

**REMOVAL PROGRAM
PRELIMINARY ASSESSMENT/
SITE INVESTIGATION REPORT
FOR THE
BIRCH SWAMP SITE
WARREN, BRISTOL COUNTY, RHODE ISLAND
3, 11 AND 12 JULY 2007**

Prepared For:

U.S. Environmental Protection Agency
Region I
Emergency Planning and Response Branch
1 Congress Street, Suite 1100
Boston, MA 02114-2023

CONTRACT NO. EP-W-05-042

TDD NO. 01-07-05-0005

TASK NO. 0299

DC NO. R-4798

Submitted By:

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I. Preliminary Assessment/Site Investigation Forms



**EPA REGION I
REMOVAL PRELIMINARY ASSESSMENT**

Site Name and Location

Name: Birch Swamp **Location:** Birch Swamp Road
Town: Warren **County:** Bristol **State:** Rhode Island

Site Status: NPL NON-NPL RCRA TSCA
 ACTIVE ABANDONED OTHER

Attached USGS Map of Location Site I.D. No.:

Latitude: 41° 44' 43" North **Longitude:** 71° 15' 31" West

Referral

Citizen City/Town State Preremedial
RCRA Other:

Name of referring party: Rhode Island Department of Environmental Management (RI DEM)

Address: 235 Promenade Street, Providence, RI 02908

Telephone: (401) 222-4700

Contacts Identified

1) Joan Taylor, RI DEM **Telephone:** (401) 222-4700 ext. 7514

Source of Information

Verbal:

Report: Rhode Island Department of Environmental Management, Office of Waste Management, *Draft Preliminary Assessment/Site Inspection Report for the Bristol Sandblasting Company (Former) Warren, RI*, dated June 2005.

Other:

REMOVAL PRELIMINARY ASSESSMENT

Physical Site Characterization (Continued)

The property west of Birch Swamp Road, across the street from the site, was the location of the former Warren Town Landfill, and is currently occupied by a transfer station and highway garages maintained by the Town of Warren Public Works and Highway Department. The Kickemuit River is approximately 0.25 miles east of the site and is a physical barrier to the rear of the site, but access is readily obtained from all other directions. The site is adjacent to the former location of the Bristol Sandblasting Company (BSB). Spent sandblasting grit contaminated with lead was stored throughout the property and at times mixed with on-site soil. This mixture of lead-contaminated sandblasting grit and on-site soil was eventually used as fill within the two residential properties, as well as on a small portion of the Town of Warren property. For an undetermined period of time, most likely between February 1991 and August 1991, Halpin Line Construction Company, working on behalf of Narragansett Electric Company, utilized a portion of the site, primarily to the rear of the former BSB garage building, to store electrical transformers.

In October 1994, the U.S. Environmental Protection Agency (EPA) and Roy F. Weston, Inc. (now known as Weston Solutions, Inc.) Technical Assistance Team (TAT) performed a Removal Program Preliminary Assessment/Site Investigation (PA/SI). The PA/SI confirmed the presence of elevated levels of lead and polychlorinated biphenyls (PCBs) in on-site soils. In May 1995, EPA began removal activities at the site. The lead cleanup levels established at the site were as follows: 500 parts per million (ppm) at the surface; 1,000 ppm at a 2-foot depth; and 1,500 ppm at a 3-foot depth. The PCB cleanup levels were 1 ppm at the surface, 5 ppm at a 1-foot depth, and 10 ppm at a 3-foot depth. The removal of lead- and PCB-contaminated soils was completed in November 1995. A total of 8,580 tons of soil was sent off site for disposal.

Because of the fact that the removal action did not involve removal of surface soils with concentrations of lead below 500 ppm, RI DEM initiated a PA/SI at the site. In June 2004, RI DEM and Vanasse Hangen Brustlin, Inc. (VHB) personnel collected 10 soil/source and surface soil samples, four drinking water samples, and seven sediment samples from the former BSB property and properties adjacent to the site.

Analytical results of soil/source samples indicated the presence of five semivolatile organic compounds (SVOCs), two PCBs, three pesticides, and three inorganic elements above the RI Residential Direct Exposure Criteria (RI-R-DEC). SVOCs detected in soil/source samples included benzo(a)anthracene [1,900 parts per billion (ppb)], benzo(b)fluoranthene (1,300 ppb), benzo(k)fluoranthene (1,400 ppb), and chrysene (1,900 ppb), all of which exceed the RI-R-DEC. In addition, benzo(a)pyrene (1,300 ppb) exceeded the RI Industrial/Commercial Direct Exposure Criteria (RI-I/C-DEC). PCBs detected in soil/source samples included Arochlor 1254 (92 ppb) and Arochlor 1260 (45 ppb), neither of which exceeded the RI-R-DEC value of 10,000 ppb. Inorganic elements detected in soil/source samples included lead (130 ppm), mercury (0.20 ppm), and potassium (1,900 ppm), none of which exceeded the RI-R-DEC.

Analytical results of sediment samples indicated the presence of nine SVOCs, three pesticides, two PCBs, and eight metals.

REMOVAL PRELIMINARY ASSESSMENT

Physical Site Characterization (Concluded)

SVOCs detected in sediment samples included benzo(a)anthracene (160 ppb), benzo(b)pyrene (180 ppb), benzo(b)fluoranthene (240 ppb), benzo(k)fluoranthene (230 ppb), butylbenzylphthalate (50 ppb), bis(2-ethylhexyl)phthalate (240 ppb), chrysene (240 ppb), fluoranthene (430 ppb), and pyrene (510 ppb). Pesticides detected in sediment samples included 4,4-DDE (12 ppb); 4,4-DDD (1.8 ppb); and 4,4-DDT (5.7 ppb). However, the presence of pesticides is attributable to normal use in the surrounding area and not to waste disposal practices at the BSB property. Therefore, the presence of these pesticides is not assumed to have originated from the BSB property. PCBs detected in sediment samples collected from properties adjacent to the BSB property, along the banks of the Kickemuit River, included Arochlor 1254 (100 ppb) and Arochlor 1260 (39 ppb), and are associated with the storage of PCB transformers on the BSB property. Metals detected in sediment samples included antimony (2 ppm), arsenic (2.8 ppm), lead (460 ppm), mercury (0.51 ppm), selenium (0.51 ppm), vanadium (24 ppm), calcium (3,100 ppm), and selenium (0.51 ppm).

Analytical results of drinking water samples indicated the presence of lead; however, lead did not exceed its Rhode Island Department of Health (RI DOH) Maximum Containment Level (MCL).

Description of Substances Possibly Present, Known or Alleged: Volatile Organic Compounds (VOCs), SVOCs, PCBs, and metals (lead).

Existing Analytical Data

() Real-Time Monitoring Data:

(√) **Sampling Data:** Analytical results of samples collected from the former BSB property and properties adjacent to the site during the June 2004 PA/SI conducted by RI DEM and their contractor.

Potential Threat

Description of potential hazards to environment and/or population-identify any of the criteria for a Removal Action (from NCP) that may be met by the site under 40 CFR 300.415 [b] [2].

- i. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants.
- ii. Actual or potential contamination of drinking water supplies or sensitive ecosystems.
- iii. Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.

REMOVAL PRELIMINARY ASSESSMENT

Potential Threat (Concluded)

- iv. High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate.
- v. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.
- vi. Threat of fire or explosion.
- vii. The availability of other appropriate federal or state response mechanisms to respond to the release.
- viii. Other situations or factors that may pose threats to public health or welfare or the environment.

Prior Response Activities

PRP STATE FEDERAL OTHER

Brief Description: In May 1995, EPA conducted a removal action at the former BSB property. In June 2004, RI DEM conducted sampling at the former BSB property and properties adjacent to the site.

Priority for Site Investigation

High Medium Low None
Comments:

Report Generation

Originator: Bonnie Mace **Date:** 17 July 2007
Affiliation: Weston Solutions (START) **Telephone:** (978) 552-2131
TDD No.: 07-05-0005 **Task No.:** 0299

REMOVAL SITE INVESTIGATION

Physical Site Characteristics

Parameter	Quantities/Extent
<input type="checkbox"/> Cylinders:	
<input type="checkbox"/> Drums:	
<input type="checkbox"/> Lagoons:	
<input type="checkbox"/> Tanks: <input type="checkbox"/> Above:	
<input type="checkbox"/> Below:	
<input type="checkbox"/> Asbestos:	
<input type="checkbox"/> Piles:	
<input type="checkbox"/> Stained Soil:	
<input type="checkbox"/> Sheens:	
<input checked="" type="checkbox"/> Stressed Vegetation:	There are several small areas of stressed vegetation.
<input type="checkbox"/> Landfill:	
<input checked="" type="checkbox"/> Population in Vicinity:	The site is surrounded by residential and agricultural properties including a horse farm.
<input type="checkbox"/> Wells: <input type="checkbox"/> Drinking:	
<input type="checkbox"/> Monitoring:	
<input type="checkbox"/> Other:	

Physical Site Observations

The Birch Swamp site (the site) consists of large wooded and wetland areas. Land use in the surrounding area is comprised of a mixture of residential, agricultural, and industrial/commercial properties, with single-family homes along Birch Swamp Road, County Road, and adjoining side roads. The site is bordered to the west by Birch Swamp Road, to the north and south by residential properties, and to the east by the Kickemuit River. The property west of Birch Swamp Road, across the street from the site, was the location of the former Warren Town Landfill, and is currently occupied by a transfer station and highway garages maintained by the Town of Warren Public Works and Highway Department. The Kickemuit River is approximately 0.25 miles east of the site and is a physical barrier to the rear of the site, but access is readily obtained from all other directions.

REMOVAL SITE INVESTIGATION

Field Sampling and Analysis

Matrix/Analytical Parameter	Field Instrumentation				
	CGI/O₂	RAD	PID	FID	Other
Background Readings:	0.0/20.9%	10-12 µR/hr	0.0	0.0	
Air:	0.0/20.9%	10-12 µR/hr	0.0	0.0	
Soil:	0.0/20.9%	10-12 µR/hr	0.0	0.0	
Surface:					
Water:					
Tanks:					
Drums:					
Vats:					
Lagoons:					
Spillage:					
Run Off:					
Piles:					
Sediments:	0.0/20.9%	10-12 µR/hr	0.0	0.0	
Groundwater:					
Other:					

Field Quality Control Procedures

(√) SOP Followed

() Deviation From SOP

Comments: START followed the protocol outlined in the document entitled, *Sampling and Analysis Plan for the Birch Swamp Site, Warren, Rhode Island.*

Description of Sampling Conducted

START collected a total of 24 surface soil samples, eight subsurface soil samples, and three sediment samples. All samples were sent to EPA Office of Environmental Measurement and Evaluation (OEME) located in North Chelmsford, Massachusetts for volatile organic compound (VOC), semivolatile organic compound (SVOC), polychlorinated biphenyl (PCB), and metals analysis.

REMOVAL SITE INVESTIGATION

Site Determination

Depending on further information, criteria that may be met by the site include 40 CFR 300.415 [b] [2], parts:

- i. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants.
- ii. Actual or potential contamination of drinking water supplies or sensitive ecosystems.
- iii. Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.
- iv. High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate.
- v. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.
- vi. Threat of fire or explosion.
- vii. The availability of other appropriate federal or state response mechanisms to respond to the release.
- viii. Other situations or factors that may pose threats to public health or welfare or the environment.

Report Generation

Originator:	Bonnie Mace	Date:	17 July 2007
Affiliation:	Weston Solutions (START)	Telephone:	(978) 552-2131
TDD No.:	07-05-0005	Task No.:	0299

II. Narrative Chronology

Narrative Chronology

Site Description

The Birch Swamp site (the site) is located on Birch Swamp Road in the northern portion of the Town of Warren, Bristol County, Rhode Island [see Appendix A – Figures: Site Location Map (Figure 1)]. The geographical coordinates of the property are 41° 44' 43" north latitude and 71° 15' 31" west longitude [1,2]. The site is identified as Lot No. 4 on Warren Tax Assessor's Map 22 [3]. The site consists of large wooded and wetland areas. Land use in the surrounding area is comprised of a mixture of residential, agricultural, and industrial/commercial properties, with single-family homes along Birch Swamp Road, County Road, and adjoining side roads. The site is bordered to the west by Birch Swamp Road, to the north and south by residential properties, and to the east by The Kickemuit River [see Appendix A – Figures: Aerial Site Map (Figure 2)] [1, 2]. The property west of Birch Swamp Road, across the street from the site, was the location of the former Warren Town Landfill, and is currently occupied by a transfer station and highway garages maintained by the Town of Warren Public Works and Highway Department. The Kickemuit River is approximately 0.25 miles east of the site and is a physical barrier to the rear of the site, but access is readily obtained from all other directions.

Site Background

The site is adjacent to the former location of the Bristol Sandblasting Company (BSB). Spent sandblasting grit contaminated with lead was stored throughout the property and at times mixed with on-site soil. This mixture of lead-contaminated sandblasting grit and on-site soil was eventually used as fill within the two residential properties, as well as on a small portion of the Town of Warren property. For an undetermined period of time, most likely between February 1991 and August 1991, Halpin Line Construction Company, working on behalf of Narragansett Electric Company, utilized a portion of the site, primarily to the rear of the former BSB garage building, to store electrical transformers [4].

In October 1994, the U.S. Environmental Protection Agency (EPA) and Roy F. Weston, Inc. (now known as Weston Solutions, Inc.) Technical Assistance Team (TAT) performed a Removal Program Preliminary Assessment/Site Investigation (PA/SI). The PA/SI confirmed the presence of elevated levels of lead and polychlorinated biphenyls (PCBs) in on-site soils. In May 1995, EPA began removal activities at the site. The lead cleanup levels established at the site were as follows: 500 parts per million (ppm) at the surface; 1,000 ppm at a 2-foot depth; and 1,500 ppm at a 3-foot depth. The PCB cleanup levels were as follows: 1 ppm at the surface, 5 ppm at a 1-foot depth, and 10 ppm at a 3-foot depth. The removal of lead- and PCB-contaminated soils was completed in November 1995. A total of 8,580 tons of soil was sent off site for disposal [4].

Because the removal action did not involve removal of surface soils with concentrations of lead below 500 ppm, Rhode Island Department of Environmental Management (RI DEM) initiated a PA/SI at the site. In June 2004, RI DEM and Vanasse Hangen Brustlin, Inc. (VHB) personnel collected 10 soil/source and surface soil samples, four drinking water samples, and seven sediment samples from the former BSB property and properties adjacent to the site.

