GE
159 Plastics Avenue
Pittsfield, MA 01201
USA

*Transmitted Via Overnight Courier*

February 17, 2005

Mr. James M. DiLorenzo
U.S. Environmental Protection Agency
EPA New England
One Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

**Re: GE-Pittsfield/Housatonic River Site**
**East Street Area 2-North (GECD140)**
**Summary of Additional Pre-Design Soil Investigations and Assessment of Remaining Data Needs**

Dear Mr. DiLorenzo:

In June 2004, the General Electric Company (GE) submitted to the U.S. Environmental Protection Agency (EPA) a document titled *Pre-Design Investigation Report for East Street Area 2-North Removal Action* (PDI Report). That document presented the results of soil investigations performed by GE to satisfy the pre-design investigation requirements for this Removal Action Area (RAA), and to support future Removal Design/Removal Action (RD/RA) evaluations concerning the need for removal actions to address the applicable Performance Standards. In addition to summarizing the completed soil investigations, the PDI Report identified certain remaining data needs concerning the presence of PCBs in soils at the RAA. The location of the RAA is shown on Figure 1.

In a letter dated October 19, 2004, EPA provided conditional approval of the PDI Report, concurred with GE's proposed additional sampling activities, and identified certain other data needs to be addressed by GE through additional soil sampling and analysis. Specifically, EPA required that GE perform additional PCB sampling to further characterize soils in close proximity to subsurface utilities potentially subject to future emergency repair.

In the PDI Report, GE proposed (and EPA approved in its October 19, 2004 conditional approval letter) that the results of the additional soil sampling would be incorporated into the Conceptual RD/RA Work Plan for East Street Area 2-North, and that GE also would provide the analytical results from the additional sampling in the CD Monthly Status Report. The PDI Report also proposed (and EPA approved) that the Conceptual RD/RA Work Plan would be submitted within six months from EPA approval of the PDI Report, assuming that no significant data needs were identified by GE while performing the detailed RD/RA evaluations. To address the possibility that additional data might be needed, GE proposed to submit a letter to the EPA within four months of approval of the PDI Report, identifying whether any additional data soil sampling was necessary to support RD/RA evaluations. If such sampling was necessary, that letter was to include a proposal for sampling and a revised schedule for submittal of the Conceptual RD/RA Work Plan, if appropriate.

As presented in this letter, GE has performed the soil sampling proposed in the PDI Report, as well as the additional sampling identified by EPA in its conditional approval letter. In addition, GE has initiated detailed RD/RA evaluations and, based on the results of the evaluations performed to date, has concluded that no further data needs exist at the present time for East Street Area 2-North.

The remainder of this letter addresses the following items related to East Street Area 2-North:

- The results of the additional pre-design soil investigations;
- A data quality review and validation of the PCB data from the additional pre-design investigations;
- A description of the status of RD/RA evaluations conducted to date for soils within the RAA and GE's assessment of data needs; and
- The anticipated schedule for submittal of the Conceptual RD/RA Work Plan.

## I. Additional Pre-Design Soil Investigations

The additional pre-design investigations for the East Street Area 2-North involved the collection and analysis for PCBs of 21 soil samples from 10 locations, as shown on Figure 2. In the PDI Report, GE proposed to collect additional PCB soil samples to address the following data needs:

- To further characterize soils in close proximity to subsurface utilities, samples from five locations (RAA5-F32.5, RAA5-HI23, RAA5-I10, RAA5-JK20, and RAA5-K18) were proposed (0- to 1-foot and 1- to 6-foot depth increments); and
- Since the results for historic sample locations RF-13 and ES1-15 may no longer represent current soil conditions in this area (due to potential soil grading that occurred since those data were collected), additional PCB soil sampling at grid node RAA5-H35 was proposed (0- to 1-foot, 1- to 6-foot, and 6- to 15-foot depth increments).

EPA's October 19, 2004 conditional approval letter identified four additional PCB sampling locations (RAA5-H25, RAA5-J19, RAA5-J22, and RAA5-K11) for characterization of soils near subsurface utilities subject to emergency repair (0- to 1-foot and 1- to 6-foot depth increments).

The soil samples described above were collected on behalf of GE by Blasland, Bouck & Lee, Inc. (BBL) between December 8, 2004 and December 10, 2004, while analytical services were provided by SGS Environmental Services, Inc. of Charleston, West Virginia. All of the additional sampling activities were performed consistent with the proposals identified by GE and approved by EPA with three exceptions: 1) sample location RAA5-I10 was moved approximately 7 feet west from its proposed location; 2) sample RAA5-J19 was moved approximately 20 feet east of its proposed location, and; 3) sample RAA5-K11 was moved approximately 44 feet east of its proposed location. These sample locations were moved due to the prevalence of underground utilities at the originally proposed locations. These modifications were approved by EPA's on-site representative.

All field and analytical activities were performed in accordance with GE's approved *Field Sampling Plan/Quality Assurance Plan* (FSP/QAPP). Soil boring logs for the additional pre-design investigations are presented in Attachment A to this document. PCB results were reported on a dry-weight basis, with a detection limit of approximately 0.05 parts per million (ppm) for all Aroclors. The analytical results for the additional PCB samples are provided in Table 1.

## II. Data Quality Assessment

The additional pre-design soil data collected by GE was subject to data quality review and validation in accordance with Section 7.5 of the FSP/QAPP. The results of this assessment are summarized in a data validation summary report presented in Attachment B. As indicated in that report, 100% of the additional pre-design data are considered to be usable. Further, there is no re-sampling needed as a result of this data validation.

## III. Status of RD/RA Evaluations and Data Needs Assessment

Since submittal of the PDI Report, GE has initiated several RD/RA activities. Specifically, GE has commissioned the preparation of a detailed site survey plan, identified the necessary evaluation areas (and corresponding Theissen polygons to support the PCB soil evaluations), and assessed current soil conditions with respect to PCB and other Appendix IX+3 constituents. A general summary of these activities is presented below.

For PCBs, RD/RA activities are being conducted based on the procedures outlined in Technical Attachment E of the *Statement of Work for Remedial Actions Outside of the River* (SOW). The results of the evaluations conducted to date indicate that some remediation will be necessary at East Street Area 2-North to achieve the applicable Performance Standards. However, the available data set appears sufficient to identify the extent of such remediation, such that no PCB-related data needs have been identified at this time. This finding will be confirmed as the detailed RD/RA evaluations proceed.

