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<input type="checkbox"/> Initial Site Investigation	<input type="checkbox"/> Work Scope
<input checked="" type="checkbox"/> Corrective Action Feasibility Investigation	<input checked="" type="checkbox"/> Technical Report
<input type="checkbox"/> Corrective Action Plan	<input type="checkbox"/> PCF Reimbursement Request
<input type="checkbox"/> Corrective Action Summary Report	<input type="checkbox"/> General Correspondence
<input type="checkbox"/> Operations & Monitoring Report	

EVALUATION OF CLEANUP OPTIONS
January 2001

Barre Coal Tar
 Barre, Vermont
 Contract #0963509
 SMS Site #77-0206
 TSEC #00035

DRAFT

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 414 Roosevelt Highway Colchester, Vermont 05446 (802) 654-8663 FAX: (802) 654-8667	MONITORING WELL/SOIL BORING LOG	
	Project Name: Barre Coal Tar Location: Barre, Vermont TSEC Project #: 00-035	WELL/ BORING ID: WC-3
INSTALL DATE: September 18, 2000	WELL DEPTH: 12 feet	BORING DEPTH: 12 feet
TSEC REP: Cris Altman	DEPTH TO WATER: (during drilling) 7 feet	
DRILLING CO: Twin State Environmental	SCREEN DIA: N/A	DEPTH: N/A
	SCREEN TYPE/SIZE: N/A	
DRILLING METHOD: Geoprobe	RISER TYPE: N/A	
SAMPLING METHOD: See below	RISER DIA: N/A	DEPTH: N/A
REFERENCE POINT (RP):	GUARD TYPE: N/A	
ELEVATION OF RP:	RISER CAP: N/A	
REMARKS: Soil boring was backfilled with bentonite to one foot above the water table, followed by cuttings and sand to match grade.		

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND	
0	N	0-4	0.0	1.8 ft recovery	0.0-0.4: SANDY LOAM, brown, loose, dry, no odor	 CEMENT GROUT	
1	O					 NATIVE BACKFILL	
2			0.0		0.4-1.2: FILL, concrete chips and clinkers, loose, dry, no odor		
3	W					 BENTONITE SEAL	
4	E		4.8		1.2-1.6: SAND, d. brown, loose, moist, no odor		
5	L					 SAND PACK	
6	L					 WELL SCREEN	
7		4-8	12.3	1.6 ft recovery	0.0-0.4: SAND, fine to medium, brown, loose, moist, odor		
8	I					 RISER PIPE	
9	N		18.9		0.4-1.6: GRAVEL, coarse, black, loose, wet, odor SAMPLE COLLECTED FOR PETROFLAG ANALYSIS		
10	S					 HS HEAD SPACE	
11	T					 WATER LEVEL (APPROXIMATE)	
12	A	8-12	43.6	2.1 ft recovery	0.0-2.1: GRAVEL, coarse, black, saturated, strong odor, free product SAMPLE COLLECTED FOR PETROFLAG AND FIELD GC ANALYSIS		
13	L						
14	L						
15	E						
16	D						
17							
18							
19							
20							
21							
22							
23							
24							
25							
GRANULAR SOILS BLOWS/FT DENSITY 0-4 V.LOOSE 4-10 LOOSE 10-30 M.DENSE 30-50 DENSE >50 V.DENSE		COHESIVE SOILS BLOWS/FT DENSITY <2 V.SOFT 2-4 SOFT 4-8 M.STIFF 8-15 STIFF 15-30 V.STIFF >30 HARD		PROPORTIONS USED TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50%		NOTES: 1. See Figure 2, SITE Plan, for boring locations 2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.	

2.0 INTRODUCTION AND SITE DESCRIPTION

2.1 Physical Setting

The SITE is situated adjacent to the Stevens Branch of the Winooski River on Williams Lane in Barre, Vermont (see SITE Location Map, **Figure 1** and SITE Plan, **Figure 2**). Williams Lane, a City right-of-way extending from North Main Street to the Stevens Branch, borders the SITE to the east. Rouleau Granite occupies a building across Williams Lane. Rouleau Granite uses settling lagoons to the north and east of the SITE to manage the wastewater generated from cutting and polishing granite for memorial stone-works. Pepin Granite occupies a building and operates a settling lagoon to the west. An apartment building, a historical society building, and other residential structures are located northwest of the SITE. The Stevens Branch is situated to the south of the SITE and flows in a westerly direction. Land uses across the Stevens Branch from the SITE include a utility substation and a drygoods warehouse and distribution facility operated by Capital Candy.

A two story masonry building that housed the former gas manufacturing operations and a partially burned wood frame pipe shed structure remain on SITE. Both buildings are accessible to the public and are in a state of disrepair, having been abandoned since approximately 1983. Two granite pads (former gas holding tank bases) also remain from the former gas manufacturing operations. The on-SITE remediation shed houses a groundwater pumping, product separation, and reinjection system. Approximately 245 feet of precast concrete "Jersey" barriers are in place in the Stevens Branch, approximately 5 feet off of the northern riverbank. These barriers were installed for the purposes of isolating and collecting seepage of coal tar into the Stevens Branch.

2.2 SITE History

Use of the property for the production of coal gas began in the late 1800s and continued until 1954, when the manufacturing process was determined to be uneconomical in comparison to natural gas. The coal gas was used as a fuel for heating, lighting, and cooking until the early 1900s. Coal gas was manufactured at this plant by a pyrolytic process called coal carbonization that involved burning coal in an oxygen deficient atmosphere (Lincoln Applied Geology 1987). This manufacturing process characteristically produces coal tar wastes including organic tars, sludges, emulsions, as well as inorganic ash, oxides, and lime wastes (Alceon 1996).

In 1954, the property use was converted to a liquid propane distribution facility and continued in this capacity until 1983. In 1983, the State of Vermont Agency of Natural Resources ordered the removal of the two on-SITE gas holding tanks, which were determined to be leaking. The tanks were removed in 1986 by the Gas Company of Vermont (GCV). A series of SITE investigations, risk assessments, and remediation efforts were initiated with initial funding by GCV's insurance carrier, American International Adjustment Company, followed by funding from the State of Vermont. Based on the subsurface investigation results, a groundwater pumping and bioventing system was installed, along with the concrete "Jersey" barriers along the edge of the Stevens Branch in 1987. Operation of the bioventing system was discontinued, but the groundwater pumping system remains active.

During the subsurface investigations and remediation evaluations, a network of groundwater monitoring wells, recovery wells, and infiltration galleries was installed (see **Figure 2**). The recovery and injection points are connected to a system inside the remediation shed via above-ground piping within wooden, insulated boxes. These boxes are currently in poor condition. Operation of the existing recovery system involves pumping of coal tar-contaminated groundwater from several recovery wells, the separation of non-aqueous phase liquid (NAPL) in an oil/water separator in the remediation shed, and reinjection of the groundwater to the subsurface through recharge galleries. The system currently operates at an average flow rate of approximately 7 to 14 gallons per minute (gpm). However, operation of the current system is not sufficient to maintain hydraulic containment of coal tar NAPL, and coal tar seeps to the Stevens Branch continue to occur. Testing performed in 1991 indicated that coal tar seepage onto the Stevens Branch increased notably with the remedial system off (Lincoln Applied Geology 1991). Therefore, with funding from the WMD, operation of the existing system continues in conjunction with product recovery from the Stevens Branch, routine groundwater gauging, and sampling.

In September of 2000, the WMD awarded Contract #0963591, under which this evaluation of cleanup options was performed.

3.0 SITE INFORMATION REVIEW AND SUBSURFACE INVESTIGATIONS

Previous investigations at the SITE included the installation of soil borings, monitoring wells, and test pits, groundwater and air monitoring, surface water and sediment sampling, risk assessments, and a coal tar saturation study. The results of previous investigations are generally summarized below.

3.1 Initial and Supplemental Subsurface Investigations

Initial and supplemental subsurface assessments of the SITE were conducted in 1985 through 1987. The investigation results were summarized by Eugene Sevi, P.E. in a 1985 report, and by Lincoln Applied Geology (LAG) in 1987. The investigations included the installation of test pits, soil borings, and monitoring wells, and a geophysical survey. The investigations identified the presence of coal tar contamination in soil, groundwater, and surface water.

Under the current contract, TSEC reviewed the results of previous investigations to determine where coal tar product and vapors were previously identified. The results of this review are described in **Section 3.2**, and were discussed in the project meeting described in **Section 3.3**. Based on the subsurface information from previous site investigations, a supplemental investigation was conducted to better define the current magnitude and extent of coal tar contamination at the SITE, to evaluate potential soil treatment options, and to better define the project cleanup goals. The procedures and results of this investigation are described in **Section 3.4** below.

3.2 Detailed Work Scope Review

Under the current contract, TSEC evaluated potential cleanup options for the SITE with a primary goal of preventing further coal tar seeps to the Stevens Branch. In this regard, TSEC completed a Detailed Work Scope Review (Task A of the Contract). The review consisted of a review of existing SITE information and documents. For the purposes of the subsurface investigation, TSEC completed a review of the available soil boring and test pit logs from a 1987 Second Phase Hydrogeologic Evaluation prepared by LAG. In addition, TSEC reviewed the results of an August 12, 1987 Biological Treatment Evaluation report by CAA Bioremediation Systems and a December 6, 1991 Summary Letter Report prepared by LAG to qualitatively evaluate potential cleanup options.

Based on TSEC's evaluation of selected historical soil boring logs, a summary of the recorded evidence and depth(s) of contamination was prepared (**Table 1**). As indicated on **Table 1**, coal tar product was observed at depths of 0 to 20 feet below grade in the vicinity of the former gas holder pads shown on the attached SITE Map. Outside of this immediate area, coal tar product occurred at deeper intervals, beginning at approximately 4+ feet below grade.

Historical soil borings completed near the Former GCV building and the Pepin Granite Shed suggested that coal tar contamination might be present beneath these buildings. This was further evaluated during the subsurface investigation outlined below. Soil borings and groundwater samples collected from wells installed across the Stevens Branch in 1986 (MW-25 and MW-26) indicated that "No evidence of coal tar" was present. Therefore, limited further subsurface investigation was conducted across the Stevens Branch to evaluate current conditions.

3.3 Project Meeting

In accordance with Task B of the Contract, TSEC attended a project meeting at the WMD offices in Waterbury, Vermont on September 7, 2000. TSEC met with the WMD project manager, Mr. Richard Spiese, and the On-Scene Coordinator (OSC) from the EPA, Ms. Dorothy G. Paar, to discuss the approach to be taken in evaluating potential cleanup options for the SITE. The meeting agenda is provided as **Appendix A**.

Several topics were discussed during the meeting, including:

- A discussion of the SITE history and historical reports that should be reviewed during the course of the cleanup option evaluation;
- Necessary SITE documentation, procedures, and record-keeping for project invoicing;
- A review of historical analytical data regarding total metals concentrations in soil samples;
- Conducting a subsurface investigation at the SITE using a Geoprobe[®] and Geoprobe[®] hand tools;
- Field screening of soil samples using a photoionization detector (PID), PetroFLAG[®] test kits, and a field gas chromatograph;
- Fix-based laboratory analysis of selected soil and sediment samples using TSEC's subcontracted laboratory and the EPA Region 1 laboratory;

- Waste characterization soil sampling for evaluation of potential cleanup options;
- A decision tree for the cleanup evaluation project;
- On-SITE pilot testing of potential cleanup options;
- Evaluation of potential off-SITE cleanup options;
- Historical public concerns regarding the project, attendance of public meetings, and preparation of a project web site for public information;
- The advantages and disadvantages of potential cleanup options;
- Preparing a detailed report evaluating the potential cleanup options;
- Estimating costs associated with the evaluated cleanup alternatives; and
- Delivering the detailed cost estimates along with a probable schedule of expenditures to the WMD in January, 2001.

As discussed in the project meeting, a subsurface investigation was required to assess current SITE conditions in order to evaluate potential cleanup options for the SITE. The results of the subsurface investigation are detailed below.

3.4 Additional Subsurface Investigation and Soil Testing

Based on the results of TSEC's Detailed Work Scope Review and Project Meeting, TSEC conducted a subsurface investigation. The investigation was used to:

- Evaluate the current horizontal and vertical extent of coal tar contamination;
- Evaluate the concentrations of coal tar that are present in the subsurface to determine what areas of the SITE contain potentially mobile coal tar product;
- Evaluate the extent of potentially mobile coal tar product beneath the Former GCV building and the Pepin Granite Shed; and
- Compare the concentrations of contaminants in soil to facility acceptance criteria for potential off-SITE cleanup options.

3.4.1 Waste Characterization Sampling

As shown on **Figure 3**, four soil borings (WC-1-4) were advanced on September 18 and 19, 2000 in the vicinity of the former gas holder pads using a truck-mounted Geoprobe[®] with a Macrocore sampler and 2" diameter by 48" long vinyl acetate liners. Continuous soil samples collected from these borings were field-screened using a PID and visually logged by TSEC. Soil boring logs are included in **Appendix B**. Sample intervals with the highest PID readings from each of the four borings were 'composited' into a single sample for off-SITE laboratory analysis at AMRO Environmental Laboratories, Inc. of Merrimack, New Hampshire (AMRO). The composite sample included:

- Soil collected from a depth of 8-12 feet below grade (ftbg) in boring WC-1. This sample was logged with a PID reading of 146 parts per million by volume (ppmv) and visible evidence of coal tar product;

- Soil collected from 4-8 ftbg in boring WC-2. This sample was logged with a PID reading of 926 ppmv and visible evidence of coal tar product;
- Soil collected from 8-12 ftbg in boring WC-3. This sample was logged with a PID reading of 43.6 ppmv and visible evidence of coal tar product; and
- Soil collected from 4-8 ftbg in boring WC-4. This sample was logged with a PID reading of 18.3 ppmv and visible evidence of coal tar product.

In addition to the sample submitted to AMRO, a portion of the composite sample was shipped to Horizon Environnement of Canada (Horizon) for analysis. Analytical results for the waste characterization samples are included in **Attachment 1**.

The results of AMRO's and Horizon's analyses were compared to the facility acceptance criteria for potential off-SITE thermal desorption, asphalt batching, and landfilling facilities. An evaluation of the applicability of various remedial alternatives is provided in **Section 5.3**.

3.4.2 Soil Borings

In addition to the waste characterization sampling detailed above, TSEC installed twenty-eight (28) soil borings (SB-1-15, SB-17-23, SB-25, and SB-27-31) as shown on **Figure 3**. Five days of boring installation using the Geoprobe[®] and Geoprobe[®] hand tools were completed, as included in the Contract and Contract Change #1. Soil borings SB-1-15 were installed on September 18 and 19, 2000, and the remaining borings were installed on November 20-22, 2000. The soil borings included:

1. Seven (7) borings (SB-2, SB-9, SB-10, SB-11, SB-20, SB-21, and SB-22) in locations near the Pepin Granite building and associated parking lot;
2. Four (4) borings (SB-19, SB-29, SB-30, and SB-31) in the vicinity of the Rouleau storage out-building and the Old Legion Hall;
3. Six (6) borings (SB-4, SB-5, SB-6, SB-7, SB-15, and SB-17) in the vicinity of the former Gas Company of Vermont building and detached shed;
4. Two (2) borings (SB-18 and SB-28) in the Rouleau Granite parking lot to the north of the former GCV building;
5. Two (2) borings (SB-14 and SB-27) in locations near the southern-most Rouleau Granite lagoon;
6. One (1) boring (SB-25) across the Stevens Branch to the south;
7. One (1) boring (SB-23) on the Merriam Graves property to the west of the Granite Street bridge; and
8. Five (5) borings (SB-1, SB-3, SB-8, SB-12, and SB-13) in areas surrounding the former gas holder pads.

The soil boring logs and field observations are provided in **Appendix B**. A summary of the samples collected and analyses and field screening performed is provided as **Table 2**. Due to the nature of fill placed on the south side of the Stevens Branch, refusal was encountered approximately fourteen (14) times during attempts to install soil borings SB-24 and SB-26, and these borings were not completed. Soil boring SB-16 was not installed based on the results of borings SB-15, SB-17, and SB-27.

As detailed in **Sections 3.1 and 3.2**, selected historical soil boring logs were reviewed for indications of elevated PID readings and visual evidence of coal tar product. The attached **Table 1** includes the results of this review, and has been updated to include the results of soil borings installed by TSEC as well. As shown, evidence of coal tar product or elevated PID readings was observed in soil borings SB-1-12, SB-15, SB-17, SB-19, SB-27, and SB-29. No visual or PID evidence coal tar product was detected in borings SB-13, SB-14, SB-18, SB-20, SB-21, SB-22, SB-23, SB-25, SB-28, SB-30, or SB-31.

3.4.3 Field Screening of Soil Borings

PetroFLAG[®] Screening

Each soil sample collected during the investigation was screened using a PID and visually examined for the presence of coal tar. In addition to the preliminary screening, TSEC selected one to two samples from each boring for secondary screening using a PetroFLAG[®] test kit. A total of forty-six (46) samples were screened using the test kits. Four (4) soil samples (WC-3 @ 8-12 ftbg, SB-4 @ 4-8 ftbg, SB-6 @ 0-4 ftbg, and SB-7 @ 12-16 ftbg) were also sent to Dexsil[®] (the PetroFLAG[®] vendor) to determine a response factor for calibrating field results to a SITE-specific standard. The response factor was determined to be roughly equivalent to motor oil/#2 fuel oil (a response factor of 7). Vendor information regarding the response factor determination is provided as **Attachment 2**. This response factor was input to the PetroFLAG[®] hydrocarbon analyzer to determine a total hydrocarbon concentration in milligrams per kilogram (mg/kg). For quality assurance/quality control (QA/QC) purposes, at least one (1) field blank and one (1) calibration standard were also prepared and analyzed with each set of PetroFLAG[®] analyses.

PetroFLAG[®] analysis results are summarized on **Table 3** in comparison to visual observations, PID field screening results, field GC results, and fix-based laboratory analytical results. Statistical analysis of the PetroFLAG[®] results in comparison to laboratory-determined total SVOC concentrations is provided in **Appendix C**. Linear regression analysis using the method of least squares shows an *r* value of 0.83. This suggests that a reasonably linear correlation exists between the measured PetroFLAG[®] results and the laboratory-determined SVOC concentrations. Based on this evaluation, it appears that the PetroFLAG[®] kits can be used at this SITE for the purposes of field screening for the presence or absence of coal tar product. PetroFLAG[®] kits are recognized by the EPA as a viable tool for expediting site characterization at manufactured gas plant sites (U.S. EPA, 2000).

An evaluation of the ratio of PetroFLAG[®] concentrations (in mg/kg) to laboratory-determined SVOC concentrations (also in mg/kg) is also included in **Appendix C**. The PetroFLAG[®]-measured concentrations were generally 10.2 times higher than the corresponding total SVOC concentrations.

Based on an evaluation of the total SVOC concentrations in samples where visual evidence of coal tar product was recorded, an SVOC concentration that indicates the presence of free coal tar product was determined (50 mg/kg – see **Section 3.4.5** below). Multiplying this value by the PetroFLAG[®]:Total SVOC ratio described above suggests that PetroFLAG[®] concentrations of approximately 500 mg/kg

may indicate the presence of free coal tar product. This value may be used as an indicator of whether potentially mobile coal tar product is present in field-screened soil samples during the SITE cleanup.

PID Headspace Screening

Each soil sample collected during the investigation was screened using an Thermo Environmental Instruments, Inc. OVM 580B PID with a 10.2eV photoionizing lamp, calibrated using 100 parts per million by volume (ppmv) isobutylene gas (as benzene). PID headspace concentrations are recorded on the soil boring logs and field notes provided in **Appendix B**. A comparison of PID headspace concentrations to PetroFLAG[®], field GC, and fix-based laboratory results is provided on **Table 3**.

Linear regression analysis of the PID results in comparison to laboratory-determined total SVOC concentrations is provided in **Appendix C**. The statistical analysis results suggest that a linear correlation between PID headspace concentrations and laboratory-determined total SVOC concentrations exists, with an r value of 0.93. The ratio of PID results to the corresponding SVOC results was determined to be 0.24. Multiplying this ratio by a SVOC concentration of 50 mg/kg (the level suggesting possible free product per **Section 3.4.5**) suggests that PID headspace concentrations of 10 ppmv or greater may indicate the presence of mobile coal tar product in a soil sample. This value may be used as an indicator of whether potentially mobile coal tar product is present in field-screened soil samples during the SITE cleanup. PID headspace concentrations of 10 ppmv or greater were detected in twenty-seven (27) of the fifty-eight (58) PID-screened samples listed in **Table 3**.

Portable Gas Chromatograph Screening

Twenty-four (24) of the PetroFLAG[®] screened samples were also analyzed using a portable gas chromatograph (field GC) in TSEC's on-SITE mobile laboratory. The field GC was calibrated with naphthalene, acenaphthene, and fluoranthene (NAF) standards. O-terphenyl was used as a surrogate for each analysis. Results were analyzed by PID and flame ionization detector (FID). The field GC results are included in **Appendix D** and summarized on **Table 3**. A comparison of field GC results to fix-based laboratory analysis results is also included in **Appendix D**. A discussion of the fix-based laboratory analysis results is provided in **Section 3.4.5**. For the overlapping samples that were analyzed by both field GC and fix-based laboratory, the results show:

- Reasonable correlation between field GC results and fix-based laboratory results for naphthalene;
- Close agreement between field GC total petroleum hydrocarbon (TPH) concentrations by FID and fix-based laboratory total SVOC results; and
- No strong correlation between field GC results and fix-based laboratory analysis results for acenaphthene or fluoranthene.

Linear regression analysis of the GC PID and GC FID results in comparison to laboratory-determined total SVOC concentrations is provided in **Appendix C**. An evaluation of the ratio of field GC concentrations (in mg/kg) to laboratory determined SVOC concentrations (in mg/kg) is also included. The statistical analysis results suggest that a linear correlation exists between GC PID results and laboratory-determined total SVOC concentrations, with an r value of 0.92. The results also suggest a

linear correlation between GC FID results and laboratory-determined SVOC concentrations, with an r value of 0.9997. GC PID results were found to be 2.44 times higher than the corresponding total SVOC (laboratory-based) concentrations, and GC FID results were an estimated 1.12 times higher. Multiplying these ratios by an SVOC concentration of 50 mg/kg (the minimum SVOC level suggesting the presence of free product) gives a GC PID concentration of 120 mg/kg, and GC FID concentration of approximately 50 mg/kg. These values may be used during the SITE cleanup as indicators of the presence of potentially mobile coal tar product in soil samples.

Field GC TPH concentrations by PID exceeded 120 mg/kg in sixteen (16) of twenty-four (24) samples. Field GC FID-determined TPH concentrations exceeded 50 mg/kg in eleven (11) of fourteen (14) analyses. Naphthalene was detected in a total of nine (9) samples.

A detailed review of the gas chromatograms generated by field GC analyses showed the presence of a "hump" that in some cases obscured the *o*-terphenyl surrogate peak. The hump typically occurred between retention times of 10 and 19 minutes, "peaking" after approximately 14 to 15 minutes of retention time. This hump was noted in field GC analysis of samples SB-21 (6-10 ft), SB-23 (8-12 ft), SB-25 (8-12 ft), SED-4 (0-1 ft), SED-5 (0-1 ft), SED-6 (0-1 ft), SED-7 (0-1 ft), and SED-8 (0-1 ft). A review of selected fix-based laboratory gas chromatograms showed a similar increasing baseline in the SVOC analysis of the SED-7 (0-1 ft) sample. No TPH was detected by method 418.1 in the SED-7 sample. A typical gas chromatogram depicting the characteristic hump is provided in **Appendix D**. A review of the extraction procedures used in performing field GC analysis, fix-based laboratory SVOC analysis, and fix-based laboratory TPH 418.1 analysis suggests that the hump may consist of fatty acids that are present in the field GC and fix-based laboratory SVOC extract, but are cleaned out of the extract during the TPH 418.1 preparation process. Fatty acids may be generated as byproducts of microbial activity. Each of the samples that exhibited the characteristic hump was collected from locations outside the source area of coal tar contamination, where microbial activity is likely to be highest (at the "fringes" of the plume). Previous remedial evaluations demonstrated the presence of tar-degrading bacteria in soil at the SITE (CAA Bioremediation Systems, 1987). Together, these results suggest that microbial activity at the "fringes" of the coal tar plume has produced fatty acids that are detected by field GC and laboratory analytical methods.

3.4.4 Stevens Branch Sediment Sampling

As requested by the EPA in the September 7, 2000 project kickoff meeting (**Section 3.3**), TSEC collected sediment samples in the Stevens Branch. Sediment samples were collected from three (3) locations (SED-1-3) between the north bank and the concrete barriers, where coal tar product seeps have been noted historically. In addition, five (5) sediment samples (SED-4-8) were collected from locations outside the concrete barriers. The sediment sampling locations are shown on **Figure 3**.

Sediment samples SED-1-3, SED-7, and SED-8 were collected from depths of 0-1 feet below the river bottom using a shovel. Samples SED-4-6 were collected using the Geoprobe[®] hand tools with a large bore (1" x 2") sampler. All sediment samples were visually examined and screened using a PID. PID readings of samples SED-4-8 were not detectable. Detectable PID readings in samples SED-1-3

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ranged from 6.8 ppmv at SED-1 to 152 ppmv at SED-3. In addition, visible evidence of coal tar product was observed in samples SED-2 and SED-3.

Samples SED-1, SED-2, and SED-3 were submitted to the EPA Region 1 laboratory for analysis for total volatile organic compounds (VOCs) by EPA Method 8260B, total polynuclear aromatic hydrocarbons (PAHs) by SIM GC/MS analysis, and total metals by Method 6010B. Sample SED-7 was submitted to AMRO for analysis by EPA Method 8240, 8270SW, and TPH by method 418.1. Samples SED-4-8 were also field-screened using the PetroFLAG[®] kit and field GC.

Laboratory analytical results for the sediment samples are included in **Attachment 3** and summarized on **Table 4**. Sediment sample PetroFLAG[®] and field GC analysis results are summarized on **Table 3**. The results show:

- PetroFLAG[®] concentrations greater than 500 mg/kg in SED-1, SED-2, and SED-3;
- PID headspace concentrations greater than 10 ppmv in SED-2 and SED-3;
- The presence of individual target VOCs and SVOCs in concentrations greater than or equal to 1 mg/kg in SED-1, SED-2, and SED-3;
- Total VOC concentrations of 2.8 to 43 mg/kg in samples SED-1, SED-2, and SED-3;
- Total SVOC concentrations of 2.1 to 468 mg/kg in samples SED-1, SED-2, SED-3 and SED-7;
- Total SVOC concentrations exceeding 50 mg/kg in samples SED-1, SED-2, and SED-3;
- Total aluminum concentrations of 6,800 to 13,000 mg/kg in samples SED-1, SED-2, and SED-3;
- Total barium concentrations of 19 to 54 mg/kg in samples SED-1, SED-2, and SED-3;
- Total chromium concentrations of 23 to 27 mg/kg in samples SED-1, SED-2, and SED-3;
- Total cobalt concentrations of 8.1 to 12 mg/kg in samples SED-1, SED-2, and SED-3;
- Total copper concentrations of 26 to 36 mg/kg in samples SED-1, SED-2, and SED-3;
- Total iron concentrations of 23,000 to 25,000 mg/kg in samples SED-1, SED-2, and SED-3;
- Total lead concentrations of 22 to 36 mg/kg in samples SED-1, SED-2, and SED-3;
- Total manganese concentrations of 220 to 520 mg/kg in samples SED-1, SED-2, and SED-3;
- Total nickel concentrations of 22 to 33 mg/kg in samples SED-1, SED-2, and SED-3;
- Total vanadium concentrations of 17 to 25 mg/kg in samples SED-1, SED-2, and SED-3;
- Total zinc concentrations of 63 to 76 mg/kg in samples SED-1, SED-2, and SED-3; and
- No detectable TPH (by fix-based laboratory analysis) in sample SED-7.

A review of the field screening and laboratory analytical results suggests that potentially mobile coal tar product is present in sediments inside the concrete barriers (SED-1, SED-2, and SED-3), and is not present in samples collected outside the barriers.

3.4.5 Laboratory Analysis of Soil Boring Samples

Selected samples from the following soil borings were collected and submitted for laboratory analysis:

- SB-2, SB-3, SB-4, SB-14, SB-20, SB-22, SB-27, and SB-28;
- SB-12 and SB-12 duplicate, SB-15 and SB-15 duplicate; and
- The composite of WC-1, WC-2, WC-3, and WC-4.

The samples that were submitted to AMRO (SB-2, SB-3, SB-12, SB-14, SB-15 and SB-15 duplicate, SB-20, SB-22, SB-27, and SB-28) were analyzed for total VOCs by EPA Method 8240, total SVOCs by 8270SW, and TPH by a method equivalent to EPA 418.1. The samples that were submitted to the EPA Region 1 laboratory (SB-4 and SB-12 duplicate) were analyzed for total VOCs by EPA Method 8260B, total PAHs by SIM GC/MS analysis, and total metals by Method 6010B.

The soil boring sample analysis results are included as **Attachment 4** and summarized on **Table 4**. The results indicate:

- The presence of individual target VOCs in concentrations greater than or equal to 1 mg/kg in SB-2, SB-12, SB-15, and WC-1-4 composite;
- The presence of individual target SVOCs in concentrations greater than or equal to 1 mg/kg in SB-2, SB-3, SB-4, SB-12, SB-15, SB-27, and WC-1-4 composite;
- The presence of tetrachloroethene at a concentration of 160 µg/kg in sample SB-27 (20-22 ft), in a sample collected atop the impeding silty layer;
- Total VOC concentrations of 0.33 to 5,641 mg/kg in samples SB-2, SB-3, SB-12, SB-15, SB-27, and WC-1-4 composite;
- Total SVOC concentrations of 7.1 to 1,070 mg/kg in samples SB-2, SB-3, SB-4, SB-12, SB-15, SB-27, and WC-1-4 composite;
- Total SVOC concentrations exceeding 50 mg/kg in samples SB-3, SB-12, SB-15, SB-27, WC-1-4 composite, and the soil pile;
- Total aluminum concentrations of 6,800 to 6,900 mg/kg in samples SB-4, and SB-12;
- Total barium concentrations of 14 to 23 mg/kg in samples SB-4, and SB-12;
- Total chromium concentrations of 16 to 19 mg/kg in samples SB-4, SB-12, and WC-1-4 composite;
- Total cobalt concentrations of 5.7 to 7.4 mg/kg in samples SB-4, and SB-12;
- Total copper concentrations of 6.1 to 19 mg/kg in samples SB-4, and SB-12;
- Total iron concentrations of 12,000 to 18,000 mg/kg in samples SB-4, and SB-12;
- Total lead concentrations of non-detectable to 52 mg/kg in samples SB-4, SB-12, and WC-1-4 composite;
- Total manganese concentrations of 150 to 170 mg/kg in samples SB-4, and SB-12;
- A total mercury concentration of 0.13 mg/kg in sample WC-1-4 composite;
- Total nickel concentrations of 17 to 21 mg/kg in samples SB-4, and SB-12;
- Total vanadium concentrations of 14 to 16 mg/kg in samples SB-4, and SB-12;
- Total zinc concentrations of 26 to 52 mg/kg in samples SB-4, and SB-12; and
- TPH concentrations of 66 to 6,600 mg/kg in samples SB-2, SB-3, SB-12, SB-15, SB-27, and WC-1-4 composite.

The SB-12 (8-12') sample was split and analyzed by both the EPA Region 1 laboratory and AMRO. In addition, a duplicate sample collected from SB-15 (8-12') was submitted to AMRO. The duplicate and split sample analysis results show poor repeatability. Differences in the sample dilution used to prepare the samples for analysis, as well as differences in the reported units (wet weight and dry weight) probably contributed to the poor repeatability. However, this difficulty in achieving repeatable results is most likely attributed to difficulties in homogenizing soil samples containing pockets of TSEC Project #00035

residual and possibly mobile coal tar product. Coal tar contamination in the split samples and duplicate samples was probably not evenly distributed by the homogenization procedures used in the field.

Determination of Free Product Using SVOC Concentrations

For the purposes of defining a laboratory-based analytical concentration that can be used to indicate the presence or absence of mobile coal tar product in soil, total SVOC concentrations from the analytical data were reviewed. The data was sorted into two categories; one category in which free coal tar product was visually observed, and a category in which no free coal tar product was visible. As shown in **Appendix C**, seven (7) samples with visible evidence of coal tar product were analyzed for SVOCs. The analytical results show that total SVOC concentrations in these samples ranged from 59 to 1,365 mg/kg. Based on these results, a minimum SVOC concentration of 50 mg/kg in soil at the Barre Coal Tar SITE is assumed to contain potentially mobile coal tar product.

SVOC concentrations in these seven (7) soil samples were compared to field screening results by PetroFLAG[®], PID, and field GC, as described in previous sections. The ratios that were determined by this comparison were multiplied by an SVOC concentration of 50 mg/kg to calculate free product determination levels for each field screening method.

3.4.6 Asbestos and Lead Sampling

On October 17, 2000, TSEC sampled selected building materials and paint in the former GCV building to evaluate whether or not asbestos-containing materials or lead-based paint may be present. Jonathan B. Ashley of TSEC (Asbestos Inspector/Management Planner License #MP016705) collected a total of three (3) samples of building materials and three (3) paint chip samples. The samples were submitted to EMSL Analytical of Westmont, New Jersey (EMSL) for analysis. The building materials samples were analyzed by EPA 600/R-93/116 Method using Polarized Light Microscopy (PLM) for Asbestos Analysis of Bulk Materials. The paint samples were analyzed by Flame AAS (SW 846, 7420) for Lead in Paint Chips. Laboratory analytical reports are included as **Attachment 5**. The results indicate:

- A pipe insulation sample collected in the largest (northwestern) room of the GCV building contained 25% chrysotile and 5% crocidolite asbestos;
- No asbestos was detected in the sample of wall plaster or the brick mortar sample collected from the former GCV building;
- Lead was detected in samples of yellow pipe paint (12.8% by weight) and green pipe paint (0.339% by weight) collected from the southeast room of the former GCV building; and
- No lead was detected in silver paint that is present on some of the interior brick walls of the former GCV building.

The limited sampling performed by TSEC was conducted to evaluate whether or not asbestos and lead paint may be present within the former GCV building. Based on the building age and the results of the preliminary sampling survey, asbestos and lead are present in the building. Therefore, any cleanup

options involving demolition of the existing structures will require a complete pre-demolition asbestos and lead paint survey, and possibly special demolition and waste disposal procedures.

3.5 ANALYSIS OF INVESTIGATION RESULTS

In accordance with the Contract, TSEC reviewed historical SITE information and conducted a subsurface investigation to better define the vertical and horizontal extent of coal tar contamination at the SITE.

3.5.1 Horizontal Extent of Coal Tar Contamination

Based on the results of TSEC's supplemental investigation, if free product was visually observed or two or more of the following conditions were noted, the sample was recorded as a location where potentially mobile coal tar product was present:

- Laboratory-determined total SVOC concentrations >50 mg/kg;
- PetroFLAG[®] concentrations >500 mg/kg;
- PID headspace concentrations >10 ppmv;
- TPH concentration by GC PID >120 mg/kg; and
- TPH concentration by GC FID >50 mg/kg.

As summarized on **Table 3**, two (2) or more of these identifying factors were noted in soil samples collected from SB-1, SB-2, SB-3, SB-4, SB-5, SB-6, SB-7, SB-8, SB-9, SB-10, SB-12, SB-15, SB-17, SB-19, SB-27, WC-1-4, the soil pile, SED-1, SED-2, and SED-3.

Combined with historical soil boring logs, the above evaluation criteria were used to define the approximate area of the SITE that may contain mobile coal tar contamination, as shown on **Figure 4**. Two contaminant zones containing potentially mobile coal tar product are delineated, as described in **Section 3.5.2**. Zone 1 consists of the "source area" in the vicinity of the former gas holder pads, remediation building, former GCV building, and the (partially burned) detached shed. This zone is estimated to occupy an area of approximately 30,000 square feet (ft²).

Zone 2 includes an area to the east of the former GCV building. It also includes the area beneath the upper (north) recharge gallery of the groundwater system and the area beneath the Pepin Granite building and associated parking lot and lawn areas. In addition, Zone 2 includes sediments between the north bank of the Stevens Branch and the existing concrete barriers, where seeps have resulted in the accumulation of coal tar product. The total estimated area of Zone 2 is 55,000 ft², of which approximately 20,000 ft² (roughly 36%) is beneath the occupied Pepin Granite building.

Soil borings installed in the vicinity of the former GCV building, the (partially burned) detached shed, the remediation building, the former gas holder pads, and the Pepin Granite building suggest that potentially mobile coal tar product is present beneath each of these structures.

3.5.2 Vertical Extent of Coal Tar Contamination

As indicated on **Table 1**, coal tar product was observed at various depths in several historical and recent soil borings. Two contaminant zones containing potentially mobile coal tar product are delineated on **Figure 4**. In the Zone 1 “source area,” coal tar product is present in soil above the water table, beginning at 1 to 5 feet below grade. The bottom of the product-contaminated interval was encountered at approximately 20 feet below grade, where an impeding layer of fine grained soil was identified during previous subsurface investigations (I.A.G, 1987).

Outside of this area (Zone 2), coal tar product is encountered at deeper intervals at and below the groundwater surface, beginning at approximately 7 to 10 feet below grade, and extending to a depth of approximately 18 to 24 feet below grade.

For the purposes of estimating the volume of soil in each zone containing potentially mobile coal tar product, nominal thicknesses of 16 feet for Zone 1 and 13 feet for Zone 2 were assumed. Multiplying these thicknesses by the estimated areas described in **Section 3.5.1** shows that approximately 18,000 yd³ of soil in Zone 1 and 26,500 yd³ of soil in Zone 2 require cleanup. Approximately 9,600 yd³ of soil in Zone 2 lie beneath the Pepin Granite building.

3.5.3 SITE Specific Coal Tar Saturation Values

Harold C. Linnemeyer of the University of Vermont studied coal tar saturation values at the SITE. The results of this study were summarized in a May 1997 thesis paper entitled Determination of Coal Tar Saturation Using the Partitioning Interwell Tracer Test. Laboratory partitioning tracer tests were performed on soil cores collected from three (3) locations. In addition, a partitioning interwell tracer test (PITT) was performed using well EW-101 as an extraction well and well MW 86-6 as an injection well. The test results in comparison to recent findings are summarized as follows:

Location	Range of Measured Coal Tar Saturation Values (%)	Average Coal Tar Saturation Value (%)	Mobile Coal Tar Product Detected During TSEC Investigation?
Between MW 88-5 and MW-3A	2.0-2.9	2.5	Yes
Between MW-7 and MW-16	0.8-4.2	2.4	Yes
Near TSEC boring SB-1	0.7-0.8	0.75	Yes
Between EW-101 and MW 86-6	1.9-2.9	2.4	Yes

Based on the above comparison, it appears that coal tar saturation values of 0.75 to 2.5% (7,500 to 25,000 mg/kg) represent potentially mobile coal tar product. This comparison agrees with the evaluation of PetroFLAG[®] results presented in **Section 3.4.3**, as PetroFLAG[®] TPH concentrations greater than 7,500 mg/kg are also predicted to be potentially mobile. However, coal tar saturation

values were not measured outside the source area, so the lower “residual” saturation limit could not be evaluated based on the saturation value study performed.

4.0 CONCEPTUAL MODEL

4.1 Geology

The SITE geology has been investigated through the installation of soil borings, test pits, and monitoring wells during previous subsurface investigations. Geologic cross sections (Johnson Co., 1997) are provided in **Attachment 6**. Soil borings installed during TSEC’s subsurface assessment generally confirmed the results of previous geologic models for the SITE with minor exceptions. In general, soils at the SITE consist of fill materials (composed of granite chips, coal, coal clinkers, ashes, cinders, wood, sand, gravel, and silt) atop native fine to medium sands and silty sands over coarse sands and silty sands and gravel. Fine sands, silts, and clays that extend to bedrock underlay the coarser materials. In some boring logs, the silty and fine sands are not encountered beneath the fill, and it appears that the coarser (gravelly) unit extends from the bottom of the fill to the lower fine grained soil unit. The fine grained soil unit of silty fine sands, silts, and clays is reported to be an impeding layer of glacio-lacustrine origin, at least 30 feet thick (Lincoln Applied Geology, 1987). A bedrock well installed in 1992 for the Pepin Granite facility reportedly encountered gray quartz muscovite phyllite bedrock at about 60 feet below grade (Johnson Co., 1997). The Vermont Agency of Transportation (AOT) also installed a test boring on the south side of the Granite Street Bridge in 1993 (AOT 93-B1). Bedrock in this boring was reportedly mapped at 73.5 feet below grade, and described as silicious limestone, consisting of the Barton River member of the Waits River formation.

4.2 Hydrogeology

Groundwater flow at the SITE is generally to the southwest towards the Stevens Branch. Infiltrating water in the vicinity of the settling lagoons and remedial system infiltration galleries has also been noted to create groundwater mounding effects, causing localized radial groundwater flow patterns. In areas of the SITE where no external loading effects occur, the shallow groundwater typically fluctuates from 6 to 9 feet below grade. In the vicinity of the infiltration galleries and settling lagoons, groundwater levels have fluctuated between 5 and 10 feet below ground surface. Hydraulic (horizontal) gradients in the shallow groundwater aquifer reportedly range from 0.010 to 0.060 feet per foot depending on external influences such as the remediation system and settling lagoons. A pump test conducted using extraction well EW-101 in 1992 resulted in an aquifer transmissivity estimate of 784 ft² per day (GZA GeoEnvironmental, Inc., 1993). Hydraulic conductivity values within the soil have been reported as follows (CAA Bioremediation Systems, 1988):

- 0.5 to 60 feet per day in the unconfined aquifer;
- 50 to 200 feet per day in the unsaturated zone; and
- <1 foot per day in the fine grained (impeding layer) soils.

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SITE groundwater typically discharges to the Stevens Branch, as indicated by coal tar seeps on the river. However, during periods of high stream flow, the Stevens Branch may lose flow to the surrounding aquifer.

The piezometric head within the impeding layer of fine grained soils is consistently higher than the average piezometric head within the more permeable sand and gravel soil units (CAA Bioremediation Systems, 1988). Therefore, it appears that vertical groundwater flow beneath the SITE tends to move upward toward the sand and gravel soil units. Groundwater flow within the unconfined shallow groundwater aquifer also appears to be upward when not under the influence of the remediation system (CAA Bioremediation Systems, 1988). When not in use, the bedrock well installed on the Pepin Granite property in 1992 reportedly overflows naturally, exhibiting artesian behavior. This indicates that the piezometric head in the bedrock is higher with respect to the shallow unconfined aquifer.

4.3 Risk Assessment

A quantitative human health and ecological risk assessment for the SITE was prepared in 1996 by the Alcon Corporation. The risk assessment considered current (1996) and foreseeable future land uses for long term exposure effects. Acute health effects and the effects of potential remedial actions were not evaluated. None of the exposure scenarios evaluated exceeded a Total Hazard Index of 1.0, which was presumed to be acceptable by the Alcon Corporation. However, all five exposure scenarios had modeled cancer risks exceeding 1×10^{-6} , which is generally defined as the limit of acceptable risk. Based on this evaluation, in the absence of cleanup, the SITE represents an unacceptable risk associated with cancer. A subsequent impact assessment conducted by the Vermont Agency of Natural Resources in 1997 showed no impacts to aquatic biota in the Stevens Branch.

5.0 CLEANUP EVALUATIONS

5.1 Previous Cleanup Evaluations

Several cleanup alternatives have been evaluated and implemented at the SITE. Brief summaries of the evaluations performed are provided below.

5.1.1 Remedial Evaluation, Design, and Construction (1987 and 1988)

Lincoln Applied Geology and Cambridge Analytical Associates (CAA) Bioremediation Systems performed investigative work and a treatability study in 1987. Contaminated groundwater and soil samples were collected to evaluate the potential application of bioremediation technologies. An evaluation of the treatability study results indicated that tar-degrading bacteria in soil and groundwater could be stimulated to degrade coal tar constituents (CAA Bioremediation Systems, 1987). Public concerns of potential airborne exposure were documented during the remedial planning stages.

A total of eleven (11) recovery wells were installed along the Stevens Branch stream bank, and seventeen (17) injection wells were installed within the upgradient recharge galleries. Five (5) soil

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vapor extraction wells were also installed to vent coal tar vapors and supply oxygen to support biological activity. In addition, the concrete barriers along the north bank of the Stevens Branch were installed to allow for containment and recovery of coal tar seeps.

5.1.2 Bioremediation System Operation (1988 through 1990)

The treatment system was started up in August 1988. Nutrients in the form of nitrogen and phosphorous were prepared in a mixing tank and added to the extracted groundwater prior to reinjection. Hydrogen peroxide was also added. The remediation efforts and groundwater monitoring continued through August 1990, when the responsible party's limit of insurance coverage (\$1,000,000) reportedly was met.

5.1.3 Site and System Operations After August 1990

Groundwater recovery, oil water separator operation, and reinjection of groundwater continued under funding through State of Vermont emergency funding. The primary purpose of system operation was to limit further coal tar seeps into the Stevens Branch. An evaluation performed in 1991 by LAG indicated that coal tar seeps to the Stevens Branch increased significantly in the absence of active groundwater pumping.

5.1.4 Limited Remedial Investigations (1992 and 1993)

During continued operation of the existing groundwater pumping and reinjection system, a limited remedial evaluation was also conducted. An extraction well (EW-101) was installed and a pump test was conducted. GZA GeoEnvironmental (GZA) recommended the use of this and one (1) proposed extraction well in the source area to contain and recover additional coal tar product. Addition of oxygen to the subsurface via extraction and injection wells and surface application of nutrients via spray irrigation were also recommended.

5.1.5 Qualitative Evaluation of Cleanup Options and Risk Assessment (1995 through 1997)

During continued operation of the existing system, the Johnson Company performed a qualitative evaluation of cleanup options. Alecon also performed a concurrent risk assessment (see **Section 4.3**). The potential options were evaluated using a technology rating matrix for three (3) different zones of the SITE. A summary of the highest-scoring technologies for each zone is provided below:

Location	Description	High Scoring Technologies	Score
Zone 1	Source area with contamination primarily above and to the top of the water table	1. Physical containment (capping)	41
		2. Vitrification, tie with excavation and ex-situ treatment	38

Location	Description	High Scoring Technologies	Score
Zone 2	Area with contamination smeared at the top of the saturated zone	1. Excavation and ex-situ treatment	42.25
		2. Hydraulic containment/ interception	40
Zone 3	Area with contamination primarily in the saturated zone	1. Solidification/ stabilization, tie with excavation and ex-situ treatment	30
		2. Physical containment (impermeable walls)	28.5

In addition, several technologies were pre-screened for applicability during the evaluation. The following technologies were either eliminated by the Johnson Company due to inapplicability, or received little consideration:

- Soil vapor extraction;
- Soil washing/flushing; and
- CleanOX®.

Based on the previous evaluation results, these previously eliminated technologies were not considered further under this Contract.

5.2 Bioremediation Treatability Testing

5.2.1 Treatability Test Soil Pile Construction

On October 11, 2000, TSEC and Wagner's Construction of West Burke, Vermont began construction of two (2) soil piles for the purposes of evaluating ex-situ bioremediation as a cleanup option. Photographs of the soil pile construction are provided in **Appendix E**. Soil berms were constructed using sod and topsoil on the larger of the former gas holder pads to form the base of each pile. Within one soil berm, a soil pile was lined with 30 mil. thick polyethylene pond liner. Contaminated soil from the southwest edge of the former gas holder pad was excavated to the water table, homogenized by turning over and mixing the material using the excavator bucket, and placed on the pond liner within the soil berm. A single layer of 6 mil. thick polyethylene sheeting was used to completely cover the soil, and the 30 mil. sheeting was wrapped over the 6 mil. layer, then secured in place. Finally, another 6 mil. polyethylene sheet was placed over both of these layers. For the purposes of this bioremediation study, this pile was used as a "control pile" to evaluate natural biodegradation rates in comparison to the test pile.

The test pile was also constructed within a soil berm on the former gas holder pad. A diagram of the test pile construction is provided as **Figure 5**. The test pile was lined with 30 mil. thick polyethylene pond liner, as well as two (2) additional layers of 6 mil. polyethylene sheeting. Crushed ledge was placed on the plastic sheeting, bedding a 4" perforated SDR 35 collection pipe. Sufficient crushed ledge was placed atop the collection pipe to completely cover the pipe, forming a sump area for liquids to accumulate following surfactant flushing. Atop the crushed ledge, a layer of filter fabric was

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installed to prevent fine-textured soil from fouling the crushed ledge drainage bed. Coal tar contaminated soil was placed atop the filter fabric with four (4) vertical injection wells and two (2) vertical extraction wells. Atop the contaminated soil, another layer of filter fabric was installed, followed by more crushed ledge. Perforated 4" schedule 40 pvc liquid distribution piping was installed in the crushed ledge bedding. Sufficient crushed ledge was installed to completely cover the distribution piping. Atop the pile, four (4) layers of 6 mil. polyethylene sheeting and a partial layer of 30 mil. pond liner were used to cover the crushed ledge. On top of the plastic sheeting, a five (5) hole pre-cast distribution box was installed and leveled.

At the conclusion of the pile construction, the excavation at the southwest edge of the former gas holder pad was secured with orange snow fencing and wooden stakes. Coal tar sheens were consistently observed on the groundwater surface at the bottom of the excavation during SITE activities.

During a subsequent SITE visit on October 16, 2000, TSEC completed piping to the liquid distribution box. Each of the liquid distribution piping headers was connected to the distribution box outlet holes as well. In addition, 1" schedule 40 pvc piping was installed to connect a regenerative blower (with a 1.5 horsepower motor) to the injection and extraction soil venting wells.

On October 23, 2000 (during the venting system startup), the vent piping was modified due to the occurrence of thermal overload shutdowns during initial startup testing of the blower. TSEC added a vapor phase carbon drum to the discharge side of the blower, allowing excess air to be vented to the atmosphere with treatment as needed. In addition, tubing from an oxygen cylinder and flow regulator was connected to the injection piping header to allow TSEC to bleed oxygen gas into the injected air stream.

5.2.2 Bioremediation Treatability Test Procedures

Construction and plumbing of the control pile and test pile were completed on October 16, 2000, with test pile plumbing modifications completed on October 23rd, as described above. Following construction, a thirty (30) day bioremediation test was conducted following an initial surfactant flush of the test pile. Routine SITE visits were conducted in the following sequence:

1. October 17, 2000 – TSEC collected baseline samples from the test pile.

Following sampling, initial surfactant flushing was performed using a solution of 2.5 gallons of PetroSolv in 50 gallons of water from the Stevens Branch. The surfactant solution was pumped into the distribution box using a pneumatic dual diaphragm pump. TSEC collected approximately 15 gallons of surfactant solution from the test pile underdrain. No visible coal tar product was noted on the collected flushing solution.

The 15 gallons of PetroSolv solution collected from the underdrain was mixed with 2.5 gallons of PetroSolv and 35 gallons of Stevens Branch water. The new solution was again pumped into the distribution box. TSEC collected surfactant solution from the test pile underdrain until drainage

slowed to a drip. The collected solution, which generally appeared clear, was transferred into a drum for on-SITE storage. A galvanized drainage tub was placed at the drainage pipe outlet to collect any additional drainage from the test pile. The tub was secured with plastic sheeting to keep out precipitation.

2. October 20, 2000 – TSEC performed another surfactant flush using 2.5 gallons PetroSolv mixed with 50 gallons of water at a temperature of 110°F. The surfactant solution was again allowed to collect in a galvanized tub at the drainage pipe outlet.
3. October 23, 2000 – TSEC collected baseline samples from the control pile and post-surfactant flushing samples from the test pile.

Inspection of the drainage tub from the hot water surfactant solution flushing revealed that the drained water was stained and smelled of coal tar. No continuous sheen or floating product was evident on the water surface, although liberated free product from the hot water surfactant flushing could have been trapped in the crushed ledge bedding material surrounding the drainage pipe.

The following materials were added to the test pile to begin the bioremediation study:

- A solution of nutrients in water (25 pounds of nutrients dissolved in 16 gallons of water); and
- A solution of 5 gallons of PAH consortium (enzymes and bacteria) mixed with 18 gallons of water.

After disconnecting the distribution pipe headers from the distribution box, each liquid solution was added in equal portions to the pipe headers using a graduated bucket.

After completing some minor re-plumbing of the test pile venting system (as described above), the soil venting and oxygen injection system was started up. Initial venting system readings were collected.

4. October 25, 2000 – TSEC monitored the soil venting and oxygen injection system.
5. November 13, 2000 – TSEC monitored the soil venting and oxygen injection system. The first oxygen injection cylinder was replaced. TSEC collected samples from the control pile and test pile for laboratory analysis.

The following materials were added to the test pile:

- A solution of approximately 10 pounds of lime in 70 gallons of water; and
- A solution of 25 pounds of nutrients in 20 gallons of water.

6. November 22, 2000 – TSEC shut down the soil venting system and collected samples from the test pile and control pile for laboratory analysis.

Soil Sampling and Analysis

Soil samples were collected from the control and test piles using 1" schedule 40 pvc soil samplers. The samplers were inserted into each pile in four locations during each sampling event. The depth of insertion in each sample location was recorded for baseline sampling, and the depth of sampler insertion was consistent during subsequent sampling events. Soil collected from each of the four sampling points was placed in a plastic bag, sealed, and homogenized by mixing thoroughly. Composite samples from each pile were preserved as required, placed in coolers, and delivered to the appropriate laboratory for the following analyses:

- VOCs by EPA Method 8240 (all samples) at AMRO;
- SVOCs by EPA Method 8270 (all samples) at AMRO;
- TPH by Method 418.1 (all samples) at AMRO;
- Aerobic and Anaerobic Plate Count by Method 9215 C (test pile baseline and at conclusion of treatability test) at Analytical Services, Inc. of Williston, VT;
- Percent Moisture by Method D2216 (all samples) at AMRO and Endyne, Inc. of Williston, VT (Endyne); and
- pH by Method EPA Method 150.1 and Method SW9045C (test pile baseline and at conclusion of treatability test) at Endyne and AMRO, respectively.

The laboratory analytical results are summarized in **Section 5.2.3** below.

Venting System Monitoring

During each SITE visit, the test pile venting system was monitored to balance air flow rates, measure vacuums and pressures, and monitor oxygen levels. The following measurements were routinely collected:

- PID readings of the air injected into the pile, influent air to carbon, and effluent air from carbon;
- Total vacuum at the blower inlet and vacuum readings at each venting well head;
- Pressure of the air injected into the pile, influent to carbon, and at each injection well head;
- Velocity of the air injected into the pile, influent to carbon, and blower inlet air;
- Temperature of the air injected into the pile, influent to carbon, and blower inlet air;
- Oxygen system pressures and flow rate; and
- Oxygen concentration in the air injected into the test pile.

A discussion of the venting system monitoring results is provided in **Section 5.2.3** below.

5.2.3 Treatability Test Results

A summary of the venting system readings collected during the test is provided as **Table 5**. The results show that:

- Air extraction rates from the test pile ranged from 8 to 22 actual cubic feet per minute (acfm) at vacuums of 2.8 to 8.0 inches of water ("H₂O);
- Air injection rates into the test pile ranged from 7.5 to 10 acfm at pressures of 8.0 to 11 "H₂O;
- Temperatures of the injected air ranged from 67 to 99 degrees Fahrenheit (°F); and
- The oxygen concentration in the injected air was maintained at 20.9%.

Moisture content in the test pile was maintained in the desired range of 10 to 20%, with actual moisture content ranging from 17.5 to 19.7%. Despite the addition of lime to the test pile, the soil pH remained low, ranging from 6.02 to 6.3.

Laboratory analytical results from the test are summarized on **Table 6** and **Table 7**, and included in **Attachment 6**. Under the conditions described above, both aerobic and anaerobic bacteria plate counts increased significantly (346% and >1,700%, respectively). A review of the VOC, SVOC, and TPH analysis results reveals the following:

- Total and individual target VOC concentrations in the test pile and control pile varied, with no increasing or decreasing trend evident;
- Total SVOC concentrations decreased steadily in the test pile. The total SVOC concentration decreased by approximately 32%;
- Total SVOC concentrations in the control pile varied, with no increasing or decreasing trend apparent;
- TPH concentrations in the test pile decreased significantly (21%) after surfactant flushing, then decreased slightly through the remainder of the test (total reduction of 34%); and
- TPH concentrations in the control pile increased during the test.

Based on the analytical results and bacterial plate counts, it appears that biological activity was successfully stimulated in the test pile. It appears that some level of treatment can be achieved through bioremediation, but it is unclear what cleanup levels might be achieved due to the short-term nature of the test. The variance in total VOC concentrations in the test pile (with an increase noted at the end of the test) suggests that treatment may not have been evenly distributed throughout the soil pile. Given the relatively small scale of the treatability test performed in comparison to the scale of cleanup required at this SITE, it may prove difficult to implement larger-scale bioremediation effectively.

5.3 Qualitative Evaluation of Cleanup Options

The primary project objective of the cleanup project is to eliminate further coal tar seeps into the Stevens Branch. Other objectives include reducing or eliminating future site costs and reducing coal tar concentrations in soil and groundwater. "Cleanup" at this SITE is defined as achieving these project objectives, not necessarily "cleaning up" the SITE to a point where no contamination remains.

A numerical ranking system was used to evaluate potential cleanup options for the SITE based on their ability to achieve these cleanup goals. Descriptions of each technology are readily available in technical references and previous reports. Therefore, conceptual process descriptions will only be provided for technologies selected for further consideration in the final Evaluation of Cleanup Options

report. The following table summarizes the advantages and disadvantages of each of the options considered.

Technology	Advantages	Disadvantages
Ex-situ bioremediation	<ol style="list-style-type: none"> 1. Shorter treatment times than in-situ bioremediation alternatives. 2. Reduces contaminant concentrations. 	<ol style="list-style-type: none"> 1. Not demonstrated to be effective for higher molecular weight compounds. 2. May be slower than alternative treatment technologies. 3. Requires a significant area for processing, preparation, and construction. 4. May not eliminate free product. 5. Not feasible beneath existing structures.
In-situ bioremediation	<ol style="list-style-type: none"> 1. Generally inexpensive. 2. Limited disruption of SITE and surrounding properties. 3. Can be applied beneath existing structures. 	<ol style="list-style-type: none"> 1. Verification of cleanup is sometimes difficult. 2. Not demonstrated to be effective for higher molecular weight compounds. 3. Treatment uniformity uncertain because of subsurface variables. 4. May not eliminate free product.
Solidification/stabilization	<ol style="list-style-type: none"> 1. Immobilizes contaminants. 2. Neutralizes soil. 3. Improves bearing capacity or shear strength of treated soil. 	<ol style="list-style-type: none"> 1. Possible leaching of volatile or mobile contaminants. 2. Creation of concrete-like material may limit future use of SITE. 3. Permanence may be affected by environmental conditions such as freeze/thaw cycles. 4. Effective in-situ mixing may be difficult, particularly beneath existing structures.
Physical containment/capping	<ol style="list-style-type: none"> 1. Relatively quick installation. 2. Does not require soil excavation. 3. Prevents vertical infiltration of water. 4. Limits potential for human and animal exposure. 	<ol style="list-style-type: none"> 1. Does not reduce contaminant concentrations. 2. Will not eliminate free product. 3. Requires operation and maintenance. 4. Typically requires institutional controls such as deed restrictions.
Hydraulic containment	<ol style="list-style-type: none"> 1. Minimizes free product migration. 2. Relatively low cost of implementation. 3. Limited disruption of SITE and surrounding properties. 4. Can be applied beneath existing structures. 	<ol style="list-style-type: none"> 1. Does not significantly reduce contaminant concentrations. 2. Indefinite period of continued operation required to control free product.

Technology	Advantages	Disadvantages
Steam-enhanced extraction	<ol style="list-style-type: none"> 1. Limited disruption of SITE and surrounding properties. 2. Can be applied beneath existing structures. 3. Works well in permeable soils and can be implemented in low permeability soils as well. 4. Effectively recovers free product. 5. Reduces mass of contaminants. 	<ol style="list-style-type: none"> 1. Utility costs may be high. 2. Contaminant mass reduction is less than other thermal treatment alternatives.
In-situ thermal desorption	<ol style="list-style-type: none"> 1. Limited disruption of SITE and surrounding properties. 2. Can be applied beneath existing structures. 3. Works well in a wide range of soil types. 4. Significant contaminant mass removal may be achieved. 	<ol style="list-style-type: none"> 1. Utility costs may be high. 2. Not as cost effective in high permeability soils. 3. Works best in unsaturated conditions.
Six phase heating	<ol style="list-style-type: none"> 1. Limited disruption of SITE and surrounding properties. 2. Can be applied beneath existing structures. 3. Works well in a wide range of soil types. 4. Significant contaminant mass removal may be achieved. 	<ol style="list-style-type: none"> 1. Utility costs may be high. 2. Not as cost effective in high permeability soils. 3. Works best in unsaturated conditions.
Excavation with on-SITE thermal treatment	<ol style="list-style-type: none"> 1. Significant contaminant mass removal may be achieved. 2. Removes free product from the subsurface. 3. No additional transportation burden on local roads. 	<ol style="list-style-type: none"> 1. Pre-processing may be required for proper treatment. 2. Soil with high organic content is not suitable for treatment. 3. Air emissions control may be required. 4. Significant area (up to 1 acre) may be required for processing and treatment equipment. 5. May not be feasible beneath existing structures.

Technology	Advantages	Disadvantages
Excavation with off-SITE thermal treatment	<ol style="list-style-type: none"> 1. Significant contaminant mass removal may be achieved. 2. Removes free product from the subsurface. 	<ol style="list-style-type: none"> 1. Pre-processing may be required for acceptability at off-SITE facilities. 2. Soil with high organic content is not suitable for treatment. 3. Air emissions control may be required. 4. Receiving facility permit and constraints may limit the rate of cleanup. 5. Transportation of soil off-SITE may burden the local roads with additional traffic. 6. May not be feasible beneath existing structures.
Excavation with off-SITE landfilling	<ol style="list-style-type: none"> 1. Removes free product from the subsurface. 2. Pre-processing may not be necessary. 	<ol style="list-style-type: none"> 1. Receiving facility permit and constraints may limit the rate of cleanup. 2. Transportation of soil off-SITE may burden the local roads with additional traffic. 3. May not be feasible beneath existing structures. 4. Permanence of cleanup is questionable since landfilling is effectively a containment option.
Excavation with asphalt batching	<ol style="list-style-type: none"> 1. Significant contaminant mass removal may be achieved. 2. Removes free product from the subsurface. 3. Reuses materials. 	<ol style="list-style-type: none"> 1. Curing times may be affected by temperature. 2. Fine-grained soil is not suitable for treatment. 3. Air emissions control may be required. 4. Receiving facility permit and constraints may limit the rate of cleanup. 5. Transportation of soil off-SITE may burden the local roads with additional traffic. 6. May not be feasible beneath existing structures. 7. Physical properties of final product not always appropriate for traffic reuse.

In order to evaluate the feasibility of potential ex-situ treatment alternatives, TSEC collected waste characterization samples, as described in **Section 3.4.1**. When compared to the applicable facility acceptance criteria, the results indicate that soils in the source area of the SITE (where concentrations are expected to be highest) are suitable for treatment by thermal desorption and are acceptable at a landfill facility in Canada. In addition, with possible pre-processing requirements, the soil can be made suitable for asphalt batch treatment.

5.3.1 Qualitative Evaluation Criteria

The above-listed technologies were evaluated based on a uniform set of criteria. In accordance with the Contract, the primary goal of cleanup is to eliminate further occurrence of coal tar seeps on the Stevens Branch. Other criteria of importance, as expressed during the project meeting, include permanence, feasibility, and duration of cleanup. The following criteria were applied during the evaluation:

1. Eliminate the occurrence of coal tar product seeps on the Stevens Branch River. Range of scores: 0 (no reduction of coal tar seeps) to 5 (eliminates coal tar seeps). *A multiplier of 2.0 is applied to this factor to weight its relative importance.*
2. Reduce or eliminate future SITE costs. Range of scores: 0 (no reduction of future SITE costs) to 5 (eliminates future SITE costs).
3. Reduce coal tar contamination in soil and groundwater. Range of scores: 0 (little to no cleanup of soils or groundwater) to 5 (eliminates coal tar contamination).
4. Achieve long term permanence of cleanup. Range of scores: 0 (short term effectiveness) to 5 (effective indefinitely).
5. Be a technology that is implementable under the known SITE conditions. Range of scores: 0 (not feasible at this SITE) to 5 (SITE limitations present no difficulties).
6. Be likely to achieve the desired cleanup goals. Range of scores: 0 (unlikely to achieve cleanup goals) to 5 (sure to achieve cleanup goals). *A multiplier of 1.5 is applied to this factor to weight its relative importance.*
7. Be cost effective. Range of scores: 0 (highest probable costs) to 5 (lowest probable costs).
8. Be compatible with potential future uses of the SITE and existing surrounding land uses. Range of scores: 0 (incompatible with future SITE and current surrounding uses) to 5 (no impacts to current surrounding uses or potential future SITE uses).
9. Not result in unacceptable short term adverse impacts to workers or the local community during implementation. Range of scores: 0 (significant risk) to 5 (little to no impacts to workers or the local community).
10. Minimize the duration of cleanup. Range of scores: 0 (long duration >30 years) to 5 (short-term duration <1 year).

5.3.2 Qualitative Technology Evaluation

Table 8 provides a summary of the scoring results for potential SITE cleanup options. The listed options were evaluated and ranked according to the criteria outlined in **Section 5.3.1**. The results of the qualitative evaluation show that excavation with thermal desorption, asphalt batch treatment, or landfilling are the most promising ex-situ treatment alternatives. The most promising in-situ treatment alternatives involve a form of thermal treatment such as in-situ thermal desorption, six phase heating, or steam-enhanced extraction. Based on EPA publications (Davis, 1997) and recent discussions with vendors regarding each of the potential thermal treatment options, steam-enhanced extraction is expected to be the most implementable and cost effective in-situ thermal treatment option under the given SITE conditions.

The complications associated with cleanup of coal tar contaminated soil and groundwater beneath existing structures may require implementing a combination of cleanup technologies at the SITE. The advantages of each technology may be combined to achieve the most desirable and cost effective cleanup. Therefore, the quantitative evaluation of selected cleanup options will consider each of the most promising technologies, as well as possible combinations of technologies that may be more effective.

Based on the above evaluation results, TSEC recommends quantitatively evaluating the following cleanup approaches:

1. Demolition of all existing structures above the potentially mobile coal tar product followed by dewatering, soil excavation, and thermal desorption, landfilling, or asphalt batch treatment at an off-SITE facility.
2. Demolition of all existing structures above the potentially mobile coal tar product followed by dewatering, excavation, and thermal desorption or asphalt batch treatment at a portable facility staged nearby.
3. Demolition of only unoccupied structures above the potentially mobile coal tar product followed by dewatering, soil excavation, and thermal desorption, landfilling, or asphalt batch treatment. In-situ steam-enhanced extraction of coal tar product beneath the Pepin Granite building.
4. In-situ steam-enhanced extraction of the entire area with potentially mobile coal tar product.

Each of the above-listed scenarios would also involve excavation and treatment of sediments within the concrete barrier area of the Stevens Branch.

5.4 Quantitative Evaluation of Selected Cleanup Options

This section of the draft report has intentionally been left blank until the qualitative evaluation is reviewed by the WMD.

