

## SOIL MANAGEMENT EVALUATION AND RESPONSE PLAN, REVISION 1

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TETRA TECH GEO PROJECT No. 117-3008070.01

JUNE 19, 2012



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# 1 INTRODUCTION

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This Soil Management Evaluation and Response Plan, Revision 1 (“the SM Response Plan”) summarizes the results of the November-December 2011 soil investigations on the W. R. Grace & Co - Conn. (Grace) property. The purpose of the investigations was to delineate the geographic area(s) containing soil with concentrations exceeding Record of Decision (ROD) (EPA, 1989) action levels. This report provides a description of the delineated geographic areas, and it also proposes appropriate response actions for those areas. The soil investigation work was conducted in accordance with the Soil Management Work Plan (Revision 1) (the “Work Plan”), (Tetra Tech GEO, 2011) which was updated to reflect Environmental Protection Agency (EPA) comments dated July 28, 2011 (EPA, 2011) and decisions made during a September 30, 2011 meeting between EPA, the Massachusetts Department of Environmental Protection (MassDEP) and Grace.

In accordance with the Work Plan, soil samples were collected for analysis from four areas of the property to verify and delineate the extent of soil contamination at locations where previous soil sample analyses indicated that ROD action levels were exceeded. In addition, soil samples were collected from one sampling location not proposed in the Work Plan, to evaluate the cPAH concentrations in a drainage basin. Section 2 of this SM Response Plan describes how the soil samples were collected and analyzed. Section 3 provides a summary of the areas that were investigated and the soil quality results from the soil samples collected in 2011. Section 4 proposes appropriate response actions for areas where soil concentrations exceed ROD action levels and Section 5 provides reference cited in this SM Response Plan. This SM Response Plan has been revised to reflect the May 21, 2012 Tetra Tech GEO letter to USEPA *RE: Response to USEPA Comments on the Soil Management Evaluation and Response Plan* (Tetra Tech GEO, 2012).

## **2 SAMPLING AND ANALYSIS PROCEDURES**

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This section describes how the soil samples were collected and analyzed.

### **2.1 SURVEYING**

The EPA approved soil sampling locations SM-1 through SM-36 were located and staked by Meridian Associates prior to sample collection (Tetra Tech GEO, 2011). The location of soil sample location SM-37, which was not originally proposed in the Work Plan, was based on field observations. The location was not staked and surveyed in the field. The mapped position of the sampling location was approximated from the CAD site map.

Meridian Associates measured the ground surface elevation at locations SM-1 through SM-36. The ground surface elevations are included on the test pit and boring logs included in Attachment A. The ground surface elevation information from the locations in the south drainage ditch (SM-24 through SM-36) and the -filled portion of the south drainage ditch (SM-18 through SM-23) was used to estimate the elevation of the former surface of the now-filled south drainage ditch. This portion of the ditch was filled in during site development for the building additions and warehouse in the late 1960s and early 1970s. Based on the surveyed elevations, it was determined that samples collected from approximately 5 to 6 feet bgs represent the elevation of the former surface of the drainage ditch to a depth of approximately 1 foot below the former surface, and samples collected from approximately 7 to 8 feet bgs would represent an elevation approximately 2 to 3 feet below the former drainage ditch surface.

### **2.2 SOIL SAMPLING**

The soil samples were collected between November 14, 2011 and December 19, 2011. Soil samples SM-18 through SM-23, were collected from between the former warehouse and 1974 building addition (ESC-13 Area). A sonic drill rig with a water-cooled outer casing was used to minimize heating of the samples and possible loss of volatile organic compounds (VOCs) from the samples. Soil samples from all other areas (SM-1 through 17 and SM-24 through SM-37) were collected from the sides of test pits dug with a small excavator. The soil samples were collected according to the procedures described in the Work Plan (Tetra Tech GEO, 2011). All excess soil generated by the borings and test pits was placed back in the boring/test pit, as specified in the Work Plan (Tetra Tech GEO, 2011). All field work was completed in accordance

with the Health and Safety Plan for the Site (GeoTrans, 2010). Test pit and boring logs for SM-1 through SM-37 are included in Attachment A.

Representatives from EPA were on-site conducting oversight on behalf of EPA during most of the 2011 field work activities.

### **2.3 SAMPLE ANALYSIS**

The soil samples were sent to Alpha Analytical for analysis. Table 2-1 summarizes the location, depth, number of soil samples and analytical methods for each of the five investigation areas of the Site. Detection limits were below ROD action levels for all parameters on all samples, except on a few samples where dilution was required due to elevated concentrations of ethyl acetate as discussed in Section 3. One equipment blank was collected for each analytical method and a trip blank was included in coolers containing VOC samples. No other quality assurance/quality control samples were collected. Tables 2-2 through 2-4 provide the results from the equipment blanks and trip blanks collected during the soil sampling. Table 2-2 shows the results for the one equipment blank and two trip blanks analyzed for VOCs, Table 2-3 shows the results for the two equipment blanks analyzed for PAHs and Table 2-4 shows the results for the two equipment blanks analyzed for PCBs. As shown in the tables, there were no issues with the equipment or trip blank results.

In order to assure that sample integrity was maintained, site sample labeling, chain-of-custody forms, and packing and shipping requirements for the project samples were handled according to the procedures described in the Work Plan (Tetra Tech GEO, 2011).

### 3 RESULTS OF SOIL SAMPLE ANALYSES

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As discussed in Section 2 of the Work Plan (TT GEO, 2011) four geographic areas were identified for the soil delineation investigation. These areas were referred to as:

- Passivating Area Drain Line (SS-14 and SS-17)
- South Side of 1966 Building Addition (ECS-8)
- Between Former Warehouse and 1974 Building Addition (ECS-13)
- South Drainage Ditch (ECS-SS-1 and ECS-SS-2)

The soil investigation areas are shown on Figure 3-1. This section of the report summarizes the four areas investigated and the soil quality results from the soil samples collected from previous investigations and during 2011.

#### 3.1 PASSIVATING AREA DRAIN LINE (SS-14 AND SS-17)

##### *Results of Previous Investigations*

Soil samples SS-14 and SS-17 were collected in 2006 from beneath corroded sections of the cast iron drain line beneath the former passivating area (Figure 3-1). Flow in the drain line was from the area of SS-17 toward SS-14. Soil sample SS-14 was collected at a depth of approximately 1.7 feet bgs and SS-17 at approximately 2.8 feet bgs. The PCB concentration in sample SS-17, collected beneath an elbow in the cast iron drain line, was 25,400 µg/Kg. The elbow directed flow from the passivating area floor trench drain into the drain line. The PCB concentration in SS-14 was 1,070J µg/Kg. The reported concentration in SS-14 was only slightly greater than the ROD action level of 1,040 µg/Kg. A duplicate sample collected at SS-14 had a PCB concentration of 65J µg/Kg,. The J qualifiers indicate that the reported concentrations are approximate. No other samples collected beneath the former passivating area drain line contained PCBs at concentrations exceeding ROD action levels.

##### *2011 Results of Sample Analyses*

In 2011, 24 soil samples were collected at locations SM-6 through SM-17 along and adjacent to the former passivating area drain line between sample locations SS-17 and ten feet beyond SS-14, as well as two samples from beneath the former trench drain that flowed into the

passivating area drain line. Locations SS-14 and SS-17 were re-sampled and identified as SM-6 and SM-14, respectively. The sample locations are shown on Figure 3-2. To target the area beneath the former drain line, two soil samples were collected from each of the twelve locations: a sample of soil from approximately one to two feet bgs and a sample of soil from approximately three to four feet bgs. Test pit logs for SM-6 through SM-17 are included in Attachment A.

The soil samples were analyzed for PCBs using EPA Method 8082 with Microwave Extraction Method 3546. The PCB concentrations from the samples collected in 2011 are summarized in Table 3-1 and shown on Figure 3-2. The PCB concentration from the sample collected one to two feet bgs at SM-8 was 1,190  $\mu\text{g}/\text{Kg}$ , slightly above the ROD action level of 1,040  $\mu\text{g}/\text{Kg}$ . The PCB concentrations in the other 23 soil samples were below the ROD action level. The soil sampling results indicate that there is a small volume of soil with PCB concentrations that exceed the ROD action level in this area. The proposed response action for this area is discussed in Section 4.1.

## **3.2 SOUTH SIDE OF 1966 BUILDING ADDITION (ECS-8)**

### ***Results of Previous Investigations***

The sample collected in 2006 from the depth interval of 1 to 3 feet from boring ECS-8 (Figure 3-1) contained TCE and PCE at concentrations of 292 and 115  $\mu\text{g}/\text{Kg}$ , respectively. Photoionization detector (PID) field screening of the sample indicated a head-space concentration of 2 parts per million (ppm). PID field screening of the next deeper sample, 5 to 7 feet deep, did not detect any VOCs. No other soil samples, collected from above the water table at the Grace property contained VOC concentrations exceeding ROD action levels. The ECS-8 sample that contained TCE and PCE concentrations exceeding ROD action levels was located just below the former building floor slab. After ECS-8 was collected, the floor slab and building foundation were removed and the ground surface was re-graded such that the current ground surface at the location of ECS-8 is approximately two feet lower than it was at the time that ECS-8 was collected.

### ***2011 Results of Sample Analyses***

To determine if VOC-contaminated soil was still present in the area of ECS-8, shallow soil samples were collected at locations SM-1 through SM-5. Location ECS-8 was re-sampled

and identified as SM-1. The locations are shown on Figure 3-3. Two soil samples were collected from each of the five locations, one at approximately 0.5 feet bgs and one approximately two feet bgs. The soil samples were collected using EnCore<sup>®</sup> Samplers and analyzed for VOCs using EPA Method 8260B with low-level detection limits. Test pit logs for SM-1 through SM-5 are included in Attachment A.

The VOC concentrations from the samples collected in 2011 are summarized in Table 3-2 and shown on Figure 3-3. Table 3-2 also summarizes the ROD action levels. No VOCs were detected in any of the 10 samples, and the detection limits were less than the ROD action levels, indicating that there is no longer VOC contamination in soil in this area. It is likely that any VOC contamination present in the soil in 2006 volatilized after the floor slab and building foundation were removed and is no longer present. No further action is needed in this area.

### **3.3 BETWEEN FORMER WAREHOUSE AND 1974 BUILDING ADDITION (ECS-13)**

#### ***Results of Previous Investigations***

The PCB concentration of the sample collected in 2005 at a depth between 5 and 7 feet from boring ECS-13 was 1,110 µg/Kg, slightly higher than the ROD action level of 1,040 µg/Kg. Boring ECS-13 was drilled in a filled portion of the south drainage ditch near the former discharge of the roof drainage system (Figure 3-1). The roof drainage discharge pipe was moved further east when the 1974 addition to the building was built.

#### ***2011 Results of Sampling Analyses***

In 2011, 12 soil samples were collected at locations SM-18 through SM-23 to delineate the soil PCB concentrations in the filled portion of the south drainage ditch. In addition, because VOC detection limits of the previous soil sample analyses from this location were greater than the ROD action levels, soil samples collected from this area in 2011 were also analyzed for VOCs. Location ECS-13 was re-sampled and identified as SM-20. The sample locations are shown on Figure 3-4. At each of the six locations, two samples were collected, one from approximately 5 to 6 feet bgs and one from approximately 7 to 8 feet bgs. As discussed in Section 2.1, it was determined that these depths represent the former surface of the drainage ditch to a depth of approximately 1 foot below the former surface and approximately 2 to 3 feet

below the former drainage ditch surface. Boring logs for SM-18 through SM-23 are included in Attachment A.

The samples were analyzed for PCBs using EPA Method 8082 with Microwave Extraction Method 3546. The PCB concentrations from the samples collected in 2011 are summarized in Table 3-1 and shown on Figure 3-4. The PCB concentrations of three samples (5.7 to 6 feet bgs and 7 to 7.3 feet bgs at SM-19 and 7.7 to 8 feet bgs at SM-21) exceeded the ROD action level of 1,040  $\mu\text{g}/\text{Kg}$ . The PCB concentrations in these three samples ranged between 2,640  $\mu\text{g}/\text{Kg}$  and 15,900  $\mu\text{g}/\text{Kg}$ . The PCB concentrations in the other nine soil samples were below the ROD action level. The soil sampling analyses indicate that there is a small volume of soil that exceeds the PCB ROD action level in this area. The proposed response action for this area is discussed in Section 4.2.

Soil samples were analyzed for VOCs using EPA Method 8260B with low-level detection limits. The VOC concentrations of the samples collected in 2011 are summarized in Table 3-2 and shown on Figure 3-5. To minimize possible volatilization caused by heat generated by drilling, these samples were collected using a sonic drill rig with a water cooled outer barrel. The VOC soil samples were collected using EnCore<sup>®</sup> Samplers. In addition, the temperature of the soil samples was measured as soon as the sample was removed from the core barrel. As shown on the boring logs, the temperature of the samples were between 55°F and 60°F, indicating minimal heating of the samples. VOC concentrations in the soil samples collected from this area did not exceed ROD action levels, however, two samples were diluted due to the presence of ethyl acetate, resulting in their detection limits exceeding ROD action levels for several VOCs. The two samples with elevated VOC detection limits (SM-19 7 to 7.3 feet bgs and SM-21 7.7 to 8 feet) were collected from locations that had PCB concentrations greater than the ROD action level, and will therefore be included in a response action which is discussed in Section 4.2.

### **3.4 SOUTH DRAINAGE DITCH (ECS-SS-1 AND ECS-SS-2)**

#### ***Results of Previous Investigations***

The samples ECS-SS-1 and ECS-SS-2 (Figure 3-1) were collected in 2005 from the south drainage ditch to assess the presence/absence of surficial soil contamination associated with

potential run-off from the Grace building and the site drainage system to the drainage ditch. These two samples contained cPAHs at concentrations exceeding the ROD action level.

### ***2011 Results of Sample Analyses***

In 2011, 22 soil samples were collected at locations SM-24 through SM-36 to delineate the cPAH concentrations within the south drainage ditch. Location ECS-SS-1 was re-sampled and identified as SM-26, and location ECS-SS-2 was re-sampled and identified as SM-30. The sample locations are shown on Figure 3-4. Two soil samples were collected at each of the nine locations along the bottom of the draining ditch: a sample from approximately 0.5 to 1.5 bgs and a sample from approximately 2 to 3 feet bgs. At the four locations along the side of the drainage ditch, one soil sample was collected from a depth of approximately 0.5 bgs. Test pit logs for SM-24 through SM-36 are included in Attachment A.

The samples were analyzed for PAHs using EPA Method 8270CSIM. The PAH concentrations of the samples collected in 2011 are summarized in Table 3-3 and shown on Figure 3-6. The cPAH concentrations from seven of the samples exceeded the ROD action level of 690 µg/Kg. The cPAH concentrations in these samples ranged between 764 µg/Kg and 3,930 µg/Kg. In addition, one sample, SM-26 at 0.5 to 1.5 feet bgs, was diluted, resulting in non-detect results at detection limits exceeding the ROD action level. As shown on Figure 3-6, cPAH concentrations exceeding the ROD action level are mainly limited to the upper 1.5 to two feet of soil along the center of the south drainage ditch. Concentrations of cPAHs in samples collected along the side of the drainage ditch and from a depth of 2 to 3 feet below the center of the drainage ditch were below the ROD action level, with one exception. The deeper sample at SM-32 had a cPAH concentration of 764 µg/Kg. The SM-32 location is adjacent to an area where a drain line effluent enters the south drainage ditch from the south. The drain line, a corrugated culvert, was installed in 1992 during construction of the Groundwater Treatment System.

To evaluate if there were cPAH within the basin located at the upgradient end of the drain line (influent end) entering the south drainage ditch at location SM-32, soil samples from two depth intervals were collected from one location (SM-37) within the basin area and adjacent to the influent end of the drain line. Concentrations of cPAHs in the two SM-37 soil samples were below the ROD action level. The low concentrations of cPAHs from the two samples at the upstream end of the culvert (SM-37) show that this drainage swale and culvert are not the source

of PAHs found at SM-32. The elevated PAH soil in the SM-32 location is likely due to water accumulation in the low area of the south drainage ditch adjacent to its intersection with the culvert. Figure 3-6 shows the location and cPAH concentrations for location SM-37. In addition, the cPAH concentrations are summarized in Table 3-3. A test pit log for SM-37 is included in Attachment A.

The results of soil sample analyses indicate that the surficial soil along the center of the south drainage ditch exceeds the cPAH ROD action level. The proposed response action for this area is discussed in Section 4.3. No further action is considered necessary in the basin where sample SM-37 was collected.

## **4 PROPOSED SOIL RESPONSE PLAN**

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Based on the 2011 soil investigations we recommend that response actions be implemented to address soil with concentrations exceeding ROD action levels in three areas of the Site. Grace proposes to excavate soil with concentrations exceeding ROD action levels, conduct confirmatory sampling where necessary, dispose of the soil off-Site and prepare a Soil Response Action Completion Report. The proposed work is discussed below.

### **4.1 EXCAVATION**

Grace proposes to excavate soil exceeding ROD action levels in three areas as described below. Each area proposed for excavation will be surveyed and marked out prior to beginning excavation.

#### **4.1.1 PASSIVATING AREA DRAIN LINE (SS-14 AND SS-17)**

Grace proposes to excavate the soil to a depth of three feet in two areas, “A” and “B”, along the passivating area drain line. The limits of the two proposed excavations are shown on Figure 3-2. A total of approximately 9.5 cubic yards of soil will be excavated and disposed of off-Site. Based on data from samples collected in 2011, specifically from locations SM-11, SM-12, SM-13, SM-14, SM-15, and SM-16, the eastern, western, northern and southern limits in this area are well defined. No additional post excavation sampling is proposed for this area as none of the twelve samples collected in 2011 from the six locations surrounding SS-17 exceeded the ROD action level.

