137* | *0I14011* | *EPA 8081B* | *09/16/10 19:40* | *REF* | *QS-03* |
| *Decachlorobiphenyl* | *0.045* | *1* | *0.0368* | *123 %* | *60-140* | *0I14011* | *EPA 8081B* | *09/16/10 19:40* | *REF* | |

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**Description:** GP-2 (17-21)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-02
**Sampled:** 09/09/10 16:45
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 90.5

## Metals by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony [7440-36-0] ^ | 0.122 | U | mg/kg dry | 1 | 0.122 | 1.10 | 0I20010 | EPA 6010C | 09/21/10 14:36 | JDH | |
| **Arsenic [7440-38-2] ^** | **10.7** | | mg/kg dry | 1 | 0.110 | 0.552 | 0I20010 | EPA 6010C | 09/21/10 14:36 | JDH | |
| **Beryllium [7440-41-7] ^** | **0.0210** | J | mg/kg dry | 1 | 0.0133 | 0.0552 | 0I20010 | EPA 6010C | 09/21/10 14:36 | JDH | |
| Cadmium [7440-43-9] ^ | 0.0106 | U | mg/kg dry | 1 | 0.0106 | 0.0552 | 0I20010 | EPA 6010C | 09/21/10 14:36 | JDH | |
| **Chromium [7440-47-3] ^** | **29.2** | | mg/kg dry | 1 | 0.110 | 0.552 | 0I20010 | EPA 6010C | 09/21/10 14:36 | JDH | |
| **Copper [7440-50-8] ^** | **49.2** | | mg/kg dry | 1 | 0.210 | 0.552 | 0I20010 | EPA 6010C | 09/21/10 14:36 | JDH | |
| **Lead [7439-92-1] ^** | **3.17** | | mg/kg dry | 1 | 0.133 | 0.552 | 0I20010 | EPA 6010C | 09/21/10 14:36 | JDH | |
| **Manganese [7439-96-5] ^** | **2.61** | | mg/kg dry | 1 | 0.110 | 0.552 | 0I20010 | EPA 6010C | 09/21/10 14:36 | JDH | |
| Mercury [7439-97-6] ^ | 0.00530 | U | mg/kg dry | 1 | 0.00530 | 0.0110 | 0I14017 | EPA 7471B | 09/14/10 16:26 | NLH | |
| Nickel [7440-02-0] ^ | 0.398 | U | mg/kg dry | 1 | 0.398 | 2.76 | 0I20010 | EPA 6010C | 09/21/10 14:36 | JDH | |
| **Selenium [7782-49-2] ^** | **23.6** | B | mg/kg dry | 1 | 0.110 | 0.552 | 0I20010 | EPA 6010C | 09/21/10 14:36 | JDH | QB-01 |
| Silver [7440-22-4] ^ | 0.110 | U | mg/kg dry | 1 | 0.110 | 0.552 | 0I20010 | EPA 6010C | 09/21/10 14:36 | JDH | |
| **Thallium [7440-28-0] ^** | **0.637** | | mg/kg dry | 1 | 0.110 | 0.552 | 0I20010 | EPA 6010C | 09/21/10 14:36 | JDH | |
| **Zinc [7440-66-6] ^** | **3.32** | | mg/kg dry | 1 | 1.22 | 2.76 | 0I20010 | EPA 6010C | 09/21/10 14:36 | JDH | |

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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**Description:** GP-7 (25-29)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-03
**Sampled:** 09/08/10 18:40
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 88.3

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.00020 | U | mg/kg dry | 1 | 0.00020 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.00028 | U | mg/kg dry | 1 | 0.00028 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.00034 | U | mg/kg dry | 1 | 0.00034 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.00036 | U | mg/kg dry | 1 | 0.00036 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.00039 | U | mg/kg dry | 1 | 0.00039 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.00031 | U | mg/kg dry | 1 | 0.00031 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.00089 | U | mg/kg dry | 1 | 0.00089 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.00052 | U | mg/kg dry | 1 | 0.00052 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.00031 | U | mg/kg dry | 1 | 0.00031 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.00043 | U | mg/kg dry | 1 | 0.00043 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 2-Butanone [78-93-3] ^ | 0.00088 | U | mg/kg dry | 1 | 0.00088 | 0.0057 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.00055 | U | mg/kg dry | 1 | 0.00055 | 0.0057 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.00020 | U | mg/kg dry | 1 | 0.00020 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.00085 | U | mg/kg dry | 1 | 0.00085 | 0.0057 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 0.00065 | U | mg/kg dry | 1 | 0.00065 | 0.0057 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Acetone [67-64-1] ^ | 0.0014 | U | mg/kg dry | 1 | 0.0014 | 0.0057 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Benzene [71-43-2] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.00046 | U | mg/kg dry | 1 | 0.00046 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.00027 | U | mg/kg dry | 1 | 0.00027 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Bromoform [75-25-2] ^ | 0.00051 | U | mg/kg dry | 1 | 0.00051 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Bromomethane [74-83-9] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.00044 | U | mg/kg dry | 1 | 0.00044 | 0.0057 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Carbon Tetrachloride [56-23-5] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Chloroethane [75-00-3] ^ | 0.00028 | U | mg/kg dry | 1 | 0.00028 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Chloroform [67-66-3] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Chloromethane [74-87-3] ^ | 0.00017 | U | mg/kg dry | 1 | 0.00017 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.00015 | U | mg/kg dry | 1 | 0.00015 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.00040 | U | mg/kg dry | 1 | 0.00040 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.00035 | U | mg/kg dry | 1 | 0.00035 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.00051 | U | mg/kg dry | 1 | 0.00051 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.00040 | U | mg/kg dry | 1 | 0.00040 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Isopropylbenzene [98-82-8] ^ | 0.00017 | U | mg/kg dry | 1 | 0.00017 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0023 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Methylene Chloride [75-09-2] ^ | 0.00063 | U | mg/kg dry | 1 | 0.00063 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |

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**Description:** GP-7 (25-29)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-03
**Sampled:** 09/08/10 18:40
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 88.3

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.00034 | U | mg/kg dry | 1 | 0.00034 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Naphthalene [91-20-3] ^ | 0.00027 | U | mg/kg dry | 1 | 0.00027 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.00020 | U | mg/kg dry | 1 | 0.00020 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| o-Xylene [95-47-6] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Styrene [100-42-5] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.00032 | U | mg/kg dry | 1 | 0.00032 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Toluene [108-88-3] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.00044 | U | mg/kg dry | 1 | 0.00044 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.00031 | U | mg/kg dry | 1 | 0.00031 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.00027 | U | mg/kg dry | 1 | 0.00027 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.00063 | U | mg/kg dry | 1 | 0.00063 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *51* | *1* | *50.0* | *101 %* | *61-118* | *0I15005* | *EPA 8260B* | *09/15/10 22:28* | *JKG* | |
| *Dibromofluoromethane* | *46* | *1* | *50.0* | *92 %* | *66-114* | *0I15005* | *EPA 8260B* | *09/15/10 22:28* | *JKG* | |
| *Toluene-d8* | *52* | *1* | *50.0* | *103 %* | *63-118* | *0I15005* | *EPA 8260B* | *09/15/10 22:28* | *JKG* | |

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**Description:** GP-7 (25-29)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-03
**Sampled:** 09/08/10 18:40
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 88.3

## Tentatively Identified Compounds by Volatile GCMS

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon Dioxide [124-38-9] | 0.11 | J | mg/kg dry | 1 | | | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Cyclopentasiloxane, decamet... [000541-02-6] | 0.0053 | JB | mg/kg dry | 1 | | | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |
| Cyclotetrasiloxane, octamet... [000556-67-2] | 0.013 | J | mg/kg dry | 1 | | | 0I15005 | EPA 8260B | 09/15/10 22:28 | JKG | |

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**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-03
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**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 88.3

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.036 | U | mg/kg dry | 1 | 0.036 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 1-Methylnaphthalene [90-12-0] ^ | 0.040 | U | mg/kg dry | 1 | 0.040 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 2,4,5-Trichlorophenol [95-95-4] ^ | 0.037 | U | mg/kg dry | 1 | 0.037 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 2,4,6-Trichlorophenol [88-06-2] ^ | 0.036 | U | mg/kg dry | 1 | 0.036 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 2,4-Dichlorophenol [120-83-2] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 2,4-Dimethylphenol [105-67-9] ^ | 0.067 | U | mg/kg dry | 1 | 0.067 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 2,4-Dinitrophenol [51-28-5] ^ | 0.053 | U | mg/kg dry | 1 | 0.053 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 2,4-Dinitrotoluene [121-14-2] ^ | 0.035 | U | mg/kg dry | 1 | 0.035 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 2,6-Dinitrotoluene [606-20-2] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 2-Chloronaphthalene [91-58-7] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 2-Chlorophenol [95-57-8] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 2-Methyl-4,6-dinitrophenol [534-52-1] ^ | 0.057 | U | mg/kg dry | 1 | 0.057 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 2-Methylnaphthalene [91-57-6] ^ | 0.042 | U | mg/kg dry | 1 | 0.042 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 2-Methylphenol [95-48-7] ^ | 0.043 | U | mg/kg dry | 1 | 0.043 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 2-Nitroaniline [88-74-4] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 2-Nitrophenol [88-75-5] ^ | 0.037 | U | mg/kg dry | 1 | 0.037 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 3 & 4-Methylphenol [108-39-4/106-44-5] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 3,3'-Dichlorobenzidine [91-94-1] ^ | 0.048 | U | mg/kg dry | 1 | 0.048 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 3-Nitroaniline [99-09-2] ^ | 0.050 | U | mg/kg dry | 1 | 0.050 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 4-Bromophenyl-phenylether [101-55-3] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 4-Chloro-3-methylphenol [59-50-7] ^ | 0.032 | U | mg/kg dry | 1 | 0.032 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 4-Chloroaniline [106-47-8] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 4-Chlorophenyl-phenylether [7005-72-3] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 4-Nitroaniline [100-01-6] ^ | 0.067 | U | mg/kg dry | 1 | 0.067 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| 4-Nitrophenol [100-02-7] ^ | 0.048 | U | mg/kg dry | 1 | 0.048 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Acenaphthene [83-32-9] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Acenaphthylene [208-96-8] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Anthracene [120-12-7] ^ | 0.037 | U | mg/kg dry | 1 | 0.037 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Benzidine [92-87-5] ^ | 0.12 | U | mg/kg dry | 1 | 0.12 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | QV-01 |
| Benzo(a)anthracene [56-55-3] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Benzo(a)pyrene [50-32-8] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Benzo(b)fluoranthene [205-99-2] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Benzo(g,h,i)perylene [191-24-2] ^ | 0.044 | U | mg/kg dry | 1 | 0.044 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Benzo(k)fluoranthene [207-08-9] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Benzoic acid [65-85-0] ^ | 0.12 | U | mg/kg dry | 1 | 0.12 | 1.9 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Benzyl alcohol [100-51-6] ^ | 0.075 | U | mg/kg dry | 1 | 0.075 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Bis(2-chloroethoxy)methane [111-91-1] ^ | 0.024 | U | mg/kg dry | 1 | 0.024 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Bis(2-chloroethyl)ether [111-44-4] ^ | 0.057 | U | mg/kg dry | 1 | 0.057 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Bis(2-chloroisopropyl)ether [108-60-1] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Bis(2-ethylhexyl)phthalate [117-81-7] ^ | 0.042 | U | mg/kg dry | 1 | 0.042 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Butylbenzylphthalate [85-68-7] ^ | 0.039 | U | mg/kg dry | 1 | 0.039 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | QV-02 |
| Chrysene [218-01-9] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Dibenzo(a,h)anthracene [53-70-3] ^ | 0.046 | U | mg/kg dry | 1 | 0.046 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Dibenzofuran [132-64-9] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Diethylphthalate [84-66-2] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Dimethylphthalate [131-11-3] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Di-n-butylphthalate [84-74-2] ^ | 0.035 | U | mg/kg dry | 1 | 0.035 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Di-n-octylphthalate [117-84-0] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |

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**Description:** GP-7 (25-29)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-03
**Sampled:** 09/08/10 18:40
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 88.3

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene [206-44-0] ^ | 0.049 | U | mg/kg dry | 1 | 0.049 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Fluorene [86-73-7] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Hexachlorobenzene [118-74-1] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Hexachlorobutadiene [87-68-3] ^ | 0.032 | U | mg/kg dry | 1 | 0.032 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Hexachlorocyclopentadiene [77-47-4] ^ | 0.049 | U | mg/kg dry | 1 | 0.049 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Hexachloroethane [67-72-1] ^ | 0.037 | U | mg/kg dry | 1 | 0.037 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Indeno(1,2,3-cd)pyrene [193-39-5] ^ | 0.043 | U | mg/kg dry | 1 | 0.043 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Isophorone [78-59-1] ^ | 0.018 | U | mg/kg dry | 1 | 0.018 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Naphthalene [91-20-3] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Nitrobenzene [98-95-3] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| N-Nitrosodimethylamine [62-75-9] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| N-Nitroso-di-n-propylamine [621-64-7] ^ | 0.019 | U | mg/kg dry | 1 | 0.019 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| N-nitrosodiphenylamine/Diphenylamine [86-30-6/122-39-4] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Pentachlorophenol [87-86-5] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Phenanthrene [85-01-8] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Phenol [108-95-2] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Pyrene [129-00-0] ^ | 0.054 | U | mg/kg dry | 1 | 0.054 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |
| Pyridine [110-86-1] ^ | 0.14 | U | mg/kg dry | 1 | 0.14 | 0.37 | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *2.9* | *1* | *3.78* | *76 %* | *28-130* | *0I16021* | *EPA 8270D* | *09/20/10 17:28* | *DFM* | |
| *2-Fluorobiphenyl* | *1.4* | *1* | *1.89* | *76 %* | *56-120* | *0I16021* | *EPA 8270D* | *09/20/10 17:28* | *DFM* | |
| *2-Fluorophenol* | *2.5* | *1* | *3.78* | *66 %* | *49-126* | *0I16021* | *EPA 8270D* | *09/20/10 17:28* | *DFM* | |
| *Nitrobenzene-d5* | *1.4* | *1* | *1.89* | *73 %* | *50-117* | *0I16021* | *EPA 8270D* | *09/20/10 17:28* | *DFM* | |
| *Phenol-d5* | *2.8* | *1* | *3.78* | *73 %* | *56-120* | *0I16021* | *EPA 8270D* | *09/20/10 17:28* | *DFM* | |
| *Terphenyl-d14* | *2.0* | *1* | *1.89* | *104 %* | *36-151* | *0I16021* | *EPA 8270D* | *09/20/10 17:28* | *DFM* | |

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**Description:** GP-7 (25-29)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-03
**Sampled:** 09/08/10 18:40
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 88.3

## Tentatively Identified Compounds by Semivolatile GCMS

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethane, 1,1,2,2-tetrachloro- [000079-34-5] | 0.28 | JB | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | B |
| Unknown [NA] | 0.56 | JB | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 17:28 | DFM | B |

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**Description:** GP-7 (25-29)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-03
**Sampled:** 09/08/10 18:40
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 88.3

## Organochlorine Pesticides by GC

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD [72-54-8] ^ | 0.00036 | U | mg/kg dry | 1 | 0.00036 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| 4,4'-DDE [72-55-9] ^ | 0.00046 | U | mg/kg dry | 1 | 0.00046 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| 4,4'-DDT [50-29-3] ^ | 0.00059 | U | mg/kg dry | 1 | 0.00059 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| Aldrin [309-00-2] ^ | 0.00041 | U | mg/kg dry | 1 | 0.00041 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| alpha-BHC [319-84-6] ^ | 0.00055 | U | mg/kg dry | 1 | 0.00055 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| beta-BHC [319-85-7] ^ | 0.00080 | U | mg/kg dry | 1 | 0.00080 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| Chlordane (tech) [12789-03-6] ^ | 0.0013 | U | mg/kg dry | 1 | 0.0013 | 0.037 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| Chlordane-alpha [5103-71-9] ^ | 0.00052 | U | mg/kg dry | 1 | 0.00052 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| Chlordane-gamma [5566-34-7] ^ | 0.00068 | U | mg/kg dry | 1 | 0.00068 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| delta-BHC [319-86-8] ^ | 0.00034 | U | mg/kg dry | 1 | 0.00034 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| Dieldrin [60-57-1] ^ | 0.00036 | U | mg/kg dry | 1 | 0.00036 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| Endosulfan I [959-98-8] ^ | 0.00046 | U | mg/kg dry | 1 | 0.00046 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| Endosulfan II [33213-65-9] ^ | 0.00044 | U | mg/kg dry | 1 | 0.00044 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| Endosulfan sulfate [1031-07-8] ^ | 0.00054 | U | mg/kg dry | 1 | 0.00054 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| Endrin [72-20-8] ^ | 0.00044 | U | mg/kg dry | 1 | 0.00044 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| Endrin aldehyde [7421-93-4] ^ | 0.00039 | U | mg/kg dry | 1 | 0.00039 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| Endrin ketone [53494-70-5] ^ | 0.00034 | U | mg/kg dry | 1 | 0.00034 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| gamma-BHC [58-89-9] ^ | 0.00048 | U | mg/kg dry | 1 | 0.00048 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| Heptachlor [76-44-8] ^ | 0.00052 | U | mg/kg dry | 1 | 0.00052 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| Heptachlor epoxide [1024-57-3] ^ | 0.00049 | U | mg/kg dry | 1 | 0.00049 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| Isodrin [465-73-6] ^ | 0.00041 | U | mg/kg dry | 1 | 0.00041 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| Methoxychlor [72-43-5] ^ | 0.00048 | U | mg/kg dry | 1 | 0.00048 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| Mirex [2385-85-5] ^ | 0.00063 | U | mg/kg dry | 1 | 0.00063 | 0.0019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |
| Toxaphene [8001-35-2] ^ | 0.011 | U | mg/kg dry | 1 | 0.011 | 0.019 | 0I14011 | EPA 8081B | 09/16/10 19:53 | REF | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | **Notes** |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,5,6-TCMX* | *0.051* | *1* | *0.0378* | *134 %* | *59-137* | *0I14011* | *EPA 8081B* | *09/16/10 19:53* | *REF* | |
| *Decachlorobiphenyl* | *0.041* | *1* | *0.0378* | *110 %* | *60-140* | *0I14011* | *EPA 8081B* | *09/16/10 19:53* | *REF* | |

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**Description:** GP-7 (25-29)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-03
**Sampled:** 09/08/10 18:40
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 88.3

## Metals by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony [7440-36-0] ^ | 0.125 | U | mg/kg dry | 1 | 0.125 | 1.13 | 0I20010 | EPA 6010C | 09/21/10 14:39 | JDH | |
| **Arsenic [7440-38-2] ^** | **1.56** | | mg/kg dry | 1 | 0.113 | 0.566 | 0I20010 | EPA 6010C | 09/21/10 14:39 | JDH | |
| Beryllium [7440-41-7] ^ | 0.0136 | U | mg/kg dry | 1 | 0.0136 | 0.0566 | 0I20010 | EPA 6010C | 09/21/10 14:39 | JDH | |
| Cadmium [7440-43-9] ^ | 0.0109 | U | mg/kg dry | 1 | 0.0109 | 0.0566 | 0I20010 | EPA 6010C | 09/21/10 14:39 | JDH | |
| **Chromium [7440-47-3] ^** | **1.93** | | mg/kg dry | 1 | 0.113 | 0.566 | 0I20010 | EPA 6010C | 09/21/10 14:39 | JDH | |
| **Copper [7440-50-8] ^** | **4.58** | | mg/kg dry | 1 | 0.215 | 0.566 | 0I20010 | EPA 6010C | 09/21/10 14:39 | JDH | |
| **Lead [7439-92-1] ^** | **0.917** | | mg/kg dry | 1 | 0.136 | 0.566 | 0I20010 | EPA 6010C | 09/21/10 14:39 | JDH | |
| **Manganese [7439-96-5] ^** | **0.331** | J | mg/kg dry | 1 | 0.113 | 0.566 | 0I20010 | EPA 6010C | 09/21/10 14:39 | JDH | |
| Mercury [7439-97-6] ^ | 0.00544 | U | mg/kg dry | 1 | 0.00544 | 0.0113 | 0I14017 | EPA 7471B | 09/14/10 16:29 | NLH | |
| Nickel [7440-02-0] ^ | 0.408 | U | mg/kg dry | 1 | 0.408 | 2.83 | 0I20010 | EPA 6010C | 09/21/10 14:39 | JDH | |
| **Selenium [7782-49-2] ^** | **0.904** | B | mg/kg dry | 1 | 0.113 | 0.566 | 0I20010 | EPA 6010C | 09/21/10 14:39 | JDH | J-01 |
| Silver [7440-22-4] ^ | 0.113 | U | mg/kg dry | 1 | 0.113 | 0.566 | 0I20010 | EPA 6010C | 09/21/10 14:39 | JDH | |
| **Thallium [7440-28-0] ^** | **0.235** | J | mg/kg dry | 1 | 0.113 | 0.566 | 0I20010 | EPA 6010C | 09/21/10 14:39 | JDH | |
| Zinc [7440-66-6] ^ | 1.25 | U | mg/kg dry | 1 | 1.25 | 2.83 | 0I20010 | EPA 6010C | 09/21/10 14:39 | JDH | |

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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**Description:** GP-3 (13-17)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-04
**Sampled:** 09/09/10 12:30
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 81.9

