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*Transmitted Via Overnight Courier*

July 31, 2014

Mr. Richard Fisher (Mail Code OSRR07-1)  
U.S. Environmental Protection Agency  
EPA New England  
5 Post Office Square – Suite 100  
Boston, Massachusetts 02114-2023

Re: **GE-Pittsfield/Housatonic River Site  
Groundwater Management Area 1 (GEC310)  
Baseline Assessment Final Report and Long-Term Monitoring Program Proposal**

Dear Mr. Fisher:

In accordance with GE's approved *Baseline Monitoring Program Proposal for Plant Site 1 Groundwater Management Area* (September 2000), enclosed is the *Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1*. This report evaluates the overall groundwater quality at GMA 1 and contains a proposal for long-term groundwater quality monitoring activities at that GMA. A summary of the two most recent rounds of sampling activities conducted at GMA 1 in spring and fall 2013 is also presented.

Please contact me if you have any questions regarding this report.

Sincerely,

A handwritten signature in black ink, appearing to read 'Richard W. Gates' with a stylized flourish at the end.

Richard W. Gates  
Senior Project Manager - Environmental Remediation

Enclosure

cc: Dean Tagliaferro, EPA  
Tim Conway, EPA (cover letter only)  
Christopher Ferry, ASRC Primus (CD-ROM)  
Robert Leitch, USACE (CD-ROM)  
Linda Palmieri, Weston (2 hard copies & CD-ROM)  
Eva Tor, MDEP (CD-ROM)  
Michael Gorski, MDEP (CD-ROM)  
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Karen Pelto, MDEP (cover letter only)  
Nancy E. Harper, MA AG (cover letter only)  
Nate Joyner, City of Pittsfield Dept. of Community Development (CD-ROM)  
Corydon Thurston, Executive Director, PEDDA (CD-ROM)  
Barbara Landau, Noble & Wickersham (CD-ROM)  
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**General Electric Company  
Pittsfield, Massachusetts**

**Baseline Assessment Final Report  
and Long-Term Monitoring  
Program Proposal for  
Groundwater Management Area 1**

**Volume I of II**

July 2014



**Baseline Assessment Final Report  
and Long-Term Monitoring  
Program Proposal for  
Groundwater Management Area 1**

(GMA 1 Long-Term Monitoring Proposal)

General Electric Company  
Pittsfield, Massachusetts

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## 1. Introduction

### 1.1 General

On October 27, 2000, a Consent Decree (CD) executed in 1999 by the General Electric Company (GE), the United States Environmental Protection Agency (EPA), the Massachusetts Department of Environmental Protection (MDEP), and several other government agencies was entered by the United States District Court for the District of Massachusetts. The CD governs (among other things) the performance of response actions to address polychlorinated biphenyls (PCBs) and other hazardous constituents in soil, sediment, and groundwater in several Removal Action Areas (RAAs) located in or near Pittsfield, Massachusetts that collectively comprise the GE-Pittsfield/Housatonic River Site (the Site).

For groundwater and non-aqueous-phase liquid (NAPL), the RAAs at and near the GE Pittsfield facility have been divided into five separate Groundwater Management Areas (GMAs), which are illustrated on Figure 1. These GMAs are described, together with the Performance Standards established for the response actions at and related to them, in Section 2.7 of the *Statement of Work for Removal Actions Outside the River* (SOW) (Appendix E to the CD), with further details presented in Attachment H to the SOW (Groundwater/NAPL Monitoring, Assessment, and Response Programs). This report relates to the Plant Site 1 Groundwater Management Area, also known as and referred to herein as GMA 1.

The Consent Decree and Attachment H to the SOW specify a series of steps to be taken at each of the GMAs to investigate and, as appropriate, respond to groundwater conditions. The Consent Decree and Attachment H to the SOW provide initially for the design and implementation of a baseline monitoring program at each of the GMAs to establish existing groundwater-related conditions and to provide the basis for evaluating the effectiveness of future response actions and for comparison of future data. Under Attachment H to the SOW, the baseline monitoring program is to consist generally of semi-annual groundwater quality sampling and quarterly groundwater elevation monitoring for a two-year period, but may be extended and/or modified when the soil-related remediation work in the relevant area has not been completed.

Following the completion of the baseline monitoring program at each GMA, GE is to prepare a Baseline Assessment Final Report. The requirements for the Baseline Assessment Final Report are specified in Section 6.3.2 of Attachment H to the SOW. As part of that Final Report, GE is to propose a long-term monitoring program for the GMA. This report constitutes the Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for GMA 1 (GMA 1 Long-Term Monitoring Proposal).

## 1.2 Overview of Groundwater Investigation Activities at GMA 1

On September 29, 2000, GE submitted a *Baseline Monitoring Program Proposal for Plant Site 1 Groundwater Management Area* (GMA 1 Baseline Monitoring Proposal). The GMA 1 Baseline Monitoring Proposal summarized the hydrogeologic information available at that time for GMA 1 and proposed groundwater quality and monitoring activities for the baseline monitoring period at this GMA. EPA provided conditional approval of the GMA 1 Baseline Monitoring Proposal by letter of March 20, 2001. Thereafter, certain modifications were made to the GMA 1 baseline monitoring program as a result of EPA approval conditions and/or findings during field reconnaissance of the selected monitoring locations and, subsequently, during implementation of the baseline monitoring program. The initial modifications were documented in a letter to EPA dated May 18, 2001 (conditionally approved by EPA in a letter to GE dated July 9, 2001). Thereafter, during discussions among GE, EPA, and MDEP, the parties agreed to a number of clarifications and modifications to the baseline monitoring program. These clarifications and modifications were documented in letters to EPA dated August 16, 2001 and August 22, 2001.

The baseline monitoring program, which was initiated in fall 2001, consisted of four semi-annual groundwater quality sampling events (with intervening quarterly groundwater elevation monitoring) followed by preparation and submittal of semi-annual reports summarizing the groundwater monitoring results, comparing the groundwater results with applicable Performance Standards under the CD, and, as appropriate, proposing modifications to the monitoring program. The fourth baseline monitoring report for GMA 1, titled *Plant Site 1 Groundwater Management Area Baseline Groundwater Quality Interim Report for Spring 2003* (Spring 2003 GMA 1 Groundwater Quality Report), was submitted to EPA on July 30, 2003.

Section 6.1.3 of Attachment H to the SOW provides that if the two-year “baseline” period ends prior to the completion of soil-related response actions at all the RAAs within a GMA, GE may make a proposal to EPA to modify and/or extend the baseline monitoring program based on the results of the initial assessment and the estimated timing of future response actions. The approved GMA 1 Baseline Monitoring Proposal also allowed GE to propose a modification and/or extension of the baseline monitoring program based on the results of the initial assessment and the estimated timing of future response actions. Since the soil-related Removal Actions at the RAAs within GMA 1 were not complete in 2003, the Spring 2003 GMA 1 Groundwater Quality Report proposed to modify and extend baseline groundwater quality monitoring activities at GMA 1 (under a program referred to as the interim monitoring program) until such time as the soil-related remediation actions at the RAAs within GMA 1 were completed and the components of a long-term groundwater quality monitoring program were determined. EPA conditionally approved the Spring 2003 GMA 1 Groundwater Quality Report in a letter dated September 23, 2003.

Under the approved interim monitoring program, annual groundwater quality sampling (alternating between the spring and fall seasons) and periodic groundwater level monitoring at selected GMA 1 wells were initiated in spring 2004, following a limited sampling event in fall 2003 involving the collection of groundwater samples from six wells that did not yet have four complete rounds of sampling as part of the baseline monitoring program. The interim monitoring program continued from spring 2004 through the present, with a number of modifications to the wells included in the program, the analytical parameters, and the sampling schedule (including the performance of supplemental groundwater sampling at certain wells on a limited or semi-annual basis). As part of that program, GE submitted reports after each groundwater sampling event to summarize the groundwater monitoring and sampling results and related activities and, as appropriate, propose modifications to the monitoring program. The most recent such report, the *Plant Site 1 Groundwater Management Area Groundwater Quality Interim Report for Fall 2012* (Fall 2012 GMA 1 Groundwater Quality Report) was submitted on January 30, 2013 and was conditionally approved by EPA in a letter dated April 17, 2013.

In addition to presenting the results of groundwater sampling activities performed at GMA 1, these reports include the groundwater elevation data collected at GMA 1 during the relevant period under GE's separate NAPL monitoring and recovery program for GMA 1 (both in data tables and plotted on a groundwater elevation contour maps). However, detailed discussions of the data from that program – including information on groundwater elevations, flow direction, and seasonal trends; assessments of the presence and extent of NAPL at GMA 1; summaries of GE's NAPL recovery efforts; and proposed modifications to the NAPL monitoring and recovery activities – are currently presented in separate semi-annual NAPL monitoring reports submitted under GE's NAPL monitoring program. The *GMA 1 NAPL Monitoring Report for Spring 2013* (Spring 2013 GMA 1 NAPL Report) was submitted to EPA on August 30, 2013 and was conditionally approved by EPA on December 23, 2013, 2013. In response to that conditional approval letter, GE submitted an Addendum to the Spring 2013 GMA 1 NAPL Report on February 28, 2014, followed by an errata to that report on March 5, 2014. That addendum and errata, which were conditionally approved by EPA in a letter to GE dated June 4, 2014, presented GE's proposed revisions to the GMA 1 NAPL monitoring program.<sup>1</sup>

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<sup>1</sup> As discussed further in Section 8.6 below, that Addendum also proposed to combine future reporting on the GMA 1 NAPL monitoring and recovery program with the reports on the long-term groundwater quality monitoring program at GMA 1.

This GMA 1 Long-Term Monitoring Proposal provides a summary of the spring 2013 sampling activities conducted at GMA 1 and certain supplemental sampling performed by GE in fall 2013, evaluates the overall groundwater quality at GMA 1 pursuant to the requirements of Attachment H of the SOW, and contains a proposal for long-term groundwater quality monitoring activities at that GMA.

### **1.3 Background Information on GMA 1**

As discussed above, the CD and SOW provide for the performance of groundwater-related monitoring and NAPL removal activities at a number of GMAs. Some of these GMAs, including GMA 1, incorporate multiple RAAs to reflect the fact that groundwater may flow between RAAs. GMA 1 encompasses 11 RAAs and occupies an area of approximately 215 acres (Figure 1). The RAAs within GMA 1 are:

- RAA 1 - 40s Complex;
- RAA 2 - 30s Complex;
- RAA 3 - 20s Complex;
- RAA 4 - East Street Area 2-South;
- RAA 5 - East Street Area 2-North;
- RAA 6 - East Street Area 1-North;
- RAA 12 - Lyman Street Area;
- RAA 13 - Newell Street Area II;
- RAA 14 - Newell Street Area I;
- RAA 17 - Silver Lake Area; and
- RAA 18 - East Street Area 1-South.

GMA 1 contains a combination of GE-owned and non-GE-owned industrial areas, residential properties, and recreational areas, including land formerly owned by GE that has been transferred to the Pittsfield Economic Development Authority (PEDA) pursuant to the Definitive Economic Development Agreement (DEDA). The properties that GE has transferred to PEDA consist of the former 20s Complex, former 30s Complex, former 40s Complex, and former 19s Complex (a portion of East Street Area 2-North), as well as portions of Woodlawn Avenue. The Housatonic River flows through the southern portion of this GMA, while Silver Lake is located along the western boundary. Certain portions of this GMA originally consisted of land associated with oxbows or low-lying areas of the Housatonic River. Re-channelization and straightening of the Housatonic River in the early 1940s by the City of Pittsfield and the United States Army Corps of Engineers (USACE) separated several of these oxbows and low-lying areas from the active course of the river.



These oxbows and low-lying areas were subsequently filled with various materials from a variety of sources, resulting in the current surface elevations and topography.

As set forth in the GMA 1 Baseline Monitoring Proposal, including EPA-approved modifications, the baseline monitoring program at this GMA initially involved a total of 65 monitoring wells. The wells included in the GMA 1 baseline monitoring program were monitored for groundwater elevations on a quarterly basis and sampled on a semi-annual basis for analysis of PCBs and/or certain non-PCB constituents listed in Appendix IX of 40 CFR Part 264, plus three additional constituents – benzidine, 2-chloroethylvinyl ether, and 1,2-diphenylhydrazine (Appendix IX+3). The specific groundwater quality parameters for each individual well were selected based on the monitoring objectives of the well.

After the fourth baseline sampling event at most of the wells in GMA 1 in spring 2003, EPA approved the implementation of the interim monitoring program until the completion of the soil-related Removal Actions at the GMA 1 RAAs. In the Spring 2003 GMA 1 Groundwater Quality Report, GE described its proposed interim groundwater quality monitoring program. Certain specific monitoring tasks were to be performed in fall 2003, and GE submitted its Fall 2003 GMA 1 Groundwater Quality Report providing the results of those tasks. Beginning in spring 2004, as approved by EPA, the interim groundwater quality monitoring program was to consist of annual sampling (alternating between the spring and fall seasons) and analysis for select constituents at 22 GMA 1 wells. Locations selected for interim groundwater quality monitoring were wells downgradient of known NAPL areas/recovery systems where no additional hydraulic controls are in place, and/or those wells where analytical results from the baseline monitoring rounds did not clearly indicate whether long-term monitoring would be necessary. Supplemental sampling outside of that annual schedule, including additional baseline characterization activities, has also been conducted at certain monitoring wells as required by EPA and/or proposed by GE.

Since the spring 2004 groundwater sampling event, GE has presented the results of each sampling event in interim or supplemental groundwater quality monitoring reports and, based on those results, has proposed and, following EPA approval, implemented modifications to the interim program. A number of program modifications were made in spring 2006, following revisions to the Massachusetts Contingency Plan (MCP) Method 1 groundwater standards that took effect on April 3, 2006. On February 14, 2008, additional revisions to the MCP Method 1 groundwater standards took effect, and, as required by Condition 4 of EPA's April 8, 2008 conditional approval letter, the Spring 2008 GMA 1 Groundwater Quality Report discussed the revised standards, evaluated their implications on the interim groundwater quality monitoring program, and proposed further modifications to that program in response to those new standards. The interim monitoring program continued through the fall of 2013.

At the present time, GE has completed the soil-related Removal Actions at all RAAs that comprise GMA 1, with the last of these, the Silver Lake Area Removal Action, completed in the fall of 2013 (although a Final Completion Report for that Removal Action has not yet been submitted). In its December 19, 2012 conditional approval letter for the Spring 2012 GMA 1 Groundwater Quality Report, EPA directed that, in anticipation of the substantial completion of the soil and sediment remediation actions at GMA 1, GE should submit the Baseline Assessment Final Report and Long-Term Monitoring Proposal for this GMA along with the report on the spring 2013 sampling event, and that GE should meet with EPA 60 days before doing so to discuss the long-term monitoring program.

Given schedule constraints, that meeting was not scheduled until November 2013. In the meantime, GE requested, and EPA granted, approval to conduct a supplemental sampling event in the fall of 2013 to obtain information on certain selected wells (i.e., wells with an incomplete baseline characterization or where additional sampling was warranted to assess an isolated prior exceedance of applicable standards). That supplemental sampling event was conducted on October 8, 2013.

A separate non-GE-related disposal site, as designated under the MCP, is located on an adjacent property near the northern edge of the Lyman Street Area. This disposal site is the O'Connell Mobil Station site (MDEP Site No. 1-13347) (also referred to as the "East Street Mobil Site") at 730 East Street. GE understands that this site is currently being addressed by O'Connell Oil Associates, Inc. (O'Connell Oil) to satisfy the requirements of Massachusetts General Laws Chapter 21E and the MCP. Available documentation indicates that soluble-phase contaminants related to gasoline releases from the East Street Mobil Site may have migrated onto GMA 1. GE is required to include available monitoring results from response actions performed at this adjacent site in the groundwater monitoring reports for GMA 1, to the extent that information is available to GE. To fulfill this requirement, GE conducted an online MDEP file search in June 2014 to review any reports that have been submitted regarding this site since submittal of the Fall 2012 GMA 1 Groundwater Quality Report. The results of that file search, including a summary of the report that was reviewed, are provided in Section 5.2.

#### **1.4 Format of Document**

The remainder of this report is presented in eight sections. Section 2 summarizes the applicable groundwater quality Performance Standards for GMA 1, as set forth in the CD and SOW. Section 3 describes the activities performed under the interim monitoring program at GMA 1 in both spring and fall 2013. Section 4 presents the analytical results obtained during the spring 2013 groundwater sampling event and the supplemental fall 2013 sampling event, including a comparison of those results to the applicable Performance Standards. Section 5 provides a discussion of recent actions performed by others (e.g., PEDAs, O'Connell Oil) that could affect groundwater at GMA 1. Section 6 provides an



**GMA 1 Long-Term  
Monitoring Proposal**  
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overall assessment of the hydrogeologic setting and groundwater quality at GMA 1 since initiation of baseline monitoring activities in fall 2001, including an evaluation of the baseline and interim monitoring data and a comparison of those results to the applicable Performance Standards. Section 7 describes the basis upon which GE has identified monitoring points and constituents to be included in a long-term monitoring program. Section 8 proposes the long-term groundwater quality monitoring program for GMA 1 and describes the wells selected for inclusion, proposed sampling frequency and analyses, and reporting requirements. Finally, Section 9 presents the schedule for future field and reporting activities related to groundwater quality at GMA 1.

## 2. Groundwater Quality Performance Standards

The Performance Standards applicable to response actions for groundwater at GMA 1 are prescribed in Paragraph 24.g of the CD and set forth in Section 2.7 and Attachment H (Section 4.1) of the SOW. In general, the Performance Standards for groundwater quality are based on the groundwater classification categories designated in the MCP. The MCP identifies three potential groundwater categories that may be applicable to a given site. One of these, GW-1 groundwater, applies to groundwater that is a current or potential source of potable drinking water. None of the groundwater at any of the GMAs at the Site is classified as GW-1. However, the remaining MCP groundwater categories are applicable to GMA 1 and are described below:

- GW-2 groundwater is defined as groundwater that is a potential source of vapors to the indoor air of buildings. Groundwater is classified as GW-2 if it is located within 30 feet of an existing occupied building and has an average annual depth below ground surface (bgs) of 15 feet or less.
- GW-3 groundwater is defined as groundwater that discharges to surface water. By MCP definition, all groundwater at a site is classified as GW-3 since it is considered to ultimately discharge to surface water.

The CD and the SOW allow for the establishment of standards for GW-2 and GW-3 groundwater at the GMAs through use of one of three methods, as generally described in the MCP. The first, known as Method 1, consists of the application of pre-established, conservative numerical "Method 1" standards set forth in the MCP for both GW-2 and GW-3 groundwater (310 CMR 40.0974). The MCP Method 1 GW-2 and GW-3 standards in effect at the time of sampling for the constituents detected in the spring 2013 and fall 2013 sampling event are listed in Tables 5 and 6, respectively (discussed further in Section 4). For constituents for which Method 1 standards do not exist, the MCP provides procedures, known as Method 2, for developing such standards (Method 2 standards) for both GW-2 (310 CMR 40.0983(2)) and GW-3 (310 CMR 40.0983(4)) groundwater. For such constituents that are detected in groundwater during the baseline monitoring program, Attachment H to the SOW states that, in the Baseline Monitoring Program Final Report, GE must propose to develop Method 2 standards using the MCP procedures or alternate procedures approved by EPA, or provide a rationale for why such standards need not be developed. For constituents whose concentrations exceed the applicable Method 1 (or Method 2) standards, GE may develop and propose to EPA alternative GW-2 and/or GW-3 standards based on a site-specific risk assessment. This procedure is known as Method 3 in the MCP. Upon EPA approval, these alternative risk-based GW-2 and/or GW-3 standards may be used in lieu of the Method 1 (or Method 2) standards. Of course, whichever method is used to establish such groundwater standards, GW-2 standards are applied to GW-2 groundwater and GW-3 standards are applied to GW-3 groundwater.

In its July 30, 2008 conditional approval letter for the *Groundwater Management Area 2 Long-Term Monitoring Program Addendum to Monitoring Event Evaluation Report for Fall 2007*, EPA specified that the low-range guidance values developed in that report for cobalt and copper should constitute the Method 2 GW-3 standards for these metals at all of the GE Pittsfield GMAs. Accordingly, GE has utilized those Method 2 standards in its evaluation of the analytical results at GMA 1.

On June 20, 2014, MDEP implemented revised Method 1 numerical standards for a number of constituents in groundwater. Those revisions are summarized in the following table:

Parameter	MCP Method 1 GW-2 Standard (ppm)		MCP Method 1 GW-3 Standard (ppm)		MCP UCL for Groundwater (ppm)	
	2008	2014	2008	2014	2008	2014
1,1-Dichloroethane	1	2	---	---	---	---
1,2,4-Trichlorobenzene	2	0.2	---	---	---	---
1,2-Dichlorobenzene	2	8	---	---	20	80
1,3-Dichlorobenzene	2	6	---	---	---	---
1,4-Dichlorobenzene	0.2	0.06	---	---	---	---
4-Chloroaniline	50	30	---	---	---	---
Acenaphthene	---	---	6	10	60	100
Aldrin	---	---	0.02	0.03	0.2	0.3
Aromatic Hydrocarbons C9 to C10	7	4	---	---	---	---
Benzene	2	1	---	---	---	---
cis-1,2-Dichloroethene	0.1	0.02	---	---	---	---
Hexachlorobutadiene	0.001	0.05	---	---	---	---
Methylene Chloride	10	2	---	---	---	---
Naphthalene	1	0.7	---	---	---	---
Pyrene	---	---	---	---	0.8	0.6
trans-1,2- Dichloroethene	0.09	0.08	---	---	---	---
Trichloroethene	0.03	0.005	---	---	---	---
Xylenes (total)	9	3	---	---	---	---

Note: “---” indicates that no change was made to the respective standard.

Although the tables presented in this report compare the groundwater analytical data to the former standards in effect at the time of sampling, GE has also reviewed the modified MCP Method 1 groundwater standards in comparison to this data. As shown above, the recent changes do not include any reduction in any of the GW-3 standards (although certain GW-3

standards were increased) or any changes in groundwater standards for PCBs; however several of the GW-2 standards for certain substances have been reduced. As further described in Section 6.6, there were no exceedances of the GW-2 standards in any GW-2 monitoring well during the baseline/interim monitoring programs at GMA 1. This is also true based on a comparison of these data with the revised MCP GW-2 standards. As such, the 2014 changes in standards do not affect the evaluation of groundwater data presented herein or the scope of the proposed long-term monitoring program. GE will compare all future groundwater quality results to the new MCP groundwater standards.

Based on consideration of the above points, the specific groundwater quality Performance Standards for GMA 1 consist of the following:

1. At monitoring wells designated as compliance points to assess GW-2 groundwater (i.e., groundwater located at an average depth of 15 feet or less from the ground surface and within 30 feet of an existing occupied building), groundwater quality shall achieve any of the following:
  - (a) the Method 1 GW-2 groundwater standards set forth in the MCP (or, for constituents for which no such standards exist, Method 2 GW-2 standards once developed, unless GE provides and EPA approves a rationale for not developing such Method 2 standards);
  - (b) alternative risk-based GW-2 standards developed by GE and approved by EPA as protective against unacceptable risks due to volatilization and transport of volatile chemicals from groundwater to the indoor air of nearby occupied buildings; or
  - (c) a condition, based on a demonstration approved by EPA, in which constituents in the groundwater do not pose an unacceptable risk to occupants of nearby occupied buildings via volatilization and transport to the indoor air of such buildings.<sup>2</sup>
2. Groundwater quality shall ultimately achieve the following standards at the perimeter monitoring wells designated as compliance points for GW-3 standards:

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<sup>2</sup> In addition, the SOW specifies a concentration of 5 parts per million (ppm) of total volatile organic compounds (VOCs) as a notification level for GW-2 wells located within 30 feet of a school or occupied residential structure and as a trigger level in GW-2 wells (if associated with an exceedance of a GW-2 standard) for the proposal of interim response actions.

- (a) the Method 1 GW-3 groundwater standards set forth in the MCP (or, for constituents for which no such standards exist, Method 2 GW-3 standards once developed, unless GE provides and EPA approves a rationale for not developing such Method 2 standards); or
- (b) alternative risk-based GW-3 standards proposed by GE and approved by EPA as protective against unacceptable risks in surface water due to potential migration of constituents in groundwater.

These Performance Standards are to be applied to the results of the individual monitoring wells included in the monitoring program. Several monitoring wells have been designated as the compliance points for attainment of the Performance Standards identified above. The compliance points were initially identified in the GMA 1 Baseline Monitoring Proposal, although certain modifications were made subsequent to that proposal as a result of EPA requirements, findings during field reconnaissance of the selected wells, or replacement of certain wells during the course of the monitoring program.

In addition to the Performance Standards described above, analytical results from all groundwater monitoring wells sampled are compared to the Upper Concentration Limits (UCLs) for groundwater set forth in the MCP (310 CMR 40.0996(7)).

### **3. Groundwater Monitoring/Sampling Activities Conducted in 2013**

#### **3.1 General**

This section describes the activities conducted as part of the interim groundwater quality monitoring program at GMA 1 during 2013. Those activities primarily involved the measurement of groundwater levels and the collection and analysis of groundwater samples at select monitoring wells within GMA 1, as described in Table 1. In addition, GE performed inspections of the monitoring wells and, where necessary, other well maintenance activities. The construction details of all wells that were sampled at GMA 1 during the baseline/interim monitoring programs, including those sampled or monitored in 2013, are provided in Table 2. This section discusses the field procedures used to conduct those field activities and the methods used to analyze the groundwater samples. All activities were performed in accordance with GE's approved *Field Sampling Plan/Quality Assurance Project Plan* (FSP/QAPP) that was in effect at the time the activities were performed.<sup>3</sup>

#### **3.2 Monitoring Well Inspections and Repairs**

In 2013, monitoring well maintenance evaluations were performed at all wells sampled during the interim groundwater sampling events and at all other wells included in the baseline or interim groundwater quality monitoring programs. Any minor maintenance needs (e.g., replacement of bolts, locks, or well caps) were listed in the comments section of the groundwater sampling field logs. Wells with major maintenance needs (e.g., adjustments to surface completion, modifications to inner casing) were identified for performance of a formal well inventory. The majority of the wells inspected in 2013 had no major maintenance requirements noted, and the issues that were identified did not impact the collection of samples. The well maintenance needs identified and the repairs completed by GE in 2013 at GMA 1 monitoring wells sampled during the baseline/interim monitoring programs are summarized in Table A-1 in Appendix A. As noted in that table, GE has addressed all maintenance needs that were identified in 2013 for these groundwater quality monitoring wells at GMA 1.

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<sup>3</sup> The activities conducted in spring 2013 were performed in accordance with GE's March 2007 version of the FSP/QAPP, which was in effect at that time. On July 2, 2013, GE submitted a revised FSP/QAPP to EPA, and it was approved by EPA on July 23, 2013. All subsequent activities within GMA 1 have been and will continue to be conducted in accordance with that revised FSP/QAPP.



### **3.3 Groundwater Level Measurement and NAPL Monitoring**

The spring 2013 groundwater elevation monitoring event at GMA 1 was conducted on April 15 and 16, 2013 and the fall 2013 groundwater elevation monitoring event was conducted on October 21 to 23, 2013. To address an inadvertent loss of data from Newell Street Area I, an additional monitoring round was conducted on November 13, 2013 at the GMA 1 water table wells located to the south of the Housatonic River. Groundwater elevations were measured at the wells shown in Table 3 (which include wells monitored as part of the GMA 1 NAPL monitoring program). Groundwater levels and NAPL thicknesses (where NAPL was present) were measured in accordance with procedures specified in the applicable approved FSP/QAPP. The groundwater elevation data presented in Table 3 from wells screened across or near the water table were used to prepare groundwater elevation contour maps for spring 2013 (Figure 3) and fall 2013 (Figure 4).<sup>4</sup> Consistent with prior data, groundwater was found to generally flow toward the Housatonic River.

As required by EPA, GE also recorded Housatonic River flow data collected at the U.S. Geological Survey (USGS) gauging station in Coltsville, Massachusetts during the groundwater elevation monitoring and sampling events. The peak daily river flow data ranged from 146 to 248 cubic feet per second (cfs) during the April sampling period and from 89 to 166 cfs during the spring 2013 groundwater elevation monitoring event. In fall 2013, the peak river flow was 156 cfs during the October 8, 2013 sampling event, ranged from 44 to 47 during the October 2013 groundwater elevation monitoring round, and was between 50 and 54 cfs during the supplemental monitoring activities conducted on November 13, 2013. In addition, GE monitored river elevations at the measuring points established at the Lyman Street and Newell Street bridges during each week of sampling to further assess potential changes in river conditions during the sampling event. No atypical fluctuations in river elevation or flow readings were observed during the sampling events. The Housatonic River flow data and river elevation readings are included in Table A-2 and Table A-3, respectively, in Appendix A.

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<sup>4</sup> The data presented on Figure 4 consist of the October 21-23, 2013 monitoring results for all water table wells located north of the Housatonic River and the November 13, 2013 results for wells south of the river.

### 3.4 Groundwater Sampling and Analysis

#### 3.4.1 Spring 2013 Groundwater Sampling and Analysis

The spring 2013 groundwater sampling event was performed on April 22-24, 2013. This event involved sampling of eight monitoring wells located within GMA 1, including two wells located in East Street Area 1-South (wells ESA1S-31R and ESA1S-72R), one well in East Street Area 2-North (well A7-RR), and five wells in East Street Area 2-South (wells E2SC-23, E2SC-24, ESA2S-52, GMA1-30, and HR-G3-MW-2). These wells are listed in Table 1 and shown on Figure 2.

In the Fall 2008 GMA 1 Groundwater Quality Report, GE had proposed removing well GMA1-4 from the GW-2/PCB assessment sampling program because the average annual depth to water at this well was deeper than the 15-foot criterion for GW-2 groundwater, and because the GW-2 designation had been previously removed from this well, with EPA approval. However, GE proposed that it would continue to measure water levels at well GMA1-4 as part of the remaining semi-annual PCB sampling events and would collect a groundwater sample for PCB analysis if a depth to water of 15 feet or less was observed and there was an adequate quantity of water in the well to collect the required sample volume. This proposal was approved by EPA. In spring 2013, the depth to groundwater at well GMA1-4 was 16.10 feet, and therefore GE did not attempt to collect a sample.

Low-flow sampling techniques, using a bladder pump or peristaltic pump were utilized for the purging and/or the collection of groundwater samples during this sampling event. Monitoring wells sampled were initially purged utilizing low-flow sampling techniques until field parameters (including temperature, pH, specific conductivity, turbidity, dissolved oxygen, and, oxidation-reduction potential) stabilized prior to sample collection. The field parameter measurements collected during sampling of wells at GMA 1 are presented in Table 4 and the field sampling records are provided in Appendix A-1. A general summary of the stabilized field measurement results recorded at the GMA 1 wells during the spring 2013 sampling event is provided below.

Parameter	Units	Range of Stabilized Readings at Wells Purged by Low-Flow Techniques
Temperature	Degrees Celsius	7.24 to 15.20
pH	pH units	6.31 to 7.76
Specific Conductivity	Millisiemens per centimeter	0.505 to 4.062
Turbidity	NTU	1.0 to 83.4
Dissolved Oxygen	Milligrams per liter	0.35 to 10.85
Oxidation-Reduction Potential	Millivolts	-87.1 to 109.1

As shown above and in Table 4, one of the groundwater samples extracted from the monitoring wells in this sampling event had turbidity levels greater than the target level of 50 nephelometric turbidity units (NTU) upon stabilization. Specifically, the turbidity upon stabilization at well E2A2S-52 was 83.4 and field staff noted fine brown sediment on the tip of the water level meter probe. At the remaining wells, turbidity levels stabilized well below the target level, ranging from 1.0 to 13.4 NTU. These results indicate that the low-flow sampling and measurement procedures utilized during this sampling event were effective in obtaining representative groundwater samples with low turbidity, with the exception of the one well mentioned above, which has since been redeveloped.

The stabilized pH range for this sampling event was from 6.31 to 7.76, which is within the acceptable range of 4.5 to 9.0 noted in Condition 1 of EPA's April 8, 2008 conditional approval letter for the *Plant Site 1 Groundwater Management Area Groundwater Quality Monitoring Interim Report for Fall 2007*. These results indicate that no additional evaluation or data qualification for pH-sensitive parameter groups is necessary at any of the spring 2013 sampling locations.

It should also be noted that the water level drawdown during purging and sampling achieved the 0.3-foot displacement goal established in the FSP/QAPP in four of the eight wells that were sampled in spring 2013 (wells ESA2S-52, E2SC-24, GMA1-30, and HR-G3-MW-2). Drawdown in the other four wells (A7-RR, E2SC-23, ESA1S-31, and ESA1S-72R) stabilized at levels between approximately 0.45 and 1.96 feet below their initial measurements. In each of these cases, no additional steps were necessary to collect the samples once the water levels and other field parameters stabilized. The wells were then sampled at the lower stabilized level.

The collected groundwater samples were submitted to Accutest Laboratories of New England (Accutest) of Marlborough, Massachusetts for laboratory analysis. Groundwater samples collected during this sampling event were submitted for analysis of the following constituents, as shown in Table 1:

- Volatile organic compounds (VOCs) using EPA Method 8260B – well ESA1S-31R;
- Semi-volatile organic compounds (SVOCs) using EPA Method 8270C – well ESA1S-31R and ESA1S-72R;
- Dissolved PCBs (in filtered samples) using EPA Method 8082 – wells A7-RR and ESA2S-52;

- Dissolved lead (in filtered samples) using EPA Method 6020A – wells E2SC-24, GMA1-30, and HR-G3-MW-2; and
- Dissolved physiologically available cyanide (PAC) (in filtered samples) using EPA Method 9012/MDEP PAC Protocol – well E2SC-23

Following receipt of the analytical data for these samples from the laboratory, the preliminary results were reviewed for completeness and compared to the MCP Method 1 GW-2 standards (where applicable) and GW-3 standards, and to the MCP UCLs for groundwater. The preliminary analytical results were presented in the next monthly report on overall activities at the GE-Pittsfield/Housatonic River Site.

The spring 2013 analytical results were validated in accordance with the previously approved FSP/QAPP (March 2007) (except using the modified data qualifier designations specified in GE's revised FSP/QAPP), and the data validation report is provided as Appendix B-1. As discussed in that data validation report, 97.5% of the spring 2013 groundwater quality data were considered to be useable, which is greater than the minimum required usability of 90%, as specified in the FSP/QAPP. The results for PCBs, lead, and PAC were found to be 100% usable, while the VOC and SVOC sample results were found to be 98.6% and 96.8% usable, respectively.<sup>5</sup> The validated analytical results are summarized in Section 4.2 below.

### **3.4.2 Fall 2013 Groundwater Sampling and Analysis**

As noted previously, GE requested approval from EPA to conduct a supplemental sampling event in fall 2013 to obtain information from certain selected wells, and EPA provided such approval on October 3, 2013. Specifically, GE planned to conduct the following sampling as part of this supplemental event:

- Collection of a sample from well ESA1S-31R in East Street Area 1-South for analysis of VOCs, SVOCs, and PCBs as the fourth baseline sample from this well, so as to complete the baseline characterization for those constituents at that location;

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<sup>5</sup> The only rejected data from the spring 2013 sampling event were the 2-chloroethylvinyl ether results at well ESA1S-31R (rejected due to laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recovery deviations), benzidine results at wells ESA1S-31R and ESA1S-72R (rejected due to LCS/LCSD recovery deviations), and the ethyl methanesulfonate, methyl methanesulfonate, and pentachloroethane results at wells ESA1S-31R and ESA1S-72R (rejected due to holding time exceedance on reanalysis of matrix spike/matrix spike duplicate (MS/MSD) samples). None of the rejected constituents has ever been detected in the associated wells.

- An additional attempt to collect a groundwater sample from well GMA1-4 in East Street Area 2-North for PCB analysis if the depth to water was 15 feet or less and there was an adequate quantity of water in the well to collect the required sample volume, as GE previously proposed (see Section 3.4.1), so as to complete the baseline sampling for PCBs at that well; and
- Collection of a sample from well E2SC-23 at East Street Area 2-South for analysis of lead, so as to further assess an isolated prior exceedance of the GW-3 standard for lead at this well in 2003, which had been followed by three later rounds of sampling for lead in which lead was not detected (except in one duplicate sample from fall 2012, in which lead was detected at a concentration below the GW-3 standard, while not being detected in the parent sample).

This supplemental sampling event was conducted on October 8, 2013. During this event, GE was unable to collect a sample from well GMA1-4 because the well was dry at the time of sampling. Samples were collected from wells ESA1S-31R and E2SC-23 (see Table 1 and Figure 2) using the same low-flow techniques employed in spring 2013. The fall 2013 field parameter data are shown in Table 4 and on the sampling logs provided in Appendix A-2. The stabilized pH range for this sampling event was from 6.47 to 7.43, which is within the acceptable range of 4.5 to 9.0, and neither sample had a turbidity level greater than the target level of 50 NTU upon stabilization. Although the water level drawdown during purging and sampling did not achieve the 0.3-foot displacement goal established in the FSP/QAPP in either of the wells that were sampled in fall 2013, no additional steps were necessary to collect the samples. Drawdown in these two wells stabilized at levels of 1.4 and 2.11 feet below their initial measurements. In each of these cases, the wells were sampled at the lower stabilized level after the other field parameters stabilized.

The collected groundwater samples were submitted to Accutest for laboratory analysis. The sample from well ESA1S-31R was submitted for analysis of VOCs using EPA Method 8260B, SVOCs using EPA Method 8270C, and dissolved PCBs (in a filtered sample) using EPA Method 8082. The sample from well E2SC-23 was submitted for analysis of dissolved lead (after filtering) using EPA Method 6020A.

Following receipt of the analytical data for these samples from the laboratory, the preliminary results were reviewed for completeness and compared to the MCP Method 1 GW-2 standards (where applicable) and GW-3 standards, and to the MCP UCLs for groundwater. The preliminary analytical results were presented in the next monthly report on overall activities at the GE-Pittsfield/Housatonic River Site.

The fall 2013 analytical results were validated in accordance with the revised FSP/QAPP (July 2013), and the data validation report is provided as Appendix B-2. As discussed in the data validation report, 97.7% of the fall 2013 groundwater quality data were considered to be useable, which is greater than the minimum required usability of 90%, as specified in the FSP/QAPP. The results for PCBs and lead were found to be 100% usable, while the VOC and SVOC sample results were found to be 99.6% and 96.5% usable, respectively.<sup>6</sup> The validated analytical results are summarized in Section 4.3 below.

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<sup>6</sup> The only rejected data from the fall 2013 sampling event were the 2-chloroethylvinyl ether results at well ESA1S-31R (rejected due to MS/MSD recovery deviations) and the ethyl methanesulfonate, methyl methanesulfonate, pentachloroethane, and 4-phenylenediamine results at well ESA1S-31R (rejected due to MS/MSD recovery deviations and LCS/LCSD recovery deviations). None of the rejected constituents has ever been detected in this well.

## **4. Groundwater Quality Results for 2013**

### **4.1 General**

This section presents the results of the sampling activities conducted as part of the interim groundwater quality monitoring program at GMA 1 during spring and fall 2013. This section also provides a comparison of those results to the applicable groundwater quality Performance Standards and the UCLs for groundwater in effect at the time of sampling.

### **4.2 Groundwater Quality Results for Spring 2013**

As discussed in Section 3.4.1, the spring 2013 sampling event involved the collection and analysis of groundwater samples from eight monitoring wells. The analytical results from those samples are summarized in Tables 5, 6, and 7 in comparison, respectively, to the applicable (at the time of sampling) GW-2 and GW-3 groundwater quality Performance Standards established in the CD and SOW (for wells where those standards apply) and to the UCLs for groundwater (for all wells sampled). Table C-1 in Appendix C provides the complete analytical data set (for constituents detected and not detected) for the groundwater samples analyzed during this sampling event. The analytical results are discussed in the following subsections.

#### **4.2.1 VOC Results**

Groundwater samples (including a duplicate) from one monitoring well (ESA1S-31R) were analyzed for VOCs during the spring 2013 sampling event. The VOC analytical results are listed in Table C-1 of Appendix C. Only two individual VOCs were detected at this location: bromodichloromethane and chloroform (both of which are known byproducts of the chlorination of public drinking water supplies). The total VOC concentration was 0.027 parts per million (ppm) in both the parent and the duplicate sample from well ESA1S-31R.

#### **4.2.2 SVOC Results**

Groundwater samples from two monitoring wells (ESA1S-31R and ESA1S-72R) were submitted for SVOC analysis. The SVOC analytical results are listed in Table C-1 of Appendix C. No SVOCs were detected in any of the groundwater samples collected and analyzed in spring 2013.

#### **4.2.3 PCB Results**

Filtered groundwater samples from wells A7-RR and ESA2S-52 were analyzed for PCBs as part of the spring 2013 sampling event. The PCB analytical results are listed in Table C-1 of Appendix C. No PCBs were detected at well ESA2S-52, while an estimated total PCB concentration of 0.00010 ppm was recorded at monitoring well A7-RR.



#### **4.2.4 Inorganic Constituent Results**

Filtered groundwater samples from monitoring wells E2SC-23, GMA1-30 and HR-G3-MW-2 were collected and submitted for lead analysis, and one filtered sample from well E2SC-24 was collected and analyzed for PAC. The analytical results from these samples are listed in Table C-1 of Appendix C. Lead was not detected in any of the sampled locations. However, PAC was detected in well E2SC-24 in both the parent and duplicate samples, at concentrations of 0.0170 ppm and 0.0230 ppm, respectively.

#### **4.3 Groundwater Quality Results for Fall 2013**

As discussed in Section 3.4.2, the fall 2013 supplemental sampling event involved the collection and analysis of groundwater samples from two monitoring wells (ESA1S-31R and E2SC-23). The analytical results from those samples are included in Tables 5, 6, and 7 in comparison, respectively, to the applicable GW-2 and GW-3 groundwater quality Performance Standards and the UCLs for groundwater in effect at the time of sampling. Table C-2 in Appendix C provides the complete analytical data set (for constituents detected and not detected) for the groundwater samples analyzed during this sampling event. .

For well ESA1S-31R, as shown in Table C-2 of Appendix C, the only VOCs detected in the fall 2013 sample were the same two VOCs detected in this well in spring 2013: bromodichloromethane and chloroform (both of which are known byproducts of the chlorination of public drinking water supplies). The concentrations of both of those VOCs were below the applicable GW-2 and GW-3 Performance Standards (as well as the groundwater UCLs) in effect at the time of sampling and the new Method 1 standards currently in effect. The total VOC concentrations were 0.0028 ppm and 0.0034 ppm in parent and duplicate samples that were analyzed. No SVOCs or PCBs were detected in the sample from this well. This sampling event was the fourth baseline sampling round at this well and thus constituted completion of the baseline characterization of well ESA1S-31R.

For well E2SC-23, as noted above, the sample collected was analyzed for lead in filtered form. As shown in Table C-2 of Appendix C, lead was not detected in this sample. This marks the fourth round of sampling from this well (following the isolated lead exceedance in 2003) in which lead was not detected (or, in one duplicate sample from fall 2012, was detected at a concentration below the GW-3 standard).



#### **4.4 Evaluation of Groundwater Quality**

The analytical results from the spring and fall 2013 groundwater sampling events have been compared to the pertinent groundwater Performance Standards for GMA 1 (applicable at the time of sampling/analysis and described in Section 2 above), as well as to the MCP UCLs for groundwater. As noted above, those comparisons are presented in Tables 5, 6, and 7; and they are discussed in the following subsections.

##### **4.4.1 2013 Groundwater Results Relative to GW-2 Performance Standards**

Three of the monitoring wells sampled in 2013 – wells ESA1S-31R (which was sampled during both the spring and fall sampling events), ESA1S-72R, and A7-RR – are designated as GW-2 monitoring locations (well ESA1S-72R is also designated as a GW-3 sentinel well). The 2013 groundwater analytical results from these wells for all detected constituents subject to the MCP Method 1 GW-2 standards have been compared to those standards. The comparison to the GW-2 standards in effect at the time of sampling is presented in Table 5. As shown in Table 5, none of the 2013 sample concentrations from any of these monitoring wells was above its corresponding GW-2 Performance Standard.

As also shown in Table 5, none of the samples exhibited total VOC concentrations above 5 ppm (the level specified in the SOW as a notification level for GW-2 wells located within 30 feet of a school or occupied residential structure and as a trigger level in GW-2 wells for the proposal of interim response actions). These results are consistent with the available results from prior sampling events.

##### **4.4.2 2013 Groundwater Results Relative to GW-3 Performance Standards**

As noted above, groundwater samples were collected from six GW-3 monitoring wells within GMA 1 during the spring 2013 groundwater sampling event, one of which (well E2SC-23) was again sampled during the fall 2013 sampling event. Four of these wells (wells E2SC-23, E2SC-24, GMA1-30 and HR-G3-MW-2) are designated as downgradient perimeter wells/GW-3 compliance points, while the other two wells (wells ESA1S-72R and ESA2S-52) are listed as GW-3 general/source area sentinel wells (see Table 1). Comparison of the 2013 groundwater analytical results for all constituents detected in these monitoring wells with the applicable MCP Method 1 GW-3 standards at the time of sampling is presented in Table 6. As shown in Table 6, none of the constituents detected in 2013 was found at a level above its applicable MCP Method 1 GW-3 standard, based on both the standards in effect at the time of sampling and the new standards.

#### **4.4.3 2013 Comparison to Upper Concentration Limits**

In addition to comparing the spring and fall 2013 groundwater analytical results with applicable MCP Method 1 GW-2 and GW-3 standards, the analytical results from all eight wells that were sampled in the spring and the two wells sampled in the fall were compared with the UCLs for groundwater specified in the MCP. As shown in Table 7, none of the groundwater samples collected in 2013 contained constituent concentrations greater than any of the listed UCLs for groundwater.

## **5. Summary of Relevant Activities Performed by Others**

This section provides a discussion of recent actions performed by others that could affect groundwater at GMA 1. These include activities by PEDA and monitoring conducted by O'Connell Oil.

### **5.1 PEDA Redevelopment Activities**

Since March 2008, PEDA has conducted various activities in the areas that were transferred to PEDA, particularly the former 20s and 30s Complexes. These activities included: abandonment of several subsurface utility lines, installation of new subsurface utility lines, excavation of large areas in the former 20s and 30s Complexes as part of the construction of a water quality basin, subsequent emergency excavation of the forebay associated with the basin, excavation for construction of a new building in the former 30s Complex by Mountain One Financial Partners, performance of repairs to the water quality basin, removal of appurtenant and other ground-covering surface features in connection with the above projects, general site grading and earthwork, and landscaping and fencing. The activities that could potentially impact the groundwater monitoring program in GMA 1 are described below.

During excavation of the southeastern portion of the water quality basin (in the former 30s Complex) on May 28, 2009, oil-stained soils and potential NAPL were observed. Based upon discussions with EPA, MDEP, and GE, a work plan was submitted and subsequent NAPL investigations were completed. In addition, PEDA conducted soil characterization activities within the limits of the water quality basin to demonstrate that the applicable Performance Standards for surface soils were met following excavation of the basin. The results of these investigations were documented in reports submitted by PEDA in November 2009.

On January 8, 2010, GE submitted a letter to EPA summarizing the current status of monitoring wells in the portions of the former 20s and 30s Complexes being re-developed by PEDA. That letter contained GE's recommendations on the need to modify specific wells, install replacement wells or, alternatively, remove selected wells without replacement. Those recommendations were conditionally approved by EPA in a letter to GE dated April 6, 2010. The ensuing activities conducted by GE (e.g., installation of well GMA1-29 and the sampling of that well, along with wells RF-02 and RF-03S/RF-03D) in spring 2010 were documented in the Spring 2010 GMA 1 Groundwater Quality Report.

Subsequently, GE installed a new monitoring well (GMA1-31) in the former 30s Complex within 30 feet of the footprint of the proposed Mountain One building; and GE sampled that well along with well GMA1-29 in spring 2011 to determine whether there were any exceedances of the Method 1 GW-2 standards in that area. The results were reported in the Spring 2011 GMA 1 Groundwater Quality Report; they showed no exceedances of the

GW-2 standards. In its November 21, 2011 conditional approval letter for that report, EPA directed GE to continue to monitor well GMA1-31 in the interim groundwater program to evaluate the potential for vapor intrusion at the Mountain One building, or, alternatively, to coordinate with PEDA and/or EPA to provide design and installation documentation for the vapor barrier installed in the Mountain One building. In response, GE obtained information from PEDA concerning the vapor barrier that was installed during construction of the Mountain One Building. That design documentation was provided as Appendix E to the Fall 2011 GMA 1 Groundwater Quality Report. Based on that information, GE concluded that additional sampling of well GMA1-31 is not necessary and proposed to continue to sample nearby wells RF-02, RF-03S/RF-03D, and GMA1-29 as part of the GMA 1 interim monitoring program. EPA conditionally approved that continued sampling in letter to GE dated April 17, 2012, but also directed GE to maintain well GMA1-31 and utilize that well as a groundwater elevation monitoring point.

GE is not aware of any subsequent redevelopment activities by PEDA that could impact groundwater quality in GMA 1. GE will continue to seek information from PEDA concerning its activities, will use any such information to assess the potential impact of observations from PEDA's redevelopment activities on GMA 1, and will provide updates in future GMA 1 reports, as necessary.

## **5.2 Adjacent MCP Disposal Site Monitoring Results**

As mentioned in Section 1.3, the O'Connell East Street Mobil Station site (MDEP Site No. 1-13347, also referred to as the "East Street Mobil Site") is located on adjacent property near the northern edge of the Lyman Street Area. This site is currently being addressed by O'Connell Oil under the MCP. Available documentation indicates that soluble-phase contaminants related to gasoline releases from the East Street Mobil Site have been documented upgradient of this portion of GMA 1.

GE is required to include available monitoring results from response actions performed at this adjacent site in the groundwater monitoring reports for GMA 1, to the extent that information is available to GE. To fulfill this requirement, GE conducted an online search of MDEP's files on June 27, 2014 to review any reports that have been placed on file with the MDEP regarding this site since the prior file search was conducted and reported in the Fall 2012 GMA 1 Groundwater Quality Report.

Three documents pertaining to groundwater investigations and response actions at the East Street Mobil Site have been added to the MDEP files since the fall 2012 file search. Those documents, which were prepared by ECS (Environmental Compliance Services), are titled:

- *ROS Status Report; October 2012 - March 2013; O'Connell Mobil Station* (ECS, April 4, 2013);
- *ROS Status Report; March 2013 - September 2013; O'Connell Mobil Station* (ECS, September 27, 2013); and
- *ROS Status Report; October 2013 – March 2014; O'Connell Mobil Station* (ECS, March 31, 2014).

Those reports describe the effectiveness of the groundwater remediation system activated at the site on September 11, 2006 and provide the results of groundwater sampling events conducted in February 2013, August 2013, and February 2014, respectively. The text of these reports is provided in Appendix F, along with a site map, pertinent monitoring results from the February 2013, August 2013, and February 2014 sampling events, as well as a historical data summary. A brief summary of the analytical results contained in each report is presented below.

As noted in the April 4, 2013 report, the February 2013 event involved the sampling of seven monitoring wells, with all samples analyzed for volatile petroleum hydrocarbons (VPH), and six of the samples also analyzed for dissolved iron, nitrates, and sulfate. According to the report, none of the VPH sample results showed any exceedances of the MCP Method 1 GW-2 or GW-3 standards.

The August 2013 event involved the sampling of 13 monitoring wells, with all samples analyzed for VPH, and three of the samples analyzed for dissolved iron, nitrates, sulfate and extractable petroleum hydrocarbons (EPH). According to the September 27, 2013 report, the August 2013 sampling results from one well, well ECS-3, exceeded the MCP Method 1 GW-2 standards for C<sub>9</sub>-C<sub>12</sub> aliphatic and C<sub>9</sub>-C<sub>10</sub> aromatic VPH fractions and the MCP Method 1 GW-3 standard for xylenes. All other sample results from the August 2013 event were reported to be below MCP Method 1 GW-2 and GW-3 standards.

The February 2014 event involved the sampling of 10 monitoring wells, with all samples analyzed for VPH and four of the samples analyzed for dissolved iron, nitrates, sulfate and EPH. As documented in the March 31, 2014 report, none of the VPH sample results showed any exceedances of the MCP Method 1 GW-2 or GW-3 standards.

GE will continue to review and assess the results from the East Street Mobil Site and downgradient areas within GMA 1 and will provide updates in future groundwater quality monitoring reports.

## 6. Overall Assessment of Groundwater Quality

### 6.1 General

For the purpose of assessing overall groundwater conditions and identifying locations and constituents for inclusion in a long-term groundwater quality monitoring program, this section presents the following: an overview of hydrogeologic conditions at GMA 1, an overview of the nature and extent of substances in groundwater in this area, an assessment of the adequacy of the monitoring locations used during the baseline/interim monitoring program, an initial statistical assessment of the data, an identification of the wells to which GW-2 standards apply, a comparison of the analytical results from the baseline and interim sampling events to the applicable Performance Standards, an overall assessment of groundwater quality data, and an evaluation of the need for follow-up investigations, assessments, or interim response actions.

In support of those discussions, Appendix D contains summaries of all analytical data collected from the wells sampled as part of the GMA 1 baseline and interim monitoring programs, as well as pre-baseline historical data, where available.<sup>7</sup> Specifically:

- Tables D1-1 through D1-12 present summaries of the data from wells located in the former 20s, 30s, and 40s Complexes;
- Tables D2-1 through D2-12 present summaries of the data from wells located in East Street Area 1-North and East Street Area 1-South;
- Tables D3-1 through D3-11 present summaries of the data from wells located in East Street Area 2-North;
- Tables D4-1 through D4-18 present summaries of the data from wells located in East Street Area 2-South;

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<sup>7</sup> For locations with duplicate and/or split analytical results, if there is a detection in any of the samples for a location during a single monitoring event, a single detection is reported in these tables when calculating the detection frequency. Minimum and maximum detects are the minimum and maximum from all analytical results, treating duplicate and split samples separately. Medians, arithmetic averages, and geometric means are calculated by treating the arithmetic average of paired duplicate results and of split samples and primary samples each as a single result (if the results from duplicate/split samples show one detection and one non-detect, only the detected result is included in subsequent statistical calculations). One half of the associated reporting limit is used for any non-detected results (excluding duplicate/split results when the corresponding sample showed a detection) in the calculation of the summary statistics presented in Appendix D.

- Tables D5-1 through D5-13 present summaries of the data from wells located in the Lyman Street Area; and
- Tables D6-1 through D6-13 present summaries of the data from wells located in Newell Street Area I and Newell Street Area II.

## **6.2 Overview of Hydrogeologic Conditions at the Site**

Over 500 monitoring wells and associated soil borings have been installed across GMA 1. Data collected at the time of soil borings and monitoring well installation (e.g. lithologic descriptions of the subsurface materials) and subsequent groundwater monitoring at many of these locations have produced an extensive database of hydrogeologic information. The overburden deposits within GMA 1 consist primarily of unconsolidated sediments of glacial origin, which have been deposited in a broad bedrock valley occupied by the Housatonic River. In general, two unconsolidated hydrogeologic units are present within GMA 1. These units are briefly described below.

Unconsolidated Granular Deposits - These shallow deposits generally consist of heterogeneous fill materials overlying sands and gravels and is the upper unit within GMA 1. These well-sorted sands and sandy gravels were deposited as glacial outwash and/or in association with recent depositional processes within the Housatonic River. Isolated silty lenses and peat deposits may also be present locally, typically at depths corresponding to the bottom elevations of the river and the former oxbows. At certain locations within GMA 1, non-native fill materials are present above the natural granular deposits. The fill materials, where present, consist of sand, gravel, cinders, brick, glass, and other similar material.

The unconsolidated granular unit extends from the ground surface to depths ranging from less than 5 feet (in the northern portion of GMA 1) to over 50 feet (in the southeastern corner of the GMA). The majority of the existing monitoring wells within GMA 1 are screened within this unit, as it is the upper and primary water-bearing unit within the GMA. Groundwater is encountered under unconfined conditions within this unit at depths between less than 3 feet to over 25 feet below ground surface (bgs). Groundwater generally occurs at shallower depths near the Housatonic River and in East Street Area 1-South.

Glacial Till - The till unit underlies the granular deposits and consists of approximately 20 to over 40 feet of dense silt containing varying amounts of clay, sand, and gravel. Discontinuous sandy lenses also have been identified in the till at the Lyman Street Area in the southwestern portion of GMA 1. Till is encountered relatively close to the ground surface at the higher elevation areas in East Street Area 2-North and in parts of East Street Area 1-South, but is otherwise generally encountered at depths beginning between approximately 20 to 50 feet bgs in the remainder of GMA 1. Figure 5 presents a top-of-till contour map. As shown on that figure, the till surface generally descends toward the



Housatonic River, although depressions and ridges are evident across the surface. The top-of-till surface exhibits substantial relief across the GMA, decreasing in elevation from over 1,040 feet in the northern portion of East Street Area 3-North to less than 940 feet near the Housatonic River, then increasing to over 960 feet to the south of the river near the southern boundary of the GMA along Newell Street.

The glacial till unit is much less permeable than the overlying granular deposits and serves as a hydraulic barrier to downward groundwater flow and potential constituent migration. Wells installed within the till are generally located in East Street Area 2-North, where the till serves as the uppermost water-bearing unit. Additionally, numerous soil borings and monitoring wells throughout GMA 1 have also been drilled to intercept the granular deposit/till interface to monitor for the potential presence of dense non-aqueous-phase liquid (DNAPL) along this hydrogeologic interface.

In addition to the primary hydrogeologic units discussed above, portions of GMA 1 also contain localized aquitards that appear to be relatively thin and discontinuous. These aquitards occur within the unconsolidated granular unit and are composed of low permeability material such as peat and silt. These units are likely associated with overbank flood events and/or stagnant bog areas located between meanders of the Housatonic River channel that existed prior to straightening of the channel. Since these silt and peat layers have relatively low permeability relative to the surrounding materials, they may act as localized hydraulic barriers that impede vertical migration of constituents in groundwater. DNAPL has been observed at the top of such layers in several monitoring wells in Newell Street Area II and in and adjacent to portions of East Street Area 2-South. The volume of DNAPL associated with these localized aquitards is relatively minor in comparison to DNAPL accumulations that are found within structural depressions in the top of the glacial till surface.

The unconsolidated units at GMA 1 overlie bedrock. Bedrock beneath GMA 1 consists of calcitic, quartzose, and dolomitic marble associated with the Stockbridge Formation. Bedrock occurs within this GMA at depths up to approximately 50 to 60 feet bgs. Generally, bedrock occurs at shallower depths in the upland portions of the plant site and dips downward to greater depths near the Housatonic River.

Groundwater at GMA 1 generally flows toward the Housatonic River, with a westerly component in the northwest corner of the GMA flowing into Silver Lake (which ultimately discharges to the river) and an easterly component in the northeast corner of the GMA toward GMA 2 and GMA 4. Figures 3 and 4 illustrate typical water table conditions, using groundwater data obtained during the spring and fall 2013 groundwater monitoring events, respectively. The groundwater depth ranges from approximately three feet bgs (in portions of East Street Area 1-South, East Street Area 2-North, and the former 30s Complex) to over 20 feet bgs (in the former 20s Complex and East Street Area 2-North). A comparison of the groundwater elevation contour maps with the top-of-till contour map (Figure 5) shows that



groundwater elevations are generally correlated with changes in the topography of the ground surface and/or the glacial till interface. Although variations occur in groundwater elevations at various wells or portions of GMA 1, overall groundwater flow patterns have remained relatively stable for several years. In general, as noted above, groundwater flow is toward the Housatonic River from both the north and south, roughly mimicking surface topography. Other influences on groundwater flow include: Silver Lake; the water quality basin constructed as part of PEDDA's redevelopment of the former 30s Complex; the recharge pond and slurry wall which are utilized to aid in hydraulic control efforts in East Street Area 2-South; and several groundwater/NAPL recovery systems which are pumped to induce hydraulic depressions in their vicinity. Groundwater flow conditions observed during spring and fall 2013 (Figures 3 and 4) display the typical patterns observed at GMA 1.