The eastern limits of excavation “B” are well defined by the data from samples collected at SM-6, SM-7, and SM-9 and therefore no post-excavation confirmatory sampling is proposed. The western limits of excavation “B”, west of sample location SM-8, will be confirmed by post-excavation confirmatory soil samples collected from the southwestern, western and northern sides of the excavation “B”. The confirmatory samples will be collected at a depth of 1 to 2 feet. The confirmatory sample locations are shown on Figure 3-2. The confirmatory soil samples will be analyzed for PCBs using EPA Method 8082 with Microwave Extraction Method 3546. If the confirmatory soil PCB concentrations are below the ROD action level, the remedial action for this area will be considered complete. If the PCB concentration of any confirmatory soil sample exceeds the ROD action level, excavation will continue two feet beyond the confirmatory sample

location and additional confirmatory sample(s) will be collected. This proposed post-excavation confirmatory sampling process will continue until soil PCB concentrations are below the ROD action level. Following completion of excavation of these areas, the excavations will be backfilled with imported fill. The fill will be from a certified clean source and tested prior to being brought onto the Site.

#### **4.1.2 BETWEEN FORMER WAREHOUSE AND 1974 BUILDING ADDITION (ECS-13)**

To remove soil containing PCB concentrations greater than the ROD action levels Grace proposes to excavate the soil from the area shown on Figure 3-4. The proposed depth of the excavation is ten feet. Excavation will be done during what is expected to be the seasonal low water table, which is estimated to be approximately 10 to 11 feet bgs. Soil below the seasonal low water table will not be excavated, as the soil remedy is targeted at limiting contact with contaminated soil and contact is unlikely below the water table. If necessary, any water accumulation in the bottom of the excavation will be pumped into a temporary holding tank and processed through the Grace on-site Treatment System.

Approximately 37 cubic yards of soil will be excavated, from the ECS-13 area, and disposed of off-Site. Post-excavation confirmatory soil samples are proposed to be collected from four locations on the sides of the excavation and from two locations in the bottom of the excavation. The confirmatory sample locations are shown on Figure 3-4. Two samples will be collected from each of the four side locations, one between 5 and 8 feet bgs, as specified in Table 4-1, and one at the base of the excavation at a depth of approximately 10 feet bgs. Two samples will be collected from the bottom of the excavation at the approximate locations of SM-19 and SM-21. The confirmatory soil samples will be analyzed for PCBs using EPA Method 8082 with Microwave Extraction Method 3546. Because the detection limits from one VOC sample collected at SM-19 and one VOC sample collected at SM-21 exceeded ROD action levels, the confirmatory samples will also be analyzed for VOCs using EPA Method 8260B with low-level detection limits. If the confirmatory sample PCB and VOC concentrations are below ROD action levels, remedial action for this area will be considered complete. If any confirmatory soil sample concentrations exceed ROD action levels, excavation will continue beyond that sample location by two feet and additional confirmatory samples will be collected until soil PCB and VOC concentrations are below the ROD action level. Following completion of excavation of this area,

the excavation will be backfilled with imported fill. The fill will be from a certified clean source and tested prior to being brought onto the Site.

#### **4.1.3 SOUTH DRAINAGE DITCH (ECS-SS-1 AND ECS-SS-2)**

The south drainage ditch is heavily vegetated. Therefore, trees and vegetation will be removed from the ditch prior to excavation. The trees and vegetation will be chipped and spread on-site. Tree roots and vegetative matter mixed with soil will be sent off-site for disposal with the soil material. Appropriate erosion and sedimentation controls will be placed at the downstream end of the drainage ditch during construction.

To remove the soil containing cPAHs at concentrations greater than the ROD action levels, Grace proposes to excavate the soil to a depth of two feet along the center line of the south drainage ditch as shown on Figure 3-6. In addition, the area around location SM-32 is proposed to be excavated to a depth of four feet. It is estimated that approximately 100 cubic yards of soil will be excavated and disposed of off-Site. Post-excavation confirmatory soil samples are proposed to be collected from three locations on the west end of the excavation near SM-24, where the former roof drain entered the ditch, from four locations near SM-32 and from four locations on the side of the ditch. The confirmatory sample locations are shown on Figure 3-6. One sample will be collected from each of the three locations at the west end of the excavation at a depth of 0.5 to 1.5 feet. A total of seven samples will be collected from the area of SM-32. At each of the locations east, west and south of SM-32, one sample will be collected at a depth of 0.5 to 1.5 feet and one will be collected at the bottom of the excavation at a depth of approximately four feet bgs. In addition, one sample will be collected from the bottom of the excavation in the location of SM-32 at a depth of approximately four feet bgs. Finally, four lateral (side wall) samples will be collected along the ditch adjacent to locations SM-28 and SM-35. These samples will be collected at a depth of 0.5 to 1.5 feet. The confirmatory soil samples will be analyzed for PAHs using EPA Method 8270CSIM. If the confirmatory soil sample cPAH concentrations are below ROD action levels, remedial action for this area will be considered complete. If any confirmatory soil sample cPAH concentrations exceed ROD action levels, excavation will continue by two feet beyond that sample location and additional confirmatory samples will be collected. Following completion of excavation of this area, clean fill and rip-rap stone will be brought in to restore the ditch to its original elevation and configuration.

## **4.2 CONFIRMATORY SOIL SAMPLING**

Confirmatory soil samples will be collected from the sides or bottom of the excavation at the locations described above. The soil samples will be collected and analyzed according to the procedures described in the Work Plan (Tetra Tech GEO, 2011). The samples will be analyzed with quick turn-around times so the results of analyses will be available before the excavation equipment demobilizes from the Site. Table 4-1 summarizes the number, depths and analyses of the proposed confirmatory soil samples.

## **4.3 SOIL DISPOSAL**

Necessary waste profiles will be prepared, based on the existing data, and disposal facilities will be selected. EPA will be provided with the names and location of the disposal facilities prior to any off-site shipment of impacted material.

## **4.4 SOIL RESPONSE ACTION COMPLETION REPORT**

Following completion of the soil remedial action, a Soil Response Action and Completion Report will be prepared and submitted to EPA. The report will summarize the soil excavation and confirmatory soil sample results.

## **4.5 SCHEDULE**

The soil excavation and sampling described in this SM Response Plan is expected to be completed in the summer of 2012, weather permitting, assuming prompt EPA approval of the response plan. A project schedule for the proposed activities will be provided upon EPA approval of the SM Response Plan.

## 5 REFERENCES

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- EPA, 1989. EPA Superfund Record of Decision: Wells G&H, EPA ID: MAD980732168, OU 01, Woburn, MA, September 14, 1989.
- EPA, 2011. *Letter with comments on the Soil Management Work Plan*, July 28, 2011.
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- Tetra Tech GEO, 2011. Soil Management Work Plan (Revision I), October 18, 2011.
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- Tetra Tech GEO, 2012. Letter to USEPA *RE: Response to USEPA Comments on the Soil Management Evaluation and Response Plan*, May 21, 2012

## TABLES

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TABLE 2-1. SUMMARY OF SOIL SAMPLING LOCATIONS, DEPTHS AND ANALYSES

<b>Locations</b>	<b>Sample Depths</b>	<b>Number of Samples</b>	<b>Analysis</b>
<p><i>Passivating Area Drain Line:</i></p> <p>SM-6 through SM-17</p> <p>(SM-14 collected at historic location SS-17; SM-6 collected at historic location SS-14)</p>	1-2 & 3-4 feet bgs	24	PCBs by EPA Method 8082 with Microwave Extraction Method 3546
<p><i>South Side of 1966 Building Addition:</i></p> <p>SM-1 through SM-5</p> <p>(SM-1 collected at historic location ECS-8)</p>	0.5 & 2 feet bgs	10	VOCs by EPA Method 8260B with low-level detection limits
<p><i>Between Former Warehouse and 1974 Building Addition:</i></p> <p>SM-18 through SM-23</p> <p>(SM-20 collected at historic location ECS-13)</p>	~5-6 & ~7-8 feet bgs	12	PCBs by EPA Method 8082 with Microwave Extraction Method 3546; VOCs by EPA Method 8260B with low-level detection limits
<p><i>South Drainage Ditch:</i></p> <p>SM-24 through SM-36</p> <p>(SM-26 collected at historic location ECS-SS-1; SM-30 collected at historic location ECS-SS-2)</p>	0.5-1.5 & 2-3 feet bgs at each of 9 locations; 0.5-1.5 feet bgs at each of 4 locations	22	cPAHs by EPA Method 8270CSIM
<p><i>Basin:</i></p> <p>SM-37</p>	0.5-1.5 & 2-3 feet bgs	2	cPAHs by EPA Method 8270CSIM

Table 2-2. Summary of 2011 VOC Equipment and Trip Blank Results Related to Soil Sampling.

Type	Equipment Blank	Trip Blank	Trip Blank
Field Sample ID	SM-21-TEB	TB-111611-SM	TB-112911
Date	11/29/11	11/16/11	11/29/11
1,1,1,2-Tetrachloroethane	ND (0.50)	ND (0.50)	ND (0.50)
1,1,1-Trichloroethane	ND (0.50)	ND (0.50)	ND (0.50)
1,1,2,2-Tetrachloroethane	ND (0.50)	ND (0.50)	ND (0.50)
1,1,2-Trichloroethane	ND (0.75)	ND (0.75)	ND (0.75)
1,1,2-trichlorotrifluoroethane	ND (10)	ND (10)	ND (10)
1,1-Dichloroethane	ND (0.75)	ND (0.75)	ND (0.75)
1,1-Dichloroethene	ND (0.50)	ND (0.50)	ND (0.50)
1,1-Dichloropropene	ND (2.5)	ND (2.5)	ND (2.5)
1,2,3-Trichlorobenzene	ND (2.5)	ND (2.5)	ND (2.5)
1,2,3-Trichloropropane	ND (5.0)	ND (5.0)	ND (5.0)
1,2,4,5-Tetramethylbenzene	ND (2.0)	ND (2.0)	ND (2.0)
1,2,4-Trichlorobenzene	ND (2.5)	ND (2.5)	ND (2.5)
1,2,4-Trimethylbenzene	ND (2.5)	ND (2.5)	ND (2.5)
1,2-Dibromo-3-chloropropane	ND (2.5)	ND (2.5)	ND (2.5)
1,2-Dibromoethane	ND (2.0)	ND (2.0)	ND (2.0)
1,2-Dichlorobenzene	ND (2.5)	ND (2.5)	ND (2.5)
1,2-Dichloroethane	ND (0.50)	ND (0.50)	ND (0.50)
1,2-Dichloropropane	ND (1.8)	ND (1.8)	ND (1.8)
1,3,5-Trimethylbenzene	ND (2.5)	ND (2.5)	ND (2.5)
1,3-Dichlorobenzene	ND (2.5)	ND (2.5)	ND (2.5)
1,3-Dichloropropane	ND (2.5)	ND (2.5)	ND (2.5)
1,4-Dichlorobenzene	ND (2.5)	ND (2.5)	ND (2.5)
1,4-Dichlorobutane	ND (5.0)	ND (5.0)	ND (5.0)
1,4-Dioxane	ND (250)	ND (250)	ND (250)
2,2-Dichloropropane	ND (2.5)	ND (2.5)	ND (2.5)
2-Butanone	ND (5.0)	ND (5.0)	ND (5.0)
2-Chloroethylvinyl ether	ND (10)	ND (10)	ND (10)
2-Hexanone	ND (5.0)	ND (5.0)	ND (5.0)
4-Ethyltoluene	ND (2.0)	ND (2.0)	ND (2.0)
4-Methyl-2-pentanone	ND (5.0)	ND (5.0)	ND (5.0)
Acetone	ND (5.0)	ND (5.0)	ND (5.0)
Acrylonitrile	ND (5.0)	ND (5.0)	ND (5.0)
Benzene	ND (0.50)	ND (0.50)	ND (0.50)
Bromobenzene	ND (2.5)	ND (2.5)	ND (2.5)
Bromochloromethane	ND (2.5)	ND (2.5)	ND (2.5)
Bromodichloromethane	ND (0.50)	ND (0.50)	ND (0.50)
Bromoform	ND (2.0)	ND (2.0)	ND (2.0)
Bromomethane	ND (1.0)	ND (1.0)	ND (1.0)
Carbon disulfide	ND (5.0)	ND (5.0)	ND (5.0)
Carbon tetrachloride	ND (0.50)	ND (0.50)	ND (0.50)
Chlorobenzene	ND (0.50)	ND (0.50)	ND (0.50)
Chloroethane	ND (1.0)	ND (1.0)	ND (1.0)
Chloroform	1.5	0.91	0.88
Chloromethane	ND (2.5)	ND (2.5)	ND (2.5)
cis-1,2-Dichloroethene	ND (0.50)	ND (0.50)	ND (0.50)
cis-1,3-Dichloropropene	ND (0.50)	ND (0.50)	ND (0.50)
Cyclohexane	ND (10)	ND (10)	ND (10)
Dibromochloromethane	ND (0.50)	ND (0.50)	ND (0.50)
Dibromomethane	ND (5.0)	ND (5.0)	ND (5.0)
Dichlorodifluoromethane	ND (5.0)	ND (5.0)	ND (5.0)
Ethyl Acetate	ND (10)	ND (10)	ND (10)
Ethyl ether	ND (2.5)	ND (2.5)	ND (2.5)
Ethyl methacrylate	ND (5.0)	ND (5.0)	ND (5.0)
Ethylbenzene	ND (0.50)	ND (0.50)	ND (0.50)
Ethyl-Tert-Butyl-Ether	ND (2.0)	ND (2.0)	ND (2.0)

Table 2-2. Summary of 2011 VOC Equipment and Trip Blank Results Related to Soil Sampling.

Type	Equipment Blank	Trip Blank	Trip Blank
Field Sample ID	SM-21-TEB	TB-111611-SM	TB-112911
Date	11/29/11	11/16/11	11/29/11
Hexachlorobutadiene	ND (0.50)	ND (0.50)	ND (0.50)
Isopropyl Ether	ND (2.0)	ND (2.0)	ND (2.0)
Isopropylbenzene	ND (0.50)	ND (0.50)	ND (0.50)
Methyl cyclohexane	ND (10)	ND (10)	ND (10)
Methyl tert butyl ether	ND (1.0)	ND (1.0)	ND (1.0)
Methylene chloride	ND (3.0)	ND (3.0)	ND (3.0)
Naphthalene	ND (2.5)	ND (2.5)	ND (2.5)
n-Butylbenzene	ND (0.50)	ND (0.50)	ND (0.50)
n-Propylbenzene	ND (0.50)	ND (0.50)	ND (0.50)
o-Chlorotoluene	ND (2.5)	ND (2.5)	ND (2.5)
o-Xylene	ND (1.0)	ND (1.0)	ND (1.0)
p/m-Xylene	ND (1.0)	ND (1.0)	ND (1.0)
p-Chlorotoluene	ND (2.5)	ND (2.5)	ND (2.5)
p-Diethylbenzene	ND (2.0)	ND (2.0)	ND (2.0)
p-Isopropyltoluene	ND (0.50)	ND (0.50)	ND (0.50)
sec-Butylbenzene	ND (0.50)	ND (0.50)	ND (0.50)
Styrene	ND (1.0)	ND (1.0)	ND (1.0)
Tert-Butyl Alcohol	ND (10)	ND (10)	ND (10)
tert-Butylbenzene	ND (2.5)	ND (2.5)	ND (2.5)
Tertiary-Amyl Methyl Ether	ND (2.0)	ND (2.0)	ND (2.0)
Tetrachloroethene	ND (0.50)	ND (0.50)	ND (0.50)
Tetrahydrofuran	ND (5.0)	ND (5.0)	ND (5.0)
Toluene	ND (0.75)	ND (0.75)	ND (0.75)
trans-1,2-Dichloroethene	ND (0.75)	ND (0.75)	ND (0.75)
trans-1,3-Dichloropropene	ND (0.50)	ND (0.50)	ND (0.50)
trans-1,4-Dichloro-2-butene	ND (2.5)	ND (2.5)	ND (2.5)
Trichloroethene	ND (0.50)	ND (0.50)	ND (0.50)
Trichlorofluoromethane	ND (2.5)	ND (2.5)	ND (2.5)
Vinyl acetate	ND (5.0)	ND (5.0)	ND (5.0)
Vinyl chloride	ND (1.0)	ND (1.0)	ND (1.0)

Concentrations in µg/L.

ND (0.50) - not detected at detection limit indicated in parentheses.

Table 2-3. Summary of 2011 PAH Equipment Blank Results Related to Soil Sampling.

Type	Equipment Blank	Equipment Blank
Field Sample ID	SM-30-BEB	SM-30-TEB
Date	11/15/11	11/15/11
1-Methylnaphthalene	ND (0.20)	ND (0.20)
2-Chloronaphthalene	ND (0.20)	ND (0.20)
2-Methylnaphthalene	ND (0.20)	ND (0.20)
Acenaphthene	ND (0.20)	ND (0.20)
Acenaphthylene	ND (0.20)	ND (0.20)
Anthracene	ND (0.20)	ND (0.20)
Benzo(a)anthracene	ND (0.20)	ND (0.20)
Benzo(a)pyrene	ND (0.20)	ND (0.20)
Benzo(b)fluoranthene	ND (0.20)	ND (0.20)
Benzo(ghi)perylene	ND (0.20)	ND (0.20)
Benzo(k)fluoranthene	ND (0.20)	ND (0.20)
Chrysene	ND (0.20)	ND (0.20)
Dibenzo(a,h)anthracene	ND (0.20)	ND (0.20)
Fluoranthene	ND (0.20)	ND (0.20)
Fluorene	ND (0.20)	ND (0.20)
Hexachlorobenzene	ND (0.80)	ND (0.80)
Hexachlorobutadiene	ND (0.50)	ND (0.50)
Hexachloroethane	ND (0.80)	ND (0.80)
Indeno(1,2,3-c,d)pyrene	ND (0.20)	ND (0.20)
Naphthalene	ND (0.20)	ND (0.20)
Pentachlorophenol	ND (0.80)	ND (0.80)
Phenanthrene	ND (0.20)	ND (0.20)
Pyrene	ND (0.20)	ND (0.20)

Concentrations in µg/L.