For Appendix IX+3 constituents other than PCBs, RD/RA evaluations are being conducted based on the procedures outlined in Technical Attachment F of the SOW. In the course of performing the initial evaluations, GE has identified one constituent, benzidine (detected only once out of 121 samples in this averaging area), that GE proposes to screen out based on very low frequency of detection. Based on the results of the initial evaluation steps, it is anticipated that no remediation will be needed to achieve the applicable Performance Standards for non-PCB Appendix IX+3 constituents at East Street Area 2-North. As such, no additional data needs related to Appendix IX+3 constituents have been identified at this time.

Based on the above, GE will continue with RD/RA evaluations for East Street Area 2-North and the preparation of the Conceptual RD/RA Work Plan. Although it is not anticipated that there are any current soil-related data needs, the detailed and final technical evaluations for this RAA have not yet been completed. As a result, some data needs may be identified as the RD/RA evaluations are completed. In the event that any data needs are identified, GE will propose sampling activities in the Conceptual RD/RA Work Plan to satisfy those needs.

## IV. Future Activities and Schedule

In its October 19, 2004 conditional approval letter for the PDI Report, EPA indicated that the Conceptual RD/RA Work Plan for East Street Area 2-North should be submitted within six months of that letter – i.e., by April 19, 2005, assuming that no additional data needs were identified. As described in this letter, GE has initiated several of the activities toward preparation of a Conceptual RD/RA Work Plan and, based on the current status of these evaluations, no further soil sampling data appear necessary. Therefore, GE anticipates submittal of the Conceptual RD/RA Work Plan by April 19, 2005.

Please call Andrew Silfer or me if you have any questions or comments regarding this letter.

Sincerely,

John F. Novotny, P.E.

Enclosure
V:\GE_Pittsfield_CD_ESA_2_North\Reports and Presentations\Data Needs Assessment\08652196Ltr.DOC

cc: Tim Conway, EPA
Holly Inglis, EPA (compact disk)
Rose Howell, EPA*
Dean Tagliaferro, EPA
K.C. Mitkevicius, USACE (compact disk)
Susan Steenstrup, MDEP (2 copies)
Anna Symington, MDEP*
Robert Bell, MDEP*
Thomas Angus, MDEP*
Linda Palmieri, Weston (hard copy, compact disk, extra copy of oversized figures)
Nancy E. Harper, MA AG*
Dale Young, MA EOEA*
Mayor James Ruberto, City of Pittsfield
Pittsfield Department of Health
Jeffrey Bernstein, Bernstein, Cushner & Kimmel*
Michael Carroll, GE*
Rod McLaren, GE*
Andrew Silfer, GE
James Bieke, Goodwin Procter
James Nuss, BBL
Public Information Repositories
GE Internal Repository

**cover letter only*

# *Table*

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*engineers, scientists, economists*

**TABLE 1**
**PCB DATA RECEIVED DURING DECEMBER 2004**

**ADDITIONAL PRE-DESIGN SOIL INVESTIGATION SAMPLING**
**EAST STREET AREA 2 - NORTH**
**GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS**
**(Results are presented in dry weight parts per million, ppm)**

| Sample ID | Depth(Feet) | Date Collected | Aroclor-1016, -1221, -1232, -1242, -1248 | Aroclor-1254 | Aroclor-1260 | Total PCBs |
|---|---|---|---|---|---|---|
| RAA5-F32.5 | 0-1 | 12/9/2004 | ND(0.76) | 4.7 | 5.5 | 10.2 |
| | 1-6 | 12/9/2004 | ND(0.77) | 5.9 | 5.5 | 11.4 |
| RAA5-H25 | 0-1 | 12/9/2004 | ND(0.037) | 0.90 | 1.1 | 2.0 |
| | 1-6 | 12/9/2004 | ND(0.038) | ND(0.038) | 0.014 J | 0.014 J |
| RAA5-H35 | 0-1 | 12/9/2004 | ND(0.038) | 0.22 | 0.22 | 0.44 |
| | 1-6 | 12/9/2004 | ND(0.19) | 2.2 | 1.2 | 3.4 |
| | 6-15 | 12/9/2004 | ND(0.041) | 0.10 | 0.072 | 0.172 |
| RAA5-HI23 | 0-1 | 12/8/2004 | ND(0.039) | 0.032 J | 0.035 J | 0.067 J |
| | 1-6 | 12/8/2004 | ND(0.038) | ND(0.038) | ND(0.038) | ND(0.038) |
| RAA5-I10 | 0-1 | 12/8/2004 | ND(1.9) | ND(1.9) | 43 | 43 |
| | 1-6 | 12/8/2004 | ND(0.037) [ND(0.037)] | ND(0.037) [ND(0.037)] | 1.4 J [ND(0.037) J] | 1.4 J [0.13 J] |
| RAA5-J19 | 0-1 | 12/8/2004 | ND(1.9) | 16 | 25 | 41 |
| | 1-6 | 12/8/2004 | ND(0.74) | 4.9 | 6.7 | 11.6 |
| RAA5-J22 | 0-1 | 12/8/2004 | ND(0.037) | 0.16 | 0.31 | 0.47 |
| | 1-6 | 12/8/2004 | ND(0.038) | 0.068 | 0.067 | 0.135 |
| RAA5-JK20 | 0-1 | 12/8/2004 | ND(0.038) | 0.25 | 0.45 | 0.70 |
| | 1-6 | 12/8/2004 | ND(0.37) | 3.9 | 6.8 | 10.7 |
| RAA5-K11 | 0-1 | 12/10/2004 | ND(0.037) | ND(0.037) | 0.99 | 0.99 |
| | 1-6 | 12/10/2004 | ND(0.037) [ND(0.037)] | ND(0.037) [ND(0.037)] | 0.40 J [0.18 J] | 0.40 J [0.18 J] |
| RAA5-K18 | 0-1 | 12/8/2004 | ND(0.036) | 0.15 | 0.53 | 0.68 |
| | 1-6 | 12/8/2004 | ND(0.038) | ND(0.038) | ND(0.038) | ND(0.038) |

Notes:
1. Samples were collected by Blasland, Bouck & Lee, Inc., and submitted to SGS Environmental Services, Inc. for analysis of PCBs.
2. Samples have been validated as per Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP), General Electric Company, Pittsfield, Massachusetts, Blasland Bouck & Lee, Inc. (approved May 29, 2004 and resubmitted June 19, 2004).
3. ND - Analyte was not detected. The number in parentheses is the associated detection limit.
4. Field duplicate sample results are presented in brackets.