6.0 SUMMARY AND CONCLUSIONS

Based on the information provided in **Sections 1-5**, TSEC offers the following summary and conclusions:

- The SITE is situated in a mixed industrial, commercial, and residential area of the City of Barre;
- Historical use of the property for the production of coal gas resulted in contamination of soil and groundwater at the SITE, as well as seepage of coal tar into the adjacent Stevens Branch of the Winooski River;
- The WMD is considering implementing cleanup measures to eliminate further coal tar seeps into the Stevens Branch and reduce the levels of coal tar contamination in soil and groundwater;
- The current groundwater pumping, product recovery, and groundwater reinjection system is inadequate to achieve the SITE cleanup objectives;

- Previous risk and impact assessments performed at the SITE suggest that the cancer-based risk to humans is unacceptable under the current SITE conditions, while short-term risks and impacts to aquatic biota is minimal;
 - Fine grained soils are typically encountered at approximately 20 to 24 feet below grade beneath the SITE. This soil unit was defined as an impeding layer during previous subsurface investigations;
 - Upward vertical groundwater flow beneath the SITE, combined with the fine-grained soil unit, appears to have limited the vertical migration of coal tar to depths of approximately 0 to 24 feet below grade;
 - The results of various subsurface investigations at the SITE suggest that a total area of approximately 85,000 ft² contains potentially mobile coal tar product. Of this area, approximately 20,000 ft² is beneath the occupied Pepin Granite building;
 - Based on the contaminant concentrations detected and the vertical and horizontal extent of contamination, TSEC estimates that approximately 44,500 yd³ of soil beneath the SITE contain potentially mobile coal tar product;
 - TSEC's October – November 2000 bioremediation treatability test results suggest that full scale cleanup at the SITE using this technology would be difficult to implement;
 - A qualitative review of several other potentially applicable technologies suggests that soil and sediment excavation and/or in-situ thermal treatment may be effective at the SITE. Quantitative review of these cleanup options should be performed to select the most suitable approach.
 - The results of TSEC's September and November 2000 SITE investigation and soil sampling program suggest that the following methods may be used to define areas containing potentially mobile coal tar product during the cleanup project:
 - Laboratory analysis of soil by EPA Method 8240, where total SVOC concentrations are greater than 50 mg/kg;
 - PetroFLAG[®] field screening of soil where TPH concentrations are found to exceed 500 mg/kg;
 - PID headspace screening where concentrations exceeding 10 ppmv are detected;
 - Field GC analysis by PID where TPH concentrations are found to exceed 120 mg/kg; and
 - Field GC analysis by FID where TPH concentrations exceeding 50 mg/kg are detected.
- Due to the margin of uncertainty associated with each of the above methods, TSEC recommends using at least two of the methods in combination to provide reliable and consistent results.

7.0 RECOMMENDATIONS

As detailed in **Section 5.3.2**, quantitative evaluation of the most promising cleanup options is recommended. TSEC recommends quantitatively evaluating the following cleanup approaches:

1. Demolition of all existing structures above the potentially mobile coal tar product followed by dewatering, soil excavation, and thermal desorption, landfilling, or asphalt batch treatment at an off-SITE facility.
2. Demolition of all existing structures above the potentially mobile coal tar product followed by dewatering, excavation, and thermal desorption or asphalt batch treatment at a portable facility staged nearby.
3. Demolition of unoccupied structures above the potentially mobile coal tar product followed by dewatering, soil excavation, and thermal desorption, landfilling, or asphalt batch treatment. In-situ steam-enhanced extraction of coal tar product beneath the occupied Pepin Granite building.
4. In-situ steam-enhanced extraction of entire area with potentially mobile coal tar product.

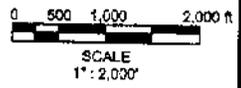
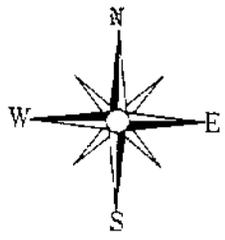
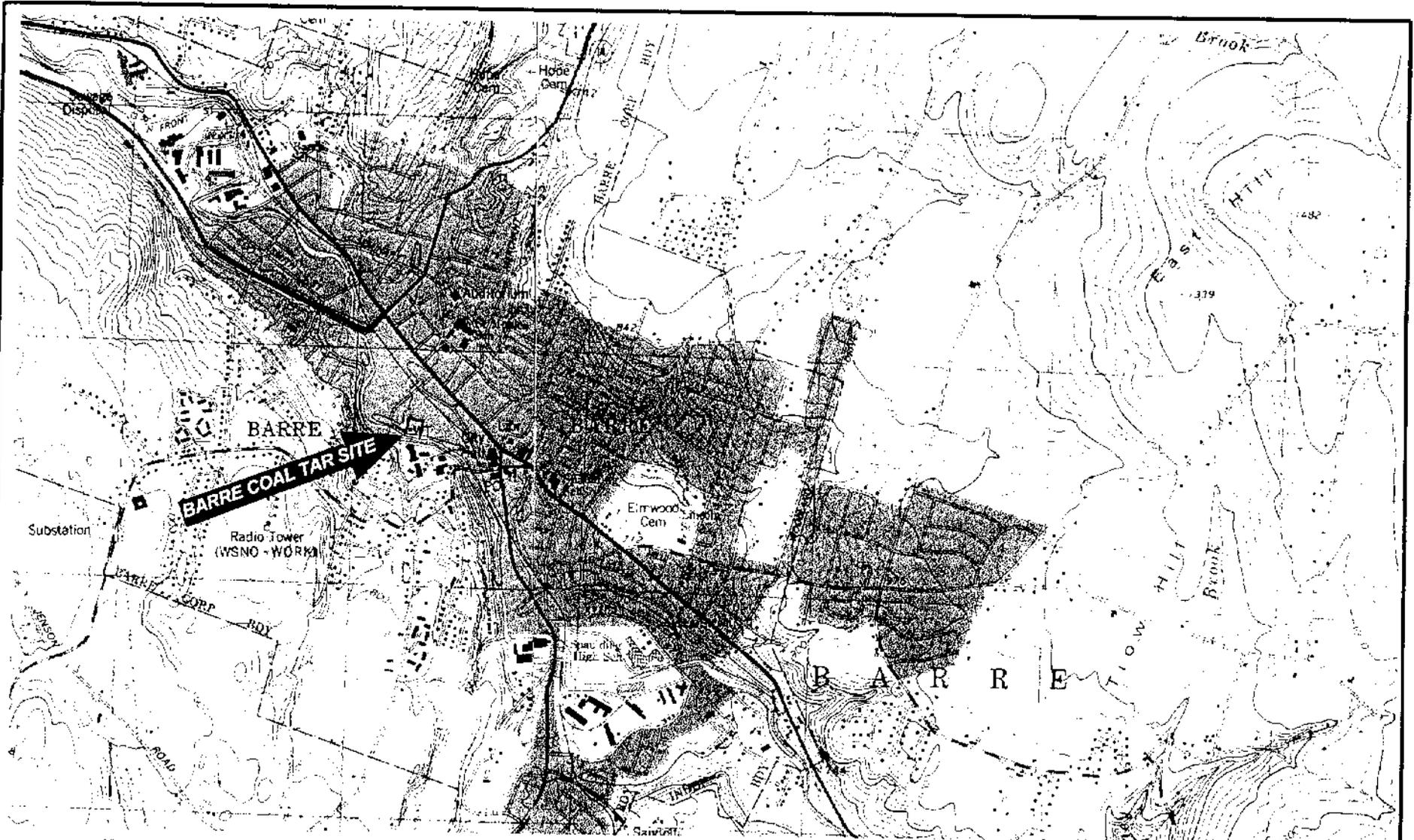
With review and approval of the WMD, the results of the quantitative evaluation will be provided in a final Cleanup Options Evaluation report.

Barre Coal Tar
Barre, Vermont
SMS Site #77-0206

REFERENCES

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FIGURES



SITE LOCATION
 Lat: 44°11'52.6" N
 Long: 72°20'24.0" W

SOURCE MAP: USGS 7.5 Minute Topographic Map Series
 Barre East and Barre West, Vermont Quadrangle

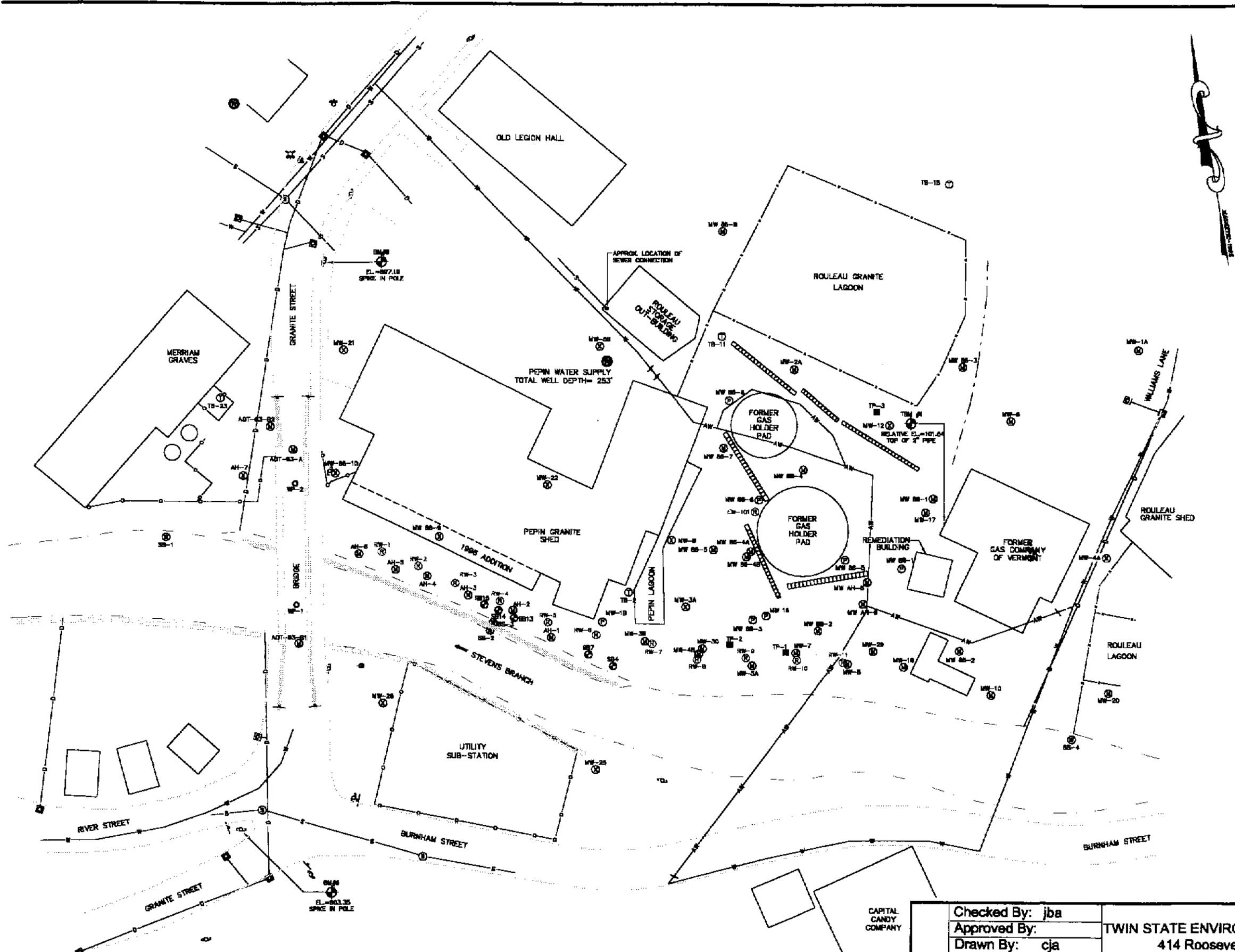
**BARRE COAL TAR SITE
 BARRE, VERMONT**

SITE LOCATION MAP

TWIN STATE ENVIRONMENTAL CONSULTANTS
 414 Roosevelt Highway - Suite 200 - Colchester, Vermont 05448
 (802) 654-8883

DRAWN BY: JPB
 CHECKED BY:
 APPROVED BY:
 DATE: 08/23/00
 SCALE: 1" = 2,000'
 TSEC Proposal #00068

FIGURE 1



- LEGEND**
- ☐ STORMWATER CATCH BASIN
 - CONCRETE BARRIER
 - GRANITE RETAINING WALL
 - SIGN
 - HYDRANT
 - ⊕ WATER SHUTOFF VALVE
 - ⊕ UTILITY POLE
 - ⊕ SEWER MANHOLE
 - ⊕ GUY POLE
 - ⊕ MONITORING WELL
 - ⊕ MONITORING WELL (CONTAINING PRODUCT)
 - ⊕ MONITORING WELL (REMOVED/DESTROYED)
 - ⊕ RECOVERY WELL
 - ⊕ SOIL BORING LOCATION
 - ⊕ SURFACE WATER SAMPLING LOCATION
 - ⊕ AGENCY OF TRANSPORTATION MARKING POINT
 - ⊕ TEST PIT LOCATION
 - ⊕ TEST BORING LOCATION
 - RECHARGING GALLERY
 - FENCELINES
 - FORMER RAILROAD TRACKS
 - STORM DRAIN LINE
 - SANITARY SEWER LINE
 - WATER MAIN
 - ABANDONED WATER MAIN
 - RIGHT-OF-WAY

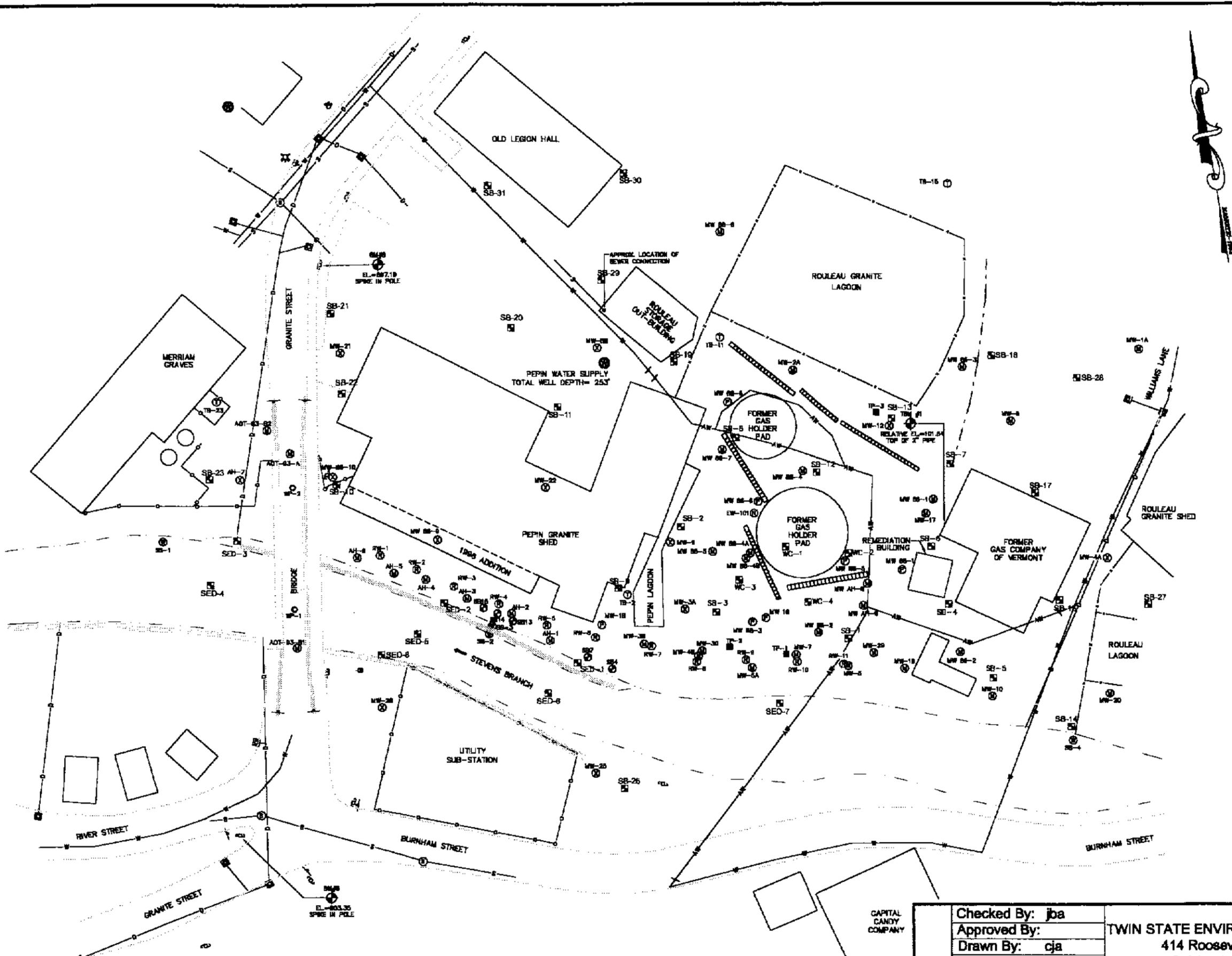
NOTES
 ALL DIMENSIONS AND LOCATIONS ARE APPROXIMATE.
 APPROXIMATE SCALE: 1" = 60'.
 ALL DIMENSIONS OF THE PEPIN GRANITE BUILDING ARE APPROXIMATE.

SOURCES
 BASE MAP PREPARED BY LINCOLN APPLIED GEOLOGY, DATED FEBRUARY 19, 1987.
 "SITE PLAN" PREPARED BY G2A GEDENVIRONMENTAL, INC.
 "STATE OF VERMONT AGENCY OF TRANSPORTATION, PROPOSED IMPROVEMENT, CITY OF BARRE, COUNTY OF WASHINGTON, GRANITE STREET, CITY STREET (LOCAL-CLASS 2)" BY BETTGOLE ANDREWS & CLARK, INC. PRELIMINARY (STEP IV) PLANS SUBMISSION AUGUST 18, 1994.
 "APPENDIX B - BORING LOGS BY ADAMS ENGINEERING" BORING LOGS, GAS COMPANY OF VERMONT, BARRE VERMONT, ON 3/30/85.
 LETTER TO MR. STEVE REVELL OF LINCOLN APPLIED GEOLOGY, FROM ADAMS ENGINEERING, RE: 10/8/85 GAS CO. OF VERMONT BORING LOGS, LETTER DATED 10/16/1988.
 BARRE COAL TAR SITE MAP, VT DEPT. OF ENVIRONMENTAL CONSERVATION, DATED JUNE 13, 1981.
 UTILITY MAPS FROM BARRE CITY ENGINEER'S OFFICE
 "STEVENS BRANCH FLOODWATER MANAGEMENT STUDY", U.S.D.A., VERMONT A.N.R., VERMONT N.R.C.C. DATED NOVEMBER, 1980.

Checked By: jba
 Approved By:
 Drawn By: cja
 Scale: 1" : 60'
 Date: See notes
 Revised: 10/04/00

TWIN STATE ENVIRONMENTAL CORP.
 414 Roosevelt Highway
 Colchester, Vermont
 (802) 654-8663

FIGURE 2
SITE PLAN
 Barre Coal Tar Site
 Barre, Vermont

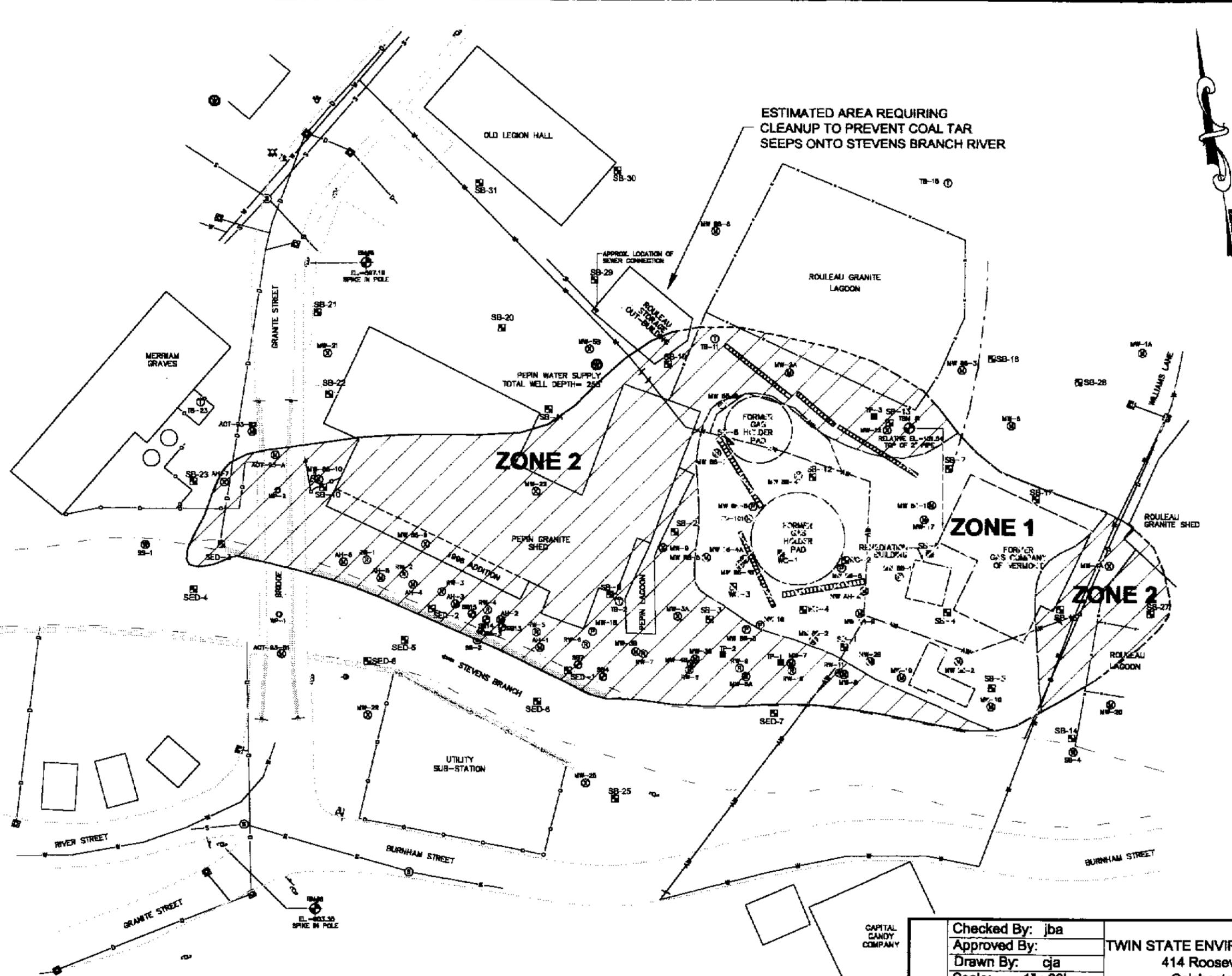


- LEGEND**
- ☐ STORMWATER CATCH BASIN
 - ▬ CONCRETE BARRIER
 - ▬ GRANITE RETAINING WALL
 - ⊥ SIGN
 - ⊥ HYDRANT
 - ⊥ WATER SHUTOFF VALVE
 - ⊥ UTILITY POLE
 - ⊙ SEWER MANHOLE
 - ⊥ GUY POLE
 - ⊙ MONITORING WELL
 - ⊙ MONITORING WELL (CONTAINING PRODUCT)
 - ⊙ MONITORING WELL (REMOVED/DESTROYED)
 - ⊙ RECOVERY WELL
 - ⊙ SOIL BORING LOCATION
 - ⊙ SURFACE WATER SAMPLING LOCATION
 - ⊙ AGENCY OF TRANSPORTATION MARKING POINT
 - ⊙ TEST PIT LOCATION
 - ⊙ TEST BORING LOCATION
 - ▬ RECHARGING GALLERY
 - ▬ FENCELINES
 - ▬ FORMER RAILROAD TRACKS
 - ▬ STORM DRAIN LINE
 - ▬ SANITARY SEWER LINE
 - ▬ WATER MAIN
 - ▬ ABANDONED WATER MAIN
 - ▬ RIGHT-OF-WAY
 - ⊙ TSEC SOIL BORING LOCATION
 - ⊙ TSEC WASTE CHARACTERIZATION BORING LOCATION
 - ⊙ TSEC SEDIMENT SAMPLING LOCATION

NOTES
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SOURCES
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Checked By: jba	TWIN STATE ENVIRONMENTAL CORP. 414 Roosevelt Highway Colchester, Vermont (802) 654-8663	FIGURE 3 SITE PLAN WITH SAMPLING LOCATIONS Barre Coal Tar Site Barre, Vermont
Approved By:		
Drawn By: cja		
Scale: 1" : 60'		
Date: See notes		
Revised: 12/13/00		



ESTIMATED AREA REQUIRING
CLEANUP TO PREVENT COAL TAR
SEEPS ONTO STEVENS BRANCH RIVER

- LEGEND**
- ☐ STORMWATER CATCH BASIN
 - ▬ CONCRETE BARRIER
 - ▬ GRANITE RETAINING WALL
 - SIGN
 - ⊕ HYDRANT
 - ⊕ WATER SHUTOFF VALVE
 - ⊕ UTILITY POLE
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 - ▬ STORM DRAIN LINE
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 - ▬ WATER MAIN
 - ▬ ABANDONED WATER MAIN
 - ▬ RIGHT-OF-WAY
 - ⊕ TSEC SOIL BORING LOCATION
 - ⊕ TSEC WASTE CHARACTERIZATION BORING LOCATION
 - ⊕ TSEC SEDIMENT SAMPLING LOCATION

NOTES
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APPROXIMATE SCALE: 1" = 60'.
ALL DIMENSIONS OF THE PEPIN GRANITE BUILDING ARE APPROXIMATE

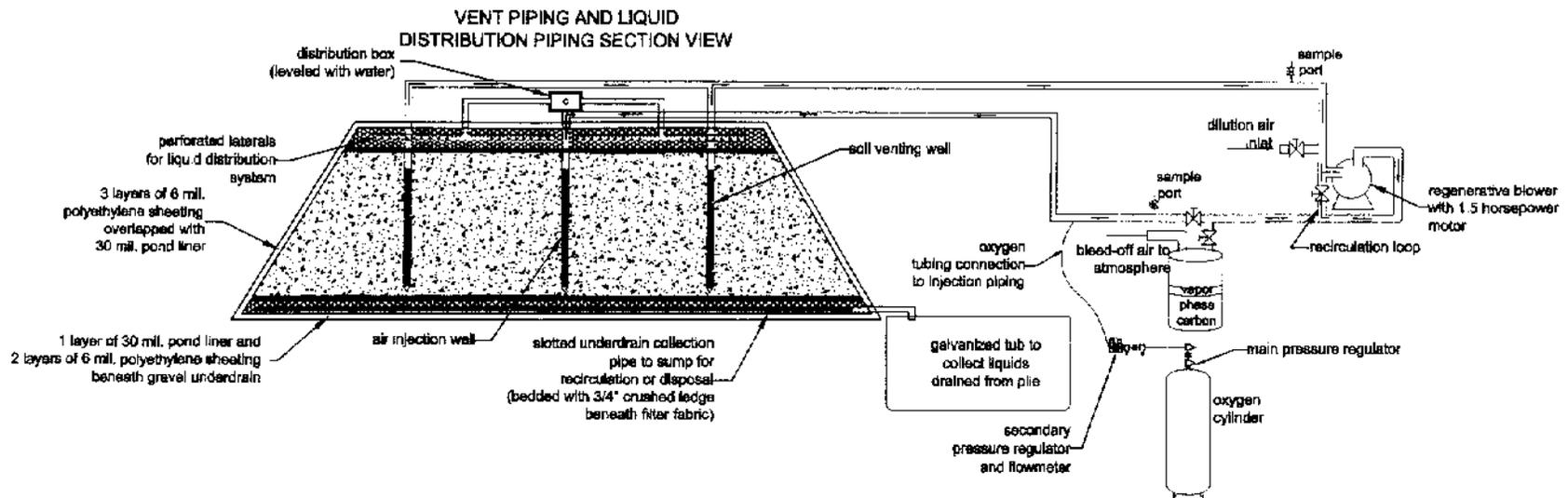
SOURCES
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"SITE PLAN" PREPARED BY GZA GEORENVIROMENTAL, INC.
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Checked By: jba
Approved By:
Drawn By: cja
Scale: 1" : 60'
Date: See notes
Revised: 12/13/00

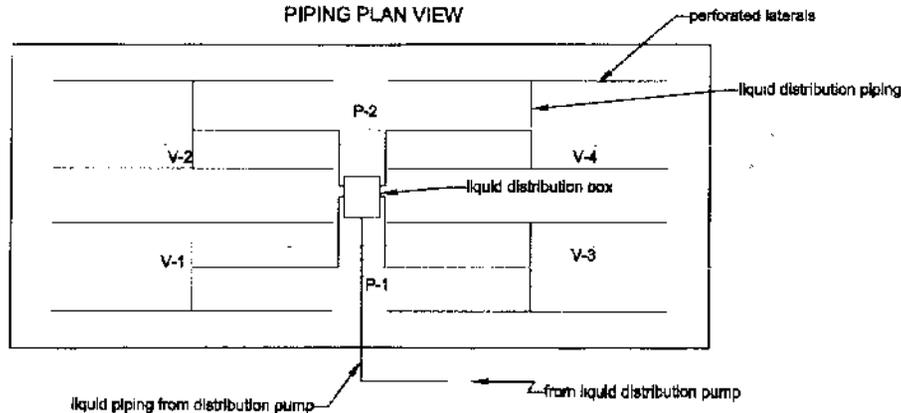
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414 Roosevelt Highway
Colchester, Vermont
(802) 654-8663

FIGURE 4
SITE PLAN WITH
PROPOSED CLEANUP ZONES

Barre Coal Tar Site
Barre, Vermont



VENT PIPING AND LIQUID DISTRIBUTION PIPING PLAN VIEW



NOTES:
 V-1 through V-4 = 1" sched. 40 pvc air extraction wells
 P-1 and P-2 = 1" sched. 40 pvc air/oxygen injection wells

TSEC Project #00035	DRAWN BY: JBA	TWIN STATE ENVIRONMENTAL CORP. 414 Roosevelt Highway - Suite 200 Colchester, Vermont 05446 (802) 654-8663	FIGURE 5 On-SITE Biopile System
	CHECKED BY: _____		
	APPROVED BY: _____		
	DATE: 01/02/01		
	SCALE: NTS		Barre Coal Tar Barre, Vermont

TABLES

Table 1
Evaluation of Soil Borings

Project Name: Barre Coal Tar
 Project #: 00-035
 Date: November 29, 2000
 By: Jonathan Ashley

Soil Boring/ Sediment Sample Location	PID or Visual Evidence of Contamination	Depth of Observed Contamination
Previous Borings		
MW 86-1	32 ppmv, odor	12-16 feet b.g.
MW 86-2	22 ppmv, odors, free product	11-26 feet b.g.
MW 86-3	"No evidence of coal tar" reported	0-22 feet b.g.
MW 86-4A	Strong odor, sheen, free product	0-20 feet b.g.
MW 86-4B	42 ppmv, strong odor, sheen, free product	0-20 feet b.g.
MW 86-5	59 ppmv, strong odor, sheen, free product	0-22 feet b.g.
MW 86-6	50 ppmv, free product	5-20 feet b.g.
MW 86-7	54 ppmv, sheen, free product	0-19 feet b.g.
MW 86-8	"No evidence of coal tar" reported	0-23 feet b.g.
MW 86-9	19 ppmv, sheen, free product	10-21 feet b.g.
MW 86-10	3.5 ppmv, free product	12-22 feet b.g.
MW-1A	"No evidence of coal tar" reported	0-55 feet b.g.
MW-1B	Free product	4-22 feet b.g.
MW-2A	Free product	11-26 feet b.g.
MW-3A	Strong odor, free product	6-16 feet b.g.
MW-4A	"No evidence of coal tar" reported	0-32 feet b.g.
MW-5A	Strong odor, free product	0-22 feet b.g.
MW-5B	"No evidence of coal tar" reported	0-33 feet b.g.
MW-6	"No evidence of coal tar" reported	0-36 feet b.g.
MW-7	Free product	10-16 feet b.g.
MW-8	No boring log	??
MW-9	Free product	5-21 feet b.g.
MW-10	Free product	7-18 feet b.g.
MW-12	Free product	6-16 feet b.g.
MW-16	Free product	0-20 feet b.g.
MW-17	Strong odor, free product	9-13 and 19-28 feet b.g.
MW-19	Strong odor, sheen	9-15 feet b.g.
MW-20	"No evidence of coal tar" reported	0-22 feet b.g.
MW-21	"No evidence of coal tar" reported	0-24 feet b.g.
MW-22	Strong odor, free product	9-22 feet b.g.
MW-25	"No evidence of coal tar" reported	0-31 feet b.g.
MW-26	"No evidence of coal tar" reported	0-30 feet b.g.
AH-1	Odor, sheen	5+ feet b.g.
AH-2	Odor, sheen	6+ feet b.g.

Notes:

1) Bold/shaded results indicate wells where potentially mobile coal tar product appears to be present based on visual observations.

Table 1
Evaluation of Soil Borings

Soil Boring/ Sediment Sample Location	PID or Visual Evidence of Contamination	Depth of Observed Contamination
AH-3	Strong odor, free product	6+ feet b.g.
AH-4	Free product	4+ feet b.g.
AH-5	Strong odor, free product	5+ feet b.g.
AH-6	Strong odor, free product	6+ feet b.g.
AH-7	Visible coal tar	4 to 4.5 feet b.g.
AH-8	Strong odor, free product	5+ feet b.g.
AH-9	Strong odor, heavy coal tar	6+ feet b.g.
TSEC Borings		
WC-1	146 ppmv, odor, free product	7 to 21.5 feet b.g.
WC-2	926 ppmv, odor, free product	0+ feet b.g.
WC-3	4.8 to 44 ppmv, strong odor, free product	3.5+ feet b.g.
WC-4	18 ppmv, odor, free product	4+ feet b.g.
SED-1	6.8 ppmv	0 to 1 feet
SED-2	48 ppmv, free product	0 to 1 feet
SED-3	152 ppmv, free product	0 to 1 feet
SED-4	No visual or PID evidence of coal tar detected	0 to 1 feet
SED-5	No visual or PID evidence of coal tar detected	0 to 1 feet
SED-6	No visual or PID evidence of coal tar detected	0 to 1 feet
SED-7	No visual or PID evidence of coal tar detected	0 to 1 feet
SED-8	Sheen	0 to 1 feet
SB-1	27 to 108 ppmv, strong odor	4+ feet b.g.
SB-2	6.8 to 40 ppmv, odor	8+ feet b.g.
SB-3	136 ppmv, odor, free product	8+ feet b.g.
SB-4	25 to 206 ppmv, odor, free product	6.5+ feet b.g.
SB-5	12 to 265 ppmv, strong odor, free product	4+ feet b.g.
SB-6	40 ppmv, odor	4+ feet b.g.
SB-7	7.8 to 29 ppmv, odor	6+ feet b.g.
SB-8	2.9 to 41 ppmv, strong odor	0+ feet b.g.
SB-9	3.5 ppmv, odor	0+ feet b.g.
SB-10	73 ppmv, odor	12+ feet b.g.
SB-11	3.8 ppmv, free product	8+ feet b.g.
SB-12	383 ppmv, strong odor	7.5+ feet b.g.
SB-13	No visual or PID evidence of coal tar detected	0-8.7 feet b.g.
SB-14	No visual or PID evidence of coal tar detected	0-24 feet b.g.
SB-15	25 ppmv, free product	8-12+ feet b.g.
SB-17	65 ppmv	4-8+ feet b.g.
SB-18	No visual or PID evidence of coal tar detected	0-16 feet b.g.
SB-19	235 ppmv, free product	10-20 feet b.g.
SB-20	No visual or PID evidence of coal tar detected	0-16 feet b.g.

Notes:

1) Bold/shaded results indicate wells where potentially mobile coal tar product appears to be present based on visual observations.

Table 1
Evaluation of Soil Borings

Soil Boring/ Sediment Sample Location	PID or Visual Evidence of Contamination	Depth of Observed Contamination
SB-21	No visual or PID evidence of coal tar detected	0-18 feet b.g.
SB-22	No visual or PID evidence of coal tar detected	0-20 feet b.g.
SB-23	Trace odor	4-8 feet b.g.
SB-25	No visual or PID evidence of coal tar detected	0-20 feet b.g.
SB-27	12.2 ppmv, free product lenses	13 and 22 feet b.g.
SB-28	No visual or PID evidence of coal tar detected	0-16 feet b.g.
SB-29	53 ppmv, staining	4-18+ feet b.g.
SB-30	No visual or PID evidence of coal tar detected	0-24 feet b.g.
SB-31	No visual or PID evidence of coal tar detected	0-20 feet b.g.

Notes:

1) Bold/shaded results indicate wells where potentially mobile coal tar product appears to be present based on visual observations.

Table 2
Summary of
Sampling and Analysis

Project Name: Barre Coal Tar
 Project #: 00-035
 Date: November 30, 2000
 By: Jonathan Ashley

Soil Boring/ Sediment Sample	Begin Sampling Depth (ft)	End Sampling Depth (ft)	PID Screening	PetroFlag Screening	GC Screening	AMRO Analysis	EPA Lab Analysis
SED-1	0	1	Throughout	0-1 ft			0-1 ft
SED-2	0	1	Throughout	0-1 ft			0-1 ft
SED-3	0	1	Throughout	0-1 ft	0-1 ft		0-1 ft
SED-4	0	1	Throughout	0-1 ft	0-1 ft		
SED-5	0	1	Throughout	0-1 ft	0-1 ft		
SED-6	0	1	Throughout	0-1 ft	0-1 ft		
SED-7	0	1	Throughout	0-1 ft	0-1 ft	0-1 ft	
SED-8	0	1	Throughout	0-1 ft	0-1 ft		
SB-1	0	12	Throughout	4-8 ft, 8-12 ft			
SB-2	0	12	Throughout	4-8 ft, 8-12 ft	4-8 ft	8-12 ft	
SB-3	0	12	Throughout			8-12 ft	
SB-4	0	16	Throughout	4-8 ft, 12-16 ft	4-8 ft		8-12 ft
SB-5	0	24	Throughout	4-8 ft, 8-12 ft	8-12 ft		
SB-6	0	6	Throughout	0-4 ft, 4-6 ft	0-4 ft, 4-6 ft		
SB-7	0	12	Throughout	4-8 ft, 8-12 ft	8-12 ft		
SB-8	0	4.2	Throughout	0-1 ft, 2-4.2 ft	0-1 ft		
SB-9	0	3.9	Throughout	0-3.9 ft			
SB-10	0	16	Throughout	8-12 ft, 12-16 ft			
SB-11	0	20	Throughout	4-8 ft, 12-16 ft			
SB-12	0	12	Throughout			8-12 ft	8-12 ft
SB-13	0	8.7	Throughout	4-8 ft			
SB-14	4	24	Throughout	8-12 ft, 20-24 ft	8-12 ft	20-24 ft	
SB-15	4	12	Throughout	8-12 ft	8-12 ft	8-12 ft, 8-12 ft (DUP-1)	

Table 2
Summary of
Sampling and Analysis

Soil Boring/ Sediment Sample	Begin Sampling Depth (ft)	End Sampling Depth (ft)	PID Screening	PetroFlag Screening	GC Screening	AMRO Analysis	EPA Lab Analysis
SB-17	4	8	Throughout	4-8 ft	4-8 ft		
SB-18	4	16	Throughout	8-12 ft			
SB-19	4	22	Throughout	12-14 ft	12-14 ft		
SB-20	0	16	Throughout	0-4 ft, 4-8 ft		4-8 ft	
SB-21	6	18	Throughout	6-10 ft	6-10 ft		
SB-22	6	20	Throughout	10-14 ft, 18-20 ft		10-14 ft	
SB-23	4	20	Throughout	8-12 ft, 16-20 ft	8-12 ft		
SB-25	4	20	Throughout	8-12 ft, 16-20 ft	8-12 ft		
SB-27	4	24	Throughout	20-22 ft	20-22 ft	20-22 ft	
SB-28	4	16	Throughout	12-16 ft		12-16 ft	
SB-29	4	18	Throughout	8-12 ft			
SB-30	4	24	Throughout	8-12 ft	8-12 ft		
SB-31	4	20	Throughout	8-12 ft	8-12 ft		
WC-1	0	24	Throughout	4-8 ft, 20-24 ft			
WC-2	0	12	Throughout	8-12 ft			
WC-3	0	12	Throughout	4-8 ft, 8-12 ft	8-12 ft		
WC-4	0	8.3	Throughout	4-8 ft			

**Table 3
Summary of Field Screening and Analytical Results**

Project Name: Barre Coal Tar
 Project #: 00-035
 Date: 01/02/01
 By: Jonathan Ashley

Sample ID	Date	PetroFlag Concentration (mg/kg)	PID Headspace Concentration (ppmv)	Visual Observation of Free Product	Field GC TPH Result by PID (mg/kg)	Field GC TPH Result by FID (mg/kg)	Laboratory TPH Result (mg/kg)	Total VOCs by Lab Analysis (mg/kg)	Total SVOCs by Lab Analysis (mg/kg)
Free Product Indicator		500	10	Yes	120	50	Not determined	Not determined	50
SB-1 (4-8)	09/18/00	>4,570	27	No					
SB-1 (8-12)	09/18/00	>4,570	108	No					
SB-2 (4-8)	09/18/00	>1,560	ND	No	55	310			
SB-2 (8-12)	09/18/00	>4,570	40	No			1,800	3.0	7.1
SB-3 (8-12)	09/18/00		136	Yes			170	0.7	65.4
SB-4 (4-8)	09/18/00	>1,660	25	No	55	130			
SB-4 (8-12)	09/18/00		38	No				ND	16.7
SB-4 (12-16)	09/18/00	180	206	Yes					
SB-5 (4-8)	09/19/00	>2,910	12	No					
SB-5 (8-12)	09/19/00	5,360	48	Yes	620	350			
SB-6 (0-4)	09/19/00	1,800	ND	No	ND	ND			
SB-6 (4-8)	09/19/00	>5,290	40	No	7,900	7,200			
SB-7 (4-8)	09/19/00	>2,560	7.8	No					
SB-7 (8-12)	09/19/00	>2,410	29	No	1,800	2,000			
SB-8 (1-1.2')	09/19/00	>2,700	3.1	No	trace	16			
SB-8 (2-4')	09/19/00	6,310	41	No					
SB-9 (0-4')	09/19/00	86	3.5	No					
SB-10 (8-12)*	09/19/00	3,300	ND	No					
SB-10 (12-16)	09/19/00	840	73	No					
SB-10 (12-16) DUP #2	09/19/00	890	73	No					
SB-11 (4-8)	09/19/00	120	ND	No					
SB-11 (4-8) DUP #1	09/19/00	96	ND	No					
SB-11 (12-16)	09/19/00	37	2.6	No					
SB-12 (8-12)	09/19/00		383	No			2,900	353	769
SB-13 (4-8)	09/19/00	27	ND	No					
SB-14 (8-12)	11/20/00	7.8	ND	No	ND	31			
SB-14 (20-24)	11/20/00	12	ND	No			ND	ND	ND
SB-15 (8-12)	11/20/00	>1,840	25	Yes	180	100	140	10.8	73.3
SB-17 (4-8)	11/20/00	770	65	No	2,300	260			
SB-18 (8-12)	11/20/00	16	ND	No					
SB-19 (12-14)	11/20/00	4,760	235	Yes	1,500	3,800			
SB-20 (0-4)	11/21/00	>2,020	ND	No					
SB-20 (4-8)	11/21/00	9.6	ND	No			ND	ND	ND
SB-21 (6-13')	11/21/00	12	ND	No	490	mal			
SB-22 (10-14')	11/21/00	4.7	ND	No			ND	ND	ND
SB-22 (18-20')	11/21/00	38	ND	No					
SB-23 (8-12')	11/22/00	9.2	ND	No	940	mal			
SB-23 (16-20')	11/22/00	21	ND	No					
SB-25 (8-12')	11/22/00	170	ND	No	750	mal			

Table 3
Summary of Field Screening and Analytical Results

Project Name: Barre Coal Tar
Project #: 00-C35
Date: 01/02/01
By: Jonathan Ashley

Sample ID	Date	PetroFlag Concentration (mg/kg)	PID Headspace Concentration (ppmv)	Visual Observation of Free Product	Field GC TPH Result by PID (mg/kg)	Field GC TPH Result by FID (mg/kg)	Laboratory TPH Result (mg/kg)	Total VOCs by Lab Analysis (mg/kg)	Total SVOCs by Lab Analysis (mg/kg)
Free Product Indicator		500	10	Yes	120	50	Not determined	Not determined	50
SB-25 (16-20')	11/22/00	4.8	ND	No					
SB-27 (20-22')	11/20/00	350	12	Yes	ND	93	66	0.33	58.7
SB-28 (12-16')	11/20/00	20	ND	No			ND	ND	ND
SB-29 (8-12')	11/21/00	180	53	No					
SB-30 (8-12')	11/21/00	11	ND	No	260	mal			
SB-31 (8-12')	11/21/00	8.8	ND	No	ND	mal			
WC-1 (4-8')	09/19/00	>10,990	12	No					
WC-1 (20-24')	09/19/00	8.1	1.8	No					
WC-2 (8-12')	09/19/00	300	377	Yes					
WC-3 (4-8')	09/18/00	>2,600	19	No					
WC-3 (8-12')	09/18/00	4,420	44	Yes	4,600	27,000			
WC-4 (4-8')	09/18/00	>2,740	18	Yes					
WC-7 -1 composite	09/20/00		N/A	Yes			6,800	5,641	1,365
Soil pile baseline	10/17/00			Yes			5,300	30.7	288
Soil pile (post-surfactant flush)	10/23/00			No			4,200	19.5	242
SED-1 (0-1')	09/19/00	610	6.8	No			158	2.8	70
SED-3 (0-1')	09/19/00	3,620	48	Yes			406	21	166
SED-3 (0-1')	09/19/00	>7,510	152	Yes	1,800	1,000	1,109	43	468
SED-4 (0-1')	11/22/00	64	ND	No	570	mal			
SED-5 (0-1')	11/22/00	160	ND	No	1,100	mal			
SED-6 (0-1')	11/22/00	54	ND	No	610	mal			
SED-7 (0-1')	11/21/00	25	ND	No	520	mal	ND	ND	2.1
SED-8 (0-1')	11/21/00	80	ND	No	ND	mal			

Notes

*PetroFLAG result estimated

ND = not detected

mal = instrument malfunction during FID analysis

trace = trace below method detection limit (mdl)

bold/italic result = free product indicator level exceeded

shaded result = two or more free product indicator levels exceeded

**Table 4
Laboratory Analytical Results**

Project Name: Barre Coal Tar
 Project #: 00-035
 Date: 12/01/00
 By: Jonathan Ashley

Compound	WC-1-4 composite 09/20/00	SED-1 09/19/00 0-1 ft	SED-2 09/19/00 0-1 ft	SED-3 09/19/00 0-1 ft	SB-4 09/18/00 8-12 ft	SB-12 Dup. 09/19/00 8-12 ft
Aluminum		8,000	13,000	6,900	6,800	6,900
Antimony		ND	ND	ND	ND	ND
Arsenic	19	ND	ND	ND	ND	ND
Barium		21	54	19	23	14
Beryllium		ND	ND	ND	ND	ND
Cadmium	ND	ND	ND	ND	ND	ND
Chromium	18	24	27	23	19	16
Cobalt		8.1	12	8.3	7.4	5.7
Copper		36	29	26	19	6.1
Iron		23,000	25,000	24,000	18,000	12,000
Lead	52	36	24	22	12	ND
Manganese		240	520	220	170	150
Mercury	0.13					
Nickel		29	33	22	21	17
Selenium		ND	ND	ND	ND	ND
Silver		ND	ND	ND	ND	ND
Thallium		ND	ND	ND	ND	ND
Vanadium		20	25	17	16	14
Zinc		63	76	67	52	26

Notes:

- 1) All results shown in mg/kg unless otherwise noted.
- 2) ND = not detected.

**Table 4
Laboratory Analytical Results**

Project Name: Barre Coal Tar
 Project #: 00-035
 Date: 12/05/00
 By: Jonathan Ashley

Compound	SB-2 09/18/00 8-12 ft	SB-3 09/18/00 8-12 ft	SB-12 09/19/00 8-12 ft	SB-14 11/20/00 20-24 ft	SB-15 11/20/00 8-12 ft	SB-15 (DUP) 11/20/00 8-12 ft	SB-20 11/21/00 4-8 ft	SB-22 11/21/00 10-14 ft	SB-27 11/20/00 20-22 ft	SB-28 11/20/00 12-16 ft	WC-1-4 composite 09/20/00 see Table 2	SED-7 11/21/00 0-1 ft
Total petroleum hydrocarbons (mg/kg)	1,800	170	2,900	ND	140	140	ND	ND	66	ND	6,600	ND
Visual Observation of Product	No	Yes	No	No	Yes	Yes	No	No	Yes	No	Yes	No

Notes:

1) ND = not detected.

**TABLE 5
BIOVENTING SYSTEM DATA
Bioremediation Treatability Test**

Project Name: Barre Coal Tar
Project #: 00-035
Date: 11/25/2000
By: Jonathan Ashley

Vacuum System

Run Time hours	Date	Vacuum ⁽¹⁾ ("H ₂ O)	abs. Pressure atm	temp deg F	abs. Temp. deg K	velocity fpm	flow ⁽¹⁾ scfm	flow acfm	notes
0.25	10/23/00	8.0	0.98	55	286	3 500	20	22	Surfactant flushing complete. 17.5% moisture, pH = 6.02. added nutrients and PAH consortium
44	10/25/00	5.2	0.99	40	277	2 850	17	17	Routine system check
498	11/13/00	3.0	0.99	32	275	1 400	8	8	19.7% moisture, added lime to raise pH, added nutrients
715	11/22/00	2.8	0.99	29	271	1 800	10	10	18.1% moisture, pH = 6.3, test ended

Pressure System

Run Time hours	Date	pressure ("H ₂ O)	abs. Pressure atm	velocity fpm	flow ⁽¹⁾ scfm	temp deg F	abs. Temp. deg K	PID ppmv	O ₂ conc. %	O ₂ press. psi	O ₂ flow rate lpm	O ₂ flow rate acfm	air flow rate acfm	cumulative O ₂ (ft ³)	notes
0.25	10/23/00	11.0	1.03	1,500	8.7	99	310			50	5.5	0.388	1.0	0.010	Oxygen injection initiated
44	10/25/00	10.0	1.02	1,300	7.6	85	303	0.1		50	5.0	0.353	8.4	1.5	Routine system check
498	11/13/00	8.0	1.02	1,300	7.6	96	310	0.0	20.9	50	5.0	0.353	9.6	14.9	One oxygen cylinder empty and replaced
715	11/22/00	8.2	1.02	1,200	7.0	67	293	0.0	20.9	0	0.00	0.000	7.5	18.6	Second oxygen cylinder empty, test ended

Notes:

1. Flow rate (scfm) = csa * fpm, where csa is for 1" sch 40 pipe.
2. Blank cell indicates that no reading was collected

s1:\project\0035\data\table 5\system monitoring.xls

Table 6
Bioremediation Treatability Test
Bacterial Counts

Project Name: Barre Coal Tar
Project #: 00-035
Date: 12/18/00
By: Jonathan Ashley

Compound	Pile Baseline 10/17/00 CFU/mL	Pile After 31 days 11/22/00 CFU/mL	% Change
Aerobic plate count	920,000	4,100,000	346%
Aanaerobic plate count	970,000	18,000,000	1756%

Notes:

1. CFU/mL = colony forming units per milliliter.

Table 7
Bioremediation Treatability Test
Analytical Results

Project Name: Barre Coal Tar
Project #: 00-035
Date: 12/01/00
By: Jonathan Ashley

Compound	Pile Baseline 10/17/00	Pile After Surfactant Flush 10/23/00	Pile After 22 days 11/13/00	Pile After 31 days 11/22/00	Control Pile Baseline 10/23/00	Control Pile After 22 days 11/13/00	Control Pile After 31 days 11/22/00
Carbon disulfide	ND	130	ND	ND	ND	ND	ND
Methylene chloride	5,500	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	200	ND	ND
Toluene	ND	95	ND	ND	520	ND	ND
Ethylbenzene	ND	210	ND	ND	180	ND	ND
m,p-Xylene	2,300	1,100	970	3,500	990	800	1,800
o-Xylene	2,100	1,300	920	4,100	1,000	900	2,100
Styrene	ND	ND	ND	ND	240	ND	600
Isopropylbenzene	ND	130	ND	ND	ND	ND	ND
n-Propylbenzene	ND	120	ND	760	76	ND	ND
1,3,5-Trimethylbenzene	4,000	2,800	1,900	6,000	2,500	2,000	5,000
1,2,4-Trimethylbenzene	7,100	5,100	2,600	11,000	3,200	2,600	7,300
sec-Butylbenzene	ND	100	ND	ND	ND	ND	ND
4-Isopropyltoluene	1,800	1,100	830	1,400	730	1,200	ND
Naphthalene	7,900	7,300	4,700	110,000	3,500	4,400	23,000
Total VOCs (mg/kg)	31	19	12	137	13	12	40
% reduction	0	37%	61%	-345%	0	9%	-203%

Notes:

1) All results shown in ug/kg unless otherwise noted.

**Table 7
Bioremediation Treatability Test
Analytical Results**

Project Name: Barre Coal Tar
Project #: 00-035
Date: 12/18/00
By: Jonathan Ashley

Compound	Pile Baseline 10/17/00	Pile After Surfactant Flush 10/23/00	Pile After 22 days 11/13/00	Pile After 31 days 11/22/00	Control Pile Baseline 10/23/00	Control Pile After 22 days 11/13/00	Control Pile After 31 days 11/22/00
Naphthalene	6,500	4,500	4,200	1,200	14,000	5,400	9,600
2-Methylnaphthalene	19,000	16,000	13,000	3,600	42,000	16,000	44,000
Acenaphthylene	17,000	13,000	13,000	13,000	63,000	20,000	77,000
Acenaphthene	12,000	8,200	5,200	5,900	14,000	6,400	22,000
Dibenzofuran	3,200	2,300	1,700	1,800	4,500	1,900	5,800
Fluorene	15,000	11,000	12,000	7,300	38,000	17,000	50,000
Phenanthrene	39,000	34,000	41,000	21,000	140,000	64,000	190,000
Anthracene	12,000	9,800	8,200	8,700	29,000	15,000	45,000
Carbazole	440	ND	ND	370	ND	530	ND
Fluoranthene	25,000	25,000	23,000	18,000	95,000	41,000	120,000
Pyrene	43,000	42,000	42,000	33,000	150,000	72,000	190,000
Benzo(a)anthracene	14,000	13,000	12,000	12,000	48,000	22,000	62,000
Chrysene	18,000	16,000	15,000	15,000	54,000	23,000	72,000
Benzo(b)fluoranthene	18,000	14,000	13,000	16,000	48,000	22,000	65,000
Benzo(k)fluoranthene	5,500	3,800	3,200	4,200	11,000	6,000	19,000
Benzo(a)pyrene	13,000	10,000	10,000	11,000	46,000	21,000	63,000
Dibenzo(a,h)anthracene	3,000	2,100	2,000	2,700	7,600	3,700	12,000
Indeno(1,2,3-cd)pyrene	11,000	8,400	8,100	10,000	30,000	15,000	46,000
Benzo(g,h,i)perylene	13,000	9,100	8,500	11,000	35,000	17,000	53,000
Total SVOCs (mg/kg)	288	242	235	196	869	389	1,145
% Reduction	0	16%	18%	32%	0	55%	-32%

Notes:

- 1) All results shown in ug/kg unless otherwise noted.
- 2) ND = not detected.

**Table 7
Bioremediation Treatability Test
Analytical Results**

Project Name: Barre Coal Tar
Project #: 00-035
Date: 12/18/00
By: Jonathan Ashley

Compound	Pile Baseline 10/17/00	Pile After Surfactant Flush 10/23/00	Pile After 22 days 11/13/00	Pile After 31 days 11/22/00	Control Pile Baseline 10/23/00	Control Pile After 22 days 11/13/00	Control Pile After 31 days 11/22/00
Total petroleum hydrocarbons (mg/kg)	5,300	4,200	3,600	3,500	4,800	5,300	6,000
% reduction	0	21%	32%	34%	0	-10%	-25%

Notes:

- 1) All results shown in ug/kg unless otherwise noted.
- 2) ND = not detected.

**Table 4
Laboratory Analytical Results**

Project Name: Barre Coal Tar
Project #: 00-035
Date: 12/05/00
By: Jonathan Ashley

Compound	SB-2 09/18/00 8-12 ft	SB-3 09/18/00 8-12 ft	SB-4 09/19/00 8-12 ft	SB-12 (AMRO) 09/19/00 8-12 ft	SB-12 Dup. (EPA) 09/19/00 8-12 ft	SB-14 11/20/00 20-24 ft	SB-15 11/20/00 8-12 ft	SB-15 (DUP) 11/20/00 8-12 ft	SB-20 11/21/00 4-8 ft	SB-22 11/21/00 10-14 ft	SB-27 11/20/00 20-22 ft	SB-28 11/20/00 12-16 ft	WC-1-4 composite 09/20/00	SED-1 09/19/00 0-1 ft	SED-2 09/19/00 0-1 ft	SED-3 09/19/00 0-1 ft	SED-7 11/21/00 0-1 ft
Carbon disulfide	500	ND	ND	580	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	380	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	ND	ND	1,100	ND	ND	ND	ND	ND	ND	ND	ND	34,000	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	270,000	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	8,200	13,000	ND	95	150	ND	ND	160	ND	ND	ND	ND	ND	ND
m,p-Xylene	ND	ND	ND	13,000	39,000 (total)	ND	100	150	ND	ND	ND	ND	280,000	ND	ND	ND	ND
o-Xylene	ND	ND	ND	8,500		ND	ND	93	ND	ND	ND	ND	510,000	ND	ND	ND	ND
Styrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	250,000	ND	ND	ND	ND
Isopropylbenzene	ND	ND	ND	4,900	ND	ND	74	120	ND	ND	ND	ND	140,000	ND	ND	ND	ND
n-Propylbenzene	ND	ND	ND	3,400	ND	ND	ND	78	ND	ND	ND	ND	23,000	ND	ND	ND	ND
1,3,5-Trimethylbenzene	ND	77	ND	22,000	250,000	ND	170	340	ND	ND	ND	ND	31,000	ND	ND	ND	ND
1,2,4-Trimethylbenzene	120	130	ND	62,000	100,000	ND	420	870	ND	ND	ND	ND	120,000	ND	7,100	14,000	ND
sec-Butylbenzene	180	ND	ND	910	ND	ND	ND	ND	ND	ND	ND	ND	360,000	890	4,500	7,300	ND
4-Isopropyltoluene	1,400	ND	ND	8,200	17,000	ND	95	190	ND	ND	ND	ND	4,500	ND	ND	ND	ND
n-Butylbenzene	ND	ND	ND	ND	20,000	ND	ND	ND	ND	ND	ND	ND	18,000	ND	2,800	3,900	ND
Naphthalene	820	530	ND	220,000	430,000	ND	5,600	13,000	ND	ND	170	ND	ND	ND	1,400	2,000	ND
Total VOCs (mg/kg)	3.0	0.7	ND	353	830	ND	6.6	15.0	ND	ND	0.33	ND	3,600,000	1,900	5,500	16,000	ND
Visual Observation of Product	No	Yes	No	No	No	No	Yes	Yes	No	No	Yes	No	5,641	2.8	21.3	43	ND
													Yes	No	Yes	Yes	No

Notes:

- 1) All results shown in ug/kg unless otherwise noted.
- 2) ND = not detected

Table 4
Laboratory Analytical Results

Project Name: Barre Coal Tar
Project #: 00-035
Date: 12/05/00
By: Jonathan Ashley

Compound	SB-2 09/18/00 8-12 ft	SB-3 09/18/00 8-12 ft	SB-4 09/19/00 8-12 ft	SB-12 (AMRO) 09/19/00 8-12 ft	SB-12 Dup. (EPA) 09/19/00 8-12 ft	SB-14 11/20/00 20-24 ft	SB-15 11/20/00 8-12 ft	SB-15 (DUP) 11/20/00 8-12 ft	SB-20 11/21/00 4-8 ft	SB-22 11/21/00 10-14 ft	SB-27 11/20/00 20-22 ft	SB-28 11/20/00 12-16 ft	WC-1-4 composite 09/20/00	SED-1 09/19/00 0-1 ft	SED-2 09/19/00 0-1 ft	SED-3 09/19/00 0-1 ft	SED-7 11/21/00 0-1 ft
Naphthalene	ND	2,400	270	150,000	280,000	ND	3,300	5,100	ND	ND	ND	ND	360,000	6,300	2,000	45,000	ND
2-Methylnaphthalene	ND	11,000		260,000		ND	3,600	5,100	ND	ND	ND	ND	250,000				ND
Acenaphthylene	590	2,200	270	14,000	37,000	ND	1,100	2,100	ND	ND	1,600	ND	61,000	530	5,600	48,000	ND
Acenaphthene	790	2,800	1,900	54,000	100,000	ND	4,800	6,000	ND	ND	390	ND	24,000	9,200	3,300	16,000	ND
Dibenzofuran	380	490		8,700		ND	390	530	ND	ND	390	ND	6,900				ND
Fluorene	1,000	3,100	1,400	33,000	82,000	ND	2,900	3,600	ND	ND	2,500	ND	45,000	6,000	4,900	50,000	ND
Phenanthrene	2,400	11,000	5,700	90,000	230,000	ND	13,000	18,000	ND	ND	18,000	ND	160,000	25,000	81,000	110,000	920
Anthracene	550	3,700	960	27,000	62,000	ND	3,400	4,200	ND	ND	4,700	ND	40,000	5,500	3,900	35,000	ND
Fluoranthene	430	4,700	680	24,000	60,000	ND	4,400	9,300	ND	ND	6,800	ND	64,000	5,900	13,000	35,000	550
Pyrene	930	10,000	1,600	51,000	100,000	ND	7,700	16,000	ND	ND	10,000	ND	95,000	6,800	20,000	65,000	670
Benzo(a)anthracene	ND	2,600	790	14,000	29,000	ND	2,300	5,700	ND	ND	3,500	ND	36,000	720	6,400	15,000	ND
Chrysene	ND	2,800	940	13,000	26,000	ND	2,100	4,800	ND	ND	2,900	ND	39,000	940	5,600	12,000	ND
Benzo(b)fluoranthene	ND	2,100	1,300	7,600	18,000	ND	1,300	3,000	ND	ND	2,000	ND	27,000	960	5,600	10,000	ND
Benzo(k)fluoranthene	ND	780	440	2,900	4,500	ND	460	970	ND	ND	730	ND	91,000	330	1,900	2,800	ND
Benzo(a)pyrene	ND	2,100	900	9,500	21,000	ND	1,800	4,300	ND	ND	2,700	ND	27,000	700	5,900	12,000	ND
Dibenzo(a,h)anthracene	ND	320	200	ND	2,400	ND	ND	520	ND	ND	300	ND	4,000	130	710	1,500	ND
Indeno(1,2,3-cd)pyrene	ND	1,600	680	5,000	8,600	ND	700	1,700	ND	ND	1,100	ND	17,000	530	3,200	5,400	ND
Benzo(g,h,i)perylene	ND	1,700	630	5,700	9,000	ND	660	1,700	ND	ND	1,100	ND	18,000	570	3,300	5,600	ND
Total SVOCs (mg/kg)	7.1	65.4	18.7	769	1,070	ND	53.9	92.6	ND	ND	58.7	ND	1,365	70	166	468	2.1
Visual Observation of Product	No	Yes	No	No	No	No	Yes	Yes	No	No	Yes	No	Yes	No	Yes	Yes	No

Notes:

- 1) All results shown in ug/kg unless otherwise noted
- 2) ND = not detected

APPENDIX A

MEETING AGENDA
EVALUATION AND SELECTION OF REMEDIAL OPTIONS
Barre Coal Tar Site, Barre, VT, SMS #77-0206, TSEC Project #00-035
For September 7, 2000
Page 1 of 2

MEETING OPENING (8:30 to 8:45am)

(Presented by TSEC)

- Begin meeting minutes
- Attendance

SITE HISTORY (8:45 to 9:00am)

(Presented by SMS)

- Former coal gasification plant from late 1800s to 1953
- Various chemical wastes produced, including coal tar
- Change in use to liquid propane distribution facility (now closed)
- Current adjacent properties include Rouleau Granite and Pepin Granite, which operate settling lagoons
- Preliminary investigations
- Groundwater and product recovery system operated from 1987 to present
- Nutrient addition and venting system installed and operated from 1987 to 1988
- Current groundwater and product recovery system is only partly successful in the isolation and containment of sheens occurring on the Stevens Branch

CURRENT CONTRACT -- SCOPE OF WORK (9:00 to 10:00am)

(Presented by TSEC)

- Detailed work scope review
- Project meeting
- Evaluation of remedial alternatives
 - Subsurface investigation and soil testing
 - Pilot test of excavated soils for on-site treatment (if applicable)
- Summary report for evaluation of remedial alternatives
 - Sequence and distribution of deliverables
- Detailed evaluation of costs
 - Includes draft schedule for implementation
- Coordination with remedy implementation contractor and public involvement
 - Assist with preparation of RFP
 - CAP preparation assistance
 - Public meeting with Barre City officials
 - Public meeting with interested citizens
 - Preparation of project web page
- Emergency work
 - Unexpected site visits
 - Additional meetings
 - Additional reports
 - Other unexpected tasks

MEETING AGENDA
EVALUATION AND SELECTION OF REMEDIAL OPTIONS
Barre Coal Tar Site, Barre, VT, SMS #77-0206, TSEC Project #00-035
September 7, 2000
Page 2 of 2

BREAK (10:00 to 10:15am)

PROPOSED PROJECT APPROACH (10:15 to 12:00noon)
(Presented by TSEC)

- Soil borings and sampling work plan
 - Sampling locations
 - Soil field screening methods and laboratory analyses
 - Waste characterization analyses
- Decision tree

LUNCH BREAK (12:00 to 1:00pm)

EVALUATION OF REMEDIAL ALTERNATIVES (1:00 to 3:00pm)
(Presented by TSEC and SMS)

- Brief review of previous remedial alternatives
- Pros and cons of on-site and off-site alternatives
- Potential off-site receiving facilities/options
 - TSEC list of facilities and criteria for acceptance
 - SMS and EPA additions to list
- Potential on-site treatment alternatives
 - Soil pile bioventing
 - Soil pile surfactant flushing and bioremediation

PROPOSED PROJECT SCHEDULE (3:00 to 3:30pm)
(Presented by TSEC)

- Proposed timeline for completion
- Effects of project on overall schedule for remedy implementation



Client: Twin State Environmental
Address: 414 Roosevelt Highway
Colchester, VT 05446

Sample Receipt Date: October 24, 2000
Report Date: November 7, 2000
Analyst: slf

Plate Count Results

Client Sample ID	ASI Sample ID	Aerobic Plate Count ¹ (CFU/mL)	Anaerobic Plate Count ² (CFU/mL)
Pile 2	2000-1024-013	9.2×10^5	9.7×10^5

CFU = Colony Forming Unit ND = None Detected NA = Not Applicable

Methods:

¹ Sample was analyzed according to Method 9215 C*, and was incubated aerobically.

² Sample was analyzed according to Method 9215 C*, and was incubated anaerobically.

*Standard Methods for the Examination of Water and Wastewater. APHA, AWWA, WEF. 20th Ed. 1998.



MONITORING WELL/SOIL BORING LOG

414 Roosevelt Highway Colchester, Vermont 05446
(802) 654-8663 FAX: (802) 654-8667

Project Name: **Barre Coal Tar**
Location: **Barre, Vermont**
TSEC Project #: **00-035**

WELL/
BORING ID:
SB-1

INSTALL DATE: September 18, 2000	WELL DEPTH: 12 feet	BORING DEPTH: 12 feet
TSEC REP: Cris Altman	DEPTH TO WATER: (during drilling) 8 feet	
DRILLING CO: Twin State Environmental	SCREEN DIA: N/A	DEPTH: N/A
DRILLING METHOD: Geoprobe	SCREEN TYPE/SIZE: N/A	
SAMPLING METHOD: See below	RISER TYPE: N/A	
REFERENCE POINT (RP):	RISER DIA.: N/A	DEPTH: N/A
ELEVATION OF RP:	GUARD TYPE: N/A	
REMARKS:	RISER CAP: N/A	

Soil boring was backfilled with bentonite to one foot above the water table, followed by cuttings and sand to match grade.

