

APPENDIX I

**DATA EVALUATION REPORT FOR
ADDITIONAL ASBESTOS INVESTIGATIONS
PREPARED BY METCALF AND EDDY**

**EPA CONTRACT NO. 68-W6-0042
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**DATA EVALUATION REPORT
FOR
ADDITIONAL
ASBESTOS INVESTIGATIONS**

**BLACKBURN & UNION PRIVILEGES
SUPERFUND SITE
Walpole, Massachusetts**

**Version 00 - September 2006
Version 01 - August 2007**

METCALF & EDDY | AECOM

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SECTION 1.0 INTRODUCTION

The U.S. Environmental Protection Agency, Region I, New England (EPA) headquartered in Boston, Massachusetts contracted with Metcalf & Eddy, Inc. (M&E) of Wakefield, Massachusetts under EPA's Response Action Contract (RAC) to provide Supplemental Remedial Investigation services for asbestos sampling in soil, sediment, and floodplain soil at the Blackburn & Union Privileges Superfund Site in Walpole, Massachusetts (the site). The work was performed in accordance with the Sampling and Analysis Plan (SAP) developed by M&E (M&E, 2006) with a few variances as discussed herein. As discussed in the SAP, the goal of the work presented in this Data Evaluation Report is twofold: 1) to refine the vertical and horizontal extent of asbestos in soil where it has previously been detected at low concentrations at on-facility and off-facility locations; and 2) to further define the extent of asbestos in sediments and floodplain soils in and around Lewis Pond.

1.1 Site Background

The site is located just south of the intersection of South Street and Common Street, approximately one-half mile south-southeast of the center of Walpole, Massachusetts. A Site Locus Map is provided as Figure 1-1. South Street bisects the site in a generally north-south direction, and the Neponset River bisects the site in a generally east-west direction (SHA, 2004). The site contains numerous industrial buildings which previously housed various manufacturing activities. The Neponset River was redirected through a culvert underneath the Area of Containment (AOC) at the site during remedial actions for asbestos during 1992. There are numerous areas of concern where contamination has come to be located at the site. A Site Features plan is shown as Figure 1-2. Refer to Sanborn, Head, and Associates' (SHA) Draft Remedial Investigation (RI) Report (SHA, 2004) and Section 1.2 below for further details regarding the description of the site.

1.2 Site History

Several areas of the site have been used for various industrial activities spanning several hundred years. Residual contamination is present in soil and groundwater beneath currently and formerly active industrial portions of the site. In 1985, an environmental investigation was initiated to assess the impact of past industrial activities. The potential for on-site impacted areas to impact off-site media was unknown, with the exception of asbestos in Lewis Pond which was documented during previous investigations. Environmental data have also been generated as a result of historical aboveground and underground storage tank (AST and UST, respectively) closures and removals (primarily in 1987) and an asbestos Removal Action (RA) conducted in 1992 by Canonic Environmental Services Corporation under contract to W.R. Grace (Canonic, 1993).

Prior environmental investigations and subsequent remedial actions addressed the presence of asbestos in soils at the site. Extensive sampling at the site was carried out between 1986 and 1990 to delineate the extent of asbestos contamination on a site-wide basis. This investigatory effort was followed by design and, in 1992, the implementation of a remedial action at the site pursuant to an Administrative Order by EPA. The RA included excavation of certain asbestos-containing soils and consolidation of these soils with other asbestos-containing soils in the AOC south of the former mill building located to the west of South Street. See Figure 1-2 for location of the AOC. This AOC is currently restricted by a deed to limit future uses of this portion of the site. Prior investigations conducted at the site by various parties between approximately 1985 and 1996 have also resulted in other chemical data generated for the site. SHA completed a review of these data as part of Remedial Investigation/Feasibility Study (RI/FS) Work Plan preparation and submitted to USEPA a draft report, dated January 14, 2000, entitled Existing Data Review and Analysis Report, Blackburn and Union Privileges Superfund Site, Walpole Massachusetts (EDRA Report) (SHA, 2000a).

Chemical data previously collected by the potentially responsible parties (PRPs) at the site indicated the presence of elevated levels of contamination, which are generally associated with manufacturing operations which have occurred on portions of the site over the past 100 years and possibly dated back to the late 17th century. Existing data indicate that lead and zinc may be the most commonly occurring metal contaminants at the site. Other metal contaminants, as well as semivolatile organic compounds (SVOCs) and in particular, polycyclic aromatic hydrocarbons (PAHs), may be present. Portions of the site in the vicinity of the former mill building located west of South Street have been historically impacted by releases of high pH fluids, possibly containing sodium hydroxide. Volatile organic compounds (VOCs) and petroleum hydrocarbons appear to be less prevalent as site contaminants and generally have been associated with the presence of fuel-oil related to USTs and ASTs. SHA submitted a Draft RI Report to USEPA during December 2004 (SHA, 2004), and is currently in the process of finalizing this document.

1.3 Problem Definition/Present Study

Significant investigational work has been performed at the site to delineate the extent of asbestos contamination within soils at and around the site. Previous sampling activities conducted by Dames & Moore (Dames & Moore, 1989 and 1990) and Canonie (Canonie, 1993) to characterize asbestos in soil utilized a detection limit of 1%. Results of this previous sampling were reported as not detected, detected at less than 1%, or at the detected value above 1%. Canonie conducted removal actions which included the excavation of soils with asbestos concentrations greater than 1% and placement under an on-site cap (Canonie, 1993). Sediment and floodplain soil sampling have been conducted by Dames & Moore (Dames & Moore, 1989) and SHA (SHA, 2004), also using a detection limit of 1% during the analysis of the samples.

Given data gaps from previous investigations and advances in analytical methods for asbestos, this investigation was designed to address the following:

1. Refine the vertical and horizontal extent of asbestos contamination in soil, sediment, and floodplain soil across selected areas of the site where it has been detected. Advances in analytical methods for asbestos since previous sampling efforts allow for a detection limit of 0.25% (which is lower than the 1% detection limit used in previous investigations).

A total of 130 samples (including field duplicate samples) were analyzed for asbestos content with a detection limit of 0.25%. On-facility soils were sampled through the depth of fill, generally in approximate 2-foot intervals. On-facility soils for this sampling program include those on the site property west of South Street (containing the former mill building) and those on the site property east of South Street (currently occupied by Cosmec).

At off-facility and background locations, soils were collected within the 0 to 0.5 feet (ft) and/or 0.5 to 2.5 ft below surface grade (bsg) intervals. Off-facility soils for this sampling program include those along the railroad tracks (behind the buildings currently occupied by Cosmec) and those along the eastern bank of a section of the Neponset River slightly upstream of the site.

Sediment samples along the banks of Lewis Pond and from selected locations within Lewis Pond were sampled from 0 to 0.5 ft below sediment surface (bss). Floodplain soils along Lewis Pond were sampled from 0 to 1 ft bsg.

2. Determine the types of asbestos present at the site. All soil, sediment, and floodplain samples were analyzed by Phase Light Microscopy (PLM), which allows for asbestos speciation, and therefore, the types of asbestos within each sample, if present, were reported.

SECTION 2.0 FIELD OPERATIONS

This section summarizes the field activities conducted by M&E at the site between July and September 2006. The design details of the field program are described in the *Sampling and Analysis Plan for Supplemental Remedial Investigation, Asbestos Sampling in Soil - Revision 01, Blackburn & Union Privileges Superfund Site, Walpole, Massachusetts* (SAP) (M&E, 2006). Variances to the SAP included the relocation of several sampling locations as discussed below.

2.1 Field Reconnaissance and Sample Location Variances

On July 5 and 7, 2006, a field reconnaissance was performed to locate historical on-facility and off-facility asbestos soil sampling locations that were planned for re-sampling. During the July 5, 2006 reconnaissance, the EPA RPM added one on-facility soil boring, ME-1, to the sampling program. Other modifications to the sampling plan included the elimination of sample boring O-4.5 due to debris and standing water covering the area. Historical soil borings were located in the field using coordinates obtained from previous figures generated by Sanborn, Head and Associates (SHA, 2000a and 2004) uploaded into a Trimball® global positioning system (GPS) unit. Three on-facility borings located on the property east of South Street (currently occupied by Cosmec) could not be located on July 5 or 7, 2006 due to access issues, but were later located during mobilization activities on July 11, 2006.

Sediment sampling locations were located by GPS during sampling activities, as most sediment sampling locations required access by boat. Some sediment locations were inaccessible due to overgrowth of purple loosestrife within deep water and were moved from their planned locations to more accessible areas.

Floodplain soil sampling locations along Lewis Pond were located on July 18, 2006 by the EPA RPM and M&E's project engineer, after access to properties was granted by private property owners. Locations were modified from those planned in the SAP (M&E, 2006) and were chosen based on available access, likely depositional areas, and in groups of two, such that one location was approximately 5 to 10 feet up the floodplain (horizontally) from another. In addition, eight floodplain soil locations were added to the sampling program.

Background soil sampling locations were located on July 24, 2006 on the edge of the Walpole Town Forest.

Several of the on-facility and off-facility soil sampling locations and sediment sampling locations were relocated, primarily due to access issues. Relocated sampling locations can be identified through the presence of an "R" within the sample location (e.g., LP-18R-ME corresponds to relocated sediment sample LP-18-ME). GPS coordinates of relocated sampling locations were recorded. Coordinates of all sampling locations are provided in Appendix A. Photographs from the field investigation are provided in Appendix B. Sampling locations are shown on Figures 2-1, 2-2, 2-3, and 2-4.

2.2 Subsurface Utility Clearance

Prior to the advancement of any subsurface soil borings, DIGSAFE marked utility locations nearby the street and on parts of the property east of South Street, currently occupied by Cosmec. However, because DIGSAFE's services are limited and utility plans for this property were not available, M&E contracted with Hager GeoScience Inc. to provide additional subsurface utility clearance around proposed soil boring locations.

Hager GeoScience Inc. performed a geophysical survey to locate possible obstructing utilities or buried debris at thirteen proposed boring locations, including on-facility locations I-2.5, I-3.5, J-2, L-3R, L-5.5, M-5.5, MA-2.5, ME-1, P-9, and R-5, and off-facility locations H-0.5R, HA-0.5, and KA-0.5. The geophysical survey was conducted using ground penetrating radar (GPR) and an electromagnetic transmitter used to trace utilities to clear a 10x10-foot grid around each marked boring. Each location was either designated as safe for drilling or an alternate location was cleared for drilling and marked on the ground. Hager GeoScience's geophysical survey report is included in Appendix C.

2.3 Sampling Procedures

A total of 130 sediment and surface, subsurface, and floodplain soil samples were collected, including field duplicates, from July 17 through 26, 2006. The following sections discuss the sampling procedures utilized during the investigation.

2.3.1 On-facility Soil Sampling Procedures. Fourteen soil borings were advanced within the on-facility portions of the site on July 19 and 20, 2006, as shown on Figures 2-1 and 2-2. On-facility soil borings were advanced with a direct push rig (Geoprobe model DT 5400) operated by Technical Drilling Services, Inc. with oversight by an M&E geologist. During boring advancement via direct push methods, perimeter air monitoring was conducted, as described further in Section 2.5, and a fine water mist was used to suppress airborne dust. Level C personal protective equipment was worn by the direct push rig operator and M&E samplers.

Four foot long macrocore samplers lined with dedicated polyethylene terephthalate (PETG) acetate sleeves were continuously advanced into undisturbed soil through the vertical extent of fill, to target depths ranging from 8 to 12 ft bsg. The depth of fill at each boring location was estimated based on fill thickness contours presented by Sanborn, Head, and Associates (SHA) in the Draft RI report (SHA, 2004). In cases where refusal was encountered above the target depth, the drilling apparatus was withdrawn and re-advanced within approximately 5 feet of the original location, as directed by the M&E representative. After completion of each borehole, the borehole was backfilled with hydrated bentonite chips to 1 foot bsg and 8-inches of #001silica sand. For locations at which a boring was advanced through asphalt, the hole was either patched with recycled asphalt or cold tar patch.

Upon the removal of the polyethylene sleeves from the macrocore sampler, the sleeves were staged on clean polyethylene sheeting while awaiting characterization by the M&E geologist. In order to characterize and sample the soils within the polyethylene sleeves, each sleeve was cut twice lengthwise in order to expose an approximately 2-inch wide strip of soil. The soil was immediately screened for total volatile organic compounds (TVOCs) with a photoionization detector (PID) and then characterized by the M&E geologist. The soil was then split into sample intervals, which consisted of the top 6 inches of soil (0 to 0.5 ft bsg), then 0.5 to 2 ft bsg, and typically in 2-foot increments thereafter. Exceptions to these standard intervals include the second interval from the top for soil borings I-3.5, I-2.5, and J-2, which extended from 0.5 to 4 ft bsg instead of 0.5 to 2 ft bsg. These borings were advanced at the beginning of the direct push activities and because only partial recovery was observed in the macrocore driven to 4 feet bsg (*i.e.*, a void was observed within part of the recovered soils due to compaction), the point representing 2 feet bsg could not be determined. In subsequent soil borings, M&E modified the procedure such that when a void was observed within recovered soils, a new boring was driven to a 2-foot depth within approximately 1 foot of the original boring. This allowed for the M&E geologist to observe soil striations and distinguish the 0.5 to 2 ft bsg and 2 to 4 ft bsg soil horizons from one another. Other exceptions to the standard 2-foot sample interval include the deeper intervals (4 to 8 ft bsg and 8 to 12 ft bsg) for boring MA-2.5. Four-foot intervals were sampled rather than 2-foot intervals within this boring because fill was observed at

deeper depths than expected, so samples were consolidated in an effort to conserve samples. In addition, if the estimated depth of fill within a boring did not correspond to the end of a sampling interval, the additional one foot was composited in with the previous interval. For example, for a boring within a 7-foot depth of fill, the last composite sample was 4 to 7 ft bsg.

Soils from each interval were placed into dedicated disposable clear plastic bags, homogenized, and a sample aliquot was placed into labeled 8-ounce polyethylene jars to be submitted for laboratory analysis. A total of 52 samples (including field duplicates) from on-facility borings were submitted for analysis.

The geologic boring logs are presented in Appendix D.2. Chains of custody documenting samples submitted for analysis are included in Appendix E.

2.3.2 Off-facility and Background Soil Sampling Procedures. A total of 19 soil samples were collected from 13 off-facility soil borings between July 17 and 26, 2006. Off-facility soil boring locations are shown in Figures 2-1 and 2-2. Samples from three off-facility soil borings (M-0.5R, KA-0.5R, and HA-0.5R) were collected via direct push procedures as described in Section 2.3.1 above, since these locations were easily accessible to the direct push rig and direct-push sample collection for shallow soils proved to be more time efficient than hand augering. Remaining off-facility soil borings were advanced with a hand auger. Off-facility soil samples were collected from 0 to 0.5 ft bsg and/or 0.5 to 2.5 ft bsg, in accordance with sample intervals stated in the SAP (M&E, 2006).

Six soil samples were collected from three background soil borings on July 26, 2006 using a hand auger. Sample intervals for each boring included both the 0 to 0.5 ft bsg and 0.5 to 2.5 ft bsg intervals. Background soil sampling locations are shown in Figure 2-3.

For both off-facility and background soil sampling locations, the auger was advanced in estimated 6-inch lifts through the sampling interval. Soils from each lift were emptied into a stainless steel bowl and characterized by the M&E geologist. After the soils from each interval had been characterized, the soils were homogenized and placed into labeled 8-ounce polyethylene jars to be submitted for laboratory analysis.

At off-facility locations, a fine water mist was sprayed over the area during hand augering and sample homogenization to suppress airborne dust. All sampling equipment was decontaminated between sampling intervals according to M&E SOPs as documented in the SAP (M&E, 2006). Soil sampling field worksheets are provided in Appendix D.3 and D.4. Chains of custody documenting samples submitted for analysis are included in Appendix E.

2.3.3 Sediment and Floodplain Soil Sampling Procedures. A total of 29 sediment (including 2 field duplicates) and 22 floodplain soil samples were collected from July 18 through 26, 2006, as shown in Figure 2-4. Sediment and floodplain soil samples were collected with a hand auger, using a similar procedure to that used for the off-facility soil sampling. For the floodplain soil samples, soils were collected to a depth of 1 ft bsg (*i.e.*, the sample interval was 0 to 1 ft bsg). Sediments were only collected to an estimated 6-inch depth bss within Lewis Pond.

After the auger was withdrawn from each sediment and floodplain soil sampling location, its contents were emptied into a stainless steel bowl and characterized by the M&E geologist. Once the target depth had been reached, the soils were homogenized and placed into labeled 8-ounce polyethylene jars to be submitted for laboratory analysis.

Sediment samples were collected beneath standing water and therefore, no additional precautions to prevent

asbestos fibers from becoming airborne were necessary. At floodplain soil sampling locations, however, the ground surface was typically dry and therefore, a fine water mist was sprayed over the area during hand augering and sample homogenization to suppress airborne dust potentially containing asbestos. All sampling equipment was decontaminated between sampling locations according to M&E SOPs as documented in the SAP (M&E, 2006).

Further details on sediment and floodplain sampling worksheets are provided on field sampling data sheets provided in Appendix D.5 and D.6. Chains of custody documenting samples submitted for analysis are included in Appendix E.

2.4 Field Observations

The following sections discuss the field observations, including significant sample descriptions and properties, made during sample collection activities.

2.4.1 On-facility Soil Sampling Observations. During the course of this investigation, M&E observed evidence of fill underlying most of the on-facility locations. These observations are consistent with those made by SHA in the Draft RI Report dated December 2004 (SHA, 2004). The fill horizon is typified by sand (typically ranging from very fine to coarse), with lesser amounts of silt, gravel, and miscellaneous materials such as cinders (clinkers), ash, concrete, wood, and coal fragments. In addition, paper-like layered material was observed in on-facility soil boring I-2.5, which is located within the southern region of the property east of South Street (currently occupied by Cosmec). The fill was observed to be underlain by sand (typically ranging from fine to coarse), with lesser amounts of silt and gravel. Physical evidence of asbestos was not visually observed in any of the on-facility soil samples collected. Visual observation of asbestos was not expected due to the low asbestos concentrations reported during previous investigations.

During the advancement of four of the soil borings (L-3R, ME-1, M-5.5, and MA-2.5), M&E observed evidence suggesting that a release of petroleum product(s) had impacted subsurface soils within the property east of South Street (currently occupied by Cosmec). While inspecting the soils retrieved from the macrocore samplers, M&E observed the following:

L-3R

Soil from 11 to 12 ft bsg was collected from below an estimated water table depth of 11 ft bsg. These soils glistened with a rainbow sheen. A strong petroleum odor was noted. Soil from 9 to 10 ft bsg and 11 to 12 ft bsg were placed in separate clear plastic bags, agitated, and screened with a PID. A TVOC concentration of 120 ppm was reported for the sample collected from 9 to 10 feet bsg, and a TVOC concentration of 268 ppm was reported for the sample collected from 11 to 12 ft bsg. In addition, a translucent amber stain was noted on the clear acetate macrocore liner at the 11 to 12 ft bsg interval.

ME-1

Soil collected from 6.9 to 8.0 ft bsg was observed to be possibly stained, and appeared to glisten with oil. A strong petroleum odor was noted. The water table was observed at an estimated depth of 11.25 ft bsg. Soil 11.5 to 12 ft bsg was observed to have a sheen, and also displayed a strong petroleum odor. A TVOC concentration of 342 ppm was reported for the sample collected from 6 to 8 ft bsg, a TVOC of 184 ppm was reported for the sample collected from 8 to 10 ft bsg, and a TVOC concentration of 622 ppm was reported for the sample collected from 11 to 12 ft bsg.

M-5.5

A slight sheen was observed on soils collected from 11.5 to 12 ft bsg, just below the water table (estimated at 11.5 ft bsg). A TVOC of 4.5 ppm was reported for the sample collected from 4 to 7 ft bsg, a TVOC concentration of 396 ppm was reported for the sample collected from 8 to 9 ft bsg, and a TVOC concentration of 426 ppm was reported for the sample collected from 11.8 to 12 ft bsg.

MA-2.5

A TVOC of 1.8 ppm was reported for the sample collected from 10 to 11.9 ft bsg. A TVOC concentration of 121 ppm was reported for the sample collected from 11.9 to 12 ft bsg. The water table was observed at 11.9 ft bsg. It is not clear if this elevated PID measurement is a result of petroleum product, as there was no visual evidence at this boring.

It was beyond the scope to analyze soils for petroleum products, so no samples were submitted for relevant analyses.

2.4.2 Off-facility and Background Soil Sampling Observations. Field observations, including sample descriptions and properties, made during off-facility and background soil sample collection are provided below.

Off-facility Soil Sample Locations. The samples collected along the former railroad bed (M-0.5R, KA-0.5R, HA-0.5R, F-0.5R, 2R, D-0.5R, and 104R) appeared to be comprised of fill associated with the railroad bed. The uppermost layer of fill (ranging in thicknesses between 9 to 18 inches) was typically observed to be comprised of a mix of medium dark brown fine, medium, and coarse sand with varying, lesser amounts of silt, fine gravel, medium gravel, clinkers, and ash. This layer was observed to be underlain by light brown fine, medium, and coarse sand, with varying, lesser amounts of silt, fine gravel, medium gravel, and coarse gravel.

The samples collected along the eastern bank of a section of the Neponset River (11, 12R, 13, 18, 19R, and 16R) were predominantly comprised of medium to dark brown organic silt with trace to little very fine and fine sand and roots.

Physical evidence of asbestos was not visually observed in any of the samples collected along the former railroad bed or the section of the Neponset River described above.

Background Soil Sample Locations. Background soil sampling locations were collected from the edge of the Walpole Town Forest, within an area overlain by grass, nearby the tree line. The top two inches of sample material retrieved consisted predominantly of plant roots, which were underlain by 9 to 17 inches of very fine and fine sand with little silt and a trace of medium sand, coarse sand, and fine gravel. This horizon was underlain by a layer of fine sand, with some very fine sand, little silt, and a trace of medium and coarse gravel.

Physical evidence of asbestos was not visually observed in any background soil sample collected.

2.4.3 Sediment and Floodplain Soil Sampling Observations. Lewis Pond is currently overgrown with purple loosestrife and other wetland shrubs. Several locations planned for sampling could not be accessed by boat or wading and therefore, numerous sediment sampling locations had to be moved. Flow through Lewis Pond has become channelized, such that the pond resembles a river with surrounding wetlands.

Sediment and floodplain samples collected from and near Lewis Pond ranged from a mix of fine, medium, and coarse sand to organic detritus. Sample content was predominantly very fine sand, organic silt, and organic detritus. Sample color ranged from tannish-gray to dark brown, and medium to dark brown being typical. A lense of sediment of high(er) organic content was often observed overlaying layers of inorganic silt and sand.

Physical evidence of asbestos was not visually observed in any sediment or floodplain soil sample collected.

2.5 Air Monitoring During Sample Collection

Perimeter air monitoring was conducted by Hub Testing Laboratory, Inc. during all direct push sampling activities. The SAP specified that perimeter air monitoring would include the collection of an upwind and three downwind samples at each sampling area. However, due to shifting wind directions during direct push sampling activities, the four perimeter air samples were generally placed such that they surrounded the soil boring, within an estimated 15 to 20 foot radius of the soil boring. Perimeter air samples were collected onto 0.8-micrometer (micron) mixed cellulose ester (MCE) membranes within 25 millimeter (mm) diameter cassettes with high-volume pumps.

Air monitoring also included the collection of personal air samples. Personal air monitoring was conducted through the use of personal air pumps connected to 0.8-micron MCE 25 mm diameter cassettes worn by M&E personnel during all phases of sampling. The pump intake was positioned such that it was located near each sampler's breathing zone.

A background air sample was collected near the staging area, away from sampling activities. All air monitoring samples were analyzed for total fiber content (including non-asbestos fibers) by phase contrast microscopy (PCM), NIOSH 7400 Method. Sample cartridges and laboratory analysis services were supplied by Hub Testing Laboratory, Inc.

Perimeter air monitoring results indicate all reported results were below the Occupational Safety and Health Administration (OSHA) permissible exposure limit (PEL) of 0.10 fibers/cc. It should be noted, however, that for 2 of the 28 perimeter samples analyzed, results indicate that the analyst was unable to quantify the fiber concentration because of overloading of particulate material on the filter. In addition, the filter on one perimeter air sample was damaged, and therefore, analysis could not be performed on this sample. Results for all personal air monitoring samples were reported below the OSHA PEL of 0.10 fibers/cc. Further details of the asbestos air sampling and analysis, as well as results, are provided in Appendix F.

2.6 GPS Survey

A survey of all sampling locations was conducted by M&E using a Trimball® GPS unit. The survey was conducted in accordance with the following standards: Horizontal Controls are Massachusetts State Plane coordinates NAD83 (North American Datum of 1983), zone 2001, in feet. Vertical datum was not recorded. GPS coordinates are provided in Appendix A.

2.7 IDW Disposal

Investigation derived wastes (IDW) generated during this investigation include liquid and solid wastes. One partially-full drum of liquid waste, consisting of decontamination fluids, was generated. Solid waste included one drum of all personal protective equipment (tyveks, booties, gloves, and respirator cartridges), and two drums containing soil cuttings, and acetate macrocore liners, trash bags, and polyethylene sheeting used during sampling activities. ENPRO Services, Inc. was contracted to provide the proper disposal of these drums, which was performed on September 20, 2006. In total, ENPRO Services, Inc. removed four drums of IDW and one empty drum from the site.

SECTION 3.0 PRESENTATION OF ANALYTICAL DATA

This section outlines the validation of the analytical data for collected samples, discusses the usability of the analytical results, and discusses the extent of the contamination at the site. The analytical method was selected to achieve the Project Quantitation Limit (PQL), which supports the data quality objectives for the site. Information concerning the target analyte and the required quantitation limits is summarized in the EPA-NE QAPP Worksheet #9b, in Appendix A of the M&E SAP (M&E, 2006).

3.1 Analytical Data Validation and Review

This section outlines the validation of the analytical data for samples, and discusses the nature of the results. The data were evaluated with respect to the data quality objectives (DQOs) for the site as presented in the SAP (M&E, 2006). The DQO is summarized as follows:

- To refine asbestos concentration levels in soil and sediment in areas at which asbestos has previously been detected, and to better delineate the extent of asbestos contamination in Lewis Pond floodplain soils.

A total of 101 soil samples (including 5 field duplicate pairs) and 29 sediment samples (including 2 field duplicate pairs) were collected by M&E from July 17 to July 26, 2006. All soil and sediment samples were analyzed for asbestos using polarized light microscopy (PLM) in accordance with Method 435 of the California Environmental Protection Agency Air Resources Board Determination of Asbestos Content of Serpentine Aggregate (CARB435; CARB, 1991) and EPA/600/R-93/116 Method for the Determination of Asbestos in Bulk Building Materials (USEPA, 1993). The analysis was performed by a subcontracted laboratory, EMSL Analytical, Inc. (Woburn, Massachusetts), and followed EMSL's *Standard Operating Procedures for Polarized Light Microscopy* (EMSL PLM SOP 200.3, March 2006). A 400-point count was performed to obtain a reporting limit of 0.25%.

The laboratory's analytical SOP is presented in Appendix F of M&E's SAP (M&E, 2006), and is also included as an attachment to each data validation memorandum.

For preparation, each sample was examined and material larger than 3/8" was removed by sieving. Approximately 6 to 8 ounces of the remaining sample was randomly selected and dried for 24 hours at 160°C - 200°C. The dried sample was then milled in a liquid nitrogen-based freezer mill to achieve a nominal particle size of 200 microns.

For analysis and quantitation, a representative portion of the milled sample was examined under a stereomicroscope for initial observations including homogeneity and preliminary fiber identification. Identification was performed by measurement of refractive indices via dispersion staining. Slide preparations were made for examination by PLM with quantification via 400-point count analysis. The slides are viewed with a counting reticule and the material that falls under the cross-hairs are counted. The ratio of asbestos material to non-asbestos material is reported as the percent asbestos. The PQL of 0.25% corresponds to a count of 1 asbestos fiber per 400 counted (*i.e.*, $1/400 * 100 = 0.25\%$).

3.1.1 Analytical Data Validation. All analytical data underwent Tier I validation in accordance with EPA Region I guidance documents – *Region I, EPA-NE Data Validation Functional Guidelines for Evaluating Environmental Analyses* (USEPA, 1996) and the data quality criteria described in the SAP (M&E, 2006). The Tier I validations indicated no issues that would adversely affect the data quality.

Data validation memoranda have been submitted to EPA and are listed below:

- Asbestos, Tier I Data Validation (Case 0280M, SDG D07651), dated September 26, 2006
- Asbestos, Tier I Data Validation (Case 0280M, SDG D07661), dated September 19, 2006
- Asbestos, Tier I Data Validation (Case 0280M, SDG D07670), dated September 19, 2006
- Asbestos, Tier I Data Validation (Case 0280M, SDG D07682), dated September 19, 2006
- Asbestos, Tier I Data Validation (Case 0280M, SDG D07690), dated September 19, 2006
- Asbestos, Tier I Data Validation (Case 0280M, SDG D07745), dated September 19, 2006

Additionally, a Data Quality Assessment was conducted using DAS Data Quality Assessment Forms. As part of this assessment the quality control information provided with each data package was evaluated against the method criteria specified in the EMSL SOP and M&E SAP. The Data Quality Assessments indicated no issues that would adversely affect the data quality.

Based on the Tier I data validation and Data Quality Assessment, all asbestos data are usable for data quality objectives.

3.1.2 Analytical Data Review. For the samples in which asbestos fibers were observed, the asbestos was identified in all instances as chrysotile.

The PLM results determined using the point-counting technique are reported as % asbestos in the sample. Because the microscopic analysis is two-dimensional, point-counting is a determination of a percent by area. In practice, it is interchangeable with volume percent. The area percent tends to over-estimate the volume percent in the sample, but that is a known limitation of the method. Mass percent and area/volume percent can be correlated by making general assumptions about asbestos and matrix densities (see, for example, *Asbestos Content in Bulk Insulation Samples: Visual Estimates and Weight Composition*, EPA, 560/5-88-011 for a simple model). In general, mass percent tends to be higher than volume/area percent. At small percentages, however, this difference is small and within the accepted precision of the method.

In approximately 20 percent of the samples, chrysotile was observed during the microscopic examination, but did not fall under the cross-hairs of point-count reticule and thus were not counted in the quantitation process. The results for these samples are reported as "<0.25%". It should be noted that these results are based on the visual observation of asbestos fibers in the samples, not the statistical quantitation, and should be considered estimated percentages of asbestos content.

3.2 Asbestos Results

Analytical results are provided in summary Table 3-1. Data summary tables providing further details on the asbestos sampling results are presented in Appendix G. Results are discussed below by area and/or matrix.

3.2.1 On-facility Soil Results. A large majority of all sample results from on-facility soil borings were reported as non-detect for the presence of asbestos. In these samples, asbestos was not detected above 0.25%, nor was it visually observed by the laboratory in these samples. Sample results are presented on Figure 3-1.

Two borings at which asbestos was detected above the detection limit in one or more intervals are I-3.5 and M-5.5, both located on the on-facility property east of South Street, near the southern corner and eastern portion of

the lot, respectively. Within soil boring I-3.5, asbestos was detected at a concentration of 1.75% within the 0.5 to 4 ft bsg interval, and the asbestos fibers were identified as chrysotile. Asbestos was also visually observed by the laboratory (but not detected above the detection limit) within the 0 to 0.5 ft bsg and 4 to 6 ft bsg intervals of I-3.5. The asbestos result for the deepest interval within this boring (6 to 9 ft bsg) was reported as non-detect.

For soil boring M-5.5, asbestos was detected at or above 0.25% at depths up to 4 ft bgs. Reported concentrations were 0.25%, 0.50%, and 0.75% for the 0 to 0.5 ft bsg, 0.5 to 2 ft bsg, and 2 to 4 ft bsg intervals, respectively. All asbestos fibers within M-5.5 were identified as chrysotile. Asbestos was not detected in the 4 to 7 ft bsg interval collected from this boring.

Asbestos was also visually observed by the laboratory, but not reported above the detection limit, within the 8 to 10 ft bsg interval of soil boring ME-1 and the 4 to 8 ft bsg interval of MA-2.5, both located near the central portion of the on-facility property east of South Street.

3.2.2 Off-facility and Background Soil Results. Asbestos was not detected, nor visually observed by the laboratory, in any of the off-facility soil sampling locations, as shown on Figure 3-1.

Reported results for the background samples also included all non-detects and no visual observations of asbestos by the laboratory.

3.2.3 Sediment and Floodplain Soil Results. In general, low detections, visual observations by the laboratory (<0.25%), and non-detects for asbestos were reported for sediment and floodplain samples collected in and around Lewis Pond. Figure 3-2 shows results of sediment and floodplain samples collected by M&E during this field investigation, as designated with a “-ME” following the sample location identification and yellow symbols.

FPS-14-ME, collected on a residential lot of the floodplain of Lewis Pond, was the only location at which asbestos was detected above the detection limit (at a concentration of 0.75%). Asbestos was also reported at concentrations equivalent to the detection limit (0.25%) in LP-23R-ME and LP-24R-ME, located within Lewis Pond near the edge of the channelized flow.

Asbestos was visually observed by the laboratory (reported as <0.25%) in several samples collected within and on the floodplain of Lewis Pond, including samples nearby the edge of channelized flow (LP-15R-ME, LP-16R-ME, LP-18R-ME, LP-20R-ME, ND-39-ME, LP-25-ME, LP-26R-ME [and field duplicate LP-26R-MECS], LP-27-ME, and ND-41-ME), and floodplain samples FPS-01R-ME, FPS-02R-ME, FPS-03R-ME, FPS-08R-ME, and FPS-06R-ME.

Asbestos was not detected in the remaining 33 sediment and floodplain samples collected.

3.3 Discussion of Results Relative to Historical Results

In the past, soil, sediment, and floodplain soil samples have been collected for asbestos analysis at the site. At on facility locations, M&E attempted to re-sample locations that had been previously sampled by Dames & Moore (Dames & Moore, 1989) to verify previous results and to refine the lateral and vertical extent of asbestos. Due to the uncertainty associated with locating historical sampling locations with a GPS unit and typical heterogeneity of asbestos in fill for soils, and the need to relocate many of the sediment samples due to inaccessibility, M&E sampled in the general vicinity of historic sampling locations, but was not able to target the exact locations of historical samples.

Samples collected by Dames & Moore in 1989 were analyzed by PLM, and samples in which asbestos was not detected were further subjected to an additional sample preparation procedure, including a water washing step to [remove interfering particles](#)) required by EPA to allow for reduced quantitation limits.

Re-sampling of locations previously sampled by SHA (SHA, 2004) was not the objective of the sampling program. However, M&E did sample in the general vicinity of some of SHA's sample locations, particularly in and around Lewis Pond to refine the lateral extent of asbestos. M&E's results relative to SHA's results are discussed below for Lewis Pond. SHA collected sediment and floodplain samples in 2001. As specified in SHA's work plan (SHA, 2000b), analysis of these samples was performed by PLM using the Region 1 1997 screening method. For instances in which asbestos was not detected or detected at a concentration less than 1%, the samples were then analyzed by transmission electron microscopy (TEM). Quantitation was performed by visual estimation with point-counting used for concentrations approaching 1% and TEM used for concentrations less than 1%.

Although analytical methodologies may be similar in some respect, such as PLM analysis being utilized by M&E, Dames & Moore, and SHA, there were variations to the analysis. For example, M&E's samples were milled prior to analysis consistent with the CARB 435 method. Dames & Moore's sample preparation techniques included water washing only after an initial non-detect was reported. SHA sample preparation involved drying of the samples, but no milling technique was used. In addition, SHA conducted a subsequent analysis by TEM, if asbestos was not detected or detected at less than 1% in the sample, as determined through PLM analysis. Therefore, a comparability analysis of sample results was not performed, but rather current results are generally discussed relative to historical results.

3.3.1 On-facility Soil: Current and Historical Results. Historical samples collected by Dames & Moore in 1989 (Dames & Moore, 1989) were collected within the 0 to 0.5 ft bsg and 2 to 2.5 ft bsg intervals of each boring. Since M&E collected samples from on-facility borings through the depth of fill, only those samples corresponding to the intervals used by Dames & Moore have been discussed. Dames & Moore asbestos summary tables are provided in Appendix H. A figure depicting Dames & Moore sampling results is provided in Figure 16 of SHA's EDRA (SHA, 2000).

Dames & Moore data. For the majority of the 0 to 0.5 ft bsg intervals for the on-facility soil borings that were sampled by both Dames & Moore and M&E, Dames & Moore asbestos results are reported as <1%, meaning that asbestos was visually observed by the laboratory but not quantified, since the detection limit was 1%. Within the 2 to 2.5 ft bsg interval, Dames & Moore's asbestos results were reported as <1% in about half of the borings that M&E sampled in the vicinity of and non-detect in the other half.