Analytical results of soil/source samples indicated the presence of five semivolatile organic compounds (SVOCs), two PCBs, three pesticides, and three inorganic elements above reference

criteria. SVOCs detected in soil/source samples included benzo(a)anthracene [1,900 parts per billion (ppb)], benzo(b)fluoranthene (1,300 ppb), benzo(k)fluoranthene (1,400 ppb), and chrysene (1,900 ppb), all of which exceed the Rhode Island Residential Direct Exposure Criteria (RI-R-DEC). In addition, benzo(a)pyrene (1,300 ppb) exceeded the RI Industrial/Commercial Direct Exposure Criteria (RI-I/C-DEC). PCBs detected in soil/source samples included Arochlor 1254 (92 ppb) and Arochlor 1260 (45 ppb), neither of which exceeded the RI-R-DEC value of 10,000 ppb. Inorganic elements detected in soil/source samples included lead (130 ppm), mercury (0.20 ppm), and potassium (1,900 ppm), none of which exceeded the RI-R-DEC. Analytical results of sediment samples indicated the presence of nine SVOCs, three pesticides, two PCBs, and eight metals. SVOCs detected in sediment samples included benzo(a)anthracene (160 ppb), benzo(b)pyrene (180 ppb), benzo(b)fluoranthene (240 ppb), benzo(k)fluoranthene (230 ppb), butylbenzylphthalate (50 ppb), bis(2-ethylhexyl)phthalate (240 ppb), chrysene (240 ppb), fluoranthene (430 ppb), and pyrene (510 ppb). Pesticides detected in sediment samples included 4,4-DDE (12 ppb), 4,4-DDD (1.8 ppb), and 4,4-DDT (5.7 ppb). However, the presence of pesticides was attributable to normal use in the surrounding area and not to waste disposal practices at the BSB property. Therefore, the presence of these pesticides was not assumed to have originated from the BSB property. PCBs detected in sediment samples collected from properties adjacent to the BSB property, along the banks of the Kickemuit River, included Arochlor 1254 (100 ppb) and Arochlor 1260 (39 ppb), and are associated with the storage of PCB transformers on the BSB property. Metals detected in sediment samples included antimony (2 ppm), arsenic (2.8 ppm), lead (460 ppm), mercury (0.51 ppm), selenium (0.51 ppm), vanadium (24 ppm), calcium (3,100 ppm), and selenium (0.51 ppm). Analytical results of drinking water samples indicated the presence of lead; however, lead did not exceed its Rhode Island Department of Health (RI DOH) Maximum Containment Level (MCL) [4].

Site Activities

On 3 July 2007, EPA On-Scene Coordinator (OSC) Mia Pasquerella, START member Bonnie Mace, and RI DEM member Joan Taylor mobilized to the site to conduct a reconnaissance of the property to prepare for sampling activities as part of a Removal Program PA/SI.

START member Mace conducted a safety and operations meeting and on-site personnel reviewed and signed the site health and safety plan (HASP). The HASP was prepared as a separate document, entitled *Weston Solutions, Inc., Region I START Site Health and Safety Plan (HASP) for the Birch Swamp Site, Warren, Rhode Island*.

EPA, START, and RI DEM conducted a site walk-through of the property. START member Mace photodocumented site conditions and utilize the Trimble™ Pathfinder Pro XRS Global Positioning System (GPS) unit to mark site features [5].

On 11 July 2007, EPA OSC Pasquerella and START members Mace, Bill Mahany, and Cheryl Henlin mobilized to the site to conduct surface and subsurface soil and sediment sampling. START personnel established a support zone and calibrated the air monitoring instrument, a combination photoionization detector (PID)/flame ionization detector (FID) [6]. Background levels were recorded in the HASP as follows: PID = 0.0 ppm; FID = 0.0 ppm. START member Mace conducted a safety and operations meeting, and on-site personnel reviewed and signed the site HASP.

START personnel collected grab surface soil samples from locations selected by the OSC on site using dedicated sampling equipment [7]. In addition, START collected subsurface soil samples from locations determined by the OSC, using hand augers. START also collected sediment samples from several intermittent streams, using hand augers [8] [see Appendix A – Figures: Sample Location Map (Figure 3)]. Sampling activities were performed in accordance with the site sampling and analysis plan (SAP), which was prepared as a separate document, entitled *Sampling and Analysis Plan for the Birch Swamp Site, Warren, Rhode Island*. Air monitoring conducted at each sample location indicated no readings above background levels.

START collected a total of 24 surface soil, eight subsurface soil, and three sediment samples for VOC, SVOC, PCB, and metals analyses [see Appendix B – Tables: Surface Soil Sample Descriptions (Table 1), Subsurface Soil Sample Descriptions (Table 2), and Sediment Sample Descriptions (Table 3)]. The water quality parameters were measured and recorded using a YSI meter prior to sediment sample collection activities [8]. All the samples were sent to EPA Office of Environmental Measurement and Evaluation (OEME) located in North Chelmsford, Massachusetts for VOC, SVOC, PCB, and metals analyses (see Appendix C – Chain-of-Custody Records). The sediment sample locations were photographed by START member Henlin (see Appendix D – Photodocumentation Log).

On 12 July 2007, START personnel re-mobilized to the site to photodocument the site and selected sample locations [9].

On 20 August 2007, START received the analytical data results from OEME [10]. These data are summarized in Appendix B [see Appendix B – Tables: Volatile Organic Compound Analytical Results (Table 4), Semivolatile Organic Compound Analytical Results (Table 5), Polychlorinated Biphenyl Analytical Results (Table 6), and Metals Analytical Results (Table 7)]. Complete laboratory data results may be found in the Birch Swamp Site File.

Analytical Data Summaries

Thirteen SVOCs, three PCB aroclors, and six metals were detected above detection limits in the surface soil samples; and one VOC was detected above detection limits in the sediment samples. A discussion of these results follows.

Volatil Organic Compounds Results

One VOC, methylene chloride, was detected at a maximum concentration of 220 micrograms per kilogram ($\mu\text{g}/\text{Kg}$) in sediment sample SD-03. However, methylene chloride did not exceed the RI-R-DEC in this sample. A summary of VOCs detected in soil and sediment samples is provided in Appendix B [Volatile Organic Compounds Analytical Results (Table 4)].

Semivolatile Organic Compounds Results

Thirteen SVOCs (with sample number and maximum concentration in parentheses) were detected in soil samples and include the following: bis (2-ethylhexyl) phthalate (1,700 $\mu\text{g}/\text{kg}$ in SS-06); diethylphthalate (2,800 $\mu\text{g}/\text{kg}$ in SS-07); fluoranthene (5,700 $\mu\text{g}/\text{kg}$ in SS-06 2'); pyrene (4,600 $\mu\text{g}/\text{kg}$ in SS-06 2'); benzo (a) anthracene (1,600 $\mu\text{g}/\text{kg}$ in SS-06 2'); benzo (a) pyrene (2,100 $\mu\text{g}/\text{kg}$ in SS-06 2'); benzo (b) fluoranthene (4,200 $\mu\text{g}/\text{kg}$ in SS-06 2'); benzo (k)

fluoranthene (2,200 µg/kg in SS-06 2v); chrysene (3,200 µg/kg in SS-06 2'); isophorone (620 µg/kg in SS-08); phenanthrene (4,100 µg/kg in SS-06 2'); indo (1,2,3-cd) pyrene (2,800 µg/kg in SS-06 2'); and safrole (1,600 µg/kg in SS-06 2'). Six of the 13 SVOCs detected in soil samples exceeded the RI-R-DEC. In addition, one SVOC exceeded the RI-I/C-DEC. A summary of SVOCs detected in soil and sediment samples is provided in Appendix B [Semivolatile Organic Compound Analytical Results (Table 5)].

Polychlorinated Biphenyl Results

Three PCB aroclors (1248, 1254, and 1260) (with sample number and maximum concentration in parentheses) were detected in surface soil samples and include the following: Aroclor-1248 [59 milligrams per kilogram (mg/kg) in SS-04]; Aroclor-1254 (36 mg/kg in SS-04); and Aroclor-1260 (0.64 mg/kg in SS-12). Only two of the three aroclors (1248 and 1254) exceeded the RI-R-DEC. A summary of PCBs detected in soil and sediment samples is provided in Appendix B [Polychlorinated Biphenyl Analytical Results (Table 6)].

Metals Results

Six metals (with sample number and maximum concentration in parentheses) were detected in soil samples and include the following: antimony (130 mg/kg in SS-14), arsenic (110 mg/kg in SS-06), cadmium (63 mg/kg in SS-07), copper (8,900 mg/kg in SS-05), lead (7,000 mg/kg in SS-05), and manganese (4,800 mg/kg in SS-06). Concentrations of metals exceeded RI-R-DEC in 19 surface soil samples and two subsurface soil samples. A summary of metals detected in soil and sediment samples is provided in Appendix B [Metals Results (Table 7)].

References

- [1] USGS (U.S. Geological Survey). 1977. Tiverton, Rhode Island/Massachusetts (7.5-minute series topographic map).
- [2] Rhode Island Geographic Information System (RI GIS). 2007. 1:5,000 Color Digital Orthophoto Imagery, RE: Image Numbers 3824 and 3826R3. Available From <http://www.edu.uri.edu/rigiscom>. Internet accessed 1 June 2007.
- [3] Town of Warren, Rhode Island. 2005. Tax Assessor's Map No. 22. 31 May.
- [4] Rhode Island Department of Environmental Management, Office of Waste Management. June 2005. *Draft Preliminary Assessment/Site Inspection Report for Bristol Sandblasting Company (Former) Warren, RI*.
- [5] Weston Solutions, Inc. July 2005. *Standard Operating Procedure for Trimble™ Pathfinder Pro XRS Global Positioning System (GPS) with TSCI Data Logger*, SOP No. WSI/S3-020, Superfund Technical Assessment and Response Team III (START), Wilmington, MA.
- [6] Weston Solutions, Inc. July 2005. *Standard Operating Procedure for Thermo Environmental Instruments Flame Ionization Detector/PhotoIonization Detector Model TVA-1000B, Toxic Vapor Analyzer*, SOP No. WSI/S3-023, Superfund Technical Assessment and Response Team III (START), Wilmington, MA.
- [7] Weston Solutions, Inc. July 2005. *Standard Operating Procedure for Surface and Subsurface Soil Sampling*, SOP No. WSI/S3-001, Superfund Technical Assessment and Response Team III (START), Wilmington, MA.
- [8] Weston Solutions, Inc. July 2005. *Standard Operating Procedure for Sediment Sampling*, SOP No. WSI/S3-003, Superfund Technical Assessment and Response Team III (START), Wilmington, MA.
- [9] Weston Solutions, Inc. Superfund Technical Assessment and Response Team III (START). 2007. Personal Logbook for Bonnie Mace. pp. 56-57, 61-65. No. 00507-A.
- [10] U.S. Environmental Protection Agency. 2007. Office of Environmental Measurement and Evaluation, Laboratory Reports, Birch Swamp, Warren, RI.

III. Appendices

Appendix A

Figures

- Site Location Map (Figure 1)
- Aerial Site Map (Figure 2)
- Sample Location Map (Figure 3)



FIGURE 1

SITE LOCATION MAP

**Birch Swamp
Birch Swamp Road
Warren, Rhode Island**

**EPA Region I
Superfund Technical Assessment and
Response Team (START) III
Contract No. EP-W-05-042**

TDD Number: 07-05-0005
 Created by: B. MACE
 Created on: 01 JUNE 2007
 Modified by:
 Modified on:

Data Sources:
 Topos: MicroPath/USGS
 Quadrangle Name(s): Tiverton, Rhode Island/
 Massachusetts, 1975. Revised 1977
 All other data: START





FIGURE 2

AERIAL SITE MAP

**Birch Swamp
Birch Swamp Road
Warren, Rhode Island**

**EPA Region I
Superfund Technical Assessment and
Response Team (START) III
Contract No. EP-W-05-042**

TDD Number: 07-05-0005
Created by: A. LYNCH
Created on: 05 July 2007
Modified by: B. MACE
Modified on: 09 July 2007

LEGEND



0 250 500
Feet

Data Sources:

Imagery: RI DOT
 Topos: MicroPath
 All other data: START





FIGURE 3
SAMPLE LOCATION MAP

Birch Swamp
Birch Swamp Road
Warren, Rhode Island

EPA Region I
 Superfund Technical Assessment and
 Response Team (START) III
 Contract No. EP-W-05-042
 TDD Number: 07-05-0005
 Created by: B. MACE
 Created on: 15 AUGUST 2007
 Modified by:
 Modified on:

LEGEND

- Soil Sample Locations
- Sediment Sample Locations



0 250 500
 Feet

Data Sources:

Imagery: RI DOT
 Topos: MicroPath
 All other data: START



Appendix B

Tables

Surface Soil Sample Descriptions (Table 1)

Subsurface Soil Sample Descriptions (Table 2)

Sediment Sample Descriptions (Table 3)

Volatile Organic Compound Analytical Results (Table 4)

Semivolatile Organic Compound Analytical Results (Table 5)

Polychlorinated Biphenyl Analytical Results (Table 6)

Metals Analytical Results (Table 7)

TABLE 1
SURFACE SOIL SAMPLE DESCRIPTIONS
BIRCH SWAMP SITE
WARREN, RHODE ISLAND
11 JULY 2007

Sample Location	Sample Number	Sample Depth	Collection Date	Sample Type	Sample Description	Comments
SS-01	0299-0001	0 - 3 in.	7/11/07	Grab	Light brown, fine SAND, trace organics.	None.
SS-02	0299-0002	0 - 3 in.	7/11/07	Grab	Dark brown, fine SAND, trace gravel and organics.	None.
SS-03	0299-0003	0 - 3 in.	7/11/07	Grab	Dark brown, coarse SAND, trace gravel, trace organics.	None.
SS-04	0299-0004	0 - 3 in.	7/11/07	Grab	Light to medium brown SAND, some coarse gravel.	Subsurface sample collected.
SS-05	0299-0005	0 - 3 in.	7/11/07	Grab	Dark brown, coarse SAND, trace gravel, trace organics.	None.
SS-06	0299-0006	0 - 3 in.	7/11/07	Grab	Dark brown, fine SAND, some metal and other debris (glass).	Subsurface sample collected.
SS-07	0299-0007	0 - 3 in.	7/11/07	Grab	Dark brown, fine SAND, trace gravel and organics, metal debris.	None.
SS-08	0299-0008	0 - 3 in.	7/11/07	Grab	Dark brown, fine SAND, trace gravel and organics, metal debris.	None.
SS-09	0299-0009	0 - 3 in.	7/11/07	Grab	Dark brown, fine SAND, trace gravel and organics, metal debris.	None.
SS-10	0299-0010	0 - 3 in.	7/11/07	Grab	Dark brown, fine SAND, trace gravel and organics, metal debris.	None.
SS-11	0299-0011	0 - 3 in.	7/11/07	Grab	Medium brown, fine SAND, trace gravel and organics.	Subsurface sample collected.
SS-12	0299-0012	0 - 3 in.	7/11/07	Grab	Dark brown, medium SAND, trace coarse gravel.	None.
SS-13	0299-0013	0 - 3 in.	7/11/07	Grab	Light brown, fine SAND, trace debris (metal, wood), trace organics.	None.
SS-14	0299-0014	0 - 3 in.	7/11/07	Grab	Light brown, fine SAND, trace to fine gravel, little debris.	None.
SS-15	0299-0015	0 - 3 in.	7/11/07	Grab	Dark brown, fine SAND, some clay.	Moist.
SS-16	0299-0016	0 - 3 in.	7/11/07	Grab	Medium brown, fine SAND, trace organics.	Subsurface sample collected.
SS-17	0299-0017	0 - 3 in.	7/11/07	Grab	Dark brown, fine SAND, trace organics.	None.
SS-18	0299-0018	0 - 3 in.	7/11/07	Grab	Medium brown, fine SAND, trace organics.	None.
SS-19	0299-0019	0 - 3 in.	7/11/07	Grab	Medium brown, fine SAND, trace organics.	None.
SS-20	0299-0020	0 - 3 in.	7/11/07	Grab	Medium brown, fine SAND, trace gravel.	None.
SS-21	0299-0021	0 - 3 in.	7/11/07	Grab	Light brown, medium SAND, trace gravel.	None.
SS-22	0299-0022	0 - 3 in.	7/11/07	Grab	Medium brown, fine SAND, trace gravel.	None.
SS-23	0299-0023	0 - 3 in.	7/11/07	Grab	Medium brown, fine SAND, trace gravel, little broken shells.	None.
SS-24	0299-0024	0 - 3 in.	7/11/07	Grab	Medium brown, fine SAND, trace gravel.	None.