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND	
0	N	0-4	0.0	2.5 FT RECOVERY	0.0-1.0: SILTY SAND, brown, loose, dry, no odor	CEMENT GROUT	
1	O					NATIVE BACKFILL	
2			0.0		1.0-2.5: CLINDERS and fill, lt. tan to black, granular, v. loose, dry, no odor	BENTONITE SEAL	
3	W					SAND PACK	
4	E					WELL SCREEN	
5	L	4-8	27.1	2.1 ft recovery	0.0-2.1: CLINKERS, dk. Brown to black, loose, moist from bottom 12", odor SAMPLE COLLECTED FOR PETROFLAG ANALYSIS	RISER PIPE	
6	L					HEAD SPACE	
7						WATER LEVEL (APPROXIMATE)	
8	I	8-12	108.1	1.4 ft recovery	0.0-1.4: CLINKERS, black, loose, saturated, strong odor SAMPLE COLLECTED FOR PETROFLAG ANALYSIS		
9	N						
10	S						
11	T						
12	A						
13	L						
14	L						
15	E						
16	D						
17							
18							
19							
20							
21							
22							
23							
24							
25							
GRANULAR SOILS BLOWS/FT DENSITY 0-4 V.LOOSE 4-10 LOOSE 10-30 M.DENSE 30-50 DENSE >50 V.DENSE		COHESIVE SOILS BLOWS/FT DENSITY <2 V.SOFT 2-4 SOFT 4-8 M.STIFF 8-15 STIFF 15-30 V.STIFF >30 HARD		PROPORTIONS USED TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50%		NOTES: 1. See Figure 2, SITE Plan, for boring locations 2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.	

 TWIN STATE ENVIRONMENTAL 414 Roosevelt Highway Colchester, Vermont 05446 (802) 654-8663 FAX: (802) 654-8667	MONITORING WELL/SOIL BORING LOG	
	Project Name: Barre Coal Tar Location: Barre, Vermont TSEC Project #: 00-035	WELL/ BORING ID: SB-2
INSTALL DATE: September 18, 2000	WELL DEPTH: 12 feet	BORING DEPTH: 12 feet
TSEC REP: Cris Altman	DEPTH TO WATER: (during drilling) 9 feet	
DRILLING CO: Twin State Environmental	SCREEN DIA: N/A	DEPTH: N/A
DRILLING METHOD: Geoprobe	SCREEN TYPE/SIZE: N/A	
SAMPLING METHOD: See below	RISER TYPE: N/A	
REFERENCE POINT (RP):	RISER DIA.: N/A	DEPTH: N/A
ELEVATION OF RP:	GUARD TYPE: N/A	
REMARKS:	RISER CAP: N/A	
Soil boring was backfilled with bentonite to one foot above the water table, followed by cuttings and sand to match grade.		

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND
0	N	0-4	0.0	1.8 ft recovery	0.0-1.0: SANDY LOAM, brown, loose, dry, no odor	 CEMENT GROUT
1	O					 NATIVE BACKFILL
2			0.0		1.0-1.8: FILL, concrete chips, loose, dry, no odor	 BENTONITE SEAL
3	W					 SAND PACK
4	E					 WELL SCREEN
5	L	4-8	0.0	1.7 ft recovery	0.0-1.7: SAND, fine to medium, brown, loose, dry, no odor SAMPLE COLLECTED FOR PETROFLAG AND FIELD GC ANALYSIS	 RISER PIPE
6	L					 HS HEAD SPACE
7						 WATER LEVEL (APPROXIMATE)
8	J	8-12	6.8	2.0 ft recovery	0.0-0.3: SAND, brown, loose, moist, faint odor	
9	N					
10	S		40.0		0.3-2.0: SAND, medium, black, saturated, odor SAMPLE COLLECTED FOR PETROFLAG AND AMRO ANALYSIS	
11	T					
12	A					
13	L					
14	L					
15	E					
16	D					
17						
18						
19						
20						
21						
22						
23						
24						
25						
GRANULAR SOILS BLOWS/FT DENSITY 0-4 V.LOOSE 4-10 LOOSE 10-30 M.DENSE 30-50 DENSE >50 V.DENSE		COHESIVE SOILS BLOWS/FT DENSITY <2 V.SOFT 2-4 SOFT 4-8 M.STIFF 8-15 STIFF 15-30 V.STIFF >30 HARD		PROPORTIONS USED TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50%	NOTES: 1. See Figure 2, SITE Plan, for boring locations 2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.	



414 Roosevelt Highway Colchester, Vermont 05446
(802) 654-8663 FAX: (802) 654-8667

MONITORING WELL/SOIL BORING LOG

Project Name: **Barre Coal Tar**
Location: **Barre, Vermont**
TSEC Project #: **00-035**

WELL/
BORING ID:
SB-3

INSTALL DATE:	September 18, 2000	WELL DEPTH:	BORING DEPTH:
TSEC REP:	Cris Altman	DEPTH TO WATER: (during drilling)	7 feet
DRILLING CO:	Twin State Environmental	SCREEN DIA:	N/A
		DEPTH:	N/A
DRILLING METHOD:	Geoprobe	SCREEN TYPE/SIZE:	N/A
SAMPLING METHOD:	See below	RISER TYPE:	N/A
REFERENCE POINT (RP):		RISER DIA.:	N/A
		DEPTH:	N/A
ELEVATION OF RP:		GUARD TYPE:	N/A
		RISER CAP:	N/A

REMARKS: Soil boring was backfilled with bentonite to one foot above the water table, followed by cuttings and sand to match grade.

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND
0	N	0-4	0.0	2.3 ft recovery	0.0-2.3: FILL (granite chips, coarse gravel, coarse sand, grey to black) dry, loose, no odor	CEMENT GROUT
1	O					
2						
3	W	4-8	0.0	0.9 ft recovery	0.0-1.3: FILL (granite chips, coarse gravel, coarse sand, grey to brown) wet, loose, no odor	NATIVE BACKFILL
4	E					
5	L					BENTONITE SEAL
6	L	8-12	136.0	0.9 ft recovery	0.0-0.9: FILL (granite chips, coarse gravel, coarse sand, grey to brown) saturated, loose, odor, free product SAMPLE COLLECTED FOR AMRO ANALYSIS	SAND PACK
7						
8	I					WELL SCREEN
9	N					
10	S					RISER PIPE
11	T					
12	A					
13	L					HEAD SPACE
14	L					
15	E					
16	D					WATER LEVEL (APPROXIMATE)
17						
18						
19						
20						
21						
22						
23						
24						
25						

GRANULAR SOILS BLOWS/FT DENSITY 0-4 V.LOOSE 4-10 LOOSE 10-30 M.DENSE 30-50 DENSE >50 V.DENSE	COHESIVE SOILS BLOWS/FT DENSITY <2 V.SOFT 2-4 SOFT 4-8 M.STIFF 8-15 STIFF 15-30 V STIFF >30 HARD	PROPORTIONS USED TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50%	NOTES: 1. See Figure 2, SITE Plan, for boring locations 2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.
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 414 Roosevelt Highway Colchester, Vermont 05446 (802) 654-8663 FAX: (802) 654-8667	MONITORING WELL/SOIL BORING LOG	
	Project Name: Barre Coal Tar Location: Barre, Vermont TSEC Project #: 00-035	WELL/ BORING ID: SB-4
INSTALL DATE: September 18, 2000	WELL DEPTH:	BORING DEPTH: 16 feet
TSEC REP: Cris Altman	DEPTH TO WATER: (during drilling)	8 feet
DRILLING CO: Twin State Environmental	SCREEN DIA: N/A	DEPTH: N/A
DRILLING METHOD: Geoprobe	SCREEN TYPE/SIZE: N/A	
SAMPLING METHOD: See below	RISER TYPE: N/A	
REFERENCE POINT (RP):	RISER DIA: N/A	DEPTH: N/A
ELEVATION OF RP:	GUARD TYPE: N/A	
REMARKS:	RISER CAP: N/A	
Soil boring was backfilled with bentonite to one foot above the water table, followed by cuttings and sand to match grade.		

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/8" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND	
0	N	0-4	0.0	1.8 ft recovery	0.0-0.9: LOAM, sandy, brown, loose, no odor	 CEMENT GROUT	
1	O					 NATIVE BACKFILL	
2	W		0.0		0.9-1.6: CLINKERS, black, loose, dry, no odor	 BENTONITE SEAL	
3	E		0.0		1.6-1.8: SANDY SILT, brown, loose, wet, no odor	 SAND PACK	
4	L		0.0			 WELL SCREEN	
5	L		0.0			 RISER PIPE	
6		4-8	0.0	2.5 ft recovery	0.0-1.3: SAND, coarse, brown to grey, loose, dry	 HS HEAD SPACE	
7			0.0			 WATER LEVEL (APPROXIMATE)	
8	I		25.0		1.3-2.5: SAND, firm, brown with orange traces, firm, moist, no odor SAMPLE COLLECTED FOR PETROFLAG AND FIELD GC ANALYSIS		
9	N		38.1	2.3 ft recovery	0.0-2.3: SAND, medium, black, some gravel, medium, s. firm, saturated, odor SAMPLE COLLECTED FOR EPA LAB ANALYSIS		
10	S	8-12	206	2.1 ft recovery	0.0-2.1: SAND, black, some coarse gravel, s. firm, saturated, odor, free product. SAMPLE COLLECTED FOR PETROFLAG ANALYSIS		
11	T						
12	A						
13	L						
14	L						
15	E	12-16					
16	D						
17							
18							
19							
20							
21							
22							
23							
24							
25							
GRANULAR SOILS BLOWS/FT DENSITY 0-4 V.LOOSE 4-10 LOOSE 10-30 M.DENSE 30-50 DENSE >50 V.DENSE		COHESIVE SOILS BLOWS/FT DENSITY <2 V.SOFT 2-4 SOFT 4-8 M.STIFF 8-15 STIFF 15-30 V.STIFF >30 HARD		PROPORTIONS USED TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50%		NOTES: 1. See Figure 2, SITE Plan, for boring locations 2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.	



414 Roosevelt Highway Colchester, Vermont 05446
(802) 654-8663 FAX: (802) 654-8667

MONITORING WELL/SOIL BORING LOG

Project Name: **Barre Coal Tar**
Location: **Barre, Vermont**
TSEC Project #: **00-035**

WELL/
BORING ID:
SB-5

INSTALL DATE:	September 18, 2000	WELL DEPTH:	BORING DEPTH:
TSEC REP:	Cris Altman	DEPTH TO WATER: (during drilling)	8 feet
DRILLING CO:	Twin State Environmental	SCREEN DIA:	N/A
DRILLING METHOD:	Geoprobe	SCREEN TYPE/SIZE:	N/A
SAMPLING METHOD:	See below	RISER TYPE:	N/A
REFERENCE POINT (RP):		RISER DIA.:	N/A
ELEVATION OF RP:		DEPTH:	N/A
		GUARD TYPE:	N/A
		RISER CAP:	N/A

REMARKS: Soil boring was backfilled with bentonite to one foot above the water table, followed by cuttings and sand to match grade.

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND
0	N	0-4	0.0	2.6 ft recovery	0.0-1.2: LOAM, sandy, brown, trace gravel, lense, dry	CEMENT GROUT
1	O					NATIVE BACKFILL
2			0.0		1.2-2.3: CLINKERS, black, some sand, coarse, brown, trace silt, loose, dry	BENTONITE SEAL
3	W		0.0		2.3-2.6: SILTY SAND, brown, firm, dry	SAND PACK
4	E					WELL SCREEN
5	L					RISER PIPE
6	L					HS HEAD SPACE
7		4-8	12.3	3.0 ft recovery	0.0-2.0: SILTY SAND, brown, firm, dry, no odor SAMPLE COLLECTED FOR PETROFLAG ANALYSIS	WATER LEVEL (APPROXIMATE)
8	I					
9	N	8-12	48.3	2.9 ft recovery	0.0-2.9: SAND, black, coarse, some fine gravel, loose, saturated, free product. SAMPLE COLLECTED FOR PETROFLAG AND FIELD GC ANALYSIS	
10	S					
11	T	12-16	265	2.3 ft recovery	0.0-2.3: SAND, coarse, black, some coarse gravel, trace silt, firm, saturated, odor, free product.	
12	A					
13	L	16-20	206	4.0 ft recovery	0.0-2.1: SAND, coarse, trace silt, loose, saturated, odor, free product.	
14	L					
15	E		240		2.1-4.0: GRAVEL, v. coarse, some fine silt, trace coarse sand, loose, saturated, strong odor, free product.	
16	D	20-24		0.0 ft. recovery	2" gravel lodged in macrocore - no recovery.	
17						
18						
19						
20						
21						
22						
23						
24						
25						

GRANULAR SOILS BLOWS/FT DENSITY 0-4 V.LOOSE 4-10 LOOSE 10-30 M.DENSE 30-50 DENSE >50 V.DENSE		COHESIVE SOILS BLOWS/FT DENSITY <2 V.SOFT 2-4 SOFT 4-8 M.STIFF 8-15 STIFF 15-30 V.STIFF >30 HARD		PROPORTIONS USED TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50%		NOTES: 1. See Figure 2, SITE Plan, for boring locations 2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.
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414 Roosevelt Highway Colchester, Vermont 05446
(802) 654-8663 FAX: (802) 654-8667

MONITORING WELL/SOIL BORING LOG

Project Name: **Barre Coal Tar**
Location: **Barre, Vermont**
TSEC Project #: **00-035**

WELL/
BORING ID:
SB-6

INSTALL DATE:	September 18, 2000	WELL DEPTH:	BORING DEPTH:	6 feet
TSEC REP:	Cris Altman	DEPTH TO WATER: (during drilling)	unknown	
DRILLING CO:	Twin State Environmental	SCREEN DIA:	N/A	DEPTH: N/A
		SCREEN TYPE/SIZE:	N/A	
DRILLING METHOD:	Geoprobe	RISER TYPE:	N/A	
SAMPLING METHOD:	See below	RISER DIA:	N/A	DEPTH: N/A
REFERENCE POINT (RP):		GUARD TYPE:	N/A	
ELEVATION OF RP:		RISER CAP:	N/A	
REMARKS:	Soil boring was backfilled with bentonite to one foot above the water table, followed by cuttings and sand to match grade.			

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND	
0	N	0-4	0.0	2.8 ft recovery	0.0-2.8: SANDY SILT, brown, 3-1" clinker layers at 1.2, 1.7, and 2.2 ft, loose, dry, no odor SAMPLE COLLECTED FOR PETROFLAG AND FIELD GC ANALYSIS	CEMENT GROUT	
1	O					NATIVE BACKFILL	
2						BENTONITE SEAL	
3	W	4-8	40.0	1.8 ft recovery	0.0-1.8: SILT, grey, firm, moist, odor, refusal at 6.3 ft. bgs. SAMPLE COLLECTED FOR PETROFLAG AND FIELD GC ANALYSIS	SAND PACK	
4	E					WELL SCREEN	
5	L					RISER PIPE	
6	L					HS HEAD SPACE	
7						WATER LEVEL (APPROXIMATE)	
8	I						
9	N						
10	S						
11	T						
12	A						
13	L						
14	L						
15	E						
16	D						
17							
18							
19							
20							
21							
22							
23							
24							
25							
GRANULAR SOILS BLOWS/FT DENSITY 0-4 V.LOOSE 4-10 LOOSE 10-30 M.DENSE 30-50 DENSE >50 V.DENSE		COHESIVE SOILS BLOWS/FT DENSITY <2 V.SOFT 2-4 SOFT 4-8 M.STIFF 8-15 STIFF 15-30 V.STIFF >30 HARD		PROPORTIONS USED TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50%		NOTES: 1. See Figure 2, SITE Plan, for boring locations 2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.	



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MONITORING WELL/SOIL BORING LOG

Project Name: **Barre Coal Tar**
Location: **Barre, Vermont**
TSEC Project #: **00-035**

WELL/
BORING ID:
SB-7

INSTALL DATE:	September 19, 2000	WELL DEPTH:	BORING DEPTH:	12 feet
TSEC REP:	Cris Altman	DEPTH TO WATER: (during drilling)	10 feet	
DRILLING CO:	Twin State Environmental	SCREEN DIA:	N/A	
		SCREEN TYPE/SIZE:	N/A	
DRILLING METHOD:	Geoprobe	RISER TYPE:	N/A	
SAMPLING METHOD:	See below	RISER DIA:	N/A	DEPTH: N/A
REFERENCE POINT (RP):		GUARD TYPE:	N/A	
ELEVATION OF RP:		RISER CAP:	N/A	

REMARKS: Soil boring was backfilled with bentonite to one foot above the water table, followed by cuttings and sand to match grade.

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND
0	N	0-4	0.0	2.0 ft. recovery	0.0-0.9: SANDY LOAM, brown, loose, dry, no odor	CEMENT GROUT
1	O					
2						
3	W		0.0		0.9-1.5: CLINKERS, black, some woody organics, brown, loose, dry, no odor	NATIVE BACKFILL
4	E		0.0		1.5-2.0: GRANITE CHIPS, grey, loose, dry, no odor	BENTONITE SEAL
5	L					
6	L					
7		4-8	0.0	2.9 ft. recovery	0.0-1.1: FILL, consisting of granite chips and clinkers, grey to black, loose, dry	SAND PACK
8	I					
9	N		7.8		1.1-2.9: SILT, fine, brown, 1" clinker layer at 2.0', black, firm, dry, odor	WELL SCREEN
10	S				SAMPLE COLLECTED FOR PETROFLAG ANALYSIS	RISER PIPE
11	T					
12	A	8-12	19.1	1.9 ft. recovery	0.0-0.9: SANDY SILT, dk brown, firm, moist, odor	HS HEAD SPACE
13	L					
14	L		29.1		0.9-1.9: SILT, grey to brown, s. loose. Saturated, odor	WATER LEVEL (APPROXIMATE)
15	E				SAMPLE COLLECTED FOR PERTOFLAG AND FIELD GC ANALYSIS	
16	D					
17						
18						
19						
20						
21						
22						
23						
24						
25						

GRANULAR SOILS		COHESIVE SOILS		PROPORTIONS USED	NOTES
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY	TRACE 0-10%	
0-4	V. LOOSE	<2	V. SOFT	LITTLE 10-20%	
4-10	LOOSE	2-4	SOFT	SOME 20-35%	
10-30	M. DENSE	4-8	M. STIFF	AND 35-50%	
30-50	DENSE	8-15	STIFF		
>50	V. DENSE	15-30	V. STIFF		
		>30	HARD		

1. See Figure 2, SITE Plan, for boring locations
2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.

 414 Roosevelt Highway Colchester, Vermont 05446 (802) 654-8663 FAX: (802) 654-8667	MONITORING WELL/SOIL BORING LOG	
	Project Name: Barre Coal Tar Location: Barre, Vermont TSEC Project #: 00-035	WELL/ BORING ID: SB-8
INSTALL DATE: September 19, 2000	WELL DEPTH: _____	BORING DEPTH: 4 feet
TSEC REP: Cris Altman	DEPTH TO WATER: (during drilling) 1 foot	
DRILLING CO: Twin State Environmental	SCREEN DIA: N/A	DEPTH: N/A
	SCREEN TYPE/SIZE: N/A	
DRILLING METHOD: Geoprobe hand tools	RISER TYPE: N/A	
SAMPLING METHOD: See below	RISER DIA.: N/A	DEPTH: N/A
REFERENCE POINT (RP): _____	GUARD TYPE: N/A	
ELEVATION OF RP: _____	RISER CAP: N/A	
REMARKS: Soil boring was backfilled with bentonite to one foot above the water table, followed by cuttings and sand to match grade.		

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND	
0	N	0-4	2.9	2.2 ft recovery	0.0-1.0: SILT, brown, s. firm, wet, odor	 CEMENT GROUT	
1	O					 NATIVE BACKFILL	
2			3.1		1.0-1.2: SILT, d brown, some coarse gravel, firm, wet, odor		
3	W				SAMPLE COLLECTED FOR PETROFLAG ANALYSIS AND FIELD GC ANALYSIS		
4	E		40.8		1.2-2.2: GRAVEL, medium, black, saturated, strong odor	 BENTONITE SEAL	
5	L				SAMPLE COLLECTED FOR PETROFLAG ANALYSIS		
6	L				Refusal at 4.2 feet (hand tools)	 SAND PACK	
7						 WELL SCREEN	
8	I						
9	N					 RISER PIPE	
10	S						
11	T						
12	A					HS HEAD SPACE	
13	L						
14	L					 WATER LEVEL (APPROXIMATE)	
15	E						
16	D						
17							
18							
19							
20							
21							
22							
23							
24							
25							
GRANULAR SOILS BLOWS/FT DENSITY 0-4 V.LOOSE 4-10 LOOSE 10-30 M.DENSE 30-50 DENSE >50 V.DENSE		COHESIVE SOILS BLOWS/FT DENSITY <2 V.SOFT 2-4 SOFT 4-8 M.STIFF 8-15 STIFF 15-30 V.STIFF >30 HARD		PROPORTIONS USED TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50%		NOTES: 1. See Figure 2, SITE Plan, for boring locations 2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.	



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MONITORING WELL/SOIL BORING LOG

Project Name: **Barre Coal Tar**
Location: **Barre, Vermont**
TSEC Project #: **00-035**

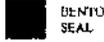
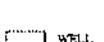
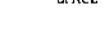
WELL/
BORING ID:
SB-9

INSTALL DATE:	September 19, 2000	WELL DEPTH:	BORING DEPTH:	4 feet
TSEC REP:	Cris Altman	DEPTH TO WATER: (during drilling)	unknown	
DRILLING CO:	Twin State Environmental	SCREEN DIA:	N/A	DEPTH: N/A
DRILLING METHOD:	Geoprobe	SCREEN TYPE/SIZE:	N/A	
SAMPLING METHOD:	See below	RISER TYPE:	N/A	
REFERENCE POINT (RP):		RISER DIA.:	N/A	DEPTH: N/A
ELEVATION OF RP:		GUARD TYPE:	N/A	
REMARKS:	Soil boring was backfilled with bentonite to one foot above the water table, followed by cuttings and sand to match grade.			

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND
0	N	0-4	3.5	2.0 ft recovery	0.0-2.0: SILT, lt brown, some granite chips and coarse gravel, grey, loose, dry, odor	
1	O				SAMPLE COLLECTED FOR PETROFLAG ANALYSIS	
2						
3	W					
4	E				Numerous refusals at 3.9 ft. (hand tools)	
5	L					
6	L					
7						
8	I					
9	N					
10	S					
11	T					
12	A					
13	L					
14	L					
15	E					
16	D					
17						
18						
19						
20						
21						
22						
23						
24						
25						

GRANULAR SOILS BLOWS/FT DENSITY 0-4 V.LOOSE 4-10 LOOSE 10-30 M.DENSE 30-50 DENSE >50 V.DENSE	COHESIVE SOILS BLOWS/FT DENSITY <2 V.SOFT 2-4 SOFT 4-8 M.STIFF 8-15 STIFF 15-30 V.STIFF >30 HARD	PROPORTIONS USED TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50%	NOTES: 1. See Figure 2, SITE Plan, for boring locations 2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.
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 414 Roosevelt Highway Colchester, Vermont 05446 (802) 654-8663 FAX: (802) 654-8667	MONITORING WELL/SOIL BORING LOG	
	Project Name: Barre Coal Tar Location: Barre, Vermont TSEC Project #: 00-035	WELL/ BORING ID: SB-10
INSTALL DATE: September 19, 2000	WELL DEPTH: 16 feet	BORING DEPTH: 16 feet
TSEC REP: Cris Altman	DEPTH TO WATER: (during drilling) 12 feet	
DRILLING CO: Twin State Environmental	SCREEN DIA: N/A	DEPTH: N/A
	SCREEN TYPE/SIZE: N/A	
DRILLING METHOD: Geoprobe	RISER TYPE: N/A	
SAMPLING METHOD: See below	RISER DIA: N/A	DEPTH: N/A
REFERENCE POINT (RP):	GUARD TYPE: N/A	
ELEVATION OF RP:	RISER CAP: N/A	
REMARKS: Soil boring was backfilled with bentonite to one foot above the water table, followed by cuttings and sand to match grade.		

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND	
0	N	0-4	0.0	1.7 ft recovery	0.0-1.9: SANDY LOAM, brown, some fine gravel, grey, loose, dry, no odor	 CEMENT GROUT	
1	O					 NATIVE BACKFILL	
2						 BENTONITE SEAL	
3	W	4-8	0.0	1.6 ft recovery	0.0-1.6: SAND, fine to coarse, some granite chips, few coarse gravel, grey, v. loose, dry, no odor	 SAND PACK	
4	E					 WELL SCREEN	
5	L					 RISER PIPE	
6	L	8-12	0.0	2.6 ft recovery	0.0-0.6: SAND, fine to coarse, grey to brown with mottling, some fine gravel, trace coarse gravel, v loose, dry, no odor	 HS HEAD SPACE	
7						 WATER LEVEL (APPROXIMATE)	
8	I		0.0		0.6-0.8: SILT, d brown, trace fine sand, v firm, dry, no odor		
9	N		0.0		0.9-2.4: FILL, coarse sand to fine gravel, grey, loose, dry, no odor		
10	S		0.0				
11	T		0.0		2.4-2.6: CLAY, lt tan, some coarse granite gravel, firm, wet, no odor		
12	A		0.0		SAMPLE COLLECTED FOR PETROFLAG ANALYSIS		
13	L						
14	L						
15	E	12-16	2.1	1.7 ft recovery	0.0-0.8: SAND, fine to coarse, tan, some granite chips, grey, loose, dry, no odor		
16	D						
17			73.1		0.8-1.7: SILT, fine, d grey to black, wet, odor		
18					SAMPLE COLLECTED FOR PETROFLAG ANALYSIS		
19							
20							
21							
22							
23							
24							
25							
GRANULAR SOILS BLOWS/FT DENSITY 0-4 V.LOOSE 4-10 LOOSE 10-30 M.DENSE 30-50 DENSE >50 V.DENSE		COHESIVE SOILS BLOWS/FT DENSITY <2 V.SOFT 2-4 SOFT 4-8 M.STIFF 8-15 STIFF 15-30 V.STIFF >30 HARD		PROPORTIONS USED TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50%		NOTES: <ol style="list-style-type: none"> See Figure 2, SITE Plan, for boring locations PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used. 	



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MONITORING WELL/SOIL BORING LOG

Project Name: **Barre Coal Tar**
Location: **Barre, Vermont**
TSEC Project #: **00-035**

WELL/
BORING ID:
SB-11

INSTALL DATE:	September 19, 2000	WELL DEPTH:	BORING DEPTH:	20 feet
TSEC REP:	Cris Altman	DEPTH TO WATER: (during drilling)	8 feet	
DRILLING CO:	Twin State Environmental	SCREEN DIA:	N/A	DEPTH: N/A
DRILLING METHOD:	Geoprobe	SCREEN TYPE/SIZE:	N/A	
SAMPLING METHOD:	See below	RISER TYPE:	N/A	
REFERENCE POINT (RP):		RISER DIA:	N/A	DEPTH: N/A
ELEVATION OF RP:		GUARD TYPE:	N/A	
REMARKS:	Soil boring was backfilled with bentonite to one foot above the water table, followed by cuttings and sand to match grade.			

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND
0	N	0-4	0.0	2.1 ft recovery	0.0-0.7: SILTY SAND, brown, some coarse gravel, grey, loose, dry, no odor	CEMENT GROUT
1	O					NATIVE BACKFILL
2	W		0.0		0.7-1.9: FILL, granite chips, some sand, coarse, grey to black, loose, dry, no odor	BENTONITE SEAL
3	E		0.0		1.9-2.1: FILL, brick fragments, red, loose, dry, no odor	SAND PACK
4	L		0.0		0.0-0.7: SAND, fine to coarse, brown, some fine granite gravel, grey, loose, dry, no odor	WELL SCREEN
5	L		0.0		0.7-1.2: FILL, granite fragments, grey, loose, dry, no odor	RISER PIPE
6	L		0.0		1.2-1.5: SILT, brown, firm, wet, no odor	HS HEAD SPACE
7	L	4-8	0.0	1.5 ft recovery	SAMPLE COLLECTED FOR PETROFLAG ANALYSIS	WATER LEVEL (APPROXIMATE)
8	I		0.0		Geoprobe pushed a cobble to 12" bgs, free product on casing	
9	N		0.0		0.0-0.8: SILT, brown, trace coarse gravel, loose, wet, no odor	
10	S		0.0		0.8-2.1: GRAVEL, coarse, some silt, trace coarse sand, d. grey to brown, loose, wet, no odor	
11	T		0.0		SAMPLE COLLECTED FOR PETROFLAG ANALYSIS	
12	A	8-12		0.0 ft recovery	0.0-0.6: SILT, brown, trace med gravel, v loose, wet, no odor	
13	L		3.8	2.2 ft recovery	0.6-2.2: Gravel, coarse, some sand, coarse, loose, wet, no odor	
14	L		2.6			
15	E	12-16		2.2 ft recovery		
16	D		3.1			
17			2.1			
18						
19						
20						
21						
22		16-20		2.2 ft recovery		
23						
24						
25						

GRANULAR SOILS		COHESIVE SOILS		PROPORTIONS USED		NOTES:
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY	TRACE	0-10%	
0-4	V.LOOSE	<2	V.SOFT	LITTLE	10-20%	1. See Figure 2, SITE Plan, for boring locations 2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.
4-10	LOOSE	2-4	SOFT	SOME	20-35%	
10-30	M.DENSE	4-8	M.STIFF	AND	35-50%	
30-50	DENSE	8-15	STIFF			
>50	V.DENSE	15-30	V.STIFF			
		>30	HARD			

 414 Roosevelt Highway Colchester, Vermont 05446 (802) 654-8663 FAX: (802) 654-8667		MONITORING WELL/SOIL BORING LOG	
		Project Name: Barre Coal Tar Location: Barre, Vermont TSEC Project #: 00-035	WELL/ BORING ID: SB-12
INSTALL DATE:	September 19, 2000	WELL DEPTH:	BORING DEPTH: 12 feet
TSEC REP:	Cris Altman	DEPTH TO WATER: (during drilling)	8 feet
DRILLING CO:	Twin State Environmental	SCREEN DIA: N/A	DEPTH: N/A
		SCREEN TYPE/SIZE:	N/A
DRILLING METHOD:	Geoprobe	RISER TYPE:	N/A
SAMPLING METHOD:	See below	RISER DIA: N/A	DEPTH: N/A
REFERENCE POINT (RP):		GUARD TYPE:	N/A
ELEVATION OF RP:		RISER CAP:	N/A
REMARKS:	Soil boring was backfilled with bentonite to one foot above the water table, followed by cuttings and sand to match grade.		

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND	
0	N	0-4	0.0	2.2 ft recovery	0.0-2.2: SILTY LOAM AND FILL, brown, some granite chips, trace coarse gravel, firm, dry, no odor	 CEMENT GROUT	
1	O					 NATIVE BACKFILL	
2						 BENTONITE SEAL	
3	W					 SAND PACK	
4	E	4-8	0.0	2.6 ft recovery	0.0-2.0: SILT, brown, some medium gravel, little cobbles, firm, dry, no odor 2.0-2.6: Same as above, odor	 WELL SCREEN	
5	L		18.9			 RISER PIPE	
6	L					 HEAD SPACE	
7						 WATER LEVEL (APPROXIMATE)	
8	I						
9	N	8-12	383	2.8 ft recovery	0.0-2.8: SAND, coarse, some gravel, loose, wet, strong odor SAMPLE COLLECTED FOR AMRO AND EPA LAB ANALYSIS (DUPLICATE)		
10	S						
11	T						
12	A						
13	L						
14	L						
15	E						
16	D						
17							
18							
19							
20							
21							
22							
23							
24							
25							
GRANULAR SOILS BLOWS/FT DENSITY 0-4 V.LOOSE 4-10 LOOSE 10-30 M.DENSE 30-50 DENSE >50 V.DENSE		COHESIVE SOILS BLOWS/FT DENSITY <2 V.SOFT 2-4 SOFT 4-8 M.STIFF 8-15 STIFF 15-30 V.STIFF >30 HARD		PROPORTIONS USED TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50%		NOTES: 1. See Figure 2, SITE Plan, for boring locations 2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.	

TWIN STATE ENVIRONMENTAL

414 Roosevelt Highway Colchester, Vermont 05446
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MONITORING WELL/SOIL BORING LOG

Project Name: **Barre Coal Tar**

Location: **Barre, Vermont**

TSEC Project #: **00-035**

WELL/
BORING ID:
SB-13

INSTALL DATE:	September 19, 2000	WELL DEPTH:	BORING DEPTH:	8.7 feet
TSEC REP:	Cris Altman	DEPTH TO WATER: (during drilling)	6 feet	
DRILLING CO:	Twin State Environmental	SCREEN DIA:	N/A	DEPTH: N/A
DRILLING METHOD:	Geoprobe	SCREEN TYPE/SIZE:	N/A	
SAMPLING METHOD:	See below	RISER TYPE:	N/A	
REFERENCE POINT (RP):		RISER DIA.:	N/A	DEPTH: N/A
ELEVATION OF RP:		GUARD TYPE:	N/A	
REMARKS:	Soil boring was backfilled with bentonite to one foot above the water table, followed by cuttings and sand to match grade.			

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND
0	N	0-4	0.0	2.3 ft recovery	0.0-2.3: FILL (very coarse sand to coarse gravel, grey to brown, trace yellow to tan clay @ 2.3 ft) loose, dry, no odor	CEMENT GROUT
1	O					NATIVE BACKFILL
2						BENTONITE SEAL
3	W					SAND PACK
4	E	4-8	0.0	2.1 ft recovery	0.0-2.1: CLAY AND COARSE GRAVEL, some coarse gravel, little cobbles, light tan, wet, very loose, no odor SAMPLE COLLECTED FOR PETROFLAG ANALYSIS	WELL SCREEN
5	L					RISER PIPE
6	L					HS HEAD SPACE
7						WATER LEVEL (APPROXIMATE)
8	I					
9	N	8-12	0.0	0.7 ft recovery	0.0-0.7: SAND, coarse, some medium to coarse gravel, little cobbles, loose, wet, no odor	
10	S					
11	T					
12	A					
13	L					
14	L					
15	E					
16	D					
17						
18						
19						
20						
21						
22						
23						
24						
25						

GRANULAR SOILS		COHESIVE SOILS		PROPORTIONS USED		NOTES:
BLOWS/FT	DENSITY	BLOWS/FT	DENSITY	TRACE	0-10%	
0-4	V.LOOSE	<2	V.SOFT	LITTLE	10-20%	1. See Figure 2, SITE Plan, for boring locations 2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.
4-10	LOOSE	2-4	SOFT	SOME	20-35%	
10-30	M.DENSE	4-8	M.STIFF	AND	35-50%	
30-50	DENSE	8-15	STIFF			
>50	V.DENSE	15-30	V.STIFF			
		>30	HARD			

 414 Roosevelt Highway Colchester, Vermont 05446 (802) 654-8663 FAX: (802) 654-8667	MONITORING WELL/SOIL BORING LOG	
	Project Name: Barre Coal Tar Location: Barre, Vermont TSEC Project #: 00-035	WELL/ BORING ID: WC-1
INSTALL DATE: September 18, 2000	WELL DEPTH: 24 feet	BORING DEPTH: 24 feet
TSEC REP: Cris Altman	DEPTH TO WATER: (during drilling) 8 feet	
DRILLING CO: Twin State Environmental	SCREEN DIA: N/A	DEPTH: N/A
	SCREEN TYPE/SIZE: N/A	
DRILLING METHOD: Geoprobe	RISER TYPE: N/A	
SAMPLING METHOD: See below	RISER DIA: N/A	DEPTH: N/A
REFERENCE POINT (RP):	GUARD TYPE: N/A	
ELEVATION OF RP:	RISER CAP: N/A	
REMARKS: Soil boring was backfilled with bentonite to one foot above the water table, followed by cuttings and sand to match grade.		

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND	
0	N	0-4	0.0	0.7 ft recovery	0.0-0.7: FILL, granite and concrete, grey, loose, dry	 CEMENT GROUT	
1	O						
2		4-8	0.0	1.6 ft recovery	0.0-0.5: FILL, granite and concrete, some silty sand, d brown to grey, loose, dry, no odor	 NATIVE BACKFILL	
3	W						
4	E		11.8		0.5-1.6: SILT, brown, firm, moist, odor	 BENTONITE SEAL	
5	L				SAMPLE COLLECTED FOR PETROFLAG ANALYSIS		
6	L	8-12	146	3.3 ft recovery	0.0-3.3: SILT, d brown to black, some coarse gravel, few granite chips, grey, v firm, wet, odor, free product	 SAND PACK	
7							
8	I	12-16	21.0	3.0 ft recovery	0.0-0.7: SILT, brown, some coarse gravel, firm, moist, odor	 WELL SCREEN	
9	N						
10	S		34.0		0.7-2.2: SAND, v coarse, d grey, some coarse gravel, s firm, wet, odor, free product	 RISER PIPE	
11	T						
12	A		23.9		2.2-3.0: SILT, grey, some woody organics, brown, few coarse gravel, s firm, wet, odor	HS HEAD SPACE	
13	L						
14	L	16-20	13.9	3.8 ft recovery	0.0-1.2: GRAVEL, medium, some silt, d brown, loose, wet, odor	 WATER LEVEL (APPROXIMATE)	
15	E						
16	D		10.0		1.2-2.5: Gravel, coarse, loose, wet, odor		
17							
18			7.6		2.5-3.8: SILT, grey, firm, wet, odor		
19							
20		20-24	1.8	3.8 ft recovery	0.0-1.4: GRAVEL, coarse, trace coarse sand, grey, loose, wet		
21							
22			0.0		1.4-3.8: SILT, grey, firm, wet, no odor		
23					SAMPLE COLLECTED FOR PETROFLAG ANALYSIS		
24							
GRANULAR SOILS BLOWS/FT DENSITY 0-4 V.LOOSE 4-10 LOOSE 10-30 M.DENSE 30-50 DENSE >50 V.DENSE		COHESIVE SOILS BLOWS/FT DENSITY <2 V.SOFT 2-4 SOFT 4-8 M.STIFF 8-15 STIFF 15-30 V.STIFF >30 HARD		PROPORTIONS USED TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50%		NOTES: 1. See Figure 2, SITE Plan, for boring locations 2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.	



414 Roosevelt Highway Colchester, Vermont 05446
(802) 654-8663 FAX: (802) 654-8667

MONITORING WELL/SOIL BORING LOG

Project Name: **Barre Coal Tar**
Location: **Barre, Vermont**
TSEC Project #: **00-035**

WELL/
BORING ID:
WC-2

INSTALL DATE:	September 18, 2000	WELL DEPTH:	BORING DEPTH:	12 feet
TSEC REP:	Cris Altman	DEPTH TO WATER: (during drilling)	7 feet	
DRILLING CO:	Twin State Environmental	SCREEN DIA:	N/A	DEPTH: N/A
DRILLING METHOD:	Geoprobe	SCREEN TYPE/SIZE:	N/A	
SAMPLING METHOD:	See below	RISER TYPE:	N/A	
REFERENCE POINT (RP):		RISER DIA.:	N/A	DEPTH: N/A
ELEVATION OF RP:		GUARD TYPE:	N/A	
REMARKS:	Soil boring was backfilled with bentonite to one foot above the water table, followed by cuttings and sand to match grade.			

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND	
0	N	0-4	6.9	1.3 ft recovery	0.0-1.3: SILTY LOAM, brown, some coarse gravel, trace granite chips, firm, dry	CEMENT GROUT	
1	O					NATIVE BACKFILL	
2						BENTONITE SEAL	
3	W	4-8	926	2.7 ft recovery	0.0-2.78: SILT, grey to brown, some coarse gravel, firm, wet, odor, free product	SAND PACK	
4	E					WELL SCREEN	
5	L					RISER PIPE	
6	L	8-12	377	3.2 ft recovery	SILT, grey, some coarse gravel, firm, wet, odor, free product SAMPLE COLLECTED FOR PETROFLAG ANALYSIS	HS HEAD SPACE	
7						WATER LEVEL (APPROXIMATE)	
8	I						
9	N						
10	S						
11	T						
12	A						
13	L						
14	L						
15	E						
16	D						
17							
18							
19							
20							
21							
22							
23							
24							
25							
GRANULAR SOILS BLOWS/FT DENSITY 0-4 V.LOOSE 4-10 LOOSE 10-30 M.DENSE 30-50 DENSE >50 V DENSE		COHESIVE SOILS BLOWS/FT DENSITY <2 V.SOFT 2-4 SOFT 4-8 M.STIFF 8-15 STIFF 15-30 V.STIFF >30 HARD		PROPORTIONS USED TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50%	NOTES: 1. See Figure 2, SITE Plan, for boring locations 2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.		

 TWIN STATE ENVIRONMENTAL 414 Roosevelt Highway Colchester, Vermont 05446 (802) 654-8663 FAX: (802) 654-8667	MONITORING WELL/SOIL BORING LOG	
	Project Name: Barre Coal Tar Location: Barre, Vermont TSEC Project #: 00-035	WELL/ BORING ID: WC-3
INSTALL DATE: September 18, 2000	WELL DEPTH: 12 feet	BORING DEPTH: 12 feet
TSEC REP: Cris Altman	DEPTH TO WATER: (during drilling) 7 feet	
DRILLING CO: Twin State Environmental	SCREEN DIA: N/A	DEPTH: N/A
	SCREEN TYPE/SIZE: N/A	
DRILLING METHOD: Geoprobe	RISER TYPE: N/A	
SAMPLING METHOD: See below	RISER DIA: N/A	DEPTH: N/A
REFERENCE POINT (RP):	GUARD TYPE: N/A	
ELEVATION OF RP:	RISER CAP: N/A	
REMARKS: Soil boring was backfilled with bentonite to one foot above the water table, followed by cuttings and sand to match grade.		

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND	
0	N	0-4	0.0	1.8 ft recovery	0.0-0.4: SANDY LOAM, brown, loose, dry, no odor	 CEMENT GROUT	
1	O					 NATIVE BACKFILL	
2			0.0		0.4-1.2: FILL, concrete chips and clinkers, loose, dry, no odor		
3	W					 BENTONITE SEAL	
4	E		4.8		1.2-1.6: SAND, d. brown, loose, moist, no odor		
5	L					 SAND PACK	
6	L					 WELL SCREEN	
7		4-8	12.3	1.6 ft recovery	0.0-0.4: SAND, fine to medium, brown, loose, moist, odor	 RISER PIPE	
8	I					 HS HEAD SPACE	
9	N		18.9		0.4-1.6: GRAVEL, coarse, black, loose, wet, odor SAMPLE COLLECTED FOR PETROFLAG ANALYSIS		
10	S					 WATER LEVEL (APPROXIMATE)	
11	T						
12	A	8-12	43.6	2.1 ft recovery	0.0-2.1: GRAVEL, coarse, black, saturated, strong odor, free product SAMPLE COLLECTED FOR PETROFLAG AND FIELD GC ANALYSIS		
13	L						
14	L						
15	E						
16	D						
17							
18							
19							
20							
21							
22							
23							
24							
25							
GRANULAR SOILS BLOWS/FT DENSITY 0-4 V.LOOSE 4-10 LOOSE 10-30 M.DENSE 30-50 DENSE >50 V.DENSE		COHESIVE SOILS BLOWS/FT DENSITY <2 V.SOFT 2-4 SOFT 4-8 M.STIFF 8-15 STIFF 15-30 V.STIFF >30 HARD		PROPORTIONS USED TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50%		NOTES: <ol style="list-style-type: none"> See Figure 2, SITE Plan, for boring locations PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used. 	



414 Roosevelt Highway Colchester, Vermont 05446
(802) 654-8663 FAX: (802) 654-8667

MONITORING WELL/SOIL BORING LOG

Project Name: **Barre Coal Tar**
 Location: **Barre, Vermont**
 TSEC Project #: **00-035**

WELL/
BORING ID:
WC-4

INSTALL DATE:	September 18, 2000	WELL DEPTH:	BORING DEPTH:	12 feet
TSEC REP:	Cris Altman	DEPTH TO WATER: (during drilling)	8 feet	
DRILLING CO:	Twin State Environmental	SCREEN DIA:	N/A	DEPTH: N/A
DRILLING METHOD:	Geoprobe	SCREEN TYPE/SIZE:	N/A	
SAMPLING METHOD:	See below	RISER TYPE:	N/A	
REFERENCE POINT (RP):		RISER DIA.:	N/A	DEPTH: N/A
ELEVATION OF RP:		GUARD TYPE:	N/A	
		RISER CAP:	N/A	

REMARKS: Soil boring was backfilled with bentonite to one foot above the water table, followed by cuttings and sand to match grade.

DEPTH IN FEET	WELL PROFILE	SAMPLE DEPTH (FT)	PID (PPMV)	BLOWS/6" AND RECOVERY	SOIL DESCRIPTION AND NOTES	LEGEND
0	N	0-4	0.0	0.9 FT RECOVERY	0.0-0.9: SILTY LOAM, d. brown, loose, dry, no odor	CEMENT GROUT
1	O					NATIVE BACKFILL
2						BENTONITE SEAL
3	W	4-8	18.3	1.3 ft recovery	0.0-1.3: CLINKERS, black, loose, saturated, odor, free product SAMPLE COLLECTED FOR PETROFLAG ANALYSIS	SAND PACK
4	E					WELL SCREEN
5	L					RISER PIPE
6	L	8-12		0 ft recovery	Refusal at 8.3 ft bgs	HS HEAD SPACE
7						WATER LEVEL (APPROXIMATE)
8	I					
9	N					
10	S					
11	T					
12	A					
13	L					
14	L					
15	E					
16	D					
17						
18						
19						
20						
21						
22						
23						
24						
25						

GRANULAR SOILS BLOWS/FT DENSITY 0-4 V.LOOSE 4-10 LOOSE 10-30 M.DENSE 30-50 DENSE >50 V.DENSE	COHESIVE SOILS BLOWS/FT DENSITY <2 V.SOFT 2-4 SOFT 4-8 M.STIFF 8-15 STIFF 15-30 V.STIFF >30 HARD	PROPORTIONS USED TRACE 0-10% LITTLE 10-20% SOME 20-35% AND 35-50%	NOTES: 1. See Figure 2, SITE Plan, for boring locations 2. PID readings were obtained using a Thermo Environmental Instruments Model 580 B PID equipped with a 10.6eV lamp. Conventional headspace techniques were used.
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Barre Coal Tar
November 20-22, 2000
Field Observations

DRAFT

Well ID	Total Depth/ft	Top Sample Interval	Bottom Sample Interval	PID	Notes
SB - 14	24	Sand, fine to medium, some fine gravel, from 4 to 8 feet	Gravel, fine to medium, some coarse sand, from 20 to 24 feet	NONE	No Confining Layer
SB - 15	12	Silty sand, brown to gray, firm, from 4 to 8 feet	Sandy silt, gray, some orange staining, from 8 to 12 feet	8-12ft, 25.0	Free Product at 12ft
SB - 27	24	Granite fill 15 inches, orange clay, fine sandy silt, from 4 to 8 feet	Firm gray, sandy silt, clay at 23 feet, from 20 to 24 feet	20-22ft, 12.2	Free Product at 13ft Free Product at 22ft
SB - 17	8	Sandy silt, gray, trace fine gravel, from 4 to 8 feet	Sandy silt, gray, trace fine gravel, from 4 to 8 feet	4-8ft, 65.2	Stopped upon discovery of contamination
SB - 18	16	Silty sand, brown to gray, from 4 to 8 feet	Clay, gray, firm, from 12 to 16 feet	NONE	
SB - 28	16	Gray silty sand from 4 to 8 feet	Clay at 15 feet, from 12-16 feet	NONE	
SB - 19	22	Firm gray sandy silt from 4 to 8 feet	Coarse sand, coarse gravel, lan @ 20 feet, from 18-22feet	12-14ft, 235	Free Product from 10 to 20ft
SB - 20	16	Sand, fine, trace of granite chips, from 0 to 4 feet	Silty clay, brown to gray, very firm, 12 to 16 feet	NONE	
SB - 21	18	Sandy silt, brown to gray, firm, from 6 to 10 feet	Silt, gray, firm from 14-18 feet	NONE	
SB - 22	20	Sandy silt, brown to gray, fine, trace of granite, from 6 to 10 feet	Silt, gray, firm from 18 to 20 feet	NONE	Pushed a rock 14 to 18ft, advanced boring 18 to 20 ft
SB - 23	20	Fill, gray to brown, from 4 to 8 feet	Gravel, fine to coarse, clay at 19feet, from 16 to 20 feet	NONE	Trace Odor
SB - 25	20	Sandy silt, brown, trace of fine gravel from 4 to 8 feet	Clay, firm, gray, from 16 to 20 feet	NONE	
SB - 29	18	Silty sand, dark brown, firm, from 4 to 8 feet	Gravel, fine to coarse, some medium, sand, from 14 to 18 feet	4-8ft, 5.2 12-14ft, 6.7 8-12ft, 53.1 14-18ft, 5.1	Staining from 4 to 18 feet. No free product observed
SB - 30	24	Sand, fine, brown, firm, from 4 to 8 feet	Clay at 22 feet, gray, very firm, from 20 to 24 feet	NONE	
SB - 31	20	Sand, fine, brown, trace medium gravel, from 4 to 8 feet	Clay at 18 feet, gray, firm, from 16 to 20 feet	NONE	

Note: NONE = No detections using PID

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TWIN STATE ENVIRONMENTAL CORPORATION

APPENDIX C

Calculation of Field Screening Levels Indicating Product

Project Name: Barre Coal Tar
 Project #: 00-035
 Date: 12/15/00
 By: Jonathan Ashley

Sample ID	Date	PetroFlag Concentration (mg/kg)	PID Headspace Concentration (ppmv)	Visual Observation of Free Product	Field GC TPH Result by PID (mg/kg)	Field GC TPH Result by FID (mg/kg)	Laboratory TPH Result (mg/kg)	Total VOCs by Lab Analysis (mg/kg)	Total SVOCs by Lab Analysis (mg/kg)
SB-3 (8-12')	09/18/00		136	Yes			170	0.7	65.4
SB-15 (8-12')	11/20/00	>1,840	25	Yes	180	100	140	10.8	73.3
SB-27 (20-22')	11/20/00	360	12	Yes	0	93	66	0.33	58.7
WC-1-4 composite	09/20/00			Yes			6 600	5,641	1,365
Soil pile baseline	10/17/00			Yes			5 300	30.7	288
SED-2 (0-1')	09/19/00	3,620	48	Yes			406	21	166
SED-3 (0-1')	09/19/00	>7,510	152	Yes	1,800	1,000	1,109	43	468
average		>3,333	75		660	398	1,970	821	355
standard dev.		3,087	65		991	522	2,767	2,125	470
minimum		360	12		0	93	66	0.3	59

GEOMETRIC MEAN CALCULATIONS

SVOC	FLAG	PID	GCPID	GCFID	labTPH	labVOC
189	2059.999941	49.5	569	210	589	16.9

RATIO CALCULATIONS

	FLAG:SVOC	PID:SVOC	GCPID:SVOC	GCFID:SVOC	labTPH:SVOC	labVOC:SVOC
mean	9.39	0.210	1.86	1.12	5.55	2.31
geometric mean	10.9	0.262	3.01	1.11	3.12	0.09
minimum	6.13	0.204	0.00	1.58	1.12	0.01
avg. ratio	10.15	0.24	2.44	1.12	4.34	1.20
r value (lin. Regres.)	0.83	0.93	0.92	1.00	0.80	

Based on the above analysis and ratios, it appears that the minimum SVOC concentration where coal tar product is visibly present is approximately 50 mg/kg. Therefore, using the ratios calculated a minimum concentration for each field screening method can be calculated to identify the presence of potentially mobile coal tar product. The following calculations show the field screening levels that will be used to define whether free product is present if no SVOC analysis is performed. Due to the potential for 'false positives', assume that two or more of the following parameters must be exceeded to indicate the presence of free coal tar product.

assuming SVOC level indicating product =	50 mg/kg
PetroFLAG minimum level =	507 mg/kg
PID minimum level =	12 ppmv
GCPID minimum level =	122 mg/kg
GCFID minimum level =	55.8 mg/kg
labTPH minimum level =	217 mg/kg
lab VOC minimum level =	60.1 mg/kg

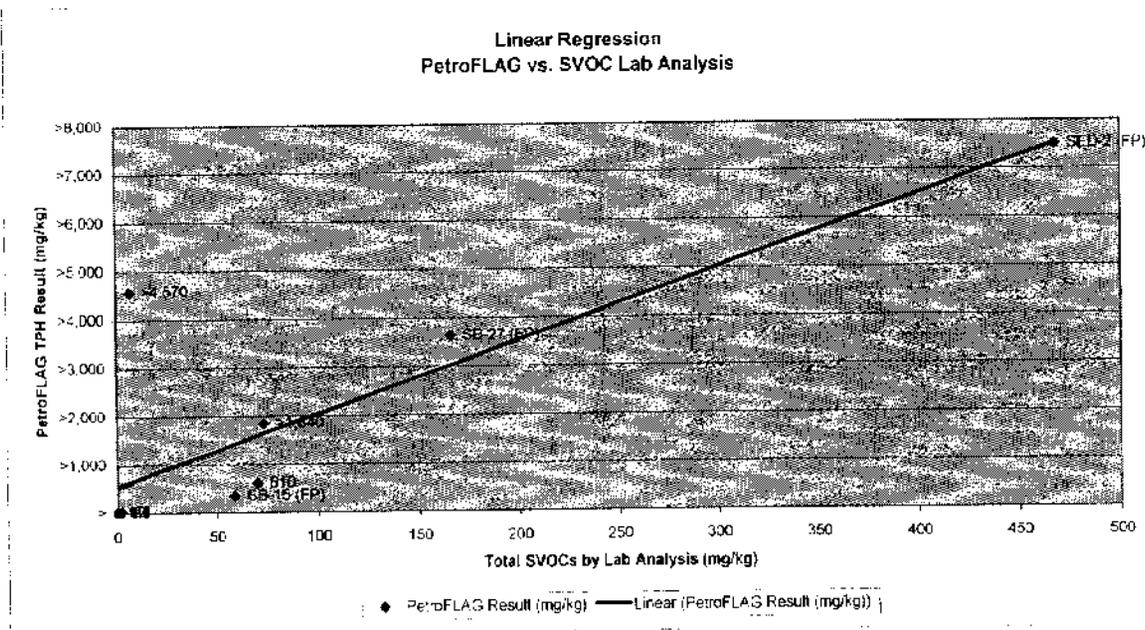
Linear Regression Analysis

Project Name: Barre Coal Tar
 Project #: 00-035
 Date: 12/15/00
 By: Jonathan Ashley

Sample ID	Date	y PetroFlag Concentration (mg/kg)	y ²	x Total SVOCs by Lab Analysis (mg/kg)	x ²	xy
SB-2 (8-12')	09/18/00	>4,570	>20,884,900	7.1	50.41	32,447.00
SB-14 (20-24')	11/20/00	12	144	0	0.00	0.00
SB-20 (4-8')	11/21/00	9.6	92.2	0	0.00	0.00
SB-22 (10-14')	11/21/00	4.7	22.1	0	0.00	0.00
SB-28 (12-16')	11/20/00	20	400	0	0.00	0.00
SED-1 (0-1')	09/19/00	610	372,100	70	4,900.00	42,700.00
SED-7 (0-1')	11/21/00	25	625	2.1	4.41	52.50
SB-15 (8-12')	11/20/00	>1,840	>3,385,600	73.3	5,365.56	134,780.00
SB-27 (20-22')	11/20/00	360	129,600	58.7	3,445.69	21,132.00
SED-2 (0-1')	09/19/00	3,620	13,104,400	166	27,556.00	600,920.00
SED-3 (0-1')	09/19/00	>7,510	>56,400,100	468	219,024.00	3,514,680.00

sum(x_i) 845.15
 sum(x_i²) 260,346.07
 (sum(x_i))² 714,278.5225
 avg(x) 76.83181818
 sum(x_iy_i) 4,346,711.50
 sum(y_i) >18,581
 sum(y_i²) >94,277,983
 (sum(y_i))² 345,264,709.69
 avg(y) 1689.209091
 n 11

r =	0.83
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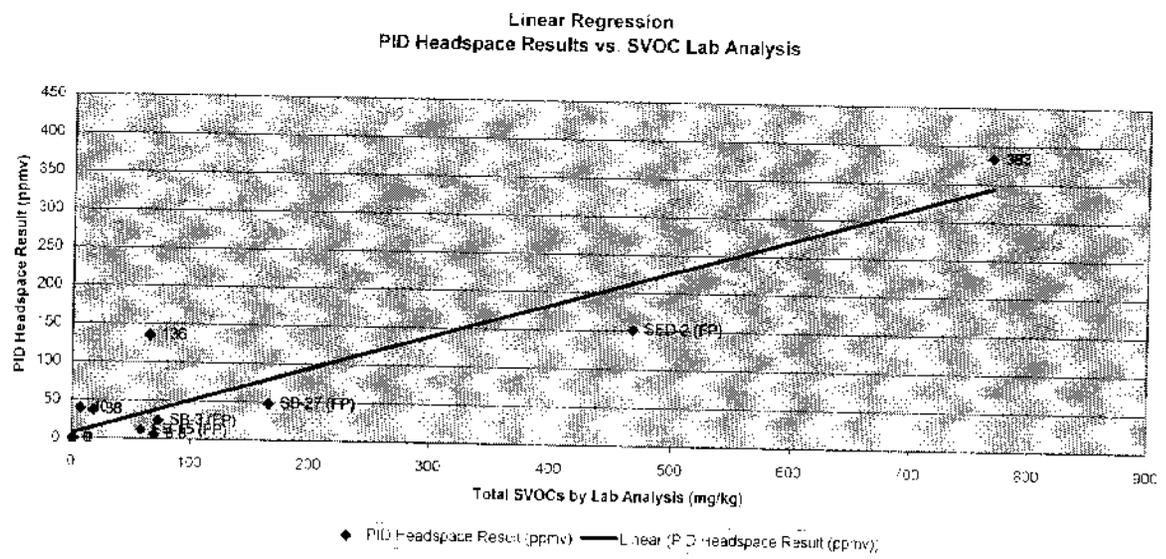
Linear Regression Analysis

Project Name: Barre Coal Tar
 Project #: 00-035
 Date: 12/15/00
 By: Jonathan Ashley

Sample ID	Date	y PID Headspace Concentration (ppmv)	y ²	x Total SVOCs by Lab Analysis (mg/kg)	x ²	xy
SB-2 (8-12')	09/18/00	40	>1,600	7.1	50.41	284.00
SB-4 (8-12')	09/18/00	38	1444	18.7	349.69	710.60
SB-12 (8-12')	09/18/00	383	146,589.0	769	591,361.00	294,527.00
SB-14 (20-24')	11/20/00	0	0.0	0	0.00	0.00
SB-20 (4-8')	11/21/00	0	0	0	0.00	0.00
SB-22 (10-14')	11/21/00	0	0	0	0.00	0.00
SB-28 (12-16')	11/20/00	0	0	0	0.00	0.00
SED-1 (0-1')	09/19/00	6.8	46.24	70	4,900.00	476.00
SED-7 (0-1')	11/21/00	0	0	2.1	4.41	0.00
SB-3 (8-12')	09/18/00	156	>18,496	65.4	4,277.16	8,894.40
SB-15 (8-12')	11/20/00	25	>625	73.3	5,365.56	1,831.25
SB-27 (20-22')	11/20/00	12	>144	58.7	3,445.69	704.40
SED-2 (0-1')	09/19/00	48	>2,304	166	27,556.00	7,968.00
SED-3 (0-1')	09/19/00	152	>23,104	468	219,024.00	71,136.00

sum(x) 1698.25
 sum(x²) 356,334
 (sum(x))² 2884053
 avg(x) 121.3
 sum(xy) 386,531.7
 sum(y) >84
 sum(y²) >194,452
 (sum(y))² 706944.6
 avg(y) 60.1
 r 14

r = 0.93



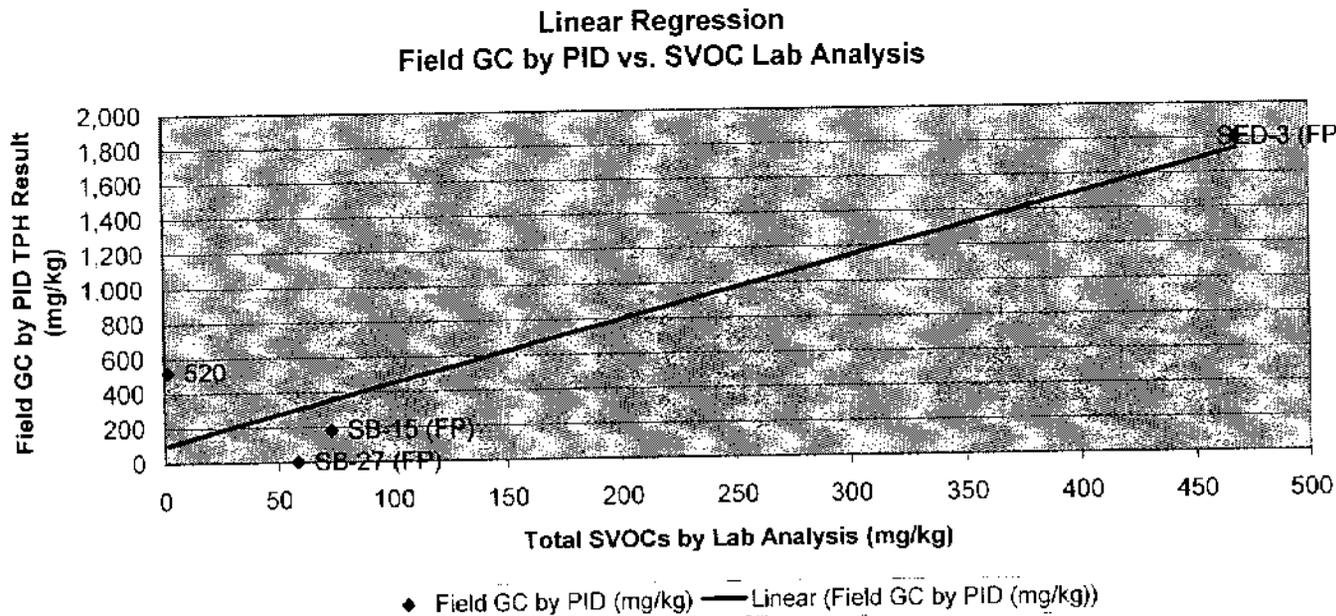
Linear Regression Analysis

Project Name: Barre Coal Tar
 Project #: 00-035
 Date: 12/15/00
 By: Jonathan Ashley

Sample ID	Date	Field GC TPH Result by PID (mg/kg)	y ²	Total SVOCs by Lab Analysis (mg/kg)	x ²	xy
SED-7 (0-1')	11/21/00	520	>270,400	2.1	4.41	1,092.00
SB-15 (8-12')	11/20/00	180	32400	73.3	5,365.56	13,185.00
SB-27 (20-22')	11/20/00	0	0.0	58.7	3,445.69	0.00
SED-3 (0-1')	09/19/00	1,800	3,240,000.0	468	219,024.00	842,400.00

sum(x _i)	602.05
sum(x _i ²)	227,839.66
(sum(x)) ²	362464.203
avg(x _i)	150.5125
sum(x _i y _i)	856,677.00
sum(y _i)	>2,500
sum(y _i ²)	>3,542,800
(sum(y _i)) ²	6250000.0
avg(y _i)	625
n	4

r	0.92
---	------



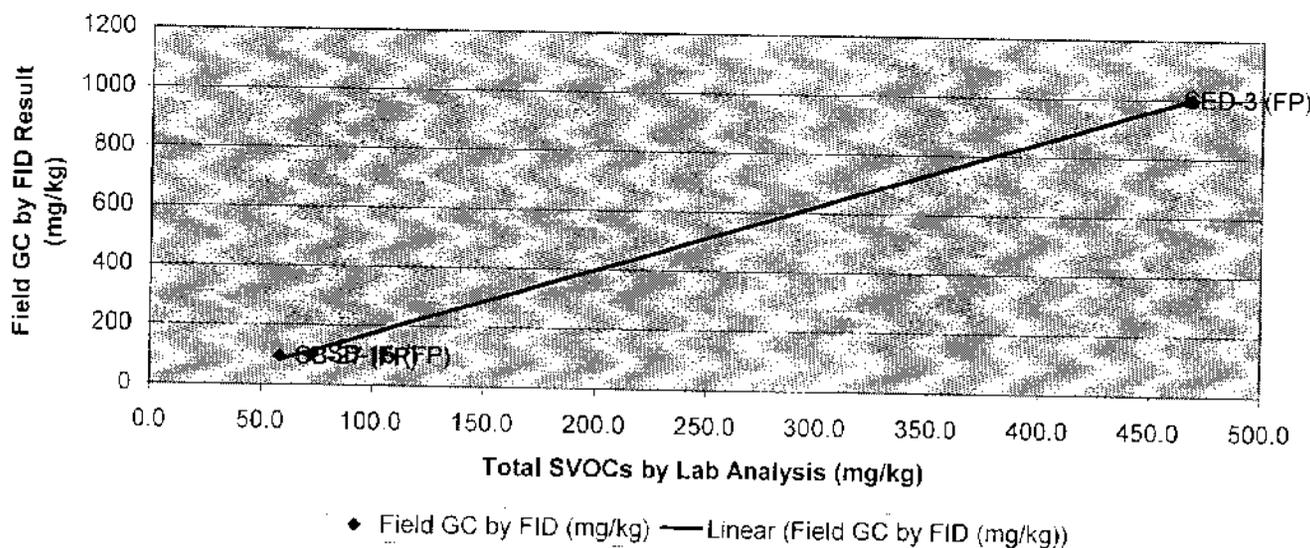
Linear Regression Analysis

Project Name: Barre Coal Tar
 Project #: 00-035
 Date: 12/15/00
 By: Jonathan Ashley

Sample ID	Date	y Field GC TPH Result by FID (mg/kg)	y ²	x Total SVOCs by Lab Analysis (mg/kg)	x ²	xy
SB-15 (8-12')	11/20/00	100	>10,000	73.3	5,365.56	7,325.00
SB-27 (20-22')	11/20/00	93	8649	58.7	3,445.69	5,459.10
SED-3 (0-1')	09/19/00	1,000	1,000,000.0	468	219,024.00	468,000.00

sum(x _i)	600.0
sum(x _i ²)	227,835.25
(sum(x _i)) ²	359940.0025
avg(x _i)	199.9833333
sum(x _i y _i)	480,784.10
sum(y _i)	>1,193
sum(y _i ²)	>1,018,649
(sum(y _i)) ²	1423249.00
avg(y _i)	397.6666667
n	3

Linear Regression
Field GC by FID vs. SVOC Lab Analysis



r =	0.9997
-----	--------

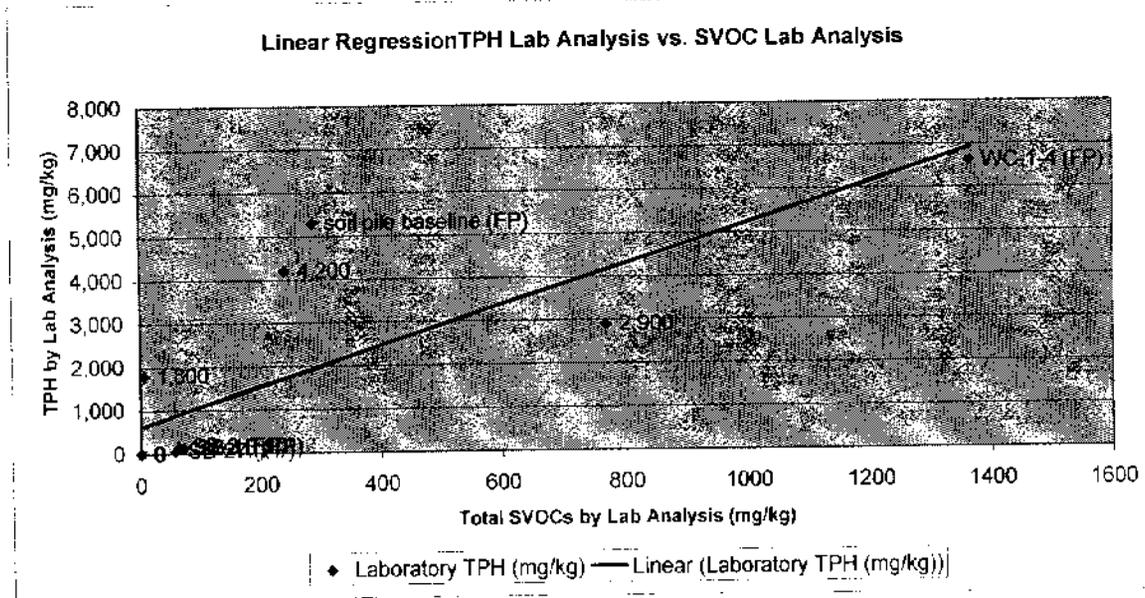
Linear Regression

Project Name: Barre Coal Tar
 Project #: 00-035
 Date: 12/15/00
 By: Jonathan Ashley

Sample ID	Date	y Laboratory TPH Result (mg/kg)	y ²	x Total SVOCs by Lab Analysis (mg/kg)	x ²	xy
SB-2 (8-12')	09/18/00	1,800	>3,240,000	7.1	50.41	12,780.00
SB-12 (8-12')	09/19/00	2,900	8410000	769	591,361.00	2,230,100.00
SB-14 (20-24')	11/20/00	0	0.0	0	0.00	0.00
SB-20 (4-8')	11/21/00	0	0.0	0	0.00	0.00
SB-22 (10-14')	11/21/00	0	0	0	0.00	0.00
SB-28 (12-16')	11/20/00	0	0	0	0.00	0.00
Soil pile (post-surfactant flush)	10/23/00	4,200	17,640,000	242	58,564.00	1,016,400.00
SED-7 (0-1')	11/21/00	0	0	2.1	4.41	0.00
SB-3 (8-12')	09/18/00	170	28,900	65.4	4,277.16	11,113.00
SB-15 (8-12')	11/20/00	140	>19,600	73.3	5,365.56	10,255.00
SB-27 (20-22')	11/20/00	65	>4,356	58.7	3,445.69	3,874.20
WC-1-4 composite	09/20/00	6,600	>43,560,000	1,365	1,863,225.00	9,009,000.00
Soil pile baseline	10/17/00	5,300	>28,090,000	288	82,944.00	1,526,400.00

sum(x_i) 2870.55
 sum(x²) 2,609,237.2
 (sum(x_i))² 8240057.303
 avg(x_i) 220.8115385
 sum(x_iy_i) 13,819,927.2
 sum(y_i) >21,176
 sum(y²) >100,992,856
 (sum(y_i))² 448422976.00
 avg(y_i) 1626.923077
 n 13

r = 0.80



APPENDIX D

**TWIN STATE ENVIRONMENTAL CORPORATION
MOBILE LABORATORY**

Barre Coal Tar, Barre, Vermont

Field GC Analysis by PID and FID

Sample Number	Date Sampled	Date Analyzed	Concentration (mg/kg)							
			Naphthalene (mdl=5 mg/kg)		Acenaphthene (mdl=5 mg/kg)		Fluoranthene (mdl=5 mg/kg)		TPH (mdl=10 mg/kg)	
			PID	FID	PID	FID	PID	FID	PID	FID
SB-2 (4-8')	09/19/00	09/19/00	nd	nd	nd	nd	nd	nd	55	310
SB-4 (4-8')	09/19/00	09/19/00	nd	trace	30	33	nd	nd	55	130
SB-5 (8-12')	09/19/00	09/19/00	30	43	75	34	380	nd	620	350
SB-6 (0-4')	09/19/00	09/19/00	nd	nd	nd	nd	nd	nd	nd	nd
SB-6 (4-6')	09/19/00	09/19/00	84	77	610	330	nd	12	7,900	7,200
SB-7 (8-12')	09/19/00	09/19/00	9.9	14	200	89	nd	nd	1,800	2,000
SB-8 (1-1.2')	09/19/00	09/19/00	nd	nd	trace	nd	nd	9.0	trace	16
SB-14 (8-12')	11/20/00	11/20/00	nd	nd	nd	nd	nd	nd	nd	31
SB-15 (8-12')	11/20/00	11/20/00	trace	nd	nd	nd	nd	nd	180	100
SB-17 (4-8')	11/20/00	11/20/00	87	16	78	10	960	trace	2,300	260
SB-19 (12-14')	11/20/00	11/20/00	140	nd	nd	nd	nd	nd	1,500	3,800
SB-21 (6-10')	11/21/00	11/21/00	16	nd	nd	nd	nd	nd	490	mal
SB-23 (8-12')	11/22/00	11/22/00	nd	nd	nd	nd	nd	nd	940	mal
SB-25 (8-12')	11/22/00	11/22/00	nd	nd	nd	nd	nd	nd	750	mal
SB-27 (20-22')	11/20/00	11/20/00	nd	nd	nd	nd	nd	nd	nd	93
SB-30 (8-12')	11/21/00	11/21/00	nd	nd	nd	nd	nd	nd	260	mal
SB-31 (8-12')	11/21/00	11/21/00	nd	nd	nd	nd	nd	nd	nd	mal
WC-3 (8-12')	09/18/00	09/18/00	nd	nd	880	1,000	nd	15	4,600	27,000
SED-3 (0-1')	09/19/00	09/19/00	18	30	100	130	nd	nd	1,800	1,000
SED-4 (0-1')	11/22/00	11/22/00	nd	nd	nd	nd	nd	nd	570	mal
SED-5 (0-1')	11/22/00	11/22/00	nd	nd	nd	nd	nd	nd	1,100	mal
SED-6 (0-1')	11/22/00	11/22/00	nd	nd	nd	nd	nd	nd	610	mal
SED-7 (0-1')	11/21/00	11/21/00	nd	nd	nd	nd	nd	nd	520	mal
SED-8 (0-1')	11/21/00	11/21/00	nd	nd	nd	nd	nd	nd	nd	mal

Notes:

1. nd= not detected above listed method detection limit (mdl)
2. mal= instrument malfunction during FID analysis
3. trace= trace detected below mdl

COMPARISON OF FIELD GC AND FIX-BASED LAB RESULTS

Barre Coal Tar, Barre, Vermont

Sample Number	Analyzed By	Date Sampled	Concentration (mg/kg)							
			Naphthalene		Acenaphthene		Fluoranthene		TPH*	
			PID	FID	PID	FID	PID	FID	PID	FID
SED-3 (0-1')	Field GC	09/19/00	17.6	30	102	135	<5	<5	1,810	1,022
SED-3 (0-1')	EPA	09/19/00	45		16		35		1,109	
SED-7 (0-1')	Field GC	11/21/00	<5	<5	<5	<5	<5	<5	520	mal
SED-7 (0-1')	AMRO	11/21/00	<0.3		<0.3		0.55		<37	
SB-15 (8-12')	Field GC	11/20/00	trace	<5	<5	<5	<5	<5	180	100
SB-15 (8-12')	AMRO	11/20/00	3.3		4.8		4.4		140	
SB-27 (20-22')	Field GC	11/20/00	<5	<5	<5	<5	<5	<5	<10	93
SB-27 (20-22')	AMRO	11/20/00	<0.3		0.39		6.8		66	

Notes:

*EPA lab did not perform TPH analysis; EPA result shown is the sum of VOCs and SVOCs divided by (VOC+SVOC):TPH ratio.