M&E data. M&E reported mostly non-detects (with a detection limit of 0.25%) for samples collected within both the 0 to 0.5 ft bsg and deeper (either 0.5 to 4 ft bsg or 2 to 4 ft bsg) intervals. Exceptions include the 0 to 0.5 ft bsg intervals in I-3.5 and M-5.5, for which asbestos was reported at <0.25% (asbestos was visually observed by the laboratory but not reported above the detection limit) and 0.25%, respectively, and the lower intervals of I-3.5 and M-5.5, for which detections of 1.75% and 0.75%, respectively, were reported by M&E.

In general, the Dames & Moore data suggest that asbestos was present in low concentrations (<1%) in the areas that M&E attempted to re-sample, as evidenced by visual observations made by their laboratory. M&E data indicate that asbestos was not detected in most samples collected, with few exceptions.

3.3.2 Off-facility Soil: Current and Historical Results. Off-facility soil samples were collected by Dames & Moore in 1989 (Dames & Moore, 1989) within the 0 to 0.5 ft bsg and 2 to 2.5 ft bsg intervals of each boring. Only off-facility soil samples collected by M&E along the Neponset River southeast of the railroad tracks are

discussed in this evaluation, since soil samples collected along the railroad tracks were relocated a significant distance (up to 50 feet) away from their planned position. For the off-facility soil samples collected along the Neponset River, M&E collected samples from either the 0 to 0.5 ft bsg or 0.5 to 2.5 ft bsg intervals, corresponding to previous detects less than 1% (<1%). Dames & Moore asbestos summary tables are provided in Appendix H.

As stated above, for the intervals and samples being evaluated, Dames & Moore reported asbestos results as less than 1%. M&E data for all of these samples indicate asbestos was not detected, nor visually observed by the laboratory.

3.3.3 Sediment and Floodplain Soil: Current and Historical Results. Sediment samples have been collected from Lewis Pond in the past. Dames & Moore collected samples from the “ND-“ series locations (Neponset River downgradient of South Street) in 1989 (Dames & Moore, 1989). A summary of Dames & Moore sediment data is included in Appendix H. M&E attempted to re-sample areas where Dames & Moore had previously collected sediment samples.

M&E sample results were non-detect for eight of the ten “ND-“ series samples (*i.e.*, ND-25-ME, ND-26-ME, ND-27-ME, ND-28-ME, ND-29-ME, ND-30-ME, ND-37R-ME, and ND-42-ME). For the other two “ND-“ series samples (ND-39-ME and ND-41-ME), asbestos was visually observed by the laboratory and therefore, the results were reported as less than 0.25%. As stated above, Dames & Moore asbestos results for their samples collected at these locations were reported as <1% indicating that the laboratory visually observed asbestos in the samples, but did not quantify it since the results were less than the detection limit.

M&E also collected sediment samples at other locations within Lewis Pond, in an effort to better define the extent of asbestos in and around the pond. SHA collected sediment and floodplain samples in 2001 (SHA, 2004); these locations were not re-sampled by M&E. However, M&E did collect samples in the vicinity of some of the SHA samples. Therefore, SHA's sample results are included in this discussion.

Figure 3-2 shows M&E 2006 asbestos sampling results in the Lewis Pond area and SHA's 2001 results in the same area. As shown in the legend, to better illustrate the areas where asbestos was detected, the red labels depict the detected concentrations and the orange results depict samples that were <0.25%. In contrast, the blue labels depict non-detects. The yellow sample symbols depict the M&E sample points and the green symbols depict the SHA points.

M&E collected 27 sediment samples and 22 floodplain soil samples (49 total excluding field duplicates) from the Lewis Pond area for purposes of increased delineation of the presence of asbestos in Lewis Pond sediments and adjacent floodplain soils. SHA collected 10 sediment samples and 2 floodplain soils samples in the area (12 total). Overall, 65% of the M&E samples were non-detect. The maximum detected concentration by M&E was 0.75%. Overall, 25% of the SHA samples were non-detect. The maximum detected concentration by SHA was 15.3%.

In general, the 2006 M&E results appear to be lower than the 2001 SHA results. This could be partially explained by differences in locations of the sampling points. In particular, some of SHA's 2001 sediment samples that had the highest asbestos results (LP-05, -06, -07 and LP-01, -02, -03 and -04) were taken in areas that were inaccessible by M&E in July 2006 because they are located in areas that are in deep standing water and overgrown by purple loosestrife. Therefore, M&E could not sample these areas. It should be noted that the purpose of the M&E sampling was to further define the extent of asbestos, not to resample and confirm asbestos existence in areas that were previously sampled by SHA.

Another possible reason for the lower M&E results is the amount of time that has elapsed since the SHA event. Additional dispersion and sedimentation could have occurred in the 5-year period between sampling events, which could result in burying and dispersing previously deposited asbestos fibers. Lastly, the differences in analytical methods (PLM by method CARB 435 used by M&E vs. the TEM method used by SHA) could partially explain the result differences.

It should also be noted that some of the M&E results were similar to those reported by SHA (SHA, 2004), as shown on Figure 3-2. For example, non-detects were reported by M&E for LP-17R-ME and by SHA for FP-08. Another example is M&E results for FPS-07R-ME (ND), FPS-06R-ME (<0.25%), which are similar to SHA's result for FP-10 (ND).

SECTION 4.0 CONCLUSIONS

During July through September 2006, M&E conducted soil and sediment sampling for asbestos at the Blackburn & Union Privileges Superfund Site in Walpole, Massachusetts, for EPA Region I. Field reconnaissance was performed to locate historical sampling locations that were planned for re-sampling by M&E. Historical asbestos data were reviewed and a sampling program was established to further define the extent of asbestos soils in and around the site, as well as in sediments and floodplain soils in and around Lewis Pond.

M&E collected 52 soil samples through the depth of fill from 14 on-facility borings via direct push sampling. Nineteen off-facility and six background soil samples were also collected to depths of 2.5 feet bsg. Twenty-nine sediment samples (including two field duplicate samples) and 22 floodplain soil samples were collected from in and around Lewis Pond. All samples were analyzed for asbestos by PLM by method CARB 435 with a detection limit of 0.25% and Tier I data validation was performed as specified in the SAP (M&E, 2006).

Conclusions regarding this investigation have been developed based on the problem definition (Section 1.3) and include the following:

- Asbestos within soils on the on-facility portions of the site was further defined, as shown on Figure 3-1. In most cases, M&E attempted to re-sample locations at which previous detects of asbestos at less than 1% were reported in soils. Laboratory analysis of samples reported that asbestos was not detected in most samples collected. Exceptions noted include an asbestos concentration of 1.75% in the 0.5 to 4 ft bsg interval for soil boring I-3.5, with visual observations of asbestos by the laboratory noted within the interval above (0 to 0.5 ft bsg) and below (4 to 6 ft bgs) this interval, reported as <0.25%. Asbestos was also detected in soil boring M-5.5 at concentrations of 0.25%, 0.50%, and 0.75% within the 0 to 0.5 ft bsg, 0.5 to 2 ft bsg, and 2 to 4 ft bsg intervals, respectively, and visual observation of asbestos was reported by the laboratory (as <0.25%) for intervals 8 to 10 ft bsg and 4 to 8 ft bsg for soil borings ME-1 and MA-2.5, respectively.
- For off-facility soils, the extent of asbestos was further defined. Asbestos was not detected within any off-facility soil sample collected, nor was it visually observed during the laboratory scan. Off-facility soil samples and their results are shown on Figure 3-1.
- The extent of asbestos in and around Lewis Pond was further defined by the collection and analysis of sediment and floodplain soil samples, as shown on Figure 3-2. Laboratory results revealed non-detects for most samples collected. However, detections were reported for FPS-14-ME (0.75%), LP-23R-ME (0.25%) and LP-24R-ME (0.25%) and visual observation of asbestos (reported as <0.25%) was noted within 15 sediment and floodplain samples (including one field duplicate sample).
- Overall, most on-facility and off-facility soil results and sediment sampling results for the "ND-" series samples are lower than historical results, which could be due to locational differences, since asbestos in fill is typically heterogeneous, or due to analytical differences, since sample preparation methodologies differed. It should be noted that the differences lie mostly between the recent non-detect results and historical visually observed at concentrations less than 1% results.
- Although M&E did not re-sample sediment locations previously sampled by SHA in 2001, it can be noted that overall, M&E sediment sample concentrations were much lower than results obtained within Lewis Pond by SHA in 2001. Locational and methodological factors could explain the differences in the

sediment sample results. However, none of these factors should be used to discount either set of results. Under the assumption that both sets of data are representative, it can be concluded that the extent of asbestos has been further defined and there may be localized hot spots of asbestos in the Lewis Pond area.

SECTION 5.0 REFERENCES

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TABLES

Table 3-1. Asbestos Sampling Results⁽¹⁾

Blackburn & Union Privileges Superfund Site
Walpole, Massachusetts

Sample Location	Sample Depth (feet bsg or bss)	Sample ID ⁽²⁾	Result (%) ⁽³⁾
Background Soil Samples			
BKGD-01	0-0.5	BKGD-01-ME-0-0.5	ND
BKGD-01	0.5-2.5	BKGD-01-ME-0.5-2.5	ND
BKGD-02	0-0.5	BKGD-02-ME-0-0.5	ND
BKGD-02	0.5-2.5	BKGD-02-ME-0.5-2.5	ND
BKGD-03	0-0.5	BKGD-03-ME-0-0.5	ND
BKGD-03	0.5-2.5	BKGD-03-ME-0.5-2.5	ND
Floodplain Samples			
FPS-01R	0-1.0	FPS-01R-ME	<0.25
FPS-02R	0-1.0	FPS-02R-ME	<0.25
FPS-03R	0-1.0	FPS-03R-ME	<0.25
FPS-04R	0-1.0	FPS-04R-ME	ND
FPS-05R	0-1.0	FPS-05R-ME	ND
FPS-06R	0-1.0	FPS-06R-ME	<0.25
FPS-07R	0-1.0	FPS-07R-ME	ND
FPS-08R	0-1.0	FPS-08R-ME	<0.25
FPS-09R	0-1.0	FPS-09R-ME	ND
FPS-10R	0-1.0	FPS-10R-ME	ND
FPS-11R	0-1.0	FPS-11R-ME	ND
FPS-12R	0-1.0	FPS-12R-ME	ND
FPS-13	0-1.0	FPS-13-ME	ND
FPS-14	0-1.0	FPS-14-ME	0.75
FPS-15	0-1.0	FPS-15-ME	ND
FPS-16	0-1.0	FPS-16-ME	ND
FPS-17	0-1.0	FPS-17-ME	ND
FPS-18	0-1.0	FPS-18-ME	ND
FPS-19	0-1.0	FPS-19-ME	ND
FPS-20	0-1.0	FPS-20-ME	ND
FPS-21	0-1.0	FPS-21-ME	ND
FPS-22	0-1.0	FPS-22-ME	ND
Lewis Pond Sediment Samples			
LP-11R	0-0.5	LP-11R-ME	ND
LP-12R	0-0.5	LP-12R-ME	ND
LP-13R	0-0.5	LP-13R-ME	ND
LP-14R	0-0.5	LP-14R-ME	ND
LP-15R	0-0.5	LP-15R-ME	<0.25
LP-16R	0-0.5	LP-16R-ME	<0.25
LP-17R	0-0.5	LP-17R-ME	ND
LP-18R	0-0.5	LP-18R-ME	<0.25
LP-19R	0-0.5	LP-19R-ME	ND
LP-20R	0-0.5	LP-20R-ME	<0.25
LP-21R	0-0.5	LP-21R-ME	ND
LP-22R	0-0.5	LP-22R-ME	ND
LP-23R	0-0.5	LP-23R-ME	0.25
LP-24R	0-0.5	LP-24R-ME	0.25
LP-25	0-0.5	LP-25-ME	<0.25
LP-26R	0-0.5	LP-26R-ME	<0.25
LP-26R	0-0.5	LP-26R-MECS	<0.25
LP-27	0-0.5	LP-27-ME	<0.25

Table 3-1. Asbestos Sampling Results⁽¹⁾

Blackburn & Union Privileges Superfund Site
Walpole, Massachusetts

Sample Location	Sample Depth (feet bsg or bss)	Sample ID ⁽²⁾	Result (%) ⁽³⁾
ND-25	0-0.5	ND-25-ME	ND
ND-26	0-0.5	ND-26-ME	ND
ND-27	0-0.5	ND-27-ME	ND
ND-28	0-0.5	ND-28-ME	ND
ND-29	0-0.5	ND-29-ME	ND
ND-30	0-0.5	ND-30-ME	ND
ND-37R	0-0.5	ND-37R-ME	ND
ND-37R	0-0.5	ND-37R-MECS	ND
ND-39	0-0.5	ND-39-ME	<0.25
ND-41	0-0.5	ND-41-ME	<0.25
ND-42	0-0.5	ND-42-ME	ND
Off-Facility Soil Samples			
104R	0-0.5	SO-33-120-104R-ME-0-0.5	ND
104R	0.5-2.5	SO-33-120-104R-ME-0.5-2.5	ND
D-0.5R	0-0.5	SO-33-120-D0.5R-ME-0-0.5	ND
D-0.5R	0.5-2.5	SO-33-120-D0.5R-ME-0.5-2.5	ND
F-0.5R	0-0.5	SO-33-120-F0.5R-ME-0-0.5	<0.25
F-0.5R	0.5-2.5	SO-33-120-F0.5R-ME-0.5-2.5	ND
HA-0.5R	0-0.5	SO-33-120-HA0.5R-ME-0-0.5	ND
HA-0.5R	0.5-2.5	SO-33-120-HA0.5R-ME-0.5-2.5	ND
KA-0.5R	0-0.5	SO-33-120-KA0.5R-ME-0-0.5	ND
KA-0.5R	0.5-2.5	SO-33-120-KA0.5R-ME-0.5-2.5	ND
M-0.5R	0-0.5	SO-33-120-M0.5R-ME-0-0.5	ND
M-0.5R	0.5-2.5	SO-33-120-M0.5R-ME-0.5-2.5	ND
M-5.5	0-0.5	SO-33-126-M5.5-ME-0-0.5	0.25
M-5.5	0.5-2	SO-33-126-M5.5-ME-0.5-2	0.50
M-5.5	2-4	SO-33-126-M5.5-ME-2-4	0.75
M-5.5	4-7	SO-33-126-M5.5-ME-4-7	ND
On-Facility Soil Samples			
R-5R	0-0.5	SO-33-126-R5R-ME-0-0.5	ND
R-5R	0.5-2	SO-33-126-R5R-ME-0.5-2	ND
R-5R	2-4	SO-33-126-R5R-ME-2-4	ND
R-5R	4-7	SO-33-126-R5R-ME-4-7	ND
I-2.5	0-0.5	SO-33-127-I2.5-ME-0-0.5	ND
I-2.5	0.5-4	SO-33-127-I2.5-ME-0.5-4	ND
I-2.5	4-5	SO-33-127-I2.5-ME-4-5	ND
I-2.5	0-0.5	SO-33-127-I2.5-MECS-0-0.5	ND
I-3.5	0.5-4	SO-33-127-I3.5-ME-0.5-4	1.75
I-3.5	0-0.5	SO-33-127-I3.5-ME-0-0.5	<0.25
I-3.5	4-6	SO-33-127-I3.5-ME-4-6	<0.25
I-3.5	6-9	SO-33-127-I3.5-ME-6-9	ND
J-2	0-0.5	SO-33-127-J2-ME-0-0.5	ND
J-2	0.5-4	SO-33-127-J2-ME-0.5-4	ND
J-2	4-7	SO-33-127-J2-ME-4-7	ND
L-3R	0-0.5	SO-33-127-L3R-ME-0-0.5	ND
L-3R	0.5-2	SO-33-127-L3R-ME-0.5-2	ND
L-3R	2-4	SO-33-127-L3R-ME-2-4	ND
L-3R	4-6	SO-33-127-L3R-ME-4-6	ND
L-3R	6-9	SO-33-127-L3R-ME-6-9	ND
L-3R	0-0.5	SO-33-127-L3R-MECS-0-0.5	ND
L-5.5	0-0.5	SO-33-127-L5.5-ME-0-0.5	ND
L-5.5	0.5-2	SO-33-127-L5.5-ME-0.5-2	ND
L-5.5	2-4	SO-33-127-L5.5-ME-2-4	ND

Table 3-1. Asbestos Sampling Results⁽¹⁾

**Blackburn & Union Privileges Superfund Site
Walpole, Massachusetts**

Sample Location	Sample Depth (feet bsg or bss)	Sample ID⁽²⁾	Result (%)⁽³⁾
MA-2.5	0-0.5	SO-33-127-MA2.5-ME-0-0.5	ND
MA-2.5	0.5-2	SO-33-127-MA2.5-ME-0.5-2	ND
MA-2.5	2-4	SO-33-127-MA2.5-ME-2-4	ND
MA-2.5	4-8	SO-33-127-MA2.5-ME-4-8	<0.25
MA-2.5	8-12	SO-33-127-MA2.5-ME-8-12	ND
11	0-0.5	SO-33-129-11-ME-0-0.5	ND
12R	0.5-2.5	SO-33-129-12R-ME-0.5-2.5	ND
13	0-0.5	SO-33-129-13-ME-0-0.5	ND
16R	0.5-2.5	SO-33-129-16R-ME-0.5-2.5	ND
18	0-0.5	SO-33-129-18-ME-0-0.5	ND
19R	0-0.5	SO-33-129-19R-ME-0-0.5	ND
2R	0-0.5	SO-33-129-2R-ME-0-0.5	ND
2R	0-0.5	SO-33-129-2R-MECS-0-0.5	ND
K-16R	0-0.5	SO-33-174-K16R-ME-0-0.5	ND
K-16R	0.5-2	SO-33-174-K16R-ME-0.5-2	ND
M-10	0-0.5	SO-33-174-M10-ME-0-0.5	ND
M-10	0.5-2	SO-33-174-M10-ME-0.5-2	ND
M-10	2-4	SO-33-174-M10-ME-2-4	ND
O-10R	0-0.5	SO-33-174-O10R-ME-0-0.5	ND
O-10R	0.5-2	SO-33-174-O10R-ME-0.5-2	ND
O-10R	0.5-2	SO-33-174-O10R-MECS-0.5-2	ND
P-9	0-0.5	SO-33-174-P9-ME-0-0.5	ND
P-9	0.5-2	SO-33-174-P9-ME-0.5-2	ND
Q-7R	0-0.5	SO-33-174-Q7R-ME-0-0.5	ND
Q-7R	0.5-2	SO-33-174-Q7R-ME-0.5-2	ND
ME-1	0-0.5	SO-ME1-ME-0-0.5	ND
ME-1	0-0.5	SO-ME1-MECS-0-0.5	ND
ME-1	0.5-2	SO-ME1-ME-0.5-2	ND
ME-1	10-11	SO-ME1-ME-10-11	ND
ME-1	2-4	SO-ME1-ME-2-4	ND
ME-1	4-6	SO-ME1-ME-4-6	ND
ME-1	6-8	SO-ME1-ME-6-8	ND
ME-1	8-10	SO-ME1-ME-8-10	<0.25
ME-1	0-0.5	SO-ME1-MECS-0-0.5	ND

ND - Not detected

BOLD - detected concentration

⁽¹⁾ Asbestos Analysis by PLM 400 Point Count.

⁽²⁾ Sample ID, as identified in laboratory results provided in Appendix G.

⁽³⁾ All asbestos reported was identified as chrysotile.

bsg - below surface grade

bss - below sediment surface

<0.25 - Asbestos was visually observed in sample by the laboratory, but was not detected above the detection limit of 0.25%.

APPENDICES

APPENDIX A

GPS Survey Data

**GPS Coordinates of Soil, Sediment, and Floodplain Soil Sampling Locations
M&E July 2006 Asbestos Sampling Event - Blackburn & Union Privileges**

(The survey was conducted in accordance with the following standards: horizontal controls are
Massachusetts State Plane coordinates NAD (North American Datum of 1983), zone 2001, in feet.)

ID	Northing	Easting	Notes
On-facility Soil Borings			
I-2.5	2875560.585	723885.317	
I-3.5	2875578.014	723838.838	
J-2	2875588.180	723931.794	
K-16R	2875879.832	723290.403	
L-3R	2875704.266	723879.218	
L-5.5	2875737.782	723788.002	
M-10	2875887.385	723599.185	
M-5.5	2875782.808	723801.075	
MA-2.5	2875775.545	723952.129	
ME-1	2875749.166	723848.587	
O-10R	2875971.272	723652.077	
O-4.5	2875896.099	723895.483	
P-9	2876012.294	723696.500	
Q-7R	2876034.859	723814.290	
R-5R	2876055.544	723915.297	
Off-facility Soil Samples			
104R	2875154.572	723843.440	
HA-0.5R	2875472.509	723977.786	
KA-0.5R	2875557.419	724002.357	
M-0.5R	2875655.214	724043.282	
2R	2875314.013	723925.771	
11	2875044.241	723923.080	
12R	2875093.200	723917.229	
13	2875122.674	723949.225	
16R	2875215.262	724043.082	
18	2875150.268	724014.585	
19R	2875178.421	724036.495	
D-0.5R	2875284.455	723890.064	
F-0.5R	2875394.285	723940.109	
Background Soil Samples			
BKGD-01-ME	2869748.532	724556.708	
BKGD-02-ME	2869935.820	724656.128	
BKGD-03-ME	2870098.216	724736.827	
Lewis Pond Sediments			
LP-01	2876880.860	721843.490	SHA sample location only
LP-02	2876864.360	721871.090	SHA sample location only
LP-03	2876860.190	721899.760	SHA sample location only
LP-04	2876850.190	721927.400	SHA sample location only
LP-05	2877270.500	722219.590	SHA sample location only
LP-06	2877269.910	722248.840	SHA sample location only
LP-07	2877263.470	722295.970	SHA sample location only
LP-08	2877810.320	722367.680	SHA sample location only
LP-09	2877815.910	722377.700	SHA sample location only
LP-10	2877821.780	722384.570	SHA sample location only
LP-11R-ME	2876550.062	721780.993	
LP-12R-ME	2876668.934	721882.639	
LP-13R-ME	2876580.465	721814.095	
LP-14R-ME	2876959.556	721911.022	
LP-15R-ME	2876943.475	721950.810	
LP-16R-ME	2877005.273	722020.256	
LP-17R-ME	2876757.040	721957.292	

**GPS Coordinates of Soil, Sediment, and Floodplain Soil Sampling Locations
M&E July 2006 Asbestos Sampling Event - Blackburn & Union Privileges**

(The survey was conducted in accordance with the following standards: horizontal controls are
Massachusetts State Plane coordinates NAD (North American Datum of 1983), zone 2001, in feet.)

ID	Northing	Easting	Notes
LP-18R-ME	2876929.128	722048.815	
LP-19R-ME	2877043.263	722094.558	
LP-20R-ME	2877068.524	722126.321	
LP-21R-ME	2877180.784	722228.249	
LP-22R-ME	2877151.621	722256.263	
LP-23R-ME	2877413.171	722214.978	
LP-24R-ME	2877205.797	722323.166	
LP-25-ME	2877576.575	722296.343	
LP-26R-ME	2877620.552	722376.544	
LP-27-ME	2877559.146	722368.966	
ND-25-ME	2876486.709	721998.765	
ND-26-ME	2876494.782	721932.993	
ND-27-ME	2876515.582	721863.507	
ND-28-ME	2876540.279	721812.094	
ND-29-ME	2876589.257	721757.015	
ND-30-ME	2876660.666	721758.346	
ND-37R-ME	2877393.405	722232.869	
ND-39-ME	2877495.239	722171.434	
ND-41-ME	2877655.007	722352.989	
ND-42-ME	2877735.727	722449.419	
Floodplain Samples			
FP-08	2876739.182	721979.479	SHA sample location only
FP-10	2877472.002	722269.872	SHA sample location only
FPS-01R-ME	2876941.574	721869.002	
FPS-02R-ME	2876943.696	721866.815	
FPS-03R-ME	2877192.485	722119.695	
FPS-04R-ME	2877268.222	722186.045	
FPS-05R-ME	2877709.304	722392.857	
FPS-06R-ME	2877480.304	722300.370	
FPS-07R-ME	2877493.139	722288.677	
FPS-08R-ME	2877170.540	722329.551	
FPS-09R-ME	2877703.677	722390.253	
FPS-10R-ME	2877315.136	722339.646	
FPS-11R-ME	2877313.911	722342.198	
FPS-12R-ME	2877170.601	722325.139	
FPS-13-ME	2877177.066	722043.890	
FPS-14-ME	2877162.052	722046.695	
FPS-15-ME	2877158.241	722053.006	
FPS-16-ME	2877212.992	722113.835	
FPS-17-ME	2877199.205	722117.220	
FPS-18-ME	2877326.210	722153.173	
FPS-19-ME	2877326.135	722158.328	
FPS-20-ME	2877329.803	722173.507	
FPS-21-ME	2877273.582	722162.010	
FPS-22-ME	2877271.231	722173.157	

APPENDIX B

Photographs from the Site Investigation



Hand augering at off-facility soil sampling location F-0.5R



Soil boring M-5.5 - Measuring off building.



Soil boring L-5.5 - Measuring off building.



Soil boring I-3.5 - Measuring off building.



Soil boring L-3R looking southeast.



Soil boring I-3.5 – Geoprobng



Soil boring L-3R - Measuring off building



Soil boring ME-1 - Measuring off building



Soil boring I-2.5 - Measuring off building



Soil boring MA-2.5 looking NE



Soil boring J-2 - Measuring off building



Soil boring MA-2.5 - Measuring off building.

APPENDIX C

Geophysical Survey Report

Hager GeoScience Inc.



596 Main Street Woburn, MA 01801

Tel 781-935-8111 Fax 781-935-2717

July 28th, 2006
File 200654

Metcalf & Eddy, Inc.
Attention: Ms. Laurie O'Connor
701 Edgewater Drive
Wakefield, MA 01880

Re: Boring Clearance
Blackburn & Union Superfund Site
South Street
Walpole, MA

Dear Ms. O'Connor:

Introduction. This letter reports the results of a geophysical survey performed by Hager GeoScience, Inc. (HGI) for Metcalf and Eddy Inc. (M&E) at the above-referenced site. The objective of the survey was to locate possible obstructing utilities or buried debris at thirteen (13) proposed boring locations: H-0.5R, HA-0.5, I-2.5, I-3.5, J-2, KA-0.5, L-3R, L-5.5, M-5.5, MA-2.5, ME-1, P-9, and R-5. Work was coordinated with M&E personnel, who designated the proposed boring locations and marked them on the ground with white paint prior to HGI's arrival on site. The boring clearance was to be performed using ground penetrating radar (GPR) and a Subsite utility locator.

Equipment and Procedure. HGI personnel performed the work on July 17th and 18th, 2006. A 10x10-foot grid was created around each marked boring location using spray paint and fiberglass tapes. A GSSI SIR System 2000 with 400-MHz antenna and survey wheel was used to gather GPR data within this grid along traverses spaced 1 foot apart in two perpendicular directions, followed by two diagonals between opposite corners.

The Subsite utility locator was used as a complementary method to the GPR to trace out utilities inside and near the grid. Appendices A and B provide descriptions of the methods and their limitations.

Results. The location of each proposed boring was either designated as safe for drilling or an alternate location marked on the ground with white paint prior to leaving the site. All

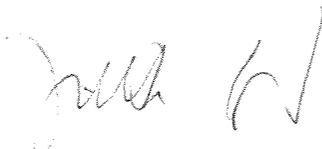
Boring Clearance
Blackburn & Union Superfund Site
South Street
Walpole, Massachusetts

File 200654
Page 2

cleared borings were labeled with the HGI name. When alternate locations were selected, the original M&E marks were crossed out with white paint. As requested by M&E, we have placed the HGI boring clearance grids in their orientations and approximate locations on the M&E AutoCAD base map you provided (Plate 1).

Please contact us at (781) 935-8111 if you have any questions or need additional information.

Respectfully yours,
HAGER GEOSCIENCE, INC.



Jutta Hager, Ph.D.
President

Hager GeoScience, Inc.

APPENDIX A: GROUND PENETRATING RADAR

DESCRIPTION OF THE METHOD

The principle of ground penetrating radar (GPR) is the same as that used by police radar, except that GPR transmits electromagnetic energy into the ground. The energy is reflected back to the surface from interfaces between materials with contrasting electrical (dielectric and conductivity) and physical properties. The greater the contrast between two materials in the subsurface, the stronger the reflection observed on the GPR record. The depth of GPR signal penetration depends on the properties of the subsurface materials and the frequency of the antenna used to collect radar data. The lower the antenna frequency, the greater the signal penetration, but the lower the signal resolution.

Data Collection. GPR data are collected using a Geophysical Survey Systems (GSSI) SIR 2000/3000 ground penetrating radar system. GPR data are digitally recorded on the internal hard drive, or flash-memory of the system. System controls allow the GPR operator to filter out noise, attributed to both coupling noise, caused by conductive soil conditions, spurious noise caused by local EMF fields and internal system noise. For shallow surveys, we use 400-, 200-, 100- or 1500-megahertz (MHz) antennas. For deeper penetration, we use lower frequency antennas ranging from 200 MHz to 15 MHz, depending on the anticipated depth of the target(s) and the degree of signal penetration. All of these antenna configurations can collect data in continuous mode or as discrete point measurements using signal-stacking techniques. Since there is a tradeoff between signal penetration and resolution, test lines are run using different antennas at several frequencies and then the highest frequency antenna that produces the highest quality data is used. In some cases, data are collected with several antenna frequencies.

The horizontal scale of the GPR record shows distance along the survey traverse. In the continuous data collection mode, the horizontal scale on each GPR record is determined by the antenna speed along the surface. When a survey wheel is used, the GPR system records data with a fixed number of traces per unit distance. The GPR record is automatically marked at specified distance intervals along the survey line. The velocity of the transmitted signal and the recording time window or range determines the vertical scale of the radar record. The recording time interval, or range, represents the maximum two-way travel time in which data are recorded. The conversion of two-way travel time to depth depends on the propagation velocity of the GPR signal, which is site specific. When little or no information is available about the makeup of subsurface materials, we estimate propagation velocities from handbook values and experience at similar sites or by CDP velocity surveys with a bi-static antenna.

Data Processing. After completion of data collection, the GPR data are transferred to a PC for review and processing using RADAN NT for Windows™ software. When appropriate, we prepare 3D models of GPR data, which can be sliced in the X, Y, and Z directions.

The size, shape, and amplitude of GPR reflections are used to interpret GPR data. Objects such as metallic UST's and utilities produce reflections with high amplitude and distinctive hyperbolic

shapes. Clay, concrete pipes boulders and other in-situ features may produce radar signatures of similar shape but lower amplitude. The boundaries between saturated and unsaturated materials such as sand and clay, bedrock and overburden generally also produce strong reflections.

LIMITATIONS OF THE METHOD

GPR signal penetration is site-specific. It is determined by the dielectric properties of local soil and fill materials. GPR signals propagate well in resistive materials such as sand and gravel; however, soils containing clay, ash- or cinder-laden fill or fill saturated with brackish or otherwise electrically conductive groundwater cause GPR signal attenuation and loss of target resolution. Concrete containing rebar or wire mesh also inhibits signal penetration.

The interpreted depths of objects detected using GPR are based on on-site calibration, handbook values, and/or estimated GPR signal propagation velocities from similar sites. GPR velocities and depth estimates may vary if the medium under investigation or soil water content is not uniform throughout the site.

Utilities are interpreted on the basis of reflections of similar size and depth that exhibit a linear trend; however GPR cannot unambiguously determine that all such reflectors are related. Fiberglass UST's, or utilities composed of plastic or clay may be difficult to detect if situated in soils with similar electromagnetic properties, or if situated in fill with other reflecting targets which generate "clutter" or signal scattering and thus obscure other deeper reflectors. Objects buried beneath reinforced concrete pads or slabs may also be difficult, but possible, to detect.

Changes in the speed at which the GPR antenna is moved along the surface causes slight variations in the horizontal scale of the recorded traverse. Distance interpolation may be performed to minimize the error in interpreted object positions. The variation in the horizontal scale of the GPR record may be controlled, to a certain extent, with a distance encoder or Survey Wheel. The GPR antenna produces a cone-shaped signal pattern that emanates approximately 45 degrees from horizontal front and back of the antenna. Therefore, buried objects may be detected before the antenna is located directly over them. GPR anomalies may appear larger than actual target dimensions.

GPR interpretation is more subjective than other geophysical methods. The interpretive method is based on the identification of reflection patterns that do not uniquely identify a subsurface target. Borings, test pits, site utility plans and other ground-truth are recommended to verify the interpreted GPR results.

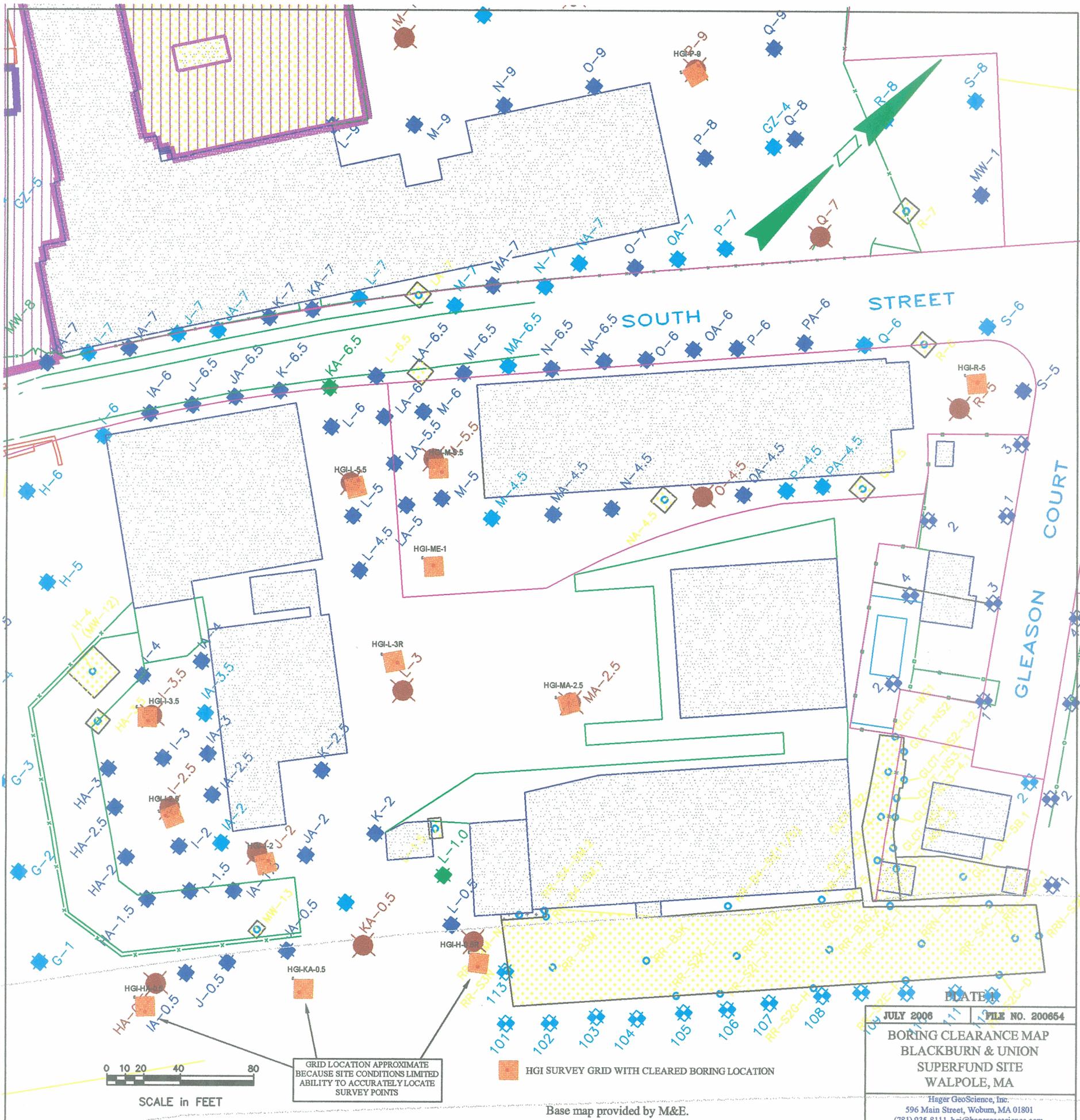
APPENDIX B: ELECTROMAGNETIC UTILITY LOCATION

DESCRIPTION OF THE METHOD

HGI uses either a Schonstedt MAC-51B or a SUBSITE 950 R/T for utility location. The locator is a two-part system using both a signal transmitter and locator. Using the transmitter, a variety of signals can be conducted or induced onto exposed portions of conduits and piping; these signals are used to trace the utilities using the locator. Alternatively, where there are no convenient exposures, the signals can be induced onto the lines by placing the transmitter on the ground above the suspected utility location.

LIMITATIONS OF THE METHOD

The location of subsurface objects, pipes, and utilities is dependent on the recognition of physical phenomena at the ground surface. These phenomena can be electromagnetic waves or magnetic fields that are interpreted as being caused by subsurface objects. These waves or fields, however, can be attenuated and/or distorted by a number of factors including soil moisture, steel reinforced concrete, and proximity to other surface and subsurface facilities.