ND (0.50) - not detected at detection limit indicated in parentheses.

Table 2-4. Summary of 2011 PCB Equipment Blank Results Related to Soil Sampling.

Type	Equipment Blank	Equipment Blank
Field Sample ID	SM-15-BEB	SM-15-TEB
Date	11/14/11	11/14/11
Aroclor 1016	ND (0.263)	ND (0.263)
Aroclor 1221	ND (0.263)	ND (0.263)
Aroclor 1232	ND (0.263)	ND (0.263)
Aroclor 1242	ND (0.263)	ND (0.263)
Aroclor 1248	ND (0.263)	ND (0.263)
Aroclor 1254	ND (0.263)	ND (0.263)
Aroclor 1260	ND (0.263)	ND (0.263)
Aroclor 1262	ND (0.263)	ND (0.263)
Aroclor 1268	ND (0.263)	ND (0.263)

Concentrations in µg/L.

ND (0.50) - not detected at detection limit indicated in parentheses.

Table 3-1. Summary of 2011 PCB Soil Sample Results.

Location	SM-6	SM-6	SM-7	SM-7	SM-8	SM-8	SM-9	SM-9	SM-10	SM-10	SM-11	SM-11
Date	11/14/11	11/14/11	11/14/11	11/14/11	11/14/11	11/14/11	11/14/11	11/14/11	11/14/11	11/14/11	11/14/11	11/14/11
Depth (feet below ground surface)	1-2	3-4	1-2	3-4	1-2	3-4	1-2	3-4	1-2	3-4	1-2	3-4
Aroclor 1016	ND (21.7)	ND (22.5)	ND (22.4)	ND (20.8)	ND (110)	ND (22.6)	ND (21.4)	ND (23.0)	ND (22.1)	ND (22.8)	ND (21.1)	ND (22.8)
Aroclor 1221	ND (21.7)	ND (22.5)	ND (22.4)	ND (20.8)	ND (110)	ND (22.6)	ND (21.4)	ND (23.0)	ND (22.1)	ND (22.8)	ND (21.1)	ND (22.8)
Aroclor 1232	ND (21.7)	ND (22.5)	ND (22.4)	ND (20.8)	ND (110)	ND (22.6)	ND (21.4)	ND (23.0)	ND (22.1)	ND (22.8)	ND (21.1)	ND (22.8)
Aroclor 1242	ND (21.7)	ND (22.5)	ND (22.4)	ND (20.8)	ND (110)	ND (22.6)	ND (21.4)	ND (23.0)	ND (22.1)	ND (22.8)	ND (21.1)	ND (22.8)
Aroclor 1248	ND (14.5)	ND (15.0)	ND (14.9)	ND (13.9)	ND (73.7)	ND (15.1)	ND (14.3)	ND (15.4)	ND (14.7)	ND (15.2)	ND (14.0)	ND (15.2)
Aroclor 1254	100	61.4	129	114	1190	50.5	194	30.4	103	68.5	49.4	ND (22.8)
Aroclor 1260	ND (14.5)	ND (15.0)	ND (14.9)	ND (13.9)	ND (73.7)	ND (15.1)	ND (14.3)	ND (15.4)	ND (14.7)	ND (15.2)	ND (14.0)	ND (15.2)
Aroclor 1262	ND (7.24)	ND (7.52)	ND (7.47)	ND (6.93)	ND (36.9)	ND (7.55)	ND (7.13)	ND (7.68)	ND (7.36)	ND (7.58)	ND (7.02)	ND (7.60)
Aroclor 1268	ND (7.24)	ND (7.52)	ND (7.47)	ND (6.93)	ND (36.9)	ND (7.55)	ND (7.13)	ND (7.68)	ND (7.36)	ND (7.58)	ND (7.02)	ND (7.60)

Table 3-1. Summary of 2011 PCB Soil Sample Results.

Location	SM-12	SM-12	SM-13	SM-13	SM-14	SM-14	SM-15	SM-15	SM-16	SM-16	SM-17	SM-17
Date	11/14/11	11/14/11	11/14/11	11/14/11	11/14/11	11/14/11	11/14/11	11/14/11	11/14/11	11/14/11	11/14/11	11/14/11
Depth (feet below ground surface)	1-2	3-4	1-2	3-4	1-2	3-4	1-2	3-4	1-2	3-4	1-2	3-4
Aroclor 1016	ND (21.2)	ND (22.8)	ND (21.8)	ND (22.0)	ND (21.8)	ND (22.2)	ND (21.7)	ND (24.3)	ND (21.7)	ND (22.9)	ND (21.3)	ND (25.4)
Aroclor 1221	ND (21.2)	ND (22.8)	ND (21.8)	ND (22.0)	ND (21.8)	ND (22.2)	ND (21.7)	ND (24.3)	ND (21.7)	ND (22.9)	ND (21.3)	ND (25.4)
Aroclor 1232	ND (21.2)	ND (22.8)	ND (21.8)	ND (22.0)	ND (21.8)	ND (22.2)	ND (21.7)	ND (24.3)	ND (21.7)	ND (22.9)	ND (21.3)	ND (25.4)
Aroclor 1242	ND (21.2)	ND (22.8)	ND (21.8)	ND (22.0)	ND (21.8)	ND (22.2)	ND (21.7)	ND (24.3)	ND (21.7)	ND (22.9)	ND (21.3)	ND (25.4)
Aroclor 1248	ND (14.1)	ND (15.2)	ND (14.5)	ND (14.7)	ND (14.6)	ND (14.8)	ND (14.5)	ND (16.2)	ND (14.4)	ND (15.3)	ND (14.2)	ND (16.9)
Aroclor 1254	24.9	ND (22.8)	48.6	200	204	124	523	ND (24.3)	36.0	ND (22.9)	ND (21.3)	ND (25.4)
Aroclor 1260	ND (14.1)	ND (15.2)	ND (14.5)	ND (14.7)	ND (14.6)	ND (14.8)	ND (14.5)	ND (16.2)	ND (14.4)	ND (15.3)	ND (14.2)	ND (16.9)
Aroclor 1262	ND (7.06)	ND (7.61)	ND (7.26)	ND (7.34)	ND (7.29)	ND (7.39)	ND (7.24)	ND (8.09)	ND (7.22)	ND (7.64)	ND (7.11)	ND (8.46)
Aroclor 1268	ND (7.06)	ND (7.61)	ND (7.26)	ND (7.34)	ND (7.29)	ND (7.39)	ND (7.24)	ND (8.09)	ND (7.22)	ND (7.64)	ND (7.11)	ND (8.46)

Table 3-1. Summary of 2011 PCB Soil Sample Results.

Location	SM-18	SM-18	SM-19	SM-19	SM-20	SM-20	SM-21	SM-21	SM-22	SM-22	SM-23	SM-23
Date	11/29/11	11/29/11	11/29/11	11/29/11	11/29/11	11/29/11	11/29/11	11/29/11	11/29/11	11/29/11	11/29/11	11/29/11
Depth (feet below ground surface)	5-5.5	7-7.3	5.7-6	7-7.3	5.7-6	7-7.3	5-5.3	7.7-8	5.7-6	7-7.3	5-5.3	7-7.3
Aroclor 1016	ND (36.6)	ND (35.5)	ND (375)	ND (361)	ND (362)	ND (36.3)	ND (34.4)	ND (1850)	ND (38.1)	ND (35.9)	ND (37.2)	ND (38.9)
Aroclor 1221	ND (36.6)	ND (35.5)	ND (375)	ND (361)	ND (362)	ND (36.3)	ND (34.4)	ND (1850)	ND (38.1)	ND (35.9)	ND (37.2)	ND (38.9)
Aroclor 1232	ND (36.6)	ND (35.5)	ND (375)	ND (361)	ND (362)	ND (36.3)	ND (34.4)	ND (1850)	ND (38.1)	ND (35.9)	ND (37.2)	ND (38.9)
Aroclor 1242	ND (36.6)	ND (35.5)	ND (375)	ND (361)	ND (362)	ND (36.3)	ND (34.4)	ND (1850)	ND (38.1)	ND (35.9)	ND (37.2)	ND (38.9)
Aroclor 1248	ND (36.6)	ND (35.5)	ND (375)	ND (361)	ND (362)	ND (36.3)	ND (34.4)	ND (1850)	ND (38.1)	ND (35.9)	ND (37.2)	ND (38.9)
Aroclor 1254	ND (36.6)	ND (35.5)	2800	2640	928	71.2	ND (34.4)	15900	435	ND (35.9)	200	ND (38.9)
Aroclor 1260	ND (36.6)	ND (35.5)	ND (375)	ND (361)	ND (362)	ND (36.3)	ND (34.4)	ND (1850)	ND (38.1)	ND (35.9)	ND (37.2)	ND (38.9)
Aroclor 1262	ND (36.6)	ND (35.5)	ND (375)	ND (361)	ND (362)	ND (36.3)	ND (34.4)	ND (1850)	ND (38.1)	ND (35.9)	ND (37.2)	ND (38.9)
Aroclor 1268	ND (36.6)	ND (35.5)	ND (375)	ND (361)	ND (362)	ND (36.3)	ND (34.4)	ND (1850)	ND (38.1)	ND (35.9)	ND (37.2)	ND (38.9)

Concentrations in µg/kg

ND (22.8) - Not detected at detection limit indicated in parentheses.

Shaded - PCB concentration exceeds target soil concentration of 1040 µg/kg.

Table 3-2. Summary of 2011 VOC Soil Sample Results.

Location Date	Target Soil Conc.	SM-1	SM-1	SM-2	SM-2	SM-3	SM-3
		11/16/11	11/16/11	11/16/11	11/16/11	11/16/11	11/16/11
Depth (feet below ground surface)		0.5	2	0.5	2	0.5	2
1,1,1,2-Tetrachloroethane	-	ND (1.1)					
1,1,1-Trichloroethane	613	ND (1.1)					
1,1,2-Tetrachloroethane	-	ND (1.1)					
1,1,2-Trichloroethane	-	ND (1.6)	ND (1.7)				
1,1,2-trichlorotrifluoroethane	-	ND (21)	ND (22)				
1,1-Dichloroethane	-	ND (1.6)	ND (1.7)				
1,1-Dichloroethene	-	ND (1.1)					
1,1-Dichloropropene	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
1,2,3-Trichlorobenzene	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
1,2,3-Trichloropropane	-	ND (11)					
1,2,4,5-Tetramethylbenzene	-	ND (4.3)	ND (4.4)				
1,2,4-Trichlorobenzene	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
1,2,4-Trimethylbenzene	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
1,2-Dibromo-3-chloropropane	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
1,2-Dibromoethane	-	ND (4.3)	ND (4.4)				
1,2-Dichlorobenzene	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
1,2-Dichloroethane	-	ND (1.1)					
1,2-Dichloropropane	-	ND (3.8)	ND (3.9)				
1,3,5-Trimethylbenzene	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
1,3-Dichlorobenzene	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
1,3-Dichloropropane	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
1,4-Dichlorobenzene	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
1,4-Dioxane	-	ND (110)					
2,2-Dichloropropane	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
2-Butanone	-	ND (11)					
2-Chloroethylvinyl ether	-	ND (21)	ND (22)				
2-Hexanone	-	ND (11)					
4-Ethyltoluene	-	ND (4.3)	ND (4.4)				
4-Methyl-2-pentanone	-	ND (11)					
Acetone	-	ND (38)	ND (40)	ND (40)	ND (39)	ND (40)	ND (40)
Acrylonitrile	-	ND (4.3)	ND (4.4)				
Benzene	-	ND (1.1)					
Bromobenzene	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
Bromochloromethane	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
Bromodichloromethane	-	ND (1.1)					
Bromoform	-	ND (4.3)	ND (4.4)				
Bromomethane	-	ND (2.1)	ND (2.2)				
Carbon disulfide	-	ND (11)					
Carbon tetrachloride	-	ND (1.1)					
Chlorobenzene	-	ND (1.1)					
Chloroethane	-	ND (2.1)	ND (2.2)				
Chloroform	63	ND (1.6)	ND (1.7)				
Chloromethane	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
cis-1,2-Dichloroethene	-	ND (1.1)					
cis-1,3-Dichloropropene	-	ND (1.1)					
Cyclohexane	-	ND (21)	ND (22)				
Dibromochloromethane	-	ND (1.1)					
Dibromomethane	-	ND (11)					
Dichlorodifluoromethane	-	ND (11)					
Ethyl Acetate	-	ND (21)	ND (22)				
Ethyl ether	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
Ethyl methacrylate	-	ND (11)					
Ethylbenzene	-	ND (1.1)					

Table 3-2. Summary of 2011 VOC Soil Sample Results.

Location	Target Soil Conc.	SM-1	SM-1	SM-2	SM-2	SM-3	SM-3
Date		11/16/11	11/16/11	11/16/11	11/16/11	11/16/11	11/16/11
Depth (feet below ground surface)		0.5	2	0.5	2	0.5	2
Ethyl-Tert-Butyl-Ether	-	ND (4.3)	ND (4.4)				
Hexachlorobutadiene	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
Isopropyl Ether	-	ND (4.3)	ND (4.4)				
Isopropylbenzene	-	ND (1.1)					
Methyl Acetate	-	ND (21)	ND (22)				
Methyl cyclohexane	-	ND (4.3)	ND (4.4)				
Methyl tert butyl ether	-	ND (2.1)	ND (2.2)				
Methylene chloride	-	ND (11)					
Naphthalene	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
n-Butylbenzene	-	ND (1.1)					
n-Propylbenzene	-	ND (1.1)					
o-Chlorotoluene	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
o-Xylene	-	ND (2.1)	ND (2.2)				
p/m-Xylene	-	ND (2.1)	ND (2.2)				
p-Chlorotoluene	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
p-Diethylbenzene	-	ND (4.3)	ND (4.4)				
p-Isopropyltoluene	-	ND (1.1)					
sec-Butylbenzene	-	ND (1.1)					
Styrene	-	ND (2.1)	ND (2.2)				
Tert-Butyl Alcohol	-	ND (110)					
tert-Butylbenzene	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
Tertiary-Amyl Methyl Ether	-	ND (4.3)	ND (4.4)				
Tetrachloroethene	37	ND (1.1)					
Tetrahydrofuran	-	ND (21)	ND (22)				
Toluene	-	ND (1.6)	ND (1.7)				
trans-1,2-Dichloroethene	83	ND (1.6)	ND (1.7)				
trans-1,3-Dichloropropene	-	ND (1.1)					
trans-1,4-Dichloro-2-butene	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
Trichloroethene	13	ND (1.1)					
Trichlorofluoromethane	-	ND (5.4)	ND (5.5)	ND (5.5)	ND (5.4)	ND (5.5)	ND (5.6)
Vinyl acetate	-	ND (11)					
Vinyl chloride	-	ND (2.1)	ND (2.2)				

Table 3-2. Summary of 2011 VOC Soil Sample Results.

Location	Target Soil Conc.	SM-4	SM-4	SM-5	SM-5	SM-18	SM-18
Date		11/16/11	11/16/11	11/16/11	11/16/11	11/29/11	11/29/11
Depth (feet below ground surface)		0.5	2	0.5	2	5-5.5	7-7.3
1,1,1,2-Tetrachloroethane	-	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
1,1,1-Trichloroethane	613	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
1,1,2-Tetrachloroethane	-	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
1,1,2-Trichloroethane	-	ND (1.6)	ND (1.6)	ND (1.7)	ND (1.6)	ND (1.7)	ND (1.6)
1,1,2-trichlorotrifluoroethane	-	ND (22)	ND (22)	ND (23)	ND (22)	ND (23)	ND (22)
1,1-Dichloroethane	-	ND (1.6)	ND (1.6)	ND (1.7)	ND (1.6)	ND (1.7)	ND (1.6)
1,1-Dichloroethene	-	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
1,1-Dichloropropene	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
1,2,3-Trichlorobenzene	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
1,2,3-Trichloropropane	-	ND (11)	ND (11)	ND (12)	ND (11)	ND (12)	ND (11)
1,2,4,5-Tetramethylbenzene	-	ND (4.4)	ND (4.4)	ND (4.6)	ND (4.4)	ND (4.6)	ND (4.4)
1,2,4-Trichlorobenzene	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
1,2,4-Trimethylbenzene	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
1,2-Dibromo-3-chloropropane	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
1,2-Dibromoethane	-	ND (4.4)	ND (4.4)	ND (4.6)	ND (4.4)	ND (4.6)	ND (4.4)
1,2-Dichlorobenzene	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
1,2-Dichloroethane	-	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
1,2-Dichloropropane	-	ND (3.8)	ND (3.9)	ND (4.1)	ND (3.8)	ND (4.1)	ND (3.8)
1,3,5-Trimethylbenzene	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
1,3-Dichlorobenzene	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
1,3-Dichloropropane	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
1,4-Dichlorobenzene	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
1,4-Dioxane	-	ND (110)	ND (110)	ND (120)	ND (110)	ND (120)	ND (110)
2,2-Dichloropropane	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
2-Butanone	-	ND (11)	ND (11)	ND (12)	ND (11)	ND (12)	ND (11)
2-Chloroethylvinyl ether	-	ND (22)	ND (22)	ND (23)	ND (22)	ND (23)	ND (22)
2-Hexanone	-	ND (11)	ND (11)	ND (12)	ND (11)	ND (12)	ND (11)
4-Ethyltoluene	-	ND (4.4)	ND (4.4)	ND (4.6)	ND (4.4)	ND (4.6)	ND (4.4)
4-Methyl-2-pentanone	-	ND (11)	ND (11)	ND (12)	ND (11)	ND (12)	ND (11)
Acetone	-	ND (39)	ND (40)	ND (42)	ND (40)	ND (42)	ND (40)
Acrylonitrile	-	ND (4.4)	ND (4.4)	ND (4.6)	ND (4.4)	ND (4.6)	ND (4.4)
Benzene	-	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
Bromobenzene	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
Bromochloromethane	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
Bromodichloromethane	-	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
Bromoform	-	ND (4.4)	ND (4.4)	ND (4.6)	ND (4.4)	ND (4.6)	ND (4.4)
Bromomethane	-	ND (2.2)	ND (2.2)	ND (2.3)	ND (2.2)	ND (2.3)	ND (2.2)
Carbon disulfide	-	ND (11)	ND (11)	ND (12)	ND (11)	ND (12)	ND (11)
Carbon tetrachloride	-	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
Chlorobenzene	-	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
Chloroethane	-	ND (2.2)	ND (2.2)	ND (2.3)	ND (2.2)	ND (2.3)	ND (2.2)
Chloroform	63	ND (1.6)	ND (1.6)	ND (1.7)	ND (1.6)	ND (1.7)	ND (1.6)
Chloromethane	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
cis-1,2-Dichloroethene	-	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
cis-1,3-Dichloropropene	-	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
Cyclohexane	-	ND (22)	ND (22)	ND (23)	ND (22)	ND (23)	ND (22)
Dibromochloromethane	-	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
Dibromomethane	-	ND (11)	ND (11)	ND (12)	ND (11)	ND (12)	ND (11)
Dichlorodifluoromethane	-	ND (11)	ND (11)	ND (12)	ND (11)	ND (12)	ND (11)
Ethyl Acetate	-	ND (22)	ND (22)	ND (23)	ND (22)	ND (23)	ND (22)
Ethyl ether	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
Ethyl methacrylate	-	ND (11)	ND (11)	ND (12)	ND (11)	ND (12)	ND (11)
Ethylbenzene	-	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)

Table 3-2. Summary of 2011 VOC Soil Sample Results.