NOTES:

in. = Inches

SS = Soil Sample

TABLE 2
SUBSURFACE SOIL SAMPLE DESCRIPTIONS
BIRCH SWAMP SITE
WARREN, RHODE ISLAND
11 JULY 2007

Sample Location	Sample Number	Sample Depth (ft.)	Collection Date	Sample Type	Sample Description	Comments
SS-04	0299-0028	1	7/11/07	Grab	Light to medium brown, fine SAND, some coarse gravel.	None.
	0299-0029	2	7/11/07	Grab	Light to medium brown, fine SAND, some coarse gravel.	None.
SS-06	0299-0030	1	7/11/07	Grab	Light brown, fine SAND, some metal.	None.
	0299-0031	2	7/11/07	Grab	Dark brown, fine SAND, little coarse gravel.	None.
SS-11	0299-0032	1	7/11/07	Grab	Medium brown, fine SAND, trace organics and gravel.	None.
	0299-0033	2	7/11/07	Grab	Medium brown, fine SAND, trace organics and gravel.	None.
SS-16	0299-0034	1	7/11/07	Grab	Light brown, coarse SAND.	None.
	0299-0035	2	7/11/07	Grab	Medium brown to orange, coarse SAND.	None.

NOTES:

ft. = feet

SS = Soil Sample

TABLE 3
SEDIMENT SAMPLE DESCRIPTIONS
BIRCH SWAMP SITE
WARREN, RHODE ISLAND
11 JULY 2007

Sample Location	Sample Number	Sample Depth (in.)	Collection Date	Sample Type	Sample Description	Comments
SD-01	0299-0025	0 - 12	7/11/07	Grab	Light brown, fine SAND, trace silt.	Water color was a pale yellow, clear of particulates, no odor.
SD-02	0299-0026	0 - 12	7/11/07	Grab	Dark brown, fine SAND, trace silt.	Water color was a pale yellow, clear of particulates, no odor.
SD-03	0299-0027	0 - 12	7/11/07	Grab	Dark grey, fine SAND, trace silt, trace organics.	Water color was a pale yellow, clear of particulates, no odor.

NOTES:

in. = Inches.

SD = Sediment Sample.

TABLE 4

**VOLATILE ORGANIC COMPOUNDS ANALYTICAL RESULTS
HIGH LEVEL METHOD
(micrograms/Kilogram)**

SITE: Birch Swamp
CASE: 07070015
LABORATORY: OEME

SAMPLE LOCATION:	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06
SAMPLE NUMBER:	0299-0001	0299-0002	0299-0003	0299-0004	0299-0005	0299-0006
LABORATORY NUMBER:	AA72284	AA72285	AA72286	AA72287	AA72288	AA72289
COMPOUND	REPORTING LIMIT					
1,1,1,2-Tetrachloroethane	50	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	50	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	50	ND	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	50	ND	ND	ND	ND	ND
1,1-Dichloroethylene	50	ND	ND	ND	ND	ND
1,1-Dichloropropene	50	ND	ND	ND	ND	ND
1,1-dichloroethane	50	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	50	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	50	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	50	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	50	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	50	ND	ND	ND	ND	ND
1,2-Dibromoethane	50	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	50	ND	ND	ND	ND	ND
1,2-Dichloroethane	50	ND	ND	ND	ND	ND
1,2-Dichloropropane	50	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	50	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	50	ND	ND	ND	ND	ND
1,3-Dichloropropane	50	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	50	ND	ND	ND	ND	ND
2,2-Dichloropropane	50	ND	ND	ND	ND	ND
2-Butanone (MEK)	50	ND	ND	ND	ND	ND
2-Chlorotoluene	50	ND	ND	ND	ND	ND
2-Hexanone	50	ND	ND	ND	ND	ND
2-Propanone (acetone)	50	ND	ND	ND	ND	ND
4-Chlorotoluene	50	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	50	ND	ND	ND	ND	ND
Acrylonitrile	50	ND	ND	ND	ND	ND
Benzene	50	ND	ND	ND	ND	ND
Bromobenzene	50	ND	ND	ND	ND	ND
Bromochloromethane	50	ND	ND	ND	ND	ND
Bromodichloromethane	50	ND	ND	ND	ND	ND
Bromoform	50	ND	ND	ND	ND	ND
Bromomethane	50	ND	ND	ND	ND	ND
c-1,3-dichloropropene	50	ND	ND	ND	ND	ND
Carbon Disulfide	50	ND	ND	ND	ND	ND
Carbon tetrachloride	50	ND	ND	ND	ND	ND
Chlorobenzene	50	ND	ND	ND	ND	ND
Chloroethane	50	ND	ND	ND	ND	ND
Chloroform	50	ND	ND	ND	ND	ND
Chloromethane	50	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	50	ND	ND	ND	ND	ND
Dibromochloromethane	50	ND	ND	ND	ND	ND
Dibromomethane	50	ND	ND	ND	ND	ND
Dichlorodifluoromethane	50	ND	ND	ND	ND	ND
Ethyl Ether	50	ND	ND	ND	ND	ND
Ethylbenzene	50	ND	ND	ND	ND	ND
Hexachlorobutadiene	50	ND	ND	ND	ND	ND
Isopropylbenzene	50	ND	ND	ND	ND	ND
M/P Xylene	50	ND	ND	ND	ND	ND
Methylene Chloride	50	ND	ND	ND	ND	ND
Methyl-t-Butyl Ether	50	ND	ND	ND	ND	ND
Naphthalene	50	ND	ND	ND	ND	ND
N-Butylbenzene	50	ND	ND	ND	ND	ND
N-Propylbenzene	50	ND	ND	ND	ND	ND
Ortho Xylene	50	ND	ND	ND	ND	ND
Para-Isopropyltoluene	50	ND	ND	ND	ND	ND
Sec-Butylbenzene	50	ND	ND	ND	ND	ND
Styrene	50	ND	ND	ND	ND	ND
t-1,3-Dichloropropene	50	ND	ND	ND	ND	ND
Tert-Butylbenzene	50	ND	ND	ND	ND	ND
Tetrachloroethylene	50	ND	ND	ND	ND	ND
Tetrahydrofuran	50	ND	ND	ND	ND	ND
Toluene	50	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene	50	ND	ND	ND	ND	ND
Trichloroethylene	50	ND	ND	ND	ND	ND
Trichlorofluoromethane	50	ND	ND	ND	ND	ND
Vinyl Acetate	50	ND	ND	ND	ND	ND
Vinyl Chloride	50	ND	ND	ND	ND	ND
DILUTION:	50	50	50	50	50	50
DATE SAMPLED:	07/11/07	07/11/07	07/11/07	07/11/07	07/11/07	07/11/07
DATE EXTRACTED:	07/12/07	07/12/07	07/12/07	07/12/07	07/12/07	07/12/07
DATE ANALYZED:	07/12/07	07/12/07	07/12/07	07/12/07	07/12/07	07/12/07

TABLE 4

**VOLATILE ORGANIC COMPOUNDS ANALYTICAL RESULTS
HIGH LEVEL METHOD
(micrograms/Kilogram)**

SITE: Birch Swamp
CASE: 07070015
LABORATORY: OEME

SAMPLE LOCATION: SAMPLE NUMBER: LABORATORY NUMBER:	SS-07	SS-08	SS-09	SS-10	SS-11	SS-12
	0299-0007 AA72290	0299-0008 AA72291	0299-0009 AA72292	0299-0010 AA72293	0299-0011 AA72294	0299-0012 AA72295
REPORTING COMPOUND	LIMIT					
1,1,1,2-Tetrachloroethane	50	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	50	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	50	ND	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-Trifluoroethane	50	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	50	ND	ND	ND	ND	ND
1,1-Dichloroethylene	50	ND	ND	ND	ND	ND
1,1-Dichloropropene	50	ND	ND	ND	ND	ND
1,1-dichloroethane	50	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	50	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	50	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	50	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	50	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	50	ND	ND	ND	ND	ND
1,2-Dibromoethane	50	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	50	ND	ND	ND	ND	ND
1,2-Dichloroethane	50	ND	ND	ND	ND	ND
1,2-Dichloropropane	50	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	50	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	50	ND	ND	ND	ND	ND
1,3-Dichloropropane	50	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	50	ND	ND	ND	ND	ND
2,2-Dichloropropane	50	ND	ND	ND	ND	ND
2-Butanone (MEK)	50	ND	ND	ND	ND	ND
2-Chlorotoluene	50	ND	ND	ND	ND	ND
2-Hexanone	50	ND	ND	ND	ND	ND
2-Propanone (acetone)	50	ND	ND	ND	ND	ND
4-Chlorotoluene	50	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	50	ND	ND	ND	ND	ND
Acrylonitrile	50	ND	ND	ND	ND	ND
Benzene	50	ND	ND	ND	ND	ND
Bromobenzene	50	ND	ND	ND	ND	ND
Bromochloromethane	50	ND	ND	ND	ND	ND
Bromodichloromethane	50	ND	ND	ND	ND	ND
Bromoform	50	ND	ND	ND	ND	ND
Bromomethane	50	ND	ND	ND	ND	ND
c-1,3-dichloropropene	50	ND	ND	ND	ND	ND
Carbon Disulfide	50	ND	ND	ND	ND	ND
Carbon tetrachloride	50	ND	ND	ND	ND	ND
Chlorobenzene	50	ND	ND	ND	ND	ND
Chloroethane	50	ND	ND	ND	ND	ND
Chloroform	50	ND	ND	ND	ND	ND
Chloromethane	50	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	50	ND	ND	ND	ND	ND
Dibromochloromethane	50	ND	ND	ND	ND	ND
Dibromomethane	50	ND	ND	ND	ND	ND
Dichlorodifluoromethane	50	ND	ND	ND	ND	ND
Ethyl Ether	50	ND	ND	ND	ND	ND
Ethylbenzene	50	ND	ND	ND	ND	ND
Hexachlorobutadiene	50	ND	ND	ND	ND	ND
Isopropylbenzene	50	ND	ND	ND	ND	ND
M/P Xylene	50	ND	ND	ND	ND	ND
Methylene Chloride	50	ND	ND	ND	ND	ND
Methyl-t-Butyl Ether	50	ND	ND	ND	ND	ND
Naphthalene	50	ND	ND	ND	ND	ND
N-Butylbenzene	50	ND	ND	ND	ND	ND
N-Propylbenzene	50	ND	ND	ND	ND	ND
Ortho Xylene	50	ND	ND	ND	ND	ND
Para-Isopropyltoluene	50	ND	ND	ND	ND	ND
Sec-Butylbenzene	50	ND	ND	ND	ND	ND
Styrene	50	ND	ND	ND	ND	ND
t-1,3-Dichloropropene	50	ND	ND	ND	ND	ND
Tert-Butylbenzene	50	ND	ND	ND	ND	ND
Tetrachloroethylene	50	ND	ND	ND	ND	ND
Tetrahydrofuran	50	ND	ND	ND	ND	ND
Toluene	50	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene	50	ND	ND	ND	ND	ND
Trichloroethylene	50	ND	ND	ND	ND	ND
Trichlorofluoromethane	50	ND	ND	ND	ND	ND
Vinyl Acetate	50	ND	ND	ND	ND	ND
Vinyl Chloride	50	ND	ND	ND	ND	ND
DILUTION:	50	50	50	50	50	50
DATE SAMPLED:	07/11/07	07/11/07	07/11/07	07/11/07	07/11/07	07/11/07
DATE EXTRACTED:	07/12/07	07/12/07	07/12/07	07/12/07	07/12/07	07/12/07
DATE ANALYZED:	07/12/07	07/12/07	07/12/07	07/12/07	07/12/07	07/12/07

TABLE 4

**VOLATILE ORGANIC COMPOUNDS ANALYTICAL RESULTS
HIGH LEVEL METHOD
(micrograms/Kilogram)**

SITE: Birch Swamp
CASE: 07070015
LABORATORY: OEME

SAMPLE LOCATION: SAMPLE NUMBER: LABORATORY NUMBER:	SS-13 0299-0013 AA72296	SS-14 0299-0014 AA72297	SS-15 0299-0015 AA72298	SS-16 0299-0016 AA72299	SS-17 0299-0017 AA72300	SS-18 0299-0018 AA72301	REPORTING
							COMPOUND LIMIT
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethane	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	ND	ND	ND	ND	ND	ND	ND
2-Hexanone	ND	ND	ND	ND	ND	ND	ND
2-Propanone (acetone)	ND	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND	ND	ND
Bromobenzene	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	ND	ND	ND	ND	ND	ND	ND
Bromoform	ND	ND	ND	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND	ND	ND	ND
c-1,3-dichloropropene	ND	ND	ND	ND	ND	ND	ND
Carbon Disulfide	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND
Chloroform	ND	ND	ND	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	ND
Ethyl Ether	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ND	ND	ND	ND	ND	ND	ND
M/P Xylene	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND
Methyl-t-Butyl Ether	ND	ND	ND	ND	ND	ND	ND
Naphthalene	ND	ND	ND	ND	ND	ND	ND
N-Butylbenzene	ND	ND	ND	ND	ND	ND	ND
N-Propylbenzene	ND	ND	ND	ND	ND	ND	ND
Ortho Xylene	ND	ND	ND	ND	ND	ND	ND
Para-Isopropyltoluene	ND	ND	ND	ND	ND	ND	ND
Sec-Butylbenzene	ND	ND	ND	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND
t-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	ND
Tert-Butylbenzene	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	ND	ND	ND	ND	ND	ND	ND
Tetrahydrofuran	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	ND
Vinyl Acetate	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND
DILUTION:	50	50	50	50	50	50	50
DATE SAMPLED:	07/11/07	07/11/07	07/11/07	07/11/07	07/11/07	07/11/07	07/11/07
DATE EXTRACTED:	07/12/07	07/12/07	07/12/07	07/12/07	07/12/07	07/12/07	07/12/07
DATE ANALYZED:	07/12/07	07/12/07	07/12/07	07/12/07	07/12/07	07/12/07	07/12/07