The hydraulic gradients are variable within GMA 1, as indicated in Table 3 and on Figures 3 and 4. The horizontal component of the hydraulic gradient generally decreases toward the Housatonic River, corresponding to a flattening of the ground surface topography. Available monitoring data from well pairs or closely spaced shallow and deep wells at GMA 1 indicate that the vertical component of the hydraulic gradient is primarily upward, particularly near the river.

### **6.3 Overview of the Nature and Extent of Substances in Groundwater at the GMA**

#### **6.3.1 Potential Sources of Constituents within the GMA**

GE's GMA 1 Baseline Monitoring Program Proposal, submitted in September 2000, identified several potential sources of constituents that could potentially affect groundwater quality within GMA 1. These include light non-aqueous phase liquid (LNAPL) and DNAPL in the former 20s Complex and East Street Area 2-North and -South, LNAPL in East Street Area 1-North and -South, the former scrap yard and drum storage areas in East Street Area 2-South, and the former oxbows. Each of these potential groundwater sources of contamination is described below.

LNAPL and DNAPL in 20s Complex and East Street Area 2-North and -South - In the past, GE used these areas of the facility in various manufacturing operations, primarily the manufacture of electrical transformers and associated components. These areas contained GE's primary transformer oil storage and distribution facilities (e.g., Building 12G Pyranol Unloading Station and Storage Area, and Building 3C Oil Storage Area), and spills and leaks periodically occurred during those operations. As a result, various oils, some containing PCBs, and other materials were released to the environment.

In addition, the Berkshire Gas Company (Berkshire Gas) operated a coal gas manufacturing and storage facility in portions of the former 20s Complex and East Street Area 2-South. Following a decommissioning process performed by Berkshire Gas (which reportedly included the hauling of waste sludge and tars off site, deposition of materials in the former oxbow in East Street Area 2- South, and in-place abandonment of waste tars, sludge, and related equipment), the property was sold to GE in 1973.

The LNAPL in these areas is present as a plume occupying portions of the 20s Complex, East Street Area 2-North, and East Street Area 2-South. This LNAPL plume has decreased significantly in size as a result of GE's ongoing groundwater/LNAPL pumping programs. However, the plume still measures several acres in size.

Two types of DNAPL are generally present within this area: (1) A coal-tar DNAPL associated with the former Berkshire Gas coal gas manufacturing and storage facility has been observed along the eastern limb of Former Oxbow H near the Housatonic River; and (2) DNAPL containing PCBs has been observed north of East Street near Building 12G and at scattered locations along the former oxbow in East Street Area 2-South and along the Housatonic River. The presence of DNAPL within these areas is limited to several pockets located mainly in East Street Area 2-South. These DNAPL occurrences are also subject to current monitoring and/or recovery programs being conducted by GE.

LNAPL in East Street Area 1-North and South - Prior to 1964, a portion of the GE facility, referred to as the Building 12F Tank Farm, located within East Street Area 1-North, was used for the storage of mineral oil dielectric fluid. A total of 14 underground storage tanks, ranging in size from 20,000 gallons to 25,000 gallons, and one 100,000-gallon capacity above-ground storage tank were located in this area. The LNAPL currently present in the subsurface of this area is believed to have originated from this former tank farm area. However, while these tanks were not used for storage of pyranol, some residual PCBs have been detected during prior sampling of the LNAPL. The presence of PCBs in LNAPL in this area may have resulted from limited interconnections between PCB and mineral oil distribution systems.

Former Scrap Yard and Drum Storage Area in East Street Area 2-South - The former scrap yard area was situated south of Building 64 in East Street Area 2-South. This area was also referred to as the Materials Reclamation Area, and was used as a scrap metal crushing and storage area. Scrap metals generated throughout the GE facility were delivered to this area, compacted using a pressure crusher located within Building 61-R, and shipped off site for disposal/salvage. The former drum storage area was located east of the former scrap yard area and north of the former Thermal Oxidizer. The area was used as a "less than 90-day" drum storage area and transfer facility for hazardous wastes generated throughout the plant. Waste materials managed at this location were subsequently transferred to the Building 68 drum storage area, incinerated in the former Thermal Oxidizer, or shipped off site.

Former Oxbows - In an effort to reduce flooding potential of the Housatonic River, the City of Pittsfield, in a joint program with the United States Army Corps of Engineers in the late 1930s and early 1940s, altered the natural course of the river through the urban areas of Pittsfield to form a relatively straight channel. A total of 11 oxbows or low-lying areas, which had previously conveyed river flows, were isolated from the newly formed channel of the river. These oxbows were subsequently filled with materials originating from the GE facility, as well as other sources.

Seven of these former oxbows areas are located within GMA 1; these include Former Oxbows B, D, and E within the Lyman Street Area, Former Oxbows F and G within Newell Street Area II, Former Oxbow H within East Street Area 2-South, and Former Oxbow Area I within Newell Street Area I. LNAPL and DNAPL have been detected in the subsurface in portions of the Lyman Street Area and Newell Street Area II.

The Lyman Street Area contains three of these former oxbows or low-lying areas (Former Oxbows B, D, and E) of the Housatonic River. LNAPL and DNAPL have been observed within and near Former Oxbow D, primarily beneath the former parking lot in the eastern portion of this RAA, which is now covered with an engineered barrier, as illustrated on Figure 2. The chemical composition of the two NAPL types is similar, in that both contain varying levels of PCBs (Aroclor 1254), PAHs, chlorobenzene, ethylbenzene, toluene, xylenes, 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene, among other constituents.

Former Housatonic River Oxbows F and G are located within Newell Street Area II. DNAPL is present within Former Oxbow G and beneath the former Newell Street parking lot at the locations shown on Figure 5. This DNAPL consists primarily of PCBs (Aroclor 1254), with lesser amounts of PAHs (mostly naphthalene and 2-methylnaphthalene), 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, toluene, tetrachloroethene, trichloroethene, and xylenes.

### **6.3.2 Spatial Distribution of Constituents within the GMA**

Appendix D contains summaries of all analytical data collected at each monitoring well during the baseline and interim monitoring programs for GMA 1. As seen in those tables, very few constituents were consistently detected during the baseline and interim periods. The observed detections were sporadic and spread throughout most of the GMA 1 wells, resulting in an apparent scattered distribution of occasionally detected constituents.

Low levels of VOCs, SVOCs, PCBs, and inorganic compounds were detected in several wells across the GMA. In general, however, higher constituent concentrations and more frequent detections were observed in or near the central to southern portion of the GMA, although PCBs and inorganic constituents were detected at various locations across the GMA.

### **6.3.3 Actual Migration or Potential for Migration of Constituents Outside the GMA**

Based on current and historical groundwater elevation data, groundwater flows primarily toward the Housatonic River from both the north and the south. In addition, groundwater from limited portions of the northern corners of GMA 1 flows westward into Silver Lake or eastward toward GMA 2 and GMA 4, ultimately discharging to the Housatonic River. As such, constituents in groundwater would be expected to migrate in these general directions within the GMA.

Historical hydraulic conductivity data (presented in Table A-4 in Appendix A) indicate a variable range in conductivities, varying from 0.03 feet/day (at well GMA1-3) to 79.9 feet/day (at well RF-3). The overall average calculated hydraulic conductivity value for GMA 1 is 28.89 feet/day.

Groundwater velocities have been calculated for GMA 1 using the above-referenced hydraulic conductivities as well as representative horizontal gradients. Groundwater elevation contours developed for the present report have been used to calculate the horizontal gradients for the northern and southern portions of the GMA near the Housatonic River and the far northern portion of the GMA (i.e., greater than 500 feet from the river). These calculations indicate a gradient of 0.031 feet/foot in the far northern portion, with lesser gradients near the river (0.017 feet/foot on the north side and 0.016 feet/foot to the south of the river). Using a variation of Darcy's Law to account for flow through porous media ( $v=K/n$ , where  $v$  is velocity,  $K$  is hydraulic conductivity,  $i$  is the gradient, and  $n$  is porosity), a range of groundwater velocities for GMA 1 were calculated. These calculated velocities range from a minimum of 0.018 feet per day to a maximum of 8.867 feet per day, with a geometric mean of 2.30 feet per day calculated for the dataset. These calculations used a porosity range of 20 to 30 percent, which is typical for granular aquifers.

To the extent that constituents exist within the groundwater at GMA 1, they would generally migrate toward the Housatonic River or, to a limited extent, Silver Lake and GMA 2 and GMA 4. Groundwater contour maps developed for the Site do not indicate a migration pathway from the GMA other than the direction of regional groundwater flow to the river or to Silver Lake (which ultimately discharges into the river). In addition, although a variation in hydraulic conductivities has been observed in site monitoring wells, the calculated geometric mean flow through the groundwater system is similar to that typically observed for the types of materials present within the subsurface at the GMA.

The existing perimeter monitoring wells within and downgradient of GMA 1 are well situated to monitor the potential migration of constituents off-site toward the Housatonic River (or Silver Lake). Although certain constituents have been detected in these wells, few have been observed at concentrations above or approaching the GW-3 standards. Sampling results from these perimeter wells are discussed further in Section 6.7.

#### **6.3.4 Assessment of the Adequacy of the Monitoring Locations Used During the Baseline and Interim Monitoring Programs**

A total of 77 GMA 1 monitoring well locations (some of which involved replacements for original wells) were sampled during the baseline and/or interim monitoring programs at GMA 1. These wells were pre-existing or were installed at EPA-approved locations. Nearly half (34) of these wells are located along the downgradient perimeter of the GMA. These wells were included in the baseline/interim monitoring programs specifically to monitor the downgradient edge of the GMA.

The data collected during the baseline/interim monitoring programs have provided representative information across GMA 1 to characterize groundwater flow patterns and to delineate constituent concentrations. No observations made during those programs or during the soil excavations conducted during the performance of Removal Actions at the RAAs within GMA 1 indicate that the wells used during the baseline/interim monitoring programs were inadequate to provide an accurate and complete profile of the groundwater within GMA 1.

#### **6.3.5 Evaluation of Variations in Groundwater Quality**

The historical groundwater analytical data from GMA 1 were reviewed to identify and assess variability in data among sampling events and potential causes of those variations. Since several of the constituents detected in groundwater during the baseline/interim monitoring programs were found only at very low concentrations or only during some of the sampling events, this evaluation focused on the primary groups of constituents of interest at the site (i.e., VOCs and PCBs), which were detected at a sufficient frequency to allow general comparisons among sampling events. Graphs of total VOC and PCB concentrations are provided in Appendix E.

VOCs have been detected in 52 wells on at least one occasion since the inception of the baseline monitoring program. The majority of detections were at trace concentrations near or below the laboratory's reporting limit and many were limited to a single sampling event at a given location. The data show no overall trends or seasonal variations in the concentration versus time plots contained in Appendix E. Although certain wells where chlorobenzene was the primary VOC detected often contain higher concentrations of VOCs during fall sampling events than during the spring rounds, there are no discernible trends in the data from fall to fall or from spring to spring.

PCBs were also sporadically detected at some wells during the baseline/interim monitoring period. Where PCBs were detected, most locations showed only one or two detections over at least four sampling events and the detected levels were significantly below the applicable GW-2 or GW-3 Performance Standards or MCP UCLs for groundwater.

Although minor fluctuations in concentrations of PCBs were observed among certain sampling events, no seasonal or overall trends are evident in the available data.

#### **6.4 Initial Summary Statistical Assessment of Baseline and Other Historical Data**

The available dataset for GMA 1 consists of the results of the semi-annual sampling, annual sampling, and supplemental sampling events that have occurred between October 2001 and October 2013, along with prior data for certain locations. GE has prepared a general summary of the analytical results for all detected constituents at each monitoring well and performed a qualitative review of the concentration versus time graphs of selected data to identify potential trends. As noted in Section 6.1 above, the summary statistics of the analytical data for each GMA 1 well are included in tables in Appendix D. In addition, Table 8 provides a summary of all wells sampled during the baseline/interim monitoring programs, showing, for each well, its usage (e.g., GW-2 sentinel well, GW-3 general/source area or perimeter well, etc.), the number of total sampling events, the number of sampling rounds for each analyte group, and the results relative to the applicable GW-2 or GW-3 Performance Standards.

#### **6.5 Identification of Wells Subject to GW-2 Standards**

Groundwater is subject to GW-2 classification if it occurs less than 15 feet bgs and is located within 30 feet of an occupied building. A total of 33 monitoring wells were used as GW-2 sentinel or supplemental wells during the baseline/interim monitoring programs at GMA 1. The locations of these wells and the average groundwater elevations at them are listed in Table 2, based on data collected between October 2001 and November 2013. This information has been reviewed to identify the wells that capture groundwater meeting the GW-2 criteria and thus are subject to the GW-2 Performance Standards. The results of that evaluation are discussed below.

Since the initiation of the baseline monitoring program at GMA 1, several buildings have been demolished, particularly in East Street Area 2-North and the former 30s and 40s Complexes. As a result, several wells that were originally utilized for GW-2 monitoring purposes no longer have occupied buildings nearby. Other wells are located greater than 30 feet from the nearest building and were utilized as GW-2 sentinel monitoring locations during the baseline program. If exceedances of the GW-2 standards had been observed at these wells, GE would have conducted additional investigations and/or well installations closer to the buildings. However, as discussed in Section 6.6 below, no such exceedances were observed.

Based on this review, a total of 14 monitoring wells have been identified as currently meeting the criteria for GW-2 monitoring points. These include: one well in the former 30s Complex (well GMA1-31); eight wells in East Street Area 1-South (wells 139R, ES1-23R, ESA1S-31R, ESA1S-33, ESA1S-37R, ESA1S-72R, GMA1-7, and GMA1-18); three wells in



East Street Area 2-North (wells A7-RR, ES1-18, and F-1); and two wells in the Lyman Street Area (wells LS-MW-3R and LSSC-16S). The remaining GW-2 monitoring locations are now greater than 30 feet from the closest existing building, but remain useful as sentinel monitoring points or as a source of background information in the event that new buildings are constructed. GE has summarized and evaluated the analytical results from all of the GW-2 monitoring wells in Section 6.6 below. GE has assessed those results to determine which of these wells should be included in the long-term monitoring program to verify attainment of the GW-2 Performance Standards.

## **6.6 Groundwater Results Relative to GW-2 Performance Standards**

The groundwater analytical results from all of the GW-2 monitoring wells (including both the wells identified in Section 6.5 as currently meeting the GW-2 criteria and other GW-2 sentinel monitoring wells) are summarized in the pertinent tables in Appendix D. In addition, a summary of the results from these wells relative to the GW-2 Performance Standards (i.e., the MCP Method 1 GW-2 standards) in effect at the time of the sampling is included in Table 8.

As shown in Table 8, there were no exceedances of the GW-2 standards in effect at the time of the sampling in any GW-2 monitoring wells during the baseline/interim monitoring programs at GMA 1. Pre-CD data did indicate a detection of hexachlorobenzene in one well above the level of the current GW-2 standards. That result was recorded at monitoring well A7 in East Street Area 2-North in March 1990 (prior to the adoption of the MCP Method 1 standards and a decade prior to the CD monitoring program). This SVOC was not analyzed for at this well or its replacements (wells A7-R and A7-RR) during the baseline monitoring period, as it is not one of the five select SVOCs that were included in the approved analyte list for wells utilized for GW-2 monitoring purposes (i.e., 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and naphthalene) in accordance with a letter from GE to EPA dated September 28, 2001. However, hexachlorobenzene was not detected at any other wells in GMA 1, including six GW-3 monitoring locations in East Street Area 2-North that were analyzed for this SVOC on one to five occasions. Based on these results, GE has concluded that there is no need for additional sampling for hexachlorobenzene at well A7-RR.

In addition to the absence of any exceedances of the GW-2 standards during the baseline/interim monitoring period, none of the GW-2 wells has ever exhibited total VOC concentrations above 5 ppm (the level specified in the SOW as a notification level for GW-2 wells located within 30 feet of a school or occupied residential structure and as a trigger level at GW-2 wells for the proposal of interim response actions).

As noted in Section 2, MDEP recently implemented revised Method 1 numerical standards for a number of constituents in groundwater and GE has also reviewed the historical groundwater data relative to the modified MCP Method 1 GW-2 standards. There were no exceedances of any of the constituents over the modified GW-2 standards in any GW-2 monitoring well during the baseline/interim monitoring programs at GMA 1. During the long-term monitoring program, GE will compare all future groundwater quality results to the new MCP groundwater standards.

## **6.7 Groundwater Results Relative to GW-3 Performance Standards**

During the baseline/interim groundwater quality monitoring programs at GMA 1, groundwater samples were collected from 63 GMA 1 monitoring wells (or their replacements) designated as GW-3 monitoring locations, including nine upgradient perimeter wells, 20 general/source area sentinel wells, and 34 downgradient perimeter wells that served as compliance points for the GW-3 standards. However to be conservative, given the definition of GW-3 groundwater in the MCP, the data from all wells sampled in the GMA 1 baseline/interim monitoring programs have been compared with the MCP Method 1 (or 2) GW-3 standards.<sup>8</sup> The groundwater analytical results for all constituents analyzed for at those wells are summarized in the tables in Appendix D. In addition, a summary of the results from these wells relative to the GW-3 Performance Standards (i.e., the MCP Method 1 [or Method 2] GW-3 standards) in effect at the time of the sampling is included in Table 8.

As shown in Table 8, there were only limited exceedances of the GW-3 standards during the baseline/interim monitoring programs. In fact, of a total of approximately 60,000 analytical results obtained during those programs, only 25 (0.04%) showed exceedances of the GW-3 standards. The limited exceedances were as follows:

- In East Street Area 1-North, the only exceedances of the GW-3 standards occurred in well ES1-08 – for lead in fall 2001 and cadmium in fall 2002. However, due to occasional presence of NAPL in this well, this well was replaced by wells downgradient of the NAPL area – initially by well ESA1S-33 (for one event) and then by well ESA1S-72R, both of which are located in East Street Area 2-South. Lead was not detected in well ESA1S-33 and was detected in only one of six sampling events at well ESA1S-72R and was at a level below the GW-3 standard. Cadmium was not detected in well ESA1S-33 and was detected in only two of six sampling events at well ESA1S-72R at levels more than an order of magnitude below the GW-3 standard.

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<sup>8</sup> In addition to the designated GW-3 or GW-2/GW-3 wells mentioned above, these include 15 GW-2-only wells and two supplemental wells.



- In East Street Area 1-South, the only exceedance of the GW-3 standards occurred in well ESA1S-33 for total cyanide in spring 2003. After that sampling event, that well was replaced by well ESA1S-72R (as noted above). In well ESA1S-72R, total cyanide was detected twice at concentrations an order of magnitude below the GW-3 standard, and PAC was subsequently not detected during four sampling events.
- In East Street Area 2-North, the only exceedance of the GW-3 standards occurred in well ES1-05 for mercury in fall 2002. However, mercury was not detected in this well during two prior sampling events and two subsequent sampling events, although mercury was detected in a split sample analyzed by a different laboratory during one of the subsequent sampling rounds at a trace concentration three orders of magnitude below the GW-3 standard.
- In East Street Area 2-South, exceedances of the GW-3 standards have been recorded at six locations: (i) at well 3-6C-EB-14, for chlorobenzene in fall 2002; (ii) at well E2SC-23, for lead in spring 2003 and PCBs in spring 2004; (iii) at wells ES2-02A/-02AR, for chlorobenzene on six occasions; (iv) at well ES2-17, for chlorobenzene on two occasions (this well was found to contain DNAPL and was replaced by well ESA2S-52 downgradient of the NAPL area following the spring 2002 event); (v) at well ESA2S-52, for chlorobenzene on three occasions and PCBs in fall 2011; and (vi) at well HR-G3-MW-1, for chlorobenzene on four occasions.<sup>9</sup> As noted in Section 4.3 above, the single exceedance of the lead standard in well E2SC-23 in 2003 has been followed by four subsequent sampling events at that well in which lead was not detected (except in one duplicate sample, in which the lead concentration was below the GW-3 standard).

No exceedances of the GW-3 standards in effect at the time of sampling were found in any other wells or RAAs in GMA 1 during the baseline/interim monitoring programs.

The pre-CD data showed a few other constituents at levels above the current GW-3 standards. These included pyrene in well RF-3 (in the former 30s Complex) on one occasion in fall 1991, PCBs in well FW-16 (in Newell Street Area I) on one occasion in

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<sup>9</sup> It should be noted that chlorobenzene data also exist, from sampling conducted prior to entry of the CD, for deeper wells located in the portion of East Street Area 2-South containing the wells showing the above-noted exceedances of the GW-3 chlorobenzene standard. Specifically, such data were obtained from pre-CD sampling of wells ES2-02 and ES2-07, which were intermediate and deep wells in a cluster with well ES2-02A, and from well ES2-03, which is an intermediate-depth well located slightly upgradient of and between wells 3-6C-EB-14 and HR-G3-MW-1. The chlorobenzene data from these wells showed no exceedances of the current GW-3 standard; in fact, the chlorobenzene results ranged from one order of magnitude (at well ES2-02) to three orders of magnitude (at well ES2-07) below the standard. Thus, there is no need for additional sampling of the deeper groundwater in this area.

spring 1997, and silver in well NS-9 (in Newell Street Area II) on one occasion in fall 1995. However, these constituents were not detected or showed concentrations below the GW-3 standards in these wells during all baseline monitoring rounds, and thus do not warrant further assessment.

As noted in Section 2, the revised Method 1 GW-3 standards recently implemented by MDEP do not include any reduction in any of the GW-3 standards (although certain GW-3 standards were increased). Therefore, those modifications in standards do not affect the GW-3 evaluation provided above. During the long-term monitoring program, GE will compare all future groundwater quality results to the new MCP groundwater standards.

## **6.8 Overall Assessment of Groundwater Analytical Results**

Graphs illustrating historical total VOC concentrations for all wells sampled during the baseline/interim monitoring programs at GMA 1 are presented in Appendix E. That appendix also provides graphs of historical PCB concentrations in filtered samples for each well where PCBs were detected during those programs. Finally, Appendix E contains graphs showing the historical concentrations of constituents that were detected above the applicable Performance Standards during the baseline/interim monitoring programs at the monitoring wells where such exceedances were observed. The following subsections provide an overall assessment of the baseline/interim monitoring data for each group of constituents, as well as a general trend assessment of the data, and discuss the implications of those data for the long-term monitoring program at GMA 1.

### **6.8.1 VOCs**

As shown in the graphs in Appendix E, total VOC concentrations at the GW-2 monitoring locations were all well below the level (5 ppm) specified in the SOW as a notification level for GW-2 wells near a school or residence and as a trigger level at GW-2 wells for the proposal of interim response actions. VOCs generally have not been detected or have remained at low levels in the majority of the GW-2 wells that have been sampled.

Overall, a total of 27 VOCs were detected in one or more GMA 1 monitoring wells during at least one sampling event. However, no VOCs were detected at 22 wells, and only 17 VOCs were frequently detected (i.e., observed in more than 50% of all samples analyzed at a given location) in at least one monitoring well, including six that were frequently detected only in a single location. The most common VOCs were chlorobenzene (frequently detected at 15 wells), benzene (frequently detected at 12 wells), trichloroethene (frequently detected at seven wells), tetrachloroethene (frequently detected at six wells), and vinyl chloride (frequently detected at five wells). The highest historical concentrations of 17 of the detected VOCs were recorded prior to initiation of the baseline monitoring program.

### **6.8.2 SVOCs**

A total of 49 SVOCs were detected in one or more of the GMA 1 monitoring wells, while 31 monitoring wells had no recorded SVOC detections. Maximum concentrations of 29 of these SVOCs were recorded prior to initiation of the baseline monitoring program. A total of 19 SVOCs were frequently detected in one or more monitoring wells, including eight that were frequently detected in only one well. The most common SVOCs were 1,4-dichlorobenzene (frequently detected at 14 wells), 1,3-dichlorobenzene (frequently detected at 11 wells), 1,2-dichlorobenzene (frequently detected at six wells), 1,2,4-trichlorobenzene (frequently detected at five wells), and naphthalene (frequently detected at four wells). However, as indicated above, none of these SVOCs has had concentrations exceeding applicable Performance Standards during the baseline/interim monitoring programs, under either the standards in effect at the time of sampling or the new standards.

### **6.8.3 PCBs**

Dissolved PCBs have occasionally been detected in all but ten of the GMA 1 monitoring wells, including 12 wells that frequently contained PCBs. However, as noted above in Sections 6.6 and 6.7, no PCBs were detected at concentrations greater than the GW-2 standards in any of the GW-2 monitoring locations, and the GW-3 standards were exceeded only at two monitoring wells, located in East Street Area 2-South, each during a single sampling event only.

### **6.8.4 PCDDs/PCDFs**

For polychlorinated dibenzo-*p*-dioxins and polychlorinated dibenzofurans (PCDDs/PCDFs), total toxicity equivalency quotient (TEQ) concentrations were calculated using the toxicity equivalency factors (TEFs) published by the World Health Organization (WHO) in 1998, as specified in the SOW, and were compared to the GW-3 standard for dioxin TEQs. There were no exceedances of the GW-3 standard for TEQs at any well in GMA 1 during the baseline/interim monitoring programs. At most locations, very few, if any PCDD/PCDF congeners were detected and the total TEQ concentrations were calculated primarily based on values representing one-half the detection limits utilized during the analyses. Accordingly, there is no need for further sampling for PCDDs/PCDFs in the GMA 1 long-term monitoring program.

### **6.8.5 Inorganics**

As shown in the summary tables provided in Appendix D, several wells contained various inorganic constituents at varying concentrations during the baseline/interim monitoring programs. A total of 19 inorganic constituents were detected at GMA 1; and of these, 14 were frequently detected in at least one monitoring well (half of which were frequently observed only in one well). Barium was, by far, the most common inorganic constituent

observed; it was frequently detected at 46 monitoring wells. The other metals detected during more than half of the sampling events in multiple locations were zinc (at 14 wells), copper (at five wells), and arsenic and beryllium (each at two wells). Total cyanide was frequently detected at seven wells, but physiologically available cyanide was frequently detected only at a single location. As indicated above, exceedances of the GW-3 standards for the inorganic constituents were extremely limited during the baseline/interim monitoring programs.

#### **6.8.6 Concentration Trends**

A review of the baseline analytical data was conducted to identify potential trends in the changes of constituent concentrations through time at each monitoring well, particularly potential trends relating to the concentrations of individual constituents that exceeded (or approached) the applicable Performance Standards at select monitoring wells during any of the baseline/interim program sampling events. These evaluations consisted of examining the ranges of detected constituent frequencies and concentrations for each well, as presented in Appendix D and visual examination of the graphs in Appendix E. No trends are evident in the concentrations of total VOCs, total PCBs, or the specific constituents that showed exceedances of Performance Standards during baseline/interim monitoring.

#### **6.9 Evaluation of the Need for Follow-up Investigations, Assessments, or Interim Response Actions**

GE has evaluated the need for additional investigations, assessments, or interim response actions prior to commencement of the long-term monitoring program, and again following modification of the standards effective in June 2014. The baseline and interim monitoring programs (including the fall 2013 supplemental sampling event) did not reveal any significant data gaps concerning groundwater quality that would suggest the need for any further investigations or assessments other than the long-term monitoring program proposed herein. The groundwater quality and elevation data do not suggest any other areas not already sampled that should now be sampled or any other analyses not already performed that should be performed.

In addition, the levels of substances found in the wells do not suggest the need for any interim response actions at GMA 1. The detected concentrations were generally very low in relation to any applicable GW-2 or GW-3 standards. As shown above, at those few wells that have shown concentrations of constituents at levels greater than the applicable Performance Standards, those exceedances have generally been isolated and intermittent and the concentrations did not exceed the applicable standards by a substantial amount (with the possible exception of chlorobenzene in a few wells at East Street Area 2-South, which will continue to be monitored). There have been no wells at which the detected concentrations suggest the need for an interim response action at this time apart from continued monitoring at and downgradient of certain of these locations.

## **7. Basis of Proposed Long-Term Monitoring Program**

Section 7.3 of Attachment H to the SOW states that GE may discontinue long-term monitoring at particular wells within any GMA if the results of four consecutive groundwater monitoring events show no exceedances of the relevant Performance Standards and other reasons do not exist for retaining the wells in the long-term monitoring program (e.g., presence of NAPL in the well or constituent concentrations exceeding the applicable Performance Standards in upgradient groundwater). That provision of Attachment H provides the basis upon which GE has identified monitoring points and constituents to be analyzed in the long-term monitoring program proposed in Section 8 below.

Specifically, locations were considered for inclusion in this program if:

- Exceedances of applicable GW-2 or GW-3 standards were reported during the baseline/interim monitoring programs;
- The well is located downgradient of a location where exceedances of GW-2 or GW-3 standards were reported during the baseline/interim monitoring programs;
- The well is located downgradient of NAPL areas and near residences, other occupied building, or the Housatonic River;
- The well is located at the end of a containment sheetpile barrier;
- A review of the available data indicates a potential increasing trend in the concentrations of certain constituents at levels approaching the relevant GW-2 or GW-3 standards; or
- Other reasons exist for inclusion in the long-term monitoring program – e.g., where it is determined, in areas in which the applicable Performance Standards have been consistently achieved, that continued monitoring would be appropriate on an infrequent basis to confirm that that condition remains true.

It should also be noted that additional monitoring, sampling, or changes to the sampling frequency may be required in the future if GE receives EPA approval to reduce or terminate groundwater extraction from an existing NAPL recovery system. In that event, GE will evaluate the need for, at a minimum, a temporary increase in sampling frequency in select downgradient groundwater wells and/or former NAPL wells to evaluate potential increases in dissolved phase constituent concentrations due to lack of groundwater extraction.

GE has re-evaluated the historical data from all GMA 1 monitoring program wells to assess the need for and scope of long-term monitoring. The results of these evaluations are discussed below. As discussed in Section 2, the June 2014 revisions to certain MCP Method 1 groundwater standards do not affect the evaluation of the data or the scope of the proposed long-term monitoring program.

First, based on review of the baseline/interim groundwater quality data, GE has identified and evaluated the locations where the GW-2 or GW-3 Performance Standards were exceeded during one or more sampling events. This evaluation indicated the following:

- As discussed in Section 6.6, there were no exceedances of the GW-2 Performance Standards during the baseline/interim monitoring programs. Although a pre-CD result for hexachlorobenzene from well A-7 in East Street Area 2-North exceeded the level of the current GW 2 standard (during a sampling event conducted in March 1990), none of the more recent sampling results detected this constituent in any GMA 1 monitoring wells, including in East Street Area 2-North. As such, there is no need to monitor the replacement for this well (A7-RR) for hexachlorobenzene during the long-term monitoring program.
- As discussed in Section 6.7, the GW-3 standard for chlorobenzene was exceeded at five locations in East Street Area 2-South (wells 3-6C-EB-14, ES2-02A/02AR, ES2-17, ESA2S-52, and HR-G3-MW-1). Well ES2-17 was found to contain NAPL and was thus removed from the baseline monitoring program and replaced by downgradient well ESA2S-52; therefore, no long-term sampling is proposed at this well. The remaining four wells should be sampled for VOCs during the long-term monitoring program (utilizing replacement wells 3-6C-EB-14R and ES2-02AR in place of the original wells which have been decommissioned).
- As discussed in Section 6.7, the GW-3 standard for PCBs was exceeded at wells E2SC-23 and ESA2S-52 in East Street Area 2-South on isolated occasions during the baseline period. At well ESA2S-52, the average PCB concentration is greater than 50% of the GW-3 standard, and thus it is considered appropriate to continue to analyze filtered samples from this well for PCBs during the long-term monitoring program. Continued sampling for PCBs at well E2SC-23 is also warranted, particularly given its location at the end of the source control sheetpile barrier in East Street Area 2-South, as discussed further below.<sup>10</sup>

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<sup>10</sup> As mentioned above (Sections 4.3 and 6.7), well E2SC-23 also showed an exceedance of the GW-3 standard for lead during a single event in 2003. However, since that time, there have been four sampling events at that well in which lead was not detected (except in one duplicate sample in which lead was detected at a concentration below the GW-3 standard). Thus, there is no need for continued sampling for lead at that well.

- As discussed in Section 6.7, the lead concentration in well ES1-08 in East Street Area 1-North exceeded the GW-3 standard for lead in fall 2001. Due to the occasional presence of NAPL in this well, it was subsequently replaced by downgradient well ESA1S-33 and then by well ESA1S-72R (in East Street Area 1-South). Lead was not detected in well ESA1-33 and was only recorded during one sampling event in well ESA1S-72R. However, the concentration was only slightly below the GW-3 standard and the overall average concentration is approximately 50% of that standard. Therefore, it would be useful to continue to analyze samples from well ESA1S-72R for lead during the long-term monitoring program.
- As discussed in Section 6.7, isolated exceedances of the GW-3 standards for certain inorganics were recorded during the baseline monitoring period, several of which appear to be anomalous. These include the following: (a) an exceedance of the GW-3 standard for cadmium at well ES1-08 in fall 2002, but no detection of cadmium in the replacements for this well in five of seven subsequent events and detection in the other two events at levels more than an order of magnitude below the GW-3 standard; (b) an exceedance of the GW-3 standard for total cyanide in well ESA1S-33 in spring 2003, but subsequent results from the replacement for this well (ESA1S-72R) show total cyanide levels an order of magnitude below the GW-3 standard and no detection of PAC; (c) an exceedance of the GW-3 standard for mercury in well ES1-5 in fall 2002, but no detections of this constituent in four other events at this well (except for detection in a spilt sample at a trace concentration far below the GMA-3 standard); and (d) an exceedance of the GW-standard for silver in well NS-9 in fall 2002, but no detections of this constituent during four subsequent events. For these reasons, there is no need for long-term sampling for these constituents at these wells.
- As also discussed in Section 6.7, although the pre-CD data showed a few other constituents at levels above the current GW-3 standards on one occasion each (i.e., pyrene in well RF-3 in fall 1991, PCBs in well FW-16 in 1997, and silver in well NS-9 in 1995), these constituents were not detected (or showed concentrations below the GW-3 standard) in these wells during all baseline monitoring rounds. As a result, the pre-CD data do not justify the inclusion of these wells in the long-term monitoring program.

Second, in addition to considering the locations where exceedances of the Performance Standards were reported, GE has evaluated the need for additional monitoring downgradient of such locations or downgradient of NAPL areas, as well as in relation to potential downgradient receptors (i.e., residences, other occupied buildings, or the Housatonic River), and at the ends of source control barriers. The results of this evaluation are as follows:



- Wells ESA1S-31R, ESA1S-72R and GMA1-6 are located in residential areas downgradient of LNAPL recovery systems in East Street Area 1-North and East Street Area 1-South, respectively. As such, although no GW-2 standard exceedances have been observed in these wells, it is appropriate to periodically sample these wells for analysis of GW-2-related constituents – i.e., VOCs, select SVOCs (i.e., 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and naphthalene), and PCBs during the long-term monitoring program. (As noted above, samples from well ESA1S-72R will also be analyzed for lead.)
- Wells E2SC-23 and E2SC-24 are located at the ends of the source control sheetpile barrier in East Street Area 2-South. Sampling of these wells for PCBs during the long-term monitoring program is warranted to ensure that liquids containing PCBs are being contained by that barrier. (Additional long-term sampling of well E2SC-24 for PAC is discussed below.)
- Wells LSSC-08S and LSSC-18 are located at the ends of the sheetpile containment barrier in the Lyman Street Area. Similar to the wells near the source control sheetpile barrier in East Street Area 2-South, sampling of these wells for PCBs during the long-term monitoring program is warranted to ensure that PCBs are being contained by that barrier.
- Well LSSC-16S is located adjacent to an occupied commercial building in the Lyman Street Area and also near the mapped extent of NAPL. Long-term sampling for VOCs and select SVOCs at this well is appropriate to evaluate GW-2 groundwater in this area.

Third, GE reviewed the analytical data from the baseline/interim monitoring program to identify any potential increasing trends in constituent concentrations approaching the applicable Performance Standards. Only one potentially increasing trend was identified for the constituents observed at GMA 1. Specifically, concentrations of PAC have recently increased to levels greater than 50% of its GW-3 standard in well E2SC-24. As a result, GE's criteria indicate that samples from this well should be analyzed for PAC during the long-term monitoring program, along with the PCB sampling discussed above.

Finally, GE has evaluated the remaining locations to assess where there are any other reasons for inclusion of one or more wells in the long-term monitoring program.

As discussed in Section 3.4 above, GE had proposed in the Fall 2008 GMA 1 Groundwater Quality Report to collect groundwater samples from well GMA1-4 in East Street Area 2-North for PCB analysis if the depth to water was 15 feet or less (a criterion for GW-2 groundwater) and there was an adequate quantity of water in the well to collect the required sample volume. That proposal was approved by EPA. GE thereafter collected three rounds of samples from this well, with PCBs either not detected (in fall 2009 and fall 2011) or present at a very low level (0.000276 ppm in spring 2011), well below the applicable GW-



2 and GW-3 standards. However, during the last several sampling events, GE has not collected a sample from this well to complete the baseline characterization for PCBs at this location, either because the depth to water was greater than 15 feet (in spring and fall 2012 and spring 2013) or because the well was dry (fall 2013). GE will continue to try to collect the fourth baseline sample from this well, including during periods outside the long-term sampling schedule if elevated groundwater conditions are noted during other routine monitoring activities.

In addition, GE has considered whether continued sampling would be appropriate in areas where the applicable Performance Standards have been consistently achieved and the other conditions identified above are not present, so as to confirm that the Performance Standards continue to be achieved and that no other changes have occurred that would warrant more frequent monitoring. Based on discussions with EPA, GE agrees that such sampling would be appropriate in specific locations, but that to meet the specified objective, it would be sufficient to sample these wells on a less frequent basis than the other wells – e.g., once every two years. Specifically, based on this objective, biennial (every two years) sampling would be appropriate at the following additional wells for the following constituents:

- 20s Complex/East Street Area 2-South: proposed well, GMA1-32, to be installed to the south of former 20s Complex monitoring well 95-23 for VOCs and PCBs;
- 30s Complex: well GMA1-29 and RF-03S for VOCs, select SVOCs (i.e., 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and naphthalene), and PCBs; and RF-03S<sup>11</sup> for VOCs and PCBs;
- East Street Area 2-North; well ES1-27R for VOCs and PCBs; and
- Newell Street Area II: wells GMA1-9 and N2SC-07S for VOCs and PCBs; and well GMA1-25 for VOCs, select SVOCs, and PCBs.

The locations of these wells are illustrated on Figure 6.

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<sup>11</sup> Although well RF-03S was initially designated as a GW-2 sentinel well/GW-3 perimeter well, it is no longer necessary to continue GW-2 monitoring at this location as subsequently-installed well GMA1-29 is located closer to the occupied building in this area. Therefore, continued monitoring at this well would be conducted for the purpose of confirming continued achievement of the GW-3 standards.

## **8. Proposed Long-Term Monitoring Program**

### **8.1 General**

In spring 2004, GE initiated the interim groundwater monitoring program at GMA 1 as a continuation of the baseline monitoring program, to be conducted until completion of the soil-related remediation actions at the RAAs that comprise GMA 1. The interim monitoring program was designed to obtain additional data from locations where it was not yet clear whether the initial baseline groundwater quality results indicate that the well may require future monitoring in a long-term monitoring program. As discussed in Section 1.3 above, the soil-related Removal Actions at the RAAs within GMA 1 have been completed. Accordingly, GE has evaluated all baseline/interim monitoring data to determine the need for and scope of a long-term monitoring program at GMA 1. Those evaluations are presented in Section 7. This section describes GE's proposed long-term groundwater quality monitoring program.

### **8.2 Long-Term Groundwater Monitoring Locations, Constituents, and Frequency**

Based on GE's evaluation of the data from the baseline/interim monitoring programs, this section describes the proposed locations, constituents, and frequency for the long-term monitoring program at GMA 1.

#### **8.2.1 Groundwater Quality Sampling**

Based on the evaluations discussed in Section 7, GE proposes to conduct long-term groundwater quality sampling at 19 monitoring wells within GMA 1 as part of the long-term groundwater monitoring program. These wells are listed in Table 9 (along with the rationale for their inclusion in the program) and are shown on Figure 6. Specifically, GE proposes to sample the following wells at the specified frequencies and for the listed constituents:

- **20s, 30s, and 40s Complexes**
  - Well GMA1-29: Biennial sampling for VOCs, select SVOCs (i.e., 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and naphthalene), and PCBs (filtered)
  - Well RF-03S: Biennial sampling for VOCs and PCBs (filtered)
- **East Street Area 1-South**
  - Well ESA1S-31R: Biennial sampling for VOCs, select SVOCs, and PCBs (filtered)
  - Well ESA1S-72R: Semi-annual sampling for VOCs, select SVOCs, PCBs (filtered), and lead (filtered)
  - Well GMA1-6: Biennial sampling for VOCs, select SVOCs, and PCBs (filtered)

- **East Street Area 2-North**
  - Well ES1-05: Biennial sampling for VOCs and PCBs (filtered)
- **East Street Area 2-South**
  - Well 64: Biennial sampling for VOCs
  - Well 3-6C-EB-14R: Semi-annual sampling for VOCs
  - Well E2SC-23: Semi-annual sampling for PCBs (filtered)
  - Well E2SC-24: Semi-annual sampling for PCBs (filtered) and PAC (filtered)
  - Well ES2-02AR: Semi-annual sampling for VOCs
  - Well ESA2S-52: Semi-annual sampling for VOCs and PCBs (filtered)
  - Proposed Well GMA1-32: Biennial (every two years) sampling for VOCs and PCBs (filtered)
  - Well HR-G1-MW-3: Biennial sampling for VOCs and PCBs (filtered)
  - Well HR-G2-MW-3: Semi-annual sampling for VOCs for at least two sampling events
  - Well HR-G3-MW-1: Semi-annual sampling for VOCs for at least two sampling events
- **Lyman Street Area**
  - Well LSSC-08S: Semi-annual sampling for PCBs (filtered) and biennial sampling for VOCs
  - Well LSSC-16S: Semi-annual sampling for VOCs and select SVOCs
  - Well LSSC-18: Semi-annual sampling for PCBs (filtered) and biennial sampling for VOCs
- **Newell Street Area II**
  - Well GMA1-9: Biennial sampling for VOCs and PCBs (filtered)
  - Well GMA1-25: Biennial sampling for VOCs, select SVOCs, and PCBs (filtered)
  - Well N2SC-07S: Biennial sampling for VOCs and PCBs (filtered)

In addition, as noted in Section 7, GE will continue to attempt to collect the fourth baseline sample from well GMA1-4 in East Street Area 2-North for PCB analysis if sufficient water is observed in the well. At wells HR-G3-MW1 and HR-G2-MW-3, GE proposes to initially conduct two semi-annual rounds of concurrent sampling. Following completion of those sampling events, GE will conduct a comparative evaluation of the data from the two

adjacent wells and may propose to remove one of them from the long-term monitoring program.

### **8.2.2 Groundwater Elevation and NAPL Monitoring**

To assess groundwater flow conditions at the time of sampling, GE proposes continue to measure groundwater elevations on a semi-annual basis during the long-term monitoring program. To the extent practical, this monitoring will be conducted on at or near the time that the semi-annual groundwater monitoring events for the GMA 1 NAPL monitoring program (as revised with EPA approval) are conducted. As part of these monitoring events, each well will also be monitored for the presence of NAPL.

### **8.3 Proposed Field Activities**

The long-term groundwater quality monitoring program for GMA 1 will begin following EPA's approval of this GMA 1 Long-Term Monitoring Proposal. During that program, GE will conduct groundwater quality sampling on a semi-annual basis, although, as noted above, some wells will be sampled biennially rather than semi-annually. The time periods for semi-annual water quality sampling were chosen to adequately assess seasonal variations which may occur during the monitoring period. This schedule was selected to obtain data during presumed annual high and low water table conditions and is consistent with the spring/fall groundwater monitoring schedule previously utilized during the baseline/interim monitoring programs at GMA 1. GE will attempt to collect groundwater analytical samples during the months of April and October, but may, on occasion, conduct these sampling events during the prior month or the next month from the target date if scheduling issues or other unforeseen factors necessitate alterations to the schedule. In addition, GE may propose a modified sampling schedule for selected wells following evaluation of the analytical data as the long-term monitoring program progresses. For the wells subject to biennial sampling, GE proposes to collect groundwater samples from them during the first monitoring event under the long-term program and thereafter during the biennial sampling events that will be followed by Long-Term Trend Evaluation Reports, as described in Section 8.6.2 below. Prior to the next scheduled monitoring event, GE proposes to install monitoring well GMA1-32 at a location to the south of decommissioned well 95-23, as indicated on Figure 6.

GE proposes to conduct groundwater elevation monitoring at the wells listed in Table 9 during periods generally coinciding with groundwater sample collection. The data obtained will be compared to the historical range of seasonal water levels previously collected in each well to verify that the groundwater elevations are representative. If the data from a given monitoring event show groundwater elevations outside of the historical ranges at a significant number of monitoring wells, GE will prepare an updated groundwater elevation contour map representing conditions during that monitoring event.

#### **8.4 Monthly CD Reporting**

In the monthly progress reports for overall work at the Site, GE will provide the observations and results from the GMA 1 groundwater quality monitoring program as follows:

Following a groundwater elevation monitoring event, the following information will be added to the next monthly progress report for the Site:

- A listing of the wells which were monitored, and the depths from the well measuring point to groundwater and groundwater/NAPL interfaces (if present);
- If NAPL was observed in any well at a thickness of greater than or equal to 1/8 inch but less than 1/2 inch, a listing of such well(s), unless the results are consistent with the types, nature, and quantities of NAPL which were previously observed and reported to EPA and MDEP; and
- If NAPL was observed to be discharging to any surface water and creating a sheen on the water, a listing of such location(s).

Following a groundwater sampling event, the following information will be added to the next monthly progress report for the Site:

- Each of the items listed above for the associated groundwater elevation monitoring event; and
- A listing of the wells which were sampled during the event and the analyses to be conducted.

Following receipt of preliminary analytical results from a groundwater sampling event, the following information will be added to the next monthly progress report for the Site:

- The analytical results from that monitoring event;
- An identification of any GW-2 wells in which the analytical results indicate an exceedance of a GW-2 standard;
- An identification of any wells in which the analytical data indicate an exceedance of a GW-3 standard; and
- An identification of any wells where the analytical data indicate an exceedance of a groundwater UCL.

Following receipt of final analytical data packages from a groundwater sampling event, the schedule for submittal of the next Monitoring Event Evaluation Report or Long-Term Trend Evaluation Report (described below) will be identified in the next monthly progress report for the Site.

## **8.5 Notification and Interim Response Actions**

### **8.5.1 Groundwater Quality-Related Notifications**

Upon receipt of sampling data from a well containing GW-2 groundwater within 30 feet of a school or occupied residential structure and having total VOC concentrations of equal to or greater than 5 ppm, GE will notify EPA and MDEP within 72 hours of obtaining knowledge of such data, unless such exceedance was previously observed and reported. GE will provide the data from each such event in the next monthly progress report for overall work at the Site. Subsequent exceedances of this level for a given well will be indicated in the next monthly progress report for the Site. Further, in its report on the monitoring event, GE will propose appropriate interim response actions to address any exceedance of the GW-2 Performance Standards associated with the measurement of VOCs at or above 5 ppm in a GW-2 well.<sup>12</sup> Upon EPA approval, GE will implement the approved interim response actions.

In addition, if an exceedance of a groundwater UCL is indicated in a groundwater sample from a given well and such exceedance was not previously observed, GE will notify EPA and MDEP within 14 days of obtaining knowledge of such an exceedance. GE will also provide the data from each such event in the next monthly progress report for overall work at the Site. Subsequent exceedances of a UCL for a given well will be identified in the next monthly report.

Upon receipt of sampling data from each monitoring event, GE will also evaluate whether or not the applicable GW-2 or GW-3 Performance Standards (utilizing the revised MCP Method 1 groundwater quality standards effective on June 20, 2014 or future revisions, as applicable) have been achieved at the compliance monitoring well locations and, if not, the progress toward attainment. GE will provide notification of any previously unobserved exceedance of the applicable GW-2 or GW-3 Performance Standards from each such event in the next monthly progress report for overall work at the Site. An evaluation of potential response actions relating to any exceedances of the GW-2 or GW-3 Performance

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<sup>12</sup> Such interim response actions may include: resampling of the groundwater; increase in sampling frequency; additional well installation (including sampling and analysis); soil gas sampling; desk-top modeling of potential volatilization of chemicals from the groundwater to the indoor air of nearby occupied buildings; sampling of the indoor air of such buildings; an evaluation of the potential risks related to volatilization to such indoor air; and/or the development and proposal of a risk-based alternative GW-2 standard (if not already established).

Standards or MCP UCLs for groundwater at compliance point locations will be made in the context of the semi-annual reports discussed in Section 8.6 below.

### **8.5.2 NAPL-Related Notifications**

During the long-term monitoring program, if NAPL is observed to be discharging to any surface water, creating a sheen on such water, in a location in which such NAPL discharge was not previously observed or measures are not in place to effectively contain the sheen, GE will notify EPA and MDEP within two hours of obtaining knowledge of such observation. This will be followed by written notice to EPA within seven days. The written notification will include a proposal to EPA for interim response actions to contain and, if feasible, eliminate such discharge, if investigation shows the discharge is originating from a GE-related source. Upon EPA approval, GE will conduct the approved interim response actions to contain and/or eliminate the NAPL discharge.

If NAPL is observed to be discharging to any such surface water, creating a sheen on the water, in a location in which such NAPL discharge was previously observed and measures are in place to contain the sheen, GE will notify EPA of the continued presence of such NAPL in the next monthly progress report for overall work at the Site.

For groundwater, if a NAPL thickness of greater than or equal to ½ inch is observed in any monitoring well, GE will notify EPA and MDEP within 72 hours of obtaining knowledge of such a condition, unless such conditions are consistent with the types, nature, and quantities of NAPL which were previously observed and reported to those Agencies. This notification will be followed by written notice to the EPA within 60 days. The written notification will include a proposal to EPA for interim response actions to be conducted, which may include NAPL sampling, additional assessment/monitoring, or NAPL removal activities. Upon EPA approval, GE will conduct the approved interim response actions. If a NAPL thickness of greater than or equal to 1/8 inch, but less than ½ inch is observed in a monitoring well, GE will notify EPA and MDEP in the next monthly progress report, unless the results are consistent with the types, nature, and quantities of NAPL which have previously been observed and reported to those Agencies.

## **8.6 Reporting Requirements**

As mentioned in Section 1.2, on February 28, 2014, in response to EPA's December 23, 2013 conditional approval letter for the Spring 2013 GMA 1 NAPL Report, GE submitted an Addendum to the Spring 2013 GMA 1 NAPL Report, presenting GE's proposed revisions to the NAPL monitoring program for GMA 1. That Addendum also proposed that, following submission of the GMA 1 NAPL monitoring report for fall 2013 and following EPA's approval of this GMA 1 Long-Term Monitoring Proposal, GE would combine the reports on the GMA 1 NAPL monitoring and recovery program with the reports on the long-term groundwater quality monitoring program and that proposal was approved by EPA. The following



subsections, which describe the reports on the long-term groundwater quality monitoring program, assume that such reports will be combined with the reports on the GMA 1 NAPL monitoring and recovery program.

### **8.6.1 Monitoring Event Evaluation Reports**

Following completion of each long-term groundwater monitoring event, GE will prepare and submit to EPA a Monitoring Event Evaluation Report that provides a summary of the activities performed and results obtained during the monitoring period, and all the information required by Section 7.2.1 of Attachment H to the SOW, including comparison of the results of the monitoring event to the applicable GW-2 or GW-3 Performance Standards and MCP UCLs for Groundwater and proposal of interim response actions, if necessary<sup>13</sup>. In addition, GE will continue to include in these reports summaries of pertinent actions performed by others during the monitoring period, along with associated monitoring results, to the extent that that information is available to GE. These include actions performed by PEDAs that could impact groundwater quality or elevations in GMA 1 and response actions at the adjacent O'Connell East Street Mobil Station site.

Upon receipt of the data from each monitoring event, GE will, on a location-by-location basis, compare the data from the current monitoring event with the prior monitoring data, focusing on long-term temporal or spatial trends, and, if appropriate based on an apparent increase in concentration, may evaluate select data using statistical methods (see Section 8.8 below). These comparisons will be performed to identify instances in which the current data indicate an increase in the concentrations of dissolved-phase constituents relative to prior monitoring results. In making these comparisons, GE will focus in particular on whether the data from the monitoring wells indicate an increase in the potential for such constituents to migrate outside the boundaries of the GMA and whether such migration is already occurring. In addition, GE will evaluate whether the constituents showing an increase were detected at concentrations approaching the applicable Performance Standards (i.e., greater than 50% of the applicable standards).

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<sup>13</sup> Such interim response actions may include: resampling of the groundwater; increase in sampling frequency; additional well installation (including sampling and analysis); soil gas sampling; desk-top modeling of potential volatilization of chemicals from the groundwater to the indoor air of nearby occupied buildings; sampling of the indoor air of such buildings; active response actions; and/or the conduct of a site-specific risk evaluation and proposal of alternative risk-based alternative Performance Standards (if not already established).



If a statistical analysis is performed and a statistically significant increase in dissolved-phase constituent concentrations is detected at any well in the most recent sampling results relative to prior data, and the constituent(s) was/were detected at concentration(s) greater than 50% of the applicable standard(s), GE will: (a) evaluate overall groundwater conditions within the GMA to ascertain if the elevated sampling data were detected elsewhere and uniformly or if the elevated data are isolated to a specific monitoring location; (b) review the recent sampling results relative to the sampling data available from comparable sampling periods (i.e., results from sampling conducted during a similar time of year); and (c) evaluate the potential presence of an upgradient source that could explain the increase in groundwater concentrations.

GE will provide a possible explanation(s) for any such increase in concentrations in the sampling data. If EPA determines that the increase is not due to inherent variations in the field or laboratory procedures or to typical historical variations in the monitoring results, GE will propose to EPA for approval one or more of the following actions, and will implement the EPA-approved actions: (a) re-sampling of the location and constituent(s) of interest; (b) increasing the frequency of monitoring at the location(s) in question; (c) additional evaluation in the area of interest (including but not limited to, sampling of nearby existing monitoring wells and/or the installation and sampling of new permanent or temporary monitoring wells); (d) evaluation of whether the groundwater in which the increase was found is affecting any surface waters, sediments, and/or biota; (e) development of alternative GW-2 and/or GW-3 standards based on a site-specific risk assessment related to the constituent(s) of interest; or (f) evaluation of active response actions to contain and/or recover the affected groundwater or to address potential sources if identified.

As discussed in Section 9.2 below, the Spring and Fall Monitoring Event Evaluation Reports, covering activities conducted in the spring or fall of each year, will be submitted by the later of (a) 60 days from receipt of final laboratory data from the last sampling event or (b) August 31 (for spring reports) or February 28 (for fall reports), except for seasons after which Long-Term Trend Evaluation Reports (described below in Section 8.6.2) are scheduled to be submitted. For the latter seasons, the information typically provided in the Monitoring Event Evaluation Reports will be incorporated into the Long-Term Trend Evaluation Reports, as discussed in Section 8.6.2 below.

### **8.6.2 Long-Term Trend Evaluation Reports**

Following completion of each two-year long-term trend evaluation period, GE will prepare and submit to EPA a Long-Term Trend Evaluation Report in place of a Monitoring Event Evaluation Report. The Long-Term Trend Evaluation Report will provide a summary of the activities performed and results obtained during the most recent monitoring period and the information required by Section 7.2.2 of Attachment H to the SOW. It will be submitted by the later of (a) 75 days after receipt of final laboratory data from the last sampling event or (b) August 31 (for spring reports) or February 28 (for fall reports).

Specifically, at two-year intervals during the long-term monitoring program beginning with the fourth semi-annual monitoring period under that program until Performance Standards have been attained at GMA 1, GE will conduct an evaluation of long-term groundwater quality trends. This evaluation will initially involve comparison of the groundwater monitoring results from the period since the last evaluation to the applicable groundwater Performance Standards for the GMA. In the event that the Performance Standards then being applied are Method 1 (or 2) standards and such standards are exceeded, GE may develop and propose to EPA for approval risk-based alternative groundwater Performance Standards for use in these comparisons, based on a site-specific risk evaluation, in accordance with Section 4.1 of Attachment H to the SOW.

In the event that the long-term trend evaluations indicate that groundwater quality continues to exceed the applicable Performance Standards (including risk-based alternative standards approved by EPA, if any), GE will evaluate appropriate response actions, as discussed in Section 8.7 below.

The long-term trend evaluation will include a statistical analysis focusing on intra-well comparisons for selected critical parameters (i.e., constituents of interest). This analysis will be performed using one or more of the statistical methods described in Section 8.8 below. If sufficient data are available, these statistical evaluations will be made regarding the presence or absence of seasonality and trend. In wells exhibiting no trends, data means and variances will be computed for constituents of interest for which there are greater than 50% detections for a particular constituent. Once trends are identified, plotting of the data and regression analysis may be performed. A moving average presentation of regularly spaced data may also be presented as an alternative to directly correlating data for seasonality.

In the long-term trend evaluations, GE will also evaluate whether modifications to the long-term monitoring program are appropriate, considering temporal and spatial groundwater quality trends, the levels of detected constituents, statistical evaluations, groundwater flow patterns, and any alternative standard evaluations, and will propose such modifications to EPA for approval.

### **8.7 Application of Performance Standards to Long-Term Monitoring Data**

Upon receipt of sampling data from each monitoring event, GE will evaluate whether or not the Performance Standards have been attained at the appropriate monitoring locations and, if not, the progress toward attainment.

If the long-term trend evaluations indicate that concentrations of constituents in groundwater continue to exceed the groundwater quality Performance Standards (which may be either the Method 1 (or 2) standards or risk-based alternative standards approved by EPA) at the compliance points for such Performance Standards, GE will evaluate appropriate response

actions and propose such response actions to EPA for approval. Such response actions may include continued monitoring, other assessment activities, or active response actions to attain the Performance Standards. Upon EPA approval, GE will implement the EPA-approved response actions. Additionally, GE will evaluate the appropriateness of modifications to the long-term groundwater monitoring program consistent with the requirements of Attachment H to the SOW.

GE may propose to discontinue long-term monitoring at particular wells within this GMA, subject to approval by EPA, if the following criteria are met:

- (1) Sentinel wells (including GW-2 wells and general/source area sentinel wells) - If the results of four consecutive groundwater monitoring events show no exceedances of the relevant Performance Standards.
- (2) Perimeter wells - If the results of four consecutive groundwater monitoring events show no exceedances of the applicable Performance Standards and other reasons do not exist for retaining such wells in the long-term monitoring program (e.g., the presence of NAPL or constituent concentrations exceeding the applicable Performance Standards in upgradient groundwater).

GE will continue the long-term monitoring program at GMA 1, with any modifications approved by EPA, until such time as the data indicate that the applicable Performance Standards have been consistently achieved at the GMA and other reasons do not exist for continuing long-term groundwater monitoring (e.g., the presence of NAPL or constituent concentrations exceeding the applicable Performance Standards in upgradient groundwater) or instances where constituent concentrations are near the applicable Performance Standards (i.e., greater than 50%) and a stable or downward long-term trend cannot be determined). As also discussed in Section 7, additional groundwater sampling may be required if GE receives EPA approval to reduce or terminate groundwater extraction from an existing NAPL recovery system to evaluate potential downgradient increases in dissolved phase contaminant concentrations due to lack of groundwater extraction. In that event, GE will evaluate the need for, at a minimum, a temporary increase in sampling frequency in select downgradient groundwater wells and/or former NAPL wells. GE will present the results of that evaluation and provide a proposal for EPA approval describing the locations, constituents, and frequency for any such sampling.

## **8.8 Description of Statistical Techniques to be Employed**

Groundwater data may exhibit monotonic trends in concentrations over time (i.e., long-term increasing or decreasing concentrations) as well as seasonal cycles. Factors that may contribute to trends and cycles include hydrogeologic characteristics, groundwater movement, natural attenuation, and changes in the original source(s) of the constituent.