0 10 20 40 80
SCALE in FEET

GRID LOCATION APPROXIMATE
BECAUSE SITE CONDITIONS LIMITED
ABILITY TO ACCURATELY LOCATE
SURVEY POINTS

HGI SURVEY GRID WITH CLEARED BORING LOCATION

Base map provided by M&E.

JULY 2006 FILE NO. 200654
BORING CLEARANCE MAP
BLACKBURN & UNION
SUPERFUND SITE
WALPOLE, MA
Hager GeoScience, Inc.
596 Main Street, Woburn, MA 01801
(781) 935-8111 hgi@hagergeoscience.com

APPENDIX D

Field Sampling Documentation

APPENDIX D.1

Field Sampling Logbook

Location Walpole MA Date 7/5/06
 Project / Client USEPA

0800 L.O'Connor meets
 Dave Lederer (CEPA
 RPM) onsite. Will
 meet w/ president
 of Cosmec to go
 over ~~to~~ sampling +
 geophysical activities
 that will be occurring
 onsite.

Bill (pres. of Cosmec)

not in yet. DL + L.O.

mark out borings
 on Cosmec side

D.L. wants to add a
 location near L-3 for
 a potential activity-
 based sampling location.

We added another
 location ME-1.

L.O. finding locations
 w/ a GPS + coordinates

VP

Location Walpole, MA Date 7/5/06 3
 Project / Client USEPA

pulled off map w/GIS.

Get some locations
 along the RR tracks
 marked. It is
 very buggy.

We don't have access to
 fenced-in area on
 Cosmec side of property

LO + DL meet w/ Bill

he says that the
 supervisor of the plant
 has a key to that

property, but is on
 vacation until next
 week. Show Bill locations

L.O + DL also don't have
 a key to Mill side of
 property.

Bill informs LO that if

VP

Location Walpole MA Date 7/5/06
 Project / Client USEPA

we need any cars moved, let him know.

DL tells LO that he will try to get the key to the mill side of property from SHA. If can't get, cut lock/chain. EPA does not yet have access to residential lots around Lewis Pond.

some locations moved, as designated w/ an "R" LO decides that she will have to come back 7/7/06 to mark more locations

~10:30 LO + DL depart site.

5

Location Walpole MA Date 7/7/06⁵
 Project / Client USEPA

07:30 L. O'lonnov + S. Czarniecki arrive on site.

Mark locations on mill side of property.

~~cut~~ Cut chain to be able to insert MTE lock.

GO TO RR tracks on Cosmec side + locate locations w/ GPS. record location ~~of~~ w/ a GPS of locations that moved.

Still can not get into chain linked fenced area of Cosmec. 0-4.5 is obstructed by

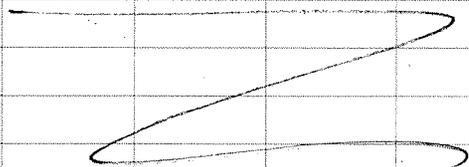
6

Location Walpole MA Date 7/7/06
 Project / Client USEPA

a lot of debris +
 location is under
 water (is it was
 in this state on 7/5/06
 also) On 7/5/06 Bill
 told DL + LO that
 debris would be cleared
 and drain unsilted
 the following week.

LO + SCZ talk about
 where port a potty +
 storage containers will
 go.

~
 11:00 LO + SCZ depart site.



W

Location Walpole MA Date 7/11/06⁷
 Project / Client USEPA

^{SCZ}
 7:15 arrived on site

Performed grass clearing

9:35 Port-a-potty arrived

Storage box did not
 show up - no record
 of Laurie calling

Left site ~ 11:00

Marked locations J-2, I-2.5,
 and I-3.5 on the Cosmec
 property SC.

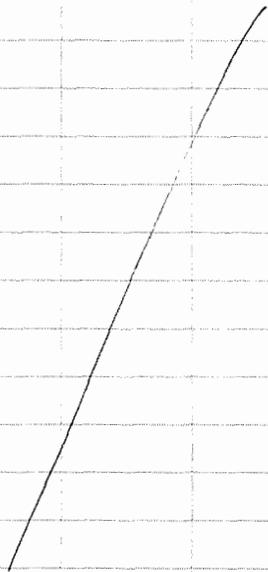
SC

Location Walpole, MA Date 7/13/06
 Project / Client USEPA

6:30 SCZ arrived on site

Storage container
 arrived at 11:00

Left site at 11:30



Location Walpole, MA Date 7/17/06⁹
 Project / Client USEPA

0750 L. O'Lonnor +
 S. Czarniecki arrive
 on site.

Yellow jacket nest
 was built in handle
 of storage container.

S. Czarniecki got
 stung.

S. Cz - OK, not
 allergic

S. Cz goes out to
 get wasp/bee killer.

L.O. meets w/ Hager
 Geoscience - Josh +
 Alex. Shows them the
 locations - ME-1
 added. would also
 like to add P-9 (on
 mill side of prop) since
 Dig safe revealed there

Location Walpole, MA Date 7/17/06
 Project / Client USEPA

Is a water line near there. LO told Hagen they could drop locations along RR tracks, if need be because we could do those w/ hand auger

J. Meunier arrives onsite

Decon equipment, organize equipment in storage container, get bottles together, calibrate equipment (including asbestos air monitors)

Collect samples from lot 33-129 - Shaffer property SE of RR tracks.

W

Location Walpole, MA Date 7/17/06¹¹
 Project / Client USEPA

1st location -
 SO-33-129-13-ME-0-0.5
 Soil Lot camp depth (ft)

Wear half face respirator - ~~also~~ extremely hot + uncomfortable - All have trouble breathing.

All other locations wet soils (except #12 which was wetted w/decon sprayer) so level C unnecessary but wear personal air monitors.
 SIZ located pts. w/GPS
 12, 16 & 19 relocated
 (12R, 16R, +19R) W

Location Walpole MA Date 7/17/06
 Project / Client USEPA

17:00 Complete sampling
 + head back to
 staging area.
 L. O'Connor talks to
 Hagen - they got 7
 done today - have
 6 (or 7) left for
 tomorrow. Their truck
 broke down - will have
 it towed. will not
 affect schedule.

Decon equipment @
 staging area. Also
 document ~~the~~ air monitor
 info. Will not submit
 cartridges (3) for analysis
 today.

All depart site @ 17:30.
~~Go to Lewis Pond to do~~
~~work @ Access~~

CO

Location Walpole, MA Date 7/18/06¹³
 Project / Client USEPA

6:30 L. O'Connor, S.
 Czarniecki + J. Munnier
 arrive onsite.

Get bottles together, get
 equipment ready +
 calibrate personal
 air monitors.

will sample sediment
 @ Lewis Pond today.

Also, D. Lederer will be
 coming onsite to stake
 locations for flood plain
 sampling

Mob to Lewis Pond. We
 will have to use boat
 for sampling. J. Munnier
 + S. Czarniecki are in
 boat - L. O'Connor on shore.

W

Location Walpole, MA Date 7/18/06

Project / Client USEPA

9:10 Dave Lederer on site.

LO + DL go to residences to look at where ^{the flood plain} samples will be collected.

L.O'Connor maintains ~~US~~ S. Garniecki communication w/ samplers via walkie-talkie.

S. Garniecki radios to say that GPS battery is dead. L.O'Connor goes back to trailer for charged - will also get a different GPS unit (from US Environmental) since this GPS unit is having problems.

12:00 DL departs site

W

Location Walpole MA Date 7/18/06

Project / Client USEPA

SC2 + JCM continue to sample. L.O'Connor serves as on-shore observer.

L.O'Connor talks to Mark Zwick of TDS about drilling/geo probe to occur ~~at~~ on Thursday.

L.O'Connor goes back to storage box to package samples with Forms 2 Lite

J. Meunier + S.G2 finish sampling - a total of 8 sediment samples collected from Lewis Pond. Sprayed off boat + waders before leaving Lewis Pond.

W

16

Location Walpole, MA Date 7/18/06
 Project / Client USEPA

JCM + SCZ go back to storage box. ~~Calibrate~~^{Cal} check the personal air monitor pumps + LO fills out chain of custody for them.

4 samples (cartridges) to be submitted for PCM analysis (SCZ + LO from 7/17/06 [JCM pump broke] + JCM / SCZ from 7/18/06 [LO did not sample])

17:00 All depart site.

LO + SCZ to drop off samples at Hub Testing (air) in Waltham + EMSL (soil) in Woburn.

LO

Location Walpole, MA Date 7/19/06 17
 Project / Client USEPA

06:30 L. O'Connor, S. Czarniecki + J. Meunier arrive onsite

Get equipment together pack drinks on ice and cal check the personal air monitor pumps.

SCZ + JCM will sample sediments at Lewis Pond again today

SCZ + JCM mob to Lewis Pond. L. O'Connor stays at trailer to add Floodplain samples requested by D. Lederer to FZL.

18

Location Walpole MA Date 7/19/06
 Project / Client USEPA

10:45 L. O'Connor receives a call from D. Lederer. He says that he got a call from owner of Riverview (Walter Daniel) who is going to give us access to his property. L. O'Connor told DL that she can pick up the signed letter from W. Daniel.

~~up to~~

11:15 L. O'Connor calls W. Daniel (508-668-0975) + shortly thereafter goes to his house to pick up letter. W. Daniel is concerned about drainage from another lot wrecking his lawn. says he contacted Robin (he thinks) previously about it ^{2 yrs ago} and

Location Walpole MA Date 7/19/06¹⁹
 Project / Client USEPA

did not hear back. L. O'Connor said she will pass his concerns onto Robin Chapell of the Town of Walpole.

11:50 L. O'Connor to Lewis Pond boat ramp area. SCZ + JCM eating lunch. They collected 6 samples so far. SCZ reiterates his concern that the river has changed, specifically near the LP-17 through 20 transect. L. O'Connor tells SCZ to collect LP-19 (LP-20 already collected). We will try to access LP-17 + 18

Location Walpole MA Date 7/19/06
 Project / Client USEPA.

with waders by land.

1400 L.O'Connor spoke to D. Dwight who instructed L.O'Connor not to call Robin re: drainage on Walter Daniel's lawn. L.O'Connor called w. Daniel to inform him that we can not help him with ~~it~~ and he should call the town directly.

SCz + JCM back to storage box
 10 sediment samples collected today.

L.O'Connor does FZL. JCM/SCz
 Jenob.

All depart site @ 16:00. L.O/SCz
 to drop off samples @ ESML. J

Location Walpole MA Date 7/19/06
 Project / Client USEPA

0630 L.O'Connor, J. Meunier, +
 S. Czarniecki arrive onsite

7:00 Ebby Job of
 Hub Testing arrives onsite.
 Ebby will be doing perimeter
 air monitoring during
 Geoprobe activities.

Comeau
 0745 Shawn from TDS
 (Geoprobe) onsite.

Go to setup @ COSMEC
 Will sample @ 3 borings
 w/in chain link first on
 COSMEC.

photos of geophysical borings
 I-3.5 distance ³⁸ perpendicular to
 II-2.5 35.3' body
 J-2 17.9'

distance is for borings marked
 by tayer

22

Location Walpole MA Date 7/20/06
 Project / Client USEPA

personal air monitors

on @ 9:15 on @ 1304

off @ 11:40 off @ 1447

I-3.5

0-4' sleeve is half
void

will take 6" under
asphalt as 0-0.5'
sample. However,
rest of sleeve will be

0.5-4'

~~4-6'~~ and ~~to~~ 6-9'

logging logs generated for all
borings

I-2.5

0-4' sleeve = 2/3 recovery

0-0.5' with duplicate,

0.5-4', 4-5'

4 Perimeter air samples collected
pumps moved to appropriate
locations. W

Location Walpole MA Date 7/20/05²³
 Project / Client USEPA

J-2

0-4' sleeve - about 2/3
recovery

0-0.5' sample

0.5-4' sample

4-7' sample

Break for lunch

HA-0.5R

0-0.5' > samples

0.5-2.5' > samples

M-0.5R

0-0.5'

> samples

0.5-2.5'

KA-0.5R

0-0.5'

> samples

0.5-2.5'

Perimeter air samples used for
I-3.5, I-2.5, J-2 will also used
for KA-0.5R, M-0.5R, HA-0.5R W

24

Location Walpole, MA Date 7/20/06
 Project / Client USEPA

L3R			
0-0.5	+FD	4-6	samples
0.5-2		6-9	
2-4			

ME-1			
0-0.5 0-0.5	+FD	4-6	10-11
0.5-2		6-8	
2-4		8-10	

4 Perimeter air samples collected around L3R + ME-1. Locations moved according to wind direction.

L. O'Connor back to storage box to do F2L.

E. Job departs site @ 15:45
 S. Comeau departs site @ 16:10
 L. O'Connor, JCM, + SCZ depart @ 16:30. L + SCZ to FMSL to drop off samples. ω

Location Walpole, MA Date 7/21/06²⁵
 Project / Client USEPA

0630 L. O'Connor, J. Meunier, + S. Czarniecki arrive onsite.

0645 TDS (Shawn Comeau) onsite. Eddy Job of Hubtesting arrives onsite also.

Scoping will start at MA-FZ 2.5 on Cosmec side. SCZ cal checks the personal air pumps + calibrates the PID. Sample aliquots saved from yesterday from L3R + ME-1 where petroleum odor was noted.

Location Walpole, MA Date 7/21/06
 Project / Client USEPA

Weather: overcast,
 drizzly - v. light rain
 @ around 8:00

MA-2.5

geoprobe down to 8 ft -
 hit refusal - geoprobe to
 move over 1 ft and try again.
 2nd try - got down to
 12 ft.

very little recovery within
 the 4-8' + 8-12' sleeve -
 will need to sample over
 4-foot intervals for this
 (rather than 2)

Measuring locations

	Dist. from bldg.
M-5.5	23.5'
L-5.5	27'
* L-3R	34'

Location Walpole, MA Date 7/21/06
 Project / Client _____

* A lot of gas lines in the area.
 Measuring loc. (Continued)

~~ME-1~~
 ME-1 from corner
 45'

from bldg. L

MA-2.5 40'

Sampled
 M-5.5

Sampled

L-5.5

R-5R

see geologic
 logs + M&E
 chain of
 custody for
 samples.

Q-7R

P-9

O-10R

M-10

K-16R

While @ K-16R a neighbor
 came out to ask what was

Location Walpole MA Date 7/21/06
Project / Client USEPA

going on. L. O'Connor informed her that we were collecting one sample and would be done in less than 1 hour & sorry about the noise (of the Geoprobe). She said it was OK and was satisfied.

Mob back to ~~the~~ storage box.

Driller + Hubtesting departs site @ 15:00.

L. O'Connor, S. Garniecki + J. Munier depart site @ 16:15. LO + SCZ to EMSL then to office to strip off equipment.

W

Location Walpole MA Date 7/24/06²⁹
Project / Client USEPA

06:30 J. Munier, L. O'Connor + S. Garniecki arrive onsite.

Weather - 70°, sunny

Will sample sediments in Lewis Pond today.

JM + SCZ mob equip. (including boat) out to Lewis Pond. L. O'Connor helps mobilize, then goes to Walpole Town Forest to look at possible locations for background samples.

L. O'Connor talks to Dave Lederer and Bob Campbell (Mass DEP)

Location Walpole MA Date 7/24/06
 Project / Client USEPA

regarding the petroleum odor and sheen observed in some of the borings

Completed sediment sampling.

Collected 2 flood plain samples (near boat launch area) FPS-05R + FPS-09R.

Moved to collect soils @ 80-33-120-104R on Cosmec side of property along RR tracks. Sampled from 0-0.5' and 0.5 to 2.5' bgs.

L. O'Connor does FZL + pack up samples.

16:00 All depart site. W + S to EMSL.

Location Walpole MA Date 7/25/06³¹
 Project / Client USEPA

06:30 L. O'Connor, J. Munnick + S. Czarniecki arrive onsite.

Will sample flood plain soils today.

S. Czarniecki cal checks the flows on the personal air sampling pumps.

Collect 18 flood plain samples - 2 remain for tomorrow to sample on Walter Davis' lot.

16:10 All depart site
 No samples dropped off today.

32

Location Walpole, MA Date 7/26/06
 Project / Client USEPA

06:30 L. O'Connor, J. Meunier,
 + S. Czarniecki arrive
 onsite

- Will complete flood plain
 samples (2 more) today.
- Also plan to collect
 background samples today
 in Walpole Town Forest
 (6 samples in 3 borings)
- Also 3 borings (6
 samples) left on
~~ess~~ Shaffer property
 near RR tracks

0710-

Mob to background location
 collect background samples

9:30 Mob to flood plain
 sample locations (walk)

Location Walpole MA Date 7/26/06³³
 Project / Client USEPA

Daniel's lot) Collect 2
 flood plain samples -
 FPS-01R-ME and
 FPS-02R-ME

10:15 Baystate portable
 Restrooms onsite to
 clean portable toilet.

10:45 Mob back to
 storage container

11:10 Mob mt to soil
 sampling locations
 along RR tracks.

11:40

Sushil Panydal onsite
 to pick up boat
 and other large
 equipment with the
 cargo van.

APPENDIX D.2

On-facility Soil Boring Logs

PROJECT : Blackburn & Union - Asbestos Investigation					SHEET		BORING NO.	
SITE LOCATION: South Street Walpole, MA					JOB NO.: 36800287.00003		1 of 1	
					LOCATION: N: E:		Elevation: Total Depth: 12'	
DRILL CONTRACTOR: TDS					M&E Staff J. MEUNIER		BEGUN : July 20, 2006	
DRILL RIG : Geoprobe					DRILLER : S. COMEAU		FINISHED : July 20, 2006	
Hole Size : 2"			Weather : ~ 70 F, cloudy			Ground Water Depth (BSG) : 6.3'		
Drilling Method : Direct push with 4' Macrocore sampler					Drilling Fluid :		Top of Rock (Depth/Elev.) : NA	
Depth (ft)	Sample Type/No.	N Value	Blow Count (per 6 in.) or Drilling Rate(min/ft)	Sample Recovery (decimal feet)	SAMPLE DESCRIPTION		PID (ppm)	STRATIGRAPHIC DESCRIPTION
0-4	S-1		NA	1.4'	0'-1.6': Void		-	
					1.6'-1.7': Asphalt			
					1.7'-2.5': Light brown very fine + fine SAND, some silt, trace-little medium-coarse sand and trace fine, medium and coarse gravel.			
					2.5'-2.6': Dark brown very fine SAND and silt, some unidentifiable material: paper-like, layered like mica (manmade), trace ash.			
					2.6'-3.2': Medium brown very fine SAND and silt; trace fine and medium sand.			
					3.2'-4': Gray-medium brown fine, medium, and coarse SAND, little silt, and trace fine-medium gravel.			
4-8	S-2		NA	3.5'	4'-4.5': Void			
					4.5-5.2': Gray-medium brown fine, medium, and coarse SAND, little silt, and trace fine-medium gravel.			
					5.2'-6.3': Gray-medium brown fine, medium, and coarse SAND, some very fine sand, trace silt.			
					6.3'-8': Gray-brown fine-medium SAND with some very fine sand, trace silt.			
8-12	S-3		NA	3.0'	8'-9': Void		-	
					9'-9.6': Gray-brown fine SAND with some very fine sand and trace silt, trace coarse sand.			
					9.6'-12': Gray-brown fine SAND transitioning to coarse sand and fine gravel; trace-little fine sand.			
SAMPLE TYPES:		trace	0 to 5%	SPT Resistance				Approve/Date
S3=3" SPLIT SPOON		few	5 to 10%					
SS=SPLIT SPOON		little	15 to 25%	Cohesionless Density: 0-4 Very Loose		Cohesive Consistency 0-2 Very Soft		
ST=SHELBY TUBE		some	30 to 45%	5-9 Loose	10-29 Med. Dense	3-4 Soft, 5-8 M/Stiff, 9-15 Stiff		
R=ROCK CORE		mostly	>50%	30-49 Dense	50+ Very Dense	16-30 V-Stiff, 31+ Hard		

PROJECT : Blackburn & Union - Asbestos Investigation					SHEET		BORING NO.		
SITE LOCATION: South Street Walpole, MA					JOB NO.: 36800287.00003		1 of 1		
					LOCATION: N: E:		Elevation: Total Depth: 12'		
DRILL CONTRACTOR : TDS					M&E Staff J. MEUNIER		BEGUN : July 20, 2006		
DRILL RIG : Geoprobe					DRILLER : S. COMEAU		FINISHED : July 20, 2006		
Hole Size : 2"		Weather : partly sunny ~75F				Ground Water Depth (BSG) : NA			
Drilling Method : Direct push with 4' Macrocore sampler					Drilling Fluid :		Top of Rock (Depth/Elev.) : NA		
Depth (ft)	Sample Type/No.	N Value	Blow Count (per 6 in.) or Drilling Rate(min/ft)	Sample Recovery (decimal feet)	SAMPLE DESCRIPTION	PID (ppm)	STRATIGRAPHIC DESCRIPTION		
0-2	S-1		NA	2.0'	0'-0.4': CLINKERS (pulverized and whole)				
					0.4'-2': Very fine SAND with some silt; transitions in color from medium brown to brown/orange to light tan/gray.				
2-4	S-2		NA	1.3'	2'-2.7': Void.				
					little silt, trace fine-medium gravel. The last 0.2' had more				
4-8	S-3		NA	3.6'	4'-5.2': Void				
					5.2'-8': Fine-medium light gray/tan SAND with trace coarse sand; dry and loose.				
8-12	S-4		NA	2.6'	8'-9.4': Void				
					9.4'-9.9': Fine-medium light gray/tan SAND with trace coarse sand; dry and loose.	120	<--9'-10'		
					9.9'-10.2': Very fine SAND and silt, trace fine, medium, and coarse sand, and fine gravel. Strong petroleum odor.				
					10.2'-12': Gray fine, medium, and coarse SAND with trace-little silt, trace fine-medium gravel. Last foot of macrocore liner has amber staining. Soil from 11'-12' glistened with an oily sheen	268	<--11'-12'		
SAMPLE TYPES:		trace 0 to 5%		SPT Resistance				Approve/Date	
S3=3" SPLIT SPOON		few 5 to 10%							
SS=SPLIT SPOON		little 15 to 25%							
ST=SHELBY TUBE		some 30 to 45%		Cohesionless Density: 0-4 Very Loose		Cohesive Consistency: 0-2 Very Soft			
R=ROCK CORE		mostly >50%		5-9 Loose 10-29 Med. Dense		3-4 Soft, 5-8 M/Stiff, 9-15 Stiff			
				30-49 Dense 50+ Very Dense		16-30 V-Stiff, 31+ Hard			

PROJECT : Blackburn & Union - Asbestos Investigation				SHEET		BORING NO.	
SITE LOCATION: South Street Walpole, MA				JOB NO.: 36800287.00003		1 of 1	
LOCATION: N: E:				Elevation:		Total Depth: 8'	
DRILL CONTRACTOR : TDS				M&E Staff J. MEUNIER		BEGUN : July 21, 2006	
DRILL RIG : Geoprobe				DRILLER : S. COMEAU		FINISHED : July 21, 2006	
Hole Size : 2"		Weather : Sunny, 80 F			Ground Water Depth (BSG) : NA		
Drilling Method : Direct push with 4' Macrocore sampler				Drilling Fluid :		Top of Rock (Depth/Elev.) : NA	
Depth (ft)	Sample Type/No.	N Value	Blow Count (per 6 in.) or Drilling Rate(min/ft)	Sample Recovery (decimal feet)	SAMPLE DESCRIPTION	PID (ppm)	STRATIGRAPHIC DESCRIPTION
0-2	S-1		NA	2.0'	0'-0.4': Asphalt		
					0.4'-2': Layered mix of lenses of coal, clinkers and brown fine sand with trace-little silt, trace medium-coarse sand.	0.4 2.2 0.0	<--0-0.5 <--0.5-2.0 <--2-4
2-4	S-2		NA	1.2'	2.0'-2.8': Void		
					2.8'-3.5': Layered mix of lenses of coal, clinkers and brown fine sand with trace-little silt, trace medium-coarse sand.		
					3.5'-4': Very fine-fine SAND with trace medium sand, trace-little silt. Brick reddish brown.		
4-8	S-3		NA		4'-5.6': Void		
					5.6'-6.7': Brick red-brown very fine-fine SAND with trace-little silt, fine-medium gravel, transitioning to tan very fine sand with little silt (transition in swirled varves)		ref at 8'
					6.7'-7.8': Tan very fine SAND with little silt, varved with brick-red brown of same material, trace medium-coarse gravel.	1.7	second attempt: refusal at 8' <--7.5-8
					7.8'-8': Tan/light brown fine, medium, and coarse SAND with some fine-medium gravel and trace silt.		
SAMPLE TYPES:		trace	0 to 5%	SPT Resistance			Approve/Date
S3=3" SPLIT SPOON		few	5 to 10%				
SS=SPLIT SPOON		little	15 to 25%				
ST=SHELBY TUBE		some	30 to 45%				
R=ROCK CORE		mostly	>50%	Cohesionless Density: 0-4 Very Loose 5-9 Loose 10-29 Med. Dense 30-49 Dense 50+ Very Dense		Cohesive Consistency: 0-2 Very Soft 3-4 Soft, 5-8 M/Stiff, 9-15 Stiff 16-30 V-Stiff, 31+ Hard	

PROJECT : Blackburn & Union - Asbestos Investigation					SHEET		BORING NO.			
SITE LOCATION: South Street Walpole, MA					JOB NO.: 36800287.00003		1 of 1		M-5.5	
					LOCATION: N: E:		Elevation:		Total Depth: 12	
DRILL CONTRACTOR : TDS					M&E Staff J. MEUNIER		BEGUN :		July 21, 2006	
DRILL RIG : Geoprobe					DRILLER : S. COMEAU		FINISHED :		July 21, 2006	
Hole Size : 2"			Weather : Sunny, 75 F				Ground Water Depth (BSG) : 11.5			
Drilling Method : Direct push with 4' Macrocore sampler					Drilling Fluid :		Top of Rock (Depth/Elev.) : NA			
Depth (ft)	Sample Type/No.	N Value	Blow Count (per 6 in.) or Drilling Rate(min/ft)	Sample Recovery (decimal feet)	SAMPLE DESCRIPTION		PID (ppm)	STRATIGRAPHIC DESCRIPTION		
0-2	S-1		NA	2.0'	0'-0.4': Asphalt					
					0.4'-1.4': Fine SAND with some silt and clinkers, trace ash.					
					Color varies from medium buff to red-brown to gray-dark brown.		0	<--0-0.5'		
					1.4'-1.9': COAL.		2.0	<--0.5-2'		
					1.9'-2.0': Tan fibrous material and red-brown very fine sand and silt		1.8	<--2-4'		
2-4	S-2		NA	1.0'	2'-3': Void					
					3'-3.6': COAL and clinkers; little of the tan fibrous material described above.					
					3.6'-4': Brick-red fine SAND with trace-little silt, trace medium sand, trace coal and clinkers.					
4-8	S-3		NA	3.2'	4'-4.8': Void.		4.5	<--4-7'		
					4.8'-7.2': Brick-red fine SAND with trace-little silt, trace medium sand, trace coal and clinkers.					
					7.2'-7.6': Very fine-fine gray SAND with little silt, trace coal or clinkers (in a band ~ 1/10" thick).		396	<--8-9'		
					7.6'-7.8': Medium tan SAND with orange tint, trace fine sand.		426	<--11.8-12'		
					7.8'-8': Gray/tan very fine SAND with some silt.			WT: 11.5'? Soil		
					8'-8.7': Blowins.			from 11.5'-12' moist/wet		
					8.7'-12': Gray/tan very fine SAND with some silt; color varying with depth to dark gray/tan to slightly orange.			but not saturated.		
								Slight sheen observed on 11.5'-12' soils.		
SAMPLE TYPES:			trace 0 to 5%	SPT Resistance					Approve/Date	
S3=3" SPLIT SPOON			few 5 to 10%							
SS=SPLIT SPOON			little 15 to 25%	Cohesionless Density: 0-4 Very Loose		Cohesive Consistency: 0-2 Very Soft				
ST=SHELBY TUBE			some 30 to 45%	5-9 Loose 10-29 Med. Dense		3-4 Soft, 5-8 M/Stiff, 9-15 Stiff				
R=ROCK CORE			mostly >50%	30-49 Dense 50+ Very Dense		16-30 V-Stiff, 31+ Hard				

PROJECT : Blackburn & Union - Asbestos Investigation					SHEET		BORING NO.	
SITE LOCATION: South Street Walpole, MA					JOB NO.: 36800287.00003		1 of 1	
					LOCATION: N: _____ E: _____		Elevation:	
DRILL CONTRACTOR : TDS			M&E Staff J. MEUNIER			BEGUN : July 21, 2006		
DRILL RIG : Geoprobe			DRILLER : S. COMEAU			FINISHED : July 21, 2006		
Hole Size : 2"		Weather : 80 F, Sunny				Ground Water Depth (BSG) : 7.25		
Drilling Method : Direct push with 4' Macrocore sampler				Drilling Fluid :		Top of Rock (Depth/Elev.) : NA		
Depth (ft)	Sample Type/No.	N Value	Blow Count (per 6 in.) or Drilling Rate(min/ft)	Sample Recovery (decimal feet)	SAMPLE DESCRIPTION		PID (ppm)	STRATIGRAPHIC DESCRIPTION
0-2	S-1		NA	1.5'	0'-0.5': Void			
					0.5'-1.5': CLINKERS, ash and some brown fine and medium sand.			
2-4	S-2		NA	1.2'	1.5'-2.0': Medium brown very fine SAND; some silt, trace fine-medium sand.			
					2.0'-2.8': Void.			
					2.8'-3.2': Blowins			
					3.2'-4': Light tan fine, medium, and coarse SAND with trace silt, trace fine-medium gravel; very loose and dry.			
4-8	S-3		NA	3.0'	4'-5': Void			
					5'-8': Gray/light brown very fine SAND with little silt, some silt at depth			
8-12	S-4		NA	3.5'	8'-8.5': Void			
					8.5'-9.5': Blowins			
					9.5'-12': Gray/light brown very fine SAND with little silt.			
SAMPLE TYPES:		trace	0 to 5%	SPT Resistance				Approve/Date
S3=3" SPLIT SPOON		few	5 to 10%					
SS=SPLIT SPOON		little	15 to 25%	Cohesionless Density: 0-4 Very Loose		Cohesive Consistency: 0-2 Very Soft		
ST=SHELBY TUBE		some	30 to 45%	5-9 Loose 10-29 Med. Dense		3-4 Soft, 5-8 M/Stiff, 9-15 Stiff		
R=ROCK CORE		mostly	>50%	30-49 Dense 50+ Very Dense		16-30 V-Stiff, 31+ Hard		

PROJECT : Blackburn & Union - Asbestos Investigation					SHEET		BORING NO.		
SITE LOCATION:			JOB NO.: 36800287.00003			1 of 1		MA-2.5	
South Street Walpole, MA			LOCATION:			Elevation:		Total Depth:	
			N: E:					12'	
DRILL CONTRACTOR : TDS			M&E Staff J. MEUNIER			BEGUN :		July 21, 2006	
DRILL RIG : Geoprobe			DRILLER : S. COMEAU			FINISHED :		July 21, 2006	
Hole Size : 2"		Weather :				Ground Water Depth (BSG) :			
		Overcast, 70 F				~11.9			
Drilling Method :			Drilling Fluid :			Top of Rock (Depth/Elev.) :			
Direct push with 4' Macrocore sampler						NA			
Depth (ft)	Sample Type/No.	N Value	Blow Count (per 6 in.) or Drilling Rate(min/ft)	Sample Recovery (decimal feet)	SAMPLE DESCRIPTION	PID (ppm)	STRATIGRAPHIC DESCRIPTION		
0-2	S-1		NA	2.0'	0'-0.5': Gray angular fine, medium, and coarse gravel w/ trace asphalt		Ref. at 8'--> move over 1' 8'-12' soils in log are from the second location.		
					0.5'-0.8': Med-dark brown fine, medium, and coarse SAND, trace silt, trace-little clinkers.				
2-4	S-2		NA	0.6'	0.8'-2.0': Tan fine-medium SAND, trace coarse sand, trace silt.				
					2.0'-3.4': Void.				
					3.4'-4.0': Tan fine-medium SAND, trace coarse sand, trace silt.				
4-8	S-3		NA	1.1'	4'-6.9': Void				
					6.9'-7.5': Tan fine-medium SAND, trace coarse sand, trace silt.				
					7.5'-8': Fine, medium, and coarse SAND with trace fine gravel, clinkers and silt.				
8-12	S-4		NA	2.2'	8'-9.8': Void				
					9.8'-10.4': Fine, medium, and coarse SAND with trace fine gravel, clinkers and silt.				
					10.4'-11.5': Tan fine SAND with some medium sand, trace clinkers (medium-coarse sand-sized particles).				
					11.5'-11.9': Tan fine, medium, and coarse SAND with fine, medium, and coarse gravel and trace silt.				
					11.9'-12': Tan, wet coarse SAND with little fine and medium sand and trace fine and medium gravel.				
SAMPLE TYPES:		trace 0 to 5%		SPT Resistance				Approve/Date	
S3=3" SPLIT SPOON		few 5 to 10%							
SS=SPLIT SPOON		little 15 to 25%		Cohesionless Density: 0-4 Very Loose		Cohesive Consistency: 0-2 Very Soft			
ST=SHELBY TUBE		some 30 to 45%		5-9 Loose 10-29 Med. Dense		3-4 Soft, 5-8 M/Stiff, 9-15 Stiff			
R=ROCK CORE		mostly >50%		30-49 Dense 50+ Very Dense		16-30 V-Stiff, 31+ Hard			

PROJECT : Blackburn & Union - Asbestos Investigation					SHEET		BORING NO.		
SITE LOCATION: South Street Walpole, MA					JOB NO.: 36800287.00003		1 of 1		
					LOCATION: N: E:		Elevation: Total Depth:		
DRILL CONTRACTOR : TDS					M&E Staff J. MEUNIER		BEGUN : July 20, 2006		
DRILL RIG : Geoprobe					DRILLER : S. COMEAU		FINISHED : July 20, 2006		
Hole Size : 2"		Weather : ~75 F, partly sunny				Ground Water Depth (BSG) : ~11.25			
Drilling Method : Direct push with 4' Macrocore sampler					Drilling Fluid :		Top of Rock (Depth/Elev.) : NA		
Depth (ft)	Sample Type/No.	N Value	Blow Count (per 6 in.) or Drilling Rate(min/ft)	Sample Recovery (decimal feet)	SAMPLE DESCRIPTION	PID (ppm)	STRATIGRAPHIC DESCRIPTION		
0-2	S-1		NA	1.6'	0'-0.4': Void				
					0.4'-2.0': Medium brown fine-medium SAND with trace-little coarse sand, trace fine and medium gravel, flecks of coal, silt, possible clinkers, trace silt.				
2-4	S-2		NA	1.6'	2.0'-2.4': Void				
					2.4'-3.9': Same as 0.4'-2.0 horizon.				
					3.9'-4.0': Medium-brown fine and medium SAND, trace-little silt, trace coarse sand.				
4-8	S-3		NA	3.5'	4'-4.5': Void				
					4.5'-4.9': Medium-brown fine and medium SAND, trace-little silt, trace coarse sand, trace fine-medium gravel.				
					4.9'-5.8': Clinkers and fine and medium SAND with trace silt and coal.				
					5.8'-8': Fine, medium, and coarse SAND (stained?) dark brown-black, trace fine and medium gravel. Strong petroleum odor; some horizons appear to glisten w/ petroleum.				
8-12	S-4		NA	2.2'	8'-9.8': Void				
					9.8'-11.5': Fine-medium SAND with trace coarse sand, fine-medium gravel, trace clinkers.	342	<--6-8'		
					11.5'-12': Gray wet fine-medium SAND in layers; little fine, medium, and coarse gravel; strong petroleum odor.	184	<--8-10'		
						622	<--11-12'		
SAMPLE TYPES:		trace	0 to 5%	SPT Resistance				Approve/Date	
S3=3" SPLIT SPOON		few	5 to 10%						
SS=SPLIT SPOON		little	15 to 25%	Cohesionless Density: 0-4 Very Loose		Cohesive Consistency: 0-2 Very Soft			
ST=SHELBY TUBE		some	30 to 45%	5-9 Loose 10-29 Med. Dense		3-4 Soft, 5-8 M/Stiff, 9-15 Stiff			
R=ROCK CORE		mostly	>50%	30-49 Dense 50+ Very Dense		16-30 V-Stiff, 31+ Hard			