Data Qualifiers:

J - Indicates that the associated numerical value is an estimated concentration.

# *Figures*

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## LEGEND:

- EAST STREET AREA 2–NORTH
- APPROXIMATE REMOVAL ACTION AREA BOUNDARY

## NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; DATA PROVIDED BY GENERAL ELECTRIC COMPANY; AND BLASLAND AND BOUCK ENGINEERS, P.C. CONSTRUCTION PLANS.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. SITE BOUNDARIES/LIMITS ARE APPROXIMATE.

0 1000' 2000'

APPROXIMATE SCALE

GENERAL ELECTRIC COMPANY
PITTSFIELD, MASSACHUSETTS
**EAST STREET AREA 2–NORTH**
**ADDITIONAL PRE–DESIGN SOIL INVESTIGATIONS**

# SITE LOCATION

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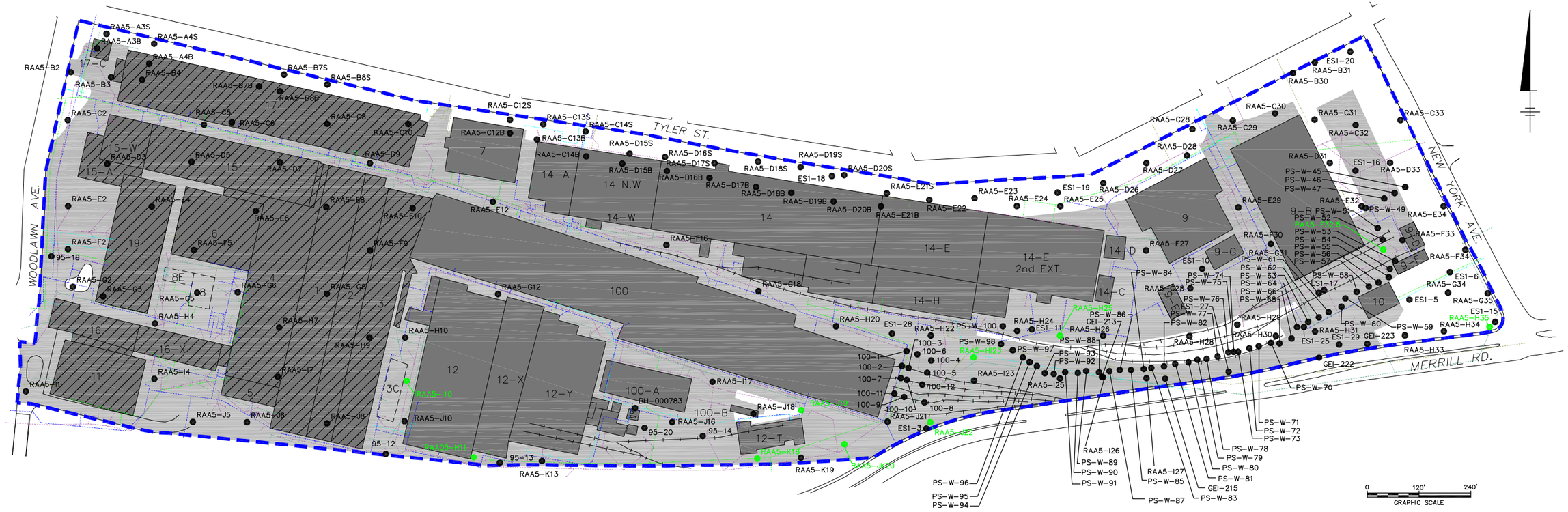
FIGURE
**1**

L: ON=*, OFF=REF
P: PAGESET/SYR-BL1
2/17/05 SYR-85-LAS NES LJP
C/40469025/40469B13.DWG




NOTES:

1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAMMETRIC MAPPING BY LOCKWOOD MAPPING, INC. – FLOWN IN APRIL 1990; DATA PROVIDED BY GENERAL ELECTRIC COMPANY, AND BLASLAND AND BOUCK ENGINEERS, P.C. CONSTRUCTION PLANS.
2. NOT ALL PHYSICAL FEATURES SHOWN.
3. SITE BOUNDARY IS APPROXIMATE.
4. EXTENT OF PAVED/UNPAVED AREA IS APPROXIMATE.

LEGEND

- APPROXIMATE REMOVAL ACTION AREA BOUNDARY
- BUILDING
- BUILDING TO BE DEMOLISHED
- FORMER BUILDING LOCATION
- PAVED AREA
- RAA5–H20 — PRE–DESIGN/HISTORICAL SOIL SAMPLING LOCATION
- RAA05–K11 — ADDITIONAL PRE–DESIGN SOIL SAMPLING LOCATION
- STORM SEWER
- SANITARY SEWER
- WATER MAIN
- FIRE PROTECTION MAIN
- NATURAL GAS MAIN
- ELECTRIC/TELEPHONE CONDUIT

GENERAL ELECTRIC COMPANY
PITTSFIELD MASSACHUSETTS
EAST STREET AREA 2–NORTH
ADDITIONAL PRE–DESIGN SOIL INVESTIGATIONS

# EXISTING PCB CHARACTERIZATION SAMPLE LOCATIONS

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FIGURE 2

X: 40469X01, X02.DWG
L: ON=*, OFF=REF*
P: PAGESET/PLT–DL1
2/17/05 SYR–85–DMW NES LJP
C/40469025/40469B09.DWG

# *Attachments*

BLASLAND, BOUCK & LEE, INC.
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*Attachment A*