To assess potential trends, various statistical methods can be utilized depending on the extent of the overall sampling period and the frequency of sampling events within the sampling period. Graphical representations such as a simple plot of concentration data versus time may reveal long-term cyclical patterns as well as pulses, both of which may explain temporal trends. Statistical analysis can be performed on the data utilized in preparation of the trend plots for each well to quantify the relationship between time and constituent concentrations. One common technique is to use simple linear regression to detect linear relationships between the two variables. This technique is easily calculated and interpreted. Several alternative statistical techniques that have been described in documents prepared by EPA and others (see references in Section 8.8.4) may also be performed to evaluate temporal trends in GMA 1 groundwater during the long-term monitoring program and to determine the statistical significance of any potential trends that are identified. In addition to using linear regression (where warranted), GE proposes to utilize the same statistical techniques that have previously been approved by EPA for use in the long-term monitoring programs at GMAs 2, 4, and 5 and in the OPCA post-closure groundwater monitoring program, if use of such techniques is appropriate for the situation. Those techniques are: (1) Mann-Kendall Test; (2) Sen's slope estimator; and (3) Seasonal Kendall Tau estimator. These methods are described in Sections 8.8.1 through 8.8.3 below.

For locations where duplicate or split samples are collected and analyzed, an average concentration of the reported results will be utilized in the statistical analyses for that sampling event. For sampling rounds where a constituent subject to statistical analysis is not detected, a value corresponding to a common value equal to 95% of the minimum detected value for the dataset (USEPA, 2009) will be utilized in the calculations. Although the non-parametric methods proposed for trend analysis can be applied to data sets with a moderate amount of non-detected results (USEPA, 2006b), the evaluation of data sets with greater than 50% of such results utilizing values based on the detection limit (e.g., one-half of the detection limit) for non-detected results would primarily reflect the changes in the detection limits, rather than detected concentrations of constituents. In particular, the confidence interval for Sen's slope estimator can be influenced by non-detected results. By replacing non-detected results with a common value less than the minimum detected value for the dataset, those non-detected values are treated as ties for the trend analysis, and the evaluation of a trend is less reflective of changes in detection limits. GE will track the detection frequency of all constituents subject to statistical analysis and will identify locations where the results may be biased by the presence of non-detect data points.

### **8.8.1 Mann-Kendall Test**

The Mann-Kendall Test is a procedure that does not assume any particular distribution form and can accommodate trace values or values below the detection limit by assigning them a common value (USEPA, 2006a, 2009). The test has the flexibility to be modified to account for multiple observations per time period, multiple sampling locations, and seasonality

(USEPA, 2006a). For each data set consisting of individual well observations, a series of pair-wise slopes are calculated by determining the change in concentration divided by the time interval between sequential sampling events. A test statistic “S” is computed based on the difference between the number of pair-wise slopes that are positive minus the number that are negative (USEPA, 2006a, 2009). If S is a large positive value, then there is evidence of an increasing trend in the data (USEPA, 2006a, 2009). If S is a large negative value, then there is evidence of a decreasing trend in the data (USEPA, 2006a, 2009).

For small data sets ( $n \leq 40$ ), the test statistic is the difference between the number of strictly positive differences and the number of strictly negative differences (USEPA, 2006a, 2009). If there is an underlying upward trend, then these differences will tend to be positive and a sufficiently large value of the test statistic will suggest the presence of an upward trend (USEPA, 2006a, 2009). A corresponding p-value (for 95% confidence), based on the sample size and test statistic S, is obtained from a reference table to confirm the trend.

For large data sets ( $n > 40$ ), a normal approximation is applied to the test procedure. The S test statistic is calculated the same way as before. The variance for the S test statistic is added to the calculation steps to provide the means to calculate a new Z test statistic for comparison to the critical values for a standard normal distribution ( $z_{1-\alpha}$ ). For testing the hypothesis, an increasing trend is found when  $Z > z_{1-\alpha}$  and a decreasing trend is found when  $Z < 0$  and the absolute value of  $Z > z_{1-\alpha}$  (USEPA, 2006a, 2009).

### **8.8.2 Sen’s Slope Estimator**

The Sen’s slope estimator is a non-parametric alternative for estimating a slope (USEPA, 2006a, 2009). This approach involves computing slopes for all the pairs of ordinal time points and then using the median of these slopes as an estimate of overall slope (USEPA, 2006a). This approach is insensitive to outliers and can accommodate data sets with a limited number of non-detected results (i.e., values less than sample reporting limits) (USEPA, 2006a, 2009).

The procedure assumes that there are n time points (or n periods of time), and  $X_i$  represents the data value for the  $i$ th time point. If there are no missing data, there will be  $n(n-1)/2$  possible pairs of time points ( $i, j$ ) in which  $i > j$ . The slope of such a pair is called a pairwise slope,  $b_{ij}$ , and is computed as  $b_{ij} = (X_i - X_j) / (i - j)$ . Sen’s slope estimator is the median of the  $n(n-1)/2$  pairwise slopes (USEPA, 2006a).

No significant trend is found when the sum of the positive and negative slopes ( $\sum b_{ij}$ ) is such that  $1 > \sum b_{ij} > -1$ . A positive trend is found when  $\sum b_{ij} > 1$  and a negative trend when  $\sum b_{ij} < -1$ . A 95% confidence interval is applied to the median slope estimate.

### 8.8.3 Seasonal Kendall Test

If seasonal cycles are present in data, tests for trend that remove these cycles or are not affected by them should be used (Gilbert, 1987). The Seasonal Kendall (SK) test was developed by the USGS and is a standard test for evaluating seasonal patterns in water quality data. This test has been applied since the early 1980s to the USGS collection of long-term water-quality records across the U.S. A number of statistical software packages (e.g., SYSTAT) are available to perform the SK test. USGS currently maintains a computer program called Estimate Trend (ESTREND) on a download site which is available to the public (<http://pubs.usgs.gov/sir/2005/5275/>).

The SK test is a non-parametric test for monotonic trend in water quality. This test is a generalization of the Mann-Kendall test and reduces potential seasonal differences in concentration by only comparing data from similar seasons when evaluating trend (Schertz et al., 1991). Stated differently, the SK test is used to determine whether concentration changes in a consistent direction over time (i.e., exhibits a monotonic trend). The test performs the Mann-Kendall trend test for individual seasons of the year and then combines the individual results into one overall test. "Season" here is defined by the analyst. Since groundwater sampling activities at GMA 1 will be conducted on a semi-annual basis, the SK test will be focused on the spring and fall seasons, but will allow evaluation of other seasons if the sampling schedule is modified in the future.

In time-series analysis, it is important to consider whether the data exhibit serial correlation, which refers to the relationship between concentrations measured in consecutive sampling events. If data exhibit serial autocorrelation, individual sampling events are not independent. The SK test can produce an "adjusted p-value" that corrects for potential serial correlation. This adjustment to the p-value is preferred because, when serial correlation is present in the data, the p-value tends to be biased low, and one could incorrectly conclude the presence of a seasonal pattern in the data. Hirsch and Slack (1984) recommend using the adjusted p-value when there are more than 10 years of data.

In addition to calculating a p-value for seasonality, the ESTREND also includes the slope and intercept of Kendall's trend line. The line represents the overall trend of the median concentration values for the time span of the dataset. The line is provided in the form:

$$Y = \text{Intercept} + (\text{Slope} \times \text{Time})$$

where

Y = the median concentration at a given time;

Intercept = the intercept of the line at time of the initial sample;

Slope = change in the median concentration over time; and

Time = the year of the sample (as decimal year) – initial water year (as decimal year).

#### **8.8.4 References for Statistical Methods**

Gilbert, R.O. 1987. Statistical Methods for Environmental Pollution Monitoring. Van Nostrand Reinhold, New York.

Hirsch, R.M., and Slack, J.R. 1984. A nonparametric trend test for seasonal data with serial dependence. Water Resources Research v. 20, pp. 727–732.

Schertz, T.L., Alexander, R.B., and Ohe, D.J. 1991. The Computer Program Estimate Trend (ESTREND), a System for the Detection of Trends in Water-Quality Data. U.S. Geological Survey Water-Resources Investigations Report 91-4040.

United States Environmental Protection Agency (USEPA). 1989. Statistical Analysis of Ground-water Monitoring Data at RCRA Facilities. Interim Final Guidance. Office of Solid Waste, Waste Management Division. April.

USEPA. 1992. Statistical Analysis of Ground-water Monitoring Data at RCRA Facilities. Addendum to Interim Final Guidance. Office of Solid Waste, Permits and State Programs Division. July. [http://www.epa.gov/swertio1/chartext\\_edu.htm#stats](http://www.epa.gov/swertio1/chartext_edu.htm#stats).

USEPA. 2006a. Data Quality Assessment: Statistical Methods for Practitioners. EPA QA/G-9S. Office of Environmental Information. EPA/240/B-06/003. February.

USEPA. 2006b. On the Computation of 95% Upper Confidence Limit of the Unknown Population Mean Based Upon Data Sets with Below Detection Limit Observations. Prepared by A. Singh, R.W. Maichle, and S.E. Lee for USEPA ORD NERL, Las Vegas, NV. EPA/600/R-06/22. March.

USEPA. 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance. Office of Resource Conservation and Recovery, Program Implementation and Information Division, EPA 530-R-09-007. March.



## **9. Schedule of Future Activities**

### **9.1 Field Activities Schedule**

GE will commence groundwater quality sampling and the associated groundwater elevation monitoring under the long-term monitoring program in the first spring or fall following EPA's approval of this GMA 1 Long-Term Monitoring Proposal. Subsequent groundwater sampling and monitoring events will be conducted semi-annually in spring and fall, although, as discussed in Section 8.2.1 and shown in Table 8, some wells in the program will not be sampled semi-annually, but rather will be subject to biennial sampling.<sup>14</sup> Prior to performance of these field activities, GE will provide EPA with 7 days advance notice to allow the assignment of oversight personnel.

### **9.2 Reporting Schedule**

GE will continue to provide the results of preliminary groundwater analytical data in its monthly reports on overall activities at the GE-Pittsfield/Housatonic River Site, as discussed in Section 8.4. Those monthly reports will also document the timetables for submittal of the Monitoring Event Evaluation Reports and Long-Term Trend Evaluation Reports, which are contingent upon receipt of the final analytical data packages from the groundwater sampling events and completion of NAPL monitoring activities during the six-month spring and fall monitoring intervals.

The schedule for submittal of these reports under the GMA 1 long-term groundwater quality monitoring program is described below. As discussed in Section 8.6, GE has proposed to combine those reports with the reports submitted on the GMA 1 NAPL monitoring program, beginning with the first report on the long-term groundwater quality monitoring program.

GE will submit the first Monitoring Event Evaluation Report under the GMA 1 long-term monitoring program within 60 days following receipt of the final analytical data packages from the first sampling event conducted under that program, or by August 31 (for a spring report) or February 28 (for a fall report), whichever is later. That report will present the final, validated sampling results from that event and a brief discussion of the results, including the evaluations of the data discussed in Section 8.6.1 and any proposals to further modify the

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<sup>14</sup> The proposed schedule is based on the assumption that GE will have permission from the owners of the non-GE-owned properties within GMA 1 to conduct the monitoring and sampling activities in advance of their estimated performance dates. In the event that GE should encounter delays or other problems in obtaining such access, GE will notify EPA of the resulting schedule impacts.





long-term monitoring program, if necessary. Subsequent semi-annual Monitoring Event Evaluation Reports for GMA 1 will be submitted by the later of (a) 60 days following receipt of the final analytical data packages from each event or (b) August 31 (for spring reports) or February 28 (for fall reports).

In addition, GE will submit a Long-Term Trend Evaluation Report in place of a Monitoring Event Evaluation Report at the completion of the fourth sampling round under the long-term program. That report will present the final, validated sampling results from that sampling event and a brief discussion of the results, including the evaluations of the data discussed in Section 8.6.2 and any proposals to further modify or terminate the long-term monitoring program, as warranted. Subsequent Trend Evaluation Reports for GMA 1 will be prepared at two-year intervals over the duration of the long-term monitoring program at GMA 1, or at such other frequency as is proposed by GE and approved by EPA. Each report will be submitted by the later of (a) 75 days following receipt of the final analytical data packages from the latest monitoring event included in the evaluation cycle or (b) August 31 (for a spring report) or February 28 (for a fall report).



**Tables**

**Table 1**  
**Groundwater Quality Monitoring Summary - Spring 2013 and Fall 2013**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**

Well Number	Monitoring Well Usage	Spring 2013 Analysis <sup>(1,2)</sup>	Fall 2013 Analysis <sup>(1,2)</sup>	Comments
<b>RAA 4 - EAST STREET AREA 2-SOUTH</b>				
E2SC-23	GW-3 Perimeter (Downgradient)	Lead	Lead	Supplemental analysis for lead conducted to evaluate isolated exceedance of GW-3 Standard in spring 2003.
E2SC-24	GW-3 Perimeter (Downgradient)	PAC	None	Supplemental analysis for PAC conducted to evaluate prior concentrations greater than 50% of the GW-3 standard.
52	GW-3 General/Source Area Sentinel	PCB	None	Supplemental analysis for PCBs conducted to evaluate isolated exceedance of GW-3 Standard in fall 2011.
GMA1-30	GW-3 Perimeter (Downgradient)	Lead	None	Supplemental analysis for lead conducted to evaluate prior concentrations greater than 50% of the GW-3 standard.
HR-G3-MW-2	GW-3 Perimeter (Downgradient)	Lead	None	Supplemental analysis for lead conducted to evaluate prior concentrations greater than 50% of the GW-3 standard.
<b>RAA 5 - EAST STREET AREA 2-NORTH</b>				
A7-RR	GW-2 Sentinel	PCB	None	Spring sampling and analysis for PCBs conducted as required by EPA.
<b>RAA 18 - EAST STREET AREA 1-SOUTH</b>				
ESA1S-31R	GW-2 Sentinel	VOC, SVOC, Select Pesticide/Herbicide	VOC, SVOC, PCB	Conducted third and fourth rounds of semi-annual sampling and analysis for VOCs and SVOCs required by EPA to demonstrate compliance with GW-2 criteria. Select pesticides and herbicide inadvertently added to the analyte list by the laboratory in spring 2013. Supplemental analysis for PCBs also conducted in fall 2013.
ESA1S-72R	GW-2 Sentinel/GW-3 General/Source Area Sentinel	SVOC	None	Supplemental SVOC sampling proposed to be conducted in spring 2013 to obtain additional data for full SVOC list (instead of five select SVOCs typically analyzed at this location).

NOTES:

1. The wells listed above were sampled in 2013 as part of the GMA 1 interim groundwater quality monitoring program.
2. All analyses for PCBs, PAC (physiologically available cyanide), and metals were performed on filtered samples only.

**Table 2**  
**Monitoring Well Construction Summary**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**

Well ID	Survey Coordinates		Current Ground Elevation (Feet AMSL)	Current Measuring Point Elevation (Feet AMSL)	Current Depth to Top of Screen (Feet bgs)	Screen Length (Feet)	Top of Screen Elevation (Feet AMSL)	Base of Screen Elevation (Feet AMSL)	Average Depth to Groundwater (Feet bgs)
	Northing	Easting							
<b>20s Complex</b>									
95-23 <sup>1</sup>	533824.00	132085.70	999.40	1,002.33	10.00	10.00	989.40	979.40	11.92
<b>30s Complex</b>									
ES2-19	534326.70	131767.10	1,007.60	1,007.25	11.50	8.00	996.10	988.10	13.86
GMA1-2	533981.90	131570.50	1,006.98	1,006.75	6.20	10.00	1,000.78	990.78	16.36
GMA1-3	533679.60	131685.00	986.60	990.03	3.50	10.00	987.78	977.78	2.83
GMA1-12	534218.40	131262.80	989.10	992.82	9.18	10.00	979.92	969.92	12.08
GMA1-29	533666.90	131250.80	991.25	990.91	11.20	10.00	980.05	970.05	13.89
GMA1-31	533570.60	131362.30	989.89	989.50	10.49	10.00	979.40	969.40	12.53
RF-02	533507.51	131110.90	983.67	983.37	5.20	15.00	978.47	963.47	6.95
RF-03 <sup>1</sup>	533872.30	131153.90	985.60	985.40	3.00	15.00	982.60	967.60	9.10
RF-03S	533887.50	131150.70	984.81	984.50	4.40	11.60	980.41	968.81	8.31
RF-03D	533879.24	131155.79	984.76	984.43	30.46	5.00	954.30	949.30	7.19
RF-16 <sup>1</sup>	534255.30	130931.53	988.15	987.91	7.00	15.00	981.15	966.15	10.34
RF-16R	534210.10	130924.53	986.88	986.37	7.27	10.00	979.61	969.61	9.06
<b>40s Complex</b>									
RF-04	534714.97	130997.69	1,012.18	1,011.99	10.00	15.00	1,002.18	987.18	16.38
<b>East Street Area 1-North</b>									
ES1-08 <sup>1</sup>	534257.78	134216.20	1001.34	1000.93	5.71	10.00	996.17	986.17	6.26
ES1-08R	534256.60	134217.50	1,001.22	1,000.89	5.66	9.70	995.56	985.86	6.22
ES1-14	534305.55	134930.66	998.80	998.74	10.00	10.00	988.80	978.80	9.53
ESA1N-52	534253.80	134565.90	999.83	999.24	2.10	20.00	997.73	977.73	5.48
<b>East Street Area 1-South</b>									
ESA1S-31 <sup>1</sup>	534143.90	134059.50	998.70	998.70	2.00	20.00	996.70	976.70	7.30
ESA1S-31R	534143.90	134059.50	1,000.46	1,000.23	5.50	10.00	994.96	984.96	9.06
ESA1S-33	534197.32	134184.99	999.95	999.58	3.45	20.00	996.50	976.50	6.15
ESA1S-37 <sup>1</sup>	533949.60	133932.60	988.10	988.10	3.00	20.00	985.10	965.10	9.25
ESA1S-37R	533949.60	133932.60	989.05	988.58	7.79	10.00	981.26	971.26	10.19
ESA1S-72 <sup>1</sup>	534191.19	134259.34	1000.92	1000.59	3.00	20.00	997.60	977.60	6.62
ESA1S-72R	534196.10	134234.60	1,001.11	1,000.75	3.91	10.00	997.20	987.20	6.81
ESA1S-139 <sup>1</sup>	533863.20	134993.81	987.13	987.13	5.00	10.00	982.13	972.13	10.00
ESA1S-139R	533841.60	135011.00	987.39	986.91	6.00	10.00	981.39	971.39	10.26
ES1-13 <sup>1</sup>	534209.68	134576.80	1000.03	999.93	4.00	10.00	996.03	986.03	6.30
ES1-13R	534205.80	134579.20	1,000.29	1,000.07	4.30	9.30	995.99	986.69	6.56
ES1-23 <sup>1</sup>	533909.41	134552.83	988.11	987.91	4.00	10.00	984.11	974.11	2.27
ES1-23R	533883.20	134539.90	987.90	989.94	4.00	10.00	983.90	973.90	2.06
GMA1-6	534083.90	134455.20	1,000.73	1,000.44	5.00	10.00	995.73	985.73	8.22
GMA1-7	533766.90	134345.00	986.08	985.81	5.40	10.00	980.68	970.68	11.68
GMA1-18	534221.00	134872.50	998.52	998.29	4.00	10.00	994.52	984.52	6.24

**Table 2**  
**Monitoring Well Construction Summary**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
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	Northing	Easting							
<b>East Street Area 2-North</b>									
17A	535187.45	132107.05	1,024.11	1,023.89	4.96	15.00	1,019.15	1,004.15	7.38
95-20	534445.16	133286.98	1,010.83	1,010.67	10.00	10.00	1,000.83	990.83	13.98
A7 <sup>1</sup>	535015.65	132828.48	1024.07	1024.07	4.00	10.00	1,020.07	1,010.07	9.17
A7-R <sup>1</sup>	534995.60	132799.70	1024.08	1023.47	5.06	12.00	1019.02	1007.02	9.18
A7-RR	534992.30	132794.90	1,023.88	1,023.31	4.50	7.60	1,019.38	1,011.38	8.98
ES1-05	534749.31	135063.74	1,023.25	1,022.75	34.86	10.00	988.39	978.39	39.82
ES1-10	534813.60	134583.40	1,024.03	1,023.75	6.99	10.50	1,017.04	1,006.54	5.73
ES1-18	535027.22	133724.97	1,049.81	1,049.71	4.00	10.00	1,045.81	1,035.81	6.28
ES1-20	535314.82	134924.90	997.82	1,001.56	6.00	10.00	991.82	981.82	11.16
ES1-27 <sup>1</sup>	534573.59	134644.67	1023.43	1023.28	7.00	10.00	1,016.43	1,006.43	8.71
ES1-27R	534603.10	134604.30	1,023.41	1,023.19	9.30	10.00	1,014.11	1,004.11	8.69
F-1	534711.00	134287.30	1,024.02	1,023.84	4.00	15.00	1,020.02	1,005.02	2.84
GMA1-4	534701.80	132178.20	1,011.77	1,011.41	10.27	10.00	1,001.50	991.50	16.98
GMA1-11	534532.60	134052.20	1,024.00	1,026.75	8.00	10.00	1,016.00	1,006.00	11.88
<b>East Street Area 2-South</b>									
52	533234.90	132433.70	985.60	988.66	4.30	20.00	981.30	961.30	11.48
40R <sup>1</sup>	533758.52	133159.76	991.60	991.60	0.00	25.00	991.60	966.60	14.74
64	533152.20	132820.40	985.08	984.93	7.00	15.00	978.08	963.08	12.51
95-09 <sup>1</sup>	534049.40	133771.90	994.40	997.49	15.00	10.00	979.40	969.40	17.41
95-25	533090.36	131385.78	985.12	988.20	8.00	10.00	977.12	967.12	11.34
E2SC-23	533344.44	133132.75	990.10	992.07	9.00	10.00	981.10	971.10	15.75
E2SC-24	533535.46	133544.45	986.00	987.90	9.00	10.00	977.00	967.00	13.18
3-6C-EB-13 <sup>1</sup>	532901.83	132127.31	984.64	984.36	28.25	9.50	956.39	946.89	11.56
3-6C-EB-14 <sup>1</sup>	532899.25	132124.98	984.68	984.20	12.00	9.50	972.68	963.18	11.82
3-6C-EB-14R	532899.32	132135.07	983.30	985.24	8.39	10.00	974.91	964.91	10.44
3-6C-EB-29	532890.20	131785.90	982.90	986.11	4.80	14.50	978.10	963.60	9.99
ES2-02 <sup>1</sup>	533030.09	132489.19	980.90	980.12	20.00	10.00	960.90	950.90	7.42
ES2-02A <sup>1</sup>	533023.60	132497.90	980.19	979.63	3.00	15.00	977.19	962.19	6.97
ES2-02AR	533035.80	132515.30	981.30	983.38	5.86	10.00	975.44	965.44	8.08
ES2-03 <sup>1</sup>	532920.76	132332.48	984.70	984.44	18.00	10.00	966.70	956.70	11.36
ES2-05	533304.20	132027.00	990.80	990.37	9.00	15.00	981.80	966.80	16.70
ES2-7 <sup>1</sup>	533019.49	132511.08	980.40	980.03	33.00	10.00	947.40	937.40	6.70
ES2-08	533337.75	132969.67	995.30	994.87	10.00	15.00	985.30	970.30	21.80
ES2-17	533340.30	132477.40	986.60	986.62	10.88	10.00	975.72	965.72	12.96
ES2-17R	533337.10	132478.70	986.57	985.97	6.55	15.00	980.02	965.02	13.18
GMA1-13	533785.60	133705.00	989.60	991.42	15.10	10.00	974.50	964.50	15.75
GMA1-20 <sup>3</sup>	533023.20	132361.60	983.76	983.49	7.78	10.00	975.98	965.98	10.53
GMA1-20R	533032.31	132361.75	983.20	984.42	9.05	10.00	974.15	964.15	9.97
GMA1-24 <sup>1</sup>	532997.93	132194.49	983.49	985.40	5.30	10.00	978.19	968.19	10.67
GMA1-24R	532997.90	132194.50	983.70	985.52	8.46	10.00	975.24	968.19	10.88
GMA1-30	532894.85	132234.23	983.30	985.60	7.14	10.00	976.16	966.16	10.86
HR-G1-MW-3	533046.20	132710.10	978.40	980.20	7.10	10.00	971.30	961.30	5.67
HR-G3-MW-1	532900.11	132454.94	983.49	986.94	3.89	10.00	979.60	969.60	10.38
HR-G3-RW-1	532872.09	132399.67	976.78	977.78	7.23	2.00	969.55	967.55	4.22
HR-G3-MW-2	532888.40	132335.30	983.20	985.26	3.00	10.00	980.20	970.20	9.83

**Table 2**  
**Monitoring Well Construction Summary**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**

Well ID	Survey Coordinates		Current Ground Elevation (Feet AMSL)	Current Measuring Point Elevation (Feet AMSL)	Current Depth to Top of Screen (Feet bgs)	Screen Length (Feet)	Top of Screen Elevation (Feet AMSL)	Base of Screen Elevation (Feet AMSL)	Average Depth to Groundwater (Feet bgs)
	Northing	Easting							
<b>Lyman Street Area</b>									
B-2	532263.47	130223.63	978.44	978.06	2.91	15.00	975.53	960.53	7.15
E-04	532781.86	131381.90	986.00	987.91	12.79	10.00	973.21	963.21	12.95
E-07	533184.18	131010.65	983.33	982.87	4.60	15.00	978.73	963.73	7.30
GMA1-5	532063.97	129887.55	979.54	979.19	3.40	10.00	976.14	966.14	7.45
LS-28	532643.84	130705.47	983.60	986.06	8.60	15.00	975.00	960.00	9.23
LS-29	532807.58	131047.39	988.40	988.25	24.60	10.00	963.80	953.80	14.18
LSSC-08I	532406.30	130816.34	983.60	983.13	13.00	10.00	970.60	960.60	11.49
LSSC-08S	532408.89	130817.23	983.64	983.11	5.00	10.00	978.64	968.64	11.85
LSSC-09	532560.23	130968.42	985.80	987.42	10.61	10.00	975.19	965.19	14.11
LSSC-16S	532500.50	130690.30	981.53	981.29	5.07	10.00	976.46	966.46	9.09
LSSC-18	532664.70	131107.50	989.40	991.13	10.80	10.00	978.60	968.60	17.69
MW-3 <sup>1</sup>	532589.50	130460.50	983.77	983.32	5.17	10.00	978.60	968.60	10.68
MW-3R	532589.50	130460.50	983.77	983.32	5.17	10.00	978.60	968.60	10.68
MW-4 <sup>1</sup>	532297.50	130347.00	981.20	980.82	5.50	10.00	975.70	965.70	9.37
MW-4R	532351.60	130525.40	981.20	980.82	5.50	10.00	975.70	965.70	9.37
MW-6R	532826.50	130329.50	985.38	984.95	3.91	10.00	981.47	971.47	11.15
<b>Newell Street Area I</b>									
FW-16 <sup>1</sup>	532922.00	132774.40	986.70	986.52	10.60	9.50	976.10	966.60	13.67
FW-16R	532922.00	132774.40	986.70	986.52	10.60	9.50	976.10	966.60	13.67
IA-9R	532749.28	132436.47	984.70	984.14	7.40	9.50	977.30	967.80	10.96
MM-1	532538.00	132097.40	988.27	988.00	4.93	10.00	983.34	973.34	12.38
SZ-1	532497.73	132750.76	985.30	984.98	6.00	10.00	979.30	969.30	9.76
<b>Newell Street Area II</b>									
GMA1-8	532537.20	131175.60	981.94	981.68	5.70	10.00	976.24	966.24	9.70
GMA1-9	532597.70	131346.30	979.10	982.36	7.10	10.00	972.00	962.00	6.01
GMA1-25	532474.90	131882.5	988.78	988.59	7.90	10.00	980.88	970.88	14.04
GMA1-26	532359.40	131417.30	983.73	985.53	5.00	10.00	978.73	968.73	9.56
GMA1-27	532319.70	131693.20	981.30	983.29	4.00	10.00	977.30	967.30	6.89
GMA1-28	532449.00	131306.00	981.70	983.49	4.00	10.00	977.70	967.70	8.35
N2SC-07S	532707.00	131599.50	983.17	982.93	8.90	10.00	974.27	964.27	10.16
NS-09 <sup>1</sup>	532760.60	131761.70	983.24	982.51	5.00	15.00	978.24	963.24	11.47
NS-9R	532771.30	131758.60	983.60	983.37	5.92	10.00	977.68	967.68	11.02
NS-17	532656.18	131503.34	982.00	984.64	6.00	10.00	976.00	966.00	9.35
NS-20	532361.30	131815.43	985.60	985.29	6.00	10.00	979.60	969.60	6.91
NS-37	532786.16	132142.18	983.90	986.07	11.35	9.50	972.55	963.05	11.16

**NOTES:**

1. Indicates well has been decommissioned
2. Feet AMSL: Feet above mean sea level
3. Feet bgs: Feet below ground surface

**Table 3**  
**Groundwater Elevation Data - Spring 2013 and Fall 2013**

**Baseline Assessment Final Report  
and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts**

Well Name	Spring 2013		Fall 2013	
	Date	Groundwater Elevation (Feet AMSL)	Date	Groundwater Elevation (Feet AMSL)
<b>40s Complex (RAA 1)</b>				
95-17	4/16/2013	983.32	10/22/2013	983.17
<b>30s Complex (RAA 2)</b>				
ES2-19	4/16/2013	993.91	10/22/2013	992.14
GMA1-3	4/16/2013	983.58	10/22/2013	983.20
GMA1-12	4/16/2013	978.26	10/22/2013	977.83
GMA1-29	4/16/2013	977.50	10/22/2013	976.89
GMA1-31	4/16/2013	977.06	10/22/2013	976.29
RF-02	4/16/2013	976.84	10/22/2013	976.24
RF-03S	4/16/2013	976.35	10/22/2013	976.33
RF-03D	4/16/2013	977.56	10/22/2013	977.02
RF-16R	4/16/2013	976.09	10/22/2013	976.53
<b>20s Complex (RAA 3)</b>				
CC-R	4/16/2013	980.22	10/22/2013	978.88
EE	4/16/2013	979.95	10/22/2013	978.86
GG	4/16/2013	981.90	10/22/2013	981.36
II	4/16/2013	980.67	10/22/2013	978.72
JJ	4/16/2013	980.59	10/22/2013	979.58
LL-R	4/16/2013	981.54	10/22/2013	980.72
O-RR	4/16/2013	985.52	10/22/2013	985.03
PEDA20-MW-2	4/16/2013	980.12	10/23/2013	978.27
QQ-R	4/16/2013	980.09	10/22/2013	978.73
U	4/16/2013	979.68	10/22/2013	978.11
Y	4/16/2013	980.03	10/22/2013	978.41
<b>Silver Lake Area (RAA 17)</b>				
SLGW-6S	4/16/2013	975.66	10/22/2013	976.50
<b>East Street Area 2-North (RAA 5)</b>				
05-N	4/16/2013	984.98	10/22/2013	984.75
09-N	4/16/2013	983.96	10/22/2013	983.06
11-N	4/16/2013	981.62	10/22/2013	980.12
14-N	4/16/2013	987.10	10/22/2013	987.07
16-N	4/16/2013	980.82	10/22/2013	979.32
17-N	4/16/2013	980.98	10/22/2013	979.46
17A	4/16/2013	1017.59	10/22/2013	1016.00
19-N	4/16/2013	981.47	10/22/2013	979.97
20-N	4/16/2013	981.56	10/22/2013	980.26
23-N	4/16/2013	981.74	10/22/2013	980.24
24-N	4/16/2013	981.46	10/22/2013	980.06
95-20	4/16/2013	996.88	10/22/2013	996.67

**Table 3**  
**Groundwater Elevation Data - Spring 2013 and Fall 2013**

**Baseline Assessment Final Report**  
**and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**

Well Name	Spring 2013		Fall 2013	
	Date	Groundwater Elevation (Feet AMSL)	Date	Groundwater Elevation (Feet AMSL)
<b>East Street Area 2-North (RAA 5) (continued)</b>				
A7-RR	4/16/2013	1017.16	10/22/2013	1015.15
ES1-05	4/16/2013	983.05	10/22/2013	982.40
ES1-10	4/16/2013	1019.27	10/22/2013	1018.08
ES1-18	4/16/2013	1042.31	10/22/2013	1041.36
ES1-20	4/16/2013	987.18	10/22/2013	986.43
ES1-27R	4/16/2013	1013.49	10/22/2013	1013.33
F-1	4/16/2013	1021.24	10/22/2013	1020.44
GMA1-4	4/16/2013	995.31	10/22/2013	Dry
<b>East Street Area 2-South (RAA 4)</b>				
13	4/15/2013	973.44	10/21/2013	972.30
14	4/15/2013	973.66	10/21/2013	972.49
16R	4/15/2013	974.11	10/21/2013	973.09
18R	4/15/2013	972.98	10/21/2013	971.82
19R	4/15/2013	973.07	10/21/2013	971.90
95-01R	4/15/2013	973.58	10/21/2013	972.50
95-25	4/15/2013	974.69	10/21/2013	973.72
3-6C-EB-14R	4/15/2013	973.17	10/21/2013	972.04
3-6C-EB-22	4/15/2013	973.19	10/21/2013	971.90
3-6C-EB-25	4/15/2013	973.45	10/21/2013	972.20
3-6C-EB-28	4/15/2013	973.41	10/21/2013	972.32
ES2-05	4/15/2013	974.08	10/21/2013	973.05
ES2-18	4/15/2013	NM <sup>4</sup>	10/21/2013	NM
GMA1-15	4/15/2013	973.61	10/21/2013	972.27
GMA1-16	4/15/2013	974.69	10/21/2013	973.49
GMA1-19	4/15/2013	973.29	10/21/2013	971.98
GMA1-20R	4/15/2013	973.14	10/21/2013	972.00
GMA1-21	4/15/2013	973.17	10/21/2013	972.01
GMA1-22	4/15/2013	973.64	10/21/2013	972.58
GMA1-23R	4/15/2013	973.37	10/21/2013	972.28
GMA1-24R	4/15/2013	973.33	10/21/2013	971.93
GMA1-30	4/15/2013	973.00	10/21/2013	971.81
HR-J1-MW-1	4/15/2013	972.75	10/21/2013	972.01
HR-J1-MW-2	4/15/2013	973.37	10/21/2013	972.30
HR-J1-MW-3	4/15/2013	973.28	10/21/2013	972.24
01R	4/15/2013	980.35	10/21/2013	979.54
02	4/15/2013	978.80	10/21/2013	977.37
05	4/15/2013	979.14	10/21/2013	977.57
09R	4/15/2013	973.98	10/21/2013	972.89
10	4/15/2013	Dry	NA	NA
10R	NA	NA	10/21/2013	972.57



**Table 3**  
**Groundwater Elevation Data - Spring 2013 and Fall 2013**

**Baseline Assessment Final Report**  
**and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**

Well Name	Spring 2013		Fall 2013	
	Date	Groundwater Elevation (Feet AMSL)	Date	Groundwater Elevation (Feet AMSL)
<b>East Street Area 2-South (RAA 4) (continued)</b>				
25R	4/15/2013	976.88	10/21/2013	975.79
26RR	4/15/2013	978.63	10/21/2013	977.42
34	4/15/2013	974.65	10/21/2013	973.87
35	4/15/2013	974.94	10/21/2013	973.77
36	4/15/2013	974.62	10/21/2013	973.30
37	4/15/2013	974.86	10/21/2013	973.64
38	4/15/2013	976.33	10/21/2013	975.11
95-07R	4/15/2013	975.71	10/21/2013	974.38
ES2-10	4/15/2013	NM <sup>4</sup>	10/21/2013	976.54
GMA1-14	4/15/2013	978.90	10/21/2013	977.42
GMA1-17E	4/15/2013	977.82	10/21/2013	977.11
GMA1-17W	4/3/2013	977.31	11/7/2013	975.95
M-R	4/15/2013	978.80	10/21/2013	977.52
28	4/15/2013	974.49	10/21/2013	973.79
29	4/15/2013	974.18	10/21/2013	973.13
30	4/15/2013	977.97	10/21/2013	976.44
32	4/15/2013	978.22	10/21/2013	977.17
42	4/15/2013	976.25	10/21/2013	975.56
43	4/15/2013	976.63	10/21/2013	975.72
44	4/15/2013	976.63	10/21/2013	975.30
47	4/15/2013	973.98	10/21/2013	972.92
48	4/15/2013	973.67	10/21/2013	972.54
49R	4/15/2013	974.00	10/21/2013	972.80
49RR	4/15/2013	973.41	10/21/2013	972.29
55	4/15/2013	973.73	10/21/2013	972.68
57	4/15/2013	978.30	10/21/2013	976.97
58	4/15/2013	973.59	10/21/2013	972.44
59	4/15/2013	972.27	10/21/2013	971.30
GMA1-13	4/15/2013	973.86	10/21/2013	972.74
P3	4/15/2013	982.67	10/21/2013	982.43
TMP-1	4/15/2013	974.10	10/21/2013	972.97
50	4/15/2013	973.63	10/21/2013	972.91
51	4/15/2013	973.76	10/21/2013	972.56
52	4/15/2013	973.40	10/21/2013	972.32
64	4/15/2013	972.81	10/21/2013	971.61
64R	4/15/2013	977.37	10/24/2013	977.14
64S	4/15/2013	965.46	10/24/2013	965.46
64S-Caisson	4/15/2013	973.70	10/24/2013	973.45
64V	4/15/2013	966.73	10/24/2013	966.66
64X(N)	4/15/2013	973.59	10/24/2013	972.70

**Table 3**  
**Groundwater Elevation Data - Spring 2013 and Fall 2013**

**Baseline Assessment Final Report**  
**and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**

Well Name	Spring 2013		Fall 2013	
	Date	Groundwater Elevation (Feet AMSL)	Date	Groundwater Elevation (Feet AMSL)
<b>East Street Area 2-South (RAA 4) (continued)</b>				
64X(S)	4/15/2013	972.57	10/24/2013	971.88
64X(W)	4/15/2013	967.16	10/24/2013	966.69
95-04RR	4/15/2013	974.21	10/21/2013	NM
95-05	4/15/2013	974.15	10/21/2013	978.54
ES2-02AR	4/15/2013	973.19	10/21/2013	971.99
ES2-06R	4/15/2013	973.47	10/21/2013	972.35
ES2-11	4/15/2013	974.18	10/21/2013	973.05
ES2-14	4/15/2013	973.51	10/21/2013	972.58
ES2-15R	4/15/2013	973.75	10/21/2013	972.58
ES2-16	4/15/2013	973.67	10/21/2013	972.81
ES2-17R	4/15/2013	973.51	10/21/2013	972.59
HR-G1-MW-1	4/15/2013	972.93	10/21/2013	971.46
HR-G1-MW-2	4/15/2013	973.10	10/21/2013	971.64
HR-G1-MW-3	4/15/2013	972.82	10/21/2013	971.33
HR-G2-MW-1	4/15/2013	972.76	10/21/2013	971.24
HR-G2-MW-2	4/15/2013	974.08	10/21/2013	971.86
HR-G2-MW-3	4/15/2013	973.13	10/21/2013	971.73
HR-G2-RW-1	4/15/2013	970.66	10/21/2013	969.37
HR-G3-MW-1	4/15/2013	973.09	10/21/2013	971.67
HR-G3-MW-2	4/15/2013	973.07	10/21/2013	971.69
HR-G3-RW-1	4/15/2013	973.28	10/21/2013	970.57
53	4/15/2013	973.55	10/21/2013	972.29
54	4/15/2013	973.25	10/21/2013	972.00
E2SC-03I	4/15/2013	973.47	10/21/2013	972.29
E2SC-06	4/15/2013	980.06	10/21/2013	979.59
E2SC-17	4/15/2013	973.03	10/21/2013	972.33
E2SC-21R	4/15/2013	974.08	10/21/2013	972.86
E2SC-23	4/15/2013	975.54	10/21/2013	974.12
E2SC-24	4/15/2013	973.24	10/21/2013	972.00
ESA2S-PZ1	4/15/2013	973.05	10/21/2013	972.21
ESA2S-PZ2	4/15/2013	972.56	10/21/2013	972.10
ESA2S-PZ3	4/15/2013	973.00	10/21/2013	972.06
ESA2S-PZ4	4/15/2013	973.13	10/21/2013	971.96
ESA2S-PZ5	4/15/2013	973.15	10/21/2013	972.01
ESA2S-PZ6	4/15/2013	973.03	10/21/2013	972.07
ESA2S-PZ7	4/15/2013	973.21	10/21/2013	972.22
ES2-08	4/15/2013	974.16	10/21/2013	972.55
HR-C-RW1	4/15/2013	972.64	10/21/2013	971.20
PZ-1S	4/15/2013	973.51	10/21/2013	972.79
PZ-6S	4/15/2013	973.10	10/21/2013	972.31

**Table 3**  
**Groundwater Elevation Data - Spring 2013 and Fall 2013**

**Baseline Assessment Final Report**  
**and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**

Well Name	Spring 2013		Fall 2013	
	Date	Groundwater Elevation (Feet AMSL)	Date	Groundwater Elevation (Feet AMSL)
<b>East Street Area 2-South (RAA 4) (continued)</b>				
RW-1(S)	4/18/2013	970.11	10/24/2013	969.15
RW-1(X)	4/18/2013	968.31	10/24/2013	968.10
RW-2(X)	4/18/2013	969.31	10/24/2013	969.16
RW-3(X)	4/11/2013	972.28	10/24/2013	971.07
RW-4	4/15/2013	967.05	10/24/2013	967.44
<b>East Street Area 1-North (RAA 6)</b>				
ESA1N-25	4/16/2013	994.47	10/22/2013	994.84
60R	4/16/2013	993.52	10/22/2013	993.35
105	4/16/2013	995.61	10/22/2013	995.23
106	4/16/2013	995.31	10/22/2013	994.28
107	4/16/2013	996.46	10/22/2013	996.02
108A	4/16/2013	997.88	10/22/2013	997.58
109A	4/16/2013	997.22	10/22/2013	996.87
118	4/16/2013	997.19	10/22/2013	996.99
128	4/16/2013	994.46	10/22/2013	994.41
131R	4/16/2013	995.54	10/22/2013	995.47
140	4/16/2013	992.43	10/22/2013	991.65
ES1-08	4/16/2013	994.91	NA	NA
ES1-08R	NA	NA	10/22/2013	995.15
North Caisson	4/18/2013	987.80	10/24/2013	986.98
<b>East Street Area 1-South (RAA 18)</b>				
ESA1S-31R	4/16/2013	991.03	10/22/2013	990.72
ESA1S-33	4/16/2013	993.23	10/22/2013	992.81
ESA1S-34	4/16/2013	993.72	10/22/2013	994.28
ESA1S-35	4/16/2013	994.13	10/22/2013	994.60
ESA1S-37R	4/16/2013	978.88	10/22/2013	978.66
ESA1S-45	4/16/2013	994.14	10/22/2013	993.45
ESA1S-46	4/16/2013	993.36	10/22/2013	993.44
ESA1S-72	4/16/2013	993.40	10/22/2013	993.97
ESA1S-72R	4/16/2013	994.05	10/22/2013	994.37
ESA1S-75	4/16/2013	993.77	10/22/2013	994.53
ESA1S-76	4/16/2013	993.27	10/22/2013	993.73
ESA1S-78	4/16/2013	993.83	10/22/2013	994.03
ESA1S-80	4/16/2013	983.94	10/22/2013	983.35
ESA1S-139R	4/16/2013	976.61	10/22/2013	975.11
ES1-13R	4/16/2013	993.80	10/22/2013	993.62
ES1-23R	4/16/2013	987.16	10/22/2013	985.24
GMA1-6	4/16/2013	992.48	10/22/2013	992.52
GMA1-7	4/16/2013	973.83	10/23/2013	973.94
GMA1-18	4/16/2013	991.49	10/22/2013	989.87
South Caisson	4/18/2013	986.95	10/24/2013	986.77

**Table 3**  
**Groundwater Elevation Data - Spring 2013 and Fall 2013**

**Baseline Assessment Final Report  
and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts**

Well Name	Spring 2013		Fall 2013	
	Date	Groundwater Elevation (Feet AMSL)	Date	Groundwater Elevation (Feet AMSL)
<b>Lyman Street Area (RAA 12)</b>				
B-2	4/16/2013	971.43	10/22/2013	970.47
GMA1-5	4/16/2013	971.61	10/22/2013	968.45
LS-12	4/16/2013	972.63	10/22/2013	971.31
LS-13	4/16/2013	974.30	10/22/2013	973.21
LS-30	4/16/2013	973.34	10/22/2013	972.31
LS-31	4/16/2013	973.73	10/22/2013	972.77
LS-34	4/16/2013	972.98	10/22/2013	971.71
LS-43R	4/16/2013	972.44	10/22/2013	971.11
LS-44	4/16/2013	971.87	10/22/2013	970.80
LSSC-07	4/16/2013	972.67	10/22/2013	971.40
LSSC-16I	4/16/2013	972.72	10/22/2013	971.44
LSSC-16S	4/16/2013	972.71	10/22/2013	971.76
LSSC-32	4/16/2013	972.21	10/22/2013	971.14
LSSC-33	4/16/2013	972.16	10/22/2013	971.13
MW-3R	4/16/2013	974.20	10/22/2013	973.29
MW-4R	4/16/2013	972.25	10/22/2013	971.20
MW-6R	4/16/2013	974.38	10/22/2013	973.50
RW-1(R)	4/18/2013	967.62	10/24/2013	967.47
RW-2	4/18/2013	969.27	10/24/2013	968.41
RW-3	4/18/2013	970.32	10/24/2013	970.50
E-04	4/16/2013	973.05	10/22/2013	970.13
EPA-01	4/16/2013	971.67	10/22/2013	970.60
LS-21	4/16/2013	968.96	10/22/2013	968.01
LS-24	4/16/2013	969.28	10/22/2013	968.16
LS-38S	4/16/2013	972.07	10/22/2013	971.08
LS-38	4/16/2013	972.27	10/22/2013	970.91
LSSC-06	4/16/2013	972.63	10/22/2013	971.29
LSSC-08I	4/16/2013	971.86	10/22/2013	970.46
LSSC-08S	4/16/2013	971.57	10/22/2013	970.45
LSSC-09	4/16/2013	973.31	10/22/2013	972.13
LSSC-18	4/16/2013	973.32	10/22/2013	972.51
LSSC-34I	4/16/2013	972.41	10/22/2013	970.98
LSSC-34S	4/16/2013	972.34	10/22/2013	970.99
<b>Newell Street Area I (RAA 14)</b>				
FW-16R	4/16/2013	973.25	11/13/2013	972.11
IA-9R	4/16/2013	973.49	11/13/2013	972.31
MM-1	4/16/2013	976.01	11/13/2013	975.58

**Table 3**  
**Groundwater Elevation Data - Spring 2013 and Fall 2013**

**Baseline Assessment Final Report  
and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts**

Well Name	Spring 2013		Fall 2013	
	Date	Groundwater Elevation (Feet AMSL)	Date	Groundwater Elevation (Feet AMSL)
<b>Newell Street Area II (RAA 13)</b>				
GMA1-8	4/16/2013	972.59	11/13/2013	971.66
GMA1-9	4/16/2013	973.21	11/13/2013	972.15
GMA1-25	4/16/2013	975.67	11/13/2013	974.90
GMA1-26	4/16/2013	973.79	11/13/2013	972.71
GMA1-27	4/16/2013	974.51	11/13/2013	973.49
GMA1-28	4/16/2013	971.84	11/13/2013	972.33
MW-1D	4/16/2013	974.18	10/22/2013	972.87
MW-1S	4/16/2013	973.53	11/13/2013	972.07
N2SC-01I	4/16/2013	973.18	10/22/2013	971.78
N2SC-01I(R)	4/18/2013	969.43	10/24/2013	968.33
N2SC-02	4/16/2013	972.99	10/22/2013	971.67
N2SC-03I	4/16/2013	973.11	10/22/2013	971.97
N2SC-03I(R)	4/18/2013	972.81	10/24/2013	971.66
N2SC-07	4/16/2013	972.91	10/22/2013	971.61
N2SC-07S	4/16/2013	972.91	11/13/2013	971.78
FW-16R	4/16/2013	973.25	11/13/2013	972.11
N2SC-09I	4/16/2013	978.58	10/22/2013	977.33
N2SC-09S	4/16/2013	973.57	11/13/2013	972.40
N2SC-13I	4/16/2013	973.75	10/22/2013	972.47
N2SC-14	4/18/2013	972.98	10/24/2013	971.81
N2SC-16	4/16/2013	973.11	10/22/2013	971.77
NS-9R	4/16/2013	972.66	11/13/2013	971.53
NS-10	4/16/2013	974.27	11/13/2013	973.17
NS-20	4/16/2013	978.40	11/13/2013	977.78
NS-30	4/16/2013	972.95	11/13/2013	971.67
NS-32	4/16/2013	972.97	10/22/2013	971.57
NS-37	4/16/2013	972.72	10/22/2013	971.48

**NOTES:**

1. AMSL - Above Mean Sea Level
2. Groundwater elevation data was collected on the listed date as part of the fall/spring 2013 monitoring event.
3. Only data from applicable water table monitoring wells are utilized in the preparation of the fall/spring 2013 groundwater elevation contour figure.
4. Groundwater monitoring wells ES2-18, ES2-10 were covered by debris and could not be monitored during the fall/spring 2013 monitoring round.

**Table 4**  
**Field Parameter Measurements - Spring 2013 and Fall 2013**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**

Well ID	Sampling Event	Turbidity (NTU)	Temperature (Degrees Celsius)	pH (Standard Units)	Specific Conductivity (mS/cm)	Oxidation-Reduction Potential (mV)	Dissolved Oxygen (mg/L)
<b>RAA 4 - EAST STREET AREA 2-SOUTH</b>							
E2SC-23	Spring 2013	1.0	8.60	7.07	0.552	7.9	1.81
E2SC-23	Fall 2013	2.0	14.20	6.47	0.607	-52.6	0.44
E2SC-24	Spring 2013	13.4	9.89	6.72	1.118	-74.5	6.79
52	Spring 2013	83.4	15.20	7.21	2.693	-87.4	2.27
GMA1-30	Spring 2013	2.6	9.50	6.91	0.990	-67.9	0.35
HR-G3-MW-2	Spring 2013	4.1	9.73	6.91	1.173	-39.4	1.73
<b>RAA 5 - EAST STREET AREA 2-NORTH</b>							
A7-RR	Spring 2013	3.0	7.24	7.6	1.162	87.9	10.85
<b>RAA 18 - EAST STREET AREA 1-SOUTH</b>							
ESA1S-31R	Spring 2013	7.19	7.50	7.76	0.505	20.9	5.50
ESA1S-31R	Fall 2013	1.50	14.29	7.43	0.502	34.4	5.44
ESA1S-72R	Spring 2013	4.0	8.51	6.31	4.062	109.1	8.89

**NOTES:**

1. Well parameters were generally monitored continuously during purging by low-flow techniques. Final stabilized parameter readings are presented.
2. NTU - Nephelometric Turbidity Units
3. mS/cm - Millisiemens per centimeter
4. mV - Millivolts
5. mg/L - Milligrams per liter (ppm)

**Table 5**  
**Spring 2013 and Fall 2013 Groundwater Analytical Results Compared to MCP Method 1 GW-2 Standards**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

Parameter	Site ID:	Method 1 GW-2 Standards	East St. Area 1 - South	East St. Area 1 - South	East St. Area 1 - South	East St. Area 2 - North
	Sample ID:		ESA1S-31R	ESA1S-31R	ESA1S-72R	A7-RR
Date Collected:			04/23/13	10/08/13	04/23/13	04/23/13
<b>Volatiles Organics</b>						
Bromodichloromethane		0.006	0.0054 [0.0053]	0.0014 [0.0017]	NA	NA
Chloroform		0.05	0.022 [0.022]	0.0014 [0.0017]	NA	NA
Total VOCs		5	0.027 [0.027]	0.0028 [0.0034]	NA	NA
<b>PCBs-Filtered</b>						
Aroclor-1254		Not Listed	NA	ND(0.00031) [ND(0.00028)]	NA	0.00010 J
Total PCBs		0.005	NA	ND(0.00031) [ND(0.00028)]	NA	0.00010 J
<b>Semivolatile Organics</b>						
None Detected		--	--	--	--	NA

**NOTES:**

1. Samples were collected by ARCADIS and submitted to Accutest Laboratories for analysis of PCBs (filtered) and selected Appendix IX+3 constituents. However, only the analytical results for volatile organic compounds (VOCs), associated semi-volatile organic compounds (SVOCs), and PCBs are presented for this comparison to GW-2 standards.
2. Sample results have been validated in accordance with the applicable EPA-approved Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP), as described in the text.
3. NA - Not Analyzed.
4. ND - Analyte was not detected. The number in parentheses is the associated reporting limit.
5. Only the VOC, SVOC, and PCB constituents detected in at least one sample are listed.
6. Field duplicate sample results are presented in brackets.
7. -- Indicates that all constituents for the parameter group were not detected.
8. The Method 1 GW-2 Standards listed above are those in effect at the time of sampling.

**Data Qualifiers:**

Organics (volatiles, PCBs, semivolatiles)

- J - Indicates that the associated numerical value is an estimated concentration.
- R - Data was rejected due to a deficiency in the data generation process.

**Table 6**  
**Spring 2013 and Fall 2013 Groundwater Analytical Results Compared to MCP Method 1 GW-3 Standards**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

Parameter	Sample ID:	Method 1 GW-3 Standards	East St. Area 1 - South	East St. Area 2 - South		
	Sample ID: Date Collected:		ESA1S-72R 04/23/13	E2SC-23 04/22/13	E2SC-23 10/08/13	E2SC-24 04/22/13
<b>PCBs-Filtered</b>						
Total PCBs		0.01	NA	NA	NA	NA
<b>Semivolatile Organics</b>						
None Detected		--	--	NA	NA	NA
<b>Organochlorine Pesticides</b>						
None Detected		--	--	NA	NA	NA
<b>Organophosphate Pesticides</b>						
None Detected		--	--	NA	NA	NA
<b>Herbicides</b>						
None Detected		--	--	NA	NA	NA
<b>Inorganics-Filtered</b>						
Cyanide (PAC)		0.03	NA	NA	NA	0.0170 [0.0230]
Lead		0.01	NA	ND(0.00100) [ND(0.00100)]	ND(1.0) [ND(1.0)]	NA



**Table 6**  
**Spring 2013 and Fall 2013 Groundwater Analytical Results Compared to MCP Method 1 GW-3 Standards**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

Parameter	Sample ID:	Method 1 GW-3 Standards	East St. Area 2 - South		
	Sample ID: Date Collected:		52 04/24/13	GMA1-30 04/23/13	HR-G3-MW-2 04/24/13
<b>PCBs-Filtered</b>					
Total PCBs		0.01	ND(0.00026) [ND(0.00026)]	NA	NA
<b>Semivolatile Organics</b>					
None Detected		--	NA	NA	NA
<b>Organochlorine Pesticides</b>					
None Detected		--	NA	NA	NA
<b>Organophosphate Pesticides</b>					
None Detected		--	NA	NA	NA
<b>Herbicides</b>					
None Detected		--	NA	NA	NA
<b>Inorganics-Filtered</b>					
Cyanide (PAC)		0.03	NA	NA	NA
Lead		0.01	NA	ND(0.00100)	ND(0.00100)

**NOTES:**

1. Samples were collected by ARCADIS and submitted to Accutest Laboratories for analysis of PCBs (filtered) and selected Appendix IX+3 constituents. However, only the analytical results for constituents detected in wells subject to GW-3 standards are presented for this comparison to GW-3 standards.
2. Physiologically available cyanide (PAC) analysis conducted in accordance with the PAC protocols contained in the August 13, 2004 MDEP document entitled *Quality Assurance and Quality Control Requirements and Performance Standards for SWC-846 Method 9014, Total Cyanide and the MADEP Physiologically Available Cyanide (PAC) Protocol for the Massachusetts Contingency Plan (MCP)*.
3. Sample results have been validated in accordance with the applicable EPA-approved Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP), as described in the text.
4. NA - Not Analyzed.
5. ND - Analyte was not detected. The number in parentheses is the associated reporting limit.
6. With the exception of lead, only those constituents detected in one or more samples are summarized.
7. Field duplicate sample results are presented in brackets.
8. -- Indicates that all constituents for the parameter group were not detected.
9. The Method 1 GW-3 Standards listed above are those in effect at the time of sampling.

**Data Qualifiers:**

Organics (volatiles, PCBs, semivolatiles, pesticides, herbicides)

- J - Indicates that the associated numerical value is an estimated concentration.
- R - Data was rejected due to a deficiency in the data generation process.

**Table 7**  
**Spring 2013 and Fall 2013 Analytical Results Compared to MCP UCLs for Groundwater**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

Parameter	Site ID: Sample ID: Date Collected:	MCP UCL for GroundWater	East St. Area 1 - South		
			ESA1S-31R 04/23/13	ESA1S-31R 10/08/13	ESA1S-72R 04/23/13
<b>Volatile Organics</b>					
Bromodichloromethane		100	0.0054 [0.0053]	0.0014 [0.0017]	NA
Chloroform		100	0.022 [0.022]	0.0014 [0.0017]	NA
<b>PCBs-Filtered</b>					
Aroclor-1254		Not Listed	NA	ND(0.00031) [ND(0.00028)]	NA
Total PCBs		0.1	NA	ND(0.00031) [ND(0.00028)]	NA
<b>Semivolatile Organics</b>					
None Detected		--	--	--	--
<b>Organochlorine Pesticides</b>					
None Detected		--	--	NA	--
<b>Organophosphate Pesticides</b>					
None Detected		--	--	NA	--
<b>Herbicides</b>					
None Detected		--	--	NA	--
<b>Inorganics-Filtered</b>					
Cyanide (PAC)		2	NA	NA	NA
Lead		0.15	NA	NA	NA

**Table 7**  
**Spring 2013 and Fall 2013 Analytical Results Compared to MCP UCLs for Groundwater**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

Parameter	Site ID:	MCP UCL for GroundWater	East St. Area 2 - North	East St. Area 2 - South	
	Sample ID: Date Collected:		A7-RR 04/23/13	E2SC-23 04/22/13	E2SC-23 10/08/13
<b>Volatile Organics</b>					
Bromodichloromethane		100	NA	NA	NA
Chloroform		100	NA	NA	NA
<b>PCBs-Filtered</b>					
Aroclor-1254		Not Listed	0.00010 J	NA	NA
Total PCBs		0.1	0.00010 J	NA	NA
<b>Semivolatile Organics</b>					
None Detected		--	NA	NA	NA
<b>Organochlorine Pesticides</b>					
None Detected		--	NA	NA	NA
<b>Organophosphate Pesticides</b>					
None Detected		--	NA	NA	NA
<b>Herbicides</b>					
None Detected		--	NA	NA	NA
<b>Inorganics-Filtered</b>					
Cyanide (PAC)		2	NA	NA	NA
Lead		0.15	NA	ND(0.00100) [ND(0.00100)]	ND(1.0) [ND(1.0)]

**Table 7**  
**Spring 2013 and Fall 2013 Analytical Results Compared to MCP UCLs for Groundwater**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

Parameter	Site ID:	MCP UCL for GroundWater	East St. Area 2 - South			
	Sample ID: Date Collected:		E2SC-24 04/22/13	52 04/24/13	GMA1-30 04/23/13	HR-G3-MW-2 04/24/13
<b>Volatile Organics</b>						
Bromodichloromethane		100	NA	NA	NA	NA
Chloroform		100	NA	NA	NA	NA
<b>PCBs-Filtered</b>						
Aroclor-1254		Not Listed	NA	ND(0.00026) [ND(0.00026)]	NA	NA
Total PCBs		0.1	NA	ND(0.00026) [ND(0.00026)]	NA	NA
<b>Semivolatile Organics</b>						
None Detected		--	NA	NA	NA	NA
<b>Organochlorine Pesticides</b>						
None Detected		--	NA	NA	NA	NA
<b>Organophosphate Pesticides</b>						
None Detected		--	NA	NA	NA	NA
<b>Herbicides</b>						
None Detected		--	NA	NA	NA	NA
<b>Inorganics-Filtered</b>						
Cyanide (PAC)		2	0.0170 [0.0230]	NA	NA	NA
Lead		0.15	NA	NA	ND(0.00100)	ND(0.00100)

**NOTES:**

1. Samples were collected by ARCADIS and submitted to Accutest Laboratories for analysis of PCBs (filtered) and selected Appendix IX+3 constituents.
2. Physiologically available cyanide (PAC) analysis conducted in accordance with the PAC protocols contained in the August 13, 2004 MDEP document entitled *Quality Assurance and Quality Control Requirements and Performance Standards for SWC-846 Method 9014, Total Cyanide and the MADEP Physiologically Available Cyanide (PAC) Protocol for the Massachusetts Contingency Plan (MCP)*.
3. Sample results have been validated in accordance with the applicable EPA-approved Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP), as described in the text.
4. NA - Not Analyzed.
5. ND - Analyte was not detected. The number in parentheses is the associated reporting limit.
6. With the exception of lead, only those constituents detected in one or more samples are summarized.
7. Field duplicate sample results are presented in brackets.
8. -- Indicates that all constituents for the parameter group were not detected.
9. The MCP UCL for Groundwater Standards listed above are those in effect at the time of sampling.