TABLE 4

**VOLATILE ORGANIC COMPOUNDS ANALYTICAL RESULTS
HIGH LEVEL METHOD
(micrograms/Kilogram)**

SITE: Birch Swamp
CASE: 07070015/07070016
LABORATORY: OEME

SAMPLE LOCATION: SAMPLE NUMBER: LABORATORY NUMBER:	SS-19 0299-0019 AA72302	SS-20 0299-0020 AA72303	SS-21 0299-0021 AA72304	SS-22 0299-0022 AA72305	SS-23 0299-0023 AA72306	SS-24 0299-0024 AA72307	REPORTING
							COMPOUND LIMIT
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	50
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	50
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND	ND	ND	50
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	ND	ND	ND	ND	ND	50
1,1,2-Trichloroethane	ND	ND	ND	ND	ND	ND	50
1,1-Dichloroethylene	ND	ND	ND	ND	ND	ND	50
1,1-Dichloropropene	ND	ND	ND	ND	ND	ND	50
1,1-dichloroethane	ND	ND	ND	ND	ND	ND	50
1,2,3-Trichlorobenzene	ND	ND	ND	ND	ND	ND	50
1,2,3-Trichloropropane	ND	ND	ND	ND	ND	ND	50
1,2,4-Trichlorobenzene	ND	ND	ND	ND	ND	ND	50
1,2,4-Trimethylbenzene	ND	ND	ND	ND	ND	ND	50
1,2-Dibromo-3-Chloropropane	ND	ND	ND	ND	ND	ND	50
1,2-Dibromoethane	ND	ND	ND	ND	ND	ND	50
1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	50
1,2-Dichloroethane	ND	ND	ND	ND	ND	ND	50
1,2-Dichloropropane	ND	ND	ND	ND	ND	ND	50
1,3,5-Trimethylbenzene	ND	ND	ND	ND	ND	ND	50
1,3-Dichlorobenzene	ND	ND	ND	ND	ND	ND	50
1,3-Dichloropropane	ND	ND	ND	ND	ND	ND	50
1,4-Dichlorobenzene	ND	ND	ND	ND	ND	ND	50
2,2-Dichloropropane	ND	ND	ND	ND	ND	ND	50
2-Butanone (MEK)	ND	ND	ND	ND	ND	ND	50
2-Chlorotoluene	ND	ND	ND	ND	ND	ND	50
2-Hexanone	ND	ND	ND	ND	ND	ND	50
2-Propanone (acetone)	ND	ND	ND	ND	ND	ND	50
4-Chlorotoluene	ND	ND	ND	ND	ND	ND	50
4-Methyl-2-Pentanone(MIBK)	ND	ND	ND	ND	ND	ND	50
Acrylonitrile	ND	ND	ND	ND	ND	ND	50
Benzene	ND	ND	ND	ND	ND	ND	50
Bromobenzene	ND	ND	ND	ND	ND	ND	50
Bromochloromethane	ND	ND	ND	ND	ND	ND	50
Bromodichloromethane	ND	ND	ND	ND	ND	ND	50
Bromoform	ND	ND	ND	ND	ND	ND	50
Bromomethane	ND	ND	ND	ND	ND	ND	50
c-1,3-dichloropropene	ND	ND	ND	ND	ND	ND	50
Carbon Disulfide	ND	ND	ND	ND	ND	ND	50
Carbon tetrachloride	ND	ND	ND	ND	ND	ND	50
Chlorobenzene	ND	ND	ND	ND	ND	ND	50
Chloroethane	ND	ND	ND	ND	ND	ND	50
Chloroform	ND	ND	ND	ND	ND	ND	50
Chloromethane	ND	ND	ND	ND	ND	ND	50
cis-1,2-Dichloroethylene	ND	ND	ND	ND	ND	ND	50
Dibromochloromethane	ND	ND	ND	ND	ND	ND	50
Dibromomethane	ND	ND	ND	ND	ND	ND	50
Dichlorodifluoromethane	ND	ND	ND	ND	ND	ND	50
Ethyl Ether	ND	ND	ND	ND	ND	ND	50
Ethylbenzene	ND	ND	ND	ND	ND	ND	50
Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	50
Isopropylbenzene	ND	ND	ND	ND	ND	ND	50
M/P Xylene	ND	ND	ND	ND	ND	ND	50
Methylene Chloride	ND	ND	ND	ND	ND	ND	50
Methyl-t-Butyl Ether	ND	ND	ND	ND	ND	ND	50
Naphthalene	ND	ND	ND	ND	ND	ND	50
N-Butylbenzene	ND	ND	ND	ND	ND	ND	50
N-Propylbenzene	ND	ND	ND	ND	ND	ND	50
Ortho Xylene	ND	ND	ND	ND	ND	ND	50
Para-Isopropyltoluene	ND	ND	ND	ND	ND	ND	50
Sec-Butylbenzene	ND	ND	ND	ND	ND	ND	50
Styrene	ND	ND	ND	ND	ND	ND	50
t-1,3-Dichloropropene	ND	ND	ND	ND	ND	ND	50
Tert-Butylbenzene	ND	ND	ND	ND	ND	ND	50
Tetrachloroethylene	ND	ND	ND	ND	ND	ND	50
Tetrahydrofuran	ND	ND	ND	ND	ND	ND	50
Toluene	ND	ND	ND	ND	ND	ND	50
Trans-1,2-Dichloroethylene	ND	ND	ND	ND	ND	ND	50
Trichloroethylene	ND	ND	ND	ND	ND	ND	50
Trichlorofluoromethane	ND	ND	ND	ND	ND	ND	50
Vinyl Acetate	ND	ND	ND	ND	ND	ND	50
Vinyl Chloride	ND	ND	ND	ND	ND	ND	50

DILUTION:	50	50	50	50	50	50
DATE SAMPLED:	07/11/07	07/11/07	07/11/07	07/11/07	07/11/07	07/11/07
DATE EXTRACTED:	07/12/07	07/12/07	07/12/07	07/12/07	07/12/07	07/12/07
DATE ANALYZED:	07/12/07	07/12/07	07/12/07	07/12/07	07/12/07	07/12/07

TABLE 4

**VOLATILE ORGANIC COMPOUNDS ANALYTICAL RESULTS
HIGH LEVEL METHOD
(micrograms/Kilogram)**

SITE: Birch Swamp
CASE: 07070016
LABORATORY: OEME

SAMPLE LOCATION: SAMPLE NUMBER: LABORATORY NUMBER:	SD-01	SD-02	SD-03	SS-04 1'	SS-04 2'	SS-06 1'
	0299-0025	0299-0026	0299-0027	0299-0028	0299-0029	0299-0030
	AA72308	AA72309	AA72310	AA72311	AA72312	AA72313
REPORTING COMPOUND	LIMIT					
1,1,1,2-Tetrachloroethane	50	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	50	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	50	ND	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-Trifluoroetha	50	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	50	ND	ND	ND	ND	ND
1,1-Dichloroethylene	50	ND	ND	ND	ND	ND
1,1-Dichloropropene	50	ND	ND	ND	ND	ND
1,1-dichloroethane	50	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	50	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	50	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	50	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	50	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	50	ND	ND	ND	ND	ND
1,2-Dibromoethane	50	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	50	ND	ND	ND	ND	ND
1,2-Dichloroethane	50	ND	ND	ND	ND	ND
1,2-Dichloropropane	50	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	50	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	50	ND	ND	ND	ND	ND
1,3-Dichloropropane	50	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	50	ND	ND	ND	ND	ND
2,2-Dichloropropane	50	ND	ND	ND	ND	ND
2-Butanone (MEK)	50	ND	ND	ND	ND	ND
2-Chlorotoluene	50	ND	ND	ND	ND	ND
2-Hexanone	50	ND	ND	ND	ND	ND
2-Propanone (acetone)	50	ND	ND	ND	ND	ND
4-Chlorotoluene	50	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	50	ND	ND	ND	ND	ND
Acrylonitrile	50	ND	ND	ND	ND	ND
Benzene	50	ND	ND	ND	ND	ND
Bromobenzene	50	ND	ND	ND	ND	ND
Bromochloromethane	50	ND	ND	ND	ND	ND
Bromodichloromethane	50	ND	ND	ND	ND	ND
Bromoform	50	ND	ND	ND	ND	ND
Bromomethane	50	ND	ND	ND	ND	ND
c-1,3-dichloropropene	50	ND	ND	ND	ND	ND
Carbon Disulfide	50	ND	ND	ND	ND	ND
Carbon tetrachloride	50	ND	ND	ND	ND	ND
Chlorobenzene	50	ND	ND	ND	ND	ND
Chloroethane	50	ND	ND	ND	ND	ND
Chloroform	50	ND	ND	ND	ND	ND
Chloromethane	50	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	50	ND	ND	ND	ND	ND
Dibromochloromethane	50	ND	ND	ND	ND	ND
Dibromomethane	50	ND	ND	ND	ND	ND
Dichlorodifluoromethane	50	ND	ND	ND	ND	ND
Ethyl Ether	50	ND	ND	ND	ND	ND
Ethylbenzene	50	ND	ND	ND	ND	ND
Hexachlorobutadiene	50	ND	ND	ND	ND	ND
Isopropylbenzene	50	ND	ND	ND	ND	ND
M/P Xylene	50	ND	ND	ND	ND	ND
Methylene Chloride	50	ND	ND	220	ND	ND
Methyl-t-Butyl Ether	50	ND	ND	ND	ND	ND
Naphthalene	50	ND	ND	ND	ND	ND
N-Butylbenzene	50	ND	ND	ND	ND	ND
N-Propylbenzene	50	ND	ND	ND	ND	ND
Ortho Xylene	50	ND	ND	ND	ND	ND
Para-Isopropyltoluene	50	ND	ND	ND	ND	ND
Sec-Butylbenzene	50	ND	ND	ND	ND	ND
Styrene	50	ND	ND	ND	ND	ND
t-1,3-Dichloropropene	50	ND	ND	ND	ND	ND
Tert-Butylbenzene	50	ND	ND	ND	ND	ND
Tetrachloroethylene	50	ND	ND	ND	ND	ND
Tetrahydrofuran	50	ND	ND	ND	ND	ND
Toluene	50	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene	50	ND	ND	ND	ND	ND
Trichloroethylene	50	ND	ND	ND	ND	ND
Trichlorofluoromethane	50	ND	ND	ND	ND	ND
Vinyl Acetate	50	ND	ND	ND	ND	ND
Vinyl Chloride	50	ND	ND	ND	ND	ND
DILUTION:	50	50	50	50	50	50
DATE SAMPLED:	07/11/07	07/11/07	07/11/07	07/11/07	07/11/07	07/11/07
DATE EXTRACTED:	07/12/07	07/12/07	07/12/07	07/12/07	07/14/07	07/14/07
DATE ANALYZED:	07/12/07	07/12/07	07/12/07	07/12/07	07/14/07	07/14/07

TABLE 4

**VOLATILE ORGANIC COMPOUNDS ANALYTICAL RESULTS
HIGH LEVEL METHOD
(micrograms/Kilogram)**

SITE: Birch Swamp
CASE: 07070016
LABORATORY: OEME

COMPOUND	LIMIT	SS-06 2'	SS-11 1'	SS-11 2'	SS-16 1'	SS-16 2'
		0299-0031 AA72314	0299-0032 AA72315	0299-0033 AA72316	0299-0034 AA72317	0299-0035 AA72318
1,1,1,2-Tetrachloroethane	50	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	50	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	50	ND	ND	ND	ND	ND
1,1,2-Trichloro-1,2,2-Trifluoroetha	50	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	50	ND	ND	ND	ND	ND
1,1-Dichloroethylene	50	ND	ND	ND	ND	ND
1,1-Dichloropropene	50	ND	ND	ND	ND	ND
1,1-dichloroethane	50	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	50	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	50	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	50	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	50	ND	ND	ND	ND	ND
1,2-Dibromo-3-Chloropropane	50	ND	ND	ND	ND	ND
1,2-Dibromoethane	50	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	50	ND	ND	ND	ND	ND
1,2-Dichloroethane	50	ND	ND	ND	ND	ND
1,2-Dichloropropane	50	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	50	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	50	ND	ND	ND	ND	ND
1,3-Dichloropropane	50	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	50	ND	ND	ND	ND	ND
2,2-Dichloropropane	50	ND	ND	ND	ND	ND
2-Butanone (MEK)	50	ND	ND	ND	ND	ND
2-Chlorotoluene	50	ND	ND	ND	ND	ND
2-Hexanone	50	ND	ND	ND	ND	ND
2-Propanone (acetone)	50	ND	ND	ND	ND	ND
4-Chlorotoluene	50	ND	ND	ND	ND	ND
4-Methyl-2-Pentanone(MIBK)	50	ND	ND	ND	ND	ND
Acrylonitrile	50	ND	ND	ND	ND	ND
Benzene	50	ND	ND	ND	ND	ND
Bromobenzene	50	ND	ND	ND	ND	ND
Bromochloromethane	50	ND	ND	ND	ND	ND
Bromodichloromethane	50	ND	ND	ND	ND	ND
Bromoform	50	ND	ND	ND	ND	ND
Bromomethane	50	ND	ND	ND	ND	ND
c-1,3-dichloropropene	50	ND	ND	ND	ND	ND
Carbon Disulfide	50	ND	ND	ND	ND	ND
Carbon tetrachloride	50	ND	ND	ND	ND	ND
Chlorobenzene	50	ND	ND	ND	ND	ND
Chloroethane	50	ND	ND	ND	ND	ND
Chloroform	50	ND	ND	ND	ND	ND
Chloromethane	50	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	50	ND	ND	ND	ND	ND
Dibromochloromethane	50	ND	ND	ND	ND	ND
Dibromomethane	50	ND	ND	ND	ND	ND
Dichlorodifluoromethane	50	ND	ND	ND	ND	ND
Ethyl Ether	50	ND	ND	ND	ND	ND
Ethylbenzene	50	ND	ND	ND	ND	ND
Hexachlorobutadiene	50	ND	ND	ND	ND	ND
Isopropylbenzene	50	ND	ND	ND	ND	ND
M/P Xylene	50	ND	ND	ND	ND	ND
Methylene Chloride	50	ND	ND	ND	ND	ND
Methyl-t-Butyl Ether	50	ND	ND	ND	ND	ND
Naphthalene	50	ND	ND	ND	ND	ND
N-Butylbenzene	50	ND	ND	ND	ND	ND
N-Propylbenzene	50	ND	ND	ND	ND	ND
Ortho Xylene	50	ND	ND	ND	ND	ND
Para-Isopropyltoluene	50	ND	ND	ND	ND	ND
Sec-Butylbenzene	50	ND	ND	ND	ND	ND
Styrene	50	ND	ND	ND	ND	ND
t-1,3-Dichloropropene	50	ND	ND	ND	ND	ND
Tert-Butylbenzene	50	ND	ND	ND	ND	ND
Tetrachloroethylene	50	ND	ND	ND	ND	ND
Tetrahydrofuran	50	ND	ND	ND	ND	ND
Toluene	50	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene	50	ND	ND	ND	ND	ND
Trichloroethylene	50	ND	ND	ND	ND	ND
Trichlorofluoromethane	50	ND	ND	ND	ND	ND
Vinyl Acetate	50	ND	ND	ND	ND	ND
Vinyl Chloride	50	ND	ND	ND	ND	ND