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.00015 | U | mg/kg dry | 1 | 0.00015 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.00017 | U | mg/kg dry | 1 | 0.00017 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.00031 | U | mg/kg dry | 1 | 0.00031 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.00020 | U | mg/kg dry | 1 | 0.00020 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.00016 | U | mg/kg dry | 1 | 0.00016 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.00076 | U | mg/kg dry | 1 | 0.00076 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.00044 | U | mg/kg dry | 1 | 0.00044 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.00036 | U | mg/kg dry | 1 | 0.00036 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.00028 | U | mg/kg dry | 1 | 0.00028 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 2-Butanone [78-93-3] ^ | 0.00075 | U | mg/kg dry | 1 | 0.00075 | 0.0048 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.00047 | U | mg/kg dry | 1 | 0.00047 | 0.0048 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.00017 | U | mg/kg dry | 1 | 0.00017 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.00072 | U | mg/kg dry | 1 | 0.00072 | 0.0048 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.00015 | U | mg/kg dry | 1 | 0.00015 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 0.00055 | U | mg/kg dry | 1 | 0.00055 | 0.0048 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Acetone [67-64-1] ^ | 0.0012 | U | mg/kg dry | 1 | 0.0012 | 0.0048 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Benzene [71-43-2] ^ | 0.00016 | U | mg/kg dry | 1 | 0.00016 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.00039 | U | mg/kg dry | 1 | 0.00039 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Bromoform [75-25-2] ^ | 0.00043 | U | mg/kg dry | 1 | 0.00043 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Bromomethane [74-83-9] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.00037 | U | mg/kg dry | 1 | 0.00037 | 0.0048 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Carbon Tetrachloride [56-23-5] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.00016 | U | mg/kg dry | 1 | 0.00016 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Chloroethane [75-00-3] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Chloroform [67-66-3] ^ | 0.00016 | U | mg/kg dry | 1 | 0.00016 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Chloromethane [74-87-3] ^ | 0.00014 | U | mg/kg dry | 1 | 0.00014 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.00022 | U | mg/kg dry | 1 | 0.00022 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.00012 | U | mg/kg dry | 1 | 0.00012 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.00034 | U | mg/kg dry | 1 | 0.00034 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.00030 | U | mg/kg dry | 1 | 0.00030 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.00043 | U | mg/kg dry | 1 | 0.00043 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.00034 | U | mg/kg dry | 1 | 0.00034 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Isopropylbenzene [98-82-8] ^ | 0.00014 | U | mg/kg dry | 1 | 0.00014 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.00035 | U | mg/kg dry | 1 | 0.00035 | 0.0019 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Methylene Chloride [75-09-2] ^ | 0.00054 | U | mg/kg dry | 1 | 0.00054 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |

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**Description:** GP-3 (13-17)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-04
**Sampled:** 09/09/10 12:30
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 81.9

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Naphthalene [91-20-3] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.00017 | U | mg/kg dry | 1 | 0.00017 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| o-Xylene [95-47-6] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Styrene [100-42-5] ^ | 0.00016 | U | mg/kg dry | 1 | 0.00016 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.00015 | U | mg/kg dry | 1 | 0.00015 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.00027 | U | mg/kg dry | 1 | 0.00027 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Toluene [108-88-3] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.00035 | U | mg/kg dry | 1 | 0.00035 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.00037 | U | mg/kg dry | 1 | 0.00037 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.00054 | U | mg/kg dry | 1 | 0.00054 | 0.00096 | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *51* | *1* | *50.0* | *101 %* | *61-118* | *0I15005* | *EPA 8260B* | *09/15/10 22:56* | *JKG* | |
| *Dibromofluoromethane* | *46* | *1* | *50.0* | *93 %* | *66-114* | *0I15005* | *EPA 8260B* | *09/15/10 22:56* | *JKG* | |
| *Toluene-d8* | *51* | *1* | *50.0* | *102 %* | *63-118* | *0I15005* | *EPA 8260B* | *09/15/10 22:56* | *JKG* | |

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**Description:** GP-3 (13-17)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-04
**Sampled:** 09/09/10 12:30
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 81.9

## Tentatively Identified Compounds by Volatile GCMS

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon Dioxide [124-38-9] | 0.13 | J | mg/kg dry | 1 | | | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Cyclopentasiloxane, decamet... [000541-02-6] | 0.0055 | JB | mg/kg dry | 1 | | | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |
| Cyclotetrasiloxane, octamet... [000556-67-2] | 0.012 | J | mg/kg dry | 1 | | | 0I15005 | EPA 8260B | 09/15/10 22:56 | JKG | |

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**Description:** GP-3 (13-17)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-04
**Sampled:** 09/09/10 12:30
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 81.9

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.039 | U | mg/kg dry | 1 | 0.039 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.037 | U | mg/kg dry | 1 | 0.037 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 1-Methylnaphthalene [90-12-0] ^ | 0.043 | U | mg/kg dry | 1 | 0.043 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 2,4,5-Trichlorophenol [95-95-4] ^ | 0.040 | U | mg/kg dry | 1 | 0.040 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 2,4,6-Trichlorophenol [88-06-2] ^ | 0.039 | U | mg/kg dry | 1 | 0.039 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 2,4-Dichlorophenol [120-83-2] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 2,4-Dimethylphenol [105-67-9] ^ | 0.072 | U | mg/kg dry | 1 | 0.072 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 2,4-Dinitrophenol [51-28-5] ^ | 0.057 | U | mg/kg dry | 1 | 0.057 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 2,4-Dinitrotoluene [121-14-2] ^ | 0.038 | U | mg/kg dry | 1 | 0.038 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 2,6-Dinitrotoluene [606-20-2] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 2-Chloronaphthalene [91-58-7] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 2-Chlorophenol [95-57-8] ^ | 0.035 | U | mg/kg dry | 1 | 0.035 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 2-Methyl-4,6-dinitrophenol [534-52-1] ^ | 0.061 | U | mg/kg dry | 1 | 0.061 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 2-Methylnaphthalene [91-57-6] ^ | 0.045 | U | mg/kg dry | 1 | 0.045 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 2-Methylphenol [95-48-7] ^ | 0.046 | U | mg/kg dry | 1 | 0.046 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 2-Nitroaniline [88-74-4] ^ | 0.037 | U | mg/kg dry | 1 | 0.037 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 2-Nitrophenol [88-75-5] ^ | 0.040 | U | mg/kg dry | 1 | 0.040 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 3 & 4-Methylphenol [108-39-4/106-44-5] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 3,3'-Dichlorobenzidine [91-94-1] ^ | 0.051 | U | mg/kg dry | 1 | 0.051 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 3-Nitroaniline [99-09-2] ^ | 0.054 | U | mg/kg dry | 1 | 0.054 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 4-Bromophenyl-phenylether [101-55-3] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 4-Chloro-3-methylphenol [59-50-7] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 4-Chloroaniline [106-47-8] ^ | 0.037 | U | mg/kg dry | 1 | 0.037 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 4-Chlorophenyl-phenylether [7005-72-3] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 4-Nitroaniline [100-01-6] ^ | 0.072 | U | mg/kg dry | 1 | 0.072 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| 4-Nitrophenol [100-02-7] ^ | 0.051 | U | mg/kg dry | 1 | 0.051 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Acenaphthene [83-32-9] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Acenaphthylene [208-96-8] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Anthracene [120-12-7] ^ | 0.040 | U | mg/kg dry | 1 | 0.040 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Benzidine [92-87-5] ^ | 0.13 | U | mg/kg dry | 1 | 0.13 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | QV-01 |
| Benzo(a)anthracene [56-55-3] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Benzo(a)pyrene [50-32-8] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Benzo(b)fluoranthene [205-99-2] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Benzo(g,h,i)perylene [191-24-2] ^ | 0.048 | U | mg/kg dry | 1 | 0.048 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Benzo(k)fluoranthene [207-08-9] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Benzoic acid [65-85-0] ^ | 0.13 | U | mg/kg dry | 1 | 0.13 | 2.1 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Benzyl alcohol [100-51-6] ^ | 0.081 | U | mg/kg dry | 1 | 0.081 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Bis(2-chloroethoxy)methane [111-91-1] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Bis(2-chloroethyl)ether [111-44-4] ^ | 0.061 | U | mg/kg dry | 1 | 0.061 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Bis(2-chloroisopropyl)ether [108-60-1] ^ | 0.032 | U | mg/kg dry | 1 | 0.032 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Bis(2-ethylhexyl)phthalate [117-81-7] ^ | 0.045 | U | mg/kg dry | 1 | 0.045 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Butylbenzylphthalate [85-68-7] ^ | 0.042 | U | mg/kg dry | 1 | 0.042 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | QV-02 |
| Chrysene [218-01-9] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Dibenzo(a,h)anthracene [53-70-3] ^ | 0.050 | U | mg/kg dry | 1 | 0.050 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Dibenzofuran [132-64-9] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Diethylphthalate [84-66-2] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Dimethylphthalate [131-11-3] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Di-n-butylphthalate [84-74-2] ^ | 0.038 | U | mg/kg dry | 1 | 0.038 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Di-n-octylphthalate [117-84-0] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |

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**Description:** GP-3 (13-17)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-04
**Sampled:** 09/09/10 12:30
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 81.9

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene [206-44-0] ^ | 0.053 | U | mg/kg dry | 1 | 0.053 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Fluorene [86-73-7] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Hexachlorobenzene [118-74-1] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Hexachlorobutadiene [87-68-3] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Hexachlorocyclopentadiene [77-47-4] ^ | 0.053 | U | mg/kg dry | 1 | 0.053 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Hexachloroethane [67-72-1] ^ | 0.040 | U | mg/kg dry | 1 | 0.040 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Indeno(1,2,3-cd)pyrene [193-39-5] ^ | 0.046 | U | mg/kg dry | 1 | 0.046 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Isophorone [78-59-1] ^ | 0.020 | U | mg/kg dry | 1 | 0.020 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Naphthalene [91-20-3] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Nitrobenzene [98-95-3] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| N-Nitrosodimethylamine [62-75-9] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| N-Nitroso-di-n-propylamine [621-64-7] ^ | 0.021 | U | mg/kg dry | 1 | 0.021 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| N-nitrosodiphenylamine/Diphenylamine [86-30-6/122-39-4] ^ | 0.032 | U | mg/kg dry | 1 | 0.032 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Pentachlorophenol [87-86-5] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Phenanthrene [85-01-8] ^ | 0.032 | U | mg/kg dry | 1 | 0.032 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Phenol [108-95-2] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Pyrene [129-00-0] ^ | 0.059 | U | mg/kg dry | 1 | 0.059 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Pyridine [110-86-1] ^ | 0.15 | U | mg/kg dry | 1 | 0.15 | 0.40 | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *3.3* | *1* | *4.07* | *81 %* | *28-130* | *0I16021* | *EPA 8270D* | *09/20/10 21:26* | *DFM* | |
| *2-Fluorobiphenyl* | *1.7* | *1* | *2.04* | *83 %* | *56-120* | *0I16021* | *EPA 8270D* | *09/20/10 21:26* | *DFM* | |
| *2-Fluorophenol* | *2.9* | *1* | *4.07* | *71 %* | *49-126* | *0I16021* | *EPA 8270D* | *09/20/10 21:26* | *DFM* | |
| *Nitrobenzene-d5* | *1.6* | *1* | *2.04* | *81 %* | *50-117* | *0I16021* | *EPA 8270D* | *09/20/10 21:26* | *DFM* | |
| *Phenol-d5* | *3.2* | *1* | *4.07* | *79 %* | *56-120* | *0I16021* | *EPA 8270D* | *09/20/10 21:26* | *DFM* | |
| *Terphenyl-d14* | *2.1* | *1* | *2.04* | *104 %* | *36-151* | *0I16021* | *EPA 8270D* | *09/20/10 21:26* | *DFM* | |

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**Description:** GP-3 (13-17)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-04
**Sampled:** 09/09/10 12:30
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 81.9

## Tentatively Identified Compounds by Semivolatile GCMS

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7-Oxabicyclo[4.1.0]heptane [000286-20-4] | 0.21 | J | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Ethane, 1,1,2,2-tetrachloro- [000079-34-5] | 0.43 | JB | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | B |
| Ethane, 1,1,2-trichloro- [000079-00-5] | 0.18 | J | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | |
| Unknown [NA] | 0.63 | JB | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 21:26 | DFM | B |

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**Description:** GP-3 (13-17)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-04
**Sampled:** 09/09/10 12:30
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 81.9

## Organochlorine Pesticides by GC

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD [72-54-8] ^ | 0.00039 | U | mg/kg dry | 1 | 0.00039 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| 4,4'-DDE [72-55-9] ^ | 0.00050 | U | mg/kg dry | 1 | 0.00050 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| 4,4'-DDT [50-29-3] ^ | 0.00064 | U | mg/kg dry | 1 | 0.00064 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| Aldrin [309-00-2] ^ | 0.00044 | U | mg/kg dry | 1 | 0.00044 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| alpha-BHC [319-84-6] ^ | 0.00060 | U | mg/kg dry | 1 | 0.00060 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| beta-BHC [319-85-7] ^ | 0.00087 | U | mg/kg dry | 1 | 0.00087 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| Chlordane (tech) [12789-03-6] ^ | 0.0014 | U | mg/kg dry | 1 | 0.0014 | 0.040 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| Chlordane-alpha [5103-71-9] ^ | 0.00056 | U | mg/kg dry | 1 | 0.00056 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| Chlordane-gamma [5566-34-7] ^ | 0.00073 | U | mg/kg dry | 1 | 0.00073 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| delta-BHC [319-86-8] ^ | 0.00037 | U | mg/kg dry | 1 | 0.00037 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| Dieldrin [60-57-1] ^ | 0.00039 | U | mg/kg dry | 1 | 0.00039 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| Endosulfan I [959-98-8] ^ | 0.00050 | U | mg/kg dry | 1 | 0.00050 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| Endosulfan II [33213-65-9] ^ | 0.00048 | U | mg/kg dry | 1 | 0.00048 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| Endosulfan sulfate [1031-07-8] ^ | 0.00059 | U | mg/kg dry | 1 | 0.00059 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| Endrin [72-20-8] ^ | 0.00048 | U | mg/kg dry | 1 | 0.00048 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| Endrin aldehyde [7421-93-4] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| Endrin ketone [53494-70-5] ^ | 0.00037 | U | mg/kg dry | 1 | 0.00037 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| gamma-BHC [58-89-9] ^ | 0.00051 | U | mg/kg dry | 1 | 0.00051 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| Heptachlor [76-44-8] ^ | 0.00056 | U | mg/kg dry | 1 | 0.00056 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| Heptachlor epoxide [1024-57-3] ^ | 0.00053 | U | mg/kg dry | 1 | 0.00053 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| Isodrin [465-73-6] ^ | 0.00044 | U | mg/kg dry | 1 | 0.00044 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| Methoxychlor [72-43-5] ^ | 0.00051 | U | mg/kg dry | 1 | 0.00051 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| Mirex [2385-85-5] ^ | 0.00068 | U | mg/kg dry | 1 | 0.00068 | 0.0021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |
| Toxaphene [8001-35-2] ^ | 0.012 | U | mg/kg dry | 1 | 0.012 | 0.021 | OI14011 | EPA 8081B | 09/16/10 20:06 | REF | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,5,6-TCMX* | *0.061* | *1* | *0.0407* | *151 %* | *59-137* | *OI14011* | *EPA 8081B* | *09/16/10 20:06* | *REF* | *QS-03* |
| *Decachlorobiphenyl* | *0.050* | *1* | *0.0407* | *124 %* | *60-140* | *OI14011* | *EPA 8081B* | *09/16/10 20:06* | *REF* | |

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**Description:** GP-3 (13-17)
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-04
**Sampled:** 09/09/10 12:30
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 81.9

## Metals by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony [7440-36-0] ^ | 0.134 | U | mg/kg dry | 1 | 0.134 | 1.22 | 0I20010 | EPA 6010C | 09/21/10 14:42 | JDH | |
| **Arsenic [7440-38-2] ^** | **4.04** | | mg/kg dry | 1 | 0.122 | 0.611 | 0I20010 | EPA 6010C | 09/21/10 14:42 | JDH | |
| Beryllium [7440-41-7] ^ | 0.0147 | U | mg/kg dry | 1 | 0.0147 | 0.0611 | 0I20010 | EPA 6010C | 09/21/10 14:42 | JDH | |
| Cadmium [7440-43-9] ^ | 0.0117 | U | mg/kg dry | 1 | 0.0117 | 0.0611 | 0I20010 | EPA 6010C | 09/21/10 14:42 | JDH | |
| **Chromium [7440-47-3] ^** | **7.44** | | mg/kg dry | 1 | 0.122 | 0.611 | 0I20010 | EPA 6010C | 09/21/10 14:42 | JDH | |
| **Copper [7440-50-8] ^** | **5.78** | | mg/kg dry | 1 | 0.232 | 0.611 | 0I20010 | EPA 6010C | 09/21/10 14:42 | JDH | |
| **Lead [7439-92-1] ^** | **1.50** | | mg/kg dry | 1 | 0.147 | 0.611 | 0I20010 | EPA 6010C | 09/21/10 14:42 | JDH | |
| **Manganese [7439-96-5] ^** | **3.38** | | mg/kg dry | 1 | 0.122 | 0.611 | 0I20010 | EPA 6010C | 09/21/10 14:42 | JDH | |
| **Mercury [7439-97-6] ^** | **0.0242** | | mg/kg dry | 1 | 0.00586 | 0.0122 | 0I14017 | EPA 7471B | 09/14/10 16:32 | NLH | |
| Nickel [7440-02-0] ^ | 0.440 | U | mg/kg dry | 1 | 0.440 | 3.05 | 0I20010 | EPA 6010C | 09/21/10 14:42 | JDH | |
| **Selenium [7782-49-2] ^** | **1.12** | B | mg/kg dry | 1 | 0.122 | 0.611 | 0I20010 | EPA 6010C | 09/21/10 14:42 | JDH | QB-01 |
| Silver [7440-22-4] ^ | 0.122 | U | mg/kg dry | 1 | 0.122 | 0.611 | 0I20010 | EPA 6010C | 09/21/10 14:42 | JDH | |
| **Thallium [7440-28-0] ^** | **0.541** | J | mg/kg dry | 1 | 0.122 | 0.611 | 0I20010 | EPA 6010C | 09/21/10 14:42 | JDH | |
| **Zinc [7440-66-6] ^** | **2.11** | J | mg/kg dry | 1 | 1.34 | 3.05 | 0I20010 | EPA 6010C | 09/21/10 14:42 | JDH | |

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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**Description:** Dup
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-05
**Sampled:** 09/08/10 00:00
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 93.3

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.00017 | U | mg/kg dry | 1 | 0.00017 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.00027 | U | mg/kg dry | 1 | 0.00027 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.00032 | U | mg/kg dry | 1 | 0.00032 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.00034 | U | mg/kg dry | 1 | 0.00034 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.00023 | U | mg/kg dry | 1 | 0.00023 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.00036 | U | mg/kg dry | 1 | 0.00036 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.00085 | U | mg/kg dry | 1 | 0.00085 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.00049 | U | mg/kg dry | 1 | 0.00049 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.00041 | U | mg/kg dry | 1 | 0.00041 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.00028 | U | mg/kg dry | 1 | 0.00028 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.00031 | U | mg/kg dry | 1 | 0.00031 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 2-Butanone [78-93-3] ^ | 0.00084 | U | mg/kg dry | 1 | 0.00084 | 0.0054 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.00053 | U | mg/kg dry | 1 | 0.00053 | 0.0054 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.00080 | U | mg/kg dry | 1 | 0.00080 | 0.0054 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.00028 | U | mg/kg dry | 1 | 0.00028 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.00017 | U | mg/kg dry | 1 | 0.00017 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 0.00061 | U | mg/kg dry | 1 | 0.00061 | 0.0054 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Acetone [67-64-1] ^ | 0.0013 | U | mg/kg dry | 1 | 0.0013 | 0.0054 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Benzene [71-43-2] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.00044 | U | mg/kg dry | 1 | 0.00044 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Bromoform [75-25-2] ^ | 0.00048 | U | mg/kg dry | 1 | 0.00048 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Bromomethane [74-83-9] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0054 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Carbon Tetrachloride [56-23-5] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Chloroethane [75-00-3] ^ | 0.00027 | U | mg/kg dry | 1 | 0.00027 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Chloroform [67-66-3] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Chloromethane [74-87-3] ^ | 0.00016 | U | mg/kg dry | 1 | 0.00016 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.00025 | U | mg/kg dry | 1 | 0.00025 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.00014 | U | mg/kg dry | 1 | 0.00014 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.00038 | U | mg/kg dry | 1 | 0.00038 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.00033 | U | mg/kg dry | 1 | 0.00033 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.00048 | U | mg/kg dry | 1 | 0.00048 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.00038 | U | mg/kg dry | 1 | 0.00038 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Isopropylbenzene [98-82-8] ^ | 0.00016 | U | mg/kg dry | 1 | 0.00016 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.00040 | U | mg/kg dry | 1 | 0.00040 | 0.0021 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Methylene Chloride [75-09-2] ^ | 0.00060 | U | mg/kg dry | 1 | 0.00060 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |

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**Description:** Dup
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-05
**Sampled:** 09/08/10 00:00
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 93.3