# Soil Boring Logs For Additional Pre-Design Investigation Soil Samples

BBL
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*engineers, scientists, economists*

| | | |
|---|---|---|
| **Date Start/Finish:** 12/9/04<br><br>**Drilling Company:** BBL<br>**Driller's Name:** Jason Gutkowski<br>**Drilling Method:** Direct Push<br>**Sampler Size:** 4' Macrocore<br>**Rig Type:** Tractor-Mounted Power Probe | **Northing:** 534856.7<br>**Easting:** 135003.5<br>**Casing Elevation:** NA<br><br>**Borehole Depth:** 6.0' below grade<br>**Surface Elevation:** 1023.8 ft. AMSL<br><br>**Descriptions By:** Jay Boland | **Boring ID:** **RAA5-F32.5**<br><br>**Client:** General Electric<br><br>**Location:** ESA 2 North RAA<br>Pittsfield, MA |

| DEPTH / ELEVATION | Sample Run Number | Sample/Int/Type | Recovery (feet) | PID Headspace (ppm) | Analytical Sample | Geologic Column | Stratigraphic Description | Boring Construction |
|---|---|---|---|---|---|---|---|---|
| 1025 | | | | | | | | |
| 0 | | | | | | | | |
| | 1 | 0-4 | 2.2 | 0.0 | X | | Brown fine to medium SAND, little Silt and fine to medium Gravel, trace Brick, moist. | Borehole backfilled with cement-bentonite grout to grade. |
| | | | | 0.0 | | | | |
| 1020 | | | | 0.0 | X | | | |
| 5 | 2 | 4-6 | 1.2 | 0.0 | | | Dark brownish-black fine to medium SAND, some fine to medium Gravel, little Silt, moist. | |
| 1015 | | | | | | | | |
| 10 | | | | | | | | |
| 1010 | | | | | | | | |
| 15 | | | | | | | | |

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**Remarks:** bgs = below ground surface; NA = Not Applicable/Not Available.
Boring starts below 0.6' Concrete on ground surface.
Water-table not encountered during boring installation.

**Date Start/Finish:** 12/9/04

**Drilling Company:** BBL
**Driller's Name:** Jason Gutkowski
**Drilling Method:** Direct Push
**Sampler Size:** 4' Macrocore
**Rig Type:** Tractor-Mounted Power Probe

**Northing:** 534657.1
**Easting:** 134253.9
**Casing Elevation:** NA

**Borehole Depth:** 6.0' below grade
**Surface Elevation:** 1023.9 ft. AMSL

**Descriptions By:** Jay Boland

**Boring ID:** **RAA5-H25**

**Client:** General Electric

**Location:** ESA 2 North RAA
Pittsfield, MA

| DEPTH / ELEVATION | Sample Run Number | Sample/Int/Type | Recovery (feet) | PID Headspace (ppm) | Analytical Sample | Geologic Column | Stratigraphic Description | Boring Construction |
|---|---|---|---|---|---|---|---|---|
| 1025 | | | | | | | | |
| 0 | | | | | | | | |
| | | | | 0.0 | X | | Brown fine to medium SAND, little Silt and fine to medium Gravel, moist. | |
| | | | | | | | Light brown fine SAND, some Silt, little fine to medium Gravel, moist. | |
| | 1 | 0-4 | 2.4 | 0.0 | | | | Borehole backfilled with cement-bentonite grout to grade. |
| 1020 | | | | 0.0 | X | | | |
| 5 | 2 | 4-6 | 1.0 | 0.0 | | | | |
| 1015 | | | | | | | | |
| 10 | | | | | | | | |
| 1010 | | | | | | | | |
| 15 | | | | | | | | |

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**Remarks:** bgs = below ground surface; NA = Not Applicable/Not Available.
Boring starts below 0.2' Asphalt and 0.7' Concrete on ground surface.
Water-table not encountered during boring installation.

**Date Start/Finish:** 12/9/04

**Drilling Company:** BBL
**Driller's Name:** Jason Gutkowski
**Drilling Method:** Direct Push
**Sampler Size:** 4' Macrocore
**Rig Type:** Tractor-Mounted Power Probe

**Northing:** 534677.4
**Easting:** 135250.0
**Casing Elevation:** NA

**Borehole Depth:** 15.0' below grade
**Surface Elevation:** 994.6 ft. AMSL

**Descriptions By:** Jay Boland

**Boring ID:** **RAA5-H35**

**Client:** General Electric

**Location:** ESA 2 North RAA
Pittsfield, MA

| DEPTH / ELEVATION | Sample Run Number | Sample/Int/Type | Recovery (feet) | PID Headspace (ppm) | Analytical Sample | Geologic Column | Stratigraphic Description | Boring Construction |
|---|---|---|---|---|---|---|---|---|
| 995 / 0 | | | | | | | | |
| | | | | 0.0 | X | | Dark brown fine SAND and SILT, trace Organics, moist. | |
| | | | | | | | Brown fine to medium SAND, some Silt and fine to medium Gravel, moist. | |
| | 1 | 0-4 | 2.2 | 0.0 | | | | |
| | | | | 0.0 | X | | | |
| 990 / 5 | 2 | 4-8 | 2.8 | 0.0 | | | | Borehole backfilled with cement-bentonite grout to grade. |
| | | | | 0.0 | | | | |
| | | | | | | | Grayish-brown fine to medium SAND, some Silt, little fine to medium Gravel, moist, dense. | |
| | 3 | 8-12 | 2.1 | 0.0 | X | | | |
| 985 / 10 | | | | 0.0 | | | | |
| | | | | | | | Dark brownish-black SILT and fine SAND, moist. | |
| | 4 | 12-15 | 3.0 | 0.0 | | | | |
| | | | | | | | Wet at 14.0' bgs. | |
| 980 / 15 | | | | 0.0 | | | | |

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**Remarks:** bgs = below ground surface; NA = Not Applicable/Not Available.
Water-table not encountered during boring installation.

**Date Start/Finish:** 12/8/04

**Drilling Company:** BBL
**Driller's Name:** Jason Gutkowski
**Drilling Method:** Direct Push
**Sampler Size:** 4' Macrocore
**Rig Type:** Tractor-Mounted Power Probe

**Northing:** 534606.6
**Easting:** 134053.6
**Casing Elevation:** NA

**Borehole Depth:** 6.0' below grade
**Surface Elevation:** 1024.1 ft. AMSL

**Descriptions By:** Jay Boland

**Boring ID:** **RAA5-HI23**

**Client:** General Electric

**Location:** ESA 2 North RAA
Pittsfield, MA

| DEPTH / ELEVATION | Sample Run Number | Sample/Int/Type | Recovery (feet) | PID Headspace (ppm) | Analytical Sample | Geologic Column | Stratigraphic Description | Boring Construction |
|---|---|---|---|---|---|---|---|---|
| 1025 | | | | | | | | |
| 0 | | | | | | | | |
| | 1 | 0-4 | 2.1 | 0.0 | X | | Blackish-brown fine to medium SAND, little Silt and fine to medium Gravel, moist. | |
| | | | | 0.0 | | | | Borehole backfilled with cement-bentonite grout to grade. |
| 1020 | | | | 0.0 | X | | Grayish-brown fine SAND and SILT, little fine to medium Gravel, moist. | |
| 5 | 2 | 4-6 | 1.6 | 0.0 | | | | |
| 1015 | | | | | | | | |
| 10 | | | | | | | | |
| 1010 | | | | | | | | |
| 15 | | | | | | | | |

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**Remarks:** bgs = below ground surface; NA = Not Applicable/Not Available.
Boring starts below 0.8' Concrete on ground surface.
Water-table not encountered during boring installation.