PROJECT : Blackburn & Union - Asbestos Investigation					SHEET		BORING NO.				
SITE LOCATION: South Street Walpole, MA					JOB NO.: 36800287.00003		1 of 1		O10-R		
					LOCATION: N: E:		Elevation:		Total Depth: 8'		
DRILL CONTRACTOR: TDS					M&E Staff J. MEUNIER		BEGUN :		July 21, 2006		
DRILL RIG : Geoprobe					DRILLER : S. COMEAU		FINISHED :		July 21, 2006		
Hole Size : 2"			Weather : 80 F, cloudy			Ground Water Depth (BSG) : 6'					
Drilling Method : Direct push with 4' Macrocore sampler					Drilling Fluid :			Top of Rock (Depth/Elev.) : NA			
Depth (ft)	Sample Type/No.	N Value	Blow Count (per 6 in.) or Drilling Rate(min/ft)	Sample Recovery (decimal feet)	SAMPLE DESCRIPTION			PID (ppm)	STRATIGRAPHIC DESCRIPTION		
0-2	S-1		NA	1.2'	0'-0.8': Void						
					0.8'-1.0': Grayish brown fine and very fine SAND, trace medium-coarse sand, trace fine and medium gravel, trace clinkers.						
					1.0'-2.0': Fine, medium, and coarse SAND, with little fine, medium and coarse gravel, trace silt. Light brown.						
2-4	S-2		NA	1.2'	2.0'-2.8': Void						
					2.8'-3.0': Fine, medium, and coarse SAND, with little fine, medium and coarse gravel, trace silt. Light brown.						
					3.0'-4.0': Light brown very fine SAND with some silt.						
4-8	S-3		NA	3.5'	4'-4.5': Void						
					4.5'-5.25': Blowins						
					5.25'-8': Very fine medium brown SAND with little-some silt.						
SAMPLE TYPES:		trace	0 to 5%	SPT Resistance					Approve/Date		
S3=3" SPLIT SPOON		few	5 to 10%								
SS=SPLIT SPOON		little	15 to 25%	Cohesionless Density: 0-4 Very Loose			Cohesive Consistency: 0-2 Very Soft				
ST=SHELBY TUBE		some	30 to 45%	5-9 Loose		10-29 Med. Dense		3-4 Soft, 5-8 M/Stiff, 9-15 Stiff			
R=ROCK CORE		mostly	>50%	30-49 Dense		50+ Very Dense		16-30 V-Stiff, 31+ Hard			

PROJECT : Blackburn & Union - Asbestos Investigation				SHEET		BORING NO.		
SITE LOCATION: South Street Walpole, MA				JOB NO.: 36800287.00003		1 of 1		
				LOCATION: N: E:		Elevation: Total Depth: 8'		
DRILL CONTRACTOR : TDS				M&E Staff J. MEUNIER		BEGUN : July 21, 2006		
DRILL RIG : Geoprobe				DRILLER : S. COMEAU		FINISHED : July 21, 2006		
Hole Size : 2"		Weather : Overcast, 80F			Ground Water Depth (BSG) : 5.0'			
Drilling Method : Direct push with 4' Macrocore sampler				Drilling Fluid :		Top of Rock (Depth/Elev.) :		
Depth (ft)	Sample Type/No.	N Value	Blow Count (per 6 in.) or Drilling Rate(min/ft)	Sample Recovery (decimal feet)	SAMPLE DESCRIPTION	PID (ppm)	STRATIGRAPHIC DESCRIPTION	
0-2	S-1		NA	2.0'	0'-0.2': Asphalt			
					0.2'-1.4': Light brown fine and medium SAND with little very fine sand, trace fine and medium gravel.			
					1.4'-2.0': Tan medium SAND, little coarse sand, trace fine sand.			
2-4	S-2		NA	1.2'	2.0'-2.8': Void.			
					2.8'-3.6': Blowins.			
					3.6'-4': Medium brown very fine SAND with little-some silt.			
4-8	S-3		NA	3.5'	4'-4.5': Void			
					4.5'-5': Blowins			
					5'-8': Medium brown very fine SAND with little-some silt, wet at			
					5.0' BSG.			
SAMPLE TYPES:		trace 0 to 5%	SPT Resistance				Approve/Date	
S3=3" SPLIT SPOON		few 5 to 10%						
SS=SPLIT SPOON		little 15 to 25%	Cohesionless Density: 0-4 Very Loose		Cohesive Consistency: 0-2 Very Soft			
ST=SHELBY TUBE		some 30 to 45%	5-9 Loose 10-29 Med. Dense		3-4 Soft, 5-8 M/Stiff, 9-15 Stiff			
R=ROCK CORE		mostly >50%	30-49 Dense 50+ Very Dense		16-30 V-Stiff, 31+ Hard			

PROJECT : Blackburn & Union - Asbestos Investigation				SHEET		BORING NO.		
SITE LOCATION: South Street Walpole, MA				JOB NO.: 36800287.00003		1 of 1		
				LOCATION: N: E:		Elevation: Total Depth:		
DRILL CONTRACTOR : TDS				M&E Staff J. MEUNIER		BEGUN : July 21, 2006		
DRILL RIG : Geoprobe				DRILLER : S. COMEAU		FINISHED : July 21, 2006		
Hole Size : 2"		Weather : Sunny, 80F			Ground Water Depth (BSG) : NA			
Drilling Method : Direct push with 4' Macrocore sampler				Drilling Fluid :		Top of Rock (Depth/Elev.) : NA		
Depth (ft)	Sample Type/No.	N Value	Blow Count (per 6 in.) or Drilling Rate(min/ft)	Sample Recovery (decimal feet)	SAMPLE DESCRIPTION	PID (ppm)	STRATIGRAPHIC DESCRIPTION	
0-2	S-1		NA	1.0'	0'-1': Void			
					1'-1.1': Asphalt			
					1.1'-1.3': Buff very fine-coarse SAND, trace fine-medium gravel.			
					1.3'-2.0': Light brown fine SAND with some very fine sand, trace-little medium-coarse sand.			
2-4	S-2		NA	1.2'	2'-2.8': Void			
					2.8'-3.1': Fine, medium, and coarse SAND with little silt and very fine sand, color range from gray to medium brown and brick red.			
					3.1'-4': Buff very fine-coarse SAND, trace silt and trace fine, medium, and coarse gravel.			
4-8	S-3		NA	3.5'	4'-4.5': Void			
					4.5'-5.0': Blowins			
					5.0'-8.0": Buff very fine-coarse SAND, trace silt, trace fine, medium and coarse gravel. Darker with depth; light brown at bottom.			
					Refusal at 8.0'.			
					Note: Refusal at 2' BSG at 3 other adjacent locations before this boring was successfully advanced.			
SAMPLE TYPES:		trace 0 to 5%	SPT Resistance				Approve/Date	
S3=3" SPLIT SPOON		few 5 to 10%						
SS=SPLIT SPOON		little 15 to 25%	Cohesionless Density: 0-4 Very Loose		Cohesive Consistency: 0-2 Very Soft			
ST=SHELBY TUBE		some 30 to 45%	5-9 Loose 10-29 Med. Dense		3-4 Soft, 5-8 M/Stiff, 9-15 Stiff			
R=ROCK CORE		mostly >50%	30-49 Dense 50+ Very Dense		16-30 V-Stiff, 31+ Hard			

2039
on at

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/24/06
Sample Location ID:	104R (SO-33-120-104R) -ME-0-0-5	Time:	R 1442
Sample #:	26 DO7676	Weather:	Clear ~82°
Samplers:	SGZ + JMY		
Sample Information:			
Sample Depth:	0-6"	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge
		(circle one)	<input type="radio"/> shovel ponar dredge
			<input type="radio"/> trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color: med brown			
Sample Description: fine sand, little silt, trace medium sand, trace fm gravel, trace roots			
Comments/Description/Sketches:			

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	2/24/06
Sample Location ID:	104R (SO-33-120-104R) (-ME-0.5-2.5)	Time:	1450
Sample #:	6-30 D07677	Weather:	Clear ~80°
Samplers:	SCZ + JM		
Sample Information:			
Sample Depth:	6-30"	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge (circle one) shovel ponar dredge trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	Grab <input checked="" type="radio"/> Composite
Munsell Color:	6-12" Grayish light brown	12-18" dark brown	18-30" light brown
Sample Description:	fine sand, little silt, trace fine gravel	railroad ballast fine sand little silt some fine gravel	mc sand some fine sand with some mc gravel
Comments/Description/Sketches:			

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union		
Project #:	36800287	Date: 7/26/06
Sample Location ID:	2R	Time: 12 ¹⁵ / 1315 (CS)
Sample #:	50-33-129-2R-VE-0-0.5 + -MECS-0-0.5 ^{dup}	Weather: pty cloudy, warm, ~82°
Samplers:	JM + SCZ	
Sample Information: → D07669 + D07771 ^{dup}		
Sample Depth:	0-6"	Sampling Device: <input checked="" type="radio"/> auger ekman dredge
		(circle one) <input type="radio"/> shovel ponar dredge
		<input type="radio"/> trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type: <input checked="" type="radio"/> Grab Composite
Munsell Color: 0-1" dK brown 1"-6" med brown		
Sample Description: fine sand, some fine sand, little silt fine sand, little fine gravel, trace silt, trace clinkers		
Comments/Description/Sketches:		

11:25-13⁰⁰

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union		
Project #:	36800287	Date: 7/26/06
Sample Location ID:	D-0.5R (SO-33-120-D0.5R) ME-0-0.5	Time: 1130
Sample #:	D07678	Weather: partly cloudy, Warm ~80°
Samplers:	SCZ & JM	

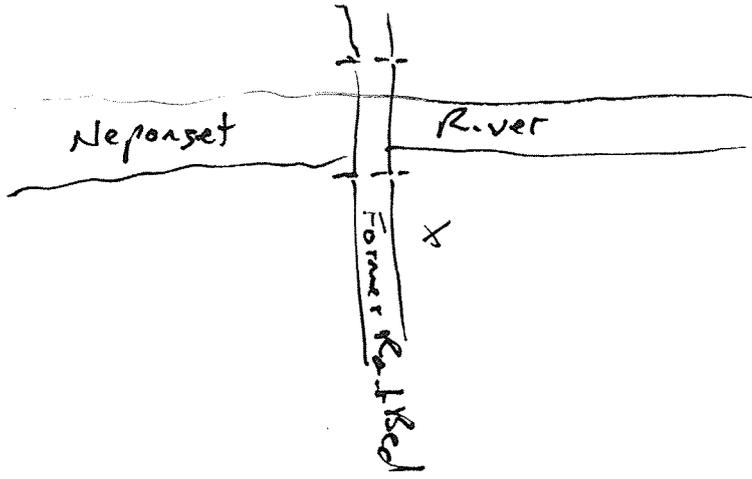
Sample Information:

Sample Depth:	0-6"	Sampling Device:	<input checked="" type="radio"/> auger	ekman dredge	
		(circle one)	<input type="radio"/> shovel	ponar dredge	
			<input type="radio"/> trowel	other:	
Field Decon:	<input checked="" type="radio"/> Yes Dedicated	No	Sample Type:	<input checked="" type="radio"/> Grab	Composite

Munsell Color: med. dk brwn

Sample Description: fine sand, some silt, little mc sand, trace fine gravel

Comments/Description/Sketches:



SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/26/06
Sample Location ID:	D-0.5R <small>(50-33-120- D0.5R-ME-0.5- 2.5)</small>	Time:	11:40
Sample #:	D07679	Weather:	partly cloudy, warm, ~80°
Samplers:	SCZ + JM		
Sample Information:			
Sample Depth:	6" - 30" [*] (0.5 - 2.5')	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge
		(circle one)	<input type="radio"/> shovel ponar dredge
			<input type="radio"/> trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	6"-9" med dk brown 9"-20" light brown		
Sample Description:	fine sand, some silt, little med sand, trace fine gravel fine sand, little silt, little fine gravel		
Comments/Description/Sketches:			
* refusal @ 20" - tried 4 locations - all the same			

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/26/06
Sample Location ID:	FO-SR (SO-33-120- FO-SR-ME-D-0.5)	Time:	12 ³⁰
Sample #:	D07680	Weather: pty cloudy, warm, ~82°	
Samplers:	JM & SCZ		
<i>Sample Information:</i>			
Sample Depth:	0-6"	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge <input type="radio"/> shovel ponar dredge <input type="radio"/> trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	0-3" med dk brown		3"-6"
Sample Description:	fine sand, trace fine gravel, trace silt		same as above with clinkers and ash
Comments/Description/Sketches:			

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/26/06
Sample Location ID:	FO.5R (SO-33-120- FO.5R-ME-0.5-2.5)	Time:	12 ⁴⁰
Sample #:	D07681	Weather:	pty cloudy warm ~82°
Samplers:	JM + SCz		
<i>Sample Information:</i>			
Sample Depth:	0.5' - 2.5'	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge (circle one) <input type="radio"/> shovel ponar dredge <input type="radio"/> trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	6-10"	: 10"-30" light brown	
Sample Description:	: fine sand with some fine gravel, : little mc gravel, trace silt		
Comments/Description/Sketches:			

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union		
Project #:	36800287	Date: 7/17/06
Sample Location ID:	GO-33-129-11-MED-0.5	Time: 16:20
Sample #:	D07670	Weather: sunny, hot 90's, humid
Samplers:	LO + JEM	

Sample Information:

Sample Depth:	0-0.5'	Sampling Device:	<input checked="" type="radio"/> auger	ekman dredge
		(circle one)	<input type="radio"/> shovel	ponar dredge
			<input type="radio"/> trowel	other:
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab	Composite

Munsell Color: med - dark brown

Sample Description: fine to med sand w/some silt

Comments/Description/Sketches:

~~|||||~~

Nepauset R.

washed up branches

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union

Project #:	36800287	Date:	7/17/06
Sample Location ID:	SO-33-129-12R-ME-05- ^{2.5}	Time:	16:10
Sample #:	DO 7671	Weather:	sunny hot 90°S, humid
Samplers:	JCM + 1 LO		

Sample Information:

Sample Depth:	0.5-2.5'	Sampling Device:	<input checked="" type="radio"/> auger	ekman dredge	
		(circle one)	<input type="radio"/> shovel	ponar dredge	
			<input type="radio"/> trowel	other:	
Field Decon:	<input checked="" type="radio"/> Yes Dedicated	<input type="radio"/> No	Sample Type:	<input checked="" type="radio"/> Grab	<input type="radio"/> Composite

Munsell Color: med. brown to light brown, greyish

Sample Description: sand - see below
looks native

Comments/Description/Sketches:

sediment 0-6" dk brown organic silt some fine sand
tr. roots

6"-12" med. brown silt w/ v. fine sand
some roots

12"-
med brown w/ v. fine sand, no roots
transitions to light brown v. fine
sand w/ silt

~~|||||~~ 30" v. fine to fine grey sand
w/ some silt, tr.
med. sand

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/17/06
Sample Location ID:	SO-33-129-13-ME-0-0.5	Time:	13:50
Sample #:	D07672	Weather:	hot - 90° humid sunny
Samplers:	L.O., JM, SCZ		
<i>Sample Information:</i>			
Sample Depth:	0-6" 0-0.5'	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge <input type="radio"/> shovel ponar dredge <input type="radio"/> trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	dark brown		
Sample Description:	organic silt with trace - little very fine sand some roots soil damp		
Comments/Description/Sketches:			
<p>The sketches include a soil profile represented by two horizontal lines with vertical tick marks between them. Below this is a curved line representing a surface. At the bottom, there is a drawing of a tree with a circled area at its base labeled 'rock' and the number '13' with a small symbol next to it.</p>			

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union		
Project #:	36800287	Date: 7/17/06
Sample Location ID:	SO-33-129-18-ME-0-0.5	Time: 14:30
Sample #:	D07674	Weather: hot 90's humid sunny
Samplers:	JCM, SG2, LO	
<i>Sample Information:</i>		
Sample Depth:	0-0.5'	Sampling Device: <u>auger</u> ekman dredge
		(circle one) shovel ponar dredge
		trowel other:
Field Decon:	<u>Yes</u> No Dedicated	Sample Type: <u>Grab</u> Composite
Munsell Color:	dark brown	
Sample Description:	organic silt little-trace fine sand some roots	soil damp
Comments/Description/Sketches:		
<p style="text-align: center;">Nepenset River</p> <p style="text-align: center;">18</p> <p style="text-align: center;">steep bank</p>		

SURFACE SOIL SAMPLING FIELD DATA SHEET

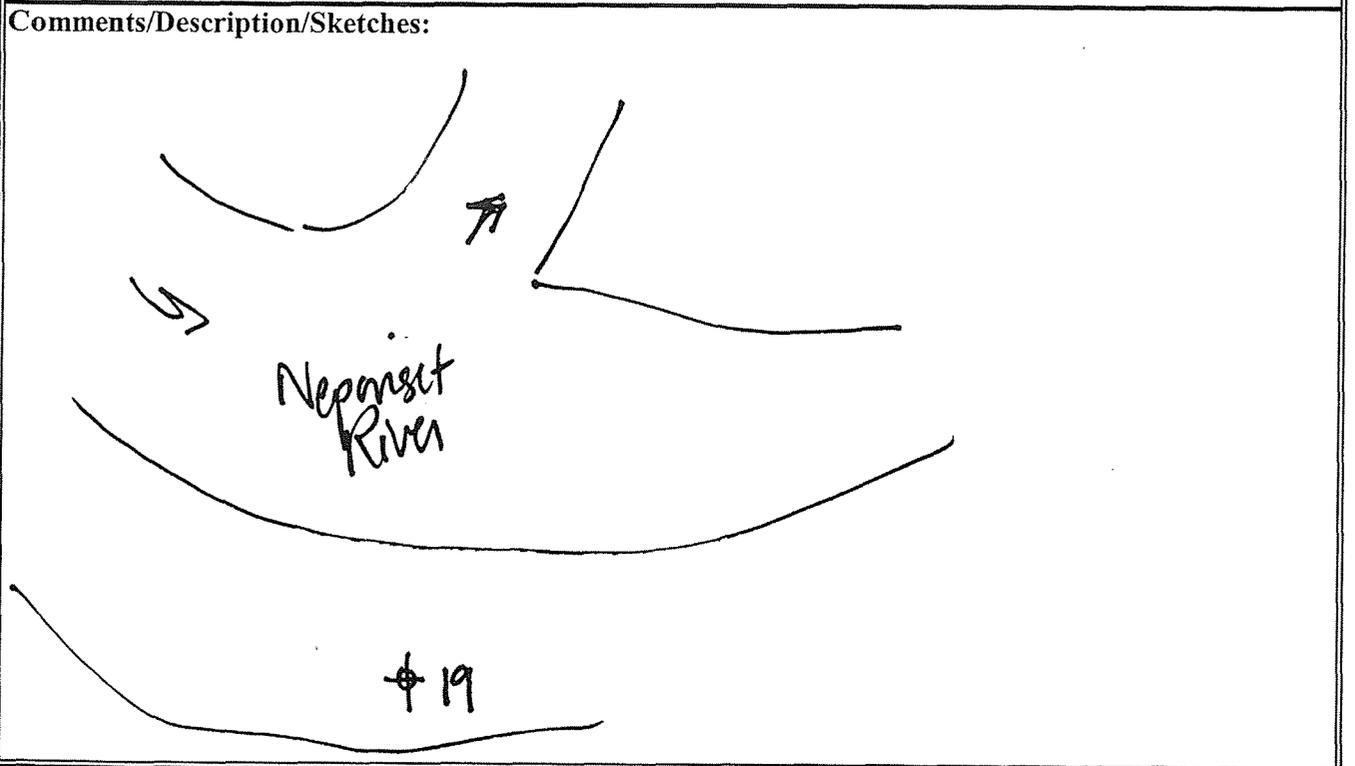
Project Name: Blackburn & Union		
Project #:	36800287	Date: 7/17/06
Sample Location ID:	80-333-129-19 ^R -0-0.5	Time: 14:50
Sample #:	D07675 [^]	Weather: sunny-hot 90's humid
Samplers:	LO, JCM	

Sample Information:

Sample Depth:	0 - 0.5	Sampling Device:
		(circle one) <input checked="" type="radio"/> auger ekman dredge
		<input type="radio"/> shovel ponar dredge
		<input type="radio"/> trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No	Sample Type:
	<input type="radio"/> Dedicated	<input checked="" type="radio"/> Grab Composite

Munsell Color: dark brown

Sample Description: organic silt
~~same as sand~~ fn/med sand soils dump
 fr. roots



SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/17/06
Sample Location ID:	50-33-129-16 ^R -ME-0.5-2.5	Time:	15:15
Sample #:	D07673	Weather:	sunny, hot 90° humid
Samplers:	W + JCM		
<i>Sample Information:</i>			
Sample Depth:	0.5 - 2.5'	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge (circle one) shovel ponar dredge trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	dark brown		
Sample Description:	organic silt tr. fine sand some organic detritus		
Comments/Description/Sketches:			

APPENDIX D.4

Background Soil Sampling Worksheets

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union		
Project #:	36800287	Date: 7/26/06
Sample Location ID:	BKGD-01-ME-0-0.5	Time: 08:15
Sample #:	D07651	Weather: sunny, partly cloudy, 75°
Samplers:	LO / SCM / SCZ	

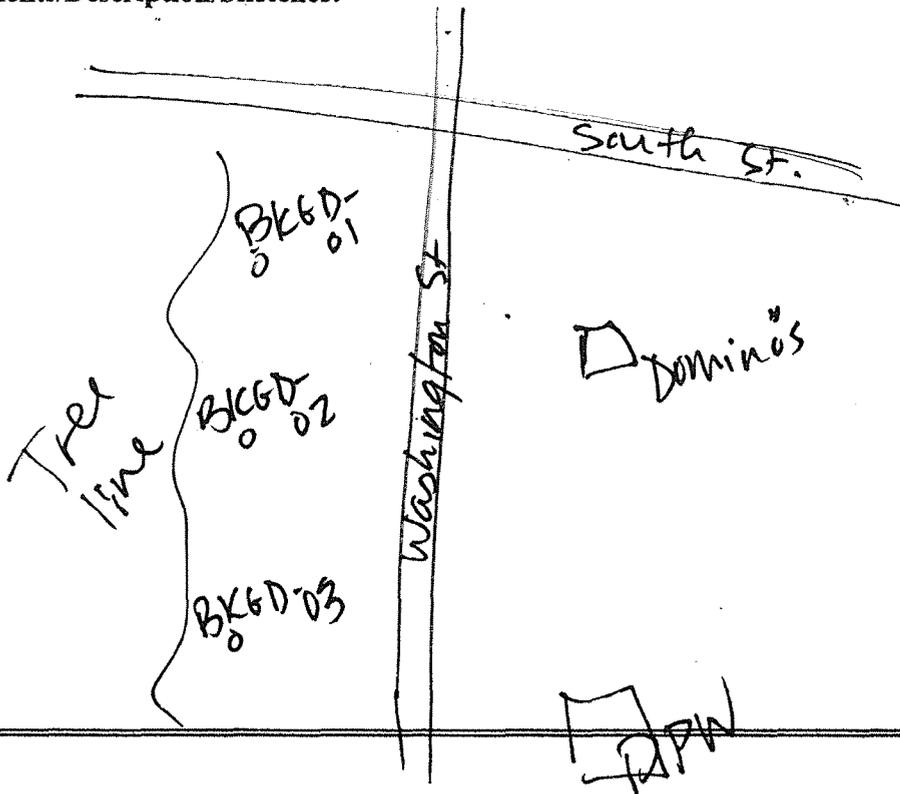
Sample Information:

Sample Depth:	0-0.5'	Sampling Device:	<input checked="" type="radio"/> auger	ekman dredge
		(circle one)	<input type="radio"/> shovel	ponar dredge
			<input type="radio"/> trowel	other:
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No	Sample Type:	<input checked="" type="radio"/> Grab	Composite
			Dedicated	

Munsell Color: med. brown

Sample Description: v. fine and fine sand w/ little silt, tr. mc sand, tr. fine gravel, top 2 inches predominantly plant roots.

Comments/Description/Sketches:



SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/26/06
Sample Location ID:	BKGD-01-ME-0.5-2.5	Time:	08:30
Sample #:	D07652	Weather:	partly sunny, 75°, slight breeze
Samplers:	LO/JCM/SCZ		
Sample Information:			
Sample Depth:	0.5 - 2.5'	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge (circle one) shovel ponar dredge trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	6-17" - same as 0-0.5' interval 17" - light reddish brown		
Sample Description:	6-17" - same as 0-0.5' interval 17-30" - fine sand, some vf sand, little silt, tr. mc sand.		
Comments/Description/Sketches:			
sample elevation - 1.5' lower than road			
see sketch for BKGD-01-ME-0-0.5			

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/26/06
Sample Location ID:	BKGD-02-ME-0-0.5	Time:	07:35
Sample #:	D07653	Weather:	over cast, 70's
Samplers:	LO + JCM		
Sample Information:			
Sample Depth:	0 - 0.5'	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge
		(circle one)	<input type="radio"/> shovel ponar dredge
			<input type="radio"/> trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No	Sample Type:	<input checked="" type="radio"/> Grab Composite
		Dedicated	
Munsell Color:	med. brown		
Sample Description:	v. fine and fine sand w/ little silt, tr. mc sand, tr. fine gravel, top 2 inches predominantly plant roots		
Comments/Description/Sketches:			
<p>The sketch shows a site layout with the following features:</p> <ul style="list-style-type: none"> Streets: South St (horizontal line) and Washington St (vertical line). Tree Line: A wavy line on the left side labeled "tree line". Sample Locations: Three points marked with circles and labeled BKGD-01, BKGD-02, and BKGD-03, located west of Washington St. Domino's Pizza: A square with an arrow pointing to it, labeled "Domino's PIZZA", located east of Washington St. DPW Entrance: A set of horizontal lines at the bottom labeled "entrance DPW". 			

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/26/06
Sample Location ID:	BKGD-02-ME-0.5-2.5	Time:	08:00
Sample #:	D07654	Weather:	overcast. 70°s
Samplers:	LO/JCM/SCZ		
<i>Sample Information:</i>			
Sample Depth:	0.5 - 2.5	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge (circle one) shovel ponar dredge trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	6-9" med. brown 9-30" light reddish brown		
Sample Description:	6-9" - same as 0-0.5 interval. 9-30" - fine sand, some vf sand, little silt, tr. mc sand		
Comments/Description/Sketches:			
see sketch for BKGD-02-ME-0.5			

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/26/06
Sample Location ID:	BKGD-03-ME-0.5-2.5	Time:	9:00
Sample #:	D07656	Weather:	sunny, partly cloudy, 75°
Samplers:	LO/JCM/SCZ		
Sample Information:			
Sample Depth:	0.5-2.5'	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge (circle one) shovel ponar dredge trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite light
Munsell Color:	6-10" - same as 0-0.5' interval. 10-12" reddish brown transitioning to greyish light brown		
Sample Description:	6-10" - same as 0-0.5' interval. 10-12" - not fine sand, some v/sand, little silt, tr. mc sand. 12" fine sand, little to some silt, tr. to little fine sand, little fine gravel.		
Comments/Description/Sketches:			
see sketch for BKGD-01-ME-0-0.5'			

APPENDIX D.5

Sediment Sampling Worksheets

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: ~~Iron Horse Park~~ ~~Superfund Site~~ *BRM*

Date(s):

Project #:	00200400-0050-00003	Date:	<i>7/24/06</i>
Sample Location ID:	<i>LP-17R-ME</i>	Time:	<i>10³⁰</i>
Sample #:	<i>T07755</i>	Weather:	<i>clear 80°</i>
Samplers:	<i>SCZ + JM</i>		

Sample Information:

Sample Depth:	<i>0-6"</i>	Sampling Device:	<i>Hand Auger</i>
Water Depth:	<i>0.3'</i>	GPS Location:	
Distance from Shore:	<i>1'</i>		
Approx. Flow Rate:			
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No <i>Dedicated</i>	Sample Type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite

Munsell Color: *0-4" red dk brwn* *4"-6" grayish light brwn*

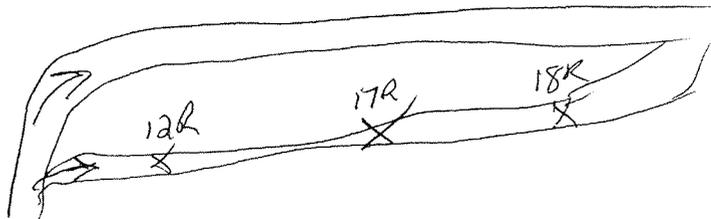
Sample Description: *loose organic silt w/some vf + f sand, trace roots* *vf sand + silt w/little fine gravel*

Other physical characteristics of water body at sample location:
(Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)

clear, slightly brownish

Sample Comments/Description: *In "tributary" on other side of island*

GPS Reading taken



SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: ~~XXXXXXXXXXXXXXXXXXXXXXXXXXXX~~ BRN

Date(s):

Project #:	00200100.0000.0000	Date:	7/24/06
Sample Location ID:	LP-18R-ME	Time:	10:45
Sample #:	DD-7756	Weather:	clear ~80°
Samplers:	SLZ + JM		

Sample Information:

Sample Depth:	0-6'	Sampling Device:	Hand Auger
Water Depth:	0.35'		
Distance from Shore:	3'	GPS Location:	
Approx. Flow Rate:			
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite

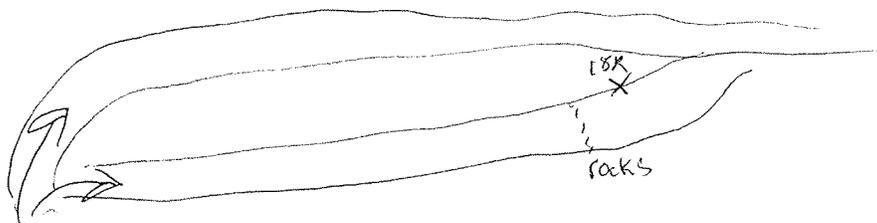
Munsell Color: med dk brn

Sample Description: organic silt and detritus

Other physical characteristics of water body at sample location:
(Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)

clear, slightly brown

Sample Comments/Description:



SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Date(s):			
Project #:	36800287	Date:	7/19/06
Sample Location ID:	LP-19R-ME	Time:	12 ²⁵
Sample #:	D07757	Weather:	
Samplers:	SLZ + JM	ptly cloudy	
Sample Information:			
Sample Depth:	0-6"	Sampling Device:	Hand Auger
Water Depth:	1.6'	GPS Location:	
Distance from Shore:	? ~ 30' next to loose rife	Sample Type:	Grab Composite
Approx. Flow Rate:			
Field Decon:	Yes No Dedicated		
Munsell Color:	med dk brown		
Sample Description:	loose org. silt w/ some detritus transitioning to stiff gray silty/ fine sand		
Other physical characteristics of water body at sample location: (Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)			
loose rife			
Sample Comments/Description:			
~15' from original location new GPS pt			

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Date(s):			
Project #:	36800287	Date:	7/19/06
Sample Location ID:	LP-20R-MF	Time:	10 ¹⁵
Sample #:	D07758	Weather:	pty cloudy, warm
Samplers:	SLZ + JM		
Sample Information:			
Sample Depth:	0-6'	Sampling Device:	Hand Auger
Water Depth:	0.95'		
Distance from Shore:	~60'	GPS Location:	
Approx. Flow Rate:			
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite
Munsell Color:	med. dark brown		
Sample Description:	organics, silt w/ very fine and fine sand w/ some detritus		
Other physical characteristics of water body at sample location: (Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)			
Sample Comments/Description:			
56' away from old shore people loostrike stepped up. The transect used to be ~2000' wide. Now about 30'			

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union

Date(s):

Project #:	36800287	Date:	7/19/06
Sample Location ID:	LP-21R-ME	Time:	9:55
Sample #:	D07759	Weather:	partly cloudy, warm
Samplers:	SLZ + JH		

Sample Information:

Sample Depth:	0-6"	Sampling Device:	Hand Auger
Water Depth:	~4'		
Distance from Shore:	5' from loostrike	GPS Location:	
Approx. Flow Rate:			
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite

Munsell Color: ~~red~~ brownish gray

Sample Description: fine sand, trace silt
trace detritus

Other physical characteristics of water body at sample location:
(Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)

purple loostrike

Sample Comments/Description:

Sample about 90' from original location
due to purple loostrike

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Date(s):			
Project #:	36800287	Date:	7/19/06
Sample Location ID:	LP-22R-ME	Time:	9:40
Sample #:	D01760	Weather:	Partly Cloudy Warm
Samplers:	SLZ & JIM		
Sample Information:			
Sample Depth:	0-6"	Sampling Device:	
Water Depth:	1.2'	Hand Auger	
Distance from Shore:	2' from low water	GPS Location:	
Approx. Flow Rate:			
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite
Munsell Color:	0-1.5" med dk brown 1.5-6" brown-sh gray		
Sample Description:	organic silt w/ little debris med. sand w/ some fc sand trace silt		
Other physical characteristics of water body at sample location: (Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)			
Sample Comments/Description:			
Sample ~ 40' off from old due to purple loushite			

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union

Date(s):

Project #:	36800287	Date:	2/18/06
Sample Location ID:	LP-23R-ME	Time:	3:00 (1500)
Sample #:	D07761	Weather:	Hot Clear
Samplers:	SCZ + JM		

Sample Information:

Sample Depth:	0-6"	Sampling Device:	Hand Auger
Water Depth:	2.1'	GPS Location:	
Distance from Shore:	? Shoreline		
Approx. Flow Rate:		Sample Type:	Grab Composite
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No Dedicated		

Munsell Color: 1/2" dark brown 5.5" brownish gray

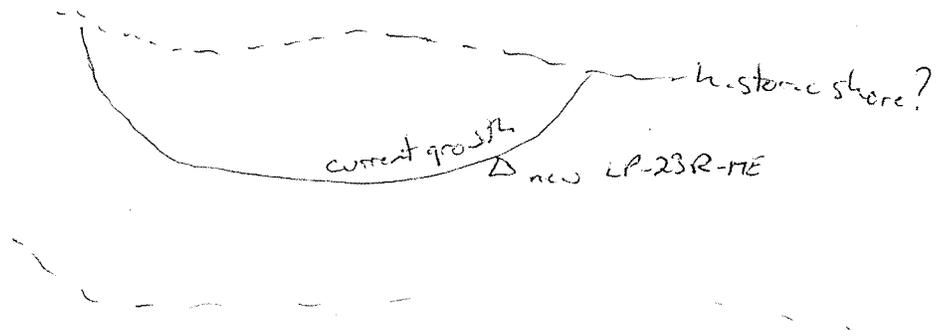
Sample Description: 1/2" organics & detritus 5.5" FM sand & trace silt

Other physical characteristics of water body at sample location:
 (Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)

Growth out from shore

Sample Comments/Description:

River seems to have changed a lot



SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Date(s):			
Project #:	36800287	Date:	7/19/06
Sample Location ID:	LP-24-ME	Time:	9:25
Sample #:	D07762	Weather:	Partly cloudy warm
Samplers:	SLZ + JW		
Sample Information:			
Sample Depth:	0-6"	Sampling Device:	
Water Depth:	0.95'	Hand Auger	
Distance from Shore:	5'	GPS Location:	
Approx. Flow Rate:			
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	0-4" med dk brn	4"-6" med dk gray	
Sample Description:	very loose organic silt + detritus	silt and very fine sand	
Other physical characteristics of water body at sample location: (Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)			
purple loostrike			
Sample Comments/Description: 45' away supposedly. Took GPS reading			

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union

Date(s):

Project #:	36800287	Date:	7/18/06
Sample Location ID:	LP-25-ME LP-25-ME	Time:	1:35 (13 ³⁵)
Sample #:	D07763	Weather:	Clear Hot
Samplers:	SCZ + JM		

Sample Information:

Sample Depth:	0-3, 3-6	Sampling Device:	Hand Auger
Water Depth:	0.75	GPS Location:	
Distance from Shore:	4'	Sample Type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite
Approx. Flow Rate:		Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No Dedicated

Munsell Color: 0-3 Brownish Gray @-6 Med-dark brown

Sample Description: 0-3 Fine sand trace med. in sand trace silt
3-6 detritus (organic) some silt

Other physical characteristics of water body at sample location:
(Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)

Lily pads

Sample Comments/Description:

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Date(s):			
Project #:	36800287	Date:	7/18/06
Sample Location ID:	LP-26 ^R -ME ^{field}	Time:	1:25 (13 ²⁵)
Sample #:	-ME & -MECS	Weather:	Clear Hot pmp 12:20
Samplers:	SCZ + JM		
Sample Information: → D07776 (dup); D07764			
Sample Depth:	0-6"	Sampling Device:	Hand Auger
Water Depth:	0.95'	GPS Location:	
Distance from Shore:	5'	Sample Type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite
Approx. Flow Rate:		Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No Dedicated
Munsell Color: Medium Brown			
Sample Description: Organic silt with some detritus			
Other physical characteristics of water body at sample location: (Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)			
Lily Pads			
Sample Comments/Description:			

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Date(s):			
Project #:	36800287	Date:	7/18/06
Sample Location ID:	LP-27-ME	Time:	1:05 (13 ⁰⁵)
Sample #:	D07765	Weather:	Clear Hot
Samplers:	JM + SCZ		
Sample Information:			
Sample Depth:	0-6"	Sampling Device:	Hand Auger
Water Depth:	1'	GPS Location:	
Distance from Shore:	3'	Approx. Flow Rate:	
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite
Munsell Color:	Medium Brown		
Sample Description:	Organic silt with some detritus		
Other physical characteristics of water body at sample location: (Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)			
Lily Pads			
Sample Comments/Description:			

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union

Date(s):