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.00032 | U | mg/kg dry | 1 | 0.00032 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Naphthalene [91-20-3] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.00019 | U | mg/kg dry | 1 | 0.00019 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| o-Xylene [95-47-6] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.00024 | U | mg/kg dry | 1 | 0.00024 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Styrene [100-42-5] ^ | 0.00018 | U | mg/kg dry | 1 | 0.00018 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.00017 | U | mg/kg dry | 1 | 0.00017 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.00030 | U | mg/kg dry | 1 | 0.00030 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Toluene [108-88-3] ^ | 0.00021 | U | mg/kg dry | 1 | 0.00021 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.00040 | U | mg/kg dry | 1 | 0.00040 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.00029 | U | mg/kg dry | 1 | 0.00029 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.00028 | U | mg/kg dry | 1 | 0.00028 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.00026 | U | mg/kg dry | 1 | 0.00026 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.00060 | U | mg/kg dry | 1 | 0.00060 | 0.0011 | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *51* | *1* | *50.0* | *103 %* | *61-118* | *0I15005* | *EPA 8260B* | *09/15/10 23:25* | *JKG* | |
| *Dibromofluoromethane* | *46* | *1* | *50.0* | *93 %* | *66-114* | *0I15005* | *EPA 8260B* | *09/15/10 23:25* | *JKG* | |
| *Toluene-d8* | *50* | *1* | *50.0* | *100 %* | *63-118* | *0I15005* | *EPA 8260B* | *09/15/10 23:25* | *JKG* | |

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**Description:** Dup
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-05
**Sampled:** 09/08/10 00:00
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 93.3

## Tentatively Identified Compounds by Volatile GCMS

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon Dioxide [124-38-9] | 0.26 | J | mg/kg dry | 1 | | | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Cyclopentasiloxane, decamet... [000541-02-6] | 0.0077 | JB | mg/kg dry | 1 | | | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |
| Cyclotetrasiloxane, octamet... [000556-67-2] | 0.025 | J | mg/kg dry | 1 | | | 0I15005 | EPA 8260B | 09/15/10 23:25 | JKG | |

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**Description:** Dup
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-05
**Sampled:** 09/08/10 00:00
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 93.3

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.025 | U | mg/kg dry | 1 | 0.025 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.032 | U | mg/kg dry | 1 | 0.032 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 1-Methylnaphthalene [90-12-0] ^ | 0.038 | U | mg/kg dry | 1 | 0.038 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 2,4,5-Trichlorophenol [95-95-4] ^ | 0.035 | U | mg/kg dry | 1 | 0.035 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 2,4,6-Trichlorophenol [88-06-2] ^ | 0.034 | U | mg/kg dry | 1 | 0.034 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 2,4-Dichlorophenol [120-83-2] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 2,4-Dimethylphenol [105-67-9] ^ | 0.063 | U | mg/kg dry | 1 | 0.063 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 2,4-Dinitrophenol [51-28-5] ^ | 0.050 | U | mg/kg dry | 1 | 0.050 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 2,4-Dinitrotoluene [121-14-2] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 2,6-Dinitrotoluene [606-20-2] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 2-Chloronaphthalene [91-58-7] ^ | 0.026 | U | mg/kg dry | 1 | 0.026 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 2-Chlorophenol [95-57-8] ^ | 0.031 | U | mg/kg dry | 1 | 0.031 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 2-Methyl-4,6-dinitrophenol [534-52-1] ^ | 0.054 | U | mg/kg dry | 1 | 0.054 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 2-Methylnaphthalene [91-57-6] ^ | 0.040 | U | mg/kg dry | 1 | 0.040 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 2-Methylphenol [95-48-7] ^ | 0.041 | U | mg/kg dry | 1 | 0.041 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 2-Nitroaniline [88-74-4] ^ | 0.032 | U | mg/kg dry | 1 | 0.032 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 2-Nitrophenol [88-75-5] ^ | 0.035 | U | mg/kg dry | 1 | 0.035 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 3 & 4-Methylphenol [108-39-4/106-44-5] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 3,3'-Dichlorobenzidine [91-94-1] ^ | 0.045 | U | mg/kg dry | 1 | 0.045 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 3-Nitroaniline [99-09-2] ^ | 0.047 | U | mg/kg dry | 1 | 0.047 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 4-Bromophenyl-phenylether [101-55-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 4-Chloro-3-methylphenol [59-50-7] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 4-Chloroaniline [106-47-8] ^ | 0.032 | U | mg/kg dry | 1 | 0.032 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 4-Chlorophenyl-phenylether [7005-72-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 4-Nitroaniline [100-01-6] ^ | 0.063 | U | mg/kg dry | 1 | 0.063 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| 4-Nitrophenol [100-02-7] ^ | 0.045 | U | mg/kg dry | 1 | 0.045 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Acenaphthene [83-32-9] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Acenaphthylene [208-96-8] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Anthracene [120-12-7] ^ | 0.035 | U | mg/kg dry | 1 | 0.035 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Benzidine [92-87-5] ^ | 0.12 | U | mg/kg dry | 1 | 0.12 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | QV-01 |
| Benzo(a)anthracene [56-55-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Benzo(a)pyrene [50-32-8] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Benzo(b)fluoranthene [205-99-2] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Benzo(g,h,i)perylene [191-24-2] ^ | 0.042 | U | mg/kg dry | 1 | 0.042 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Benzo(k)fluoranthene [207-08-9] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Benzoic acid [65-85-0] ^ | 0.12 | U | mg/kg dry | 1 | 0.12 | 1.8 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Benzyl alcohol [100-51-6] ^ | 0.071 | U | mg/kg dry | 1 | 0.071 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Bis(2-chloroethoxy)methane [111-91-1] ^ | 0.023 | U | mg/kg dry | 1 | 0.023 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Bis(2-chloroethyl)ether [111-44-4] ^ | 0.054 | U | mg/kg dry | 1 | 0.054 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Bis(2-chloroisopropyl)ether [108-60-1] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Bis(2-ethylhexyl)phthalate [117-81-7] ^ | 0.040 | U | mg/kg dry | 1 | 0.040 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Butylbenzylphthalate [85-68-7] ^ | 0.036 | U | mg/kg dry | 1 | 0.036 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | QV-02 |
| Chrysene [218-01-9] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Dibenzo(a,h)anthracene [53-70-3] ^ | 0.044 | U | mg/kg dry | 1 | 0.044 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Dibenzofuran [132-64-9] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Diethylphthalate [84-66-2] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Dimethylphthalate [131-11-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Di-n-butylphthalate [84-74-2] ^ | 0.033 | U | mg/kg dry | 1 | 0.033 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Di-n-octylphthalate [117-84-0] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |

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**Description:** Dup
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-05
**Sampled:** 09/08/10 00:00
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 93.3

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene [206-44-0] ^ | 0.046 | U | mg/kg dry | 1 | 0.046 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Fluorene [86-73-7] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Hexachlorobenzene [118-74-1] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Hexachlorobutadiene [87-68-3] ^ | 0.030 | U | mg/kg dry | 1 | 0.030 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Hexachlorocyclopentadiene [77-47-4] ^ | 0.046 | U | mg/kg dry | 1 | 0.046 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Hexachloroethane [67-72-1] ^ | 0.035 | U | mg/kg dry | 1 | 0.035 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Indeno(1,2,3-cd)pyrene [193-39-5] ^ | 0.041 | U | mg/kg dry | 1 | 0.041 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Isophorone [78-59-1] ^ | 0.017 | U | mg/kg dry | 1 | 0.017 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Naphthalene [91-20-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Nitrobenzene [98-95-3] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| N-Nitrosodimethylamine [62-75-9] ^ | 0.029 | U | mg/kg dry | 1 | 0.029 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| N-Nitroso-di-n-propylamine [621-64-7] ^ | 0.018 | U | mg/kg dry | 1 | 0.018 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| N-nitrosodiphenylamine/Diphenylamine [86-30-6/122-39-4] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Pentachlorophenol [87-86-5] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Phenanthrene [85-01-8] ^ | 0.028 | U | mg/kg dry | 1 | 0.028 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Phenol [108-95-2] ^ | 0.027 | U | mg/kg dry | 1 | 0.027 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Pyrene [129-00-0] ^ | 0.051 | U | mg/kg dry | 1 | 0.051 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Pyridine [110-86-1] ^ | 0.13 | U | mg/kg dry | 1 | 0.13 | 0.35 | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *2.9* | *1* | *3.57* | *82 %* | *28-130* | *0I16021* | *EPA 8270D* | *09/20/10 21:55* | *DFM* | |
| *2-Fluorobiphenyl* | *1.5* | *1* | *1.79* | *83 %* | *56-120* | *0I16021* | *EPA 8270D* | *09/20/10 21:55* | *DFM* | |
| *2-Fluorophenol* | *2.5* | *1* | *3.57* | *70 %* | *49-126* | *0I16021* | *EPA 8270D* | *09/20/10 21:55* | *DFM* | |
| *Nitrobenzene-d5* | *1.5* | *1* | *1.79* | *82 %* | *50-117* | *0I16021* | *EPA 8270D* | *09/20/10 21:55* | *DFM* | |
| *Phenol-d5* | *2.8* | *1* | *3.57* | *79 %* | *56-120* | *0I16021* | *EPA 8270D* | *09/20/10 21:55* | *DFM* | |
| *Terphenyl-d14* | *1.8* | *1* | *1.79* | *101 %* | *36-151* | *0I16021* | *EPA 8270D* | *09/20/10 21:55* | *DFM* | |

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**Description:** Dup
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-05
**Sampled:** 09/08/10 00:00
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 93.3

## Tentatively Identified Compounds by Semivolatile GCMS

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 7-Oxabicyclo[4.1.0]heptane [000286-20-4] | 0.20 | J | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Ethane, 1,1,2,2-tetrachloro- [000079-34-5] | 0.41 | JB | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | B |
| Ethane, 1,1,2-trichloro- [000079-00-5] | 0.18 | J | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | |
| Unknown [NA] | 0.55 | JB | mg/kg dry | 1 | | | 0I16021 | EPA 8270D | 09/20/10 21:55 | DFM | B |

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**Description:** Dup
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-05
**Sampled:** 09/08/10 00:00
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 93.3

## Organochlorine Pesticides by GC

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD [72-54-8] ^ | 0.00034 | U | mg/kg dry | 1 | 0.00034 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| 4,4'-DDE [72-55-9] ^ | 0.00044 | U | mg/kg dry | 1 | 0.00044 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| 4,4'-DDT [50-29-3] ^ | 0.00056 | U | mg/kg dry | 1 | 0.00056 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| Aldrin [309-00-2] ^ | 0.00039 | U | mg/kg dry | 1 | 0.00039 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| alpha-BHC [319-84-6] ^ | 0.00053 | U | mg/kg dry | 1 | 0.00053 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| beta-BHC [319-85-7] ^ | 0.00076 | U | mg/kg dry | 1 | 0.00076 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| Chlordane (tech) [12789-03-6] ^ | 0.0012 | U | mg/kg dry | 1 | 0.0012 | 0.035 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| Chlordane-alpha [5103-71-9] ^ | 0.00049 | U | mg/kg dry | 1 | 0.00049 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| Chlordane-gamma [5566-34-7] ^ | 0.00064 | U | mg/kg dry | 1 | 0.00064 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| delta-BHC [319-86-8] ^ | 0.00032 | U | mg/kg dry | 1 | 0.00032 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| Dieldrin [60-57-1] ^ | 0.00034 | U | mg/kg dry | 1 | 0.00034 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| Endosulfan I [959-98-8] ^ | 0.00044 | U | mg/kg dry | 1 | 0.00044 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| Endosulfan II [33213-65-9] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| Endosulfan sulfate [1031-07-8] ^ | 0.00051 | U | mg/kg dry | 1 | 0.00051 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| Endrin [72-20-8] ^ | 0.00042 | U | mg/kg dry | 1 | 0.00042 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| Endrin aldehyde [7421-93-4] ^ | 0.00036 | U | mg/kg dry | 1 | 0.00036 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| Endrin ketone [53494-70-5] ^ | 0.00032 | U | mg/kg dry | 1 | 0.00032 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| gamma-BHC [58-89-9] ^ | 0.00045 | U | mg/kg dry | 1 | 0.00045 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| Heptachlor [76-44-8] ^ | 0.00049 | U | mg/kg dry | 1 | 0.00049 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| Heptachlor epoxide [1024-57-3] ^ | 0.00046 | U | mg/kg dry | 1 | 0.00046 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| Isodrin [465-73-6] ^ | 0.00039 | U | mg/kg dry | 1 | 0.00039 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| Methoxychlor [72-43-5] ^ | 0.00045 | U | mg/kg dry | 1 | 0.00045 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| Mirex [2385-85-5] ^ | 0.00060 | U | mg/kg dry | 1 | 0.00060 | 0.0018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |
| Toxaphene [8001-35-2] ^ | 0.011 | U | mg/kg dry | 1 | 0.011 | 0.018 | 0I14011 | EPA 8081B | 09/16/10 20:20 | REF | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,5,6-TCMX* | *0.047* | *1* | *0.0357* | *131 %* | *59-137* | *0I14011* | *EPA 8081B* | *09/16/10 20:20* | *REF* | |
| *Decachlorobiphenyl* | *0.038* | *1* | *0.0357* | *107 %* | *60-140* | *0I14011* | *EPA 8081B* | *09/16/10 20:20* | *REF* | |

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**Description:** Dup
**Matrix:** Soil
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-05
**Sampled:** 09/08/10 00:00
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147
**% Solids:** 93.3

## Metals by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony [7440-36-0] ^ | 0.118 | U | mg/kg dry | 1 | 0.118 | 1.07 | 0I20010 | EPA 6010C | 09/21/10 14:54 | JDH | |
| **Arsenic [7440-38-2] ^** | **0.418** | J | mg/kg dry | 1 | 0.107 | 0.536 | 0I20010 | EPA 6010C | 09/21/10 14:54 | JDH | |
| Beryllium [7440-41-7] ^ | 0.0129 | U | mg/kg dry | 1 | 0.0129 | 0.0536 | 0I20010 | EPA 6010C | 09/21/10 14:54 | JDH | |
| Cadmium [7440-43-9] ^ | 0.0103 | U | mg/kg dry | 1 | 0.0103 | 0.0536 | 0I20010 | EPA 6010C | 09/21/10 14:54 | JDH | |
| **Chromium [7440-47-3] ^** | **0.939** | | mg/kg dry | 1 | 0.107 | 0.536 | 0I20010 | EPA 6010C | 09/21/10 14:54 | JDH | |
| **Copper [7440-50-8] ^** | **0.598** | | mg/kg dry | 1 | 0.204 | 0.536 | 0I20010 | EPA 6010C | 09/21/10 14:54 | JDH | |
| **Lead [7439-92-1] ^** | **0.438** | J | mg/kg dry | 1 | 0.129 | 0.536 | 0I20010 | EPA 6010C | 09/21/10 14:54 | JDH | |
| **Manganese [7439-96-5] ^** | **0.312** | J | mg/kg dry | 1 | 0.107 | 0.536 | 0I20010 | EPA 6010C | 09/21/10 14:54 | JDH | |
| Mercury [7439-97-6] ^ | 0.00515 | U | mg/kg dry | 1 | 0.00515 | 0.0107 | 0I14017 | EPA 7471B | 09/14/10 16:41 | NLH | |
| Nickel [7440-02-0] ^ | 0.386 | U | mg/kg dry | 1 | 0.386 | 2.68 | 0I20010 | EPA 6010C | 09/21/10 14:54 | JDH | |
| **Selenium [7782-49-2] ^** | **0.309** | JB | mg/kg dry | 1 | 0.107 | 0.536 | 0I20010 | EPA 6010C | 09/21/10 14:54 | JDH | J-01 |
| Silver [7440-22-4] ^ | 0.107 | U | mg/kg dry | 1 | 0.107 | 0.536 | 0I20010 | EPA 6010C | 09/21/10 14:54 | JDH | |
| **Thallium [7440-28-0] ^** | **0.132** | J | mg/kg dry | 1 | 0.107 | 0.536 | 0I20010 | EPA 6010C | 09/21/10 14:54 | JDH | |
| **Zinc [7440-66-6] ^** | **1.38** | J | mg/kg dry | 1 | 1.18 | 2.68 | 0I20010 | EPA 6010C | 09/21/10 14:54 | JDH | |

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

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**Description:** Equipment Blank
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-06
**Sampled:** 09/09/10 18:00
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane [630-20-6] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,1,1-Trichloroethane [71-55-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,1,2,2-Tetrachloroethane [79-34-5] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,1,2-Trichloroethane [79-00-5] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,1-Dichloroethane [75-34-3] ^ | 0.33 | U | ug/L | 1 | 0.33 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,1-Dichloroethene [75-35-4] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,1-Dichloropropene [563-58-6] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,2,3-Trichlorobenzene [87-61-6] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,2,3-Trichloropropane [96-18-4] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,2,4-Trimethylbenzene [95-63-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,2-Dibromo-3-chloropropane [96-12-8] ^ | 0.48 | U | ug/L | 1 | 0.48 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,2-Dibromoethane [106-93-4] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,2-Dichloroethane [107-06-2] ^ | 0.65 | U | ug/L | 1 | 0.65 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,2-Dichloropropane [78-87-5] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,3,5-Trimethylbenzene [108-67-8] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,3-Dichloropropane [142-28-9] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 2,2-Dichloropropane [594-20-7] ^ | 0.55 | U | ug/L | 1 | 0.55 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 2-Butanone [78-93-3] ^ | 1.0 | U | ug/L | 1 | 1.0 | 5.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 2-Chloroethyl Vinyl Ether [110-75-8] ^ | 0.94 | U | ug/L | 1 | 0.94 | 5.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 2-Chlorotoluene [95-49-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 2-Hexanone [591-78-6] ^ | 0.69 | U | ug/L | 1 | 0.69 | 5.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 4-Chlorotoluene [106-43-4] ^ | 0.25 | U | ug/L | 1 | 0.25 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 4-Isopropyltoluene [99-87-6] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| 4-Methyl-2-pentanone [108-10-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 5.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Acetone [67-64-1] ^ | 1.5 | U | ug/L | 1 | 1.5 | 5.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Benzene [71-43-2] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Bromobenzene [108-86-1] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Bromochloromethane [74-97-5] ^ | 0.42 | U | ug/L | 1 | 0.42 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Bromodichloromethane [75-27-4] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Bromoform [75-25-2] ^ | 0.71 | U | ug/L | 1 | 0.71 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Bromomethane [74-83-9] ^ | 0.49 | U | ug/L | 1 | 0.49 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Carbon disulfide [75-15-0] ^ | 0.54 | U | ug/L | 1 | 0.54 | 5.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Carbon tetrachloride [56-23-5] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Chlorobenzene [108-90-7] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Chloroethane [75-00-3] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Chloroform [67-66-3] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Chloromethane [74-87-3] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| cis-1,2-Dichloroethene [156-59-2] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| cis-1,3-Dichloropropene [10061-01-5] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Dibromochloromethane [124-48-1] ^ | 0.32 | U | ug/L | 1 | 0.32 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Dibromomethane [74-95-3] ^ | 0.37 | U | ug/L | 1 | 0.37 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Dichlorodifluoromethane [75-71-8] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Ethylbenzene [100-41-4] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Hexachlorobutadiene [87-68-3] ^ | 0.35 | U | ug/L | 1 | 0.35 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Isopropylbenzene [98-82-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| m,p-Xylenes [108-38-3/106-42-3] ^ | 0.48 | U | ug/L | 1 | 0.48 | 2.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Methylene chloride [75-09-2] ^ | 0.53 | U | ug/L | 1 | 0.53 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |

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**Description:** Equipment Blank
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-06
**Sampled:** 09/09/10 18:00
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147

## Volatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-tert-Butyl Ether [1634-04-4] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Naphthalene [91-20-3] ^ | 0.39 | U | ug/L | 1 | 0.39 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| n-Butyl Benzene [104-51-8] ^ | 0.20 | U | ug/L | 1 | 0.20 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| n-Propyl Benzene [103-65-1] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| o-Xylene [95-47-6] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| sec-Butylbenzene [135-98-8] ^ | 0.24 | U | ug/L | 1 | 0.24 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Styrene [100-42-5] ^ | 0.26 | U | ug/L | 1 | 0.26 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| tert-Butylbenzene [98-06-6] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Tetrachloroethene [127-18-4] ^ | 0.36 | U | ug/L | 1 | 0.36 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Toluene [108-88-3] ^ | 0.27 | U | ug/L | 1 | 0.27 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| trans-1,2-Dichloroethene [156-60-5] ^ | 0.34 | U | ug/L | 1 | 0.34 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| trans-1,3-Dichloropropene [10061-02-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Trichloroethene [79-01-6] ^ | 0.38 | U | ug/L | 1 | 0.38 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Trichlorofluoromethane [75-69-4] ^ | 0.28 | U | ug/L | 1 | 0.28 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Vinyl chloride [75-01-4] ^ | 0.30 | U | ug/L | 1 | 0.30 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |
| Xylenes (Total) [1330-20-7] ^ | 0.40 | U | ug/L | 1 | 0.40 | 1.0 | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *4-Bromofluorobenzene* | *40* | *1* | *50.0* | *79 %* | *51-122* | *0I14012* | *EPA 8260B* | *09/14/10 15:57* | *JKG* | |
| *Dibromofluoromethane* | *43* | *1* | *50.0* | *86 %* | *68-117* | *0I14012* | *EPA 8260B* | *09/14/10 15:57* | *JKG* | |
| *Toluene-d8* | *44* | *1* | *50.0* | *88 %* | *69-110* | *0I14012* | *EPA 8260B* | *09/14/10 15:57* | *JKG* | |

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**Description:** Equipment Blank
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-06
**Sampled:** 09/09/10 18:00
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147

## Tentatively Identified Compounds by Volatile GCMS

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon Dioxide [124-38-9] | 110 | J | ug/L | 1 | | | 0I14012 | EPA 8260B | 09/14/10 15:57 | JKG | |