Location	Target Soil Conc.	SM-4	SM-4	SM-5	SM-5	SM-18	SM-18
Date		11/16/11	11/16/11	11/16/11	11/16/11	11/29/11	11/29/11
Depth (feet below ground surface)		0.5	2	0.5	2	5-5.5	7-7.3
Ethyl-Tert-Butyl-Ether	-	ND (4.4)	ND (4.4)	ND (4.6)	ND (4.4)	ND (4.6)	ND (4.4)
Hexachlorobutadiene	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
Isopropyl Ether	-	ND (4.4)	ND (4.4)	ND (4.6)	ND (4.4)	ND (4.6)	ND (4.4)
Isopropylbenzene	-	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
Methyl Acetate	-	ND (22)	ND (22)	ND (23)	ND (22)	ND (23)	ND (22)
Methyl cyclohexane	-	ND (4.4)	ND (4.4)	ND (4.6)	ND (4.4)	ND (4.6)	ND (4.4)
Methyl tert butyl ether	-	ND (2.2)	ND (2.2)	ND (2.3)	ND (2.2)	ND (2.3)	ND (2.2)
Methylene chloride	-	ND (11)	ND (11)	ND (12)	ND (11)	ND (12)	13
Naphthalene	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
n-Butylbenzene	-	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
n-Propylbenzene	-	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
o-Chlorotoluene	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
o-Xylene	-	ND (2.2)	ND (2.2)	ND (2.3)	ND (2.2)	ND (2.3)	ND (2.2)
p/m-Xylene	-	ND (2.2)	ND (2.2)	ND (2.3)	ND (2.2)	ND (2.3)	ND (2.2)
p-Chlorotoluene	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
p-Diethylbenzene	-	ND (4.4)	ND (4.4)	ND (4.6)	ND (4.4)	ND (4.6)	ND (4.4)
p-Isopropyltoluene	-	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
sec-Butylbenzene	-	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
Styrene	-	ND (2.2)	ND (2.2)	ND (2.3)	ND (2.2)	ND (2.3)	ND (2.2)
Tert-Butyl Alcohol	-	ND (110)	ND (110)	ND (120)	ND (110)	ND (120)	ND (110)
tert-Butylbenzene	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
Tertiary-Amyl Methyl Ether	-	ND (4.4)	ND (4.4)	ND (4.6)	ND (4.4)	ND (4.6)	ND (4.4)
Tetrachloroethene	37	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	1.8
Tetrahydrofuran	-	ND (22)	ND (22)	ND (23)	ND (22)	ND (23)	ND (22)
Toluene	-	ND (1.6)	ND (1.6)	ND (1.7)	ND (1.6)	ND (1.7)	ND (1.6)
trans-1,2-Dichloroethene	83	ND (1.6)	ND (1.6)	ND (1.7)	ND (1.6)	ND (1.7)	ND (1.6)
trans-1,3-Dichloropropene	-	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
trans-1,4-Dichloro-2-butene	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
Trichloroethene	13	ND (1.1)	ND (1.1)	ND (1.2)	ND (1.1)	ND (1.2)	ND (1.1)
Trichlorofluoromethane	-	ND (5.5)	ND (5.5)	ND (5.8)	ND (5.5)	ND (5.8)	ND (5.5)
Vinyl acetate	-	ND (11)	ND (11)	ND (12)	ND (11)	ND (12)	ND (11)
Vinyl chloride	-	ND (2.2)	ND (2.2)	ND (2.3)	ND (2.2)	ND (2.3)	ND (2.2)

Table 3-2. Summary of 2011 VOC Soil Sample Results.

Location	Target Soil Conc.	SM-19	SM-19	SM-20	SM-20	SM-21	SM-21
Date		11/29/11	11/29/11	11/29/11	11/29/11	11/29/11	11/29/11
Depth (feet below ground surface)		5.7-6	7-7.3	5.7-6	7-7.3	5-5.3	7.7-8
1,1,1,2-Tetrachloroethane	-	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
1,1,1-Trichloroethane	613	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
1,1,2-Tetrachloroethane	-	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
1,1,2-Trichloroethane	-	ND (1.6)	ND (92)	ND (1.5)	ND (1.7)	ND (1.6)	ND (94)
1,1,2-trichlorotrifluoroethane	-	ND (21)	ND (1200)	ND (21)	ND (22)	ND (22)	ND (1200)
1,1-Dichloroethane	-	ND (1.6)	ND (92)	ND (1.5)	ND (1.7)	ND (1.6)	ND (94)
1,1-Dichloroethene	-	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
1,1-Dichloropropene	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
1,2,3-Trichlorobenzene	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
1,2,3-Trichloropropane	-	ND (11)	ND (620)	ND (10)	ND (11)	ND (11)	ND (620)
1,2,4,5-Tetramethylbenzene	-	ND (4.2)	ND (250)	ND (4.1)	ND (4.4)	ND (4.4)	ND (250)
1,2,4-Trichlorobenzene	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
1,2,4-Trimethylbenzene	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
1,2-Dibromo-3-chloropropane	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
1,2-Dibromoethane	-	ND (4.2)	ND (250)	ND (4.1)	ND (4.4)	ND (4.4)	ND (250)
1,2-Dichlorobenzene	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
1,2-Dichloroethane	-	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
1,2-Dichloropropane	-	ND (3.7)	ND (220)	ND (3.6)	ND (3.9)	ND (3.8)	ND (220)
1,3,5-Trimethylbenzene	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
1,3-Dichlorobenzene	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
1,3-Dichloropropane	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
1,4-Dichlorobenzene	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
1,4-Dioxane	-	ND (110)	ND (6200)	ND (100)	ND (110)	ND (110)	ND (6200)
2,2-Dichloropropane	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
2-Butanone	-	ND (11)	ND (620)	ND (10)	ND (11)	ND (11)	ND (620)
2-Chloroethylvinyl ether	-	ND (21)	ND (1200)	ND (21)	ND (22)	ND (22)	ND (1200)
2-Hexanone	-	ND (11)	ND (620)	ND (10)	ND (11)	ND (11)	ND (620)
4-Ethyltoluene	-	ND (4.2)	ND (250)	ND (4.1)	ND (4.4)	ND (4.4)	ND (250)
4-Methyl-2-pentanone	-	ND (11)	ND (620)	ND (10)	ND (11)	ND (11)	ND (620)
Acetone	-	ND (38)	ND (2200)	ND (37)	ND (40)	ND (40)	ND (2200)
Acrylonitrile	-	ND (4.2)	ND (250)	ND (4.1)	ND (4.4)	ND (4.4)	ND (250)
Benzene	-	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
Bromobenzene	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
Bromochloromethane	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
Bromodichloromethane	-	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
Bromoform	-	ND (4.2)	ND (250)	ND (4.1)	ND (4.4)	ND (4.4)	ND (250)
Bromomethane	-	ND (2.1)	ND (120)	ND (2.1)	ND (2.2)	ND (2.2)	ND (120)
Carbon disulfide	-	ND (11)	ND (620)	ND (10)	ND (11)	ND (11)	ND (620)
Carbon tetrachloride	-	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
Chlorobenzene	-	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
Chloroethane	-	ND (2.1)	ND (120)	ND (2.1)	ND (2.2)	ND (2.2)	ND (120)
Chloroform	63	ND (1.6)	ND (92)	ND (1.5)	ND (1.7)	ND (1.6)	ND (94)
Chloromethane	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
cis-1,2-Dichloroethene	-	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
cis-1,3-Dichloropropene	-	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
Cyclohexane	-	ND (21)	ND (1200)	ND (21)	ND (22)	ND (22)	ND (1200)
Dibromochloromethane	-	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
Dibromomethane	-	ND (11)	ND (620)	ND (10)	ND (11)	ND (11)	ND (620)
Dichlorodifluoromethane	-	ND (11)	ND (620)	ND (10)	ND (11)	ND (11)	ND (620)
Ethyl Acetate	-	ND (21)	1600	ND (21)	ND (22)	ND (22)	1600
Ethyl ether	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
Ethyl methacrylate	-	ND (11)	ND (620)	ND (10)	ND (11)	ND (11)	ND (620)
Ethylbenzene	-	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)

Table 3-2. Summary of 2011 VOC Soil Sample Results.

Location	Target Soil Conc.	SM-19	SM-19	SM-20	SM-20	SM-21	SM-21
Date		11/29/11	11/29/11	11/29/11	11/29/11	11/29/11	11/29/11
Depth (feet below ground surface)		5.7-6	7-7.3	5.7-6	7-7.3	5-5.3	7.7-8
Ethyl-Tert-Butyl-Ether	-	ND (4.2)	ND (250)	ND (4.1)	ND (4.4)	ND (4.4)	ND (250)
Hexachlorobutadiene	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
Isopropyl Ether	-	ND (4.2)	ND (250)	ND (4.1)	ND (4.4)	ND (4.4)	ND (250)
Isopropylbenzene	-	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
Methyl Acetate	-	ND (21)	ND (1200)	ND (21)	ND (22)	ND (22)	ND (1200)
Methyl cyclohexane	-	ND (4.2)	ND (250)	ND (4.1)	ND (4.4)	ND (4.4)	ND (250)
Methyl tert butyl ether	-	ND (2.1)	ND (120)	ND (2.1)	ND (2.2)	ND (2.2)	ND (120)
Methylene chloride	-	ND (11)	ND (620)	ND (10)	ND (11)	ND (11)	ND (620)
Naphthalene	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
n-Butylbenzene	-	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
n-Propylbenzene	-	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
o-Chlorotoluene	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
o-Xylene	-	ND (2.1)	ND (120)	ND (2.1)	ND (2.2)	ND (2.2)	ND (120)
p/m-Xylene	-	ND (2.1)	ND (120)	ND (2.1)	ND (2.2)	ND (2.2)	ND (120)
p-Chlorotoluene	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
p-Diethylbenzene	-	ND (4.2)	ND (250)	ND (4.1)	ND (4.4)	ND (4.4)	ND (250)
p-Isopropyltoluene	-	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
sec-Butylbenzene	-	3.0	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
Styrene	-	ND (2.1)	ND (120)	ND (2.1)	ND (2.2)	ND (2.2)	ND (120)
Tert-Butyl Alcohol	-	ND (110)	ND (6200)	ND (100)	ND (110)	ND (110)	ND (6200)
tert-Butylbenzene	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
Tertiary-Amyl Methyl Ether	-	ND (4.2)	ND (250)	ND (4.1)	ND (4.4)	ND (4.4)	ND (250)
Tetrachloroethene	37	1.8	ND (62)	4.9	1.2	4.6	ND (62)
Tetrahydrofuran	-	ND (21)	ND (1200)	ND (21)	ND (22)	ND (22)	ND (1200)
Toluene	-	ND (1.6)	ND (92)	ND (1.5)	ND (1.7)	ND (1.6)	ND (94)
trans-1,2-Dichloroethene	83	ND (1.6)	ND (92)	ND (1.5)	ND (1.7)	ND (1.6)	ND (94)
trans-1,3-Dichloropropene	-	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
trans-1,4-Dichloro-2-butene	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
Trichloroethene	13	ND (1.1)	ND (62)	ND (1.0)	ND (1.1)	ND (1.1)	ND (62)
Trichlorofluoromethane	-	ND (5.3)	ND (310)	ND (5.2)	ND (5.6)	ND (5.5)	ND (310)
Vinyl acetate	-	ND (11)	ND (620)	ND (10)	ND (11)	ND (11)	ND (620)
Vinyl chloride	-	ND (2.1)	ND (120)	ND (2.1)	ND (2.2)	ND (2.2)	ND (120)

Table 3-2. Summary of 2011 VOC Soil Sample Results.

Location	Target Soil Conc.	SM-22	SM-22	SM-23	SM-23
Date		11/29/11	11/29/11	11/29/11	11/29/11
Depth (feet below ground surface)		5.7-6	7-7.3	5-5.3	7-7.3
1,1,1,2-Tetrachloroethane	-	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
1,1,1-Trichloroethane	613	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
1,1,2,2-Tetrachloroethane	-	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
1,1,2-Trichloroethane	-	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.8)
1,1,2-trichlorotrifluoroethane	-	ND (23)	ND (22)	ND (22)	ND (23)
1,1-Dichloroethane	-	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.8)
1,1-Dichloroethene	-	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
1,1-Dichloropropene	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
1,2,3-Trichlorobenzene	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
1,2,3-Trichloropropane	-	ND (11)	ND (11)	ND (11)	ND (12)
1,2,4,5-Tetramethylbenzene	-	ND (4.6)	ND (4.4)	ND (4.5)	ND (4.7)
1,2,4-Trichlorobenzene	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
1,2,4-Trimethylbenzene	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
1,2-Dibromo-3-chloropropane	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
1,2-Dibromoethane	-	ND (4.6)	ND (4.4)	ND (4.5)	ND (4.7)
1,2-Dichlorobenzene	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
1,2-Dichloroethane	-	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
1,2-Dichloropropane	-	ND (4.0)	ND (3.9)	ND (3.9)	ND (4.1)
1,3,5-Trimethylbenzene	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
1,3-Dichlorobenzene	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
1,3-Dichloropropane	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
1,4-Dichlorobenzene	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
1,4-Dioxane	-	ND (110)	ND (110)	ND (110)	ND (120)
2,2-Dichloropropane	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
2-Butanone	-	ND (11)	ND (11)	ND (11)	ND (12)
2-Chloroethylvinyl ether	-	ND (23)	ND (22)	ND (22)	ND (23)
2-Hexanone	-	ND (11)	ND (11)	ND (11)	ND (12)
4-Ethyltoluene	-	ND (4.6)	ND (4.4)	ND (4.5)	ND (4.7)
4-Methyl-2-pentanone	-	ND (11)	ND (11)	ND (11)	ND (12)
Acetone	-	ND (41)	ND (40)	ND (40)	ND (42)
Acrylonitrile	-	ND (4.6)	ND (4.4)	ND (4.5)	ND (4.7)
Benzene	-	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
Bromobenzene	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
Bromochloromethane	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
Bromodichloromethane	-	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
Bromoform	-	ND (4.6)	ND (4.4)	ND (4.5)	ND (4.7)
Bromomethane	-	ND (2.3)	ND (2.2)	ND (2.2)	ND (2.3)
Carbon disulfide	-	ND (11)	ND (11)	ND (11)	ND (12)
Carbon tetrachloride	-	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
Chlorobenzene	-	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
Chloroethane	-	ND (2.3)	ND (2.2)	ND (2.2)	ND (2.3)
Chloroform	63	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.8)
Chloromethane	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
cis-1,2-Dichloroethene	-	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
cis-1,3-Dichloropropene	-	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
Cyclohexane	-	ND (23)	ND (22)	ND (22)	ND (23)
Dibromochloromethane	-	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
Dibromomethane	-	ND (11)	ND (11)	ND (11)	ND (12)
Dichlorodifluoromethane	-	ND (11)	ND (11)	ND (11)	ND (12)
Ethyl Acetate	-	ND (23)	ND (22)	ND (22)	ND (23)
Ethyl ether	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
Ethyl methacrylate	-	ND (11)	ND (11)	ND (11)	ND (12)
Ethylbenzene	-	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)

Table 3-2. Summary of 2011 VOC Soil Sample Results.