DILUTION:	50	50	50	50	50
DATE SAMPLED:	07/11/07	07/11/07	07/11/07	07/11/07	07/11/07
DATE EXTRACTED:	07/14/07	07/14/07	07/14/07	07/14/07	07/14/07
DATE ANALYZED:	07/14/07	07/14/07	07/14/07	07/14/07	07/14/07

TABLE 5

SEMIVOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS
(micrograms/Kilogram)

SITE: Birch Swamp
CASE: 07070015
LABORATORY: OEME

	SAMPLE NUMBER:	0299-0001	0299-0002	0299-0003	0299-0004	0299-0005	0299-0006	0299-0007
	SAMPLE LOCATION:	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07
	LABORATORY NUMBER:	AA72284	AA72285	AA72286	AA72287	AA72288	AA72289	AA72290
COMPOUND	REPORTING LIMIT							
1,2,4,5-Tetrachlorobenzene	500	ND						
1,2,4-Trichlorobenzene	500	ND						
1,2-Dichlorobenzene	500	ND						
1,3-Dichlorobenzene	500	ND						
1,3-Dinitrobenzene	500	ND						
1,4-Dichlorobenzene	500	ND						
1,4-Naphthoquinone	500	ND						
1-Methylnaphthalene	500	ND						
2,2'-oxybis(1-Chloropropane)	500	ND						
2,3,4,6-Tetrachlorophenol	500	ND						
2,4,5-Trichlorophenol	500	ND						
2,4,6-Trichlorophenol	500	ND						
2,4-Dichlorophenol	500	ND						
2,4-Dinitrophenol	500	ND						
2,4-Dinitrotoluene	500	ND						
2,4-dimethylphenol	500	ND						
2,6-Dichlorophenol	500	ND						
2,6-Dinitrotoluene	500	ND						
2-Chloronaphthalene	500	ND						
2-Chlorophenol	500	ND						
2-Methylnaphthalene	500	ND						
2-Methylphenol	500	ND						
2-Nitroaniline	500	ND						
2-Nitrophenol	500	ND						
3&4-Methylphenol	1000	ND						
3,3'-Dichlorobenzidine	500	ND						
3-Methylcholanthrene	500	ND						
3-Nitroaniline	500	ND						
4,6-Dinitro-2-methylphenol	500	ND						
4-Bromophenyl-phenylether	500	ND						
4-Chloro-3-methylphenol	500	ND						
4-Chloroaniline	500	ND						
4-Chlorophenyl-phenylether	500	ND						
4-Nitroaniline	500	ND						
4-Nitrophenol	500	ND						
4-nitroquinoline-1-oxide	500	ND						
Acenaphthene	500	ND						
Acenaphthylene	500	ND						
Acetophenone	500	ND						
Aniline	500	ND						
Anthracene	500	ND						
Aramite	500	ND						
Azobenzene	500	ND						
Benzidine	500	ND						
Benzo(a)anthracene	500	ND						
Benzo(a)pyrene	500	ND						
Benzo(b)fluoranthene	500	ND						
Benzo(g,h,i)perylene	500	ND						
Benzo(k)fluoranthene	500	ND						
Benzoic Acid	500	ND						
Benzyl Alcohol	500	ND						
Bis(2-Chloroethyl)ether	500	ND						
bis(2-Ethylhexyl)phthalate	500	550	ND	ND	920	1,100	1,700	ND
Butylbenzylphthalate	500	ND						
Carbazole	500	ND						
Chlorobenzilate	500	ND						
Chrysene	500	ND						
Di-n-butylphthalate	500	ND						
Di-n-octyl phthalate	500	ND						
Dibenz(a,h)anthracene	500	ND						
Dibenzofuran	500	ND						
Diethylphthalate	500	ND	ND	ND	ND	ND	850	2,800
Dimethyl phthalate	500	ND						
Dinoseb	500	ND						
Ethyl methanesulfonate	500	ND						
DILUTION FACTOR:		1	1	1	1	1	1	1
PERCENT SOLIDS:		97	96	96	91	93	87	94
DATE SAMPLED:		7/11/07	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07
DATE EXTRACTED:		7/16/07	7/16/07	7/16/07	7/16/07	7/16/07	7/16/07	7/16/07
DATE ANALYZED:		7/17/07	7/17/07	7/17/07	7/17/07	7/17/07	7/17/07	7/17/07

TABLE 5

SEMIVOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS
(micrograms/Kilogram)

SITE: Birch Swamp
CASE: 07070015
LABORATORY: OEME

	SAMPLE NUMBER:	0299-0001	0299-0002	0299-0003	0299-0004	0299-0005	0299-0006	0299-0007
	SAMPLE LOCATION:	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07
	LABORATORY NUMBER:	AA72284	AA72285	AA72286	AA72287	AA72288	AA72289	AA72290
COMPOUND	REPORTING LIMIT							
Fluoranthene	500	760	ND	ND	ND	ND	ND	ND
Fluorene	500	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	500	ND	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	500	ND	ND	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	500	ND	ND	ND	ND	ND	ND	ND
Hexachloroethane	500	ND	ND	ND	ND	ND	ND	ND
Hexachloropropene	500	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	500	ND	ND	ND	ND	ND	ND	ND
Isodrin	500	ND	ND	ND	ND	ND	ND	ND
Isophorone	500	ND	ND	ND	ND	ND	ND	ND
Isosafrole	500	ND	ND	ND	ND	ND	ND	ND
Kepone	500	ND	ND	ND	ND	ND	ND	ND
Methyl methanesulfonate	500	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	500	ND	ND	ND	ND	ND	ND	ND
N-nitroso-di-n-propylamine	500	ND	ND	ND	ND	ND	ND	ND
N-nitrosodimethylamine	500	ND	ND	ND	ND	ND	ND	ND
Naphthalene	500	ND	ND	ND	ND	ND	ND	ND
Nitrobenzene	500	ND	ND	ND	ND	ND	ND	ND
Pentachlorobenzene	500	ND	ND	ND	ND	ND	ND	ND
Pentachloronitrobenzene	500	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	500	ND	ND	ND	ND	ND	ND	ND
Phenacetin	500	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	500	ND	ND	ND	ND	ND	ND	ND
Phenol	500	ND	ND	ND	ND	ND	ND	ND
Pyrene	500	630	ND	ND	ND	ND	ND	ND
Pyridine	500	ND	ND	ND	ND	ND	ND	ND
Safrole	500	ND	ND	ND	ND	ND	ND	ND
bis(-2-Chloroethoxy)methane	500	ND	ND	ND	ND	ND	ND	ND
DILUTION FACTOR:		1	1	1	1	1	1	1
PERCENT SOLIDS:		97	96	96	91	93	87	94
DATE SAMPLED:		7/11/07	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07
DATE EXTRACTED:		7/16/07	7/16/07	7/16/07	7/16/07	7/16/07	7/16/07	7/16/07
DATE ANALYZED:		7/17/07	7/17/07	7/17/07	7/17/07	7/17/07	7/17/07	7/17/07

NOTE: Bolded and Shaded results exceed Rhode Island Residential Direct Exposure Criteria (RI-R-DEC).
ND = Not Detected.

TABLE 5

SEMIVOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS
(micrograms/Kilogram)

SITE: Birch Swamp
CASE: 07070015
LABORATORY: OEME

	SAMPLE NUMBER:	0299-0008	0299-0009	0299-0010	0299-0011	0299-0012	0299-0013	0299-0014
	SAMPLE LOCATION:	SS-08	SS-09	SS-10	SS-11	SS-12	SS-13	SS-14
	LABORATORY NUMBER:	AA72291	AA72292	AA72293	AA72294	AA72295	AA72296	AA72297
COMPOUND	REPORTING LIMIT							
1,2,4,5-Tetrachlorobenzene	500	ND						
1,2,4-Trichlorobenzene	500	ND						
1,2-Dichlorobenzene	500	ND						
1,3-Dichlorobenzene	500	ND						
1,3-Dinitrobenzene	500	ND						
1,4-Dichlorobenzene	500	ND						
1,4-Naphthoquinone	500	ND						
1-Methylnaphthalene	500	ND						
2,2'-oxybis(1-Chloropropane)	500	ND						
2,3,4,6-Tetrachlorophenol	500	ND						
2,4,5-Trichlorophenol	500	ND						
2,4,6-Trichlorophenol	500	ND						
2,4-Dichlorophenol	500	ND						
2,4-Dinitrophenol	500	ND						
2,4-Dinitrotoluene	500	ND						
2,4-dimethylphenol	500	ND						
2,6-Dichlorophenol	500	ND						
2,6-Dinitrotoluene	500	ND						
2-Chloronaphthalene	500	ND						
2-Chlorophenol	500	ND						
2-Methylnaphthalene	500	ND						
2-Methylphenol	500	ND						
2-Nitroaniline	500	ND						
2-Nitrophenol	500	ND						
3&4-Methylphenol	1000	ND						
3,3'-Dichlorobenzidine	500	ND						
3-Methylcholanthrene	500	ND						
3-Nitroaniline	500	ND						
4,6-Dinitro-2-methylphenol	500	ND						
4-Bromophenyl-phenylether	500	ND						
4-Chloro-3-methylphenol	500	ND						
4-Chloroaniline	500	ND						
4-Chlorophenyl-phenylether	500	ND						
4-Nitroaniline	500	ND						
4-Nitrophenol	500	ND						
4-nitroquinoline-1-oxide	500	ND						
Acenaphthene	500	ND						
Acenaphthylene	500	ND						
Acetophenone	500	ND						
Aniline	500	ND						
Anthracene	500	ND						
Aramite	500	ND						
Azobenzene	500	ND						
Benzidine	500	ND						
Benzo(a)anthracene	500	910	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	500	750	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	500	1,000	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	500	ND						
Benzo(k)fluoranthene	500	690	ND	ND	ND	ND	ND	ND
Benzoic Acid	500	ND						
Benzyl Alcohol	500	ND						
Bis(2-Chloroethyl)ether	500	ND						
bis(2-Ethylhexyl)phthalate	500	1,300	1,200	ND	1,400	ND	ND	870
Butylbenzylphthalate	500	ND						
Carbazole	500	ND						
Chlorobenzilate	500	ND						
Chrysene	500	1,000	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	500	ND						
Di-n-octyl phthalate	500	ND						
Dibenz(a,h)anthracene	500	ND						
Dibenzofuran	500	ND						
Diethylphthalate	500	ND						
Dimethyl phthalate	500	ND						
Dinoseb	500	ND						
Ethyl methanesulfonate	500	ND						
DILUTION FACTOR:		1	1	1	1	1	1	1
PERCENT SOLIDS:		89	88	94	80	86	86	91
DATE SAMPLED:		7/11/07	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07
DATE EXTRACTED:		7/16/07	7/16/07	7/16/07	7/16/07	7/16/07	7/16/07	7/16/07
DATE ANALYZED:		7/18/07	7/18/07	7/18/07	7/18/07	7/18/07	7/18/07	7/18/07

TABLE 5

SEMIVOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS
(micrograms/Kilogram)

SITE: Birch Swamp
CASE: 07070015
LABORATORY: OEME

	SAMPLE NUMBER:	0299-0008	0299-0009	0299-0010	0299-0011	0299-0012	0299-0013	0299-0014
	SAMPLE LOCATION:	SS-08	SS-09	SS-10	SS-11	SS-12	SS-13	SS-14
	LABORATORY NUMBER:	AA72291	AA72292	AA72293	AA72294	AA72295	AA72296	AA72297
COMPOUND	REPORTING LIMIT							
Fluoranthene	500	2,600	ND	ND	ND	ND	ND	ND
Fluorene	500	ND						
Hexachlorobenzene	500	ND						
Hexachlorobutadiene	500	ND						
Hexachlorocyclopentadiene	500	ND						
Hexachloroethane	500	ND						
Hexachloropropene	500	ND						
Indeno(1,2,3-cd)pyrene	500	ND						
Isodrin	500	ND						
Isophorone	500	620	ND	ND	ND	ND	ND	ND
Isosafrole	500	ND						
Kepone	500	ND						
Methyl methanesulfonate	500	ND						
N-Nitrosodiphenylamine	500	ND						
N-nitroso-di-n-propylamine	500	ND						
N-nitrosodimethylamine	500	ND						
Naphthalene	500	ND						
Nitrobenzene	500	ND						
Pentachlorobenzene	500	ND						
Pentachloronitrobenzene	500	ND						
Pentachlorophenol	500	ND						
Phenacetin	500	ND						
Phenanthrene	500	1,900	ND	ND	ND	ND	ND	ND
Phenol	500	ND						
Pyrene	500	1,800	ND	ND	ND	ND	ND	ND
Pyridine	500	ND						
Safrole	500	ND						
bis(-2-Chloroethoxy)methane	500	ND						
DILUTION FACTOR:		1	1	1	1	1	1	1
PERCENT SOLIDS:		89	88	94	80	86	86	91
DATE SAMPLED:		7/11/07	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07
DATE EXTRACTED:		7/16/07	7/16/07	7/16/07	7/16/07	7/16/07	7/16/07	7/16/07
DATE ANALYZED:		7/18/07	7/18/07	7/18/07	7/18/07	7/18/07	7/18/07	7/18/07

NOTE: Bolded and Shaded results exceed Rhode Island Residential Direct Exposure Criteria (RI-R-DEC).
ND = Not Detected.