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**Description:** Equipment Blank
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-06
**Sampled:** 09/09/10 18:00
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene [120-82-1] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 1,2-Dichlorobenzene [95-50-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 1,3-Dichlorobenzene [541-73-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 1,4-Dichlorobenzene [106-46-7] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 1-Methylnaphthalene [90-12-0] ^ | 1.7 | U | ug/L | 1 | 1.7 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 2,4,5-Trichlorophenol [95-95-4] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 2,4,6-Trichlorophenol [88-06-2] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 2,4-Dichlorophenol [120-83-2] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 2,4-Dimethylphenol [105-67-9] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 2,4-Dinitrophenol [51-28-5] ^ | 2.6 | U | ug/L | 1 | 2.6 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 2,4-Dinitrotoluene [121-14-2] ^ | 2.4 | U | ug/L | 1 | 2.4 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 2,6-Dinitrotoluene [606-20-2] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 2-Chloronaphthalene [91-58-7] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 2-Chlorophenol [95-57-8] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 2-Methyl-4,6-dinitrophenol [534-52-1] ^ | 2.9 | U | ug/L | 1 | 2.9 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 2-Methylnaphthalene [91-57-6] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 2-Methylphenol [95-48-7] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 2-Nitroaniline [88-74-4] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 2-Nitrophenol [88-75-5] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 3 & 4-Methylphenol [108-39-4/106-44-5] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 3,3'-Dichlorobenzidine [91-94-1] ^ | 3.3 | U | ug/L | 1 | 3.3 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 3-Nitroaniline [99-09-2] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 4-Bromophenyl-phenylether [101-55-3] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 4-Chloro-3-methylphenol [59-50-7] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 4-Chloroaniline [106-47-8] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 4-Chlorophenyl-phenylether [7005-72-3] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 4-Nitroaniline [100-01-6] ^ | 3.2 | U | ug/L | 1 | 3.2 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| 4-Nitrophenol [100-02-7] ^ | 2.0 | U | ug/L | 1 | 2.0 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Acenaphthene [83-32-9] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Acenaphthylene [208-96-8] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Anthracene [120-12-7] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Benzidine [92-87-5] ^ | 1.6 | U | ug/L | 1 | 1.6 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Benzo(a)anthracene [56-55-3] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Benzo(a)pyrene [50-32-8] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Benzo(b)fluoranthene [205-99-2] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Benzo(g,h,i)perylene [191-24-2] ^ | 2.4 | U | ug/L | 1 | 2.4 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Benzo(k)fluoranthene [207-08-9] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Benzoic acid [65-85-0] ^ | 1.0 | U | ug/L | 1 | 1.0 | 50 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Benzyl alcohol [100-51-6] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Bis(2-chloroethoxy)methane [111-91-1] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Bis(2-chloroethyl)ether [111-44-4] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Bis(2-chloroisopropyl)ether [108-60-1] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Bis(2-ethylhexyl)phthalate [117-81-7] ^ | 1.7 | U | ug/L | 1 | 1.7 | 5.0 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Butylbenzylphthalate [85-68-7] ^ | 2.0 | U | ug/L | 1 | 2.0 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Chrysene [218-01-9] ^ | 2.0 | U | ug/L | 1 | 2.0 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Dibenzo(a,h)anthracene [53-70-3] ^ | 2.3 | U | ug/L | 1 | 2.3 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Dibenzofuran [132-64-9] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Diethylphthalate [84-66-2] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Dimethylphthalate [131-11-3] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Di-n-butylphthalate [84-74-2] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Di-n-octylphthalate [117-84-0] ^ | 3.1 | U | ug/L | 1 | 3.1 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |

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**Description:** Equipment Blank
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-06
**Sampled:** 09/09/10 18:00
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147

## Semivolatile Organic Compounds by GCMS

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Fluoranthene [206-44-0] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Fluorene [86-73-7] ^ | 1.7 | U | ug/L | 1 | 1.7 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Hexachlorobenzene [118-74-1] ^ | 1.0 | U | ug/L | 1 | 1.0 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Hexachlorobutadiene [87-68-3] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Hexachlorocyclopentadiene [77-47-4] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Hexachloroethane [67-72-1] ^ | 1.1 | U | ug/L | 1 | 1.1 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Indeno(1,2,3-cd)pyrene [193-39-5] ^ | 2.2 | U | ug/L | 1 | 2.2 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Isophorone [78-59-1] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Naphthalene [91-20-3] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Nitrobenzene [98-95-3] ^ | 1.2 | U | ug/L | 1 | 1.2 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| N-Nitrosodimethylamine [62-75-9] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| N-Nitroso-di-n-propylamine [621-64-7] ^ | 1.5 | U | ug/L | 1 | 1.5 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| N-nitrosodiphenylamine/Diphenylamine [86-30-6/122-39-4] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Pentachlorophenol [87-86-5] ^ | 1.8 | U | ug/L | 1 | 1.8 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Phenanthrene [85-01-8] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Phenol [108-95-2] ^ | 1.4 | U | ug/L | 1 | 1.4 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Pyrene [129-00-0] ^ | 2.1 | U | ug/L | 1 | 2.1 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |
| Pyridine [110-86-1] ^ | 1.3 | U | ug/L | 1 | 1.3 | 10 | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,6-Tribromophenol* | *72* | *1* | *100* | *72 %* | *10-179* | *0I14023* | *EPA 8270D* | *09/23/10 02:54* | *DFM* | |
| *2-Fluorobiphenyl* | *35* | *1* | *50.0* | *71 %* | *10-149* | *0I14023* | *EPA 8270D* | *09/23/10 02:54* | *DFM* | |
| *2-Fluorophenol* | *46* | *1* | *100* | *46 %* | *10-110* | *0I14023* | *EPA 8270D* | *09/23/10 02:54* | *DFM* | |
| *Nitrobenzene-d5* | *34* | *1* | *50.0* | *68 %* | *10-149* | *0I14023* | *EPA 8270D* | *09/23/10 02:54* | *DFM* | |
| *Phenol-d5* | *40* | *1* | *100* | *40 %* | *10-88* | *0I14023* | *EPA 8270D* | *09/23/10 02:54* | *DFM* | |
| *Terphenyl-d14* | *42* | *1* | *50.0* | *84 %* | *10-188* | *0I14023* | *EPA 8270D* | *09/23/10 02:54* | *DFM* | |

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**Description:** Equipment Blank
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-06
**Sampled:** 09/09/10 18:00
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147

## Tentatively Identified Compounds by Semivolatile GCMS

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Unknown (01) [NA] | 9.7 | JB | ug/L | 1 | | | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | B |
| Unknown (02) [NA] | 11 | JB | ug/L | 1 | | | 0I14023 | EPA 8270D | 09/23/10 02:54 | DFM | B |

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**Description:** Equipment Blank
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-06
**Sampled:** 09/09/10 18:00
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147

## Organochlorine Pesticides by GC

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD [72-54-8] ^ | 0.013 | U | ug/L | 1 | 0.013 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| 4,4'-DDE [72-55-9] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| 4,4'-DDT [50-29-3] ^ | 0.015 | U | ug/L | 1 | 0.015 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| Aldrin [309-00-2] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| alpha-BHC [319-84-6] ^ | 0.015 | U | ug/L | 1 | 0.015 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| beta-BHC [319-85-7] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| Chlordane (tech) [12789-03-6] ^ | 0.20 | U | ug/L | 1 | 0.20 | 0.50 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| Chlordane-alpha [5103-71-9] ^ | 0.014 | U | ug/L | 1 | 0.014 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| Chlordane-gamma [5566-34-7] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| delta-BHC [319-86-8] ^ | 0.014 | U | ug/L | 1 | 0.014 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| Dieldrin [60-57-1] ^ | 0.0089 | U | ug/L | 1 | 0.0089 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| Endosulfan I [959-98-8] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| Endosulfan II [33213-65-9] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| Endosulfan sulfate [1031-07-8] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| Endrin [72-20-8] ^ | 0.013 | U | ug/L | 1 | 0.013 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| Endrin aldehyde [7421-93-4] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| Endrin ketone [53494-70-5] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| gamma-BHC [58-89-9] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| Heptachlor [76-44-8] ^ | 0.012 | U | ug/L | 1 | 0.012 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| Heptachlor epoxide [1024-57-3] ^ | 0.0089 | U | ug/L | 1 | 0.0089 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| Isodrin [465-73-6] ^ | 0.013 | U | ug/L | 1 | 0.013 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| Methoxychlor [72-43-5] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| Mirex [2385-85-5] ^ | 0.016 | U | ug/L | 1 | 0.016 | 0.050 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |
| Toxaphene [8001-35-2] ^ | 0.22 | U | ug/L | 1 | 0.22 | 0.50 | 0I14004 | EPA 8081B | 09/22/10 00:46 | DFM | |

| *Surrogates* | *Results* | *DF* | *Spike Lvl* | *% Rec* | *% Rec Limits* | *Batch* | *Method* | *Analyzed* | *By* | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| *2,4,5,6-TCMX* | *0.97* | *1* | *1.00* | *97 %* | *44-134* | *0I14004* | *EPA 8081B* | *09/22/10 00:46* | *DFM* | |
| *Decachlorobiphenyl* | *1.1* | *1* | *1.00* | *106 %* | *37-149* | *0I14004* | *EPA 8081B* | *09/22/10 00:46* | *DFM* | |

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**Description:** Equipment Blank
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-06
**Sampled:** 09/09/10 18:00
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147

## Metals by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury [7439-97-6] ^ | 0.170 | U | ug/L | 1 | 0.170 | 0.200 | 0I15010 | EPA 7470A | 09/15/10 17:08 | NLH | |

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**Description:** Equipment Blank
**Matrix:** Ground Water
**Project:** Mary Chappell Site

**Lab Sample ID:** C010147-06
**Sampled:** 09/09/10 18:00
**Sampled By:** Gerald Paul

**Received:** 09/10/10 17:30
**Work Order:** C010147

## Metals (total recoverable) by EPA 6000/7000 Series Methods

*^ - ENCO Cary certified analyte [NC 591]*

| Analyte [CAS Number] | Results | Flag | Units | DF | MDL | MRL | Batch | Method | Analyzed | By | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony [7440-36-0] ^ | 0.220 | U | ug/L | 1 | 0.220 | 2.00 | 0I14027 | EPA 6020A | 09/22/10 16:10 | VLO | |
| Arsenic [7440-38-2] ^ | 2.80 | U | ug/L | 1 | 2.80 | 10.0 | 0I13014 | EPA 6010C | 09/14/10 12:45 | JDH | |
| Beryllium [7440-41-7] ^ | 0.100 | U | ug/L | 1 | 0.100 | 1.00 | 0I13014 | EPA 6010C | 09/14/10 12:45 | JDH | |
| Cadmium [7440-43-9] ^ | 0.360 | U | ug/L | 1 | 0.360 | 1.00 | 0I13014 | EPA 6010C | 09/14/10 12:45 | JDH | |
| Chromium [7440-47-3] ^ | 1.00 | U | ug/L | 1 | 1.00 | 10.0 | 0I13014 | EPA 6010C | 09/14/10 12:45 | JDH | |
| Copper [7440-50-8] ^ | 1.60 | U | ug/L | 1 | 1.60 | 10.0 | 0I13014 | EPA 6010C | 09/14/10 12:45 | JDH | |
| Lead [7439-92-1] ^ | 1.90 | U | ug/L | 1 | 1.90 | 10.0 | 0I13014 | EPA 6010C | 09/14/10 12:45 | JDH | |
| **Manganese [7439-96-5] ^** | **4.07** | JB | ug/L | 1 | 1.10 | 10.0 | 0I13014 | EPA 6010C | 09/14/10 12:45 | JDH | J-01 |
| Nickel [7440-02-0] ^ | 1.80 | U | ug/L | 1 | 1.80 | 10.0 | 0I13014 | EPA 6010C | 09/14/10 12:45 | JDH | |
| **Selenium [7782-49-2] ^** | **4.64** | J | ug/L | 1 | 2.70 | 10.0 | 0I13014 | EPA 6010C | 09/14/10 12:45 | JDH | |
| Silver [7440-22-4] ^ | 1.90 | U | ug/L | 1 | 1.90 | 10.0 | 0I13014 | EPA 6010C | 09/14/10 12:45 | JDH | |
| Thallium [7440-28-0] ^ | 0.110 | U | ug/L | 1 | 0.110 | 1.00 | 0I14027 | EPA 6020A | 09/22/10 16:10 | VLO | |
| Zinc [7440-66-6] ^ | 3.80 | U | ug/L | 1 | 3.80 | 10.0 | 0I13014 | EPA 6010C | 09/14/10 12:45 | JDH | |

This report relates only to the sample as received by the laboratory, and may only be reproduced in full.

# QUALITY CONTROL

## Volatile Organic Compounds by GCMS - Quality Control

*Batch OI14012 - EPA 5030B_MS*

**Blank (OI14012-BLK1)** Prepared: 09/14/2010 09:59 Analyzed: 09/14/2010 13:25

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.40 | U | 1.0 | ug/L | | | | | | | |
| 1,1,1-Trichloroethane | 0.27 | U | 1.0 | ug/L | | | | | | | |
| 1,1,2,2-Tetrachloroethane | 0.33 | U | 1.0 | ug/L | | | | | | | |
| 1,1,2-Trichloroethane | 0.37 | U | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloroethane | 0.33 | U | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloroethene | 0.24 | U | 1.0 | ug/L | | | | | | | |
| 1,1-Dichloropropene | 0.32 | U | 1.0 | ug/L | | | | | | | |
| 1,2,3-Trichlorobenzene | 0.25 | U | 1.0 | ug/L | | | | | | | |
| 1,2,3-Trichloropropane | 0.55 | U | 1.0 | ug/L | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.36 | U | 1.0 | ug/L | | | | | | | |
| 1,2,4-Trimethylbenzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dibromo-3-chloropropane | 0.48 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dibromoethane | 0.42 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dichlorobenzene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dichloroethane | 0.65 | U | 1.0 | ug/L | | | | | | | |
| 1,2-Dichloropropane | 0.20 | U | 1.0 | ug/L | | | | | | | |
| 1,3,5-Trimethylbenzene | 0.25 | U | 1.0 | ug/L | | | | | | | |
| 1,3-Dichlorobenzene | 0.30 | U | 1.0 | ug/L | | | | | | | |
| 1,3-Dichloropropane | 0.32 | U | 1.0 | ug/L | | | | | | | |
| 1,4-Dichlorobenzene | 0.38 | U | 1.0 | ug/L | | | | | | | |
| 2,2-Dichloropropane | 0.55 | U | 1.0 | ug/L | | | | | | | |
| 2-Butanone | 1.0 | U | 5.0 | ug/L | | | | | | | |
| 2-Chloroethyl Vinyl Ether | 0.94 | U | 5.0 | ug/L | | | | | | | |
| 2-Chlorotoluene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| 2-Hexanone | 0.69 | U | 5.0 | ug/L | | | | | | | |
| 4-Chlorotoluene | 0.25 | U | 1.0 | ug/L | | | | | | | |
| 4-Isopropyltoluene | 0.26 | U | 1.0 | ug/L | | | | | | | |
| 4-Methyl-2-pentanone | 1.1 | U | 5.0 | ug/L | | | | | | | |
| Acetone | 1.5 | U | 5.0 | ug/L | | | | | | | |
| Benzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| Bromobenzene | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Bromochloromethane | 0.42 | U | 1.0 | ug/L | | | | | | | |
| Bromodichloromethane | 0.37 | U | 1.0 | ug/L | | | | | | | |
| Bromoform | 0.71 | U | 1.0 | ug/L | | | | | | | |
| Bromomethane | 0.49 | U | 1.0 | ug/L | | | | | | | |
| Carbon disulfide | 0.54 | U | 5.0 | ug/L | | | | | | | |
| Carbon tetrachloride | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Chlorobenzene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| Chloroethane | 0.30 | U | 1.0 | ug/L | | | | | | | |
| Chloroform | 0.20 | U | 1.0 | ug/L | | | | | | | |
| Chloromethane | 0.34 | U | 1.0 | ug/L | | | | | | | |
| cis-1,2-Dichloroethene | 0.36 | U | 1.0 | ug/L | | | | | | | |
| cis-1,3-Dichloropropene | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Dibromochloromethane | 0.32 | U | 1.0 | ug/L | | | | | | | |
| Dibromomethane | 0.37 | U | 1.0 | ug/L | | | | | | | |
| Dichlorodifluoromethane | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Ethylbenzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| Hexachlorobutadiene | 0.35 | U | 1.0 | ug/L | | | | | | | |
| Isopropylbenzene | 0.24 | U | 1.0 | ug/L | | | | | | | |

# QUALITY CONTROL

## Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I14012 - EPA 5030B_MS*

**Blank (0I14012-BLK1) Continued** Prepared: 09/14/2010 09:59 Analyzed: 09/14/2010 13:25

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| m,p-Xylenes | 0.48 | U | 2.0 | ug/L | | | | | | | |
| Methylene chloride | 0.53 | U | 1.0 | ug/L | | | | | | | |
| Methyl-tert-Butyl Ether | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Naphthalene | 0.39 | U | 1.0 | ug/L | | | | | | | |
| n-Butyl Benzene | 0.20 | U | 1.0 | ug/L | | | | | | | |
| n-Propyl Benzene | 0.30 | U | 1.0 | ug/L | | | | | | | |
| o-Xylene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| sec-Butylbenzene | 0.24 | U | 1.0 | ug/L | | | | | | | |
| Styrene | 0.26 | U | 1.0 | ug/L | | | | | | | |
| tert-Butylbenzene | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Tetrachloroethene | 0.36 | U | 1.0 | ug/L | | | | | | | |
| Toluene | 0.27 | U | 1.0 | ug/L | | | | | | | |
| trans-1,2-Dichloroethene | 0.34 | U | 1.0 | ug/L | | | | | | | |
| trans-1,3-Dichloropropene | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Trichloroethene | 0.38 | U | 1.0 | ug/L | | | | | | | |
| Trichlorofluoromethane | 0.28 | U | 1.0 | ug/L | | | | | | | |
| Vinyl chloride | 0.30 | U | 1.0 | ug/L | | | | | | | |
| Xylenes (Total) | 0.40 | U | 1.0 | ug/L | | | | | | | |
| *Surrogate: 4-Bromofluorobenzene* | *41* | | | *ug/L* | *50.0* | | *82* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *42* | | | *ug/L* | *50.0* | | *85* | *68-117* | | | |
| *Surrogate: Toluene-d8* | *44* | | | *ug/L* | *50.0* | | *88* | *69-110* | | | |

**LCS (0I14012-BS1)** Prepared: 09/14/2010 09:59 Analyzed: 09/14/2010 13:56

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 18 | | 1.0 | ug/L | 20.0 | | 91 | 75-133 | | | |
| Benzene | 21 | | 1.0 | ug/L | 20.0 | | 107 | 81-134 | | | |
| Chlorobenzene | 19 | | 1.0 | ug/L | 20.0 | | 94 | 83-117 | | | |
| Toluene | 18 | | 1.0 | ug/L | 20.0 | | 90 | 71-118 | | | |
| Trichloroethene | 19 | | 1.0 | ug/L | 20.0 | | 97 | 75-115 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *40* | | | *ug/L* | *50.0* | | *79* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *42* | | | *ug/L* | *50.0* | | *83* | *68-117* | | | |
| *Surrogate: Toluene-d8* | *42* | | | *ug/L* | *50.0* | | *84* | *69-110* | | | |

**Matrix Spike (0I14012-MS1)** Prepared: 09/14/2010 09:59 Analyzed: 09/14/2010 14:26

**Source: C010549-08**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 19 | | 1.0 | ug/L | 20.0 | 0.24 U | 97 | 75-133 | | | |
| Benzene | 24 | | 1.0 | ug/L | 20.0 | 0.20 U | 118 | 81-134 | | | |
| Chlorobenzene | 19 | | 1.0 | ug/L | 20.0 | 0.27 U | 97 | 83-117 | | | |
| Toluene | 19 | | 1.0 | ug/L | 20.0 | 0.27 U | 95 | 71-118 | | | |
| Trichloroethene | 21 | | 1.0 | ug/L | 20.0 | 0.38 U | 103 | 75-115 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *38* | | | *ug/L* | *50.0* | | *76* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *41* | | | *ug/L* | *50.0* | | *82* | *68-117* | | | |
| *Surrogate: Toluene-d8* | *43* | | | *ug/L* | *50.0* | | *85* | *69-110* | | | |

# QUALITY CONTROL

## Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I14012 - EPA 5030B_MS*

**Matrix Spike Dup (0I14012-MSD1)** Prepared: 09/14/2010 09:59 Analyzed: 09/14/2010 14:56

**Source: C010549-08**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 20 | | 1.0 | ug/L | 20.0 | 0.24 U | 98 | 75-133 | 1 | 20 | |
| Benzene | 24 | | 1.0 | ug/L | 20.0 | 0.20 U | 122 | 81-134 | 3 | 17 | |
| Chlorobenzene | 20 | | 1.0 | ug/L | 20.0 | 0.27 U | 101 | 83-117 | 4 | 16 | |
| Toluene | 19 | | 1.0 | ug/L | 20.0 | 0.27 U | 97 | 71-118 | 2 | 17 | |
| Trichloroethene | 21 | | 1.0 | ug/L | 20.0 | 0.38 U | 107 | 75-115 | 4 | 18 | |
| *Surrogate: 4-Bromofluorobenzene* | *41* | | | *ug/L* | *50.0* | | *82* | *51-122* | | | |
| *Surrogate: Dibromofluoromethane* | *43* | | | *ug/L* | *50.0* | | *87* | *68-117* | | | |
| *Surrogate: Toluene-d8* | *45* | | | *ug/L* | *50.0* | | *91* | *69-110* | | | |