**Data Qualifiers:**

**Organics (volatiles, PCBs, semivolatiles, pesticides, herbicides)**

- J - Indicates that the associated numerical value is an estimated concentration.
- R - Data was rejected due to a deficiency in the data generation process.

**Inorganics**

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

**Table 8**  
**Summary of Groundwater Sampling Activities**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**

Well Number	Monitoring Well Usage	No. of Sampling Events	No. of Analyses	Discussion of Results Relative to Applicable Performance Standards	
				GW-2 Standards	GW-3 Standards
<b>20s COMPLEX</b>					
95-23 <sup>3</sup>	GW-3 General/Source Area Sentinel	4	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.
<b>30s COMPLEX</b>					
ES2-19	GW-2 Sentinel	8	VOC (4 rounds) Select SVOC (4 rounds) PCB-filtered (4 rounds)	No exceedances.	No exceedances.
GMA1-2	GW-2 Sentinel	1	VOC (1 round) Select SVOC (1 round)	No exceedances Well was removed during building demolition.	No exceedances Well was removed during building demolition.
GMA1-3	GW-2 Sentinel	8	VOC (4 rounds) Select SVOC (4 rounds) PCB-filtered (4 rounds)	No exceedances.	No exceedances.
GMA1-12	GW-2 Sentinel / GW-3 General/Source Area Sentinel	4	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds)	No exceedances.	No exceedances.
GMA1-29	GW-2 Sentinel / GW-3 General/Source Area Sentinel	4	VOC (4 rounds) Select SVOC (4 rounds) PCB-filtered (4 rounds)	No exceedances.	No exceedances.
GMA1-31	Supplemental Sampling Location	1	VOC (1 round) Select SVOC (1 round) PCB-filtered (1 round)	No exceedances.	No exceedances.

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Well Number	Monitoring Well Usage	No. of Sampling Events	No. of Analyses	Discussion of Results Relative to Applicable Performance Standards	
				GW-2 Standards	GW-3 Standards
<b>30s COMPLEX (Continued)</b>					
RF-02	GW-3 Perimeter (Downgradient)	14	VOC (9 rounds) SVOC (6 rounds) PCB-unfiltered (6 rounds) / filtered (13 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (5 rounds) Metals-unfiltered (6 rounds) / filtered (5 rounds) Total CN-unfiltered (6 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.
RF-03/RF-03S	GW-2 Sentinel / GW-3 Perimeter (Downgradient)	9	VOC (9 rounds) SVOC (6 rounds) Select SVOC (3 rounds) PCB-unfiltered (6 rounds) / filtered (8 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (5 rounds) Metals-unfiltered (6 rounds) / filtered (5 rounds) Total CN-unfiltered (6 rounds) / filtered (2 rounds)	No exceedances.	No exceedances during baseline/interim programs. Historical pyrene concentration above current GW-3 standard level observed on one occasion in 1991, but pyrene not detected during baseline/interim programs.
RF-03D	GW-3 General/ Source Area Sentinel	7	VOC (7 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (7 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.
RF-16/RF-16R	GW-3 Perimeter (Downgradient)	9	VOC (6 rounds) SVOC (6 rounds) PCB-unfiltered (6 rounds) / filtered (5 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (5 rounds) Metals-unfiltered (6 rounds) / filtered (7 rounds) Total CN-unfiltered (6 rounds) / filtered (4 rounds) PA CN-filtered (2 rounds)	Not applicable.	No exceedances.

**Table 8**  
**Summary of Groundwater Sampling Activities**

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**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**

Well Number	Monitoring Well Usage	No. of Sampling Events	No. of Analyses	Discussion of Results Relative to Applicable Performance Standards	
				GW-2 Standards	GW-3 Standards
<b>40s COMPLEX</b>					
RF-04	GW-3 Perimeter (Upgradient)	5	VOC (5 rounds) SVOC (5 rounds) PCB-unfiltered (5 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (5 rounds) Metals-unfiltered (5 rounds) / filtered (4 rounds) Total CN-unfiltered (5 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.
<b>EAST STREET AREA 1-NORTH</b>					
ES1-08/ ES1-08R	GW-2 Sentinel / GW-3 General/Source Area Sentinel	3	VOC (3 rounds) Select SVOC (3 rounds) PCB-unfiltered (3 rounds) / filtered (3 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (3 rounds) Metals-unfiltered (3 rounds) / filtered (3 rounds) Total CN-unfiltered (3 rounds) / filtered (1 round)	No exceedances.	Exceedances for lead and cadmium on one occasion each. However, due to presence of NAPL, well was replaced for sampling purposes by well ESA1S-33 and then ESA1S-72R. Those replacement wells showed no exceedances of lead and cadmium standards. No other exceedances.
ES1-14	GW-2 Sentinel/GW-3 General/Source Area Sentinel	4	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Replaced by well GMA1-18 for sampling purposes. No exceedances.	No exceedances. Replaced by well GMA1-18 for sampling purposes.
ESA1N-52	GW-2 Sentinel / GW-3 General/Source Area Sentinel	8	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (8 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds)	No exceedances. Well has been decommissioned.	No exceedances. Well has been decommissioned.

**Table 8**  
**Summary of Groundwater Sampling Activities**

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**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**

Well Number	Monitoring Well Usage	No. of Sampling Events	No. of Analyses	Discussion of Results Relative to Applicable Performance Standards	
				GW-2 Standards	GW-3 Standards
<b>EAST STREET AREA 1-SOUTH</b>					
ESA1S-139/139R	GW-2 Sentinel / GW-3 Perimeter (Downgradient)	10	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (5 rounds) / filtered (10 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds)	No exceedances.	No exceedances.
ESA1S-31R	GW-2 Sentinel / GW-3 General/Source Area Sentinel	8	VOC (4 rounds) SVOC (4 rounds) PCB-filtered (5 rounds) Pesticide/Herbicide (1 round)	No exceedances (including fall 2013 supplemental sampling event).	No exceedances (including fall 2013 supplemental sampling event).
ESA1S-33	GW-2 Sentinel / GW-3 General/Source Area Sentinel	1	VOC (1 round) SVOC (1 round) PCB-unfiltered (1 round) / filtered (1 round) PCDD/PCDF (1 round) Metals-unfiltered (1 round) / filtered (1 round) Total CN-unfiltered (1 round) / filtered (1 round)	Temporary replacement for well ES1-08 downgradient of NAPL containment area prior to sampling of well ESA1S-72R. No exceedances.	Temporary replacement for well ES1-08 downgradient of NAPL area prior to sampling of well ESA1S-72R. Exceedance for cyanide during only sampling event at this well, but no such exceedances in several rounds at replacement well ESA1S-72R. No other exceedances.
ESA1S-37R	GW-2 Sentinel	8	VOC (4 rounds) Select SVOC (4 rounds) PCB-filtered (4 rounds)	No exceedances.	No exceedances.
ESA1S-72R	GW-2 Sentinel / GW-3 General/Source Area Sentinel	11	VOC (9 rounds) SVOC (2 rounds) / Select SVOC (8 rounds) PCB-filtered (9 rounds) Pesticide/Herbicide (1 round) PCDD/PCDF (4 rounds) Metals-filtered (6 rounds) Total CN-filtered (2 rounds) PA CN-filtered (4 rounds)	Added to monitoring program to replace wells ES1-08 and ESA1S-33. No exceedances.	Added to monitoring program to replace wells ES1-08 and ESA1S-33. No exceedances.



**Table 8**  
**Summary of Groundwater Sampling Activities**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
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Well Number	Monitoring Well Usage	No. of Sampling Events	No. of Analyses	Discussion of Results Relative to Applicable Performance Standards	
				GW-2 Standards	GW-3 Standards
EAST STREET AREA 1 SOUTH (continued)					
ES1-13R	GW-2 Sentinel / GW-3 General/Source Area Sentinel	4	VOC (4 rounds) SVOC (4 rounds) PCB-filtered (4 rounds) PCDD/PCDF (4 rounds) Metals-filtered (4 rounds) PA CN-filtered (4 rounds)	No exceedances.	No exceedances.
ES1-23/ ES1-23R	GW-2 Sentinel / GW-3 Perimeter (Downgradient)	4	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds)	No exceedances.	No exceedances.
GMA1-6	GW-2 Sentinel / GW-3 General/Source Area Sentinel	13	VOC (13 rounds) SVOC (4 rounds) / Select SVOC (9 rounds) PCB-unfiltered (4 rounds) / filtered (13 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds)	No exceedances.	No exceedances.
GMA1-7	GW-2 Sentinel/GW-3 Perimeter (Downgradient)	4	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds)	No exceedances.	No exceedances.
GMA1-18	GW-2 Sentinel / GW-3 General/Source Area Sentinel	5	PCB-filtered (5 rounds)	No exceedances.	No exceedances.

**Table 8**  
**Summary of Groundwater Sampling Activities**

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Well Number	Monitoring Well Usage	No. of Sampling Events	No. of Analyses	Discussion of Results Relative to Applicable Performance Standards	
				GW-2 Standards	GW-3 Standards
<b>EAST STREET AREA 2-NORTH</b>					
17A	GW-2 Sentinel	9	VOC (5 rounds) SVOC (1 round) / Select SVOC (4 rounds) PCB-unfiltered (1 round) / filtered (4 rounds) Pesticide/Herbicide (1 round) Metals-unfiltered (1 round) Total CN-unfiltered (1 round)	No exceedances.	No exceedances.
95-20	GW-2 Sentinel	8	VOC (4 rounds) Select SVOC (4 rounds) PCB-filtered (4 rounds)	No exceedances.	No exceedances.
A7 / A7-R / A7-RR	GW-2 Sentinel	13	VOC (5 rounds) SVOC (1 round) / Select SVOC (4 rounds) PCB-unfiltered (1 round) / filtered (8 rounds) Pesticide/Herbicide (1 round) Metals-unfiltered (1 round) Total CN-unfiltered (1 round)	No exceedances during baseline/interim programs. Historical hexachlorobenzene concentration above current GW-2 standard level observed on one occasion in 1990. But not a constituent of interest in this area and no exceedances for this constituent in any other GMA 1 well.	No exceedances.
ES1-05	GW-3 Perimeter (Downgradient)	10	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (9 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Mercury-unfiltered (5 rounds) / filtered (5 rounds)* Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Not applicable.	Exceedance for mercury observed in fall 2002. But mercury not detected in this well during two prior and two subsequent events (except in one split sample at concentration far below standard). No other exceedances.
ES1-10	GW-2 Sentinel	8	VOC (4 rounds) Select SVOC (4 rounds) PCB-filtered (4 rounds)	No exceedances.	No exceedances.

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Well Number	Monitoring Well Usage	No. of Sampling Events	No. of Analyses	Discussion of Results Relative to Applicable Performance Standards	
				GW-2 Standards	GW-3 Standards
<b>EAST STREET AREA 2-NORTH (continued)</b>					
ES1-18	GW-2 Sentinel	8	VOC (4 rounds) Select SVOC (4 rounds) PCB-filtered (4 rounds)	No exceedances.	No exceedances.
ES1-20	GW-3 Perimeter (Upgradient)	5	VOC (5 rounds) SVOC (5 rounds) PCB-unfiltered (4 rounds) / filtered (4 rounds) Pesticide/Herbicide (3 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (5 rounds) / filtered (5 rounds) Total CN-unfiltered (5 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.
ES1-27R	GW-3 General/ Source Area Sentinel	9	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (9 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.
F-1	GW-2 Sentinel	11	VOC (5 rounds) SVOC (1 round) / Select SVOC (4 rounds) PCB-unfiltered (1 round) / filtered (6 rounds) Pesticide/Herbicide (1 round) Metals-unfiltered (1 round) Total CN-unfiltered (1 round)	No exceedances.	No exceedances.
GMA1-4	GW-2 Sentinel	7	VOC (4 rounds) Select SVOC (4 rounds) PCB-filtered (3 rounds)	No exceedances.	No exceedances.
GMA1-11	GW-3 General/ Source Area Sentinel	4	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.

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**Summary of Groundwater Sampling Activities**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
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Well Number	Monitoring Well Usage	No. of Sampling Events	No. of Analyses	Discussion of Results Relative to Applicable Performance Standards	
				GW-2 Standards	GW-3 Standards
<b>EAST STREET AREA 2-SOUTH</b>					
3-6C-EB-14 / 3-6C-EB-14R	GW-3 Perimeter (Downgradient)	10	VOC (10 rounds) SVOC (4 rounds) / Select SVOC (1 round) PCB-unfiltered (4 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Not applicable.	Exceedance for chlorobenzene on one occasion. No other exceedances.
3-6C-EB-29	GW-3 Perimeter (Downgradient)	4	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.
95-09	GW-3 General/Source Area Sentinel	2	VOC (2 rounds) SVOC (2 rounds) PCB-unfiltered (2 rounds) / filtered (2 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (2 rounds) Metals-unfiltered (2 rounds) / filtered (2 rounds) Total CN-unfiltered (2 rounds)	Not applicable.	No exceedances. Replaced by well GMA1-13 for sampling purposes.
95-25	GW-2 Sentinel	8	VOC (4 rounds) Select SVOC (4 rounds) PCB-filtered (4 rounds)	No exceedances.	No exceedances.
E2SC-23	GW-3 Perimeter (Downgradient)	16	VOC (6 rounds) SVOC (6 rounds) PCB-unfiltered (4 rounds) / filtered (13 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (6 rounds) Metals-unfiltered (4 rounds) / filtered (5 rounds) Lead-filtered (8 rounds)* Total CN-unfiltered (4 rounds) / filtered (2 rounds) PA CN-filtered (1 round)	Not applicable.	Exceedance for PCBs on one occasion. Exceedance for lead on one occasion, followed by four rounds with no lead detection (or detection in duplicate sample below standard). No other exceedances.

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Well Number	Monitoring Well Usage	No. of Sampling Events	No. of Analyses	Discussion of Results Relative to Applicable Performance Standards	
				GW-2 Standards	GW-3 Standards
<b>EAST STREET AREA 2-SOUTH (Continued)</b>					
E2SC-24	GW-3 Perimeter (Downgradient)	14	VOC (5 rounds) SVOC (5 rounds) PCB-unfiltered (4 rounds) / filtered (13 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (5 rounds) Metals-unfiltered (4 rounds) / filtered (5 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds) PA CN-filtered (3 rounds)	Not applicable.	No exceedances.
ES2-02A / ES2-02AR	GW-3 Perimeter (Downgradient)	16	VOC (11 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (4 rounds) PA CN-filtered (2 rounds)	Not applicable.	Exceedances for chlorobenzene on seven occasions. No other exceedances.
ES2-05	GW-3 General/ Source Area Sentinel	5	VOC (5 rounds) SVOC (5 rounds) PCB-unfiltered (5 rounds) / filtered (4 rounds) Pesticide/Herbicide (3 rounds) PCDD/PCDF (5 rounds) Metals-unfiltered (5 rounds) / filtered (4 rounds) Total CN-unfiltered (5 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.
ES2-08	GW-3 Perimeter (Downgradient)	4	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.

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Well Number	Monitoring Well Usage	No. of Sampling Events	No. of Analyses	Discussion of Results Relative to Applicable Performance Standards	
				GW-2 Standards	GW-3 Standards
<b>EAST STREET AREA 2-SOUTH (Continued)</b>					
ES2-17	GW-3 Perimeter (Downgradient)	2	VOC (2 rounds) SVOC (2 rounds) PCB-unfiltered (2 rounds) / filtered (2 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (2 rounds) Metals-unfiltered (2 rounds) / filtered (2 rounds) Total CN-unfiltered (2 rounds)	Not applicable.	Exceedances for chlorobenzene on two occasions. No other exceedances. Due to presence of DNAPL, replaced by well ESA2S-52 for sampling purposes.
52	GW-3 General/Source Area Sentinel	12	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (9 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (4 rounds) PA CN-filtered (2 rounds)	Not applicable.	Exceedances for chlorobenzene on four occasions and for PCBs on one occasion. No other exceedances.
64	GW-3 Perimeter (Downgradient)	12	VOC (11 rounds) SVOC (5 rounds) PCB-unfiltered (4 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (5 rounds) Metals-unfiltered (5 rounds) / filtered (4 rounds) Total CN-unfiltered (5 rounds) / filtered (2 rounds) PA CN-filtered (1 round)	Not applicable.	No exceedances.
GMA1-13	GW-3 General/Source Area Sentinel	7	VOC (2 rounds) SVOC (2 rounds) PCB-unfiltered (2 rounds) / filtered (7 rounds) PCDD/PCDF (2 rounds) Metals-unfiltered (2 rounds) / filtered (2 rounds) Total CN-unfiltered (2 rounds) / filtered (2 rounds)	Not applicable.	Replacement for well 95-9. No exceedances.

**Table 8**  
**Summary of Groundwater Sampling Activities**

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Well Number	Monitoring Well Usage	No. of Sampling Events	No. of Analyses	Discussion of Results Relative to Applicable Performance Standards	
				GW-2 Standards	GW-3 Standards
<b>EAST STREET AREA 2-SOUTH (Continued)</b>					
GMA1-24R	GW-3 General/Source Area Sentinel	4	VOC (4 rounds) SVOC (4 rounds) PCB-filtered (4 rounds) PCDD/PCDF (4 rounds) Metals-filtered (4 rounds) PA CN-filtered (4 rounds)	Not applicable.	No exceedances.
GMA1-30	GW-3 Perimeter (Downgradient)	5	VOC (4 rounds) SVOC (4 rounds) PCB-filtered (4 rounds) PCDD/PCDF (4 rounds) Metals-filtered (4 rounds) Lead-filtered (5 rounds)* PA CN-filtered (4 rounds)	Not applicable.	No exceedances.
HR-G1-MW-3	GW-3 Perimeter (Downgradient)	8	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Mercury-unfiltered (5 rounds) / filtered (5 rounds)* Total CN-unfiltered (4 rounds) / filtered (4 rounds) PA CN-filtered (2 rounds)	Not applicable.	No exceedances.
HR-G3-MW-1	GW-3 Perimeter (Downgradient)	10	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (9 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Mercury-unfiltered (5 rounds) / filtered (5 rounds)* Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Not applicable.	Exceedances for chlorobenzene on three occasions. No other exceedances.

**Table 8**  
**Summary of Groundwater Sampling Activities**

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Well Number	Monitoring Well Usage	No. of Sampling Events	No. of Analyses	Discussion of Results Relative to Applicable Performance Standards	
				GW-2 Standards	GW-3 Standards
<b>EAST STREET AREA 2-SOUTH (Continued)</b>					
HR-G3-MW-2	GW-3 Perimeter (Downgradient)	5	VOC (4 rounds) SVOC (4 rounds) PCB-filtered (4 rounds) PCDD/PCDF (4 rounds) Metals-filtered (4 rounds) Lead-filtered (5 rounds)* PA CN-filtered (4 rounds)	Not applicable.	No exceedances.
<b>LYMAN STREET AREA</b>					
B-2	GW-3 Perimeter (Downgradient)	6	VOC (6 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Mercury-unfiltered (5 rounds) / filtered (5 rounds)* Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.
E-04	GW-3 Perimeter (Downgradient)	5	VOC (5 rounds) SVOC (5 rounds) PCB-unfiltered (5 rounds) / filtered (5 rounds) Pesticide/Herbicide (3 rounds) PCDD/PCDF (5 rounds) Metals-unfiltered (5 rounds) / filtered (5 rounds) Total CN-unfiltered (5 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.
E-07	GW-3 Perimeter (Upgradient)	6	VOC (5 rounds) SVOC (5 rounds) PCB-unfiltered (5 rounds) / filtered (5 rounds) Pesticide/Herbicide (3 rounds) PCDD/PCDF (5 rounds) Metals-unfiltered (5 rounds) / filtered (5 rounds) Mercury-unfiltered (6 rounds) / filtered (6 rounds)* Total CN-unfiltered (5 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.



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**Summary of Groundwater Sampling Activities**

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Well Number	Monitoring Well Usage	No. of Sampling Events	No. of Analyses	Discussion of Results Relative to Applicable Performance Standards	
				GW-2 Standards	GW-3 Standards
<b>LYMAN STREET AREA (continued)</b>					
GMA1-5	GW-3 Perimeter (Downgradient)	4	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.
LS-28	GW-3 Perimeter (Upgradient)	5	VOC (5 rounds) SVOC (5 rounds) PCB-unfiltered (5 rounds) / filtered (5 rounds) Pesticide/Herbicide (3 rounds) PCDD/PCDF (5 rounds) Metals-unfiltered (5 rounds) / filtered (5 rounds) Total CN-unfiltered (5 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.
LS-29	GW-3 General/ Source Area Sentinel	10	VOC (5 rounds) SVOC (5 rounds) PCB-unfiltered (5 rounds) / filtered (10 rounds) Pesticide/Herbicide (3 rounds) PCDD/PCDF (5 rounds) Metals-unfiltered (5 rounds) / filtered (5 rounds) Total CN-unfiltered (5 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.
LSSC-08I	Supplemental Monitoring (Deep Downgradient)	1	VOC (1 round) SVOC (1 round) PCB-unfiltered (1 round) / filtered (1 round)	Not applicable.	No exceedances.
LSSC-08S	GW-3 Perimeter (Downgradient)	15	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (15 rounds) Pesticide/Herbicide (4 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.

**Table 8**  
**Summary of Groundwater Sampling Activities**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**

Well Number	Monitoring Well Usage	No. of Sampling Events	No. of Analyses	Discussion of Results Relative to Applicable Performance Standards	
				GW-2 Standards	GW-3 Standards
<b>LYMAN STREET AREA (continued)</b>					
LSSC-16S	GW-2 Sentinel	16	VOC (14 rounds) SVOC (1 round) / Select SVOC (13 rounds) PCB-unfiltered (1 round) / filtered (4 rounds) Pesticide/Herbicide (1 round) PCDD/PCDF (1 round) Metals-unfiltered (1 round) Total CN-unfiltered (1 round)	No exceedances.	No exceedances.
LSSC-18	GW-3 Perimeter (Downgradient)	15	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (15 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.
MW-3 / MW-3R	GW-2 Sentinel	9	VOC (5 rounds) SVOC (1 round) / Select SVOC (4 rounds) PCB-filtered (4 rounds)	No exceedances.	No exceedances.
MW-4 / MW-4R	GW-3 Perimeter (Downgradient)	11	VOC (11 rounds) SVOC (7 rounds) PCB-unfiltered (4 rounds) / filtered (8 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (6 rounds) Metals-unfiltered (4 rounds) / filtered (6 rounds) Total CN-unfiltered (4 rounds) / filtered (4 rounds)	Not applicable.	No exceedances.
MW-6R	GW-3 Perimeter (Upgradient)	5	VOC (5 rounds) SVOC (4 rounds) PCB-unfiltered (3 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Mercury-unfiltered (5 rounds) / filtered (5 rounds)* Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.

**Table 8**  
**Summary of Groundwater Sampling Activities**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**

Well Number	Monitoring Well Usage	No. of Sampling Events	No. of Analyses	Discussion of Results Relative to Applicable Performance Standards	
				GW-2 Standards	GW-3 Standards
<b>NEWELL STREET AREA I</b>					
FW-16/FW-16R	GW-3 Perimeter (Downgradient)	7	VOC (7 rounds) SVOC (5 rounds) PCB-unfiltered (5 rounds) / filtered (6 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (5 rounds) Metals-unfiltered (5 rounds) / filtered (5 rounds) Total CN-unfiltered (5 rounds) / filtered (2 rounds)	Not applicable.	No exceedances during baseline/interim programs. Historical exceedance for PCBs on one occasion in 1997 prior to CD baseline monitoring, but no subsequent exceedances.
IA-9R	GW-3 Perimeter (Downgradient)	7	VOC (7 rounds) SVOC (5 rounds) PCB-unfiltered (5 rounds) / filtered (6 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (5 rounds) Metals-unfiltered (5 rounds) / filtered (5 rounds) Total CN-unfiltered (5 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.
MM-1	GW-2 Sentinel	9	VOC (5 rounds) SVOC (1 round) / Select SVOC (4 rounds) PCB-unfiltered (1 round) / filtered (4 rounds) PCDD/PCDF (1 round) Metals-unfiltered (1 round) / filtered (1 round) Total CN-unfiltered (1 round)	No exceedances.	No exceedances.
SZ-1	GW-2 Sentinel/GW-3 Perimeter (Upgradient)	7	VOC (7 rounds) SVOC (5 rounds) PCB-unfiltered (5 rounds) / filtered (6 rounds) Pesticide/Herbicide (3 rounds) PCDD/PCDF (5 rounds) Metals-unfiltered (5 rounds) / filtered (5 rounds) Total CN-unfiltered (5 rounds) / filtered (2 rounds)	No exceedances.	No exceedances.

**Table 8**  
**Summary of Groundwater Sampling Activities**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**

Well Number	Monitoring Well Usage	No. of Sampling Events	No. of Analyses	Discussion of Results Relative to Applicable Performance Standards	
				GW-2 Standards	GW-3 Standards
<b>NEWELL STREET AREA II</b>					
GMA1-8	GW-3 Perimeter (Downgradient)	4	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.
GMA1-9	GW-3 Perimeter (Downgradient)	5	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Mercury-unfiltered (5 rounds) / filtered (5 rounds)* Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.
GMA1-25	GW-2 Sentinel / GW-3 Perimeter (Upgradient)	4	VOC (4 rounds) SVOC (4 rounds) PCB-filtered (4 rounds)	No exceedances.	No exceedances.
GMA1-27	GW-2 Sentinel / GW-3 Perimeter (Upgradient)	4	VOC (4 rounds) SVOC (4 rounds) PCB-filtered (4 rounds)	No exceedances.	No exceedances.
N2SC-07S	GW-3 Perimeter (Downgradient)	10	VOC (7 rounds) SVOC (5 rounds) PCB-unfiltered (4 rounds) / filtered (9 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Mercury-unfiltered (5 rounds) / filtered (5 rounds)* Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.

**Table 8**  
**Summary of Groundwater Sampling Activities**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**

Well Number	Monitoring Well Usage	No. of Sampling Events	No. of Analyses	Discussion of Results Relative to Applicable Performance Standards	
				GW-2 Standards	GW-3 Standards
<b>NEWELL STREET AREA II (Continued)</b>					
NS-09	GW-3 Perimeter (Downgradient)	7	VOC (6 rounds) SVOC (6 rounds) PCB-unfiltered (6 rounds) / filtered (5 rounds) Pesticide/Herbicide (3 rounds) PCDD/PCDF (6 rounds) Metals-unfiltered (6 rounds) / filtered (5 rounds) Total CN-unfiltered (6 rounds) / filtered (2 rounds)	Not applicable.	No exceedances during baseline/interim programs. Historical exceedance for silver on one occasion in 1995 prior to CD baseline monitoring, but no subsequent exceedances.
NS-17	GW-3 Perimeter (Downgradient)	9	VOC (8 rounds) SVOC (5 rounds) / Select SVOC (1 round) PCB-unfiltered (5 rounds) / filtered (5 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (5 rounds) Metals-unfiltered (5 rounds) / filtered (5 rounds) Total CN-unfiltered (5 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.
NS-20	GW-3 Perimeter (Upgradient)	6	VOC (5 rounds) SVOC (5 rounds) PCB-unfiltered (5 rounds) / filtered (5 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (5 rounds) Metals-unfiltered (5 rounds) / filtered (5 rounds) Total CN-unfiltered (5 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.

**Table 8  
Summary of Groundwater Sampling Activities**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts**

Well Number	Monitoring Well Usage	No. of Sampling Events	No. of Analyses	Discussion of Results Relative to Applicable Performance Standards	
				GW-2 Standards	GW-3 Standards
<b>NEWELL STREET AREA II (Continued)</b>					
NS-37	GW-3 Perimeter (Downgradient)	5	VOC (4 rounds) SVOC (4 rounds) PCB-unfiltered (4 rounds) / filtered (4 rounds) Pesticide/Herbicide (2 rounds) PCDD/PCDF (4 rounds) Metals-unfiltered (4 rounds) / filtered (4 rounds) Mercury-unfiltered (5 rounds) / filtered (5 rounds)* Total CN-unfiltered (4 rounds) / filtered (2 rounds)	Not applicable.	No exceedances.

NOTES:

- Analyte definitions:  
 VOC = volatile organic compounds analyzed by EPA Method 8260B.  
 SVOC = semivolatile organic compounds analyzed by EPA Method 8270.  
 Select SVOC: select semivolatile organic compounds analyzed by EPA method 8260B analytes. Limited to 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and naphthalene.  
 PCB = Polychlorinated biphenyls analyzed by EPA method 8082.  
 PCDD/PCDF = Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans analyzed by EPA method 8290.  
 Total CN = Total cyanide analyzed by EPA method 9014.  
 PA CN = Physiologically available cyanide analyzed using the PAC protocols contained in the August 13, 2004 MDEP document entitled "Quality Assurance and Quality Control Requirements and Performance Standards for SWC-846 Method 9014, Total Cyanide and the MADEP Physiologically Available Cyanide (PAC) Protocol for the Massachusetts Contingency Plan (MCP)".
- The number of analyses for specific metals (denoted by an asterisk\*) also include analyses performed as part of routine metals analysis listed for the well.
- 95-23 was decommissioned in 2010, a proposed sample location, GMA1-32 is proposed to be installed directly south of this former well on GE property.

**Table 9  
Proposed Long-Term Groundwater Quality Monitoring Program**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts**

Well Number	Monitoring Well Usage	Sampling Schedule	Analyses	Basis for Inclusion/Comments
<b>30s COMPLEX</b>				
GMA1-29	GW-2 Sentinel/GW-3 General/Source Area Sentinel	Biennial	VOC / Select SVOC / PCB	Periodic long-term sampling for VOCs, select SVOCs, and PCBs proposed to confirm that standards are being met near former UST area and occupied building.
RF-03S	GW-3 Perimeter (Downgradient)	Biennial	VOC / PCB	Periodic long-term sampling for VOCs and PCBs proposed to confirm that standards are being met near Silver Lake.
<b>EAST STREET AREA 1-SOUTH</b>				
ESA1S-31R	GW-2 Sentinel/GW-3 General/Source Area Sentinel	Biennial	VOC / Select SVOC / PCB	Periodic long-term sampling for VOCs, select SVOCs, and PCBs proposed to confirm that standards are being met downgradient of NAPL containment area and near residences.
ESA1S-72R	GW-2 Sentinel/GW-3 General/Source Area Sentinel	Semi-Annual	VOC / Select SVOC / PCB / Lead	Long-term sampling for VOCs, select SVOCs, and PCBs proposed based on location downgradient of NAPL containment area and near residences. Long-term sampling for lead proposed to assess average lead concentration greater than 50% of GW-3 Standard.
GMA1-6	GW-2 Sentinel/GW-3 General/Source Area Sentinel	Biennial	VOC / Select SVOC / PCB	Periodic long-term sampling for VOCs, select SVOCs, and PCBs proposed to confirm that standards are being met downgradient of NAPL containment area and near residences.
<b>EAST STREET AREA 2-NORTH</b>				
ES1-05	GW-3 Perimeter (Downgradient)	Biennial	VOC/PCB	Periodic long-term sampling for VOCs and PCBs proposed to confirm that standards continue to be met in this area.
GMA1-4	GW-2 Sentinel	One event if sufficient water exists	PCB	One additional sample will be collected for PCB analysis to complete baseline sampling at this well if sufficient water is observed in this well. See text.
<b>EAST STREET AREA 2-SOUTH</b>				
3-6C-EB-14R	GW-3 Perimeter (Downgradient)	Semi-Annual	VOC	Chlorobenzene exceeded GW-3 standard on one occasion; average concentration is greater than 50% of standard.
E2SC-23	GW-3 Perimeter (Downgradient)	Semi-Annual	PCB	Long-term sampling for PCBs proposed based on location at edge of sheetpile containment barrier and to assess isolated PCB exceedance.

**Table 9  
Proposed Long-Term Groundwater Quality Monitoring Program**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts**

Well Number	Monitoring Well Usage	Sampling Schedule	Analyses	Basis for Inclusion/Comments
<b>EAST STREET AREA 2-SOUTH (Continued)</b>				
E2SC-24	GW-3 Perimeter (Downgradient)	Semi-Annual	PCB / Cyanide (PAC)	Long-term sampling for PCBs proposed based on location at edge of sheetpile containment barrier. Long-term sampling for physiologically available cyanide proposed to assess increasing concentrations at approximately 50% of the GW-3 standard.
ES2-02AR	GW-3 Perimeter (Downgradient)	Semi-Annual	VOC	Chlorobenzene exceeded GW-3 standard on seven occasions; average concentration is greater than standard.
GMA1-32 <sup>3</sup>	GW-3 General/Source Area Sentinel	Biennial	VOC / PCB	Proposed monitoring well to be installed on GE property as a replacement for decommissioned well 95-23 that was located just to the north in the 20s Complex. Periodic long-term sampling for VOCs and PCBs proposed to confirm that standards continue to be met in this area.
52	GW-3 General/Source Area Sentinel	Semi-Annual	VOC / PCB	Chlorobenzene exceeded GW-3 standard on four occasions; average concentration is greater than standard. PCBs exceeded GW-3 standard on one occasion; average concentration is greater than 50% of standard.
64	GW-3 Perimeter (Downgradient)	Biennial	VOC	No exceedances of GW-3 standards observed during baseline/interim period. Periodic long-term sampling for VOCs proposed to confirm that standards continue to be met in this area.
HR-G1-MW-3	GW-3 Perimeter (Downgradient)	Biennial	VOC / PCB	No exceedances of GW-3 standards observed during baseline/interim period. Periodic long-term sampling for VOCs and PCBs proposed to confirm that standards continue to be met in this area.
HR-G3-MW-1	GW-3 Perimeter (Downgradient)	Semi-Annual (To be re-evaluated after two sampling events)	VOC	Chlorobenzene exceeded GW-3 standard on three occasions; average concentration is greater than standard. Following two monitoring events GE may propose to eliminate this location from the LTMP following comparative analysis with the results from HR-G2-MW-3.
HR-G2-MW-3	GW-3 Perimeter (Downgradient)	Semi-Annual (To be re-evaluated after two sampling events)	VOC	Semi-annual sampling proposed based on proximity to well HR-G3-MW-1. Following two monitoring events GE may propose to eliminate this location from the LTMP following comparative analysis with the results from HR-G3-MW-1.



**Table 9  
Proposed Long-Term Groundwater Quality Monitoring Program**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts**

Well Number	Monitoring Well Usage	Sampling Schedule	Analyses	Basis for Inclusion/Comments
<b>LYMAN STREET AREA</b>				
LSSC-08S	GW-3 Perimeter (Downgradient)	Semi-Annual	PCB	Long-term sampling for PCBs proposed based on location at edge of sheetpile containment barrier.
		Biennial	VOC	Biennial sampling for VOCs proposed based on EPA requirement.
LSSC-16S	GW-2 Sentinel	Semi-Annual	VOC / Select SVOC	Long-term sampling for VOCs and select SVOCs proposed to confirm that standards are being met near occupied building near edge of NAPL area.
LSSC-18	GW-3 Perimeter (Downgradient)	Semi-Annual	PCB	Long-term sampling for PCBs proposed based on location at edge of sheetpile containment barrier.
		Biennial	VOC	Biennial sampling for VOCs proposed based on EPA requirement.
<b>NEWELL STREET AREA II</b>				
GMA1-9	GW-3 Perimeter (Downgradient)	Biennial	VOC / PCB	Periodic long-term sampling for VOCs and PCBs proposed to confirm that standards are being met near river downgradient of NAPL containment area.
GMA1-25	GW-2 Sentinel/GW-3 Perimeter (Upgradient)	Biennial	VOC / Select SVOC / PCB	Periodic long-term sampling for VOCs, select SVOCs, and PCBs proposed to confirm that standards are being met near occupied building near edge of NAPL containment area.
N2SC-07S	GW-3 Perimeter (Downgradient)	Biennial	VOC / PCB	Periodic long-term sampling for VOCs and PCBs proposed to confirm that standards are being met near river downgradient of NAPL containment area.

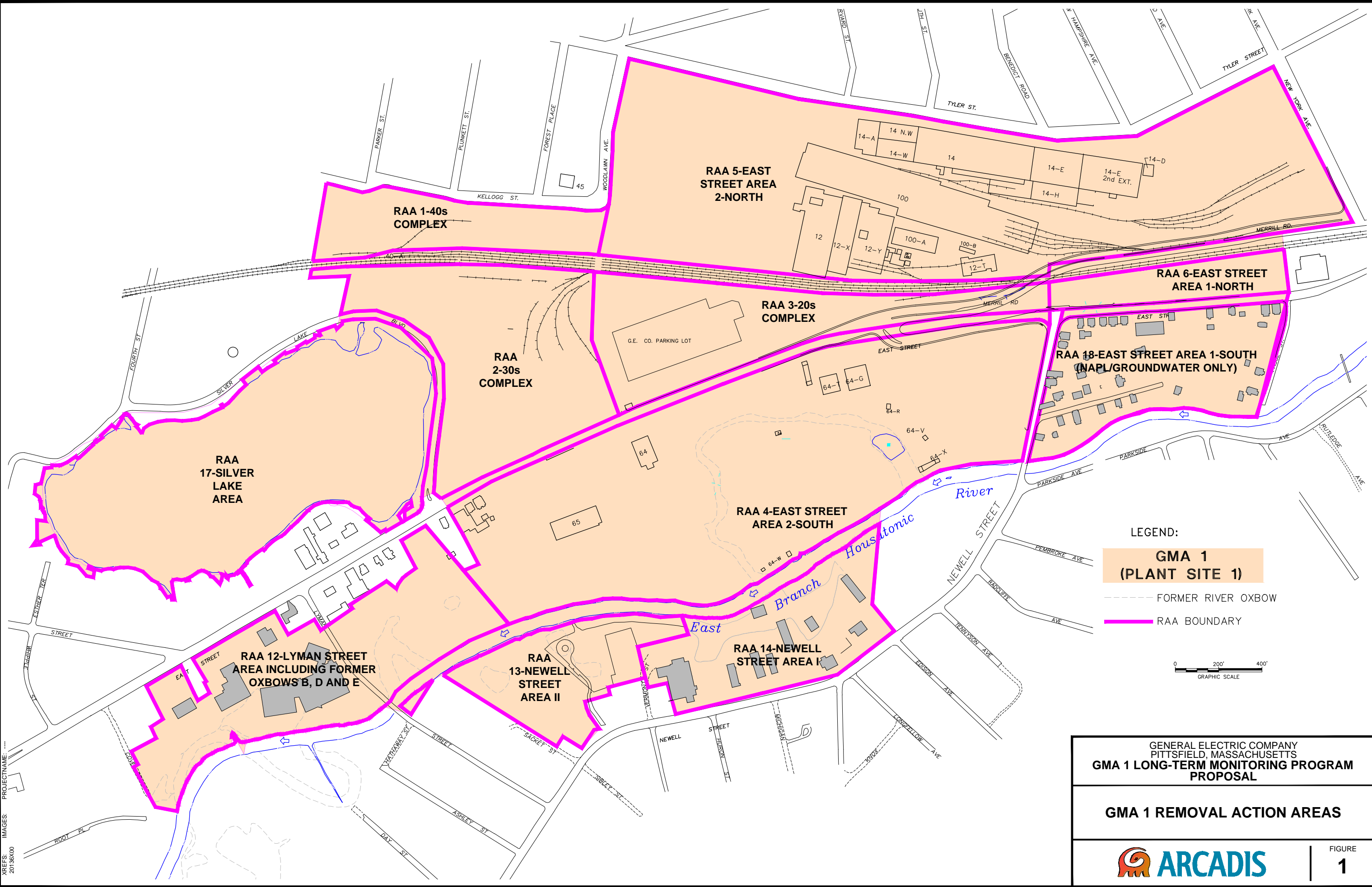
**NOTES:**

1. Analysis for select SVOCs under the long-term monitoring program will consist of analysis for five SVOCs (1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, and naphthalene) performed in conjunction with VOC analyses using EPA Method 8260B.
2. All analyses for PCB, metals, and PA cyanide conducted under the long-term monitoring program will be performed on filtered samples only.
3. Proposed new monitoring well.



**Figures**

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GENERAL ELECTRIC COMPANY  
 PITTSFIELD, MASSACHUSETTS  
**GMA 1 LONG-TERM MONITORING PROGRAM PROPOSAL**

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**GMA 1 REMOVAL ACTION AREAS**

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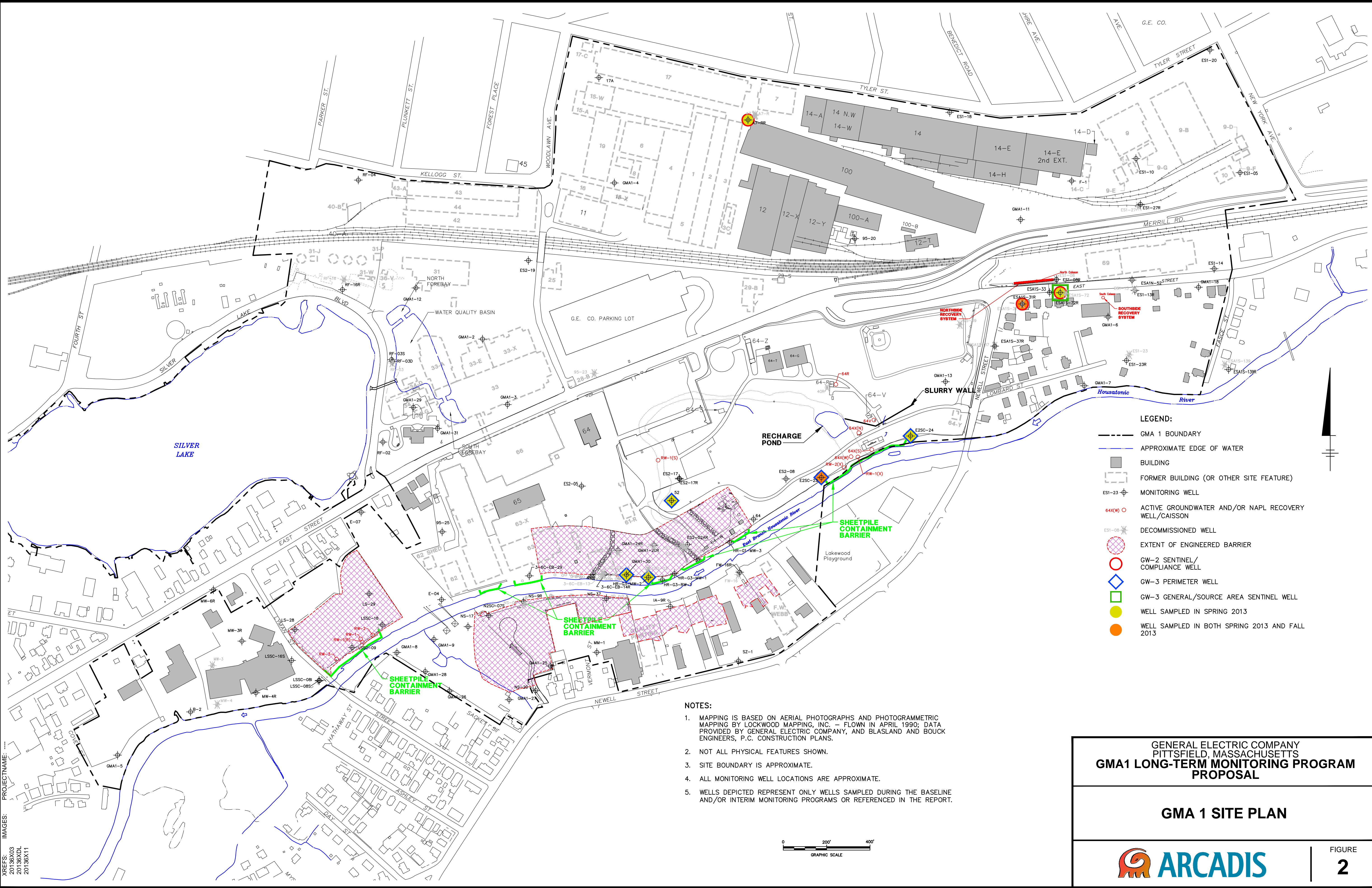
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FIGURE  
**1**

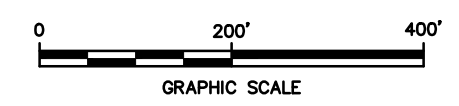


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- LEGEND:**
- GMA 1 BOUNDARY
  - APPROXIMATE EDGE OF WATER
  - BUILDING
  - FORMER BUILDING (OR OTHER SITE FEATURE)
  - ESI-23 ○ MONITORING WELL
  - 64X(W) ○ ACTIVE GROUNDWATER AND/OR NAPL RECOVERY WELL/CAISSON
  - ESI-08 ○ DECOMMISSIONED WELL
  - ◌ EXTENT OF ENGINEERED BARRIER
  - GW-2 SENTINEL/COMPLIANCE WELL
  - ◇ GW-3 PERIMETER WELL
  - GW-3 GENERAL/SOURCE AREA SENTINEL WELL
  - WELL SAMPLED IN SPRING 2013
  - WELL SAMPLED IN BOTH SPRING 2013 AND FALL 2013

- 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. ALL MONITORING WELL LOCATIONS ARE APPROXIMATE.
  5. WELLS DEPICTED REPRESENT ONLY WELLS SAMPLED DURING THE BASELINE AND/OR INTERIM MONITORING PROGRAMS OR REFERENCED IN THE REPORT.



GENERAL ELECTRIC COMPANY  
 PITTSFIELD, MASSACHUSETTS  
**GMA1 LONG-TERM MONITORING PROGRAM  
 PROPOSAL**

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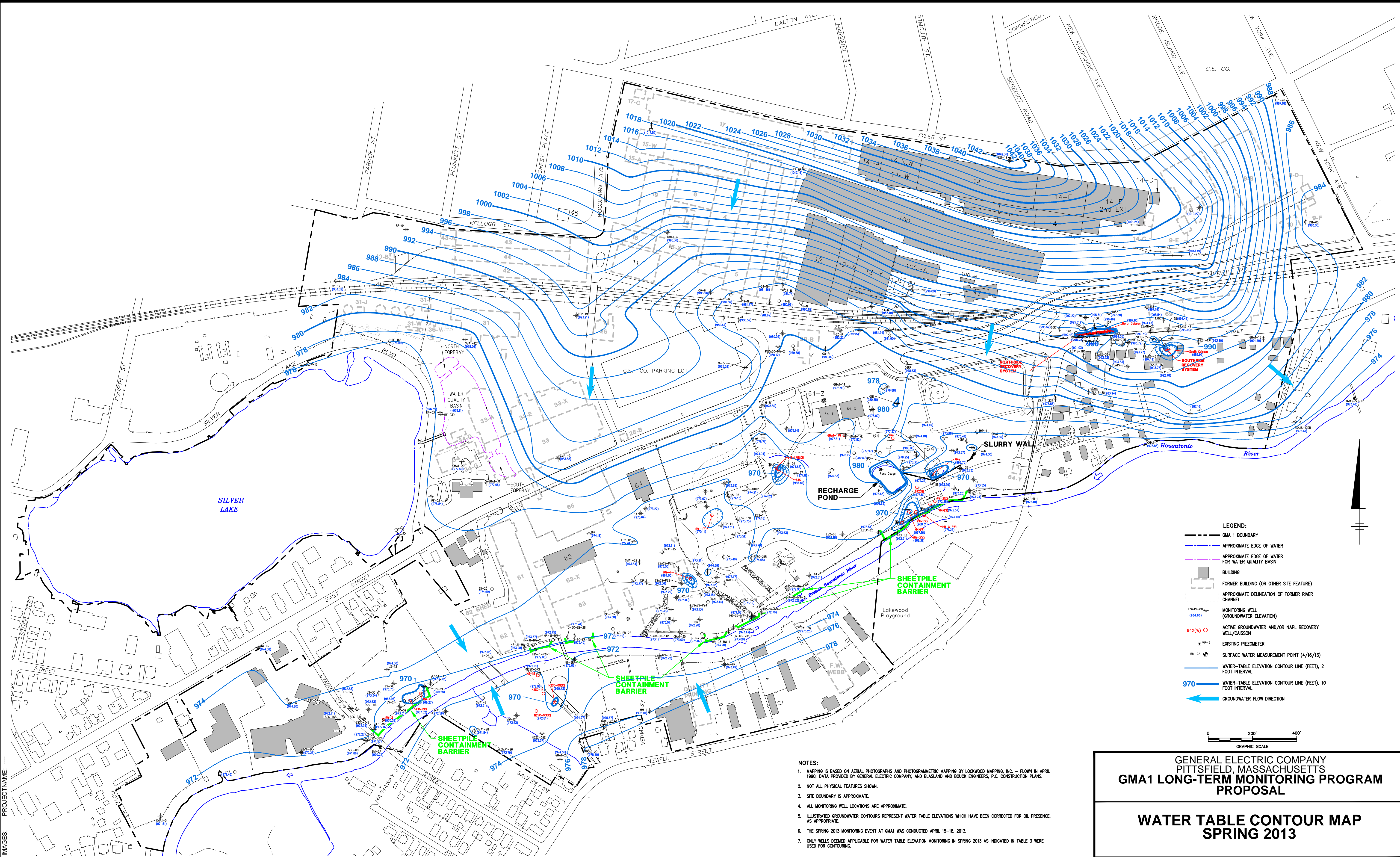
**GMA 1 SITE PLAN**

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- NOTES:**
1. MAPPING IS BASED ON AERIAL PHOTOGRAPHS AND PHOTOGRAHMETRIC MAPPING BY LOCKWOOD MAPPING, INC. - FLOWN IN APRIL 1990; DATA PROVIDED BY GENERAL ELECTRIC COMPANY, AND BLASLAND AND BUCK ENGINEERS, P.C. CONSTRUCTION PLANS.
  2. NOT ALL PHYSICAL FEATURES SHOWN.
  3. SITE BOUNDARY IS APPROXIMATE.
  4. ALL MONITORING WELL LOCATIONS ARE APPROXIMATE.
  5. ILLUSTRATED GROUNDWATER CONTOURS REPRESENT WATER TABLE ELEVATIONS WHICH HAVE BEEN CORRECTED FOR OIL PRESENCE, AS APPROPRIATE.
  6. THE SPRING 2013 MONITORING EVENT AT GMA1 WAS CONDUCTED APRIL 15-18, 2013.
  7. ONLY WELLS DEEMED APPLICABLE FOR WATER TABLE ELEVATION MONITORING IN SPRING 2013 AS INDICATED IN TABLE 3 WERE USED FOR CONTOURING.

GENERAL ELECTRIC COMPANY  
 PITTSFIELD, MASSACHUSETTS  
**GMA1 LONG-TERM MONITORING PROGRAM  
 PROPOSAL**

**WATER TABLE CONTOUR MAP  
 SPRING 2013**

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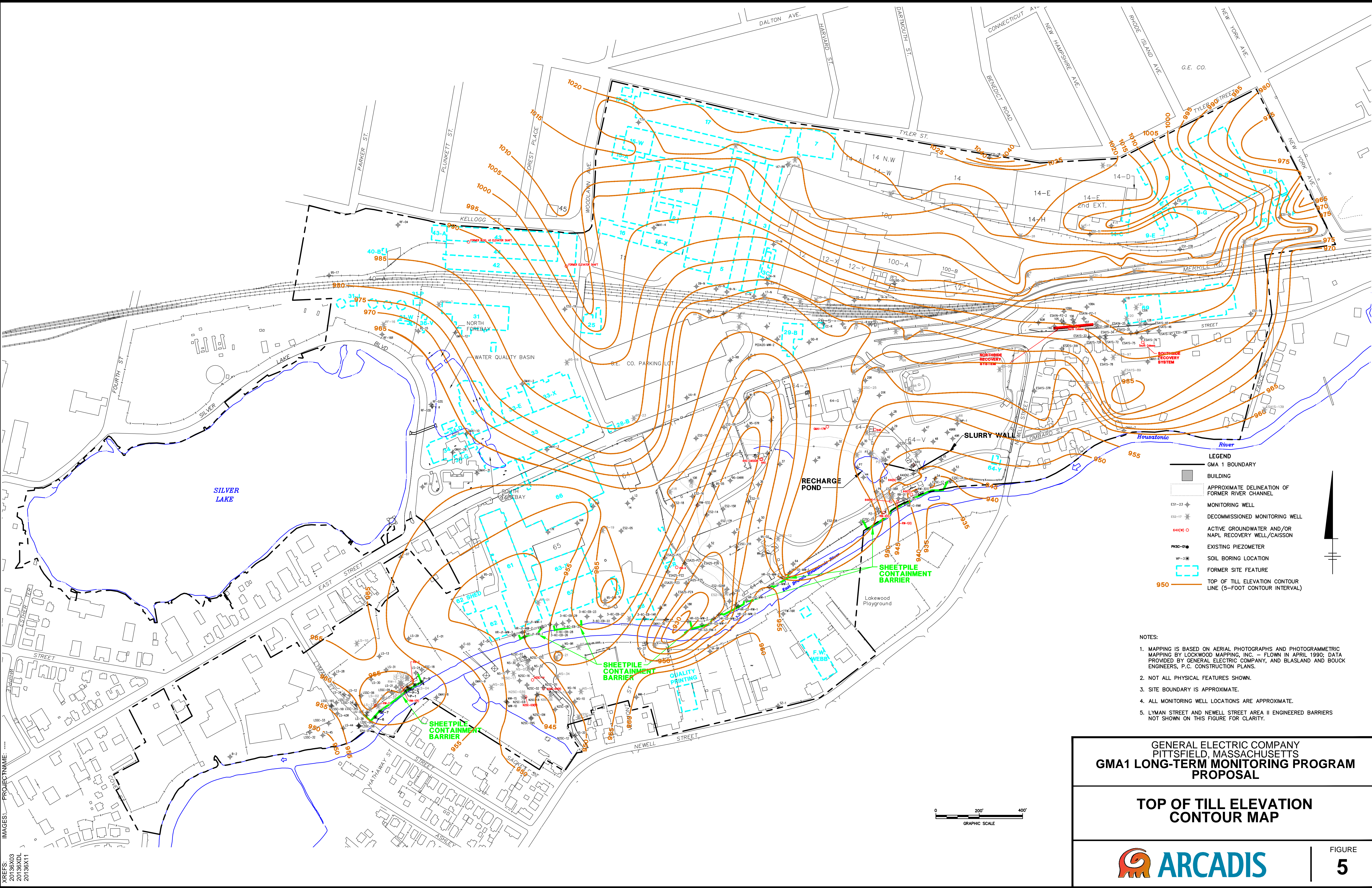
FIGURE  
**3**





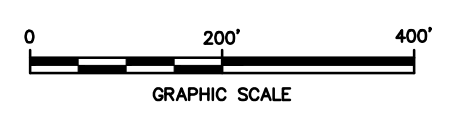


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- LEGEND**
- GMA 1 BOUNDARY
  - BUILDING
  - - - APPROXIMATE DELINEATION OF FORMER RIVER CHANNEL
  - ES1-23 ◉ MONITORING WELL
  - ES2-17 ◉ DECOMMISSIONED MONITORING WELL
  - ES4-10 ◉ ACTIVE GROUNDWATER AND/OR NAPL RECOVERY WELL/CAISSON
  - PS3C-01 ◉ EXISTING PIEZOMETER
  - W-31 ◉ SOIL BORING LOCATION
  - ◉ FORMER SITE FEATURE
  - 950 — TOP OF TILL ELEVATION CONTOUR LINE (5-FOOT CONTOUR INTERVAL)

- 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. ALL MONITORING WELL LOCATIONS ARE APPROXIMATE.
  5. LYMAN STREET AND NEWELL STREET AREA II ENGINEERED BARRIERS NOT SHOWN ON THIS FIGURE FOR CLARITY.