TABLE 5

SEMIVOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS
(micrograms/Kilogram)

SITE: Birch Swamp
CASE: 07070015/07070016
LABORATORY: OEME

	SAMPLE NUMBER:	0299-0015	0299-0016	0299-0017	0299-0018	0299-0019	0299-0020	0299-0021
	SAMPLE LOCATION:	SS-15	SS-16	SS-17	SS-18	SS-19	SS-20	SS-21
	LABORATORY NUMBER:	AA72298	AA72299	AA72300	AA72301	AA72302	AA72303	AA72304
COMPOUND	REPORTING LIMIT							
1,2,4,5-Tetrachlorobenzene	500	ND						
1,2,4-Trichlorobenzene	500	ND						
1,2-Dichlorobenzene	500	ND						
1,3-Dichlorobenzene	500	ND						
1,3-Dinitrobenzene	500	ND						
1,4-Dichlorobenzene	500	ND						
1,4-Naphthoquinone	500	ND						
1-Methylnaphthalene	500	ND						
2,2'-oxybis(1-Chloropropane)	500	ND						
2,3,4,6-Tetrachlorophenol	500	ND						
2,4,5-Trichlorophenol	500	ND						
2,4,6-Trichlorophenol	500	ND						
2,4-Dichlorophenol	500	ND						
2,4-Dinitrophenol	500	ND						
2,4-Dinitrotoluene	500	ND						
2,4-dimethylphenol	500	ND						
2,6-Dichlorophenol	500	ND						
2,6-Dinitrotoluene	500	ND						
2-Chloronaphthalene	500	ND						
2-Chlorophenol	500	ND						
2-Methylnaphthalene	500	ND						
2-Methylphenol	500	ND						
2-Nitroaniline	500	ND						
2-Nitrophenol	500	ND						
3&4-Methylphenol	1000	ND						
3,3'-Dichlorobenzidine	500	ND						
3-Methylcholanthrene	500	ND						
3-Nitroaniline	500	ND						
4,6-Dinitro-2-methylphenol	500	ND						
4-Bromophenyl-phenylether	500	ND						
4-Chloro-3-methylphenol	500	ND						
4-Chloroaniline	500	ND						
4-Chlorophenyl-phenylether	500	ND						
4-Nitroaniline	500	ND						
4-Nitrophenol	500	ND						
4-nitroquinoline-1-oxide	500	ND						
Acenaphthene	500	ND						
Acenaphthylene	500	ND						
Acetophenone	500	ND						
Aniline	500	ND						
Anthracene	500	ND						
Aramite	500	ND						
Azobenzene	500	ND						
Benzidine	500	ND						
Benzo(a)anthracene	500	ND	ND	ND	ND	ND	1,300	ND
Benzo(a)pyrene	500	ND	ND	ND	ND	ND	1,200	ND
Benzo(b)fluoranthene	500	ND	ND	ND	ND	ND	1,700	ND
Benzo(g,h,i)perylene	500	ND	ND	ND	ND	ND	1,300	ND
Benzo(k)fluoranthene	500	ND						
Benzoic Acid	500	ND						
Benzyl Alcohol	500	ND						
Bis(2-Chloroethyl)ether	500	ND						
bis(2-Ethylhexyl)phthalate	500	ND	ND	ND	ND	ND	1,600	ND
Butylbenzylphthalate	500	ND						
Carbazole	500	ND						
Chlorobenzilate	500	ND						
Chrysene	500	ND	ND	ND	ND	ND	1,600	ND
Di-n-butylphthalate	500	ND						
Di-n-octyl phthalate	500	ND						
Dibenz(a,h)anthracene	500	ND						
Dibenzofuran	500	ND						
Diethylphthalate	500	ND						
Dimethyl phthalate	500	ND						
Dinoseb	500	ND						
Ethyl methanesulfonate	500	ND						
DILUTION FACTOR:		1	1	1	1	1	1	1
PERCENT SOLIDS:		74	86	78	81	90	97	91
DATE SAMPLED:		7/11/07	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07
DATE EXTRACTED:		7/16/07	7/16/07	7/16/07	7/16/07	7/16/07	7/18/07	7/18/07
DATE ANALYZED:		7/18/07	7/18/07	7/18/07	7/18/07	7/18/07	7/23/07	7/23/07

TABLE 5

SEMIVOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS
(micrograms/Kilogram)

SITE: Birch Swamp
CASE: 07070015/07070016
LABORATORY: OEME

	SAMPLE NUMBER:	0299-0015	0299-0016	0299-0017	0299-0018	0299-0019	0299-0020	0299-0021
	SAMPLE LOCATION:	SS-15	SS-16	SS-17	SS-18	SS-19	SS-20	SS-21
	LABORATORY NUMBER:	AA72298	AA72299	AA72300	AA72301	AA72302	AA72303	AA72304
COMPOUND	REPORTING LIMIT							
Fluoranthene	500	ND	ND	ND	ND	ND	2,900	ND
Fluorene	500	ND						
Hexachlorobenzene	500	ND						
Hexachlorobutadiene	500	ND						
Hexachlorocyclopentadiene	500	ND						
Hexachloroethane	500	ND						
Hexachloropropene	500	ND						
Indeno(1,2,3-cd)pyrene	500	ND	ND	ND	ND	ND	1,500	ND
Isodrin	500	ND						
Isophorone	500	ND						
Isosafrole	500	ND						
Kepone	500	ND						
Methyl methanesulfonate	500	ND						
N-Nitrosodiphenylamine	500	ND						
N-nitroso-di-n-propylamine	500	ND						
N-nitrosodimethylamine	500	ND						
Naphthalene	500	ND						
Nitrobenzene	500	ND						
Pentachlorobenzene	500	ND						
Pentachloronitrobenzene	500	ND						
Pentachlorophenol	500	ND						
Phenacetin	500	ND						
Phenanthrene	500	ND	ND	ND	ND	ND	1,400	ND
Phenol	500	ND						
Pyrene	500	ND	ND	ND	ND	ND	2,500	ND
Pyridine	500	ND						
Safrole	500	ND						
bis(-2-Chloroethoxy)methane	500	ND						
DILUTION FACTOR:		1						
PERCENT SOLIDS:		74	86	78	81	90	97	91
DATE SAMPLED:		7/11/07						
DATE EXTRACTED:		7/16/07	7/16/07	7/16/07	7/16/07	7/16/07	7/18/07	7/18/07
DATE ANALYZED:		7/18/07	7/18/07	7/18/07	7/18/07	7/18/07	7/23/07	7/23/07

NOTE: Bolded and Shaded results exceed Rhode Island Residential Direct Exposure Criteria (RI-R-DEC).
ND = Not Detected.

TABLE 5

SEMIVOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS
(micrograms/Kilogram)

SITE: Birch Swamp
CASE: 07070016
LABORATORY: OEME

SAMPLE NUMBER:	0299-0022	0299-0023	0299-0024	0299-0025	0299-0026	0299-0027	0299-0028
SAMPLE LOCATION:	SS-22	SS-23	SS-24	SD-01	SD-02	SD-03	SS-04 1'
LABORATORY NUMBER:	AA72305	AA72306	AA72307	AA72308	AA72309	AA72310	AA72311
COMPOUND	REPORTING LIMIT						
1,2,4,5-Tetrachlorobenzene	500	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	500	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	500	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	500	ND	ND	ND	ND	ND	ND
1,3-Dinitrorobenzene	500	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	500	ND	ND	ND	ND	ND	ND
1,4-Naphthoquinone	500	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	500	ND	ND	ND	ND	ND	ND
2,2'-oxybis(1-Chloropropane)	500	ND	ND	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol	500	ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	500	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	500	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	500	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	500	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	500	ND	ND	ND	ND	ND	ND
2,4-dimethylphenol	500	ND	ND	ND	ND	ND	ND
2,6-Dichlorophenol	500	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	500	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	500	ND	ND	ND	ND	ND	ND
2-Chlorophenol	500	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	500	ND	ND	ND	ND	ND	ND
2-Methylphenol	500	ND	ND	ND	ND	ND	ND
2-Nitroaniline	500	ND	ND	ND	ND	ND	ND
2-Nitrophenol	500	ND	ND	ND	ND	ND	ND
3&4-Methylphenol	1000	ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	500	ND	ND	ND	ND	ND	ND
3-Methylcholanthrene	500	ND	ND	ND	ND	ND	ND
3-Nitroaniline	500	ND	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	500	ND	ND	ND	ND	ND	ND
4-Bromophenyl-phenylether	500	ND	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol	500	ND	ND	ND	ND	ND	ND
4-Chloroaniline	500	ND	ND	ND	ND	ND	ND
4-Chlorophenyl-phenylether	500	ND	ND	ND	ND	ND	ND
4-Nitroaniline	500	ND	ND	ND	ND	ND	ND
4-Nitrophenol	500	ND	ND	ND	ND	ND	ND
4-nitroquinoline-1-oxide	500	ND	ND	ND	ND	ND	ND
Acenaphthene	500	ND	ND	ND	ND	ND	ND
Acenaphthylene	500	ND	ND	ND	ND	ND	ND
Acetophenone	500	ND	ND	ND	ND	ND	ND
Aniline	500	ND	ND	ND	ND	ND	ND
Anthracene	500	ND	ND	ND	ND	ND	ND
Aramite	500	ND	ND	ND	ND	ND	ND
Azobenzene	500	ND	ND	ND	ND	ND	ND
Benzidine	500	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	500	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	500	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	500	ND	ND	ND	ND	ND	ND
Benzo(g,h,i)perylene	500	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	500	ND	ND	ND	ND	ND	ND
Benzoic Acid	500	ND	ND	ND	ND	ND	ND
Benzyl Alcohol	500	ND	ND	ND	ND	ND	ND
Bis(2-Chloroethyl)ether	500	ND	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	500	ND	ND	ND	ND	ND	ND
Butylbenzylphthalate	500	ND	ND	ND	ND	ND	ND
Carbazole	500	ND	ND	ND	ND	ND	ND
Chlorobenzilate	500	ND	ND	ND	ND	ND	ND
Chrysene	500	ND	ND	ND	ND	ND	ND
Di-n-butylphthalate	500	ND	ND	ND	ND	ND	ND
Di-n-octyl phthalate	500	ND	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	500	ND	ND	ND	ND	ND	ND
Dibenzofuran	500	ND	ND	ND	ND	ND	ND
Diethylphthalate	500	ND	ND	ND	ND	ND	ND
Dimethyl phthalate	500	ND	ND	ND	ND	ND	ND
Dinoseb	500	ND	ND	ND	ND	ND	ND
Ethyl methanesulfonate	500	ND	ND	ND	ND	ND	ND
DILUTION FACTOR:	1	1	1	1	1	1	1
PERCENT SOLIDS:	92	57	90	84	67	62	96
DATE SAMPLED:	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07
DATE EXTRACTED:	7/18/07	7/18/07	7/18/07	7/18/07	7/18/07	7/18/07	7/18/07
DATE ANALYZED:	7/24/07	7/24/07	7/23/07	7/23/07	7/23/07	7/23/07	7/24/07

TABLE 5

SEMIVOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS
(micrograms/Kilogram)

SITE: Birch Swamp
CASE: 07070016
LABORATORY: OEME

	0299-0022	0299-0023	0299-0024	0299-0025	0299-0026	0299-0027	0299-0028
SAMPLE NUMBER:	0299-0022	0299-0023	0299-0024	0299-0025	0299-0026	0299-0027	0299-0028
SAMPLE LOCATION:	SS-22	SS-23	SS-24	SD-01	SD-02	SD-03	SS-04 1'
LABORATORY NUMBER:	AA72305	AA72306	AA72307	AA72308	AA72309	AA72310	AA72311
COMPOUND	REPORTING LIMIT						
Fluoranthene	500	900	ND	ND	ND	ND	ND
Fluorene	500	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	500	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	500	ND	ND	ND	ND	ND	ND
Hexachlorocyclopentadiene	500	ND	ND	ND	ND	ND	ND
Hexachloroethane	500	ND	ND	ND	ND	ND	ND
Hexachloropropene	500	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	500	ND	ND	ND	ND	ND	ND
Isodrin	500	ND	ND	ND	ND	ND	ND
Isophorone	500	ND	ND	ND	ND	ND	ND
Isosafrole	500	ND	ND	ND	ND	ND	ND
Kepone	500	ND	ND	ND	ND	ND	ND
Methyl methanesulfonate	500	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	500	ND	ND	ND	ND	ND	ND
N-nitroso-di-n-propylamine	500	ND	ND	ND	ND	ND	ND
N-nitrosodimethylamine	500	ND	ND	ND	ND	ND	ND
Naphthalene	500	ND	ND	ND	ND	ND	ND
Nitrobenzene	500	ND	ND	ND	ND	ND	ND
Pentachlorobenzene	500	ND	ND	ND	ND	ND	ND
Pentachloronitrobenzene	500	ND	ND	ND	ND	ND	ND
Pentachlorophenol	500	ND	ND	ND	ND	ND	ND
Phenacetin	500	ND	ND	ND	ND	ND	ND
Phenanthrene	500	ND	ND	ND	ND	ND	ND
Phenol	500	ND	ND	ND	ND	ND	ND
Pyrene	500	800	ND	ND	ND	ND	ND
Pyridine	500	ND	ND	ND	ND	ND	ND
Safrole	500	ND	ND	ND	ND	ND	ND
bis(-2-Chloroethoxy)methane	500	ND	ND	ND	ND	ND	ND
DILUTION FACTOR:	1	1	1	1	1	1	1
PERCENT SOLIDS:	92	57	90	84	67	62	96
DATE SAMPLED:	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07
DATE EXTRACTED:	7/18/07	7/18/07	7/18/07	7/18/07	7/18/07	7/18/07	7/18/07
DATE ANALYZED:	7/24/07	7/24/07	7/23/07	7/23/07	7/23/07	7/23/07	7/24/07

NOTE: Bolded and Shaded results exceed Rhode Island Residential Direct Exposure Criteria (RI-R-DEC).
ND = Not Detected.

TABLE 5

SEMIVOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS
(micrograms/Kilogram)

SITE: Birch Swamp
CASE: 07070016
LABORATORY: OEME

SAMPLE NUMBER: 0299-0029 0299-0030 0299-0031 0299-0032 0299-0033 0299-0034 0299-0035
SAMPLE LOCATION: SS-04 2' SS-06 1' SS-06 2' SD-11 1' SD-11 2' SS-16 1' SS-16 2'
LABORATORY NUMBER: AA72312 AA72313 AA72314 AA72315 AA72316 AA72317 AA72318