*Batch 0I15005 - EPA 5035_MS*

**Blank (0I15005-BLK1)** Prepared: 09/15/2010 08:26 Analyzed: 09/15/2010 14:19

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.00016 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | 0.00018 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | 0.00023 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethane | 0.00025 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethene | 0.00030 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1-Dichloropropene | 0.00032 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | 0.00021 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | 0.00034 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.00027 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dibromo-3-chloropropane | 0.00079 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dibromoethane | 0.00046 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | 0.00027 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dichloroethane | 0.00038 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dichloropropane | 0.00026 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,3-Dichloropropane | 0.00029 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| 2,2-Dichloropropane | 0.00023 | U | 0.0010 | mg/kg wet | | | | | | | |
| 2-Butanone | 0.00078 | U | 0.0050 | mg/kg wet | | | | | | | |
| 2-Chloroethyl Vinyl Ether | 0.00049 | U | 0.0050 | mg/kg wet | | | | | | | |
| 2-Chlorotoluene | 0.00018 | U | 0.0010 | mg/kg wet | | | | | | | |
| 2-Hexanone | 0.00075 | U | 0.0050 | mg/kg wet | | | | | | | |
| 4-Chlorotoluene | 0.00026 | U | 0.0010 | mg/kg wet | | | | | | | |
| 4-Isopropyltoluene | 0.00016 | U | 0.0010 | mg/kg wet | | | | | | | |
| 4-Methyl-2-pentanone | 0.00057 | U | 0.0050 | mg/kg wet | | | | | | | |
| Acetone | 0.0012 | U | 0.0050 | mg/kg wet | | | | | | | |
| Benzene | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromobenzene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromochloromethane | 0.00041 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromodichloromethane | 0.00024 | U | 0.0010 | mg/kg wet | | | | | | | |

# QUALITY CONTROL

## Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I15005 - EPA 5035_MS*

**Blank (0I15005-BLK1) Continued** Prepared: 09/15/2010 08:26 Analyzed: 09/15/2010 14:19

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bromoform | 0.00045 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromomethane | 0.00023 | U | 0.0010 | mg/kg wet | | | | | | | |
| Carbon disulfide | 0.00039 | U | 0.0050 | mg/kg wet | | | | | | | |
| Carbon Tetrachloride | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| Chlorobenzene | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| Chloroethane | 0.00025 | U | 0.0010 | mg/kg wet | | | | | | | |
| Chloroform | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| Chloromethane | 0.00015 | U | 0.0010 | mg/kg wet | | | | | | | |
| cis-1,2-Dichloroethene | 0.00023 | U | 0.0010 | mg/kg wet | | | | | | | |
| cis-1,3-Dichloropropene | 0.00013 | U | 0.0010 | mg/kg wet | | | | | | | |
| Dibromochloromethane | 0.00035 | U | 0.0010 | mg/kg wet | | | | | | | |
| Dibromomethane | 0.00031 | U | 0.0010 | mg/kg wet | | | | | | | |
| Dichlorodifluoromethane | 0.00045 | U | 0.0010 | mg/kg wet | | | | | | | |
| Ethylbenzene | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | 0.00035 | U | 0.0010 | mg/kg wet | | | | | | | |
| Isopropylbenzene | 0.00015 | U | 0.0010 | mg/kg wet | | | | | | | |
| m,p-Xylenes | 0.00037 | U | 0.0020 | mg/kg wet | | | | | | | |
| Methylene Chloride | 0.00056 | U | 0.0010 | mg/kg wet | | | | | | | |
| Methyl-tert-Butyl Ether | 0.00030 | U | 0.0010 | mg/kg wet | | | | | | | |
| Naphthalene | 0.00024 | U | 0.0010 | mg/kg wet | | | | | | | |
| n-Butyl Benzene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| n-Propyl Benzene | 0.00018 | U | 0.0010 | mg/kg wet | | | | | | | |
| o-Xylene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| sec-Butylbenzene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| Styrene | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| tert-Butylbenzene | 0.00016 | U | 0.0010 | mg/kg wet | | | | | | | |
| Tetrachloroethene | 0.00028 | U | 0.0010 | mg/kg wet | | | | | | | |
| Toluene | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| trans-1,2-Dichloroethene | 0.00037 | U | 0.0010 | mg/kg wet | | | | | | | |
| trans-1,3-Dichloropropene | 0.00039 | U | 0.0010 | mg/kg wet | | | | | | | |
| Trichloroethene | 0.00027 | U | 0.0010 | mg/kg wet | | | | | | | |
| Trichlorofluoromethane | 0.00026 | U | 0.0010 | mg/kg wet | | | | | | | |
| Vinyl chloride | 0.00024 | U | 0.0010 | mg/kg wet | | | | | | | |
| Xylenes (Total) | 0.00056 | U | 0.0010 | mg/kg wet | | | | | | | |
| *Surrogate: 4-Bromofluorobenzene* | *52* | | | *ug/L* | *50.0* | | *104* | *61-118* | | | |
| *Surrogate: Dibromofluoromethane* | *50* | | | *ug/L* | *50.0* | | *101* | *66-114* | | | |
| *Surrogate: Toluene-d8* | *51* | | | *ug/L* | *50.0* | | *101* | *63-118* | | | |

**LCS (0I15005-BS1)** Prepared: 09/15/2010 08:26 Analyzed: 09/15/2010 14:47

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 22 | | 1.0 | ug/L | 20.0 | | 108 | 64-133 | | | |
| Benzene | 19 | | 1.0 | ug/L | 20.0 | | 94 | 79-129 | | | |
| Chlorobenzene | 21 | | 1.0 | ug/L | 20.0 | | 107 | 79-121 | | | |
| Toluene | 21 | | 1.0 | ug/L | 20.0 | | 107 | 77-120 | | | |
| Trichloroethene | 22 | | 1.0 | ug/L | 20.0 | | 111 | 78-118 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *54* | | | *ug/L* | *50.0* | | *107* | *61-118* | | | |
| *Surrogate: Dibromofluoromethane* | *50* | | | *ug/L* | *50.0* | | *101* | *66-114* | | | |

# QUALITY CONTROL

## Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I15005 - EPA 5035_MS*

**LCS (0I15005-BS1) Continued** Prepared: 09/15/2010 08:26 Analyzed: 09/15/2010 14:47

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Surrogate: Toluene-d8* | *51* | | | *ug/L* | *50.0* | | *102* | *63-118* | | | |

**Matrix Spike (0I15005-MS1)** Prepared: 09/15/2010 08:26 Analyzed: 09/15/2010 15:16

**Source: C010771-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 21 | | 1.0 | ug/L | 20.0 | 0.30 U | 106 | 64-133 | | | |
| Benzene | 19 | | 1.0 | ug/L | 20.0 | 0.17 U | 95 | 79-129 | | | |
| Chlorobenzene | 21 | | 1.0 | ug/L | 20.0 | 0.17 U | 107 | 79-121 | | | |
| Toluene | 21 | | 1.0 | ug/L | 20.0 | 0.20 U | 104 | 77-120 | | | |
| Trichloroethene | 24 | | 1.0 | ug/L | 20.0 | 0.27 U | 119 | 78-118 | | | QM-07 |
| *Surrogate: 4-Bromofluorobenzene* | *54* | | | *ug/L* | *50.0* | | *108* | *61-118* | | | |
| *Surrogate: Dibromofluoromethane* | *50* | | | *ug/L* | *50.0* | | *100* | *66-114* | | | |
| *Surrogate: Toluene-d8* | *52* | | | *ug/L* | *50.0* | | *103* | *63-118* | | | |

**Matrix Spike Dup (0I15005-MSD1)** Prepared: 09/15/2010 08:26 Analyzed: 09/15/2010 15:45

**Source: C010771-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 21 | | 1.0 | ug/L | 20.0 | 0.30 U | 104 | 64-133 | 2 | 23 | |
| Benzene | 19 | | 1.0 | ug/L | 20.0 | 0.17 U | 93 | 79-129 | 3 | 23 | |
| Chlorobenzene | 21 | | 1.0 | ug/L | 20.0 | 0.17 U | 104 | 79-121 | 3 | 25 | |
| Toluene | 21 | | 1.0 | ug/L | 20.0 | 0.20 U | 105 | 77-120 | 0.5 | 23 | |
| Trichloroethene | 22 | | 1.0 | ug/L | 20.0 | 0.27 U | 108 | 78-118 | 10 | 24 | |
| *Surrogate: 4-Bromofluorobenzene* | *53* | | | *ug/L* | *50.0* | | *107* | *61-118* | | | |
| *Surrogate: Dibromofluoromethane* | *47* | | | *ug/L* | *50.0* | | *95* | *66-114* | | | |
| *Surrogate: Toluene-d8* | *50* | | | *ug/L* | *50.0* | | *101* | *63-118* | | | |

*Batch 0I21004 - EPA 5035_MS*

**Blank (0I21004-BLK1)** Prepared: 09/21/2010 08:11 Analyzed: 09/21/2010 10:44

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | 0.00016 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1,1-Trichloroethane | 0.00018 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1,2,2-Tetrachloroethane | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1,2-Trichloroethane | 0.00023 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethane | 0.00025 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1-Dichloroethene | 0.00030 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,1-Dichloropropene | 0.00032 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2,3-Trichlorobenzene | 0.00021 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2,3-Trichloropropane | 0.00034 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2,4-Trichlorobenzene | 0.00027 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2,4-Trimethylbenzene | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dibromo-3-chloropropane | 0.00079 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dibromoethane | 0.00046 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | 0.00027 | U | 0.0010 | mg/kg wet | | | | | | | |

## QUALITY CONTROL

### Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I21004 - EPA 5035_MS*

**Blank (0I21004-BLK1) Continued***

Prepared: 09/21/2010 08:11 Analyzed: 09/21/2010 10:44

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloroethane | 0.00038 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,2-Dichloropropane | 0.00026 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,3,5-Trimethylbenzene | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,3-Dichloropropane | 0.00029 | U | 0.0010 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| 2,2-Dichloropropane | 0.00023 | U | 0.0010 | mg/kg wet | | | | | | | |
| 2-Butanone | 0.00078 | U | 0.0050 | mg/kg wet | | | | | | | |
| 2-Chloroethyl Vinyl Ether | 0.00049 | U | 0.0050 | mg/kg wet | | | | | | | |
| 2-Chlorotoluene | 0.00018 | U | 0.0010 | mg/kg wet | | | | | | | |
| 2-Hexanone | 0.00075 | U | 0.0050 | mg/kg wet | | | | | | | |
| 4-Chlorotoluene | 0.00026 | U | 0.0010 | mg/kg wet | | | | | | | |
| 4-Isopropyltoluene | 0.00016 | U | 0.0010 | mg/kg wet | | | | | | | |
| 4-Methyl-2-pentanone | 0.00057 | U | 0.0050 | mg/kg wet | | | | | | | |
| Acetone | 0.0012 | U | 0.0050 | mg/kg wet | | | | | | | |
| Benzene | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromobenzene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromochloromethane | 0.00041 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromodichloromethane | 0.00024 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromoform | 0.00045 | U | 0.0010 | mg/kg wet | | | | | | | |
| Bromomethane | 0.00023 | U | 0.0010 | mg/kg wet | | | | | | | |
| Carbon disulfide | 0.00039 | U | 0.0050 | mg/kg wet | | | | | | | |
| Carbon Tetrachloride | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| Chlorobenzene | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| Chloroethane | 0.00025 | U | 0.0010 | mg/kg wet | | | | | | | |
| Chloroform | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| Chloromethane | 0.00015 | U | 0.0010 | mg/kg wet | | | | | | | |
| cis-1,2-Dichloroethene | 0.00023 | U | 0.0010 | mg/kg wet | | | | | | | |
| cis-1,3-Dichloropropene | 0.00013 | U | 0.0010 | mg/kg wet | | | | | | | |
| Dibromochloromethane | 0.00035 | U | 0.0010 | mg/kg wet | | | | | | | |
| Dibromomethane | 0.00031 | U | 0.0010 | mg/kg wet | | | | | | | |
| Dichlorodifluoromethane | 0.00045 | U | 0.0010 | mg/kg wet | | | | | | | |
| Ethylbenzene | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | 0.00035 | U | 0.0010 | mg/kg wet | | | | | | | |
| Isopropylbenzene | 0.00015 | U | 0.0010 | mg/kg wet | | | | | | | |
| m,p-Xylenes | 0.00037 | U | 0.0020 | mg/kg wet | | | | | | | |
| Methylene Chloride | 0.00056 | U | 0.0010 | mg/kg wet | | | | | | | |
| Methyl-tert-Butyl Ether | 0.00030 | U | 0.0010 | mg/kg wet | | | | | | | |
| Naphthalene | 0.00024 | U | 0.0010 | mg/kg wet | | | | | | | |
| n-Butyl Benzene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| n-Propyl Benzene | 0.00018 | U | 0.0010 | mg/kg wet | | | | | | | |
| o-Xylene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| sec-Butylbenzene | 0.00022 | U | 0.0010 | mg/kg wet | | | | | | | |
| Styrene | 0.00017 | U | 0.0010 | mg/kg wet | | | | | | | |
| tert-Butylbenzene | 0.00016 | U | 0.0010 | mg/kg wet | | | | | | | |
| Tetrachloroethene | 0.00028 | U | 0.0010 | mg/kg wet | | | | | | | |
| Toluene | 0.00020 | U | 0.0010 | mg/kg wet | | | | | | | |
| trans-1,2-Dichloroethene | 0.00037 | U | 0.0010 | mg/kg wet | | | | | | | |
| trans-1,3-Dichloropropene | 0.00039 | U | 0.0010 | mg/kg wet | | | | | | | |

# QUALITY CONTROL

## Volatile Organic Compounds by GCMS - Quality Control

*Batch 0I21004 - EPA 5035_MS*

**Blank (0I21004-BLK1) Continued** Prepared: 09/21/2010 08:11 Analyzed: 09/21/2010 10:44

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Trichloroethene | 0.00027 | U | 0.0010 | mg/kg wet | | | | | | | |
| Trichlorofluoromethane | 0.00026 | U | 0.0010 | mg/kg wet | | | | | | | |
| Vinyl chloride | 0.00024 | U | 0.0010 | mg/kg wet | | | | | | | |
| Xylenes (Total) | 0.00056 | U | 0.0010 | mg/kg wet | | | | | | | |
| *Surrogate: 4-Bromofluorobenzene* | *47* | | | *ug/L* | *50.0* | | *93* | *61-118* | | | |
| *Surrogate: Dibromofluoromethane* | *44* | | | *ug/L* | *50.0* | | *89* | *66-114* | | | |
| *Surrogate: Toluene-d8* | *46* | | | *ug/L* | *50.0* | | *92* | *63-118* | | | |

**LCS (0I21004-BS1)** Prepared: 09/21/2010 08:11 Analyzed: 09/21/2010 11:13

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 19 | | 1.0 | ug/L | 20.0 | | 94 | 64-133 | | | |
| Benzene | 18 | | 1.0 | ug/L | 20.0 | | 90 | 79-129 | | | |
| Chlorobenzene | 18 | | 1.0 | ug/L | 20.0 | | 91 | 79-121 | | | |
| Toluene | 18 | | 1.0 | ug/L | 20.0 | | 91 | 77-120 | | | |
| Trichloroethene | 18 | | 1.0 | ug/L | 20.0 | | 92 | 78-118 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *47* | | | *ug/L* | *50.0* | | *94* | *61-118* | | | |
| *Surrogate: Dibromofluoromethane* | *45* | | | *ug/L* | *50.0* | | *89* | *66-114* | | | |
| *Surrogate: Toluene-d8* | *46* | | | *ug/L* | *50.0* | | *92* | *63-118* | | | |

**Matrix Spike (0I21004-MS1)** Prepared: 09/21/2010 08:11 Analyzed: 09/21/2010 11:41

**Source: C010771-05**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 20 | | 1.0 | ug/L | 20.0 | 0.30 U | 99 | 64-133 | | | |
| Benzene | 19 | | 1.0 | ug/L | 20.0 | 0.17 U | 95 | 79-129 | | | |
| Chlorobenzene | 19 | | 1.0 | ug/L | 20.0 | 0.17 U | 97 | 79-121 | | | |
| Toluene | 19 | | 1.0 | ug/L | 20.0 | 0.20 U | 93 | 77-120 | | | |
| Trichloroethene | 19 | | 1.0 | ug/L | 20.0 | 0.27 U | 96 | 78-118 | | | |
| *Surrogate: 4-Bromofluorobenzene* | *46* | | | *ug/L* | *50.0* | | *92* | *61-118* | | | |
| *Surrogate: Dibromofluoromethane* | *46* | | | *ug/L* | *50.0* | | *91* | *66-114* | | | |
| *Surrogate: Toluene-d8* | *46* | | | *ug/L* | *50.0* | | *93* | *63-118* | | | |

**Matrix Spike Dup (0I21004-MSD1)** Prepared: 09/21/2010 08:11 Analyzed: 09/21/2010 12:10

**Source: C010771-05**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Dichloroethene | 20 | | 1.0 | ug/L | 20.0 | 0.30 U | 98 | 64-133 | 0.8 | 23 | |
| Benzene | 19 | | 1.0 | ug/L | 20.0 | 0.17 U | 93 | 79-129 | 1 | 23 | |
| Chlorobenzene | 19 | | 1.0 | ug/L | 20.0 | 0.17 U | 97 | 79-121 | 0.2 | 25 | |
| Toluene | 20 | | 1.0 | ug/L | 20.0 | 0.20 U | 99 | 77-120 | 6 | 23 | |
| Trichloroethene | 19 | | 1.0 | ug/L | 20.0 | 0.27 U | 94 | 78-118 | 2 | 24 | |
| *Surrogate: 4-Bromofluorobenzene* | *47* | | | *ug/L* | *50.0* | | *94* | *61-118* | | | |
| *Surrogate: Dibromofluoromethane* | *45* | | | *ug/L* | *50.0* | | *89* | *66-114* | | | |
| *Surrogate: Toluene-d8* | *46* | | | *ug/L* | *50.0* | | *92* | *63-118* | | | |

# QUALITY CONTROL

## Tentatively Identified Compounds by Volatile GCMS - Quality Control

*Batch 0I14012 - EPA 5030B_MS*

**Blank (0I14012-BLK1)** Prepared: 09/14/2010 09:59 Analyzed: 09/14/2010 13:25

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon Dioxide | 110 | J | | ug/L | | | | | | | |

*Batch 0I15005 - EPA 5035_MS*

**Blank (0I15005-BLK1)** Prepared: 09/15/2010 08:26 Analyzed: 09/15/2010 14:19

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon Dioxide | 0.053 | J | | mg/kg wet | | | | | | | |
| Cyclopentasiloxane, decamet... | 0.0070 | J | | mg/kg wet | | | | | | | |
| Cyclotetrasiloxane, octamet... | 0.017 | J | | mg/kg wet | | | | | | | |

*Batch 0I21004 - EPA 5035_MS*

**Blank (0I21004-BLK1)** Prepared: 09/21/2010 08:11 Analyzed: 09/21/2010 10:44

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Carbon Dioxide | 0.087 | J | | mg/kg wet | | | | | | | |
| Cyclopentasiloxane, decamet... | 0.0056 | J | | mg/kg wet | | | | | | | |
| Cyclotetrasiloxane, octamet... | 0.016 | J | | mg/kg wet | | | | | | | |
| Pentane | 0.012 | J | | mg/kg wet | | | | | | | |

## Semivolatile Organic Compounds by GCMS - Quality Control

*Batch 0I14023 - EPA 3510C_MS*

**Blank (0I14023-BLK1)** Prepared: 09/14/2010 12:33 Analyzed: 09/23/2010 00:27

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 1.2 | U | 10 | ug/L | | | | | | | |
| 1,2-Dichlorobenzene | 1.1 | U | 10 | ug/L | | | | | | | |
| 1,3-Dichlorobenzene | 1.1 | U | 10 | ug/L | | | | | | | |
| 1,4-Dichlorobenzene | 1.0 | U | 10 | ug/L | | | | | | | |
| 1-Methylnaphthalene | 1.7 | U | 10 | ug/L | | | | | | | |
| 2,4,5-Trichlorophenol | 1.0 | U | 10 | ug/L | | | | | | | |
| 2,4,6-Trichlorophenol | 1.1 | U | 10 | ug/L | | | | | | | |
| 2,4-Dichlorophenol | 1.4 | U | 10 | ug/L | | | | | | | |
| 2,4-Dimethylphenol | 1.3 | U | 10 | ug/L | | | | | | | |
| 2,4-Dinitrophenol | 2.6 | U | 10 | ug/L | | | | | | | |
| 2,4-Dinitrotoluene | 2.4 | U | 10 | ug/L | | | | | | | |
| 2,6-Dinitrotoluene | 1.5 | U | 10 | ug/L | | | | | | | |
| 2-Chloronaphthalene | 1.0 | U | 10 | ug/L | | | | | | | |
| 2-Chlorophenol | 1.2 | U | 10 | ug/L | | | | | | | |
| 2-Methyl-4,6-dinitrophenol | 2.9 | U | 10 | ug/L | | | | | | | |
| 2-Methylnaphthalene | 1.5 | U | 10 | ug/L | | | | | | | |
| 2-Methylphenol | 1.4 | U | 10 | ug/L | | | | | | | |
| 2-Nitroaniline | 1.5 | U | 10 | ug/L | | | | | | | |
| 2-Nitrophenol | 1.1 | U | 10 | ug/L | | | | | | | |
| 3 & 4-Methylphenol | 1.6 | U | 10 | ug/L | | | | | | | |
| 3,3'-Dichlorobenzidine | 3.3 | U | 10 | ug/L | | | | | | | |