GENERAL ELECTRIC COMPANY  
 PITTSFIELD, MASSACHUSETTS  
**GMA1 LONG-TERM MONITORING PROGRAM  
 PROPOSAL**

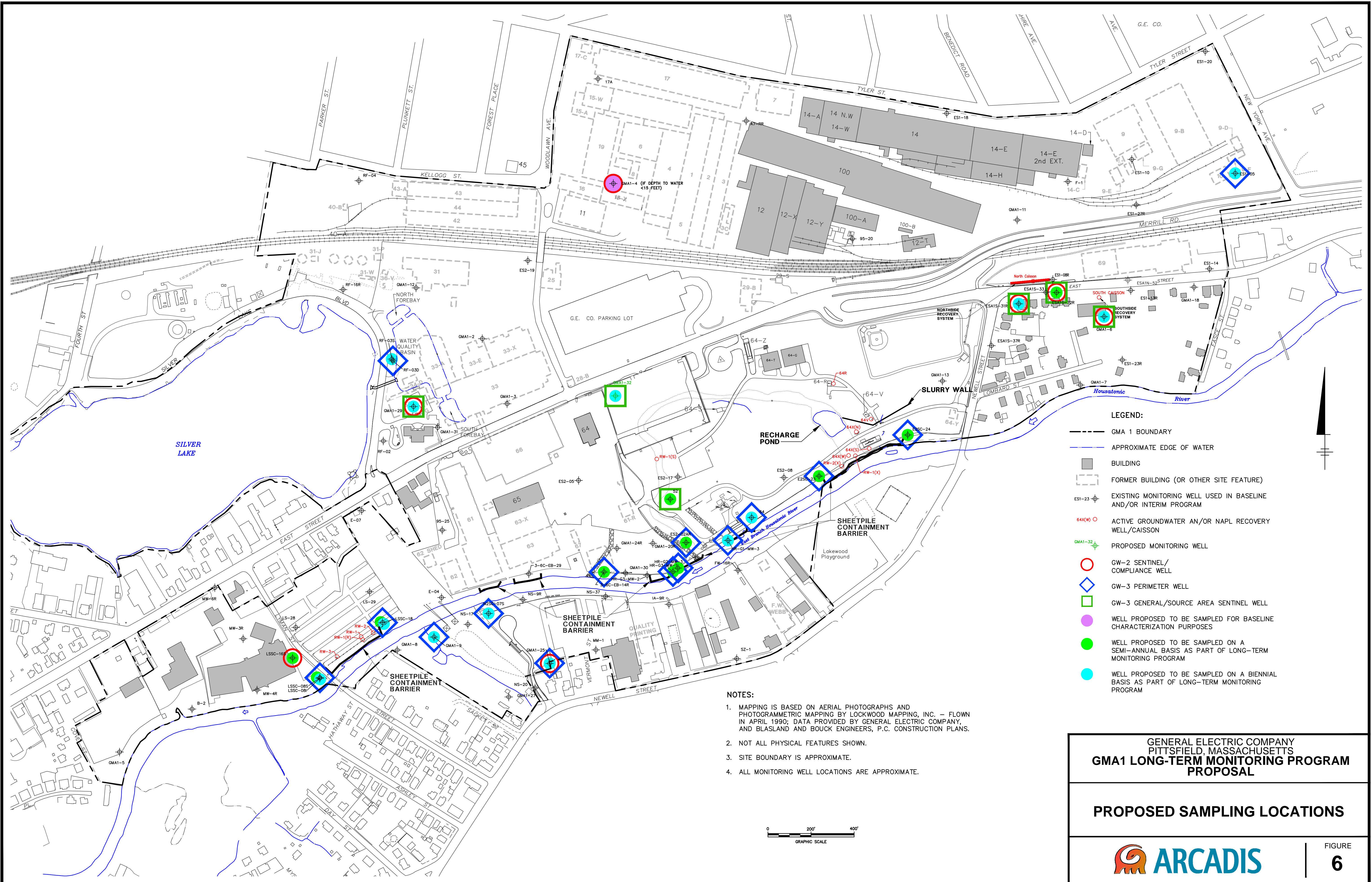
**TOP OF TILL ELEVATION  
 CONTOUR MAP**

**ARCADIS**

FIGURE  
**5**



CITY: Syracuse DIV/GROUP: EnvCAD DE: A.Schilling LD: A.Schilling PM: P.Keeney TM: N.Smith LTR: ON="OFF"="REF" G:\GE\ENVCAD\SYRACUSE\ACT\B020136\00030006\DWG\GMA1\TMP\20136B05.DWG LAYOUT: 6 SAVED: 7/11/2014 10:29 AM ACADVER: 18.15 (LMS TECH) PAGES: 18 PLOT: PLT\GMA1\GMA1-10-2014-11-54.AM BY: SCHILLING, ADAM

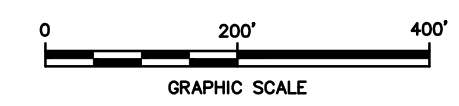


**LEGEND:**

- GMA 1 BOUNDARY
- APPROXIMATE EDGE OF WATER
- BUILDING
- FORMER BUILDING (OR OTHER SITE FEATURE)
- ESI-23 EXISTING MONITORING WELL USED IN BASELINE AND/OR INTERIM PROGRAM
- 64X(W) ○ ACTIVE GROUNDWATER AN/OR NAPL RECOVERY WELL/CAISSON
- GMA1-32 PROPOSED MONITORING WELL
- GW-2 SENTINEL/ COMPLIANCE WELL
- ◇ GW-3 PERIMETER WELL
- GW-3 GENERAL/SOURCE AREA SENTINEL WELL
- WELL PROPOSED TO BE SAMPLED FOR BASELINE CHARACTERIZATION PURPOSES
- WELL PROPOSED TO BE SAMPLED ON A SEMI-ANNUAL BASIS AS PART OF LONG-TERM MONITORING PROGRAM
- WELL PROPOSED TO BE SAMPLED ON A BIENNIAL BASIS AS PART OF LONG-TERM MONITORING PROGRAM

**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.
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3. SITE BOUNDARY IS APPROXIMATE.
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**GENERAL ELECTRIC COMPANY  
PITTSFIELD, MASSACHUSETTS  
GMA1 LONG-TERM MONITORING PROGRAM  
PROPOSAL**

**PROPOSED SAMPLING LOCATIONS**







**General Electric Company  
Pittsfield, Massachusetts**

**Baseline Assessment Final Report  
and Long-Term Monitoring  
Program Proposal for  
Groundwater Management Area 1**

**Volume II of II**

July 2014

**Volume II – Appendices**

- A Field Monitoring and Sampling Data
- B Data Validation Reports
- C Groundwater Analytical Results – Spring and Fall 2013
- D Summaries of Historical Analytical Groundwater Data
- E Time vs. Concentration Graphs for Selected Historical Data
- F Monitoring Results for Adjacent MCP Disposal Site



**Appendices**



**Appendix A**

Field Monitoring and Sampling  
Data

**Table A-1  
Monitoring Well Inventory Summary**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts**

Well Name	Date(s) of Inventory	As-Built Depth to Bottom <sup>(2)</sup> (ft BMP)	Fall 2013 Measured Depth (ft BMP)	Maintenance Comments Noted During Inventory	Areas Identified for Follow-up in Spring/Fall 2013			Date(s) of Completed Maintenance	Completed Maintenance
					Outer Casing Maintenance (Replace Bolts, washers, Cover, gasket , Lid, Road box)	Inner Casing Maintenance (Modify Riser, Mark MP, Replace J-Plug, Re-survey)	General Maintenance (Label well ID, replace lock, sediment removal)		
<b>30s Complex</b>									
GMA1-29	1. 4/16/2013 2. 10/22/2013	20.86	20.70	1. Sediment on probe. 2. None.					
RF-03S	1. 4/16/2013 2. 10/22/13	15.84	15.04	1. Remark MP, secure PVC stick-up, resurvey, hard bottom . 2. Attempt sediment removal.		Remark MP, secure PVC detachment.	Attempt sediment removal.	1. 4/24/2013, 7/31/13, 10/1/2013 2. 10/30/13	1. Remarked MP, replaced gasket (4/24/13) PCV riser secured (7/31/13), Well resurveyed (10/1/2013). 2. Sediment removal completed (10/30/13).
<b>East Street Area 2-South</b>									
52	1. 4/15/2013 2. 10/21/2013	27.36	27.17	1. Replace lock, elevated turbidity, attempt redevelopment. 2. None.			Develop well and replace lock.	1. 9/5/2013	1. Well developed, lock replaced.
E2SC-23	1. 4/15/2013 2. 10/21/2013	20.97	21.23	1. None. 2. None.					
E2SC-24	1. 4/15/2013 2. 10/21/2013	22.00	21.65	1. Replace lock, sediment on probe. 2. None.			Replace lock.	1. 5/15/2013	1. Replaced lock.
3-6C-EB-14R	1. 4/15/2013 2. 10/21/2013	20.33	20.22	1. None. 2. Needs lock.			Needs lock.	2. 10/21/2013	2. Lock added.
ES2-02AR	1. 4/15/2013 2. 10/21/2013	17.94	17.76	1. None. 2. None.					
GMA1-30	1. 4/15/2013 2. 10/21/2013	19.44	27.17	1. Soft bottom. 2. Needs lock.			Needs lock.	2. 10/21/2013	2. Lock added.
HR-G3-MW-1	1. 4/15/2013 2. 10/21/2013	17.34	17.71	1. Located inside fence, different from figure location. 2. None.			Update location on figure.	1. Spring 2013	1. Figure location updated.
HR-G3-MW-2	1. 4/15/2013 2. 10/21/2013	15.06	14.86	1. Remark MP, relabel. 2. None.		Remark MP.	Relabel.	1. 7/31/2013	1. Remarked MP, relabeled.
<b>East Street Area 2-North</b>									
ES1-27R	1. 4/16/2013 2. 10/22/2013	19.08	19.22	1. None. 2. None.					
GMA1-4	1. 4/16/2013 2. 10/22/2013	19.91	19.95	1. Remark MP. 2. None.		Remark MP.		1. 4/22/2013	1. Remarked MP.
<b>East Street Area 1-South</b>									
ESA1S-31R	1. 4/16/2013 2. 10/22/2013	15.27	14.91	1. Relabel, retap bolts. 2. None.	Retap bolts.		Relabel.	1. 4/22/2013	1. Relabeled, retapped bolts.
ESA1S-72R	1. 4/16/2013 2. 10/22/2013	13.55	13.50	1. Replace bolt, washers and lock, retap bolts, remove sediment. 2. None.	Replace bolt, washers, retap.		Perform sediment removal, relabel, replace lock.	1.4/22/2013, 5/1/2013, 5/15/2013, 6/27/2013	1. Replaced bolt and washers, relabeled (4/22/2013) Replaced lock (5/1/2013) Retapped bolts (5/15/2013) Attempted sediment removal via air lifting; final DTB is 13.50', hard bottom (6/27/2013).
GMA1-6	1. 4/16/2013 2. 10/22/2013	14.71	15.22	1. None. 2. None.					
<b>Lyman Street Area</b>									
LSSC-08S	1. 4/16/2013 2. 10/22/2013	14.47	14.67	1. Soft bottom. 2. Location flagged.					
LSSC-16S	1. 4/16/2013 2. 10/22/2013	14.83	13.99	1. Soft bottom. 2. None.					
LSSC-18	1. 4/16/2013 2. 10/22/2013	22.53	22.52	1. Soft bottom, replace lock and relabel. 2. None.			Relabel, replace lock.	1. 5/1/2013	1. Replaced lock, relabeled.

**Table A-1  
Monitoring Well Inventory Summary**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts**

Well Name	Date(s) of Inventory	As-Built Depth to Bottom <sup>(2)</sup> (ft BMP)	Fall 2013 Measured Depth (ft BMP)	Maintenance Comments Noted During Inventory	Areas Identified for Follow-up in Spring/Fall 2013			Date(s) of Completed Maintenance	Completed Maintenance
					Outer Casing Maintenance (Replace Bolts, washers, Cover, gasket , Lid, Road box)	Inner Casing Maintenance (Modify Riser, Mark MP, Replace J-Plug, Re-survey)	General Maintenance (Label well ID, replace lock, sediment removal)		
<b>Newell Street Area II</b>									
GMA1-9	1. 4/16/2013 2. 11/13/2013	20.36	21.41	1. Replace lock, soft bottom. 2. None.			Replace lock.	1. 5/1/2013	1. Replaced lock.
GMA1-25	1. 4/16/2013 2. 11/13/2013	17.71	17.35	1. Hard bottom. 2. None.					
N2SC-07	1. 4/16/2013 2. 11/13/2013	36.43	36.27	1. Replace bolts and washers replace well lid, lock, modify riser resurvey and relabel. 2. None.	Replace bolts , lid, and washers.	Modify riser, resurvey.	Replace lock, relabel.	1. 4/12/2013, 4/24/2013 5/14/2013, 7/12/2013	1.Replaced bolts and washers (4/12/2013) replaced lock and lid, modified riser (4/24/2013) relabelled (5/14/2013) resurveyed (7/12/2013).

**NOTES:**

1. ft BMP - Feet Below Measuring Point
2. As-built depth based on original well construction details.
3. NA- Indicates well specifications/measurement is not available for calculation.NM-Indicate that well was not monitored.
4. Inventory completed on wells determined to have maintenance issues.

**Table A-2  
East Branch Housatonic River at Coltsville, MA River Discharge**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts**

Date	Maximum Discharge (cfs)	Minimum Discharge (cfs)	Comments
01/03/13	68	43	Lyman and Newell Street Bridge Gauges Monitored
01/08/13	68	39	Lyman and Newell Street Bridge Gauges Monitored
01/18/13	141	93	Lyman and Newell Street Bridge Gauges Monitored
01/22/13	89	71	Lyman and Newell Street Bridge Gauges Monitored
01/30/13	192	66	Lyman and Newell Street Bridge Gauges Monitored
02/05/13	136	122	Lyman and Newell Street Bridge Gauges Monitored
02/13/13	101	95	Lyman and Newell Street Bridge Gauges Monitored
02/19/13	80	61	Lyman and Newell Street Bridge Gauges Monitored
02/26/13	64	58	Lyman and Newell Street Bridge Gauges Monitored
03/04/13	75	66	Lyman and Newell Street Bridge Gauges Monitored
03/13/13	492	357	Lyman and Newell Street Bridge Gauges Monitored
03/19/13	103	93	Lyman and Newell Street Bridge Gauges Monitored
03/27/13	80	59	Lyman and Newell Street Bridge Gauges Monitored
04/01/13	232	153	Semi-annual Bailing Round
04/02/13	245	180	Semi-annual Bailing Round
04/03/13	192	141	Lyman and Newell Street Bridge Gauges Monitored Semi-annual Bailing Round
04/08/13	186	146	All 3 Bridge Gauges Monitored
04/09/13	258	189	Maintenance Performed, Bridge Gauges Monitored
04/10/13	317	258	All 3 Bridge Gauges Monitored
04/11/13	349	255	All 3 Bridge Gauges Monitored
04/12/13	294	241	Maintenance Performed, Bridge Gauges Monitored
04/15/13	248	192	Semi-annual Monitoring Event, Bridge Gauges Monitored, Maintenance Performed
04/16/13	192	177	Semi-annual Monitoring Event, Bridge Gauges Monitored, Maintenance Performed
04/17/13	235	195	Semi-annual Monitoring Event, Bridge Gauges Monitored, Maintenance Performed
04/18/13	219	146	Semi-annual Monitoring Event, Bridge Gauges Monitored, Maintenance Performed
04/19/13	159	129	Maintenance Performed
04/22/13	166	113	Maintenance Performed, Bridge Gauges Monitored, Semi-annual Sampling Event
04/23/13	113	99	Bridge Gauges Monitored, Semi-annual Sampling Event
04/24/13	101	89	Maintenance Performed, Bridge Gauges Monitored, Semi-annual Sampling Event
04/25/13	97	75	All 3 Bridge Gauges Monitored
04/26/13	75	61	All 3 Bridge Gauges Monitored
04/29/13	46	42	All 3 Bridge Gauges Monitored
04/30/13	43	39	Lyman and Newell Street Bridge Gauges Monitored
05/01/13	40	36	Semi Annual Riverbank Inspection and Maintenance Performed
05/02/13	37	35	Maintenance Performed
05/03/13	36	33	Maintenance Performed
05/07/13	40	27	Maintenance Performed, Lyman and Newell Street Bridge Gauges Monitored
05/09/13	46	40	Maintenance Performed
05/14/13	84	59	Maintenance Performed, Lyman and Newell Street Bridge Gauges Monitored
05/15/13	61	51	Maintenance Performed
05/17/13	46	38	Maintenance Performed
05/18/13	37	33	Maintenance Performed
05/20/13	35	31	Lyman and Newell Street Bridge Gauges Monitored
05/29/13	374	131	Lyman and Newell Street Bridge Gauges Monitored
06/04/13	91	69	Lyman and Newell Street Bridge Gauges Monitored
06/11/13	1,110	306	Maintenance Performed
06/12/13	1,100	533	Maintenance Performed, Lyman and Newell Street Bridge Gauges Monitored
06/14/13	1,340	874	High Flow Event Occurred
06/20/13	136	111	Lyman and Newell Street Bridge Gauges Monitored High Flow River Bank Inspection

**Table A-2  
East Branch Housatonic River at Coltsville, MA River Discharge**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts**

Date	Maximum Discharge (cfs)	Minimum Discharge (cfs)	Comments
06/24/13	146	75	Lyman and Newell Street Bridge Gauges Monitored
06/26/13	107	89	Maintenance Performed
06/27/13	97	82	Maintenance Performed, Bridge Gauges Monitored
06/28/13	172	97	Maintenance Performed
06/29/13	164	113	Maintenance Performed
07/01/13	134	95	Lyman Street Bridge Gauge Monitored
07/02/13	134	95	Newell Street Bridge Gauge Monitored
07/08/13	51	49	Lyman Street Bridge Gauge Monitored
07/10/13	122	91	Newell Street Bridge Gauge Monitored
07/12/13	99	82	Maintenance Performed
07/16/13	66	58	Lyman and Newell Street Bridge Gauges Monitored
07/23/13	56	42	All 3 Bridge Gauges Monitored
07/30/13	30	12	Lyman Street Bridge Gauge Monitored
07/31/13	24	14	Newell Street Bridge Gauge Monitored, Maintenance Performed
08/07/13	22	18	Newell Street Bridge Gauge Monitored
08/08/13	25	15	Lyman Street Bridge Gauge Monitored
08/12/13	44	30	Lyman Street Bridge Gauge Monitored
08/14/13	80	66	Newell Street Bridge Gauge Monitored
08/20/13	25	23	Newell Street Bridge Gauge Monitored
08/21/13	28	19	Lyman Street Bridge Gauge Monitored
08/26/13	39	16	Newell Street Bridge Gauge Monitored
08/27/13	46	30	Lyman Street and GMA 2 Bridge Gauge Monitored
09/03/13	169	99	Lyman Street Bridge Gauge Monitored
09/04/13	101	54	Newell Street Bridge Gauge Monitored
09/06/13	40	35	Maintenance Performed
09/11/13	43	25	Lyman and Newell Street Bridge Gauges Monitored
09/16/13	62	44	Lyman Street Bridge Gauge Monitored
09/18/13	42	33	Newell Street Bridge Gauge Monitored
09/23/13	302	175	Lyman Street Bridge Gauge Monitored
09/25/13	210	50	Newell Street and GMA 2 Bridge Gauges Monitoring
09/26/13	235	69	Newell Street Bridge Gauge Monitored
09/30/13	28	22	Semi-annual Bailing Round
10/01/13	27	23	Semi-annual Bailing Round
10/02/13	27	23	Semi-annual Bailing Round, Lyman Street Bridge Monitored
10/03/13	36	19	Semi-annual Bailing Round
10/04/13	73	24	Semi-annual Bailing Round, All 3 Bridge Gauges Monitored
10/07/13	161	37	Groundwater samples collected, All 3 Bridge Gauges Monitored
10/08/13	156	107	Groundwater samples collected, All 3 Bridge Gauges Monitored
10/09/13	111	62	All 3 Bridge Gauges Monitored
10/10/13	71	43	All 3 Bridge Gauges Monitored
10/11/13	53	35	All 3 Bridge Gauges Monitored
10/14/13	32	30	All 3 Bridge Gauges Monitored
10/15/13	36	28	All 3 Bridge Gauges Monitored
10/16/13	36	31	All 3 Bridge Gauges Monitored
10/17/13	35	29	All 3 Bridge Gauges Monitored
10/18/13	35	30	All 3 Bridge Gauges Monitored
10/21/13	44	40	Semi-annual Monitoring Event, All 3 Bridge Gauges Monitored, Maintenance Performed
10/22/13	47	40	Semi-annual Monitoring Event, All 3 Bridge Gauges Monitored
10/23/13	47	42	Semi-annual Monitoring Event, All 3 Bridge Gauges Monitored
10/24/13	46	40	Semi Annual Riverbank Inspection Performed
10/28/13	73	66	All 3 Bridge Gauges Monitored
10/29/13	75	54	All 3 Bridge Gauges Monitored
10/30/13	64	49	All 3 Bridge Gauges Monitored
10/31/13	86	44	All 3 Bridge Gauges Monitored
11/01/13	120	82	All 3 Bridge Gauges Monitored
11/04/13	73	46	Lyman Street Bridge Gauge Monitored
11/05/13	68	42	Newell Street Bridge Gauge Monitored
11/12/13	59	53	Lyman Street Bridge Gauge Monitored



**Table A-2  
East Branch Housatonic River at Coltsville, MA River Discharge**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts**

<b>Date</b>	<b>Maximum Discharge (cfs)</b>	<b>Minimum Discharge (cfs)</b>	<b>Comments</b>
11/13/13	54	50	Supplemental groundwater monitoring performed at Newell I and Newell II, All 3 Bridge Gauges Monitored
11/14/13	51	49	Newell Street Bridge Gauge Monitored
11/18/13	80	38	Lyman Street Bridge Gauge Monitored
11/19/13	66	44	Newell Street Bridge Gauge Monitored
11/25/13	37	22	Newell Street Bridge Gauge Monitored
11/27/13	478	43	All 3 Bridge Gauges Monitored

NOTES:

1. cfs - cubic feet per second.
2. Data obtained from the USGS Real-Time Water Data for Massachusetts Web Interface.
3. Location: Lat 42°28'10", long 73°11'49", Berkshire County, Hydrologic Unit 01100005, on right bank 250 ft downstream from Hubbard Avenue Bridge at Coltsville, 1.2 mi upstream from Unkamet Brook, and 2 mi northeast of Pittsfield. Prior to Nov. 8, 1994, at site 200 ft upstream.
4. The Spring 2013 monitoring event was conducted between April 15, 2013 and April 18, 2013 and the Fall 2013 monitoring event was conducted between October 21, 2013 and October 23, 2013 With a supplemental groundwater monitoring event taking place at Newell Street Area I and II on November 13, 2013.

**Table A-3  
East Branch Housatonic River Elevations**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts**

<b>Date</b>	<b>BM-2A River Elevation (ft AMSL)</b>	<b>GMA2-SG-1R River Elevation (ft AMSL)</b>	<b>SG-HR-1 River Elevation (ft AMSL)</b>	<b>Event</b>
04/15/13	970.88	973.62	972.27	Semi-annual Monitoring Event
04/16/13	970.72	973.46	972.10	Semi-annual Monitoring Event
04/17/13	970.97	973.79	972.40	Semi-annual Monitoring Event
04/18/13	970.83	973.49	972.00	Semi-annual Monitoring Event
04/22/13	NM	NM	NM	Spring 2013 Semi-Annual Sampling Event
04/23/13	NM	NM	971.68	Spring 2013 Semi-Annual Sampling Event
04/24/13	970.26	NM	NM	Spring 2013 Semi-Annual Sampling Event
10/07/13	970.34	973.00	971.42	Fall 2013 Supplemental Sampling Event
10/08/13	970.75	973.50	971.89	Fall 2013 Supplemental Sampling Event
10/21/13	969.99	972.84	971.05	Semi-annual Monitoring Event
10/22/13	969.99	972.82	971.11	Semi-annual Monitoring Event
10/23/13	970.00	972.82	971.03	Semi-annual Monitoring Event
11/13/13	969.82	972.77	970.99	Supplemental groundwater monitoring performed at Newell I and Newell II

**NOTE:**

1. NM - Not Monitored.

**Table A-4  
Summary of Hydraulic Conductivity Data**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company- Pittsfield, Massachusetts**

Well ID	Hydraulic Conductivity		
	(centimeters / second)	(feet / minute)	(feet / day)
<b>40s Complex Monitoring Well</b>			
RF-04	1.242E-03	2.445E-03	3.5
<b>30s Complex Monitoring Wells</b>			
GMA1-3	1.150E-04	2.264E-04	0.3
RF-03	2.818E-02	5.549E-02	79.9
<b>20s Complex Monitoring Well</b>			
U	1.113E-02	2.191E-02	31.6
<b>East Street Area 1-South Monitoring Well</b>			
GMA1-7	2.219E-03	4.369E-03	6.3
<b>East Street Area 2-South Monitoring Well</b>			
ES2-07	1.441E-02	2.837E-02	40.9
<b>East Street Area 2-North Monitoring Wells</b>			
17A	1.878E-02	3.698E-02	53.2
ES1-05	5.927E-04	1.167E-03	1.7
<b>Newell Street Area II Monitoring Wells</b>			
N2SC-07	1.544E-03	3.040E-03	4.4
N2SC-07S	2.033E-02	4.003E-02	57.6
NS-09	1.294E-02	2.548E-02	36.7
NS-20	1.078E-02	2.123E-02	30.6

**NOTES:**

- '1. Hydraulic conductivity testing was performed at the listed wells between August 15 and 17, 2001.
- '2. Hydraulic conductivities were determined by applying the Bower-Rice solution for unconfined aquifers using AQTESOLV software.



**Appendix A-1**

Spring 2013 Sampling Logs

**GROUNDWATER SAMPLING LOG**

Well No. E2SC-23  
 Key No. FX-37  
 PID Background (ppm) 0.0  
 Well Headspace (ppm) 0.0

Site/GMA Name East Area 2 South - GMA1  
 Sampling Personnel T. Martin, R. Hensel  
 Date 4/22/13  
 Weather Sunny - 50°F

**WELL INFORMATION**

Reference Point Marked? Y N  
 Height of Reference Point 2.5 Meas. From BGS  
 Well Diameter 2 in  
 Screen Interval Depth 11-21' Meas. From TIC  
 ~ Water Table Depth 16.41 Meas. From TIC  
 #8 Offset + Well Depth 21.2 Meas. From TIC  
 Length of Water Column 4.79  
 Volume of Water in Well 0.782  
 Intake Depth of Pump/Tubing ~19 Meas. From TIC

Sample Time 1710  
 Sample ID E2SC-23  
 Duplicate ID Dup 042213-Gma1-Dup  
 MS/MSD -042213-  
 Split Sample ID -

Reference Point Identification:  
 TIC: Top of Inner (PVC) Casing  
 TOC: Top of Outer (Protective) Casing  
 Grade/BGS: Ground Surface

Redevelop? Y (N)  
 Additional well maintenance needed? Y (N) (if yes, describe below)  
 Did the water level stabilize? (Y) N Drawdown 1.37 ft

Required	Analytical Parameters:	Collected
( )	VOCs (Standard List)	( )
( )	VOCs (Expanded List)	( )
( )	SVOCs	( )
( )	PCBs (Unfiltered)	( )
( )	PCBs (Filtered)	( )
( )	Metals/Inorganics (Unfiltered)	( )
( )	Metals/Inorganics (Filtered)	( )
( )	Total Cyanide (Unfiltered)	( )
( )	Total Cyanide (Filtered)	( )
( )	PAC Cyanide (Filtered)	( )
( )	PCDDs/PCDFs	( )
( )	Pesticides/Herbicides	( )
( )	Natural Attenuation	( )
( )	Other (Specify)	( )

Lead Dup-Lead 1

**EVACUATION INFORMATION**

Pump Start Time 1455  
 Pump Stop Time 1700  
 Minutes of Pumping 135  
 Volume of Water Removed ~35 gal  
 Did Well Go Dry? Y (N)

Evacuation Method: Bailer ( ) Bladder Pump (X)  
 Peristaltic Pump ( ) Submersible Pump ( ) Other/Specify ( )  
 Pump Type: QED Bladder  
 Samples collected by same method as evacuation? (Y) N (specify)

Water Quality Meter Type(s) / Serial Numbers: Waterlevel #8, ysi #4 Hatch 02100002832

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
1455	200		16.51		8.24		3		
* 1500	120		16.67	9.5	7.08	0.531	3	6.14	35.8
1505	80		16.79	9.5	7.06	0.536	2	5.60	27.7
1510	80		16.98	9.3	7.09	0.539	1	5.33	30.5
1515	80		16.88	9.2	7.06	0.540	1	5.14	33.4
1520	80		16.90	9.2	7.09	0.543	1	5.07	35.0
1525	80		16.97	9.2	7.10	0.546	1	4.84	35.9
1530	80		17.03	9.1	7.10	0.549	1	4.77	37.6

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

**OBSERVATIONS/SAMPLING METHOD DEVIATIONS**

Initial Pump Clear odorless fine red pump same as initial  
\* Hooked up ysi @ 1500

**SAMPLE DESTINATION**

Laboratory: Acadest  
 Delivered Via: UPS  
 Airbill #: \_\_\_\_\_

Field Sampling Coordinator: [Signature]

**GROUNDWATER SAMPLING LOG**

Well No. E2 SC-23

Site/GMA Name East Area 2 South GMA1  
 Sampling Personnel T. Martin, R. Henzel  
 Date 4/22/13  
 Weather Sunny ~ 90° F

WELL INFORMATION - See Page 1

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (R TIC)	Temp. (Celsius) [3%]*	pH (0.1 units)*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
1535	70		17.07	9.2	7.09	.552	1	4.28	35.7
1540	70		17.11	9.1	7.09	.557	1	4.08	34.9
1545	150		17.19	8.8	7.10	.560	1	4.03	35.2
1550	125		17.31	8.8	7.08	.562	1	3.79	35.0
1555	125		17.41	8.7	7.07	.572	1	3.09	33.8
1600	80		17.46	9.0	7.06	.576	1	3.03	31.5
1605	70		17.48	9.0	7.05	.579	1	2.75	28.9
1610	70		17.50	9.0	7.01	.578	1	2.71	28.4
1615	60		17.45	9.0	7.09	.580	1	2.56	27.0
1620	60		17.52	8.9	7.06	.584	1	2.36	25.3
1625	125		17.60	8.6	7.08	.579	1	2.65	26.6
1630	125		17.70	8.5	7.06	.583	1	2.40	27.3
1635	60		17.80	8.5	7.04	.588	1	2.00	24.1
1640	60		17.84	8.8	7.07	.593	1	1.80	20.2
1645	60		17.88	8.5	7.07	0.595	1	1.86	13.8
1650	60		17.88	8.7	7.05	0.594	1	1.75	9.8
1655	60		17.88	8.7	7.07	.597	1	1.71	8.2
1700	60	↓	17.88	8.7	7.07	.596	1	1.81	8.1
1705	60	3.5g	17.88	8.6	7.07	.595	1	1.81	7.9
ALL Parameters Stable Sample @ 1710									

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

OBSERVATIONS/SAMPLING METHOD DEVIATIONS

1545 - Turned Pump up to find Rate of Recharge. as indicated in Sp 2012  
Sample Event

GROUNDWATER SAMPLING LOG

Well No. E2SC-24  
 Key No. 2537 Master  
 PID Background (ppm) 0.0  
 Well Headspace (ppm) ---

Site/GMA Name GMA 1 East Street Area 2 South  
 Sampling Personnel Chris Kassel, Chioma Enechukwu  
 Date 04/22/13  
 Weather 60's Sunny

WELL INFORMATION

Reference Point Marked? (Y) N  
 Height of Reference Point 2" Meas. From TIC  
 Well Diameter 2"  
 Screen Interval Depth 10.9 - 20.9 Meas. From TIC  
 Water Table Depth 14.95 Meas. From TIC  
 Well Depth 21.49 Meas. From TIC  
 Length of Water Column 6.78 Meas. From TIC  
 Volume of Water in Well 1.105 gallons  
 Intake Depth of Pump/Tubing 18" Meas. From TIC

Sample Time 18.05 17:30  
 Sample ID E2SC-24  
 Duplicate ID E2SC-24 GMA1-DAP041  
 MS/MSD E2SC-24 MS/MSD -2  
 Split Sample ID --- ck ck

Required	Analytical Parameters:	Collected
( )	VOCs (Standard List)	( )
( )	VOCs (Expanded List)	( )
( )	SVOCs	( )
( )	PCBs (Unfiltered)	( )
( )	PCBs (Filtered)	( )
( )	Metals/Inorganics (Unfiltered)	( )
( )	Metals/Inorganics (Filtered)	( )
( )	Total Cyanide (Unfiltered)	( )
( )	Total Cyanide (Filtered)	( )
( )	PAC Cyanide (Filtered)	( )
( )	PCDDs/PCDFs	( )
( )	Pesticides/Herbicides	( )
( )	Natural Attenuation	( )
( )	Other (Specify)	( )

Dup/MG/MS 4 total

Reference Point Identification:  
 TIC: Top of Inner (PVC) Casing  
 TOC: Top of Outer (Protective) Casing  
 Grade/BGS: Ground Surface

Redevelop? Y (N)  
 Additional well maintenance needed? (Y) N (if yes, describe below) needs lock  
 Did the water level stabilize? (Y) N Drawdown 0.1'

EVACUATION INFORMATION

Pump Start Time 15:18  
 Pump Stop Time 17:25  
 Minutes of Pumping 127  
 Volume of Water Removed 59 gallons  
 Did Well Go Dry? Y (N)

Evacuation Method: Bailer ( ) Bladder Pump (X)  
 Peristaltic Pump ( ) Submersible Pump (X) Other/Specify ( )  
 Pump Type: QED Sample Pro  
 Samples collected by same method as evacuation? (Y) N (specify)

Water Quality Meter Type(s) / Serial Numbers: Water level Meter #6, YSI 556MPS 03M0230AC # 2  
2'00" turbidimeter 94110000 6523

Time	Pump Rate (L/min)	Total Gallons Removed	Water Level (ft. TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
1520	0.125	X	14.99				116.0		
1525	0.125		15.05				64.9		
1530	0.125		15.05				58.6		
1535	0.125		15.05				48.53.0		
1540	---		15.05				42.0		
1545	0.100		15.05	10.59	6.71	1.030	38.5	7.05	-40.8
1550	0.100		15.05	10.26	6.62	1.035	33.0	6.37	-44.2
1555	0.100	↓	15.05	10.19	6.68	1.042	31.3	6.54	-50.0

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

OBSERVATIONS/SAMPLING METHOD DEVIATIONS

initial purge CD for less with suspended particulate matter present through pumping, decreased in conc. as pumping progressed, needs lock

SAMPLE DESTINATION

Laboratory: Accutest  
 Delivered Via: UPS  
 Airbill #:

Field Sampling Coordinator: [Signature]





**GROUNDWATER SAMPLING LOG**

Well No. ESA 25-52  
 Key No. -  
 PID Background (ppm) -  
 Well Headspace (ppm) -

Site/GMA Name GMA-1  
 Sampling Personnel TRM / CMK  
 Date 4/24/13  
 Weather sunny ~ 65° F

**WELL INFORMATION**

Reference Point Marked?  Y  N  
 Height of Reference Point - Meas. From Grade  
 Well Diameter 2'  
 Screen Interval Depth 4.1-24.1 Meas. From TIC  
 Water Table Depth 15.15 Meas. From TIC  
 Well Depth 27.40 Meas. From \_\_\_\_\_  
 Length of Water Column 12.25  
 Volume of Water in Well 2.0 gallons  
 Intake Depth of Pump/Tubing 19.40 Meas. From TIC  
 Reference Point Identification: 17.50, see 2nd page  
 TIC Top of Inner (PVC) Casing  
 TOC Top of Outer (Protective) Casing  
 Grade/BGS Ground Surface

Sample Time (11) ~~ESA 25-52~~ 1600  
 Sample ID ESA 25-52  
 Duplicate ID GMA1-DUP-042413-4  
 MS/MSD \_\_\_\_\_  
 Split Sample ID \_\_\_\_\_

Required	Analytical Parameters	Collected
( )	VOCs (Standard List)	( )
( )	VOCs (Expanded List)	( )
( )	SVOCs	( )
( )	PCBs (Unfiltered)	( )
( X )	PCBs (Filtered)	( X ) * DUP
( )	Metals/Inorganics (Unfiltered)	( )
( )	Metals/Inorganics (Filtered)	( )
( )	Total Cyanide (Unfiltered)	( )
( )	Total Cyanide (Filtered)	( )
( )	PAC Cyanide (Filtered)	( )
( )	PCDDs/PCDFs	( )
( )	Pesticides/Herbicides	( )
( )	Natural Attenuation	( )
( )	Other (Specify)	( )

Redevelop?  Y  N  
*attempt to remove/redevelop soon to eliminate sediment.*  
 Additional well maintenance needed? Y  N (if yes, describe below)  
 Did the water level stabilize?  Y  N Drawdown -0.03 feet

**EVACUATION INFORMATION**

Pump Start Time 1210  
 Pump Stop Time 1600  
 Minutes of Pumping 170  
 Volume of Water Removed ~8 gallons  
 Did Well Go Dry? Y  N

Evacuation Method Bailer ( ) Bladder Pump ( X )  
 Peristaltic Pump ( ) Submersible Pump ( ) Other/Specify ( )  
 Pump Type: RED Bladder pump w/ MFSO  
 Samples collected by same method as evacuation?  Y  N (specify)

Water Quality Meter Type(s) / Serial Numbers: YSI 556 MPS # 0300392 AF, HACH Turbidimeter # 94100006523

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
1210	200 mL/min	7	15.20	-	-	-	11.8	-	-
1215	100 mL/min		15.19	-	-	-	20.2	-	-
1220			15.19	14.50	7.32	3.995	41.8	0.98	-156.2
1225			15.18	14.26	7.29	3.976	54.4	0.50	-143.2
1230			15.18	14.34	7.30	3.893	72.4	0.55	-135.1
1235			15.18	14.32	7.30	3.838	107	0.85	-120.9
1240			15.18	14.06	7.28	3.823	127	0.88	-111.4
1245		0.8	15.18	14.07	7.26	3.741	139	1.27	-115.2

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

**OBSERVATIONS/SAMPLING METHOD DEVIATIONS**

*Initial water: slightly brown, some particles, slight <sup>hydrocarbon</sup> petro odor, slight/faint sheen.*  
*Final: still brown, no noticeable sheen, petro odor*  
*YSI connected @ 1220.*

**SAMPLE DESTINATION**

Laboratory Accutest  
 Delivered Via ups  
 Airbill # \_\_\_\_\_

Field Sampling Coordinator: Kristen Carmichael

GROUNDWATER SAMPLING LOG

Well No. ESA 25-52

Site/GMA Name GMA-1  
 Sampling Personnel TBM, CMK  
 Date 4/24/13  
 Weather Sunny ~ 65° F

WELL INFORMATION - See Page 1

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*	
1250	100 ml/min	X	15.18	14.33	7.34	3.665	133	1.16	-92.3	
1255			15.17	14.44	7.30	3.637	128	1.13	-87.6	
1300			15.17	14.48	7.33	3.591	133	1.22	-85.3	
1305			15.17	14.62	7.31	3.578	144	1.55	-83.5	
1310	↓		15.17	14.72	7.34	3.565	149	1.59	-75.0	
1315	150 ml/min		15.16	14.22	7.34	3.561	144	1.88	-93.7	
1320	↓	↓	15.16	13.97	7.30	3.501	139	206	-94.9	
1325*	-	-	-	-	-	-	-	-	-	
1330	150 ml/min	X	15.16	14.03	7.31	3.255	122	2.45	-106.3	
1335			15.16	13.99	7.30	3.262	121	2.41	-102.1	
1340			15.16	13.84	7.31	3.246	121	2.21	-100.2	
1345			15.16	13.70	7.28	3.198	123	2.28	-94.8	
1350			15.14	13.70	7.26	3.152	122	2.27	-95.4	
1355			15.14	13.75	7.30	3.137	119	2.33	-94.6	
1400			15.14	13.77	7.26	3.080	111	2.35	-94.2	
1405			15.14	13.84	7.28	3.049	109	2.36	-94.4	
1410		↓	15.14	13.81	7.26	3.050	105	2.37	-94.1	
1415		3.5	15.14	13.82	7.27	3.045	105	2.35	-93.8	
			<del>TM sampled @ 1415</del> → see note							
1435		X	15.18	13.98	7.11	2.772	80.4	3.86	-113.2	
1440			15.14	13.78	7.17	2.787	87.5	2.76	-103.9	
1445			15.14	13.97	7.32	3.018	143	4.17	-83.7	
1450			15.14	13.93	7.35	3.018	134	4.11	-78.8	
1455			15.14	13.95	7.31	2.934	115	3.36	-90.5	
1500			15.14	13.85	7.28	2.882	105	3.17	-91.4	
1505			15.14	13.94	7.26	2.830	95.7	2.93	-91.3	
1510	↓		15.14	13.90	7.24	2.776	87.7	2.57	-93.0	
1515	200 ml/min	↓ @ 15	15.14	13.97	7.22	2.738	78.9	2.56	-96.0	
1520	↓	8.66	15.14	14.01	7.21	2.704	72.8	2.38	-95.4	

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading

OBSERVATIONS/SAMPLING METHOD DEVIATIONS

did not take readings to adjust flow through cell cap  
 Began sampling @ 1415, determined that turbidity was not low enough, threw out bottles, resumed purging @ 1435

Ⓞ Moved pump up to 17.5 (TIC) to try and get less turbidity

GROUNDWATER SAMPLING LOG

Well No. ESA25-52

Site/GMA Name GMA 1  
 Sampling Personnel TAM CMK  
 Date 4/24/13  
 Weather Sunny, ~ 65° F

WELL INFORMATION - See Page 1

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
1525	100 ml/min	X	15.13	14.69	7.23	2.697	83.3	2.25	-94.5
1530			15.13	14.93	7.21	2.685	85.1	2.25	-87.4
1535			15.13	15.14	7.21	2.661	81.2	2.26	-86.1
1540			15.13	15.11	7.21	2.655	83.6	2.26	-85.4
1545			15.13	15.16	7.21	2.649	80.7	2.19	-86.1
1550			15.12	15.20	7.21	2.643	86.8	2.20	-88.2
1550			15.12	15.17	7.21	2.644	82.2	2.25	-85.6
1600	↓	8	15.12	15.20	7.21	2.639	83.4	2.27	-87.4
sampled @ 1600, All parameters except turbidity stable*									

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

OBSERVATIONS/SAMPLING METHOD DEVIATIONS Soft bottom. top of pump had sediment accumulated on it when pulled out. Sediment was slime-like and held together in mats (brown). water level meter covered partially in same sediment.

\* Decided to sample at 1600 as long as all parameters - except turbidity - stable by TIC, even if turbidity above 50 NTU. All parameters were stable with no clear trends. Turbidity stable w/in 10%, and fluctuating between 80-86 ntu for 40 min. prior to sampling.

**GROUNDWATER SAMPLING LOG**

Well No. GMA 1-30  
 Key No. 253Z  
 PID Background (ppm) 0.0  
 Well Headspace (ppm) —

Site/GMA Name GMA 1  
 Sampling Personnel CMC CE  
 Date 4/22/13  
 Weather overcast 40% F

**WELL INFORMATION**

Reference Point Marked? 9' N  
 Height of Reference Point 9' Meas. From —  
 Well Diameter 2 in  
 Screen Interval Depth 9.4-19.4 Meas. From TIC  
 Water Table Depth 12.86 Meas. From TIC  
 Well Depth 20.03+0.24 Meas. From TIC  
 Length of Water Column 7.41' = 20.27'  
 Volume of Water in Well 1.2 gallons  
 Intake Depth of Pump/Tubing 16.54' Meas. From TIC

Sample Time 1651  
 Sample ID GMA 1-30  
 Duplicate ID —  
 MS/MSD —  
 Split Sample ID —

Reference Point Identification:  
 TIC: Top of Inner (PVC) Casing  
 TOC: Top of Outer (Protective) Casing  
 Grade/BGS: Ground Surface

Redevelop? Y (N)

Additional well maintenance needed? Y (N) (if yes, describe below)

Did the water level stabilize? (Y) N Drawdown 0.01

Required	Analytical Parameters:	Collected
( )	VOCs (Standard List)	( )
( )	VOCs (Expanded List)	( )
( )	SVOCs	( )
( )	PCBs (Unfiltered)	( )
( )	PCBs (Filtered)	( )
( )	Metals/Inorganics (Unfiltered)	( )
( )	Metals/Inorganics (Filtered)	( )
( )	Total Cyanide (Unfiltered)	( )
( )	Total Cyanide (Filtered)	( )
( )	PAC Cyanide (Filtered)	( )
( )	PCDDs/PCDFs	( )
( )	Pesticides/Herbicides	( )
( )	Natural Attenuation	( )
( )	Other (Specify)	( )

lead (lab filtered) + CE

**EVACUATION INFORMATION**

Pump Start Time 1607  
 Pump Stop Time 1651  
 Minutes of Pumping 44  
 Volume of Water Removed ~0.5 gal  
 Did Well Go Dry? Y (N)

Evacuation Method: Bailer ( ) Bladder Pump (X)  
 Peristaltic Pump ( ) Submersible Pump (X) Other/Specify ( )  
 Pump Type: GED Sump Pro  
 Samples collected by same method as evacuation? (Y) N (specify)

Water Quality Meter Type(s) / Serial Numbers: K&F Pro #84 15102577, Water level Meter #6, 2100P Turbidity meter 94110006523

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
1605	0.100	X	12.87	X	X	X	1.53	X	X
1610	0.077		12.87	9.9	7.50	1.04	4.77	6.08	-71.0
1615	0.075		12.87	9.8	6.90	1.00	4.15	0.66	-71.3
1620	0.075		12.87	9.6	6.91	1.00	3.55	0.59	-71.9
1625	0.075		12.87	9.5	6.91	1.00	4.63	0.54	-71.1
1630	0.075		12.87	9.6	6.91	1.00	3.61	0.47	-69.8
1635	0.075		12.87	9.5	6.91	0.99	2.83	0.43	-67.6
1640	0.075	↓	12.87	9.5	6.91	0.99	2.58	0.42	-67.7

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.  
 OBSERVATIONS/SAMPLING METHOD DEVIATIONS: Initial purge: clear no odor, 1007 hooked up flow through cell.  
Final purge: same as initial

**SAMPLE DESTINATION**

Laboratory: Acutest  
 Delivered Via: UPS  
 Airbill #: \_\_\_\_\_

Field Sampling Coordinator: Kurtis Connelly

**GROUNDWATER SAMPLING LOG**

Well No. GMA1-30

Site/GMA Name GMA1  
 Sampling Personnel CMK CE  
 Date 4/23/13  
 Weather overcast, 40s °F

WELL INFORMATION - See Page 1

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
1645	0.075	X	12.67	9.6	6.91	0.99	2.29	0.39	-67.3
1650	0.075	~0.5	12.87	9.5	6.91	0.99	2.58	0.35	-67.8
All parameters stable									

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

OBSERVATIONS/SAMPLING METHOD DEVIATIONS See page 1

**GROUNDWATER SAMPLING LOG**

Well No. HR-63-MV-2  
 Key No. 2537  
 PID Background (ppm) -  
 Wall Headspace (ppm) -

Site/GMA Name GMA-1  
 Sampling Personnel CMK, TRM  
 Date 4/24/13  
 Weather 50i ckn

**WELL INFORMATION**

Reference Point Marked? 0 N  
 Height of Reference Point TIC Meas From TIC  
 Well Diameter 2 inch  
 Screen Interval Depth 4.1-14.1 ft Meas From TIC  
 Water Table Depth 12.67 Meas From TIC  
 Well Depth 14.44 Meas From TIC  
 Length of Water Column 1.77  
 Volume of Water in Well 0.24 gal  
 Intake Depth of Pump/Tubing 13.5 feet Meas From TIC

Sample Time 1029  
 Sample ID HR-63-MV-2  
 Duplicate ID -  
 MS/MSD HR-63-MV-2 MS/MSD  
 Split Sample ID -

Reference Point Identification:  
 TIC Top of Inner (PVC) Casing  
 TOC Top of Outer (Protective) Casing  
 Grade/BGS Ground Surface

Redevelop? Y N  
 Additional well maintenance needed? Y N (if yes, describe below)  
 Did the water level stabilize? 0 N Drawdown 0.23

Required	Analytical Parameters	Collected	MS/MSD
( )	VOCs (Standard List)	( )	
( )	VOCs (Expanded List)	( )	
( )	SVOCs	( )	
( )	PCBs (Unfiltered)	( )	
( )	PCBs (Filtered)	( )	
( )	Metals/Inorganics (Unfiltered)	( )	
( )	Metals/Inorganics (Filtered)	( )	
( )	Total Cyanide (Unfiltered)	( )	
( )	Total Cyanide (Filtered)	( )	
( )	PAC Cyanide (Filtered)	( )	
( )	PCDDs/PCDFs	( )	
( )	Pesticides/Herbicides	( )	
( )	Natural Attenuation	( )	
( X )	Other (Specify) <u>Lead (Filtered)</u>	( )	( )

**EVACUATION INFORMATION**

Pump Start Time 0907  
 Pump Stop Time 1029  
 Minutes of Pumping 82  
 Volume of Water Removed ~2.5 gal  
 Did Well Go Dry? Y N

Evacuation Method Bailer ( ) Bladder Pump (X)  
 Peristaltic Pump ( ) Submersible Pump ( ) Other/Specify ( )  
 Pump Type: GED Sample Pro  
 Samples collected by same method as evacuation? Y N (specify)

Water Quality Meter Type(s) / Serial Numbers: VSI 556 #1, 0390392 AF, Hach 46646, 941100006523  
water level type #6, sol. nit. metal wt

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
0910	0.250	X	NC	X	X	X	123	X	X
0913	0.100		12.92				62.1		
0918	0.100		12.92				47.5	0.85	-13.0
0923	0.090		12.89	9.30	6.44	1.161	18.2		
0928	0.100		12.87	9.39	6.34	1.152	18.1	0.91	-15.0
0933	0.100		12.91	8.91	6.40	1.154	10.1	0.76	-19.9
0938	0.100		12.92	8.83	6.44	1.157	8.77	0.81	-21.3
0943	0.100		12.90	8.79	6.51	1.159	8.56	0.83	-24.4

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

OBSERVATIONS/SAMPLING METHOD DEVIATIONS Initial pump cloudy, NC = not collected  
Note water level NC for first reading due to 0.24 ft exclusion below meter sitting on top of pump. Flow they started 0919.  
0922 flow through cell leaking, affected against flow rate. corrected 0924 through flow through cell, sound leak.  
well depth corrected for tape #6 offset.

**SAMPLE DESTINATION**

Laboratory: Acrobat  
 Delivered Via: UPS  
 Airbill #: \_\_\_\_\_

Field Sampling Coordinator: Jesse Powell

GROUNDWATER SAMPLING LOG

Well No. HR-G3-MW-2

Site/GMA Name GMA 1 ESA25  
 Sampling Personnel CK TRM  
 Date 4/24/13  
 Weather Sor, clow

WELL INFORMATION - See Page 1

CK  
4/24/13

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH (0.1 units)*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
0948	0.100		12.90	8.86	6.58	1.161	6.56	0.87	-24.7
0953	0.100		12.90	8.91	6.62	1.162	5.10	0.86	-36.0
0958	0.100		12.90	9.01	6.67	1.165	3.68	0.85	-31.4
1003	0.100		12.90	9.22	6.51	1.164	4.24	0.88	-32.8
1008	0.100		12.90	9.55	6.78	1.165	4.20	1.73*	-32.9
1013	0.100		12.90	9.56	6.86	1.169	4.58	1.65	-40.8
1018	0.100		12.90	9.61	6.87	1.170	4.98	1.86	-38.0
1023	0.100		12.90	9.66	6.89	1.173	4.21	1.82	-36.1
1028	0.100	2.6	12.90	9.73	6.91	1.173	4.13	1.78	-31.4
All parameters			Stable, sample at		1029				

*[Handwritten signature]*  
4/24/13

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.  
 OBSERVATIONS/SAMPLING METHOD DEVIATIONS 1004 protocol flow high cell from son by Patten in purge buckets, outside temperature increased as purged. 1008 flow high cell leaked \*DO sensor out of water, DO from 1008 not indicative of pore water.  
1046 sample complete



GROUNDWATER SAMPLING LOG

Well No. A7-RR  
 Key No. flush  
 PID Background (ppm) 0.0  
 Well Headspace (ppm) 0.0

Site/GMA Name GE Pittsfield GMA2  
 Sampling Personnel R Hensel T. Martin  
 Date 4/23/13  
 Weather Overcast Windy 30s

WELL INFORMATION

Reference Point Marked? (Y) N  
 Height of Reference Point -5.0 in Meas. From BGS  
 Well Diameter 2.0 in  
 Screen Interval Depth 4.5-12.1 Meas. From TIC  
 Water Table Depth 5.86 Meas. From TIC  
 Well Depth 11.70 Meas. From TIC  
 Length of Water Column 5.84  
 Volume of Water in Well .953  
 Intake Depth of Pump/Tubing 2.9 Meas. From TIC

Sample Time A7-RR  
 Sample ID 1010  
 Duplicate ID \_\_\_\_\_  
 MS/MSD A7RR(MS) (MSD)  
 Split Sample ID \_\_\_\_\_

Reference Point Identification:

TIC: Top of Inner (PVC) Casing  
 TOC: Top of Outer (Protective) Casing  
 Grade/BGS: Ground Surface

Redevelop? Y (N)

Additional well maintenance needed? Y (N) (if yes, describe below)

Did the water level stabilize? Y (N) Drawdown .64

Required	Analytical Parameters:	Collected
( )	VOCs (Standard List)	( )
( )	VOCs (Expanded List)	( )
( )	SVOCs	( )
( )	PCBs (Unfiltered) <u>(MS)(MSD)</u>	<u>(6)</u>
( )	PCBs (Filtered)	( )
( )	Metals/Inorganics (Unfiltered)	( )
( )	Metals/Inorganics (Filtered)	( )
( )	Total Cyanide (Unfiltered)	( )
( )	Total Cyanide (Filtered)	( )
( )	PAC Cyanide (Filtered)	( )
( )	PCDDs/PCDFs	( )
( )	Pesticides/Herbicides	( )
( )	Natural Attenuation	( )
( )	Other (Specify)	( )

EVACUATION INFORMATION

Pump Start Time 850  
 Pump Stop Time 1010  
 Minutes of Pumping 80  
 Volume of Water Removed ~7.5  
 Did Well Go Dry? Y (N)

Evacuation Method: Bailer ( ) Bladder Pump (X)  
 Peristaltic Pump ( ) Submersible Pump ( ) Other/Specify ( )  
 Pump Type: QED Bladder  
 Samples collected by same method as evacuation? (Y) N (specify)

Water Quality Meter Type(s) / Serial Numbers: Water level #8, ySI #2, Hatch 2100P.

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
850	110						9		±
* 855	100		6.01	8.15	7.06	.959	35	11.88	133.6
900	100		6.10	7.74	7.20	.972	19	11.51	119.3
905	100		6.18	7.57	7.24	.996	10	11.26	110.3
910	100		6.20	7.46	7.28	1.030	5	11.16	103.9
915	100		6.25	7.41	7.31	1.052	6	11.12	100.3
920	100		6.32	7.37	7.37	1.092	3	11.04	96.9
925	100	√	6.39	7.37	7.39	1.131	3	10.96	95.5

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

OBSERVATIONS/SAMPLING METHOD DEVIATIONS

Limited purge clear and odorless. Final same as initial  
\* hooked up 0 ySI @ 855 b/c turbidity below 50

SAMPLE DESTINATION

Laboratory: AcuteST  
 Delivered Via: UPS  
 Airbill #: \_\_\_\_\_

Field Sampling Coordinator: Kasey Bernick

GROUNDWATER SAMPLING LOG

Well No. A7-RR

Site/GMA Name Gre Pittsfield GMA 1  
 Sampling Personnel R. Hensel, T. Martin  
 Date 4/23/13  
 Weather 30s overcast windy

WELL INFORMATION - See Page 1

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
930	100		16.44	7.37	7.45	1.160	3	11.07	93.8
935	100		16.47	7.38	7.45	1.176	3	11.00	93.7
940	100		16.50	7.35	7.50	1.168	3	10.89	91.7
945	70		16.50	7.32	7.52	1.161	3	10.95	91.0
950	70		16.50	7.27	7.52	1.157	3	10.85	88.4
955	70		16.50	7.29	7.56	1.159	3	10.73	88.5
1000	70	↓	16.50	7.27	7.59	1.162	3	10.71	87.8
1005	70	~3.5	16.50	7.24	7.60	1.162	3	10.85	87.9
All Parameters			Stable	Sampled		C	10/10		

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

OBSERVATIONS/SAMPLING METHOD DEVIATIONS

Turned down flow rate to stabilize water level

Field Staff Noted Error in water level column

**GROUNDWATER SAMPLING LOG**

Well No. ESAIS-31R  
 Key No. FV37  
 PID Background (ppm) 0.6  
 Well Headspace (ppm) —

Site/GMA Name GE Pittsfield/GMAI  
 Sampling Personnel Chimo Encheleku, Chris Kassel  
 Date 4/23/13  
 Weather 40's partly cloudy

**WELL INFORMATION**

Reference Point Marked? (Y)  
 Height of Reference Point 3.3" Meas. From BGS  
 Well Diameter 2"  
 Screen Interval Depth 5-15' Meas. From TIC  
 Water Table Depth 9.01' Meas. From TIC/TIC  
 Well Depth 14.69 ± .24 = 14.93' Meas. From TIC  
 Length of Water Column 5.92'  
 Volume of Water in Well 7.9 gallons  
 Intake Depth of Pump/Tubing 12' Meas. From TIC

Sample Time 1134  
 Sample ID ESAIS-31R  
 Duplicate ID GMAI DWP 0423B-3  
 MS/MSD ESAIS-31R N/MSD  
 Split Sample ID —

Required	Analytical Parameters:	Collected	Dup	MSM
(2)	VOCs (Standard List)	(2)	2	2
( )	VOCs (Expanded List)	( )		
(2)	SVOCs	(2)	2	2
( )	PCBs (Unfiltered)	( )		
( )	PCBs (Filtered)	( )		
( )	Metals/Inorganics (Unfiltered)	( )		
( )	Metals/Inorganics (Filtered)	( )		
( )	Total Cyanide (Unfiltered)	( )		
( )	Total Cyanide (Filtered)	( )		
( )	PAC Cyanide (Filtered)	( )		
( )	PCDDs/PCDFs	( )		
( )	Pesticides/Herbicides	( )		
( )	Natural Attenuation	( )		
( )	Other (Specify)	( )		

Reference Point Identification:  
 TIC: Top of Inner (PVC) Casing  
 TOC: Top of Outer (Protective) Casing  
 Grade/BGS: Ground Surface  
 Redevelop? Y (N)

Additional well maintenance needed? Y (N) (if yes, describe below)  
 Did the water level stabilize? (Y) N Drawdown 1.96 feet

**EVACUATION INFORMATION**

Pump Start Time 9:23  
 Pump Stop Time 11:30  
 Minutes of Pumping 127  
 Volume of Water Removed 4.5 gallons  
 Did Well Go Dry? Y (N)

Evacuation Method: Bailer ( ) Bladder Pump (X)  
Peristaltic Pump ( ) Submersible Pump (X) Other/Specify ( )  
 Pump Type: WEO Sample Pro  
 Samples collected by same method as evacuation? (Y) N (specify)

Water Quality Meter Type(s) / Serial Numbers: Water Level Meter #6, 2100P Turbidity meter 941100006523  
SSE Pro Plus #41510257

Time	Pump Rate (L/min)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
9:25	0.225	X	9.12				189		
9:30	0.100		9.25				123		
9:35	0.100		9.41				67.1		
9:40	0.100		9.61				50.3		
9:45	0.100		9.77	7.7	7.99	0.471	30.3	7.20	32.3
9:50	0.100		9.85	7.6	7.89	0.464	22.2	7.26	28.4
9:55	0.100		9.91	7.5	7.79	0.456	14.9	7.55	21.4
10:00	0.100		10.08	7.5	7.76	0.453	10.4	7.64	20.1

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.  
 OBSERVATIONS/SAMPLING METHOD DEVIATIONS: Initial purge slightly cloudy & colorless; no odor.  
9:42 - knocked up (low) through cell. Purge becoming less cloudy at  
10:00. 10:30 - started skip method to find point of recharge.

**SAMPLE DESTINATION**  
 Laboratory: Accutest  
 Delivered Via: UPS  
 Airbill #: \_\_\_\_\_

Field Sampling Coordinator: [Signature]

GROUNDWATER SAMPLING LOG

Well No. ESAIS-31R

Site/GMA Name GE Pittsfield GMA1  
 Sampling Personnel Chioma Enechukwu, Chris Kasse  
 Date 4/23/13  
 Weather USA's partly cloudy

WELL INFORMATION - See Page 1

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
10:05	0.100	*	10.13	7.5	7.75	0.454	7.81	7.86	20.7
10:10	0.100		10.20	7.5	7.75	0.461	6.22	7.62	21.3
10:15	0.100		10.30	7.5	7.74	0.466	5.43	7.40	22.3
10:20	0.100		10.37	7.5	7.74	0.464	5.24	7.03	22.2
10:25	0.100		10.45	7.5	7.74	0.474	5.80	6.97	22.1
10:30	0.200		10.55	7.7	7.75	0.476	6.66	6.89	21.6
10:35	0.150		10.66	7.7	7.74	0.460	10.1	6.87	22.1
10:40	0.225		10.85	7.8	7.74	0.487	12.4	7.00	22.2
10:45	0.075		10.97	7.7	7.74	0.494	24.6	6.63	22.0
10:50	0.075		10.97	7.5	7.74	0.498	29.5	6.09	21.7
10:55	0.075		10.97	7.6	7.74	0.500	23.3	5.95	21.3
11:00	0.075		10.97	7.6	7.74	0.501	17.5	5.82	21.5
11:05	0.075		10.97	7.5	7.75	0.503	13.7	5.75	21.2
11:10	0.075		10.97	7.5	7.75	0.504	10.8	5.66	21.1
11:15	0.075		10.97	7.5	7.75	0.504	7.81	5.52	21.1
11:20	0.075	↓	10.97	7.6	7.75	0.504	7.11	5.42	20.9
11:25	0.075	~4.5	10.97	7.5	7.76	0.505	7.19	5.50	20.9
Parameters Stable - samples collected									
<i>Chioma</i>									

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

OBSERVATIONS/SAMPLING METHOD DEVIATIONS See page 1

**GROUNDWATER SAMPLING LOG**

Well No. ESA15-72R  
 Key No. flush  
 PID Background (ppm) 0.0  
 Well Headspace (ppm) 0.0

Site/GMA Name GE Pittsfield GMA 1  
 Sampling Personnel R. Hensel T. Martin  
 Date 9/27/13  
 Weather 40s Overcast

**WELL INFORMATION**

Reference Point Marked? (N) 3'  
 Height of Reference Point 4.0' Meas. From BGS  
 Well Diameter 4.0"  
 Screen Interval Depth 3.5-13.5' Meas. From TIC  
 Water Table Depth 6.47' Meas. From TIC  
 Well Depth 13.17' Meas. From TIC  
 Length of Water Column 6.7'  
 Volume of Water in Well 4.37'  
 Intake Depth of Pump/Tubing ~9' Meas. From TIC

Sample Time 1550  
 Sample ID ESA15-72R  
 Duplicate ID \_\_\_\_\_  
 MS/MSD \_\_\_\_\_  
 Split Sample ID \_\_\_\_\_

Reference Point Identification:  
 TIC: Top of Inner (PVC) Casing  
 TOC: Top of Outer (Protective) Casing  
 Grade/BGS: Ground Surface

Redevelop? Y (N)  
 Additional well maintenance needed? Y (N) (if yes, describe below)  
 Did the water level stabilize? Y (N) Drawdown 0.45ft

Required	Analytical Parameters:	Collected
( )	VOCs (Standard List)	( )
( )	VOCs (Expanded List)	( )
( )	SVOCs	( 2 )
( )	PCBs (Unfiltered)	( )
( )	PCBs (Filtered)	( )
( )	Metals/Inorganics (Unfiltered)	( )
( )	Metals/Inorganics (Filtered)	( )
( )	Total Cyanide (Unfiltered)	( )
( )	Total Cyanide (Filtered)	( )
( )	PAC Cyanide (Filtered)	( )
( )	PCDDs/PCDFs	( )
( )	Pesticides/Herbicides	( )
( )	Natural Attenuation	( )
( )	Other (Specify)	( )

**EVACUATION INFORMATION**

Pump Start Time 1450  
 Pump Stop Time 1550  
 Minutes of Pumping 60  
 Volume of Water Removed ~1.5gal  
 Did Well Go Dry? Y (N)

Evacuation Method: Bailer ( ) Bladder Pump (X)  
 Peristaltic Pump ( ) Submersible Pump ( ) Other/Specify ( )  
 Pump Type: QED Bladder  
 Samples collected by same method as evacuation? Y (N) (specify)

Water Quality Meter Type(s) / Serial Numbers: YSI #2, Waterlevel #8, Turbidity Hecker 2000P

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
* 1450	90		6.53	8.96	6.68		5		
1455	90		6.60	8.96	6.68	4.17	4	12.06	164.4
1500	90		6.79	8.61	6.29	4.328	4	9.13	131.1
1505	90		6.81	8.55	6.31	4.339	4	9.06	119.8
1510	90		6.82	8.53	6.30	4.331	4	8.82	116.9
1515	90		6.87	8.47	6.3	4.292	4	8.84	114.4
1520	90		6.91	8.44	6.3	4.249	4	8.82	113.0
1525	90		6.92	8.45	6.33	4.177	4	8.95	111.7

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

**OBSERVATIONS/SAMPLING METHOD DEVIATIONS**

Initial Purge Clear and odorless final same as initial  
 \* Attached 0 YSI @ 1455

**SAMPLE DESTINATION**

Laboratory: AcuteST  
 Delivered Via: UPS  
 Airbill #: \_\_\_\_\_

Field Sampling Coordinator: Karen Connell

**GROUNDWATER SAMPLING LOG**

Well No. ESA15-72R

Site/GMA Name GE Pittsfield GMA 1  
 Sampling Personnel R. Hensel T. Martin  
 Date 4.23.13  
 Weather 40s Overcast

WELL INFORMATION - See Page 1

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
1530	80		6.92	8.49	6.32	4.140	4	8.86	110.2
1535	80		6.92	8.50	6.34	4.110	4	8.81	108.8
1540	80	↓	6.91	8.51	6.31	4.086	4	8.79	109.1
1545	80	1.5 gal	6.92	8.51	6.31	4.062	4	8.89	109.1
All Parameter Stable - Sample @ 1550									
(B)									

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading.