Location	Target Soil Conc.	SM-22	SM-22	SM-23	SM-23
Date		11/29/11	11/29/11	11/29/11	11/29/11
Depth (feet below ground surface)		5.7-6	7-7.3	5-5.3	7-7.3
Ethyl-Tert-Butyl-Ether	-	ND (4.6)	ND (4.4)	ND (4.5)	ND (4.7)
Hexachlorobutadiene	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
Isopropyl Ether	-	ND (4.6)	ND (4.4)	ND (4.5)	ND (4.7)
Isopropylbenzene	-	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
Methyl Acetate	-	ND (23)	ND (22)	ND (22)	ND (23)
Methyl cyclohexane	-	ND (4.6)	ND (4.4)	ND (4.5)	ND (4.7)
Methyl tert butyl ether	-	ND (2.3)	ND (2.2)	ND (2.2)	ND (2.3)
Methylene chloride	-	ND (11)	ND (11)	ND (11)	ND (12)
Naphthalene	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
n-Butylbenzene	-	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
n-Propylbenzene	-	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
o-Chlorotoluene	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
o-Xylene	-	ND (2.3)	ND (2.2)	ND (2.2)	ND (2.3)
p/m-Xylene	-	ND (2.3)	ND (2.2)	ND (2.2)	ND (2.3)
p-Chlorotoluene	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
p-Diethylbenzene	-	ND (4.6)	ND (4.4)	ND (4.5)	ND (4.7)
p-Isopropyltoluene	-	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
sec-Butylbenzene	-	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
Styrene	-	ND (2.3)	ND (2.2)	ND (2.2)	ND (2.3)
Tert-Butyl Alcohol	-	ND (110)	ND (110)	ND (110)	ND (120)
tert-Butylbenzene	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
Tertiary-Amyl Methyl Ether	-	ND (4.6)	ND (4.4)	ND (4.5)	ND (4.7)
Tetrachloroethene	37	1.4	1.7	2.0	1.3
Tetrahydrofuran	-	ND (23)	ND (22)	ND (22)	ND (23)
Toluene	-	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.8)
trans-1,2-Dichloroethene	83	ND (1.7)	ND (1.7)	ND (1.7)	ND (1.8)
trans-1,3-Dichloropropene	-	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
trans-1,4-Dichloro-2-butene	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
Trichloroethene	13	ND (1.1)	ND (1.1)	ND (1.1)	ND (1.2)
Trichlorofluoromethane	-	ND (5.7)	ND (5.6)	ND (5.6)	ND (5.9)
Vinyl acetate	-	ND (11)	ND (11)	ND (11)	ND (12)
Vinyl chloride	-	ND (2.3)	ND (2.2)	ND (2.2)	ND (2.3)

Concentrations in µg/kg

ND (1.1) - Not detected at detection limit indicated in parentheses.

Table 3-3. Summary of 2011 PAH Soil Sample Results.

<b>Location</b>	<b>SM-24</b>	<b>SM-24</b>	<b>SM-25</b>	<b>SM-26</b>	<b>SM-26</b>	<b>SM-27</b>	<b>SM-28</b>	<b>SM-28</b>	<b>SM-29</b>
<b>Date</b>	<b>11/15/11</b>	<b>11/15/11</b>	<b>11/15/11</b>	<b>11/15/11</b>	<b>11/15/11</b>	<b>11/15/11</b>	<b>11/15/11</b>	<b>11/15/11</b>	<b>11/15/11</b>
<b>Depth (feet below ground surface)</b>	<b>0.5-1.5</b>	<b>2-3</b>	<b>0.5-1.5</b>	<b>0.5-1.5</b>	<b>2-3</b>	<b>0.5-1.5</b>	<b>0.5-1.5</b>	<b>2-3</b>	<b>0.5-1.5</b>
1-Methylnaphthalene	ND (1700)	ND (69)	ND (31)	ND (8000)	ND (15)	ND (14)	ND (140)	ND (14)	ND (14)
2-Chloronaphthalene	ND (1700)	ND (69)	ND (31)	ND (8000)	ND (15)	ND (14)	ND (140)	ND (14)	ND (14)
2-Methylnaphthalene	ND (1700)	ND (69)	ND (31)	ND (8000)	ND (15)	ND (14)	ND (140)	ND (14)	ND (14)
Acenaphthene	ND (1700)	ND (69)	ND (31)	ND (8000)	ND (15)	ND (14)	ND (140)	ND (14)	ND (14)
Acenaphthylene	ND (1700)	ND (69)	ND (31)	ND (8000)	ND (15)	ND (14)	ND (140)	ND (14)	ND (14)
Anthracene	ND (1700)	ND (69)	ND (31)	ND (8000)	ND (15)	ND (14)	ND (140)	ND (14)	ND (14)
Benzo(a)anthracene*	ND (1700)	ND (69)	ND (31)	ND (8000)	19	ND (14)	400	ND (14)	ND (14)
Benzo(a)pyrene*	ND (1700)	120	ND (31)	ND (8000)	33	16	700	25	17
Benzo(b)fluoranthene*	1900	160	42	ND (8000)	47	22	1100	41	26
Benzo(ghi)perylene	ND (1700)	110	ND (31)	ND (8000)	32	ND (14)	620	26	16
Benzo(k)fluoranthene*	ND (1700)	91	ND (31)	ND (8000)	29	14	520	24	16
Chrysene*	ND (1700)	120	ND (31)	ND (8000)	32	16	640	25	17
Dibenzo(a,h)anthracene*	ND (1700)	ND (69)	ND (31)	ND (8000)	ND (15)	ND (14)	ND (140)	ND (14)	ND (14)
Fluoranthene	2700	190	49	ND (8000)	63	38	1300	48	30
Fluorene	ND (1700)	ND (69)	ND (31)	ND (8000)	ND (15)	ND (14)	ND (140)	ND (14)	ND (14)
Hexachlorobenzene	ND (6800)	ND (280)	ND (120)	ND (32000)	ND (60)	ND (54)	ND (580)	ND (56)	ND (55)
Hexachlorobutadiene	ND (4300)	ND (170)	ND (78)	ND (20000)	ND (37)	ND (34)	ND (360)	ND (35)	ND (34)
Hexachloroethane	ND (6800)	ND (280)	ND (120)	ND (32000)	ND (60)	ND (54)	ND (580)	ND (56)	ND (55)
Indeno(1,2,3-c,d)pyrene*	ND (1700)	92	ND (31)	ND (8000)	30	ND (14)	570	24	15
Naphthalene	ND (1700)	ND (69)	ND (31)	ND (8000)	ND (15)	ND (14)	ND (140)	ND (14)	ND (14)
Pentachlorophenol	ND (6800)	ND (280)	ND (120)	ND (32000)	ND (60)	ND (54)	ND (580)	ND (56)	ND (55)
Phenanthrene	ND (1700)	ND (69)	ND (31)	ND (8000)	24	16	420	15	ND (14)
Pyrene	2100	140	40	ND (8000)	48	29	1000	36	24
<b>Total cPAHs</b>	<b>1900</b>	<b>583</b>	<b>42</b>	<b>ND (56000)</b>	<b>190</b>	<b>68</b>	<b>3930</b>	<b>139</b>	<b>91</b>

Table 3-3. Summary of 2011 PAH Soil Sample Results.

Location	SM-30	SM-30	SM-31	SM-32	SM-32	SM-33	SM-33	SM-34	SM-34
Date	11/15/11	11/15/11	11/15/11	11/15/11	11/15/11	11/15/11	11/15/11	11/15/11	11/15/11
Depth (feet below ground surface)	0.5-1.5	2-3	0.5-1.5	0.5-1.5	2-3	0.5-1.5	2-3	0.5-1.5	2-3
1-Methylnaphthalene	ND (76)	ND (15)	ND (15)	ND (27)	ND (14)	ND (65)	ND (16)	ND (34)	ND (15)
2-Chloronaphthalene	ND (76)	ND (15)	ND (15)	ND (27)	17	ND (65)	ND (16)	ND (34)	ND (15)
2-Methylnaphthalene	ND (76)	ND (15)	ND (15)	ND (27)	14	ND (65)	ND (16)	ND (34)	ND (15)
Acenaphthene	ND (76)	ND (15)	ND (15)	ND (27)	ND (14)	ND (65)	ND (16)	ND (34)	ND (15)
Acenaphthylene	ND (76)	ND (15)	ND (15)	ND (27)	ND (14)	ND (65)	ND (16)	ND (34)	ND (15)
Anthracene	ND (76)	ND (15)	ND (15)	ND (27)	35	ND (65)	ND (16)	ND (34)	ND (15)
Benzo(a)anthracene*	370	ND (15)	ND (15)	220	110	140	74	52	ND (15)
Benzo(a)pyrene*	630	ND (15)	ND (15)	360	150	180	95	88	ND (15)
Benzo(b)fluoranthene*	920	ND (15)	ND (15)	460	170	240	120	150	ND (15)
Benzo(ghi)perylene	520	ND (15)	ND (15)	260	100	130	61	70	ND (15)
Benzo(k)fluoranthene*	440	ND (15)	ND (15)	230	100	130	59	57	ND (15)
Chrysene*	520	ND (15)	ND (15)	220	94	120	58	80	ND (15)
Dibenzo(a,h)anthracene*	110	ND (15)	ND (15)	58	40	ND (65)	ND (16)	ND (34)	ND (15)
Fluoranthene	1100	ND (15)	ND (15)	510	200	270	130	140	ND (15)
Fluorene	ND (76)	ND (15)	ND (15)	ND (27)	21	ND (65)	ND (16)	ND (34)	ND (15)
Hexachlorobenzene	ND (300)	ND (60)	ND (59)	ND (110)	ND (58)	ND (260)	ND (63)	ND (130)	ND (60)
Hexachlorobutadiene	ND (190)	ND (37)	ND (37)	ND (68)	ND (36)	ND (160)	ND (39)	ND (84)	ND (38)
Hexachloroethane	ND (300)	ND (60)	ND (59)	ND (110)	ND (58)	ND (260)	ND (63)	ND (130)	ND (60)
Indeno(1,2,3-c,d)pyrene*	500	ND (15)	ND (15)	240	100	130	59	69	ND (15)
Naphthalene	ND (76)	ND (15)	ND (15)	ND (27)	ND (14)	ND (65)	ND (16)	ND (34)	ND (15)
Pentachlorophenol	ND (300)	ND (60)	ND (59)	ND (110)	ND (58)	ND (260)	ND (63)	ND (130)	ND (60)
Phenanthrene	340	ND (15)	ND (15)	87	52	ND (65)	16	50	ND (15)
Pyrene	910	ND (15)	ND (15)	430	170	220	110	110	ND (15)
Total cPAHs	3490	ND (105)	ND (105)	1788	764	940	465	496	ND (105)

Table 3-3. Summary of 2011 PAH Soil Sample Results.

Location	SM-35	SM-35	SM-36	SM-36	SM-37	SM-37
Date	11/15/11	11/15/11	11/15/11	11/15/11	12/19/11	12/19/11
Depth (feet below ground surface)	0.5-1.5	2-3	0.5-1.5	2-3	0.5-1.5	2-3
1-Methylnaphthalene	ND (190)	ND (15)	ND (63)	ND (15)	ND (14)	ND (14)
2-Chloronaphthalene	ND (190)	ND (15)	ND (63)	ND (15)	ND (14)	ND (14)
2-Methylnaphthalene	ND (190)	ND (15)	ND (63)	ND (15)	ND (14)	ND (14)
Acenaphthene	ND (190)	ND (15)	ND (63)	ND (15)	ND (14)	ND (14)
Acenaphthylene	ND (190)	ND (15)	ND (63)	ND (15)	ND (14)	ND (14)
Anthracene	ND (190)	ND (15)	ND (63)	ND (15)	ND (14)	ND (14)
Benzo(a)anthracene*	370	ND (15)	ND (63)	ND (15)	35	ND (14)
Benzo(a)pyrene*	520	ND (15)	87	ND (15)	61	ND (14)
Benzo(b)fluoranthene*	780	15	130	ND (15)	73	ND (14)
Benzo(ghi)perylene	430	ND (15)	73	ND (15)	44	ND (14)
Benzo(k)fluoranthene*	440	ND (15)	67	ND (15)	45	ND (14)
Chrysene*	460	ND (15)	84	ND (15)	40	ND (14)
Dibenzo(a,h)anthracene*	ND (190)	ND (15)	ND (63)	ND (15)	ND (14)	ND (14)
Fluoranthene	870	17	160	ND (15)	73	ND (14)
Fluorene	ND (190)	ND (15)	ND (63)	ND (15)	ND (14)	ND (14)
Hexachlorobenzene	ND (760)	ND (60)	ND (250)	ND (61)	ND (55)	ND (58)
Hexachlorobutadiene	ND (480)	ND (38)	ND (160)	ND (38)	ND (34)	ND (36)
Hexachloroethane	ND (760)	ND (60)	ND (250)	ND (61)	ND (55)	ND (58)
Indeno(1,2,3-c,d)pyrene*	420	ND (15)	71	ND (15)	46	ND (14)
Naphthalene	ND (190)	ND (15)	ND (63)	ND (15)	ND (14)	ND (14)
Pentachlorophenol	ND (760)	ND (60)	ND (250)	ND (61)	ND (55)	ND (58)
Phenanthrene	270	ND (15)	ND (63)	ND (15)	15	ND (14)
Pyrene	670	15	120	ND (15)	66	ND (14)
Total cPAHs	2990	15	439	ND (105)	300	ND (98)

Concentrations in µg/kg

ND (60) - Not detected at detection limit indicated in parentheses.

\* - Carcinogenic polyaromatic hydrocarbons (cPAH)

Shaded - cPAH concentration exceeds target soil concentration of 690 µg/kg.

TABLE 4-1. SUMMARY OF PROPOSED CONFIRMATORY SOIL SAMPLING LOCATIONS

Locations	Sample Depths	Number of Samples	Analysis
<i>Passivating Area Drain Line</i>			
3 locations	1-2 feet bgs	3	PCBs by EPA Method 8082 with Microwave Extraction Method 3546
<i>Between Former Warehouse and 1974 Building Addition</i>			
Eastern Wall	7-8 feet bgs (below "newer" fill) and Base of excavation (~10 feet bgs)	10	PCBs by EPA Method 8082 with Microwave Extraction Method 3546; VOCs by EPA Method 8260B with low-level detection limits
Western Wall	5-7 feet bgs (below "newer" fill) and Base of excavation (~10 feet bgs)		
Northern Wall	5-7 feet bgs and Base of excavation (~10 feet bgs)		
Southern Wall	7-8 feet bgs and Base of excavation (~10 feet bgs)		
1 location at SM-19 1 location at SM-21	Bottom of excavation (~10 feet bgs)		
<i>South Drainage Ditch</i>			
3 locations at west end 2 side wall locations at SM-28 2 side wall locations at SM-35	0.5-1.5 feet bgs	11	cPAHs by EPA Method 8270CSIM
1 location south of SM-32 1 location west of SM-32 1 location east of SM-32	0.5-1.5 feet bgs and base of excavation (~4 feet bgs)		
1 location at SM-32	Bottom of excavation (~4 feet bgs)		

## FIGURES

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**BASE MAP LEGEND**

- SEWER CLEAN OUT
- ▲ FLOOD LIGHT
- ⊕ TRAFFIC SIGNAL
- ⊕ GUY POLE
- ⊕ ELECTRIC METER
- ⊕ FIRE ALARM
- ⊕ TEMPORARY BENCHMARK
- MANHOLE (UNKNOWN TYPE)
- ⊕ BOLLARD
- ⊕ BORING
- ⊕ TELEPHONE BOX
- ⊕ ELECTRIC BOX
- ⊕ WATER VALVE
- ⊕ POST
- ⊕ TELEPHONE MANHOLE
- ⊕ UTILITY POLE
- ⊕ GAS VALVE
- ⊕ DRAIN MANHOLE
- ⊕ SEWER MANHOLE
- ⊕ BUSH
- ⊕ IRON ROD FOUND
- ⊕ GRANITE BOUND FOUND
- ⊕ MONITORING WELL
- ⊕ CATCH BASIN
- ⊕ SIGN
- ⊕ MAILBOX
- ⊕ CULVERT
- ⊕ DECIDUOUS TREE
- ⊕ CONIFER TREE
- ⊕ TRAFFIC FLOW
- ⊕ TRAFFIC FLOW
- ⊕ RW9 ● RECOVERY WELL
- ⊕ METAL COVER
- ⊕ HYDRANT
- ⊕ FLAG POLE
- ⊕ ELECTRIC HAND HOLE
- SEWER LINE
- DRAIN LINE
- WATER LINE
- GAS LINE
- TELEPHONE LINE
- ELECTRIC LINE
- OVERHEAD WIRES
- 1" CONTOURS
- 5" CONTOURS
- WETLANDS (EDGE OF BWV)

**NOTE:**

1. BASE MAP AND WELL LOCATIONS WHEN POSSIBLE PROVIDED BY CARTER & BURGESS PLAN TITLED "EXISTING CONDITIONS PLAN WASHINGTON STREET WOBURN, MASSACHUSETTS" DATED JULY 28, 2005 PREPARED BY CHAS. H. SELLS, INC.
2. EXPLORATION TRENCHES/PITS DIGITIZED FROM MAP TITLED "CRYOVAC SITE EXPLORATION MAP" PREPARED BY GEOTRANS, INC DATED 1985.
3. BUILDING UNDERGROUND PIPING DIGITIZED FROM VARIOUS BUILDING PLANS PROVIDED BY W.R. GRACE.
4. ECS SOIL BORINGS LOCATIONS INSIDE THE BUILDING AND ECS-1 FROM MAP TITLED "SITE PLAN" PREPARED BY ECS DATED MAR. 2005 AND FROM FIELD MEASUREMENTS TAKEN BEFORE SLAB REMOVAL. ALL OTHER ECS BORINGS FROM CARTER & BURGESS BASE MAP (SEE NOTE 1).
5. US EPA SOIL BORINGS DIGITIZED FROM MAP TITLED "FIGURE 4-5 W.R. GRACE PROPERTY SOIL BORING AND SURFACE WATER SEDIMENT LOCATIONS" PREPARED BY THE US EPA.
6. SILT FENCE & HAY BALE BARRIER DIGITIZED FROM SKETCH PREPARED BY CHARTER ENVIRONMENTAL, JUNE 2006

**BUILDING REMOVAL SAMPLING LOCATION NOTE:**

1. PRE-DETERMINED TEST PIT/SOIL SAMPLING LOCATION FROM TAPE SURVEY AT THE TIME OF SAMPLING
2. FIELD SOIL SCREENING LOCATIONS BASED ON THE FIELD SAMPLING LOCATION SKETCH MAP AND FROM THE APPROXIMATE LOCATION DESCRIPTIONS IN THE SOIL COLLECTION FIELD FORM