## QUALITY CONTROL

### Semivolatile Organic Compounds by GCMS - Quality Control

*Batch 0I14023 - EPA 3510C_MS*

**Blank (0I14023-BLK1) Continued** Prepared: 09/14/2010 12:33 Analyzed: 09/23/2010 00:27

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3-Nitroaniline | 2.1 | U | 10 | ug/L | | | | | | | |
| 4-Bromophenyl-phenylether | 1.0 | U | 10 | ug/L | | | | | | | |
| 4-Chloro-3-methylphenol | 1.5 | U | 10 | ug/L | | | | | | | |
| 4-Chloroaniline | 1.2 | U | 10 | ug/L | | | | | | | |
| 4-Chlorophenyl-phenylether | 1.6 | U | 10 | ug/L | | | | | | | |
| 4-Nitroaniline | 3.2 | U | 10 | ug/L | | | | | | | |
| 4-Nitrophenol | 2.0 | U | 10 | ug/L | | | | | | | |
| Acenaphthene | 1.4 | U | 10 | ug/L | | | | | | | |
| Acenaphthylene | 1.2 | U | 10 | ug/L | | | | | | | |
| Anthracene | 1.6 | U | 10 | ug/L | | | | | | | |
| Benzidine | 1.6 | U | 10 | ug/L | | | | | | | |
| Benzo(a)anthracene | 1.3 | U | 10 | ug/L | | | | | | | |
| Benzo(a)pyrene | 1.3 | U | 10 | ug/L | | | | | | | |
| Benzo(b)fluoranthene | 1.0 | U | 10 | ug/L | | | | | | | |
| Benzo(g,h,i)perylene | 2.4 | U | 10 | ug/L | | | | | | | |
| Benzo(k)fluoranthene | 1.3 | U | 10 | ug/L | | | | | | | |
| Benzoic acid | 1.0 | U | 50 | ug/L | | | | | | | |
| Benzyl alcohol | 1.4 | U | 10 | ug/L | | | | | | | |
| Bis(2-chloroethoxy)methane | 1.4 | U | 10 | ug/L | | | | | | | |
| Bis(2-chloroethyl)ether | 1.2 | U | 10 | ug/L | | | | | | | |
| Bis(2-chloroisopropyl)ether | 1.3 | U | 10 | ug/L | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 1.7 | U | 5.0 | ug/L | | | | | | | |
| Butylbenzylphthalate | 2.0 | U | 10 | ug/L | | | | | | | |
| Chrysene | 2.0 | U | 10 | ug/L | | | | | | | |
| Dibenzo(a,h)anthracene | 2.3 | U | 10 | ug/L | | | | | | | |
| Dibenzofuran | 1.4 | U | 10 | ug/L | | | | | | | |
| Diethylphthalate | 2.1 | U | 10 | ug/L | | | | | | | |
| Dimethylphthalate | 1.4 | U | 10 | ug/L | | | | | | | |
| Di-n-butylphthalate | 1.5 | U | 10 | ug/L | | | | | | | |
| Di-n-octylphthalate | 3.1 | U | 10 | ug/L | | | | | | | |
| Fluoranthene | 2.1 | U | 10 | ug/L | | | | | | | |
| Fluorene | 1.7 | U | 10 | ug/L | | | | | | | |
| Hexachlorobenzene | 1.0 | U | 10 | ug/L | | | | | | | |
| Hexachlorobutadiene | 1.2 | U | 10 | ug/L | | | | | | | |
| Hexachlorocyclopentadiene | 1.3 | U | 10 | ug/L | | | | | | | |
| Hexachloroethane | 1.1 | U | 10 | ug/L | | | | | | | |
| Indeno(1,2,3-cd)pyrene | 2.2 | U | 10 | ug/L | | | | | | | |
| Isophorone | 1.3 | U | 10 | ug/L | | | | | | | |
| Naphthalene | 1.3 | U | 10 | ug/L | | | | | | | |
| Nitrobenzene | 1.2 | U | 10 | ug/L | | | | | | | |
| N-Nitrosodimethylamine | 1.3 | U | 10 | ug/L | | | | | | | |
| N-Nitroso-di-n-propylamine | 1.5 | U | 10 | ug/L | | | | | | | |
| N-nitrosodiphenylamine/Diphenylamine | 2.1 | U | 10 | ug/L | | | | | | | |
| Pentachlorophenol | 1.8 | U | 10 | ug/L | | | | | | | |
| Phenanthrene | 1.4 | U | 10 | ug/L | | | | | | | |
| Phenol | 1.4 | U | 10 | ug/L | | | | | | | |
| Pyrene | 2.1 | U | 10 | ug/L | | | | | | | |
| Pyridine | 1.3 | U | 10 | ug/L | | | | | | | |

# QUALITY CONTROL

## Semivolatile Organic Compounds by GCMS - Quality Control

*Batch 0I14023 - EPA 3510C_MS*

**Blank (0I14023-BLK1) Continued** Prepared: 09/14/2010 12:33 Analyzed: 09/23/2010 00:27

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2,4,6-Tribromophenol* | *62* | | | *ug/L* | *100* | | *62* | *10-179* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *39* | | | *ug/L* | *50.0* | | *77* | *10-149* | | | |
| *Surrogate: 2-Fluorophenol* | *55* | | | *ug/L* | *100* | | *55* | *10-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *39* | | | *ug/L* | *50.0* | | *79* | *10-149* | | | |
| *Surrogate: Phenol-d5* | *45* | | | *ug/L* | *100* | | *45* | *10-88* | | | |
| *Surrogate: Terphenyl-d14* | *42* | | | *ug/L* | *50.0* | | *85* | *10-188* | | | |

**LCS (0I14023-BS1)** Prepared: 09/14/2010 12:33 Analyzed: 09/23/2010 00:57

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 34 | | 10 | ug/L | 50.0 | | 67 | 27-90 | | | |
| 1,4-Dichlorobenzene | 32 | | 10 | ug/L | 50.0 | | 64 | 23-84 | | | |
| 2,4-Dinitrotoluene | 43 | | 10 | ug/L | 50.0 | | 87 | 67-132 | | | |
| 2-Chlorophenol | 38 | | 10 | ug/L | 50.0 | | 77 | 40-109 | | | |
| 4-Chloro-3-methylphenol | 43 | | 10 | ug/L | 50.0 | | 85 | 58-121 | | | |
| 4-Nitrophenol | 29 | | 10 | ug/L | 50.0 | | 58 | 33-105 | | | |
| Acenaphthene | 39 | | 10 | ug/L | 50.0 | | 78 | 39-125 | | | |
| N-Nitroso-di-n-propylamine | 41 | | 10 | ug/L | 50.0 | | 82 | 48-126 | | | |
| Pentachlorophenol | 32 | | 10 | ug/L | 50.0 | | 64 | 51-135 | | | |
| Phenol | 25 | | 10 | ug/L | 50.0 | | 49 | 19-78 | | | |
| Pyrene | 43 | | 10 | ug/L | 50.0 | | 86 | 44-137 | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *82* | | | *ug/L* | *100* | | *82* | *10-179* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *40* | | | *ug/L* | *50.0* | | *79* | *10-149* | | | |
| *Surrogate: 2-Fluorophenol* | *58* | | | *ug/L* | *100* | | *58* | *10-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *40* | | | *ug/L* | *50.0* | | *79* | *10-149* | | | |
| *Surrogate: Phenol-d5* | *49* | | | *ug/L* | *100* | | *49* | *10-88* | | | |
| *Surrogate: Terphenyl-d14* | *42* | | | *ug/L* | *50.0* | | *85* | *10-188* | | | |

**Matrix Spike (0I14023-MS1)** Prepared: 09/14/2010 12:33 Analyzed: 09/23/2010 01:56

**Source: C010549-10**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 33 | | 10 | ug/L | 50.0 | 1.2 U | 66 | 27-90 | | | |
| 1,4-Dichlorobenzene | 31 | | 10 | ug/L | 50.0 | 1.0 U | 61 | 23-84 | | | |
| 2,4-Dinitrotoluene | 39 | | 10 | ug/L | 50.0 | 2.4 U | 78 | 67-132 | | | |
| 2-Chlorophenol | 35 | | 10 | ug/L | 50.0 | 1.2 U | 70 | 40-109 | | | |
| 4-Chloro-3-methylphenol | 38 | | 10 | ug/L | 50.0 | 1.5 U | 75 | 58-121 | | | |
| 4-Nitrophenol | 25 | | 10 | ug/L | 50.0 | 2.0 U | 51 | 33-105 | | | |
| Acenaphthene | 36 | | 10 | ug/L | 50.0 | 1.4 U | 73 | 39-125 | | | |
| N-Nitroso-di-n-propylamine | 37 | | 10 | ug/L | 50.0 | 1.5 U | 75 | 48-126 | | | |
| Pentachlorophenol | 31 | | 10 | ug/L | 50.0 | 1.8 U | 63 | 51-135 | | | |
| Phenol | 21 | | 10 | ug/L | 50.0 | 1.4 U | 43 | 19-78 | | | |
| Pyrene | 40 | | 10 | ug/L | 50.0 | 2.1 U | 81 | 44-137 | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *75* | | | *ug/L* | *100* | | *75* | *10-179* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *38* | | | *ug/L* | *50.0* | | *76* | *10-149* | | | |
| *Surrogate: 2-Fluorophenol* | *53* | | | *ug/L* | *100* | | *53* | *10-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *38* | | | *ug/L* | *50.0* | | *76* | *10-149* | | | |

## QUALITY CONTROL

### Semivolatile Organic Compounds by GCMS - Quality Control

*Batch 0I14023 - EPA 3510C_MS*

**Matrix Spike (0I14023-MS1) Continued** Prepared: 09/14/2010 12:33 Analyzed: 09/23/2010 01:56

**Source: C010549-10**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Surrogate: Phenol-d5* | *43* | | | *ug/L* | *100* | | *43* | *10-88* | | | |
| *Surrogate: Terphenyl-d14* | *40* | | | *ug/L* | *50.0* | | *81* | *10-188* | | | |

**Matrix Spike Dup (0I14023-MSD1)** Prepared: 09/14/2010 12:33 Analyzed: 09/23/2010 02:25

**Source: C010549-10**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 32 | | 10 | ug/L | 50.0 | 1.2 U | 65 | 27-90 | 0.8 | 43 | |
| 1,4-Dichlorobenzene | 30 | | 10 | ug/L | 50.0 | 1.0 U | 59 | 23-84 | 4 | 39 | |
| 2,4-Dinitrotoluene | 39 | | 10 | ug/L | 50.0 | 2.4 U | 78 | 67-132 | 0.8 | 17 | |
| 2-Chlorophenol | 35 | | 10 | ug/L | 50.0 | 1.2 U | 69 | 40-109 | 1 | 22 | |
| 4-Chloro-3-methylphenol | 39 | | 10 | ug/L | 50.0 | 1.5 U | 78 | 58-121 | 4 | 22 | |
| 4-Nitrophenol | 26 | | 10 | ug/L | 50.0 | 2.0 U | 52 | 33-105 | 3 | 27 | |
| Acenaphthene | 37 | | 10 | ug/L | 50.0 | 1.4 U | 74 | 39-125 | 2 | 25 | |
| N-Nitroso-di-n-propylamine | 38 | | 10 | ug/L | 50.0 | 1.5 U | 77 | 48-126 | 3 | 23 | |
| Pentachlorophenol | 31 | | 10 | ug/L | 50.0 | 1.8 U | 63 | 51-135 | 0.2 | 11 | |
| Phenol | 22 | | 10 | ug/L | 50.0 | 1.4 U | 44 | 19-78 | 3 | 18 | |
| Pyrene | 39 | | 10 | ug/L | 50.0 | 2.1 U | 79 | 44-137 | 2 | 24 | |
| *Surrogate: 2,4,6-Tribromophenol* | *73* | | | *ug/L* | *100* | | *73* | *10-179* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *38* | | | *ug/L* | *50.0* | | *76* | *10-149* | | | |
| *Surrogate: 2-Fluorophenol* | *50* | | | *ug/L* | *100* | | *50* | *10-110* | | | |
| *Surrogate: Nitrobenzene-d5* | *37* | | | *ug/L* | *50.0* | | *74* | *10-149* | | | |
| *Surrogate: Phenol-d5* | *44* | | | *ug/L* | *100* | | *44* | *10-88* | | | |
| *Surrogate: Terphenyl-d14* | *39* | | | *ug/L* | *50.0* | | *77* | *10-188* | | | |

*Batch 0I16021 - EPA 3550C_MS*

**Blank (0I16021-BLK1)** Prepared: 09/16/2010 14:49 Analyzed: 09/20/2010 16:28

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 0.023 | U | 0.33 | mg/kg wet | | | | | | | |
| 1,2-Dichlorobenzene | 0.032 | U | 0.33 | mg/kg wet | | | | | | | |
| 1,3-Dichlorobenzene | 0.030 | U | 0.33 | mg/kg wet | | | | | | | |
| 1,4-Dichlorobenzene | 0.027 | U | 0.33 | mg/kg wet | | | | | | | |
| 1-Methylnaphthalene | 0.035 | U | 0.33 | mg/kg wet | | | | | | | |
| 2,4,5-Trichlorophenol | 0.033 | U | 0.33 | mg/kg wet | | | | | | | |
| 2,4,6-Trichlorophenol | 0.032 | U | 0.33 | mg/kg wet | | | | | | | |
| 2,4-Dichlorophenol | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| 2,4-Dimethylphenol | 0.059 | U | 0.33 | mg/kg wet | | | | | | | |
| 2,4-Dinitrophenol | 0.047 | U | 0.33 | mg/kg wet | | | | | | | |
| 2,4-Dinitrotoluene | 0.031 | U | 0.33 | mg/kg wet | | | | | | | |
| 2,6-Dinitrotoluene | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| 2-Chloronaphthalene | 0.024 | U | 0.33 | mg/kg wet | | | | | | | |
| 2-Chlorophenol | 0.029 | U | 0.33 | mg/kg wet | | | | | | | |
| 2-Methyl-4,6-dinitrophenol | 0.050 | U | 0.33 | mg/kg wet | | | | | | | |
| 2-Methylnaphthalene | 0.037 | U | 0.33 | mg/kg wet | | | | | | | |
| 2-Methylphenol | 0.038 | U | 0.33 | mg/kg wet | | | | | | | |

## QUALITY CONTROL

### Semivolatile Organic Compounds by GCMS - Quality Control

*Batch 0I16021 - EPA 3550C_MS*

**Blank (0I16021-BLK1) Continued** Prepared: 09/16/2010 14:49 Analyzed: 09/20/2010 16:28

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Nitroaniline | 0.030 | U | 0.33 | mg/kg wet | | | | | | | |
| 2-Nitrophenol | 0.033 | U | 0.33 | mg/kg wet | | | | | | | |
| 3 & 4-Methylphenol | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| 3,3'-Dichlorobenzidine | 0.042 | U | 0.33 | mg/kg wet | | | | | | | |
| 3-Nitroaniline | 0.044 | U | 0.33 | mg/kg wet | | | | | | | |
| 4-Bromophenyl-phenylether | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| 4-Chloro-3-methylphenol | 0.028 | U | 0.33 | mg/kg wet | | | | | | | |
| 4-Chloroaniline | 0.030 | U | 0.33 | mg/kg wet | | | | | | | |
| 4-Chlorophenyl-phenylether | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| 4-Nitroaniline | 0.059 | U | 0.33 | mg/kg wet | | | | | | | |
| 4-Nitrophenol | 0.042 | U | 0.33 | mg/kg wet | | | | | | | |
| Acenaphthene | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Acenaphthylene | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Anthracene | 0.033 | U | 0.33 | mg/kg wet | | | | | | | |
| Benzidine | 0.11 | U | 0.33 | mg/kg wet | | | | | | | QV-01 |
| Benzo(a)anthracene | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Benzo(a)pyrene | 0.027 | U | 0.33 | mg/kg wet | | | | | | | |
| Benzo(b)fluoranthene | 0.027 | U | 0.33 | mg/kg wet | | | | | | | |
| Benzo(g,h,i)perylene | 0.039 | U | 0.33 | mg/kg wet | | | | | | | |
| Benzo(k)fluoranthene | 0.027 | U | 0.33 | mg/kg wet | | | | | | | |
| Benzoic acid | 0.11 | U | 1.7 | mg/kg wet | | | | | | | |
| Benzyl alcohol | 0.066 | U | 0.33 | mg/kg wet | | | | | | | |
| Bis(2-chloroethoxy)methane | 0.021 | U | 0.33 | mg/kg wet | | | | | | | |
| Bis(2-chloroethyl)ether | 0.050 | U | 0.33 | mg/kg wet | | | | | | | |
| Bis(2-chloroisopropyl)ether | 0.026 | U | 0.33 | mg/kg wet | | | | | | | |
| Bis(2-ethylhexyl)phthalate | 0.037 | U | 0.33 | mg/kg wet | | | | | | | |
| Butylbenzylphthalate | 0.034 | U | 0.33 | mg/kg wet | | | | | | | QV-02 |
| Chrysene | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Dibenzo(a,h)anthracene | 0.041 | U | 0.33 | mg/kg wet | | | | | | | |
| Dibenzofuran | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Diethylphthalate | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Dimethylphthalate | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Di-n-butylphthalate | 0.031 | U | 0.33 | mg/kg wet | | | | | | | |
| Di-n-octylphthalate | 0.027 | U | 0.33 | mg/kg wet | | | | | | | |
| Fluoranthene | 0.043 | U | 0.33 | mg/kg wet | | | | | | | |
| Fluorene | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Hexachlorobenzene | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Hexachlorobutadiene | 0.028 | U | 0.33 | mg/kg wet | | | | | | | |
| Hexachlorocyclopentadiene | 0.043 | U | 0.33 | mg/kg wet | | | | | | | |
| Hexachloroethane | 0.033 | U | 0.33 | mg/kg wet | | | | | | | |
| Indeno(1,2,3-cd)pyrene | 0.038 | U | 0.33 | mg/kg wet | | | | | | | |
| Isophorone | 0.016 | U | 0.33 | mg/kg wet | | | | | | | |
| Naphthalene | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Nitrobenzene | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| N-Nitrosodimethylamine | 0.027 | U | 0.33 | mg/kg wet | | | | | | | |
| N-Nitroso-di-n-propylamine | 0.017 | U | 0.33 | mg/kg wet | | | | | | | |
| N-nitrosodiphenylamine/Diphenylamine | 0.026 | U | 0.33 | mg/kg wet | | | | | | | |
| Pentachlorophenol | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Phenanthrene | 0.026 | U | 0.33 | mg/kg wet | | | | | | | |

# QUALITY CONTROL

## Semivolatile Organic Compounds by GCMS - Quality Control

*Batch 0I16021 - EPA 3550C_MS*

**Blank (0I16021-BLK1) Continued** Prepared: 09/16/2010 14:49 Analyzed: 09/20/2010 16:28

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Phenol | 0.025 | U | 0.33 | mg/kg wet | | | | | | | |
| Pyrene | 0.048 | U | 0.33 | mg/kg wet | | | | | | | |
| Pyridine | 0.12 | U | 0.33 | mg/kg wet | | | | | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *2.1* | | | *mg/kg wet* | *3.33* | | *64* | *28-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *1.4* | | | *mg/kg wet* | *1.67* | | *84* | *56-120* | | | |
| *Surrogate: 2-Fluorophenol* | *2.5* | | | *mg/kg wet* | *3.33* | | *75* | *49-126* | | | |
| *Surrogate: Nitrobenzene-d5* | *1.4* | | | *mg/kg wet* | *1.67* | | *86* | *50-117* | | | |
| *Surrogate: Phenol-d5* | *2.7* | | | *mg/kg wet* | *3.33* | | *80* | *56-120* | | | |
| *Surrogate: Terphenyl-d14* | *1.8* | | | *mg/kg wet* | *1.67* | | *108* | *36-151* | | | |

**LCS (0I16021-BS1)** Prepared: 09/16/2010 14:49 Analyzed: 09/20/2010 16:58

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 1.4 | | 0.33 | mg/kg wet | 1.67 | | 85 | 51-121 | | | |
| 1,4-Dichlorobenzene | 1.4 | | 0.33 | mg/kg wet | 1.67 | | 84 | 48-118 | | | |
| 2,4-Dinitrotoluene | 1.7 | | 0.33 | mg/kg wet | 1.67 | | 103 | 63-127 | | | |
| 2-Chlorophenol | 1.4 | | 0.33 | mg/kg wet | 1.67 | | 86 | 56-120 | | | |
| 4-Chloro-3-methylphenol | 1.6 | | 0.33 | mg/kg wet | 1.67 | | 94 | 59-121 | | | |
| 4-Nitrophenol | 1.8 | | 0.33 | mg/kg wet | 1.67 | | 107 | 73-147 | | | |
| Acenaphthene | 1.4 | | 0.33 | mg/kg wet | 1.67 | | 87 | 64-131 | | | |
| N-Nitroso-di-n-propylamine | 1.5 | | 0.33 | mg/kg wet | 1.67 | | 90 | 55-135 | | | |
| Pentachlorophenol | 1.1 | | 0.33 | mg/kg wet | 1.67 | | 64 | 45-117 | | | |
| Phenol | 1.5 | | 0.33 | mg/kg wet | 1.67 | | 87 | 54-121 | | | |
| Pyrene | 1.6 | | 0.33 | mg/kg wet | 1.67 | | 97 | 65-146 | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *3.0* | | | *mg/kg wet* | *3.33* | | *91* | *28-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *1.4* | | | *mg/kg wet* | *1.67* | | *84* | *56-120* | | | |
| *Surrogate: 2-Fluorophenol* | *2.7* | | | *mg/kg wet* | *3.33* | | *80* | *49-126* | | | |
| *Surrogate: Nitrobenzene-d5* | *1.5* | | | *mg/kg wet* | *1.67* | | *89* | *50-117* | | | |
| *Surrogate: Phenol-d5* | *2.8* | | | *mg/kg wet* | *3.33* | | *83* | *56-120* | | | |
| *Surrogate: Terphenyl-d14* | *1.7* | | | *mg/kg wet* | *1.67* | | *100* | *36-151* | | | |