COMPOUND	REPORTING LIMIT							
1,2,4,5-Tetrachlorobenzene	500	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	500	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	500	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	500	ND	ND	ND	ND	ND	ND	ND
1,3-Dinitrobenzene	500	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	500	ND	ND	ND	ND	ND	ND	ND
1,4-Naphthoquinone	500	ND	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	500	ND	ND	ND	ND	ND	ND	ND
2,2'-oxybis(1-Chloropropane)	500	ND	ND	ND	ND	ND	ND	ND
2,3,4,6-Tetrachlorophenol	500	ND	ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	500	ND	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	500	ND	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	500	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	500	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	500	ND	ND	ND	ND	ND	ND	ND
2,4-dimethylphenol	500	ND	ND	ND	ND	ND	ND	ND
2,6-Dichlorophenol	500	ND	ND	ND	ND	ND	ND	ND
2,6-Dinitrotoluene	500	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	500	ND	ND	ND	ND	ND	ND	ND
2-Chlorophenol	500	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	500	ND	ND	ND	ND	ND	ND	ND
2-Methylphenol	500	ND	ND	ND	ND	ND	ND	ND
2-Nitroaniline	500	ND	ND	ND	ND	ND	ND	ND
2-Nitrophenol	500	ND	ND	ND	ND	ND	ND	ND
3&4-Methylphenol	1000	ND	ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	500	ND	ND	ND	ND	ND	ND	ND
3-Methylcholanthrene	500	ND	ND	ND	ND	ND	ND	ND
3-Nitroaniline	500	ND	ND	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	500	ND	ND	ND	ND	ND	ND	ND
4-Bromophenyl-phenylether	500	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol	500	ND	ND	ND	ND	ND	ND	ND
4-Chloroaniline	500	ND	ND	ND	ND	ND	ND	ND
4-Chlorophenyl-phenylether	500	ND	ND	ND	ND	ND	ND	ND
4-Nitroaniline	500	ND	ND	ND	ND	ND	ND	ND
4-Nitrophenol	500	ND	ND	ND	ND	ND	ND	ND
4-nitroquinoline-1-oxide	500	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	500	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	500	ND	ND	ND	ND	ND	ND	ND
Acetophenone	500	ND	ND	ND	ND	ND	ND	ND
Aniline	500	ND	ND	ND	ND	ND	ND	ND
Anthracene	500	ND	ND	ND	ND	ND	ND	ND
Aramite	500	ND	ND	ND	ND	ND	ND	ND
Azobenzene	500	ND	ND	ND	ND	ND	ND	ND
Benzidine	500	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	500	ND	ND	1,600	ND	ND	ND	ND
Benzo(a)pyrene	500	ND	ND	2,100	ND	ND	ND	ND
Benzo(b)fluoranthene	500	ND	ND	4,200	ND	ND	ND	ND
Benzo(g,h,i)perylene	500	ND	ND	2,200	ND	ND	ND	ND
Benzo(k)fluoranthene	500	ND	ND	ND	ND	ND	ND	ND
Benzoic Acid	500	ND	ND	ND	ND	ND	ND	ND
Benzyl Alcohol	500	ND	ND	ND	ND	ND	ND	ND
Bis(2-Chloroethyl)ether	500	ND	ND	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	500	ND	ND	ND	810	ND	ND	ND
Butylbenzylphthalate	500	ND	ND	ND	ND	ND	ND	ND
Carbazole	500	ND	ND	ND	ND	ND	ND	ND
Chlorobenzilate	500	ND	ND	ND	ND	ND	ND	ND
Chrysene	500	ND	ND	3,200	ND	ND	ND	ND
Di-n-butylphthalate	500	ND	ND	ND	ND	ND	ND	ND
Di-n-octyl phthalate	500	ND	ND	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene	500	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	500	ND	ND	ND	ND	ND	ND	ND
Diethylphthalate	500	ND	ND	ND	ND	ND	ND	ND
Dimethyl phthalate	500	ND	ND	ND	ND	ND	ND	ND
Dinoseb	500	ND	ND	ND	ND	ND	ND	ND
Ethyl methanesulfonate	500	ND	ND	ND	ND	ND	ND	ND

DILUTION FACTOR:	1	1	1	1	1	1	1
PERCENT SOLIDS:	95	93	78	78	84	95	93
DATE SAMPLED:	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07
DATE EXTRACTED:	7/18/07	7/23/07	7/18/07	7/18/07	7/18/07	7/18/07	7/18/07
DATE ANALYZED:	7/23/07	7/23/07	7/24/07	7/24/07	7/24/07	7/20/07	7/23/07

TABLE 5

SEMIVOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS
(micrograms/Kilogram)

SITE: Birch Swamp
CASE: 07070016
LABORATORY: OEME

		0299-0029	0299-0030	0299-0031	0299-0032	0299-0033	0299-0034	0299-0035
		SS-04 2'	SS-06 1'	SS-06 2'	SD-11 1'	SD-11 2'	SS-16 1'	SS-16 2'
		AA72312	AA72313	AA72314	AA72315	AA72316	AA72317	AA72318
COMPOUND	REPORTING LIMIT							
Fluoranthene	500	ND	ND	5,700	ND	ND	ND	ND
Fluorene	500	ND						
Hexachlorobenzene	500	ND						
Hexachlorobutadiene	500	ND						
Hexachlorocyclopentadiene	500	ND						
Hexachloroethane	500	ND						
Hexachloropropene	500	ND						
Indeno(1,2,3-cd)pyrene	500	ND	ND	2,800	ND	ND	ND	ND
Isodrin	500	ND						
Isophorone	500	ND						
Isosafrole	500	ND						
Kepone	500	ND						
Methyl methanesulfonate	500	ND						
N-Nitrosodiphenylamine	500	ND						
N-nitroso-di-n-propylamine	500	ND						
N-nitrosodimethylamine	500	ND						
Naphthalene	500	ND						
Nitrobenzene	500	ND						
Pentachlorobenzene	500	ND						
Pentachloronitrobenzene	500	ND						
Pentachlorophenol	500	ND						
Phenacetin	500	ND						
Phenanthrene	500	ND	ND	4,100	ND	ND	ND	ND
Phenol	500	ND						
Pyrene	500	ND	ND	4,600	ND	ND	ND	ND
Pyridine	500	ND						
Safrole	500	ND	ND	1,600	ND	ND	ND	ND
bis(-2-Chloroethoxy)methane	500	ND						
DILUTION FACTOR:		1	1	1	1	1	1	1
PERCENT SOLIDS:		95	93	78	78	84	95	93
DATE SAMPLED:		7/11/07	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07	7/11/07
DATE EXTRACTED:		7/18/07	7/23/07	7/18/07	7/18/07	7/18/07	7/18/07	7/18/07
DATE ANALYZED:		7/23/07	7/23/07	7/24/07	7/24/07	7/24/07	7/20/07	7/23/07

NOTE: Bolded and Shaded results exceed Rhode Island Residential Direct Exposure Criteria (RI-R-DEC).
ND = Not Detected.

TABLE 6
POLYCHLORINATED BIPHENYL ANALYTICAL RESULTS
mg/kg

SITE: Birch Swamp
CASE: 07070015
LABORATORY: OEME

SAMPLE LOCATION:	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07
SAMPLE NUMBER:	0299-0001	0299-0002	0299-0003	0299-0004	0299-0005	0299-0006	0299-0007
LABORATORY NUMBER:	AA72284	AA72285	AA72286	AA72287	AA72288	AA72289	AA72290
COMPOUND	RL						
Aroclor-1242	0.20	ND	ND	ND	ND	ND	ND
Aroclor-1248	0.20	ND	ND	ND	59	ND	ND
Aroclor-1254	0.20	28	0.31	1.9	36	1.3	0.7
Aroclor-1260	0.20	ND	ND	ND	ND	ND	ND
Aroclor-1262	0.20	ND	ND	ND	ND	ND	ND
Aroclor-1268	0.20	ND	ND	ND	ND	ND	ND
DATE SAMPLED:	7/11/2007	7/11/2007	7/11/2007	7/11/2007	7/11/2007	7/11/2007	7/11/2007
DATE EXTRACTED:	7/13/2007	7/13/2007	7/13/2007	7/13/2007	7/13/2007	7/13/2007	7/13/2007
DATE ANALYZED:	7/16/2007	7/18/2007	7/18/2007	7/18/2007	7/18/2007	7/18/2007	7/18/2007

SAMPLE LOCATION:	SS-08	SS-09	SS-10	SS-11	SS-12	SS-13	SS-14
SAMPLE NUMBER:	0299-0008	0299-0009	0299-0010	0299-0011	0299-0012	0299-0013	0299-0014
LABORATORY NUMBER:	AA72291	AA72292	AA72293	AA72294	AA72295	AA72296	AA72297
COMPOUND	RL						
Aroclor-1242	0.20	ND	ND	ND	ND	ND	ND
Aroclor-1248	0.20	18	ND	ND	ND	ND	12
Aroclor-1254	0.20	ND	3.9	0.83	1.1	0.64	ND
Aroclor-1260	0.20	ND	ND	0.44	0.55	0.64	ND
Aroclor-1262	0.20	ND	ND	ND	ND	ND	ND
Aroclor-1268	0.20	ND	ND	ND	ND	ND	ND
DATE SAMPLED:	7/11/2007	7/11/2007	7/11/2007	7/11/2007	7/11/2007	7/11/2007	7/11/2007
DATE EXTRACTED:	7/13/2007	7/13/2007	7/13/2007	7/13/2007	7/13/2007	7/13/2007	7/13/2007
DATE ANALYZED:	7/18/2007	7/18/2007	7/18/2007	7/18/2007	7/18/2007	7/18/2007	7/18/2007

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

ND = Not Detected

RL = Reporting Limit

NOTE: Bolded and Shaded results exceed Rhode Island Residential Direct Exposure Criteria (RI-R-DEC).

TABLE 6
POLYCHLORINATED BIPHENYL ANALYTICAL RESULTS
mg/kg

SITE: Birch Swamp
CASE: 07070015
LABORATORY: OEME

SAMPLE LOCATION:	SS-15	SS-16	SS-17	SS-18	SS-19	SS-20	SS-21
SAMPLE NUMBER:	0299-0015	0299-0016	0299-0017	0299-0018	0299-0019	0299-0020	0299-0021
LABORATORY NUMBER:	AA72298	AA72299	AA72300	AA72301	AA72302	AA72303	AA72304

COMPOUND RL

Aroclor-1242	0.20	ND						
Aroclor-1248	0.20	ND						
Aroclor-1254	0.20	ND						
Aroclor-1260	0.20	ND						
Aroclor-1262	0.20	ND						
Aroclor-1268	0.20	ND						

DATE SAMPLED:	7/11/2007	7/11/2007	7/11/2007	7/11/2007	7/11/2007	7/11/2007	7/11/2007
DATE EXTRACTED:	7/13/2007	7/13/2007	7/13/2007	7/13/2007	7/13/2007	7/13/2007	7/13/2007
DATE ANALYZED:	7/18/2007	7/18/2007	7/18/2007	7/18/2007	7/18/2007	7/16/2007	7/16/2007

SAMPLE LOCATION:	SS-22	SS-23	SS-24	SS-04 1'	SS-04 2'	SS-06 1'	SS-06 2'
SAMPLE NUMBER:	0299-022	0299-0023	0299-0024	0299-0028	0299-0029	0299-0030	0299-0031
LABORATORY NUMBER:	AA72305	AA72306	AA72307	AA72311	AA72312	AA72313	AA72314

COMPOUND RL

Aroclor-1242	0.20	ND	ND	ND	ND	ND	ND
Aroclor-1248	0.20	ND	ND	ND	0.41	2.7	ND
Aroclor-1254	0.20	ND	ND	0.64	ND	ND	ND
Aroclor-1260	0.20	ND	ND	0.48	ND	ND	ND
Aroclor-1262	0.20	ND	ND	ND	ND	ND	ND
Aroclor-1268	0.20	ND	ND	ND	ND	ND	ND

DATE SAMPLED:	7/11/2007	7/11/2007	7/11/2007	7/11/2007	7/11/2007	7/11/2007	7/11/2007
DATE EXTRACTED:	7/13/2007	7/13/2007	7/13/2007	7/13/2007	7/13/2007	7/13/2007	7/13/2007
DATE ANALYZED:	7/16/2007	7/16/2007	7/16/2007	7/16/2007	7/16/2007	7/16/2007	7/16/2007

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

ND = Not Detected

RL = Reporting Limit

NOTE: Bolded and Shaded results exceed Rhode Island Residential Direct Exposure Criteria (RI-R-DEC).

TABLE 6
POLYCHLORINATED BIPHENYL ANALYTICAL RESULTS
mg/kg

SITE: Birch Swamp
CASE: 07070016
LABORATORY: OEME

SAMPLE LOCATION:	SS-11 1'	SS-11 2'	SS-16 1'	SS-16 2'	SD-01	SD-02	SD-03
SAMPLE NUMBER:	0299-0032	0299-0033	0299-0034	0299-0035	0299-0025	0299-0026	0299-0027
LABORATORY NUMBER:	AA72315	AA72316	AA72317	AA72318	AA72308	AA72309	AA72310
COMPOUND	RL						
Aroclor-1242	0.20	ND	ND	ND	ND	ND	ND
Aroclor-1248	0.20	ND	ND	ND	ND	ND	ND
Aroclor-1254	0.20	ND	ND	ND	ND	ND	ND
Aroclor-1260	0.20	ND	ND	ND	ND	ND	ND
Aroclor-1262	0.20	ND	ND	ND	ND	ND	ND
Aroclor-1268	0.20	ND	ND	ND	ND	ND	ND
DATE SAMPLED:	7/11/2007	7/11/2007	7/11/2007	7/11/2007	7/11/2007	7/11/2007	7/11/2007
DATE EXTRACTED:	7/13/2007	7/13/2007	7/13/2007	7/13/2007	7/13/2007	7/13/2007	7/13/2007
DATE ANALYZED:	7/16/2007	7/16/2007	7/16/2007	7/16/2007	7/16/2007	7/16/2007	7/16/2007

NOTE: RESULTS ARE REPORTED ON A DRY WEIGHT BASIS.

ND = Not Detected

RL = Reporting Limit

NOTE: Bolded and Shaded results exceed Rhode Island Residential Direct Exposure Criteria (RI-R-DEC).

TABLE 7

METALS ANALYTICAL RESULTS
(milligrams/kilogram)

SITE: Birch Swamp
CASE: 07070015
LABORATORY: OEME

SAMPLE LOCATION:	SS-01	SS-02	SS-03	SS-04	SS-05	SS-06	SS-07	SS-08	SS-09	SS-10	
SAMPLE NUMBER:	0299-0001	0299-0002	0299-0003	0299-0004	0299-0005	0299-0006	0299-0007	0299-0008	0299-0009	0299-0010	RI-R-DEC
LABORATORY NUMBER:	AA72284	AA72285	AA72286	AA72287	AA72288	AA72289	AA72290	AA72291	AA72292	AA72293	
SAMPLE DEPTH:	0-0.5 ft.										
DILUTION FACTOR:	1	1	1	1	2	1	2	10	1	1	

INORGANIC ANALYTES	METHOD	REPORTING LIMIT												
Aluminum	ICP	40/20*	4,600	5,900	3,800	9,600	8,600	7,600	6,000	4,000	6,200	7,800	NL	
Antimony	ICP	10	ND	22	35	41	73	28	ND	ND	12	ND	10	
Arsenic	ICP	20	ND	ND	ND	24	ND	110	ND	ND	ND	ND	7	
Barium	ICP	3	70	220	260	170	820	1,900	220	700	110	46	5,500	
Beryllium	ICP	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.4	
Cadmium	ICP	3	3.7	31	29	25	54	24	63	60	45	17	39	
Calcium	ICP	20	1,400	2,300	1,300	1,700	8,000	47,000	1,200	1,500	2,300	1,000	NL	
Chromium	ICP	3	45	49	70	32	67	64	39	75	39	22	1,400	
Cobalt	ICP	3	3.7	14	5.9	10	12	23	6.8	ND	7.2	10	NL	
Copper	ICP	3	300	1,500	5,400	1,700	8,900	2,800	260	1,400	5,300	230	3,100	
Iron	ICP	10	26,000	27,000	42,000	44,000	84,000	40,000	65,000	220,000	41,000	41,000	NL	
Lead	ICP	10	360	790	1,400	660	7,000	3,200	340	1,200	580	220	150	
Magnesium	ICP	20	1,500	2,000	1,200	3,200	2,400	2,900	1,800	1,300	2,000	2,400	NL	
Manganese	ICP	2	260	1,100	280	410	970	4,800	450	1,300	350	420	390	
Nickel	ICP	6	20	310	38	42	96	50	27	120	37	84	1,000	
Selenium	ICP	10/20*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	390	
Silver	ICP	3	ND	5.7	13	ND	29	4.0	ND	ND	4.5	ND	200	
Thallium	ICP	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.5	
Vanadium	ICP	3	12	14	12	20	47	22	18	ND	15	16	550	
Zinc	ICP	3	390	2,000	780	1,400	2,700	6,000	590	3,500	1,100	260	6,000	