**Date Start/Finish:** 12/8/04

**Drilling Company:** BBL
**Driller's Name:** Jason Gutkowski
**Drilling Method:** Direct Push
**Sampler Size:** 4' Macrocore
**Rig Type:** Tractor-Mounted Power Probe

**Northing:** 534552.8
**Easting:** 132739.0
**Casing Elevation:** NA

**Borehole Depth:** 6.0' below grade
**Surface Elevation:** 1011.2 ft. AMSL

**Descriptions By:** Jay Boland

**Boring ID:** **RAA5-I10**

**Client:** General Electric

**Location:** ESA 2 North RAA
Pittsfield, MA

| DEPTH / ELEVATION | Sample Run Number | Sample/Int/Type | Recovery (feet) | PID Headspace (ppm) | Analytical Sample | Geologic Column | Stratigraphic Description | Boring Construction |
|---|---|---|---|---|---|---|---|---|
| 0 / 1010 | 1 | 0-4 | 2.2 | 8.4 | X | | Grayish-brown fine to medium SAND, some fine to medium Gravel, little Silt, trace Brick, moist, slight petroleum-like odor. [FILL] | Borehole backfilled with cement-bentonite grout to grade. |
| | | | | 8.8 | | | | |
| | | | | 6.0 | X | | | |
| 5 / 1005 | 2 | 4-6 | 1.4 | 0.0 | | | | |
| 10 / 1000 | | | | | | | | |
| 15 | | | | | | | | |

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**Remarks:** bgs = below ground surface; NA = Not Applicable/Not Available.
Boring starts below 0.8' Concrete on ground surface.
Water-table not encountered during boring installation.

| | | |
|---|---|---|
| **Date Start/Finish:** 12/8/04<br><br>**Drilling Company:** BBL<br>**Driller's Name:** Jason Gutkowski<br>**Drilling Method:** Direct Push<br>**Sampler Size:** 4' Macrocore<br>**Rig Type:** Tractor-Mounted Power Probe | **Northing:** 534484.6<br>**Easting:** 133654.2<br>**Casing Elevation:** NA<br><br>**Borehole Depth:** 6.0' below grade<br>**Surface Elevation:** 1019.9 ft. AMSL<br><br>**Descriptions By:** Jay Boland | **Boring ID: RAA5-J19**<br><br>**Client:** General Electric<br><br>**Location:** ESA 2 North RAA<br>Pittsfield, MA |

| DEPTH / ELEVATION | Sample Run Number | Sample/Int/Type | Recovery (feet) | PID Headspace (ppm) | Analytical Sample | Geologic Column | Stratigraphic Description | Boring Construction |
|---|---|---|---|---|---|---|---|---|
| 0 / 1020 | | | | | | | | |
| | | | | 0.0 | X | | Brownish-gray fine to medium SAND, some fine to medium Gravel, trace Silt, moist. | |
| | 1 | 0-4 | 3.0 | 0.0 | | | Dark brownish-black fine to medium SAND, little Silt and fine to medium Gravel, moist. | Borehole backfilled with cement-bentonite grout to grade. |
| | | | | 0.0 | X | | | |
| 5 / 1015 | 2 | 4-6 | 1.1 | 0.0 | | | Brown fine to medium SAND, some Silt, little fine to coarse Gravel, moist. | |
| 10 / 1010 | | | | | | | | |
| 15 / 1005 | | | | | | | | |

BBL®
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engineers, scientists, economists

**Remarks:** bgs = below ground surface; NA = Not Applicable/Not Available.
Water-table not encountered during boring installation.

**Date Start/Finish:** 12/8/04

**Drilling Company:** BBL
**Driller's Name:** Jason Gutkowski
**Drilling Method:** Direct Push
**Sampler Size:** 4' Macrocore
**Rig Type:** Tractor-Mounted Power Probe

**Northing:** 534456.5
**Easting:** 133953.3
**Casing Elevation:** NA

**Borehole Depth:** 6.0' below grade
**Surface Elevation:** 1024.8 ft. AMSL

**Descriptions By:** Jay Boland

**Boring ID:** **RAA5-J22**

**Client:** General Electric

**Location:** ESA 2 North RAA
Pittsfield, MA

| DEPTH / ELEVATION | Sample Run Number | Sample/Int/Type | Recovery (feet) | PID Headspace (ppm) | Analytical Sample | Geologic Column | Stratigraphic Description | Boring Construction |
|---|---|---|---|---|---|---|---|---|
| 0 / 1025 | | | | | | | | |
| | | | | 0.0 | X | | Dark brown fine SAND and SILT, trace Organics, moist. | |
| | | | | | | | Brown fine SAND, trace fine Gravel, moist. | |
| | 1 | 0-4 | 3.4 | 0.0 | | | | Borehole backfilled with cement-bentonite grout to grade. |
| | | | | 0.0 | X | | | |
| | | | | | | | Brown fine to medium SAND, little Silt and fine to medium Gravel, moist. | |
| 5 / 1020 | 2 | 4-6 | 1.8 | 0.0 | | | | |
| 10 / 1015 | | | | | | | | |
| 15 / 1010 | | | | | | | | |

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**Remarks:** bgs = below ground surface; NA = Not Applicable/Not Available.
Water-table not encountered during boring installation.