**Matrix Spike (0I16021-MS1)** Prepared: 09/16/2010 14:49 Analyzed: 09/20/2010 17:57

**Source: C010147-03**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 1.5 | | 0.37 | mg/kg dry | 1.89 | 0.026 U | 82 | 51-121 | | | |
| 1,4-Dichlorobenzene | 1.5 | | 0.37 | mg/kg dry | 1.89 | 0.031 U | 77 | 48-118 | | | |
| 2,4-Dinitrotoluene | 1.9 | | 0.37 | mg/kg dry | 1.89 | 0.035 U | 98 | 63-127 | | | |
| 2-Chlorophenol | 1.6 | | 0.37 | mg/kg dry | 1.89 | 0.033 U | 83 | 56-120 | | | |
| 4-Chloro-3-methylphenol | 1.7 | | 0.37 | mg/kg dry | 1.89 | 0.032 U | 90 | 59-121 | | | |
| 4-Nitrophenol | 2.1 | | 0.37 | mg/kg dry | 1.89 | 0.048 U | 112 | 73-147 | | | |
| Acenaphthene | 1.7 | | 0.37 | mg/kg dry | 1.89 | 0.028 U | 87 | 64-131 | | | |
| N-Nitroso-di-n-propylamine | 1.6 | | 0.37 | mg/kg dry | 1.89 | 0.019 U | 86 | 55-135 | | | |
| Pentachlorophenol | 1.3 | | 0.37 | mg/kg dry | 1.89 | 0.028 U | 68 | 45-117 | | | |
| Phenol | 1.6 | | 0.37 | mg/kg dry | 1.89 | 0.028 U | 87 | 54-121 | | | |
| Pyrene | 1.6 | | 0.37 | mg/kg dry | 1.89 | 0.054 U | 87 | 65-146 | | | |
| *Surrogate: 2,4,6-Tribromophenol* | *3.5* | | | *mg/kg dry* | *3.78* | | *94* | *28-130* | | | |

# QUALITY CONTROL

## Semivolatile Organic Compounds by GCMS - Quality Control

*Batch 0I16021 - EPA 3550C_MS*

**Matrix Spike (0I16021-MS1) Continued** Prepared: 09/16/2010 14:49 Analyzed: 09/20/2010 17:57

**Source: C010147-03**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Surrogate: 2-Fluorobiphenyl* | *1.6* | | | *mg/kg dry* | *1.89* | | *84* | *56-120* | | | |
| *Surrogate: 2-Fluorophenol* | *2.9* | | | *mg/kg dry* | *3.78* | | *75* | *49-126* | | | |
| *Surrogate: Nitrobenzene-d5* | *1.6* | | | *mg/kg dry* | *1.89* | | *86* | *50-117* | | | |
| *Surrogate: Phenol-d5* | *3.1* | | | *mg/kg dry* | *3.78* | | *82* | *56-120* | | | |
| *Surrogate: Terphenyl-d14* | *1.7* | | | *mg/kg dry* | *1.89* | | *88* | *36-151* | | | |

**Matrix Spike Dup (0I16021-MSD1)** Prepared: 09/16/2010 14:49 Analyzed: 09/20/2010 18:27

**Source: C010147-03**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 1.6 | | 0.37 | mg/kg dry | 1.89 | 0.026 U | 82 | 51-121 | 0.9 | 10 | |
| 1,4-Dichlorobenzene | 1.5 | | 0.37 | mg/kg dry | 1.89 | 0.031 U | 78 | 48-118 | 1 | 13 | |
| 2,4-Dinitrotoluene | 1.9 | | 0.37 | mg/kg dry | 1.89 | 0.035 U | 98 | 63-127 | 0.4 | 10 | |
| 2-Chlorophenol | 1.6 | | 0.37 | mg/kg dry | 1.89 | 0.033 U | 84 | 56-120 | 1 | 11 | |
| 4-Chloro-3-methylphenol | 1.7 | | 0.37 | mg/kg dry | 1.89 | 0.032 U | 91 | 59-121 | 0.7 | 10 | |
| 4-Nitrophenol | 2.1 | | 0.37 | mg/kg dry | 1.89 | 0.048 U | 113 | 73-147 | 0.7 | 10 | |
| Acenaphthene | 1.7 | | 0.37 | mg/kg dry | 1.89 | 0.028 U | 88 | 64-131 | 0.4 | 19 | |
| N-Nitroso-di-n-propylamine | 1.7 | | 0.37 | mg/kg dry | 1.89 | 0.019 U | 89 | 55-135 | 3 | 10 | |
| Pentachlorophenol | 1.3 | | 0.37 | mg/kg dry | 1.89 | 0.028 U | 69 | 45-117 | 1 | 10 | |
| Phenol | 1.7 | | 0.37 | mg/kg dry | 1.89 | 0.028 U | 88 | 54-121 | 0.5 | 13 | |
| Pyrene | 1.6 | | 0.37 | mg/kg dry | 1.89 | 0.054 U | 87 | 65-146 | 0.5 | 50 | |
| *Surrogate: 2,4,6-Tribromophenol* | *3.5* | | | *mg/kg dry* | *3.78* | | *92* | *28-130* | | | |
| *Surrogate: 2-Fluorobiphenyl* | *1.6* | | | *mg/kg dry* | *1.89* | | *85* | *56-120* | | | |
| *Surrogate: 2-Fluorophenol* | *2.8* | | | *mg/kg dry* | *3.78* | | *75* | *49-126* | | | |
| *Surrogate: Nitrobenzene-d5* | *1.6* | | | *mg/kg dry* | *1.89* | | *86* | *50-117* | | | |
| *Surrogate: Phenol-d5* | *3.1* | | | *mg/kg dry* | *3.78* | | *82* | *56-120* | | | |
| *Surrogate: Terphenyl-d14* | *1.6* | | | *mg/kg dry* | *1.89* | | *86* | *36-151* | | | |

## Tentatively Identified Compounds by Semivolatile GCMS - Quality Control

*Batch 0I14023 - EPA 3510C_MS*

**Blank (0I14023-BLK1)** Prepared: 09/14/2010 12:33 Analyzed: 09/23/2010 00:27

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Unknown (01)** | **8.6** | **J** | | ug/L | | | | | | | |
| **Unknown (02)** | **13** | **J** | | ug/L | | | | | | | |

*Batch 0I16021 - EPA 3550C_MS*

**Blank (0I16021-BLK1)** Prepared: 09/16/2010 14:49 Analyzed: 09/20/2010 16:28

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **2-Chlorocyclohexanol** | **0.14** | **J** | | mg/kg wet | | | | | | | |
| **Ethane, 1,1,2,2-tetrachloro-** | **0.30** | **J** | | mg/kg wet | | | | | | | |
| **Unknown** | **0.47** | **J** | | mg/kg wet | | | | | | | |

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## QUALITY CONTROL

### Organochlorine Pesticides by GC - Quality Control

*Batch 0I14004 - EPA 3510C*

**Blank (0I14004-BLK1)** Prepared: 09/14/2010 07:47 Analyzed: 09/21/2010 23:39

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD | 0.013 | U | 0.050 | ug/L | | | | | | | |
| 4,4'-DDE | 0.012 | U | 0.050 | ug/L | | | | | | | |
| 4,4'-DDT | 0.015 | U | 0.050 | ug/L | | | | | | | |
| Aldrin | 0.012 | U | 0.050 | ug/L | | | | | | | |
| alpha-BHC | 0.015 | U | 0.050 | ug/L | | | | | | | |
| beta-BHC | 0.012 | U | 0.050 | ug/L | | | | | | | |
| Chlordane (tech) | 0.20 | U | 0.50 | ug/L | | | | | | | |
| Chlordane-alpha | 0.014 | U | 0.050 | ug/L | | | | | | | |
| Chlordane-gamma | 0.012 | U | 0.050 | ug/L | | | | | | | |
| delta-BHC | 0.014 | U | 0.050 | ug/L | | | | | | | |
| Dieldrin | 0.0089 | U | 0.050 | ug/L | | | | | | | |
| Endosulfan I | 0.016 | U | 0.050 | ug/L | | | | | | | |
| Endosulfan II | 0.012 | U | 0.050 | ug/L | | | | | | | |
| Endosulfan sulfate | 0.012 | U | 0.050 | ug/L | | | | | | | |
| Endrin | 0.013 | U | 0.050 | ug/L | | | | | | | |
| Endrin aldehyde | 0.012 | U | 0.050 | ug/L | | | | | | | |
| Endrin ketone | 0.012 | U | 0.050 | ug/L | | | | | | | |
| gamma-BHC | 0.016 | U | 0.050 | ug/L | | | | | | | |
| Heptachlor | 0.012 | U | 0.050 | ug/L | | | | | | | |
| Heptachlor epoxide | 0.0089 | U | 0.050 | ug/L | | | | | | | |
| Isodrin | 0.013 | U | 0.050 | ug/L | | | | | | | |
| Methoxychlor | 0.016 | U | 0.050 | ug/L | | | | | | | |
| Mirex | 0.016 | U | 0.050 | ug/L | | | | | | | |
| Toxaphene | 0.22 | U | 0.50 | ug/L | | | | | | | |
| *Surrogate: 2,4,5,6-TCMX* | *0.97* | | | *ug/L* | *1.00* | | *97* | *44-134* | | | |
| *Surrogate: Decachlorobiphenyl* | *1.1* | | | *ug/L* | *1.00* | | *109* | *37-149* | | | |

**LCS (0I14004-BS1)** Prepared: 09/14/2010 07:47 Analyzed: 09/21/2010 23:52

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDT | 1.1 | | 0.050 | ug/L | 1.00 | | 108 | 37-139 | | | |
| Dieldrin | 1.0 | | 0.050 | ug/L | 1.00 | | 103 | 46-132 | | | |
| Endrin | 1.0 | | 0.050 | ug/L | 1.00 | | 102 | 43-133 | | | |
| *Surrogate: 2,4,5,6-TCMX* | *0.91* | | | *ug/L* | *1.00* | | *91* | *44-134* | | | |
| *Surrogate: Decachlorobiphenyl* | *1.1* | | | *ug/L* | *1.00* | | *106* | *37-149* | | | |

**Matrix Spike (0I14004-MS1)** Prepared: 09/14/2010 07:47 Analyzed: 09/22/2010 00:19

**Source: C010549-07**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDT | 1.1 | | 0.050 | ug/L | 1.00 | 0.015 U | 109 | 37-139 | | | |
| Dieldrin | 1.0 | | 0.050 | ug/L | 1.00 | 0.0089 U | 101 | 46-132 | | | |
| Endrin | 1.0 | | 0.050 | ug/L | 1.00 | 0.013 U | 101 | 43-133 | | | |
| *Surrogate: 2,4,5,6-TCMX* | *0.92* | | | *ug/L* | *1.00* | | *92* | *44-134* | | | |
| *Surrogate: Decachlorobiphenyl* | *1.0* | | | *ug/L* | *1.00* | | *104* | *37-149* | | | |

**Matrix Spike Dup (0I14004-MSD1)** Prepared: 09/14/2010 07:47 Analyzed: 09/22/2010 00:32

# QUALITY CONTROL

## Organochlorine Pesticides by GC - Quality Control

*Batch 0I14004 - EPA 3510C*

**Matrix Spike Dup (0I14004-MSD1) Continued** Prepared: 09/14/2010 07:47 Analyzed: 09/22/2010 00:32

**Source: C010549-07**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDT | 1.1 | | 0.050 | ug/L | 1.00 | 0.015 U | 106 | 37-139 | 3 | 26 | |
| Dieldrin | 0.99 | | 0.050 | ug/L | 1.00 | 0.0089 U | 99 | 46-132 | 2 | 27 | |
| Endrin | 0.99 | | 0.050 | ug/L | 1.00 | 0.013 U | 99 | 43-133 | 2 | 26 | |
| *Surrogate: 2,4,5,6-TCMX* | *0.90* | | | *ug/L* | *1.00* | | *90* | *44-134* | | | |
| *Surrogate: Decachlorobiphenyl* | *1.0* | | | *ug/L* | *1.00* | | *103* | *37-149* | | | |

*Batch 0I14011 - EPA 3550C*

**Blank (0I14011-BLK1)** Prepared: 09/14/2010 09:57 Analyzed: 09/16/2010 18:06

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDD | 0.00032 | U | 0.0017 | mg/kg wet | | | | | | | |
| 4,4'-DDE | 0.00041 | U | 0.0017 | mg/kg wet | | | | | | | |
| 4,4'-DDT | 0.00052 | U | 0.0017 | mg/kg wet | | | | | | | |
| Aldrin | 0.00036 | U | 0.0017 | mg/kg wet | | | | | | | |
| alpha-BHC | 0.00049 | U | 0.0017 | mg/kg wet | | | | | | | |
| beta-BHC | 0.00071 | U | 0.0017 | mg/kg wet | | | | | | | |
| Chlordane (tech) | 0.0011 | U | 0.033 | mg/kg wet | | | | | | | |
| Chlordane-alpha | 0.00046 | U | 0.0017 | mg/kg wet | | | | | | | |
| Chlordane-gamma | 0.00060 | U | 0.0017 | mg/kg wet | | | | | | | |
| delta-BHC | 0.00030 | U | 0.0017 | mg/kg wet | | | | | | | |
| Dieldrin | 0.00032 | U | 0.0017 | mg/kg wet | | | | | | | |
| Endosulfan I | 0.00041 | U | 0.0017 | mg/kg wet | | | | | | | |
| Endosulfan II | 0.00039 | U | 0.0017 | mg/kg wet | | | | | | | |
| Endosulfan sulfate | 0.00048 | U | 0.0017 | mg/kg wet | | | | | | | |
| Endrin | 0.00039 | U | 0.0017 | mg/kg wet | | | | | | | |
| Endrin aldehyde | 0.00034 | U | 0.0017 | mg/kg wet | | | | | | | |
| Endrin ketone | 0.00030 | U | 0.0017 | mg/kg wet | | | | | | | |
| gamma-BHC | 0.00042 | U | 0.0017 | mg/kg wet | | | | | | | |
| Heptachlor | 0.00046 | U | 0.0017 | mg/kg wet | | | | | | | |
| Heptachlor epoxide | 0.00043 | U | 0.0017 | mg/kg wet | | | | | | | |
| Isodrin | 0.00036 | U | 0.0017 | mg/kg wet | | | | | | | |
| Methoxychlor | 0.00042 | U | 0.0017 | mg/kg wet | | | | | | | |
| Mirex | 0.00056 | U | 0.0017 | mg/kg wet | | | | | | | |
| Toxaphene | 0.010 | U | 0.017 | mg/kg wet | | | | | | | |
| *Surrogate: 2,4,5,6-TCMX* | *0.048* | | | *mg/kg wet* | *0.0333* | | *145* | *59-137* | | | *QS-03* |
| *Surrogate: Decachlorobiphenyl* | *0.043* | | | *mg/kg wet* | *0.0333* | | *130* | *60-140* | | | |

**LCS (0I14011-BS1)** Prepared: 09/14/2010 09:57 Analyzed: 09/16/2010 18:19

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDT | 0.057 | | 0.0017 | mg/kg wet | 0.0333 | | 170 | 38-142 | | | QL-02 |
| Dieldrin | 0.045 | | 0.0017 | mg/kg wet | 0.0333 | | 134 | 51-129 | | | QL-02 |
| Endrin | 0.047 | | 0.0017 | mg/kg wet | 0.0333 | | 140 | 51-126 | | | QL-02 |
| *Surrogate: 2,4,5,6-TCMX* | *0.051* | | | *mg/kg wet* | *0.0333* | | *152* | *59-137* | | | *QS-03* |
| *Surrogate: Decachlorobiphenyl* | *0.045* | | | *mg/kg wet* | *0.0333* | | *135* | *60-140* | | | |

# QUALITY CONTROL

## Organochlorine Pesticides by GC - Quality Control

*Batch 0I14011 - EPA 3550C*

**Matrix Spike (0I14011-MS1)** Prepared: 09/14/2010 09:57 Analyzed: 09/16/2010 18:33

**Source: C010080-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDT | 0.073 | | 0.0019 | mg/kg dry | 0.0379 | 0.00059 U | 194 | 38-142 | | | QM-07 |
| Dieldrin | 0.15 | | 0.0019 | mg/kg dry | 0.0379 | 0.12 | 74 | 51-129 | | | |
| Endrin | 0.053 | | 0.0019 | mg/kg dry | 0.0379 | 0.00044 U | 139 | 51-126 | | | QM-07 |
| *Surrogate: 2,4,5,6-TCMX* | *0.058* | | | *mg/kg dry* | *0.0379* | | *153* | *59-137* | | | *QS-03* |
| *Surrogate: Decachlorobiphenyl* | *0.049* | | | *mg/kg dry* | *0.0379* | | *129* | *60-140* | | | |

**Matrix Spike Dup (0I14011-MSD1)** Prepared: 09/14/2010 09:57 Analyzed: 09/16/2010 18:46

**Source: C010080-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,4'-DDT | 0.072 | | 0.0019 | mg/kg dry | 0.0379 | 0.00059 U | 190 | 38-142 | 2 | 42 | QM-07 |
| Dieldrin | 0.14 | | 0.0019 | mg/kg dry | 0.0379 | 0.12 | 48 | 51-129 | 7 | 40 | QM-07 |
| Endrin | 0.051 | | 0.0019 | mg/kg dry | 0.0379 | 0.00044 U | 135 | 51-126 | 3 | 33 | QM-07 |
| *Surrogate: 2,4,5,6-TCMX* | *0.054* | | | *mg/kg dry* | *0.0379* | | *143* | *59-137* | | | *QS-03* |
| *Surrogate: Decachlorobiphenyl* | *0.046* | | | *mg/kg dry* | *0.0379* | | *123* | *60-140* | | | |

## Metals by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I14017 - EPA 7471B*

**Blank (0I14017-BLK1)** Prepared: 09/14/2010 10:54 Analyzed: 09/14/2010 16:05

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.00480 | U | 0.0100 | mg/kg wet | | | | | | | |

**LCS (0I14017-BS1)** Prepared: 09/14/2010 10:54 Analyzed: 09/14/2010 16:08

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.259 | | 0.0100 | mg/kg wet | 0.246 | | 105 | 85-115 | | | |

**Matrix Spike (0I14017-MS1)** Prepared: 09/14/2010 10:54 Analyzed: 09/14/2010 16:14

**Source: C010147-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.283 | | 0.0107 | mg/kg dry | 0.264 | 0.00515 U | 107 | 85-115 | | | |

**Matrix Spike Dup (0I14017-MSD1)** Prepared: 09/14/2010 10:54 Analyzed: 09/14/2010 16:17

**Source: C010147-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.269 | | 0.0107 | mg/kg dry | 0.268 | 0.00515 U | 100 | 85-115 | 5 | 15 | |

**Post Spike (0I14017-PS1)** Prepared: 09/14/2010 10:54 Analyzed: 09/14/2010 16:20

**Source: C010147-01**

# QUALITY CONTROL

## Metals by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I14017 - EPA 7471B*

**Post Spike (0I14017-PS1) Continued** Prepared: 09/14/2010 10:54 Analyzed: 09/14/2010 16:20

**Source: C010147-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 4.98 | | 0.200 | ug/L | 5.00 | -0.420 | 108 | 75-125 | | | |

*Batch 0I15010 - EPA 245.1*

**Blank (0I15010-BLK1)** Prepared: 09/15/2010 08:56 Analyzed: 09/15/2010 16:17

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.170 | U | 0.200 | ug/L | | | | | | | |

**LCS (0I15010-BS1)** Prepared: 09/15/2010 08:56 Analyzed: 09/15/2010 16:21

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 4.99 | | 0.200 | ug/L | 5.00 | | 100 | 85-115 | | | |

**Matrix Spike (0I15010-MS1)** Prepared: 09/15/2010 08:56 Analyzed: 09/15/2010 16:27

**Source: C010137-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 4.86 | | 0.200 | ug/L | 5.00 | 0.170 U | 97 | 85-115 | | | |

**Matrix Spike Dup (0I15010-MSD1)** Prepared: 09/15/2010 08:56 Analyzed: 09/15/2010 16:30

**Source: C010137-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 4.47 | | 0.200 | ug/L | 5.00 | 0.170 U | 89 | 85-115 | 8 | 15 | |

**Post Spike (0I15010-PS1)** Prepared: 09/15/2010 08:56 Analyzed: 09/15/2010 16:33

**Source: C010137-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 3.91 | | 0.200 | ug/L | 5.00 | -0.211 | 82 | 75-125 | | | |

*Batch 0I20010 - EPA 3050B*

**Blank (0I20010-BLK1)** Prepared: 09/20/2010 10:28 Analyzed: 09/21/2010 14:16

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 0.110 | U | 1.00 | mg/kg wet | | | | | | | |
| Arsenic | 0.100 | U | 0.500 | mg/kg wet | | | | | | | |
| Beryllium | 0.0120 | U | 0.0500 | mg/kg wet | | | | | | | |
| Cadmium | 0.00960 | U | 0.0500 | mg/kg wet | | | | | | | |
| Chromium | 0.100 | U | 0.500 | mg/kg wet | | | | | | | |
| Copper | 0.190 | U | 0.500 | mg/kg wet | | | | | | | |
| Lead | 0.120 | U | 0.500 | mg/kg wet | | | | | | | |
| Manganese | 0.100 | U | 0.500 | mg/kg wet | | | | | | | |
| Nickel | 0.360 | U | 2.50 | mg/kg wet | | | | | | | |