<5 not detected at indicated method detection limit (mdl)

nd = not detected above mdl - refer to laboratory analysis report

mal = instrument malfunction during FID analysis

trace = trace detected below indicated mdl

**TWIN STATE ENVIRONMENTAL CORPORATION
MOBILE LABORATORY**

Barre Coal Tar, Barre, Vermont

Field GC Analysis by PID and FID

Sample Number	Date Sampled	Date Analyzed	Concentration (mg/kg)							
			Naphthalene (mdl=5 mg/kg)		Acenaphthene (mdl=5 mg/kg)		Fluoranthene (mdl=5 mg/kg)		TPH (mdl=10 mg/kg)	
			PID	FID	PID	FID	PID	FID	PID	FID
SB-2 (4-8')	09/19/00	09/19/00	nd	nd	nd	nd	nd	nd	55	310
SB-4 (4-8')	09/19/00	09/19/00	nd	trace	30	33	nd	nd	55	130
SB-5 (8-12')	09/19/00	09/19/00	30	43	75	34	380	nd	620	350
SB-6 (0-4')	09/19/00	09/19/00	nd	nd	nd	nd	nd	nd	nd	nd
SB-6 (4-6')	09/19/00	09/19/00	84	77	610	330	nd	12	7,900	7,200
SB-7 (8-12')	09/19/00	09/19/00	9.9	14	200	89	nd	nd	1,800	2,000
SB-8 (1-1.2')	09/19/00	09/19/00	nd	nd	trace	nd	nd	9.0	trace	16
SB-14 (8-12')	11/20/00	11/20/00	nd	nd	nd	nd	nd	nd	nd	31
SB-15 (8-12')	11/20/00	11/20/00	trace	nd	nd	nd	nd	nd	180	100
SB-17 (4-8')	11/20/00	11/20/00	87	16	78	10	960	trace	2,300	260
SB-19 (12-14')	11/20/00	11/20/00	140	nd	nd	nd	nd	nd	1,500	3,800
SB-21 (6-10')	11/21/00	11/21/00	16	nd	nd	nd	nd	nd	490	mal
SB-23 (8-12')	11/22/00	11/22/00	nd	nd	nd	nd	nd	nd	940	mal
SB-25 (8-12')	11/22/00	11/22/00	nd	nd	nd	nd	nd	nd	750	mal
SB-27 (20-22')	11/20/00	11/20/00	nd	nd	nd	nd	nd	nd	nd	93
SB-30 (8-12')	11/21/00	11/21/00	nd	nd	nd	nd	nd	nd	260	mal
SB-31 (8-12')	11/21/00	11/21/00	nd	nd	nd	nd	nd	nd	nd	mal
WC-3 (8-12')	09/18/00	09/18/00	nd	nd	880	1,000	nd	15	4,600	27,000
SED-3 (0-1')	09/19/00	09/19/00	18	30	100	130	nd	nd	1,800	1,000
SED-4 (0-1')	11/22/00	11/22/00	nd	nd	nd	nd	nd	nd	570	mal
SED-5 (0-1')	11/22/00	11/22/00	nd	nd	nd	nd	nd	nd	1,100	mal
SED-6 (0-1')	11/22/00	11/22/00	nd	nd	nd	nd	nd	nd	610	mal
SED-7 (0-1')	11/21/00	11/21/00	nd	nd	nd	nd	nd	nd	520	mal
SED-8 (0-1')	11/21/00	11/21/00	nd	nd	nd	nd	nd	nd	nd	mal

Notes:

1. nd= not detected above listed method detection limit (mdl)
2. mal= instrument malfunction during FID analysis
3. trace= trace detected below mdl

APPENDIX E

ATTACHMENT 1



H O R I Z O N
E N V I R O N N E M E N T

**TRANSMISSION PAR TÉLÉCOPIEUR
TRANSMISSION BY FAX**

Date: 11/10/00

Heure/Hour: 10:48

A l'attention de / Attention:	Mr Christopher Altman
Nom de l'entreprise / Company Name:	Twin State Environmental
Numéro du télécopieur / Fax Number:	(802)654-8667
Numéro de téléphone / Phone Number:	(802)654-8663
Nombre de pages incluant la page couverture: Number of pages including cover page:	10

Nom de l'expéditeur / Sender:	Guy Brousseau
Nom de l'entreprise / Company Name:	Horizon Environnement Int'l
Numéro du télécopieur / Fax Number:	(450)629-7554
Numéro de téléphone / Phone Number:	1(800)792-7645 ou/or (514)984-1197

Analyses from The Barre Coal Tar Site

Guy Brousseau



Certificat d'analyses

CLIENT

Antécédents: Guy Brousseau
 Compagnie: HORIZON ENVIRONNEMENT
 Projet: 00-119
 Description:
 Prélevé par: HORIZON ENVIRONNEMENT

 Adresse: 120, route 155
 Grandes-Piles (Québec)
 Q6X 1H0
 Télécopieur: 819 538 0889
 Téléphone: 800-545-7657

LABORATOIRE

Chargé(e) de projet: Martin Des
 Projet: Q001500
 Date de réception: 00/09/22
 Date de rapport: 00/10/06
 Révision no.: 0

 No. de certificat: 010997
 Nombre de pages: 9

Notes:

. = Non Analysé

NA = Non Applicable

LDR = Limite de détection rapportée

→ Résultats obtenus toujours à la limite de détection rapportée

Les résultats sont exprimés en poids sec

Les analyses organiques ne sont pas corrigées en fonction de la récupération de l'étalon analogue (sauf toxines/musarins).

Préférez de contacter le ou la chargé(e) de projet pour toutes informations supplémentaires

Les méthodes utilisées par Philip Services Analytiques proviennent de publications telles que "Standard Methods for the examination of Water and Wastewater" 18e Ed., ou autres autres publications reconnues par des organismes tels que MEF, EPA, etc. (voir annexes)

Toutes les analyses incluses dans ce rapport ont été effectuées selon les règles de l'art incluant les procédures d'assurance et de contrôle de la qualité à moins d'en avoir écritement convenu au préalable avec le client.

La responsabilité financière relative à la responsabilité professionnelle est limitée à une valeur n'excédant pas le coût des analyses effectuées. Les échantillons seront conservés pour une période de 6 semaines après la réception de ces données à moins d'indication contraire convenue préalablement.

Ce certificat d'analyse ne peut être reproduit, sous sa forme ou en partie, sans l'autorisation écrite de Philip Services Analytiques.



Vérifié par:

Martin Des
Chargé(e) de projet

Cet envoi est à l'image exacte de documents ci-dessus et peut contenir des informations privilégiées et confidentielles. Si vous avez reçu cet envoi par erreur, veuillez nous en informer sur le champ à nos frais par téléphone et nous le retourner par la poste à l'adresse ci-dessus, sans faire de copie. Merci.

du Rapport: Q287630n

Philip Services Analytiques

10390, L.-H. Lafontaine Arjoux (Québec) H1J 2J3 • Tél.: (514) 493-4733 Téléc.: (514) 493-4725 • Site Internet: www.philipsanalytical.com



Philip Services Analytiques Rapport de conformité

	Non-Applicable	Non-conforme	Conforme	Commentaires
Réception des échantillons				
Type de contenant				
Agent de préservation				
Température des échantillons reçus				
Formulaire de demande d'analyse				
Délai entre date d'échantillonnage et date de réception				
Analyses				
Procédure analytique Philip suivie intégralement				
Délais d'extraction/minéralisation respectés				
Délais d'analyses respectés				
Contrôle de la qualité				
Diane de méthode (témoin)				
Matériau de référence (MR)				
Duplicata				
Échantillon formé				
Évalués analogues ("surrogates") (voir résultats d'analyse)				
Résultat du MR statistiquement sous contrôle				
Commentaires:				

Dominique Jean
 Dominique Jean
 Responsable analytique

[Signature]
 VÉRIFIÉ PAR
 Martin Des. Chimiste
 11/06/00-0010200



Philip Services Analytiques
Résultats d'analyses

	<i>No. de Client:</i>		BARRE
	<i>No. du Labo:</i>		028763 00
	<i>Date d'échantillonnage:</i>		00/09/15
	<i>Matrice:</i>		SOL
	LDR	Unités	
Paramètre			
Humidité	0.5	(%)	21
Hydrocarbures C10-C30 (Hexane/OC)	40	mg/kg	5100

BTEX

Benzène	0.06	mg/kg	6.9
Toluène	0.10	"	59
Ethyl Benzène	0.06	"	81
Xylènes	0.10	"	200
Acépnitrone		%	
4,4'-Dinitroéthane	74-125	"	90
o-Toluène	80-119	"	102
Dinitrofluorobenzène	73-118	"	105

BFC

Trichlorobiphényle	0.001	mg/kg	<0.025
Tétrachlorobiphényle	0.001	"	<0.025
Pentachlorobiphényle	0.001	"	<0.025
Hexachlorobiphényle	0.001	"	<0.025
Heptachlorobiphényle	0.001	"	<0.025
Octachlorobiphényle	0.001	"	<0.025
Nonachlorobiphényle	0.001	"	<0.025
Décachlorobiphényle	0.001	"	<0.025
BFC total		%	
Acépnitrone		"	
Trichlorobiphényle IUPAC 34	40-120	"	89
Pentachlorobiphényle IUPAC 109	40-120	"	73
Nonachlorobiphényle IUPAC 207	40-120	"	54

Dominique Jean
Dominique Jean
Superviseur régional
SI

CHIMISTE
Maurice Desjardins
1982-012
QUEBEC

Véridé par
Maurice Desjardins
Chimiste
à la Normative 8391

Philip Services Analytiques
Résultats d'analyses

Paramètre	No. du Client		BARRÉ
	No. du Labo:		
	Date d'échantillonnage:		028783 00
	Matrice:		0009/13
	LDR	Unités	SOL
HAM			
Benzène	0.06	mg/kg	6.9
Toluène	0.10	"	59
Éthyl Benzène	0.06	"	81
Xylènes	0.10	"	200
Styrène	0.06	"	35
Chlorobenzène	0.10	"	<2.3
1,2-Dichlorobenzène	0.07	"	<1.6
1,3-Dichlorobenzène	0.08	"	<1.8
1,4-Dichlorobenzène	0.08	"	<1.8
Récupération		%	
o4-1,2-Dichlorobenzène	74-125	"	90
m8-Toluène	80-119	"	102
Bromo Benzobenzène	73-118	"	105
HIT			
Chlorure de vinyle	0.30	mg/kg	<11
1,1-Dichloroéthène	0.10	"	<2.3
Chlorure de méthylène	0.30	"	<19
trans-1,2-Dichloroéthylène	0.10	"	<2.3
1,1-Dichloroéthane	0.10	"	<2.3
cis-1,2-Dichloroéthylène	0.10	"	<2.3
Chloroforme	0.10	"	<2.3
1,1,1-Trichloroéthane	0.10	"	<2.3
1,2-Dichloroéthane	0.10	"	<2.3
Tétrachlorure de carbone	0.10	"	<2.3
1,2-Dichloropropane	0.10	"	<2.3
Trichloroéthylène	0.10	"	<2.3
cis-1,2-Dichloropropylène	0.10	"	<2.3
trans-1,3-Dichloropropylène	0.10	"	<2.3
1,1,2-Trichloroéthane	0.10	"	<2.3
Tétrachloroéthylène	0.10	"	<2.3
1,1,2,2-Tétrachloroéthane	0.10	"	<2.3
Récupération		%	
o4-1,2-Dichloroéthane	74-125	"	91
m8-Toluène	80-119	"	100
Bromo fluorobenzène	73-118	"	110

Dominique Jean
Dominique Jean
Superviseur organique


VÉRIFIÉ
Memb. Des. Chimiste
du QUÉBEC

Philip Services Analytiques
Résultats d'analyses

No. du Client: **BANKE**
 No. du Labo: **028743 00**
 Date d'échantillonnage: **00/09/15**
 Matrice: **SOL**
LDR Unités

Paramètre

HAJ

Paramètre	LDR	Unités	Valeur
Naphtalène	0.05	mg/kg	710
2-Méthylnaphtalène	0.05	"	310
1-Méthylnaphtalène	0.05	"	420
1,3-Diméthylnaphtalène	0.05	"	160
Acénaphtylène	0.05	"	120
Acénaphtène	0.05	"	52
2,3,5-Triméthylnaphtalène	0.05	"	34
Fluorène	0.05	"	98
Phénanthrène	0.05	"	300
Anthracène	0.05	"	82
Fluoranthène	0.05	"	120
Pyène	0.05	"	190
Benzo(c)phénanthrène	0.05	"	<16
Benzo(a)anthracène	0.05	"	<80
Chrysène	0.05	"	73
1,2-Benzanthracène-7,12-diméthyl	0.05	"	<0.65
Benzo(b)fluoranthène	0.05	"	75
Benzo(a)pyrène	0.05	"	54
3-Méthylcholanthrène	0.05	"	<0.65
Indène (1,2,3-cd) pyrène	0.05	"	24
Dibenz(a,h)anthracène	0.05	"	6.5
Benzo(g,h,i)pyrène	0.05	"	31
Dibenz(a,h)pyrène	0.05	"	<11
Dibenzo(a,h)pyrène	0.05	"	<0.65
Dibenz(a,h)pyrène	0.05	"	<0.65
Recréation		%	
d10-Fluorène	40-120	"	109
d10-Fluoranthène	40-120	"	104
d12-Benzo(a)pyrène	40-120	"	105

Dominique Jean
 Dominique Jean
 Superviseur organique
 si

CHIMISTE
 Marché Des
 1882-072
 QUÉBEC

Véifié par
 M. G. G. G. G.
 # 4-11-00-02874300

06/10/2000

Philip Services Analytiques
Échantillons témoins et matériaux de référence (MR)

Paramètre	INR	Unités		MR
No. de lot:			09268503	MR
Hydrocarbures C10-C50 (Hexane/GC)	40	mg/kg	<	83%
No. de lot:			1005CBS1	MR
Benzène	0.06	µg/kg	<	99%
Toluène	0.10	"	0.12	94%
Ethyl Benzène	0.06	"	<	92%
Xylènes	0.10	"	0.17	93%
Alcatriènes		%		
d4 1,2-Dichlorobenzène	74-125	"	86	103
d8-Toluène	80-119	"	104	91
Isomofluorobenzène	93-118	"	101	95
No. de lot:			0926KV01	MR
Trichlorobiphényle	0.001	mg/kg	<	104%
Tétrachlorobiphényle	0.001	"	0.001	105%
Pentachlorobiphényle	0.001	"	<	98%
Hexachlorobiphényle	0.001	"	<	106%
Heptachlorobiphényle	0.001	"	<	114%
Octachlorobiphényle	0.001	"	<	113%
Nonachlorobiphényle	0.001	"	<	108%
Décachlorobiphényle	0.001	"	<	90%
BPC totaux	0.001	"	0.001	104%
Alcatriènes		%		
Trichlorobiphényle IUPAC 34	40-120	"	77	87
Pentachlorobiphényle IUPAC 109	40-120	"	89	87
Nonachlorobiphényle IUPAC 207	40-120	"	82	93

Dominique Jean
 Dominique Jean
 Superviseur organique


 Vérifié par
 Marion Des. CHAMBERLAIN
 605-999-2875 ext. 222

06/10/0000

Philip Services Analytiques
Échantillons témoins et matériaux de référence (MR)

Paramètre	LDR	Unités	1005CB51	MR
No. de lot:	0.06	mg/kg	<	90%
Benzène	0.10	"	0.12	94%
Toluène	0.06	"	<	92%
Écyl benzène	0.10	"	0.17	93%
Xylènes	0.06	"	<	91%
Styrène	0.10	"	<	90%
Chlorobenzène	0.07	"	<	96%
1,2-Dichlorobenzène	0.08	"	<	89%
1,3-Dichlorobenzène	0.08	"	<	88%
1,4-Dichlorobenzène		%		
Récupération	74-125	"	86	103
d4-1,2-Dichloroéthane	80-119	"	104	93
d8-Toluène	73-118	"	101	95
Bromofluorobenzène				
			1005CR51	MR
No. de lot	0.50	mg/kg	<	NA
Chlorure de vinyle	0.10	"	<	70%
1,1-Dichloroéthène	0.20	"	0.30	89%
Chlorure de méthylène	0.10	"	<	97%
trans-1,2-Dichloroéthylène	0.10	"	<	129%
1,1-Dichloroéthane	0.10	"	<	108%
cis-1,2-Dichloroéthylène	0.10	"	0.32	107%
Chloroforme	0.10	"	<	114%
1,1,1-Trichloroéthane	0.10	"	<	111%
1,2-Dichloroéthane	0.10	"	<	122%
Tétrachlorure de carbone	0.10	"	<	107%
1,2-Dichloropropane	0.10	"	<	115%
Trichloroéthylène	0.10	"	<	84%
cis-1,3-Dichloropropylène	0.10	"	<	80%
trans-1,3-Dichloropropylène	0.10	"	<	82%
1,1,2-Trichloroéthane	0.10	"	<	95%
Tétrachloroéthylène	0.10	"	<	83%
1,1,2,2-Tétrachloroéthane		%		
Récupération	74-125	"	88	110
d4-1,2-Dichloroéthane	80-119	"	110	102
d8-Toluène	73-118	"	106	85
Bromofluorobenzène				

Dominique Jean
 Dominique Jean
 Superviseur organique
 81

CHIMISTE
 Martin Gosselin
 1902-012
 QUÉBEC

Martin Gosselin, Chimiste
 1902-01275328

10/06/00 16:15

818 538 0880

HORIZON ENVIRON. GUY BROUSSEAU

000/000

OCT 06 2000 16:15 De PHILIP SERVICES

Philip Services Analytiques
Corrélation des no. de lot avec les échantillons

06/10/2000

No. de lot:	0924EN01	
Humidité etc.	028763 00	
Date d'analyse:	00/09/25	
Date de préparation:	00/09/24	
No. de lot:	0926ES01	
Hydrocarbures C10 C30 (Hexane/GC) etc.	028763 00	
Date d'analyse:	00/09/28	
Date de préparation:	00/09/26	
No. de lot:	1005C051	
Benzène etc.	028763 00	
Date d'analyse:	00/10/05	
Date de préparation:	00/10/05	
No. de lot:	1005CB51	
Benzène etc.	028763 00	
Date d'analyse:	00/10/05	
Date de préparation:	00/10/05	
No. de lot:	1005CB51	
Chlorure de vinyle etc.	028763 00	
Date d'analyse:	00/10/05	
Date de préparation:	00/10/05	
No. de lot:	0929RC01	0926CM01
Naphtalène etc.	028763 00	028763 00
Date d'analyse:	00/09/29	00/09/26
Date de préparation:	00/09/29	00/09/26
No. de lot:	0926CM01	0929RC01
1,2-Benzanthracène-7,12-diméthyle etc.	028763 00	028763 00
Date d'analyse:	00/09/26	00/09/29
Date de préparation:	00/09/26	00/09/29
No. de lot:	0926KV01	
Trichlorobiphényle etc.	028763 00	
Date d'analyse:	00/09/28	
Date de préparation:	00/09/26	

Dominique Jean
 Dominique Jean
 Superviseur analytique

CHIMISTE
 Martin Des
 1002-012
 QUEBEC

[Signature]
 Validé par
 Martin Des, Chimiste
 # du laboratoire 27630



October 05, 2000

Jon Ashley
Twin State Environmental
414 Roosevelt Highway
Colchester, VT 05446
TEL: (802) 654-8663
FAX (802) 654-8667

OCT 13 2000

RE: 00-035 Barre Coal Tar

Order No.: 0009170

Dear Jon Ashley:

AMRO Environmental Laboratories Corp. received 5 samples on 9/21/00 for the analyses presented in the following report.

AMRO operates a Quality Assurance Program which meets or exceeds EPA and state requirements. A copy of the appropriate State Certificate is attached. The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt.

Please be advised that any unused sample volume and sample extracts will be stored for a period of thirty (30) days from this report date. After this time, AMRO will properly dispose of the remaining sample(s). If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This letter is an integral part of your data report. If you have any questions regarding this project in the future, please refer to the Order Number above.

Sincerely,

Nancy Stewart
Vice President / Lab Director

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Project: 00-035 Barre Coal Tar
Lab Order: 0009170
Date Received: 9/21/00

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Collection Date
0009170-01A	SB-2	9/18/00
0009170-01B	SB-2	9/18/00
0009170-01C	SB-2	9/18/00
0009170-02A	SB-3	9/18/00
0009170-02B	SB-3	9/18/00
0009170-02C	SB-3	9/18/00
0009170-03A	SB-12	9/19/00
0009170-03B	SB-12	9/19/00
0009170-03C	SB-12	9/19/00
0009170-04A	COMP-1	9/20/00
0009170-04C	COMP-1	9/20/00
0009170-04D	COMP-1	9/20/00
0009170-04E	COMP-1	9/20/00
0009170-04F	COMP-1	9/20/00
0009170-04G	COMP-1	9/20/00
0009170-04H	COMP-1	9/20/00
0009170-05A	Trip Blank	9/20/00

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Project: 00-035 Barre Coal Tar
Lab Order: 0009170

CASE NARRATIVE

PCB Analysis

- 1) Sample 0009170-04G had low surrogate recoveries due to matrix effect.

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0009170
Project: 00-035 Barre Coal Tar
Lab ID: 0009170-04C

Client Sample ID: COMP-1
Collection Date: 9/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TOTAL ORGANIC CARBON, SOIL			CFAS18			Analyst: APL
Total Organic Carbon	63,000	700		mg/Kg-dry	1	9/29/00

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank F - Value above quantitation range
* - Value exceeds Maximum Contaminant Level # - See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental	Client Sample ID: COMP-1
Lab Order: 0009170	
Project: 00-035 Barre Coal Tar	Collection Date: 9/20/00
Lab ID: 0009170-04D	Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
IGNITABILITY		SW1010				
Ignitability	>200	0		*F	1	9/28/00

Analyst: RK

Qualifiers:

ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank	E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level	# - See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.	

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0009170
Project: 00-035 Barre Coal Tar
Lab ID: 0009170-04E

Client Sample ID: COMP-1
Collection Date: 9/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PAINT FILTER TEST, FREE LIQUID		SW9095				Analyst: RK
Free Liquid	No free liquids	0			1	9/28/00

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level # - See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0009170
Project: 00-035 Barre Coal Tar
Lab ID: 0009170-04G

Client Sample ID: COMP-1
Collection Date: 9/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
ICP METALS TOTAL SW-846 - 3051/6010						
		SW6010B				Analyst: RK
Arsenic	19	7.6		mg/Kg-dry	1	9/27/00 12:37:56 PM
Cadmium	ND	0.76		mg/Kg-dry	1	9/27/00 12:37:56 PM
Chromium	18	1.5		mg/Kg-dry	1	9/27/00 12:37:56 PM
Lead	52	3.8		mg/Kg-dry	1	9/27/00 12:37:56 PM
TPH/IR (MODIFIED FOR SOILS/SOLIDS)						
		E418.1				Analyst: JA
Petroleum Hydrocarbons, TR	6,600	410		mg/Kg-dry	8	9/29/00
MERCURY, 7471						
		SW7471A				Analyst: GM
Mercury	0.13	0.035		mg/Kg-dry	1	9/25/00
PERCENT MOISTURE						
		D2216				Analyst: CLB
Percent Moisture	22.5	0		wt%	1	9/25/00
CYANIDE, REACTIVE						
		SW7.3.3.2				Analyst: GM
Reactive Cyanide	ND	13		mg/Kg-dry	1	9/26/00
SULFIDE, REACTIVE						
		SW7.3.4.2				Analyst: JA
Reactive Sulfide	ND	50		mg/Kg-dry	1	9/25/00
PH/CORROSIVITY						
		SW9045C				Analyst: RK
pH	7.4	0		pH Units	1	9/27/00

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0009170
Project: 00-035 Barre Coal Tar
Lab ID: 0009170-04A

Client Sample ID: COMP-1
Collection Date: 9/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	1,600		µg/Kg-dry	10	9/29/00 11:04:00 PM
Chloromethane	ND	1,600		µg/Kg-dry	10	9/29/00 11:04:00 PM
Vinyl chloride	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
Chloroethane	ND	1,600		µg/Kg-dry	10	9/29/00 11:04:00 PM
Bromomethane	ND	1,600		µg/Kg-dry	10	9/29/00 11:04:00 PM
Trichlorofluoromethane	ND	1,600		µg/Kg-dry	10	9/29/00 11:04:00 PM
Acetone	ND	7,800		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,1-Dichloroethene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
Carbon disulfide	ND	1,600		µg/Kg-dry	10	9/29/00 11:04:00 PM
Methylene chloride	ND	1,600		µg/Kg-dry	10	9/29/00 11:04:00 PM
Methyl tert-butyl ether	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
trans-1,2-Dichloroethene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,1-Dichloroethane	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
2-Butanone	ND	7,800		µg/Kg-dry	10	9/29/00 11:04:00 PM
2,2-Dichloropropane	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
cis-1,2-Dichloroethene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
Chloroform	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
Bromochloromethane	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,1,1-Trichloroethane	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,1-Dichloropropene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
Carbon tetrachloride	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,2-Dichloroethane	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
Benzene	34,000	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
Trichloroethene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,2-Dichloropropane	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
Bromodichloromethane	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
Dibromomethane	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
4-Methyl-2-pentanone	ND	7,800		µg/Kg-dry	10	9/29/00 11:04:00 PM
cis-1,3-Dichloropropene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
Toluene	270,000	7,800		µg/Kg-dry	100	9/30/00 10:47:00 PM
trans-1,3-Dichloropropene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,1,2-Trichloroethane	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,2-Dibromoethane	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
2-Hexanone	ND	7,800		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,3-Dichloropropane	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
Tetrachloroethene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
Dibromochloromethane	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
Chlorobenzene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,1,1,2-Tetrachloroethane	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank F - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0009170
Project: 00-035 Barre Coal Tar
Lab ID: 0009170-04A

Client Sample ID: COMP-1

Collection Date: 9/20/00

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	280,000	7,800		µg/Kg-dry	100	9/30/00 10:47:00 PM
m,p-Xylene	510,000	7,800		µg/Kg-dry	100	9/30/00 10:47:00 PM
o-Xylene	250,000	7,800		µg/Kg-dry	100	9/30/00 10:47:00 PM
Styrene	140,000	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
Bromoform	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
Isopropylbenzene	23,000	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,1,2,2-Tetrachloroethane	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,2,3-Trichloropropane	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
Bromobenzene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
n-Propylbenzene	31,000	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
2-Chlorotoluene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
4-Chlorotoluene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,3,5-Trimethylbenzene	120,000	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
tert-Butylbenzene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,2,4-Trimethylbenzene	360,000	7,800		µg/Kg-dry	100	9/30/00 10:47:00 PM
sec-Butylbenzene	4,500	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
4-Isopropyltoluene	18,000	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,3-Dichlorobenzene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,4-Dichlorobenzene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
n-Butylbenzene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,2-Dichlorobenzene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,2-Dibromo-3-chloropropane	ND	1,600		µg/Kg-dry	10	9/29/00 11:04:00 PM
1,2,4-Trichlorobenzene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
Hexachlorobutadiene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM
Naphthalene	3,600,000	160,000		µg/Kg-dry	1000	10/3/00 2:41:00 AM
1,2,3-Trichlorobenzene	ND	780		µg/Kg-dry	10	9/29/00 11:04:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0009170
Project: 00-035 Barre Coal Tar
Lab ID: 0009170-04G

Client Sample ID: COMP-1
Collection Date: 9/20/00
Matrix: SOIL.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C				Analyst: KD
Phenol	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Bis(2-chloroethyl)ether	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
2-Chlorophenol	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
1,3-Dichlorobenzene	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
1,4-Dichlorobenzene	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Benzyl alcohol	ND	6,300		µg/Kg-dry	10	9/26/00 6:42:00 PM
2-Methylphenol	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
1,2-Dichlorobenzene	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Bis(2-chloroisopropyl)ether	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
4-Methylphenol	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
N-Nitrosodi-n-propylamine	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Hexachloroethane	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Nitrobenzene	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Isophorone	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
2,4-Dimethylphenol	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Benzoic acid	ND	6,300		µg/Kg-dry	10	9/26/00 6:42:00 PM
2-Nitrophenol	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Bis(2-chloroethoxy)methane	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
2,4-Dichlorophenol	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
1,2,4-Trichlorobenzene	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Naphthalene	360,000	32,000		µg/Kg-dry	100	9/26/00 5:52:00 PM
4-Chloroaniline	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Hexachlorobutadiene	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
4-Chloro-3-methylphenol	ND	6,300		µg/Kg-dry	10	9/26/00 6:42:00 PM
2-Methylnaphthalene	250,000	32,000		µg/Kg-dry	100	9/26/00 5:52:00 PM
Hexachlorocyclopentadiene	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
2,4,6-Trichlorophenol	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
2,4,5-Trichlorophenol	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
2-Chloronaphthalene	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
2-Nitroaniline	ND	6,300		µg/Kg-dry	10	9/26/00 6:42:00 PM
Dimethyl phthalate	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
2,6-Dinitrotoluene	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Acenaphthylene	61,000	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
3-Nitroaniline	ND	6,300		µg/Kg-dry	10	9/26/00 6:42:00 PM
4-Nitrophenol	ND	6,300		µg/Kg-dry	10	9/26/00 6:42:00 PM
2,4-Dinitrophenol	ND	6,300		µg/Kg-dry	10	9/26/00 6:42:00 PM
Acenaphthene	24,000	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
2,4-Dinitrotoluene	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Dibenzofuran	6,900	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
 Lab Order: 0009170
 Project: 00-035 Barre Coal Tar
 Lab ID: 0009170-04G

Client Sample ID: COMP-1
 Collection Date: 9/20/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
4-Chlorophenyl phenyl ether	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Fluorene	45,000	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
4-Nitroaniline	ND	6,300		µg/Kg-dry	10	9/26/00 6:42:00 PM
4,6-Dinitro-2-methylphenol	ND	6,300		µg/Kg-dry	10	9/26/00 6:42:00 PM
N-Nitrosodiphenylamine	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
4-Bromophenyl phenyl ether	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Hexachlorobenzene	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Pentachlorophenol	ND	6,300		µg/Kg-dry	10	9/26/00 6:42:00 PM
Phenanthrene	160,000	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Anthracene	40,000	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Carbazole	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Di-n-butyl phthalate	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Fluoranthene	64,000	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Pyrene	95,000	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Butyl benzyl phthalate	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Bis(2-ethylhexyl)phthalate	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
3,3'-Dichlorobenzidine	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Benz(a)anthracene	36,000	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Chrysene	39,000	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Di-n-octyl phthalate	ND	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Benzo(b)fluoranthene	27,000	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Benzo(k)fluoranthene	9,100	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Benzo(a)pyrene	27,000	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Dibenz(a,h)anthracene	4,000	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Indeno(1,2,3-cd)pyrene	17,000	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM
Benzo(g,h,i)perylene	18,000	3,200		µg/Kg-dry	10	9/26/00 6:42:00 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
- S - Spike Recovery outside accepted recovery limits
- R - RPLD outside accepted recovery limits
- E - Value above quantitation range
- # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
 Lab Order: 0009170
 Project: 00-035 Barre Coal Tar
 Lab ID: 0009170-04G

Client Sample ID: COMP-1
 Collection Date: 9/20/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
PCBS BY EPA8082						
		SW8082				Analyst: RAP
Aroclor 1016	ND	32		µg/Kg-dry	1	9/29/00 4:35:00 PM
Aroclor 1221	ND	32		µg/Kg-dry	1	9/29/00 4:35:00 PM
Aroclor 1232	ND	32		µg/Kg-dry	1	9/29/00 4:35:00 PM
Aroclor 1242	ND	32		µg/Kg-dry	1	9/29/00 4:35:00 PM
Aroclor 1248	ND	32		µg/Kg-dry	1	9/29/00 4:35:00 PM
Aroclor 1254	ND	32		µg/Kg-dry	1	9/29/00 4:35:00 PM
Aroclor 1260	ND	32		µg/Kg-dry	1	9/29/00 4:35:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank F - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.



**Northeast
Generation Services**

The Northeast Utilities System

**Northeast Generation Services
Analytical Laboratory**

P.O. Box 2010
West Springfield, MA 01090-2010
Phone (413) 787-9064 Fax (413) 787-9056
email-shahmp@nu.com

To: N. Borduz
From: Madhu Shah *MS*
Re: Analyses of Soil Samples

September 28, 2000

Mass Certification - MA-00071
Conn Certification - PH-0520

Sample Description	Source	Taken	Received	Work Order
946 Comp-1, Coal Tar	AMRO	9/20/00	9/27/00	00-1708
Parameter	Results	MDL	Method	Analyzed
Chlorine, %	0.16	0.01	ASTM D-1552	9/28/00

Lab Order: 0009170
 Client: Twin State Environmental
 Project: 00-035 Barre Coal Tar

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0009170-01A	SB-2	9/18/00	Soil	VOLATILES by GC/MS, Medium-Level		9/18/00	9/26/00
0009170-01B				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/25/00
0009170-01C				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/25/00
				Percent Moisture			9/25/00
				TPH/IR (Modified for Soils/Solids)			9/29/00
0009170-02A	SB-3			VOLATILES by GC/MS, Medium-Level		9/18/00	9/26/00
0009170-02B				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/25/00
0009170-02C				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/25/00
				Percent Moisture			9/25/00
				TPH/IR (Modified for Soils/Solids)			9/29/00
0009170-03A	SB-12	9/19/00		VOLATILES by GC/MS, Medium-Level		9/19/00	9/30/00
				VOLATILES by GC/MS, Medium-Level		9/19/00	9/29/00
0009170-03B				VOLATILES by GC/MS, Medium-Level		9/19/00	10/3/00
				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/25/00
				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/25/00
				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/25/00
				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/26/00
0009170-03C				Percent Moisture			9/25/00
				TPH/IR (Modified for Soils/Solids)			9/29/00
0009170-04A	COMP-1	9/20/00		VOLATILES by GC/MS, Medium-Level		9/20/00	9/30/00
				VOLATILES by GC/MS, Medium-Level		9/20/00	10/3/00
0009170-04C				VOLATILES by GC/MS, Medium-Level		9/20/00	9/29/00
0009170-04D				TOC, Soil			9/29/00
0009170-04E				Ignitability			9/28/00
0009170-04F				Paint Filter Test			9/28/00
0009170-04G				VOLATILES, TCLP Leached	9/25/00	9/26/00	9/26/00
				Cyanide, Reactive			9/26/00
				ICP METALS, 3051/6010		9/26/00	9/27/00

Lab Order: 0009170
Client: Twin State Environmental
Project: 00-035 Barre Coal Tar

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0009170-04G	COMP-1	9/20/00	Soil	MERCURY, Soil		9/25/00	9/25/00
				PCBS IN SOIL/SOLIDS		9/25/00	9/29/00
				Percent Moisture			9/25/00
				pH/Corrosivity in Soil			9/27/00
				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/26/00
				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/26/00
				Sulfide, Reactive (Soils/Solids/Waste)			9/25/00
				TPI/IR (Modified for Soils/Solids)			9/29/00
0009170-05A	Trip Blank			VOLATILES by GC/MS, Medium-Level		9/20/00	9/27/00
				VOLATILES by GC/MS, Medium-Level		9/20/00	9/26/00

Client: <u>Twin State Env.</u>	AMRO ID: <u>0009170</u>
Project Name: <u>Barre Cool Tar</u>	Date Rec.: <u>9/21/00</u>
Ship via: (circle one) <u>Fed Ex</u> UPS, AMRO Courier.	Date Due: <u>9/13/00</u>
Hand Del. Other Courier. Other:	

Items to be Checked Upon Receipt

1. Army Samples received in individual plastic bags?
2. Custody Seals present?
3. Custody Seals intact?
4. Air Bill included in folder if received?
5. Is COC included with samples?
6. Is COC signed and dated by client?
7. Laboratory receipt temperature. TEMP = 12
 Samples rec. with ice ___ ice packs ___ neither ___
8. Were samples received the same day they were sampled?
 Is client temperature 4°C ± 2°C?
 If no obtain authorization from the client for the analyses.
 Client authorization from: _____ Date: _____ Obtained by: _____
9. Is the COC filled out correctly and completely?
10. Does the info on the COC match the samples?
11. Were samples rec. within holding time?
12. Were all samples properly labeled?
13. Were all samples properly preserved?
14. Were proper sample containers used?
15. Were all samples received intact? (none broken or leaking)
16. Were VOA vials rec. with no air bubbles?
17. Were the sample volumes sufficient for requested analysis?
18. Were all samples received?

Yes	No	NA	Comments
		X	
	X		
		X	
X			
X			
X			
	X		
	X		WAS FAXED
X			
X	X		
X			
X			
X			
X			
X			
X		X	
X			

19. VPH and VOA Soils only:

Sampling Method VPH (circle one): M=Methanol, E=EnCore (air-tight container)

Sampling Method VOA (circle one): M=Methanol, SB=Sodium Bisulfate, E=EnCore, B=Bulk

If M or SB:

Does preservative cover the soil? If NO then client must be faxed.

Does preservation level come close to the fill line on the vial? If NO then client must be faxed.

Were vials provided by AMRO? If NO then weights MUST be obtained from client

Was dry weight aliquot provided? If NO then fax client and inform the VOA lab ASAP.

X			
X			
X			
X			

20. Subcontracted Samples:

What samples sent:

Where sent:

Date:

Analysis:

TAT:

		X	

21. Information entered into:

Internal Tracking Log?

Dry Weight Log?

Client Log?

Composite Log?

Filtration Log?

X			
X			
X			
		X	
		X	

Received By: _____	Date: _____	Logged in By: _____	Date: _____
Labeled By: _____	Date: _____	Checked By: _____	Date: _____

CHAIN OF CUSTODY RECORD

Proj. No. 00-035		Project Name BARRE COAL TAR			Project State VT		MATRIX Water - A Soil/Solid-S Waste-W Other-O Explain				PAGE <u>1</u> OF <u>1</u>	
Samplers (Signature) CRIS ALTMAN <i>CAJCA</i>					Type Size, & No. of Containers		<i>EPA 8240</i> <i>EPA 1270 SW</i> <i>TRI 411.1 (60 (BHW))</i>					
Sta. No.	Date	Time	Comp	Grab	Station Location							
	9/18/00	1045		X	SB-2	2VDA, 2-80Z.	S	X	X	X		
	9/17/00	1135		X	SB-3	2VDA, 2-80Z.	S	X	X	X		
	9/19/00	1500		X	SB-12	2VDA, 2-80Z.	S	X	X	X		
	9/20/00	0900	X	X	COMP-1		S	AS PER TABLE (ENCLOSED)				

Please print clearly, legibly and completely. Samples cannot be logged in and the turnaround time clock will not start until any ambiguities are resolved.

PRIORITY TURNAROUND TIME AUTHORIZATION

Before submitting samples for expedited T.A.T., you must have requested in advance and received a coded T.A.T. AUTHORIZATION NUMBER.

AUTHORIZATION NO. _____ T.A.T. authorized by: _____

Relinquished by (Signature) <i>CAJCA</i>	Date Time 9/20/00 1200	Received by (Signature) FID LX	<input checked="" type="checkbox"/> Fax to (phone) (800) 654-8667	Send Results to: TWIN STATE ENVIRONMENTAL
Relinquished by (Signature)	Date Time	Received by (Signature)	Results needed	ATTN: JON ASHLEY
Relinquished by (Signature)	Date Time	Received by (Signature)	PO#	414 ROOSEVELT HIGHWAY
Relinquished by (Signature)	Date Time	Received by (Signature)	AMRO Project No. 0009170	Remarks
Relinquished by (Signature)	Date Time 9/21/00 8844	Received for Laboratory by: (Signature) <i>Constance Brody</i>	Seal Intact? Yes No N/A	

ATTACHMENT 2

DEXSIL CORPORATION

ONE HAMDEN PARK DRIVE

HAMDEN, CT 06517

FAX (203) 248-6523

PHONE (203) 288-3509

TRANSMITTAL COVER SHEET**WARNING**

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Date: 11/17/00

To: Ken Bisceglia

Company: Twin State

Transmittal is being sent by: Andrew Lynn

Number of pages 2 including cover sheet.

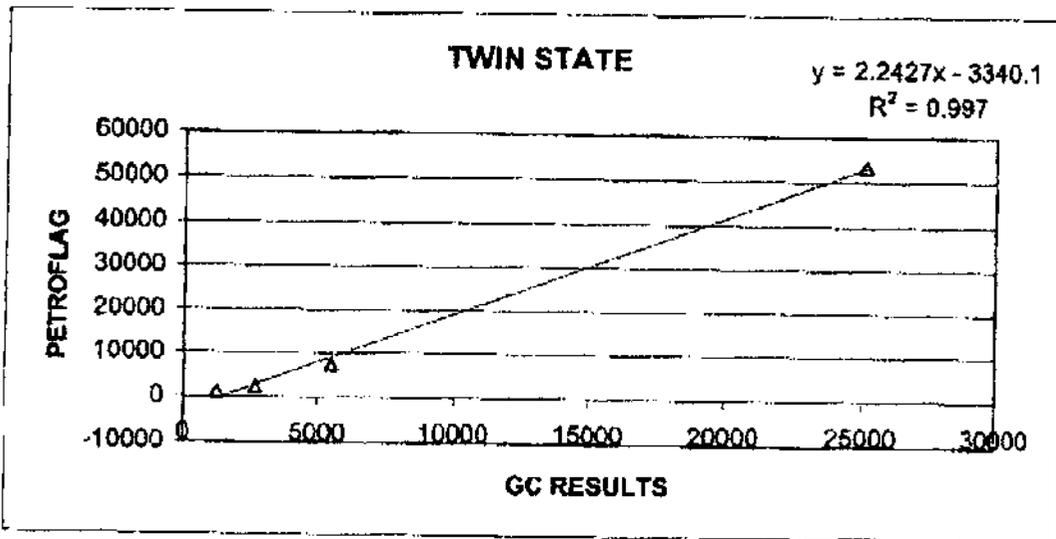
If you do not receive all pages, please notify the sender as soon as possible.

Ken,

Here are the results we discussed on the phone. A response factor of 7 will work the best for the samples we analyzed.

Andrew.

sample id	GC result	contaminant	pf result re10	sample size	dilution	corr pf-10	pf final result
wc-3	25127	diesel/oil	933	2.5	10	37320	53314.28571
sb-7	5494	diesel/oil	519	10	10	5190	7414.285714
sb-6	1254	diesel/oil	807	10	1	807	1152.857143
sb-4	2687	diesel/oil	794	5	1	1588	2268.571429



ATTACHMENT 3



December 01, 2000

Jon Ashley
Twin State Environmental
414 Roosevelt Highway
Colchester, VT 05446
TEL: (802) 654-8663
FAX (802) 654-8667

RE: 00-035 Barre Coal Tar

Order No.: 0011264

Dear Jon Ashley:

AMRO Environmental Laboratories Corp. received 5 samples on 11/24/00 for the analyses presented in the following report.

AMRO operates a Quality Assurance Program which meets or exceeds EPA and state requirements. A copy of the appropriate State Certificate is attached. The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt.

Please be advised that any unused sample volume and sample extracts will be stored for a period of thirty (30) days from this report date. After this time, AMRO will properly dispose of the remaining sample(s). If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This letter is an integral part of your data report. If you have any questions regarding this project in the future, please refer to the Order Number above.

Sincerely,

Nancy Stewart
Vice President / Lab Director

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
Project: 00-035 Barre Coal Tar
Lab Order: 0011264
Date Received: 11/24/00**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Collection Date
0011264-01A	SB-14D 20-24'	11/20/00
0011264-01B	SB-14D 20-24'	11/20/00
0011264-02A	SED-7 0-1'	11/21/00
0011264-02B	SED-7 0-1'	11/21/00
0011264-03A	SB-20 4-8'	11/21/00
0011264-03B	SB-20 4-8'	11/21/00
0011264-04A	SB-22 10-14'	11/21/00
0011264-04B	SB-22 10-14'	11/21/00
0011264-05A	Trip Blank	11/21/00

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
 Lab Order: 0011264
 Project: 00-035 Barre Coal Tar
 Lab ID: 0011264-02B

Client Sample ID: SED-7 0-1'
 Collection Date: 11/21/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH/IR (MODIFIED FOR SOILS/SOLIDS)		E418.1				
Petroleum Hydrocarbons, TR	ND	37		mg/Kg-dry	1	11/29/00
						Analyst: JA
PERCENT MOISTURE		D2216				
Percent Moisture	18.3	0		wt%	1	11/28/00
						Analyst: SL

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
 Lab Order: 0011264
 Project: 00-035 Barre Coal Tar
 Lab ID: 0011264-02A

Client Sample ID: SED-7 0-1'
 Collection Date: 11/21/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	100		µg/Kg-dry	1	11/29/00 8:52:00 PM
Chloromethane	ND	100		µg/Kg-dry	1	11/29/00 8:52:00 PM
Vinyl chloride	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Chloroethane	ND	100		µg/Kg-dry	1	11/29/00 8:52:00 PM
Bromomethane	ND	100		µg/Kg-dry	1	11/29/00 8:52:00 PM
Trichlorofluoromethane	ND	100		µg/Kg-dry	1	11/29/00 8:52:00 PM
Acetone	ND	520		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,1-Dichloroethene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Carbon disulfide	ND	100		µg/Kg-dry	1	11/29/00 8:52:00 PM
Methylene chloride	ND	100		µg/Kg-dry	1	11/29/00 8:52:00 PM
Methyl tert-butyl ether	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
trans-1,2-Dichloroethene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,1-Dichloroethane	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
2-Butanone	ND	520		µg/Kg-dry	1	11/29/00 8:52:00 PM
2,2-Dichloropropane	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
cis-1,2-Dichloroethene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Chloroform	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Bromochloromethane	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,1,1-Trichloroethane	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,1-Dichloropropene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Carbon tetrachloride	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,2-Dichloroethane	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Benzene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Trichloroethene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,2-Dichloropropane	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Bromodichloromethane	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Dibromomethane	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
4-Methyl-2-pentanone	ND	520		µg/Kg-dry	1	11/29/00 8:52:00 PM
cis-1,3-Dichloropropene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Toluene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
trans-1,3-Dichloropropene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,1,2-Trichloroethane	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,2-Dibromoethane	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
2-Hexanone	ND	520		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,3-Dichloropropane	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Tetrachloroethene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Dibromochloromethane	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Chlorobenzene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,1,1,2-Tetrachloroethane	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
Lab Order: 0011264
Project: 00-035 Barre Coal Tar
Lab ID: 0011264-02A

Client Sample ID: SED-7 0-1'
Collection Date: 11/21/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
m,p-Xylene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
o-Xylene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Styrene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Bromoform	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Isopropylbenzene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,1,2,2-Tetrachloroethane	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,2,3-Trichloropropane	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Bromobenzene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
n-Propylbenzene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
2-Chlorotoluene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
4-Chlorotoluene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,3,5-Trimethylbenzene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
tert-Butylbenzene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,2,4-Trimethylbenzene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
sec-Butylbenzene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
4-Isopropyltoluene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,3-Dichlorobenzene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,4-Dichlorobenzene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
n-Butylbenzene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,2-Dichlorobenzene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,2-Dibromo-3-chloropropane	ND	100		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,2,4-Trichlorobenzene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Hexachlorobutadiene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM
Naphthalene	ND	100		µg/Kg-dry	1	11/29/00 8:52:00 PM
1,2,3-Trichlorobenzene	ND	52		µg/Kg-dry	1	11/29/00 8:52:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank F - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental

Client Sample ID: SED-7 0-1'

Lab Order: 0011264

Project: 00-035 Barre Coal Tar

Collection Date: 11/21/00

Lab ID: 0011264-02B

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C				Analyst: KD
Phenol	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Bis(2-chloroethyl)ether	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
2-Chlorophenol	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
1,3-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
1,4-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Benzyl alcohol	ND	610		µg/Kg-dry	1	11/28/00 3:00:00 PM
2-Methylphenol	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
1,2-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Bis(2-chloroisopropyl)ether	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
4-Methylphenol	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
N-Nitrosodi-n-propylamine	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Hexachloroethane	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Nitrobenzene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Isophorone	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
2,4-Dimethylphenol	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Benzoic acid	ND	610		µg/Kg-dry	1	11/28/00 3:00:00 PM
2-Nitrophenol	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Bis(2-chloroethoxy)methane	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
2,4-Dichlorophenol	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
1,2,4-Trichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Naphthalene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
4-Chloroaniline	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Hexachlorobutadiene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
4-Chloro-3-methylphenol	ND	610		µg/Kg-dry	1	11/28/00 3:00:00 PM
2-Methylnaphthalene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Hexachlorocyclopentadiene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
2,4,6-Trichlorophenol	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
2,4,5-Trichlorophenol	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
2-Chloronaphthalene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
2-Nitroaniline	ND	610		µg/Kg-dry	1	11/28/00 3:00:00 PM
Dimethyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
2,6-Dinitrotoluene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Acenaphthylene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
3-Nitroaniline	ND	610		µg/Kg-dry	1	11/28/00 3:00:00 PM
4-Nitrophenol	ND	610		µg/Kg-dry	1	11/28/00 3:00:00 PM
2,4-Dinitrophenol	ND	610		µg/Kg-dry	1	11/28/00 3:00:00 PM
Acenaphthene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
2,4-Dinitrotoluene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Dibenzofuran	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

F - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
Lab Order: 0011264
Project: 00-035 Barre Coal Tar
Lab ID: 0011264-02B

Client Sample ID: SED-7 0-1'
Collection Date: 11/21/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
4-Chlorophenyl phenyl ether	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Fluorene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
4-Nitroaniline	ND	610		µg/Kg-dry	1	11/28/00 3:00:00 PM
4,6-Dinitro-2-methylphenol	ND	610		µg/Kg-dry	1	11/28/00 3:00:00 PM
N-Nitrosodiphenylamine	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
4-Bromophenyl phenyl ether	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Hexachlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Pentachlorophenol	ND	610		µg/Kg-dry	1	11/28/00 3:00:00 PM
Phenanthrene	920	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Anthracene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Carbazole	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Di-n-butyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Fluoranthene	550	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Pyrene	670	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Butyl benzyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Bis(2-ethylhexyl)phthalate	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
3,3'-Dichlorobenzidine	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Benz(a)anthracene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Chrysene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Di-n-octyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Benzo(b)fluoranthene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Benzo(k)fluoranthene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Benzo(a)pyrene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Dibenz(a,h)anthracene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Indeno(1,2,3-cd)pyrene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM
Benzo(g,h,i)perylene	ND	300		µg/Kg-dry	1	11/28/00 3:00:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level # - See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

Lab Order: 0011264
Client: Twin State Environmental
Project: 00-035 Barre Coal Tar

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0011264-01A	SB-14D 20-24'	11/20/00	Soil	VOLATILES by GC/MS, Medium-Level		11/20/00	11/29/00
0011264-01B				Percent Moisture			11/28/00
				SEMIVOLATILE ORGANICS, Soil/Solids		11/27/00	11/28/00
				TPH/IR (Modified for Soils/Solids)			11/29/00
0011264-02A	SED-7 0-1'	11/21/00		VOLATILES by GC/MS, Medium-Level		11/21/00	11/29/00
0011264-02B				Percent Moisture			11/28/00
				SEMIVOLATILE ORGANICS, Soil/Solids		11/27/00	11/28/00
				TPH/IR (Modified for Soils/Solids)			11/29/00
0011264-03A	SB-20 4-8'			VOLATILES by GC/MS, Medium-Level		11/21/00	11/29/00
0011264-03B				Percent Moisture			11/28/00
				SEMIVOLATILE ORGANICS, Soil/Solids		11/27/00	11/28/00
				TPH/IR (Modified for Soils/Solids)			11/29/00
0011264-04A	SB-22 10-14'			VOLATILES by GC/MS, Medium-Level		11/21/00	11/29/00
0011264-04B				Percent Moisture			11/28/00
				SEMIVOLATILE ORGANICS, Soil/Solids		11/27/00	11/28/00
				TPH/IR (Modified for Soils/Solids)			11/29/00
0011264-05A	Trip Blank			VOLATILES by GC/MS, Medium-Level		11/21/00	11/28/00

AMRO Environmental Laboratories Corporation

111 Herrick Street
 Merrimack, N.H. 03054
 Office: 603-424-2022 Fax: 603-429-8496

34610

CHAIN OF CUSTODY RECORD

Proj. No. 00-035		Project Name 00-035 Barre Coal Tar			Project State VT		MATRIX Water - A Soil/Solid-S Waste-W Other-O Explain				PAGE 1 OF 1	
Samplers (Signature) <i>[Signature]</i>					Type Size & No. of Containers		8240 8270 SW 417.1				Remarks	
Sta. No.	Date	Time	Comp	Grab	Station Location							
	11/20/00	0935		X	SB-14D 20-24' 2 VOA 1402		S	X	X	X	TAT BY 12/8/00	
	11/21/00	1500		Y	SED-7 0-1'		S	X	X	X		
	11/21/00	1100		Y	SB-20 4-8'		S	X	X	X		
	11/21/00	0900		Y	SB-22 10-14"		S	X	X	X		

Please print clearly, legibly and completely. Samples cannot be logged in and the turnaround time clock will not start until any ambiguities are resolved.

PRIORITY TURNAROUND TIME AUTHORIZATION
 Before submitting samples for expedited T.A.T., you must have requested in advance and received a coded T.A.T. AUTHORIZATION NUMBER.
 AUTHORIZATION NO. _____ T.A.T. authorized by: _____

Relinquished by (Signature) <i>[Signature]</i>	Date Time 11/21/00 1700	Received by (Signature) <i>[Signature]</i> 11/24/00 14:00
Relinquished by (Signature) <i>[Signature]</i>	Date Time 11/21/00 14:40	Received by (Signature) <i>[Signature]</i>
Relinquished by (Signature) <i>[Signature]</i>	Date Time	Received by (Signature)
Relinquished by (Signature) <i>[Signature]</i>	Date Time 1000 11/24	Received for Laboratory by (Signature) <i>[Signature]</i>

Fax to (phone)
 (802) 654-8667
 Results needed
 12/8/00
 PC#

Send Results to:
 TWIN STATE ENVIRONMENTAL
 414 ROOSEVELT HWY
 COLCHESTER VT 05446
 ATTN: JON ASHLEY

AMRO Project No.
 11264
 Seal Intact?
 Yes No N/A

Remarks
 Need results by 12/8/00



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
60 Westview Street
Lexington, MA 02421-3185

Dorville
Paav
HBR

Laboratory Results

October 23, 2000

Project Number: 00090035

Project: Barre Coal Tar, Barre, VT

Analysis: Metals in Soil Medium Level by ICP

Analyst: Dan Curran *PC 10/19/00*

Analytical Procedure:

All samples were received and logged in by the laboratory according to the SOP for Sample Log-in (EIA-ADMLOGN5.SOP, 4/99).

Sample analysis was done following the EPA Region I SOP, INGICP3.SOP.

Samples preparation was done following the Region I SOP INGPREP2.SOP

Samples were analyzed by inductively coupled plasma - atomic emission spectrometry using pneumatic nebulization. Analysis and preparation SOP's are based on Test Methods for Evaluating Solid Waste Physical/Chemical Methods SW-846, 3rd Edition, Revision 2, Final Update III, Methods 6010B and 3050B respectively.

Percent solids values were determined after oven drying samples overnight at 60 degrees Celsius, and are for analytical purposes only.