Project #:	36800287	Date:	7/24/06
Sample Location ID:	ND-25 - ME	Time:	9:40
Sample #:	DO 7739	Weather:	clear ~80
Samplers:	SLZ +JM		

Sample Information:

Sample Depth:	0-6"	Sampling Device:	Hard Auger
Water Depth:	0.35'	GPS Location:	
Distance from Shore:	2'		
Approx. Flow Rate:		Sample Type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No Dedicated		

Munsell Color: med dk brown

Sample Description: silt w/ some ~~fine~~ vF + F sand, little roots, little detritus

Other physical characteristics of water body at sample location:
(Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)

clear, slightly brownish
metal fence post in water, branches

Sample Comments/Description:

GPS not reading due to overgrowth;
location estimated based on maps and old
GPS navigation

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union

Date(s):

Project #:	36800287	Date:	7/24/06
Sample Location ID:	N/O-26-ME	Time:	9:30
Sample #:	D07740	Weather:	Clear ~ 80°
Samplers:	SCZ + JM		

Sample Information:

Sample Depth:	0-6"	Sampling Device:	Hand Auger
Water Depth:	0.9'		
Distance from Shore:	2'	GPS Location:	
Approx. Flow Rate:			
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite

Munsell Color: grayish brown

Sample Description: fm sand, little silt, little roots

Other physical characteristics of water body at sample location:
(Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)

Clear, slightly brownish

debris in water (twigs, wood, etc)
Applies to all N/O 25 to 30 samples

Sample Comments/Description:

GPS not reading due to surrounding growth - location estimated from maps + old GPS navigation

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Date(s):			
Project #:	36800287	Date:	7/24/06
Sample Location ID:	ND-27-ME	Time:	9:20
Sample #:	D07741	Weather:	Clear ~80°
Samplers:	SLZ & JM		
Sample Information:			
Sample Depth:	0-6"	Sampling Device:	Hand Auger
Water Depth:	0.9'		
Distance from Shore:	3'	GPS Location:	
Approx. Flow Rate:	high		
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	grayish brown		
Sample Description:	red sand some fine sand + silt some detritus & roots		
Other physical characteristics of water body at sample location: (Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)			
clear, brownish tint			
Sample Comments/Description:			
River Overgrown - This area a bit more open GPS off + on - location estimated based on map and old GPS navigation			

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Date(s):			
Project #:	36800287	Date:	7/24/06
Sample Location ID:	ND-28-ME	Time:	900
Sample #:	D07742	Weather: clear 70's	
Samplers:	SLZ JM		
Sample Information:			
Sample Depth:	0-6"	Sampling Device: Hand Auger	
Water Depth:	0.4'		
Distance from Shore:	1.5'	GPS Location:	
Approx. Flow Rate:	high		
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite
Munsell Color:	med dk brown		
Sample Description:	silt w/roots some fine sand		
Other physical characteristics of water body at sample location: (Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)			
Overgrown brownish water, clear			
Sample Comments/Description:			
GPS seems to have gotten a reading and we were pretty close to being correct. Potentially, sample may be near LP-11			

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Date(s):			
Project #:	36800287	Date:	7/24/06
Sample Location ID:	ND-29-ME	Time:	8:50
Sample #:	DO 7743	Weather: Clear 70's	
Samplers:	SCZ + JIM		
Sample Information:			
Sample Depth:	0-6"	Sampling Device: Hard Auger	
Water Depth:	1.4'		
Distance from Shore:	3'	GPS Location:	
Approx. Flow Rate:			
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite
Munsell Color:	Med dk brown		
Sample Description:	med sand w/ some fc sand some silt trace detritus; loose		
Other physical characteristics of water body at sample location: (Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)			
Color - brown, clear			
Sample Comments/Description:			
River overgrown - GPS can't get reading - location estimated based on map			

M

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Date(s):			
Project #:	36800287	Date:	7/24/06
Sample Location ID:	N.D.-30-ME	Time:	840
Sample #:	D07744	Weather:	Clear 70's
Samplers:	SLZ & JM		
Sample Information:			
Sample Depth:	0-6"	Sampling Device:	Hand Auger
Water Depth:	0.65'		
Distance from Shore:	1'	GPS Location:	
Approx. Flow Rate:			
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	Med dk brown		
Sample Description:	very loose organic silt w/ some detritus and some fine sand		
Other physical characteristics of water body at sample location: (Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)			
River well overgrown - water color brownish			
Sample Comments/Description:			
GPS not getting good reading under tree cover - location estimated based on map and old GPS navigation			

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union

Date(s):

Project #:	36800287	Date:	7/18/06
Sample Location ID:	ND-37R-ME & -MEUS	Time:	3:15 (15:15)
Sample #:	D07745 D07775	Weather:	Hot Clear
Samplers:	SLZ+JM		

Sample Information:

Sample Depth:	0-6"	Sampling Device:	Hand Auger
Water Depth:	2, 3	GPS Location:	
Distance from Shore:	? at shore	Sample Type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite
Approx. Flow Rate:			
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No Dedicated		

Munsell Color: 0-11 brown-sh gray 4-6 med dark brown

Sample Description: fine sand some med sand traces (1) organic silt little detritus

Other physical characteristics of water body at sample location:
(Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)

turbid

Sample Comments/Description:

This location (based on GPS) seems to be over 100' off. The river appears to have changed significantly since the 1992 sampling



SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Date(s):			
Project #:	36800287	Date:	7/18/06
Sample Location ID:	ND-39-ME	Time:	2:40 (1440)
Sample #:	D07746	Weather:	Hot Clear
Samplers:	SLZ + JM		
Sample Information:			
Sample Depth:	0-6"	Sampling Device:	Hand Auger
Water Depth:	0.875'		
Distance from Shore:	5'	GPS Location:	
Approx. Flow Rate:			
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite
Munsell Color: 0-3" dark brown 3-6" brown-sh gray			
Sample Description: 0-3" organics - lt very loose w/ detritus 3-6" fine medium coarse sand			
Other physical characteristics of water body at sample location: (Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)			
Lily pads - dead branches			
Sample Comments/Description:			

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Date(s):			
Project #:	36800287	Date:	7/18/06
Sample Location ID:	NO-41-ME	Time:	12:55
Sample #:	D07747	Weather:	Clear Hot
Samplers:	JM + SCZ		
Sample Information:			
Sample Depth:	0-6"	Sampling Device:	
Water Depth:	170.5 1.95	Had Auger	
Distance from Shore:	5'	GPS Location:	
Approx. Flow Rate:			
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	Medium Dark Brown		
Sample Description:	Organic Silt and very Fine Sand with little FMS sand trace detritus		
Other physical characteristics of water body at sample location: (Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)			
Dead branches nearby			
Sample Comments/Description:			

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Date(s):			
Project #:	36800287	Date:	7/18/06
Sample Location ID:	NA-42-ME	Time:	9:50
Sample #:	D07748	Weather:	Clear Hot
Samplers:	JM + SC		
Sample Information:			
Sample Depth:	0-6"	Sampling Device:	Hand Auger
Water Depth:	2.7'	GPS Location:	
Distance from Shore:	10'	Approx. Flow Rate:	
Field Decon:	Yes <input type="radio"/> No <input checked="" type="radio"/> Dedicated	Sample Type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite
Munsell Color:	Med to Dark Brown		
Sample Description:	Organic silt w/ detritus and fine sand with little		
Other physical characteristics of water body at sample location: (Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)			
Broken fence post			
Sample Comments/Description:			

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Date(s):			
Project #:	36800287	Date:	7/19/06
Sample Location ID:	LP-11R-ME	Time:	2:25 1425
Sample #:	D07749	Weather:	partly cloudy warm
Samplers:	SCZ + JMY		
Sample Information:			
Sample Depth:	0-6"	Sampling Device:	hand auger
Water Depth:	4"	GPS Location:	
Distance from Shore:	1'	Sample Type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite
Approx. Flow Rate:	high		
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No Dedicated		
Munsell Color:	med dark brown		
Sample Description:	organic silt w/ debris - loose		
Other physical characteristics of water body at sample location: (Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)			
Muck nearby - much brush/junk in river			
Sample Comments/Description:			
15' across stream from LP-13R-ME - Need to get revised GPS			

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Date(s):			
Project #:	36800287	Date:	7/24/06
Sample Location ID:	LP-12R-ME	Time:	10 ¹⁰
Sample #:	D07750	Weather:	Clear ~80°
Samplers:	SCC + JMT		
Sample Information:			
Sample Depth:	0-6"	Sampling Device:	Hand Auger
Water Depth:	0.9'	GPS Location:	
Distance from Shore:	1.85'	Sample Type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite
Approx. Flow Rate:	high	Field Decon:	
	<input checked="" type="radio"/> Yes <input type="radio"/> No Dedicated		
Munsell Color:	tannish gray		
Sample Description:	vf sand, some silt, trace fm sand		
Other physical characteristics of water body at sample location: (Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)			
clear, slightly brownish rocks			
Sample Comments/Description:			
This location was collected on "tributary" on other side of "island" in pond. Island has some growth 730-40 yrs GPS reading taken			

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union

Date(s):

Project #:	36800287	Date:	7/19/06
Sample Location ID:	LP-14R-ME	Time:	1040
Sample #:	D07752	Weather:	
Samplers:	SCZ + JM	ptly cloudy, warm	

Sample Information:

Sample Depth:	0-6"	Sampling Device:	Hand Auger
Water Depth:	1.15'	GPS Location:	
Distance from Shore:	~5'		
Approx. Flow Rate:			
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite

Munsell Color:	1.5" dk brown	2" dk brown (1.5-3.5")	2.5" gray (3.5-6")
Sample Description:	organic silt & detritus	noncompact organic silt & detritus	semi-plastic gray silt w/ some fine sand, little detritus

Other physical characteristics of water body at sample location:
 (Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)

swamp odor
Algae growth

Sample Comments/Description:

loostrike only kept us ~10' from old location

GPS pt collected

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Date(s):			
Project #:	36800287	Date:	7/19/06
Sample Location ID:	LP-15R-ME	Time:	11 ⁰⁰
Sample #:	D07753	Weather:	ptly cloudy, warm
Samplers:	SCZ + JM		
Sample Information:			
Sample Depth:	0-6"	Sampling Device:	Hand Auger
Water Depth:	0.95'	GPS Location:	
Distance from Shore:	? 4' from lowstrife	Sample Type:	Grab Composite
Approx. Flow Rate:			
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated		
Munsell Color:	Brownish gray		
Sample Description:	fine sand w/trace fm sand some detritus		
Other physical characteristics of water body at sample location: (Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)			
lowstrife			
Sample Comments/Description:			
~120' from original location lowstrife made new shoreline			

SEDIMENT SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union

Date(s):

Project #:	36800287	Date:	7/19/06
Sample Location ID:	LP-16B-ME	Time:	10:30
Sample #:	D07754	Weather:	ptly cldy, warm
Samplers:	SCZ + JM		

Sample Information:

Sample Depth:	0-6"	Sampling Device:	Head Auger
Water Depth:	0.9'		
Distance from Shore:	?	GPS Location:	
Approx. Flow Rate:			
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite

Munsell Color: brownish gray

Sample Description: fine sand, trace silt
interbedded w 0.25-1" layers of vf gray sand

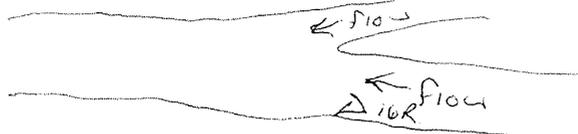
Other physical characteristics of water body at sample location:
(Water color, turbidity, odor, presence of sheens, dead/stressed vegetation)

purple loose soil

Sample Comments/Description:

~ 20' away from old location (closer to center of river)
Took GPS reading

confluence of some tributary? across from this location



APPENDIX D.6

Floodplain Soil Sampling Worksheets

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/26/06
Sample Location ID:	FPS-01R-ME	Time:	10:30
Sample #:	D07657	Weather:	hot, 85° partly sunny
Samplers:	LO + JCM		
Sample Information:			
Sample Depth:	0-1'	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge
		(circle one)	<input type="radio"/> shovel ponar dredge
			<input type="radio"/> trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No	Sample Type:	<input checked="" type="radio"/> Grab Composite
Dedicated			
Munsell Color:	0-4" med dark brown; 4-12" brownish grey		
Sample Description:	0-4" fine sand, some v. fine sand, little silt, some detritus + roots. 4-12" med sand, some fc sand, tr. silt, tr. fm gravel		
Comments/Description/Sketches:	<p>sample elevation - 6" above water surface.</p> <p>Approx. 1ft upland from shore</p> <p>See sketch for FPS-02R-ME</p>		

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union

Project #:	36800287	Date:	7/26/06
Sample Location ID:	FPS-02R-ME	Time:	10:20
Sample #:	D07658	Weather: hot, 80°s sunny but slight overcast	
Samplers:	LO + JCM		

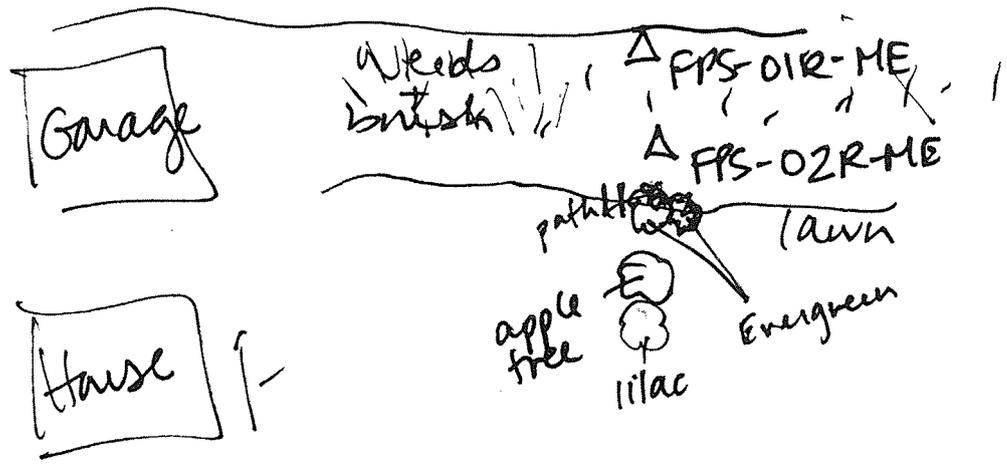
Sample Information:

Sample Depth:	0-1'	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge (circle one) shovel ponar dredge trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite

Munsell Color: 0-3" med. dark brown; 3-9" med dark brown w/ rust; 9-12" brownish grey

Sample Description: 0-3" very fine and fine sand, with some silt + fr. mc sand, fr. roots, fr. fm gravel
 3-9" fine sand, some vf sand, little silt, little detritus.
 9"-12" - vf + f sand, some silt, fr med sand

Comments/Description/Sketches: Sample elevation - approx. 1 ft higher than water surface
 distance upland from shore - 6 ft



SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union		
Project #:	36800287	Date: 7/25/06
Sample Location ID:	FPS-03R-ME	Time: 12:10
Sample #:	D07659	Weather: sunny hot some clouds
Samplers:	JCM + SCZ	

Sample Information:

Sample Depth:	0-1'	Sampling Device:	<input checked="" type="radio"/> auger	<input type="radio"/> ekman dredge
		(circle one)	<input type="radio"/> shovel	<input type="radio"/> ponar dredge
			<input type="radio"/> trowel	<input type="radio"/> other:
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No	Sample Type:	<input checked="" type="radio"/> Grab	<input type="radio"/> Composite
		Dedicated		

Munsell Color: 0-6" med dark brown
6-12" tanish light brown

Sample Description: 0-6" v. loose organic silt and detritus
6-12" vf + f sand with little silt

Comments/Description/Sketches:

6" standing water at this location,
7' from grass line

The sketch depicts a cross-section of the ground surface. On the left, there is a slope labeled 'wreeds over semi-solid ground' and a 'small tree'. On the right, there is a 'large tree' and a 'purple loose strife' area. Three sampling points are marked: 'FPS-03R-ME' (circled), 'FPS-17-ME', and 'FPS-16-ME'. A circled area between the trees is labeled 'Standing water'.

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: XXXXXXXXXX Blackburn + Union			
Project #:	XXXXXXXXXX	Date:	7/25/06
Sample Location ID:	FPS-04R-ME	Time:	14:30
Sample #:	D07660	Weather:	sunny, some clouds, hot
Samplers:	JCM + SGZ + LO		
Sample depth:	0-1'		
Munsell Color:	0-11" med dark brown	Equipment:	<input checked="" type="radio"/> auger
	11-12" greyish light brown	(circle one)	<input type="radio"/> shovel
Sample description:	0-11" organic silt w/detritus		<input type="radio"/> trowel
	11-12" vf+f sand w/fmc gravel and some fmc sand		<input type="radio"/> Ekman dredge
Sample type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite	other:	<input type="radio"/> Ponar dredge
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Dedicated		
Comments/sketches:	<p>sample elevation - 1" above water surface.</p> <p>sample location is 15' ^{out toward water} from grassline</p> <p>see sketch for FPS-21-ME</p>		

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/24/06
Sample Location ID:	FPS-05R	Time:	13:05
Sample #:	D07661	Weather: sunny, 80s clear	
Samplers:	LO + JCM		
Sample Information:			
Sample Depth:	0-1'	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge (circle one) <input type="radio"/> shovel ponar dredge <input type="radio"/> trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	dark brown		
Sample Description:	organic silt, loose w/ little to some debris		
Comments/Description/Sketches:			
<p>3" standing water over sample</p> <p>FPS09R Δ Δ FPS-05R</p> <p>Nepauset R. →</p> <p>bridge</p> <p>rock wall</p>			

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/25/06
Sample Location ID:	FPS-06R-ME	Time:	08:50
Sample #:	D07662	Weather:	Sunny, 80° clear
Samplers:	LO + JCM		
Sample Information:			
Sample Depth:	0-1"	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge <input type="radio"/> shovel ponar dredge <input type="radio"/> trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	med/dark brown		
Sample Description:	silt with some detritus, little fine sand		
Comments/Description/Sketches:			
<p>no standing water, however 6" from shore</p>			

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/28/06
Sample Location ID:	FPS 07R-ME	Time:	09:00
Sample #:	D07663	Weather: sunny, 88° clear	
Samplers:	LO + JCM		
Sample Information:			
Sample Depth:	0-1'	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge
		(circle one)	<input type="radio"/> shovel ponar dredge
			<input type="radio"/> trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	0-3" dark brown 3"-12" mottled, varying from light gray to light brown		
Sample Description:	0-3" v. fine sand and silt, fr. roots, fr. detritus 3-12" v. fine sand and some silt		
Comments/Description/Sketches:	<p style="text-align: right;">sample elevation - approx. 1.5 ft above water</p> <p style="text-align: right;">6 ft from shore</p> <p>NE part (Lewis Pond)</p> <p>NO flow here</p> <p>lily pads</p> <p>purple loose strife</p> <p>A FPS-06R</p> <p>A FPS-07R</p>		

light
rust
orange

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union		
Project #:	36800287	Date: 7/25/06
Sample Location ID:	FPS-08R-ME	Time: 10:00
Sample #:	007664	Weather: sunny, 80° clear
Samplers:	JCM + SCZ	

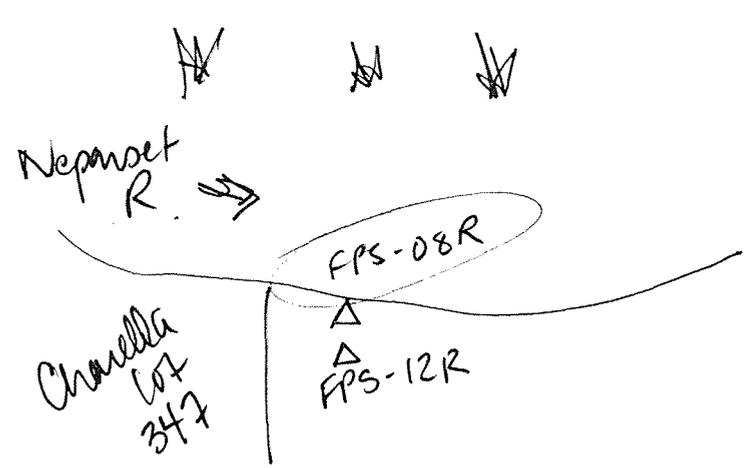
Sample Information:

Sample Depth:	0-1'	Sampling Device:	<input checked="" type="radio"/> auger	ekman dredge
		(circle one)	<input type="radio"/> shovel	ponar dredge
			<input type="radio"/> trowel	other:
Field Decon:	<input checked="" type="radio"/> Yes Dedicated	No	Sample Type:	<input checked="" type="radio"/> Grab Composite

Munsell Color: med dark brown, ~~slightly reddish~~ roots

Sample Description: silt with tr. to little fine sand and fm gravel, little detritus, little roots

Comments/Description/Sketches:
Sample elevation - 5" above water
1 ft off shore



SURFACE SOIL SAMPLING FIELD DATA SHEET

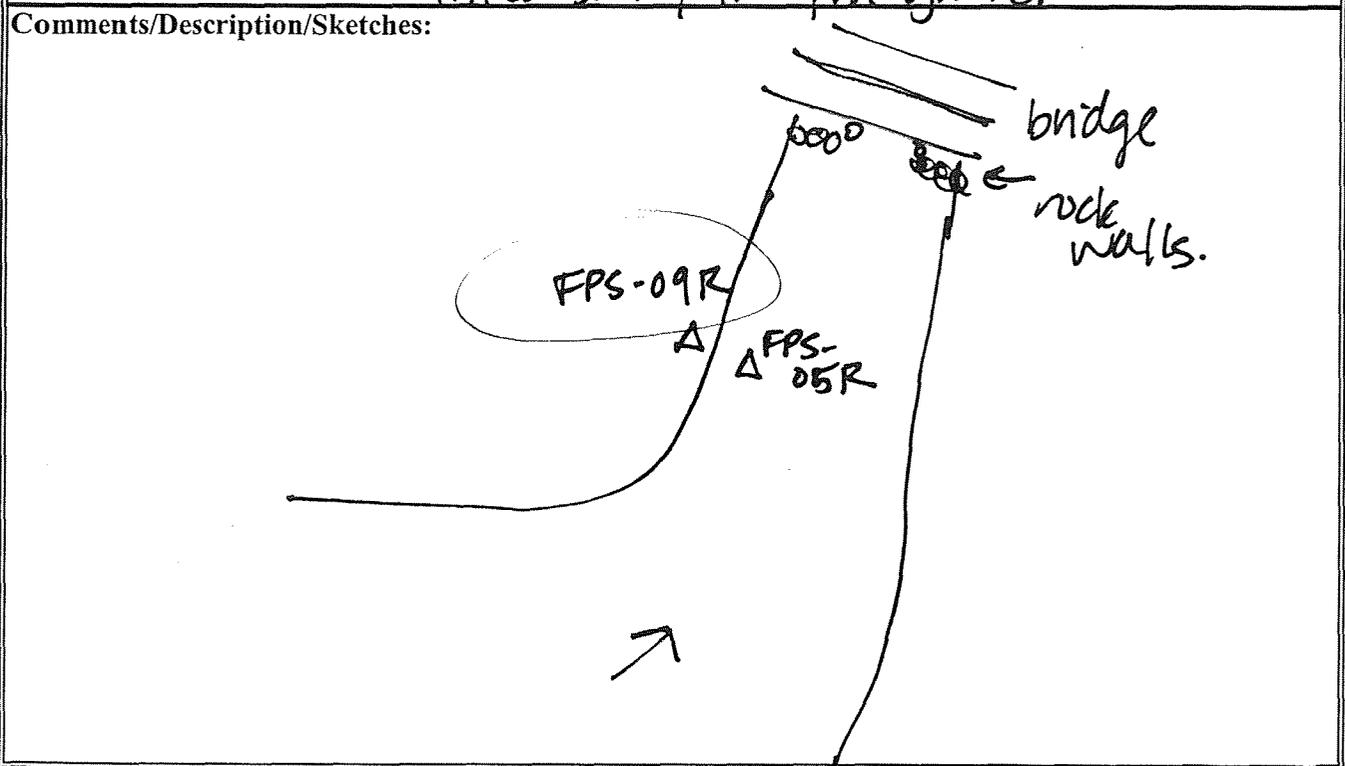
Project Name: Blackburn & Union		
Project #:	36800287	Date: 7/24/06
Sample Location ID:	FPS-09R	Time: 12:45
Sample #:	D07665	Weather: sunny, 80s clear
Samplers:	LO + JCM	

Sample Information:

Sample Depth:	0-1'	Sampling Device:	<input checked="" type="radio"/> auger	ekman dredge
		(circle one)	<input type="radio"/> shovel	ponar dredge
			<input type="radio"/> trowel	other:
Field Decon:	<input checked="" type="radio"/> Yes Dedicated	No	Sample Type:	<input checked="" type="radio"/> Grab
				Composite

Munsell Color: 2 layers - ① med. dark brown (top layer 6")
 ② grayish med brown

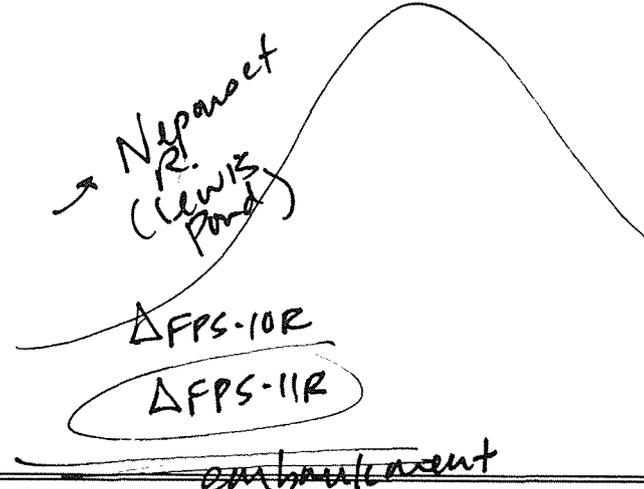
Sample Description: ① silt w/ fine sand and roots
 ② fine sand w/ little mc sand, trace to little silt, fr. fm gravel



SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/25/06
Sample Location ID:	FPS-10R-ME	Time:	08:10
Sample #:	D07666	Weather: sunny, clear, 70-80°	
Samplers:	LO + JCM		
<i>Sample Information:</i>			
Sample Depth:	0-1'	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge (circle one) <input type="radio"/> shovel ponar dredge <input type="radio"/> trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	0-1/2" med-dark brown 0.5"-12" tanish-grey		
Sample Description:	sludge 0-0.5" silt w/roots, tr detritus, moss 0.5"-12" very fine sand, with some silt, tr. fm sand		
Comments/Description/Sketches:			
sample elevation - 1" above water surface sample is wet (water filled boring when auger extracted)			

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union		
Project #:	36800287	Date: 7/25/06
Sample Location ID:	FPS-11R-ME	Time: 08:20
Sample #:	DO 7667	Weather: sunny, clear 80°
Samplers:	JCM + SCZ	
Sample Information:		
Sample Depth:	0 - 1 ^{1/2} "	Sampling Device: <u>auger</u> ekman dredge
		(circle one) shovel ponar dredge
		trowel other:
Field Decon:	<u>Yes</u> No Dedicated	Sample Type: <u>Grab</u> Composite
Munsell Color:	0-3" med brown 3"-12" light light brown	
Sample Description:	0-3" silt, little roots, little to some very fine sand. 3"-12" silt and very fine sand with little fine sand, trace fine gravel.	
Comments/Description/Sketches: Sample elevation: 5" above water surface 		

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union		
Project #:	36800287	Date: 7/25/06
Sample Location ID:	FPS-12R-ME	Time: 10:10
Sample #:	DO 7668	Weather: sunny; clear; 80's
Samplers:	JCM+SLZ	

Sample Information:

Sample Depth:	0 - 1'	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge <input type="radio"/> shovel ponar dredge <input type="radio"/> trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite

Munsell Color: 0-5" med. brown
5"-12" - grayish light brown

Sample Description: 0-5" very fine sand, little silt, tr. fine sand, tr. fine gravel.
5-12" - very fine sand, some silt, tr. fine sand

Comments/Description/Sketches:
 sample elevation (above water) 4ft
 (still in floodplain. Distance from shore - 10 ft.)

Charlela W. 347

Nipmuck R.

A FPS-08R

A FPS-12R

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/25/06
Sample Location ID:	FPS-13-ME	Time:	11:45
Sample #:	D07778	Weather: sunny, hot, 85°	
Samplers:	LO+JCM		
<i>Sample Information:</i>			
Sample Depth:	0-1'	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge
		(circle one)	<input type="radio"/> shovel ponar dredge
			<input type="radio"/> trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	med dark brown		
Sample Description:	silt, v. fine sand with little fine sand little roots, tr. fm gravel		
Comments/Description/Sketches:	3 ft up from stake, sample elevation - 1' up from water surface. See sketch for FPS-15-ME		

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/25/06
Sample Location ID:	FPS-14-ME	Time:	11:35
Sample #:	D07779	Weather: hot, sunny. 85°	
Samplers:	SG2 + JCM + LO		
<i>Sample Information:</i>			
Sample Depth:	0-1'	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge (circle one) <input type="radio"/> shovel ponar dredge <input type="radio"/> trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	med dark brown		
Sample Description:	loose organic silt and some very fine sand, little to some debris.		
Comments/Description/Sketches:	sample elevation - 3" up from water No standing water, 3ft out from stake, in weeds. see picture for FPS-15-ME		

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union		
Project #:	36800287	Date: 7/25/06
Sample Location ID:	FPS-15-ME	Time: 11:20
Sample #:	D07780	Weather: we sunny, hot, clear, 85°
Samplers:	SC2 + JCM	

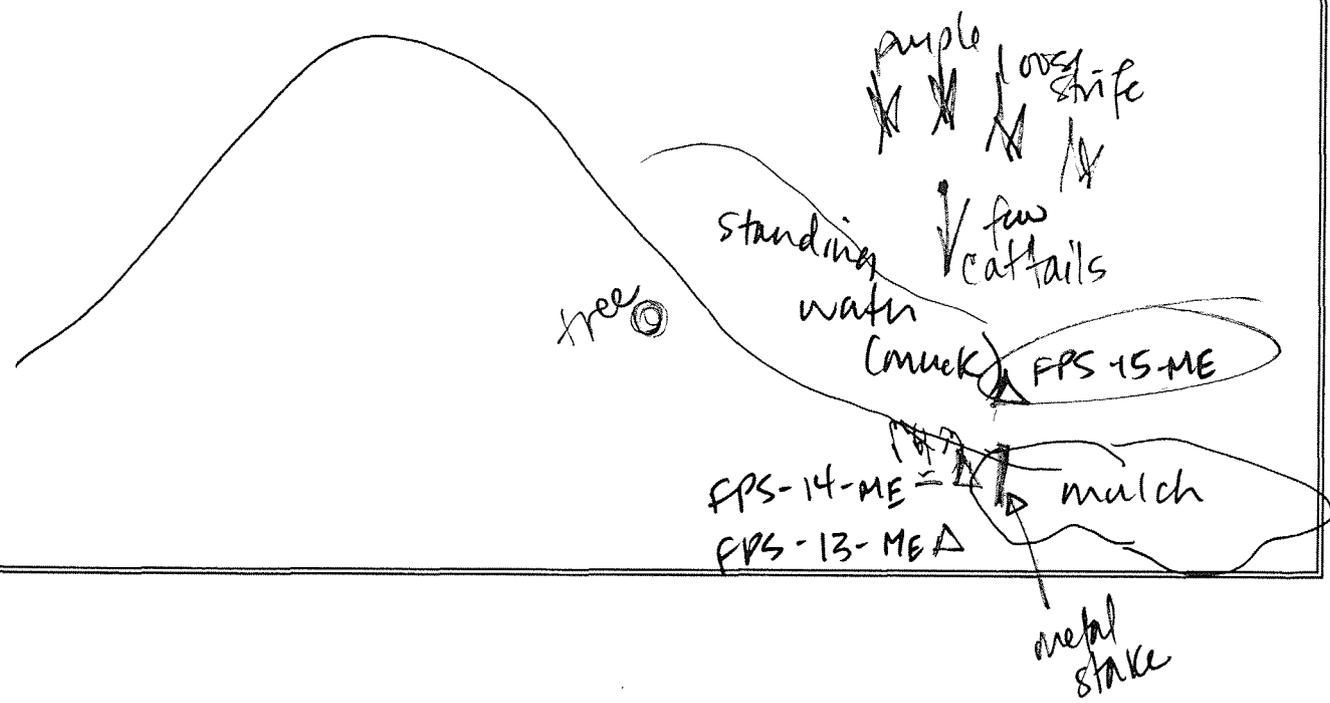
Sample Information:

Sample Depth:	0-1'	Sampling Device:	<input checked="" type="radio"/> auger	ekman dredge
		(circle one)	<input type="radio"/> shovel	ponar dredge
			<input type="radio"/> trowel	other:
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No	Sample Type:	<input checked="" type="radio"/> Grab	Composite
			Dedicated	

Munsell Color: med dark brown

Sample Description: loose organic silt and with some very fine sand, little to some detritus.