**UNDER FLOOR PIPING EXPLANATION**

- SANITARY SEWER
- ROOF DRAIN
- DASH INDICATES PIPE FOUND DURING SLAB REMOVAL AND WAS NOT ON ORIGINAL PLANS

**ECS-8 ● SOIL SAMPLE LOCATION WHERE ROD ACTION LEVEL WAS EXCEEDED**

- RW22-B1 ⊕ SOIL BORING LOCATION RW-22 AREA EVALUATION
- IP-B9 ⊕ SOIL BORING LOCATION IP EVALUATION (DEMOLITION RELATED)

- G9 ● MONITORING WELL
- G7 ● ABANDONED MONITORING WELL
- RW16 ● RECOVERY WELL
- RW1 ● ABANDONED RECOVERY WELL
- 28 | EXPLORATION TRENCHES/PITS (GEOENVIRONMENTAL CONSULTANTS, 1983)
- SB9 △ EPA SOIL BORING LOCATION (EBASCO, 1988)
- ECS-3 ● DECATHLON SOIL BORING & SOIL SAMPLE LOCATION (ECS, 2005)
- ECS-SS-1 ● SOIL SAMPLE LOCATION (ECS, 2005)
- SOUTH DRAINAGE DITCH DASHED WHERE FILLED

- ① PRE-SPECIFIED POTENTIAL SOURCE OF HISTORIC RELEASE
- ⊕ TENTATIVE GROUND SCAR LOCATION AS INDICATED IN EPA 1988 SITE ANALYSIS
- SS-18 AA34 ▲ TEST PIT/SOIL SAMPLING LOCATIONS (SS-# = SOIL SAMPLE ID.)
- TRC001 △ EPA SOIL SAMPLE LOCATION (2006)
- GP-7 ▲ GEOPHYSICAL SURVEY ANOMALY TEST PIT
- BB12 × FIELD SOIL HEAD-SPACE SCREENING LOCATION (PID)
- ⊕ AREA 4 GROUND SCAR TEST PITS

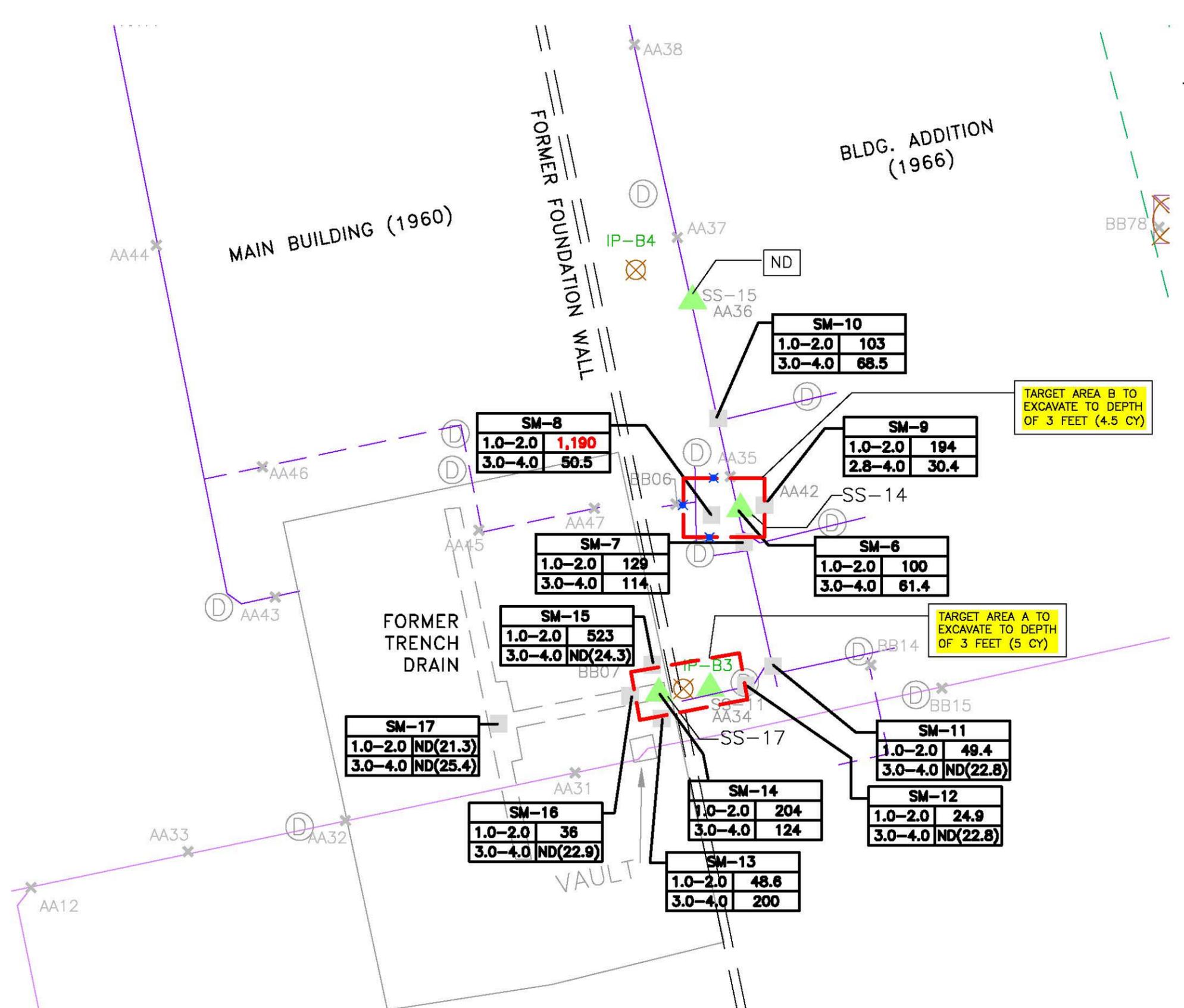
**TITLE: LOCATION OF HISTORIC SOIL SAMPLES EXCEEDING ROD ACTION LEVELS**

**LOCATION: W.R. Grace, Woburn, Massachusetts**



APPROVED	ASB JRB	FIGURE
DRAFTED	RMK	<b>3-1</b>
PROJECT#	117-3008	
DATE	JAN 2012	

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**EXPLANATION**

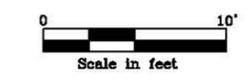
- ⊗ RW22-B1 SOIL BORING LOCATION RW-22 AREA EVALUATION
- ⊗ IP-B9 SOIL BORING LOCATION IP EVALUATION (DEMOLITION RELATED)
- ⊗ BB12 FIELD SOIL HEAD-SPACE SCREENING LOCATION (PID)
- ▲ SS-17 AA34 TEST PIT/SOIL SAMPLING LOCATIONS (SS-# = SOIL SAMPLE ID.)
- AREA 4 GROUND SCAR TEST PITS
- ⊠ TENTATIVE GROUND SCAR LOCATION AS INDICATED IN EPA 1988 SITE ANALYSIS

**SOIL SAMPLING RESULTS (FALL 2011)**

LOCATION		PCB (Arochlor 1254)
FEET	ug/kg	
SAMPLE DEPTH		
<b>1,040</b>	RESULT EXCEEDS ROD ACTION LEVEL OF 1,040 ug/kg	
<b>ND(22.8)</b>	NOT DETECTED (AT DETECTION LIMIT)	
⊗	TARGET LOCATION OF POST EXCAVATION CONFIRMATORY PCB SAMPLE	

**UNDER FLOOR PIPING EXPLANATION**

- ⊙ FLOOR DRAIN
- SANITARY SEWER
- ROOF DRAIN
- DASH INDICATES PIPE FOUND DURING SLAB REMOVAL AND WAS NOT ON ORIGINAL PLANS



TITLE: **SS-14 & 17 AREA SOIL INVESTIGATION - PCB RESULTS**

LOCATION: **W.R. Grace, Woburn, Massachusetts**



APPROVED	ABS JRB	FIGURE <b>3-2</b>
DRAFTED	RMK	
PROJECT#	117-3008	
DATE	JAN 2012	

BLDG. ADDITION  
(1966)



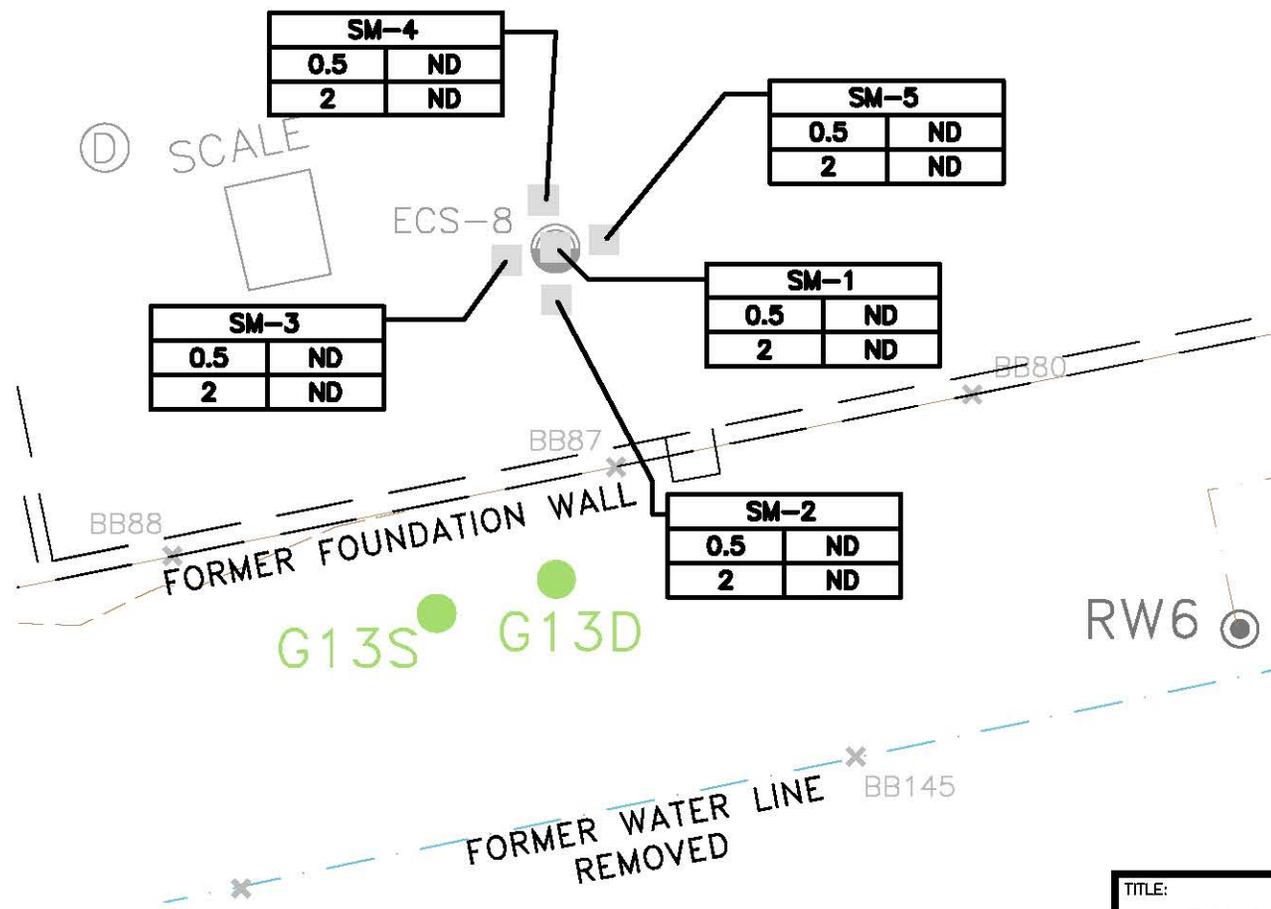
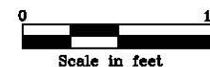
EXPLANATION

- G9 ● MONITORING WELL
- RW1 ○ ABANDONED RECOVERY WELL
- ECS-3 ○ DECATHLON SOIL BORING LOCATION (ECS, 2005)
- BB12 × FIELD SOIL HEAD-SPACE SCREENING LOCATION (PID)

SOIL SAMPLING RESULTS (FALL 2011)

LOCATION		VOCs
FEET	ug/kg	
SAMPLE DEPTH		

**ND** NO VOC DETECTED ABOVE ROD ACTION LEVEL



SM-3

0.5	ND
2	ND

SM-4

0.5	ND
2	ND

SM-5

0.5	ND
2	ND

SM-1

0.5	ND
2	ND

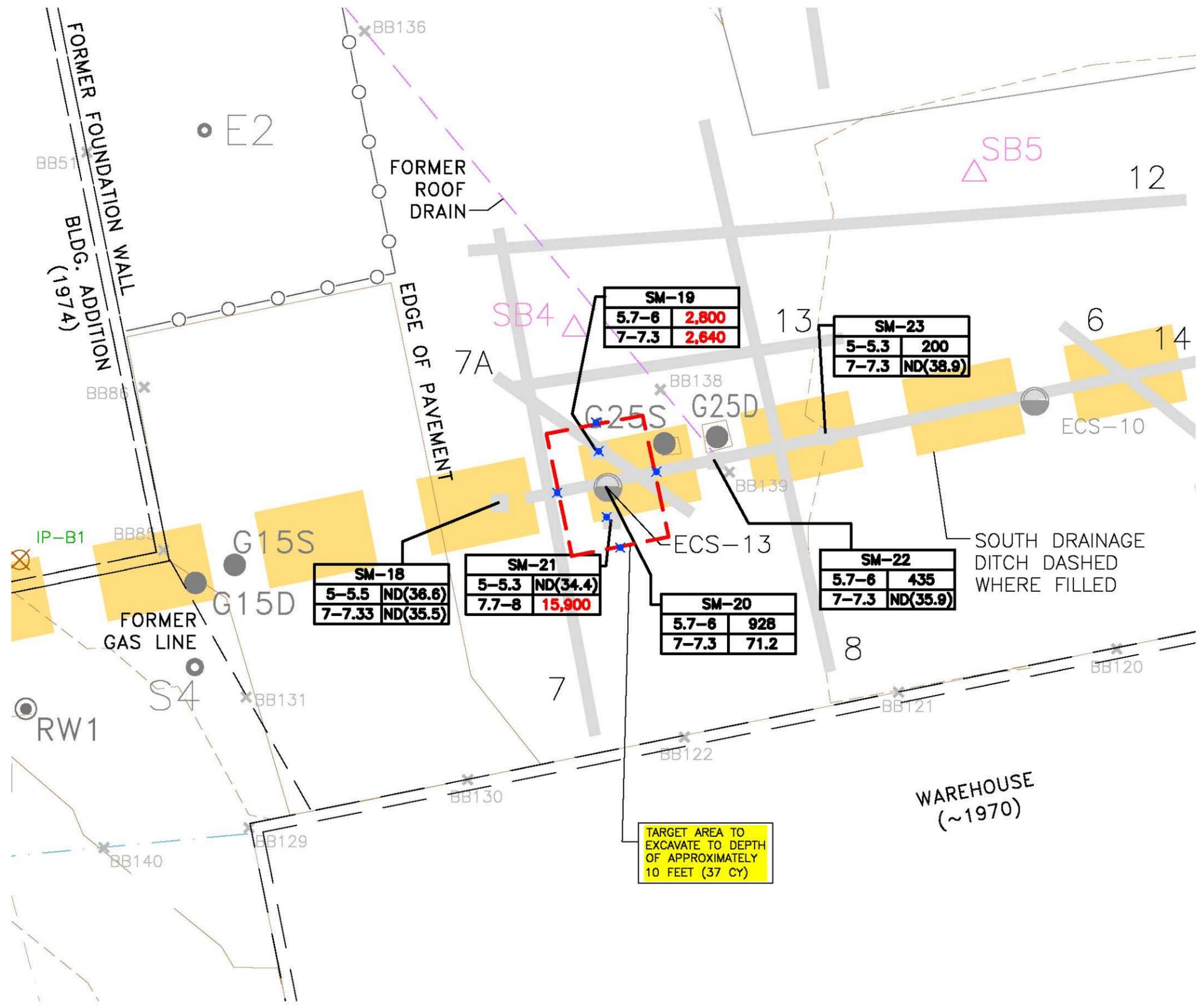
SM-2

0.5	ND
2	ND

TITLE: <b>ECS-8 AREA SOIL INVESTIGATION - VOC RESULTS</b>			
LOCATION: <b>W.R. Grace, Woburn, Massachusetts</b>			
APPROVED	ABS JRB	FIGURE <b>3-3</b>	
DRAFTED	RMK		
PROJECT#	117-3008		
DATE	JAN 2012		



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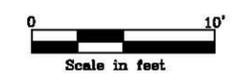


- EXPLANATION**
- G7 ● ABANDONED MONITORING WELL
  - RW1 ⊙ ABANDONED RECOVERY WELL
  - IP-B9 ⊗ SOIL BORING LOCATION IP EVALUATION (DEMOLITION RELATED)
  - BB12 × FIELD SOIL HEAD-SPACE SCREENING LOCATION (PID)
  - ECS-3 ⊙ DECATHLON SOIL BORING LOCATION (ECS, 2005)
  - 28 █ EXPLORATION TRENCHES/PITS (GEOENVIRONMENTAL CONSULTANTS, 1985)
  - SB9 △ EPA SOIL BORING LOCATION (EBASCO,1988)
  - S4 ⊙ SURVEY CONTROL POINT

**SOIL SAMPLE RESULTS (FALL 2011)**

LOCATION		
FEET	ug/kg	PCB (Aroclor1254)
		— SAMPLE DEPTH

- ND(35.5)** NOT DETECTED (AT DETECTION LIMIT)
- 2,800** RESULTS EXCEED ROD ACTION LEVEL OF 1,040 ug/kg
- ✦ TARGET LOCATION OF POST EXCAVATION CONFIRMATORY PCB SAMPLE