Date Samples Received by the Laboratory: 09/21/2000

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Dr. William J. Andrade, Advanced Analytical Chemistry Specialist
781-860-4333

Signature: *WJ Andrade 10/24/00*

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Barre Coal Tar, Barre, VT

Metals in Soil Medium Level by ICP

Sample Number: SED-1
Date of Collection: 9/19/00
Date of Extraction: 10/10/2000
Date of Analysis: 10/11/2000
Dry Weight Extracted: 0.50 grams
Wet Weight Extracted: 0.50 grams
Volume Extracted: N/A

Laboratory ID: AA09765
Matrix: Soil
Final Volume: 50 mL
Percent Solids: 100%
Extract Dilution: 1
pH: N/A

CAS Number	Compound	Concentration mg/Kg	RL mg/Kg	Qualifier
7429-90-5	Aluminum	8000	20	
7440-36-0	Antimony	ND	10	J
7440-38-2	Arsenic	ND	20	
7440-39-3	Barium	21	1.5	
7440-41-7	Beryllium	ND	0.5	
7440-43-9	Cadmium	ND	3.0	
7440-47-3	Chromium	24	3.0	
7440-48-4	Cobalt	8.1	3.0	
7440-50-8	Copper	36	1.5	
7439-89-6	Iron	23000	10	
7439-92-1	Lead	36	10	
7439-96-5	Manganese	240	1.0	
7440-02-0	Nickel	29	6.0	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	3.0	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	20	3.0	
7440-66-6	Zinc	63	3.0	

Comments: Antimony result is approximated due to the low matrix spike recovery.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Barre Coal Tar, Barre, VT

Metals in Soil Medium Level by ICP

Sample Number: SED-2
Date of Collection: 9/19/00
Date of Extraction: 10/10/2000
Date of Analysis: 10/11/2000
Dry Weight Extracted: 0.50 grams
Wet Weight Extracted: 0.50 grams
Volume Extracted: N/A

Laboratory ID: AA09766
Matrix: Soil
Final Volume: 50 mL
Percent Solids: 100%
Extract Dilution: 1
pH: N/A

CAS Number	Compound	Concentration mg/Kg	RL mg/Kg	Qualifier
7429-90-5	Aluminum	13000	20	
7440-36-0	Antimony	ND	10	J
7440-38-2	Arsenic	ND	20	
7440-39-3	Barium	54	1.5	
7440-41-7	Beryllium	ND	0.5	
7440-43-9	Cadmium	ND	3.0	
7440-47-3	Chromium	27	3.0	
7440-48-4	Cobalt	12	3.0	
7440-50-8	Copper	29	1.5	
7439-89-6	Iron	25000	10	
7439-92-1	Lead	24	10	
7439-96-5	Manganese	520	1.0	
7440-02-0	Nickel	33	6.0	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	3.0	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	25	3.0	
7440-66-6	Zinc	76	3.0	

Comments: Antimony result is approximated due to the low matrix spike recovery.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Barre Coal Tar, Barre, VT
Metals in Soil Medium Level by ICP

Sample Number: SED-3
Date of Collection: 9/19/00
Date of Extraction: 10/10/2000
Date of Analysis: 10/11/2000
Dry Weight Extracted: 0.51 grams
Wet Weight Extracted: 0.51 grams
Volume Extracted: N/A

Laboratory ID: AA09767
Matrix: Soil
Final Volume: 50 mL
Percent Solids: 100%
Extract Dilution: 1
pH: N/A

CAS Number	Compound	Concentration mg/Kg	RL mg/Kg	Qualifier
7429-90-5	Aluminum	6900	20	
7440-36-0	Antimony	ND	9.8	J
7440-38-2	Arsenic	ND	20	
7440-39-3	Barium	19	1.5	
7440-41-7	Beryllium	ND	0.49	
7440-43-9	Cadmium	ND	2.9	
7440-47-3	Chromium	23	2.9	
7440-48-4	Cobalt	8.3	2.9	
7440-50-8	Copper	26	1.5	
7439-89-6	Iron	24000	9.8	
7439-92-1	Lead	22	9.8	
7439-96-5	Manganese	220	0.98	
7440-02-0	Nickel	22	5.9	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	2.9	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	17	2.9	
7440-66-6	Zinc	67	2.9	

Comments: Antimony result is approximated due to the low matrix spike recovery.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Barre Coal Tar, Barre, VT

Laboratory Reagent Blank

Sample Number: N/A
Date of Collection: N/A
Date of Extraction: 10/11/2000
Date of Analysis: 10/11/2000
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A
Volume Extracted: 50 mL

Laboratory ID: N/A
Matrix: Soil
Final Volume: 50 mL
Percent Solids: 0%
Extract Dilution: 1
pH: N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	200	
7440-36-0	Antimony	ND	100	
7440-38-2	Arsenic	ND	200	
7440-39-3	Barium	ND	15	
7440-41-7	Beryllium	ND	5	
7440-43-9	Cadmium	ND	30	
7440-47-3	Chromium	ND	30	
7440-48-4	Cobalt	ND	30	
7440-50-8	Copper	ND	15	
7439-89-6	Iron	ND	100	
7439-92-1	Lead	ND	100	
7439-96-5	Manganese	ND	10	
7440-02-0	Nickel	ND	60	
7782-49-2	Selenium	ND	200	
7440-22-4	Silver	ND	30	
7440-28-0	Thallium	ND	200	
7440-62-2	Vanadium	ND	30	
7440-66-6	Zinc	ND	30	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

METALS MATRIX SPIKE (MS) RESULTS

Sample ID: AA09769

COMPOUND	SPIKE ADDED mg/Kg	SAMPLE CONCENTRATION mg/Kg	MS CONCENTRATION mg/Kg	MS % REC	QC LIMITS (% REC)
Antimony	100	0	43.3	43.3	75 - 125
Arsenic	400	0	400	100	75 - 125
Barium	400	14	390	94.0	75 - 125
Beryllium	10.0	0	9.03	90.3	75 - 125
Cadmium	20.0	0	22.0	110	75 - 125
Chromium	40.0	16	59.9	110	75 - 125
Cobalt	100	5.7	100	94.3	75 - 125
Copper	50.0	6.1	48.6	85.0	75 - 125
Lead	100	0	98.3	98.3	75 - 125
Manganese	100	150	268	118	75 - 125
Nickel	100	17	111	94.0	75 - 125
Selenium	400	0	391	97.8	75 - 125
Silver	10.0	0	9.51	95.1	75 - 125
Thallium	400	0	366	91.5	75 - 125
Vanadium	100	14	107	93.0	75 - 125
Zinc	100	26	129	103	75 - 125

Comments: The antimony matrix spike recovery is low. Antimony results are approximated.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Sample ID: AA09765

COMPOUND	SAMPLE RESULT mg/Kg	SAMPLE DUPLICATE RESULT mg/Kg	PRECISION RPD %	QC LIMITS
Aluminum	8000	7900	1.3	35
Antimony	ND	ND	NA	35
Arsenic	ND	ND	NA	35
Barium	21	22	4.7	35
Beryllium	ND	ND	NA	35
Cadmium	ND	ND	NA	35
Chromium	24	25	4.1	35
Cobalt	8.1	8.0	1.2	35
Copper	36	42	15	35
Iron	23000	22000	4.4	35
Lead	36	46	24	35
Manganese	240	240	0.0	35
Nickel	29	28	3.5	35
Selenium	ND	ND	NA	35
Silver	ND	ND	NA	35
Thallium	ND	ND	NA	35
Vanadium	20	20	0.0	35
Zinc	63	71	12	35

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Fortified Blank (LFB) Results

COMPOUND	LFB AMOUNT SPIKED ug/L	LFB RESULT ug/L	LFB RECOVERY %	QC LIMITS RPD
Antimony	1000	1100	110	80 - 120
Arsenic	4000	4000	100	80 - 120
Barium	4000	3900	97.5	80 - 120
Beryllium	100	96	96.0	80 - 120
Cadmium	200	220	110	80 - 120
Chromium	400	400	100	80 - 120
Cobalt	1000	990	99.0	80 - 120
Copper	500	440	88.0	80 - 120
Lead	1000	930	93.0	80 - 120
Manganese	1000	980	98.0	80 - 120
Nickel	1000	1000	100	80 - 120
Selenium	4000	4000	100	80 - 120
Silver	100	94	94.0	80 - 120
Thallium	4000	3900	97.5	80 - 120
Vanadium	1000	1000	100	80 - 120
Zinc	1000	960	96.0	80 - 120

Comments:

Samples in Batch: AA09765 AA09766 AA09767 AA09768 AA09769

Qualifiers: RL = Reporting limit
 ND = Not Detected above Reporting limit
 NA = Not Applicable due to high sample dilutions or sample interferences
 J = Estimated value
 E = Estimated value exceeds the calibration range
 L = Estimated value is below the calibration range
 B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
 P = The confirmation value exceeded 35% difference and is less than 100%. The lower value is reported.
 C = The identification has been confirmed by GC/MS.
 A = Suspected Aldol condensation product.
 N = Tentatively identified compound.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Solid Laboratory Control Sample (LCS) Results

COMPOUND	LCS RESULTS mg/Kg	CONTROL LIMITS
Aluminum	5400	3140 - 7360
Antimony	28.3	5.87 - 60.2
Arsenic	102	69.8 - 118
Barium	303	254 - 405
Beryllium	38.6	33.5 - 51.9
Cadmium	92.5	74.8 - 120
Chromium	48.9	35.5 - 56.5
Cobalt	118	95.6 - 145
Copper	143	121 - 174
Iron	12000	5920 - 14500
Lead	126	103 - 167
Manganese	166	127 - 205
Nickel	136	108 - 168
Selenium	102	71.2 - 121
Silver	41.7	64.6 - 109
Thallium	36.2	23.2 - 68.3
Vanadium	63.8	44.4 - 85.8
Zinc	74.4	58.0 - 92.1

Comments: Silver result is outside the control limit.; however, the matrix spike and laboratory fortified blank recoveries are acceptable.

US ENVIRONMENTAL PROTECTION AGENCY
60 Westview Street
Lexington, MA. 02421

*Dorrie
Par
HBR*

DATE: October 9, 2000

SUBJECT: **Barre Coal Tar, Barre, VT**
Soils-Volatile Organic Analysis by GC/MS

Samples Received: SED-1 14528, SED-2 14487, SED-3 14536,
SB-4 14506, DUP-1 14515

FROM: Joseph Montanaro, EIA *10/9/00*

TO: Dorrie Par, HBR

THRU: William Andrade, Ph.D., Analytical Specialist *WJA 10/11/00*

PROJECT NUMBER: 00090035

DATE(S) SAMPLES RECEIVED BY THE LABORATORY: 9/21/00

ANALYTICAL PROCEDURE:

SOIL: The samples were processed by Method 5035, High Concentration for Soils and the extracts were analyzed by SW-846, Method 8260B, SW-846, Rev 5.0, April 1999, (VOAGCMS3. SOP 12/99). Concentration is based on wet weight.

QUALITY CONTROL:

1. A method blank was analyzed prior to sample analysis.
2. Each sample was spiked with three surrogate compounds at 25 ppb concentration. The results for the surrogate recoveries are reported for each sample.
3. Sample SB-4 14506, was spiked in duplicate and analyzed to determine laboratory precision and accuracy.

**ANALYTICAL PARAMETERS
PURGEABLE ORGANIC ANALYSIS**

INSTRUMENTS: Varian Archon Purge and Trap Autosampler
 Tekmar 2000
 Finnigan INCOS-50 XL

PURGE CONDITIONS:

Gas:	Helium
Purge Time and Flow:	11 min., 40 ml/min
Dry Purge:	4 min., 40 ml/min
Trap:	25 cm stainless steel (1/8 in. OD) packed with Carbopack B (10 cm) Carboxen 1000 (6 cm), and Carboxen 1001 (1 cm)
Desorption Time, Flow, Temperature:	4 min, 15 ml/min., 250 C
Bake out cycle:	8 min @ 260 C

CHROMATOGRAPHIC CONDITIONS:

Column:	Restek 502.2 40M length, 0.18 mm id, 1.0 df (um)
Program:	Initial 50 C programmed at 8 C/min to 220 C and held 220 C for 7 minutes.
Injector and Transfer Temperatures:	200 C
Carrier Gas and Flow:	Helium, 15 ml/min

MASS SPECTROMETER CONDITIONS:

Electron Energy:	70 V
Mass Range:	35 to 300
Scan Rate:	1.5 seconds

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
PROJECT AND REPORT FORM

Chemist Reviewing Data: Dan Boudreau

Method Modifications: None

Limitations of Data: None

Laboratory Blank Problems: None

Instrument Performance Problems: None

Surrogate or Spike Recovery Problems:

The RPD's for Chloroform and 1,4-Dichlorobenzene were beyond the acceptable quality control limits in the matrix spike duplicate analysis.

Additional Comments:

A field blank was not received with the samples.

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental **Client Sample ID:** SB-27
Lab Order: 0011245
Project: 00-035.D Barre Coal Tar **Collection Date:** 11/20/00
Lab ID: 0011245-02A **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	82		µg/Kg-dry	1	11/29/00 10:03:00 PM
Chloromethane	ND	82		µg/Kg-dry	1	11/29/00 10:03:00 PM
Vinyl chloride	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Chloroethane	ND	82		µg/Kg-dry	1	11/29/00 10:03:00 PM
Bromomethane	ND	82		µg/Kg-dry	1	11/29/00 10:03:00 PM
Trichlorofluoromethane	ND	82		µg/Kg-dry	1	11/29/00 10:03:00 PM
Acetone	ND	410		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,1-Dichloroethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Carbon disulfide	ND	82		µg/Kg-dry	1	11/29/00 10:03:00 PM
Methylene chloride	ND	82		µg/Kg-dry	1	11/29/00 10:03:00 PM
Methyl tert-butyl ether	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
trans-1,2-Dichloroethene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,1-Dichloroethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
2-Butanone	ND	410		µg/Kg-dry	1	11/29/00 10:03:00 PM
2,2-Dichloropropane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
cis-1,2-Dichloroethene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Chloroform	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Bromochloromethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,1,1-Trichloroethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,1-Dichloropropene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Carbon tetrachloride	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,2-Dichloroethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Benzene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Trichloroethene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,2-Dichloropropane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Bromodichloromethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Dibromomethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
4-Methyl-2-pentanone	ND	410		µg/Kg-dry	1	11/29/00 10:03:00 PM
cis-1,3-Dichloropropene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Toluene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
trans-1,3-Dichloropropene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,1,2-Trichloroethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,2-Dibromoethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
2-Hexanone	ND	410		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,3-Dichloropropane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Tetrachloroethene	160	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Dibromochloromethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Chlorobenzene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,1,1,2-Tetrachloroethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

FACILITY SAMPLED: Barre Coal Tar

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE ID.: Method Blank
FILE NAME(S): 09280E32
DATE OF ANALYSIS: 9/28/00

SAMPLE WET WEIGHT: 10.090 grams
DILUTION FACTOR(S): 500
PRESERVATION: Cool to 4 C

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	PPM Conc. (ug/g)	Reporting Limits (ug/g)	Comments
TARGET COMPOUNDS					
74-87-3	34418	Chloromethane	ND	5.00	
74-83-9	34413	Bromomethane	ND	5.00	
75-01-4	39175	Vinyl Chloride	ND	5.00	
75-00-3	34311	Chloroethane	ND	5.00	
75-09-2	34423	Methylene Chloride	ND	5.00	
75-69-4	34488	Trichlorofluoromethane	ND	5.00	
75-35-4	34501	1,1-Dichloroethylene	ND	5.00	
75-34-3	34496	1,1-Dichloroethane	ND	5.00	
156-59-2		c-1,2-Dichloroethylene	ND	5.00	
156-60-5		t-1,2-Dichloroethylene	ND	5.00	
67-66-3	32106	Chloroform	ND	5.00	
107-06-2	34531	1,2-Dichloroethane	ND	5.00	
71-55-6	34506	1,1,1-Trichloroethane	ND	5.00	
56-23-5	32102	Carbon Tetrachloride	ND	5.00	
75-27-4	32101	Bromodichloromethane	ND	5.00	
78-87-5	34541	1,2-Dichloropropane	ND	5.00	
10061-02-6	34699	t-1,3-Dichloropropene	ND	5.00	
79-01-6	39180	Trichloroethylene	ND	5.00	
124-48-1	32105	Dibromochloromethane	ND	5.00	
10061-01-5	34704	c-1,3-Dichloropropene	ND	5.00	
563-58-6		1,1-Dichloropropene	ND	5.00	
79-00-5	34511	1,1,2-Trichloroethane	ND	5.00	
71-43-2	34030	Benzene	ND	5.00	
75-25-2	32104	Bromoform	ND	5.00	
127-18-4	34475	Tetrachloroethylene	ND	5.00	
79-34-5	34516	1,1,2,2-Tetrachloroethane	ND	5.00	
108-88-3	34010	Toluene	ND	5.00	
108-90-7	34301	Chlorobenzene	ND	5.00	
100-41-4	34371	Ethylbenzene	ND	5.00	
541-73-1		1,3-Dichlorobenzene	ND	5.00	
106-46-7		1,4-Dichlorobenzene	ND	5.00	
95-50-1		1,2-Dichlorobenzene	ND	5.00	
		1,1,2-Trichloro-1,2,2-trifluoroethane	ND	5.00	
67-64-1	81552	Acetone	ND	10.00	
75-15-0	77041	Carbon Disulfide	ND	15.00	

(con't)

US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE ID.: Method Blank
 Sample Results Continued:

CAS NO.	STORET NO.	Compound	PPM Conc. (ug/g)	Reporting Limits (ug/g)	Comments
78-93-3	81595	2-Butanone(MEK)	ND	20.00	
591-10-6	77103	2-Hexanone	ND	3.00	
108-10-1	81596	4-Methyl-2-Pentanone (MIBK)	ND	3.00	
100-42-5	81708	Styrene	ND	5.00	
133-02-7	81551	Xylenes (total)	ND	10.00	
		1,2-Dibromoethane (EDB)	ND	5.00	
		Tetrahydrofuran	ND	35.00	
		Ethyl ether	ND	15.00	
		Isopropylbenzene	ND	5.00	
		n-Propylbenzene	ND	5.00	
		1,3,5-Trimethylbenzene	ND	5.00	
		1,2,4-Trimethylbenzene	ND	5.00	
		sec-Butylbenzene	ND	5.00	
		para-Isopropyltoluene	ND	5.00	
		n-Butylbenzene	ND	5.00	
		Naphthalene	ND	5.00	
		methyl-tert-butyl Ether (MTBE)	ND	5.00	

Other Compounds Tentatively Identified					

Sample Recoveries for Surrogate Compounds:	Observed Recoveries	ACCEPTABLE RANGE ₂
1,2-Dichloroethane,d4	97	63-145
Toluene,d8	101	76-116
1,4-Bromofluorobenzene	92	71-131

Notes:

- ND=none detected above the detection level
- RL=Reporting Limit
- J=approximate
- NA=not available due to dilution or interference
- E=estimated value exceeds the calibration range
- L=estimated value is below the calibration range
- B=analyte is associated with lab blank
- 1=out of range
- 2=quality control acceptance criteria as per laboratory

FACILITY SAMPLED: Barre Coal Tar

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE ID.: SED-1 14528
FILE NAME(S): 09280E33
DATE OF COLLECTION: 9/19/00
DATE OF ANALYSIS: 9/28/00

SAMPLE WET WEIGHT: 11.677 grams
DILUTION FACTOR(S): 500
PRESERVATION: Cool to 4 C

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	PPM Conc. (ug/g)	Reporting Limits (ug/g)	Comments
TARGET COMPOUNDS					
74-87-3	34418	Chloromethane	ND	4.30	
74-83-9	34413	Bromomethane	ND	4.30	
75-01-4	39175	Vinyl Chloride	ND	4.30	
75-00-3	34311	Chloroethane	ND	4.30	
75-09-2	34423	Methylene Chloride	ND	4.30	
75-69-4	34488	Trichlorofluoromethane	ND	4.30	
75-35-4	34501	1,1-Dichloroethylene	ND	4.30	
75-34-3	34496	1,1-Dichloroethane	ND	4.30	
156-59-2		c-1,2-Dichloroethylene	ND	4.30	
156-60-5		t-1,2-Dichloroethylene	ND	4.30	
67-66-3	32106	Chloroform	ND	4.30	
107-06-2	34531	1,2-Dichloroethane	ND	4.30	
71-55-6	34506	1,1,1-Trichloroethane	ND	4.30	
56-23-5	32102	Carbon Tetrachloride	ND	4.30	
75-27-4	32101	Bromodichloromethane	ND	4.30	
78-87-5	34541	1,2-Dichloropropane	ND	4.30	
10061-02-6	34699	t-1,3-Dichloropropene	ND	4.30	
79-01-6	39180	Trichloroethylene	ND	4.30	
124-48-1	32105	Dibromochloromethane	ND	4.30	
10061-01-5	34704	c-1,3-Dichloropropene	ND	4.30	
563-58-6		1,1-Dichloropropene	ND	4.30	
79-00-5	34511	1,1,2-Trichloroethane	ND	4.30	
71-43-2	34030	Benzene	ND	4.30	
75-25-2	32104	Bromoform	ND	4.30	
127-18-4	34475	Tetrachloroethylene	ND	4.30	
79-34-5	34516	1,1,2,2-Tetrachloroethane	ND	4.30	
108-88-3	34010	Toluene	ND	4.30	
108-90-7	34301	Chlorobenzene	ND	4.30	
100-41-4	34371	Ethylbenzene	ND	4.30	
541-73-1		1,3-Dichlorobenzene	ND	4.30	
106-46-7		1,4-Dichlorobenzene	ND	4.30	
95-50-1		1,2-Dichlorobenzene	ND	4.30	
		1,1,2-Trichloro-1,2,2-trifluoroethane	ND	4.30	
67-64-1	81552	Acetone	ND	8.60	
75-15-0	77041	Carbon Disulfide	ND	12.90	

(con't)

US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE ID.: SED-1 14528

Sample Results Continued:

CAS NO.	STORET NO.	Compound	PPM Conc. (ug/g)	Reporting Limits (ug/g)	Comments
78-93-3	81595	2-Butanone(MEK)	ND	17.20	
591-10-6	77103	2-Hexanone	ND	2.58	
108-10-1	81596	4-Methyl-2-Pentanone (MIBK)	ND	2.58	
100-42-5	81708	Styrene	ND	4.30	
133-02-7	81551	Xylenes (total)	ND	8.60	
		1,2-Dibromoethane (EDB)	ND	4.30	
		Tetrahydrofuran	ND	30.10	
		Ethyl ether	ND	12.90	
		Isopropylbenzene	ND	4.30	
		n-Propylbenzene	ND	4.30	
		1,3,5-Trimethylbenzene	ND	4.30	
		1,2,4-Trimethylbenzene	0.89	4.30	L
		sec-Butylbenzene	ND	4.30	
		para-Isopropyltoluene	ND	4.30	
		n-Butylbenzene	ND	4.30	
		Naphthalene	1.9	4.30	L
		methyl-tert-butyl Ether (MTBE)	ND	4.30	
Other Compounds Tentatively Identified					
Other Compounds Quantitated					

Sample Recoveries for Surrogate Compounds:	Observed Recoveries	ACCEPTABLE RANGE ₂
1,2-Dichloroethane,d4	115	63-145
Toluene,d8	105	76-116
1,4-Bromofluorobenzene	99	71-131

Notes:

- ND=none detected above the detection level
- RL=Reporting Limit
- J=approximate
- NA=not available due to dilution or interference
- E=estimated value exceeds the calibration range
- L=estimated value is below the calibration range
- B=analyte is associated with lab blank
- 1=out of range
- 2=quality control acceptance criteria as per laboratory

FACILITY SAMPLED: Barre Coal Tar

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE ID: SED-2 14487
FILE NAME(S): 09280E34
DATE OF COLLECTION: 9/19/00
DATE OF ANALYSIS: 9/28/00

SAMPLE WET WEIGHT: 9.677 grams
DILUTION FACTOR(S): 500
PRESERVATION: Cool to 4 C

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	ppm Conc. (ug/gm)	Reporting Limits (ug/gm)	Comments
TARGET COMPOUNDS					
74-87-3	34418	Chloromethane	ND	5.20	
74-83-9	34413	Bromomethane	ND	5.20	
75-01-4	39175	Vinyl Chloride	ND	5.20	
75-00-3	34311	Chloroethane	ND	5.20	
75-09-2	34423	Methylene Chloride	ND	5.20	
75-69-4	34488	Trichlorofluoromethane	ND	5.20	
75-35-4	34501	1,1-Dichloroethylene	ND	5.20	
75-34-3	34496	1,1-Dichloroethane	ND	5.20	
156-59-2		c-1,2-Dichloroethylene	ND	5.20	
156-60-5		t-1,2-Dichloroethylene	ND	5.20	
67-66-3	32106	Chloroform	ND	5.20	
107-06-2	34531	1,2-Dichloroethane	ND	5.20	
71-55-6	34506	1,1,1-Trichloroethane	ND	5.20	
56-23-5	32102	Carbon Tetrachloride	ND	5.20	
75-27-4	32101	Bromodichloromethane	ND	5.20	
78-87-5	34541	1,2-Dichloropropane	ND	5.20	
10061-02-6	34699	t-1,3-Dichloropropene	ND	5.20	
79-01-6	39180	Trichloroethylene	ND	5.20	
124-48-1	32105	Dibromochloromethane	ND	5.20	
10061-01-5	34704	c-1,3-Dichloropropene	ND	5.20	
563-58-6		1,1-Dichloropropene	ND	5.20	
79-00-5	34511	1,1,2-Trichloroethane	ND	5.20	
71-43-2	34030	Benzene	ND	5.20	
75-25-2	32104	Bromoform	ND	5.20	
127-18-4	34475	Tetrachloroethylene	ND	5.20	
79-34-5	34516	1,1,2,2-Tetrachloroethane	ND	5.20	
108-88-3	34010	Toluene	ND	5.20	
108-90-7	34301	Chlorobenzene	ND	5.20	
100-41-4	34371	Ethylbenzene	ND	5.20	
541-73-1		1,3-Dichlorobenzene	ND	5.20	
106-46-7		1,4-Dichlorobenzene	ND	5.20	
95-50-1		1,2-Dichlorobenzene	ND	5.20	
		1,1,2-Trichloro-1,2,2-trifluoroethane	ND	5.20	
67-64-1	81552	Acetone	ND	10.40	
75-15-0	77041	Carbon Disulfide	ND	15.60	

(con't)

US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE ID.: SED-2 14487
 Sample Results Continued:

CAS NO.	STORET NO.	Compound	ppm Conc. (ug/gm)	Reporting Limits (ug/gm)	Comments
78-93-3	81595	2-Butanone (MEK)	ND	20.80	
591-10-6	77103	2-Hexanone	ND	3.12	
108-10-1	81596	4-Methyl-2-Pentanone(MIBK)	ND	3.12	
100-42-5	81708	Styrene	ND	5.20	
133-02-7	81551	Xylenes (total)	ND	10.40	
		1,2-Dibromoethane	ND	5.20	
		Tetrahydrofuran	ND	36.40	
		Ethyl ether	ND	15.60	
		Isopropylbenzene	ND	5.20	
		n-Propylbenzene	ND	5.20	
		1,3,5-Trimethylbenzene	7.1	5.20	
		1,2,4-Trimethylbenzene	4.5	5.20	L
		sec-Butylbenzene	ND	5.20	
		para-Isopropyltoluene	2.8	5.20	L
		n-Butylbenzene	1.4	5.20	L
		Naphthalene	5.5	5.20	
		methyl-tert-butyl Ether (MTBE)	ND	5.20	

Other Compounds Tentatively Identified					

Other Compounds Quantitated					

Sample Recoveries for Surrogate Compounds:	Observed Recoveries	ACCEPTABLE RANGE ₂
1,2-Dichloroethane,d4	127	63-145
Toluene,d8	113	76-116
1,4-Bromofluorobenzene	111	71-131

Notes:

- ND=none detected above the detection level
- RL=Reporting Limit
- J=approximate
- NA=not available due to dilution or interference
- E=estimated value exceeds the calibration range
- L=estimated value is below the calibration range
- B=analyte is associated with lab blank
- 1=out of range
- 2=quality control acceptance criteria as per laboratory

FACILITY SAMPLED: Barre Coal Tar

US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE ID: SED-3 14536
 FILE NAME(S): 09280E35
 DATE OF COLLECTION: 9/19/00
 DATE OF ANALYSIS: 9/28/00

SAMPLE WET WEIGHT: 10.910 grams
 DILUTION FACTOR(S): 500
 PRESERVATION: Cool to 4 C

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	ppm Conc. (ug/gm)	Reporting Limits (ug/gm)	Comments
TARGET COMPOUNDS					
74-87-3	34418	Chloromethane	ND	4.60	
74-83-9	34413	Bromomethane	ND	4.60	
75-01-4	39175	Vinyl Chloride	ND	4.60	
75-00-3	34311	Chloroethane	ND	4.60	
75-09-2	34423	Methylene Chloride	ND	4.60	
75-69-4	34488	Trichlorofluoromethane	ND	4.60	
75-35-4	34501	1,1-Dichloroethylene	ND	4.60	
75-34-3	34496	1,1-Dichloroethane	ND	4.60	
156-59-2		c-1,2-Dichloroethylene	ND	4.60	
156-60-5		t-1,2-Dichloroethylene	ND	4.60	
67-66-3	32106	Chloroform	ND	4.60	
107-06-2	34531	1,2-Dichloroethane	ND	4.60	
71-55-6	34506	1,1,1-Trichloroethane	ND	4.60	
56-23-5	32102	Carbon Tetrachloride	ND	4.60	
75-27-4	32101	Bromodichloromethane	ND	4.60	
78-87-5	34541	1,2-Dichloropropane	ND	4.60	
10061-02-6	34699	t-1,3-Dichloropropene	ND	4.60	
79-01-6	39180	Trichloroethylene	ND	4.60	
124-48-1	32105	Dibromochloromethane	ND	4.60	
10061-01-5	34704	c-1,3-Dichloropropene	ND	4.60	
563-58-6		1,1-Dichloropropene	ND	4.60	
79-00-5	34511	1,1,2-Trichloroethane	ND	4.60	
71-43-2	34030	Benzene	ND	4.60	
75-25-2	32104	Bromoform	ND	4.60	
127-18-4	34475	Tetrachloroethylene	ND	4.60	
79-34-5	34516	1,1,2,2-Tetrachloroethane	ND	4.60	
108-88-3	34010	Toluene	ND	4.60	
108-90-7	34301	Chlorobenzene	ND	4.60	
100-41-4	34371	Ethylbenzene	ND	4.60	
541-73-1		1,3-Dichlorobenzene	ND	4.60	
106-46-7		1,4-Dichlorobenzene	ND	4.60	
95-50-1		1,2-Dichlorobenzene	ND	4.60	
		1,1,2-Trichloro-1,2,2-trifluoroethane	ND	4.60	
67-64-1	81552	Acetone	ND	9.20	
75-15-0	77041	Carbon Disulfide	ND	13.80	

(con't)

US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE ID.: SED-3 14536

Sample Results Continued:

CAS NO.	STORET NO.	Compound	ppm Conc. (ug/gm)	Reporting Limits (ug/gm)	Comments
78-93-3	81595	2-Butanone (MEK)	ND	18.40	
591-10-6	77103	2-Hexanone	ND	2.76	
108-10-1	81596	4-Methyl-2-Pentanone(MIBK)	ND	2.76	
100-42-5	81708	Styrene	ND	4.60	
133-02-7	81551	Xylenes (total)	ND	9.20	
		1,2-Dibromoethane	ND	4.60	
		Tetrahydrofuran	ND	32.20	
		Ethyl ether	ND	13.80	
		Isopropylbenzene	ND	4.60	
		n-Propylbenzene	ND	4.60	
		1,3,5-Trimethylbenzene	14	4.60	
		1,2,4-Trimethylbenzene	7.3	4.60	
		sec-Butylbenzene	ND	4.60	
		para-Isopropyltoluene	3.9	4.60	L
		n-Butylbenzene	2.0	4.60	L
		Naphthalene	16	4.60	
		methyl-tert-butyl Ether (MTBE)	ND	4.60	
Other Compounds Tentatively Identified					
		2-methyl Naphthalene	9.9	9.20	J
		2-ethyl-1-3-dimethyl Benzene	12	9.20	J
		1-methyl-4-(1-methylethyl) Benzene	10	9.20	J

Sample Recoveries for Surrogate Compounds:	Observed Recoveries	ACCEPTABLE RANGE ₂
1,2-Dichloroethane,d4	134	63-145
Toluene,d8	136 ₁	76-116
1,4-Bromofluorobenzene	118	71-131

Notes:

- ND=none detected above the detection level
- RL=Reporting Limit
- J=approximate
- NA=not available due to dilution or interference
- E=estimated value exceeds the calibration range
- L=estimated value is below the calibration range
- B=analyte is associated with lab blank
- 1=out of range
- 2=quality control acceptance criteria as per laboratory



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
OFFICE OF ENVIRONMENTAL MEASUREMENT & EVALUATION
60 WESTVIEW STREET
LEXINGTON, MASSACHUSETTS 02421-3185

Dorrie
Paar
HBR

ATE: October 16, 2000

SUBJ: Gas Chromatography-Mass Spectrometry Analysis of Polynuclear Aromatic Hydrocarbons (PAHs) in Soils and Sediments - **Barre Coal Tar, Barre, VT**

ROM: Dick Siscanaw, Chemistry Section *RS 10/16/00*

THRU: Dr. William J. Andrade, Advanced Analytical Chemistry Specialist *WJA 10/19/00*

TO: Dorrie Paar

PROJECT NUMBER: 00090035

ANALYTICAL PROCEDURE:

All samples were received and logged in by the laboratory according to the SOP for Sample Log-in (EIA-ADMLOGN2.SOP, 7/16/98).

Sample processing was done following the EPA Region I method: Standard Operating Procedure for the Extraction and Analysis of Polynuclear Aromatic Hydrocarbons (PAHs) in solid samples using SIM-GC/MS analysis. All values are reported out on a dry weight basis.

The analytical support for this report was performed by ESAT contractors.

Date(s) Samples Received by the Laboratory: 9/21/00

cc:

File: J:\CHEMISTRY\REPORTS\BNA\00090035SPH.WPD

US ENVIRONMENTAL PROTECTION AGENCY
60 Westview Street
Lexington, MA 02421

QUALITY CONTROL:

1. A laboratory blank was analyzed before the sample analysis.
2. Each sample was spiked with 40 ug of the following surrogate compounds: Fluorobiphenyl and p-Terphenyl,d14. The results for the surrogate recoveries are reported out for each sample.
3. One sample, SED-2, was spiked twice as a matrix and matrix spike duplicate with 40 ug of the following compounds. The results of the analyses are listed below.

Compound	Matrix Rec. (%)	Matrix Dup. Rec. (%)	QC Range (%)	RPD (%)	Comments
Naphthalene	108	70		34	
Acenaphthylene	125	101		13	
Acenaphthene	105	93	31-137	9	
Fluorene	122	98		14	
Phenanthrene	131	107		11	
Anthracene	122	110		7	
Fluoranthene	145	133		4	
Pyrene	145*	133	35-142	3	
Benzo (a) anthracene	128	128		0	
Chrysene	101	101		0	
Benzo (b) fluoranthene	125	125		0	
Benzo (k) fluoranthene	98	98		0	
Benzo (a) pyrene	122	122		0	
Indeno (1, 2, 3-cd) pyrene	106	106		0	
Dibenzo (a, h) anthracene	106	108		2	
Benzo (ghi) perylene	105	105		0	

(Cont.)

SAMPLES ANALYZED: SED-1, SED-2, SED-3, SB-4, DUP-1

US ENVIRONMENTAL PROTECTION AGENCY
60 Westview Street
Lexington, MA 02421

ANALYTICAL PARAMETERS

INSTRUMENTS:

Hewlett Packard Gas Chromatograph
Hewlett Packard Gas Chromatograph-Mass
Spectrometer

GC/FID Screening Conditions:

Gas: Hydrogen
Capillary Column: DB-1, 30m, 0.32mm ID, 0.10 micron
film thickness
Injection Mode: Splitless
Temperature Program: Isothermal for 3 min at 40°C,
programmed at 15°C/min to 320°C
for 3 min

GC-MS Conditions:

Gas: Helium
Capillary Column: DB-5, 60m, 0.25mm ID, 0.25 micron
film thickness
Injection Mode: Splitless
Temperature Program: Isothermal for 4 min at 40°C,
programmed at 7°C/min to 300°C
Injector, Transfer
Temperatures: 300°C, 290°C
Electron Energy: 70 V
Mass Range: SIM

US ENVIRONMENTAL PROTECTION AGENCY
60 Westview Street
Lexington, MA 02421

Chemist who reviewed data: Dick Siscanaw

Holding times met (Y/N): Yes
Extraction (Water - 7 days, Soils - 14 days)
Analytical (40 days after extraction)

Method modifications: None

Limitations of data: None

Laboratory blank problems: None

Instrument performance problems: None

Surrogate and spike recovery problems: None

Additional comments: None

FACILITY SAMPLED: Barre Coal Tar

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: SBLK01

Matrix: Soil

DATE OF COLLECTION:	9/21/00		
DATE OF EXTRACTION:	9/26/00	Percent Moisture	0
DATE OF ANALYSIS:	9/29/00	Final Vol. (mL):	1
WET WEIGHT (g):	5.005	GPC Factor:	1
DRY WEIGHT (g):	5.005	Dilution Factor	1

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	Conc. (ug/Kg)	RL (ug/Kg)	Qualifier or Comment
----- Priority Pollutants					
91-20-3	34696	Naphthalene	50	10	
208-96-8	34200	Acenaphthylene	50	10	
83-32-9	34205	Acenaphthene	50	10	
86-73-7	34381	Fluorene	50	10	
85-01-8	34461	Phenanthrene	50	10	
120-12-7	34220	Anthracene	50	10	
206-44-0	34376	Fluoranthene	50	10	
129-00-0	34469	Pyrene	50	10	
56-55-3	34526	Benzo (a) anthracene	50	10	
218-01-9	34320	Chrysene	50	10	
205-99-2	34230	Benzo (b) fluoranthene	50	10	
207-08-9	34242	Benzo (k) fluoranthene	50	10	
50-32-8	34247	Benzo (a) pyrene	50	10	
193-39-5	34403	Indeno (1,2,3-cd) pyrene	50	10	
53-70-3	34556	Dibenzo (a, h) anthracene	50	10	
191-24-2	34521	Benzo (ghi) perylene	50	10	

Other Compounds Quantitated

None	ND	10
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US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

Sample Recoveries For Surrogate Compounds:	Recoveries (%)	QC Range (%)
Fluorobiphenyl	105	30-115
p-Terphenyl, d14	120	18-137

Notes:

- RL = Reporting limit
- ND = None detected
- < = Less than
- > = Greater than
- NA = Not available, due to sample dilution or interference
- E = Estimated value exceeds the calibration range
- L = Estimated value is below the calibration range
- B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contaminant in the sample extract is less than ten times the concentration in the blank extract for the common contaminants (phthalates and adipates), or less than five times for the remaining contaminants.
- C = This compound is confirmation for the pesticide analyses. See the pesticide report for the quantitation.
- A = Suspected aldolcondensation product
- J = Estimated value
- M = Matrix is interfering with the compound, usually area counts of the internal standard is low.

FACILITY SAMPLED: Barre Coal Tar

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: SED-1
DATE OF COLLECTION: 9/21/00
DATE OF EXTRACTION: 9/26/00
DATE OF ANALYSIS: 9/29/00
WET WEIGHT (g): 5.446
DRY WEIGHT (g): 4.003

Matrix: Soil
Percent Moisture 26.5
Final Vol. (mL): 1
GPC Factor: 1
Dilution Factor 1

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	Conc. (ug/Kg)	RL (ug/Kg)	Qualifier or Comment
----- Priority Pollutants					
91-20-3	34696	Naphthalene	6300	12.5	
208-96-8	34200	Acenaphthylene	530	12.5	
83-32-9	34205	Acenaphthene	9200	12.5	
86-73-7	34381	Fluorene	6000	12.5	
85-01-8	34461	Phenanthrene	25000	25.0	D
120-12-7	34220	Anthracene	5500	12.5	
206-44-0	34376	Fluoranthene	5900	12.5	
129-00-0	34469	Pyrene	6800	12.5	
56-55-3	34526	Benzo (a) anthracene	720	12.5	
218-01-9	34320	Chrysene	940	12.5	
205-99-2	34230	Benzo (b) fluoranthene	960	12.5	
207-08-9	34242	Benzo (k) fluoranthene	330	12.5	
50-32-8	34247	Benzo (a) pyrene	700	12.5	
193-39-5	34403	Indeno (1, 2, 3-cd) pyrene	530	12.5	
53-70-3	34556	Dibenzo (a, h) anthracene	130	12.5	
191-24-2	34521	Benzo (ghi) perylene	570	12.5	

Other Compounds Quantitated

None ND 12.5

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

Sample Recoveries For Surrogate Compounds:	Recoveries (%)	QC Range (%)
Fluorobiphenyl	97	43-116
p-Terphenyl, d14	125	33-141

FACILITY SAMPLED: Barre Coal Tar

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.:	SED-2	Matrix:	Soil
DATE OF COLLECTION:	9/21/00	Percent Moisture	18.2
DATE OF EXTRACTION:	9/26/00	Final Vol. (mL):	1
DATE OF ANALYSIS:	9/29/00	GPC Factor:	1
WET WEIGHT (g):	5.916	Dilution Factor	1
DRY WEIGHT (g):	4.839		

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	Conc. (ug/Kg)	RL (ug/Kg)	Qualifier or Comment
----- Priority Pollutants -----					
91-20-3	34696	Naphthalene	2000	12.5	
208-96-8	34200	Acenaphthylene	5600	12.5	
83-32-9	34205	Acenaphthene	3300	12.5	
86-73-7	34381	Fluorene	4900	12.5	
85-01-8	34461	Phenanthrene	8100	12.5	
120-12-7	34220	Anthracene	3900	12.5	
206-44-0	34376	Fluoranthene	13000	12.5	
129-00-0	34469	Pyrene	20000	12.5	
56-55-3	34526	Benzo (a) anthracene	6400	12.5	
218-01-9	34320	Chrysene	5600	12.5	
205-99-2	34230	Benzo (b) fluoranthene	5600	12.5	
207-08-9	34242	Benzo (k) fluoranthene	1900	12.5	
50-32-8	34247	Benzo (a) pyrene	5900	12.5	
193-39-5	34403	Indeno (1,2,3-cd) pyrene	3200	12.5	
53-70-3	34556	Dibenzo (a,h) anthracene	710	12.5	
191-24-2	34521	Benzo (ghi) perylene	3300	12.5	

Other Compounds Quantitated

None	ND	10.3
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US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

Sample Recoveries For Surrogate Compounds:	Recoveries (%)	QC Range (%)
Fluorobiphenyl	84	43-116
p-Terphenyl, d14	108	33-141

FACILITY SAMPLED: Barre Coal Tar

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: SED-3

Matrix: Soil

DATE OF COLLECTION: 9/21/00

DATE OF EXTRACTION: 9/26/00

DATE OF ANALYSIS: 9/29/00

WET WEIGHT(g): 5.783

DRY WEIGHT(g): 4.777

Percent Moisture 17.4

Final Vol.(mL): 1

GPC Factor: 1

Dilution Factor 1&10

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	Conc. (ug/Kg)	RL (ug/Kg)	Qualifier or Comment
----- Priority Pollutants					
91-20-3	34696	Naphthalene	45000	125	D
208-96-8	34200	Acenaphthylene	48000	125	D
83-32-9	34205	Acenaphthene	16000	12.5	
86-73-7	34381	Fluorene	50000	125	D
85-01-8	34461	Phenanthrene	110000	125	D
120-12-7	34220	Anthracene	35000	125	D
206-44-0	34376	Fluoranthene	35000	125	D
129-00-0	34469	Pyrene	65000	125	D
56-55-3	34526	Benzo(a)anthracene	15000	12.5	
218-01-9	34320	Chrysene	12000	12.5	
205-99-2	34230	Benzo(b)fluoranthene	10000	12.5	
207-08-9	34242	Benzo(k)fluoranthene	2800	12.5	
50-32-8	34247	Benzo(a)pyrene	12000	12.5	
193-39-5	34403	Indeno(1,2,3-cd)pyrene	5400	12.5	
53-70-3	34556	Dibenzo(a,h)anthracene	1500	12.5	
191-24-2	34521	Benzo(ghi)perylene	5600	12.5	

Other Compounds Quantitated

None ND 10.5

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

Sample Recoveries For Surrogate Compounds:	Recoveries (%)	QC Range (%)
Fluorobiphenyl	79	43-116
p-Terphenyl, d14	107	33-141

ATTACHMENT 4



December 01, 2000

Jon Ashley
Twin State Environmental
414 Roosevelt Highway
Colchester, VT 05446
TEL: (802) 654-8663
FAX (802) 654-8667

RE: 00-035 Barre Coal Tar

Order No.: 0011264

Dear Jon Ashley:

AMRO Environmental Laboratories Corp. received 5 samples on 11/24/00 for the analyses presented in the following report.

AMRO operates a Quality Assurance Program which meets or exceeds EPA and state requirements. A copy of the appropriate State Certificate is attached. The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt.

Please be advised that any unused sample volume and sample extracts will be stored for a period of thirty (30) days from this report date. After this time, AMRO will properly dispose of the remaining sample(s). If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This letter is an integral part of your data report. If you have any questions regarding this project in the future, please refer to the Order Number above.

Sincerely,

Nancy Stewart
Vice President / Lab Director

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
Project: 00-035 Barre Coal Tar
Lab Order: 0011264
Date Received: 11/24/00**Work Order Sample Summary**

Lab Sample ID	Client Sample ID	Collection Date
0011264-01A	SB-14D 20-24'	11/20/00
0011264-01B	SB-14D 20-24'	11/20/00
0011264-02A	SED-7 0-1'	11/21/00
0011264-02B	SED-7 0-1'	11/21/00
0011264-03A	SB-20 4-8'	11/21/00
0011264-03B	SB-20 4-8'	11/21/00
0011264-04A	SB-22 10-14'	11/21/00
0011264-04B	SB-22 10-14'	11/21/00
0011264-05A	Trip Blank	11/21/00

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
Lab Order: 0011264
Project: 00-035 Barre Coal Tar
Lab ID: 0011264-01B

Client Sample ID: SB-14D 20-24'
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH/IR (MODIFIED FOR SOILS/SOLIDS)		E418.1				
Petroleum Hydrocarbons, TR	ND	35		mg/Kg-dry	1	11/29/00
PERCENT MOISTURE		D2216				
Percent Moisture	13.5	0		wt%	1	11/28/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
Lab Order: 0011264
Project: 00-035 Barre Coal Tar
Lab ID: 0011264-03B

Client Sample ID: SB-20 4-8'
Collection Date: 11/21/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH/IR (MODIFIED FOR SOILS/SOLIDS)	E418.1					Analyst: JA
Petroleum Hydrocarbons, TR	ND	36		mg/Kg-dry	1	11/29/00
PERCENT MOISTURE	D2216					Analyst: SL
Percent Moisture	18.7	0		wt%	1	11/28/00

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
Lab Order: 0011264
Project: 00-035 Barre Coal Tar
Lab ID: 0011264-04B

Client Sample ID: SB-22 10-14'
Collection Date: 11/21/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH/IR (MODIFIED FOR SOILS/SOLIDS)		E418.1				Analyst: JA
Petroleum Hydrocarbons, TR	ND	41		mg/Kg-dry	1	11/29/00
PERCENT MOISTURE		D2216				Analyst: SL
Percent Moisture	31.9	0		wt%	1	11/28/00

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level # - See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
Lab Order: 0011264
Project: 00-035 Barre Coal Tar
Lab ID: 0011264-01A

Client Sample ID: SB-14D 20-24'
Collection Date: 11/20/00
Matrix: SOIL.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	96		µg/Kg-dry	1	11/29/00 8:17:00 PM
Chloromethane	ND	96		µg/Kg-dry	1	11/29/00 8:17:00 PM
Vinyl chloride	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Chloroethane	ND	96		µg/Kg-dry	1	11/29/00 8:17:00 PM
Bromomethane	ND	96		µg/Kg-dry	1	11/29/00 8:17:00 PM
Trichlorofluoromethane	ND	96		µg/Kg-dry	1	11/29/00 8:17:00 PM
Acetone	ND	480		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,1-Dichloroethene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Carbon disulfide	ND	96		µg/Kg-dry	1	11/29/00 8:17:00 PM
Methylene chloride	ND	96		µg/Kg-dry	1	11/29/00 8:17:00 PM
Methyl tert-butyl ether	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
trans-1,2-Dichloroethene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,1-Dichloroethane	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
2-Butanone	ND	480		µg/Kg-dry	1	11/29/00 8:17:00 PM
2,2-Dichloropropane	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
cis-1,2-Dichloroethene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Chloroform	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Bromochloromethane	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,1,1-Trichloroethane	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,1-Dichloropropene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Carbon tetrachloride	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,2-Dichloroethane	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Benzene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Trichloroethene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,2-Dichloropropane	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Bromodichloromethane	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Dibromomethane	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
4-Methyl-2-pentanone	ND	480		µg/Kg-dry	1	11/29/00 8:17:00 PM
cis-1,3-Dichloropropene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Toluene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
trans-1,3-Dichloropropene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,1,2-Trichloroethane	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,2-Dibromoethane	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
2-Hexanone	ND	480		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,3-Dichloropropane	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Tetrachloroethene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Dibromochloromethane	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Chlorobenzene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,1,1,2-Tetrachloroethane	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
Lab Order: 0011264
Project: 00-035 Barrc Coal Tar
Lab ID: 0011264-01A

Client Sample ID: SB-14D 20-24'
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
m,p-Xylene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
o-Xylene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Styrene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Bromoform	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Isopropylbenzene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,1,2,2-Tetrachloroethane	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,2,3-Trichloropropane	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Bromobenzene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
n-Propylbenzene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
2-Chlorotoluene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
4-Chlorotoluene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,3,5-Trimethylbenzene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
tert-Butylbenzene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,2,4-Trimethylbenzene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
sec-Butylbenzene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
4-Isopropyltoluene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,3-Dichlorobenzene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,4-Dichlorobenzene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
n-Butylbenzene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,2-Dichlorobenzene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,2-Dibromo-3-chloropropane	ND	96		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,2,4-Trichlorobenzene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Hexachlorobutadiene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM
Naphthalene	ND	96		µg/Kg-dry	1	11/29/00 8:17:00 PM
1,2,3-Trichlorobenzene	ND	48		µg/Kg-dry	1	11/29/00 8:17:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
Lab Order: 0011264
Project: 00-035 Barre Coal Tar
Lab ID: 0011264-03A

Client Sample ID: SB-20 4-8'
Collection Date: 11/21/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	120		µg/Kg-dry	1	11/29/00 9:27:00 PM
Chloromethane	ND	120		µg/Kg-dry	1	11/29/00 9:27:00 PM
Vinyl chloride	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Chloroethane	ND	120		µg/Kg-dry	1	11/29/00 9:27:00 PM
Bromomethane	ND	120		µg/Kg-dry	1	11/29/00 9:27:00 PM
Trichlorofluoromethane	ND	120		µg/Kg-dry	1	11/29/00 9:27:00 PM
Acetone	ND	600		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,1-Dichloroethene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Carbon disulfide	ND	120		µg/Kg-dry	1	11/29/00 9:27:00 PM
Methylene chloride	ND	120		µg/Kg-dry	1	11/29/00 9:27:00 PM
Methyl tert-butyl ether	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
trans-1,2-Dichloroethene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,1-Dichloroethane	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
2-Butanone	ND	600		µg/Kg-dry	1	11/29/00 9:27:00 PM
2,2-Dichloropropane	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
cis-1,2-Dichloroethene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Chloroform	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Bromochloromethane	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,1,1-Trichloroethane	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,1-Dichloropropene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Carbon tetrachloride	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,2-Dichloroethane	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Benzene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Trichloroethene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,2-Dichloropropane	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Bromodichloromethane	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Dibromomethane	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
4-Methyl-2-pentanone	ND	600		µg/Kg-dry	1	11/29/00 9:27:00 PM
cis-1,3-Dichloropropene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Toluene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
trans-1,3-Dichloropropene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,1,2-Trichloroethane	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,2-Dibromoethane	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
2-Hexanone	ND	600		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,3-Dichloropropane	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Tetrachloroethene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Dibromochloromethane	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Chlorobenzene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,1,1,2-Tetrachloroethane	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 I - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RI - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
Lab Order: 0011264
Project: 00-035 Barre Coal Tar
Lab ID: 0011264-03A

Client Sample ID: SB-20 4-8'
Collection Date: 11/21/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
m,p-Xylene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
o-Xylene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Styrene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Bromoforn	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Isopropylbenzene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,1,2,2-Tetrachloroethane	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,2,3-Trichloropropane	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Bromobenzene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
n-Propylbenzene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
2-Chlorotoluene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
4-Chlorotoluene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,3,5-Trimethylbenzene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
tert-Butylbenzene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,2,4-Trimethylbenzene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
sec-Butylbenzene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
4-Isopropyltoluene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,3-Dichlorobenzene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,4-Dichlorobenzene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
n-Butylbenzene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,2-Dichlorobenzene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,2-Dibromo-3-chloropropane	ND	120		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,2,4-Trichlorobenzene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Hexachlorobutadiene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM
Naphthalene	ND	120		µg/Kg-dry	1	11/29/00 9:27:00 PM
1,2,3-Trichlorobenzene	ND	60		µg/Kg-dry	1	11/29/00 9:27:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental	Client Sample ID: SB-22 10-14'
Lab Order: 0011264	
Project: 00-035 Barre Coal Tar	Collection Date: 11/21/00
Lab ID: 0011264-04A	Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	130		µg/Kg-dry	1	11/29/00 7:41:00 PM
Chloromethane	ND	130		µg/Kg-dry	1	11/29/00 7:41:00 PM
Vinyl chloride	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Chloroethane	ND	130		µg/Kg-dry	1	11/29/00 7:41:00 PM
Bromomethane	ND	130		µg/Kg-dry	1	11/29/00 7:41:00 PM
Trichlorofluoromethane	ND	130		µg/Kg-dry	1	11/29/00 7:41:00 PM
Acetone	ND	670		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,1-Dichloroethene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Carbon disulfide	ND	130		µg/Kg-dry	1	11/29/00 7:41:00 PM
Methylene chloride	ND	130		µg/Kg-dry	1	11/29/00 7:41:00 PM
Methyl tert-butyl ether	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
trans-1,2-Dichloroethene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,1-Dichloroethane	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
2-Butanone	ND	670		µg/Kg-dry	1	11/29/00 7:41:00 PM
2,2-Dichloropropane	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
cis-1,2-Dichloroethene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Chloroform	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Bromochloromethane	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,1,1-Trichloroethane	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,1-Dichloropropene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Carbon tetrachloride	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,2-Dichloroethane	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Benzene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Trichloroethene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,2-Dichloropropane	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Bromodichloromethane	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Dibromomethane	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
4-Methyl-2-pentanone	ND	670		µg/Kg-dry	1	11/29/00 7:41:00 PM
cis-1,3-Dichloropropene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Toluene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
trans-1,3-Dichloropropene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,1,2-Trichloroethane	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,2-Dibromoethane	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
2-Hexanone	ND	670		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,3-Dichloropropane	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Tetrachloroethene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Dibromochloromethane	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Chlorobenzene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,1,1,2-Tetrachloroethane	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank	E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level	# - See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.	

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
Lab Order: 0011264
Project: 00-035 Barre Coal Tar
Lab ID: 0011264-04A

Client Sample ID: SB-22 10-14'
Collection Date: 11/21/00
Matrix: SOIL.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
m,p-Xylene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
o-Xylene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Styrene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Bromoform	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Isopropylbenzene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,1,2,2-Tetrachloroethane	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,2,3-Trichloropropane	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Bromobenzene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
n-Propylbenzene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
2-Chlorotoluene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
4-Chlorotoluene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,3,5-Trimethylbenzene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
tert-Butylbenzene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,2,4-Trimethylbenzene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
sec-Butylbenzene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
4-Isopropyltoluene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,3-Dichlorobenzene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,4-Dichlorobenzene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
n-Butylbenzene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,2-Dichlorobenzene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,2-Dibromo-3-chloropropane	ND	130		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,2,4-Trichlorobenzene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Hexachlorobutadiene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM
Naphthalene	ND	130		µg/Kg-dry	1	11/29/00 7:41:00 PM
1,2,3-Trichlorobenzene	ND	67		µg/Kg-dry	1	11/29/00 7:41:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
 Lab Order: 0011264
 Project: 00-035 Barrc Coal Tar
 Lab ID: 0011264-05A

Client Sample ID: Trip Blank
 Collection Date: 11/21/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	50		µg/Kg	1	11/28/00 8:51:00 PM
Chloromethane	ND	50		µg/Kg	1	11/28/00 8:51:00 PM
Vinyl chloride	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Chloroethane	ND	50		µg/Kg	1	11/28/00 8:51:00 PM
Bromomethane	ND	50		µg/Kg	1	11/28/00 8:51:00 PM
Trichlorofluoromethane	ND	50		µg/Kg	1	11/28/00 8:51:00 PM
Acetone	ND	250		µg/Kg	1	11/28/00 8:51:00 PM
1,1-Dichloroethene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Carbon disulfide	ND	50		µg/Kg	1	11/28/00 8:51:00 PM
Methylene chloride	ND	50		µg/Kg	1	11/28/00 8:51:00 PM
Methyl tert-butyl ether	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
trans-1,2-Dichloroethene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
1,1-Dichloroethane	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
2-Butanone	ND	250		µg/Kg	1	11/28/00 8:51:00 PM
2,2-Dichloropropane	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
cis-1,2-Dichloroethene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Chloroform	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Bromochloromethane	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
1,1,1-Trichloroethane	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
1,1-Dichloropropene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Carbon tetrachloride	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
1,2-Dichloroethane	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Benzene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Trichloroethene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
1,2-Dichloropropane	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Bromodichloromethane	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Dibromomethane	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
4-Methyl-2-pentanone	ND	250		µg/Kg	1	11/28/00 8:51:00 PM
cis-1,3-Dichloropropene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Toluene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
trans-1,3-Dichloropropene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
1,1,2-Trichloroethane	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
1,2-Dibromoethane	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
2-Hexanone	ND	250		µg/Kg	1	11/28/00 8:51:00 PM
1,3-Dichloropropane	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Tetrachloroethene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Dibromochloromethane	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Chlorobenzene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
1,1,1,2-Tetrachloroethane	ND	25		µg/Kg	1	11/28/00 8:51:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
Lab Order: 0011264
Project: 00-035 Barre Coal Tar
Lab ID: 0011264-05A

Client Sample ID: Trip Blank
Collection Date: 11/21/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
m,p-Xylene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
o-Xylene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Styrene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Bromoform	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Isopropylbenzene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
1,1,2,2-Tetrachloroethane	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
1,2,3-Trichloropropane	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Bromobenzene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
n-Propylbenzene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
2-Chlorotoluene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
4-Chlorotoluene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
1,3,5-Trimethylbenzene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
tert-Butylbenzene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
1,2,4-Trimethylbenzene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
sec-Butylbenzene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
4-Isopropyltoluene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
1,3-Dichlorobenzene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
1,4-Dichlorobenzene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
n-Butylbenzene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
1,2-Dichlorobenzene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
1,2-Dibromo-3-chloropropane	ND	50		µg/Kg	1	11/28/00 8:51:00 PM
1,2,4-Trichlorobenzene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Hexachlorobutadiene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM
Naphthalene	ND	50		µg/Kg	1	11/28/00 8:51:00 PM
1,2,3-Trichlorobenzene	ND	25		µg/Kg	1	11/28/00 8:51:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
 Lab Order: 0011264
 Project: 00-035 Barre Coal Tar
 Lab ID: 0011264-01B

Client Sample ID: SB-14D 20-24'
 Collection Date: 11/20/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C				Analyst: KD
Phenol	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Bis(2-chloroethyl)ether	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
2-Chlorophenol	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
1,3-Dichlorobenzene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
1,4-Dichlorobenzene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Benzyl alcohol	ND	580		µg/Kg-dry	1	11/28/00 2:34:00 PM
2-Methylphenol	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
1,2-Dichlorobenzene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Bis(2-chloroisopropyl)ether	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
4-Methylphenol	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
N-Nitrosodi-n-propylamine	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Hexachloroethane	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Nitrobenzene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Isophorone	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
2,4-Dimethylphenol	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Benzoic acid	ND	580		µg/Kg-dry	1	11/28/00 2:34:00 PM
2-Nitrophenol	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Bis(2-chloroethoxy)methane	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
2,4-Dichlorophenol	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
1,2,4-Trichlorobenzene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Naphthalene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
4-Chloroaniline	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Hexachlorobutadiene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
4-Chloro-3-methylphenol	ND	580		µg/Kg-dry	1	11/28/00 2:34:00 PM
2-Methylnaphthalene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Hexachlorocyclopentadiene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
2,4,6-Trichlorophenol	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
2,4,5-Trichlorophenol	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
2-Chloronaphthalene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
2-Nitroaniline	ND	580		µg/Kg-dry	1	11/28/00 2:34:00 PM
Dimethyl phthalate	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
2,6-Dinitrotoluene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Acenaphthylene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
3-Nitroaniline	ND	580		µg/Kg-dry	1	11/28/00 2:34:00 PM
4-Nitrophenol	ND	580		µg/Kg-dry	1	11/28/00 2:34:00 PM
2,4-Dinitrophenol	ND	580		µg/Kg-dry	1	11/28/00 2:34:00 PM
Acenaphthene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
2,4-Dinitrotoluene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Dibenzofuran	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
Lab Order: 0011264
Project: 00-035 Barre Coal Tar
Lab ID: 0011264-01B

Client Sample ID: SB-14D 20-24'
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
4-Chlorophenyl phenyl ether	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Fluorene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
4-Nitroaniline	ND	580		µg/Kg-dry	1	11/28/00 2:34:00 PM
4,6-Dinitro-2-methylphenol	ND	580		µg/Kg-dry	1	11/28/00 2:34:00 PM
N-Nitrosodiphenylamine	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
4-Bromophenyl phenyl ether	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Hexachlorobenzene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Pentachlorophenol	ND	580		µg/Kg-dry	1	11/28/00 2:34:00 PM
Phenanthrene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Anthracene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Carbazole	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Di-n-butyl phthalate	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Fluoranthene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Pyrene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Butyl benzyl phthalate	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Bis(2-ethylhexyl)phthalate	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
3,3'-Dichlorobenzidine	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Benz(a)anthracene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Chrysene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Di-n-octyl phthalate	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Benzo(b)fluoranthene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Benzo(k)fluoranthene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Benzo(a)pyrene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Dibenz(a,h)anthracene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Indano(1,2,3-cd)pyrene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM
Benzo(g,h,i)perylene	ND	290		µg/Kg-dry	1	11/28/00 2:34:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
 Lab Order: 0011264
 Project: 00-035 Barre Coal Tar
 Lab ID: 0011264-03B

Client Sample ID: SB-20 4-8'
 Collection Date: 11/21/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C				Analyst: KD
Phenol	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Bis(2-chloroethyl)ether	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
2-Chlorophenol	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
1,3-Dichlorobenzene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
1,4-Dichlorobenzene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Benzyl alcohol	ND	610		µg/Kg-dry	1	11/28/00 3:27:00 PM
2-Methylphenol	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
1,2-Dichlorobenzene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Bis(2-chloroisopropyl)ether	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
4-Methylphenol	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
N-Nitrosodi-n-propylamine	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Hexachloroethane	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Nitrobenzene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Isophorone	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
2,4-Dimethylphenol	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Benzoic acid	ND	610		µg/Kg-dry	1	11/28/00 3:27:00 PM
2-Nitrophenol	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Bis(2-chloroethoxy)methane	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
2,4-Dichlorophenol	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
1,2,4-Trichlorobenzene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Naphthalene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
4-Chloroaniline	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Hexachlorobutadiene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
4-Chloro-3-methylphenol	ND	610		µg/Kg-dry	1	11/28/00 3:27:00 PM
2-Methylnaphthalene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Hexachlorocyclopentadiene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
2,4,6-Trichlorophenol	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
2,4,5-Trichlorophenol	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
2-Chloronaphthalene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
2-Nitroaniline	ND	610		µg/Kg-dry	1	11/28/00 3:27:00 PM
Dimethyl phthalate	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
2,6-Dinitrotoluene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Acenaphthylene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
3-Nitroaniline	ND	610		µg/Kg-dry	1	11/28/00 3:27:00 PM
4-Nitrophenol	ND	610		µg/Kg-dry	1	11/28/00 3:27:00 PM
2,4-Dinitrophenol	ND	610		µg/Kg-dry	1	11/28/00 3:27:00 PM
Acenaphthene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
2,4-Dinitrotoluene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Dibenzofuran	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
Lab Order: 0011264
Project: 00-035 Barre Coal Tar
Lab ID: 0011264-03B

Client Sample ID: SB-20 4-8'
Collection Date: 11/21/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
4-Chlorophenyl phenyl ether	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Fluorene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
4-Nitroaniline	ND	610		µg/Kg-dry	1	11/28/00 3:27:00 PM
4,6-Dinitro-2-methylphenol	ND	610		µg/Kg-dry	1	11/28/00 3:27:00 PM
N-Nitrosodiphenylamine	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
4-Bromophenyl phenyl ether	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Hexachlorobenzene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Pentachlorophenol	ND	610		µg/Kg-dry	1	11/28/00 3:27:00 PM
Phenanthrene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Anthracene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Carbazole	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Di-n-butyl phthalate	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Fluoranthene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Pyrene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Butyl benzyl phthalate	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Bis(2-ethylhexyl)phthalate	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
3,3'-Dichlorobenzidine	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Benz(a)anthracene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Chrysene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Di-n-octyl phthalate	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Benzo(b)fluoranthene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Benzo(k)fluoranthene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Benzo(a)pyrene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Dibenz(a,h)anthracene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Indeno(1,2,3-cd)pyrene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM
Benzo(g,h,i)perylene	ND	310		µg/Kg-dry	1	11/28/00 3:27:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
 Lab Order: 0011264
 Project: 00-035 Barre Coal Tar
 Lab ID: 0011264-04B

Client Sample ID: SB-22 10-14'
 Collection Date: 11/21/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C				Analyst: KD
Phenol	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Bis(2-chloroethyl)ether	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
2-Chlorophenol	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
1,3-Dichlorobenzene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
1,4-Dichlorobenzene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Benzyl alcohol	ND	720		µg/Kg-dry	1	11/28/00 4:46:00 PM
2-Methylphenol	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
1,2-Dichlorobenzene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Bis(2-chloroisopropyl)ether	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
4-Methylphenol	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
N-Nitrosodi-n-propylamine	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Hexachloroethane	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Nitrobenzene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Isophorone	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
2,4-Dimethylphenol	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Benzoic acid	ND	720		µg/Kg-dry	1	11/28/00 4:46:00 PM
2-Nitrophenol	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Bis(2-chloroethoxy)methane	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
2,4-Dichlorophenol	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
1,2,4-Trichlorobenzene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Naphthalene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
4-Chloroaniline	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Hexachlorobutadiene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
4-Chloro-3-methylphenol	ND	720		µg/Kg-dry	1	11/28/00 4:46:00 PM
2-Methylnaphthalene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Hexachlorocyclopentadiene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
2,4,6-Trichlorophenol	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
2,4,5-Trichlorophenol	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
2-Chloronaphthalene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
2-Nitroaniline	ND	720		µg/Kg-dry	1	11/28/00 4:46:00 PM
Dimethyl phthalate	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
2,6-Dinitrotoluene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Acenaphthylene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
3-Nitroaniline	ND	720		µg/Kg-dry	1	11/28/00 4:46:00 PM
4-Nitrophenol	ND	720		µg/Kg-dry	1	11/28/00 4:46:00 PM
2,4-Dinitrophenol	ND	720		µg/Kg-dry	1	11/28/00 4:46:00 PM
Acenaphthene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
2,4-Dinitrotoluene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Dibenzofuran	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 01-Dec-00

CLIENT: Twin State Environmental
Lab Order: 0011264
Project: 00-035 Barre Coal Tar
Lab ID: 0011264-04B

Client Sample ID: SB-22 10-14'

Collection Date: 11/21/00

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
4-Chlorophenyl phenyl ether	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Fluorene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
4-Nitroaniline	ND	720		µg/Kg-dry	1	11/28/00 4:46:00 PM
4,6-Dinitro-2-methylphenol	ND	720		µg/Kg-dry	1	11/28/00 4:46:00 PM
N-Nitrosodiphenylamine	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
4-Bromophenyl phenyl ether	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Hexachlorobenzene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Pentachlorophenol	ND	720		µg/Kg-dry	1	11/28/00 4:46:00 PM
Phenanthrene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Anthracene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Carbazole	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Di-n-butyl phthalate	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Fluoranthene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Pyrene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Butyl benzyl phthalate	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Bis(2-ethylhexyl)phthalate	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
3,3'-Dichlorobenzidine	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Benz(a)anthracene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Chrysene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Di-n-octyl phthalate	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Benzo(b)fluoranthene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Benzo(k)fluoranthene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Benzo(a)pyrene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Dibenz(a,h)anthracene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Indeno(1,2,3-cd)pyrene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM
Benzo(g,h,i)perylene	ND	360		µg/Kg-dry	1	11/28/00 4:46:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

Lab Order: 0011264
 Client: Twin State Environmental
 Project: 00-035 Barre Coal Tar

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date	
0011264-01A	SB-14D 20-24'	11/20/00	Soil	VOLATILES by GC/MS, Medium-Level		11/20/00	11/29/00	
0011264-01B				Percent Moisture			11/28/00	
				SEMIVOLATILE ORGANICS, Soil/Solids			11/27/00	11/28/00
				TPH/IR (Modified for Soils/Solids)				11/29/00
0011264-02A	SED-7 0-1'	11/21/00		VOLATILES by GC/MS, Medium-Level		11/21/00	11/29/00	
0011264-02B				Percent Moisture			11/28/00	
				SEMIVOLATILE ORGANICS, Soil/Solids			11/27/00	11/28/00
				TPH/IR (Modified for Soils/Solids)				11/29/00
0011264-03A	SB-20 4-8'			VOLATILES by GC/MS, Medium-Level		11/21/00	11/29/00	
0011264-03B				Percent Moisture			11/28/00	
				SEMIVOLATILE ORGANICS, Soil/Solids			11/27/00	11/28/00
				TPH/IR (Modified for Soils/Solids)				11/29/00
0011264-04A	SB-22 10-14'			VOLATILES by GC/MS, Medium-Level		11/21/00	11/29/00	
0011264-04B				Percent Moisture			11/28/00	
				SEMIVOLATILE ORGANICS, Soil/Solids			11/27/00	11/28/00
				TPH/IR (Modified for Soils/Solids)				11/29/00
0011264-05A	Trip Blank			VOLATILES by GC/MS, Medium-Level		11/21/00	11/28/00	

AMRO Environmental Laboratories Corporation

111 Herrick Street
 Merrimack, N.H. 03054
 Office: 603-424-2022 Fax: 603-429-8496

34610

CHAIN OF CUSTODY RECORD

Proj. No. 00-035		Project Name 00-035 Barre Coal Tar			Project State VT		MATRIX Water - A Soil/Solid-S Waste-W Other-O Explain				PAGE 1 OF 1	
Samplers (Signature) <i>[Signature]</i>					Type Size, & No. of Containers		8240 8270 SW 411.1					
Sta. No.	Date	Time	Comp	Grab	Station Location							
	11/20/00	0935		X	SB-14D 20-24' 2 VOA 1402		S	X	X	X	TAT BY 12/8/00	
	11/21/00	1500		Y	SED -7 0-1'		S	X	X	X		
	11/21/00	1100		Y	SB-20 4-8'		S	X	X	X		
	11/21/00	0900		Y	SB-22 10-14'		S	X	X	X		

Please print clearly, legibly and completely. Samples cannot be logged in and the turnaround time clock will not start until any ambiguities are resolved.

PRIORITY TURNAROUND TIME AUTHORIZATION

Before submitting samples for expedited T.A.T., you must have requested in advance and received a coded T.A.T. AUTHORIZATION NUMBER.