**Date Start/Finish:** 12/8/04

**Drilling Company:** BBL
**Driller's Name:** Jason Gutkowski
**Drilling Method:** Direct Push
**Sampler Size:** 4' Macrocore
**Rig Type:** Tractor-Mounted Power Probe

**Northing:** 534405.3
**Easting:** 133754.2
**Casing Elevation:** NA

**Borehole Depth:** 6.0' below grade
**Surface Elevation:** 1018.9 ft. AMSL

**Descriptions By:** Jay Boland

**Boring ID:** **RAA5-JK20**

**Client:** General Electric

**Location:** ESA 2 North RAA
Pittsfield, MA

| DEPTH / ELEVATION | Sample Run Number | Sample/Int/Type | Recovery (feet) | PID Headspace (ppm) | Analytical Sample | Geologic Column | Stratigraphic Description | Boring Construction |
|---|---|---|---|---|---|---|---|---|
| 1020 / 0 | | | | | | | | |
| | 1 | 0-4 | 3.2 | 0.0 | X | | Grayish-brown fine to medium SAND, some Silt, little fine to medium Gravel, moist. | Borehole backfilled with cement-bentonite grout to grade. |
| 1015 / 5 | 2 | 4-6 | 1.3 | 0.0 | X | | | |
| 1010 / 10 | | | | | | | | |
| 1005 / 15 | | | | | | | | |

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**Remarks:** bgs = below ground surface; NA = Not Applicable/Not Available.
Boring starts below 0.5' Concrete on ground surface.
Water-table not encountered during boring installation.

**Date Start/Finish:** 12/10/4

**Drilling Company:** BBL
**Driller's Name:** Jason Gutkowski
**Drilling Method:** Direct Push
**Sampler Size:** 4' Macrocore
**Rig Type:** Tractor-Mounted Power Probe

**Northing:** 534375.2
**Easting:** 132894.4
**Casing Elevation:** NA

**Borehole Depth:** 6.0' below grade
**Surface Elevation:** 1010.7 ft. AMSL

**Descriptions By:** Jay Boland

**Boring ID:** **RAA5-K11**

**Client:** General Electric

**Location:** ESA 2 North RAA
Pittsfield, MA

| DEPTH / ELEVATION | Sample Run Number | Sample/Int/Type | Recovery (feet) | PID Headspace (ppm) | Analytical Sample | Geologic Column | Stratigraphic Description | Boring Construction |
|---|---|---|---|---|---|---|---|---|
| 0 / 1010 | 1 | 0-4 | 2.9 | 0.0 | X | | Brown fine to medium SAND, little Silt and fine to medium Gravel, moist. | Borehole backfilled with cement-bentonite grout to grade. |
| | | | | 0.0 | | | | |
| | | | | 0.0 | X | | | |
| 5 / 1005 | 2 | 4-6 | 2.0 | 0.0 | | | | |
| 10 / 1000 | | | | | | | | |
| 15 / 995 | | | | | | | | |

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**Remarks:** bgs = below ground surface; NA = Not Applicable/Not Available.
Boring begins below 0.2' Asphalt and 0.3' Concrete on ground surface.
Water-table not encountered during boring installation.

**Date Start/Finish:** 12/8/04

**Drilling Company:** BBL
**Driller's Name:** Jason Gutkowski
**Drilling Method:** Direct Push
**Sampler Size:** 4' Macrocore
**Rig Type:** Tractor-Mounted Power Probe

**Northing:** 534372.2
**Easting:** 133552.0
**Casing Elevation:** NA

**Borehole Depth:** 6.0' below grade
**Surface Elevation:** 1011.4 ft. AMSL

**Descriptions By:** Jay Boland

**Boring ID:** **RAA5-K18**

**Client:** General Electric

**Location:** ESA 2 North RAA
Pittsfield, MA

| DEPTH / ELEVATION | Sample Run Number | Sample/Int/Type | Recovery (feet) | PID Headspace (ppm) | Analytical Sample | Geologic Column | Stratigraphic Description | Boring Construction |
|---|---|---|---|---|---|---|---|---|
| 0 / 1010 | 1 | 0-4 | 2.4 | 0.0 | X | | Brown fine to medium SAND, some Silt, little fine to medium Gravel, moist. | Borehole backfilled with cement-bentonite grout to grade. |
| | | | | 0.0 | | | | |
| | | | | 0.0 | X | | | |
| 5 / 1005 | 2 | 4-6 | 1.3 | 0.0 | | | Grayish-brown fine to medium SAND, moist. | |
| 10 / 1000 | | | | | | | | |
| 15 | | | | | | | | |

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**Remarks:** bgs = below ground surface; NA = Not Applicable/Not Available.
Boring starts below 0.2' Asphalt on ground surface.
Water-table not encountered during boring installation.

*Attachment B*

# Soil Sampling Data Validation Report for Additional Pre-Design Investigation Samples

BLASLAND, BOUCK & LEE, INC.
*engineers, scientists, economists*

**ATTACHMENT B**
**SOIL SAMPLING DATA VALIDATION REPORT**

**EAST STREET AREA 2-NORTH**

**GENERAL ELECTRIC COMPANY**
**PITTSFIELD, MASSACHUSETTS**

## 1.0 General

This attachment summarizes the Tier I and Tier II data reviews performed for additional soil samples collected during Remedial Investigation activities conducted at the East Street Area 2-North site, located in Pittsfield, Massachusetts. The samples were analyzed for polychlorinated biphenyls (PCBs) and/or various other constituents listed in Appendix IX of 40 CFR Part 264, plus three additional constituents -- benzidine, 2-chloroethyl vinyl ether and 1,2-diphenylhydrazine (hereafter referred to as Appendix IX+3) by SGS Environmental Services, Inc. (formerly CT&E) of Charleston, West Virginia. Data validation was performed for the following quantities of soil samples: 34 polychlorinated biphenyl (PCB) samples, one volatile organic compound (VOC) sample, one semi-volatile organic compound (SVOC) sample, one polychlorinated dibenzo-p-dioxin (PCDD)/polychlorinated dibenzofuran (PCDF) sample, one metals sample, and one cyanide/sulfide sample.

## 2.0 Data Evaluation Procedures

This attachment outlines the applicable quality control criteria utilized during the data review process and any deviations from those criteria. The data review was conducted in accordance with the following documents:

- *Field Sampling Plan/Quality Assurance Project Plan, General Electric Company, Pittsfield, Massachusetts,* Blasland, Bouck & Lee, Inc. (BBL; FSP/QAPP, approved May 25, 2004 and resubmitted June 15, 2004);

- *Region I Tiered Organic and Inorganic Data Validation Guidelines,* USEPA Region I (July 1, 1993);

- *Region I Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses,* USEPA Region I (June 13, 1988) (Modified February 1989);

- *Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses,* USEPA Region I (February 1, 1988) (Modified November 1, 1988);

- *Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses,* USEPA Region I (Draft, December 1996); and

- *National Functional Guidelines for Dioxin/Furan Data Validation,* USEPA (Draft, January 1996).