OBSERVATIONS/SAMPLING METHOD DEVIATIONS  
Dropped water level to allow water level to stabilize



**Appendix A-2**

Fall 2013 Sampling Logs



**GROUNDWATER SAMPLING LOG**

12

Well No. ESA 15-31R  
 Key No. EX-37  
 PID Background (ppm) NM  
 Well Headspace (ppm) NM

Site/GMA Name GMA-1  
 Sampling Personnel C. Kassel / A. DaSilva  
 Date 10/7/13  
 Weather overcast, 60s, rain

**WELL INFORMATION**

Reference Point Marked?  N  
 Height of Reference Point TIC Meas. From NA  
 Well Diameter 2"  
 Screen Interval Depth 5-18' 5.3-15.5' Meas. From TIC  
 Water Table Depth 9.45' / 9.45' Meas. From TIC  
 Well Depth 14.69' + 0.24' Meas. From TIC  
 Length of Water Column 5.48' = 14.43'  
 Volume of Water in Well 0.84 gal  
 Intake Depth of Pump/Tubing 13' / 12.5' Meas. From TIC  
 10/6/13 10/6/13

Sample Time 1055  
 Sample ID ESA15-31R  
 Duplicate ID GMA1-10/8/13-DWP-2  
 MS/MSD ESA15-31R MS/MSD  
 Split Sample ID NA

Reference Point Identification:  
 TIC Top of Inner (PVC) Casing  
 TOC Top of Outer (Protective) Casing  
 Grade/BGS Ground Surface

Redevelop? Y  N

Additional well maintenance needed? Y  N (if yes, describe below)

Did the water level stabilize?  N Drawdown 2.11'

**EVACUATION INFORMATION**

Pump Start Time 1552 / 10825  
 Pump Stop Time 1635 / 1402 / 1501  
 Minutes of Pumping 43 / 145 / 306  
 Volume of Water Removed 0.2 / 1.24 gal  
 Did Well Go Dry? Y  N

Evacuation Method:  Bailor  Bladder Pump  
 Peristaltic Pump  Submersible Pump  Other/Specify:  
 Pump Type: QED Simple pro  
 Samples collected by same method as evacuation?  N (specify)

Water Quality Meter Type(s) / Serial Numbers: YSI 556

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10% or 1 mV]*
1610	0.050	NM	9.40	NM	NM	NM	75.1	NM	NM
1620		NM	9.91	NM	NM	NM	42.2	NM	NM
1630		↓	10.02	16.2	7.75	0.477	40.2	7.39	117.9
1635		-0.2	10.02	NM					
10/6/13 0825	0.100	NA	9.45	NA					
0830	0.100	9.48	NM	NM			144	NM	NM
0840	0.100	NM	9.86	NM			119		
0850	0.100	NM	10.24	NM			24.2		

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading

**OBSERVATIONS/SAMPLING METHOD DEVIATIONS**

1635 pump off, high winds and pump rate mean well not finish before @  
10/6/13 0800 CK onsite. Initial purge cloudy, no other

**SAMPLE DESTINATION**

Laboratory: Accutest  
 Delivered Via: FedEx  
 Airbill # \_\_\_\_\_

Field Sampling Coordinator: 

GROUNDWATER SAMPLING LOG

Well No. ES445-31R

Site/GMA Name GMA1  
 Sampling Personnel C. Kassel / A. D. Silva  
 Date 10/6/13  
 Weather Cloudy, high in 60's °F, windy

WELL INFORMATION - See Page 1

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
0910	0.100		10.70	14.24	7.31	0.517	13.1	6.80	194.0
0915	0.100		10.77	14.37	7.32	0.516	11.7	6.95	185.7
0920	0.100		10.46	14.40	7.37	0.514	10.8	6.89	145.1
0925			11.02	14.44	7.39	0.513	12.3	6.80	122.3
0930			11.10	14.45	7.45	0.513	9.91	6.64	82.4
0935			11.18	14.37	7.33	0.513	7.05	6.44	66.2
0940			11.24	14.37	7.32	0.513	6.33	6.39	58.5
0945			11.27	14.37	7.31	0.513	5.75	6.35	51.5
0950			11.31	14.40	7.30	0.512	5.02	6.31	51.9
0955	0.100		11.36	14.34	7.40	0.512	4.11	6.19	46.2
1000			11.38	14.35	7.39	0.511	3.91	6.08	44.4
1005			11.42	14.35	7.40	0.511	3.11	6.01	42.3
1010			11.44	14.34	7.40	0.510	2.79	5.94	40.9
1015			11.48	14.38	7.40	0.509	2.39	5.86	39.2
1020			11.50	14.36	7.40	0.508	2.45	5.79	38.1
1025			11.52	14.33	7.40	0.508	2.24	5.75	37.6
1030			11.55	14.32	7.41	0.507	2.54	5.71	36.8
1035	0.075		11.55	14.26	7.41	0.505	2.48	5.65	36.8
1040			11.55	14.29	7.42	0.505	2.09	5.62	35.7
1045			11.56	14.25	7.41	0.504	1.85	5.55	35.1
1048			11.56	14.26	7.43	0.503	1.74	5.51	34.8
1051			11.56	14.27	7.43	0.503	1.73	5.50	34.5
1054			11.56	14.29	7.43	0.502	1.50	5.44	34.4
1055									
1501									

All parameters stable, begin sampling.  
 Sample complete water level has risen while sampling.  
 11.02

*[Handwritten Signature]*

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading  
 OBSERVATIONS/SAMPLING METHOD DEVIATIONS 0900 hook up flow through cell.

12

**GROUNDWATER SAMPLING LOG**

Well No E2SC-23  
 Key No. EX-37  
 PID Background (ppm) NM  
 Well Headspace (ppm) NM

Site/GMA Name GMA-1  
 Sampling Personnel A. DeSilva  
 Date 10/11/13  
 Weather Sunny 60°F

**WELL INFORMATION**

Reference Point Marked? 0 N  
 Height of Reference Point 2.20' Meas. From AGS  
 Well Diameter 2"  
 Screen Interval Depth 11-21' Meas. From TIC  
 AD # 1745 Water Table Depth 19.5' Meas. From TIC  
 Well Depth 21.28' Meas. From TIC  
 Length of Water Column 3.35'  
 Volume of Water in Well .502 gal  
 Intake Depth of Pump/Tubing 19.5' Meas. From TIC

Sample Time 1215  
 Sample ID E2SC-23  
 Duplicate ID DUP-1-GMA-1  
 MS/MSD E2SC-23 MS/MSD  
 Split Sample ID NA

Required	Analytical Parameters	Completed
( )	VOCs (Standard List)	
( )	VOCs (Expanded List)	
( )	SVOCS	
( )	PCBs (Unfiltered)	
( )	PCBs (Filtered)	
( )	Metals/Inorganics (Unfiltered)	
( )	Metals/Inorganics (Filtered)	
( )	Total Cyanide (Unfiltered)	
( )	Total Cyanide (Filtered)	
( )	PAC Cyanide (Filtered)	
( )	PCDDs/PCDFs	
( )	Pesticides/Herbicides	
( )	Natural Attenuation	
( X )	Other (Specify)	

(4) 500 ml, large served pol bottles filled

Reference Point Identification:  
 TIC Top of Inner (PVC) Casing  
 TOC Top of Outer (Protective) Casing  
 Grade/BGS Ground Surface

AGS: Above Ground Surface

Redevelop? Y (N)

Additional well maintenance needed? Y (N) (if yes, describe below)

Do the water level stabilize? Y N Drawdown 1.4 ft

**EVACUATION INFORMATION**

Pump Start Time 915  
 Pump Stop Time 1211  
 Minutes of Pumping 2 hrs 55 min  
 Volume of Water Removed ~2.5 gals  
 Did Well Go Dry? Y (N)

Evacuation Method Bailer ( ) Bladder Pump (X)  
 Peristaltic Pump ( ) Submersible Pump ( ) Other/Specify ( )  
 Pump Type GED Bailer  
 Samples collected by same method as evacuation Y (N) (specify)

Lead (unfiltered (ug)) / MS/MSD  
 DUP Lead

Water Quality Meter Type(s) / Serial Numbers

YSI Pro #3 115102578  
HACH Turbidity Model #46500-00

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (µS/cm) (MS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
0916	40	NM	18.11	11.8	7.38	0.622	38	1.46	-24.7
0926	40	NM	18.14	11.9	7.65	0.612	19	1.41	-27.6
0931	40	NM	18.20	11.9	7.66	0.592	10	1.94	-21.7
0936	40	NM	18.21	11.9	7.70	0.582	5	1.68	-17.2
0941	40	NM	18.23	11.9	7.70	0.578	3	2.14	-13.9
0946	40	NM	18.26	11.8	7.62	0.571	3	1.95	-18.6
0951	40	NM	18.29	11.8	7.62	0.570	3	1.76	-22.0
0956	40	NM	18.35	11.9	7.56	0.570	3	1.81	-25.9

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading

OBSERVATIONS/SAMPLING METHOD DEVIATIONS  
colorless  
\* Water is clear, no odor or sheen  
\* Final purge, same as initial

**SAMPLE DESTINATION**

Laboratory Accutest  
 Delivered Via Fed Ex  
 Airbill # \_\_\_\_\_

Field Sampling Coordinator: Chris Cassel

GROUNDWATER SAMPLING LOG

Well No. E2SC-23

Site/GMA Name GMA-1  
 Sampling Personnel A. DeS...  
 Date 10/2/13  
 Weather Sunny 60°F

WELL INFORMATION - See Page 1

Time	Pump Rate (L/min.)	Total Gallons Removed	Water Level (ft TIC)	Temp. (Celsius) [3%]*	pH [0.1 units]*	Sp. Cond. (mS/cm) [3%]*	Turbidity (NTU) [10% or 1 NTU]*	DO (mg/l) [10% or 0.1 mg/l]*	ORP (mV) [10 mV]*
1001	40	NM	18.37	11.9	7.56	0.571	2	1.70	-29.6
1006	40	NM	18.41	11.9	7.45	0.572	2	1.69	-33.3
1011	40	NM	18.42	11.9	7.40	0.569	2	1.54	-36.0
1016	160 <sup>+</sup>	NM	18.81	11.3	7.36	0.577	2	1.28	-46.9
1021	90	NM	18.81	11.4	7.40	0.585	2	0.84	-59.6
1026	90	NM	18.83	11.6	7.38	0.595	1	0.74	-62.8
1036	140	NM	18.98	11.4	7.16	0.600	18	0.53	-76.1
1041	140	NM	19.19	11.5	7.16	0.611	20	0.41	-85.1
1046	60	NM	19.25	11.9	6.98	0.613	21	0.45	-82.7
1051	60	NM	19.30	12.1	6.93	0.622	9	0.43	-80.1
1056	40	NM	19.33	12.8	6.65	0.623	6	0.43	-71.6
1101	40	NM	19.34	13.0	6.33	0.625	5	0.40	-58.4
1106	40	NM	19.34	13.2	6.66	0.627	4	0.42	-74.4
1111	40	NM	19.34	13.2	6.56	0.628	4	0.45	-69.2
1116	40	2 gals	19.34	13.5	6.92	0.628	4	0.44	-79.3
1121	40	NM	19.34	13.5	6.70	0.628	3	0.45	-74.3
1126	40	NM	19.34	13.6	6.41	0.626	3	0.45	-57.3
1131	40	NM	19.34	13.7	6.95	0.621	3	0.42	-91.0
1136	40	NM	19.34	13.9	6.87	0.620	3	0.40	-88.1
1141	40	NM	19.35	13.9	6.52	0.620	3	0.40	-60.1
1146	40	NM	19.35	14.0	6.20	0.618	2	0.42	-49.5
1151	40	NM	19.35	14.1	7.00	0.616	2	0.41	-80.1
1156	40	NM	19.35	14.1	6.85	0.613	2	0.41	-77.1
1201	40	NM	19.35	14.2	6.55	0.612	2	0.41	-60.1
1206	40	NM	19.35	14.2	6.53	0.612	2	0.41	-53.3
1211	40	NM	19.35	14.2	6.47	0.607	2	0.44	-52.6
AVG	Stabilized				SAMPLE				

\* The stabilization criteria for each field parameter (three consecutive readings collected at 3- to 5-minute intervals) is listed in each column heading

OBSERVATIONS/SAMPLING METHOD DEVIATIONS

Increased Flow to increase water level to increase recharge to find stabilization

NM: NOT MEASURED

*Handwritten signature*



**Appendix B**

Data Validation Reports



**Appendix B-1**

Spring 2013 Data Validation  
Report

**Appendix B-1  
Groundwater Sampling Data Validation Report – Spring 2013**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for  
Groundwater Management Area 1  
General Electric Company  
Pittsfield, Massachusetts**

**1.0 General**

This attachment summarizes the data validation performed on behalf of the General Electric Company (GE) for groundwater samples collected in April 2013 as part of groundwater sampling activities conducted at Groundwater Management Area 1 (GMA 1), located at the GE-Pittsfield/Housatonic River Site in Pittsfield, Massachusetts. The samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), lead, and/or physiologically available cyanide (PAC) by Accutest Laboratories of Marlborough, Massachusetts. Data validation was performed for five VOC results, four SVOC results, four PCB results, five lead results, and three PAC results.

**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, as applicable:

- *Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP)*, General Electric Company, Pittsfield, Massachusetts, ARCADIS BBL (submitted by GE on March 30, 2007 and approved by EPA on June 13, 2007), with the modified data qualifier designations specified in GE's revised FSP/QAPP, submitted to EPA on July 2, 2013 and approved by EPA on July 23, 2013;<sup>1</sup>
- EPA Region I, *EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses* (July 1996, revised December 1996) (EPA Region I Guidelines); and
- EPA Region I, *Part IV, Inorganic Data Validation Functional Guidelines* (November 2008) of the above-cited EPA Region I Guidelines.

The data were validated to Tier I and Tier II levels, as described below. Any deviations from the applicable quality control criteria utilized during the data review process are identified below. A tabulated summary of the Tier I/Tier II data review is presented in Table B-1. Each sample subject to evaluation is listed in Table B-1 to document that data review was performed. Samples that required data qualification are listed separately.

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<sup>1</sup> All future data validation activities for data from the GMA 1 monitoring wells will be conducted in accordance with that revised FSP/QAPP.



The following data qualifiers were used in this data evaluation in accordance with GE's revised FSP/QAPP (July 2013):

- 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).
- ND(PQL) The compound was analyzed for, but was not detected at the method detection limit. The sample PQL is presented in parentheses. Non-detect sample results are presented as ND(PQL) in this report for consistency with documents previously prepared for investigations conducted at the GE-Pittsfield/Housatonic River Site.<sup>2</sup>
- ND(PQL)J The compound was not detected above the reported sample PQL, but the sample PQL is estimated and may or may not represent the actual level of quantitation. Non-detect sample results that required this qualification are presented as ND(PQL)J in this report for consistency with documents previously prepared for investigations conducted at the GE-Pittsfield/Housatonic River Site.<sup>3</sup>
- 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**

Section 7.5 of the FSP/QAPP states that all analytical data will be validated to a Tier I level following the procedures presented in EPA Region I guidelines. The Tier I review consisted of a completeness evidence audit, as outlined in the *EPA Region I CSF Completeness Evidence Audit Program* (EPA Region I, July 31, 1991), to ensure that 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 EPA Region I Tier I data completeness requirements.

All analytical results from the groundwater sampling activities described above were also subjected to a Tier II data review. The Tier II data review consisted of a review of data package summary forms for identification of quality assurance/quality control (QA/QC) deviations and qualification of the data according to the EPA Region I Guidelines. Additionally, field duplicates were examined for relative percent difference (RPD) compliance with the criteria specified in the FSP/QAPP.

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<sup>2</sup> This project specific nomenclature differs from that in EPA guidance, which uses the qualifier U for non-detected compounds.

<sup>3</sup> This project specific nomenclature differs from that in EPA guidance, which uses the qualifier UJ for non-detected compounds in this category.

A tabulated summary of the samples subject to Tier I and Tier II data review is presented in the following table.

Parameter	Tier I & Tier II			Total
	Samples	Duplicates	Blanks	
VOCs	1	1	3	5
SVOCs	2	1	1	4
PCBs	2	1	1	4
Lead	3	1	1	5
PAC	1	1	1	3
<b>Total</b>	<b>9</b>	<b>5</b>	<b>7</b>	<b>21</b>

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 the EPA Region I Guidelines. 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 in Section 4 below.

#### **4.0 Summary of QA/QC Parameter Deviations Requiring Data Qualification**

This section provides a summary of the deviations from the applicable QA/QC criteria that resulted in qualification of results.

The initial calibration criterion for organic analyses requires that the average relative response factor (RRF) have a value greater than 0.05. Sample results were qualified as estimated (J) when this criterion was not achieved. The compounds that did not achieve 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	Compound	Number of Affected Samples	Qualification
VOCs	1,4-Dioxane	5	ND(PQL) J
	2-Butanone	5	ND(PQL) J
	Acrolein	5	ND(PQL) J
	Propionitrile	5	ND(PQL) J
SVOCs	Hexachlorophene	4	ND(PQL) J

The continuing calibration criterion requires that the percent difference (%D) between the initial calibration RRF and the continuing calibration RRF for VOCs/SVOCs be less than 25%. Sample data for detect 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	Compound	Number of Affected Samples	Qualification
VOCs	Acetone	4	ND(PQL) J
	Acetonitrile	5	ND(PQL) J
	Acrolein	5	ND(PQL) J
	Dichlorodifluoromethane	1	ND(PQL) J
	Trichlorofluoromethane	1	ND(PQL) J
	Vinyl Acetate	4	ND(PQL) J
SVOCs	Famphur	4	ND(PQL) J
	Hexachlorocyclopentadiene	4	ND(PQL) J
	Kepone	4	ND(PQL) J

Matrix spike/matrix spike duplicate (MS/MSD) sample analysis recovery criteria for organics require that the MS/MSD recovery must be within the laboratory-generated QC control limits specified on the MS reporting form. Sample results with MS/MSD recoveries that were less than the laboratory-generated QC control limits and have recoveries greater than 10% were qualified as estimated (J). The compounds that did not meet MS/MSD recovery criteria and the number of samples qualified due to those deviations are presented in the following table.

**Compounds Qualified Due to MS/MSD Recovery Deviations**

Analysis	Compound/Analyte	Number of Affected Samples	Qualification
SVOCs	1,2,4,5-Tetrachlorobenzene	1	ND(PQL) J
	Acetophenone	1	ND(PQL) J
	1,4-Naphthoquinone	1	ND(PQL) J
	3,3'-Dimethylbenzidine	1	ND(PQL) J
	4-Phenylenediamine	1	ND(PQL) J
	Aniline	1	ND(PQL) J
	Hexachlorocyclopentadiene	1	ND(PQL) J
	N-Nitrosodiphenylamine	1	ND(PQL) J

MS/MSD sample analysis recovery criteria for organics require that the RPD between the MS and MSD recoveries be less than the laboratory-generated QC acceptance limits specified on the MS/MSD reporting form. The compound that exceeded the RPD limit and the number of samples qualified due to deviations are presented in the following table.

**Compound Qualified Due to MS/MSD RPD Deviations**

Analysis	Compound	Number of Affected Samples	Qualification
SVOCs	1,4-Naphthoquinone	1	ND(PQL) J

Blank action levels for analytes detected in the blanks were calculated at five times the blank concentrations. Detected sample results that were below the blank action level were qualified with a “ND(PQL).” The analyte detected in method/analytical blanks 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/Compound	Number of Affected Samples	Qualification
Inorganics	Lead	2	ND(PQL)

Laboratory control sample (LCS) analysis recovery criteria for organics must be within the laboratory-generated QC acceptance limits specified on the LCS reporting form. Organic sample results associated with the LCS that exceeded laboratory-generated QC acceptance limits were qualified as estimated (J) and sample results with LCS recoveries less than 10% were qualified as rejected (R). The compounds that did not meet LCS recovery criteria and the number of samples qualified due to those deviations are presented in the following table.

**Compounds Qualified Due to LCS/LCSD Recovery Deviations**

Analysis	Compound	Number of Affected Samples	Qualification
VOCs	2-Chloroethylvinyl ether	4	R
SVOCs	1,2,4,5-Tetrachlorobenzene	4	ND(PQL) J
	3,3'-Dimethylbenzidine	4	ND(PQL) J
	4-Phenylenediamine	4	ND(PQL) J
	Acetophenone	4	ND(PQL) J
	Aniline	4	ND(PQL) J
	Benzidine	4	R
	Hexachlorocyclopentadiene	4	ND(PQL) J
	N-Nitrosodiphenylamine	4	ND(PQL) J

The laboratory did not spike the LCS/MS/MSD associated with the SVOC samples for several compounds. The LCS/MS/MSD was reanalyzed outside of holding time along with the samples to prove that recoveries were achievable. All sample results associated with compounds that achieved recoveries were qualified as estimated (J), and the compounds that exhibited recoveries less than 10% were qualified as rejected (R). The compounds that did not meet QC spike criteria and the number of samples qualified due to those deviations are presented in the following table.

**Compounds Qualified Due to Incorrect QC Spike**

<b>Analysis</b>	<b>Compound</b>	<b>Number of Affected Samples</b>	<b>Qualification</b>
SVOCs	1,3,5-Trinitrobenzene	4	ND(PQL) J
	1,3-Dinitrobenzene	4	ND(PQL) J
	1,4-Naphthoquinone	4	ND(PQL) J
	1-Naphthylamine	4	ND(PQL) J
	2-Acetylaminofluorene	4	ND(PQL) J
	2-Naphthylamine	4	ND(PQL) J
	2-Picoline	4	ND(PQL) J
	3,3'-Dimethylbenzidine	4	ND(PQL) J
	3-Methylcholanthrene	4	ND(PQL) J
	4-Aminobiphenyl	4	ND(PQL) J
	4-Chlorobenzilate	4	ND(PQL) J
	4-Nitroquinoline-1-oxide	4	ND(PQL) J
	4-Phenylenediamine	4	ND(PQL) J
	5-Nitro-o-toluidine	4	ND(PQL) J
	7,12-Dimethylbenz(a)anthracene	4	ND(PQL) J
	a,a'-Dimethylphenethylamine	4	ND(PQL) J
	Aramite	4	ND(PQL) J
	Diallate	4	ND(PQL) J
	Dimethoate	4	ND(PQL) J
	Dinoseb	4	ND(PQL) J
	Diphenylamine	4	ND(PQL) J
	Disulfoton	4	ND(PQL) J
	Ethyl Methanesulfonate	4	R
	Ethyl Parathion	4	ND(PQL) J
	Famphur	4	ND(PQL) J
	Hexachlorophene	4	ND(PQL) J
	Hexachloropropene	4	ND(PQL) J
	Isodrin	4	ND(PQL) J
	Isosafrole	4	ND(PQL) J
	Kepone	4	ND(PQL) J
	Methapyrilene	4	ND(PQL) J
	Methyl Methanesulfonate	4	R
	Methyl Parathion	4	ND(PQL) J
	N-Nitrosodiethylamine	4	ND(PQL) J
N-Nitroso-di-n-butylamine	4	ND(PQL) J	
N-Nitrosomethylethylamine	4	ND(PQL) J	
N-Nitrosomorpholine	4	ND(PQL) J	
N-Nitrosopiperidine	4	ND(PQL) J	
N-Nitrosopyrrolidine	4	ND(PQL) J	
o,o,o-Triethylphosphorothioate	4	ND(PQL) J	
o-Toluidine	4	ND(PQL) J	

**Compounds Qualified Due to Incorrect QC Spike**

<b>Analysis</b>	<b>Compound</b>	<b>Number of Affected Samples</b>	<b>Qualification</b>
SVOCs (continued)	p-Dimethylaminoazobenzene	4	ND(PQL) J
	Pentachlorobenzene	4	ND(PQL) J
	Pentachloroethane	4	R
	Phenacetin	4	ND(PQL) J
	Phorate	4	ND(PQL) J
	Pronamide	4	ND(PQL) J
	Safrole	4	ND(PQL) J
	Sulfotep	4	ND(PQL) J
	Thionazin	4	ND(PQL) J

**5.0 Overall Data Usability**

This section summarizes the analytical data in terms of its completeness and usability. 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/II data validation reviews. The percent usability calculation also includes quality control samples (i.e., field/equipment blanks, trip blanks, and field duplicates) to aid in the evaluation of data usability. Data usability is summarized in the following table.

<b>Data Usability</b>		
<b>Parameter</b>	<b>Percent Usability</b>	<b>Rejected Data</b>
VOCs	98.6	A total of four sample results were rejected due to LCS recovery deviations.
SVOCs	96.8	A total of 16 sample results were rejected due to LCS recovery deviations.
PCBs	100	None
Lead	100	None
PAC	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 field duplicates, MS/MSD samples, and LCS/LCSD samples. For this analytical program, 0.12% of the data required qualification due to MS/MSD RPD deviations. None of the data required qualification due to field duplicate RPD deviations or LCS/LCSD samples.

## **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, LCS, MS/MSD samples, CRDL samples, and surrogate compound recoveries. For this analytical program, 0.73% of the data required qualification due to instrument calibration deviations, 0.98% of the data required qualification due to MS/MSD recovery deviations, and 4.4% of the data required qualification due to LCS recovery deviations. None of the data required qualification due to internal standard recovery deviations, CRDL recovery 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 the EPA-approved work plans, and by following the procedures for sample collection/analyses that were described in the applicable FSP/QAPP. Additionally, the analytical program used procedures consistent with EPA-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 data set, 25% of the data was qualified due to incorrect QC spiking. None of the data required qualification due to holding time deviations.

## **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. Specifically, all the groundwater samples collected in April 2013 were analyzed by EPA SW-846 Methods 8260B for VOCs, 8270C for SVOCs, 8082 for PCBs, 6020A for lead, and 9012 (per MassDEP protocol) for PAC.



## **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. The actual completeness of this analytical data set ranged from 96.8% to 100% for individual analytical parameters and had an overall usability of 97.5%, which is greater than the minimum required usability of 90% as specified in the FSP/QAPP.

Table B-1  
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General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)

Sample Delivery Group No.	Sample ID	Date Collected	Matrix	Validation Level	Qualification	Compound	QA/QC Parameter	Value	Control Limits	Qualified Result	Notes
<b>PCBs</b>											
MC20133	A7-RR (Filtered)	4/23/2013	Water	Tier II	No						
MC20133	ESA2S-52 (Filtered)	4/24/2013	Water	Tier II	No						
MC20133	GMA1-DUP-042413-4 (Filtered)	4/24/2013	Water	Tier II	No						Duplicate of ESA2S-52 (Filtered)
MC20133	GMA1-RINSE BLANK (Filtered)	4/24/2013	Water	Tier II	No						
<b>Metals</b>											
MC20133	E2SC-23 (Filtered)	4/22/2013	Water	Tier II	Yes	Lead	Method Blank	-	-	ND(0.00100)	
MC20133	GMA1-30 (Filtered)	4/23/2013	Water	Tier II	No						
MC20133	GMA1-DUP0422-1 (Filtered)	4/22/2013	Water	Tier II	No						Duplicate of E2SC-23 (Filtered)
MC20133	GMA1-RINSE BLANK (Filtered)	4/24/2013	Water	Tier II	No						
MC20133	HR-G3-MW-2 (Filtered)	4/24/2013	Water	Tier II	Yes	Lead	Method Blank	-	-	ND(0.00100)	
<b>VOCs</b>											
MC20133	ESA1S-31R	4/23/2013	Water	Tier II	Yes	1,4-Dioxane	ICAL RRF	0.002	>0.05	ND(0.025) J	
						2-Butanone	ICAL RRF	0.032	>0.05	ND(0.0050) J	
						2-Chloroethylvinylether	LCS %R	0.0%	70% to 130%	R	
						Acetone	CCAL %D	36.4%	<25%	ND(0.010) J	
						Acetonitrile	CCAL %D	25.6%	<25%	ND(0.0050) J	
						Acrolein	ICAL RRF	0.019	>0.05	ND(0.025) J	
						Acrolein	CCAL %D	58.2%	<25%	ND(0.025) J	
						Propionitrile	ICAL RRF	0.044	>0.05	ND(0.0050) J	
						Vinyl Acetate	CCAL %D	25.4%	<25%	ND(0.0050) J	
MC20133	GMA1-DUP042313-3	4/23/2013	Water	Tier II	Yes	1,4-Dioxane	ICAL RRF	0.002	>0.05	ND(0.025) J	Duplicate of ESA1S-31R
						2-Butanone	ICAL RRF	0.032	>0.05	ND(0.0050) J	
						2-Chloroethylvinylether	LCS %R	0.0%	70% to 130%	R	
						Acetone	CCAL %D	36.4%	<25%	ND(0.010) J	
						Acetonitrile	CCAL %D	25.6%	<25%	ND(0.0050) J	
						Acrolein	ICAL RRF	0.019	>0.05	ND(0.025) J	
						Acrolein	CCAL %D	58.2%	<25%	ND(0.025) J	
						Propionitrile	ICAL RRF	0.044	>0.05	ND(0.0050) J	
						Vinyl Acetate	CCAL %D	25.4%	<25%	ND(0.0050) J	
MC20133	GMA1-RINSE BLANK	4/24/2013	Water	Tier II	Yes	1,4-Dioxane	ICAL RRF	0.002	>0.05	ND(0.025) J	
						2-Butanone	ICAL RRF	0.032	>0.05	ND(0.0050) J	
						2-Chloroethylvinylether	LCS %R	0.0%	70% to 130%	R	
						Acetone	CCAL %D	36.4%	<25%	0.0044 J	
						Acetonitrile	CCAL %D	25.6%	<25%	ND(0.0050) J	
						Acrolein	ICAL RRF	0.019	>0.05	ND(0.025) J	
						Acrolein	CCAL %D	58.2%	<25%	ND(0.025) J	
						Propionitrile	ICAL RRF	0.044	>0.05	ND(0.0050) J	
						Vinyl Acetate	CCAL %D	25.4%	<25%	ND(0.0050) J	
MC20133	TRIP BLANK	4/12/2013	Water	Tier II	Yes	1,4-Dioxane	ICAL RRF	0.002	>0.05	ND(0.025) J	
						2-Butanone	ICAL RRF	0.032	>0.05	ND(0.0050) J	
						Acetonitrile	CCAL %D	29.3%	<25%	ND(0.0050) J	
						Acrolein	ICAL RRF	0.019	>0.05	ND(0.025) J	
						Acrolein	CCAL %D	56.7%	<25%	ND(0.025) J	
						Dichlorodifluoromethane	CCAL %D	28.1%	<25%	ND(0.0020) J	
						Propionitrile	ICAL RRF	0.044	>0.05	ND(0.0050) J	
						Trichlorofluoromethane	CCAL %D	25.2%	<25%	ND(0.0010) J	
MC20133	TRIP BLANK	4/24/2013	Water	Tier II	Yes	1,4-Dioxane	ICAL RRF	0.002	>0.05	ND(0.025) J	
						2-Butanone	ICAL RRF	0.032	>0.05	ND(0.0050) J	
						2-Chloroethylvinylether	LCS %R	0.0%	70% to 130%	R	
						Acetone	CCAL %D	36.4%	<25%	0.0045 J	
						Acetonitrile	CCAL %D	25.6%	<25%	ND(0.0050) J	
						Acrolein	ICAL RRF	0.019	>0.05	ND(0.025) J	
						Acrolein	CCAL %D	58.2%	<25%	ND(0.025) J	
						Propionitrile	ICAL RRF	0.044	>0.05	ND(0.0050) J	
						Vinyl Acetate	CCAL %D	25.4%	<25%	ND(0.0050) J	
<b>SVOCs</b>											
MC20133	ESA1S-31R	4/23/2013	Water	Tier II	Yes	1,2,4,5-Tetrachlorobenzene	LCS %R	36.0%	40% to 140%	ND(0.010) J	
						1,2,4,5-Tetrachlorobenzene	MS %R	39.0%	40% to 140%	ND(0.010) J	
						1,3,5-Trinitrobenzene	QC Not Performed within HT	-	-	ND(0.010) J	
						1,3-Dinitrobenzene	QC Not Performed within HT	-	-	ND(0.010) J	
						1,4-Naphthoquinone	MS/MSD %R	32.0%, 22.0%	40% to 140%	ND(0.010) J	
						1,4-Naphthoquinone	MS/MSD RPD	52.0%	<20%	ND(0.010) J	

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Sample Delivery Group No.	Sample ID	Date Collected	Matrix	Validation Level	Qualification	Compound	QA/QC Parameter	Value	Control Limits	Qualified Result	Notes
SVOCs (continued)											
MC20133	ESATS-31R	4/23/2013	Water	Tier II	Yes	1,4-Naphthoquinone	QC Not Performed within HT	-	-	ND(0.010) J	
						1-Naphthylamine	QC Not Performed within HT	-	-	ND(0.010) J	
						2-Acetylaminofluorene	QC Not Performed within HT	-	-	ND(0.010) J	
						2-Naphthylamine	QC Not Performed within HT	-	-	ND(0.010) J	
						2-Picoline	QC Not Performed within HT	-	-	ND(0.010) J	
						3,3'-Dimethylbenzidine	LCS %R	32.0%	40% to 140%	ND(0.010) J	
						3,3'-Dimethylbenzidine	MS/MSD %R	31.0%, 32.0%	40% to 140%	ND(0.010) J	
						3,3'-Dimethylbenzidine	QC Not Performed within HT	-	-	ND(0.010) J	
						3-Methylcholanthrene	QC Not Performed within HT	-	-	ND(0.010) J	
						4-Aminobiphenyl	QC Not Performed within HT	-	-	ND(0.010) J	
						4-Chlorobenzilate	QC Not Performed within HT	-	-	ND(0.010) J	
						4-Nitroquinoline-1-oxide	QC Not Performed within HT	-	-	ND(0.010) J	
						4-Phenylenediamine	LCS %R	28.0%	40% to 140%	ND(0.010) J	
						4-Phenylenediamine	MS/MSD %R	36.0%, 38.0%	40% to 140%	ND(0.010) J	
						4-Phenylenediamine	QC Not Performed within HT	-	-	ND(0.010) J	
						5-Nitro-o-toluidine	QC Not Performed within HT	-	-	ND(0.010) J	
						7,12-Dimethylbenz(a)anthracene	QC Not Performed within HT	-	-	ND(0.010) J	
						a,a'-Dimethylphenethylamine	QC Not Performed within HT	-	-	ND(0.010) J	
						Acetophenone	LCS %R	38.0%	40% to 140%	ND(0.010) J	
						Acetophenone	MS %R	39.0%	40% to 140%	ND(0.010) J	
						Aniline	LCS %R	31.0%	40% to 140%	ND(0.010) J	
						Aniline	MS/MSD %R	32.0%, 33.0%	40% to 140%	ND(0.010) J	
						Aramite	QC Not Performed within HT	-	-	ND(0.010) J	
						Benzidine	LCS %R	1.0%	40% to 140%	R	
						Diallate	QC Not Performed within HT	-	-	ND(0.0052) J	
						Dimethoate	QC Not Performed within HT	-	-	ND(0.0052) J	
						Dinoseb	QC Not Performed within HT	-	-	ND(0.010) J	
						Diphenylamine	QC Not Performed within HT	-	-	ND(0.010) J	
						Disulfoton	QC Not Performed within HT	-	-	ND(0.0052) J	
						Ethyl Methanesulfonate	QC Not Performed within HT	-	-	R	
						Ethyl Parathion	QC Not Performed within HT	-	-	ND(0.0052) J	
						Famphur	CCAL %D	39.3%	<25%	ND(0.0052) J	
						Famphur	QC Not Performed within HT	-	-	ND(0.0052) J	
						Hexachlorocyclopentadiene	LCS %R	25.0%	40% to 140%	ND(0.010) J	
						Hexachlorocyclopentadiene	MS/MSD %R	27.0%, 28.0%	40% to 140%	ND(0.010) J	
						Hexachlorocyclopentadiene	CCAL %D	28.5%	<25%	ND(0.010) J	
						Hexachlorophene	ICAL RRF	0.005	>0.05	ND(0.010) J	
						Hexachlorophene	QC Not Performed within HT	-	-	ND(0.010) J	
						Hexachloropropene	QC Not Performed within HT	-	-	ND(0.010) J	
						Isodrin	QC Not Performed within HT	-	-	ND(0.010) J	
						Isosafrole	QC Not Performed within HT	-	-	ND(0.010) J	
						Kepone	CCAL %D	42.0%	<25%	ND(0.0052) J	
						Kepone	QC Not Performed within HT	-	-	ND(0.0052) J	
						Methapyrilene	QC Not Performed within HT	-	-	ND(0.010) J	
						Methyl Methanesulfonate	QC Not Performed within HT	-	-	R	
						Methyl Parathion	QC Not Performed within HT	-	-	ND(0.0052) J	
						N-Nitrosodiethylamine	QC Not Performed within HT	-	-	ND(0.010) J	
						N-Nitroso-di-n-butylamine	QC Not Performed within HT	-	-	ND(0.010) J	
						N-Nitrosodiphenylamine	LCS %R	35.0%	40% to 140%	ND(0.0050) J	
						N-Nitrosodiphenylamine	MS/MSD %R	35.0%, 37.0%	40% to 140%	ND(0.0050) J	
						N-Nitrosomethylethylamine	QC Not Performed within HT	-	-	ND(0.010) J	
						N-Nitrosomorpholine	QC Not Performed within HT	-	-	ND(0.010) J	
						N-Nitrosopiperidine	QC Not Performed within HT	-	-	ND(0.010) J	
						N-Nitrosopyrrolidine	QC Not Performed within HT	-	-	ND(0.010) J	
						o,o,o-Triethylphosphorothioate	QC Not Performed within HT	-	-	ND(0.010) J	
						o-Toluidine	QC Not Performed within HT	-	-	ND(0.010) J	
						p-Dimethylaminoazobenzene	QC Not Performed within HT	-	-	ND(0.010) J	
						Pentachlorobenzene	QC Not Performed within HT	-	-	ND(0.010) J	
						Pentachloroethane	QC Not Performed within HT	-	-	R	
						Phenacetin	QC Not Performed within HT	-	-	ND(0.010) J	
						Phorate	QC Not Performed within HT	-	-	ND(0.0052) J	
						Pronamide	QC Not Performed within HT	-	-	ND(0.010) J	

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Sample Delivery Group No.	Sample ID	Date Collected	Matrix	Validation Level	Qualification	Compound	QA/QC Parameter	Value	Control Limits	Qualified Result	Notes
SVOCs (continued)											
MC20133	ESA1S-31R	4/23/2013	Water	Tier II	Yes	Safrole	QC Not Performed within HT	-	-	ND(0.010) J	
						Sulfotep	QC Not Performed within HT	-	-	ND(0.010) J	
						Thionazin	QC Not Performed within HT	-	-	ND(0.010) J	
MC20133	ESA1S-72R	4/23/2013	Water	Tier II	Yes	1,2,4,5-Tetrachlorobenzene	LCS %R	36.0%	40% to 140%	ND(0.011) J	
						1,3,5-Trinitrobenzene	QC Not Performed within HT	-	-	ND(0.011) J	
						1,3-Dinitrobenzene	QC Not Performed within HT	-	-	ND(0.011) J	
						1,4-Naphthoquinone	QC Not Performed within HT	-	-	ND(0.011) J	
						1-Naphthylamine	QC Not Performed within HT	-	-	ND(0.011) J	
						2-Acetylaminofluorene	QC Not Performed within HT	-	-	ND(0.011) J	
						2-Naphthylamine	QC Not Performed within HT	-	-	ND(0.011) J	
						2-Picoline	QC Not Performed within HT	-	-	ND(0.011) J	
						3,3'-Dimethylbenzidine	LCS %R	32.0%	40% to 140%	ND(0.011) J	
						3,3'-Dimethylbenzidine	QC Not Performed within HT	-	-	ND(0.011) J	
						3-Methylcholanthrene	QC Not Performed within HT	-	-	ND(0.011) J	
						4-Aminobiphenyl	QC Not Performed within HT	-	-	ND(0.011) J	
						4-Chlorobenzilate	QC Not Performed within HT	-	-	ND(0.011) J	
						4-Nitroquinoline-1-oxide	QC Not Performed within HT	-	-	ND(0.011) J	
						4-Phenylenediamine	LCS %R	28.0%	40% to 140%	ND(0.011) J	
						4-Phenylenediamine	QC Not Performed within HT	-	-	ND(0.011) J	
						5-Nitro-o-toluidine	QC Not Performed within HT	-	-	ND(0.011) J	
						7,12-Dimethylbenz(a)anthracene	QC Not Performed within HT	-	-	ND(0.011) J	
						a,a'-Dimethylphenethylamine	QC Not Performed within HT	-	-	ND(0.011) J	
						Acetophenone	LCS %R	38.0%	40% to 140%	ND(0.011) J	
						Aniline	LCS %R	31.0%	40% to 140%	ND(0.011) J	
						Aramite	QC Not Performed within HT	-	-	ND(0.011) J	
						Benzidine	LCS %R	1.0%	40% to 140%	R	
						Diallate	QC Not Performed within HT	-	-	ND(0.0056) J	
						Dimethoate	QC Not Performed within HT	-	-	ND(0.0056) J	
						Dinoseb	QC Not Performed within HT	-	-	ND(0.011) J	
						Diphenylamine	QC Not Performed within HT	-	-	ND(0.011) J	
						Disulfoton	QC Not Performed within HT	-	-	ND(0.0056) J	
						Ethyl Methanesulfonate	QC Not Performed within HT	-	-	R	
						Ethyl Parathion	QC Not Performed within HT	-	-	ND(0.0056) J	
						Famphur	CCAL %D	39.3%	<25%	ND(0.0056) J	
						Famphur	QC Not Performed within HT	-	-	ND(0.0056) J	
						Hexachlorocyclopentadiene	LCS %R	25.0%	40% to 140%	ND(0.011) J	
						Hexachlorocyclopentadiene	CCAL %D	28.5%	<25%	ND(0.011) J	
						Hexachlorophene	ICAL RRF	0.005	>0.05	ND(0.011) J	
						Hexachlorophene	QC Not Performed within HT	-	-	ND(0.011) J	
						Hexachloropropene	QC Not Performed within HT	-	-	ND(0.011) J	
						Isodrin	QC Not Performed within HT	-	-	ND(0.011) J	
						Isosafrole	QC Not Performed within HT	-	-	ND(0.011) J	
						Kepone	CCAL %D	42.0%	<25%	ND(0.0056) J	
						Kepone	QC Not Performed within HT	-	-	ND(0.0056) J	
						Methapyrilene	QC Not Performed within HT	-	-	ND(0.011) J	
						Methyl Methanesulfonate	QC Not Performed within HT	-	-	R	
						Methyl Parathion	QC Not Performed within HT	-	-	ND(0.0056) J	
						N-Nitrosodiethylamine	QC Not Performed within HT	-	-	ND(0.011) J	
						N-Nitroso-di-n-butylamine	QC Not Performed within HT	-	-	ND(0.011) J	
						N-Nitrosodiphenylamine	LCS %R	35.0%	40% to 140%	ND(0.0056) J	
						N-Nitrosomethylethylamine	QC Not Performed within HT	-	-	ND(0.011) J	
						N-Nitrosomorpholine	QC Not Performed within HT	-	-	ND(0.011) J	
						N-Nitrosopiperidine	QC Not Performed within HT	-	-	ND(0.011) J	
						N-Nitrosopyrrolidine	QC Not Performed within HT	-	-	ND(0.011) J	
						o,o,o-Triethylphosphorothioate	QC Not Performed within HT	-	-	ND(0.011) J	
						o-Toluidine	QC Not Performed within HT	-	-	ND(0.011) J	
						p-Dimethylaminoazobenzene	QC Not Performed within HT	-	-	ND(0.011) J	
						Pentachlorobenzene	QC Not Performed within HT	-	-	ND(0.011) J	
						Pentachloroethane	QC Not Performed within HT	-	-	R	
						Phenacetin	QC Not Performed within HT	-	-	ND(0.011) J	
						Phorate	QC Not Performed within HT	-	-	ND(0.0056) J	
						Pronamide	QC Not Performed within HT	-	-	ND(0.011) J	

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General Electric Company - Pittsfield, Massachusetts  
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Sample Delivery Group No.	Sample ID	Date Collected	Matrix	Validation Level	Qualification	Compound	QA/QC Parameter	Value	Control Limits	Qualified Result	Notes
SVOCs (continued)											
MC20133	ESA1S-72R	4/23/2013	Water	Tier II	Yes	Safrole	QC Not Performed within HT	-	-	ND(0.011) J	
						Sulfotep	QC Not Performed within HT	-	-	ND(0.011) J	
						Thionazin	QC Not Performed within HT	-	-	ND(0.011) J	
MC20133	GMA1-DUP042313-3	4/23/2013	Water	Tier II	Yes	1,2,4,5-Tetrachlorobenzene	LCS %R	36.0%	40% to 140%	ND(0.010) J	Duplicate of ESA1S-31R
						1,3,5-Trinitrobenzene	QC Not Performed within HT	-	-	ND(0.010) J	
						1,3-Dinitrobenzene	QC Not Performed within HT	-	-	ND(0.010) J	
						1,4-Naphthoquinone	QC Not Performed within HT	-	-	ND(0.010) J	
						1-Naphthylamine	QC Not Performed within HT	-	-	ND(0.010) J	
						2-Acetylaminofluorene	QC Not Performed within HT	-	-	ND(0.010) J	
						2-Naphthylamine	QC Not Performed within HT	-	-	ND(0.010) J	
						2-Picoline	QC Not Performed within HT	-	-	ND(0.010) J	
						3,3'-Dimethylbenzidine	LCS %R	32.0%	40% to 140%	ND(0.010) J	
						3,3'-Dimethylbenzidine	QC Not Performed within HT	-	-	ND(0.010) J	
						3-Methylcholanthrene	QC Not Performed within HT	-	-	ND(0.010) J	
						4-Aminobiphenyl	QC Not Performed within HT	-	-	ND(0.010) J	
						4-Chlorobenzilate	QC Not Performed within HT	-	-	ND(0.010) J	
						4-Nitroquinoline-1-oxide	QC Not Performed within HT	-	-	ND(0.010) J	
						4-Phenylenediamine	LCS %R	28.0%	40% to 140%	ND(0.010) J	
						4-Phenylenediamine	QC Not Performed within HT	-	-	ND(0.010) J	
						5-Nitro-o-toluidine	QC Not Performed within HT	-	-	ND(0.010) J	
						7,12-Dimethylbenz(a)anthracene	QC Not Performed within HT	-	-	ND(0.010) J	
						a,a'-Dimethylphenethylamine	QC Not Performed within HT	-	-	ND(0.010) J	
						Acetophenone	LCS %R	38.0%	40% to 140%	ND(0.010) J	
						Aniline	LCS %R	31.0%	40% to 140%	ND(0.010) J	
						Aramite	QC Not Performed within HT	-	-	ND(0.010) J	
						Benzidine	LCS %R	1.0%	40% to 140%	R	
						Diallate	QC Not Performed within HT	-	-	ND(0.0052) J	
						Dimethoate	QC Not Performed within HT	-	-	ND(0.0052) J	
						Dinoseb	QC Not Performed within HT	-	-	ND(0.010) J	
						Diphenylamine	QC Not Performed within HT	-	-	ND(0.010) J	
						Disulfoton	QC Not Performed within HT	-	-	ND(0.0052) J	
						Ethyl Methanesulfonate	QC Not Performed within HT	-	-	R	
						Ethyl Parathion	QC Not Performed within HT	-	-	ND(0.0052) J	
						Famphur	CCAL %D	39.3%	<25%	ND(0.0052) J	
						Famphur	QC Not Performed within HT	-	-	ND(0.0052) J	
						Hexachlorocyclopentadiene	LCS %R	25.0%	40% to 140%	ND(0.010) J	
						Hexachlorocyclopentadiene	CCAL %D	28.5%	<25%	ND(0.010) J	
						Hexachlorophene	ICAL RRF	0.005	>0.05	ND(0.010) J	
						Hexachlorophene	QC Not Performed within HT	-	-	ND(0.010) J	
						Hexachloropropene	QC Not Performed within HT	-	-	ND(0.010) J	
						Isodrin	QC Not Performed within HT	-	-	ND(0.010) J	
						Isosafrole	QC Not Performed within HT	-	-	ND(0.010) J	
						Kepone	CCAL %D	42.0%	<25%	ND(0.0052) J	
						Kepone	QC Not Performed within HT	-	-	ND(0.0052) J	
						Methapyrilene	QC Not Performed within HT	-	-	ND(0.010) J	
						Methyl Methanesulfonate	QC Not Performed within HT	-	-	R	
						Methyl Parathion	QC Not Performed within HT	-	-	ND(0.0052) J	
						N-Nitrosodiethylamine	QC Not Performed within HT	-	-	ND(0.010) J	
						N-Nitroso-di-n-butylamine	QC Not Performed within HT	-	-	ND(0.010) J	
						N-Nitrosodiphenylamine	LCS %R	35.0%	40% to 140%	ND(0.0051) J	
						N-Nitrosomethylethylamine	QC Not Performed within HT	-	-	ND(0.010) J	
						N-Nitrosomorpholine	QC Not Performed within HT	-	-	ND(0.010) J	
						N-Nitrosopiperidine	QC Not Performed within HT	-	-	ND(0.010) J	
						N-Nitrosopyrrolidine	QC Not Performed within HT	-	-	ND(0.010) J	
						o,o,o-Triethylphosphorothioate	QC Not Performed within HT	-	-	ND(0.010) J	
						o-Toluidine	QC Not Performed within HT	-	-	ND(0.010) J	
						p-Dimethylaminoazobenzene	QC Not Performed within HT	-	-	ND(0.010) J	
						Pentachlorobenzene	QC Not Performed within HT	-	-	ND(0.010) J	
						Pentachloroethane	QC Not Performed within HT	-	-	R	
						Phenacetin	QC Not Performed within HT	-	-	ND(0.010) J	
						Phorate	QC Not Performed within HT	-	-	ND(0.0052) J	
						Pronamide	QC Not Performed within HT	-	-	ND(0.010) J	

Table B-1  
Analytical Data Validation Summary - Spring 2013

Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)

Sample Delivery Group No.	Sample ID	Date Collected	Matrix	Validation Level	Qualification	Compound	QA/QC Parameter	Value	Control Limits	Qualified Result	Notes
SVOCs (continued)											
MC20133	GMA1-DUP042313-3	4/23/2013	Water	Tier II	Yes	Safrole	QC Not Performed within HT	-	-	ND(0.010) J	
						Sulfotep	QC Not Performed within HT	-	-	ND(0.010) J	
						Thionazin	QC Not Performed within HT	-	-	ND(0.010) J	
MC20133	GMA1-RINSE BLANK	4/24/2013	Water	Tier II	Yes	1,2,4,5-Tetrachlorobenzene	LCS %R	36.0%	40% to 140%	ND(0.011) J	
						1,3,5-Trinitrobenzene	QC Not Performed within HT	-	-	ND(0.011) J	
						1,3-Dinitrobenzene	QC Not Performed within HT	-	-	ND(0.011) J	
						1,4-Naphthoquinone	QC Not Performed within HT	-	-	ND(0.011) J	
						1-Naphthylamine	QC Not Performed within HT	-	-	ND(0.011) J	
						2-Acetylaminofluorene	QC Not Performed within HT	-	-	ND(0.011) J	
						2-Naphthylamine	QC Not Performed within HT	-	-	ND(0.011) J	
						2-Picoline	QC Not Performed within HT	-	-	ND(0.011) J	
						3,3'-Dimethylbenzidine	LCS %R	32.0%	40% to 140%	ND(0.011) J	
						3,3'-Dimethylbenzidine	QC Not Performed within HT	-	-	ND(0.011) J	
						3-Methylcholanthrene	QC Not Performed within HT	-	-	ND(0.011) J	
						4-Aminobiphenyl	QC Not Performed within HT	-	-	ND(0.011) J	
						4-Chlorobenzilate	QC Not Performed within HT	-	-	ND(0.011) J	
						4-Nitroquinoline-1-oxide	QC Not Performed within HT	-	-	ND(0.011) J	
						4-Phenylenediamine	LCS %R	28.0%	40% to 140%	ND(0.011) J	
						4-Phenylenediamine	QC Not Performed within HT	-	-	ND(0.011) J	
						5-Nitro-o-toluidine	QC Not Performed within HT	-	-	ND(0.011) J	
						7,12-Dimethylbenz(a)anthracene	QC Not Performed within HT	-	-	ND(0.011) J	
						a,a'-Dimethylphenethylamine	QC Not Performed within HT	-	-	ND(0.011) J	
						Acetophenone	LCS %R	38.0%	40% to 140%	ND(0.011) J	
						Aniline	LCS %R	31.0%	40% to 140%	ND(0.011) J	
						Aramite	QC Not Performed within HT	-	-	ND(0.011) J	
						Benzidine	LCS %R	1.0%	40% to 140%	R	
						Diallate	QC Not Performed within HT	-	-	ND(0.0053) J	
						Dimethoate	QC Not Performed within HT	-	-	ND(0.0053) J	
						Dinoseb	QC Not Performed within HT	-	-	ND(0.011) J	
						Diphenylamine	QC Not Performed within HT	-	-	ND(0.011) J	
						Disulfoton	QC Not Performed within HT	-	-	ND(0.0053) J	
						Ethyl Methanesulfonate	QC Not Performed within HT	-	-	R	
						Ethyl Parathion	QC Not Performed within HT	-	-	ND(0.0053) J	
						Famphur	CCAL %D	39.3%	<25%	ND(0.0053) J	
						Famphur	QC Not Performed within HT	-	-	ND(0.0053) J	
						Hexachlorocyclopentadiene	LCS %R	25.0%	40% to 140%	ND(0.011) J	
						Hexachlorocyclopentadiene	CCAL %D	28.5%	<25%	ND(0.011) J	
						Hexachlorophene	ICAL RRF	0.005	>0.05	ND(0.011) J	
						Hexachlorophene	QC Not Performed within HT	-	-	ND(0.011) J	
						Hexachloropropene	QC Not Performed within HT	-	-	ND(0.011) J	
						Isodrin	QC Not Performed within HT	-	-	ND(0.011) J	
						Isosafrole	QC Not Performed within HT	-	-	ND(0.011) J	
						Kepone	CCAL %D	42.0%	<25%	ND(0.0053) J	
						Kepone	QC Not Performed within HT	-	-	ND(0.0053) J	
						Methapyrilene	QC Not Performed within HT	-	-	ND(0.011) J	
						Methyl Methanesulfonate	QC Not Performed within HT	-	-	R	
						Methyl Parathion	QC Not Performed within HT	-	-	ND(0.0053) J	
						N-Nitrosodiethylamine	QC Not Performed within HT	-	-	ND(0.011) J	
						N-Nitroso-di-n-butylamine	QC Not Performed within HT	-	-	ND(0.011) J	
						N-Nitrosodiphenylamine	LCS %R	35.0%	40% to 140%	ND(0.0056) J	
						N-Nitrosomethyl ethylamine	QC Not Performed within HT	-	-	ND(0.011) J	
						N-Nitrosomorpholine	QC Not Performed within HT	-	-	ND(0.011) J	
						N-Nitrosopiperidine	QC Not Performed within HT	-	-	ND(0.011) J	
						N-Nitrosopyrrolidine	QC Not Performed within HT	-	-	ND(0.011) J	
						o,o,o-Triethylphosphorothioate	QC Not Performed within HT	-	-	ND(0.011) J	
						o-Toluidine	QC Not Performed within HT	-	-	ND(0.011) J	
						p-Dimethylaminoazobenzene	QC Not Performed within HT	-	-	ND(0.011) J	
						Pentachlorobenzene	QC Not Performed within HT	-	-	ND(0.011) J	
						Pentachloroethane	QC Not Performed within HT	-	-	R	
						Phenacetin	QC Not Performed within HT	-	-	ND(0.011) J	
						Phorate	QC Not Performed within HT	-	-	ND(0.0053) J	
						Pronamide	QC Not Performed within HT	-	-	ND(0.011) J	

Table B-1  
Analytical Data Validation Summary - Spring 2013

Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)

Sample Delivery Group No.	Sample ID	Date Collected	Matrix	Validation Level	Qualification	Compound	QA/QC Parameter	Value	Control Limits	Qualified Result	Notes
<b>SVOCs (continued)</b>											
MC20133	GMA1-RINSE BLANK	4/24/2013	Water	Tier II	Yes	Safrole	QC Not Performed within HT	-	-	ND(0.011) J	
						Sulfotep	QC Not Performed within HT	-	-	ND(0.011) J	
						Thionazin	QC Not Performed within HT	-	-	ND(0.011) J	
<b>Cyanides</b>											
MC20133	E2SC-24 (Filtered)	4/22/2013	Water	Tier II	No						
MC20133	GMA1-DUP0422-2 (Filtered)	4/22/2013	Water	Tier II	No						Duplicate of E2SC-24 (Filtered)
MC20133	GMA1-RINSE BLANK (Filtered)	4/24/2013	Water	Tier II	No						





**Appendix B-2**

Fall 2013 Data Validation Report

**Appendix B-2**  
**Groundwater Sampling Data Validation Report – Fall 2013**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for**  
**Groundwater Management Area 1**  
**General Electric Company**  
**Pittsfield, Massachusetts**

**1.0 General**

This attachment summarizes the data validation review performed on behalf of the General Electric Company (GE) for groundwater samples collected in October 2013 as part of groundwater sampling activities conducted at Groundwater Management Area 1 (GMA 1), located at the GE-Pittsfield/Housatonic River Site in Pittsfield, Massachusetts. The samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and/or lead by Accutest Laboratories of Marlborough, Massachusetts. Data validation was performed for four VOC results, three SVOC results, three PCB results, and three lead results.