Comments/Description/Sketches: sample elevation - at water level
no standing water, but sample is wet (in short wet grass', 8ft out from stake



SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/25/06
Sample Location ID:	FPS-16-ME	Time:	12:35
Sample #:	D07781	Weather:	sunny, hot, 85°
Samplers:	JCM + SCZ		
<i>Sample Information:</i>			
Sample Depth:	0-1'	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge (circle one) shovel ponar dredge trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	0-6" med dark brown 6-12" grayish light brown		
Sample Description:	0-6" silt with little fine sand, fr. roots 6-12" fine sand fr. silt		
Comments/Description/Sketches:	sample elevation - 1.5' from water surface 7' upland from grassline see sketch for FPS-03R-ME		

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn & Union			
Project #:	36800287	Date:	7/25/06
Sample Location ID:	FPS-17-ME	Time:	12:20
Sample #:	D07782	Weather:	sunny, w/ some clouds
Samplers:	JCM / LO / SGZ		
Sample Information:			
Sample Depth:	0-1'	Sampling Device:	<input checked="" type="radio"/> auger ekman dredge (circle one) shovel ponar dredge trowel other:
Field Decon:	<input checked="" type="radio"/> Yes No Dedicated	Sample Type:	<input checked="" type="radio"/> Grab Composite
Munsell Color:	0-6" med dark brown 6-12" grayish light brown		
Sample Description:	0-6" organic silt w/ detritus + some roots 6-12" fine sand with some vf sand, tr med sand, tr. silt.		
Comments/Description/Sketches:	one foot inland from water at grass line sample elevation - 3" above water. see sketch for FPS-03R-ME		

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Mackland Farms Blackburn + Union			
Project #:	020 000 100 0000 000000		Date: 7/25/06
Sample Location ID:	FPS-18-ME		Time: 15:10
Sample #:	D07783		Weather: hot, partly sunny. 80°s
Samplers:	JCM + SLZ		
Sample depth:	0-1'		
Munsell Color: 0-6" med dark brown 6-12" med brown		Equipment:	<input checked="" type="radio"/> auger
Sample description: 0-6" silt and v. fine sand, tr. fm sand and tr. roots. 6-12" fine sand w/ little silt, tr. fm gravel		(circle one)	<input type="radio"/> shovel
Sample type: (circle one) <input checked="" type="radio"/> Grab <input type="radio"/> Composite			<input type="radio"/> trowel
Field Decon: (circle one) <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Dedicated			<input type="radio"/> Ekman dredge
			<input type="radio"/> Ponar dredge
		other:	
<p>Comments/sketches: sample elevation - $\frac{1.5'}{2}$ above water surface location is 3' inland from grass line.</p> <p align="center">see sketch for FPS-20-ME</p>			

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: XXXXXXXXXX Blackburn + Union			
Project #:	026 200400 0005 00000		Date: 7/25/06
Sample Location ID:	FPS-19-ME		Time: 15:05
Sample #:	DO 7784		Weather: hot, sunny, 85°
Samplers:	SCZ/LO/JCM		
Sample depth:	0-1'		
Munsell Color: 0-2" med. dark brown 2"-12" med brown		Equipment: <input checked="" type="radio"/> auger (circle one) <input type="radio"/> shovel <input type="radio"/> trowel <input type="radio"/> Ekman dredge <input type="radio"/> Ponar dredge other:	
Sample description:	0-2" silt, fine sand w/ detritus, w/ roots 2-12" fine sand, some silt, tr. fm gravel		
Sample type: (circle one)	<input checked="" type="radio"/> Grab <input type="radio"/> Composite		
Field Decon: (circle one)	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Dedicated		
Comments/sketches: FPS-19-ME sample elevation is 4" above water surface location is 3' out toward water from grass line. see sketch for FPS-20-ME			

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackland Farms Blackburn + Union	
Project #: 00020010000000000000	Date: 7/25/06
Sample Location ID: FPS-20-ME	Time: 14:55
Sample #: DO 7785	Weather: hot, sunny.
Samplers: SC2 + JCM	85°

Sample depth: **0-1'**

Munsell Color: 0-1" med dark brown 1"-12" med brown	Equipment: <input checked="" type="radio"/> auger (circle one) <input type="radio"/> shovel <input type="radio"/> trowel <input type="radio"/> Ekman dredge <input type="radio"/> Ponar dredge other:
Sample description: 0-1" organic silt and detritus and roots. 1"-12" fine sand, some v. fine sand	some silt, tr. fm sand.
Sample type: (circle one) <input checked="" type="radio"/> Grab <input type="radio"/> Composite	
Field Decon: (circle one) <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Dedicated	

Comments/sketches: **FPS-20 - no standing water - 0.5" above water surface. 15' offshore from grass line.**

41"

Standing water

purple loose stuff

FPS-20

FPS-19

FPS-18

Large tree

Large tree

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Mockland Farm Blackburn + Union			
Project #:	000-0000-0000-0000-0000-0000	Date:	7/25/06
Sample Location ID:	FPS-21-ME	Time:	14:00
Sample #:	D07718	Weather:	hot, sunny, 85°
Samplers:	JCM + SCE		
Sample depth:	0-1'		
Munsell Color: medium brown		Equipment:	<input checked="" type="radio"/> auger
		(circle one)	<input type="radio"/> shovel
Sample description: silt and v. fine sand, tr. fm sand, 4-5" lense of light brown fm sand, little v.f. sand			<input type="radio"/> trowel
			<input type="radio"/> Ekman dredge
Sample type: (circle one) <input checked="" type="radio"/> Grab <input type="radio"/> Composite			<input type="radio"/> Ponar dredge
		other:	
Field Decon: (circle one) <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Dedicated			
<p>Comments/sketches:</p> <p> FPS-21-ME - 10 feet upland from grass-line Sample elevation is approx. 1.5' above water surface 100 ft high weeds in mucky soil (no standing water) purple loose strife FPS-04R FPS-22 FPS-21 A large tree small tree </p>			

SURFACE SOIL SAMPLING FIELD DATA SHEET

Project Name: Blackburn Farms Blackburn + Union			
Project #:	000-000000-000000		Date: 7/25/06
Sample Location ID:	FPS-22-ME		Time: 14:20
Sample #:	D07719		Weather: hot, sunny, 85°
Samplers:	JCM + SCZ		
Sample depth:	0-1'		
Munsell Color:	0-9" med. dark brown 9-12" light brown	Equipment:	<input checked="" type="radio"/> auger
Sample description:	0-9" organic silt with detritus 9-12" fm sand w/little vf sand	(circle one)	<input type="radio"/> shovel
Sample type:	<input checked="" type="radio"/> Grab <input type="radio"/> Composite		<input type="radio"/> trowel
Field Decon:	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Dedicated		<input type="radio"/> Ekman dredge
		other:	<input type="radio"/> Ponar dredge
Comments/sketches:	sample elevation is 3" above water surface. Location is at grassline. See sketch for FPS-21-ME		

APPENDIX E

Chain-of-Custody Documentation



Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case: **R**
 Client No: 0280M

Region: 1 Project Code: Account Code: CERCLIS ID: MAD982191363 Spill ID: 01B3 Site Name/State: Blackburn & Union Privileges/MA Project Leader: Laurie O'Connor Action: Remedial Investigation Sampling Co: Metcalf & Eddy, Inc.	Date Shipped: 7/18/2006 Carrier Name: HAND DELIVERED Airbill: Shipped to: EMSL Analytical, Inc. Cross Westchester Executive Park 175 Clearbrook Road Elmsford NY 10188 (914) 592-4688	Chain of Custody Record Sampler Signature: <i>Laurie O'Connor</i> <table border="1"> <tr> <th>Relinquished By</th> <th>(Date / Time)</th> <th>Received By</th> <th>(Date / Time)</th> </tr> <tr> <td>1 <i>Laurie O'Connor</i></td> <td>7/18/06 16:30</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> </tr> </table>	Relinquished By	(Date / Time)	Received By	(Date / Time)	1 <i>Laurie O'Connor</i>	7/18/06 16:30			2				3				4			
Relinquished By	(Date / Time)	Received By	(Date / Time)																			
1 <i>Laurie O'Connor</i>	7/18/06 16:30																					
2																						
3																						
4																						

SAMPLE No.	MATRX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
D07670	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-129-11-ME-0-0.5	S: 7/17/2006 16:20	--
D07671	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-129-12R-ME-0.5-2.S 5	7/17/2006 16:10	--
D07672	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-129-13-ME-0-0.5	S: 7/17/2006 13:50	--
D07673	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-129-16R-ME-0.5-2.S 5	7/17/2006 15:15	--
D07674	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-129-18-ME-0-0.5	S: 7/17/2006 14:30	--
D07675	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-129-19R-ME-0-0.5	S: 7/17/2006 14:50	--
D07763	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	LP-25-ME	S: 7/18/2006 13:35	--
D07764	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	LP-26R-ME	S: 7/18/2006 13:25	FD 06
D07765	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	LP-27-ME	S: 7/18/2006 13:05	--
D07776	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	LP-26R-MECS	S: 7/18/2006 12:25	FD 06

Shipment for Case Completes? N	Sample(s) to be used for laboratory QC: D07763	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: PLM Asbest = CARB435 Asbestos in Soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 1-502446878-071806-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Mike Benhoff, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

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Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case: **R**
 Client No: 0280M

Region: 1 Project Code: Account Code: CERCLIS ID: MAD982191363 Sp# ID: 01B3 Site Name/State: Blackburn & Union Privileges/MA Project Leader: Laurie O'Connor Action: Remedial Investigation Sampling Co: Metcalf & Eddy, Inc.	Date Shipped: 7/19/2006 Carrier Name: HAND DELIVERED Attrib: Shipped to: EMSL Analytical, Inc. Cross Westchester Executive Park 175 Clearbrook Road Elmsford NY 10188 (914) 592-4688	Chain of Custody Record Relinquished By: (Date / Time) [Signature] 7/19/06 17:35 Received By: (Date / Time) [Signature]	Sampler Signature: [Signature] QC Type:
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SAMPLE No.	MATRX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		QC Type
D07745	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	ND-37R-ME	S: 7/18/2006	15:20	FD 05
D07746	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	ND-39-ME	S: 7/18/2006	14:40	-
D07747	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	ND-41-ME	S: 7/18/2006	12:55	-
D07748	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	ND-42-ME	S: 7/18/2006	9:50	-
D07749	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	LP-11R-ME	S: 7/19/2006	14:25	-
D07751	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	LP-13R-ME	S: 7/19/2006	14:05	-
D07752	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	LP-14R-ME	S: 7/19/2006	10:40	-
D07753	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (2) <i>7/19/06 (1)</i>	LP-15R-ME	S: 7/19/2006	11:00	-
D07754	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	LP-16R-ME	S: 7/19/2006	10:30	-
D07757	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	LP-19R-ME	S: 7/19/2006	12:25	-
D07758	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	LP-20R-ME	S: 7/19/2006	10:15	-

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: D07753	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: PLM Asbest = CARB435 Asbestos in Soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: **1-502446878-071906-0001**

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EPA Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case:

Client No: 0280M

R

Region: 1 Project Code: Account Code: CERCLIS ID: MAD982191363 Spill ID: 01B3 Site Name/State: Blackburn & Union Privileges/MA Project Leader: Laurie O'Connor Action: Remedial Investigation Sampling Co: Metcalf & Eddy, Inc.	Date Shipped: 7/19/2006 Carrier Name: HAND DELIVERED Airbill: Shipped to: EMSL Analytical, Inc. Cross Westchester Executive Park 175 Clearbrook Road Elmsford NY 10188 (914) 592-4688	Chain of Custody Record Sampler Signature: <i>Laurie O'Connor</i> Relinquished By (Date / Time): 1 <i>Laurie O'Connor</i> 7/19/06 17:35 2 3 4	Received By (Date / Time)
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SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		QC Type
D07759	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	LP-21R-ME	S: 7/19/2006	9:55	-
D07760	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	LP-22R-ME	S: 7/19/2006	9:40	-
D07761	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	LP-23R-ME	S: 7/18/2006	15:00	-
D07762	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	LP-24R-ME	S: 7/19/2006	9:25	-
D07775	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	ND-37R-MECS	S: 7/18/2006	15:15	FD 05

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: D07753	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: PLM Asbest = CARB435 Asbestos in Soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 1-502446878-071906-0001

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Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case:

R

Client No: 0280M

Region: 1 Project Code: Account Code: CERCLIS ID: MAD982191363 Spill ID: 01B3 Site Name/State: Blackburn & Union Privileges/MA Project Leader: Laurie O'Connor Action: Remedial Investigation Sampling Co: Metcalf & Eddy, Inc.	Date Shipped: 7/20/2006 Carrier Name: HAND DELIVERED Airbill: Shipped to: EMSL Analytical, Inc. Cross Westchester Executive Park 175 Clearbrook Road Elmsford NY 10188 (914) 592-4688	Chain of Custody Record <table border="1"> <tr> <td>Relinquished By</td> <td>(Date / Time)</td> <td>Sampler Signature: <i>Laurie O'Connor</i></td> <td>Received By</td> <td>(Date / Time)</td> </tr> <tr> <td><i>Laurie O'Connor</i></td> <td>7/20/06 17:55</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Relinquished By	(Date / Time)	Sampler Signature: <i>Laurie O'Connor</i>	Received By	(Date / Time)	<i>Laurie O'Connor</i>	7/20/06 17:55				2					3					4				
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<i>Laurie O'Connor</i>	7/20/06 17:55																										
2																											
3																											
4																											

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
D07682	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-120-HA0.5R-ME-0-S 0.5	7/20/2006 13:15	-
D07683	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-120-HA0.5R-ME-0.S 5-2.5	7/20/2006 13:20	-
D07684	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-120-KA0.5R-ME-0-S 0.5	7/20/2006 13:35	-
D07685	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-120-KA0.5R-ME-0.S 5-2.5	7/20/2006 13:40	-
D07686	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-120-M0.5R-ME-0-0.S 5	7/20/2006 13:25	-
D07687	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (2)	SO-33-120-M0.5R-ME-0.5.S 2.5	7/20/2006 13:30	-
D07688	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-I2.5-ME-0-0.5 S	7/20/2006 10:30	FD 02
D07689	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-I2.5-ME-0.5-4 S	7/20/2006 10:40	-
D07691	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-I2.5-ME-4-5 S	7/20/2006 10:45	-
D07693	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-I3.5-ME-0-0.5 S	7/20/2006 9:30	-
D07694	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-I3.5-ME-0.5-4 S	7/20/2006 9:45	-

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: D07687, D07696	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: PLM Asbest = CARB435 Asbestos in Soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment iced? _____

TR Number: 1-502446878-072006-0001

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EPA Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case: **R**
 Client No: 0280M

Region: 1 Project Code: Account Code: CERCLIS ID: MAD982191363 Spill ID: 01B3 Site Name/State: Blackburn & Union Privileges/MA Project Leader: Laurie O'Connor Action: Remedial Investigation Sampling Co: Metcalf & Eddy, Inc.	Date Shipped: 7/20/2006 Carrier Name: HAND DELIVERED Airbill: Shipped to: EMSL Analytical, Inc. Cross Westchester Executive Park 175 Clearbrook Road Elmsford NY 10188 (914) 592-4688	Chain of Custody Record Relinquished By: <i>Laurie O'Connor</i> (Date / Time): 7/20/06 17:55 Received By: _____ (Date / Time): _____ _____ _____ _____	Sampler Signature: <i>Laurie O'Connor</i>
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SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
D07696	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (2)	SO-33-127-I3.5-ME-4-6	S: 7/20/2006 10:00	-
D07697	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-I3.5-ME-6-9	S: 7/20/2006 10:10	-
D07698	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-J2-ME-0-0.5	S: 7/20/2006 11:10	-
D07699	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-J2-ME-0.5-4	S: 7/20/2006 11:15	-
D07701	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-J2-ME-4-7	S: 7/20/2006 11:20	-
D07702	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-L3R-ME-6-9	S: 7/20/2006 14:55	-
D07707	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-L3R-ME-0-0.5	S: 7/20/2006 14:25	FD 03
D07708	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-L3R-ME-0.5-2	S: 7/20/2006 14:30	-
D07709	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-L3R-ME-2-4	S: 7/20/2006 14:35	-
D07710	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-L3R-ME-4-6	S: 7/20/2006 14:45	-
D07772	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-I2.5-MECS-0-0S	7/20/2006 9:30	FD 02

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: D07687, D07696	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: PLM Asbest = CARB435 Asbestos in Soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: **1-502446878-072006-0001**

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REGION COPY



Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case:

Client No: 0280M

R

Region: 1 Project Code: Account Code: CERCLIS ID: MAD982191363 Spill ID: 01B3 Site Name/State: Blackburn & Union Privileges/MA Project Leader: Laurie O'Connor Action: Remedial Investigation Sampling Co: Metcalf & Eddy, Inc.	Date Shipped: 7/20/2006 Carrier Name: HAND DELIVERED Airbill: Shipped to: EMSL Analytical, Inc. Cross Westchester Executive Park 175 Clearbrook Road Elmsford NY 10188 (914) 592-4688	Chain of Custody Record <table border="1"> <tr> <td>Relinquished By</td> <td>(Date / Time)</td> <td>Received By</td> <td>(Date / Time)</td> </tr> <tr> <td>1 <i>[Signature]</i></td> <td>7/20/06 17:55</td> <td><i>[Signature]</i></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> </tr> </table>	Relinquished By	(Date / Time)	Received By	(Date / Time)	1 <i>[Signature]</i>	7/20/06 17:55	<i>[Signature]</i>		2				3				4				Sampler Signature: <i>[Signature]</i>
Relinquished By	(Date / Time)	Received By	(Date / Time)																				
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SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
D07773	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-L3R-MECS-0-0S: .5	7/20/2006 13:25	FD 03

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: D07687, D07696	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: PLM Asbest = CARB435 Asbestos in Soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 1-502446878-072006-0001

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EPA Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case:
 Client No: 0280M

R

Region: 1 Project Code: Account Code: CERCLIS ID: MAD982191363 Spill ID: 01B3 Site Name/State: Blackburn & Union Privileges/MA Project Leader: Laurie O'Connor Action: Remedial Investigation Sampling Co: Metcalf & Eddy, Inc.	Date Shipped: 7/21/2006 Carrier Name: HAND DELIVERED Airbill: Shipped to: EMSL Analytical, Inc. Cross Westchester Executive Park 175 Clearbrook Road Elmsford NY 10188 (914) 592-4688	Chain of Custody Record <table border="1"> <tr> <td>Relinquished By:</td> <td>(Date / Time)</td> <td>Received By:</td> <td>(Date / Time)</td> </tr> <tr> <td><i>[Signature]</i></td> <td>7/21/06 17:40</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> </tr> </table>	Relinquished By:	(Date / Time)	Received By:	(Date / Time)	<i>[Signature]</i>	7/21/06 17:40			2				3				4				Sampler Signature:
Relinquished By:	(Date / Time)	Received By:	(Date / Time)																				
<i>[Signature]</i>	7/21/06 17:40																						
2																							
3																							
4																							

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
D07690	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-126-R5R-ME-4-7 S:	7/21/2006 11:40	-
D07695	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-126-M5.5-ME-4-7 S:	7/21/2006 9:35	-
D07700	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-MA2.5-ME-8-1S: 2	7/21/2006 8:35	-
D07703	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-L5.5-ME-0-0.5S:	7/21/2006 10:00	-
D07704	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-L5.5-ME-0.5-2S:	7/21/2006 10:05	-
D07705	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-L5.5-ME-2-4 S:	7/21/2006 10:10	-
D07706	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-126-R5R-ME-2-4 S:	7/21/2006 11:35	-
D07711	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-MA2.5-ME-0-0S: 5	7/21/2006 8:15	-
D07712	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-MA2.5-ME-0.5-S: 2	7/21/2006 8:20	-
D07713	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-MA2.5-ME-2-4S:	7/21/2006 8:25	-
D07714	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-127-MA2.5-ME-4-8S:	7/21/2006 8:30	-

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: D07706, D07715, D07725, D07770	Additional Sampler Signature(s): 	Chain of Custody Seal Number:
Analysis Key: PLM Asbest = CARB435 Asbestos in Soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 1-502446878-072106-0001

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Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case: **R**
 Client No: 0280M

Region: 1 Project Code: Account Code: CERCLIS ID: MAD982191363 Spill ID: 01B3 Site Name/State: Blackburn & Union Privileges/MA Project Leader: Laurie O'Connor Action: Remedial Investigation Sampling Co: Metcalf & Eddy, Inc.	Date Shipped: 7/21/2006 Carrier Name: HAND DELIVERED Airbill: Shipped to: EMSL Analytical, Inc. Cross Westchester Executive Park 175 Clearbrook Road Elmsford NY 10188 (914) 592-4688	Chain of Custody Record <table border="1"> <tr> <td colspan="2">Relinquished By</td> <td colspan="2">(Date / Time)</td> <td colspan="2">Sampler Signature:</td> </tr> <tr> <td colspan="2">[Signature]</td> <td colspan="2">7/21/06 17:40</td> <td colspan="2">[Signature]</td> </tr> <tr> <td colspan="2">2</td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td colspan="2">3</td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td colspan="2">4</td> <td colspan="2"></td> <td colspan="2"></td> </tr> </table>	Relinquished By		(Date / Time)		Sampler Signature:		[Signature]		7/21/06 17:40		[Signature]		2						3						4					
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4																																

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
D07715	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-126-M5.5-ME-0-0.5S:	7/21/2006 9:20	--
D07716	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-126-M5.5-ME-0.5-2S:	7/21/2006 9:25	--
D07717	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-126-M5.5-ME-2-4 S:	7/21/2006 9:30	--
D07721	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-126-R5R-ME-0-0.5S:	7/21/2006 11:25	--
D07722	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-126-R5R-ME-0.5-2S:	7/21/2006 11:30	--
D07725	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (2) (1)	SO-ME1-ME-8-10 S:	7/20/2006 15:50	--
D07726	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-ME1-ME-10-11 S:	7/20/2006 15:55	--
D07731	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-174-Q7R-ME-0-0.5S:	7/21/2006 11:50	--
D07732	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-174-Q7R-ME-0.5-2S:	7/21/2006 11:55	--
D07766	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-ME1-ME-0-0.5 S:	7/20/2006 15:25	FD 07
D07767	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-ME1-ME-0.5-2 S:	7/20/2006 15:30	--

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: D07706, D07715, D07725, D07770	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: PLM Asbest = CARB435 Asbestos in Soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 1-502446878-072106-0001

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Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case: **R**
 Client No: 0280M

Region: 1	Date Shipped: 7/21/2006	Chain of Custody Record	Sampler Signature:
Project Code:	Carrier Name: HAND DELIVERED		Received By:
Account Code:	Airbill:	Relinquished By (Date / Time)	(Date / Time)
CERCLIS ID: MAD982191363	Shipped to: EMSL Analytical, Inc. Cross Westchester Executive Park 175 Clearbrook Road Elmsford NY 10188 (914) 592-4688	1 [Signature] 7/21/06 17:40	
Spill ID: 01B3		2	
Site Name/State: Blackburn & Union Privileges/MA		3	
Project Leader: Laurie O'Connor		4	
Action: Remedial Investigation			
Sampling Co: Metcalf & Eddy, Inc.			

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		QC Type
D07768	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-ME1-ME-2-4	S: 7/20/2006	15:35	-
D07769	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-ME1-ME-4-6	S: 7/20/2006	15:40	-
D07770	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (2) (1)	SO-ME1-ME-6-8	S: 7/20/2006	15:45	-
D07777	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-ME1-MECS-0-0.5	S: 7/20/2006	14:25	FD 07

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: D07706, D07715, D07725, D07770	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: PLM Asbest = CARB435 Asbestos in Soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment iced? _____

TR Number: **1-502446878-072106-0001**

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Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case: **R**
 Client No: 0280M

Region: 1 Project Code: Account Code: CERCLIS ID: MAD982191363 Spill ID: 01B3 Site Name/State: Blackburn & Union Privileges/MA Project Leader: Laurie O'Connor Action: Remedial Investigation Sampling Co: Metcalf & Eddy, Inc.	Date Shipped: 7/24/2006 Carrier Name: HAND DELIVERED Airbill: Shipped to: EMSL Analytical, Inc. Cross Westchester Executive Park 175 Clearbrook Road Elmsford NY 10188 (914) 592-4688	Chain of Custody Record Relinquished By (Date / Time) Received By (Date / Time) 2 <i>[Signature]</i> 7/24/06 16:45 3 4	Sampler Signature: <i>[Signature]</i>
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SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
D07661	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-05R-ME	S: 7/24/2006 13:05	-
D07665	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-09R-ME	S: 7/24/2006 12:45	-
D07676	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-120-104R-ME-0-0.5S:	7/24/2006 14:42	-
D07677	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (2) (1)	SO-33-120-104R-ME-0.5-2S: 5	7/24/2006 14:50	-
D07723	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-174-O10R-ME-0-0.S: 5	7/21/2006 13:05	-
D07724	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-174-O10R-ME-0.5-S: 2	7/21/2006 13:10	FD 04
D07728	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-174-P9-ME-0-0.5 S:	7/21/2006 13:00	-
D07729	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-174-P9-ME-0.5-2 S:	7/21/2006 13:05	-
D07733	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-174-M10-ME-0-0.5S:	7/21/2006 13:25	-
D07734	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (2) (1)	SO-33-174-M10-ME-0.5-2S:	7/21/2006 13:30	-
D07735	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-174-M10-ME-2-4 S:	7/21/2006 13:35	-

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: D07677, D07734, D07744	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: PLM Asbest = CARB435 Asbestos in Soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 1-502446878-072406-0001

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Metcalfe and Eddy DAS Chain of Custody Form

Generic Chain of Custody

Reference Case:

R

Client No:

0280M

Region: 1	Date Shipped: 7/24/2006	Chain of Custody Record		Sampler Signature:	
Project Code:	Carrier Name: HAND DELIVERED	Relinquished By	(Date / Time)	Received By	(Date / Time)
Account Code:	Airbill:	1 <i>Laurie O'Connor</i> 7/24/06 16:45			
CERCLIS ID: MAD982191363	Shipped to: EMSL Analytical, Inc. Cross Westchester Executive Park 175 Clearbrook Road Elmsford NY 10188 (914) 592-4688	2			
Spill ID: 01B3		3			
Site Name/State: Blackburn & Union Privileges/MA		4			
Project Leader: Laurie O'Connor					
Action: Remedial Investigation					
Sampling Co: Metcalfe & Eddy, Inc.					

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		QC Type
D07737	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-174-K16R-ME-0-0-S: 5	7/21/2006	14:55	-
D07738	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-174-K16R-ME-0.5-S: 2	7/21/2006	15:00	-
D07739	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	ND-25-ME	S: 7/24/2006	9:40	-
D07740	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	ND-26-ME	S: 7/24/2006	9:30	-
D07741	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	ND-27-ME	S: 7/24/2006	9:20	-
D07742	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	ND-28-ME	S: 7/21/2006	9:00	-
D07743	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	ND-29-ME	S: 7/24/2006	8:50	-
D07744	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (2) (1)	ND-30-ME	S: 7/24/2006	8:40	-
D07750	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	LP-12R-ME	S: 7/24/2006	10:10	-
D07755	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	LP-17R-ME	S: 7/24/2006	10:30	-
D07756	Sediment/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	LP-18R-ME	S: 7/24/2006	10:45	-

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: D07677, D07734, D07744	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: PLM Asbest = CARB435 Asbestos in Soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 1-502446878-072406-0001

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EPA Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case:

Client No: 0280M

R

Region: 1 Project Code: Account Code: CERCLIS ID: MAD982191363 Spill ID: 01B3 Site Name/State: Blackburn & Union Privileges/MA Project Leader: Laurie O'Connor Action: Remedial Investigation Sampling Co: Metcalf & Eddy, Inc.	Date Shipped: 7/24/2006 Carrier Name: HAND DELIVERED Airbill: Shipped to: EMSL Analytical, Inc. Cross Westchester Executive Park 175 Clearbrook Road Elmsford NY 10188 (914) 592-4688	Chain of Custody Record Relinquished By (Date / Time) Received By (Date / Time) 1 [Signature] 7/24/06 16:45 2 3 4	Sampler Signature: [Signature]
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SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME	QC Type
D07774	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-174-O10R-MECS-QS: .5-2	7/21/2006 12:10	FD 04

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: D07677, D07734, D07744	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: PLM Asbest = CARB435 Asbestos in Soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 1-502446878-072406-0001

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EPA Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case:

R

Client No: 0280M

Region: 1 Project Code: Account Code: CERCLIS ID: MAD982191363 Spill ID: 01B3 Site Name/State: Blackburn & Union Privileges/MA Project Leader: Laurie O'Connor Action: Remedial Investigation Sampling Co: Metcalf & Eddy, Inc.	Date Shipped: 7/26/2006 Carrier Name: HAND DELIVERED Airbill: Shipped to: EMSL Analytical, Inc. Cross Westchester Executive Park 175 Clearbrook Road Elmsford NY 10188 (914) 592-4688	Chain of Custody Record Sampler Signature: <i>[Signature]</i> <table border="1"> <thead> <tr> <th>Relinquished By</th> <th>(Date / Time)</th> <th>Received By</th> <th>(Date / Time)</th> </tr> </thead> <tbody> <tr> <td>1 <i>[Signature]</i></td> <td>7/26/06 16:30</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Relinquished By	(Date / Time)	Received By	(Date / Time)	1 <i>[Signature]</i>	7/26/06 16:30			2				3				4			
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SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		QC Type
D07651	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	BKGD-01-ME-0-0.5	S: 7/26/2006	8:15	-
D07652	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	BKGD-01-ME-0.5-2.5	S: 7/26/2006	8:30	-
D07653	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	BKGD-02-ME-0-0.5	S: 7/26/2006	7:35	-
D07654	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	BKGD-02-ME-0.5-2.5	S: 7/26/2006	8:00	-
D07655	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	BKGD-03-ME-0-0.5	S: 7/26/2006	8:45	-
D07656	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (2) ^{up} (1)	BKGD-03-ME-0.5-2.5	S: 7/26/2006	9:00	-
D07657	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-01R-ME	S: 7/26/2006	10:30	-
D07658	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-02R-ME	S: 7/26/2006	10:20	-
D07659	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-03R-ME	S: 7/25/2006	12:10	-
D07660	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-04R-ME	S: 7/25/2006	14:30	-
D07662	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-06R-ME	S: 7/25/2006	8:50	-

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC: D07656, D07663	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: PLM Asbest = CARB435 Asbestos in Soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 1-502446878-072606-0001

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REGION COPY

Reference Case:

R

Client No: 0280M

Region: 1 Project Code: Account Code: CERCLIS ID: MAD982191363 Spill ID: 01B3 Site Name/State: Blackburn & Union Privileges/MA Project Leader: Laurie O'Connor Action: Remedial Investigation Sampling Co: Metcalf & Eddy, Inc.	Date Shipped: 7/26/2006 Carrier Name: HAND DELIVERED Airbill: Shipped to: EMSL Analytical, Inc. Cross Westchester Executive Park 175 Clearbrook Road Elmsford NY 10188 (914) 592-4688	Chain of Custody Record Sampler Signature: <i>[Signature]</i> <table border="1"> <tr> <th>Relinquished By</th> <th>(Date / Time)</th> <th>Received By</th> <th>(Date / Time)</th> </tr> <tr> <td><i>[Signature]</i></td> <td>7/26/06 16:30</td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> </tr> </table>	Relinquished By	(Date / Time)	Received By	(Date / Time)	<i>[Signature]</i>	7/26/06 16:30			3				4			
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<i>[Signature]</i>	7/26/06 16:30																	
3																		
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SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		QC Type
D07663	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (2) ⁽¹⁾	FPS-07R-ME	S: 7/25/2006	9:00	-
D07664	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-08R-ME	S: 7/25/2006	10:00	-
D07666	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-10R-ME	S: 7/25/2006	8:10	-
D07667	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-11R-ME	S: 7/25/2006	8:20	-
D07668	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-12R-ME	S: 7/25/2006	10:10	-
D07669	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-129-2R-ME-0-0.5	S: 7/26/2006	12:15	FD 01
D07678	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-120-D0.5R-ME-0-0.S 5	S: 7/26/2006	11:30	-
D07679	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-120-D0.5R-ME-0.5.S 2.5	S: 7/26/2006	11:40	-
D07680	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-120-F0.5R-ME-0-0.S 5	S: 7/26/2006	12:30	-
D07681	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-120-F0.5R-ME-0.5.S 2.5	S: 7/26/2006	12:40	-
D07718	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-21-ME	S: 7/25/2006	14:00	-

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC: D07656, D07663	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: PLM Asbest = CARB435 Asbestos in Soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: **1-502446878-072606-0001**

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Mike Benhoff, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-4602

REGION COPY



Metcalf and Eddy DAS Chain of Custody Form
Generic Chain of Custody

Reference Case:

R

Client No: 0280M

Region: 1 Project Code: Account Code: CERCLIS ID: MAD982191363 Spill ID: 01B3 Site Name/State: Blackburn & Union Privileges/MA Project Leader: Laurie O'Connor Action: Remedial Investigation Sampling Co: Metcalf & Eddy, Inc.	Date Shipped: 7/26/2006 Carrier Name: HAND DELIVERED Airbill: Shipped to: EMSL Analytical, Inc. Cross Westchester Executive Park 175 Clearbrook Road Elmsford NY 10188 (914) 592-4688	Chain of Custody Record Sampler Signature: <i>[Signature]</i> <table border="1"> <thead> <tr> <th>Relinquished By</th> <th>(Date / Time)</th> <th>Received By</th> <th>(Date / Time)</th> </tr> </thead> <tbody> <tr> <td><i>[Signature]</i></td> <td>7/26/06 16:30</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Relinquished By	(Date / Time)	Received By	(Date / Time)	<i>[Signature]</i>	7/26/06 16:30			2				3				4			
Relinquished By	(Date / Time)	Received By	(Date / Time)																			
<i>[Signature]</i>	7/26/06 16:30																					
2																						
3																						
4																						

SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		QC Type
D07719	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-22-ME	S: 7/25/2006	14:20	-
D07771	Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	SO-33-129-2R-MECS-0-0.S: 5	7/26/2006	13:15	FD 01
D07778	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-13-ME	S: 7/25/2006	11:45	-
D07779	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-14-ME	S: 7/25/2006	11:35	-
D07780	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-15-ME	S: 7/25/2006	11:20	-
D07781	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-16-ME	S: 7/25/2006	12:35	-
D07782	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-17-ME	S: 7/25/2006	12:20	-
D07783	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-18-ME	S: 7/25/2006	15:10	-
D07785	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-20-ME	S: 7/25/2006	14:55	-
D07784	Surface Soil/ Laurie O'Connor	L/G	PLM Asbest (5)	(None) (1)	FPS-19-ME	S: 7/25/2006	15:05	-

Shipment for Case Complete? Y	Sample(s) to be used for laboratory QC: D07656, D07663	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: PLM Asbest = CARB435 Asbestos in Soil	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 1-502446878-072606-0001

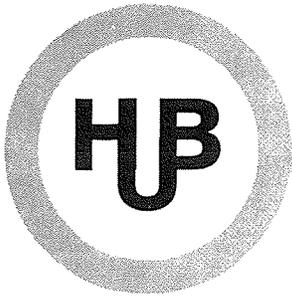
PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, Attn: Mike Benhoff, CSC, 15000 Conference Center Dr., Chantilly, VA 20151-3819; Phone 703/818-4200; Fax 703/818-1602

REGION COPY

APPENDIX F

Air Monitoring Report



HUB TESTING LABORATORY, INC.

Environmental Testing Service

95 Beaver Street - Waltham, MA 02453
(781) 893-8330 (781) 893-4414 (fax)

August 3, 2006

Report For: Laurie O Connor
Metcalf & Eddy
701 Edgewater Drive
Wakefield, MA 01880

Hub ID: 18141 & 18142

Project ID: Superfund Site in Walpole

Scope: Hub Testing Laboratory was employed to conduct monitoring during the Geoprob activity performed at the Superfund Site in Walpole. Monitoring was to include air samples from around the Geoprob Area. Samples were collected from four locations around the area, which included one from upstream and three from downstream. Samples were analyzed for fiber content.

Analysis: The samples were analyzed by NIOSH 7400(A) method.

Results:

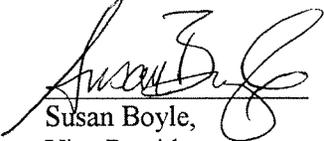
Location	Upstream	Downstream	Downstream	Downstream
I.35,I.25,J.2,	<0.001	<0.001	<0.001	<0.001
HA. 2,KA 0.5 JA 0.5, M 0.5	0.003	<0.003	0.003	0.003
MA2.5	<0.006	0.006	<0.005	<0.005
M5.5, L 5.5	<0.002	<0.002	<0.002	Reporting note 1
R-5, Q-7R	<0.003	<0.003	<0.003	<0.003
D-10, M 10	0.004	<0.004	<0.004	<0.004
K-16-R	Reporting note 2	Reporting note 1	<0.013	<0.013

Reporting Notes

- (1) Analyst was unable to quantify fiber concentration because of overloading of particulate material on the filter
- (2) Filter Damage

Standard: The OSHA PEL is 0.10 fibers/cc.

Comment: The NIOSH method requires that all fibers, including animal hair, synthetic, mineral, etc. be counted and included in the total fiber count.


Susan Boyle,
Vice President

HUB TESTING LABORATORY, INC.

Environmental Testing Service

95 Beaver Street - Waltham, MA 02453
 (781) 893-8330 (781) 893-4414 (fax)

DAILY AIR MONITORING DATA SHEET

Report for: M&E Corp & Eddy
701 Edgewater Dr
Wakefield, MA
 Contractor: M&E
 Job Site: _____

Hub ID: 18140
 Date: 7/20/06
 Calibration Method: Rotometer
 Rotometer #: _____
 Type of Sampling: Ambient

Calibration:

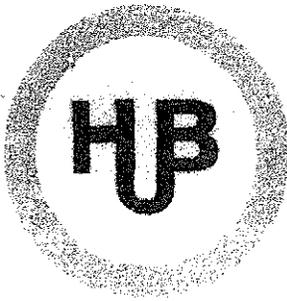
Pump Number	Z-3	02	04	N-3	N-3	04	02	Z-3		
Pre-Calibration	10.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0		
Post-Calibration	10.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0		
Average Flow	10.0	10.0	10.0	15.0	15.0	15.0	15.0	15.0		

Quality Control:

Blank #1 Result	1	Blank #2 Result	0	Reference Slide ID	160-3	Result	123.5	Mean	147.5	Range	72.2-249.3
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Sample I.D.	Sample Location	Pump Number	Start Time	Stop Time	Total Minutes	Volume (liters)	Fibers	Fibers/cc
1-A	I-35	Z-3	9:30	1:30	240 min	2400	5	<.001
2-A	I-25	02	9:30	1:40	250 min	2500	6.5	<.001
3-A	J-2	04	9:30	1:45	255 min	2550	3	<.001
4-A	K-2	N-3	9:30	1:25	235 min	2350	6.5	<.001
5-A	HA-2	N-3	2:15	3:20	65 min	975	7	.003
6A	KA0.5	04	2:15	3:20	65 min	975	8	.003
7A	LO.5	02	2:15	3:20	65 min	975	4	<.003
8A	MO.5	Z-3	2:15	3:20	65 min	975	8	.003

Project Monitors Signature: [Signature] Date: 7/20/06



HUB TESTING LABORATORY, INC.

Environmental Testing Service

95 Beaver Street - Waltham, MA 02453

(781) 893-8330 (781) 893-4414 (fax)

DAILY AIR MONITORING DATA SHEET

Report for: Metcalf & Eddy

Hub ID: 18142

Date: 7/21/06

Calibration Method: _____

Contractor: TDS

Rotometer #: _____

Job Site: B.F.P. Superfund site
(Walpole)

Type of Sampling: _____

Calibration:

Pump Number	04	02	N-3	Z-3	04	02	N-3	Z-3
Pre-Calibration	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
Post-Calibration								
Average Flow	14.0				14.0			

Quality Control:

Blank #1 Result	Blank #2 Result	Reference Slide ID	Result	Mean	Range

Sample I.D.	Sample Location	Pump Number	Start Time	Stop Time	Total Minutes	Volume (liters)	Fibers	Fibers/cc
9A	MA 2.5 up stream	Z-3	7:50	8:25	35 min	490	1	<.004
10A	MA 2.5 down stream	04	7:50	8:27	37 min	518	6	.004
11A	MA 2.5 down stream	N-3	7:50	8:30	40 min	560	2	<.005
12A	MA 2.5 down stream	02	7:50	8:30	40 min	560	3.5	<.005
13A	MA 2.5, L 2.5 up stream	Z-3	8:50	10:15	85 min	1190	2	2.002
14A	MA 2.5, L 2.5 down stream	04	8:50	10:15	85 min	1190	1.5	2.002
15A	MA 2.5, L 2.5 down stream	N-3	8:50	10:15	85 min	1190	1	2.002
16A	MA 2.5, L 2.5 down stream	02	8:50	10:15	85 min	1190		particulate over load

Project Monitors Signature: [Signature]

Date: 7/21/06



HUB TESTING LABORATORY, INC.