SAMPLE LOCATION:	SS-11	SS-12	SS-13	SS-14	SS-15	SS-16	SS-17	SS-18	SS-19	SS-20	
SAMPLE NUMBER:	0299-0011	0299-0012	0299-0013	0299-0014	0299-0015	0299-0016	0299-0017	0299-0018	0299-0019	0299-0020	RI-R-DEC
LABORATORY NUMBER:	AA72294	AA72295	AA72296	AA72297	AA72298	AA72299	AA72300	AA72301	AA72302	AA72303	
SAMPLE DEPTH:	0-0.5 ft.										
DILUTION FACTOR:	2	1	1	1	1	1	1	1	1	1	

INORGANIC ANALYTES	METHOD	REPORTING LIMIT												
Aluminum	ICP	40/20*	13,000	11,000	4,400	7,400	12,000	7,700	9,300	8,200	6,900	3,100*	NL	
Antimony	ICP	9.8	42	19	ND	130	ND	ND	ND	19	ND	ND	10	
Arsenic	ICP	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7	
Barium	ICP	2.9	420	280	1,900	190	44	16	20	140	52	36	5,500	
Beryllium	ICP	0.98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.4	
Cadmium	ICP	2.9	39	17	7.4	15	ND	ND	ND	ND	ND	ND	39	
Calcium	ICP	20	4,400	4,300	9,700	3,700	1,400	650	700	1,100	510	2,800	NL	
Chromium	ICP	2.9	130	55	56	30	16	7.1	6.9	13	10	25	1,400	
Cobalt	ICP	2.9	24	14	9.4	5.7	8.1	ND	ND	5.5	3.1	ND	NL	
Copper	ICP	2.9	2,900	830	260	6,400	32	5.1	7.6	650	60	47	3,100	
Iron	ICP	9.8	81,000	42,000	24,000	26,000	18,000	6,400	5,500	9,500	12,000	14,000	NL	
Lead	ICP	9.8	2,500	1,000	2,700	4,400	44	21	36	840	340	160	150	
Magnesium	ICP	20	3,100	3,000	1,800	1,500	1,000	1,000	690	1,000	730	1,100	NL	
Manganese	ICP	2	740	510	400	250	520	170	85	170	180	140	390	
Nickel	ICP	5.9	100	43	18	29	9.8	ND	ND	20	11	11	1,000	
Selenium	ICP	10/20*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND*	390	
Silver	ICP	2.9	10	ND	ND	11	ND	ND	ND	ND	ND	ND	200	
Thallium	ICP	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.5	
Vanadium	ICP	2.9	39	25	14	11	29	13	14	65	17	11	550	
Zinc	ICP	2.9	4,300	2,100	1,400	1,200	58	18	38	1,700	200	97	6,000	

NOTES:
ICP = Inductively Coupled
RI-R-DEC = Rhode Island Residential Direct Exposure Criteria.
ND = Not Detected.
NL = Not Listed.
All results in Milligrams per Kilogram (mg/Kg).
Bolded and shaded results exceed RI-R-DEC.
* Indicates Reporting Limit used to determine results.

TABLE 7

METALS ANALYTICAL RESULTS
(milligrams/kilogram)

SITE: Birch Swamp
CASE: 07070015
LABORATORY: OEME

SAMPLE LOCATION:	SS-21	SS-22	SS-23	SS-24	SD-01	SD-02	SD-03	SS-04 1'	SS-04 2'	SS-06 1'	
SAMPLE NUMBER:	0299-0021	0299-0022	0299-0023	0299-0024	0299-0025	0299-0026	0299-0027	0299-0028	0299-0029	0299-0030	RI-R-DEC
LABORATORY NUMBER:	AA72304	AA72305	AA72306	AA72307	AA72308	AA72309	AA72310	AA72311	AA72312	AA72313	
SAMPLE DEPTH:	0 - 0.5 ft.	0-0.5 ft.	0 - 0.5 ft.	0-0.5 ft.	0 - 0.5 ft.	0 - 0.5 ft.	0-0.5 ft.	1 ft.	2 ft.	1 ft.	
DILUTION FACTOR:	1	1	1	1	1	1	1	1	1	1	

INORGANIC ANALYTES	METHOD	REPORTING LIMIT	SS-21	SS-22	SS-23	SS-24	SD-01	SD-02	SD-03	SS-04 1'	SS-04 2'	SS-06 1'	
Aluminum	ICP	40/20*	7,200*	3,900*	9,700*	11,000*	3,900*	5,700*	9,600*	12,000*	12,000*	8,600*	NL
Antimony	ICP	10	ND	ND	ND	12	ND	ND	ND	ND	ND	ND	10
Arsenic	ICP	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	7
Barium	ICP	3	27	26	300	190	20	25	42	40	61	410	5,500
Beryllium	ICP	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.4
Cadmium	ICP	3	ND	ND	ND	13	ND	ND	ND	ND	3.3	7.8	39
Calcium	ICP	20	1,800	85,000	31,000	3,400	720	1,400	880	640	870	1,200	NL
Chromium	ICP	3	6.2	12	22	38	4.0	7.2	12	19	28	40	1,400
Cobalt	ICP	3	ND	ND	6.3	12	ND	3.4	3.2	12	12	6.3	NL
Copper	ICP	3	6.1	30	86	460	ND	ND	4.0	69	250	210	3,100
Iron	ICP	10	7,500	8,500	41,000	36,000	2,900	7,900	6,400	29,000	27,000	16,000	NL
Lead	ICP	10	26	120	960	650	ND	11	ND	28	84	250	150
Magnesium	ICP	20	860	1,100	1,500	3,600	590	1,000	900	4,300	4,400	2,200	NL
Manganese	ICP	2	130	140	270	420	64	120	82	370	420	240	390
Nickel	ICP	6	ND	7.2	20	42	ND	ND	ND	20	24	17	1,000
Selenium	ICP	10/20*	ND*	ND*	ND*	ND*	ND*	ND*	ND*	ND*	ND*	ND*	390
Silver	ICP	3	ND	ND	ND	ND	ND	ND	ND	ND	ND	7.4	200
Thallium	ICP	20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5.5
Vanadium	ICP	3	15	10	26	19	5.8	13	15	19	23	17	550
Zinc	ICP	3	23	69	370	1,800	5.7	16	11	94	240	440	6,000

SAMPLE LOCATION:	SS-06 2'	SS-11 1'	SS-11 2'	SS-16 1'	SS-16 2'	
SAMPLE NUMBER:	0299-0031	0299-0032	0299-0033	0299-0034	0299-0035	RI-R-DEC
LABORATORY NUMBER:	AA72314	AA72315	AA72316	AA72317	AA72318	
SAMPLE DEPTH:	2 ft.	1 ft.	2 ft.	1 ft.	2 ft.	
DILUTION FACTOR:	1	1	1	1	1	

INORGANIC ANALYTES	METHOD	REPORTING LIMIT	SS-06 2'	SS-11 1'	SS-11 2'	SS-16 1'	SS-16 2'	
Aluminum	ICP	40/20*	6,800*	8,300*	11,000*	4,600*	3,600*	NL
Antimony	ICP	9.8	ND	ND	ND	ND	ND	10
Arsenic	ICP	20	ND	ND	ND	ND	ND	7
Barium	ICP	2.9	74	63	260	9.1	8.8	5,500
Beryllium	ICP	0.98	ND	ND	ND	ND	ND	0.4
Cadmium	ICP	2.9	ND	ND	ND	ND	ND	39
Calcium	ICP	20	1,300	2,500	890	470	480	NL
Chromium	ICP	2.9	16	6.3	8.1	4.7	5.3	1,400
Cobalt	ICP	2.9	5.3	ND	ND	ND	ND	NL
Copper	ICP	2.9	36	51	9.8	ND	ND	3,100
Iron	ICP	9.8	11,000	8,000	7,900	5,000	5,800	NL
Lead	ICP	9.8	76	84	15	ND	ND	150
Magnesium	ICP	20	940	450	800	880	900	NL
Manganese	ICP	2	210	45	62	120	87	390
Nickel	ICP	5.9	100	ND	ND	ND	ND	1,000
Selenium	ICP	10/20*	ND*	ND*	ND*	ND*	ND*	390
Silver	ICP	2.9	ND	ND	ND	ND	ND	200
Thallium	ICP	20	ND	ND	ND	ND	ND	5.5
Vanadium	ICP	2.9	16	15	16	7.0	7.2	550
Zinc	ICP	2.9	120	240	38	9.9	9.0	6,000

NOTES:

ICP = Inductively Coupled
RI-R-DEC = Rhode Island Residential Direct Exposure (Criteria).
ND = Not Detected.
NL = Not Listed.
All results in Milligrams per Kilogram (mg/Kg).
Bolded and shaded results exceed RI-R-DEC.
* Indicates Reporting Limit used to determine results.

Appendix C

Chain-of-Custody Record

Appendix D

Photodocumentation Log

PHOTOGRAPHY LOG SHEET
Birch Swamp • Warren, Rhode Island



SCENE: View of sediment sample location SD-01. Photograph taken facing southeast.

DATE: 11 July 2007

PHOTOGRAPHER: Cheryl Henlin

TIME: 1701 hours

CAMERA: Nikon CoolPix 3100



SCENE: View of sediment sample location SD-02. Photograph taken facing southeast.

DATE: 11 July 2007

PHOTOGRAPHER: Cheryl Henlin

TIME: 1720 hours

CAMERA: Nikon CoolPix 3100

PHOTOGRAPHY LOG SHEET
Birch Swamp • Warren, Rhode Island



SCENE: View of sediment sample location SD-03. Photograph taken facing east.

DATE: 11 July 2007

PHOTOGRAPHER: Cheryl Henlin

TIME: 1742 hours

CAMERA: Nikon CoolPix 3100



SCENE: View of open field with trailer. Photograph taken facing northeast.

DATE: 12 July 2007

PHOTOGRAPHER: Bonnie Mace

TIME: 1003 hours

CAMERA: Nikon CoolPix 3100

PHOTOGRAPHY LOG SHEET
Birch Swamp • Warren, Rhode Island



SCENE: View of surface soil sample location SS-15. Photograph taken facing north.

DATE: 12 July 2007

TIME: 1004 hours

PHOTOGRAPHER: Bonnie Mace

CAMERA: Nikon CoolPix 3100



TOP

SCENE: View of soil sample location SS-16. Photograph taken facing northeast.

DATE: 12 July 2007

TIME: 1006 hours

PHOTOGRAPHER: Bonnie Mace

CAMERA: Nikon CoolPix 3100

PHOTOGRAPHY LOG SHEET
Birch Swamp • Warren, Rhode Island



SCENE: View of surface soil sample location SS-17. Photograph taken facing northeast.

DATE: 12 July 2007

TIME: 1007 hours

PHOTOGRAPHER: Bonnie Mace

CAMERA: Nikon CoolPix 3100



SCENE: View of surface soil sample location SS-18. Photograph taken facing northwest.

DATE: 12 July 2007

TIME: 1007 hours

PHOTOGRAPHER: Bonnie Mace

CAMERA: Nikon CoolPix 3100

PHOTOGRAPHY LOG SHEET
Birch Swamp • Warren, Rhode Island



SCENE: View of surface soil sample location SS-19 with stressed vegetation. Photograph taken facing north.

DATE: 12 July 2007

TIME: 1009 hours

PHOTOGRAPHER: Bonnie Mace

CAMERA: Nikon CoolPix 3100



SCENE: View of the entrance to the wetland area. Photograph taken facing east.

DATE: 12 July 2007

TIME: 1010 hours

PHOTOGRAPHER: Bonnie Mace

CAMERA: Nikon CoolPix 3100

PHOTOGRAPHY LOG SHEET
Birch Swamp • Warren, Rhode Island



SCENE: View of surface soil sample location SS-14 with stressed vegetation. Photograph taken facing northwest.

DATE: 12 July 2007

TIME: 1012 hours

PHOTOGRAPHER: Bonnie Mace

CAMERA: Nikon CoolPix 3100



SCENE: View of surface soil sample location SS-13. Photograph taken facing south.

DATE: 12 July 2007

TIME: 1013 hours

PHOTOGRAPHER: Bonnie Mace

CAMERA: Nikon CoolPix 3100

PHOTOGRAPHY LOG SHEET
Birch Swamp • Warren, Rhode Island



SCENE: View of soil sample locations SS-11 and SS-12 with stressed vegetation. Photograph taken facing south.

DATE: 12 July 2007

TIME: 1014 hours

PHOTOGRAPHER: Bonnie Mace

CAMERA: Nikon CoolPix 3100



SCENE: View of surface soil sample location SS-10, outside the foundation wall. Photograph taken facing north.

DATE: 12 July 2007

TIME: 1014 hours

PHOTOGRAPHER: Bonnie Mace

CAMERA: Nikon CoolPix 3100

PHOTOGRAPHY LOG SHEET
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SCENE: View of surface soil sample location SS-09. Photograph taken facing east.

DATE: 12 July 2007

PHOTOGRAPHER: Bonnie Mace

TIME: 1015 hours

CAMERA: Nikon CoolPix 3100



SCENE: View of the former foundation area. Photograph taken facing northwest.

DATE: 12 July 2007

PHOTOGRAPHER: Bonnie Mace

TIME: 1024 hours

CAMERA: Nikon CoolPix 3100

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SCENE: View of surface soil sample location SS-23 with drum carcasses. Photograph taken facing south.

DATE: 12 July 2007

TIME: 1024 hours

PHOTOGRAPHER: Bonnie Mace

CAMERA: Nikon CoolPix 3100



SCENE: View of surface soil sample location SS-22, located on the access road. Photograph taken facing west.

DATE: 12 July 2007

TIME: 1025 hours

PHOTOGRAPHER: Bonnie Mace

CAMERA: Nikon CoolPix 3100

PHOTOGRAPHY LOG SHEET
Birch Swamp • Warren, Rhode Island



SCENE: View of surface soil sample location SS-21, located on the access road. Photograph taken facing southeast.

DATE: 12 July 2007

TIME: 1027 hours

PHOTOGRAPHER: Bonnie Mace

CAMERA: Nikon CoolPix 3100



SCENE: View of surface soil sample location SS-20, located on the access road. Photograph taken facing northeast.

DATE: 12 July 2007

TIME: 1028 hours

PHOTOGRAPHER: Bonnie Mace

CAMERA: Nikon CoolPix 3100

PHOTOGRAPHY LOG SHEET
Birch Swamp • Warren, Rhode Island



SCENE: View of the entrance to the access road from Birch Swamp Road. Photograph taken facing east.

DATE: 12 July 2007

TIME: 1030 hours

PHOTOGRAPHER: Bonnie Mace

CAMERA: Nikon CoolPix 3100