**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, as applicable:

- *Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP)*, General Electric Company, Pittsfield, Massachusetts, ARCADIS (Revision 5 submitted by GE on July 2, 2013 and approved by EPA on July 23, 2013);
- EPA Region I, *EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses* (July 1996, revised December 1996) (EPA Region I Guidelines); and
- EPA Region I, *Part IV, Inorganic Data Validation Functional Guidelines* (November 2008) of the above-cited EPA Region I Guidelines.

The data were validated to Tier I and Tier II levels, as described below. Any deviations from the applicable quality control criteria utilized during the data review process are identified below. A tabulated summary of the Tier I/Tier II data review is presented in Table B-2. Each sample subject to evaluation is listed in Table B-2 to document that data review was performed. Samples that required data qualification are listed separately.

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).

ND(PQL) The compound was analyzed for, but was not detected at the method detection limit. The sample PQL is presented in parentheses. Non-detect sample results are presented as ND(PQL) in this report for consistency with documents previously prepared for investigations conducted at the GE-Pittsfield/Housatonic River Site.<sup>1</sup>

ND(PQL) J The compound was not detected above the reported sample PQL, but the sample PQL is estimated and may or may not represent the actual level of quantitation. Non-detect sample results that required this qualification are presented as ND(PQL) J in this report for consistency with documents previously prepared for investigations conducted at the GE-Pittsfield/Housatonic River Site.<sup>2</sup>

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**

Section 7.5 of the revised FSP/QAPP states that all analytical data will be validated to a Tier I level following the procedures presented in the EPA Region I Guidelines. The Tier I review consisted of a completeness evidence audit, as outlined in the *EPA Region I CSF Completeness Evidence Audit Program* (EPA Region I, July 31, 1991), to ensure that 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 EPA Region I Tier I data completeness requirements.

All analytical results from the groundwater sampling activities described above were also subjected to a Tier II data review. The Tier II data review consisted of a review of data package summary forms for identification of quality assurance/quality control (QA/QC) deviations and qualification of the data according to the EPA Region I Guidelines. Additionally, field duplicates were examined for relative percent difference (RPD) compliance with the criteria specified in the FSP/QAPP.

A tabulated summary of the samples subject to Tier I and Tier II data review is presented in the following table.

Parameter	Tier I & Tier II			Total
	Samples	Duplicates	Blanks	
VOCs	1	1	2	4
SVOCs	1	1	1	3
PCBs	1	1	1	3
Lead	1	1	1	3
<b>Total</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>13</b>

<sup>1</sup> This project specific nomenclature differs from that in EPA guidance, which uses the qualifier U for non-detected compounds.

<sup>2</sup> This project specific nomenclature differs from that in EPA guidance, which uses the qualifier UJ for non-detected compounds in this category.

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 the EPA Region I Guidelines. 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 in Section 4 below.

#### **4.0 Summary of QA/QC Parameter Deviations Requiring Data Qualification**

This section provides a summary of the deviations from the applicable QA/QC criteria that resulted in qualification of results.

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

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

<b>Analysis</b>	<b>Compound</b>	<b>Number of Affected Samples</b>	<b>Qualification</b>
VOCs	1,4-Dioxane	4	ND(PQL) J
	Propionitrile	4	ND(PQL) J

The continuing calibration criterion requires that the percent difference (%D) between the initial calibration RRF and the continuing calibration RRF for SVOCs be less than 25%. Sample data for detect 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**

<b>Analysis</b>	<b>Compound</b>	<b>Number of Affected Samples</b>	<b>Qualification</b>
SVOCs	1,4-Naphthoquinone	3	ND(PQL) J
	Hexachlorocyclopentadiene	3	ND(PQL) J
	Methapyrilene	3	ND(PQL) J

Matrix spike/matrix spike duplicate (MS/MSD) sample analysis recovery criteria for organics require that the MS/MSD recovery must be within the laboratory-generated QC control limits specified on the MS reporting form. Sample results with MS/MSD recoveries that were less than the laboratory-generated QC control limits and have recoveries greater than 10% were qualified as estimated (J) and sample results with MS/MSD recoveries less than 10% were qualified as rejected (R). The compounds that did not meet MS/MSD recovery criteria and the number of samples qualified due to those deviations are presented in the following table.

**Compounds Qualified Due to MS/MSD Recovery Deviations**

<b>Analysis</b>	<b>Compound/Analyte</b>	<b>Number of Affected Samples</b>	<b>Qualification</b>
VOCs	2-Chloroethylvinylether	1	R
SVOCs	1,4-Naphthoquinone	1	ND(PQL) J
	3,3'-Dimethylbenzidine	1	ND(PQL) J
	4-Phenylenediamine	1	R
	Ethyl Methanesulfonate	1	R
	Methyl Methanesulfonate	1	R
	Pentachloroethane	1	R
	Pyridine	1	ND(PQL) J
	N-Nitrosodimethylamine	1	ND(PQL) J

MS/MSD sample analysis recovery criteria for organics require that the RPD between the MS and MSD recoveries be less than the laboratory-generated QC acceptance limits specified on the MS/MSD reporting form. The compounds that exceeded the RPD limit and the number of samples qualified due to deviations are presented in the following table.

**Compounds Qualified Due to MS/MSD RPD Deviations**

<b>Analysis</b>	<b>Compound</b>	<b>Number of Affected Samples</b>	<b>Qualification</b>
SVOCs	1,4-Naphthoquinone	1	ND(PQL) J
	bis(2-Ethylhexyl)phthalate	1	ND(PQL) J

Blank action levels for analytes detected in the blanks were calculated at five times the blank concentrations. Detected sample results that were below the blank action level were qualified with a "ND(PQL)." The analyte detected in method/analytical blanks 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**

<b>Analysis</b>	<b>Analyte/Compound</b>	<b>Number of Affected Samples</b>	<b>Qualification</b>
Inorganics	Lead	2	ND(PQL)

Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analysis recovery criteria for organics must be within the laboratory-generated QC acceptance limits specified on the LCS/LCSD reporting form. Organic sample results associated with the LCS/LCSD that exceeded laboratory-generated QC acceptance limits were qualified as estimated (J) and sample results with LCS/LCSD recoveries less than 10% were qualified as rejected (R). The compounds that did not meet LCS/LCSD recovery criteria and the number of samples qualified due to those deviations are presented in the following table.

**Compounds Qualified Due to LCS/LCSD Recovery Deviations**

Analysis	Compound	Number of Affected Samples	Qualification
SVOCs	1,4-Naphthoquinone	3	ND(PQL) J
	3,3'-Dimethylbenzidine	3	ND(PQL) J
	4-Phenylenediamine	3	R
	Ethyl Methanesulfonate	3	R
	Methyl Methanesulfonate	3	R
	Pentachloroethane	3	R
	Pyridine	3	ND(PQL) J

LCS/LCSD sample analysis recovery criteria for organics require that the RPD between the LCS and LCSD recoveries be less than the laboratory-generated QC acceptance limits specified on the LCS/LCSD reporting form. The compound that exceeded the RPD limit and the number of samples qualified due to deviations are presented in the following table.

**Compound Qualified Due to LCS/LCSD RPD Deviations**

Analysis	Compound	Number of Affected Samples	Qualification
VOCs	1,4-Dioxane	4	ND(PQL) J

**5.0 Overall Data Usability**

This section summarizes the analytical data in terms of its completeness and usability. 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/II data validation reviews. The percent usability calculation also includes quality control samples (i.e., field/equipment blanks, trip blanks, and field duplicates) to aid in the evaluation of data usability. Data usability is summarized in the following table.

**Data Usability**

Parameter	Percent Usability	Rejected Data
VOCs	99.6	A total of one sample result was rejected due to MS/MSD recovery deviations.
SVOCs	96.5	A total of 12 sample results were rejected due to LCS/LCSD recovery deviations.
PCBs	100	None
Lead	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 field duplicates, MS/MSD samples, and LCS/LCSD samples. For this analytical program, 0.34% of the data required qualification due to MS/MSD RPD deviations and 0.70% of the data required qualification due to LCS/LCSD RPD deviations. None of the data required qualification due to field duplicate RPD 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, LCS, MS/MSD samples, CRDL samples, and surrogate compound recoveries. For this analytical program, 3.0% of the data required qualification due to instrument calibration deviations, 1.6% of the data required qualification due to MS/MSD recovery deviations, and 3.7% of the data required qualification due to LCS/LCSD recovery deviations. None of the data required qualification due to internal standard recovery deviations, CRDL recovery 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 the EPA-approved work plans, and by following the procedures for sample collection/analyses that were described in the applicable FSP/QAPP. Additionally, the analytical program used procedures consistent with EPA-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. None of the data required qualification due to holding time deviations.

### **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. Specifically, all the groundwater samples collected in October 2013 were analyzed by EPA SW-846 Methods 8260B for VOCs, 8270C for SVOCs, 8082 for PCBs, and 6020A for lead.

## **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. The actual completeness of this analytical data set ranged from 96.5% to 100% for individual analytical parameters and had an overall usability of 97.7%, which is greater than the minimum required usability of 90% as specified in the FSP/QAPP.



**Table B-2**  
**Analytical Data Validation Summary - Fall 2013**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

Sample Delivery Group No.	Sample ID	Date Collected	Matrix	Validation Level	Qualification	Compound	QA/QC Parameter	Value	Control Limits	Qualified Result	Notes
<b>PCBs</b>											
MC25199	ESA1S-31R (Filtered)	10/8/2013	Water	Tier II	No						
MC25199	GMA1-100813-DUP-2 (Filtered)	10/8/2013	Water	Tier II	No						Duplicate of ESA1S-31R (Filtered)
MC25199	RINSE BLANK-GMA1 (Filtered)	10/8/2013	Water	Tier II	No						
<b>Metals</b>											
MC25199	DUP-1-GMA1 (Filtered)	10/8/2013	Water	Tier II	Yes	Lead	Rinse Blank	-	-	ND(1.0)	Duplicate of E2SC-23 (Filtered)
MC25199	E2SC-23 (Filtered)	10/8/2013	Water	Tier II	Yes	Lead	Rinse Blank	-	-	ND(1.0)	
MC25199	RINSE BLANK-GMA1 (Filtered)	10/8/2013	Water	Tier II	No						
<b>VOCs</b>											
MC25199	ESA1S-31R	10/8/2013	Water	Tier II	Yes	1,4-Dioxane	LCS/LCSD RPD	34.0%	<20%	ND(0.025) J	
						1,4-Dioxane	ICAL RRF	0.003	>0.05	ND(0.025) J	
						2-Chloroethylvinylether	MS/MSD %R	0.0%, 0.0%	70.0% to 130%	R	
						Propionitrile	ICAL RRF	0.044	>0.05	ND(0.0050) J	
MC25199	GMA1-100813-DUP-2	10/8/2013	Water	Tier II	Yes	1,4-Dioxane	LCS/LCSD RPD	34.0%	<20%	ND(0.025) J	Duplicate of ESA1S-31R
						1,4-Dioxane	ICAL RRF	0.003	>0.05	ND(0.025) J	
						Propionitrile	ICAL RRF	0.044	>0.05	ND(0.0050) J	
MC25199	RINSE BLANK-GMA1	10/8/2013	Water	Tier II	Yes	1,4-Dioxane	LCS/LCSD RPD	34.0%	<20%	ND(0.025) J	
						1,4-Dioxane	ICAL RRF	0.003	>0.05	ND(0.025) J	
						Propionitrile	ICAL RRF	0.044	>0.05	ND(0.0050) J	
MC25199	TRIP BLANK	10/8/2013	Water	Tier II	Yes	1,4-Dioxane	LCS/LCSD RPD	34.0%	<20%	ND(0.025) J	
						1,4-Dioxane	ICAL RRF	0.003	>0.05	ND(0.025) J	
						Propionitrile	ICAL RRF	0.044	>0.05	ND(0.0050) J	
<b>SVOCs</b>											
MC25199	ESA1S-31R	10/8/2013	Water	Tier II	Yes	1,4-Naphthoquinone	LCS %R	26.0%	40% to 140%	ND(0.011) J	
						1,4-Naphthoquinone	MS/MSD %R	25.0%, 32.0%	40% to 140%	ND(0.011) J	
						1,4-Naphthoquinone	MS/MSD RPD	23.0%	<20%	ND(0.011) J	
						1,4-Naphthoquinone	CCAL %D	39.5%	<25%	ND(0.011) J	
						3,3'-Dimethylbenzidine	LCS %R	17.0%	40% to 140%	ND(0.011) J	
						3,3'-Dimethylbenzidine	MS/MSD %R	13.0%, 13.0%	40% to 140%	ND(0.011) J	
						4-Phenylenediamine	LCS %R	0.0%	40% to 140%	R	
						4-Phenylenediamine	MS/MSD %R	0.0%, 0.0%	40% to 140%	R	
						bis(2-Ethylhexyl)phthalate	MS/MSD RPD	35.0%	<20%	ND(0.0022) J	
						Ethyl Methanesulfonate	LCS %R	0.0%	40% to 140%	R	
						Ethyl Methanesulfonate	MS/MSD %R	0.0%, 0.0%	40% to 140%	R	
						Hexachlorocyclopentadiene	CCAL %D	25.1%	<25%	ND(0.011) J	
						Methapyrilene	CCAL %D	26.4%	<25%	ND(0.011) J	
						Methyl Methanesulfonate	LCS %R	0.0%	40% to 140%	R	
						Methyl Methanesulfonate	MS/MSD %R	0.0%, 0.0%	40% to 140%	R	
						N-Nitrosodimethylamine	MSD %R	39.0%	40% to 140%	ND(0.0055) J	
						Pentachloroethane	LCS %R	0.0%	40% to 140%	R	
						Pentachloroethane	MS/MSD %R	0.0%, 0.0%	40% to 140%	R	
						Pyridine	LCS %R	38.0%	40% to 140%	ND(0.011) J	
						Pyridine	MS/MSD %R	37.0%, 32.0%	40% to 140%	ND(0.011) J	
MC25199	GMA1-100813-DUP-2	10/8/2013	Water	Tier II	Yes	1,4-Naphthoquinone	LCS %R	26.0%	40% to 140%	ND(0.011) J	Duplicate of ESA1S-31R
						1,4-Naphthoquinone	CCAL %D	39.5%	<25%	ND(0.011) J	
						3,3'-Dimethylbenzidine	LCS %R	17.0%	40% to 140%	ND(0.011) J	
						4-Phenylenediamine	LCS %R	0.0%	40% to 140%	R	
						Ethyl Methanesulfonate	LCS %R	0.0%	40% to 140%	R	
						Hexachlorocyclopentadiene	CCAL %D	25.1%	<25%	ND(0.011) J	
						Methapyrilene	CCAL %D	26.4%	<25%	ND(0.011) J	
						Methyl Methanesulfonate	LCS %R	0.0%	40% to 140%	R	
						Pentachloroethane	LCS %R	0.0%	40% to 140%	R	
						Pyridine	LCS %R	38.0%	40% to 140%	ND(0.011) J	
MC25199	RINSE BLANK-GMA1	10/8/2013	Water	Tier II	Yes	1,4-Naphthoquinone	LCS %R	26.0%	40% to 140%	ND(0.010) J	
						1,4-Naphthoquinone	CCAL %D	39.5%	<25%	ND(0.010) J	
						3,3'-Dimethylbenzidine	LCS %R	17.0%	40% to 140%	ND(0.010) J	
						4-Phenylenediamine	LCS %R	0.0%	40% to 140%	R	
						Ethyl Methanesulfonate	LCS %R	0.0%	40% to 140%	R	
						Hexachlorocyclopentadiene	CCAL %D	25.1%	<25%	ND(0.010) J	
						Methapyrilene	CCAL %D	26.4%	<25%	ND(0.010) J	
						Methyl Methanesulfonate	LCS %R	0.0%	40% to 140%	R	
						Pentachloroethane	LCS %R	0.0%	40% to 140%	R	
						Pyridine	LCS %R	38.0%	40% to 140%	ND(0.010) J	



## **Appendix C**

Groundwater Analytical Results –  
Spring and Fall 2013

**Table C-1**  
**Spring 2013 Groundwater Analytical Results**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

Parameter	Site ID:	East St. Area 1 - South		East St. Area 2 - North	East St. Area 2 - South
	Sample ID: Date Collected:	ESA1S-31R 04/23/13	ESA1S-72R 04/23/13	A7-RR 04/23/13	E2SC-23 04/22/13
<b>Volatile Organics</b>					
1,1,1,2-Tetrachloroethane		ND(0.0050) [ND(0.0050)]	NA	NA	NA
1,1,1-Trichloroethane		ND(0.0010) [ND(0.0010)]	NA	NA	NA
1,1,2,2-Tetrachloroethane		ND(0.0010) [ND(0.0010)]	NA	NA	NA
1,1,2-Trichloroethane		ND(0.0010) [ND(0.0010)]	NA	NA	NA
1,1-Dichloroethane		ND(0.0010) [ND(0.0010)]	NA	NA	NA
1,1-Dichloroethene		ND(0.0010) [ND(0.0010)]	NA	NA	NA
1,2,3-Trichloropropane		ND(0.0050) [ND(0.0050)]	NA	NA	NA
1,2-Dibromo-3-chloropropane		ND(0.0050) [ND(0.0050)]	NA	NA	NA
1,2-Dibromoethane		ND(0.0020) [ND(0.0020)]	NA	NA	NA
1,2-Dichloroethane		ND(0.0010) [ND(0.0010)]	NA	NA	NA
1,2-Dichloropropane		ND(0.0020) [ND(0.0020)]	NA	NA	NA
1,4-Dioxane		ND(0.025) J [ND(0.025) J]	NA	NA	NA
2-Butanone		ND(0.0050) J [ND(0.0050) J]	NA	NA	NA
2-Chloro-1,3-butadiene		ND(0.0050) [ND(0.0050)]	NA	NA	NA
2-Chloroethylvinylether		R [R]	NA	NA	NA
2-Hexanone		ND(0.0050) [ND(0.0050)]	NA	NA	NA
3-Chloropropene		ND(0.0050) [ND(0.0050)]	NA	NA	NA
4-Methyl-2-pentanone		ND(0.0050) [ND(0.0050)]	NA	NA	NA
Acetone		ND(0.010) J [ND(0.010) J]	NA	NA	NA
Acetonitrile		ND(0.0050) J [ND(0.0050) J]	NA	NA	NA
Acrolein		ND(0.025) J [ND(0.025) J]	NA	NA	NA
Acrylonitrile		ND(0.0050) [ND(0.0050)]	NA	NA	NA
Benzene		ND(0.00050) [ND(0.00050)]	NA	NA	NA
Bromodichloromethane		0.0054 [0.0053]	NA	NA	NA
Bromoform		ND(0.0010) [ND(0.0010)]	NA	NA	NA
Bromomethane		ND(0.0020) [ND(0.0020)]	NA	NA	NA
Carbon Disulfide		ND(0.0050) [ND(0.0050)]	NA	NA	NA
Carbon Tetrachloride		ND(0.0010) [ND(0.0010)]	NA	NA	NA
Chlorobenzene		ND(0.0010) [ND(0.0010)]	NA	NA	NA
Chloroethane		ND(0.0020) [ND(0.0020)]	NA	NA	NA
Chloroform		0.022 [0.022]	NA	NA	NA
Chloromethane		ND(0.0020) [ND(0.0020)]	NA	NA	NA
cis-1,3-Dichloropropene		ND(0.00050) [ND(0.00050)]	NA	NA	NA
Dibromochloromethane		ND(0.0010) [ND(0.0010)]	NA	NA	NA
Dibromomethane		ND(0.0050) [ND(0.0050)]	NA	NA	NA
Dichlorodifluoromethane		ND(0.0020) [ND(0.0020)]	NA	NA	NA
Ethyl Methacrylate		ND(0.0050) [ND(0.0050)]	NA	NA	NA
Ethylbenzene		ND(0.0010) [ND(0.0010)]	NA	NA	NA
Iodomethane		ND(0.0050) [ND(0.0050)]	NA	NA	NA
Isobutanol		ND(0.025) [ND(0.025)]	NA	NA	NA
Methacrylonitrile		ND(0.0050) [ND(0.0050)]	NA	NA	NA
Methyl Methacrylate		ND(0.0050) [ND(0.0050)]	NA	NA	NA
Methylene Chloride		ND(0.0020) [ND(0.0020)]	NA	NA	NA
Propionitrile		ND(0.0050) J [ND(0.0050) J]	NA	NA	NA
Styrene		ND(0.0050) [ND(0.0050)]	NA	NA	NA
Tetrachloroethene		ND(0.0010) [ND(0.0010)]	NA	NA	NA
Toluene		ND(0.0010) [ND(0.0010)]	NA	NA	NA
trans-1,2-Dichloroethene		ND(0.0010) [ND(0.0010)]	NA	NA	NA
trans-1,3-Dichloropropene		ND(0.00050) [ND(0.00050)]	NA	NA	NA
trans-1,4-Dichloro-2-butene		ND(0.0050) [ND(0.0050)]	NA	NA	NA
Trichloroethene		ND(0.0010) [ND(0.0010)]	NA	NA	NA
Trichlorofluoromethane		ND(0.0010) [ND(0.0010)]	NA	NA	NA
Vinyl Acetate		ND(0.0050) J [ND(0.0050) J]	NA	NA	NA
Vinyl Chloride		ND(0.0010) [ND(0.0010)]	NA	NA	NA
Xylenes (total)		ND(0.0010) [ND(0.0010)]	NA	NA	NA
Total VOCs		0.027 [0.027]	NA	NA	NA

**Table C-1**  
**Spring 2013 Groundwater Analytical Results**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

Parameter	Site ID:	East St. Area 1 - South		East St. Area 2 - North	East St. Area 2 - South
	Sample ID: Date Collected:	ESA1S-31R 04/23/13	ESA1S-72R 04/23/13	A7-RR 04/23/13	E2SC-23 04/22/13
<b>PCBs-Filtered</b>					
Aroclor-1016		NA	NA	ND(0.00025)	NA
Aroclor-1221		NA	NA	ND(0.00025)	NA
Aroclor-1232		NA	NA	ND(0.00025)	NA
Aroclor-1242		NA	NA	ND(0.00025)	NA
Aroclor-1248		NA	NA	ND(0.00025)	NA
Aroclor-1254		NA	NA	0.00010 J	NA
Aroclor-1260		NA	NA	ND(0.00025)	NA
Total PCBs		NA	NA	0.00010 J	NA
<b>Semivolatile Organics</b>					
1,2,4,5-Tetrachlorobenzene		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
1,2,4-Trichlorobenzene		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
1,2-Dichlorobenzene		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
1,2-Diphenylhydrazine		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
1,3,5-Trinitrobenzene		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
1,3-Dichlorobenzene		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
1,3-Dinitrobenzene		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
1,4-Dichlorobenzene		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
1,4-Naphthoquinone		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
1-Naphthylamine		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
2,3,4,6-Tetrachlorophenol		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
2,4,5-Trichlorophenol		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
2,4,6-Trichlorophenol		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
2,4-Dichlorophenol		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
2,4-Dimethylphenol		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
2,4-Dinitrophenol		ND(0.020) [ND(0.020)]	ND(0.022)	NA	NA
2,4-Dinitrotoluene		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
2,6-Dichlorophenol		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
2,6-Dinitrotoluene		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
2-Acetylaminofluorene		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
2-Chloronaphthalene		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
2-Chlorophenol		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
2-Methylnaphthalene		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
2-Methylphenol		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
2-Naphthylamine		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
2-Nitroaniline		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
2-Nitrophenol		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
2-Picoline		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
3&4-Methylphenol		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
3,3'-Dichlorobenzidine		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
3,3'-Dimethylbenzidine		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
3-Methylcholanthrene		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
3-Nitroaniline		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
4,6-Dinitro-2-methylphenol		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
4-Aminobiphenyl		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
4-Bromophenyl-phenylether		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
4-Chloro-3-Methylphenol		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
4-Chloroaniline		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
4-Chlorobenzilate		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
4-Chlorophenyl-phenylether		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
4-Nitroaniline		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
4-Nitrophenol		ND(0.020) [ND(0.020)]	ND(0.022)	NA	NA
4-Nitroquinoline-1-oxide		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
4-Phenylenediamine		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
5-Nitro-o-toluidine		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
7,12-Dimethylbenz(a)anthracene		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
a,a'-Dimethylphenethylamine		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA

**Table C-1**  
**Spring 2013 Groundwater Analytical Results**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

Parameter	Site ID:	East St. Area 1 - South		East St. Area 2 - North	East St. Area 2 - South
	Sample ID: Date Collected:	ESA1S-31R 04/23/13	ESA1S-72R 04/23/13	A7-RR 04/23/13	E2SC-23 04/22/13
<b>Semivolatile Organics (continued)</b>					
Acenaphthene		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
Acenaphthylene		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
Acetophenone		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
Aniline		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
Anthracene		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
Aramite		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
Benzidine		R [R]	R	NA	NA
Benzo(a)anthracene		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
Benzo(a)pyrene		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
Benzo(b)fluoranthene		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
Benzo(g,h,i)perylene		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
Benzo(k)fluoranthene		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
Benzyl Alcohol		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
bis(2-Chloroethoxy)methane		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
bis(2-Chloroethyl)ether		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
bis(2-Chloroisopropyl)ether		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
bis(2-Ethylhexyl)phthalate		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
Butylbenzylphthalate		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
Chrysene		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
Diallate		ND(0.0052) J [ND(0.0052) J]	ND(0.0056) J	NA	NA
Dibenzo(a,h)anthracene		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
Dibenzofuran		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
Diethylphthalate		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
Dimethylphthalate		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
Di-n-Butylphthalate		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
Di-n-Octylphthalate		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
Diphenylamine		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
Ethyl Methanesulfonate		R [R]	R	NA	NA
Fluoranthene		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
Fluorene		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
Hexachlorobenzene		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
Hexachlorobutadiene		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
Hexachlorocyclopentadiene		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
Hexachloroethane		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
Hexachlorophene		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
Hexachloropropene		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
Indeno(1,2,3-cd)pyrene		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
Isodrin		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
Isophorone		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
Isosafrole		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
Methapyrilene		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
Methyl Methanesulfonate		R [R]	R	NA	NA
Naphthalene		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
Nitrobenzene		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
N-Nitrosodiethylamine		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
N-Nitrosodimethylamine		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
N-Nitroso-di-n-butylamine		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
N-Nitroso-di-n-propylamine		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
N-Nitrosodiphenylamine		ND(0.0050) J [ND(0.0051) J]	ND(0.0056) J	NA	NA
N-Nitrosomethylethylamine		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
N-Nitrosomorpholine		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
N-Nitrosopiperidine		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
N-Nitrosopyrrolidine		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA

**Table C-1**  
**Spring 2013 Groundwater Analytical Results**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

Parameter	Site ID:	East St. Area 1 - South		East St. Area 2 - North	East St. Area 2 - South
	Sample ID: Date Collected:	ESA1S-31R 04/23/13	ESA1S-72R 04/23/13	A7-RR 04/23/13	E2SC-23 04/22/13
<b>Semivolatile Organics (continued)</b>					
o,o,o-Triethylphosphorothioate		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
o-Toluidine		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
p-Dimethylaminoazobenzene		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
Pentachlorobenzene		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
Pentachloroethane		R [R]	R	NA	NA
Pentachloronitrobenzene		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
Pentachlorophenol		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
Phenacetin		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
Phenanthrene		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
Phenol		ND(0.0050) [ND(0.0051)]	ND(0.0056)	NA	NA
Pronamide		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
Pyrene		ND(0.0020) [ND(0.0020)]	ND(0.0022)	NA	NA
Pyridine		ND(0.010) [ND(0.010)]	ND(0.011)	NA	NA
Safrole		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
Thionazin		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
<b>Organochlorine Pesticides</b>					
Kepone		ND(0.0052) J [ND(0.0052) J]	ND(0.0056) J	NA	NA
<b>Organophosphate Pesticides</b>					
Dimethoate		ND(0.0052) J [ND(0.0052) J]	ND(0.0056) J	NA	NA
Disulfoton		ND(0.0052) J [ND(0.0052) J]	ND(0.0056) J	NA	NA
Ethyl Parathion		ND(0.0052) J [ND(0.0052) J]	ND(0.0056) J	NA	NA
Famphur		ND(0.0052) J [ND(0.0052) J]	ND(0.0056) J	NA	NA
Methyl Parathion		ND(0.0052) J [ND(0.0052) J]	ND(0.0056) J	NA	NA
Phorate		ND(0.0052) J [ND(0.0052) J]	ND(0.0056) J	NA	NA
Sulfotep		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
<b>Herbicides</b>					
Dinoseb		ND(0.010) J [ND(0.010) J]	ND(0.011) J	NA	NA
<b>Inorganics-Filtered</b>					
Cyanide (PAC)		NA	NA	NA	NA
Lead		NA	NA	NA	ND(0.00100) [ND(0.00100)]

**Table C-1**  
**Spring 2013 Groundwater Analytical Results**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

Parameter	Site ID:	East St. Area 2 - South			
	Sample ID: Date Collected:	E2SC-24 04/22/13	52 04/24/13	GMA1-30 04/23/13	HR-G3-MW-2 04/24/13
<b>Volatile Organics</b>					
1,1,1,2-Tetrachloroethane		NA	NA	NA	NA
1,1,1-Trichloroethane		NA	NA	NA	NA
1,1,2,2-Tetrachloroethane		NA	NA	NA	NA
1,1,2-Trichloroethane		NA	NA	NA	NA
1,1-Dichloroethane		NA	NA	NA	NA
1,1-Dichloroethene		NA	NA	NA	NA
1,2,3-Trichloropropane		NA	NA	NA	NA
1,2-Dibromo-3-chloropropane		NA	NA	NA	NA
1,2-Dibromoethane		NA	NA	NA	NA
1,2-Dichloroethane		NA	NA	NA	NA
1,2-Dichloropropane		NA	NA	NA	NA
1,4-Dioxane		NA	NA	NA	NA
2-Butanone		NA	NA	NA	NA
2-Chloro-1,3-butadiene		NA	NA	NA	NA
2-Chloroethylvinylether		NA	NA	NA	NA
2-Hexanone		NA	NA	NA	NA
3-Chloropropene		NA	NA	NA	NA
4-Methyl-2-pentanone		NA	NA	NA	NA
Acetone		NA	NA	NA	NA
Acetonitrile		NA	NA	NA	NA
Acrolein		NA	NA	NA	NA
Acrylonitrile		NA	NA	NA	NA
Benzene		NA	NA	NA	NA
Bromodichloromethane		NA	NA	NA	NA
Bromoform		NA	NA	NA	NA
Bromomethane		NA	NA	NA	NA
Carbon Disulfide		NA	NA	NA	NA
Carbon Tetrachloride		NA	NA	NA	NA
Chlorobenzene		NA	NA	NA	NA
Chloroethane		NA	NA	NA	NA
Chloroform		NA	NA	NA	NA
Chloromethane		NA	NA	NA	NA
cis-1,3-Dichloropropene		NA	NA	NA	NA
Dibromochloromethane		NA	NA	NA	NA
Dibromomethane		NA	NA	NA	NA
Dichlorodifluoromethane		NA	NA	NA	NA
Ethyl Methacrylate		NA	NA	NA	NA
Ethylbenzene		NA	NA	NA	NA
Iodomethane		NA	NA	NA	NA
Isobutanol		NA	NA	NA	NA
Methacrylonitrile		NA	NA	NA	NA
Methyl Methacrylate		NA	NA	NA	NA
Methylene Chloride		NA	NA	NA	NA
Propionitrile		NA	NA	NA	NA
Styrene		NA	NA	NA	NA
Tetrachloroethene		NA	NA	NA	NA
Toluene		NA	NA	NA	NA
trans-1,2-Dichloroethene		NA	NA	NA	NA
trans-1,3-Dichloropropene		NA	NA	NA	NA
trans-1,4-Dichloro-2-butene		NA	NA	NA	NA
Trichloroethene		NA	NA	NA	NA
Trichlorofluoromethane		NA	NA	NA	NA
Vinyl Acetate		NA	NA	NA	NA
Vinyl Chloride		NA	NA	NA	NA
Xylenes (total)		NA	NA	NA	NA
Total VOCs		NA	NA	NA	NA

**Table C-1  
Spring 2013 Groundwater Analytical Results**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

Parameter	Site ID:	East St. Area 2 - South			
	Sample ID: Date Collected:	E2SC-24 04/22/13	52 04/24/13	GMA1-30 04/23/13	HR-G3-MW-2 04/24/13
<b>PCBs-Filtered</b>					
Aroclor-1016		NA	ND(0.00026) [ND(0.00026)]	NA	NA
Aroclor-1221		NA	ND(0.00026) [ND(0.00026)]	NA	NA
Aroclor-1232		NA	ND(0.00026) [ND(0.00026)]	NA	NA
Aroclor-1242		NA	ND(0.00026) [ND(0.00026)]	NA	NA
Aroclor-1248		NA	ND(0.00026) [ND(0.00026)]	NA	NA
Aroclor-1254		NA	ND(0.00026) [ND(0.00026)]	NA	NA
Aroclor-1260		NA	ND(0.00026) [ND(0.00026)]	NA	NA
Total PCBs		NA	ND(0.00026) [ND(0.00026)]	NA	NA
<b>Semivolatile Organics</b>					
1,2,4,5-Tetrachlorobenzene		NA	NA	NA	NA
1,2,4-Trichlorobenzene		NA	NA	NA	NA
1,2-Dichlorobenzene		NA	NA	NA	NA
1,2-Diphenylhydrazine		NA	NA	NA	NA
1,3,5-Trinitrobenzene		NA	NA	NA	NA
1,3-Dichlorobenzene		NA	NA	NA	NA
1,3-Dinitrobenzene		NA	NA	NA	NA
1,4-Dichlorobenzene		NA	NA	NA	NA
1,4-Naphthoquinone		NA	NA	NA	NA
1-Naphthylamine		NA	NA	NA	NA
2,3,4,6-Tetrachlorophenol		NA	NA	NA	NA
2,4,5-Trichlorophenol		NA	NA	NA	NA
2,4,6-Trichlorophenol		NA	NA	NA	NA
2,4-Dichlorophenol		NA	NA	NA	NA
2,4-Dimethylphenol		NA	NA	NA	NA
2,4-Dinitrophenol		NA	NA	NA	NA
2,4-Dinitrotoluene		NA	NA	NA	NA
2,6-Dichlorophenol		NA	NA	NA	NA
2,6-Dinitrotoluene		NA	NA	NA	NA
2-Acetylaminofluorene		NA	NA	NA	NA
2-Chloronaphthalene		NA	NA	NA	NA
2-Chlorophenol		NA	NA	NA	NA
2-Methylnaphthalene		NA	NA	NA	NA
2-Methylphenol		NA	NA	NA	NA
2-Naphthylamine		NA	NA	NA	NA
2-Nitroaniline		NA	NA	NA	NA
2-Nitrophenol		NA	NA	NA	NA
2-Picoline		NA	NA	NA	NA
3&4-Methylphenol		NA	NA	NA	NA
3,3'-Dichlorobenzidine		NA	NA	NA	NA
3,3'-Dimethylbenzidine		NA	NA	NA	NA
3-Methylcholanthrene		NA	NA	NA	NA
3-Nitroaniline		NA	NA	NA	NA
4,6-Dinitro-2-methylphenol		NA	NA	NA	NA
4-Aminobiphenyl		NA	NA	NA	NA
4-Bromophenyl-phenylether		NA	NA	NA	NA
4-Chloro-3-Methylphenol		NA	NA	NA	NA
4-Chloroaniline		NA	NA	NA	NA
4-Chlorobenzilate		NA	NA	NA	NA
4-Chlorophenyl-phenylether		NA	NA	NA	NA
4-Nitroaniline		NA	NA	NA	NA
4-Nitrophenol		NA	NA	NA	NA
4-Nitroquinoline-1-oxide		NA	NA	NA	NA
4-Phenylenediamine		NA	NA	NA	NA
5-Nitro-o-toluidine		NA	NA	NA	NA
7,12-Dimethylbenz(a)anthracene		NA	NA	NA	NA
a,a'-Dimethylphenethylamine		NA	NA	NA	NA



**Table C-1  
Spring 2013 Groundwater Analytical Results**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

Parameter	Site ID:	East St. Area 2 - South			
	Sample ID: Date Collected:	E2SC-24 04/22/13	52 04/24/13	GMA1-30 04/23/13	HR-G3-MW-2 04/24/13
<b>Semivolatile Organics (continued)</b>					
Acenaphthene		NA	NA	NA	NA
Acenaphthylene		NA	NA	NA	NA
Acetophenone		NA	NA	NA	NA
Aniline		NA	NA	NA	NA
Anthracene		NA	NA	NA	NA
Aramite		NA	NA	NA	NA
Benzidine		NA	NA	NA	NA
Benzo(a)anthracene		NA	NA	NA	NA
Benzo(a)pyrene		NA	NA	NA	NA
Benzo(b)fluoranthene		NA	NA	NA	NA
Benzo(g,h,i)perylene		NA	NA	NA	NA
Benzo(k)fluoranthene		NA	NA	NA	NA
Benzyl Alcohol		NA	NA	NA	NA
bis(2-Chloroethoxy)methane		NA	NA	NA	NA
bis(2-Chloroethyl)ether		NA	NA	NA	NA
bis(2-Chloroisopropyl)ether		NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate		NA	NA	NA	NA
Butylbenzylphthalate		NA	NA	NA	NA
Chrysene		NA	NA	NA	NA
Diallate		NA	NA	NA	NA
Dibenzo(a,h)anthracene		NA	NA	NA	NA
Dibenzofuran		NA	NA	NA	NA
Diethylphthalate		NA	NA	NA	NA
Dimethylphthalate		NA	NA	NA	NA
Di-n-Butylphthalate		NA	NA	NA	NA
Di-n-Octylphthalate		NA	NA	NA	NA
Diphenylamine		NA	NA	NA	NA
Ethyl Methanesulfonate		NA	NA	NA	NA
Fluoranthene		NA	NA	NA	NA
Fluorene		NA	NA	NA	NA
Hexachlorobenzene		NA	NA	NA	NA
Hexachlorobutadiene		NA	NA	NA	NA
Hexachlorocyclopentadiene		NA	NA	NA	NA
Hexachloroethane		NA	NA	NA	NA
Hexachlorophene		NA	NA	NA	NA
Hexachloropropene		NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene		NA	NA	NA	NA
Isodrin		NA	NA	NA	NA
Isophorone		NA	NA	NA	NA
Isosafrole		NA	NA	NA	NA
Methapyrilene		NA	NA	NA	NA
Methyl Methanesulfonate		NA	NA	NA	NA
Naphthalene		NA	NA	NA	NA
Nitrobenzene		NA	NA	NA	NA
N-Nitrosodiethylamine		NA	NA	NA	NA
N-Nitrosodimethylamine		NA	NA	NA	NA
N-Nitroso-di-n-butylamine		NA	NA	NA	NA
N-Nitroso-di-n-propylamine		NA	NA	NA	NA
N-Nitrosodiphenylamine		NA	NA	NA	NA
N-Nitrosomethylethylamine		NA	NA	NA	NA
N-Nitrosomorpholine		NA	NA	NA	NA
N-Nitrosopiperidine		NA	NA	NA	NA
N-Nitrosopyrrolidine		NA	NA	NA	NA

**Table C-1**  
**Spring 2013 Groundwater Analytical Results**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

Parameter	Site ID:	East St. Area 2 - South			
	Sample ID: Date Collected:	E2SC-24 04/22/13	52 04/24/13	GMA1-30 04/23/13	HR-G3-MW-2 04/24/13
<b>Semivolatile Organics (continued)</b>					
o,o,o-Triethylphosphorothioate		NA	NA	NA	NA
o-Toluidine		NA	NA	NA	NA
p-Dimethylaminoazobenzene		NA	NA	NA	NA
Pentachlorobenzene		NA	NA	NA	NA
Pentachloroethane		NA	NA	NA	NA
Pentachloronitrobenzene		NA	NA	NA	NA
Pentachlorophenol		NA	NA	NA	NA
Phenacetin		NA	NA	NA	NA
Phenanthrene		NA	NA	NA	NA
Phenol		NA	NA	NA	NA
Pronamide		NA	NA	NA	NA
Pyrene		NA	NA	NA	NA
Pyridine		NA	NA	NA	NA
Safrole		NA	NA	NA	NA
Thionazin		NA	NA	NA	NA
<b>Organochlorine Pesticides</b>					
Kepon		NA	NA	NA	NA
<b>Organophosphate Pesticides</b>					
Dimethoate		NA	NA	NA	NA
Disulfoton		NA	NA	NA	NA
Ethyl Parathion		NA	NA	NA	NA
Famphur		NA	NA	NA	NA
Methyl Parathion		NA	NA	NA	NA
Phorate		NA	NA	NA	NA
Sulfotep		NA	NA	NA	NA
<b>Herbicides</b>					
Dinoseb		NA	NA	NA	NA
<b>Inorganics-Filtered</b>					
Cyanide (PAC)		0.0170 [0.0230]	NA	NA	NA
Lead		NA	NA	ND(0.00100)	ND(0.00100)

**Table C-1  
Spring 2013 Groundwater Analytical Results**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

NOTES:

1. Samples were collected by ARCADIS and submitted to Accutest Laboratories for analysis of PCBs (filtered) and selected Appendix IX+3 constituents, as indicated.
2. Physiologically available cyanide (PAC) analysis conducted in accordance with the PAC protocols contained in the August 13, 2004 MDEP document entitled *Quality Assurance and Quality Control Requirements and Performance Standards for SWC-846 Method 9014, Total Cyanide and the MADEP Physiologically Available Cyanide (PAC) Protocol for the Massachusetts Contingency Plan (MCP)*.
3. Sample results have been validated in accordance with GE's Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP), dated March 2007, as approved by EPA, with the modified data qualifier designations specified in GE's revised FSP/QAPP, dated July 2013.
4. NA - Not Analyzed.
5. ND - Analyte was not detected. The number in parentheses is the associated reporting limit.
6. Field duplicate sample results are presented in brackets.

Data Qualifiers:

Organics (volatiles, PCBs, semivolatiles, pesticides, herbicides)

- J - Indicates that the associated numerical value is an estimated concentration.
- R - Data was rejected due to a deficiency in the data generation process.

Inorganics

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

**Table C-2**  
**Fall 2013 Groundwater Analytical Results**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

Parameter	Site ID: Sample ID: Date Collected:	East St. Area 1 - South ESA1S-31R 10/08/13	East St. Area 2 - South E2SC-23 10/08/13
<b>Volatile Organics</b>			
1,1,1,2-Tetrachloroethane		ND(0.0010) [ND(0.0010)]	NA
1,1,1-Trichloroethane		ND(0.0010) [ND(0.0010)]	NA
1,1,2,2-Tetrachloroethane		ND(0.00050) [ND(0.00050)]	NA
1,1,2-Trichloroethane		ND(0.0010) [ND(0.0010)]	NA
1,1-Dichloroethane		ND(0.0010) [ND(0.0010)]	NA
1,1-Dichloroethene		ND(0.0010) [ND(0.0010)]	NA
1,2,3-Trichloropropane		ND(0.0050) [ND(0.0050)]	NA
1,2-Dibromo-3-chloropropane		ND(0.0050) [ND(0.0050)]	NA
1,2-Dibromoethane		ND(0.0020) [ND(0.0020)]	NA
1,2-Dichloroethane		ND(0.0010) [ND(0.0010)]	NA
1,2-Dichloropropane		ND(0.0020) [ND(0.0020)]	NA
1,4-Dioxane		ND(0.025) J [ND(0.025) J]	NA
2-Butanone		ND(0.0050) [ND(0.0050)]	NA
2-Chloro-1,3-butadiene		ND(0.0050) [ND(0.0050)]	NA
2-Chloroethylvinylether		R [ND(0.0050)]	NA
2-Hexanone		ND(0.0050) [ND(0.0050)]	NA
3-Chloropropene		ND(0.0050) [ND(0.0050)]	NA
4-Methyl-2-pentanone		ND(0.0050) [ND(0.0050)]	NA
Acetone		ND(0.010) [ND(0.010)]	NA
Acetonitrile		ND(0.0050) [ND(0.0050)]	NA
Acrolein		ND(0.025) [ND(0.025)]	NA
Acrylonitrile		ND(0.0050) [ND(0.0050)]	NA
Benzene		ND(0.00050) [ND(0.00050)]	NA
Bromodichloromethane		0.0014 [0.0017]	NA
Bromoform		ND(0.0010) [ND(0.0010)]	NA
Bromomethane		ND(0.0020) [ND(0.0020)]	NA
Carbon Disulfide		ND(0.0050) [ND(0.0050)]	NA
Carbon Tetrachloride		ND(0.0010) [ND(0.0010)]	NA
Chlorobenzene		ND(0.0010) [ND(0.0010)]	NA
Chloroethane		ND(0.0020) [ND(0.0020)]	NA
Chloroform		0.0014 [0.0017]	NA
Chloromethane		ND(0.0020) [ND(0.0020)]	NA
cis-1,3-Dichloropropene		ND(0.00050) [ND(0.00050)]	NA
Dibromochloromethane		ND(0.0010) [ND(0.0010)]	NA
Dibromomethane		ND(0.0050) [ND(0.0050)]	NA
Dichlorodifluoromethane		ND(0.0020) [ND(0.0020)]	NA
Ethyl Methacrylate		ND(0.0050) [ND(0.0050)]	NA
Ethylbenzene		ND(0.0010) [ND(0.0010)]	NA
Iodomethane		ND(0.0050) [ND(0.0050)]	NA
Isobutanol		ND(0.025) [ND(0.025)]	NA
Methacrylonitrile		ND(0.0050) [ND(0.0050)]	NA
Methyl Methacrylate		ND(0.0050) [ND(0.0050)]	NA
Methylene Chloride		ND(0.0020) [ND(0.0020)]	NA
Propionitrile		ND(0.0050) J [ND(0.0050) J]	NA
Styrene		ND(0.0050) [ND(0.0050)]	NA
Tetrachloroethene		ND(0.0010) [ND(0.0010)]	NA
Toluene		ND(0.0010) [ND(0.0010)]	NA
trans-1,2-Dichloroethene		ND(0.0010) [ND(0.0010)]	NA
trans-1,3-Dichloropropene		ND(0.00050) [ND(0.00050)]	NA
trans-1,4-Dichloro-2-butene		ND(0.0050) [ND(0.0050)]	NA
Trichloroethene		ND(0.0010) [ND(0.0010)]	NA
Trichlorofluoromethane		ND(0.0010) [ND(0.0010)]	NA
Vinyl Acetate		ND(0.0050) [ND(0.0050)]	NA
Vinyl Chloride		ND(0.0010) [ND(0.0010)]	NA
Xylenes (total)		ND(0.0010) [ND(0.0010)]	NA
Total VOCs		0.0028 [0.0034]	NA

**Table C-2**  
**Fall 2013 Groundwater Analytical Results**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

Parameter	Site ID: Sample ID: Date Collected:	East St. Area 1 - South ESA1S-31R 10/08/13	East St. Area 2 - South E2SC-23 10/08/13
<b>PCBs-Filtered</b>			
Aroclor-1016		ND(0.00031) [ND(0.00028)]	NA
Aroclor-1221		ND(0.00031) [ND(0.00028)]	NA
Aroclor-1232		ND(0.00031) [ND(0.00028)]	NA
Aroclor-1242		ND(0.00031) [ND(0.00028)]	NA
Aroclor-1248		ND(0.00031) [ND(0.00028)]	NA
Aroclor-1254		ND(0.00031) [ND(0.00028)]	NA
Aroclor-1260		ND(0.00031) [ND(0.00028)]	NA
Total PCBs		ND(0.00031) [ND(0.00028)]	NA
<b>Semivolatile Organics</b>			
1,2,4,5-Tetrachlorobenzene		ND(0.011) [ND(0.011)]	NA
1,2,4-Trichlorobenzene		ND(0.0055) [ND(0.0055)]	NA
1,2-Dichlorobenzene		ND(0.0055) [ND(0.0055)]	NA
1,2-Diphenylhydrazine		ND(0.0055) [ND(0.0055)]	NA
1,3,5-Trinitrobenzene		ND(0.011) [ND(0.011)]	NA
1,3-Dichlorobenzene		ND(0.0055) [ND(0.0055)]	NA
1,3-Dinitrobenzene		ND(0.011) [ND(0.011)]	NA
1,4-Dichlorobenzene		ND(0.0055) [ND(0.0055)]	NA
1,4-Naphthoquinone		ND(0.011) J [ND(0.011) J]	NA
1-Naphthylamine		ND(0.011) [ND(0.011)]	NA
2,3,4,6-Tetrachlorophenol		ND(0.011) [ND(0.011)]	NA
2,4,5-Trichlorophenol		ND(0.011) [ND(0.011)]	NA
2,4,6-Trichlorophenol		ND(0.011) [ND(0.011)]	NA
2,4-Dichlorophenol		ND(0.011) [ND(0.011)]	NA
2,4-Dimethylphenol		ND(0.011) [ND(0.011)]	NA
2,4-Dinitrophenol		ND(0.022) [ND(0.022)]	NA
2,4-Dinitrotoluene		ND(0.011) [ND(0.011)]	NA
2,6-Dichlorophenol		ND(0.011) [ND(0.011)]	NA
2,6-Dinitrotoluene		ND(0.011) [ND(0.011)]	NA
2-Acetylaminofluorene		ND(0.011) [ND(0.011)]	NA
2-Chloronaphthalene		ND(0.0055) [ND(0.0055)]	NA
2-Chlorophenol		ND(0.0055) [ND(0.0055)]	NA
2-Methylnaphthalene		ND(0.0022) [ND(0.0022)]	NA
2-Methylphenol		ND(0.011) [ND(0.011)]	NA
2-Naphthylamine		ND(0.011) [ND(0.011)]	NA
2-Nitroaniline		ND(0.011) [ND(0.011)]	NA
2-Nitrophenol		ND(0.011) [ND(0.011)]	NA
2-Picoline		ND(0.011) [ND(0.011)]	NA
3&4-Methylphenol		ND(0.011) [ND(0.011)]	NA
3,3'-Dichlorobenzidine		ND(0.0055) [ND(0.0055)]	NA
3,3'-Dimethylbenzidine		ND(0.011) J [ND(0.011) J]	NA
3-Methylcholanthrene		ND(0.011) [ND(0.011)]	NA
3-Nitroaniline		ND(0.011) [ND(0.011)]	NA
4,6-Dinitro-2-methylphenol		ND(0.011) [ND(0.011)]	NA
4-Aminobiphenyl		ND(0.011) [ND(0.011)]	NA
4-Bromophenyl-phenylether		ND(0.0055) [ND(0.0055)]	NA
4-Chloro-3-Methylphenol		ND(0.011) [ND(0.011)]	NA
4-Chloroaniline		ND(0.011) [ND(0.011)]	NA
4-Chlorobenzilate		ND(0.011) [ND(0.011)]	NA
4-Chlorophenyl-phenylether		ND(0.0055) [ND(0.0055)]	NA
4-Nitroaniline		ND(0.011) [ND(0.011)]	NA
4-Nitrophenol		ND(0.022) [ND(0.022)]	NA
4-Nitroquinoline-1-oxide		ND(0.011) [ND(0.011)]	NA
4-Phenylenediamine		R [R]	NA
5-Nitro-o-toluidine		ND(0.011) [ND(0.011)]	NA
7,12-Dimethylbenz(a)anthracene		ND(0.011) [ND(0.011)]	NA
a,a'-Dimethylphenethylamine		ND(0.011) [ND(0.011)]	NA

**Table C-2**  
**Fall 2013 Groundwater Analytical Results**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

Parameter	Site ID: Sample ID: Date Collected:	East St. Area 1 - South ESA1S-31R 10/08/13	East St. Area 2 - South E2SC-23 10/08/13																																																																																																																																																												
<b>Semivolatile Organics (continued)</b>																																																																																																																																																															
Acenaphthene		ND(0.0022) [ND(0.0022)]	NA																																																																																																																																																												
Acenaphthylene		ND(0.0022) [ND(0.0022)]	NA																																																																																																																																																												
Acetophenone		ND(0.011) [ND(0.011)]	NA																																																																																																																																																												
Aniline		ND(0.011) [ND(0.011)]	NA																																																																																																																																																												
Anthracene		ND(0.0022) [ND(0.0022)]	NA																																																																																																																																																												
Aramite		ND(0.011) [ND(0.011)]	NA																																																																																																																																																												
Benzidine		ND(0.0055) [ND(0.0055)]	NA																																																																																																																																																												
Benzo(a)anthracene		ND(0.0022) [ND(0.0022)]	NA																																																																																																																																																												
Benzo(a)pyrene		ND(0.0022) [ND(0.0022)]	NA																																																																																																																																																												
Benzo(b)fluoranthene		ND(0.0022) [ND(0.0022)]	NA																																																																																																																																																												
Benzo(g,h,i)perylene		ND(0.0022) [ND(0.0022)]	NA																																																																																																																																																												
Benzo(k)fluoranthene		ND(0.0022) [ND(0.0022)]	NA																																																																																																																																																												
Benzyl Alcohol		ND(0.011) [ND(0.011)]	NA																																																																																																																																																												
bis(2-Chloroethoxy)methane		ND(0.0055) [ND(0.0055)]	NA																																																																																																																																																												
bis(2-Chloroethyl)ether		ND(0.0055) [ND(0.0055)]	NA																																																																																																																																																												
bis(2-Chloroisopropyl)ether		ND(0.0055) [ND(0.0055)]	NA </tr <tr> <td>bis(2-Ethylhexyl)phthalate</td> <td></td> <td>ND(0.0022) J [ND(0.0022)]</td> <td>NA</td> </tr> <tr> <td>Butylbenzylphthalate</td> <td></td> <td>ND(0.0055) [ND(0.0055)]</td> <td>NA</td> </tr> <tr> <td>Chrysene</td> <td></td> <td>ND(0.0022) [ND(0.0022)]</td> <td>NA</td> </tr> <tr> <td>Diallate</td> <td></td> <td>ND(0.0055) [ND(0.0055)]</td> <td>NA</td> </tr> <tr> <td>Dibenzo(a,h)anthracene</td> <td></td> <td>ND(0.0022) [ND(0.0022)]</td> <td>NA</td> </tr> <tr> <td>Dibenzofuran</td> <td></td> <td>ND(0.0022) [ND(0.0022)]</td> <td>NA</td> </tr> <tr> <td>Diethylphthalate</td> <td></td> <td>ND(0.0055) [ND(0.0055)]</td> <td>NA</td> </tr> <tr> <td>Dimethylphthalate</td> <td></td> <td>ND(0.0055) [ND(0.0055)]</td> <td>NA</td> </tr> <tr> <td>Di-n-Butylphthalate</td> <td></td> <td>ND(0.0055) [ND(0.0055)]</td> <td>NA</td> </tr> <tr> <td>Di-n-Octylphthalate</td> <td></td> <td>ND(0.0055) [ND(0.0055)]</td> <td>NA</td> </tr> <tr> <td>Diphenylamine</td> <td></td> <td>ND(0.011) [ND(0.011)]</td> <td>NA</td> </tr> <tr> <td>Ethyl Methanesulfonate</td> <td></td> <td>R [R]</td> <td>NA</td> </tr> <tr> <td>Fluoranthene</td> <td></td> <td>ND(0.0022) [ND(0.0022)]</td> <td>NA</td> </tr> <tr> <td>Fluorene</td> <td></td> <td>ND(0.0022) [ND(0.0022)]</td> <td>NA</td> </tr> <tr> <td>Hexachlorobenzene</td> <td></td> <td>ND(0.0055) [ND(0.0055)]</td> <td>NA</td> </tr> <tr> <td>Hexachlorobutadiene</td> <td></td> <td>ND(0.0055) [ND(0.0055)]</td> <td>NA</td> </tr> <tr> <td>Hexachlorocyclopentadiene</td> <td></td> <td>ND(0.011) J [ND(0.011) J]</td> <td>NA</td> </tr> <tr> <td>Hexachloroethane</td> <td></td> <td>ND(0.0055) [ND(0.0055)]</td> <td>NA</td> </tr> <tr> <td>Hexachlorophene</td> <td></td> <td>ND(0.011) [ND(0.011)]</td> <td>NA</td> </tr> <tr> <td>Hexachloropropene</td> <td></td> <td>ND(0.011) [ND(0.011)]</td> <td>NA</td> </tr> <tr> <td>Indeno(1,2,3-cd)pyrene</td> <td></td> <td>ND(0.0022) [ND(0.0022)]</td> <td>NA</td> </tr> <tr> <td>Isodrin</td> <td></td> <td>ND(0.011) [ND(0.011)]</td> <td>NA</td> </tr> <tr> <td>Isophorone</td> <td></td> <td>ND(0.0055) [ND(0.0055)]</td> <td>NA</td> </tr> <tr> <td>Isosafrole</td> <td></td> <td>ND(0.011) [ND(0.011)]</td> <td>NA</td> </tr> <tr> <td>Methapyrilene</td> <td></td> <td>ND(0.011) J [ND(0.011) J]</td> <td>NA</td> </tr> <tr> <td>Methyl Methanesulfonate</td> <td></td> <td>R [R]</td> <td>NA</td> </tr> <tr> <td>Naphthalene</td> <td></td> <td>ND(0.0022) [ND(0.0022)]</td> <td>NA</td> </tr> <tr> <td>Nitrobenzene</td> <td></td> <td>ND(0.0055) [ND(0.0055)]</td> <td>NA</td> </tr> <tr> <td>N-Nitrosodiethylamine</td> <td></td> <td>ND(0.011) [ND(0.011)]</td> <td>NA</td> </tr> <tr> <td>N-Nitrosodimethylamine</td> <td></td> <td>ND(0.0055) J [ND(0.0055)]</td> <td>NA</td> </tr> <tr> <td>N-Nitroso-di-n-butylamine</td> <td></td> <td>ND(0.011) [ND(0.011)]</td> <td>NA</td> </tr> <tr> <td>N-Nitroso-di-n-propylamine</td> <td></td> <td>ND(0.0055) [ND(0.0055)]</td> <td>NA</td> </tr> <tr> <td>N-Nitrosodiphenylamine</td> <td></td> <td>ND(0.0055) [ND(0.0055)]</td> <td>NA</td> </tr> <tr> <td>N-Nitrosomethylethylamine</td> <td></td> <td>ND(0.011) [ND(0.011)]</td> <td>NA</td> </tr> <tr> <td>N-Nitrosomorpholine</td> <td></td> <td>ND(0.011) [ND(0.011)]</td> <td>NA</td> </tr> <tr> <td>N-Nitrosopiperidine</td> <td></td> <td>ND(0.011) [ND(0.011)]</td> <td>NA</td> </tr> <tr> <td>N-Nitrosopyrrolidine</td> <td></td> <td>ND(0.011) [ND(0.011)]</td> <td>NA</td> </tr> <tr> <td>o,o,o-Triethylphosphorothioate</td> <td></td> <td>ND(0.011) [ND(0.011)]</td> <td>NA</td> </tr> <tr> <td>o-Toluidine</td> <td></td> <td>ND(0.011) [ND(0.011)]</td> <td>NA</td> </tr>	bis(2-Ethylhexyl)phthalate		ND(0.0022) J [ND(0.0022)]	NA	Butylbenzylphthalate		ND(0.0055) [ND(0.0055)]	NA	Chrysene		ND(0.0022) [ND(0.0022)]	NA	Diallate		ND(0.0055) [ND(0.0055)]	NA	Dibenzo(a,h)anthracene		ND(0.0022) [ND(0.0022)]	NA	Dibenzofuran		ND(0.0022) [ND(0.0022)]	NA	Diethylphthalate		ND(0.0055) [ND(0.0055)]	NA	Dimethylphthalate		ND(0.0055) [ND(0.0055)]	NA	Di-n-Butylphthalate		ND(0.0055) [ND(0.0055)]	NA	Di-n-Octylphthalate		ND(0.0055) [ND(0.0055)]	NA	Diphenylamine		ND(0.011) [ND(0.011)]	NA	Ethyl Methanesulfonate		R [R]	NA	Fluoranthene		ND(0.0022) [ND(0.0022)]	NA	Fluorene		ND(0.0022) [ND(0.0022)]	NA	Hexachlorobenzene		ND(0.0055) [ND(0.0055)]	NA	Hexachlorobutadiene		ND(0.0055) [ND(0.0055)]	NA	Hexachlorocyclopentadiene		ND(0.011) J [ND(0.011) J]	NA	Hexachloroethane		ND(0.0055) [ND(0.0055)]	NA	Hexachlorophene		ND(0.011) [ND(0.011)]	NA	Hexachloropropene		ND(0.011) [ND(0.011)]	NA	Indeno(1,2,3-cd)pyrene		ND(0.0022) [ND(0.0022)]	NA	Isodrin		ND(0.011) [ND(0.011)]	NA	Isophorone		ND(0.0055) [ND(0.0055)]	NA	Isosafrole		ND(0.011) [ND(0.011)]	NA	Methapyrilene		ND(0.011) J [ND(0.011) J]	NA	Methyl Methanesulfonate		R [R]	NA	Naphthalene		ND(0.0022) [ND(0.0022)]	NA	Nitrobenzene		ND(0.0055) [ND(0.0055)]	NA	N-Nitrosodiethylamine		ND(0.011) [ND(0.011)]	NA	N-Nitrosodimethylamine		ND(0.0055) J [ND(0.0055)]	NA	N-Nitroso-di-n-butylamine		ND(0.011) [ND(0.011)]	NA	N-Nitroso-di-n-propylamine		ND(0.0055) [ND(0.0055)]	NA	N-Nitrosodiphenylamine		ND(0.0055) [ND(0.0055)]	NA	N-Nitrosomethylethylamine		ND(0.011) [ND(0.011)]	NA	N-Nitrosomorpholine		ND(0.011) [ND(0.011)]	NA	N-Nitrosopiperidine		ND(0.011) [ND(0.011)]	NA	N-Nitrosopyrrolidine		ND(0.011) [ND(0.011)]	NA	o,o,o-Triethylphosphorothioate		ND(0.011) [ND(0.011)]	NA	o-Toluidine		ND(0.011) [ND(0.011)]	NA
bis(2-Ethylhexyl)phthalate		ND(0.0022) J [ND(0.0022)]	NA																																																																																																																																																												
Butylbenzylphthalate		ND(0.0055) [ND(0.0055)]	NA																																																																																																																																																												
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Diallate		ND(0.0055) [ND(0.0055)]	NA																																																																																																																																																												
Dibenzo(a,h)anthracene		ND(0.0022) [ND(0.0022)]	NA																																																																																																																																																												
Dibenzofuran		ND(0.0022) [ND(0.0022)]	NA																																																																																																																																																												
Diethylphthalate		ND(0.0055) [ND(0.0055)]	NA																																																																																																																																																												
Dimethylphthalate		ND(0.0055) [ND(0.0055)]	NA																																																																																																																																																												
Di-n-Butylphthalate		ND(0.0055) [ND(0.0055)]	NA																																																																																																																																																												
Di-n-Octylphthalate		ND(0.0055) [ND(0.0055)]	NA																																																																																																																																																												
Diphenylamine		ND(0.011) [ND(0.011)]	NA																																																																																																																																																												
Ethyl Methanesulfonate		R [R]	NA																																																																																																																																																												
Fluoranthene		ND(0.0022) [ND(0.0022)]	NA																																																																																																																																																												
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Hexachlorobenzene		ND(0.0055) [ND(0.0055)]	NA																																																																																																																																																												
Hexachlorobutadiene		ND(0.0055) [ND(0.0055)]	NA																																																																																																																																																												
Hexachlorocyclopentadiene		ND(0.011) J [ND(0.011) J]	NA																																																																																																																																																												
Hexachloroethane		ND(0.0055) [ND(0.0055)]	NA																																																																																																																																																												
Hexachlorophene		ND(0.011) [ND(0.011)]	NA																																																																																																																																																												
Hexachloropropene		ND(0.011) [ND(0.011)]	NA																																																																																																																																																												
Indeno(1,2,3-cd)pyrene		ND(0.0022) [ND(0.0022)]	NA																																																																																																																																																												
Isodrin		ND(0.011) [ND(0.011)]	NA																																																																																																																																																												
Isophorone		ND(0.0055) [ND(0.0055)]	NA																																																																																																																																																												
Isosafrole		ND(0.011) [ND(0.011)]	NA																																																																																																																																																												
Methapyrilene		ND(0.011) J [ND(0.011) J]	NA																																																																																																																																																												
Methyl Methanesulfonate		R [R]	NA																																																																																																																																																												
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Nitrobenzene		ND(0.0055) [ND(0.0055)]	NA																																																																																																																																																												
N-Nitrosodiethylamine		ND(0.011) [ND(0.011)]	NA																																																																																																																																																												
N-Nitrosodimethylamine		ND(0.0055) J [ND(0.0055)]	NA																																																																																																																																																												
N-Nitroso-di-n-butylamine		ND(0.011) [ND(0.011)]	NA																																																																																																																																																												
N-Nitroso-di-n-propylamine		ND(0.0055) [ND(0.0055)]	NA																																																																																																																																																												
N-Nitrosodiphenylamine		ND(0.0055) [ND(0.0055)]	NA																																																																																																																																																												
N-Nitrosomethylethylamine		ND(0.011) [ND(0.011)]	NA																																																																																																																																																												
N-Nitrosomorpholine		ND(0.011) [ND(0.011)]	NA																																																																																																																																																												
N-Nitrosopiperidine		ND(0.011) [ND(0.011)]	NA																																																																																																																																																												
N-Nitrosopyrrolidine		ND(0.011) [ND(0.011)]	NA																																																																																																																																																												
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**Table C-2**  
**Fall 2013 Groundwater Analytical Results**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
 Plant Site 1 Groundwater Management Area  
 General Electric Company - Pittsfield, Massachusetts  
 (Results are presented in parts per million, ppm)**

Parameter	Site ID: Sample ID: Date Collected:	East St. Area 1 - South ESA1S-31R 10/08/13	East St. Area 2 - South E2SC-23 10/08/13
<b>Semivolatile Organics (continued)</b>			
p-Dimethylaminoazobenzene		ND(0.011) [ND(0.011)]	NA
Pentachlorobenzene		ND(0.011) [ND(0.011)]	NA
Pentachloroethane		R [R]	NA
Pentachloronitrobenzene		ND(0.011) [ND(0.011)]	NA
Pentachlorophenol		ND(0.011) [ND(0.011)]	NA
Phenacetin		ND(0.011) [ND(0.011)]	NA
Phenanthrene		ND(0.0022) [ND(0.0022)]	NA
Phenol		ND(0.0055) [ND(0.0055)]	NA
Pronamide		ND(0.011) [ND(0.011)]	NA
Pyrene		ND(0.0022) [ND(0.0022)]	NA
Pyridine		ND(0.011) J [ND(0.011) J]	NA
Safrole		ND(0.011) [ND(0.011)]	NA
Thionazin		ND(0.011) [ND(0.011)]	NA
<b>Inorganics-Filtered</b>			
Lead		NA	ND(1.0) [ND(1.0)]

**Table C-2**  
**Fall 2013 Groundwater Analytical Results**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

NOTES:

1. Samples were collected by ARCADIS and submitted to Accutest Laboratories analysis of volatile organic compounds (VOCs), associated semi-volatile organic compounds (SVOCs), PCBs (filtered), or lead (filtered), as indicated.
2. Sample results have been validated in accordance with GE's revised Field Sampling Plan/Quality Assurance Project Plan (FSP/QAPP), dated July 2013, as approved by EPA on July 23, 2013.
3. NA - Not Analyzed.
4. ND - Analyte was not detected. The number in parentheses is the associated reporting limit.
5. Field duplicate sample results are presented in brackets.