Environmental Testing Service

95 Beaver Street - Waltham, MA 02453

(781) 893-8330 (781) 893-4414 (fax)

DAILY AIR MONITORING DATA SHEET

Report for: OKTCAIP & Eddy
 Contractor: TDS
 Job Site: B.F.T Super Fund (Wampod)
 Calibration:

Hub ID: 18142
 Date: 7/21/06
 Calibration Method: _____
 Rotometer #: _____
 Type of Sampling: _____

Pump Number	04	02	N-3	Z-3	02	N-3	Z-3	04
Pre-Calibration	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
Post-Calibration	13.0	13.0	13.0	13.0	14.0	14.0	14.0	14.0
Average Flow	13.5				14.0			

Quality Control:

Blank #1 Result	Blank #2 Result	Reference Slide ID	Result	Mean	Range

Sample I.D.	Sample Location	Pump Number	Start Time	Stop Time	Total Minutes	Volume (liters)	Fibers	Fibers/cc
17A	R-5, Q-7R up stream	02	10:45	12:00	75 min	1050	3	<.003
18A	R-5, Q-7R down stream	Z-3	10:45	12:00	75 min	1050	4	<.003
19A	R-5, Q-7R down stream	04	10:45	12:00	75 min	1050	X	<.003
20A	R-5, Q-7R down stream	N-3	10:45	12:00	75 min	1050	2	<.003
21A	D-10, M-10 up stream	Z-3	12:30	1:20	50 min	700	5.5	.004
22A	D-10, M-10 down stream	N-3	12:30	1:20	50 min	700	4	<.004
23A	D-10, M-10 down stream	04	12:30	1:20	50 min	700	1	<.004
24A	D-10, M-10 down stream	02	12:30	1:20	50 min	700	1	<.004

Project Monitors Signature: [Signature] Date 7/21/06



HUB TESTING LABORATORY, INC.

Environmental Testing Service

95 Beaver Street - Waltham, MA 02453
(781) 893-8330 (781) 893-4414 (fax)

DAILY AIR MONITORING DATA SHEET

Report for: Metcof \$ Eddy Hub ID: 18142
 Contractor: TDS Date: 7/21/06
 Job Site: _____ Calibration Method: _____
 Rotometer #: _____
 Type of Sampling: _____

Calibration:

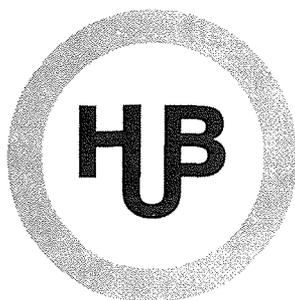
Pump Number	02	N-3	Z-3	04						
Pre-Calibration	14.0	14.0	14.0	14.0						
Post-Calibration	14.0	14.0	14.0	14.0						
Average Flow	14.0									

Quality Control:

Blank #1 Result	Blank #2 Result	Reference Slide ID	Result	Mean	Range
-----------------	-----------------	--------------------	--------	------	-------

Sample I.D.	Sample Location	Pump Number	Start Time	Stop Time	Total Minutes	Volume (liters)	Fibers	Fibers/cc
25A	End of Clark St K-16-R	N-3	2:15	2:30	15 min	210	filter torn	
26A	End of Clark St K-16-R	Z-3	2:15	2:30	15 min	210	over loaded w/ particulate	
27A	End of Clark St K-16-R	04	2:15	2:30	15 min	210	1	<.013
28A	End of Clark St K-16-R	02	2:15	2:30	15 min	210	2	<.013

Project Monitors Signature: [Signature] Date 7/21/06



HUB TESTING LABORATORY, INC.

Environmental Testing Service

95 Beaver Street - Waltham, MA 02453
(781) 893-8330 (781) 893-4414 (fax)

August 24, 2006

Report For: Laurie O'Connor
Metcalf & Eddy, Inc.
701 Edgewater Drive
Wakefield, MA 01880

Project: 18161

Scope: Six personal air samples were delivered to Hub Testing Laboratory. It was requested that the samples be analyzed by phase contrast microscopy (PCM).

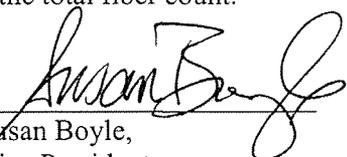
Analysis: The samples were analyzed by phase contrast microscopy, NIOSH 7400 Method.

Results:

Hub ID	Sample ID	Time	Type	Fibers	Fibers/cc
18161-1	V511349	302 Min	Personal	4.5	<0.007
18161-2	V511309	40 Min	Personal	2	<0.052
18161-3	V511460	135 Min	Personal	0	<0.015
18161-4	V511443	135 Min	Personal	1	<0.017
18161-5	W047955	404 Min	Personal	1	<0.006
18161-6	W047993	396 Min	Personal	4	<0.005
18161-7	W048209	253.2 Min	Personal	5	<0.001
18161-8	W047902	274.3 Min	Personal	3.5	<0.010
18161-9	V511474	394.8 Min	Personal	2	<0.007
18161-10	V511343	329 Min	Personal	1.5	<0.007

Standard: The OSHA PEL is 0.10 fibers/cc.

Comment: The samples and all information regarding the samples were supplied by the client. The NIOSH method requires that all fibers, including animal hair, synthetic, mineral, etc. be counted and included in the total fiber count.


Susan Boyle,
Vice President

Metcalf & Eddy
 701 Edgewater Drive
 Wakefield, MA 01880

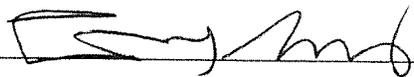
Laurie
 Contact: ~~Lori~~ O'Connor
 781/224-6431

Project Name: Walpole, MA / Blackburn + Union

Date: ~~7/21/06~~ 7/26/06
 SC

Sample ID	Individual	Description of Work Being Performed	On Time	Off Time	Total Minutes	Flow Rate	Volume
W047 955	SEAN - 7/21/06	GEOPROBING	7 ⁵⁵ 12 ⁴⁰	12 ⁰⁰ 15 ¹⁹	245 <u>159</u> 404	1.2	
W047 993	JOEL - 7/21/06	" "	7 ⁵⁵ 12 ⁴⁸	12 ⁰⁰ 15 ¹⁹	245 <u>151</u> 396	1.3	
W048 209	SEAN - 7/24/06	Sediment sampling; Soil hand augering	8 ¹⁰ 14 ³⁹	11 ⁰⁰ 15 ²⁰	170 <u>41</u> 211	1.2	
W047 902	JOEL - 7/24/06	" "	8 ¹⁰ 14 ³⁹	11 ⁰⁰ 15 ²⁰	170 <u>41</u> 211	1.3	
V511 474	SEAN - 7/25/06	Soil hand augering	8 ⁰⁰ 11 ¹⁷ 14 ⁰⁰	10 ²⁶ 12 ⁵⁰ 15 ³⁰	146 <u>93</u> <u>90</u> 329	1.2	
V511 343	JOEL - 7/25/06	" "	8 ⁰⁰ 11 ¹⁷ 14 ⁰⁰	10 ²⁶ 12 ⁵⁰ 15 ³⁰	146 <u>93</u> <u>90</u> 329	1.3	

Relinquished By:  Date: 7/26/06 Time: 15⁴⁵

Received By:  Date: 7/26/06 Time: _____

1^{SC}
 page 7 of 7

Metcalf & Eddy
 701 Edgewater Drive
 Wakefield, MA 01880

Laurie
 Contact: Lori O'Connor
 781/224-6431

Project Name: Walpole, MA / Blackburn & Union
 Date: 7/26/06

Sample ID	Individual	Description of Work Being Performed	On Time	Off Time	Total Minutes	Flow Rate	Volume
V511 349	LAURIE- 7/25/06	Soil hand augering	8:00 9:58 11:17 14:00	9:31 10:26 12:50 15:30	91 28 93 90 Total: 302	1.3	
V511 309	LAURIE- 7/26/06	" "	10:00	10:40	40	1.3	
V511 460	JOEL- 7/26/06	" "	10:00 11:25	10:40 13:00	40 95 135	1.3	
V511 443	SEAN- 7/26/06	" "	10:00 11:25	10:40 13:00	40 95 135	1.2	

Relinquished By: Sean Seaman Date: 7/26/06 Time: 15:45
 Received By: [Signature] Date: 7/26/06 Time: _____

HUB TESTING LABORATORY, INC.

Environmental Testing Service

95 Beaver Street - Waltham, MA 02453
(781) 893-8330 (781) 893-4414 (fax)

July 20, 2006

Report For: Laurie O'Conner
Metcalf & Eddy, Inc.
701 Edgewater Drive
Wakefield, MA 01880

Project: 18133

Scope: Four air samples were delivered to Hub Testing Laboratory. It was requested that the samples be analyzed for fibers using phase contrast microscopy (PCM).

Analysis: The samples were analyzed by phase contrast microscopy, NIOSH 7400 Method.

Results:

Hub ID	Sample ID	Time	Type	Fibers	Fibers/cc
18133-1	W047900	13:40 – 16:32	Personnel	8	.017
18133-2	W048277	13:40 – 16:32	Personnel	6	.013
18133-3	W047911	9:15 – 10:52 12:39 – 15:42	Personnel	4	.005
18133-4	W047951	9:15 – 10:52 12:39 – 15:42	Personnel	4	.005

Standard: The samples were collected as personnel samples and the current Massachusetts personnel standard for airborne asbestos fibers is 0.010 fibers/cc, as designated by the Massachusetts Department of Labor and Workforce Development (DLWD).

Comment: The samples and all information regarding the samples were supplied by the client. The NIOSH method requires that all fibers, including animal hair, synthetic, mineral, vegetable, etc. be counted and included in the total fiber count.


Susan Boyle, Vice President
MA Analytical Lab #AA000013

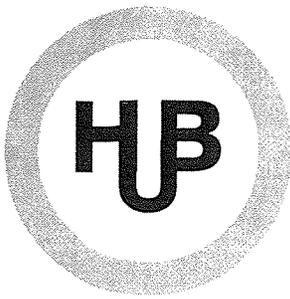
Metcalf & Eddy
701 Edgewater Drive
Wakefield, MA 01880

Laurie
Contact: *Lori O'Connor*
781/224-6431

Project Name: Walpole, MA / Blackburn & Union
Date: 7/18/06 (18133)

Sample ID	Individual	Description of Work Being Performed	On Time	Off Time	Total Minutes	Flow Rate	Volume
W047 900	Laurie- 7/17/06	SOIL SAMPLING IN WOODS ACROSS RIVER	13:40	16:32	172	1.3 1.3	
W048 277	SEAN- 7/17/06	" "	13:40	16:32	172	1.3 1.2	
W047 911	JOEL- 7/18/06	SEDIMENT SAMPLING IN LEWIS POND	9:15 12:39	10:52 15:42		1.3 1.3	
W047 951	SEAN- 7/18/06	" "	9:10 12:39	10:52 15:42		1.2 1.2	

Relinquished By: *Laurie O'Connor* Date: 7/18/06 Time: 17:30
Received By: *Lynne Whitcraft* Date: 7/18/06 Time: 17:30



HUB TESTING LABORATORY, INC.

Environmental Testing Service

95 Beaver Street - Waltham, MA 02453
(781) 893-8330 (781) 893-4414 (fax)

July 27, 2006

Report For: Laurie O'Connor
Metcalf & Eddy, Inc.
701 Edgewater Drive
Wakefield, MA 01880

Project: 18146

Scope: Six personal air samples were delivered to Hub Testing Laboratory. It was requested that the samples be analyzed by phase contrast microscopy (PCM).

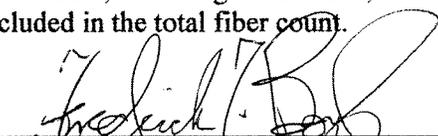
Analysis: The samples were analyzed by phase contrast microscopy, NIOSH 7400 Method.

Results:

Hub ID	Sample ID	Time	Type	Fibers	Fibers/cc
18146-1	W047980	8:15 – 13:45	Personnel	9	0.014
18146-2	W048179	8:15 – 15:05	Personnel	7	0.007
18146-3	W047991	13:41 – 15:12	Personnel	1	<0.016
18146-4	W047910	9:15 – 11:40 13:05 – 16:00	Personnel	0.5	<0.007
18146-5	W047918	9:15 – 11:40 13:05 – 16:00	Personnel	3.5	<0.005
18146-6	W048254	9:15 – 11:40 13:14 – 14:45	Personnel	2	<0.008

Standard: The OSHA PEL is 0.10 fibers/cc.

Comment: The samples and all information regarding the samples were supplied by the client. The NIOSH method requires that all fibers, including animal hair, synthetic, mineral, etc. be counted and included in the total fiber count.


Susan Boyle, Vice President
MA Analytical Lab #AA000013

Metcalf & Eddy
 701 Edgewater Drive
 Wakefield, MA 01880

Laurie
 Contact: ~~Lori~~ O'Connor
 781/224-6431

15146

Project Name: Walpole, MA / Blackburn & Union

Date: 7/21/06

(L/m)

Sample ID	Individual	Description of Work Being Performed	On Time	Off Time	Total Minutes	Flow Rate	Volume
1 W047 980	SEAN- 7/19/06	SEDIMENT SAMPLING IN LEWIS POND	8:15	13:45		1.2 1.2	
2 W048 179	JOEL- 7/19/06	" "	8:15	15:05		1.2 1.3	
3 W047 991	AMBIENT- 7/19/06	AMBIENT SAMPLE IN STAGING AREA	13:41	15:12		1.8 1.8	
4 W047 910	SEAN- 7/20/06	GEORROBING ON COSMEC SIDE OF PROPERTY	9:15 13:05	11:40 16:00		1.2 1.2	
5 W047 918	JOEL- 7/20/06	" "	9:15 13:05	11:40 16:00		1.3 1.3	
6 W048 254	LAVRIE- 7/20/06	" "	9:15 13:14	11:40 14:47		1.3 1.4	

Relinquished By: *Laurie O'Connor*
 Received By: *Laurie O'Connor*

Date: 7/21/06 Time: ~~13~~ 14:55
 Date: 7/21/06 Time: 14:55

Metcalf & Eddy
701 Edgewater Drive
Wakefield, MA 01880

Laurie
Contact: Lori O'Connor
781/224-6431

Project Name: Walpole, MA / Blackburn & Union
Date: 7/18/06 (18133)

Sample ID	Individual	Description of Work Being Performed	On Time	Off Time	Total Minutes	Flow Rate	Volume
W047 900	LAURIE- 7/17/06	SOIL SAMPLING IN WOODS ACROSS RIVER	13:40	16:32	172	1.3 1.3	
W048 277	SEAN- 7/17/06	" "	13:40	16:32	172	1.3 1.2	
W047 911	JOEL- 7/18/06	SEDIMENT SAMPLING IN LEWIS POND	9:15 12:39	10:52 15:42		1.3 1.3	
W047 951	SEAN- 7/18/06	" "	9:10 12:39	10:52 15:42		1.2 1.2	

Relinquished By: Laurie O'Connor Date: 7/18/06 Time: 17:30
Received By: Lynne Whitcraft Date: 7/18/06 Time: 17:30

APPENDIX G

Analytical Data

SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07745

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.		D07745	D07775	D07746	D07747	D07748
M&E Sample ID		ND-37R-ME	ND-37R-MECS	ND-39-ME	ND-41-ME	ND-42-ME
Lab Sample ID		130602428-0001	130602428-0016	130602428-0002	130602428-0003	130602428-0004
Matrix		SE	SE	SE	SE	SE
Sample Type		FD	FD	N	N	N
Date Sampled		07/18/06	07/18/06	07/18/06	07/18/06	07/18/06
Date Received		07/19/06	07/19/06	07/19/06	07/19/06	07/19/06
Date Extracted		07/20/06	07/20/06	07/20/06	07/20/06	07/20/06
Date Analyzed		07/24/06	07/24/06	07/24/06	07/24/06	07/24/06
Units		%	%	%	%	%
% Solids		100	100	100	100	100
Dilution Factor		1	1	1	1	1
Mass/Volume of Sample						
Comments		FD of D07775	FD of D07745			
Analyte	RL					
Non-fibrous		100	100	100	100	100
Fibrous, non-asbestos						
glass		<1	<1	<1	<1	<1
cellulose		<1	<1	<1	<1	<1
Fibrous, asbestos						
Actinolite	0.25	ND	ND	ND	ND	ND
Amosite	0.25	ND	ND	ND	ND	ND
Anthophyllite	0.25	ND	ND	ND	ND	ND
Chrysotile	0.25	ND	ND	<0.25	<0.25	ND
Crocidolite	0.25	ND	ND	ND	ND	ND
Tremolite	0.25	ND	ND	ND	ND	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07745

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07749	D07751	D07752	D07753	D07754
M&E Sample ID	LP-11R-ME	LP-13R-ME	LP-14R-ME	LP-15R-ME	LP-16R-ME
Lab Sample ID	130602428-0005	130602428-0006	130602428-0007	130602428-0008	130602428-0009
Matrix	SE	SE	SE	SE	SE
Sample Type	N	N	N	N	N
Date Sampled	07/19/06	07/19/06	07/19/06	07/19/06	07/19/06
Date Received	07/19/06	07/19/06	07/19/06	07/19/06	07/19/06
Date Extracted	07/20/06	07/20/06	07/20/06	07/20/06	07/20/06
Date Analyzed	07/24/06	07/24/06	07/24/06	07/24/06	07/24/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments					
Analyte	RL				
Non-fibrous		100	100	100	100
Fibrous, non-asbestos					
glass		<1	<1	<1	<1
cellulose		<1	<1	<1	<1
Fibrous, asbestos					
Actinolite	0.25	ND	ND	ND	ND
Amosite	0.25	ND	ND	ND	ND
Anthophyllite	0.25	ND	ND	ND	ND
Chrysotile	0.25	ND	ND	<0.25	<0.25
Crocidolite	0.25	ND	ND	ND	ND
Termolite	0.25	ND	ND	ND	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07745

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.		D07757	D07758	D07759	D07760	D07761
M&E Sample ID		LP-19R-ME	LP-20R-ME	LP-21R-ME	LP-22R-ME	LP-23R-ME
Lab Sample ID		130602428-0010	130602428-0011	130602428-0012	130602428-0013	130602428-0014
Matrix		SE	SE	SE	SE	SE
Sample Type		N	N	N	N	N
Date Sampled		07/19/06	07/19/06	07/19/06	07/19/06	07/18/06
Date Received		07/19/06	07/19/06	07/19/06	07/19/06	07/19/06
Date Extracted		07/20/06	07/20/06	07/20/06	07/20/06	07/20/06
Date Analyzed		07/24/06	07/24/06	07/24/06	07/24/06	07/24/06
Units		%	%	%	%	%
% Solids		100	100	100	100	100
Dilution Factor		1	1	1	1	1
Mass/Volume of Sample						
Comments						
Analyte	RL					
Non-fibrous		100	100	100	100	99.75
Fibrous, non-asbestos						
glass		<1	<1	<1	<1	<1
cellulose		<1	<1	<1	<1	<1
Fibrous, asbestos						
Actinolite	0.25	ND	ND	ND	ND	ND
Amosite	0.25	ND	ND	ND	ND	ND
Anthophyllite	0.25	ND	ND	ND	ND	ND
Chrysotile	0.25	ND	<0.25	ND	ND	0.25
Crocidolite	0.25	ND	ND	ND	ND	ND
Termolite	0.25	ND	ND	ND	ND	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07745

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.		D07762
M&E Sample ID		LP-24R-ME
Lab Sample ID		130602428-0015
Matrix		SE
Sample Type		N
Date Sampled		07/19/06
Date Received		07/19/06
Date Extracted		07/20/06
Date Analyzed		07/24/06
Units		%
% Solids		100
Dilution Factor		1
Mass/Volume of Sample		
Comments		
Analyte	RL	
Non-fibrous		99.75
Fibrous, non-asbestos		
glass		<1
cellulose		<1
Fibrous, asbestos		
Actinolite	0.25	ND
Amosite	0.25	ND
Anthophyllite	0.25	ND
Chrysotile	0.25	0.25
Crocidolite	0.25	ND
Termolite	0.25	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

SITE: Blackburn & Union Superfund Site
CASE NO.: 0280M
SDG NO.: D07651

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07651	D07652	D07653	D07654	D07655
M&E Sample ID	BKGD-01-ME-0-0.5	BKGD-01-ME-0.5-2.5	BKGD-02-ME-0-0.5	BKGD-02-ME-0.5-2.5	BKGD-03-ME-0-0.5
Lab Sample ID	130602520-0001	130602520-0002	130602520-0003	130602520-0004	130602520-0005
Matrix	SO	SO	SO	SO	SO
Sample Type	N	N	N	N	N
Date Sampled	07/26/06	07/26/06	07/26/06	07/26/06	07/26/06
Date Received	07/26/06	07/26/06	07/26/06	07/26/06	07/26/06
Date Extracted	07/27/06	07/27/06	07/27/06	07/27/06	07/27/06
Date Analyzed	08/02/06	08/02/06	08/02/06	08/02/06	08/02/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments					
Analyte	RL				
Non-fibrous	100	100	100	100	100
Fibrous, non-asbestos					
glass	<1	ND	ND	<1	<1
cellulose	<1	ND	<1	<1	<1
Fibrous, asbestos					
Actinolite	0.25 ND	ND	ND	ND	ND
Amosite	0.25 ND	ND	ND	ND	ND
Anthophyllite	0.25 ND	ND	ND	ND	ND
Chrysotile	0.25 ND	ND	ND	ND	ND
Crocidolite	0.25 ND	ND	ND	ND	ND
Termolite	0.25 ND	ND	ND	ND	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

SITE: Blackburn & Union Superfund Site
CASE NO.: 0280M
SDG NO.: D07651

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07656	D07657	D07658	D07659	D07660
M&E Sample ID	BKGD-03-ME-0.5-2.5	FPS-01R-ME	FPS-02R-ME	FPS-03R-ME	FPS-04R-ME
Lab Sample ID	130602520-0006	130602520-0007	130602520-0008	130602520-0009	130602520-0010
Matrix	SO	SS	SS	SS	SS
Sample Type	N	N	N	N	N
Date Sampled	07/26/06	07/26/06	07/26/06	07/25/06	07/25/06
Date Received	07/26/06	07/26/06	07/26/06	07/26/06	07/26/06
Date Extracted	07/27/06	07/27/06	07/27/06	07/27/06	07/27/06
Date Analyzed	08/02/06	08/02/06	08/02/06	08/02/06	08/02/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments					
Analyte	RL				
Non-fibrous	100	100	100	100	100
Fibrous, non-asbestos					
glass	ND	<1	ND	<1	ND
cellulose	<1	<1	<1	<1	<1
Fibrous, asbestos					
Actinolite	0.25 ND	ND	ND	ND	ND
Amosite	0.25 ND	ND	ND	ND	ND
Anthophyllite	0.25 ND	ND	ND	ND	ND
Chrysotile	0.25 ND	<0.25	<0.25	<0.25	ND
Crocidolite	0.25 ND	ND	ND	ND	ND
Termolite	0.25 ND	ND	ND	ND	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

SITE: Blackburn & Union Superfund Site
CASE NO.: 0280M
SDG NO.: D07651

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07662	D07663	D07664	D07666	D07667
M&E Sample ID	FPS-06R-ME	FPS-07R-ME	FPS-08R-ME	FPS-10R-ME	FPS-11R-ME
Lab Sample ID	130602520-0011	130602520-0012	130602520-0013	130602520-0014	130602520-0015
Matrix	SS	SS	SS	SS	SS
Sample Type	N	N	N	N	N
Date Sampled	07/25/06	07/25/06	07/25/06	07/25/06	07/25/06
Date Received	07/26/06	07/26/06	07/26/06	07/26/06	07/26/06
Date Extracted	07/27/06	07/27/06	07/27/06	07/27/06	07/27/06
Date Analyzed	08/02/06	08/02/06	08/02/06	08/02/06	08/02/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments					
Analyte	RL				
Non-fibrous		100	100	100	100
Fibrous, non-asbestos					
glass		ND	ND	<1	ND
cellulose		<1	ND	<1	ND
Fibrous, asbestos					
Actinolite	0.25	ND	ND	ND	ND
Amosite	0.25	ND	ND	ND	ND
Anthophyllite	0.25	ND	ND	ND	ND
Chrysotile	0.25	<0.25	ND	<0.25	ND
Crocidolite	0.25	ND	ND	ND	ND
Termolite	0.25	ND	ND	ND	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

SITE: Blackburn & Union Superfund Site
CASE NO.: 0280M
SDG NO.: D07651

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07668	D07669	D07771	D07678	D07679
M&E Sample ID	FPS-12R-ME	SO-33-129-2R-ME-0-0.5	SO-33-129-2R-MECS-0-0.5	SO-33-120-D0.5R-ME-0-0.5	SO-33-120-D0.5R-ME-0.5-2.5
Lab Sample ID	130602520-0016	130602520-0017	130602520-0024	130602520-0018	130602520-0019
Matrix	SS	SO	SO	SO	SO
Sample Type	N	FD	FD	N	N
Date Sampled	07/25/06	07/26/06	07/26/06	07/26/06	07/26/06
Date Received	07/26/06	07/26/06	07/26/06	07/26/06	07/26/06
Date Extracted	07/27/06	07/27/06	07/27/06	07/27/06	07/27/06
Date Analyzed	08/02/06	08/02/06	08/02/06	08/02/06	08/02/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments		FD of D07771	FD of D07669		
Analyte	RL				
Non-fibrous	100	100	100	100	100
Fibrous, non-asbestos					
glass	ND	ND	ND	ND	ND
cellulose	ND	ND	<1	ND	ND
Fibrous, asbestos					
Actinolite	0.25 ND	ND	ND	ND	ND
Amosite	0.25 ND	ND	ND	ND	ND
Anthophyllite	0.25 ND	ND	ND	ND	ND
Chrysotile	0.25 ND	ND	ND	ND	ND
Crocidolite	0.25 ND	ND	ND	ND	ND
Termolite	0.25 ND	ND	ND	ND	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

SITE: Blackburn & Union Superfund Site
CASE NO.: 0280M
SDG NO.: D07651

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07680	D07681	D07718	D07719	D07778
M&E Sample ID	SO-33-120-F0.5R-ME-0-0.5	SO-33-120-F0.5R-ME-0.5-2.5	FPS-21-ME	FPS-22-ME	FPS-13-ME
Lab Sample ID	130602520-0020	130602520-0021	130602520-0022	130602520-0023	130602520-0025
Matrix	SO	SO	SS	SS	SS
Sample Type	N	N	N	N	N
Date Sampled	07/26/06	07/26/06	07/25/06	07/25/06	07/25/06
Date Received	07/26/06	07/26/06	07/26/06	07/26/06	07/26/06
Date Extracted	07/27/06	07/27/06	07/27/06	07/27/06	07/27/06
Date Analyzed	08/02/06	08/02/06	08/02/06	08/02/06	08/02/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments					
Analyte	RL				
Non-fibrous	100	100	100	100	100
Fibrous, non-asbestos					
glass	ND	ND	ND	<1	ND
cellulose	<1	ND	<1	<1	ND
Fibrous, asbestos					
Actinolite	0.25 ND	ND	ND	ND	ND
Amosite	0.25 ND	ND	ND	ND	ND
Anthophyllite	0.25 ND	ND	ND	ND	ND
Chrysotile	0.25 <0.25	ND	ND	ND	ND
Crocidolite	0.25 ND	ND	ND	ND	ND
Termolite	0.25 ND	ND	ND	ND	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

SITE: Blackburn & Union Superfund Site
CASE NO.: 0280M
SDG NO.: D07651

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07779	D07780	D07781	D07782	D07783
M&E Sample ID	FPS-14-ME	FPS-15-ME	FPS-16-ME	FPS-17-ME	FPS-18-ME
Lab Sample ID	130602520-0026	130602520-0027	130602520-0028	130602520-0029	130602520-0030
Matrix	SS	SS	SS	SS	SS
Sample Type	N	N	N	N	N
Date Sampled	07/25/06	07/25/06	07/25/06	07/25/06	07/25/06
Date Received	07/26/06	07/26/06	07/26/06	07/26/06	07/26/06
Date Extracted	07/27/06	07/27/06	07/27/06	07/27/06	07/27/06
Date Analyzed	08/02/06	08/02/06	08/02/06	08/02/06	08/02/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments					
Analyte	RL				
Non-fibrous	99.25	100	100	100	100
Fibrous, non-asbestos					
glass	ND	ND	ND	ND	ND
cellulose	<1	ND	ND	<1	ND
Fibrous, asbestos					
Actinolite	0.25 ND	ND	ND	ND	ND
Amosite	0.25 ND	ND	ND	ND	ND
Anthophyllite	0.25 ND	ND	ND	ND	ND
Chrysotile	0.25 0.75	ND	ND	ND	ND
Crocidolite	0.25 ND	ND	ND	ND	ND
Termolite	0.25 ND	ND	ND	ND	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

SITE: Blackburn & Union Superfund Site
CASE NO.: 0280M
SDG NO.: D07651

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.		D07784	D07785
M&E Sample ID		FPS-19-ME	FPS-20-ME
Lab Sample ID		130602520-0032	130602520-0031
Matrix		SS	SS
Sample Type		N	N
Date Sampled		07/25/06	07/25/06
Date Received		07/26/06	07/26/06
Date Extracted		07/27/06	07/27/06
Date Analyzed		08/02/06	08/02/06
Units		%	%
% Solids		100	100
Dilution Factor		1	1
Mass/Volume of Sample			
Comments			
Analyte	RL		
Non-fibrous		100	100
Fibrous, non-asbestos			
glass		<1	ND
cellulose		<1	<1
Fibrous, asbestos			
Actinolite	0.25	ND	ND
Amosite	0.25	ND	ND
Anthophyllite	0.25	ND	ND
Chrysotile	0.25	ND	ND
Crocidolite	0.25	ND	ND
Termolite	0.25	ND	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07661

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07661	D07665	D07676	D07677	D07723
M&E Sample ID	FPS-05R-ME	FPS-09R-ME	SO-33-120-104R-ME-0-0.5	SO-33-120-104R-ME-0.5-2.5	SO-33-174-010R-ME-0-0.5
Lab Sample ID	130602503-0001	130602503-0002	130602503-0003	130602503-0004	130602503-0005
Matrix	SS	SS	SO	SO	SO
Sample Type	N	N	N	N	N
Date Sampled	07/24/06	07/24/06	07/24/06	07/24/06	07/21/06
Date Received	07/24/06	07/24/06	07/24/06	07/24/06	07/24/06
Date Extracted	07/25/06	07/25/06	07/25/06	07/25/06	07/25/06
Date Analyzed	07/29/06	07/29/06	07/29/06	07/29/06	07/29/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments					
Analyte	RL				
Non-fibrous	100	100	100	100	100
Fibrous, non-asbestos					
glass	<1	<1	<1	ND	<1
cellulose	ND	<1	ND	ND	<1
Fibrous, asbestos					
Actinolite	0.25 ND	ND	ND	ND	ND
Amosite	0.25 ND	ND	ND	ND	ND
Anthophyllite	0.25 ND	ND	ND	ND	ND
Chrysotile	0.25 ND	ND	ND	ND	ND
Crocidolite	0.25 ND	ND	ND	ND	ND
Termolite	0.25 ND	ND	ND	ND	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07661

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.		D07724	D07774	D07728	D07729	D07733
M&E Sample ID		SO-33-174-O10R-ME-0.5-2	SO-33-174-O10R-MECS-0.5-2	SO-33-174-P9-ME-0-0.5	SO-33-174-P9-ME-0.5-2	SO-33-174-M10-ME-0-0.5
Lab Sample ID		130602503-0006	130602503-0023	130602503-0007	130602503-0008	130602503-0009
Matrix		SO	SO	SO	SO	SO
Sample Type		FD	FD	N	N	N
Date Sampled		07/21/06	07/21/06	07/21/06	07/21/06	07/21/06
Date Received		07/24/06	07/24/06	07/24/06	07/24/06	07/24/06
Date Extracted		07/25/06	07/25/06	07/25/06	07/25/06	07/25/06
Date Analyzed		07/29/06	07/29/06	07/29/06	07/29/06	07/29/06
Units		%	%	%	%	%
% Solids		100	100	100	100	100
Dilution Factor		1	1	1	1	1
Mass/Volume of Sample						
Comments		FD of D07774	FD of D07724			
Analyte	RL					
Non-fibrous		100	100	100	100	100
Fibrous, non-asbestos						
glass		ND	ND	<1	ND	ND
cellulose		ND	ND	ND	ND	ND
Fibrous, asbestos						
Actinolite	0.25	ND	ND	ND	ND	ND
Amosite	0.25	ND	ND	ND	ND	ND
Anthophyllite	0.25	ND	ND	ND	ND	ND
Chrysotile	0.25	ND	ND	ND	ND	ND
Crocidolite	0.25	ND	ND	ND	ND	ND
Termolite	0.25	ND	ND	ND	ND	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07661

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07734	D07735	D07737	D07738	D07739
M&E Sample ID	SO-33-174-M10-ME-0.5-2	SO-33-174-M10-ME-2-4	SO-33-174-K16R-ME-0-0.5	SO-33-174-K16R-ME-0.5-2	ND-25-ME
Lab Sample ID	130602503-0010	130602503-0011	130602503-0012	130602503-0013	130602503-0014
Matrix	SO	SO	SO	SO	SE
Sample Type	N	N	N	N	N
Date Sampled	07/21/06	07/21/06	07/21/06	07/21/06	07/24/06
Date Received	07/24/06	07/24/06	07/24/06	07/24/06	07/24/06
Date Extracted	07/25/06	07/25/06	07/25/06	07/25/06	07/25/06
Date Analyzed	07/29/06	07/29/06	07/29/06	07/29/06	07/29/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments					
Analyte	RL				
Non-fibrous	100	100	100	100	100
Fibrous, non-asbestos					
glass	ND	ND	ND	ND	ND
cellulose	ND	ND	ND	ND	<1
Fibrous, asbestos					
Actinolite	0.25 ND	ND	ND	ND	ND
Amosite	0.25 ND	ND	ND	ND	ND
Anthophyllite	0.25 ND	ND	ND	ND	ND
Chrysotile	0.25 ND	ND	ND	ND	ND
Crocidolite	0.25 ND	ND	ND	ND	ND
Termolite	0.25 ND	ND	ND	ND	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07661

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07740	D07741	D07742	D07743	D07744
M&E Sample ID	ND-26-ME	ND-27-ME	ND-28-ME	ND-29-ME	ND-30-ME
Lab Sample ID	130602503-0015	130602503-0016	130602503-0017	130602503-0018	130602503-0019
Matrix	SE	SE	SE	SE	SE
Sample Type	N	N	N	N	N
Date Sampled	07/24/06	07/24/06	07/21/06	07/24/06	07/24/06
Date Received	07/24/06	07/24/06	07/24/06	07/24/06	07/24/06
Date Extracted	07/25/06	07/25/06	07/25/06	07/25/06	07/25/06
Date Analyzed	07/29/06	07/29/06	07/29/06	07/29/06	07/29/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments					
Analyte	RL				
Non-fibrous		100	100	100	100
Fibrous, non-asbestos					
glass		ND	ND	ND	ND
cellulose		<1	ND	<1	<1
Fibrous, asbestos					
Actinolite	0.25	ND	ND	ND	ND
Amosite	0.25	ND	ND	ND	ND
Anthophyllite	0.25	ND	ND	ND	ND
Chrysotile	0.25	ND	ND	ND	ND
Crocidolite	0.25	ND	ND	ND	ND
Termolite	0.25	ND	ND	ND	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07661

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07750	D07755	D07756
M&E Sample ID	LP-12R-ME	LP-17R-ME	LP-18R-ME
Lab Sample ID	130602503-0020	130602503-0021	130602503-0022
Matrix	SE	SE	SE
Sample Type	N	N	N
Date Sampled	07/24/06	07/24/06	07/24/06
Date Received	07/24/06	07/24/06	07/24/06
Date Extracted	07/25/06	07/25/06	07/25/06
Date Analyzed	07/29/06	07/29/06	07/29/06
Units	%	%	%
% Solids	100	100	100
Dilution Factor	1	1	1
Mass/Volume of Sample			
Comments			
Analyte	RL		
Non-fibrous	100	100	100
Fibrous, non-asbestos			
glass	ND	ND	ND
cellulose	ND	<1	<1
Fibrous, asbestos			
Actinolite	0.25 ND	ND	ND
Amosite	0.25 ND	ND	ND
Anthophyllite	0.25 ND	ND	ND
Chrysotile	0.25 ND	ND	<0.25
Crocidolite	0.25 ND	ND	ND
Termolite	0.25 ND	ND	ND

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SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07670