A tabulated summary of the Tier I and Tier II data evaluations is presented in Table C-1. Each sample subjected to evaluation is listed in Table C-1 to document that data review was performed, as well as present the highest level of data validation (Tier I or Tier II) that was applied. Samples that required data qualification are listed separately for each parameter (compound or analyte) that required qualification.

The following data qualifiers were used in this data evaluation:

J The compound was positively identified, but the associated numerical value is an estimated concentration. This qualifier is used when the data evaluation procedure identifies a deficiency in the data generation process. This qualifier is also used when a compound is detected at an estimated concentration less than the corresponding practical quantitation limit (PQL).

U The compound was analyzed for, but was not detected. The sample quantitation limit is presented and adjusted for dilution and (for solid samples only) percent moisture. Non-detect sample results are presented as ND(PQL) within this report and in Table C-1 for consistency with documents previously prepared for investigations conducted at this site.

UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is estimated and may or may not represent the actual level of quantitation. Non-detect sample results that required qualification are presented as ND(PQL) J within this report and in Table C-1 for consistency with documents previously prepared for this investigation.

R Indicates that the previously reported detection limit or sample result has been rejected due to a major deficiency in the data generation procedure. The data should not be used for any qualitative or quantitative purpose.

## 3.0 Data Validation Procedures

The FSP/QAPP provides (in Section 7.5) that all analytical data will be validated to a Tier I level following the procedures presented in the *Region I Tiered Organic and Inorganic Data Validation Guidelines* (USEPA guidelines). Accordingly, 100% of the analytical data for these investigations were subjected to Tier I review. The Tier I review consisted of a completeness evidence audit, as outlined in the *USEPA Region I CSF Completeness Evidence Audit Program* (USEPA Region I, 7/31/91), to ensure that all laboratory data and documentation were present. In the event that data packages were determined to be incomplete, the missing information was requested from the laboratory. Upon completion of the Tier I review, the data packages complied with the USEPA Region I Tier I data completeness requirements. A tabulated summary of the samples subjected to Tier I and Tier II data evaluation is presented in the following table.

**Summary of Samples Subjected to Tier I and Tier II Data Validation**

| Parameter | Tier I Only | | | Tier I &Tier II | | | Total |
|---|---|---|---|---|---|---|---|
| | Samples | Duplicates | Blanks | Samples | Duplicates | Blanks | |
| PCBs | 10 | 0 | 0 | 20 | 2 | 2 | 34 |
| VOCs | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| SVOCs | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| PCDDs/PCDFs | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Metals | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Cyanide/Sulfide | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| **Total** | **10** | **0** | **0** | **25** | **2** | **2** | **39** |

In the event data packages were determined to be incomplete, the missing information was requested from the laboratory. Upon completion of the Tier I review, the data packages complied with USEPA Region I Tier I data completeness requirements.

As specified in the FSP/QAPP, approximately 25% of the laboratory sample delivery group packages were randomly chosen to be subjected to Tier II review. A Tier II review was also performed to resolve data usability limitations identified from laboratory qualification of the data during the Tier I data review. The Tier II data review consisted of a review of all data package summary forms for identification of Quality Assurance/Quality Control (QA/QC) deviations and qualification of the data according to the Region I Data Validation Functional Guidelines. Due to the variable sizes of the data packages and the number of data qualification issues identified during the Tier I review, approximately 74% of the data were subjected to a Tier II review. The Tier II review resulted in the qualification of data for several samples due to minor QA/QC deficiencies. Additionally, all field duplicates were examined for relative percent difference (RPD) compliance with the criteria specified in the FSP/QAPP.

When qualification of the sample data was required, the sample results associated with a QA/QC parameter deviation were qualified in accordance with the procedures outlined in USEPA Region I data validation guidance documents. When the data validation process identified several quality control deficiencies, the cumulative effect of the various deficiencies was employed in assigning the final data qualifier. A summary of the QA/QC parameter deviations that resulted in data qualification is presented below for each analytical method.

## 4.0 Data Review

The initial calibration criterion for organic analyses requires that the average relative response factor (RRF) has a value greater than 0.05. Sample results were qualified as estimated (J) when this criterion was not met. The compounds that did not meet the initial calibration criterion and the number of samples qualified are presented in the following table.

**Compounds Qualified Due to Initial Calibration Deviations (RRF)**

| Analysis | Compounds | Number of Affected Samples | Qualification |
|---|---|---|---|
| VOCs | 1,4-Dioxane | 1 | J |
| | Acetonitrile | 1 | J |
| | Acrolein | 1 | J |
| | Isobutanol | 1 | J |
| | Propionitrile | 1 | J |
| SVOCs | 4-Nitroquinoline-1-oxide | 1 | J |

Several of the organic compounds (including the compounds presented in the above tables detailing RRF deviations) exhibit instrument response factors (RFs) below the USEPA Region I minimum value of 0.05, but meet the analytical method criterion, which does not specify minimum RFs for these compounds. These compounds were analyzed by the laboratory at a higher concentration than the compounds that normally exhibit RFs greater than the USEPA Region I minimum value of 0.05 in an effort to demonstrate acceptable response. USEPA Region I guidelines state that non-detect compound results associated with a RF less than the minimum value of 0.05 are to be rejected (R). However, in the case of these select organic compounds, the RF is an inherent problem with the current analytical methodology; therefore, the non-detect sample results were qualified as estimated (J).

The initial calibration criterion requires that the percent relative standard deviation (%RSD) must be less than or equal to 30%. Sample data for detect and non-detect compounds with %RSD values greater than 30% were qualified as estimated (J). The compound that exceeded initial calibration criterion and the number of samples qualified due to those deviations are presented in the following table.

**Compound Qualified Due to Exceedence of %RSD Values**

| Analysis | Compound | Number of Affected Samples | Qualification |
|---|---|---|---|
| SVOCs | 4-Nitrophenol | 1 | J |

The continuing calibration criterion requires that the percent difference (%D) between the initial calibration RRF and the continuing calibration RRF for VOCs and SVOCs. Sample data for detected and non-detect compounds with %D values that exceeded the continuing calibration criteria were qualified as estimated (J). A summary of the compounds that exceeded the continuing calibration criterion and the number of samples qualified due to those deviations are presented in the following table.