TARGET AREA TO EXCAVATE TO DEPTH OF APPROXIMATELY 10 FEET (37 CY)

REVISED 5/21/12

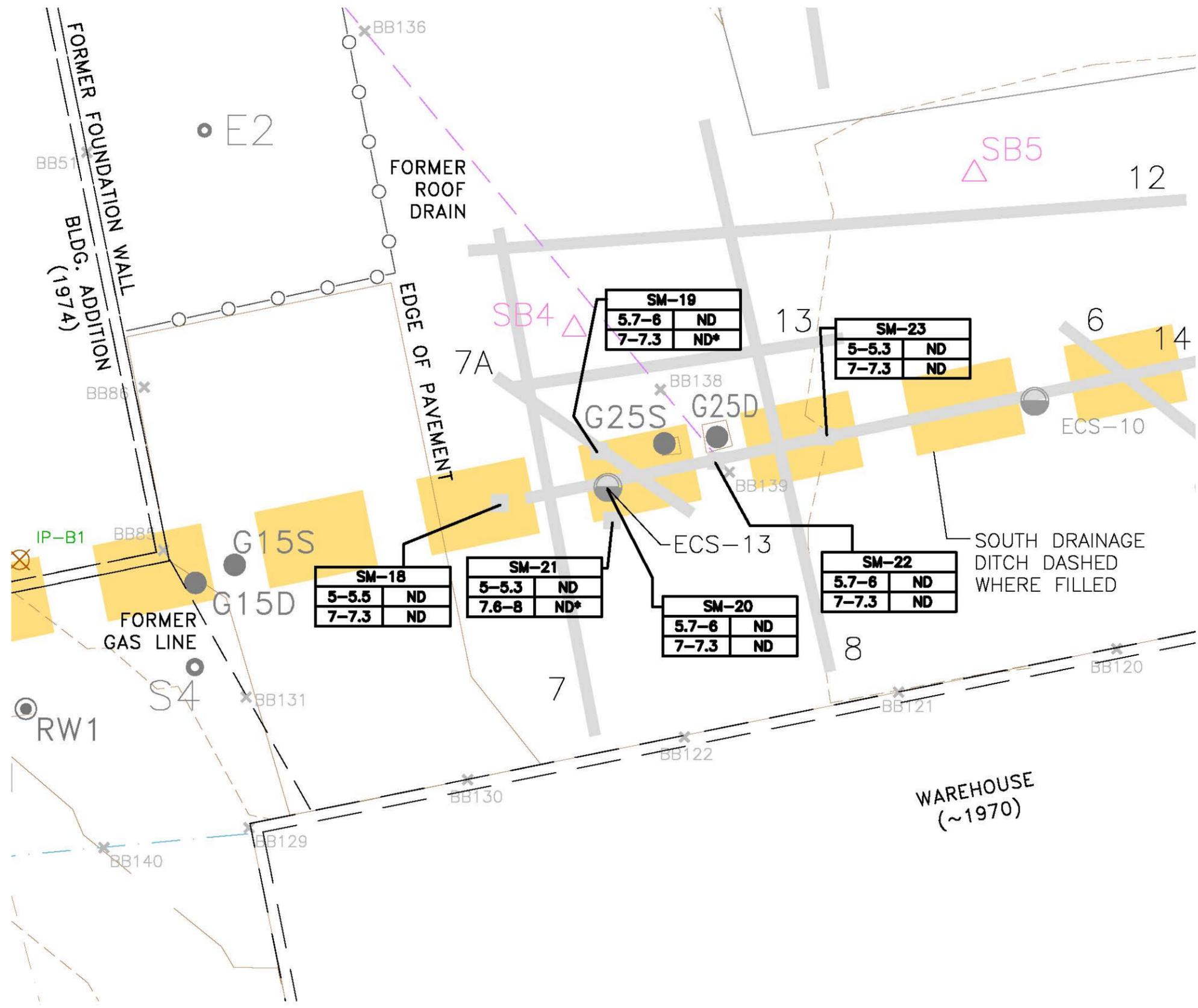
TITLE: **ECS-13 AREA SOIL INVESTIGATION - PCB RESULTS**

LOCATION: **W.R. Grace, Woburn, Massachusetts**



APPROVED	ABS JRB	FIGURE <b>3-4</b>
DRAFTED	RMK	
PROJECT#	117-3008	
DATE	JAN 2012	

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**EXPLANATION**

- G7 ● ABANDONED MONITORING WELL
- RW1 ⊙ ABANDONED RECOVERY WELL
- IP-B9 ⊗ SOIL BORING LOCATION IP EVALUATION (DEMOLITION RELATED)
- BB12 × FIELD SOIL HEAD-SPACE SCREENING LOCATION (PID)
- ECS-3 ● DECATHLON SOIL BORING LOCATION (ECS, 2005)
- 28 | EXPLORATION TRENCHES/PITS (GEOENVIRONMENTAL CONSULTANTS, 1983)
- SB9 △ EPA SOIL BORING LOCATION (EBASCO, 1988)
- S4 ⊙ SURVEY CONTROL POINT

**SOIL SAMPLING RESULTS (FALL 2011)**

LOCATION		VOC
FEET	ug/kg	
SAMPLE DEPTH		

- ND** NO VOC DETECTED ABOVE ROD ACTION LEVEL
- ND\*** DETECTION LIMIT GREATER THAN ROD ACTION LEVEL

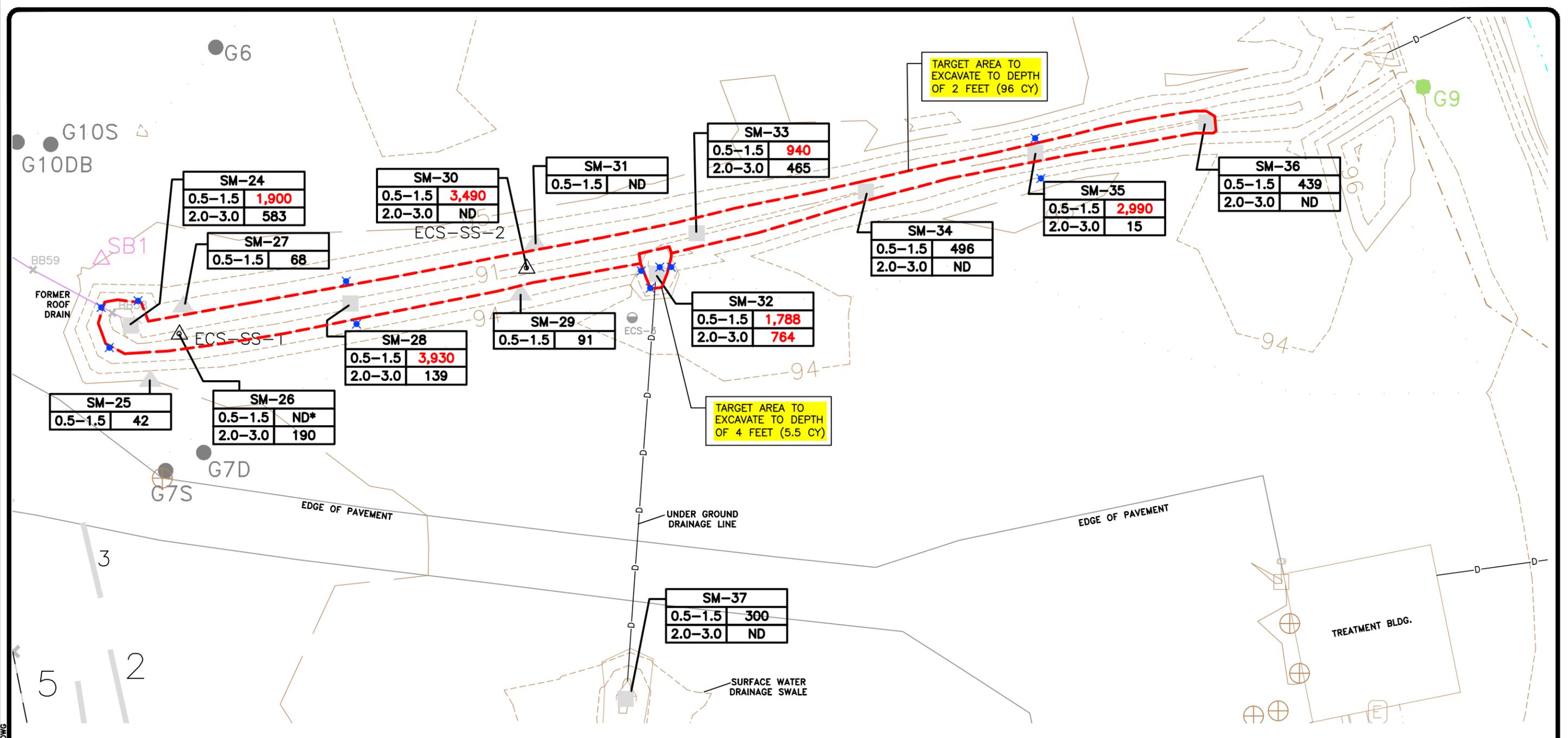


TITLE: **ECS-13 AREA SOIL INVESTIGATION - VOC RESULTS**

LOCATION: **W.R. Grace, Woburn, Massachusetts**



APPROVED	ABS JRB	FIGURE <b>3-5</b>
DRAFTED	RMK	
PROJECT#	117-3008	
DATE	DEC 2011	



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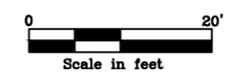
**EXPLANATION**

- G9 MONITORING WELL
- G7 ABANDONED MONITORING WELL
- SS-2 DECATHLON SOIL SAMPLE LOCATION (ECS, 2005)
- SB9 EPA SOIL BORING LOCATION (EBASCO, 1988)
- 28 EXPLORATION TRENCHES/PITS (GEOENVIRONMENTAL CONSULTANTS, 1985)
- BB12 FIELD SOIL HEAD-SPACE SCREENING LOCATION (PID)
- TWO DEPTH SOIL SAMPLE LOCATION
- SURFICIAL SOIL SAMPLE LOCATION
- TARGET LOCATION OF POST EXCAVATION CONFIRMATORY cPAH SAMPLE

**SOIL SAMPLING RESULTS (FALL 2011)**

LOCATION		TOTAL ROD SPECIFIC cPAHs
FEET	ug/kg	
SAMPLE DEPTH		

- \* DETECTION LIMIT GREATER THAN ROD ACTION LEVEL 690 ug/kg
- ND NOT DETECTED
- 690 RESULT EXCEEDS ROD ACTION LEVEL 690 ug/kg



TITLE: **ECS-SS-1 & ECS-SS-2 AREA SOIL INVESTIGATION cPAH RESULTS**

LOCATION: **W.R. Grace, Woburn, Massachusetts**

REVISED 5/21/12



APPROVED	ABS JRB	FIGURE <b>3-6</b>
DRAFTED	RMK	
PROJECT#	117-3008	
DATE	JAN 2012	

## **APPENDIX A**

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### **TEST PIT AND BORING LOGS**

SM-1 THROUGH SM-37

## LOG OF TEST PIT SM-01

Date Excavated: 11/16/11

Logged by: COC

Equipment: Backhoe

Surface Elevation(ft): 95.8

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
0.5		Organic layer ----- Yellow-brown fine to medium SAND, some gravel, some cobbles, well graded, medium dense, dry. No visual/olfactory indicators.	☞	0.0			VOC 8260 LOW
1.0		Sample SM-1-0.5 collected at 0.5' BGS					
1.5							
2.0		Sample SM-1-2 collected at 2' BGS. ----- Bottom of hole at 2	☞	0.0			VOC 8260 LOW

## LOG OF TEST PIT SM-02

Date Excavated: 11/16/11

Logged by: COC

Equipment: Backhoe

Surface Elevation(ft): 95.7

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
0.5		Organic layer ----- Yellow-brown fine to medium SAND, some gravel, some cobbles, well graded, medium dense, dry. No visual/olfactory indicators.	☞	0.0			VOC 8260 LOW
1.0		Sample SM-2-0.5 collected at 0.5' BGS. ----- Yellow-brown fine to medium SAND, some gravel, some cobbles, well graded, medium dense, dry. No visual/olfactory indicators.					
1.5							
2.0		Sample SM-2-2 collected at 2' BGS. ----- Bottom of hole at 2	☞	0.0			VOC 8260 LOW

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Littleton MA 01460  
(978) 952-0120 Fax: (978) 952-0122

WR Grace  
369 Washington St., Woburn, MA  
Soil Management Test Pits

## LOG OF TEST PIT SM-03

Date Excavated: 11/16/11 Logged by: COC  
 Equipment: Backhoe Surface Elevation(ft): 95.8

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
0.5		Organic layer Yellow-brown fine to medium SAND, some gravel, some cobbles, well graded, medium dense, dry. No visual/olfactory indicators.	☞	0.0			VOC 8260 LOW
2.0		Sample SM-3-2 collected at 2' BGS. Bottom of hole at 2	☞	0.0			VOC 8260 LOW

## LOG OF TEST PIT SM-04

Date Excavated: 11/16/11 Logged by: COC  
 Equipment: Backhoe Surface Elevation(ft): 95.8

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
0.5		Organic layer Yellow-brown fine to medium SAND, some gravel, some cobbles, well graded, medium dense, dry. No visual/olfactory indicators.	☞	0.0			VOC 8260 LOW
2.0		Sample SM-4-2 collected at 2' BGS. Bottom of hole at 2	☞	0.0			VOC 8260 LOW

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 Soil Management Test Pits



## LOG OF TEST PIT SM-07

Date Excavated: 11/14/11

Logged by: COC

Equipment: Backhoe

Surface Elevation(ft): 97.2

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
0.5		Organic layer					
1.0		Yellow-brown fine to medium SAND, some gravel, some cobbles, trace boulders, well graded, medium dense, dry. No visual/olfactory indicators.					
1.5		Composite Sample SM-7-2 collected from 1-2' BGS.	✎				PCBs 8082
2.0							
2.5							
3.0							
3.5		Composite Sample SM-7-4 collected from 3-4' BGS.	✎				PCBs 8082
4.0			Bottom of hole at 4				

## LOG OF TEST PIT SM-08

Date Excavated: 11/14/11

Logged by: COC

Equipment: Backhoe

Surface Elevation(ft): 97.2

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
0.5		Organic layer					
1.0		Yellow-brown fine to medium SAND some gravel, some cobbles, trace boulders, well graded, medium dense, dry. No visual/olfactory indicators.					
1.5		Composite Sample SM-8-2 collected from 1-2' BGS.	✎				PCBs 8082
2.0							
2.5							
3.0							
3.5		Composite Sample SM-8-4 collected from 3-4' BGS.	✎				PCBs 8082
4.0			Bottom of hole at 4				

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Soil Management Test Pits

LOG A GNNIN07 - LOG A GNNIN07.GDT - 1/31/12 11:59 - P:\PROJECT\WOBURN\GINT\SOILMANAGEMENT\2011\SM-TESTPITS.GPJ

## LOG OF TEST PIT SM-09

Date Excavated: 11/14/11

Logged by: COC

Equipment: Backhoe

Surface Elevation(ft): 97.3

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
0.5		Organic layer Yellow-brown fine to medium SAND, some gravel, some cobbles, well graded, medium dense, dry. No visual/olfactory indicators.					PCBs 8082
1.0							
1.5		Composite Sample SM-9-2 collected from 1-2' BGS.	✎				
2.0		Orange fine SAND and SILT, some cobbles, well graded, medium dense, dry. No visual/olfactory indicators.					
2.5							
3.0		Dark brown SAND, well graded, medium dense, dry. No visual/olfactory indicators.					PCBs 8082
3.5		Orange fine SAND and SILT, some cobbles, well graded, medium dense, dry. No visual/olfactory indicators.	✎				
4.0		Composite Sample SM-9-4 collected from 2.8-4' BGS.					
		Bottom of hole at 4					

## LOG OF TEST PIT SM-10

Date Excavated: 11/14/11

Logged by: COC

Equipment: Backhoe

Surface Elevation(ft): 97.3

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
0.5		Organic layer Yellow-brown fine to medium SAND, some gravel, some cobbles, well graded, medium dense, dry. No visual/olfactory indicators.					PCBs 8082
1.0							
1.5		Composite Sample SM-10-2 collected from 1-2' BGS.	✎				
2.0		SAA, two 3' pipe segments and one 2' pipe segment found approximately 1-4' BGS. No staining, no visual/olfactory indicators.					
2.5							
3.0							PCBs 8082
3.5		Composite Sample SM-10-4 collected from 3-4' BGS.	✎				
4.0		Bottom of hole at 4					

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## LOG OF TEST PIT SM-11

Date Excavated: 11/14/11

Logged by: COC

Equipment: Backhoe

Surface Elevation(ft): 97.4

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
0.5		Organic layer Yellow-brown fine to medium SAND, trace gravel, trace cobbles, well graded, medium dense, dry. No visual/olfactory indicators.					PCBs 8082
1.0		Composite Sample SM-11-2 collected from 1-2' BGS.	✎				
1.5							
2.0			Yellow- brown fine to medium SAND some gravel, some cobbles, well graded, medium dense, dry. No staining, no visual/olfactory indicators.				
2.5							PCBs 8082
3.0		Composite Sample SM-11-4 collected from 3-4' BGS.	✎				
3.5							
4.0			Bottom of hole at 4				

## LOG OF TEST PIT SM-12

Date Excavated: 11/14/11

Logged by: COC

Equipment: Backhoe

Surface Elevation(ft): 97.2

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
0.5		Organic layer Yellow-brown fine to medium SAND, some gravel, some cobbles, well graded, medium dense, dry/slightly moist at 4' BGS. No visual/olfactory indicators.					PCBs 8082
1.0		Composite Sample SM-12-2 collected from 1-2' BGS.	✎				
1.5							
2.0							
2.5							PCBs 8082
3.0		Composite Sample SM-12-4 collected from 3-4' BGS.	✎				
3.5							
4.0			Bottom of hole at 4				