AUTHORIZATION NO. _____ T.A.T. authorized by: _____

Relinquished by (Signature) <i>[Signature]</i>	Date Time 11/21/00 1700	Received by (Signature) <i>[Signature]</i>	11/21/00 17:00	<input checked="" type="checkbox"/> Fax to (phone) (603) 604-8667	Send Results to: TWIN STATE ENVIRONMENTAL 414 ROOSEVELT HWY COLCHESTER VT 05446 ATTN: JANE KASHLEY
Relinquished by (Signature) <i>[Signature]</i>	Date Time 11/21/00 14:40	Received by (Signature) <i>[Signature]</i>		Results needed 12/8/00	
Relinquished by (Signature) <i>[Signature]</i>	Date Time	Received by (Signature)		AMRO Project No. 11264	Remarks Need results by 12/8/00
Relinquished by (Signature) <i>[Signature]</i>	Date Time 11/24 1000	Received for Laboratory by (Signature) <i>[Signature]</i>		Seal Intact? Yes No N/A	



November 30, 2000

DEC 04 2000

Jon Ashley
Twin State Environmental
414 Roosevelt Highway
Colchester, VT 05446
TEL: (802) 654-8663
FAX (802) 654-8667

RE: 00-035.D Barre Coal Tar

Order No.: 0011245

Dear Jon Ashley:

AMRO Environmental Laboratories Corp. received 5 samples on 11/22/00 for the analyses presented in the following report.

AMRO operates a Quality Assurance Program which meets or exceeds EPA and state requirements. A copy of the appropriate State Certificate is attached. The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt.

Please be advised that any unused sample volume and sample extracts will be stored for a period of thirty (30) days from this report date. After this time, AMRO will properly dispose of the remaining sample(s). If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This letter is an integral part of your data report. If you have any questions regarding this project in the future, please refer to the Order Number above.

Sincerely,

Nancy Stewart
Vice President / Lab Director

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Project: 00-035.D Barre Coal Tar
Lab Order: 0011245
Date Received: 11/22/00

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Collection Date
0011245-01A	SB-15	11/20/00
0011245-01B	SB-15	11/20/00
0011245-02A	SB-27	11/20/00
0011245-02B	SB-27	11/20/00
0011245-03A	SB-28	11/20/00
0011245-03B	SB-28	11/20/00
0011245-04A	DUP-1	11/20/00
0011245-04B	DUP-1	11/20/00
0011245-05A	Trip Blank	11/20/00

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT:	Twin State Environmental	Client Sample ID:	SB-15
Lab Order:	0011245		
Project:	00-035.D Barre Coal Tar	Collection Date:	11/20/00
Lab ID:	0011245-01B	Matrix:	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH/R (MODIFIED FOR SOILS/SOLIDS)		E418.1				Analyst: JA
Petroleum Hydrocarbons, TR	140	37		mg/Kg-dry	1	11/29/00
PERCENT MOISTURE		D2216				Analyst: SL
Percent Moisture	19.9	0		wt%	1	11/24/00

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	# - See Case Narrative
	RI - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.	

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011245
Project: 00-035.D Barre Coal Tar
Lab ID: 0011245-02B

Client Sample ID: SB-27
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH/IR (MODIFIED FOR SOILS/SOLIDS)		E418.1				
Petroleum Hydrocarbons, TR	66	40		mg/Kg-dry	1	11/29/00
PERCENT MOISTURE		D2216				
Percent Moisture	17.6	0		wt%	1	11/24/00

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental	Client Sample ID: SB-28
Lab Order: 0011245	
Project: 00-035.D Barre Coal Tar	Collection Date: 11/20/00
Lab ID: 0011245-03B	Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH/IR (MODIFIED FOR SOILS/SOLIDS)		E418.1				Analyst: JA
Petroleum Hydrocarbons, TR	ND	35		mg/Kg-dry	1	11/29/00
PERCENT MOISTURE		D2216				Analyst: SL
Percent Moisture	14.2	0		wt%	1	11/24/00

Qualifiers:

ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank	E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level	# - See Case Narrative
RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.	

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011245
Project: 00-035.D Barre Coal Tar
Lab ID: 0011245-04B

Client Sample ID: DUP-1
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH/IR (MODIFIED FOR SOILS/SOLIDS)		E418.1				Analyst: JA
Petroleum Hydrocarbons, TR	140	39		mg/Kg-dry	1	11/29/00
PERCENT MOISTURE		D2216				Analyst: SL
Percent Moisture	19.1	0		wt%	1	11/24/00

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011245
Project: 00-035.D Barre Coal Tar
Lab ID: 0011245-01A

Client Sample ID: SB-15
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	130		µg/Kg-dry	1	11/28/00 5:50:00 PM
Chloromethane	ND	130		µg/Kg-dry	1	11/28/00 5:50:00 PM
Vinyl chloride	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Chloroethane	ND	130		µg/Kg-dry	1	11/28/00 5:50:00 PM
Bromomethane	ND	130		µg/Kg-dry	1	11/28/00 5:50:00 PM
Trichlorofluoromethane	ND	130		µg/Kg-dry	1	11/28/00 5:50:00 PM
Acetone	ND	640		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,1-Dichloroethene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Carbon disulfide	ND	130		µg/Kg-dry	1	11/28/00 5:50:00 PM
Methylene chloride	ND	130		µg/Kg-dry	1	11/28/00 5:50:00 PM
Methyl tert-butyl ether	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
trans-1,2-Dichloroethene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,1-Dichloroethane	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
2-Butanone	ND	640		µg/Kg-dry	1	11/28/00 5:50:00 PM
2,2-Dichloropropane	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
cis-1,2-Dichloroethene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Chloroform	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Bromochloromethane	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,1,1-Trichloroethane	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,1-Dichloropropene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Carbon tetrachloride	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,2-Dichloroethane	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Benzene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Trichloroethene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,2-Dichloropropane	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Bromodichloromethane	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Dibromomethane	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
4-Methyl-2-pentanone	ND	640		µg/Kg-dry	1	11/28/00 5:50:00 PM
cis-1,3-Dichloropropene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Toluene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
trans-1,3-Dichloropropene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,1,2-Trichloroethane	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,2-Dibromoethane	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
2-Hexanone	ND	640		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,3-Dichloropropane	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Tetrachloroethene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Dibromochloromethane	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Chlorobenzene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,1,1,2-Tetrachloroethane	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011245
Project: 00-035.D Barre Coal Tar
Lab ID: 0011245-01A

Client Sample ID: SB-15
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	95	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
m,p-Xylene	100	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
o-Xylene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Styrene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Bromoform	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Isopropylbenzene	74	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,1,2,2-Tetrachloroethane	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,2,3-Trichloropropane	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Bromobenzene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
n-Propylbenzene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
2-Chlorotoluene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
4-Chlorotoluene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,3,5-Trimethylbenzene	170	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
tert-Butylbenzene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,2,4-Trimethylbenzene	420	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
sec-Butylbenzene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
4-Isopropyltoluene	95	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,3-Dichlorobenzene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,4-Dichlorobenzene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
n-Butylbenzene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,2-Dichlorobenzene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,2-Dibromo-3-chloropropane	ND	130		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,2,4-Trichlorobenzene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Hexachlorobutadiene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM
Naphthalene	5,600	130		µg/Kg-dry	1	11/28/00 5:50:00 PM
1,2,3-Trichlorobenzene	ND	64		µg/Kg-dry	1	11/28/00 5:50:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental **Client Sample ID:** SB-27
Lab Order: 0011245
Project: 00-035.D Barre Coal Tar **Collection Date:** 11/20/00
Lab ID: 0011245-02A **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	82		µg/Kg-dry	1	11/29/00 10:03:00 PM
Chloromethane	ND	82		µg/Kg-dry	1	11/29/00 10:03:00 PM
Vinyl chloride	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Chloroethane	ND	82		µg/Kg-dry	1	11/29/00 10:03:00 PM
Bromomethane	ND	82		µg/Kg-dry	1	11/29/00 10:03:00 PM
Trichlorofluoromethane	ND	82		µg/Kg-dry	1	11/29/00 10:03:00 PM
Acetone	ND	410		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,1-Dichloroethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Carbon disulfide	ND	82		µg/Kg-dry	1	11/29/00 10:03:00 PM
Methylene chloride	ND	82		µg/Kg-dry	1	11/29/00 10:03:00 PM
Methyl tert-butyl ether	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
trans-1,2-Dichloroethene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,1-Dichloroethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
2-Butanone	ND	410		µg/Kg-dry	1	11/29/00 10:03:00 PM
2,2-Dichloropropane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
cis-1,2-Dichloroethene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Chloroform	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Bromochloromethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,1,1-Trichloroethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,1-Dichloropropene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Carbon tetrachloride	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,2-Dichloroethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Benzene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Trichloroethene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,2-Dichloropropane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Bromodichloromethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Dibromomethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
4-Methyl-2-pentanone	ND	410		µg/Kg-dry	1	11/29/00 10:03:00 PM
cis-1,3-Dichloropropene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Toluene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
trans-1,3-Dichloropropene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,1,2-Trichloroethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,2-Dibromoethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
2-Hexanone	ND	410		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,3-Dichloropropane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Tetrachloroethene	160	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Dibromochloromethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Chlorobenzene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,1,1,2-Tetrachloroethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011245
Project: 00-035.D Barre Coal Tar
Lab ID: 0011245-02A

Client Sample ID: SB-27
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
m,p-Xylene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
o-Xylene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Styrene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Bromoforn	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Isopropylbenzene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,1,2,2-Tetrachloroethane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,2,3-Trichloropropane	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Bromobenzene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
n-Propylbenzene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
2-Chlorotoluene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
4-Chlorotoluene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,3,5-Trimethylbenzene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
tert-Butylbenzene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,2,4-Trimethylbenzene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
sec-Butylbenzene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
4-Isopropyltoluene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,3-Dichlorobenzene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,4-Dichlorobenzene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
n-Butylbenzene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,2-Dichlorobenzene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,2-Dibromo-3-chloropropane	ND	82		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,2,4-Trichlorobenzene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Hexachlorobutadiene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM
Naphthalene	170	82		µg/Kg-dry	1	11/29/00 10:03:00 PM
1,2,3-Trichlorobenzene	ND	41		µg/Kg-dry	1	11/29/00 10:03:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011245
Project: 00-035.D Barre Coal Tar
Lab ID: 0011245-03A

Client Sample ID: SB-28
Collection Date: 11/20/00
Matrix: SOIL.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	96		µg/Kg-dry	1	11/28/00 9:27:00 PM
Chloromethane	ND	96		µg/Kg-dry	1	11/28/00 9:27:00 PM
Vinyl chloride	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Chloroethane	ND	96		µg/Kg-dry	1	11/28/00 9:27:00 PM
Bromomethane	ND	96		µg/Kg-dry	1	11/28/00 9:27:00 PM
Trichlorofluoromethane	ND	96		µg/Kg-dry	1	11/28/00 9:27:00 PM
Acetone	ND	480		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,1-Dichloroethene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Carbon disulfide	ND	96		µg/Kg-dry	1	11/28/00 9:27:00 PM
Methylene chloride	ND	96		µg/Kg-dry	1	11/28/00 9:27:00 PM
Methyl tert-butyl ether	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
trans-1,2-Dichloroethene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,1-Dichloroethane	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
2-Butanone	ND	480		µg/Kg-dry	1	11/28/00 9:27:00 PM
2,2-Dichloropropane	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
cis-1,2-Dichloroethene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Chloroform	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Bromochloromethane	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,1,1-Trichloroethane	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,1-Dichloropropene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Carbon tetrachloride	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,2-Dichloroethane	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Benzene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Trichloroethene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,2-Dichloropropane	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Bromodichloromethane	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Dibromomethane	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
4-Methyl-2-pentanone	ND	480		µg/Kg-dry	1	11/28/00 9:27:00 PM
cis-1,3-Dichloropropene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Toluene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
trans-1,3-Dichloropropene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,1,2-Trichloroethane	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,2-Dibromoethane	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
2-Hexanone	ND	480		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,3-Dichloropropane	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Tetrachloroethene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Dibromochloromethane	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Chlorobenzene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,1,1,2-Tetrachloroethane	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011245
Project: 00-035.D Barre Coal Tar
Lab ID: 0011245-03A

Client Sample ID: SB-28
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
m,p-Xylene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
o-Xylene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Styrene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Bromoform	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Isopropylbenzene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,1,2,2-Tetrachloroethane	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,2,3-Trichloropropane	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Bromobenzene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
n-Propylbenzene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
2-Chlorotoluene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
4-Chlorotoluene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,3,5-Trimethylbenzene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
tert-Butylbenzene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,2,4-Trimethylbenzene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
sec-Butylbenzene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
4-Isopropyltoluene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,3-Dichlorobenzene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,4-Dichlorobenzene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
n-Butylbenzene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,2-Dichlorobenzene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,2-Dibromo-3-chloropropane	ND	96		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,2,4-Trichlorobenzene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Hexachlorobutadiene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM
Naphthalene	ND	96		µg/Kg-dry	1	11/28/00 9:27:00 PM
1,2,3-Trichlorobenzene	ND	48		µg/Kg-dry	1	11/28/00 9:27:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011245
Project: 00-035.D Barre Coal Tar
Lab ID: 0011245-04A

Client Sample ID: DUP-1
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	110		µg/Kg-dry	1	11/28/00 6:26:00 PM
Chloromethane	ND	110		µg/Kg-dry	1	11/28/00 6:26:00 PM
Vinyl chloride	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Chloroethane	ND	110		µg/Kg-dry	1	11/28/00 6:26:00 PM
Bromomethane	ND	110		µg/Kg-dry	1	11/28/00 6:26:00 PM
Trichlorofluoromethane	ND	110		µg/Kg-dry	1	11/28/00 6:26:00 PM
Acetone	ND	530		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,1-Dichloroethene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Carbon disulfide	ND	110		µg/Kg-dry	1	11/28/00 6:26:00 PM
Methylene chloride	ND	110		µg/Kg-dry	1	11/28/00 6:26:00 PM
Methyl tert-butyl ether	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
trans-1,2-Dichloroethene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,1-Dichloroethane	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
2-Butanone	ND	530		µg/Kg-dry	1	11/28/00 6:26:00 PM
2,2-Dichloropropane	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
cis-1,2-Dichloroethene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Chloroform	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Bromochloromethane	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,1,1-Trichloroethane	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,1-Dichloropropene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Carbon tetrachloride	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,2-Dichloroethane	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Benzene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Trichloroethene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,2-Dichloropropane	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Bromodichloromethane	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Dibromomethane	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
4-Methyl-2-pentanone	ND	530		µg/Kg-dry	1	11/28/00 6:26:00 PM
cis-1,3-Dichloropropene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Toluene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
trans-1,3-Dichloropropene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,1,2-Trichloroethane	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,2-Dibromoethane	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
2-Hexanone	ND	530		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,3-Dichloropropane	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Tetrachloroethene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Dibromochloromethane	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Chlorobenzene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,1,1,2-Tetrachloroethane	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011245
Project: 00-035.D Barre Coal Tar
Lab ID: 0011245-04A

Client Sample ID: DUP-1
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	150	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
m,p-Xylene	150	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
o-Xylene	93	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Styrene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Bromoform	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Isopropylbenzene	120	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,1,2,2-Tetrachloroethane	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,2,3-Trichloropropane	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Bromobenzene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
n-Propylbenzene	78	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
2-Chlorotoluene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
4-Chlorotoluene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,3,5-Trimethylbenzene	340	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
tert-Butylbenzene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,2,4-Trimethylbenzene	870	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
sec-Butylbenzene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
4-Isopropyltoluene	190	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,3-Dichlorobenzene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,4-Dichlorobenzene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
n-Butylbenzene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,2-Dichlorobenzene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,2-Dibromo-3-chloropropane	ND	110		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,2,4-Trichlorobenzene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Hexachlorobutadiene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM
Naphthalene	13,000	110		µg/Kg-dry	1	11/28/00 6:26:00 PM
1,2,3-Trichlorobenzene	ND	53		µg/Kg-dry	1	11/28/00 6:26:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level # - See Case Narrative
RI - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011245
Project: 00-035.D Barre Coal Tar
Lab ID: 0011245-05A

Client Sample ID: Trip Blank
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	50		µg/Kg	1	11/28/00 8:15:00 PM
Chloromethane	ND	50		µg/Kg	1	11/28/00 8:15:00 PM
Vinyl chloride	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Chloroethane	ND	50		µg/Kg	1	11/28/00 8:15:00 PM
Bromomethane	ND	50		µg/Kg	1	11/28/00 8:15:00 PM
Trichlorofluoromethane	ND	50		µg/Kg	1	11/28/00 8:15:00 PM
Acetone	ND	250		µg/Kg	1	11/28/00 8:15:00 PM
1,1-Dichloroethene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Carbon disulfide	ND	50		µg/Kg	1	11/28/00 8:15:00 PM
Methylene chloride	ND	50		µg/Kg	1	11/28/00 8:15:00 PM
Methyl tert-butyl ether	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
trans-1,2-Dichloroethene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
1,1-Dichloroethane	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
2-Butanone	ND	250		µg/Kg	1	11/28/00 8:15:00 PM
2,2-Dichloropropane	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
cis-1,2-Dichloroethene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Chloroform	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Bromochloromethane	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
1,1,1-Trichloroethane	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
1,1-Dichloropropene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Carbon tetrachloride	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
1,2-Dichloroethane	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Benzene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Trichloroethene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
1,2-Dichloropropane	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Bromodichloromethane	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Dibromomethane	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
4-Methyl-2-pentanone	ND	250		µg/Kg	1	11/28/00 8:15:00 PM
cis-1,3-Dichloropropene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Toluene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
trans-1,3-Dichloropropene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
1,1,2-Trichloroethane	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
1,2-Dibromoethane	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
2-Hexanone	ND	250		µg/Kg	1	11/28/00 8:15:00 PM
1,3-Dichloropropane	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Tetrachloroethene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Dibromochloromethane	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Chlorobenzene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
1,1,1,2-Tetrachloroethane	ND	25		µg/Kg	1	11/28/00 8:15:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011245
Project: 00-035.D Barre Coal Tar
Lab ID: 0011245-05A

Client Sample ID: Trip Blank
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
m,p-Xylene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
o-Xylene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Styrene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Bromoform	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Isopropylbenzene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
1,1,2,2-Tetrachloroethane	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
1,2,3-Trichloropropane	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Bromobenzene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
n-Propylbenzene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
2-Chlorotoluene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
4-Chlorotoluene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
1,3,5-Trimethylbenzene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
tert-Butylbenzene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
1,2,4-Trimethylbenzene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
sec-Butylbenzene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
4-Isopropyltoluene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
1,3-Dichlorobenzene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
1,4-Dichlorobenzene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
n-Butylbenzene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
1,2-Dichlorobenzene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
1,2-Dibromo-3-chloropropane	ND	50		µg/Kg	1	11/28/00 8:15:00 PM
1,2,4-Trichlorobenzene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Hexachlorobutadiene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM
Naphthalene	ND	50		µg/Kg	1	11/28/00 8:15:00 PM
1,2,3-Trichlorobenzene	ND	25		µg/Kg	1	11/28/00 8:15:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
 Lab Order: 0011245
 Project: 00-035.D Barre Coal Tar
 Lab ID: 0011245-01B

Client Sample ID: SB-15
 Collection Date: 11/20/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C				Analyst: KD
Phenol	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Bis(2-chloroethyl)ether	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
2-Chlorophenol	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
1,3-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
1,4-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Benzyl alcohol	ND	600		µg/Kg-dry	1	11/28/00 5:12:00 PM
2-Methylphenol	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
1,2-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Bis(2-chloroisopropyl)ether	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
4-Methylphenol	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
N-Nitrosodi-n-propylamine	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Hexachloroethane	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Nitrobenzene	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Isophorone	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
2,4-Dimethylphenol	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Benzoic acid	ND	600		µg/Kg-dry	1	11/28/00 5:12:00 PM
2-Nitrophenol	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Bis(2-chloroethoxy)methane	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
2,4-Dichlorophenol	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
1,2,4-Trichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Naphthalene	3,300	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
4-Chloroaniline	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Hexachlorobutadiene	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
4-Chloro-3-methylphenol	ND	600		µg/Kg-dry	1	11/28/00 5:12:00 PM
2-Methylnaphthalene	3,600	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Hexachlorocyclopentadiene	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
2,4,6-Trichlorophenol	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
2,4,5-Trichlorophenol	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
2-Chloronaphthalene	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
2-Nitroaniline	ND	600		µg/Kg-dry	1	11/28/00 5:12:00 PM
Dimethyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
2,6-Dinitrotoluene	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Acenaphthylene	1,100	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
3-Nitroaniline	ND	600		µg/Kg-dry	1	11/28/00 5:12:00 PM
4-Nitrophenol	ND	600		µg/Kg-dry	1	11/28/00 5:12:00 PM
2,4-Dinitrophenol	ND	600		µg/Kg-dry	1	11/28/00 5:12:00 PM
Acenaphthene	4,800	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
2,4-Dinitrotoluene	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Dibenzofuran	390	300		µg/Kg-dry	1	11/28/00 5:12:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011245
Project: 00-035.D Barre Coal Tar
Lab ID: 0011245-01B

Client Sample ID: SB-15
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
4-Chlorophenyl phenyl ether	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Fluorene	2,900	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
4-Nitroaniline	ND	600		µg/Kg-dry	1	11/28/00 5:12:00 PM
4,6-Dinitro-2-methylphenol	ND	600		µg/Kg-dry	1	11/28/00 5:12:00 PM
N-Nitrosodiphenylamine	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
4-Bromophenyl phenyl ether	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Hexachlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Pentachlorophenol	ND	600		µg/Kg-dry	1	11/28/00 5:12:00 PM
Phenanthrene	13,000	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Anthracene	3,400	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Carbazole	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Di-n-butyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Fluoranthene	4,400	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Pyrene	7,700	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Butyl benzyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Bis(2-ethylhexyl)phthalate	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
3,3'-Dichlorobenzidine	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Benz(a)anthracene	2,300	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Chrysene	2,100	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Di-n-octyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Benzo(b)fluoranthene	1,300	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Benzo(k)fluoranthene	460	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Benzo(a)pyrene	1,800	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Dibenz(a,h)anthracene	ND	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Indeno(1,2,3-cd)pyrene	700	300		µg/Kg-dry	1	11/28/00 5:12:00 PM
Benzo(g,h,i)perylene	660	300		µg/Kg-dry	1	11/28/00 5:12:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
 Lab Order: 0011245
 Project: 00-035.D Barre Coal Tar
 Lab ID: 0011245-02B

Client Sample ID: SB-27
 Collection Date: 11/20/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C				Analyst: KD
Phenol	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Bis(2-chloroethyl)ether	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
2-Chlorophenol	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
1,3-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
1,4-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Benzyl alcohol	ND	600		µg/Kg-dry	1	11/28/00 5:37:00 PM
2-Methylphenol	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
1,2-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Bis(2-chloroisopropyl)ether	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
4-Methylphenol	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
N-Nitrosodi-n-propylamine	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Hexachloroethane	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Nitrobenzene	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Isophorone	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
2,4-Dimethylphenol	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Benzoic acid	ND	600		µg/Kg-dry	1	11/28/00 5:37:00 PM
2-Nitrophenol	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Bis(2-chloroethoxy)methane	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
2,4-Dichlorophenol	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
1,2,4-Trichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Naphthalene	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
4-Chloroaniline	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Hexachlorobutadiene	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
4-Chloro-3-methylphenol	ND	600		µg/Kg-dry	1	11/28/00 5:37:00 PM
2-Methylnaphthalene	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Hexachlorocyclopentadiene	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
2,4,6-Trichlorophenol	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
2,4,5-Trichlorophenol	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
2-Chloronaphthalene	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
2-Nitroaniline	ND	600		µg/Kg-dry	1	11/28/00 5:37:00 PM
Dimethyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
2,6-Dinitrotoluene	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Acenaphthylene	1,600	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
3-Nitroaniline	ND	600		µg/Kg-dry	1	11/28/00 5:37:00 PM
4-Nitrophenol	ND	600		µg/Kg-dry	1	11/28/00 5:37:00 PM
2,4-Dinitrophenol	ND	600		µg/Kg-dry	1	11/28/00 5:37:00 PM
Acenaphthene	390	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
2,4-Dinitrotoluene	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Dibenzoturan	390	300		µg/Kg-dry	1	11/28/00 5:37:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RI - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011245
Project: 00-035.D Barre Coal Tar
Lab ID: 0011245-02B

Client Sample ID: SB-27
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
4-Chlorophenyl phenyl ether	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Fluorene	2,500	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
4-Nitroaniline	ND	600		µg/Kg-dry	1	11/28/00 5:37:00 PM
4,6-Dinitro-2-methylphenol	ND	600		µg/Kg-dry	1	11/28/00 5:37:00 PM
N-Nitrosodiphenylamine	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
4-Bromophenyl phenyl ether	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Hexachlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Pentachlorophenol	ND	600		µg/Kg-dry	1	11/28/00 5:37:00 PM
Phenanthrene	18,000	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Anthracene	4,700	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Carbazole	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Di-n-butyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Fluoranthene	6,800	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Pyrene	10,000	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Butyl benzyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Bis(2-ethylhexyl)phthalate	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
3,3'-Dichlorobenzidine	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Benz(a)anthracene	3,500	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Chrysene	2,900	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Di-n-octyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Benzo(b)fluoranthene	2,000	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Benzo(k)fluoranthene	730	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Benzo(a)pyrene	2,700	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Dibenz(a,h)anthracene	300	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Indeno(1,2,3-cd)pyrene	1,100	300		µg/Kg-dry	1	11/28/00 5:37:00 PM
Benzo(g,h,i)perylene	1,100	300		µg/Kg-dry	1	11/28/00 5:37:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011245
Project: 00-035.D Barre Coal Tar
Lab ID: 0011245-03B

Client Sample ID: SB-28
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C				Analyst: KD
Phenol	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Bis(2-chloroethyl)ether	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
2-Chlorophenol	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
1,3-Dichlorobenzene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
1,4-Dichlorobenzene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Benzyl alcohol	ND	580		µg/Kg-dry	1	11/28/00 6:04:00 PM
2-Methylphenol	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
1,2-Dichlorobenzene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Bis(2-chloroisopropyl)ether	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
4-Methylphenol	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
N-Nitrosodi-n-propylamine	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Hexachloroethane	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Nitrobenzene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Isophorone	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
2,4-Dimethylphenol	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Benzoic acid	ND	580		µg/Kg-dry	1	11/28/00 6:04:00 PM
2-Nitrophenol	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Bis(2-chloroethoxy)methane	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
2,4-Dichlorophenol	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
1,2,4-Trichlorobenzene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Naphthalene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
4-Chloroaniline	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Hexachlorobutadiene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
4-Chloro-3-methylphenol	ND	580		µg/Kg-dry	1	11/28/00 6:04:00 PM
2-Methylnaphthalene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Hexachlorocyclopentadiene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
2,4,6-Trichlorophenol	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
2,4,5-Trichlorophenol	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
2-Chloronaphthalene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
2-Nitroaniline	ND	580		µg/Kg-dry	1	11/28/00 6:04:00 PM
Dimethyl phthalate	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
2,6-Dinitrotoluene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Acenaphthylene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
3-Nitroaniline	ND	580		µg/Kg-dry	1	11/28/00 6:04:00 PM
4-Nitrophenol	ND	580		µg/Kg-dry	1	11/28/00 6:04:00 PM
2,4-Dinitrophenol	ND	580		µg/Kg-dry	1	11/28/00 6:04:00 PM
Acenaphthene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
2,4-Dinitrotoluene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Dibenzofuran	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011245
Project: 00-035.D Barrc Coal Tar
Lab ID: 0011245-03B

Client Sample ID: SB-28
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
4-Chlorophenyl phenyl ether	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Fluorene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
4-Nitroaniline	ND	580		µg/Kg-dry	1	11/28/00 6:04:00 PM
4,6-Dinitro-2-methylphenol	ND	580		µg/Kg-dry	1	11/28/00 6:04:00 PM
N-Nitrosodiphenylamine	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
4-Bromophenyl phenyl ether	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Hexachlorobenzene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Pentachlorophenol	ND	580		µg/Kg-dry	1	11/28/00 6:04:00 PM
Phenanthrene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Anthracene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Carbazole	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Di-n-butyl phthalate	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Fluoranthene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Pyrene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Butyl benzyl phthalate	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Bis(2-ethylhexyl)phthalate	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
3,3'-Dichlorobenzidine	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Benz(a)anthracene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Chrysene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Di-n-octyl phthalate	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Benzo(b)fluoranthene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Benzo(k)fluoranthene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Benzo(a)pyrene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Dibenz(a,h)anthracene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Indeno(1,2,3-cd)pyrene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM
Benzo(g,h,i)perylene	ND	290		µg/Kg-dry	1	11/28/00 6:04:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011245
Project: 00-035.D Barre Coal Tar
Lab ID: 0011245-04B

Client Sample ID: DUP-1
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C				Analyst: KD
Phenol	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Bis(2-chloroethyl)ether	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
2-Chlorophenol	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
1,3-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
1,4-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Benzyl alcohol	ND	610		µg/Kg-dry	1	11/28/00 6:31:00 PM
2-Methylphenol	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
1,2-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Bis(2-chloroisopropyl)ether	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
4-Methylphenol	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
N-Nitrosodi-n-propylamine	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Hexachloroethane	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Nitrobenzene	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Isophorone	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
2,4-Dimethylphenol	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Benzoic acid	ND	610		µg/Kg-dry	1	11/28/00 6:31:00 PM
2-Nitrophenol	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Bis(2-chloroethoxy)methane	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
2,4-Dichlorophenol	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
1,2,4-Trichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Naphthalene	5,100	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
4-Chloroaniline	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Hexachlorobutadiene	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
4-Chloro-3-methylphenol	ND	610		µg/Kg-dry	1	11/28/00 6:31:00 PM
2-Methylnaphthalene	5,100	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Hexachlorocyclopentadiene	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
2,4,6-Trichlorophenol	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
2,4,5-Trichlorophenol	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
2-Chloronaphthalene	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
2-Nitroaniline	ND	610		µg/Kg-dry	1	11/28/00 6:31:00 PM
Dimethyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
2,6-Dinitrotoluene	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Acenaphthylene	2,100	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
3-Nitroaniline	ND	610		µg/Kg-dry	1	11/28/00 6:31:00 PM
4-Nitrophenol	ND	610		µg/Kg-dry	1	11/28/00 6:31:00 PM
2,4-Dinitrophenol	ND	610		µg/Kg-dry	1	11/28/00 6:31:00 PM
Acenaphthene	6,000	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
2,4-Dinitrotoluene	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Dibenzofuran	530	300		µg/Kg-dry	1	11/28/00 6:31:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RI - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011245
Project: 00-035.D Barre Coal Tar
Lab ID: 0011245-04B

Client Sample ID: DUP-1
Collection Date: 11/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
4-Chlorophenyl phenyl ether	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Fluorene	3,600	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
4-Nitroaniline	ND	610		µg/Kg-dry	1	11/28/00 6:31:00 PM
4,6-Dinitro-2-methylphenol	ND	610		µg/Kg-dry	1	11/28/00 6:31:00 PM
N-Nitrosodiphenylamine	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
4-Bromophenyl phenyl ether	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Hexachlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Pentachlorophenol	ND	610		µg/Kg-dry	1	11/28/00 6:31:00 PM
Phenanthrene	18,000	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Anthracene	4,200	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Carbazole	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Di-n-butyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Fluoranthene	9,300	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Pyrene	16,000	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Butyl benzyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Bis(2-ethylhexyl)phthalate	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
3,3'-Dichlorobenzidine	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Benz(a)anthracene	5,700	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Chrysene	4,800	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Di-n-octyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Benzo(b)fluoranthene	3,000	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Benzo(k)fluoranthene	970	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Benzo(a)pyrene	4,300	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Dibenz(a,h)anthracene	520	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Indeno(1,2,3-cd)pyrene	1,700	300		µg/Kg-dry	1	11/28/00 6:31:00 PM
Benzo(g,h,i)perylene	1,700	300		µg/Kg-dry	1	11/28/00 6:31:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

Lab Order: 0011245
Client: Twin State Environmental
Project: 00-035.D Barre Coal Tar

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0011245-01A	SB-15	11/20/00	Soil	VOLATILES by GC/MS, Medium-Level		11/20/00	11/28/00
0011245-01B				Percent Moisture			11/24/00
				SEMIVOLATILE ORGANICS, Soil/Solids		11/27/00	11/28/00
				TPH/IR (Modified for Soils/Solids)			11/29/00
0011245-02A	SB-27			VOLATILES by GC/MS, Medium-Level		11/20/00	11/29/00
0011245-02B				Percent Moisture			11/24/00
				SEMIVOLATILE ORGANICS, Soil/Solids		11/27/00	11/28/00
				TPH/IR (Modified for Soils/Solids)			11/29/00
0011245-03A	SB-28			VOLATILES by GC/MS, Medium-Level		11/20/00	11/28/00
0011245-03B				Percent Moisture			11/24/00
				SEMIVOLATILE ORGANICS, Soil/Solids		11/27/00	11/28/00
				TPH/IR (Modified for Soils/Solids)			11/29/00
0011245-04A	DUP-1			VOLATILES by GC/MS, Medium-Level		11/20/00	11/28/00
0011245-04B				Percent Moisture			11/24/00
				SEMIVOLATILE ORGANICS, Soil/Solids		11/27/00	11/28/00
				TPH/IR (Modified for Soils/Solids)			11/29/00
0011245-05A	Trip Blank			VOLATILES by GC/MS, Medium-Level		11/20/00	11/28/00

Client: TWIN STATE ENVIRO AMRO ID: 0011245
 Project Name: 00-035.D BARRE COAL TAR Date Rec.: 11-22-00
 Ship via: (circle one) Fed Ex., UPS, AMRO Courier, Date Due: 12-5-01
 Hand Del., Other Courier, Other:

Items to be Checked Upon Receipt	Yes	No	NA	Comments
1. Army Samples received in individual plastic bags?			X	
2. Custody Seals present?		X		
3. Custody Seals Intact?			X	
4. Air Bill included in folder if received?			X	
5. Is COC included with samples?	X			
6. Is COC signed and dated by client?	Y			
7. Laboratory receipt temperature. TEMP = <u>4</u> Samples rec. with ice <input checked="" type="checkbox"/> ice packs <input type="checkbox"/> neither <input type="checkbox"/>				
8. Were samples received the same day they were sampled? Is client temperature 4°C ± 2°C? If no obtain authorization from the client for the analyses. Client authorization from: _____ Date: _____ Obtained by: _____		X		
9. Is the COC filled out correctly and completely?	X			
10. Does the info on the COC match the samples?	Y			
11. Were samples rec. within holding time?	X			
12. Were all samples properly labeled?	X			
13. Were all samples properly preserved?	Y			
14. Were proper sample containers used?	Y			
15. Were all samples received intact? (none broken or leaking)	Y			
16. Were VOA vials rec. with no air bubbles?			X	
17. Were the sample volumes sufficient for requested analysis?	X			
18. Were all samples received?	X			

19. VPH and VOA Soils only:
 Sampling Method VPH (circle one): M=Methanol, E=EnCore (air-tight container)
 Sampling Method VOA (circle one): M=~~Methanol~~, SB=Sodium Bisulfate, E=EnCore, B=Bulk
 If M or SB:
 Does preservative cover the soil? **If NO then client must be faxed.**
 Does preservation level come close to the fill line on the vial? **If NO then client must be faxed.**
 Were vials provided by AMRO? **If NO then weights MUST be obtained from client**
 Was dry weight aliquot provided? **If NO then fax client and inform the VOA lab ASAP.**

20. Subcontracted Samples:
 What samples sent: _____
 Where sent: _____
 Date: _____
 Analysis: _____
 TAT: _____

21. Information entered into:
 Internal Tracking Log?
 Dry Weight Log?
 Client Log?
 Composite Log?
 Filtration Log?

Received By: CB Date: 11-22-00 Logged in By: ST Date: 11/24
 Labeled By: ST Date: 11/24 Checked By: _____ Date: _____

AMRO Environmental Laboratories Corporation

111 Herrick Street
Merrimack, N.H. 03054
Office: 603-424-2022 Fax: 603-429-8496

34608

CHAIN OF CUSTODY RECORD

Proj. No. 00-035.D		Project Name 00-035 Barre Coal Tar			Project State VT	MATRIX Water - A Soil/Solid-S Waste-W Other-Q Explain				PAGE 1 OF 1							
Samplers (Signature) <i>[Signature]</i>					Type Size, & No. of Containers	<div style="display: flex; justify-content: space-around;"> P240 P270 41P.1 </div>											
Sta. No.	Date	Time	Comp	Grab	Station Location							Remarks					
	11/20/00	1130		X	SB-15							3-2V018/1402	S	X	X	X	Need all results by 12/8/00
		1300		X	SB-27								S	X	X	X	
		1400		X	SB-28								S	X	X	X	
		1600		X	DUP-1		S	X	X	X							

Please print clearly, legibly and completely. Samples cannot be logged in and the turnaround time clock will not start until any ambiguities are resolved.

PRIORITY TURNAROUND TIME AUTHORIZATION

Before submitting samples for expedited T.A.T., you must have requested in advance and received a coded T.A.T. AUTHORIZATION NUMBER.

AUTHORIZATION NO. _____ T.A.T. authorized by: _____

Relinquished by (Signature) <i>[Signature]</i>	Date Time 11/20/00 1700	Received by (Signature) <i>[Signature]</i> 11/20/00	<input checked="" type="checkbox"/> Fax to (phone) (802) 654-8667	Send Results to: TWIN STATE ENVIRONMENTAL
Relinquished by (Signature) <i>[Signature]</i>	Date Time 11/21/00 15:00	Received by (Signature) <i>[Signature]</i>	Results needed 12/8/00	414 ROOSEVELT HWY
Relinquished by (Signature) <i>[Signature]</i>	Date Time	Received by (Signature)	AMRO Project No. 0011245	COLCHESTER VT 05446
Relinquished by (Signature)	Date Time 11/22/00 12:30	Received for Laboratory by (Signature) <i>[Signature]</i>	Seal Intact? Yes No N/A	ATT: JON ASHLEY

White: Lab copy

Yellow: Accompanies report

Pink: Client copy



United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
60 Westview Street
Lexington, MA 02421-3185

Douville
Paav
HBR

Laboratory Results

October 23, 2000

Project Number: 00090035
Project: Barre Coal Tar, Barre, VT
Analysis: Metals in Soil Medium Level by ICP
Analyst: Dan Curran *PL 10/19/00*

Analytical Procedure:

All samples were received and logged in by the laboratory according to the SOP for Sample Log-in (EIA-ADMLOGN5.SOP, 4/99).

Sample analysis was done following the EPA Region I SOP, INGICP3.SOP.

Samples preparation was done following the Region I SOP INGPREP2.SOP

Samples were analyzed by inductively coupled plasma - atomic emission spectrometry using pneumatic nebulization. Analysis and preparation SOP's are based on Test Methods for Evaluating Solid Waste Physical/Chemical Methods SW-846, 3rd Edition, Revision 2, Final Update III, Methods 6010B and 3050B respectively.

Percent solids values were determined after oven drying samples overnight at 60 degrees Celsius, and are for analytical purposes only.

Date Samples Received by the Laboratory: 09/21/2000

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Dr. William J. Andrade, Advanced Analytical Chemistry Specialist
781-860-4333

Signature: *WJ Andrade 10/24/00*

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Barre Coal Tar, Barre, VT

Metals in Soil Medium Level by ICP

Sample Number: SB-4
Date of Collection: 9/18/00
Date of Extraction: 10/10/2000
Date of Analysis: 10/11/2000
Dry Weight Extracted: 0.52 grams
Wet Weight Extracted: 0.52 grams
Volume Extracted: N/A

Laboratory ID: AA09768
Matrix: Soil
Final Volume: 50 mL
Percent Solids: 100%
Extract Dilution: 1
pH: N/A

CAS Number	Compound	Concentration mg/Kg	RL mg/Kg	Qualifier
7429-90-5	Aluminum	6800	19	
7440-36-0	Antimony	ND	9.6	J
7440-38-2	Arsenic	ND	19	
7440-39-3	Barium	23	1.4	
7440-41-7	Beryllium	ND	0.48	
7440-43-9	Cadmium	ND	2.9	
7440-47-3	Chromium	19	2.9	
7440-48-4	Cobalt	7.4	2.9	
7440-50-8	Copper	19	1.4	
7439-89-6	Iron	18000	9.6	
7439-92-1	Lead	12	9.6	
7439-96-5	Manganese	170	0.96	
7440-02-0	Nickel	21	5.8	
7782-49-2	Selenium	ND	19	
7440-22-4	Silver	ND	2.9	
7440-28-0	Thallium	ND	19	
7440-62-2	Vanadium	16	2.9	
7440-66-6	Zinc	52	2.9	

Comments: Antimony result is approximated due to the low matrix spike recovery.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Barre Coal Tar, Barre, VT

Metals in Soil Medium Level by ICP

Sample Number: DUP-1
Date of Collection: 9/19/00
Date of Extraction: 10/10/2000
Date of Analysis: 10/11/2000
Dry Weight Extracted: 0.50 grams
Wet Weight Extracted: 0.50 grams
Volume Extracted: N/A

Laboratory ID: AA09769
Matrix: Soil
Final Volume: 50 mL
Percent Solids: 100%
Extract Dilution: 1
pH: N/A

CAS Number	Compound	Concentration mg/Kg	RL mg/Kg	Qualifier
7429-90-5	Aluminum	6900	20	
7440-36-0	Antimony	ND	10	J
7440-38-2	Arsenic	ND	20	
7440-39-3	Barium	14	1.5	
7440-41-7	Beryllium	ND	0.5	
7440-43-9	Cadmium	ND	3.0	
7440-47-3	Chromium	16	3.0	
7440-48-4	Cobalt	5.7	3.0	
7440-50-8	Copper	6.1	1.5	
7439-89-6	Iron	12000	10	
7439-92-1	Lead	ND	10	
7439-96-5	Manganese	150	1.0	
7440-02-0	Nickel	17	6.0	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	3.0	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	14	3.0	
7440-66-6	Zinc	26	3.0	

Comments: Antimony result is approximated due to the low matrix spike recovery.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Barre Coal Tar, Barre, VT

Laboratory Reagent Blank

Sample Number: N/A
Date of Collection: N/A
Date of Extraction: 10/11/2000
Date of Analysis: 10/11/2000
Dry Weight Extracted: N/A
Wet Weight Extracted: N/A
Volume Extracted: 50 mL

Laboratory ID: N/A
Matrix: Soil
Final Volume: 50 mL
Percent Solids: 0%
Extract Dilution: 1
pH: N/A

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	200	
7440-36-0	Antimony	ND	100	
7440-38-2	Arsenic	ND	200	
7440-39-3	Barium	ND	15	
7440-41-7	Beryllium	ND	5	
7440-43-9	Cadmium	ND	30	
7440-47-3	Chromium	ND	30	
7440-48-4	Cobalt	ND	30	
7440-50-8	Copper	ND	15	
7439-89-6	Iron	ND	100	
7439-92-1	Lead	ND	100	
7439-96-5	Manganese	ND	10	
7440-02-0	Nickel	ND	60	
7782-49-2	Selenium	ND	200	
7440-22-4	Silver	ND	30	
7440-28-0	Thallium	ND	200	
7440-62-2	Vanadium	ND	30	
7440-66-6	Zinc	ND	30	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

METALS MATRIX SPIKE (MS) RESULTS

Sample ID: AA09769

COMPOUND	SPIKE ADDED mg/Kg	SAMPLE CONCENTRATION mg/Kg	MS CONCENTRATION mg/Kg	MS % REC	QC LIMITS (% REC)
Antimony	100	0	43.3	43.3	75 - 125
Arsenic	400	0	400	100	75 - 125
Barium	400	14	390	94.0	75 - 125
Beryllium	10.0	0	9.03	90.3	75 - 125
Cadmium	20.0	0	22.0	110	75 - 125
Chromium	40.0	16	59.9	110	75 - 125
Cobalt	100	5.7	100	94.3	75 - 125
Copper	50.0	6.1	48.6	85.0	75 - 125
Lead	100	0	98.3	98.3	75 - 125
Manganese	100	150	268	118	75 - 125
Nickel	100	17	111	94.0	75 - 125
Selenium	400	0	391	97.8	75 - 125
Silver	10.0	0	9.51	95.1	75 - 125
Thallium	400	0	366	91.5	75 - 125
Vanadium	100	14	107	93.0	75 - 125
Zinc	100	26	129	103	75 - 125

Comments: The antimony matrix spike recovery is low. Antimony results are approximated.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Sample ID: AA09765

COMPOUND	SAMPLE	SAMPLE DUPLICATE	PRECISION	QC LIMITS
	RESULT mg/Kg	RESULT mg/Kg	RPD %	
Aluminum	8000	7900	1.3	35
Antimony	ND	ND	NA	35
Arsenic	ND	ND	NA	35
Barium	21	22	4.7	35
Beryllium	ND	ND	NA	35
Cadmium	ND	ND	NA	35
Chromium	24	25	4.1	35
Cobalt	8.1	8.0	1.2	35
Copper	36	42	15	35
Iron	23000	22000	4.4	35
Lead	36	46	24	35
Manganese	240	240	0.0	35
Nickel	29	28	3.5	35
Selenium	ND	ND	NA	35
Silver	ND	ND	NA	35
Thallium	ND	ND	NA	35
Vanadium	20	20	0.0	35
Zinc	63	71	12	35

Comments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Laboratory Fortified Blank (LFB) Results

COMPOUND	LFB AMOUNT SPIKED ug/L	LFB RESULT ug/L	LFB RECOVERY %	QC LIMITS RPD
Antimony	1000	1100	110	80 - 120
Arsenic	4000	4000	100	80 - 120
Barium	4000	3900	97.5	80 - 120
Beryllium	100	96	96.0	80 - 120
Cadmium	200	220	110	80 - 120
Chromium	400	400	100	80 - 120
Cobalt	1000	990	99.0	80 - 120
Copper	500	440	88.0	80 - 120
Lead	1000	930	93.0	80 - 120
Manganese	1000	980	98.0	80 - 120
Nickel	1000	1000	100	80 - 120
Selenium	4000	4000	100	80 - 120
Silver	100	94	94.0	80 - 120
Thallium	4000	3900	97.5	80 - 120
Vanadium	1000	1000	100	80 - 120
Zinc	1000	960	96.0	80 - 120

Comments:

Samples in Batch: AA09765 AA09766 AA09767 AA09768 AA09769

Qualifiers: RL = Reporting limit
 ND = Not Detected above Reporting limit
 NA = Not Applicable due to high sample dilutions or sample interferences
 J = Estimated value
 E = Estimated value exceeds the calibration range
 L = Estimated value is below the calibration range
 B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
 P = The confirmation value exceeded 35% difference and is less than 100%. The lower value is reported.
 C = The identification has been confirmed by GC/MS.
 A = Suspected Aldol condensation product.
 N = Tentatively identified compound.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Solid Laboratory Control Sample (LCS) Results

COMPOUND	LCS RESULTS mg/Kg	CONTROL LIMITS
Aluminum	5400	3140 - 7360
Antimony	28.3	5.87 - 60.2
Arsenic	102	69.8 - 118
Barium	303	254 - 405
Beryllium	38.6	33.5 - 51.9
Cadmium	92.5	74.8 - 120
Chromium	48.9	35.5 - 56.5
Cobalt	118	95.6 - 145
Copper	143	121 - 174
Iron	12000	5920 - 14500
Lead	126	103 - 167
Manganese	166	127 - 205
Nickel	136	108 - 168
Selenium	102	71.2 - 121
Silver	41.7	64.6 - 109
Thallium	36.2	23.2 - 68.3
Vanadium	63.8	44.4 - 85.8
Zinc	74.4	58.0 - 92.1

Comments: Silver result is outside the control limit.; however, the matrix spike and laboratory fortified blank recoveries are acceptable.

US ENVIRONMENTAL PROTECTION AGENCY
60 Westview Street
Lexington, MA. 02421

*Dorrie
Par
HBR*

DATE: October 9, 2000

SUBJECT: **Barre Coal Tar, Barre, VT**
Soils--Volatile Organic Analysis by GC/MS

Samples Received: SED-1 14528, SED-2 14487, SED-3 14536,
SB-4 14506, DUP-1 14515

FROM: Joseph Montanaro, EIA *10/9/00*

TO: Dorrie Par, HBR

THRU: William Andrade, Ph.D., Analytical Specialist *WJA 10/11/00*

PROJECT NUMBER: 00090035

DATE(S) SAMPLES RECEIVED BY THE LABORATORY: 9/21/00

ANALYTICAL PROCEDURE:

SOIL: The samples were processed by Method 5035, High Concentration for Soils and the extracts were analyzed by SW-846, Method 8260B, SW-846, Rev 5.0, April 1999, (VOAGCMS3. SOP 12/99). Concentration is based on wet weight.

QUALITY CONTROL:

1. A method blank was analyzed prior to sample analysis.
2. Each sample was spiked with three surrogate compounds at 25 ppb concentration. The results for the surrogate recoveries are reported for each sample.
3. Sample SB-4 14506, was spiked in duplicate and analyzed to determine laboratory precision and accuracy.

DATA FILE: J:\CHEMISTRY\REPORTS\VOA\0090035.wk4

ANALYTICAL PARAMETERS
PURGEABLE ORGANIC ANALYSIS

INSTRUMENTS: Varian Archon Purge and Trap Autosampler
 Tekmar 2000
 Finnigan INCOS-50 XL

PURGE CONDITIONS:

Gas:	Helium
Purge Time and Flow:	11 min., 40 ml/min
Dry Purge:	4 min., 40 ml/min
Trap:	25 cm stainless steel (1/8 in. OD) packed with Carbopack B (10 cm) Carboxen 1000 (6 cm), and Carboxen 1001 (1 cm)
Desorption Time,Flow, Temperature:	4 min, 15 ml/min., 250 C
Bake out cycle:	8 min @ 260 C

CHROMATOGRAPHIC CONDITIONS:

Column:	Restek 502.2 40M length, 0.18 mm id, 1.0 df (um)
Program:	Initial 50 C programmed at 8 C/min to 220 C and held 220 C for 7 minutes.
Injector and Transfer Temperatures:	200 C
Carrier Gas and Flow:	Helium, 15 ml/min

MASS SPECTROMETER CONDITIONS:

Electron Energy:	70 V
Mass Range:	35 to 300
Scan Rate:	1.5 seconds

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
PROJECT AND REPORT FORM

Chemist Reviewing Data: Dan Boudreau

Method Modifications: None

Limitations of Data: None

Laboratory Blank Problems: None

Instrument Performance Problems: None

Surrogate or Spike Recovery Problems:

The RPD's for Chloroform and 1,4-Dichlorobenzene were beyond the acceptable quality control limits in the matrix spike duplicate analysis.

Additional Comments:

A field blank was not received with the samples.

MATRIX SPIKE DUPLICATE ANALYSIS

FACILITY SAMPLED: Barre Coal Tar
 SAMPLE ID: SB-4 14506
 FILE NAME(S): 09280E38 & 09280E39
 DATE OF ANALYSIS: 9/28/00

ACCURACY

COMPOUND	AVERAGE % RECOVERY	ACCEPTABLE RANGE ₂
1,1 Dichloroethylene	107	48-161
Chloroform	87	58-140
1,2 Dichloroethane	97	66-134
1,1,1 Trichloroethane	94	48-154
Carbon tetrachloride	106	65-140
Bromodichloromethane	90	55-129
Trichloroethylene	94	49-154
Benzene	90	68-129
Dibromochloromethane	90	50-114
Bromoform	86	46-105
1,4 Dichlorobenzene	90	67-119
Vinyl chloride	114	78-200

PRECISION

COMPOUND	#1 % RECOVERY	#2 % RECOVERY	RPD	ACCEPTABLE RANGE ₂
1,1 Dichloroethylene	107	107	0	0-29
Chloroform	80	94	16 ₁	0-14
1,2 Dichloroethane	100	94	6	0-23
1,1,1 Trichloroethane	90	99	9	0-22
Carbon tetrachloride	111	102	8	0-12
Bromodichloromethane	91	88	3	0-16
Trichloroethylene	99	89	11	0-22
Benzene	83	96	14	0-16
Dibromochloromethane	81	99	19	0-30
Bromoform	80	92	14	0-15
1,4 Dichlorobenzene	101	99	24 ₁	0-22
Vinyl chloride	108	120	10	0-23

1 = out of range

2 = Quality Control Acceptance Criteria as per Laboratory

FACILITY SAMPLED: Barre Coal Tar

US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE ID.: Method Blank
 FILE NAME(S): 09280E32
 DATE OF ANALYSIS: 9/28/00

SAMPLE WET WEIGHT: 10.090 grams
 DILUTION FACTOR(S): 500
 PRESERVATION: Cool to 4 C

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	PPM Conc. (ug/g)	Reporting Limits (ug/g)	Comments
TARGET COMPOUNDS					
74-87-3	34418	Chloromethane	ND	5.00	
74-83-9	34413	Bromomethane	ND	5.00	
75-01-4	39175	Vinyl Chloride	ND	5.00	
75-00-3	34311	Chloroethane	ND	5.00	
75-09-2	34423	Methylene Chloride	ND	5.00	
75-69-4	34488	Trichlorofluoromethane	ND	5.00	
75-35-4	34501	1,1-Dichloroethylene	ND	5.00	
75-34-3	34496	1,1-Dichloroethane	ND	5.00	
156-59-2		c-1,2-Dichloroethylene	ND	5.00	
156-60-5		t-1,2-Dichloroethylene	ND	5.00	
67-66-3	32106	Chloroform	ND	5.00	
107-06-2	34531	1,2-Dichloroethane	ND	5.00	
71-55-6	34506	1,1,1-Trichloroethane	ND	5.00	
56-23-5	32102	Carbon Tetrachloride	ND	5.00	
75-27-4	32101	Bromodichloromethane	ND	5.00	
78-87-5	34541	1,2-Dichloropropane	ND	5.00	
10061-02-6	34699	t-1,3-Dichloropropene	ND	5.00	
79-01-6	39180	Trichloroethylene	ND	5.00	
124-48-1	32105	Dibromochloromethane	ND	5.00	
10061-01-5	34704	c-1,3-Dichloropropene	ND	5.00	
563-58-6		1,1-Dichloropropene	ND	5.00	
79-00-5	34511	1,1,2-Trichloroethane	ND	5.00	
71-43-2	34030	Benzene	ND	5.00	
75-25-2	32104	Bromoform	ND	5.00	
127-18-4	34475	Tetrachloroethylene	ND	5.00	
79-34-5	34516	1,1,2,2-Tetrachloroethane	ND	5.00	
108-88-3	34010	Toluene	ND	5.00	
108-90-7	34301	Chlorobenzene	ND	5.00	
100-41-4	34371	Ethylbenzene	ND	5.00	
541-73-1		1,3-Dichlorobenzene	ND	5.00	
106-46-7		1,4-Dichlorobenzene	ND	5.00	
95-50-1		1,2-Dichlorobenzene	ND	5.00	
		1,1,2-Trichloro-1,2,2-trifluoroethane	ND	5.00	
67-64-1	81552	Acetone	ND	10.00	
75-15-0	77041	Carbon Disulfide	ND	15.00	

(con't)

US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE ID.: Method Blank
 Sample Results Continued:

CAS NO.	STORET NO.	Compound	PPM Conc. (ug/g)	Reporting Limits (ug/g)	Comments
78-93-3	81595	2-Butanone(MEK)	ND	20.00	
591-10-6	77103	2-Hexanone	ND	3.00	
108-10-1	81596	4-Methyl-2-Pentanone (MIBK)	ND	3.00	
100-42-5	81708	Styrene	ND	5.00	
133-02-7	81551	Xylenes (total)	ND	10.00	
		1,2-Dibromoethane (EDB)	ND	5.00	
		Tetrahydrofuran	ND	35.00	
		Ethyl ether	ND	15.00	
		Isopropylbenzene	ND	5.00	
		n-Propylbenzene	ND	5.00	
		1,3,5-Trimethylbenzene	ND	5.00	
		1,2,4-Trimethylbenzene	ND	5.00	
		sec-Butylbenzene	ND	5.00	
		para-Isopropyltoluene	ND	5.00	
		n-Butylbenzene	ND	5.00	
		Naphthalene	ND	5.00	
		methyl-tert-butyl Ether (MTBE)	ND	5.00	

Other Compounds Tentatively Identified					

Sample Recoveries for Surrogate Compounds:	Observed Recoveries	ACCEPTABLE RANGE ₂
1,2-Dichloroethane,d4	97	63-145
Toluene,d8	101	76-116
1,4-Bromofluorobenzene	92	71-131

Notes:

- ND=none detected above the detection level
- RL=Reporting Limit
- J=approximate
- NA=not available due to dilution or interference
- E=estimated value exceeds the calibration range
- L=estimated value is below the calibration range
- B=analyte is associated with lab blank
- ₁=out of range
- ₂=quality control acceptance criteria as per laboratory

FACILITY SAMPLED: Barre Coal Tar

US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE ID: SB-4 14506
 FILE NAME(S): 09280E36
 DATE OF COLLECTION: 9/19/00
 DATE OF ANALYSIS: 9/28/00

SAMPLE WET WEIGHT: 10.486 grams
 DILUTION FACTOR(S): 500
 PRESERVATION: Cool to 4 C

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	ppm Conc. (ug/gm)	Reporting Limits (ug/gm)	Comments
TARGET COMPOUNDS					
74-87-3	34418	Chloromethane	ND	4.80	
74-83-9	34413	Bromomethane	ND	4.80	
75-01-4	39175	Vinyl Chloride	ND	4.80	
75-00-3	34311	Chloroethane	ND	4.80	
75-09-2	34423	Methylene Chloride	ND	4.80	
75-69-4	34488	Trichlorofluoromethane	ND	4.80	
75-35-4	34501	1,1-Dichloroethylene	ND	4.80	
75-34-3	34496	1,1-Dichloroethane	ND	4.80	
156-59-2		c-1,2-Dichloroethylene	ND	4.80	
156-60-5		t-1,2-Dichloroethylene	ND	4.80	
67-66-3	32106	Chloroform	ND	4.80	
107-06-2	34531	1,2-Dichloroethane	ND	4.80	
71-55-6	34506	1,1,1-Trichloroethane	ND	4.80	
56-23-5	32102	Carbon Tetrachloride	ND	4.80	
75-27-4	32101	Bromodichloromethane	ND	4.80	
78-87-5	34541	1,2-Dichloropropane	ND	4.80	
10061-02-6	34699	t-1,3-Dichloropropene	ND	4.80	
79-01-6	39180	Trichloroethylene	ND	4.80	
124-48-1	32105	Dibromochloromethane	ND	4.80	
10061-01-5	34704	c-1,3-Dichloropropene	ND	4.80	
563-58-6		1,1-Dichloropropene	ND	4.80	
79-00-5	34511	1,1,2-Trichloroethane	ND	4.80	
71-43-2	34030	Benzene	ND	4.80	
75-25-2	32104	Bromoform	ND	4.80	
127-18-4	34475	Tetrachloroethylene	ND	4.80	
79-34-5	34516	1,1,2,2-Tetrachloroethane	ND	4.80	
108-88-3	34010	Toluene	ND	4.80	
108-90-7	34301	Chlorobenzene	ND	4.80	
100-41-4	34371	Ethylbenzene	ND	4.80	
541-73-1		1,3-Dichlorobenzene	ND	4.80	
106-46-7		1,4-Dichlorobenzene	ND	4.80	
95-50-1		1,2-Dichlorobenzene	ND	4.80	
		1,1,2-Trichloro-1,2,2-trifluoroethane	ND	4.80	
67-64-1	81552	Acetone	ND	9.60	
75-15-0	77041	Carbon Disulfide	ND	14.40	
		(con't)			

US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE ID.: SB-4 14506
 Sample Results Continued:

CAS NO.	STORET NO.	Compound	ppm Conc. (ug/gm)	Reporting Limits (ug/gm)	Comments
78-93-3	81595	2-Butanone (MEK)	ND	19.20	
591-10-6	77103	2-Hexanone	ND	2.88	
108-10-1	81596	4-Methyl-2-Pentanone(MIBK)	ND	2.88	
100-42-5	81708	Styrene	ND	4.80	
133-02-7	81551	Xylenes (total)	ND	9.60	
		1,2-Dibromoethane	ND	4.80	
		Tetrahydrofuran	ND	33.60	
		Ethyl ether	ND	14.40	
		Isopropylbenzene	ND	4.80	
		n-Propylbenzene	ND	4.80	
		1,3,5-Trimethylbenzene	ND	4.80	
		1,2,4-Trimethylbenzene	ND	4.80	
		sec-Butylbenzene	ND	4.80	
		para-Isopropyltoluene	ND	4.80	
		n-Butylbenzene	ND	4.80	
		Naphthalene	ND	4.80	
		methyl-tert-butyl Ether (MTBE)	ND	4.80	
Other Compounds Tentatively Identified					
		2-methyl Naphthalene	31	9.60	J
		2,3-dimethyl Naphthalene	29	9.60	J
		1,3-dimethyl Naphthalene	22	9.60	J

Sample Recoveries for Surrogate Compounds:	Observed Recoveries	ACCEPTABLE RANGE ₂
1,2-Dichloroethane,d4	134	63-145
Toluene,d8	136 ₁	76-116
1,4-Bromofluorobenzene	118	71-131

Notes:

ND=none detected above the detection level
 RL=Reporting Limit
 J=approximate
 NA=not available due to dilution or interference
 E=estimated value exceeds the calibration range
 L=estimated value is below the calibration range
 B=analyte is associated with lab blank
 1=out of range
 2=quality control acceptance criteria as per laboratory

FACILITY SAMPLED: Barre Coal Tar

US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE ID: DUP-1 14515
 FILE NAME(S): 09280E37
 DATE OF COLLECTION: 9/19/00
 DATE OF ANALYSIS: 9/28/00

SAMPLE WET WEIGHT: 7.985 grams
 DILUTION FACTOR(S): 5000
 PRESERVATION: Cool to 4 C

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	ppm Conc. (ug/gm)	Reporting Limits (ug/gm)	Comments
TARGET COMPOUNDS					
74-87-3	34418	Chloromethane	ND	63.00	
74-83-9	34413	Bromomethane	ND	63.00	
75-01-4	39175	Vinyl Chloride	ND	63.00	
75-00-3	34311	Chloroethane	ND	63.00	
75-09-2	34423	Methylene Chloride	ND	63.00	
75-69-4	34488	Trichlorofluoromethane	ND	63.00	
75-35-4	34501	1,1-Dichloroethylene	ND	63.00	
75-34-3	34496	1,1-Dichloroethane	ND	63.00	
156-59-2		c-1,2-Dichloroethylene	ND	63.00	
156-60-5		t-1,2-Dichloroethylene	ND	63.00	
67-66-3	32106	Chloroform	ND	63.00	
107-06-2	34531	1,2-Dichloroethane	ND	63.00	
71-55-6	34506	1,1,1-Trichloroethane	ND	63.00	
56-23-5	32102	Carbon Tetrachloride	ND	63.00	
75-27-4	32101	Bromodichloromethane	ND	63.00	
78-87-5	34541	1,2-Dichloropropane	ND	63.00	
10061-02-6	34699	t-1,3-Dichloropropene	ND	63.00	
79-01-6	39180	Trichloroethylene	ND	63.00	
124-48-1	32105	Dibromochloromethane	ND	63.00	
10061-01-5	34704	c-1,3-Dichloropropene	ND	63.00	
563-58-6		1,1-Dichloropropene	ND	63.00	
79-00-5	34511	1,1,2-Trichloroethane	ND	63.00	
71-43-2	34030	Benzene	ND	63.00	
75-25-2	32104	Bromoform	ND	63.00	
127-18-4	34475	Tetrachloroethylene	ND	63.00	
79-34-5	34516	1,1,2,2-Tetrachloroethane	ND	63.00	
108-88-3	34010	Toluene	ND	63.00	
108-90-7	34301	Chlorobenzene	ND	63.00	
100-41-4	34371	Ethylbenzene	13	63.00	
541-73-1		1,3-Dichlorobenzene	ND	63.00	L
106-46-7		1,4-Dichlorobenzene	ND	63.00	
95-50-1		1,2-Dichlorobenzene	ND	63.00	
		1,1,2-Trichloro-1,2,2-trifluoroethane	ND	63.00	
67-64-1	81552	Acetone	ND	126.00	
75-15-0	77041	Carbon Disulfide	ND	189.00	

(con't)

US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 GC/MS PURGEABLE ORGANIC ANALYSIS - SOIL

SAMPLE ID.: DUP-1 14515
 Sample Results Continued:

CAS NO.	STORET NO.	Compound	ppm Conc. (ug/gm)	Reporting Limits (ug/gm)	Comments
78-93-3	81595	2-Butanone (MEK)	ND	252.00	
591-10-6	77103	2-Hexanone	ND	37.80	
108-10-1	81596	4-Methyl-2-Pentanone(MIBK)	ND	37.80	
100-42-5	81708	Styrene	ND	63.00	
133-02-7	81551	Xylenes (total)	39	126.00	L
		1,2-Dibromoethane	ND	63.00	
		Tetrahydrofuran	ND	441.00	
		Ethyl ether	ND	189.00	
		Isopropylbenzene	ND	63.00	
		n-Propylbenzene	ND	63.00	
		1,3,5-Trimethylbenzene	250	63.00	
		1,2,4-Trimethylbenzene	100	63.00	
		sec-Butylbenzene	ND	63.00	
		para-Isopropyltoluene	17	63.00	L
		n-Butylbenzene	20	63.00	L
		Naphthalene	430	63.00	
		methyl-tert-butyl Ether (MTBE)	ND	63.00	
Other Compounds Tentatively Identified					

Sample Recoveries for Surrogate Compounds:	Observed Recoveries	ACCEPTABLE RANGE ₂
1,2-Dichloroethane,d4	100	63-145
Toluene,d8	95	76-116
1,4-Bromofluorobenzene	98	71-131

Notes:

- ND=none detected above the detection level
- RL=Reporting Limit
- J=approximate
- NA=not available due to dilution or interference
- E=estimated value exceeds the calibration range
- L=estimated value is below the calibration range
- B=analyte is associated with lab blank
- 1=out of range
- 2=quality control acceptance criteria as per laboratory



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
OFFICE OF ENVIRONMENTAL MEASUREMENT & EVALUATION
60 WESTVIEW STREET
LEXINGTON, MASSACHUSETTS 02421-3185

Dorrie
Paar
HBR

ATE: October 16, 2000

SUBJ: Gas Chromatography-Mass Spectrometry Analysis of Polynuclear Aromatic Hydrocarbons (PAHs) in Soils and Sediments - **Barre Coal Tar, Barre, VT**

FROM: Dick Siscanaw, Chemistry Section *RS 10/16/00*

THRU: Dr. William J. Andrade, Advanced Analytical Chemistry Specialist *WJA 10/19/00*

TO: Dorrie Paar

PROJECT NUMBER: 00090035

ANALYTICAL PROCEDURE:

All samples were received and logged in by the laboratory according to the SOP for Sample Log-in (EIA-ADMLOGN2.SOP, 7/16/98).

Sample processing was done following the EPA Region I method: Standard Operating Procedure for the Extraction and Analysis of Polynuclear Aromatic Hydrocarbons (PAHs) in solid samples using SIM-GC/MS analysis. All values are reported out on a dry weight basis.

The analytical support for this report was performed by ESAT contractors.

Date(s) Samples Received by the Laboratory: 9/21/00

cc:

File: J:\CHEMISTRY\REPORTS\BNA\00090035SPH.WPD

US ENVIRONMENTAL PROTECTION AGENCY
60 Westview Street
Lexington, MA 02421

QUALITY CONTROL:

1. A laboratory blank was analyzed before the sample analysis.
2. Each sample was spiked with 40 ug of the following surrogate compounds: Fluorobiphenyl and p-Terphenyl,d14. The results for the surrogate recoveries are reported out for each sample.
3. One sample, SED-2, was spiked twice as a matrix and matrix spike duplicate with 40 ug of the following compounds. The results of the analyses are listed below.