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.		D07670	D07671	D07672	D07673	D07674
M&E Sample ID		SO-33-129-11-ME-0-0.5	SO-33-129-12R-ME-0.5-2.5	SO-33-129-13-ME-0-0.5	SO-33-129-16R-ME-0.5-2.5	SO-33-129-18-ME-0-0.5
Lab Sample ID		130602423-0001	130602423-0002	130602423-0003	130602423-0004	130602423-0005
Matrix		SO	SO	SO	SO	SO
Sample Type		N	N	N	N	N
Date Sampled		07/17/06	07/17/06	07/17/06	07/17/06	07/17/06
Date Received		07/18/06	07/18/06	07/18/06	07/18/06	07/18/06
Date Extracted		07/19/06	07/19/06	07/19/06	07/19/06	07/19/06
Date Analyzed		07/25/06	07/25/06	07/25/06	07/25/06	07/25/06
Units		%	%	%	%	%
% Solids		100	100	100	100	100
Dilution Factor		1	1	1	1	1
Mass/Volume of Sample						
Comments						
Analyte	RL					
Non-fibrous		100	100	100	100	100
Fibrous, non-asbestos						
glass		<1	<1	<1	<1	<1
cellulose		<1	<1	<1	<1	<1
Fibrous, asbestos						
Actinolite	0.25	ND	ND	ND	ND	ND
Amosite	0.25	ND	ND	ND	ND	ND
Anthophyllite	0.25	ND	ND	ND	ND	ND
Chrysotile	0.25	ND	ND	ND	ND	ND
Crocidolite	0.25	ND	ND	ND	ND	ND
Termolite	0.25	ND	ND	ND	ND	ND

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SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07670

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07675	D07763	D07764	D07776	D07765
M&E Sample ID	SO-33-129-19R-ME-0-0.5	LP-25-ME	LP-26R-ME	LP-26R-MECS	LP-27-ME
Lab Sample ID	130602423-0006	130602423-0007	130602423-0008	130602423-0010	130602423-0009
Matrix	SO	SE	SE	SE	SE
Sample Type	N	N	FD	FD	N
Date Sampled	07/17/06	07/18/06	07/18/06	07/18/06	07/18/06
Date Received	07/18/06	07/18/06	07/18/06	07/18/06	07/18/06
Date Extracted	07/19/06	07/19/06	07/19/06	07/19/06	07/19/06
Date Analyzed	07/25/06	07/25/06	07/25/06	07/25/06	07/25/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments			FD of D07776	FD of D07764	
Analyte	RL				
Non-fibrous	100	100	100	100	100
Fibrous, non-asbestos					
glass	<1	<1	<1	<1	<1
cellulose	<1	<1	<1	<1	<1
Fibrous, asbestos					
Actinolite	0.25 ND	ND	ND	ND	ND
Amosite	0.25 ND	ND	ND	ND	ND
Anthophyllite	0.25 ND	ND	ND	ND	ND
Chrysotile	0.25 ND	<0.25	<0.25	<0.25	<0.25
Crocidolite	0.25 ND	ND	ND	ND	ND
Termolite	0.25 ND	ND	ND	ND	ND

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SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07682

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07682	D07683	D07684	D07685	D07686
M&E Sample ID	SO-33-120-HA0.5R-ME-0-0.5	SO-33-120-HA0.5R-ME-0.5-2.5	SO-33-120-KA0.5R-ME-0-0.5	SO-33-120-KA0.5R-ME-0.5-2.5	SO-33-120-M0.5R-ME-0-0.5
Lab Sample ID	130602471-0001	130602471-0002	130602471-0003	130602471-0004	130602471-0005
Matrix	SO	SO	SO	SO	SO
Sample Type	N	N	N	N	N
Date Sampled	07/20/06	07/20/06	07/20/06	07/20/06	07/20/06
Date Received	07/20/06	07/20/06	07/20/06	07/20/06	07/20/06
Date Extracted	07/21/06	07/21/06	07/21/06	07/21/06	07/21/06
Date Analyzed	07/26/06	07/26/06	07/26/06	07/26/06	07/26/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments					
Analyte	RL				
Non-fibrous	100	100	100	100	100
Fibrous, non-asbestos					
glass	<1	<1	<1	<1	<1
cellulose	<1	<1	<1	<1	<1
Fibrous, asbestos					
Actinolite	0.25 ND	ND	ND	ND	ND
Amosite	0.25 ND	ND	ND	ND	ND
Anthophyllite	0.25 ND	ND	ND	ND	ND
Chrysotile	0.25 ND	ND	ND	ND	ND
Crocidolite	0.25 ND	ND	ND	ND	ND
Termolite	0.25 ND	ND	ND	ND	ND

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SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07682

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.		D07687	D07688	D07772	D07689	D07691
M&E Sample ID		SO-33-120-M0.5R-ME-0.5-2.5	SO-33-127-I2.5-ME-0-0.5	SO-33-127-I2.5-MECS-0-0.5	SO-33-127-I2.5-ME-0.5-4	SO-33-127-I2.5-ME-4-5
Lab Sample ID		130602471-0006	130602471-0007	130602471-0022	130602471-0008	130602471-0009
Matrix		SO	SO	SO	SO	SO
Sample Type		N	FD	FD	N	N
Date Sampled		07/20/06	07/20/06	07/20/06	07/20/06	07/20/06
Date Received		07/20/06	07/20/06	07/20/06	07/20/06	07/20/06
Date Extracted		07/21/06	07/21/06	07/21/06	07/21/06	07/21/06
Date Analyzed		07/26/06	07/26/06	07/26/06	07/26/06	07/26/06
Units		%	%	%	%	%
% Solids		100	100	100	100	100
Dilution Factor		1	1	1	1	1
Mass/Volume of Sample						
Comments			FD of D07772	FD of D07688		
Analyte	RL					
Non-fibrous		100	100	100	100	100
Fibrous, non-asbestos						
glass		<1	<1	<1	<1	<1
cellulose		<1	<1	<1	<1	<1
Fibrous, asbestos						
Actinolite	0.25	ND	ND	ND	ND	ND
Amosite	0.25	ND	ND	ND	ND	ND
Anthophyllite	0.25	ND	ND	ND	ND	ND
Chrysotile	0.25	ND	ND	ND	ND	ND
Crocidolite	0.25	ND	ND	ND	ND	ND
Termolite	0.25	ND	ND	ND	ND	ND

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SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07682

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07693	D07694	D07696	D07697	D07698
M&E Sample ID	SO-33-127-13.5-ME-0-0.5	SO-33-127-13.5-ME-0.5-4	SO-33-127-13.5-ME-4-6	SO-33-127-13.5-ME-6-9	SO-33-127-J2-ME-0-0.5
Lab Sample ID	130602471-0010	130602471-0011	130602471-0012	130602471-0013	130602471-0014
Matrix	SO	SO	SO	SO	SO
Sample Type	N	N	N	N	N
Date Sampled	07/20/06	07/20/06	07/20/06	07/20/06	07/20/06
Date Received	07/20/06	07/20/06	07/20/06	07/20/06	07/20/06
Date Extracted	07/21/06	07/21/06	07/21/06	07/21/06	07/21/06
Date Analyzed	07/26/06	07/26/06	07/26/06	07/26/06	07/26/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments					
Analyte	RL				
Non-fibrous	100	98.25	100	100	100
Fibrous, non-asbestos					
glass	<1	<1	<1	<1	<1
cellulose	<1	<1	<1	<1	<1
Fibrous, asbestos					
Actinolite	0.25 ND	ND	ND	ND	ND
Amosite	0.25 ND	ND	ND	ND	ND
Anthophyllite	0.25 ND	ND	ND	ND	ND
Chrysotile	0.25 <0.25	1.75	<0.25	ND	ND
Crocidolite	0.25 ND	ND	ND	ND	ND
Termolite	0.25 ND	ND	ND	ND	ND

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SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07682

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07699	D07701	D07702	D07707	D07773
M&E Sample ID	SO-33-127-J2-ME-0.5-4	SO-33-127-J2-ME-4-7	SO-33-127-L3R-ME-6-9	SO-33-127-L3R-ME-0-0.5	SO-33-127-L3R-MECS-0-0.5
Lab Sample ID	130602471-0015	130602471-0016	130602471-0017	130602471-0018	130602471-0023
Matrix	SO	SO	SO	SO	SO
Sample Type	N	N	N	FD	FD
Date Sampled	07/20/06	07/20/06	07/20/06	07/20/06	07/20/06
Date Received	07/20/06	07/20/06	07/20/06	07/20/06	07/20/06
Date Extracted	07/21/06	07/21/06	07/21/06	07/21/06	07/21/06
Date Analyzed	07/26/06	07/26/06	07/26/06	07/26/06	07/26/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments				FD of D07773	FD of D07707
Analyte	RL				
Non-fibrous	100	100	100	100	100
Fibrous, non-asbestos					
glass	<1	<1	<1	<1	ND
cellulose	<1	<1	<1	<1	<1
Fibrous, asbestos					
Actinolite	0.25 ND	ND	ND	ND	ND
Amosite	0.25 ND	ND	ND	ND	ND
Anthophyllite	0.25 ND	ND	ND	ND	ND
Chrysotile	0.25 ND	ND	ND	ND	ND
Crocidolite	0.25 ND	ND	ND	ND	ND
Termolite	0.25 ND	ND	ND	ND	ND

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SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07682

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07708	D07709	D07710
M&E Sample ID	SO-33-127-L3R-ME-0.5-2	SO-33-127-L3R-ME-2-4	SO-33-127-L3R-ME-4-6
Lab Sample ID	130602471-0019	130602471-0020	130602471-0021
Matrix	SO	SO	SO
Sample Type	N	N	N
Date Sampled	07/20/06	07/20/06	07/20/06
Date Received	07/20/06	07/20/06	07/20/06
Date Extracted	07/21/06	07/21/06	07/21/06
Date Analyzed	07/26/06	07/26/06	07/26/06
Units	%	%	%
% Solids	100	100	100
Dilution Factor	1	1	1
Mass/Volume of Sample			
Comments			
Analyte	RL		
Non-fibrous	100	100	100
Fibrous, non-asbestos			
glass	<1	ND	ND
cellulose	<1	<1	<1
Fibrous, asbestos			
Actinolite	0.25 ND	ND	ND
Amosite	0.25 ND	ND	ND
Anthophyllite	0.25 ND	ND	ND
Chrysotile	0.25 ND	ND	ND
Crocidolite	0.25 ND	ND	ND
Termolite	0.25 ND	ND	ND

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SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07690

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07690	D07695	D07700	D07703	D07704
M&E Sample ID	SO-33-126-R5R-ME-4-7	SO-33-126-M5.5-ME-4-7	SO-33-127-MA2.5-ME-8-12	SO-33-127-L5.5-ME-0-0.5	SO-33-127-L5.5-ME-0.5-2
Lab Sample ID	130602472-0001	130602472-0002	130602472-0003	130602472-0004	130602472-0005
Matrix	SO	SO	SO	SO	SO
Sample Type	N	N	N	N	N
Date Sampled	07/21/06	07/21/06	07/21/06	07/21/06	07/21/06
Date Received	07/21/06	07/21/06	07/21/06	07/21/06	07/21/06
Date Extracted	07/24/06	07/24/06	07/24/06	07/24/06	07/24/06
Date Analyzed	07/27/06	07/27/06	07/27/06	07/27/06	07/27/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments					
Analyte	RL				
Non-fibrous	100	100	100	100	100
Fibrous, non-asbestos					
glass	<1	ND	ND	ND	ND
cellulose	<1	ND	ND	<1	ND
Fibrous, asbestos					
Actinolite	0.25 ND	ND	ND	ND	ND
Amosite	0.25 ND	ND	ND	ND	ND
Anthophyllite	0.25 ND	ND	ND	ND	ND
Chrysotile	0.25 ND	ND	ND	ND	ND
Crocidolite	0.25 ND	ND	ND	ND	ND
Termolite	0.25 ND	ND	ND	ND	ND

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SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07690

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07705	D07706	D07711	D07712	D07713
M&E Sample ID	SO-33-127-L5.5-ME-2-4	SO-33-126-R5R-ME-2-4	SO-33-127-MA2.5-ME-0-0.5	SO-33-127-MA2.5-ME-0.5-2	SO-33-127-MA2.5-ME-2-4
Lab Sample ID	130602472-0006	130602472-0007	130602472-0008	130602472-0009	130602472-0010
Matrix	SO	SO	SO	SO	SO
Sample Type	N	N	N	N	N
Date Sampled	07/21/06	07/21/06	07/21/06	07/21/06	07/21/06
Date Received	07/21/06	07/21/06	07/21/06	07/21/06	07/21/06
Date Extracted	07/24/06	07/24/06	07/24/06	07/24/06	07/24/06
Date Analyzed	07/27/06	07/27/06	07/27/06	07/27/06	07/27/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments					
Analyte	RL				
Non-fibrous	100	100	100	100	100
Fibrous, non-asbestos					
glass	ND	<1	ND	ND	<1
cellulose	ND	<1	ND	ND	<1
Fibrous, asbestos					
Actinolite	0.25 ND	ND	ND	ND	ND
Amosite	0.25 ND	ND	ND	ND	ND
Anthophyllite	0.25 ND	ND	ND	ND	ND
Chrysotile	0.25 ND	ND	ND	ND	ND
Crocidolite	0.25 ND	ND	ND	ND	ND
Termolite	0.25 ND	ND	ND	ND	ND

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SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07690

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07714	D07715	D07716	D07717	D07721
M&E Sample ID	SO-33-127-MA2.5-ME-4-8	SO-33-126-M5.5-ME-0-0.5	SO-33-126-M5.5-ME-0.5-2	SO-33-126-M5.5-ME-2-4	SO-33-126-R5R-ME-0-0.5
Lab Sample ID	130602472-0011	130602472-0012	130602472-0013	130602472-0014	130602472-0015
Matrix	SO	SO	SO	SO	SO
Sample Type	N	N	N	N	N
Date Sampled	07/21/06	07/21/06	07/21/06	07/21/06	07/21/06
Date Received	07/21/06	07/21/06	07/21/06	07/21/06	07/21/06
Date Extracted	07/24/06	07/24/06	07/24/06	07/24/06	07/24/06
Date Analyzed	07/27/06	07/27/06	07/27/06	07/27/06	07/27/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments					
Analyte	RL				
Non-fibrous	100	99.75	99.50	99.25	100
Fibrous, non-asbestos					
glass	ND	<1	ND	ND	<1
cellulose	<1	<1	ND	ND	<1
Fibrous, asbestos					
Actinolite	0.25 ND	ND	ND	ND	ND
Amosite	0.25 ND	ND	ND	ND	ND
Anthophyllite	0.25 ND	ND	ND	ND	ND
Chrysotile	0.25 <0.25	0.25	0.50	0.75	ND
Crocidolite	0.25 ND	ND	ND	ND	ND
Termolite	0.25 ND	ND	ND	ND	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07690

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07722	D07725	D07726	D07731	D07732
M&E Sample ID	SO-33-126-R5R-ME-0.5-2	SO-ME1-ME-8-10	SO-ME1-ME-10-11	SO-33-174-Q7R-ME-0-0.5	SO-33-174-Q7R-ME-0.5-2
Lab Sample ID	130602472-0016	130602472-0017	130602472-0018	130602472-0019	130602472-0020
Matrix	SO	SO	SO	SO	SO
Sample Type	N	N	N	N	N
Date Sampled	07/21/06	07/20/06	07/20/06	07/21/06	07/21/06
Date Received	07/21/06	07/21/06	07/21/06	07/21/06	07/21/06
Date Extracted	07/24/06	07/24/06	07/24/06	07/24/06	07/24/06
Date Analyzed	07/27/06	07/27/06	07/27/06	07/27/06	07/27/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments					
Analyte	RL				
Non-fibrous	100	100	100	100	100
Fibrous, non-asbestos					
glass	<1	ND	ND	ND	<1
cellulose	<1	<1	ND	<1	<1
Fibrous, asbestos					
Actinolite	0.25	ND	ND	ND	ND
Amosite	0.25	ND	ND	ND	ND
Anthophyllite	0.25	ND	ND	ND	ND
Chrysotile	0.25	ND	<0.25	ND	ND
Crocidolite	0.25	ND	ND	ND	ND
Termolite	0.25	ND	ND	ND	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07690

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07766	D07777	D07767	D07768	D07769
M&E Sample ID	SO-ME1-ME-0-0.5	SO-ME1-MECS-0-0.5	SO-ME1-ME-0.5-2	SO-ME1-ME-2-4	SO-ME1-ME-4-6
Lab Sample ID	130602472-0021	130602472-0026	130602472-0022	130602472-0023	130602472-0024
Matrix	SO	SO	SO	SO	SO
Sample Type	FD	FD	N	N	N
Date Sampled	07/20/06	07/20/06	07/20/06	07/20/06	07/20/06
Date Received	07/21/06	07/21/06	07/21/06	07/21/06	07/21/06
Date Extracted	07/24/06	07/24/06	07/24/06	07/24/06	07/24/06
Date Analyzed	07/27/06	07/27/06	07/27/06	07/27/06	07/27/06
Units	%	%	%	%	%
% Solids	100	100	100	100	100
Dilution Factor	1	1	1	1	1
Mass/Volume of Sample					
Comments	FD of D07777	FD of D07766			
Analyte	RL				
Non-fibrous	100	100	100	100	100
Fibrous, non-asbestos					
glass	<1	<1	ND	ND	ND
cellulose	<1	<1	<1	ND	ND
Fibrous, asbestos					
Actinolite	0.25 ND	ND	ND	ND	ND
Amosite	0.25 ND	ND	ND	ND	ND
Anthophyllite	0.25 ND	ND	ND	ND	ND
Chrysotile	0.25 ND	ND	ND	ND	ND
Crocidolite	0.25 ND	ND	ND	ND	ND
Termolite	0.25 ND	ND	ND	ND	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

SITE: Blackburn & Union Privileges Superfund Site
CASE NO.: 0280M
SDG NO.: D07690

DATA SUMMARY TABLE
Asbestos Analysis (PLM CARB435)
Soil (% asbestos)

Traffic Report Sample No.	D07770	
M&E Sample ID	SO-ME1-ME-6-8	
Lab Sample ID	130602472-0025	
Matrix	SO	
Sample Type	N	
Date Sampled	07/20/06	
Date Received	07/21/06	
Date Extracted	07/24/06	
Date Analyzed	07/27/06	
Units	%	
% Solids	100	
Dilution Factor	1	
Mass/Volume of Sample		
Comments		
Analyte	RL	
Non-fibrous		100
Fibrous, non-asbestos		
glass		ND
cellulose		<1
Fibrous, asbestos		
Actinolite	0.25	ND
Amosite	0.25	ND
Anthophyllite	0.25	ND
Chrysotile	0.25	ND
Crocidolite	0.25	ND
Termolite	0.25	ND

< = Material was observed in the subsample mounted for point counting at locations in the field of view that are not counted.

APPENDIX H

Historical Asbestos Data

TABLE 6-1A
SUMMARY OF SOIL SAMPLE ANALYSIS
% ASBESTOS CONTENT/SHALLOW BORINGS
SAMPLE DEPTH: 0-6 INCHES

	A	B	C	D	E	F	G	H	HA	I	IA	J	JA	K	KA	L	LA	M	MA	N	NA	O	OA	P	PA	Q	QA	R	RA	S	TA	UA	VA	WA					
0.5									<1,C				<1,C	<1,C		ND		<1,C		3,C		3,C		1,C															
1.0				ND		ND	ND									1,C																							
1.5									ND	<1,C	<1,C																												
2.0				ND	ND	ND	ND		<1,C	<1,C	ND	<1,C	ND	<1,C																									
2.5									<1,C	ND	<1,C								<1,C																				
3.0						ND	ND		ND	<1,C	<1,C					<1,C																							
3.5									ND	<1,C	ND																												
4.0				ND			ND			<1,C	<1,C																												
4.5							<1,C									<1,C		ND	<1,C	<1,C	<1,C	<1,C	ND	ND	ND	<1,C													
5.0				ND	ND			ND								<1,C	<1,C	<1,C																					
5.5																<1,C	<1,C	<1,C																					
6.0				ND	<1,C			ND		ND						<1,C	<1,C	<1,C				<1,C	<1,C	<1,C	<1,C	ND		1,C		ND									
6.5													<1,C	<1,C	<1,C	1,C	<1,C	1,C	ND	ND	ND	<1,C																	
7.0				ND		ND		<1,C	ND	<1,C	ND	ND	<1,C	ND	ND	<1,C	1,C	ND	<1,C	ND	ND	ND	ND	ND		ND													
7.5					ND																																		
8.0				<1,C	ND	<1,C																		<1,C		<1,C													
8.5																																							
9.0				<1,C	1,C			<1,C								<1,C																							
9.5																																							
10.0				<1,C	5,C	*									<1,C	10,C		<1,C		ND		ND		ND		ND													
10.5																																							
11.0				<1,C	30,C	*									*	1,C		<1,C		<1,C		ND																	
11.5																																							
12.0				ND	<1,C	2,C	*	<1,C							*																								
12.5																																							
13.0		<1,C	ND	<1,C	<1,C	<1,C		1,C							<1,C		ND		<1,C																				
13.5																																							
14.0	<1,C	<1,C	ND	<1,C	*	80,C	<1,C	*		<1,C		1,C		*		<1,C																							
14.5																																							
15.0	ND	ND	ND	<1,C	<1,C		ND	2,C		<1,C		1,C		*		ND																							
15.5																																							
16.0		ND	ND	ND	ND	1,C	ND	<1,C				ND		<1,C		<1,C																							
16.5																																							
17.0			ND	ND	ND	ND	ND					ND		ND		ND																							
17.5																																							
18.0						ND	<1,C					ND		<1,C																									

C = Chrysotile A = Amosite Cr = Crocidolite ND - Not Detected
* - Asbestos visually observed and sample not subject to laboratory analysis.
Refer to Plate 8-1 for sample locations.
Horizontal Axis (i.e. A,B,C, etc.) represents North-South grid stations.
Vertical Axis (i.e. 0.5,1.0,1.5, etc.) represents East-West grid stations.

TABLE 6-1B
SUMMARY OF SOIL SAMPLE ANALYSIS
%ASBESTOS CONTENT - SHALLOW BORINGS
SAMPLE DEPTH: 24-30 INCHES

	A	B	C	D	E	F	G	H	HA	I	IA	J	JA	K	KA	L	LA	M	MA	N	NA	O	OA	P	PA	Q	QA	R	RA	S	TA	UA	VA	WA			
0.5									ND		<1,C	<1,C				<1,C	1,C		1,C		5,C		1,C														
1.0				ND	ND	ND	ND									5,C																					
1.5										<1,C	<1,C	<1,C																									
2.0				ND	ND	ND	ND		ND	<1,C	ND	ND	<1,C	ND																							
2.5									<1,C	<1,C	ND								<1,C																		
3.0						ND	ND		<1,C	<1,C	<1,C					ND																					
3.5									<1,C	<1,C	ND																										
4.0							ND				ND	ND																									
4.5																ND		ND	<1,C	<1,C	<1,C	<1,C	<1,C	ND			<1,C										
5.0							ND	ND								<1,C	<1,C	<1,C													ND		ND				
5.5																<1,C	<1,C	<1,C																			
6.0								ND		ND	<1,C					ND	<1,C	<1,C				ND	ND	ND	ND	ND		<1,C			ND						
6.5												ND	<1,C	<1,C	<1,C	ND	2,C	<1,C	ND	ND	ND																
7.0				<1,C	<1,C	ND		ND	ND	<1,C	ND	ND	ND	<1,C	ND	<1,Cr	ND	ND	ND	ND	<1,C	ND	ND			<1,Cr		ND									
7.5																																					
8.0				<1,C	ND	ND																		ND		ND		ND									
8.5																																					
9.0					ND	ND		1,C								<1,C		ND		ND		<1,C		ND		<1,C											
9.5																																					
10.0					ND	<1,C	*							ND		<1,C		ND		ND		<1,C		<1,C		ND											
10.5																																					
11.0					ND	ND	*							<1,C		10,C		<1,C		ND		<1,C															
11.5																																					
12.0				ND	<1,C	*		<1,C						<1,C				<1,C																			
12.5					<1,A																																
13.0		<1,C	ND	<1,C	<1,C	1,C		ND						<1,C		<1,C		<1,C																			
13.5																	<1,Cr		<1,C																		
14.0	ND	ND	ND	ND	*	2,C	<1,C	<1,C		<1,C		2,C		<1,C		ND		ND																			
14.5																																					
15.0	ND	ND	ND	ND	<1,C		ND	1,C		*		2,C				3,Cr		ND																			
15.5																																					
16.0		ND	ND	ND	ND	<1,C	ND	<1,C				ND		ND		ND		ND																			
16.5																																					
17.0			ND	ND	ND	ND	ND	ND				ND		<1,C		ND																					
17.5																																					
18.0							ND	ND				ND		ND																							

C = Chrysotile = Amosite = Crocidolite ND - Not Detected

* - Asbestos visually observed and sample not subject to laboratory analysis.

Refer to Plate 8-1 for sample locations.

Horizontal Axis (i.e. A,B,C, etc.) represents North-South grid stations / Vertical Axis (i.e. 0.5,1.0,1.5, etc.) represents East-West grid stations.

TABLE 6-5A
SUMMARY OF OFF FACILITY SOIL SAMPLE ANALYSIS
% ASBESTOS CONTENT - SHALLOW SOIL BORINGS
SOUTH STREET SITE, WALPOLE, MASS.

Lot #	Sample Depth	1235-5		Sample I.D.	1235-6	
		0-6"	24-30"		0-6"	24-30"
	1	ND	ND	1	ND	ND
	2	<1,C	ND	2	ND	ND
	3	ND	ND	3	ND	ND
	4	ND	ND	4	ND	ND
	5	ND	ND	5	ND	ND
	6	ND	ND	6	ND	ND
	7	ND	ND	7	ND	ND
	8	ND	ND	8	ND	ND
	9	ND	ND	9	ND	ND
	10	ND	ND	10	ND	ND
	11	<1,C	ND	11	ND	ND
	12	ND	<1,C	12	ND	ND
	13	<1	ND	13	ND	ND
	14	ND	ND	14	ND	ND
	15	ND	ND	15	ND	ND
	16	ND	<1,C	16	ND	ND
	17	ND	ND	17	ND	ND
	18	<1,C	ND	18	ND	ND
	19	<1,C	ND	19	ND	ND
	20			20	ND	ND
	21			21	ND	<1,C
	22			22	ND	ND
	23			23	ND	ND
	24			24	ND	ND
	25			25	ND	ND
	26			26	<1,C	ND
	27			27	ND	ND
	28			28	ND	ND
	29			29	ND	ND
	30			30	ND	ND
	31			31	ND	ND
	32			32	ND	ND
	33			33	ND	ND
	34			34	ND	ND
	35			35	ND	ND
	36			36	ND	ND
	37			37	ND	ND
	38			38	ND	ND
	39			39	ND	ND
	40			40	ND	ND
	41			41	ND	ND
	42			42	ND	ND
	43			43	ND	ND
	44			44	ND	ND
	45			45	ND	ND
	46			46	ND	ND
	47			47	ND	ND
	48			48	ND	ND
	49			49	ND	ND
	50			50	ND	ND
	51			51	ND	ND
	52			52	ND	ND
	53			53	ND	ND
	54			54	ND	ND
	55			55	ND	ND

TABLE 6-6
SUMMARY OF SEDIMENT SAMPLE ANALYSIS
NEPONSET RIVER SEDIMENT SAMPLES
% ASBESTOS CONTENT
SOUTH STREET SITE, WALPOLE, MASS.

D&M I.D.	Date Sampled	Depth (Inches)	% Asbestos
Up Gradient of South Street:			
1	3/16/89	0-6	ND
2	3/16/89	0-6	ND
3	3/16/89	0-6	ND
4	3/16/89	0-6	ND
5	3/16/89	0-6	1,C
Down Gradient of South Street:			
1	3/17/89	0-3	5,C
2	3/17/89	0-3	<1,C
3	3/17/89	0-6	<1,C
4	3/17/89	0-4	ND
5	3/17/89	0-6	ND
6	3/17/89	0-3	<1,C
7	3/17/89	0-6	ND
8	3/17/89	0-6	ND
9	3/17/89	0-6	<1,C
10	3/17/89	0-6	<1,C
11	3/17/89	0-6	<1,C
12	3/17/89	0-6	<1,C
13	3/17/89	0-4	<1,C
14	3/17/89	0-6	<1,C
15	3/17/89	0-6	<1,C
16	3/17/89	0-6	<1,C
17	3/17/89	0-6	ND
18	3/17/89	0-6	<1,C
19	3/17/89	0-8	<1,C
20	3/17/89	0-8	ND
21	3/17/89	0-6	ND
22	3/17/89	0-6	ND
23	3/17/89	0-6	ND
24	3/17/89	0-6	ND
25	3/17/89	0-6	<1,C
26	3/17/89	0-6	<1,C
27	3/17/89	0-6	<1,C
28	3/17/89	0-6	<1,C
29	3/17/89	0-6	1,C
30	3/20/89	0-6	1,C
31	3/20/89	0-6	ND
32	3/20/89	0-6	ND
33	3/20/89	0-6	ND
34	3/20/89	0-6	ND
35	3/20/89	0-6	ND
36	3/20/89	0-6	ND
37	3/20/89	0-6	1,C
38	3/20/89	0-6	ND
39	3/20/89	0-6	<1,C
40	3/20/89	0-6	ND
41	3/20/89	0-6	<1,C
42	3/20/89	0-6	<1,C
43	3/20/89	0-6	ND

Notes:

ND - Not Detected C - Chrysotile Asbestos Refer to Plate 8-4 for Sample Locations.

Hager GeoScience Inc.



596 Main Street Woburn, MA 01801

Tel 781-935-8111 Fax 781-935-2717

July 28th, 2006
File 200654

Metcalf & Eddy, Inc.
Attention: Ms. Laurie O'Connor
701 Edgewater Drive
Wakefield, MA 01880

Re: Boring Clearance
Blackburn & Union Superfund Site
South Street
Walpole, MA

Dear Ms. O'Connor:

Introduction. This letter reports the results of a geophysical survey performed by Hager GeoScience, Inc. (HGI) for Metcalf and Eddy Inc. (M&E) at the above-referenced site. The objective of the survey was to locate possible obstructing utilities or buried debris at thirteen (13) proposed boring locations: H-0.5R, HA-0.5, I-2.5, I-3.5, J-2, KA-0.5, L-3R, L-5.5, M-5.5, MA-2.5, ME-1, P-9, and R-5. Work was coordinated with M&E personnel, who designated the proposed boring locations and marked them on the ground with white paint prior to HGI's arrival on site. The boring clearance was to be performed using ground penetrating radar (GPR) and a Subsite utility locator.

Equipment and Procedure. HGI personnel performed the work on July 17th and 18th, 2006. A 10x10-foot grid was created around each marked boring location using spray paint and fiberglass tapes. A GSSI SIR System 2000 with 400-MHz antenna and survey wheel was used to gather GPR data within this grid along traverses spaced 1 foot apart in two perpendicular directions, followed by two diagonals between opposite corners.

The Subsite utility locator was used as a complementary method to the GPR to trace out utilities inside and near the grid. Appendices A and B provide descriptions of the methods and their limitations.

Results. The location of each proposed boring was either designated as safe for drilling or an alternate location marked on the ground with white paint prior to leaving the site. All

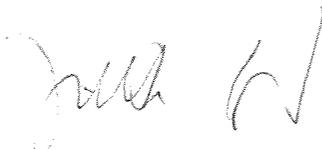
Boring Clearance
Blackburn & Union Superfund Site
South Street
Walpole, Massachusetts

File 200654
Page 2

cleared borings were labeled with the HGI name. When alternate locations were selected, the original M&E marks were crossed out with white paint. As requested by M&E, we have placed the HGI boring clearance grids in their orientations and approximate locations on the M&E AutoCAD base map you provided (Plate 1).

Please contact us at (781) 935-8111 if you have any questions or need additional information.

Respectfully yours,
HAGER GEOSCIENCE, INC.



Jutta Hager, Ph.D.
President

Hager GeoScience, Inc.

APPENDIX A: GROUND PENETRATING RADAR

DESCRIPTION OF THE METHOD

The principle of ground penetrating radar (GPR) is the same as that used by police radar, except that GPR transmits electromagnetic energy into the ground. The energy is reflected back to the surface from interfaces between materials with contrasting electrical (dielectric and conductivity) and physical properties. The greater the contrast between two materials in the subsurface, the stronger the reflection observed on the GPR record. The depth of GPR signal penetration depends on the properties of the subsurface materials and the frequency of the antenna used to collect radar data. The lower the antenna frequency, the greater the signal penetration, but the lower the signal resolution.

Data Collection. GPR data are collected using a Geophysical Survey Systems (GSSI) SIR 2000/3000 ground penetrating radar system. GPR data are digitally recorded on the internal hard drive, or flash-memory of the system. System controls allow the GPR operator to filter out noise, attributed to both coupling noise, caused by conductive soil conditions, spurious noise caused by local EMF fields and internal system noise. For shallow surveys, we use 400-, 200-, 100- or 1500-megahertz (MHz) antennas. For deeper penetration, we use lower frequency antennas ranging from 200 MHz to 15 MHz, depending on the anticipated depth of the target(s) and the degree of signal penetration. All of these antenna configurations can collect data in continuous mode or as discrete point measurements using signal-stacking techniques. Since there is a tradeoff between signal penetration and resolution, test lines are run using different antennas at several frequencies and then the highest frequency antenna that produces the highest quality data is used. In some cases, data are collected with several antenna frequencies.

The horizontal scale of the GPR record shows distance along the survey traverse. In the continuous data collection mode, the horizontal scale on each GPR record is determined by the antenna speed along the surface. When a survey wheel is used, the GPR system records data with a fixed number of traces per unit distance. The GPR record is automatically marked at specified distance intervals along the survey line. The velocity of the transmitted signal and the recording time window or range determines the vertical scale of the radar record. The recording time interval, or range, represents the maximum two-way travel time in which data are recorded. The conversion of two-way travel time to depth depends on the propagation velocity of the GPR signal, which is site specific. When little or no information is available about the makeup of subsurface materials, we estimate propagation velocities from handbook values and experience at similar sites or by CDP velocity surveys with a bi-static antenna.

Data Processing. After completion of data collection, the GPR data are transferred to a PC for review and processing using RADAN NT for Windows™ software. When appropriate, we prepare 3D models of GPR data, which can be sliced in the X, Y, and Z directions.

The size, shape, and amplitude of GPR reflections are used to interpret GPR data. Objects such as metallic UST's and utilities produce reflections with high amplitude and distinctive hyperbolic

shapes. Clay, concrete pipes boulders and other in-situ features may produce radar signatures of similar shape but lower amplitude. The boundaries between saturated and unsaturated materials such as sand and clay, bedrock and overburden generally also produce strong reflections.

LIMITATIONS OF THE METHOD

GPR signal penetration is site-specific. It is determined by the dielectric properties of local soil and fill materials. GPR signals propagate well in resistive materials such as sand and gravel; however, soils containing clay, ash- or cinder-laden fill or fill saturated with brackish or otherwise electrically conductive groundwater cause GPR signal attenuation and loss of target resolution. Concrete containing rebar or wire mesh also inhibits signal penetration.

The interpreted depths of objects detected using GPR are based on on-site calibration, handbook values, and/or estimated GPR signal propagation velocities from similar sites. GPR velocities and depth estimates may vary if the medium under investigation or soil water content is not uniform throughout the site.

Utilities are interpreted on the basis of reflections of similar size and depth that exhibit a linear trend; however GPR cannot unambiguously determine that all such reflectors are related. Fiberglass UST's, or utilities composed of plastic or clay may be difficult to detect if situated in soils with similar electromagnetic properties, or if situated in fill with other reflecting targets which generate "clutter" or signal scattering and thus obscure other deeper reflectors. Objects buried beneath reinforced concrete pads or slabs may also be difficult, but possible, to detect.

Changes in the speed at which the GPR antenna is moved along the surface causes slight variations in the horizontal scale of the recorded traverse. Distance interpolation may be performed to minimize the error in interpreted object positions. The variation in the horizontal scale of the GPR record may be controlled, to a certain extent, with a distance encoder or Survey Wheel. The GPR antenna produces a cone-shaped signal pattern that emanates approximately 45 degrees from horizontal front and back of the antenna. Therefore, buried objects may be detected before the antenna is located directly over them. GPR anomalies may appear larger than actual target dimensions.

GPR interpretation is more subjective than other geophysical methods. The interpretive method is based on the identification of reflection patterns that do not uniquely identify a subsurface target. Borings, test pits, site utility plans and other ground-truth are recommended to verify the interpreted GPR results.

APPENDIX B: ELECTROMAGNETIC UTILITY LOCATION

DESCRIPTION OF THE METHOD

HGI uses either a Schonstedt MAC-51B or a SUBSITE 950 R/T for utility location. The locator is a two-part system using both a signal transmitter and locator. Using the transmitter, a variety of signals can be conducted or induced onto exposed portions of conduits and piping; these signals are used to trace the utilities using the locator. Alternatively, where there are no convenient exposures, the signals can be induced onto the lines by placing the transmitter on the ground above the suspected utility location.

LIMITATIONS OF THE METHOD

The location of subsurface objects, pipes, and utilities is dependent on the recognition of physical phenomena at the ground surface. These phenomena can be electromagnetic waves or magnetic fields that are interpreted as being caused by subsurface objects. These waves or fields, however, can be attenuated and/or distorted by a number of factors including soil moisture, steel reinforced concrete, and proximity to other surface and subsurface facilities.