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## LOG OF TEST PIT SM-13

Date Excavated: 11/14/11

Logged by: COC

Equipment: Backhoe

Surface Elevation(ft): 96.9

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
0.5		Organic layer					
1.0		Yellow-brown fine to medium SAND, some gravel, some cobbles, trace boulders, well graded, medium dense, dry/slightly moist at 4' BGS. No visual/olfactory indicators.					
1.5		Composite Sample SM-13-2 collected from 1-2' BGS.	☞				PCBs 8082
2.0							
2.5							
3.0							
3.5		Composite Sample SM-13-4 collected from 3-4' BGS.	☞				PCBs 8082
4.0		Bottom of hole at 4					

## LOG OF TEST PIT SM-14

Date Excavated: 11/14/11

Logged by: COC

Equipment: Backhoe

Surface Elevation(ft): 96.8

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
0.5		Organic layer					
1.0		Yellow-brown fine to medium SAND, some gravel, some cobbles, trace boulders, well graded, medium dense, dry/slightly moist at 4' BGS. No visual/olfactory indicators.					
1.5		Composite Sample SM-14-2 collected from 1-2' BGS.	☞				PCBs 8082
2.0							
2.5							
3.0							
3.5		Composite Sample SM-14-4 collected from 3-4' BGS.	☞				PCBs 8082
4.0		Bottom of hole at 4					

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## LOG OF TEST PIT SM-17

Date Excavated: 11/14/11

Logged by: COC

Equipment: Backhoe

Surface Elevation(ft): 96.7

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
0.5		Organic layer					
1.0		Yellow-brown fine to medium SAND, some gravel, some cobbles, well graded, medium dense, dry. No visual/olfactory indicators.					
1.5		Composite Sample SM-17-2 collected from 1-2' BGS.	☞				PCBs 8082
2.0							
2.5							
3.0		Dark brown fine SAND and SILT, well graded, dense, dry.					
3.5		Orange/yellow-brown fine SAND and SILT, some gravel, some cobbles, well graded, dense, slightly moist. No visual/olfactory indicators.	☞				PCBs 8082
4.0		Composite Sample SM-17-4 collected from 3-4' BGS.					
4.5		Bottom of hole at 4					

## LOG OF TEST PIT SM-24

Date Excavated: 11/15/11

Logged by: COC

Equipment: Backhoe

Surface Elevation(ft): 92.0

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
0.5		Organic layer					
1.0		Yellow-brown coarse SAND and GRAVEL, some cobbles, trace boulders, well graded, medium dense, dry-slightly moist at 3'. No visual/olfactory indicators.	☞				cPAHs 8270 CSIM
1.5		Composite Sample SM-24-1.5 collected from 0.5-1.5' BGS.					
2.0		Composite Sample SM-24-3 collected from 2-3' BGS.	☞				cPAHs 8270 CSIM
2.5							
3.0		Bottom of hole at 3					

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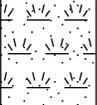






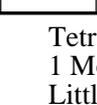
## LOG OF TEST PIT SM-31

Date Excavated: 11/15/11 Logged by: COC  
 Equipment: Backhoe Surface Elevation(ft): 93.9

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
		Organic layer					
0.5		Dark yellow-brown fine to coarse SAND and GRAVEL, some cobbles, well graded, medium dense, moist. No visual/olfactory indicators.					cPAHs 8270 CSIM
1.0		Composite Sample SM-31-1.5 collected from 0.5-1.5' BGS.	☞				
1.5		----- Bottom of hole at 1.5					

## LOG OF TEST PIT SM-32

Date Excavated: 11/15/11 Logged by: COC  
 Equipment: Backhoe Surface Elevation(ft): 92.0

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
		Organic layer					
0.5		Dark yellow-brown fine to coarse SAND and GRAVEL with cobbles, some boulders, well graded, medium dense, moist, standing water from 35-36". No visual/olfactory indicators.					cPAHs 8270 CSIM
1.0		Composite Sample SM-32-1.5 collected from 0.5-1.5' BGS.	☞				
1.5							
2.0							cPAHs 8270 CSIM
2.5		Composite Sample SM-32-3 collected from 2-3' BGS.	☞				
3.0		----- Bottom of hole at 3					

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## LOG OF TEST PIT SM-33

Date Excavated: 11/15/11

Logged by: COC

Equipment: Backhoe

Surface Elevation(ft): 91.9

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
0.5		Organic layer					
0.5		Composite Sample SM-33-1.5 collected from 0.5-1.5' BGS.					
1.0		Dark yellow GRAVEL with coarse sand and cobbles, well graded, medium dense to loose, moist to wet, standing water from 32-36". No visual/olfactory indicators.	☞				cPAHs 8270 CSIM
1.5							
2.0							
2.5		Composite Sample SM-33-3 collected from 2-3' BGS.	☞				cPAHs 8270 CSIM
3.0		Bottom of hole at 3					

## LOG OF TEST PIT SM-34

Date Excavated: 11/15/11

Logged by: COC

Equipment: Backhoe

Surface Elevation(ft): 91.9

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
0.5		Organic layer					
0.5		Composite Sample SM-34-1.5 collected from 0.5-1.5' BGS.					
1.0		Grey-yellow fine to coarse SAND with gravel and cobbles, well graded, dense, moist. No visual/olfactory indicators.	☞				cPAHs 8270 CSIM
1.5							
2.0		Composite Sample SM-34-3 collected from 2-3' BGS.					
2.5			☞				cPAHs 8270 CSIM
3.0		Bottom of hole at 3					

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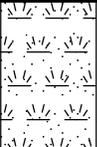
## LOG OF TEST PIT SM-35

Date Excavated: 11/15/11

Logged by: COC

Equipment: Backhoe

Surface Elevation(ft): 92.1

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
0.5		Organic layer					cPAHs 8270 CSIM
1.0		Dark yellow-brown fine to coarse SAND with gravel, some cobbles, well graded, medium dense, moist. No visual/olfactory indicators.	Hand icon				
1.5		Composite Sample SM-35-1.5 collected from 0.5-1.5' BGS. Dark yellow-brown GRAVEL with fine to coarse sand, well graded, medium dense, wet, standing water from 32-36". No visual/olfactory indicators.					cPAHs 8270 CSIM
2.0							
2.5		Composite Sample SM-35-3 collected from 2-3' BGS.	Hand icon				
3.0		Bottom of hole at 3					

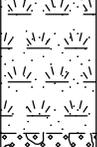
## LOG OF TEST PIT SM-36

Date Excavated: 11/15/11

Logged by: COC

Equipment: Backhoe

Surface Elevation(ft): 92.2

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
0.5		Organic layer					cPAHs 8270 CSIM
1.0		Yellow-grey fine to coarse SAND and GRAVEL with cobbles, well graded, medium dense, moist. No visual/olfactory indicators.	Hand icon				
1.5		Composite Sample SM-36-1.5 collected from 0.5-1.5' BGS.					cPAHs 8270 CSIM
2.0		Yellow-grey GRAVEL with fine to coarse sand and cobbles, trace boulders, well graded, medium dense, wet. No visual/olfactory indicators.					
2.5		Composite Sample SM-36-3 collected from 2-3' BGS.	Hand icon				
3.0		Bottom of hole at 3					

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# LOG OF TEST PIT SM-37

Date Excavated: 12/19/11

Logged by: COC

Equipment: Backhoe

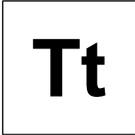
Surface Elevation(ft): NA

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PID (ppm)	MOISTURE (%)	DRY UNIT WT. (pcf)	LAB TESTS
		Organic layer					
0.5		Brown-orange fine to medium SAND, some gravel and boulders, well graded, loose, dry. No visual/olfactory indicators.					cPAHs 8270 CSIM
1.0		Composite Sample SM-37-1.5 collected from 0.5-1.5' BGS.					
1.5		Brown medium SAND, some gravel and boulders, well graded, loose, dry. No visual/olfactory indicators.					cPAHs 8270 CSIM
2.0		Composite Sample SM-37-3 collected from 2-3' BGS.					
2.5							
3.0		----- Bottom of hole at 3					

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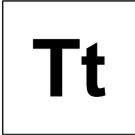
LOG OF: **SM-18**  
 (1 of 1)

Project Number: **117-3008070**

Client: <b>W.R. Grace</b>	Drilling Company: <b>Major Environmental/Maher Services</b>
Project: <b>Wells G &amp; H</b>	Driller: <b>Harry Huntoon</b>
Location: <b>W.R. Grace Woburn, MA</b>	Boring Method: <b>Mini-Sonic, water-cooled outer barrel</b>
North: <b>546772.600</b>	East: <b>701246.040</b>
Total Depth: <b>8.0</b>	Logged By: <b>COC</b>
Elev GS: <b>97.3</b>	Datum: <b>NGVD29</b>
Completion Date: <b>November 29, 2011</b>	

Sample Type/No.	Blow Counts	Recovery	SOIL DESCRIPTION	Depth (feet)	PID (ppm)	Remarks
			Light brown, SAND with some silt, trace gravel, well graded loose, wet.	0	0.8	
		38		2	0.8	
				4	1.1	Temp: 55°F
SM-18-6		38		6	1.1	Sampled from area of highest headspace PID, 5-5.5 feet BGS; no visual/olfactory indicators; Temp: 55°F
SM-18-8			Grey SAND, some silt with some gravel, well graded, dense, wet.	2.3	2.3	Sampled from area of highest headspace PID, 7-7.3 feet BGS; no visual/olfactory indicators; Temp: 55°F
			Boring terminated at 8 ft	8		

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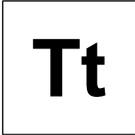
LOG OF: **SM-19**  
 (1 of 1)

Project Number: **117-3008070**

Client: <b>W.R. Grace</b>	Drilling Company: <b>Major Environmental/Maher Services</b>
Project: <b>Wells G &amp; H</b>	Driller: <b>Harry Huntoon</b>
Location: <b>W.R. Grace Woburn, MA</b>	Boring Method: <b>Mini-Sonic, water-cooled outer barrel</b>
North: <b>546777.270</b>	East: <b>701254.930</b>
Logged By: <b>COC</b>	
Total Depth: <b>8.0</b>	Elev GS: <b>96.9</b>
Datum: <b>NGVD29</b>	Completion Date: <b>November 29, 2011</b>

Sample Type/No.	Blow Counts	Recovery	SOIL DESCRIPTION	Depth (feet)	PID (ppm)	Remarks
			Light yellow-brown fine SAND, some silt, trace coarse gravel, well graded, loose to medium dense, dry.	0		
		46		0.8		Temp: 55°F
				2		
				0.8		Temp: 55°F
			SAA, wet from drilling.	4		
SM-19-6		46	Grey SILT and fine SAND, some coarse to fine gravel, well graded, medium dense, wet from drilling.	0.8		Sampled from area of highest headspace PID, 5.7-6 feet BGS; no visual/olfactory indicators; Temp: 55°F.
				6	2.4	
SM-19-8			Yellow-brown fine to coarse SAND and GRAVEL, well graded, medium dense, wet from drilling.	7.5		Sampled from area of highest headspace PID, 7-7.3 feet BGS; no visual/olfactory indicators; Temp: 55°F.
			Boring terminated at 8 ft	8	2.2	

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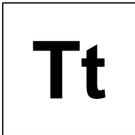
LOG OF: **SM-20**  
 (1 of 1)

Project Number: **117-3008070**

Client: <b>W.R. Grace</b>	Drilling Company: <b>Major Environmental/Maher Services</b>
Project: <b>Wells G &amp; H</b>	Driller: <b>Harry Huntoon</b>
Location: <b>W.R. Grace Woburn, MA</b>	Boring Method: <b>Mini-Sonic, water-cooled outer barrel</b>
North: <b>546774.010</b>	East: <b>701255.690</b>
Logged By: <b>COC</b>	
Total Depth: <b>8.0</b>	Elev GS: <b>97.2</b>
Datum: <b>NGVD29</b>	Completion Date: <b>November 29, 2011</b>

Sample Type/No.	Blow Counts	Recovery	SOIL DESCRIPTION	Depth (feet)	PID (ppm)	Remarks
			Yellow-brown fine to coarse SAND and GRAVEL, some silt, well graded, loose, wet.	0		
				0.6		Temp: 55°F
		32	Layer of dark brown fine to coarse SAND and GRAVEL, some silt, well graded, loose, wet.	2		Temp: 55°F
				4		
				6		Temp: 55°F
SM-20-6		48	Grey SILT, some fine sand and gravel, well graded, medium dense, wet.	6	0.1	Sampled from area of highest headspace PID, 5.7-6 feet BGS; no visual/olfactory indicators; Temp: 55°F
SM-20-8			Yellow-brown fine to coarse SAND and GRAVEL, well graded, medium dense, wet.	6.3		Sampled from area of highest headspace PID, 7-7.3 feet BGS; no visual/olfactory indicators; Temp: 55°F
			Boring terminated at 8 ft	8	0.9	

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LOG OF: **SM 21**  
 (1 of 1)

Project Number: **117-3008070**

Client: <b>W.R. Grace</b>	Drilling Company: <b>Major Environmental/Maher Services</b>
Project: <b>Wells G &amp; H</b>	Driller: <b>Harry Huntoon</b>
Location: <b>W.R. Grace Woburn, MA</b>	Boring Method: <b>Mini-Sonic, water-cooled outer barrel</b>
North: <b>546770.960</b>	East: <b>701256.150</b>
Logged By: <b>COC</b>	
Total Depth: <b>8.0</b>	Elev GS: <b>97.2</b>
Datum: <b>NGVD29</b>	Completion Date: <b>November 29, 2011</b>

Sample Type/No.	Blow Counts	Recovery	SOIL DESCRIPTION	Depth (feet)	PID (ppm)	Remarks
			Pavement	0		
			Yellow-brown fine to coarse SAND and GRAVEL, well graded, loose, moist from drilling.			Temp: 60°F
		40	Grey SILT and fine SAND, some fine to coarse gravel, well graded, dense, wet from drilling	2	0.0	Temp: 60°F
			No recovery due to rock stuck in drill bit. Shifted rig west one foot and re-drilled.	4	15.5	
SM-21-6			Yellow-brown fine to coarse SAND and GRAVEL, well graded, medium dense, moist from drilling.		0.0	Composite of top 1/3 of interval 5-5.3 feet BGS; no visual/olfactory indicators; Temp: 55°F.
		48	Grey SILT and fine SAND, some fine to coarse gravel, well graded, medium dense to dense, moist/wet from drilling.	6	0.1	
SM-21-8					0.2	Temp: 59°F
			Boring terminated at 8 ft	8	24.6	Sampled from area of highest headspace PID, 7.7-8 feet BGS; no visual/olfactory indicators; Temp: 59°F.

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LOG OF: **SM-22**  
 (1 of 1)

Project Number: **117-3008070**

Client: <b>W.R. Grace</b>	Drilling Company: <b>Major Environmental/Maher Services</b>
Project: <b>Wells G &amp; H</b>	Driller: <b>Harry Huntoon</b>
Location: <b>W.R. Grace Woburn, MA</b>	Boring Method: <b>Mini-Sonic, water-cooled outer barrel</b>
North: <b>546776.490</b>	East: <b>701265.690</b>
Total Depth: <b>8.0</b>	Completion Date: <b>November 29, 2011</b>
Elev GS: <b>97.2</b>	Datum: <b>NGVD29</b>
	Logged By: <b>COC</b>

Sample Type/No.	Blow Counts	Recovery	SOIL DESCRIPTION	Depth (feet)	PID (ppm)	Remarks
			Yellow-brown fine to coarse SAND and GRAVEL, some silt, well graded, loose to medium dense, wet from drilling	0		
		38		0.0		Temp: 55°F
				2		
				0.0		Temp: 55°F
				4		
			Grey SILT, some fine sand and gravel, well graded, medium dense to dense, moist	9.5		
SM-22-6		48	Yellow-brown fine to coarse SAND and GRAVEL, well graded, dense to medium dense, moist	6	62.3	Sampled from area of highest headspace PID, 5.7-6 feet BGS; no visual/olfactory indicators; Temp: 55°F.
SM-22-8				2.1		Sampled from area of highest headspace PID, 7-7.3 feet BGS; no visual/olfactory indicators; Temp: 60°F.
			Boring terminated at 8 ft	8	0.9	

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Tetra Tech GEO  
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 Fax: (978) 952-0122

LOG OF: **SM-23**  
 (1 of 1)

Project Number: **117-3008070**

Client: <b>W.R. Grace</b>	Drilling Company: <b>Major Environmental/Maher Services</b>
Project: <b>Wells G &amp; H</b>	Driller: <b>Harry Huntoon</b>
Location: <b>W.R. Grace Woburn, MA</b>	Boring Method: <b>Mini-Sonic, water-cooled outer barrel</b>
North: <b>546778.610</b>	East: <b>701275.650</b>
Logged By: <b>COC</b>	
Total Depth: <b>8.0</b>	Elev GS: <b>97.2</b>
Datum: <b>NGVD29</b>	Completion Date: <b>November 29, 2011</b>

Sample Type/No.	Blow Counts	Recovery	SOIL DESCRIPTION	Depth (feet)	PID (ppm)	Remarks
			Yellow-brown fine to coarse SAND and GRAVEL, some silt, well graded, loose, wet from drilling.	0		
				3.1		
		26		2	3.9	Temp: 55°F
			Yellow-brown fine to coarse SAND, some gravel, trace silt, well graded, medium dense, wet from drilling.	4		
SM-23-6				0.0		Composite sample from 5-5.3 feet BGS; no visual/olfactory indicators; Temp: 55°F.
		38		6	0.0	
SM-23-8				0.0		Composite sample from 7-7.3 feet BGS due to recovery; no visual/olfactory indicators; Temp: 57°F.
			Boring terminated at 8 ft	8		

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