Compound	Matrix Rec. (%)	Matrix Dup. Rec. (%)	QC Range (%)	RPD (%)	Comments
Naphthalene	108	70		34	
Acenaphthylene	125	101		13	
Acenaphthene	105	93	31-137	9	
Fluorene	122	98		14	
Phenanthrene	131	107		11	
Anthracene	122	110		7	
Fluoranthene	145	133		4	
Pyrene	145*	133	35-142	3	
Benzo (a) anthracene	128	128		0	
Chrysene	101	101		0	
Benzo (b) fluoranthene	125	125		0	
Benzo (k) fluoranthene	98	98		0	
Benzo (a) pyrene	122	122		0	
Indeno (1, 2, 3-cd) pyrene	106	106		0	
Dibenzo (a, h) anthracene	106	108		2	
Benzo (ghi) perylene	105	105		0	

(Cont.)

SAMPLES ANALYZED: SED-1, SED-2, SED-3, SB-4, DUP-1

US ENVIRONMENTAL PROTECTION AGENCY
60 Westview Street
Lexington, MA 02421

ANALYTICAL PARAMETERS

INSTRUMENTS:

Hewlett Packard Gas Chromatograph
Hewlett Packard Gas Chromatograph-Mass
Spectrometer

GC/FID Screening Conditions:

Gas: Hydrogen
Capillary Column: DB-1, 30m, 0.32mm ID, 0.10 micron
film thickness
Injection Mode: Splitless
Temperature Program: Isothermal for 3 min at 40°C,
programmed at 15°C/min to 320°C
for 3 min

GC-MS Conditions:

Gas: Helium
Capillary Column: DB-5, 60m, 0.25mm ID, 0.25 micron
film thickness
Injection Mode: Splitless
Temperature Program: Isothermal for 4 min at 40°C,
programmed at 7°C/min to 300°C
Injector, Transfer
Temperatures: 300°C, 290°C
Electron Energy: 70 V
Mass Range: SIM

US ENVIRONMENTAL PROTECTION AGENCY
60 Westview Street
Lexington, MA 02421

Chemist who reviewed data: Dick Siscanaw

Holding times met (Y/N): Yes
Extraction (Water - 7 days, Soils - 14 days)
Analytical (40 days after extraction)

Method modifications: None

Limitations of data: None

Laboratory blank problems: None

Instrument performance problems: None

Surrogate and spike recovery problems: None

Additional comments: None

FACILITY SAMPLED: Barre Coal Tar

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: SBLK01

Matrix: Soil

DATE OF COLLECTION:	9/21/00	Percent Moisture	0
DATE OF EXTRACTION:	9/26/00	Final Vol. (mL):	1
DATE OF ANALYSIS:	9/29/00	GPC Factor:	1
WET WEIGHT (g):	5.005	Dilution Factor	1
DRY WEIGHT (g):	5.005		

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	Conc. (ug/Kg)	RL (ug/Kg)	Qualifier or Comment
----- Priority Pollutants					
91-20-3	34696	Naphthalene	50	10	
208-96-8	34200	Acenaphthylene	50	10	
83-32-9	34205	Acenaphthene	50	10	
86-73-7	34381	Fluorene	50	10	
85-01-8	34461	Phenanthrene	50	10	
120-12-7	34220	Anthracene	50	10	
206-44-0	34376	Fluoranthene	50	10	
129-00-0	34469	Pyrene	50	10	
56-55-3	34526	Benzo (a) anthracene	50	10	
218-01-9	34320	Chrysene	50	10	
205-99-2	34230	Benzo (b) fluoranthene	50	10	
207-08-9	34242	Benzo (k) fluoranthene	50	10	
50-32-8	34247	Benzo (a) pyrene	50	10	
193-39-5	34403	Indeno (1, 2, 3-cd) pyrene	50	10	
53-70-3	34556	Dibenzo (a, h) anthracene	50	10	
191-24-2	34521	Benzo (ghi) perylene	50	10	

Other Compounds Quantitated

None	ND	10
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US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

Sample Recoveries For Surrogate Compounds:	Recoveries (%)	QC Range (%)
Fluorobiphenyl	105	30-115
p-Terphenyl, d14	120	18-137

Notes:

- RL = Reporting limit
- ND = None detected
- < = Less than
- > = Greater than
- NA = Not available, due to sample dilution or interference
- E = Estimated value exceeds the calibration range
- L = Estimated value is below the calibration range
- B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contaminant in the sample extract is less than ten times the concentration in the blank extract for the common contaminants (phthalates and adipates), or less than five times for the remaining contaminants.
- C = This compound is confirmation for the pesticide analyses. See the pesticide report for the quantitation.
- A = Suspected aldolcondensation product
- J = Estimated value
- M = Matrix is interfering with the compound, usually area counts of the internal standard is low.

FACILITY SAMPLED: Barre Coal Tar

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.:	SB-4	Matrix:	Soil
DATE OF COLLECTION:	9/21/00	Percent Moisture	22.8
DATE OF EXTRACTION:	9/26/00	Final Vol. (mL):	1
DATE OF ANALYSIS:	9/29/00	GPC Factor:	1
WET WEIGHT (g):	5.263	Dilution Factor	1
DRY WEIGHT (g):	4.063		

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	Conc. (ug/Kg)	RL (ug/Kg)	Qualifier or Comment
----- Priority Pollutants					
91-20-3	34696	Naphthalene	270	12.5	
208-96-8	34200	Acenaphthylene	270	12.5	
83-32-9	34205	Acenaphthene	1900	12.5	
86-73-7	34381	Fluorene	1400	12.5	
85-01-8	34461	Phenanthrene	5700	12.5	
120-12-7	34220	Anthracene	960	12.5	
206-44-0	34376	Fluoranthene	680	12.5	
129-00-0	34469	Pyrene	1600	12.5	
56-55-3	34526	Benzo (a) anthracene	790	12.5	
218-01-9	34320	Chrysene	940	12.5	
205-99-2	34230	Benzo (b) fluoranthene	1300	12.5	
207-08-9	34242	Benzo (k) fluoranthene	440	12.5	
50-32-8	34247	Benzo (a) pyrene	900	12.5	
193-39-5	34403	Indeno (1,2,3-cd) pyrene	680	12.5	
53-70-3	34556	Dibenzo (a,h) anthracene	200	12.5	
191-24-2	34521	Benzo (ghi) perylene	630	12.5	

----- Other Compounds Quantitated					
None			ND	12.3	

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

Sample Recoveries For Surrogate Compounds:	Recoveries (%)	QC Range (%)
Fluorobiphenyl	84	43-116
p-Terphenyl, d14	114	33-141

FACILITY SAMPLED: Barre Coal Tar

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

SAMPLE NO.: DUP-1
DATE OF COLLECTION: 9/21/00
DATE OF EXTRACTION: 9/26/00
DATE OF ANALYSIS: 9/29/00
WET WEIGHT (g): 5.783
DRY WEIGHT (g): 4.985

Matrix: Soil
Percent Moisture 13.8
Final Vol. (mL): 1
GPC Factor: 1
Dilution Factor 1&20

SAMPLE RESULTS:

CAS NO.	STORET NO.	Compound	Conc. (ug/Kg)	RL (ug/Kg)	Qualifier or Comment
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Priority Pollutants

91-20-3	34696	Naphthalene	280000	250	D
208-96-8	34200	Acenaphthylene	37000	250	D
83-32-9	34205	Acenaphthene	100000	250	D
86-73-7	34381	Fluorene	82000	250	D
85-01-8	34461	Phenanthrene	230000	250	D
120-12-7	34220	Anthracene	62000	250	D
206-44-0	34376	Fluoranthene	60000	250	D
129-00-0	34469	Pyrene	100000	250	D
56-55-3	34526	Benzo(a)anthracene	29000	250	D
218-01-9	34320	Chrysene	26000	250	D
205-99-2	34230	Benzo(b)fluoranthene	18000	12.5	
207-08-9	34242	Benzo(k)fluoranthene	4500	12.5	
50-32-8	34247	Benzo(a)pyrene	21000	250	D
193-39-5	34403	Indeno(1,2,3-cd)pyrene	8600	12.5	
53-70-3	34556	Dibenzo(a,h)anthracene	2400	12.5	
191-24-2	34521	Benzo(ghi)perylene	9000	12.5	

Other Compounds Quantitated

None	ND	10
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US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
GC/MS EXTRACTABLE ORGANIC ANALYSIS

Sample Recoveries For Surrogate Compounds:	Recoveries (%)	QC Range (%)
Fluorobiphenyl	55	43-116
p-Terphenyl, d14	93	33-141



October 05, 2000

Jon Ashley
Twin State Environmental
414 Roosevelt Highway
Colchester, VT 05446
TEL: (802) 654-8663
FAX (802) 654-8667

OCT 18 2000

RE: 00-035 Barre Coal Tar

Order No.: 0009170

Dear Jon Ashley:

AMRO Environmental Laboratories Corp. received 5 samples on 9/21/00 for the analyses presented in the following report.

AMRO operates a Quality Assurance Program which meets or exceeds EPA and state requirements. A copy of the appropriate State Certificate is attached. The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt.

Please be advised that any unused sample volume and sample extracts will be stored for a period of thirty (30) days from this report date. After this time, AMRO will properly dispose of the remaining sample(s). If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This letter is an integral part of your data report. If you have any questions regarding this project in the future, please refer to the Order Number above.

Sincerely,

Nancy Stewart
Vice President / Lab Director

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Project: 00-035 Barre Coal Tar
Lab Order: 0009170
Date Received: 9/21/00

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Collection Date
0009170-01A	SB-2	9/18/00
0009170-01B	SB-2	9/18/00
0009170-01C	SB-2	9/18/00
0009170-02A	SB-3	9/18/00
0009170-02B	SB-3	9/18/00
0009170-02C	SB-3	9/18/00
0009170-03A	SB-12	9/19/00
0009170-03B	SB-12	9/19/00
0009170-03C	SB-12	9/19/00
0009170-04A	COMP-1	9/20/00
0009170-04C	COMP-1	9/20/00
0009170-04D	COMP-1	9/20/00
0009170-04E	COMP-1	9/20/00
0009170-04F	COMP-1	9/20/00
0009170-04G	COMP-1	9/20/00
0009170-04H	COMP-1	9/20/00
0009170-05A	Trip Blank	9/20/00

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Project: 00-035 Barre Coal Tar
Lab Order: 0009170

CASE NARRATIVE

PCB Analysis

- 1) Sample 0009170-04G had low surrogate recoveries due to matrix effect.

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT:	Twin State Environmental	Client Sample ID:	SB-2
Lab Order:	0009170		
Project:	00-035 Barre Coal Tar	Collection Date:	9/18/00
Lab ID:	0009170-01C	Matrix:	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH/IR (MODIFIED FOR SOILS/SOLIDS)		E418.1				Analyst: JA
Petroleum Hydrocarbons, TR	1,800	69		mg/Kg-dry	1	9/29/00
PERCENT MOISTURE		D2216				Analyst: CLB
Percent Moisture	30.4	0		wt%	1	9/25/00

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT:	Twin State Environmental	Client Sample ID:	SB-3
Lab Order:	0009170		
Project:	00-035 Barre Coal Tar	Collection Date:	9/18/00
Lab ID:	0009170-02C	Matrix:	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH/IR (MODIFIED FOR SOILS/SOLIDS)	E418.1					
Petroleum Hydrocarbons, TR	170	45		mg/Kg-dry	1	9/29/00 Analyst: JA
PERCENT MOISTURE	D2216					
Percent Moisture	13.1	0		wt%	1	9/25/00 Analyst: CLB

Qualifiers:

ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank	F - Value above quantitation range
* - Value exceeds Maximum Contaminant Level	# - See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.	

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0009170
Project: 00-035 Barre Coal Tar
Lab ID: 0009170-03C

Client Sample ID: SB-12
Collection Date: 9/19/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH/IR (MODIFIED FOR SOILS/SOLIDS)		E418.1				Analyst: JA
Petroleum Hydrocarbons, TR	2,900	220		mg/Kg-dry	4	9/29/00
PERCENT MOISTURE		D2216				Analyst: CLB
Percent Moisture	15.6	0		wt%	1	9/25/00

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental	Client Sample ID: SB-2
Lab Order: 0009170	
Project: 00-035 Barre Coal Tar	Collection Date: 9/18/00
Lab ID: 0009170-01A	Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	180		µg/Kg-dry	1	9/26/00 9:48:00 PM
Chloromethane	ND	180		µg/Kg-dry	1	9/26/00 9:48:00 PM
Vinyl chloride	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Chloroethane	ND	180		µg/Kg-dry	1	9/26/00 9:48:00 PM
Bromomethane	ND	180		µg/Kg-dry	1	9/26/00 9:48:00 PM
Trichlorofluoromethane	ND	180		µg/Kg-dry	1	9/26/00 9:48:00 PM
Acetone	ND	920		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,1-Dichloroethane	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Carbon disulfide	500	180		µg/Kg-dry	1	9/26/00 9:48:00 PM
Methylene chloride	ND	180		µg/Kg-dry	1	9/26/00 9:48:00 PM
Methyl tert-butyl ether	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
trans-1,2-Dichloroethene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,1-Dichloroethane	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
2-Butanone	ND	920		µg/Kg-dry	1	9/26/00 9:48:00 PM
2,2-Dichloropropane	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
cis-1,2-Dichloroethene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Chloroform	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Bromochloromethane	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,1,1-Trichloroethane	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,1-Dichloropropene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Carbon tetrachloride	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,2-Dichloroethane	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Benzene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Trichloroethene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,2-Dichloropropane	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Bromodichloromethane	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Dibromomethane	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
4-Methyl-2-pentanone	ND	920		µg/Kg-dry	1	9/26/00 9:48:00 PM
cis-1,3-Dichloropropene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Toluene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
trans-1,3-Dichloropropene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,1,2-Trichloroethane	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,2-Dibromoethane	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
2-Hexanone	ND	920		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,3-Dichloropropane	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Tetrachloroethene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Dibromochloromethane	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Chlorobenzene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,1,1,2-Tetrachloroethane	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank	E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level	# - See Case Narrative
RI - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.	

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0009170
Project: 00-035 Barre Coal Tar
Lab ID: 0009170-01A

Client Sample ID: SB-2
Collection Date: 9/18/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
m,p-Xylene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
o-Xylene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Styrene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Bromoforn	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Isopropylbenzene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,1,2,2-Tetrachloroethane	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,2,3-Trichloropropane	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Bromobenzene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
n-Propylbenzene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
2-Chlorotoluene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
4-Chlorotoluene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,3,5-Trimethylbenzene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
tert-Butylbenzene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,2,4-Trimethylbenzene	120	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
sec-Butylbenzene	180	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
4-Isopropyltoluene	1,400	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,3-Dichlorobenzene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,4-Dichlorobenzene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
n-Butylbenzene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,2-Dichlorobenzene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,2-Dibromo-3-chloropropane	ND	180		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,2,4-Trichlorobenzene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Hexachlorobutadiene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM
Naphthalene	820	180		µg/Kg-dry	1	9/26/00 9:48:00 PM
1,2,3-Trichlorobenzene	ND	92		µg/Kg-dry	1	9/26/00 9:48:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
 Lab Order: 0009170
 Project: 00-035 Barre Coal Tar
 Lab ID: 0009170-02A

Client Sample ID: SB-3
 Collection Date: 9/18/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	95		µg/Kg-dry	1	9/26/00 9:13:00 PM
Chloromethane	ND	95		µg/Kg-dry	1	9/26/00 9:13:00 PM
Vinyl chloride	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Chloroethane	ND	95		µg/Kg-dry	1	9/26/00 9:13:00 PM
Bromomethane	ND	95		µg/Kg-dry	1	9/26/00 9:13:00 PM
Trichlorofluoromethane	ND	95		µg/Kg-dry	1	9/26/00 9:13:00 PM
Acetone	ND	470		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,1-Dichloroethene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Carbon disulfide	ND	95		µg/Kg-dry	1	9/26/00 9:13:00 PM
Methylene chloride	ND	95		µg/Kg-dry	1	9/26/00 9:13:00 PM
Methyl tert-butyl ether	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
trans-1,2-Dichloroethene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,1-Dichloroethane	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
2-Butanone	ND	470		µg/Kg-dry	1	9/26/00 9:13:00 PM
2,2-Dichloropropane	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
cis-1,2-Dichloroethene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Chloroform	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Bromochloromethane	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,1,1-Trichloroethane	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,1-Dichloropropene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Carbon tetrachloride	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,2-Dichloroethane	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Benzene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Trichloroethene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,2-Dichloropropane	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Bromodichloromethane	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Dibromomethane	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
4-Methyl-2-pentanone	ND	470		µg/Kg-dry	1	9/26/00 9:13:00 PM
cis-1,3-Dichloropropene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Toluene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
trans-1,3-Dichloropropene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,1,2-Trichloroethane	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,2-Dibromoethane	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
2-Hexanone	ND	470		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,3-Dichloropropane	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Tetrachloroethene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Dibromochloromethane	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Chlorobenzene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,1,1,2-Tetrachloroethane	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0009170
Project: 00-035 Barre Coal Tar
Lab ID: 0009170-02A

Client Sample ID: SB-3
Collection Date: 9/18/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
m,p-Xylene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
o-Xylene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Styrene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Bromoform	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Isopropylbenzene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,1,2,2-Tetrachloroethane	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,2,3-Trichloropropane	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Bromobenzene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
n-Propylbenzene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
2-Chlorotoluene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
4-Chlorotoluene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,3,5-Trimethylbenzene	77	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
tert-Butylbenzene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,2,4-Trimethylbenzene	130	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
sec-Butylbenzene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
4-Isopropyltoluene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,3-Dichlorobenzene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,4-Dichlorobenzene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
n-Butylbenzene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,2-Dichlorobenzene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,2-Dibromo-3-chloropropane	ND	95		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,2,4-Trichlorobenzene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Hexachlorobutadiene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM
Naphthalene	530	95		µg/Kg-dry	1	9/26/00 9:13:00 PM
1,2,3-Trichlorobenzene	ND	47		µg/Kg-dry	1	9/26/00 9:13:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
 Lab Order: 0009170
 Project: 00-035 Barre Coal Tar
 Lab ID: 0009170-03A

Client Sample ID: SB-12
 Collection Date: 9/19/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	140		µg/Kg-dry	1	9/29/00 11:40:00 PM
Chloromethane	ND	140		µg/Kg-dry	1	9/29/00 11:40:00 PM
Vinyl chloride	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Chloroethane	ND	140		µg/Kg-dry	1	9/29/00 11:40:00 PM
Bromomethane	ND	140		µg/Kg-dry	1	9/29/00 11:40:00 PM
Trichlorofluoromethane	ND	140		µg/Kg-dry	1	9/29/00 11:40:00 PM
Acetone	ND	690		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,1-Dichloroethene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Carbon disulfide	580	140		µg/Kg-dry	1	9/29/00 11:40:00 PM
Methylene chloride	ND	140		µg/Kg-dry	1	9/29/00 11:40:00 PM
Methyl tert-butyl ether	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
trans-1,2-Dichloroethene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,1-Dichloroethane	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
2-Butanone	ND	690		µg/Kg-dry	1	9/29/00 11:40:00 PM
2,2-Dichloropropane	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
cis-1,2-Dichloroethene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Chloroform	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Bromochloromethane	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,1,1-Trichloroethane	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,1-Dichloropropene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Carbon tetrachloride	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,2-Dichloroethane	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Benzene	380	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Trichloroethene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,2-Dichloropropane	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Bromodichloromethane	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Dibromomethane	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
4-Methyl-2-pentanone	ND	690		µg/Kg-dry	1	9/29/00 11:40:00 PM
cis-1,3-Dichloropropene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Toluene	1,100	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
trans-1,3-Dichloropropene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,1,2-Trichloroethane	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,2-Dibromoethane	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
2-Hexanone	ND	690		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,3-Dichloropropane	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Tetrachloroethene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Dibromochloromethane	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Chlorobenzene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,1,1,2-Tetrachloroethane	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0009170
Project: 00-035 Barre Coal Tar
Lab ID: 0009170-03A

Client Sample ID: SB-12
Collection Date: 9/19/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	8,200	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
m,p-Xylene	13,000	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
o-Xylene	8,500	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Styrene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Bromoform	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Isopropylbenzene	4,900	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,1,2,2-Tetrachloroethane	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,2,3-Trichloropropane	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Bromobenzene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
n-Propylbenzene	3,400	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
2-Chlorotoluene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
4-Chlorotoluene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,3,5-Trimethylbenzene	22,000	690		µg/Kg-dry	10	9/30/00 11:24:00 PM
tert-Butylbenzene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,2,4-Trimethylbenzene	62,000	690		µg/Kg-dry	10	9/30/00 11:24:00 PM
sec-Butylbenzene	910	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
4-Isopropyltoluene	8,200	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,3-Dichlorobenzene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,4-Dichlorobenzene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
n-Butylbenzene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,2-Dichlorobenzene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,2-Dibromo-3-chloropropane	ND	140		µg/Kg-dry	1	9/29/00 11:40:00 PM
1,2,4-Trichlorobenzene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Hexachlorobutadiene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM
Naphthalene	220,000	14,000		µg/Kg-dry	100	10/3/00 2:03:00 AM
1,2,3-Trichlorobenzene	ND	69		µg/Kg-dry	1	9/29/00 11:40:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0009170
Project: 00-035 Barre Coal Tar
Lab ID: 0009170-05A

Client Sample ID: Trip Blank
Collection Date: 9/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	50		µg/Kg	1	9/26/00 8:37:00 PM
Chloromethane	ND	50		µg/Kg	1	9/26/00 8:37:00 PM
Vinyl chloride	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
Chloroethane	ND	50		µg/Kg	1	9/26/00 8:37:00 PM
Bromomethane	ND	50		µg/Kg	1	9/26/00 8:37:00 PM
Trichlorofluoromethane	ND	50		µg/Kg	1	9/26/00 8:37:00 PM
Acetone	ND	250		µg/Kg	1	9/26/00 8:37:00 PM
1,1-Dichloroethene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
Carbon disulfide	ND	50		µg/Kg	1	9/26/00 8:37:00 PM
Methylene chloride	ND	50		µg/Kg	1	9/26/00 8:37:00 PM
Methyl tert-butyl ether	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
trans-1,2-Dichloroethene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
1,1-Dichloroethane	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
2-Butanone	ND	250		µg/Kg	1	9/26/00 8:37:00 PM
2,2-Dichloropropane	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
cis-1,2-Dichloroethene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
Chloroform	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
Bromochloromethane	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
1,1,1-Trichloroethane	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
1,1-Dichloropropene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
Carbon tetrachloride	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
1,2-Dichloroethane	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
Benzene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
Trichloroethene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
1,2-Dichloropropane	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
Bromodichloromethane	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
Dibromomethane	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
4-Methyl-2-pentanone	ND	250		µg/Kg	1	9/26/00 8:37:00 PM
cis-1,3-Dichloropropene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
Toluene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
trans-1,3-Dichloropropene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
1,1,2-Trichloroethane	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
1,2-Dibromoethane	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
2-Hexanone	ND	250		µg/Kg	1	9/26/00 8:37:00 PM
1,3-Dichloropropane	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
Tetrachloroethene	28	25		µg/Kg	1	9/26/00 8:37:00 PM
Dibromochloromethane	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
Chlorobenzene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
1,1,1,2-Tetrachloroethane	ND	25		µg/Kg	1	9/26/00 8:37:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0009170
Project: 00-035 Barre Coal Tar
Lab ID: 0009170-05A

Client Sample ID: Trip Blank
Collection Date: 9/20/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
m,p-Xylene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
o-Xylene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
Styrene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
Bromoform	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
Isopropylbenzene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
1,1,2,2-Tetrachloroethane	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
1,2,3-Trichloropropane	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
Bromobenzene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
n-Propylbenzene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
2-Chlorotoluene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
4-Chlorotoluene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
1,3,5-Trimethylbenzene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
tert-Butylbenzene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
1,2,4-Trimethylbenzene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
sec-Butylbenzene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
4-Isopropyltoluene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
1,3-Dichlorobenzene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
1,4-Dichlorobenzene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
n-Butylbenzene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
1,2-Dichlorobenzene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
1,2-Dibromo-3-chloropropane	ND	50		µg/Kg	1	9/26/00 8:37:00 PM
1,2,4-Trichlorobenzene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
Hexachlorobutadiene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM
Naphthalene	ND	50		µg/Kg	1	9/26/00 8:37:00 PM
1,2,3-Trichlorobenzene	ND	25		µg/Kg	1	9/26/00 8:37:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
 Lab Order: 0009170
 Project: 00-035 Barre Coal Tar
 Lab ID: 0009170-01B

Client Sample ID: SB-2
 Collection Date: 9/18/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C				Analyst: KD
Phenol	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Bis(2-chloroethyl)ether	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
2-Chlorophenol	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
1,3-Dichlorobenzene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
1,4-Dichlorobenzene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Benzyl alcohol	ND	710		µg/Kg-dry	1	9/25/00 2:35:00 PM
2-Methylphenol	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
1,2-Dichlorobenzene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Bis(2-chloroisopropyl)ether	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
4-Methylphenol	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
N-Nitrosodi-n-propylamine	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Hexachloroethane	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Nitrobenzene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Isophorone	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
2,4-Dimethylphenol	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Benzoic acid	ND	710		µg/Kg-dry	1	9/25/00 2:35:00 PM
2-Nitrophenol	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Bis(2-chloroethoxy)methane	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
2,4-Dichlorophenol	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
1,2,4-Trichlorobenzene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Naphthalene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
4-Chloroaniline	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Hexachlorobutadiene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
4-Chloro-3-methylphenol	ND	710		µg/Kg-dry	1	9/25/00 2:35:00 PM
2-Methylnaphthalene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Hexachlorocyclopentadiene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
2,4,6-Trichlorophenol	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
2,4,5-Trichlorophenol	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
2-Chloronaphthalene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
2-Nitroaniline	ND	710		µg/Kg-dry	1	9/25/00 2:35:00 PM
Dimethyl phthalate	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
2,6-Dinitrotoluene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Acenaphthylene	590	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
3-Nitroaniline	ND	710		µg/Kg-dry	1	9/25/00 2:35:00 PM
4-Nitrophenol	ND	710		µg/Kg-dry	1	9/25/00 2:35:00 PM
2,4-Dinitrophenol	ND	710		µg/Kg-dry	1	9/25/00 2:35:00 PM
Acenaphthene	790	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
2,4-Dinitrotoluene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Dibenzofuran	380	350		µg/Kg-dry	1	9/25/00 2:35:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0009170
Project: 00-035 Barre Coal Tar
Lab ID: 0009170-01B

Client Sample ID: SB-2
Collection Date: 9/18/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
4-Chlorophenyl phenyl ether	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Fluorene	1,000	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
4-Nitroaniline	ND	710		µg/Kg-dry	1	9/25/00 2:35:00 PM
4,6-Dinitro-2-methylphenol	ND	710		µg/Kg-dry	1	9/25/00 2:35:00 PM
N-Nitrosodiphenylamine	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
4-Bromophenyl phenyl ether	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Hexachlorobenzene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Pentachlorophenol	ND	710		µg/Kg-dry	1	9/25/00 2:35:00 PM
Phenanthrene	2,400	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Anthracene	550	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Carbazole	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Di-n-butyl phthalate	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Fluoranthene	430	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Pyrene	930	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Butyl benzyl phthalate	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Bis(2-ethylhexyl)phthalate	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
3,3'-Dichlorobenzidine	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Benz(a)anthracene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Chrysene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Di-n-octyl phthalate	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Benzo(b)fluoranthene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Benzo(k)fluoranthene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Benzo(a)pyrene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Dibenz(a,h)anthracene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Indeno(1,2,3-cd)pyrene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM
Benzo(g,h,i)perylene	ND	350		µg/Kg-dry	1	9/25/00 2:35:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental	Client Sample ID: SB-3
Lab Order: 0009170	
Project: 00-035 Barre Coal Tar	Collection Date: 9/18/00
Lab ID: 0009170-02B	Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C				Analyst: KD
Phenol	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Bis(2-chloroethyl)ether	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
2-Chlorophenol	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
1,3-Dichlorobenzene	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
1,4-Dichlorobenzene	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Benzyl alcohol	ND	570		µg/Kg-dry	1	9/25/00 3:00:00 PM
2-Methylphenol	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
1,2-Dichlorobenzene	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Bis(2-chloroisopropyl)ether	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
4-Methylphenol	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
N-Nitrosodi-n-propylamine	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Hexachloroethane	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Nitrobenzene	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Isophorone	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
2,4-Dimethylphenol	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Benzoic acid	ND	570		µg/Kg-dry	1	9/25/00 3:00:00 PM
2-Nitrophenol	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Bis(2-chloroethoxy)methane	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
2,4-Dichlorophenol	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
1,2,4-Trichlorobenzene	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Naphthalene	2,400	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
4-Chloroaniline	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Hexachlorobutadiene	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
4-Chloro-3-methylphenol	ND	570		µg/Kg-dry	1	9/25/00 3:00:00 PM
2-Methylnaphthalene	11,000	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Hexachlorocyclopentadiene	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
2,4,6-Trichlorophenol	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
2,4,5-Trichlorophenol	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
2-Chloronaphthalene	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
2-Nitroaniline	ND	570		µg/Kg-dry	1	9/25/00 3:00:00 PM
Dimethyl phthalate	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
2,6-Dinitrotoluene	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Acenaphthylene	2,200	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
3-Nitroaniline	ND	570		µg/Kg-dry	1	9/25/00 3:00:00 PM
4-Nitrophenol	ND	570		µg/Kg-dry	1	9/25/00 3:00:00 PM
2,4-Dinitrophenol	ND	570		µg/Kg-dry	1	9/25/00 3:00:00 PM
Acenaphthene	2,800	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
2,4-Dinitrotoluene	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Dibenzofuran	490	290		µg/Kg-dry	1	9/25/00 3:00:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 D - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0009170
Project: 00-035 Barre Coal Tar
Lab ID: 0009170-02B

Client Sample ID: SB-3
Collection Date: 9/18/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
4-Chlorophenyl phenyl ether	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Fluorene	3,100	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
4-Nitroaniline	ND	570		µg/Kg-dry	1	9/25/00 3:00:00 PM
4,6-Dinitro-2-methylphenol	ND	570		µg/Kg-dry	1	9/25/00 3:00:00 PM
N-Nitrosodiphenylamine	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
4-Bromophenyl phenyl ether	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Hexachlorobenzene	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Pentachlorophenol	ND	570		µg/Kg-dry	1	9/25/00 3:00:00 PM
Phenanthrene	11,000	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Anthracene	3,700	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Carbazole	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Di-n-butyl phthalate	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Fluoranthene	4,700	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Pyrene	10,000	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Butyl benzyl phthalate	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Bis(2-ethylhexyl)phthalate	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
3,3'-Dichlorobenzidine	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Benz(a)anthracene	2,600	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Chrysene	2,800	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Di-n-octyl phthalate	ND	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Benzo(b)fluoranthene	2,100	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Benzo(k)fluoranthene	780	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Benzo(a)pyrene	2,100	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Dibenz(a,h)anthracene	320	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Indeno(1,2,3-cd)pyrene	1,600	290		µg/Kg-dry	1	9/25/00 3:00:00 PM
Benzo(g,h,i)perylene	1,700	290		µg/Kg-dry	1	9/25/00 3:00:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
 Lab Order: 0009170
 Project: 00-035 Barre Coal Tar
 Lab ID: 0009170-03B

Client Sample ID: SB-12
 Collection Date: 9/19/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C				Analyst: KD
Phenol	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Bis(2-chloroethyl)ether	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
2-Chlorophenol	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
1,3-Dichlorobenzene	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
1,4-Dichlorobenzene	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Benzyl alcohol	ND	5,800		µg/Kg-dry	10	9/26/00 6:17:00 PM
2-Methylphenol	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
1,2-Dichlorobenzene	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Bis(2-chloroisopropyl)ether	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
4-Methylphenol	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
N-Nitrosodi-n-propylamine	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Hexachloroethane	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Nitrobenzene	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Isophorone	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
2,4-Dimethylphenol	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Benzoic acid	ND	5,800		µg/Kg-dry	10	9/26/00 6:17:00 PM
2-Nitrophenol	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Bis(2-chloroethoxy)methane	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
2,4-Dichlorophenol	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
1,2,4-Trichlorobenzene	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Naphthalene	150,000	14,000		µg/Kg-dry	50	9/25/00 4:40:00 PM
4-Chloroaniline	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Hexachlorobutadiene	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
4-Chloro-3-methylphenol	ND	5,800		µg/Kg-dry	10	9/26/00 6:17:00 PM
2-Methylnaphthalene	260,000	14,000		µg/Kg-dry	50	9/25/00 4:40:00 PM
Hexachlorocyclopentadiene	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
2,4,6-Trichlorophenol	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
2,4,5-Trichlorophenol	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
2-Chloronaphthalene	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
2-Nitroaniline	ND	5,800		µg/Kg-dry	10	9/26/00 6:17:00 PM
Dimethyl phthalate	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
2,6-Dinitrotoluene	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Acenaphthylene	14,000	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
3-Nitroaniline	ND	5,800		µg/Kg-dry	10	9/26/00 6:17:00 PM
4-Nitrophenol	ND	5,800		µg/Kg-dry	10	9/26/00 6:17:00 PM
2,4-Dinitrophenol	ND	5,800		µg/Kg-dry	10	9/26/00 6:17:00 PM
Acenaphthene	54,000	14,000		µg/Kg-dry	50	9/25/00 4:40:00 PM
2,4-Dinitrotoluene	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Dibenzofuran	8,700	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 05-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0009170
Project: 00-035 Barre Coal Tar
Lab ID: 0009170-03B

Client Sample ID: SB-12
Collection Date: 9/19/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
4-Chlorophenyl phenyl ether	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Fluorene	33,000	14,000		µg/Kg-dry	50	9/25/00 4:40:00 PM
4-Nitroaniline	ND	5,800		µg/Kg-dry	10	9/26/00 6:17:00 PM
4,6-Dinitro-2-methylphenol	ND	5,800		µg/Kg-dry	10	9/26/00 6:17:00 PM
N-Nitrosodiphenylamine	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
4-Bromophenyl phenyl ether	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Hexachlorobenzene	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Pentachlorophenol	ND	5,800		µg/Kg-dry	10	9/26/00 6:17:00 PM
Phenanthrene	90,000	14,000		µg/Kg-dry	50	9/25/00 4:40:00 PM
Anthracene	27,000	14,000		µg/Kg-dry	50	9/25/00 4:40:00 PM
Carbazole	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Di-n-butyl phthalate	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Fluoranthene	24,000	14,000		µg/Kg-dry	50	9/25/00 4:40:00 PM
Pyrene	51,000	14,000		µg/Kg-dry	50	9/25/00 4:40:00 PM
Butyl benzyl phthalate	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Bis(2-ethylhexyl)phthalate	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
3,3'-Dichlorobenzidine	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Benz(a)anthracene	14,000	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Chrysene	13,000	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Di-n-octyl phthalate	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Benzo(b)fluoranthene	7,600	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Benzo(k)fluoranthene	2,900	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Benzo(a)pyrene	9,500	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Dibenz(a,h)anthracene	ND	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Indeno(1,2,3-cd)pyrene	5,000	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM
Benzo(g,h,i)perylene	5,700	2,900		µg/Kg-dry	10	9/26/00 6:17:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

05-Oct-00

Lab Order: 0009170
Client: Twin State Environmental
Project: 00-035 Barre Coal Tar

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0009170-01A	SB-2	9/18/00	Soil	VOLATILES by GC/MS, Medium-Level		9/18/00	9/26/00
0009170-01B				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/25/00
				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/25/00
0009170-01C				Percent Moisture			9/25/00
				TPH/IR (Modified for Soils/Solids)			9/29/00
0009170-02A	SB-3			VOLATILES by GC/MS, Medium-Level		9/18/00	9/26/00
0009170-02B				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/25/00
				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/25/00
0009170-02C				Percent Moisture			9/25/00
				TPH/IR (Modified for Soils/Solids)			9/29/00
0009170-03A	SB-12	9/19/00		VOLATILES by GC/MS, Medium-Level		9/19/00	9/30/00
				VOLATILES by GC/MS, Medium-Level		9/19/00	9/29/00
				VOLATILES by GC/MS, Medium-Level		9/19/00	10/3/00
0009170-03B				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/25/00
				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/25/00
				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/25/00
				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/26/00
0009170-03C				Percent Moisture			9/25/00
				TPH/IR (Modified for Soils/Solids)			9/29/00
0009170-04A	COMP-1	9/20/00		VOLATILES by GC/MS, Medium-Level		9/20/00	9/30/00
				VOLATILES by GC/MS, Medium-Level		9/20/00	10/3/00
				VOLATILES by GC/MS, Medium-Level		9/20/00	9/29/00
0009170-04C				TOC, Soil			9/29/00
0009170-04D				Ignitability			9/28/00
0009170-04E				Paint Filter Test			9/28/00
0009170-04F				VOLATILES, TCLP Leached	9/25/00	9/26/00	9/26/00
0009170-04G				Cyanide, Reactive			9/26/00
				ICP METALS, 3051/6010		9/26/00	9/27/00

AMRO Environmental Laboratories Corp.

05-Oct-00

Lab Order: 0009170
Client: Twin State Environmental
Project: 00-035 Barre Coal Tar

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0009170-04G	COMP-1	9/20/00	Soil	MERCURY, Soil		9/25/00	9/25/00
				PCBS IN SOIL/SOLIDS		9/25/00	9/29/00
				Percent Moisture			9/25/00
				pH/Corrosivity in Soil			9/27/00
				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/26/00
				SEMIVOLATILE ORGANICS, Soil/Solids		9/22/00	9/26/00
				Sulfide, Reactive (Soils/Solids/Waste)			9/25/00
				TPIE/IR (Modified for Soils/Solids)			9/29/00
0009170-05A	Trip Blank			VOLATILES by GC/MS, Medium-Level		9/20/00	9/27/00
				VOLATILES by GC/MS, Medium-Level		9/20/00	9/26/00

Client: Twin State Env.
Project Name: Barre Coal Tar
Ship via: (circle one) Fed Ex UPS, AMRO Courier.
Hand Del., Other Courier, Other:

AMRO ID: 0009170
Date Recd: 9/21/00
Date Due: 9/20/3/00

Items to be Checked Upon Receipt

1. Army Samples received in individual plastic bags?
2. Custody Seals present?
3. Custody Seals intact?
4. Air Bill included in folder if received?
5. Is COC included with samples?
6. Is COC signed and dated by client?
7. Laboratory receipt temperature. TEMP = 12
Samples rec. with ice ___ ice packs ___ neither ___
3. Were samples received the same day they were sampled?
Is client temperature 4°C ± 2°C?
If no obtain authorization from the client for the analyses.
Client authorization from: _____ Date: _____ Obtained by: _____
9. Is the COC filled out correctly and completely?
10. Does the info on the COC match the samples?
11. Were samples rec. within holding time?
12. Were all samples properly labeled?
13. Were all samples properly preserved?
14. Were proper sample containers used?
15. Were all samples received intact? (none broken or leaking)
16. Were VOA vials rec. with no air bubbles?
17. Were the sample volumes sufficient for requested analysis?
18. Were all samples received?

Yes	No	NA	Comments
		X	
	Y		
		X	
X			
Y			
Y			
	X		
	X		WAS FAXED
X			
X	X		
X			
X			
X			
X			
X			
X		X	
X			

19. VPH and VOA Soils only:
Sampling Method VPH (circle one): M=Methanol, E=EnCore (air-tight container)
Sampling Method VOA (circle one): M=Methanol, SB=Sodium Bisulfate, E=EnCore, B=Bulk
If M or SB:
Does preservative cover the soil?
If NO then client must be faxed.
Does preservation level come close to the fill line on the vial?
If NO then client must be faxed.
Were vials provided by AMRO?
If NO then weights MUST be obtained from client
Was dry weight aliquot provided?
If NO then fax client and inform the VOA lab ASAP.

X			
X			
X			

20. Subcontracted Samples:
What samples sent:
Where sent:
Date:
Analysis:
TAT:

		X	

21. Information entered into:
Internal Tracking Log?
Dry Weight Log?
Client Log?
Composite Log?
Filtration Log?

Y			
Y			
X			
		Y	
		Y	

Received By: _____ Date: _____ Logged in By: _____ Date: _____
Labeled By: _____ Date: _____ Checked By: _____ Date: _____

CHAIN OF CUSTODY RECORD

Proj. No. 00-035		Project Name BARRE COAL TAR				Project State VT		MATRIX Water - A Soil/Solid-S Waste-W Other-Q Explain				PAGE 1 OF 1	
Samplers (Signature) CRIS ALTMAN		CAJG				Type Size & No. of Containers		EPA 8240 EPA 1270 SW TPI 40-100 (ENV)					
Sta. No.	Date	Time	Comp	Grab	Station Location							Remarks	
	9/18/00	1045		X	SB-2	2-VA, 2-802	S	X	X	X			
	9/18/00	1135		X	SB-3	2-VA, 2-802	S	X	X	X			
	9/19/00	1500		F	SB-12	2-VA, 2-802	S	X	X	X			
	9/20/00	0900	X	X	COMP-1		S	AS PER TABLE (ENCLOSED)					

Please print clearly, legibly and completely. Samples cannot be logged in and the turnaround time clock will not start until any ambiguities are resolved.

PRIORITY TURNAROUND TIME AUTHORIZATION

Before submitting samples for expedited T.A.T., you must have requested in advance and received a coded T.A.T. AUTHORIZATION NUMBER.

AUTHORIZATION NO. _____ T.A.T. authorized by: _____

Relinquished by (Signature) CAJG	Date Time 9/20/00 1200	Received by (Signature) FID LX	<input checked="" type="checkbox"/> Fax to (phone) 603-654-8667	Send Results to: VERMONT STATE ENVIRONMENTAL ADMIN: JON ASHLEY 414 ROOSEVELT HIGHWAY COLCHESTER VT 05446
Relinquished by (Signature)	Date Time	Received by (Signature)	Results needed	
Relinquished by (Signature)	Date Time	Received by (Signature)	PO#	
Relinquished by (Signature)	Date Time	Received by (Signature)	AMRO Project No. 0009170	Remarks
Relinquished by (Signature)	Date Time 9/21/08 844	Received for Laboratory by (Signature) DANIELA...	Seal Intact? Yes No N/A	

ATTACHMENT 5

EMSL Analytical, Inc.

107 Haddon Ave., Westmont, NJ 08108

Phone: (856) 858-4800 Fax: (856) 858-4960 Email: ssiegel@EMSL.com



Attn: Twin State Environmental
414 Roosevelt Highway, Suite 200
Colchester, VT 05446
Fax: (802) 654-8667 Phone: 802-654-8663
Project: 00-035- BARRE COAL TAR

Customer ID: +TSE50
Customer PO:
Received: 10/20/00 10:32 AM
EMSL Order: 040018054
EMSL Project ID:
Analysis Date: 10/25/00

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Location	Appearance	Treatment	Non-Asbestos		Asbestos
				% Fibrous	% Non-Fibrous	% Type
1 040018054-0001	PIPE INSULATION (60)	White/Gray Fibrous Heterogeneous	Teased	1% Cellulose	69% Non-fibrous (other)	25% Chrysotile 5% Crocidolite
2 040018054-0002	PLASTER	Gray/Tan Non-Fibrous Heterogeneous	Crushed Teased	2% Cellulose	98% Non-fibrous (other)	None Detected
3 040018054-0003	BRICK MORTAR	Gray/Tan/Brown Non-Fibrous Heterogeneous	Crushed Teased	<1% Cellulose	100% Non-fibrous (other)	None Detected

VT CERT. #PB016927

Analyst(s)

Scott Combs (3)

Stephen Siegel, CIH
or other approved signatory

PLM has been known to miss asbestos in a small percentage of samples which contain asbestos. Negative PLM results cannot be guaranteed. Samples reported as <1% or none detected should be tested with TEM. The above test report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government.
Analysis performed by EMSL Westmont (NVLAP #101048-0), NY ELAP 10872

PLM-1



CHAIN OF CUSTODY RECORD

414

Roosevelt Highway • Colchester, Vermont 05446
 (802) 654-8663 Fax: (802) 654-8667

CLIENT INFORMATION			PROJECT INFORMATION			RECEIVING LABORATORY INFORMATION		
TWIN STATE ENV. CORP. Company Name 414 ROOSEVELT HIGHWAY, SUITE 200 Address COLCHESTER VT 05446 City State Zip Send Report to: Jonathan Ashley Phone #: (802) 654-8663			00-035 Project #: Barre Location Barre Coal Tar Project Name (802) 654-8667 Fax #:			EMSL Analytical, Inc. Name 107 Haddon Ave. Westmont, NJ 08108 Address City State Zip Phone #: (800) 220-3675		
			CONTAINER TYPE P-PLASTIC G-GLASS V-VOA T-Tedlar bag <input checked="" type="radio"/> Other Ziploc Bags			MATRIX CODES DW-DRINKING WATER GW-GROUNDWATER WW-WASTEWATER SO-SOIL SL-SLUDGE OL-OIL LIQ-OTHER LIQUID <input checked="" type="radio"/> SOL-OTHER SOLID		
LAB #	SAMPLE IDENTIFICATION	SAMPLE INFORMATION					REQUESTED ANALYSIS	
		DATE/TIME	SAMPLER	MATRIX	CONTAINER TYPE	SIZE		
	Pipe Insulation	10/17/00/13:00	JBA	SOL	Ziploc	1L	PLM - Bulk	5 day T.A.T.
	Plaster	10/17/00/13:05	JBA	SOL	Ziploc	1L	PLM - Bulk	5 day T.A.T.
	Brick Mortar	10/17/00/13:10	JBA	SOL	Ziploc	1L	PLM - Bulk	5 day T.A.T.

RELINQUISHED BY: <i>Jonathan Ashley</i> DATE/TIME: 10/18/00/11:30	RECEIVED BY: <i>[Signature]</i> DATE/TIME:	RELINQUISHED BY: DATE/TIME:	RECEIVED BY: DATE/TIME:
--	---	--------------------------------	----------------------------

414



EMSL Analytical

<http://www.emsl.com>

59 Haddon Ave.
Westmont, NJ 08108
Phone: (856) 858-4800

Attention: Jonathan Ashley
Twin State Environmental
414 Roosevelt Highway, Suite 200
Colchester, VT 05446
Phone 802-654-8663
Fax: 802-654-8667

10/26/00

The following report covers the analysis performed on samples submitted to EMSL Analytical on 10/20/00. The results are tabulated on the attached data pages for the following client designated project:

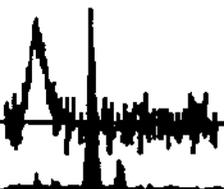
00-035/Barre Coal Tar

The reference number for these samples is EMSL Order #200001734. Please use this reference when calling about these samples.

If you have any questions, please do not hesitate to contact me at (856) 858-4800.

Reviewed and Approved By:

Gerold J. Miller, Ph.D.
Laboratory Manager
NJ Certification: 04653



EMSL Analytical

58 Haddon Ave., Westmont, NJ 08108

Phone: (856) 958-4800 Fax: 8568589551 Email: 20email



EMSL

Attn: Jonathan Ashley
Twin State Environmental
414 Roosevelt Highway, Suite 200
Colchester, VT 05446

Customer ID: +TSE50
Customer PO:
Received: 10/20/00 10:06 AM

Fax: (802) 654-8667 Phone: 802-654-8663

EMSL Order: 200001734

Project: 00-035/Barre Coal Tar

EMSL Project ID:

Lead in Paint Chips by Flame AAS (SW 846, 7420)

<i>Client Sample Description</i>	<i>Lab ID</i>	<i>Analyzed</i>	<i>Lead Concentration</i>	<i>Notes</i>
Yellow pipe paint	0001	10/25/00	12.800 % wt	
Silver brick paint	0002	10/25/00	<0.006 % wt	
Green pipe paint	0003	10/25/00	0.339 % wt	

Reporting limit is 0.01 % wt

ATTACHMENT 6



October 30, 2000

NOV 08 2000

Chris Altman
Twin State Environmental
414 Roosevelt Highway
Colchester, VT 05446
TEL: (802) 654-8663
FAX (802) 654-8667

RE: 00-035

Order No.: 0010170

Dear Chris Altman:

AMRO Environmental Laboratories Corp. received 1 sample on 10/19/00 for the analyses presented in the following report.

AMRO operates a Quality Assurance Program which meets or exceeds EPA and state requirements. A copy of the appropriate State Certificate is attached. The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt.

Please be advised that any unused sample volume and sample extracts will be stored for a period of thirty (30) days from this report date. After this time, AMRO will properly dispose of the remaining sample(s). If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This letter is an integral part of your data report. If you have any questions regarding this project in the future, please refer to the Order Number above.

Sincerely,

Nancy Stewart
Vice President / Lab Director

CLIENT: Twin State Environmental
Project: 00-035
Lab Order: 0010170
Date Received: 10/19/00

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Collection Date
0010170-01A	PILE - 1	10/17/00
0010170-01B	PILE - 1	10/17/00

AMRO Environmental Laboratories Corp.

Date: 30-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0010170
Project: 00-035
Lab ID: 0010170-01B**Client Sample ID:** PILE - 1
Collection Date: 10/17/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH/R (MODIFIED FOR SOILS/SOLIDS)		E418.1				Analyst: JA
Petroleum Hydrocarbons, TR	5,300	320		mg/Kg-dry	8	10/27/00
PERCENT MOISTURE		D2216				Analyst: SL
Percent Moisture	17.2	0		wt%	1	10/19/00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

RI. - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 30-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0010170
Project: 00-035
Lab ID: 0010170-01A

Client Sample ID: FILE - 1
Collection Date: 10/17/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: SK
Dichlorodifluoromethane	ND	1,600		µg/Kg-dry	10	10/24/00 12:53:00 AM
Chloromethane	ND	1,600		µg/Kg-dry	10	10/24/00 12:53:00 AM
Vinyl chloride	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Chloroethane	ND	1,600		µg/Kg-dry	10	10/24/00 12:53:00 AM
Bromomethane	ND	1,600		µg/Kg-dry	10	10/24/00 12:53:00 AM
Trichlorofluoromethane	ND	1,600		µg/Kg-dry	10	10/24/00 12:53:00 AM
Acetone	ND	7,800		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,1-Dichloroethene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Carbon disulfide	ND	1,600		µg/Kg-dry	10	10/24/00 12:53:00 AM
Methylene chloride	5,500	1,600		µg/Kg-dry	10	10/24/00 12:53:00 AM
Methyl tert-butyl ether	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
trans-1,2-Dichloroethene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,1-Dichloroethane	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
2-Butanone	ND	7,800		µg/Kg-dry	10	10/24/00 12:53:00 AM
2,2-Dichloropropane	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
cis-1,2-Dichloroethene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Chloroform	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Bromochloromethane	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,1,1-Trichloroethane	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,1-Dichloropropene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Carbon tetrachloride	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,2-Dichloroethane	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Benzene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Trichloroethene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,2-Dichloropropane	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Bromodichloromethane	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Dibromomethane	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
4-Methyl-2-pentanone	ND	7,800		µg/Kg-dry	10	10/24/00 12:53:00 AM
cis-1,3-Dichloropropene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Toluene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
trans-1,3-Dichloropropene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,1,2-Trichloroethane	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,2-Dibromoethane	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
2-Hexanone	ND	7,800		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,3-Dichloropropane	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Tetrachloroethene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Dibromochloromethane	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Chlorobenzene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,1,1,2-Tetrachloroethane	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 F - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 30-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0010170
Project: 00-035
Lab ID: 0010170-01A

Client Sample ID: PILE - 1
Collection Date: 10/17/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
m,p-Xylene	2,300	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
o-Xylene	2,100	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Styrene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Bromoform	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Isopropylbenzene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,1,2,2-Tetrachloroethane	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,2,3-Trichloropropane	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Bromobenzene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
n-Propylbenzene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
2-Chlorotoluene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
4-Chlorotoluene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,3,5-Trimethylbenzene	4,000	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
tert-Butylbenzene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,2,4-Trimethylbenzene	7,100	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
sec-Butylbenzene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
4-Isopropyltoluene	1,800	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,3-Dichlorobenzene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,4-Dichlorobenzene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
n-Butylbenzene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,2-Dichlorobenzene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,2-Dibromo-3-chloropropane	ND	1,600		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,2,4-Trichlorobenzene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Hexachlorobutadiene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM
Naphthalene	7,900	1,600		µg/Kg-dry	10	10/24/00 12:53:00 AM
1,2,3-Trichlorobenzene	ND	780		µg/Kg-dry	10	10/24/00 12:53:00 AM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 30-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0010170
Project: 00-035
Lab ID: 0010170-01B

Client Sample ID: PILE - 1
Collection Date: 10/17/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C		Analyst: KD		
Phenol	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Bis(2-chloroethyl)ether	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
2-Chlorophenol	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
1,3-Dichlorobenzene	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
1,4-Dichlorobenzene	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Benzyl alcohol	ND	590		µg/Kg-dry	1	10/20/00 7:08:00 PM
2-Methylphenol	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
1,2-Dichlorobenzene	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Bis(2-chloroisopropyl)ether	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
4-Methylphenol	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
N-Nitrosodi-n-propylamine	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Hexachloroethane	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Nitrobenzene	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Isophorone	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
2,4-Dimethylphenol	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Benzoic acid	ND	590		µg/Kg-dry	1	10/20/00 7:08:00 PM
2-Nitrophenol	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Bis(2-chloroethoxy)methane	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
2,4-Dichlorophenol	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
1,2,4-Trichlorobenzene	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Naphthalene	6,500	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
4-Chloroaniline	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Hexachlorobutadiene	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
4-Chloro-3-methylphenol	ND	590		µg/Kg-dry	1	10/20/00 7:08:00 PM
2-Methylnaphthalene	19,000	3,000		µg/Kg-dry	10	10/20/00 7:36:00 PM
Hexachlorocyclopentadiene	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
2,4,6-Trichlorophenol	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
2,4,5-Trichlorophenol	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
2-Chloronaphthalene	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
2-Nitroaniline	ND	590		µg/Kg-dry	1	10/20/00 7:08:00 PM
Dimethyl phthalate	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
2,6-Dinitrotoluene	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Acenaphthylene	17,000	3,000		µg/Kg-dry	10	10/20/00 7:36:00 PM
3-Nitroaniline	ND	590		µg/Kg-dry	1	10/20/00 7:08:00 PM
4-Nitrophenol	ND	590		µg/Kg-dry	1	10/20/00 7:08:00 PM
2,4-Dinitrophenol	ND	590		µg/Kg-dry	1	10/20/00 7:08:00 PM
Acenaphthene	12,000	3,000		µg/Kg-dry	10	10/20/00 7:36:00 PM
2,4-Dinitrotoluene	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Dibenzofuran	3,200	3,000		µg/Kg-dry	10	10/20/00 7:36:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 30-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0010170
Project: 00-035
Lab ID: 0010170-01B

Client Sample ID: PILE - 1
Collection Date: 10/17/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
4-Chlorophenyl phenyl ether	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Fluorene	15,000	3,000		µg/Kg-dry	10	10/20/00 7:36:00 PM
4-Nitroaniline	ND	590		µg/Kg-dry	1	10/20/00 7:08:00 PM
4,6-Dinitro-2-methylphenol	ND	590		µg/Kg-dry	1	10/20/00 7:08:00 PM
N-Nitrosodiphenylamine	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
4-Bromophenyl phenyl ether	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Hexachlorobenzene	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Pentachlorophenol	ND	590		µg/Kg-dry	1	10/20/00 7:08:00 PM
Phenanthrene	39,000	3,000		µg/Kg-dry	10	10/20/00 7:36:00 PM
Anthracene	12,000	3,000		µg/Kg-dry	10	10/20/00 7:36:00 PM
Carbazole	440	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Di-n-butyl phthalate	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Fluoranthene	25,000	3,000		µg/Kg-dry	10	10/20/00 7:36:00 PM
Pyrene	43,000	3,000		µg/Kg-dry	10	10/20/00 7:36:00 PM
Butyl benzyl phthalate	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Bis(2-ethylhexyl)phthalate	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
3,3'-Dichlorobenzidine	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Benz(a)anthracene	14,000	3,000		µg/Kg-dry	10	10/20/00 7:36:00 PM
Chrysene	18,000	3,000		µg/Kg-dry	10	10/20/00 7:36:00 PM
Di-n-octyl phthalate	ND	300		µg/Kg-dry	1	10/20/00 7:08:00 PM
Benzo(b)fluoranthene	18,000	3,000		µg/Kg-dry	10	10/20/00 7:36:00 PM
Benzo(k)fluoranthene	5,500	3,000		µg/Kg-dry	10	10/20/00 7:36:00 PM
Benzo(a)pyrene	13,000	3,000		µg/Kg-dry	10	10/20/00 7:36:00 PM
Dibenz(a,h)anthracene	3,000	3,000		µg/Kg-dry	10	10/20/00 7:36:00 PM
Indeno(1,2,3-cd)pyrene	11,000	3,000		µg/Kg-dry	10	10/20/00 7:36:00 PM
Benzo(g,h,i)perylene	13,000	3,000		µg/Kg-dry	10	10/20/00 7:36:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

Lab Order: 0010170
 Client: Twin State Environmental
 Project: 00-035

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0010170-01A	PILE - 1	10/17/00	Soil	VOLATILES by GC/MS, Medium-Level		10/17/00	10/24/00
0010170-01B				Percent Moisture			10/19/00
				SEMIVOLATILE ORGANICS, Soil/Solids		10/19/00	10/20/00
				SEMIVOLATILE ORGANICS, Soil/Solids		10/19/00	10/20/00
				TPH/IR (Modified for Soils/Solids)			10/27/00

Client: TWIN STATE
 Project Name: 00-035
 Ship via: (circle one) Fed Ex. UPS, AMRO Courier.
 Hand Del., Other Courier, Other:

AMRO ID: 001070
 Date Rec.: 10-19-00
 Date Due: 10-31-00

- Items to be Checked Upon Receipt
1. Army Samples received in individual plastic bags?
 2. Custody Seals present?
 3. Custody Seals intact?
 4. Air Bill included in folder if received?
 5. Is COC included with samples?
 6. Is COC signed and dated by client?
 7. Laboratory receipt temperature.
 Samples rec. with ice ice packs neither TEMP = 5°C
 8. Were samples received the same day they were sampled?
 Is client temperature 4°C ± 2°C?
 If no obtain authorization from the client for the analyses.
 Client authorization from: _____ Date: _____ Obtained by: _____
 9. Is the COC filled out correctly and completely?
 10. Does the info on the COC match the samples?
 11. Were samples rec. within holding time?
 12. Were all samples properly labeled?
 13. Were all samples properly preserved?
 14. Were proper sample containers used?
 15. Were all samples received intact? (none broken or leaking)
 16. Were VOA vials rec. with no air bubbles?
 17. Were the sample volumes sufficient for requested analysis?
 18. Were all samples received?

Yes	No	NA	Comments
		<input checked="" type="checkbox"/>	
	<input checked="" type="checkbox"/>		
		<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
		<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			

19. VPH and VOA Soils only:
 Sampling Method VPH (circle one): M=Methanol, E=EnCore (air-tight container)
 Sampling Method VOA (circle one): M=Methanol, SB=Sodium Bisulfate, E=EnCore, B=Bulk
 If M or SB:
 Does preservative cover the soil?
 If NO then client must be faxed.
 Does preservation level come close to the fill line on the vial?
 If NO then client must be faxed.
 Were vials provided by AMRO?
 If NO then weights MUST be obtained from client
 Was dry weight aliquot provided?
 If NO then fax client and inform the VOA lab ASAP.

<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
		<input checked="" type="checkbox"/>	

20. Subcontracted Samples:
 What samples sent:
 Where sent:
 Date:
 Analysis:
 TAT:

		<input checked="" type="checkbox"/>	

21. Information entered into:
 Internal Tracking Log?
 Dry Weight Log?
 Client Log?
 Composite Log?
 Filtration Log?

<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
<input checked="" type="checkbox"/>			
		<input checked="" type="checkbox"/>	
		<input checked="" type="checkbox"/>	

Received By: CB Date: 10-19-00 Logged in By: CB Date: 10-19-00
 Labeled By: CB Date: 10-19-00 Checked By: MG Date: 10-19-00

AMRO Environmental Laboratories Corporation

111 Herrick Street
 Merrimack, N.H. 03054
 Office: 603-424-2022 Fax: 603-429-8496

25721

CHAIN OF CUSTODY RECORD

Proj. No.		Project Name 00-035				Project State VT		MATRIX Water - A Soil/Solid-S Waste-W Other-Q Explain 8240 8270 418.1				PAGE <u>1</u> OF <u>1</u>	
Samplers (Signature) GA JGA						Type Size, & No. of Containers							
Sta. No.	Date	Time	Comp	Grab	Station Location							Remarks	
	10/17/00	1500	X		PILE-1	2 VOA	S	X					
	10/17/00	1500	X		PILE-1	1 GLASS	S		X	X			

Please print clearly, legibly and completely. Samples cannot be logged in and the turnaround time clock will not start until any ambiguities are resolved.

PRIORITY TURNAROUND TIME AUTHORIZATION
 Before submitting samples for expedited T.A.T., you must have requested in advance and received a coded T.A.T. AUTHORIZATION NUMBER.
 AUTHORIZATION NO. _____ T.A.T. authorized by: _____

Relinquished by (Signature) GA JGA	Date Time 10/18/00 1500	Received by (Signature) FED EX 1500	<input type="checkbox"/> Fax to (phone) Results needed PO#	Send Results to: CRIS ALTMAN TWIN STATE 414 BROADWAY COLCHESTER VT 05446
Relinquished by (Signature)	Date Time	Received by (Signature)		
Relinquished by (Signature)	Date Time	Received by (Signature)	AMRO Project No. 0010170	Remarks
Relinquished by (Signature)	Date Time 10/19/00 9:45	Received for Laboratory by: (Signature) Constance Frade	Seal Intact? Yes No N/A	

**The State of New Hampshire
Department of Environmental Services
CERTIFICATE OF APPROVAL
Wastewater Analysis**

Issued to

AMRO Environmental Laboratories

Located at

111 Herrick Street, Merrimack, NH

*Under the provisions of the Regulations in Env-C300
for the following analyses:*

FULL CERTIFICATION: Metals by ICP, PCB's in Water, PCB's in Oil, Pesticides, Volatile Organics, Metals by Graphite Furnace, Nitrate-N, Total Residual Chlorine, Total Phenolics, Oil & Grease (Freon), Non-Filterable Residue, Total Cyanide, 5-Day BOD, COD, Total Phosphorus, Orthophosphate, Ammonia-N, Sulfate, Calcium, Mercury, pH, TKN, Total Hardness, Fluoride, Magnesium, Sodium, Potassium, Total Alkalinity, Chloride, TDS.

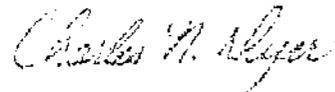
PROVISIONAL CERTIFICATION: None.

REPLACES CERTIFICATE #: 100199-D

CERTIFICATE NUMBER: 100100-B

DATE OF ISSUE: July 20, 2000

EXPIRATION DATE: July 19, 2001



Accreditation Officer



NOV 03 2000

October 31, 2000

Jon Ashley
Twin State Environmental
414 Roosevelt Highway
Colchester, VT 05446
TEL: (802) 654-8663
FAX (802) 654-8667

RE: 00-035

Order No.: 0010242

Dear Jon Ashley:

AMRO Environmental Laboratories Corp. received 2 samples on 10/25/00 for the analyses presented in the following report.

AMRO operates a Quality Assurance Program which meets or exceeds EPA and state requirements. A copy of the appropriate State Certificate is attached. The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt.

Please be advised that any unused sample volume and sample extracts will be stored for a period of thirty (30) days from this report date. After this time, AMRO will properly dispose of the remaining sample(s). If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This letter is an integral part of your data report. If you have any questions regarding this project in the future, please refer to the Order Number above.

Sincerely,

Nancy Stewart
Vice President / Lab Director

AMRO Environmental Laboratories Corp.

Date: 31-Oct-00

CLIENT: Twin State Environmental
Project: 00-035
Lab Order: 0010242
Date Received: 10/25/00

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Collection Date
0010242-01A	Pile 2	10/23/00
0010242-01B	Pile 2	10/23/00
0010242-02A	Control 1	10/23/00
0010242-02B	Control 1	10/23/00

AMRO Environmental Laboratories Corp.

Date: 31-Oct-00

CLIENT: Twin State Environmental	Client Sample ID: Pile 2
Lab Order: 0010242	
Project: 00-035	Collection Date: 10/23/00
Lab ID: 0010242-01B	Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH/IR (MODIFIED FOR SOILS/SOLIDS)		E418.1				Analyst: JA
Petroleum Hydrocarbons, TR	4,200	160		mg/Kg-dry	4	10/27/00
PERCENT MOISTURE		D2216				Analyst: SL
Percent Moisture	17.5	0		wt%	1	10/25/00

Qualifiers:

ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
I - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank	E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level	# - See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.	

AMRO Environmental Laboratories Corp.