# QUALITY CONTROL

## Metals by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I20010 - EPA 3050B*

**Blank (0I20010-BLK1) Continued**

Prepared: 09/20/2010 10:28 Analyzed: 09/21/2010 14:16

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Selenium** | **0.122** | **J** | 0.500 | mg/kg wet | | | | | | | |
| Silver | 0.100 | U | 0.500 | mg/kg wet | | | | | | | |
| Thallium | 0.100 | U | 0.500 | mg/kg wet | | | | | | | |
| Zinc | 1.10 | U | 2.50 | mg/kg wet | | | | | | | |

**LCS (0I20010-BS1)**

Prepared: 09/20/2010 10:28 Analyzed: 09/21/2010 14:20

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 12.5 | | 1.00 | mg/kg wet | 12.5 | | 100 | 80-120 | | | |
| Arsenic | 24.8 | | 0.500 | mg/kg wet | 25.0 | | 99 | 80-120 | | | |
| Beryllium | 12.7 | | 0.0500 | mg/kg wet | 12.5 | | 102 | 80-120 | | | |
| Cadmium | 12.6 | | 0.0500 | mg/kg wet | 12.5 | | 100 | 80-120 | | | |
| Chromium | 25.1 | | 0.500 | mg/kg wet | 25.0 | | 100 | 80-120 | | | |
| Copper | 12.7 | | 0.500 | mg/kg wet | 12.5 | | 101 | 80-120 | | | |
| Lead | 25.3 | | 0.500 | mg/kg wet | 25.0 | | 101 | 80-120 | | | |
| Manganese | 12.3 | | 0.500 | mg/kg wet | 12.5 | | 99 | 80-120 | | | |
| Nickel | 25.3 | | 2.50 | mg/kg wet | 25.0 | | 101 | 80-120 | | | |
| Selenium | 24.9 | B | 0.500 | mg/kg wet | 25.0 | | 99 | 80-120 | | | |
| Silver | 12.1 | | 0.500 | mg/kg wet | 12.5 | | 97 | 80-120 | | | |
| Thallium | 12.8 | | 0.500 | mg/kg wet | 12.5 | | 102 | 80-120 | | | |
| Zinc | 25.7 | | 2.50 | mg/kg wet | 25.0 | | 103 | 80-120 | | | |

**Matrix Spike (0I20010-MS1)**

Prepared: 09/20/2010 10:28 Analyzed: 09/21/2010 14:26

**Source: C010147-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 10.7 | | 1.07 | mg/kg dry | 13.6 | 0.118 U | 79 | 75-125 | | | |
| Arsenic | 27.4 | | 0.537 | mg/kg dry | 27.1 | 0.528 | 99 | 75-125 | | | |
| Beryllium | 13.9 | | 0.0537 | mg/kg dry | 13.6 | 0.0129 U | 103 | 75-125 | | | |
| Cadmium | 13.4 | | 0.0537 | mg/kg dry | 13.6 | 0.0103 U | 99 | 75-125 | | | |
| Chromium | 29.2 | | 0.537 | mg/kg dry | 27.1 | 0.925 | 104 | 75-125 | | | |
| Copper | 14.3 | | 0.537 | mg/kg dry | 13.6 | 0.454 | 103 | 75-125 | | | |
| Lead | 29.6 | | 0.537 | mg/kg dry | 27.1 | 0.473 | 108 | 75-125 | | | |
| Manganese | 13.8 | | 0.537 | mg/kg dry | 13.6 | 0.324 | 99 | 75-125 | | | |
| Nickel | 27.4 | | 2.68 | mg/kg dry | 27.1 | 0.386 U | 101 | 75-125 | | | |
| Selenium | 27.1 | B | 0.537 | mg/kg dry | 27.1 | 0.207 | 99 | 75-125 | | | |
| Silver | 13.0 | | 0.537 | mg/kg dry | 13.6 | 0.107 U | 96 | 75-125 | | | |
| Thallium | 14.3 | | 0.537 | mg/kg dry | 13.6 | 0.165 | 104 | 75-125 | | | |
| Zinc | 27.8 | | 2.68 | mg/kg dry | 27.1 | 1.18 U | 103 | 75-125 | | | |

**Matrix Spike Dup (0I20010-MSD1)**

Prepared: 09/20/2010 10:28 Analyzed: 09/21/2010 14:28

**Source: C010147-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 11.0 | | 1.07 | mg/kg dry | 13.6 | 0.118 U | 81 | 75-125 | 3 | 20 | |
| Arsenic | 27.7 | | 0.537 | mg/kg dry | 27.1 | 0.528 | 100 | 75-125 | 1 | 20 | |
| Beryllium | 13.9 | | 0.0537 | mg/kg dry | 13.6 | 0.0129 U | 102 | 75-125 | 0.6 | 20 | |

# QUALITY CONTROL

## Metals by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I20010 - EPA 3050B*

**Matrix Spike Dup (0I20010-MSD1) Continued** Prepared: 09/20/2010 10:28 Analyzed: 09/21/2010 14:28

**Source: C010147-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cadmium | 13.3 | | 0.0537 | mg/kg dry | 13.6 | 0.0103 U | 98 | 75-125 | 0.6 | 20 | |
| Chromium | 35.5 | | 0.537 | mg/kg dry | 27.1 | 0.925 | 128 | 75-125 | 20 | 20 | QM-07 |
| Copper | 14.3 | | 0.537 | mg/kg dry | 13.6 | 0.454 | 102 | 75-125 | 0.4 | 20 | |
| Lead | 30.1 | | 0.537 | mg/kg dry | 27.1 | 0.473 | 109 | 75-125 | 2 | 20 | |
| Manganese | 13.9 | | 0.537 | mg/kg dry | 13.6 | 0.324 | 100 | 75-125 | 1 | 20 | |
| Nickel | 28.5 | | 2.68 | mg/kg dry | 27.1 | 0.386 U | 105 | 75-125 | 4 | 20 | |
| Selenium | 27.0 | B | 0.537 | mg/kg dry | 27.1 | 0.207 | 99 | 75-125 | 0.3 | 20 | |
| Silver | 12.9 | | 0.537 | mg/kg dry | 13.6 | 0.107 U | 95 | 75-125 | 0.3 | 20 | |
| Thallium | 14.2 | | 0.537 | mg/kg dry | 13.6 | 0.165 | 104 | 75-125 | 0.5 | 20 | |
| Zinc | 28.3 | | 2.68 | mg/kg dry | 27.1 | 1.18 U | 104 | 75-125 | 2 | 20 | |

**Post Spike (0I20010-PS1)** Prepared: 09/20/2010 10:28 Analyzed: 09/21/2010 14:30

**Source: C010147-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 0.523 | | 0.0200 | mg/L | 0.500 | -0.00192 | 105 | 80-120 | | | |
| Arsenic | 1.06 | | 0.0100 | mg/L | 1.00 | 0.00994 | 105 | 80-120 | | | |
| Beryllium | 0.517 | | 0.00100 | mg/L | 0.500 | 0.000201 | 103 | 80-120 | | | |
| Cadmium | 0.515 | | 0.00100 | mg/L | 0.500 | 9.11E-5 | 103 | 80-120 | | | |
| Chromium | 1.06 | | 0.0100 | mg/L | 1.00 | 0.0174 | 104 | 80-120 | | | |
| Copper | 0.542 | | 0.0100 | mg/L | 0.500 | 0.00854 | 107 | 80-120 | | | |
| Lead | 1.05 | | 0.0100 | mg/L | 1.00 | 0.00890 | 104 | 80-120 | | | |
| Manganese | 0.518 | | 0.0100 | mg/L | 0.500 | 0.00611 | 102 | 80-120 | | | |
| Nickel | 1.03 | | 0.0500 | mg/L | 1.00 | 0.00112 | 102 | 80-120 | | | |
| Selenium | 1.05 | B | 0.0100 | mg/L | 1.00 | 0.00390 | 104 | 80-120 | | | |
| Silver | 0.477 | | 0.0100 | mg/L | 0.500 | -0.00590 | 97 | 80-120 | | | |
| Thallium | 0.534 | | 0.0100 | mg/L | 0.500 | 0.00310 | 106 | 80-120 | | | |
| Zinc | 1.04 | | 0.0500 | mg/L | 1.00 | 0.0124 | 103 | 80-120 | | | |

## Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I13014 - EPA 3005A*

**Blank (0I13014-BLK1)** Prepared: 09/13/2010 09:47 Analyzed: 09/14/2010 11:51

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 2.80 | U | 10.0 | ug/L | | | | | | | |
| Beryllium | 0.100 | U | 1.00 | ug/L | | | | | | | |
| Cadmium | 0.360 | U | 1.00 | ug/L | | | | | | | |
| Chromium | 1.00 | U | 10.0 | ug/L | | | | | | | |
| Copper | 1.60 | U | 10.0 | ug/L | | | | | | | |
| Lead | 1.90 | U | 10.0 | ug/L | | | | | | | |
| **Manganese** | **4.35** | **J** | 10.0 | ug/L | | | | | | | |
| Nickel | 1.80 | U | 10.0 | ug/L | | | | | | | |
| Selenium | 2.70 | U | 10.0 | ug/L | | | | | | | |
| Silver | 1.90 | U | 10.0 | ug/L | | | | | | | |
| Zinc | 3.80 | U | 10.0 | ug/L | | | | | | | |

## QUALITY CONTROL

### Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I13014 - EPA 3005A*

**LCS (0I13014-BS1)** Prepared: 09/13/2010 09:47 Analyzed: 09/14/2010 11:55

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 515 | | 10.0 | ug/L | 500 | | 103 | 80-120 | | | |
| Beryllium | 256 | | 1.00 | ug/L | 250 | | 102 | 80-120 | | | |
| Cadmium | 253 | | 1.00 | ug/L | 250 | | 101 | 80-120 | | | |
| Chromium | 508 | | 10.0 | ug/L | 500 | | 102 | 80-120 | | | |
| Copper | 258 | | 10.0 | ug/L | 250 | | 103 | 80-120 | | | |
| Lead | 514 | | 10.0 | ug/L | 500 | | 103 | 80-120 | | | |
| Manganese | 252 | B | 10.0 | ug/L | 250 | | 101 | 80-120 | | | |
| Nickel | 508 | | 10.0 | ug/L | 500 | | 102 | 80-120 | | | |
| Selenium | 534 | | 10.0 | ug/L | 500 | | 107 | 80-120 | | | |
| Silver | 260 | | 10.0 | ug/L | 250 | | 104 | 80-120 | | | |
| Zinc | 513 | | 10.0 | ug/L | 500 | | 103 | 80-120 | | | |

**Matrix Spike (0I13014-MS1)** Prepared: 09/13/2010 09:47 Analyzed: 09/14/2010 12:05

**Source: C010139-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 514 | | 10.0 | ug/L | 500 | 7.51 | 101 | 75-125 | | | |
| Beryllium | 259 | | 1.00 | ug/L | 250 | 0.100 U | 104 | 75-125 | | | |
| Cadmium | 242 | | 1.00 | ug/L | 250 | 0.360 U | 97 | 75-125 | | | |
| Chromium | 486 | | 10.0 | ug/L | 500 | 1.00 U | 97 | 75-125 | | | |
| Copper | 251 | | 10.0 | ug/L | 250 | 1.60 U | 100 | 75-125 | | | |
| Lead | 500 | | 10.0 | ug/L | 500 | 3.33 | 99 | 75-125 | | | |
| Manganese | 11300 | B | 10.0 | ug/L | 250 | 10200 | 410 | 75-125 | | | QM-07 |
| Nickel | 482 | | 10.0 | ug/L | 500 | 1.80 U | 96 | 75-125 | | | |
| Selenium | 532 | | 10.0 | ug/L | 500 | 13.4 | 104 | 75-125 | | | |
| Silver | 254 | | 10.0 | ug/L | 250 | 1.90 U | 102 | 75-125 | | | |
| Zinc | 493 | | 10.0 | ug/L | 500 | 5.39 | 97 | 75-125 | | | |

**Matrix Spike Dup (0I13014-MSD1)** Prepared: 09/13/2010 09:47 Analyzed: 09/14/2010 12:17

**Source: C010139-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 519 | | 10.0 | ug/L | 500 | 7.51 | 102 | 75-125 | 0.9 | 20 | |
| Beryllium | 260 | | 1.00 | ug/L | 250 | 0.100 U | 104 | 75-125 | 0.5 | 20 | |
| Cadmium | 251 | | 1.00 | ug/L | 250 | 0.360 U | 100 | 75-125 | 4 | 20 | |
| Chromium | 504 | | 10.0 | ug/L | 500 | 1.00 U | 101 | 75-125 | 4 | 20 | |
| Copper | 260 | | 10.0 | ug/L | 250 | 1.60 U | 104 | 75-125 | 4 | 20 | |
| Lead | 508 | | 10.0 | ug/L | 500 | 3.33 | 101 | 75-125 | 2 | 20 | |
| Manganese | 11100 | B | 10.0 | ug/L | 250 | 10200 | 356 | 75-125 | 1 | 20 | QM-07 |
| Nickel | 501 | | 10.0 | ug/L | 500 | 1.80 U | 100 | 75-125 | 4 | 20 | |
| Selenium | 542 | | 10.0 | ug/L | 500 | 13.4 | 106 | 75-125 | 2 | 20 | |
| Silver | 263 | | 10.0 | ug/L | 250 | 1.90 U | 105 | 75-125 | 3 | 20 | |
| Zinc | 511 | | 10.0 | ug/L | 500 | 5.39 | 101 | 75-125 | 4 | 20 | |

**Post Spike (0I13014-PS1)** Prepared: 09/13/2010 09:47 Analyzed: 09/14/2010 12:19

**Source: C010139-01**

# QUALITY CONTROL

## Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control

*Batch 0I13014 - EPA 3005A*

**Post Spike (0I13014-PS1) Continued** Prepared: 09/13/2010 09:47 Analyzed: 09/14/2010 12:19

**Source: C010139-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsenic | 1.09 | | 0.0100 | mg/L | 1.00 | 0.00751 | 108 | 80-120 | | | |
| Beryllium | 0.560 | | 0.00100 | mg/L | 0.500 | -3.70E-5 | 112 | 80-120 | | | |
| Cadmium | 0.536 | | 0.00100 | mg/L | 0.500 | -0.000550 | 107 | 80-120 | | | |
| Chromium | 1.08 | | 0.0100 | mg/L | 1.00 | -0.00352 | 108 | 80-120 | | | |
| Copper | 0.556 | | 0.0100 | mg/L | 0.500 | -0.000500 | 111 | 80-120 | | | |
| Lead | 1.07 | | 0.0100 | mg/L | 1.00 | 0.00333 | 106 | 80-120 | | | |
| Manganese | 11.3 | B | 0.0100 | mg/L | 0.500 | 10.2 | 218 | 80-120 | | | QM-08 |
| Nickel | 1.06 | | 0.0100 | mg/L | 1.00 | 5.47E-5 | 106 | 80-120 | | | |
| Selenium | 1.13 | | 0.0100 | mg/L | 1.00 | 0.0134 | 112 | 80-120 | | | |
| Silver | 0.522 | | 0.0100 | mg/L | 0.500 | 0.00123 | 104 | 80-120 | | | |
| Zinc | 1.09 | | 0.0100 | mg/L | 1.00 | 0.00539 | 108 | 80-120 | | | |

*Batch 0I14027 - EPA 3005A*

**Blank (0I14027-BLK1)** Prepared: 09/14/2010 16:20 Analyzed: 09/22/2010 14:27

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 0.220 | U | 2.00 | ug/L | | | | | | | |
| Thallium | 0.110 | U | 1.00 | ug/L | | | | | | | |

**LCS (0I14027-BS1)** Prepared: 09/14/2010 16:20 Analyzed: 09/22/2010 14:31

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 27.8 | | 2.00 | ug/L | 25.0 | | 111 | 80-120 | | | |
| Thallium | 27.3 | | 1.00 | ug/L | 25.0 | | 109 | 80-120 | | | |

**Matrix Spike (0I14027-MS1)** Prepared: 09/14/2010 16:20 Analyzed: 09/22/2010 14:38

**Source: C010140-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 27.3 | | 2.00 | ug/L | 25.0 | 0.220 U | 109 | 75-125 | | | |
| Thallium | 26.4 | | 1.00 | ug/L | 25.0 | 0.110 U | 106 | 75-125 | | | |

**Matrix Spike Dup (0I14027-MSD1)** Prepared: 09/14/2010 16:20 Analyzed: 09/22/2010 14:41

**Source: C010140-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 27.4 | | 2.00 | ug/L | 25.0 | 0.220 U | 109 | 75-125 | 0.3 | 20 | |
| Thallium | 26.3 | | 1.00 | ug/L | 25.0 | 0.110 U | 105 | 75-125 | 0.4 | 20 | |

**Post Spike (0I14027-PS1)** Prepared: 09/14/2010 16:20 Analyzed: 09/22/2010 14:45

**Source: C010140-01**

| Analyte | Result | Flag | MRL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | 27.2 | | 2.00 | ug/L | 25.0 | -0.0100 | 109 | 80-120 | | | |
| Thallium | 26.6 | | 1.00 | ug/L | 25.0 | 0.0290 | 106 | 80-120 | | | |

## QUALITY CONTROL

**Metals (total recoverable) by EPA 6000/7000 Series Methods - Quality Control**

*Batch 0I14027 - EPA 3005A*

## FLAGS/NOTES AND DEFINITIONS

| | |
|---|---|
| B | The analyte was detected in the associated method blank. |
| D | The sample was analyzed at dilution. |
| J | The reported value is between the laboratory method detection limit (MDL) and the laboratory method reporting limit (MRL), adjusted for actual sample preparation data and moisture content, where applicable. |
| U | The analyte was analyzed for but not detected to the level shown, adjusted for actual sample preparation data and moisture content, where applicable. |
| E | The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate. |
| MRL | Method Reporting Limit. The MRL is roughly equivalent to the practical quantitation limit (PQL) and is based on the low point of the calibration curve, when applicable, sample preparation factor, dilution factor, and, in the case of soil samples, moisture content. |
| J-01 | Result is estimated due to positive results in the associated method blank. |
| QB-01 | The method blank had a positive result for the analyte; however, the concentration in the method blank is less than 10% of the sample result, which minimizes the impact of the deviation. |
| QL-02 | The associated laboratory control sample exhibited high bias; since the result is ND, the impact on data quality is minimal. |
| QM-07 | The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery. |
| QM-08 | Post-digestion spike did not meet method requirements due to confirmed matrix effects (dilution test). |
| QS-03 | Surrogate recovery outside acceptance limits |
| QV-01 | The associated continuing calibration verification standard exhibited high bias; since the result is ND, the impact on data quality is minimal. |
| QV-02 | The associated continuing calibration verification standard exhibited low bias; the reported result should be considered to be a minimum estimate. |

# ENVIRONMENTAL CONSERVATION LABORATORIES CHAIN-OF-CUSTODY RECORD

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102-A Woodwinds Industrial Ct
Cary, NC 27511
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Page 1 of 1

| | |
|---|---|
| Client Name: S&ME, Inc. (SM001) | Project Number: 1054-10-2003 |
| Address: 3201 Spring Forest Road | Project Name Desc: Mary Chappell Site |
| City/ST/Zip: Raleigh, NC 27616 | PO # / Billing Info: |
| Tel: (919) 872-2660 / Fax: (919) 876-3958 | Reporting Contact: Ed Woloszyn |
| Sampler(s) Name, Affiliation (Print): Gerald Paul Stme | Billing Contact: Accounts Payable |
| Sampler(s) Signature: [signature] | Site Location / Time Zone: Hamlet, NC |

Requested Analyses

Requested Turnaround Times

Note: Rush requests subject to acceptance by the facility

X Standard

___ Expedited

Due __/__/__

Lab Workorder: C010147

Preservation (See Codes) (Combine as necessary)

| Sample ID (Field Identification) | Collection Date | Collection Time | Comp / Grab | Matrix (see codes) | Total # of Containers | 8270D + TICs | 8081B,8270D | 8260B + TICs | Ag As Be Cd Cr Cu Mn Ni Pb Sb Se Tl Zn | Hg | Sample Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GP-1 (17-21) | 9/9/10 | 1345 | Grab | SO | 4 | X | | X | | | |
| GP-2 (17-21) | 9/9/10 | 1645 | ↓ | SO | 4 | X | | X | | | |
| GP-2 (25-29) | 9/8/10 | 1240 | ↓ | SO | 4 | X | | X | | | |
| GP-3 (13-17) | 9/9/10 | 1250 | ↓ | SO | 4 | X | | X | | | |
| | | | | SO | 4 | X | | X | | | |
| | | | | SO | 4 | X | | X | | | |
| | | | | SO | 4 | X | | X | | | |
| Dup | 9/8/10 | — | ↓ | SO | 4 | X | | X | | | |
| Equipment Blank | 9/9/10 | 1800 | ↓ | WA | 6 | | X | X | X | X | |
| Trip Blank | — | | | WA | 2 | | | X | | | No trip blank received BJG 9/13/10 |

<-- Total # of Containers

| Sample Kit Prepared By | Date/Time | Relinquished By | Date/Time | Received By | Date/Time |
|---|---|---|---|---|---|
| BJG | 9/1/10 | [signature] | 730 9/10/10 | [signature] | 9/10/10 1730 |
| Comments/Special Reporting Requirements | | Relinquished By | Date/Time | Received By | Date/Time |
| | | Relinquished By | Date/Time | Received By | Date/Time |

Correct #'s & Temps on Receipt: C-338 3.2°C

Condition Upon Receipt: ✓ Acceptable ___ Unacceptable

Matrix: GW Ground water SO Soil DW Drinking Water SE Sediment SW Surface Water WW Wastewater A Air O Other (detail in comments)

Preservation: I-Ice H-HCl N-HNO3 S-H2SO4 NO NaOH O Other (detail in comments)

Note: All samples submitted to ENCO Labs are in accordance with the terms and conditions listed on the reverse of this form unless prior written agreements exist

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