**Compounds Qualified Due to Continuing Calibration of %D Values**

| Analysis | Compounds | Number of Affected Samples | Qualification |
|---|---|---|---|
| VOCs | Carbon Disulfide | 1 | J |
| | trans-1,4-Dichloro-2-butene | 1 | J |
| SVOCs | 2,6-Dinitrotoluene | 1 | J |
| | 2-Nitroaniline | 1 | J |
| | Benzidine | 1 | J |
| | Hexachlorophene | 1 | J |
| | o,o,o-Triethylphosphorothioate | 1 | J |

Blank action levels for inorganic analytes detected in the blanks were calculated at five times the blank concentrations. Detected sample result that was below the blank action level and above the instrument detection limit (IDL) was qualified with a "U." The analyte detected in method blank which resulted in qualification of sample data, along with the number of affected samples, are presented in the following table.

**Analyte Qualified Due to Blank Deviations**

| Analysis | Analyte | Number of Affected Samples | Qualification |
|---|---|---|---|
| Inorganics | Tin | 1 | U |

Field duplicate samples were analyzed to evaluate the overall precision of laboratory and field procedures. The RPD between field duplicate samples is required to be less than 50% for soil sample values greater than five times the PQL for organics. Sample results that exceeded these limits were qualified as estimated (J). The compounds that did not meet field duplicate RPD requirements and the number of samples qualified due to those deviations are presented in the following table.

**Compounds Qualified Due to Field Duplicate Deviations**

| Analysis | Compounds | Number of Affected Samples | Qualification |
|---|---|---|---|
| PCBs | Aroclor-1260 | 4 | J |
| | Total PCBs | 4 | |

## 5.0 Overall Data Usability

This section summarizes the analytical data in terms of its completeness and usability for site characterization purposes. Data completeness is defined as the percentage of sample results that have been determined to be usable during the data validation process. The percent usability calculation included analyses evaluated under both the Tier I and Tier II data validation reviews. Data completeness with respect to usability was calculated separately for inorganic and each of the organic analysis. The percent usability calculation also includes quality control samples collected to aid in the evaluation of data usability. Therefore, field/equipment blank, trip blank, and field duplicate data determined to be unusable as a result of the validation process are represented in the percent usability value tabulated in the following table.

**Data Usability**

| Parameter | Percent Usability | Rejected Data |
|---|---|---|
| Inorganics | 100 | None |
| Cyanide and Sulfide | 100 | None |
| PCBs | 100 | None |
| VOCs | 100 | None |
| SVOCs | 100 | None |
| PCDDs/PCDFs | 100 | None |

The data package completeness, as determined from the Tier I data review, was used in combination with the data quality deviations identified during the Tier II data review to determine overall data quality. As specified in the FSP/QAPP, the overall precision, accuracy, representativeness, comparability, and completeness (PARCC) parameters determined from the Tier I and Tier II data reviews were used as indicators of overall data quality. These parameters were assessed through an evaluation of the results of the field and laboratory QA/QC sample analyses to provide a measure of compliance of the analytical data with the Data Quality Objectives (DQOs) specified in the FSP/QAPP. Therefore, the following sections present summaries of the PARCC parameters assessment with regard to the DQOs specified in the FSP/QAPP.

### 5.1 Precision

Precision measures the reproducibility of measurements under a given set of conditions. Specifically, it is a quantitative measure of the variability of a group of measurements compared to their average value. For this investigation, precision was defined as the RPD between duplicate sample results. The duplicate samples used to evaluate precision included laboratory duplicates, field duplicates, MS/MSD samples, and ICP serial dilution samples. For this analytical program, 1.6% of the data required qualification due to field duplicate RPD deviations. None of the data required qualification due to laboratory duplicate RPD deviations, MS/MSD RPD deviations or ICP serial dilution deviations.

### 5.2 Accuracy

Accuracy measures the bias in an analytical system or the degree of agreement of a measurement with a known reference value. For this investigation, accuracy was defined as the percent recovery of QA/QC samples that were spiked with a known concentration of an analyte or compound of interest. The QA/QC samples used to evaluate analytical accuracy included instrument calibration, internal standards, Laboratory Control Standards (LCSs), MS/MSD samples, contract required detection limit (CRDL) samples, and surrogate compound recoveries. For this analytical program, 2.9% of the data required qualification due to instrument calibration deviations. None of the data required qualification due to internal standards deviations, LCS recovery deviations, MS/MSD recovery deviations, CRDL samples deviations or surrogate compound recovery deviations.

## 5.3 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is a qualitative parameter, which is most concerned with the proper design of the sampling program. The representativeness criterion is best satisfied by making certain that sampling locations are selected properly and a sufficient number of samples are collected. This parameter has been addressed by collecting samples at locations specified in MDEP-approved work plans, and by following the procedures for sample collection/analyses that were described in the FSP/QAPP. Additionally, the analytical program used procedures consistent with USEPA-approved analytical methodology. A QA/QC parameter that is an indicator of the representativeness of a sample is holding time. Holding time criteria are established to maintain the samples in a state that is representative of the in-situ field conditions before analysis. For this analytical program, none of the data required qualification due to holding time requirements.

## 5.4 Comparability

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. This goal was achieved through the use of the standardized techniques for sample collection and analysis presented in the FSP/QAPP. The USEPA SW-846[1] analytical methods presented in the FSP/QAPP are updated on occasion by the USEPA to benefit from recent technological advancements in analytical chemistry and instrumentation. In most cases, the method upgrades include the incorporation of new technology that improves the sensitivity and stability of the instrumentation or allows the laboratory to increase throughput without hindering accuracy and precision. Overall, the analytical methods for this investigation have remained consistent in their general approach through continued use of the basic analytical techniques (e.g., sample extraction/preparation, instrument calibration, QA/QC procedures). Through this use of consistent base analytical procedures and by requiring that updated procedures meet the QA/QC criteria specified in the FSP/QAPP, the analytical data from past, present, and future sampling events will be comparable to allow for qualitative and quantitative assessment of site conditions.

## 5.5 Completeness

Completeness is defined as the percentage of measurements that are judged to be valid or usable to meet the prescribed DQOs. The completeness criterion is essentially the same for all data uses -- the generation of a sufficient amount of valid data. This analytical data set had an overall usability of 100%.

[1] Test Methods for evaluating Solid Waste, SW-846, USEPA, Final Update III, December 1996.