Date: 31-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0010242
Project: 00-035
Lab ID: 0010242-02B**Client Sample ID:** Control 1
Collection Date: 10/23/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH/IR (MODIFIED FOR SOILS/SOLIDS)		E418.1				Analyst: JA
Petroleum Hydrocarbons, TR	4,800	320		mg/Kg-dry	8	10/27/00
PERCENT MOISTURE		D2216				Analyst: SL
Percent Moisture	21.6	0		wt%	1	10/25/00

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
- See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 31-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0010242
Project: 00-035
Lab ID: 0010242-01A

Client Sample ID: Pile 2
Collection Date: 10/23/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	120		µg/Kg-dry	1	10/26/00 10:41:00 PM
Chloromethane	ND	120		µg/Kg-dry	1	10/26/00 10:41:00 PM
Vinyl chloride	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Chloroethane	ND	120		µg/Kg-dry	1	10/26/00 10:41:00 PM
Bromomethane	ND	120		µg/Kg-dry	1	10/26/00 10:41:00 PM
Trichlorofluoromethane	ND	120		µg/Kg-dry	1	10/26/00 10:41:00 PM
Acetone	ND	580		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,1-Dichloroethene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Carbon disulfide	130	120		µg/Kg-dry	1	10/26/00 10:41:00 PM
Methylene chloride	ND	120		µg/Kg-dry	1	10/26/00 10:41:00 PM
Methyl tert-butyl ether	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
trans-1,2-Dichloroethene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,1-Dichloroethane	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
2-Butanone	ND	580		µg/Kg-dry	1	10/26/00 10:41:00 PM
2,2-Dichloropropane	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
cis-1,2-Dichloroethene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Chloroform	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Bromochloromethane	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,1,1-Trichloroethane	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,1-Dichloropropene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Carbon tetrachloride	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,2-Dichloroethane	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Benzene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Trichloroethene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,2-Dichloropropane	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Bromodichloromethane	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Dibromomethane	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
4-Methyl-2-pentanone	ND	580		µg/Kg-dry	1	10/26/00 10:41:00 PM
cis-1,3-Dichloropropene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Toluene	95	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
trans-1,3-Dichloropropene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,1,2-Trichloroethane	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,2-Dibromoethane	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
2-Hexanone	ND	580		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,3-Dichloropropane	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Tetrachloroethane	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Dibromochloromethane	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Chlorobenzene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,1,1,2-Tetrachloroethane	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 31-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0010242
Project: 00-035
Lab ID: 0010242-01A

Client Sample ID: Pile 2
Collection Date: 10/23/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	210	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
m,p-Xylene	1,100	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
o-Xylene	1,300	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Styrene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Bromoforn	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Isopropylbenzene	130	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,1,2,2-Tetrachloroethane	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,2,3-Trichloropropane	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Bromobenzene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
n-Propylbenzene	120	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
2-Chlorotoluene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
4-Chlorotoluene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,3,5-Trimethylbenzene	2,800	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
tert-Butylbenzene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,2,4-Trimethylbenzene	5,100	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
sec-Butylbenzene	100	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
4-Isopropyltoluene	1,100	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,3-Dichlorobenzene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,4-Dichlorobenzene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
n-Butylbenzene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,2-Dichlorobenzene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,2-Dibromo-3-chloropropane	ND	120		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,2,4-Trichlorobenzene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Hexachlorobutadiene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM
Naphthalene	7,300	120		µg/Kg-dry	1	10/26/00 10:41:00 PM
1,2,3-Trichlorobenzene	ND	58		µg/Kg-dry	1	10/26/00 10:41:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 31-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0010242
Project: 00-035
Lab ID: 0010242-02A

Client Sample ID: Control 1
Collection Date: 10/23/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	140		µg/Kg-dry	1	10/26/00 11:54:00 PM
Chloromethane	ND	140		µg/Kg-dry	1	10/26/00 11:54:00 PM
Vinyl chloride	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Chloroethane	ND	140		µg/Kg-dry	1	10/26/00 11:54:00 PM
Bromomethane	ND	140		µg/Kg-dry	1	10/26/00 11:54:00 PM
Trichlorofluoromethane	ND	140		µg/Kg-dry	1	10/26/00 11:54:00 PM
Acetone	ND	720		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,1-Dichloroethene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Carbon disulfide	ND	140		µg/Kg-dry	1	10/26/00 11:54:00 PM
Methylene chloride	ND	140		µg/Kg-dry	1	10/26/00 11:54:00 PM
Methyl tert-butyl ether	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
trans-1,2-Dichloroethene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,1-Dichloroethane	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
2-Butanone	ND	720		µg/Kg-dry	1	10/26/00 11:54:00 PM
2,2-Dichloropropane	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
cis-1,2-Dichloroethene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Chloroform	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Bromochloromethane	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,1,1-Trichloroethane	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,1-Dichloropropene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Carbon tetrachloride	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,2-Dichloroethane	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Benzene	200	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Trichloroethene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,2-Dichloropropane	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Bromodichloromethane	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Dibromomethane	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
4-Methyl-2-pentanone	ND	720		µg/Kg-dry	1	10/26/00 11:54:00 PM
cis-1,3-Dichloropropene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Toluene	520	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
trans-1,3-Dichloropropene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,1,2-Trichloroethane	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,2-Dibromoethane	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
2-Hexanone	ND	720		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,3-Dichloropropane	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Tetrachloroethene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Dibromochloromethane	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Chlorobenzene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,1,1,2-Tetrachloroethane	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank E - Value above quantitation range
* - Value exceeds Maximum Contaminant Level # - See Case Narrative
RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 31-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0010242
Project: 00-035
Lab ID: 0010242-02A

Client Sample ID: Control 1
Collection Date: 10/23/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	180	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
m,p-Xylene	990	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
o-Xylene	1,000	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Styrene	240	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Bromoform	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Isopropylbenzene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,1,2,2-Tetrachloroethane	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,2,3-Trichloropropane	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Bromobenzene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
n-Propylbenzene	76	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
2-Chlorotoluene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
4-Chlorotoluene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,3,5-Trimethylbenzene	2,500	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
tert-Butylbenzene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,2,4-Trimethylbenzene	3,200	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
sec-Butylbenzene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
4-Isopropyltoluene	730	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,3-Dichlorobenzene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,4-Dichlorobenzene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
n-Butylbenzene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,2-Dichlorobenzene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,2-Dibromo-3-chloropropane	ND	140		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,2,4-Trichlorobenzene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Hexachlorobutadiene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM
Naphthalene	3,500	140		µg/Kg-dry	1	10/26/00 11:54:00 PM
1,2,3-Trichlorobenzene	ND	72		µg/Kg-dry	1	10/26/00 11:54:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 31-Oct-00

CLIENT: Twin State Environmental
 Lab Order: 0010242
 Project: 00-035
 Lab ID: 0010242-01B

Client Sample ID: Pile 2

Collection Date: 10/23/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C				Analyst: KD
Phenol	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Bis(2-chloroethyl)ether	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
2-Chlorophenol	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
1,3-Dichlorobenzene	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
1,4-Dichlorobenzene	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Benzyl alcohol	ND	1,200		µg/Kg-dry	2	10/31/00 1:34:00 AM
2-Methylphenol	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
1,2-Dichlorobenzene	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Bis(2-chloroisopropyl)ether	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
4-Methylphenol	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
N-Nitrosodi-n-propylamine	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Hexachloroethane	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Nitrobenzene	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Isophorone	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
2,4-Dimethylphenol	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Benzoic acid	ND	1,200		µg/Kg-dry	2	10/31/00 1:34:00 AM
2-Nitrophenol	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Bis(2-chloroethoxy)methane	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
2,4-Dichlorophenol	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
1,2,4-Trichlorobenzene	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Naphthalene	4,500	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
4-Chloroaniline	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Hexachlorobutadiene	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
4-Chloro-3-methylphenol	ND	1,200		µg/Kg-dry	2	10/31/00 1:34:00 AM
2-Methylnaphthalene	16,000	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Hexachlorocyclopentadiene	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
2,4,6-Trichlorophenol	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
2,4,5-Trichlorophenol	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
2-Chloronaphthalene	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
2-Nitroaniline	ND	1,200		µg/Kg-dry	2	10/31/00 1:34:00 AM
Dimethyl phthalate	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
2,6-Dinitrotoluene	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Acenaphthylene	13,000	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
3-Nitroaniline	ND	1,200		µg/Kg-dry	2	10/31/00 1:34:00 AM
4-Nitrophenol	ND	1,200		µg/Kg-dry	2	10/31/00 1:34:00 AM
2,4-Dinitrophenol	ND	1,200		µg/Kg-dry	2	10/31/00 1:34:00 AM
Acenaphthene	8,200	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
2,4-Dinitrotoluene	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Dibenzofuran	2,300	600		µg/Kg-dry	2	10/31/00 1:34:00 AM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 31-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0010242
Project: 00-035
Lab ID: 0010242-01B

Client Sample ID: Pile 2
Collection Date: 10/23/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
4-Chlorophenyl phenyl ether	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Fluorene	11,000	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
4-Nitroaniline	ND	1,200		µg/Kg-dry	2	10/31/00 1:34:00 AM
4,6-Dinitro-2-methylphenol	ND	1,200		µg/Kg-dry	2	10/31/00 1:34:00 AM
N-Nitrosodiphenylamine	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
1,2-Diphenylhydrazine (as Azobenzene)	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
4-Bromophenyl phenyl ether	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Hexachlorobenzene	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Pentachlorophenol	ND	1,200		µg/Kg-dry	2	10/31/00 1:34:00 AM
Phenanthrene	34,000	6,000		µg/Kg-dry	20	10/28/00 12:46:00 AM
Anthracene	9,800	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Carbazole	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Di-n-butyl phthalate	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Fluoranthene	25,000	6,000		µg/Kg-dry	20	10/28/00 12:46:00 AM
Pyrene	42,000	6,000		µg/Kg-dry	20	10/28/00 12:46:00 AM
Butyl benzyl phthalate	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Bis(2-ethylhexyl)phthalate	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
3,3'-Dichlorobenzidine	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Benz(a)anthracene	13,000	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Chrysene	16,000	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Di-n-octyl phthalate	ND	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Benzo(b)fluoranthene	14,000	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Benzo(k)fluoranthene	3,800	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Benzo(a)pyrene	10,000	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Dibenz(a,h)anthracene	2,100	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Indeno(1,2,3-cd)pyrene	8,400	600		µg/Kg-dry	2	10/31/00 1:34:00 AM
Benzo(g,h,i)perylene	9,100	600		µg/Kg-dry	2	10/31/00 1:34:00 AM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 31-Oct-00

CLIENT: Twin State Environmental

Client Sample ID: Control 1

Lab Order: 0010242

Project: 00-035

Collection Date: 10/23/00

Lab ID: 0010242-02B

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C				Analyst: KD
Phenol	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Bis(2-chloroethyl)ether	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
2-Chlorophenol	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
1,3-Dichlorobenzene	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
1,4-Dichlorobenzene	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Benzyl alcohol	ND	3,200		µg/Kg-dry	5	10/31/00 2:00:00 AM
2-Methylphenol	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
1,2-Dichlorobenzene	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Bis(2-chloroisopropyl)ether	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
4-Methylphenol	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
N-Nitrosodi-n-propylamine	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Hexachloroethane	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Nitrobenzene	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Isophorone	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
2,4-Dimethylphenol	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Benzoic acid	ND	3,200		µg/Kg-dry	5	10/31/00 2:00:00 AM
2-Nitrophenol	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Bis(2-chloroethoxy)methane	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
2,4-Dichlorophenol	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
1,2,4-Trichlorobenzene	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Naphthalene	14,000	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
4-Chloroaniline	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Hexachlorobutadiene	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
4-Chloro-3-methylphenol	ND	3,200		µg/Kg-dry	5	10/31/00 2:00:00 AM
2-Methylnaphthalene	42,000	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Hexachlorocyclopentadiene	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
2,4,6-Trichlorophenol	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
2,4,5-Trichlorophenol	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
2-Chloronaphthalene	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
2-Nitroaniline	ND	3,200		µg/Kg-dry	5	10/31/00 2:00:00 AM
Dimethyl phthalate	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
2,6-Dinitrotoluene	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Acenaphthylene	63,000	6,300		µg/Kg-dry	20	10/28/00 1:13:00 AM
3-Nitroaniline	ND	3,200		µg/Kg-dry	5	10/31/00 2:00:00 AM
4-Nitrophenol	ND	3,200		µg/Kg-dry	5	10/31/00 2:00:00 AM
2,4-Dinitrophenol	ND	3,200		µg/Kg-dry	5	10/31/00 2:00:00 AM
Acenaphthene	14,000	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
2,4-Dinitrotoluene	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Dibenzofuran	4,500	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 31-Oct-00

CLIENT: Twin State Environmental
Lab Order: 0010242
Project: 00-035
Lab ID: 0010242-02B

Client Sample ID: Control 1
Collection Date: 10/23/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
4-Chlorophenyl phenyl ether	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Fluorene	38,000	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
4-Nitroaniline	ND	3,200		µg/Kg-dry	5	10/31/00 2:00:00 AM
4,6-Dinitro-2-methylphenol	ND	3,200		µg/Kg-dry	5	10/31/00 2:00:00 AM
N-Nitrosodiphenylamine	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
1,2-Diphenylhydrazine (as Azobenzene)	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
4-Bromophenyl phenyl ether	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Hexachlorobenzene	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Pentachlorophenol	ND	3,200		µg/Kg-dry	5	10/31/00 2:00:00 AM
Phenanthrene	140,000	6,300		µg/Kg-dry	20	10/28/00 1:13:00 AM
Anthracene	29,000	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Carbazole	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Di-n-butyl phthalate	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Fluoranthene	95,000	6,300		µg/Kg-dry	20	10/28/00 1:13:00 AM
Pyrene	150,000	6,300		µg/Kg-dry	20	10/28/00 1:13:00 AM
Butyl benzyl phthalate	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Bis(2-ethylhexyl)phthalate	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
3,3'-Dichlorobenzidine	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Benz(a)anthracene	48,000	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Chrysene	54,000	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Di-n-octyl phthalate	ND	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Benzo(b)fluoranthene	48,000	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Benzo(k)fluoranthene	11,000	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Benzo(a)pyrene	46,000	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Dibenz(a,h)anthracene	7,600	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Indeno(1,2,3-cd)pyrene	30,000	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM
Benzo(g,h,i)perylene	35,000	1,600		µg/Kg-dry	5	10/31/00 2:00:00 AM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

Lab Order: 0010242
Client: Twin State Environmental
Project: 00-035

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0010242-01A	Pile 2	10/23/00	Soil	VOLATILES by GC/MS, Medium-Level		10/23/00	10/26/00
0010242-01B				Percent Moisture			10/25/00
				SEMIVOLATILE ORGANICS, Soil/Solids		10/26/00	10/31/00
				SEMIVOLATILE ORGANICS, Soil/Solids		10/26/00	10/28/00
				TPH/IR (Modified for Soils/Solids)			10/27/00
0010242-02A	Control 1			VOLATILES by GC/MS, Medium-Level		10/23/00	10/26/00
0010242-02B				Percent Moisture			10/25/00
				SEMIVOLATILE ORGANICS, Soil/Solids		10/26/00	10/31/00
				SEMIVOLATILE ORGANICS, Soil/Solids		10/26/00	10/28/00
				TPH/IR (Modified for Soils/Solids)			10/27/00

AMRO Environmental Laboratories Corporation

111 Herrick Street
Merrimack, N.H. 03054

Office: 603-424-2022 Fax: 603-429-8496

32944

CHAIN OF CUSTODY RECORD

Proj. No.		Project Name 00-035				Project State VT		MATRIX Water - A Soil/Solid-S Waste-W Other-Q Explain				PAGE <u>1</u> OF <u>1</u>	
Samplers (Signature) <i>GA GA</i>						Type Size, & No. of Containers		<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px; transform: rotate(-45deg);">8240</div> <div style="border: 1px solid black; padding: 5px; transform: rotate(-45deg);">8270</div> <div style="border: 1px solid black; padding: 5px; transform: rotate(-45deg);">41P.1</div> </div>					
Sta. No.	Date	Time	Comp	Grab	Station Location							Remarks	
	10/23/00	1000	X		PILE 2	2V0A 180Z	S	X	X	X			
	10/23/00	1400	X		CONTROL 1	2V0A 170Z	S	X	X	X			

Please print clearly, legibly and completely. Samples cannot be logged in and the turnaround time clock will not start until any ambiguities are resolved.

PRIORITY TURNAROUND TIME AUTHORIZATION
 Before submitting samples for expedited T.A.T., you must have requested in advance and received a coded T.A.T. AUTHORIZATION NUMBER.
 AUTHORIZATION NO. _____ T.A.T. authorized by: _____

Relinquished by (Signature) <i>GA GA</i>	Date Time 10/24/00 1200	Received by (Signature) <i>Theresa Loney</i>
Relinquished by (Signature)	Date Time 10/24/00 1000	Received by (Signature)
Relinquished by (Signature)	Date Time	Received by (Signature)
Relinquished by (Signature)	Date Time	Received for Laboratory by: (Signature)

<input checked="" type="checkbox"/> Fax to (phone) 800 634-7667	Send Results to: TWIN STATE ENVIRONMENTAL 414 ROOSEVELT HWY COLCHESTER VT 05446
Results needed	
PO#	ATTN: JON ASHLEY
AMRO Project No. 0010242	Remarks
Seal Intact? Yes No N/A	



ENDYNE, INC.

NOV 07 2000

Laboratory Services

160 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

Twin State Environmental Corp.
414 Roosevelt Highway
Colchester, VT 05446
Attn: Cris Altman

PROJECT: 00-035

ORDER ID: 9915

RECEIVE DATE: October 24, 2000

REPORT DATE: November 2, 2000

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. Different groups of analyses may be reported under separate cover.

All samples were prepared and analyzed by requirements outlined in the referenced methods and within the specified holding times.

All instrumentation was calibrated with the appropriate frequency and verified by the requirements outlined in the referenced methods.

Blank contamination was not observed at levels affecting the analytical results.

Analytical method precision and accuracy was monitored by laboratory control standards which include matrix spike, duplicate and quality control analyses. These standards were determined to be within established laboratory method acceptance limits, unless otherwise noted.

Reviewed by,

Harry B. Locker, Ph.D.
Laboratory Director

enclosures



ENDYNE, INC.

Laboratory Services

160 James Brown Drive
Williston, Vermont 05495
(802) 879-4333
FAX 879-7103

LABORATORY REPORT

CLIENT: Twin State Environmental Corp.

ORDER ID: 9915

PROJECT: 00-035

DATE RECEIVED: October 24, 2000

REPORT DATE: November 2, 2000

SAMPLER: CA

Ref. Number: 164420

Site: Pile 2

Date Sampled: October 23, 2000 Time: 10:00 AM

<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Method</u>	<u>Analysis Date</u>	<u>Analyst</u>
pH	6.02	S.U.	EPA 150.1	10/31/00	911
Percent Solids	83.10	%	EPA 160.3	10/30/00	714



NOV 08 2000

P.O. Box 515
130 Allen Brook Lane
Williston, VT 05495

Phone: (802) 878-5138
Toll Free: (800) 723-4432
Fax: (802) 878-6765

November 7, 2000

Ken Bisceglia
Twin State Environmental
414 Roosevelt Highway
Colchester, VT 05446

Dear Ken:

Enclosed please find the results of the aerobic and anaerobic plate count analyses performed on the sample received in our laboratory on October 24, 2000.

Thank you for using Analytical Services, Inc. for your testing needs. If you have any questions or if we may be of service in the future, please do not hesitate to contact Client Services at 1-800-723-4432.

Sincerely,

ANALYTICAL SERVICES, INC.


Jennifer Parent
Staff Microbiologist

JP/III

Project No.: 2000-1024-013

Web site: www.analyticalservices.com



Client: Twin State Environmental
Address: 414 Roosevelt Highway
Colchester, VT 05446

Sample Receipt Date: October 24, 2000
Report Date: November 7, 2000
Analyst: slf

Plate Count Results

Client Sample ID	ASI Sample ID	Aerobic Plate Count ¹ (CFU/mL)	Anaerobic Plate Count ² (CFU/mL)
Pile 2	2000-1024-013	9.2×10^5	9.7×10^5

CFU = Colony Forming Unit ND = None Detected NA = Not Applicable

Methods:

¹ Sample was analyzed according to Method 9215 C*, and was incubated aerobically.

² Sample was analyzed according to Method 9215 C*, and was incubated anaerobically.

*Standard Methods for the Examination of Water and Wastewater. APHA, AWWA, WEF. 20th Ed. 1998.



November 30, 2000

DEC 04 2000

Jon Ashley
Twin State Environmental
414 Roosevelt Highway
Colchester, VT 05446
TEL: (802) 654-8663
FAX (802) 654-8667

RE: 00-035 Barre, VT

Order No.: 0011157

Dear Jon Ashley:

AMRO Environmental Laboratories Corp. received 3 samples on 11/15/00 for the analyses presented in the following report.

AMRO operates a Quality Assurance Program which meets or exceeds EPA and state requirements. A copy of the appropriate State Certificate is attached. The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt.

Please be advised that any unused sample volume and sample extracts will be stored for a period of thirty (30) days from this report date. After this time, AMRO will properly dispose of the remaining sample(s). If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This letter is an integral part of your data report. If you have any questions regarding this project in the future, please refer to the Order Number above.

Sincerely,

Nancy Stewart
Vice President / Lab Director

CLIENT: Twin State Environmental
Project: 00-035 Barre, VT
Lab Order: 0011157
Date Received: 11/15/00

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Collection Date
0011157-01A	Pile 3	11/13/00
0011157-01B	Pile 3	11/13/00
0011157-02A	Control 2	11/13/00
0011157-02B	Control 2	11/13/00
0011157-03A	Trip Blank	11/13/00

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011157
Project: 00-035 Barre, VT
Lab ID: 0011157-01B

Client Sample ID: Pile 3
Collection Date: 11/13/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH/IR (MODIFIED FOR SOILS/SOLIDS)		E418.1				Analyst: JA
Petroleum Hydrocarbons, TR	3,600	160		mg/Kg-dry	4	11/29/00
PERCENT MOISTURE		D2216				Analyst: CB
Percent Moisture	19.7	0		wt%	1	11/15/00

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT:	Twin State Environmental	Client Sample ID:	Control 2
Lab Order:	0011157		
Project:	00-035 Barre, VT	Collection Date:	11/13/00
Lab ID:	0011157-02B	Matrix:	SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH/IR (MODIFIED FOR SOILS/SOLIDS)		E418.1				Analyst: JA
Petroleum Hydrocarbons, TR	5,300	180		mg/Kg-dry	4	11/29/00
PERCENT MOISTURE		D2216				Analyst: CB
Percent Moisture	29.1	0		wt%	1	11/15/00

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	# - See Case Narrative
	RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.	

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011157
Project: 00-035 Barre, VT
Lab ID: 0011157-01A

Client Sample ID: Pile 3
Collection Date: 11/13/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	1,400		µg/Kg-dry	10	11/15/00 6:13:00 PM
Chloromethane	ND	1,400		µg/Kg-dry	10	11/15/00 6:13:00 PM
Vinyl chloride	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Chloroethane	ND	1,400		µg/Kg-dry	10	11/15/00 6:13:00 PM
Bromomethane	ND	1,400		µg/Kg-dry	10	11/15/00 6:13:00 PM
Trichlorofluoromethane	ND	1,400		µg/Kg-dry	10	11/15/00 6:13:00 PM
Acetone	ND	6,800		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,1-Dichloroethene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Carbon disulfide	ND	1,400		µg/Kg-dry	10	11/15/00 6:13:00 PM
Methylene chloride	ND	1,400		µg/Kg-dry	10	11/15/00 6:13:00 PM
Methyl tert-butyl ether	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
trans-1,2-Dichloroethene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,1-Dichloroethane	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
2-Butanone	ND	6,800		µg/Kg-dry	10	11/15/00 6:13:00 PM
2,2-Dichloropropane	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
cis-1,2-Dichloroethene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Chloroform	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Bromochloromethane	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,1,1-Trichloroethane	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,1-Dichloropropene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Carbon tetrachloride	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,2-Dichloroethane	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Benzene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Trichloroethene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,2-Dichloropropane	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Bromodichloromethane	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Dibromomethane	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
4-Methyl-2-pentanone	ND	6,800		µg/Kg-dry	10	11/15/00 6:13:00 PM
cis-1,3-Dichloropropene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Toluene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
trans-1,3-Dichloropropene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,1,2-Trichloroethane	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,2-Dibromoethane	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
2-Hexanone	ND	6,800		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,3-Dichloropropane	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Tetrachloroethene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Dibromochloromethane	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Chlorobenzene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,1,1,2-Tetrachloroethane	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011157
Project: 00-035 Barre, VT
Lab ID: 0011157-01A

Client Sample ID: Pile 3
Collection Date: 11/13/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
m,p-Xylene	970	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
o-Xylene	920	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Styrene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Bromoform	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Isopropylbenzene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,1,2,2-Tetrachloroethane	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,2,3-Trichloropropane	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Bromobenzene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
n-Propylbenzene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
2-Chlorotoluene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
4-Chlorotoluene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,3,5-Trimethylbenzene	1,900	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
tert-Butylbenzene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,2,4-Trimethylbenzene	2,600	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
sec-Butylbenzene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
4-Isopropyltoluene	830	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,3-Dichlorobenzene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,4-Dichlorobenzene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
n-Butylbenzene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,2-Dichlorobenzene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,2-Dibromo-3-chloropropane	ND	1,400		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,2,4-Trichlorobenzene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Hexachlorobutadiene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM
Naphthalene	4,700	1,400		µg/Kg-dry	10	11/15/00 6:13:00 PM
1,2,3-Trichlorobenzene	ND	680		µg/Kg-dry	10	11/15/00 6:13:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank F - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
 Lab Order: 0011157
 Project: 00-035 Barre, VT
 Lab ID: 0011157-02A

Client Sample ID: Control 2
 Collection Date: 11/13/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	1,300		µg/Kg-dry	10	11/15/00 7:25:00 PM
Chloromethane	ND	1,300		µg/Kg-dry	10	11/15/00 7:25:00 PM
Vinyl chloride	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Chloroethane	ND	1,300		µg/Kg-dry	10	11/15/00 7:25:00 PM
Bromomethane	ND	1,300		µg/Kg-dry	10	11/15/00 7:25:00 PM
Trichlorofluoromethane	ND	1,300		µg/Kg-dry	10	11/15/00 7:25:00 PM
Acetone	ND	6,300		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,1-Dichloroethene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Carbon disulfide	ND	1,300		µg/Kg-dry	10	11/15/00 7:25:00 PM
Methylene chloride	ND	1,300		µg/Kg-dry	10	11/15/00 7:25:00 PM
Methyl tert-butyl ether	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
trans-1,2-Dichloroethene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,1-Dichloroethane	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
2-Butanone	ND	6,300		µg/Kg-dry	10	11/15/00 7:25:00 PM
2,2-Dichloropropane	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
cis-1,2-Dichloroethene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Chloroform	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Bromochloromethane	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,1,1-Trichloroethane	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,1-Dichloropropene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Carbon tetrachloride	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,2-Dichloroethane	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Benzene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Trichloroethene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,2-Dichloropropane	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Bromodichloromethane	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Dibromomethane	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
4-Methyl-2-pentanone	ND	6,300		µg/Kg-dry	10	11/15/00 7:25:00 PM
cis-1,3-Dichloropropene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Toluene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
trans-1,3-Dichloropropene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,1,2-Trichloroethane	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,2-Dibromoethane	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
2-Hexanone	ND	6,300		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,3-Dichloropropane	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Tetrachloroethene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Dibromochloromethane	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Chlorobenzene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,1,1,2-Tetrachloroethane	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011157
Project: 00-035 Barre, VT
Lab ID: 0011157-02A

Client Sample ID: Control 2
Collection Date: 11/13/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
m,p-Xylene	800	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
o-Xylene	900	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Styrene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Bromoforn	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Isopropylbenzene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,1,2,2-Tetrachloroethane	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,2,3-Trichloropropane	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Bromobenzene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
n-Propylbenzene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
2-Chlorotoluene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
4-Chlorotoluene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,3,5-Trimethylbenzene	2,000	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
tert-Butylbenzene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,2,4-Trimethylbenzene	2,600	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
sec-Butylbenzene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
4-Isopropyltoluene	1,200	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,3-Dichlorobenzene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,4-Dichlorobenzene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
n-Butylbenzene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,2-Dichlorobenzene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,2-Dibromo-3-chloropropane	ND	1,300		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,2,4-Trichlorobenzene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Hexachlorobutadiene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM
Naphthalene	4,400	1,300		µg/Kg-dry	10	11/15/00 7:25:00 PM
1,2,3-Trichlorobenzene	ND	630		µg/Kg-dry	10	11/15/00 7:25:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

RL - Reporting Limit, defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
 Lab Order: 0011157
 Project: 00-035 Barre, VT
 Lab ID: 0011157-03A

Client Sample ID: Trip Blank
 Collection Date: 11/13/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	50		µg/Kg	1	11/15/00 5:38:00 PM
Chloromethane	ND	50		µg/Kg	1	11/15/00 5:38:00 PM
Vinyl chloride	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Chloroethane	ND	50		µg/Kg	1	11/15/00 5:38:00 PM
Bromomethane	ND	50		µg/Kg	1	11/15/00 5:38:00 PM
Trichlorofluoromethane	ND	50		µg/Kg	1	11/15/00 5:38:00 PM
Acetone	ND	250		µg/Kg	1	11/15/00 5:38:00 PM
1,1-Dichloroethane	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Carbon disulfide	ND	50		µg/Kg	1	11/15/00 5:38:00 PM
Methylene chloride	ND	50		µg/Kg	1	11/15/00 5:38:00 PM
Methyl tert-butyl ether	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
trans-1,2-Dichloroethene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
1,1-Dichloroethane	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
2-Butanone	ND	250		µg/Kg	1	11/15/00 5:38:00 PM
2,2-Dichloropropane	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
cis-1,2-Dichloroethene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Chloroform	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Bromochloromethane	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
1,1,1-Trichloroethane	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
1,1-Dichloropropene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Carbon tetrachloride	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
1,2-Dichloroethane	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Benzene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Trichloroethene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
1,2-Dichloropropane	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Bromodichloromethane	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Dibromomethane	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
4-Methyl-2-pentanone	ND	250		µg/Kg	1	11/15/00 5:38:00 PM
cis-1,3-Dichloropropene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Toluene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
trans-1,3-Dichloropropene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
1,1,2-Trichloroethane	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
1,2-Dibromoethane	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
2-Hexanone	ND	250		µg/Kg	1	11/15/00 5:38:00 PM
1,3-Dichloropropane	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Tetrachloroethene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Dibromochloromethane	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Chlorobenzene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
1,1,1,2-Tetrachloroethane	ND	25		µg/Kg	1	11/15/00 5:38:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011157
Project: 00-035 Barre, VT
Lab ID: 0011157-03A

Client Sample ID: Trip Blank
Collection Date: 11/13/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
m,p-Xylene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
o-Xylene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Styrene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Bromoform	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Isopropylbenzene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
1,1,2,2-Tetrachloroethane	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
1,2,3-Trichloropropane	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Bromobenzene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
n-Propylbenzene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
2-Chlorotoluene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
4-Chlorotoluene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
1,3,5-Trimethylbenzene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
tert-Butylbenzene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
1,2,4-Trimethylbenzene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
sec-Butylbenzene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
4-Isopropyltoluene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
1,3-Dichlorobenzene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
1,4-Dichlorobenzene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
n-Butylbenzene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
1,2-Dichlorobenzene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
1,2-Dibromo-3-chloropropane	ND	50		µg/Kg	1	11/15/00 5:38:00 PM
1,2,4-Trichlorobenzene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Hexachlorobutadiene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM
Naphthalene	ND	50		µg/Kg	1	11/15/00 5:38:00 PM
1,2,3-Trichlorobenzene	ND	25		µg/Kg	1	11/15/00 5:38:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011157
Project: 00-035 Barre, VT
Lab ID: 0011157-01B

Client Sample ID: Pile 3
Collection Date: 11/13/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C		Analyst: KD		
Phenol	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Bis(2-chloroethyl)ether	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
2-Chlorophenol	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
1,3-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
1,4-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Benzyl alcohol	ND	610		µg/Kg-dry	1	11/19/00 9:13:00 PM
2-Methylphenol	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
1,2-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Bis(2-chloroisopropyl)ether	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
4-Methylphenol	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
N-Nitrosodi-n-propylamine	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Hexachloroethane	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Nitrobenzene	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Isophorone	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
2,4-Dimethylphenol	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Benzoic acid	ND	610		µg/Kg-dry	1	11/19/00 9:13:00 PM
2-Nitrophenol	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Bis(2-chloroethoxy)methane	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
2,4-Dichlorophenol	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
1,2,4-Trichlorobenzene	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Naphthalene	4,200	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
4-Chloroaniline	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Hexachlorobutadiene	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
4-Chloro-3-methylphenol	ND	610		µg/Kg-dry	1	11/19/00 9:13:00 PM
2-Methylnaphthalene	13,000	1,500		µg/Kg-dry	5	11/20/00 12:27:00 PM
Hexachlorocyclopentadiene	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
2,4,6-Trichlorophenol	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
2,4,5-Trichlorophenol	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
2-Chloronaphthalene	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
2-Nitroaniline	ND	610		µg/Kg-dry	1	11/19/00 9:13:00 PM
Dimethyl phthalate	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
2,6-Dinitrotoluene	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Acenaphthylene	13,000	1,500		µg/Kg-dry	5	11/20/00 12:27:00 PM
3-Nitroaniline	ND	610		µg/Kg-dry	1	11/19/00 9:13:00 PM
4-Nitrophenol	ND	610		µg/Kg-dry	1	11/19/00 9:13:00 PM
2,4-Dinitrophenol	ND	610		µg/Kg-dry	1	11/19/00 9:13:00 PM
Acenaphthene	5,200	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
2,4-Dinitrotoluene	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Dibenzofuran	1,700	300		µg/Kg-dry	1	11/19/00 9:13:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
 Lab Order: 0011157
 Project: 00-035 Barre, VT
 Lab ID: 0011157-01B

Client Sample ID: Pile 3
 Collection Date: 11/13/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
4-Chlorophenyl phenyl ether	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Fluorene	12,000	1,500		µg/Kg-dry	5	11/20/00 12:27:00 PM
4-Nitroaniline	ND	610		µg/Kg-dry	1	11/19/00 9:13:00 PM
4,6-Dinitro-2-methylphenol	ND	610		µg/Kg-dry	1	11/19/00 9:13:00 PM
N-Nitrosodiphenylamine	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
4-Bromophenyl phenyl ether	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Hexachlorobenzene	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Pentachlorophenol	ND	610		µg/Kg-dry	1	11/19/00 9:13:00 PM
Phenanthrene	41,000	1,500		µg/Kg-dry	5	11/20/00 12:27:00 PM
Anthracene	8,200	1,500		µg/Kg-dry	5	11/20/00 12:27:00 PM
Carbazole	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Di-n-butyl phthalate	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Fluoranthene	23,000	1,500		µg/Kg-dry	5	11/20/00 12:27:00 PM
Pyrene	42,000	1,500		µg/Kg-dry	5	11/20/00 12:27:00 PM
Butyl benzyl phthalate	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Bis(2-ethylhexyl)phthalate	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
3,3'-Dichlorobenzidine	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Benzo(a)anthracene	12,000	1,500		µg/Kg-dry	5	11/20/00 12:27:00 PM
Chrysene	15,000	1,500		µg/Kg-dry	5	11/20/00 12:27:00 PM
Di-n-octyl phthalate	ND	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Benzo(b)fluoranthene	13,000	1,500		µg/Kg-dry	5	11/20/00 12:27:00 PM
Benzo(k)fluoranthene	3,200	1,500		µg/Kg-dry	5	11/20/00 12:27:00 PM
Benzo(a)pyrene	10,000	1,500		µg/Kg-dry	5	11/20/00 12:27:00 PM
Dibenz(a,h)anthracene	2,000	300		µg/Kg-dry	1	11/19/00 9:13:00 PM
Indeno(1,2,3-cd)pyrene	8,100	1,500		µg/Kg-dry	5	11/20/00 12:27:00 PM
Benzo(g,h,i)perylene	8,500	1,500		µg/Kg-dry	5	11/20/00 12:27:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental
Lab Order: 0011157
Project: 00-035 Barre, VT
Lab ID: 0011157-02B

Client Sample ID: Control 2
Collection Date: 11/13/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C		Analyst: KD		
Phenol	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Bis(2-chloroethyl)ether	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
2-Chlorophenol	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
1,3-Dichlorobenzene	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
1,4-Dichlorobenzene	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Benzyl alcohol	ND	690		µg/Kg-dry	1	11/19/00 9:39:00 PM
2-Methylphenol	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
1,2-Dichlorobenzene	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Bis(2-chloroisopropyl)ether	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
4-Methylphenol	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
N-Nitrosodi-n-propylamine	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Hexachloroethane	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Nitrobenzene	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Isophorone	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
2,4-Dimethylphenol	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Benzoic acid	ND	690		µg/Kg-dry	1	11/19/00 9:39:00 PM
2-Nitrophenol	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Bis(2-chloroethoxy)methane	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
2,4-Dichlorophenol	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
1,2,4-Trichlorobenzene	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Naphthalene	5,400	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
4-Chloroaniline	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Hexachlorobutadiene	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
4-Chloro-3-methylphenol	ND	690		µg/Kg-dry	1	11/19/00 9:39:00 PM
2-Methylnaphthalene	16,000	1,700		µg/Kg-dry	5	11/20/00 12:53:00 PM
Hexachlorocyclopentadiene	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
2,4,6-Trichlorophenol	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
2,4,5-Trichlorophenol	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
2-Chloronaphthalene	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
2-Nitroaniline	ND	690		µg/Kg-dry	1	11/19/00 9:39:00 PM
Dimethyl phthalate	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
2,6-Dinitrotoluene	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Acenaphthylene	20,000	1,700		µg/Kg-dry	5	11/20/00 12:53:00 PM
3-Nitroaniline	ND	690		µg/Kg-dry	1	11/19/00 9:39:00 PM
4-Nitrophenol	ND	690		µg/Kg-dry	1	11/19/00 9:39:00 PM
2,4-Dinitrophenol	ND	690		µg/Kg-dry	1	11/19/00 9:39:00 PM
Acenaphthene	6,400	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
2,4-Dinitrotoluene	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Dibenzofuran	1,900	350		µg/Kg-dry	1	11/19/00 9:39:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 30-Nov-00

CLIENT: Twin State Environmental

Client Sample ID: Control 2

Lab Order: 0011157

Project: 00-035 Barre, VT

Collection Date: 11/13/00

Lab ID: 0011157-02B

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
4-Chlorophenyl phenyl ether	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Fluorene	17,000	1,700		µg/Kg-dry	5	11/20/00 12:53:00 PM
4-Nitroaniline	ND	690		µg/Kg-dry	1	11/19/00 9:39:00 PM
4,6-Dinitro-2-methylphenol	ND	690		µg/Kg-dry	1	11/19/00 9:39:00 PM
N-Nitrosodiphenylamine	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
4-Bromophenyl phenyl ether	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Hexachlorobenzene	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Pentachlorophenol	ND	690		µg/Kg-dry	1	11/19/00 9:39:00 PM
Phenanthrene	64,000	1,700		µg/Kg-dry	5	11/20/00 12:53:00 PM
Anthracene	15,000	1,700		µg/Kg-dry	5	11/20/00 12:53:00 PM
Carbazole	530	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Di-n-butyl phthalate	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Fluoranthene	41,000	1,700		µg/Kg-dry	5	11/20/00 12:53:00 PM
Pyrene	72,000	1,700		µg/Kg-dry	5	11/20/00 12:53:00 PM
Butyl benzyl phthalate	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Bis(2-ethylhexyl)phthalate	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
3,3'-Dichlorobenzidine	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Benz(a)anthracene	22,000	1,700		µg/Kg-dry	5	11/20/00 12:53:00 PM
Chrysene	23,000	1,700		µg/Kg-dry	5	11/20/00 12:53:00 PM
Di-n-octyl phthalate	ND	350		µg/Kg-dry	1	11/19/00 9:39:00 PM
Benzo(b)fluoranthene	22,000	1,700		µg/Kg-dry	5	11/20/00 12:53:00 PM
Benzo(k)fluoranthene	6,000	1,700		µg/Kg-dry	5	11/20/00 12:53:00 PM
Benzo(a)pyrene	21,000	1,700		µg/Kg-dry	5	11/20/00 12:53:00 PM
Dibenz(a,h)anthracene	3,700	1,700		µg/Kg-dry	5	11/20/00 12:53:00 PM
Indeno(1,2,3-cd)pyrene	15,000	1,700		µg/Kg-dry	5	11/20/00 12:53:00 PM
Benzo(g,h,i)perylene	17,000	1,700		µg/Kg-dry	5	11/20/00 12:53:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

Lab Order: 0011157
Client: Twin State Environmental
Project: 00-035 Barre, VT

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0011157-01A	Pile 3	11/13/00	Soil	VOLATILES by GC/MS, Medium-Level		11/13/00	11/15/00
0011157-01B				Percent Moisture			11/15/00
				SEMIVOLATILE ORGANICS, Soil/Solids		11/16/00	11/20/00
				SEMIVOLATILE ORGANICS, Soil/Solids		11/16/00	11/19/00
				TPH/IR (Modified for Soils/Solids)			11/29/00
0011157-02A	Control 2			VOLATILES by GC/MS, Medium-Level		11/13/00	11/15/00
0011157-02B				Percent Moisture			11/15/00
				SEMIVOLATILE ORGANICS, Soil/Solids		11/16/00	11/20/00
				SEMIVOLATILE ORGANICS, Soil/Solids		11/16/00	11/19/00
				TPH/IR (Modified for Soils/Solids)			11/29/00
0011157-03A	Trip Blank			VOLATILES by GC/MS, Medium-Level		11/13/00	11/15/00

Client: <u>Twin State</u>	AMRO ID: <u>11157</u>
Project Name: <u>00-035 Barre VT</u>	Date Rec: <u>11/15</u>
Ship via: (circle one) <u>Fed Ex</u> , AMRO Courier.	Date Due: <u>11/28</u>
Hand Del. Other Courier Other	

Items to be Checked Upon Receipt	Yes	No	NA	Comments
1. Army Samples received in individual plastic bags?			X	
2. Custody Seals present?		X		
3. Custody Seals intact?			X	
4. Air Bill included in folder if received?	Y			
5. Is COC included with samples?	Y			
6. Is COC signed and dated by client?	X			
7. Laboratory receipt temperature. TEMP = <u>-3</u> Samples rec. with ice <input checked="" type="checkbox"/> ice packs <input type="checkbox"/> neither <input type="checkbox"/>				
8. Were samples received the same day they were sampled? Is client temperature $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$? If no obtain authorization from the client for the analyses. Client authorization from: _____ Date: _____ Obtained by: _____	Y		X	
9. Is the COC filled out correctly and completely?	Y			
10. Does the info on the COC match the samples?	X			
11. Were samples rec. within holding time?	Y			
12. Were all samples properly labeled?	X			
13. Were all samples properly preserved?	Y			
14. Were proper sample containers used?	X			
15. Were all samples received intact? (none broken or leaking)	X			
16. Were VOA vials rec. with no air bubbles?			Y	
17. Were the sample volumes sufficient for requested analysis?	Y			
18. Were all samples received?	Y			

19. VPH and VOA Soils only:

Sampling Method VPH (circle one): M=Methanol, E=EnCore (air-tight container)

Sampling Method VOA (circle one): M=Methanol, SB=Sodium Bisulfate, E=EnCore, B=Bulk

If M or SB:

Does preservative cover the soil? If NO then client must be faxed.

Does preservation level come close to the fill line on the vial? If NO then client must be faxed.

Were vials provided by AMRO? If NO then weights MUST be obtained from client

Was dry weight aliquot provided? If NO then fax client and inform the VOA lab ASAP.

20. Subcontracted Samples:

What samples sent: _____

Where sent: _____

Date: _____

Analysis: _____

TAT: _____

21. Information entered into:

Internal Tracking Log?

Dry Weight Log?

Client Log?

Composite Log?

Filtration Log?

Received By: <u>ST</u>	Date: <u>11/15</u>	Logged in By: <u>ST</u>	Date: <u>11/15</u>
Labeled By: <u>ST</u>	Date: <u>11/15</u>	Checked By: <u>MG</u>	Date: <u>11/15/00</u>



CHAIN OF CUSTODY RECORD

11157

34 Roosevelt Highway • Colchester, Vermont 05446
 (802) 654-8663 Fax: (802) 654-8667

CLIENT INFORMATION		PROJECT INFORMATION				RECEIVING LABORATORY INFORMATION	
TWIN STATE ENVIRONMENTAL Company Name 414 ROOSEVELT HWY Address COLCHESTER VT 05446 City, State Zip Send Report to: JON ASHLEY Phone #: (866) 654-8663 FAX 654-8667		00-035 Project #: BARRE, VT Location Project Name Fax #:				Name Address City State Zip Phone #: CONTAINER TYPE P - PLASTIC G - GLASS V - VOA T - Tedlar bag O - Other MATRIX CODES DW - DRINKING WATER GW - GROUNDWATER WW - WASTEWATER SO - SOIL SL - SLUDGE OL - OIL LIQ - OTHER LIQUID SOL - OTHER SOLID	
LAB #	SAMPLE IDENTIFICATION	SAMPLE INFORMATION				REQUESTED ANALYSES	REMARKS
		DATE/TIME	SAMPLER	MATRIX	CONTAINER TYPE SIZE		
	PILE 3	11/13/00 ¹¹⁰⁰	CA	SD	G 2 VOA 1 BOD	8260, 8270, TPH 418.1	
	CONTROL 2	11/13/00 ¹¹¹⁵	CA	SD	G 2 VOA 1 BOD	8260 8270 TPH 418.1	

RELINQUISHED BY: <i>GA</i> DATE/TIME: 11/13/00 1300	RECEIVED BY: <i>FIDEX</i> DATE/TIME:	RELINQUISHED BY: DATE/TIME:	RECEIVED BY: <i>Jon Ashley</i> DATE/TIME: 11/15/00 0930
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December 06, 2000

Jon Ashley
Twin State Environmental
414 Roosevelt Highway
Colchester, VT 05446
TEL: (802) 654-8663
FAX (802) 654-8667

RE: 00-035 Barre Coal Tar

Order No.: 0011265

Dear Jon Ashley:

AMRO Environmental Laboratories Corp. received 3 samples on 11/24/00 for the analyses presented in the following report.

AMRO operates a Quality Assurance Program which meets or exceeds EPA and state requirements. A copy of the appropriate State Certificate is attached. The enclosed Sample Receipt Checklist details the condition of your sample(s) upon receipt.

Please be advised that any unused sample volume and sample extracts will be stored for a period of thirty (30) days from this report date. After this time, AMRO will properly dispose of the remaining sample(s). If you require further analysis, or need the samples held for a longer period, please contact us immediately.

This letter is an integral part of your data report. If you have any questions regarding this project in the future, please refer to the Order Number above.

Sincerely,

Nancy Stewart
Vice President / Lab Director

CLIENT: Twin State Environmental
Project: 00-035 Barre Coal Tar
Lab Order: 0011265
Date Received: 11/24/00

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Collection Date
0011265-01A	PILE 4	11/22/00
0011265-01B	PILE 4	11/22/00
0011265-02A	CONTROL 3	11/22/00
0011265-02B	CONTROL 3	11/22/00
0011265-03A	TRIP BLANK	11/22/00

AMRO Environmental Laboratories Corp.

Date: 06-Dec-00

CLIENT: Twin State Environmental
Lab Order: 0011265
Project: 00-035 Barre Coal Tar
Lab ID: 0011265-01B

Client Sample ID: PILE 4
Collection Date: 11/22/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH/IR (MODIFIED FOR SOILS/SOLIDS) Petroleum Hydrocarbons, TR	E418.1 3,500	150		mg/Kg-dry	4	Analyst: JA 11/29/00
PERCENT MOISTURE Percent Moisture	D2216 18.1	0		wt%	1	Analyst: SL 11/27/00
PH/CORROSIVITY pH	SW9045C 6.3	0		pH Units	1	Analyst: JA 12/1/00

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 06-Dec-00

CLIENT: Twin State Environmental**Client Sample ID:** CONTROL 3**Lab Order:** 0011265**Project:** 00-035 Barre Coal Tar**Collection Date:** 11/22/00**Lab ID:** 0011265-02B**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
TPH/IR (MODIFIED FOR SOILS/SOLIDS)		E418.1				Analyst: JA
Petroleum Hydrocarbons, TR	6,000	330		mg/Kg-dry	8	11/29/00
PERCENT MOISTURE		D2216				Analyst: SL
Percent Moisture	22.4	0		wt%	1	11/27/00

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 06-Dec-00

CLIENT: Twin State Environmental
 Lab Order: 0011265
 Project: 00-035 Barre Coal Tar
 Lab ID: 0011265-01A

Client Sample ID: PILE 4
 Collection Date: 11/22/00
 Matrix: SOIL

Analyses	Result	RL	Quai	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	1,300		µg/Kg-dry	10	11/29/00 10:38:00 PM
Chloromethane	ND	1,300		µg/Kg-dry	10	11/29/00 10:38:00 PM
Vinyl chloride	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Chloroethane	ND	1,300		µg/Kg-dry	10	11/29/00 10:38:00 PM
Bromomethane	ND	1,300		µg/Kg-dry	10	11/29/00 10:38:00 PM
Trichlorofluoromethane	ND	1,300		µg/Kg-dry	10	11/29/00 10:38:00 PM
Acetone	ND	6,700		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,1-Dichloroethene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Carbon disulfide	ND	1,300		µg/Kg-dry	10	11/29/00 10:38:00 PM
Methylene chloride	ND	1,300		µg/Kg-dry	10	11/29/00 10:38:00 PM
Methyl tert-butyl ether	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
trans-1,2-Dichloroethene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,1-Dichloroethane	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
2-Butanone	ND	6,700		µg/Kg-dry	10	11/29/00 10:38:00 PM
2,2-Dichloropropane	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
cis-1,2-Dichloroethene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Chloroform	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Bromochloromethane	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,1,1-Trichloroethane	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,1-Dichloropropene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Carbon tetrachloride	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,2-Dichloroethane	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Benzene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Trichloroethene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,2-Dichloropropane	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Bromodichloromethane	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Dibromomethane	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
4-Methyl-2-pentanone	ND	6,700		µg/Kg-dry	10	11/29/00 10:38:00 PM
cis-1,3-Dichloropropene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Toluene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
trans-1,3-Dichloropropene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,1,2-Trichloroethane	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,2-Dibromoethane	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
2-Hexanone	ND	6,700		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,3-Dichloropropane	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Tetrachloroethene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Dibromochloromethane	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Chlorobenzene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,1,1,2-Tetrachloroethane	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 06-Dec-00

CLIENT: Twin State Environmental

Client Sample ID: PILE 4

Lab Order: 0011265

Project: 00-035 Barre Coal Tar

Collection Date: 11/22/00

Lab ID: 0011265-01A

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
m,p-Xylene	3,500	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
o-Xylene	4,100	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Styrene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Bromoform	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Isopropylbenzene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,1,2,2-Tetrachloroethane	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,2,3-Trichloropropane	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Bromobenzene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
n-Propylbenzene	760	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
2-Chlorotoluene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
4-Chlorotoluene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,3,5-Trimethylbenzene	6,000	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
tert-Butylbenzene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,2,4-Trimethylbenzene	11,000	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
sec-Butylbenzene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
4-Isopropyltoluene	1,400	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,3-Dichlorobenzene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,4-Dichlorobenzene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
n-Butylbenzene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,2-Dichlorobenzene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,2-Dibromo-3-chloropropane	ND	1,300		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,2,4-Trichlorobenzene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Hexachlorobutadiene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM
Naphthalene	110,000	1,300		µg/Kg-dry	10	11/29/00 10:38:00 PM
1,2,3-Trichlorobenzene	ND	670		µg/Kg-dry	10	11/29/00 10:38:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

- See Case Narrative

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 06-Dec-00

CLIENT: Twin State Environmental
Lab Order: 0011265
Project: 00-035 Barre Coal Tar
Lab ID: 0011265-02A

Client Sample ID: CONTROL 3
Collection Date: 11/22/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	1,100		µg/Kg-dry	10	11/29/00 11:49:00 PM
Chloromethane	ND	1,100		µg/Kg-dry	10	11/29/00 11:49:00 PM
Vinyl chloride	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Chloroethane	ND	1,100		µg/Kg-dry	10	11/29/00 11:49:00 PM
Bromomethane	ND	1,100		µg/Kg-dry	10	11/29/00 11:49:00 PM
Trichlorofluoromethane	ND	1,100		µg/Kg-dry	10	11/29/00 11:49:00 PM
Acetone	ND	5,500		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,1-Dichloroethene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Carbon disulfide	ND	1,100		µg/Kg-dry	10	11/29/00 11:49:00 PM
Methylene chloride	ND	1,100		µg/Kg-dry	10	11/29/00 11:49:00 PM
Methyl tert-butyl ether	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
trans-1,2-Dichloroethene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,1-Dichloroethane	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
2-Butanone	ND	5,500		µg/Kg-dry	10	11/29/00 11:49:00 PM
2,2-Dichloropropane	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
cis-1,2-Dichloroethene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Chloroform	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Bromochloromethane	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,1,1-Trichloroethane	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,1-Dichloropropene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Carbon tetrachloride	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,2-Dichloroethane	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Benzene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Trichloroethene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,2-Dichloropropane	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Bromodichloromethane	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Dibromomethane	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
4-Methyl-2-pentanone	ND	5,500		µg/Kg-dry	10	11/29/00 11:49:00 PM
cis-1,3-Dichloropropene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Toluene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
trans-1,3-Dichloropropene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,1,2-Trichloroethane	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,2-Dibromoethane	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
2-Hexanone	ND	5,500		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,3-Dichloropropane	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Tetrachloroethene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Dibromochloromethane	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Chlorobenzene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,1,1,2-Tetrachloroethane	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

F - Value above quantitation range

- See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 06-Dec-00

CLIENT: Twin State Environmental
 Lab Order: 0011265
 Project: 00-035 Barre Coal Tar
 Lab ID: 0011265-02A

Client Sample ID: CONTROL 3
 Collection Date: 11/22/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
m,p-Xylene	1,800	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
o-Xylene	2,100	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Styrene	600	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Bromoform	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Isopropylbenzene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,1,2,2-Tetrachloroethane	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,2,3-Trichloropropane	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Bromobenzene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
n-Propylbenzene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
2-Chlorotoluene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
4-Chlorotoluene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,3,5-Trimethylbenzene	5,000	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
tert-Butylbenzene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,2,4-Trimethylbenzene	7,300	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
sec-Butylbenzene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
4-Isopropyltoluene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,3-Dichlorobenzene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,4-Dichlorobenzene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
n-Butylbenzene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,2-Dichlorobenzene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,2-Dibromo-3-chloropropane	ND	1,100		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,2,4-Trichlorobenzene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Hexachlorobutadiene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM
Naphthalene	23,000	1,100		µg/Kg-dry	10	11/29/00 11:49:00 PM
1,2,3-Trichlorobenzene	ND	550		µg/Kg-dry	10	11/29/00 11:49:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 06-Dec-00

CLIENT: Twin State Environmental
 Lab Order: 0011265
 Project: 00-035 Barre Coal Tar
 Lab ID: 0011265-03A

Client Sample ID: TRIP BLANK
 Collection Date: 11/22/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
VOLATILES BY GC/MS, EPA 5035 MEDIUM-LEVEL SW8260B						Analyst: LN
Dichlorodifluoromethane	ND	50		µg/Kg	1	11/29/00 7:05:00 PM
Chloromethane	ND	50		µg/Kg	1	11/29/00 7:05:00 PM
Vinyl chloride	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Chloroethane	ND	50		µg/Kg	1	11/29/00 7:05:00 PM
Bromomethane	ND	50		µg/Kg	1	11/29/00 7:05:00 PM
Trichlorofluoromethane	ND	50		µg/Kg	1	11/29/00 7:05:00 PM
Acetone	ND	250		µg/Kg	1	11/29/00 7:05:00 PM
1,1-Dichloroethene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Carbon disulfide	ND	50		µg/Kg	1	11/29/00 7:05:00 PM
Methylene chloride	ND	50		µg/Kg	1	11/29/00 7:05:00 PM
Methyl tert-butyl ether	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
trans-1,2-Dichloroethene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
1,1-Dichloroethane	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
2-Butanone	ND	250		µg/Kg	1	11/29/00 7:05:00 PM
2,2-Dichloropropane	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
cis-1,2-Dichloroethene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Chloroform	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Bromochloromethane	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
1,1,1-Trichloroethane	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
1,1-Dichloropropene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Carbon tetrachloride	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
1,2-Dichloroethane	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Benzene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Trichloroethene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
1,2-Dichloropropane	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Bromodichloromethane	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Dibromomethane	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
4-Methyl-2-pentanone	ND	250		µg/Kg	1	11/29/00 7:05:00 PM
cis-1,3-Dichloropropene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Toluene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
trans-1,3-Dichloropropene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
1,1,2-Trichloroethane	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
1,2-Dibromoethane	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
2-Hexanone	ND	250		µg/Kg	1	11/29/00 7:05:00 PM
1,3-Dichloropropane	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Tetrachloroethene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Dibromochloromethane	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Chlorobenzene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
1,1,1,2-Tetrachloroethane	ND	25		µg/Kg	1	11/29/00 7:05:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 06-Dec-00

CLIENT: Twin State Environmental
 Lab Order: 0011265
 Project: 00-035 Barre Coal Tar
 Lab ID: 0011265-03A

Client Sample ID: TRIP BLANK
 Collection Date: 11/22/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Ethylbenzene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
m,p-Xylene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
o-Xylene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Styrene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Bromoform	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Isopropylbenzene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
1,1,2,2-Tetrachloroethane	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
1,2,3-Trichloropropane	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Bromobenzene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
n-Propylbenzene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
2-Chlorotoluene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
4-Chlorotoluene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
1,3,5-Trimethylbenzene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
tert-Butylbenzene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
1,2,4-Trimethylbenzene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
sec-Butylbenzene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
4-Isopropyltoluene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
1,3-Dichlorobenzene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
1,4-Dichlorobenzene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
n-Butylbenzene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
1,2-Dichlorobenzene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
1,2-Dibromo-3-chloropropane	ND	50		µg/Kg	1	11/29/00 7:05:00 PM
1,2,4-Trichlorobenzene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Hexachlorobutadiene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM
Naphthalene	ND	50		µg/Kg	1	11/29/00 7:05:00 PM
1,2,3-Trichlorobenzene	ND	25		µg/Kg	1	11/29/00 7:05:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

- See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 06-Dec-00

CLIENT: Twin State Environmental
 Lab Order: 0011265
 Project: 00-035 Barre Coal Tar
 Lab ID: 0011265-01B

Client Sample ID: PILE 4
 Collection Date: 11/22/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C		Analyst: KD		
Phenol	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Bis(2-chloroethyl)ether	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
2-Chlorophenol	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
1,3-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
1,4-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Benzyl alcohol	ND	600		µg/Kg-dry	1	11/28/00 8:16:00 PM
2-Methylphenol	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
1,2-Dichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Bis(2-chloroisopropyl)ether	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
4-Methylphenol	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
N-Nitrosodi-n-propylamine	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Hexachloroethane	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Nitrobenzene	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Isophorone	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
2,4-Dimethylphenol	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Benzoic acid	ND	600		µg/Kg-dry	1	11/28/00 8:16:00 PM
2-Nitrophenol	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Bis(2-chloroethoxy)methane	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
2,4-Dichlorophenol	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
1,2,4-Trichlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Naphthalene	1,200	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
4-Chloroaniline	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Hexachlorobutadiene	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
4-Chloro-3-methylphenol	ND	600		µg/Kg-dry	1	11/28/00 8:16:00 PM
2-Methylnaphthalene	3,600	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Hexachlorocyclopentadiene	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
2,4,6-Trichlorophenol	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
2,4,5-Trichlorophenol	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
2-Chloronaphthalene	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
2-Nitroaniline	ND	600		µg/Kg-dry	1	11/28/00 8:16:00 PM
Dimethyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
2,6-Dinitrotoluene	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Acenaphthylene	13,000	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
3-Nitroaniline	ND	600		µg/Kg-dry	1	11/28/00 8:16:00 PM
4-Nitrophenol	ND	600		µg/Kg-dry	1	11/28/00 8:16:00 PM
2,4-Dinitrophenol	ND	600		µg/Kg-dry	1	11/28/00 8:16:00 PM
Acenaphthene	5,900	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
2,4-Dinitrotoluene	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Dibenzofuran	1,800	300		µg/Kg-dry	1	11/28/00 8:16:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 B - Analyte detected in the associated Method Blank
 * - Value exceeds Maximum Contaminant Level
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 E - Value above quantitation range
 # - See Case Narrative

AMRO Environmental Laboratories Corp.

Date: 06-Dec-00

CLIENT: Twin State Environmental
Lab Order: 0011265
Project: 00-035 Barre Coal Tar
Lab ID: 0011265-01B

Client Sample ID: PILE 4
Collection Date: 11/22/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
4-Chlorophenyl phenyl ether	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Fluorene	7,300	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
4-Nitroaniline	ND	600		µg/Kg-dry	1	11/28/00 8:16:00 PM
4,6-Dinitro-2-methylphenol	ND	600		µg/Kg-dry	1	11/28/00 8:16:00 PM
N-Nitrosodiphenylamine	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
4-Bromophenyl phenyl ether	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Hexachlorobenzene	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Pentachlorophenol	ND	600		µg/Kg-dry	1	11/28/00 8:16:00 PM
Phenanthrene	21,000	3,000		µg/Kg-dry	10	11/28/00 7:24:00 PM
Anthracene	8,700	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Carbazole	370	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Di-n-butyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Fluoranthene	18,000	3,000		µg/Kg-dry	10	11/28/00 7:24:00 PM
Pyrene	33,000	3,000		µg/Kg-dry	10	11/28/00 7:24:00 PM
Butyl benzyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Bis(2-ethylhexyl)phthalate	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
3,3'-Dichlorobenzidine	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Benz(a)anthracene	12,000	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Chrysene	15,000	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Di-n-octyl phthalate	ND	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Benzo(b)fluoranthene	16,000	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Benzo(k)fluoranthene	4,200	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Benzo(a)pyrene	11,000	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Dibenz(a,h)anthracene	2,700	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Indeno(1,2,3-cd)pyrene	10,000	300		µg/Kg-dry	1	11/28/00 8:16:00 PM
Benzo(g,h,i)perylene	11,000	300		µg/Kg-dry	1	11/28/00 8:16:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 06-Dec-00

CLIENT: Twin State Environmental
 Lab Order: 0011265
 Project: 00-035 Barre Coal Tar
 Lab ID: 0011265-02B

Client Sample ID: CONTROL 3

Collection Date: 11/22/00
 Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANICS		SW8270C				Analyst: KD
Phenol	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Bis(2-chloroethyl)ether	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
2-Chlorophenol	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
1,3-Dichlorobenzene	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
1,4-Dichlorobenzene	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Benzyl alcohol	ND	6,300		µg/Kg-dry	5	11/28/00 7:50:00 PM
2-Methylphenol	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
1,2-Dichlorobenzene	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Bis(2-chloroisopropyl)ether	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
4-Methylphenol	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
N-Nitrosodi-n-propylamine	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Hexachloroethane	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Nitrobenzene	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Isophorone	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
2,4-Dimethylphenol	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Benzoic acid	ND	6,300		µg/Kg-dry	5	11/28/00 7:50:00 PM
2-Nitrophenol	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Bis(2-chloroethoxy)methane	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
2,4-Dichlorophenol	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
1,2,4-Trichlorobenzene	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Naphthalene	9,600	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
4-Chloroaniline	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Hexachlorobutadiene	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
4-Chloro-3-methylphenol	ND	6,300		µg/Kg-dry	5	11/28/00 7:50:00 PM
2-Methylnaphthalene	44,000	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Hexachlorocyclopentadiene	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
2,4,6-Trichlorophenol	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
2,4,5-Trichlorophenol	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
2-Chloronaphthalene	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
2-Nitroaniline	ND	6,300		µg/Kg-dry	5	11/28/00 7:50:00 PM
Dimethyl phthalate	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
2,6-Dinitrotoluene	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Acenaphthylene	77,000	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
3-Nitroaniline	ND	6,300		µg/Kg-dry	5	11/28/00 7:50:00 PM
4-Nitrophenol	ND	6,300		µg/Kg-dry	5	11/28/00 7:50:00 PM
2,4-Dinitrophenol	ND	6,300		µg/Kg-dry	5	11/28/00 7:50:00 PM
Acenaphthene	22,000	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
2,4-Dinitrotoluene	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Dibenzofuran	5,800	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank E - Value above quantitation range
 * - Value exceeds Maximum Contaminant Level # - See Case Narrative
 RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

AMRO Environmental Laboratories Corp.

Date: 06-Dec-00

CLIENT: Twin State Environmental
Lab Order: 0011265
Project: 00-035 Barre Coal Tar
Lab ID: 0011265-02B

Client Sample ID: CONTROL 3
Collection Date: 11/22/00
Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diethyl phthalate	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
4-Chlorophenyl phenyl ether	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Fluorene	50,000	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
4-Nitroaniline	ND	6,300		µg/Kg-dry	5	11/28/00 7:50:00 PM
4,6-Dinitro-2-methylphenol	ND	6,300		µg/Kg-dry	5	11/28/00 7:50:00 PM
N-Nitrosodiphenylamine	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
1,2-Diphenylhydrazine (as Azobenzene)	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
4-Bromophenyl phenyl ether	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Hexachlorobenzene	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Pentachlorophenol	ND	6,300		µg/Kg-dry	5	11/28/00 7:50:00 PM
Phenanthrene	190,000	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Anthracene	45,000	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Carbazole	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Di-n-butyl phthalate	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Fluoranthene	120,000	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Pyrene	190,000	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Butyl benzyl phthalate	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Bis(2-ethylhexyl)phthalate	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
3,3'-Dichlorobenzidine	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Benz(a)anthracene	62,000	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Chrysene	72,000	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Di-n-octyl phthalate	ND	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Benzo(b)fluoranthene	65,000	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Benzo(k)fluoranthene	19,000	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Benzo(a)pyrene	63,000	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Dibenz(a,h)anthracene	12,000	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Indeno(1,2,3-cd)pyrene	46,000	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM
Benzo(g,h,i)perylene	53,000	3,200		µg/Kg-dry	5	11/28/00 7:50:00 PM

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

RL - Reporting Limit; defined as the lowest concentration the laboratory can accurately quantitate.

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

F - Value above quantitation range

- See Case Narrative

Lab Order: 0011265
Client: Twin State Environmental
Project: 00-035 Barre Coal Tar

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date	
0011265-01A	PILE 4	11/22/00	Soil	VOLATILES by GC/MS, Medium-Level		11/22/00	11/29/00	
0011265-01B				Percent Moisture			11/27/00	
				pH/Corrosivity in Soil			12/1/00	
				SEMIVOLATILE ORGANICS, Soil/Solids			11/27/00	11/28/00
				SEMIVOLATILE ORGANICS, Soil/Solids			11/27/00	11/28/00
				TPH/IR (Modified for Soils/Solids)			11/29/00	
0011265-02A	CONTROL 3			VOLATILES by GC/MS, Medium-Level		11/22/00	11/29/00	
0011265-02B				Percent Moisture			11/27/00	
				SEMIVOLATILE ORGANICS, Soil/Solids			11/27/00	11/28/00
				TPH/IR (Modified for Soils/Solids)			11/29/00	
0011265-03A	TRIP BLANK			VOLATILES by GC/MS, Medium-Level		11/22/00	11/29/00	

CHAIN OF CUSTODY RECORD

Proj. No. 00-035		Project Name 00-035 Barre Coal Tar			Project State VT	MATRIX Water - A Soil/Solid-S Waste-W Other-O Explain				Remarks	
Samplers (Signature) [Signature]					Type Size, & No. of Containers	P260 P270 41A.1					
Sta. No.	Date	Time	Comp	Grab	Station Location						Remarks
	11/22/00	1030	X		PILE 4	2409 12402	S	X	X	X	Need all results by 12/8/00 ↓
	11/22/00	1045	X		CONTROL 3	2409 1402	S	X	X	X	

Please print clearly, legibly and completely. Samples cannot be logged in and the turnaround time clock will not start until any ambiguities are resolved.

PRIORITY TURNAROUND TIME AUTHORIZATION
 Before submitting samples for expedited T.A.T., you must have requested in advance and received a coded T.A.T. AUTHORIZATION NUMBER.
 AUTHORIZATION NO. _____ T.A.T. authorized by: _____

Relinquished by (Signature) [Signature]	Date Time 11/22/00 12:00	Received by (Signature) [Signature]	11/24/00 12:00	X Fax to (phone) (603) 454-8667	Send Results to: JON ASHLEY TWIN STATE ENVIRONMENTAL 414 ROOSEVELT HIGHWAY COLCHESTER VT 05446
Relinquished by (Signature) [Signature]	Date Time 11/24/00 14:30	Received by (Signature) [Signature]		Results needed 12/8/00	
Relinquished by (Signature) [Signature]	Date Time 11/24	Received by (Signature) [Signature]		AMRO Project No. 11265	Remarks Need all results by 12/8/00.
Relinquished by (Signature) [Signature]	Date Time 1000	Received for Laboratory by (Signature) [Signature]		Seal Intact? Yes No N/A	



DEC 08 2000

P.O. Box 515
130 Allen Brook Lane
Williston, VT 05495

Phone: (802) 878-5138
Toll Free: (800) 723-4432
Fax: (802) 878-6765

December 6, 2000

Ken Bisceglia
Twin State Environmental
414 Roosevelt Highway
Colchester, VT 05446

Dear Ken:

Enclosed please find the results of the microbiological analyses performed on the samples received in our laboratory on November 22, 2000.

Thank you for using Analytical Services, Inc. for your testing needs. If you have any questions or if we may be of service in the future, please do not hesitate to contact Client Services at 1-800-723-4432.

Sincerely,

ANALYTICAL SERVICES, INC.

A handwritten signature in cursive script that reads 'Jennifer Parent'.

Jennifer Parent
Staff Microbiologist

JP/dhg

Project No.: 2000-1122-001

Web site: www.analyticalservices.com



Client: Twin State Environmental
Address: 414 Roosevelt Highway
Colchester, VT 05446

Date Collected: November 22, 2000
Date Received: November 22, 2000
Date Analyzed: November 22, 2000
Analyst: jp, slf

Plate Count Results

Client Sample ID	ASI Sample ID	Heterotrophic Bacteria		
		CFU/mL	Colony Type Count	Identification
Pile 4	2000-1122-001	4.1×10^6	6	NR
Pile 4 Anaerobic	2000-1122-001	1.8×10^7	8	NR

CFU = Colony Forming Unit

NR = Not Requested

Samples were analyzed according to Method 9215 C from Standard Methods for the Examination of Water and Wastewater. APHA, AWWA, WEF. 20th Ed. 1998.