Data Qualifiers:

Organics (volatiles, PCBs, semivolatiles)

- J - Indicates that the associated numerical value is an estimated concentration.
- R - Data was rejected due to a deficiency in the data generation process.





## **Appendix D**

Summaries of Historical Analytical  
Groundwater Data

**Table D1-1**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**20s Complex GW-3 General/Source Area Sentinel Monitoring Well 95-2:**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Trichloroethene	5	50	1/4	0.0049	0.0049	0.00250	0.00310	0.00296	0.00120
Total VOCs	Not Listed	Not Listed	1/4	0.0049	0.0049	0.100	0.0762	0.0470	0.0476
<b>PCBs-Unfiltered</b>									
Aroclor-1260	Not Listed	Not Listed	2/4	0.000077	0.000093	0.0000550	0.0000590	0.0000528	0.0000307
Total PCBs	0.01	0.1	2/4	0.000077	0.000093	0.0000550	0.0000590	0.0000528	0.0000307
<b>PCBs-Filtered</b>									
Aroclor-1260	Not Listed	Not Listed	1/4	0.00013	0.00013	0.0000365	0.0000590	0.0000488	0.0000474
Total PCBs	0.01	0.1	1/4	0.00013	0.00013	0.0000365	0.0000590	0.0000488	0.0000474
<b>Semivolatile Organics</b>									
None Detected	--	--	0/4						
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2						
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2						
<b>Herbicides</b>									
None Detected	--	--	0/2						
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/4	ND	ND	5.00E-10	9.50E-10	1.55E-10	1.26E-09
TCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	5.00E-10	9.50E-10	1.55E-10	1.26E-09
1,2,3,7,8-PeCDF	Not Listed	Not Listed	1/4	8E-13	8E-13	1.00E-09	9.50E-10	1.93E-10	7.55E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	1/4	9E-13	9E-13	1.13E-09	1.09E-09	2.20E-10	8.70E-10
PeCDFs (total)	Not Listed	Not Listed	1/4	1.7E-12	1.7E-12	1.60E-09	1.78E-09	3.58E-10	1.62E-09
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.60E-09	1.38E-09	2.70E-10	9.77E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.20E-09	9.50E-10	1.73E-10	6.45E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.50E-09	1.23E-09	2.44E-10	8.54E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	1/4	1.4E-09	1.4E-09	1.25E-09	1.00E-09	2.04E-10	6.88E-10
HxCDFs (total)	Not Listed	Not Listed	2/4	2.1E-12	1.2E-08	3.75E-09	4.88E-09	6.90E-10	5.39E-09
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	0/4	ND	ND	2.05E-09	2.08E-09	2.02E-09	5.50E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	1/4	2E-09	2E-09	1.15E-09	1.08E-09	1.91E-10	9.36E-10
HpCDFs (total)	Not Listed	Not Listed	1/4	7E-09	7E-09	1.60E-09	2.93E-09	2.28E-09	2.72E-09
OCDF	Not Listed	Not Listed	1/4	1.1E-08	1.1E-08	3.10E-09	4.30E-09	7.34E-10	4.76E-09

**Table D1-1  
Statistical Summary Of Historical Groundwater Analytical Results  
20s Complex GW-3 General/Source Area Sentinel Monitoring Well 95-2:**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	9.00E-10	1.05E-09	2.20E-10	9.95E-10
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	9.25E-10	1.06E-09	2.23E-10	9.92E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.13E-09	1.95E-10	8.01E-10
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.50E-09	1.23E-09	2.41E-10	8.54E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.50E-09	1.30E-09	3.52E-10	9.26E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.20E-09	3.17E-10	9.04E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.40E-09	1.25E-09	3.31E-10	9.17E-10
HxCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.80E-09	1.95E-09	4.40E-10	1.75E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	2/4	2.5E-09	5.9E-09	1.95E-09	2.45E-09	4.39E-10	2.52E-09
HpCDDs (total)	Not Listed	Not Listed	2/4	4.6E-09	5.9E-09	3.00E-09	2.98E-09	4.62E-10	2.74E-09
OCDD	Not Listed	Not Listed	0/4	ND	ND	4.50E-09	3.88E-09	1.01E-09	3.01E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	1.9E-11	6.6E-09	4.10E-09	3.70E-09	1.20E-09	2.74E-09
<b>Inorganics-Unfiltered</b>									
Antimony	8	80	1/4	0.0069	0.0069	0.0300	0.0242	0.0208	0.0116
Arsenic	0.9	9	2/4	0.0028	0.008	0.00500	0.00520	0.00486	0.00214
Barium	50	100	2/4	0.051	0.097	0.0985	0.0870	0.0839	0.0240
Cadmium	0.004	0.05	2/4	0.0006	0.0016	0.00205	0.00180	0.00157	0.000906
Chromium	0.3	3	2/4	0.01	0.016	0.00750	0.00900	0.00795	0.00523
Cobalt	0.075	Not Listed	1/4	0.012	0.012	0.0250	0.0218	0.0208	0.00650
Copper	0.23	Not Listed	4/4	0.047	0.44	0.111	0.177	0.122	0.181
Cyanide	0.03	2	1/4	0.0038	0.0038	0.00500	0.00470	0.00467	0.000600
Lead	0.01	0.15	2/4	0.0083	0.0087	0.00490	0.00500	0.00357	0.00404
Mercury	0.02	0.2	1/4	0.00042	0.00042	0.000100	0.000180	0.000143	0.000160
Nickel	0.2	2	2/4	0.046	0.051	0.0330	0.0343	0.0311	0.0166
Selenium	0.1	1	1/4	0.0034	0.0034	0.00250	0.00273	0.00270	0.000450
Silver	0.007	1	1/4	0.0028	0.0028	0.00250	0.00258	0.00257	0.000150
Vanadium	4	40	1/4	0.0036	0.0036	0.0250	0.0197	0.0154	0.0107
Zinc	0.9	50	4/4	0.0099	0.24	0.109	0.117	0.0631	0.111

**Table D1-1  
 Statistical Summary Of Historical Groundwater Analytical Results  
 20s Complex GW-3 General/Source Area Sentinel Monitoring Well 95-2:**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
 Plant Site 1 Groundwater Management Area  
 General Electric Company - Pittsfield, Massachusetts  
 (Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>									
Antimony	8	80	2/4	0.01	0.016	0.0230	0.0215	0.0195	0.0101
Arsenic	0.9	9	1/4	0.0044	0.0044	0.00500	0.0161	0.00861	0.0226
Barium	50	100	2/4	0.054	0.056	0.0780	0.0775	0.0742	0.0260
Cadmium	0.004	0.05	2/4	0.00053	0.00063	0.00157	0.00217	0.00143	0.00210
Copper	0.23	Not Listed	2/4	0.033	0.08	0.0415	0.0440	0.0362	0.0284
Mercury	0.02	0.2	2/4	0.00029	0.00037	0.000195	0.000215	0.000181	0.000137
Nickel	0.2	2	2/4	0.0027	0.0074	0.0137	0.0125	0.00946	0.00884
Vanadium	4	40	2/4	0.003	0.0037	0.0144	0.0142	0.00913	0.0125
Zinc	0.9	50	3/4	0.02	0.039	0.0240	0.0245	0.0221	0.0119

Notes:

1. Samples were collected between 2001 and 2003 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling

**Table D1-2  
 Statistical Summary Of Historical Groundwater Analytical Results  
 30s Complex GW-2 Sentinel Monitoring Well ES2-19**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
 Plant Site 1 Groundwater Management Area  
 General Electric Company - Pittsfield, Massachusetts  
 (Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>PCBs-Filtered</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>Semivolatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--

**Notes:**

1. Samples were collected between 2001 and 2010 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling

**Table D1-3  
 Statistical Summary Of Historical Groundwater Analytical Results  
 30s Complex GW-2 Sentinel Monitoring Well GMA1-2**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
 Plant Site 1 Groundwater Management Area  
 General Electric Company - Pittsfield, Massachusetts  
 (Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>Semivolatile Organics</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--

**Notes:**

1. Samples were collected in 2003 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling

**Table D1-4  
 Statistical Summary Of Historical Groundwater Analytical Results  
 30s Complex GW-2 Sentinel Monitoring Well GMA1-3**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
 Plant Site 1 Groundwater Management Area  
 General Electric Company - Pittsfield, Massachusetts  
 (Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>PCBs-Filtered</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>Semivolatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--

Notes:

1. Samples were collected between 2001 and 2010 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling

**Table D1-5**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**30s Complex GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well GMA1-11**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
Chlorobenzene	0.2	1	10	4/4	0.0078	0.02	0.0155	0.0147	0.0137	0.00582
Total VOCs	5	Not Listed	Not Listed	4/4	0.0078	0.02	0.0155	0.0147	0.0137	0.00582
<b>PCBs-Unfiltered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	1/4	0.00011	0.00011	0.0000330	0.0000523	0.0000446	0.0000385
Aroclor-1260	Not Listed	Not Listed	Not Listed	4/4	0.000099	0.00028	0.000145	0.000170	0.000159	0.0000753
Total PCBs	0.005	0.01	0.1	4/4	0.000099	0.00028	0.000185	0.000198	0.000190	0.0000655
<b>PCBs-Filtered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	1/4	0.000078	0.000078	0.0000330	0.0000443	0.0000409	0.0000225
Total PCBs	0.005	0.01	0.1	1/4	0.000078	0.000078	0.0000330	0.0000443	0.0000409	0.0000225
<b>Semivolatile Organics</b>										
1,4-Dichlorobenzene	0.2	8	80	1/4	0.0028	0.0038	0.00500	0.00683	0.00583	0.00485
bis(2-Ethylhexyl)phthalate	Not Listed	50	100	1/4	0.018	0.018	0.00550	0.00800	0.00600	0.00707
<b>Organochlorine Pesticides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>										
None Detected	--	--	--	0/3	--	--	--	--	--	--
<b>Herbicides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>										
2,3,7,8-TCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	8.40E-10	9.20E-10	2.19E-10	8.31E-10
TCDFs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	8.40E-10	9.20E-10	2.19E-10	8.31E-10
1,2,3,7,8-PeCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	9.75E-10	8.13E-10	1.80E-10	5.63E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.15E-09	9.00E-10	2.08E-10	6.16E-10
PeCDFs (total)	Not Listed	Not Listed	Not Listed	1/4	1.5E-09	1.5E-09	9.90E-10	8.70E-10	2.01E-10	6.27E-10
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	9.00E-10	7.75E-10	1.73E-10	5.51E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.05E-09	8.50E-10	1.80E-10	5.91E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.20E-09	9.25E-10	2.13E-10	6.23E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.10E-09	8.75E-10	1.92E-10	6.13E-10
HxCDFs (total)	Not Listed	Not Listed	Not Listed	1/4	1.2E-09	1.2E-09	1.05E-09	8.50E-10	1.89E-10	5.91E-10
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.15E-09	1.13E-09	3.08E-10	8.98E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.03E-09	2.30E-10	6.89E-10
HpCDFs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	9.50E-10	2.07E-10	6.35E-10
OCDF	Not Listed	Not Listed	Not Listed	1/4	7.3E-09	7.3E-09	3.40E-09	4.13E-09	3.70E-09	2.29E-09



**Table D1-5**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**30s Complex GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well GMA1-11**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>										
2,3,7,8-TCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.03E-09	9.39E-10	2.87E-10	7.35E-10
TCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.08E-09	3.29E-10	7.39E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	9.50E-10	2.17E-10	6.35E-10
PeCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	1.15E-09	2.45E-10	8.66E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.55E-09	1.25E-09	3.05E-10	8.95E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.50E-09	1.23E-09	3.01E-10	8.72E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.45E-09	1.20E-09	2.93E-10	8.52E-10
HxCDDs (total)	Not Listed	Not Listed	Not Listed	1/4	9.1E-12	9.1E-12	1.55E-09	1.35E-09	4.67E-10	1.00E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	Not Listed	3/4	2.2E-11	5.2E-09	3.05E-09	2.83E-09	9.19E-10	2.56E-09
HpCDDs (total)	Not Listed	Not Listed	Not Listed	3/4	3.8E-11	5.2E-09	3.05E-09	2.83E-09	1.05E-09	2.56E-09
OCDD	Not Listed	Not Listed	Not Listed	2/4	5.1E-11	2.7E-08	9.40E-09	1.15E-08	3.26E-09	1.15E-08
Total TEQs (1998 WHO TEFs)	Not Listed	4.00E-05	4.00E-04	4/4	7.6E-12	4.9E-09	3.90E-09	3.18E-09	8.68E-10	2.16E-09
<b>Inorganics-Unfiltered</b>										
Antimony	Not Listed	8	80	1/4	0.0049	0.0049	0.0300	0.0237	0.0191	0.0126
Barium	Not Listed	50	100	3/4	0.065	0.147	0.0935	0.101	0.0960	0.0360
Beryllium	Not Listed	0.2	2	2/4	0.0004	0.00086	0.000500	0.000565	0.000542	0.000202
Cadmium	Not Listed	0.004	0.05	1/4	0.00091	0.00091	0.00250	0.00210	0.00194	0.000795
Chromium	Not Listed	0.3	3	1/4	0.0025	0.0025	0.00500	0.00438	0.00420	0.00125
Copper	Not Listed	0.23	Not Listed	3/4	0.0034	0.0051	0.00655	0.00760	0.00691	0.00394
Cyanide	Not Listed	0.03	2	1/4	0.0037	0.0037	0.00500	0.00468	0.00464	0.000650
Vanadium	Not Listed	4	40	2/4	0.0012	0.0043	0.0147	0.0139	0.00754	0.0129
Zinc	Not Listed	0.9	50	2/4	0.00332	0.0094	0.00970	0.00903	0.00891	0.00158

**Table D1-5  
 Statistical Summary Of Historical Groundwater Analytical Results  
 30s Complex GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well GMA1-11**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
 Plant Site 1 Groundwater Management Area  
 General Electric Company - Pittsfield, Massachusetts  
 (Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>										
Barium	Not Listed	50	100	3/4	0.058	0.151	0.0945	0.0993	0.0938	0.0382
Beryllium	Not Listed	0.2	2	1/4	0.00071	0.00071	0.000500	0.000553	0.000546	0.000105
Chromium	Not Listed	0.3	3	1/4	0.0026	0.0026	0.00500	0.00640	0.00539	0.00454
Copper	Not Listed	0.23	Not Listed	1/4	0.0039	0.0039	0.0130	0.0200	0.0135	0.0205
Mercury	Not Listed	0.02	0.2	1/4	0.0007	0.0007	0.000100	0.000250	0.000163	0.000300
Vanadium	Not Listed	4	40	1/4	0.0019	0.0019	0.0250	0.0192	0.0131	0.0116
Zinc	Not Listed	0.9	50	1/4	0.014	0.014	0.0100	0.0110	0.0109	0.00200

**Notes:**

1. Samples were collected between 2001 and 2003 and were submitted to SGS Environmental Services, Inc for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling

**Table D1-6**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**30s Complex GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well GMA1-2**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
Tetrachloroethene	0.05	30	100	4/4	0.00044	0.0027	0.00053	0.00105	0.000759	0.0011
Trichloroethene	0.03	5	50	2/4	0.00014	0.0012	0.0005	0.000585	0.000453	0.000444
Trichlorofluoromethane	Not Listed	Not Listed	Not Listed	4/4	0.0048	0.016	0.0054	0.0079	0.00688	0.00541
Total VOCs	5	Not Listed	Not Listed	4/4	0.0052	0.02	0.006	0.0093	0.00782	0.00715
<b>PCBs-Filtered</b>										
Aroclor-1248	Not Listed	Not Listed	Not Listed	1/4	0.000069	0.000069	0.0000545	0.000118	0.0000729	0.000143
Aroclor-1254	Not Listed	Not Listed	Not Listed	2/4	0.00004	0.0026	0.00004	0.000678	0.000107	0.00128
Total PCBs	0.005	0.01	0.1	2/4	0.000109	0.0026	0.000075	0.000695	0.000137	0.00127
<b>Semivolatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--

**Notes:**

1. Samples were collected between 2010 and 2012 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling

**Table D1-7  
Statistical Summary Of Historical Groundwater Analytical Results  
30s Complex Supplemental Sampling Location Monitoring Well GMA1-31**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
1,1-Dichloroethane	1	20	100	1/1	0.0011	0.0011	0.0011	0.0011	0.0011	NA
Tetrachloroethene	0.05	30	100	1/1	0.00053	0.00053	0.00053	0.00053	0.00053	NA
Trichloroethene	0.03	5	50	1/1	0.00073	0.00073	0.00073	0.00073	0.00073	NA
Trichlorofluoromethane	Not Listed	Not Listed	Not Listed	1/1	0.00032	0.00032	0.00032	0.00032	0.00032	NA
Vinyl Chloride	0.002	50	100	1/1	0.0003	0.0003	0.0003	0.0003	0.0003	NA
Total VOCs	5	Not Listed	Not Listed	1/1	0.003	0.003	0.003	0.003	0.003	NA
<b>PCBs-Filtered</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>Semivolatile Organics</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--

**Notes:**

1. Sample was collected in 2011 and submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling

**Table D1-8**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**30s Complex GW-3 Perimeter (Downgradient) Monitoring Well RF-02**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
Acetone	50	50	100	1/9	0.0012	0.0012	0.00500	0.00521	0.00432	0.00347
Carbon Disulfide	Not Listed	Not Listed	Not Listed	1/9	0.002	0.002	0.00225	0.00169	0.00133	0.000998
Methylene Chloride	10	50	100	2/9	0.002	0.002	0.00250	0.00239	0.00238	0.000220
Propionitrile	Not Listed	Not Listed	Not Listed	0/8	ND	ND	0.00750	1.26	0.0168	3.53
Styrene	0.1	6	60	0/8	ND	ND	0.00250	0.00175	0.00137	0.00104
Tetrachloroethene	0.05	30	100	0/9	ND	ND	0.00100	0.00100	0.000865	0.000655
Toluene	50	40	100	0/9	ND	ND	0.00250	0.00175	0.00137	0.00104
trans-1,2-Dichloroethene	0.09	50	100	1/8	0.00034	0.00038	0.00250	0.00162	0.00120	0.00109
trans-1,3-Dichloropropene	Not Listed	Not Listed	Not Listed	0/8	ND	ND	0.00250	0.00175	0.00137	0.00104
trans-1,4-Dichloro-2-butene	Not Listed	Not Listed	Not Listed	0/7	ND	ND	0.00250	0.00250	0.00250	0
Trichloroethene	0.03	5	50	3/9	0.00059	0.0014	0.00250	0.00196	0.00177	0.000777
Trichlorofluoromethane	Not Listed	Not Listed	Not Listed	0/8	ND	ND	0.00250	0.00175	0.00137	0.00104
Vinyl Acetate	Not Listed	Not Listed	Not Listed	0/8	ND	ND	0.00250	0.00229	0.00200	0.00130
Vinyl Chloride	0.002	50	100	1/9	0.00018	0.00018	0.00100	0.00129	0.000899	0.00152
Xylenes (total)	9	5	100	0/9	ND	ND	0.00375	0.00313	0.00230	0.00208
Total VOCs	5	Not Listed	Not Listed	5/9	0.0012	0.004	0.00400	0.0456	0.0113	0.0516
<b>PCBs-Unfiltered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	4/5	0.000032	0.00041	0.0000880	0.000170	0.000115	0.000158
Total PCBs	0.005	0.01	0.1	5/6	0.000032	0.0037	0.000169	0.000759	0.000206	0.00145
<b>PCBs-Filtered</b>										
Aroclor-1248	Not Listed	Not Listed	Not Listed	1/12	0.000024	0.000024	0.0000330	0.0000341	0.0000337	0.00000588
Aroclor-1254	Not Listed	Not Listed	Not Listed	6/12	0.000021	0.0003	0.0000330	0.0000788	0.0000489	0.000101
Total PCBs	0.005	0.01	0.1	6/13	0.000021	0.0003	0.0000390	0.0000808	0.0000518	0.000101
<b>Semivolatile Organics</b>										
Acenaphthylene	10	0.04	100	1/6	0.001	0.001	0.00500	0.00600	0.00445	0.00480
Anthracene	Not Listed	0.03	0.6	1/6	0.001	0.001	0.00500	0.00600	0.00445	0.00480
Benzo(a)anthracene	Not Listed	1	10	1/6	0.002	0.002	0.00500	0.00620	0.00511	0.00455
Benzo(a)pyrene	Not Listed	0.5	5	1/6	0.002	0.002	0.00500	0.00620	0.00511	0.00455
Benzo(b)fluoranthene	Not Listed	0.4	4	1/6	0.003	0.003	0.00500	0.00640	0.00555	0.00434
Benzo(g,h,i)perylene	Not Listed	0.02	0.5	1/6	0.001	0.001	0.00500	0.00600	0.00445	0.00480
Benzo(k)fluoranthene	Not Listed	0.1	1	1/6	0.003	0.003	0.00500	0.00640	0.00555	0.00434
bis(2-Ethylhexyl)phthalate	Not Listed	50	100	1/6	0.002	0.002	0.00300	0.00380	0.00337	0.00239
Chrysene	Not Listed	0.07	0.7	1/6	0.002	0.002	0.00500	0.00620	0.00511	0.00455
Fluoranthene	Not Listed	0.2	2	1/6	0.003	0.003	0.00500	0.00640	0.00555	0.00434
Fluorene	Not Listed	0.04	0.4	1/6	0.001	0.001	0.00500	0.00600	0.00445	0.00480
Indeno(1,2,3-cd)pyrene	Not Listed	0.1	1	1/6	0.001	0.001	0.00500	0.00600	0.00445	0.00480
Phenanthrene	Not Listed	10	100	1/6	0.003	0.003	0.00500	0.00640	0.00555	0.00434
Pyrene	Not Listed	0.02	0.8	1/6	0.005	0.005	0.00500	0.00680	0.00614	0.00402

**Table D1-8**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**30s Complex GW-3 Perimeter (Downgradient) Monitoring Well RF-02**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Organochlorine Pesticides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>										
2,3,7,8-TCDF	Not Listed	Not Listed	Not Listed	0/5	ND	ND	7.50E-10	1.15E-08	5.29E-10	2.43E-08
TCDFs (total)	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.10E-09	2.93E-08	9.16E-10	6.19E-08
1,2,3,7,8-PeCDF	Not Listed	Not Listed	Not Listed	1/4	2.7E-09	2.7E-09	1.55E-09	1.45E-09	2.89E-10	1.13E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.13E-09	1.04E-09	2.25E-10	7.95E-10
PeCDFs (total)	Not Listed	Not Listed	Not Listed	1/5	2.7E-09	2.7E-09	2.70E-09	3.21E-08	1.30E-09	6.60E-08
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	Not Listed	1/4	2.8E-09	2.8E-09	1.75E-09	1.58E-09	3.19E-10	1.22E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	1/4	2.3E-09	2.3E-09	1.80E-09	1.53E-09	3.08E-10	1.14E-09
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	Not Listed	1/4	1.9E-09	1.9E-09	1.60E-09	1.40E-09	3.12E-10	1.04E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.15E-09	1.15E-09	2.54E-10	9.46E-10
HxCDFs (total)	Not Listed	Not Listed	Not Listed	1/5	7E-09	7E-09	7.00E-09	3.16E-08	1.76E-09	6.07E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	Not Listed	1/4	2.6E-09	2.6E-09	1.15E-09	1.23E-09	2.77E-10	1.10E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	9.50E-10	2.42E-10	6.34E-10
HpCDFs (total)	Not Listed	Not Listed	Not Listed	1/5	4.8E-09	4.8E-09	1.50E-09	4.95E-08	1.28E-09	1.06E-07
OCDF	Not Listed	Not Listed	Not Listed	1/5	3.9E-09	3.9E-09	3.40E-09	6.60E-08	2.03E-09	1.42E-07
<b>Dioxins</b>										
2,3,7,8-TCDD	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.20E-09	2.07E-08	8.39E-10	4.43E-08
TCDDs (total)	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.60E-09	2.09E-08	1.01E-09	4.42E-08
1,2,3,7,8-PeCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.50E-09	1.43E-09	3.38E-10	1.12E-09
PeCDDs (total)	Not Listed	Not Listed	Not Listed	1/5	8.2E-12	8.2E-12	2.50E-09	2.94E-08	1.69E-09	6.18E-08
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.40E-09	1.23E-09	3.53E-10	8.83E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.70E-09	1.33E-09	3.81E-10	9.01E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.60E-09	1.30E-09	3.67E-10	9.00E-10
HxCDDs (total)	Not Listed	Not Listed	Not Listed	1/5	1.4E-11	1.4E-11	1.90E-09	4.11E-08	1.74E-09	8.88E-08
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	Not Listed	1/4	4.1E-09	4.1E-09	3.25E-09	9.80E-09	4.77E-09	1.42E-08
HpCDDs (total)	Not Listed	Not Listed	Not Listed	2/5	1.2E-10	4.1E-09	2.40E-09	3.76E-08	3.08E-09	7.96E-08
OCDD	Not Listed	Not Listed	Not Listed	1/5	1.1E-10	1.1E-10	6.50E-09	6.98E-08	6.19E-09	1.45E-07
Total TEQs (1998 WHO TEFs)	Not Listed	4.00E-05	4.00E-04	4/4	3.1E-10	6.5E-09	4.55E-09	3.98E-09	2.52E-09	2.70E-09

**Table D1-8  
Statistical Summary Of Historical Groundwater Analytical Results  
30s Complex GW-3 Perimeter (Downgradient) Monitoring Well RF-02**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Unfiltered</b>										
Aluminum	Not Listed	Not Listed	Not Listed	1/1	0.0878	0.0878	0.0880	0.0880	0.0880	NA
Antimony	Not Listed	8	80	1/6	0.0041	0.0041	0.0300	0.0237	0.0198	0.0107
Arsenic	Not Listed	0.9	9	2/6	0.0046	0.0059	0.00500	0.00510	0.00508	0.000480
Barium	Not Listed	50	100	5/6	0.031	0.0796	0.0505	0.0588	0.0541	0.0265
Beryllium	Not Listed	0.2	2	1/6	0.00032	0.00032	0.000500	0.000470	0.000464	0.0000735
Calcium	Not Listed	Not Listed	Not Listed	1/1	95.1	95.1	95.0	95.0	95.0	NA
Chromium	Not Listed	0.3	3	3/6	0.0026	0.009	0.00500	0.00505	0.00470	0.00216
Cobalt	Not Listed	0.075	Not Listed	3/6	0.0025	0.0045	0.00355	0.0104	0.00598	0.0114
Copper	Not Listed	0.23	Not Listed	2/6	0.0044	0.0144	0.0130	0.0101	0.00861	0.00497
Cyanide	Not Listed	0.03	2	1/6	0.0037	0.0037	0.00500	0.00474	0.00471	0.000581
Iron	Not Listed	Not Listed	Not Listed	1/1	2.67	2.67	2.70	2.70	2.70	NA
Lead	Not Listed	0.01	0.15	1/6	0.018	0.018	0.00150	0.00433	0.00231	0.00671
Magnesium	Not Listed	Not Listed	Not Listed	1/1	17	17	17.0	17.0	17.0	NA
Manganese	Not Listed	Not Listed	Not Listed	1/1	0.632	0.632	0.630	0.630	0.630	NA
Nickel	Not Listed	0.2	2	1/6	0.0062	0.0062	0.0200	0.0150	0.0126	0.00773
Potassium	Not Listed	Not Listed	Not Listed	1/1	4.41	4.41	4.40	4.40	4.40	NA
Selenium	Not Listed	0.1	1	1/6	0.0046	0.0046	0.00250	0.00272	0.00255	0.00114
Sodium	Not Listed	Not Listed	Not Listed	1/1	21.1	21.1	21.0	21.0	21.0	NA
Sulfide	Not Listed	Not Listed	Not Listed	1/6	4.9	4.9	2.50	2.98	2.86	1.07
Vanadium	Not Listed	4	40	1/6	0.003	0.003	0.0250	0.0177	0.0123	0.0114
Zinc	Not Listed	0.9	50	6/6	0.0089	0.208	0.0375	0.0617	0.0334	0.0764

**Table D1-8  
Statistical Summary Of Historical Groundwater Analytical Results  
30s Complex GW-3 Perimeter (Downgradient) Monitoring Well RF-02**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>										
Antimony	Not Listed	8	80	2/5	0.0029	0.0098	0.0300	0.0205	0.0150	0.0132
Barium	Not Listed	50	100	4/5	0.03	0.0415	0.0360	0.0486	0.0437	0.0290
Beryllium	Not Listed	0.2	2	1/5	0.00069	0.00069	0.000500	0.000548	0.000542	0.0000950
Cobalt	Not Listed	0.075	Not Listed	2/5	0.0026	0.004	0.0145	0.0142	0.00898	0.0125
Copper	Not Listed	0.23	Not Listed	3/5	0.002	0.0048	0.00480	0.00744	0.00590	0.00519
Lead	Not Listed	0.01	0.15	1/5	0.0018	0.0018	0.00150	0.00176	0.00172	0.000434
Mercury	Not Listed	0.02	0.2	1/5	0.00002	0.00002	0.000100	0.0000800	0.0000669	0.0000400
Nickel	Not Listed	0.2	2	1/5	0.0013	0.0013	0.0200	0.0163	0.0116	0.00836
Selenium	Not Listed	0.1	1	1/5	0.0151	0.0151	0.00250	0.00500	0.00358	0.00559
Thallium	Not Listed	3	30	1/5	0.0044	0.0044	0.00500	0.00488	0.00487	0.000268
Zinc	Not Listed	0.9	50	4/5	0.01	0.0618	0.0120	0.0284	0.0204	0.0248

**Notes:**

1. Samples were collected between 1991 and 2012 and were submitted to SGS Environmental Services, Inc. and CompuChem for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. Non-detect samples without reporting limits for the 3/1996 sample are included in detection frequency but did not participate in the remaining calculations.
7. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
8. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.



**Table D1-9**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**30s Complex GW-2 Sentinel / GW-3 Perimeter (Downgradient) Monitoring Well RF-03 & RF-03S**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
1,1-Dichloroethane	1	20	100	2/9	0.0003	0.0007	0.00250	0.00175	0.00134	0.00104
1,4-Dioxane	6	50	100	1/9	0.047	0.047	0.100	1.18	0.122	3.31
Carbon Disulfide	Not Listed	Not Listed	Not Listed	1/9	0.002	0.002	0.00225	0.00169	0.00133	0.000998
Chlorobenzene	0.2	1	10	2/9	0.00013	0.0016	0.00250	0.00184	0.00135	0.000994
Methylene Chloride	10	50	100	1/9	0.003	0.003	0.00250	0.00283	0.00276	0.000829
Trichloroethene	0.03	5	50	1/9	0.00015	0.00015	0.00250	0.00171	0.00118	0.00110
Vinyl Chloride	0.002	50	100	2/9	0.00036	0.0004	0.00100	0.00128	0.000877	0.00153
Xylenes (total)	9	5	100	1/9	0.005	0.005	0.00500	0.00333	0.00251	0.00205
Total VOCs	5	Not Listed	Not Listed	5/9	0.00036	0.055	0.0550	0.0512	0.0126	0.0493
<b>PCBs-Unfiltered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	4/5	0.000014	0.0001	0.0000920	0.0000976	0.0000635	0.0000929
Total PCBs	0.005	0.01	0.1	5/6	0.000014	0.0072	0.0000960	0.00128	0.000140	0.00290
<b>PCBs-Filtered</b>										
Aroclor-1242	Not Listed	Not Listed	Not Listed	1/7	0.0002	0.0002	0.0000330	0.0000574	0.0000434	0.0000629
Aroclor-1254	Not Listed	Not Listed	Not Listed	2/7	0.00012	0.00037	0.0000350	0.0000941	0.0000570	0.000126
Total PCBs	0.005	0.01	0.1	4/8	0.00012	0.00077	0.0000775	0.000199	0.0000981	0.000259
<b>Semivolatile Organics</b>										
1,4-Dichlorobenzene	0.2	8	80	2/9	0.00014	0.002	0.00350	0.00402	0.00184	0.00457
2-Methylnaphthalene	2	20	100	1/6	0.001	0.001	0.00500	0.00600	0.00445	0.00480
Acenaphthene	Not Listed	6	60	1/6	0.003	0.003	0.00500	0.00640	0.00555	0.00434
Acenaphthylene	10	0.04	100	1/6	0.002	0.002	0.00500	0.00620	0.00511	0.00455
Anthracene	Not Listed	0.03	0.6	1/6	0.006	0.006	0.00500	0.00700	0.00637	0.00394
Benzo(a)anthracene	Not Listed	1	10	1/6	0.019	0.019	0.00500	0.00960	0.00802	0.00654
Benzo(a)pyrene	Not Listed	0.5	5	1/6	0.013	0.013	0.00500	0.00840	0.00744	0.00467
Benzo(b)fluoranthene	Not Listed	0.4	4	1/6	0.014	0.014	0.00500	0.00860	0.00755	0.00493
Benzo(g,h,i)perylene	Not Listed	0.02	0.5	1/6	0.007	0.007	0.00500	0.00720	0.00657	0.00390
Benzo(k)fluoranthene	Not Listed	0.1	1	1/6	0.01	0.01	0.00500	0.00780	0.00706	0.00409
Benzoic Acid	Not Listed	Not Listed	Not Listed	1/1	0.002	0.002	0.00200	0.00200	0.00200	NA
bis(2-Ethylhexyl)phthalate	Not Listed	50	100	1/6	0.002	0.002	0.00300	0.00380	0.00337	0.00239
Chrysene	Not Listed	0.07	0.7	1/6	0.016	0.016	0.00500	0.00900	0.00775	0.00552
Dibenzo(a,h)anthracene	Not Listed	0.04	0.4	1/6	0.003	0.003	0.00500	0.00640	0.00555	0.00434
Dibenzofuran	Not Listed	Not Listed	Not Listed	1/6	0.002	0.002	0.00500	0.00620	0.00511	0.00455
Fluoranthene	Not Listed	0.2	2	1/6	0.031	0.031	0.00500	0.0120	0.00885	0.0113
Fluorene	Not Listed	0.04	0.4	1/6	0.005	0.005	0.00500	0.00680	0.00614	0.00402
Indeno(1,2,3-cd)pyrene	Not Listed	0.1	1	1/6	0.008	0.008	0.00500	0.00740	0.00675	0.00391
Naphthalene	1	20	100	1/9	0.002	0.002	0.00350	0.00401	0.00160	0.00458
Phenanthrene	Not Listed	10	100	1/6	0.025	0.025	0.00500	0.0108	0.00848	0.00884
Pyrene	Not Listed	0.02	0.8	1/6	0.028	0.028	0.00500	0.0114	0.00867	0.0101

**Table D1-9**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**30s Complex GW-2 Sentinel / GW-3 Perimeter (Downgradient) Monitoring Well RF-03 & RF-03S**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Organochlorine Pesticides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>										
2,3,7,8-TCDF	Not Listed	Not Listed	Not Listed	0/5	ND	ND	9.50E-10	2.51E-08	8.28E-10	5.31E-08
TCDFs (total)	Not Listed	Not Listed	Not Listed	0/5	ND	ND	9.50E-10	9.12E-08	1.11E-09	2.01E-07
1,2,3,7,8-PeCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.10E-09	3.30E-09	3.45E-10	5.16E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	3.10E-09	3.61E-10	4.57E-09
PeCDFs (total)	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	3.27E-08	1.38E-09	6.06E-08
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	2.75E-09	3.76E-10	3.88E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	2.90E-09	3.69E-10	4.18E-09
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	2.88E-09	4.06E-10	4.06E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	2.45E-09	3.62E-10	3.29E-09
HxCDFs (total)	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	2.91E-08	1.55E-09	4.73E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.45E-09	2.81E-09	1.79E-09	3.29E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.40E-09	2.73E-09	4.11E-10	3.64E-09
HpCDFs (total)	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.70E-09	4.64E-08	5.56E-09	9.71E-08
OCDF	Not Listed	Not Listed	Not Listed	0/5	ND	ND	4.20E-09	8.21E-08	3.05E-09	1.72E-07
<b>Dioxins</b>										
2,3,7,8-TCDD	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	3.73E-08	1.10E-09	7.98E-08
TCDDs (total)	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.50E-09	3.74E-08	1.32E-09	7.97E-08
1,2,3,7,8-PeCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.03E-09	2.76E-09	3.33E-10	4.19E-09
PeCDDs (total)	Not Listed	Not Listed	Not Listed	0/5	ND	ND	2.30E-09	4.47E-08	1.65E-09	9.25E-08
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.85E-09	2.83E-09	5.57E-10	3.30E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.75E-09	2.95E-09	5.57E-10	3.66E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.80E-09	3.03E-09	5.61E-10	3.75E-09
HxCDDs (total)	Not Listed	Not Listed	Not Listed	0/5	ND	ND	2.20E-09	4.14E-08	2.25E-09	7.81E-08
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	Not Listed	1/4	2.2E-11	2.2E-11	1.80E-09	2.76E-09	8.27E-10	3.24E-09
HpCDDs (total)	Not Listed	Not Listed	Not Listed	1/5	2.2E-11	2.2E-11	2.50E-09	4.03E-08	2.55E-09	8.38E-08
OCDD	Not Listed	Not Listed	Not Listed	1/5	1.6E-08	1.6E-08	1.40E-08	1.17E-07	6.20E-09	2.42E-07
Total TEQs (1998 WHO TEFs)	Not Listed	4.00E-05	4.00E-04	4/4	2.3E-11	4.8E-08	3.70E-09	1.39E-08	1.97E-09	2.28E-08

**Table D1-9  
Statistical Summary Of Historical Groundwater Analytical Results  
30s Complex GW-2 Sentinel / GW-3 Perimeter (Downgradient) Monitoring Well RF-03 & RF-03S**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Unfiltered</b>										
Aluminum	Not Listed	Not Listed	Not Listed	1/1	11	11	11.0	11.0	11.0	NA
Arsenic	Not Listed	0.9	9	5/6	0.0043	0.0154	0.00595	0.00725	0.00657	0.00400
Barium	Not Listed	50	100	5/6	0.11	0.272	0.120	0.155	0.144	0.0689
Cadmium	Not Listed	0.004	0.05	1/6	0.0008	0.0008	0.00250	0.00216	0.00199	0.000760
Calcium	Not Listed	Not Listed	Not Listed	1/1	175	175	180	180	180	NA
Chromium	Not Listed	0.3	3	2/6	0.0054	0.0191	0.00500	0.00740	0.00633	0.00569
Cobalt	Not Listed	0.075	Not Listed	2/6	0.00089	0.0096	0.0250	0.0184	0.0122	0.0106
Copper	Not Listed	0.23	Not Listed	3/6	0.0041	0.541	0.0130	0.108	0.0260	0.213
Cyanide	Not Listed	0.03	2	1/6	0.0027	0.0032	0.00500	0.00460	0.00451	0.000894
Iron	Not Listed	Not Listed	Not Listed	1/1	47.1	47.1	47.0	47.0	47.0	NA
Lead	Not Listed	0.01	0.15	2/6	0.038	0.233	0.00200	0.0458	0.00648	0.0914
Magnesium	Not Listed	Not Listed	Not Listed	1/1	20.7	20.7	21.0	21.0	21.0	NA
Manganese	Not Listed	Not Listed	Not Listed	1/1	0.973	0.973	0.970	0.970	0.970	NA
Mercury	Not Listed	0.02	0.2	2/6	0.00052	0.62	0.000100	0.103	0.000384	0.253
Nickel	Not Listed	0.2	2	2/6	0.0032	0.0276	0.0200	0.0185	0.0156	0.00816
Potassium	Not Listed	Not Listed	Not Listed	1/1	18.9	18.9	19.0	19.0	19.0	NA
Selenium	Not Listed	0.1	1	1/6	0.0062	0.0062	0.00250	0.00304	0.00271	0.00182
Sodium	Not Listed	Not Listed	Not Listed	1/1	89.7	89.7	90.0	90.0	90.0	NA
Vanadium	Not Listed	4	40	1/6	0.022	0.022	0.0250	0.0244	0.0244	0.00134
Zinc	Not Listed	0.9	50	5/6	0.019	0.625	0.0220	0.149	0.0471	0.246

**Table D1-9**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**30s Complex GW-2 Sentinel / GW-3 Perimeter (Downgradient) Monitoring Well RF-03 & RF-03S**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>										
Antimony	Not Listed	8	80	2/5	0.0044	0.0085	0.0300	0.0206	0.0159	0.0130
Arsenic	Not Listed	0.9	9	1/5	0.0036	0.0036	0.00500	0.0137	0.00742	0.0203
Barium	Not Listed	50	100	4/5	0.074	0.134	0.0880	0.0956	0.0938	0.0213
Cobalt	Not Listed	0.075	Not Listed	1/5	0.0011	0.0011	0.0250	0.0202	0.0134	0.0107
Copper	Not Listed	0.23	Not Listed	2/5	0.00075	0.0044	0.0130	0.0134	0.00850	0.00929
Lead	Not Listed	0.01	0.15	1/5	0.0024	0.0024	0.00150	0.00188	0.00183	0.000522
Selenium	Not Listed	0.1	1	1/5	0.0313	0.0313	0.00250	0.00820	0.00414	0.0127
Thallium	Not Listed	3	30	1/5	0.0065	0.0065	0.00500	0.00530	0.00527	0.000671
Zinc	Not Listed	0.9	50	3/5	0.0082	0.02	0.0100	0.0112	0.0110	0.00272

**Notes:**

1. Samples were collected between 1991 and 2012 and were submitted to SGS Environmental Services, Inc. and CompuChem for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. Non-detect samples without reporting limits for the 3/1996 sample are included in detection frequency but did not participate in the remaining calculations.
7. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
8. Total TEQs (1998 WHO TEFs) could not be calculated for the 12/1991 sample due to insufficient data.
9. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D1-10**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**30s Complex GW-3 General/Source Area Sentinel Monitoring Well RF-03E**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Chloroform	20	100	1/7	0.0039	0.0039	0.0025	0.00227	0.00197	0.00105
Tetrachloroethene	30	100	4/7	0.0011	0.0014	0.0011	0.00114	0.00113	0.000162
Trichloroethene	5	50	3/7	0.001	0.0025	0.0025	0.00214	0.00204	0.000627
Trichlorofluoromethane	Not Listed	Not Listed	3/7	0.00035	0.00037	0.0025	0.00158	0.00109	0.00114
Total VOCs	Not Listed	Not Listed	4/7	0.0014	0.0064	0.0064	0.045	0.0142	0.0515
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.00003	0.0056	0.000079	0.00145	0.000173	0.00277
Total PCBs	0.01	0.1	4/4	0.00003	0.0056	0.000079	0.00145	0.000173	0.00277
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	3/7	0.000048	0.000056	0.000034	0.000041	0.00004	0.00000997
Total PCBs	0.01	0.1	3/7	0.000048	0.000056	0.000034	0.000041	0.00004	0.00000997
<b>Semivolatile Organics</b>									
None Detected	--	--	0/4	--	--	--	--	--	--
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--

**Table D1-10**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**30s Complex GW-3 General/Source Area Sentinel Monitoring Well RF-03E**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/4	ND	ND	9.75E-10	1.61E-09	2.79E-10	1.99E-09
TCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	9.75E-10	1.86E-09	2.94E-10	2.47E-09
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	4.15E-09	3.92E-10	6.59E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	1/4	1.70E-09	1.70E-09	1.50E-09	3.50E-09	3.90E-10	5.05E-09
PeCDFs (total)	Not Listed	Not Listed	1/4	1.70E-09	1.70E-09	1.50E-09	7.00E-09	4.79E-10	1.20E-08
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.20E-09	2.98E-09	3.65E-10	4.39E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	1/4	1.30E-09	1.30E-09	1.30E-09	3.15E-09	3.69E-10	4.61E-09
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	3.65E-09	4.24E-10	5.60E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.08E-09	2.54E-09	3.27E-10	3.68E-09
HxCDFs (total)	Not Listed	Not Listed	1/4	1.30E-09	1.30E-09	1.30E-09	1.04E-08	5.51E-10	1.91E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	1/4	2.90E-09	2.90E-09	2.10E-09	3.05E-09	4.45E-10	3.51E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	2.90E-09	3.89E-10	4.11E-09
HpCDFs (total)	Not Listed	Not Listed	1/4	2.90E-09	2.90E-09	2.10E-09	5.30E-09	5.37E-10	7.89E-09
OCDF	Not Listed	Not Listed	0/4	ND	ND	2.60E-09	5.30E-09	8.06E-10	7.24E-09
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	1.05E-09	1.73E-09	3.58E-10	2.13E-09
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.55E-09	1.98E-09	4.47E-10	2.02E-09
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	3.03E-09	3.73E-10	4.36E-09
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.95E-09	3.35E-09	4.56E-10	4.20E-09
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.65E-09	2.70E-09	4.99E-10	3.30E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.50E-09	2.75E-09	4.85E-10	3.58E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.65E-09	3.33E-09	5.33E-10	4.52E-09
HxCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	2.30E-09	7.65E-09	8.07E-10	1.23E-08
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	1/4	1.10E-11	1.10E-11	2.10E-09	2.80E-09	7.63E-10	2.97E-09
HpCDDs (total)	Not Listed	Not Listed	1/4	2.00E-11	2.00E-11	2.45E-09	2.98E-09	9.34E-10	2.98E-09
OCDD	Not Listed	Not Listed	0/4	ND	ND	7.25E-09	7.38E-09	1.85E-09	6.12E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	6.90E-12	2.70E-08	4.20E-09	8.85E-09	1.34E-09	1.23E-08

**Table D1-10**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**30s Complex GW-3 General/Source Area Sentinel Monitoring Well RF-03D**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Unfiltered</b>									
Barium	50	100	3/4	0.0082	0.0085	0.00845	0.0313	0.0156	0.0458
Chromium	0.3	3	1/4	0.0028	0.0028	0.005	0.00445	0.00433	0.0011
Copper	0.23	Not Listed	1/4	0.0033	0.0033	0.013	0.0106	0.00923	0.00485
Cyanide	0.03	2	1/4	0.0035	0.0035	0.005	0.00463	0.00457	0.00075
Selenium	0.1	1	1/4	0.009	0.009	0.0025	0.00413	0.00344	0.00325
Vanadium	4	40	1/4	0.0018	0.0018	0.025	0.0192	0.013	0.0116
Zinc	0.9	50	2/4	0.009	0.022	0.01	0.0128	0.0119	0.00618
<b>Inorganics-Filtered</b>									
Barium	50	100	3/4	0.0078	0.0092	0.00915	0.0315	0.016	0.0457
Copper	0.23	Not Listed	1/4	0.0059	0.0059	0.013	0.0205	0.0149	0.02
Zinc	0.9	50	2/4	0.011	0.087	0.0105	0.0295	0.0176	0.0383

**Notes:**

1. Samples were collected between 2001 and 2012 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling

**Table D1-11**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**30s Complex GW-3 Perimeter (Downgradient) Monitoring Well RF-16 & RF-16R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Chloroform	20	100	1/6	0.026	0.026	0.00250	0.00720	0.00399	0.0105
Methylene Chloride	50	100	1/6	0.002	0.002	0.00250	0.00283	0.00270	0.00108
Tetrachloroethene	30	100	5/6	0.0011	0.012	0.00145	0.00350	0.00219	0.00431
Total VOCs	Not Listed	Not Listed	5/6	0.0011	0.028	0.00900	0.0248	0.00823	0.0382
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	1/5	0.000097	0.000097	0.0000330	0.0000892	0.0000614	0.0000941
Total PCBs	0.01	0.1	2/6	0.000097	0.019	0.0000650	0.00324	0.000160	0.00772
<b>PCBs-Filtered</b>									
Total PCBs	0.01	0.1	1/5	0.0014	0.0014	0.0000330	0.000306	0.0000698	0.000611
<b>Semivolatile Organics</b>									
Benzo(a)anthracene	1	10	1/6	0.003	0.003	0.00500	0.00460	0.00451	0.000894
Benzo(a)pyrene	0.5	5	1/6	0.002	0.002	0.00500	0.00440	0.00416	0.00134
Benzo(b)fluoranthene	0.4	4	1/6	0.007	0.007	0.00500	0.00540	0.00535	0.000894
Benzo(g,h,i)perylene	0.02	0.5	1/6	0.001	0.002	0.00500	0.00430	0.00393	0.00157
Benzo(k)fluoranthene	0.1	1	1/6	0.007	0.007	0.00500	0.00540	0.00535	0.000894
bis(2-Ethylhexyl)phthalate	50	100	1/6	0.002	0.005	0.00300	0.00310	0.00309	0.000224
Chrysene	0.07	0.7	1/6	0.004	0.006	0.00500	0.00500	0.00500	0
Dibenzofuran	Not Listed	Not Listed	1/6	0.001	0.002	0.00500	0.00430	0.00393	0.00157
Fluoranthene	0.2	2	1/6	0.008	0.01	0.00500	0.00580	0.00562	0.00179
Indeno(1,2,3-cd)pyrene	0.1	1	1/6	0.001	0.002	0.00500	0.00430	0.00393	0.00157
Naphthalene	20	100	1/6	0	0.002	0.00500	0.00470	0.00466	0.000671
Phenanthrene	10	100	1/6	0.01	0.01	0.00500	0.00600	0.00574	0.00224
Pyrene	0.02	0.8	1/6	0.005	0.005	0.00500	0.00500	0.00500	0
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--



**Table D1-11**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**30s Complex GW-3 Perimeter (Downgradient) Monitoring Well RF-16 & RF-16R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/5	ND	ND	9.00E-10	1.72E-08	5.20E-10	3.68E-08
TCDFs (total)	Not Listed	Not Listed	0/5	ND	ND	9.00E-10	4.26E-08	6.26E-10	9.36E-08
1,2,3,7,8-PeCDF	Not Listed	Not Listed	1/4	2E-09	2E-09	1.25E-09	1.13E-09	1.94E-10	8.30E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	8.75E-10	7.63E-10	1.43E-10	5.76E-10
PeCDFs (total)	Not Listed	Not Listed	1/5	2E-09	2E-09	1.30E-09	4.29E-08	7.83E-10	9.34E-08
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.10E-09	8.75E-10	1.62E-10	6.13E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.00E-09	1.81E-10	6.68E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.20E-09	9.25E-10	1.83E-10	6.24E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	7.75E-10	7.13E-10	1.40E-10	5.39E-10
HxCDFs (total)	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	4.28E-08	7.57E-10	9.35E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	1/4	2E-12	2E-12	1.30E-09	9.76E-10	2.57E-10	6.49E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.05E-09	2.16E-10	7.14E-10
HpCDFs (total)	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	7.70E-08	3.95E-09	1.69E-07
OCDF	Not Listed	Not Listed	0/5	ND	ND	2.80E-09	8.82E-08	7.48E-09	1.91E-07
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/5	ND	ND	1.40E-09	2.88E-08	7.87E-10	6.22E-08
TCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.40E-09	2.88E-08	7.87E-10	6.22E-08
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.05E-09	1.87E-10	7.14E-10
PeCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.40E-09	5.29E-08	9.36E-10	1.16E-07
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.60E-09	1.28E-09	2.60E-10	8.77E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.60E-09	1.25E-09	2.67E-10	8.42E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.55E-09	1.23E-09	2.53E-10	8.34E-10
HxCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.70E-09	5.90E-08	1.04E-09	1.29E-07
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	1/4	4.5E-12	4.5E-12	2.35E-09	1.80E-09	4.99E-10	1.21E-09
HpCDDs (total)	Not Listed	Not Listed	1/5	4.5E-12	4.5E-12	2.50E-09	6.34E-08	1.81E-09	1.38E-07
OCDD	Not Listed	Not Listed	0/5	ND	ND	7.00E-09	1.13E-07	1.52E-08	2.39E-07
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	3.6E-12	4.5E-09	4.15E-09	3.20E-09	7.27E-10	2.14E-09

**Table D1-11**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**30s Complex GW-3 Perimeter (Downgradient) Monitoring Well RF-16 & RF-16R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Unfiltered</b>									
Aluminum	Not Listed	Not Listed	1/1	0.121	0.145	0.130	0.130	0.130	NA
Antimony	8	80	2/6	0.002	0.0043	0.0240	0.0191	0.0127	0.0132
Barium	50	100	5/6	0.012	0.0725	0.0310	0.0440	0.0339	0.0344
Beryllium	0.2	2	1/6	0.00043	0.00043	0.000500	0.000488	0.000488	0.0000286
Calcium	Not Listed	Not Listed	1/1	65.1	76.3	71.0	71.0	71.0	NA
Chromium	0.3	3	2/6	0.0092	0.0144	0.00500	0.00623	0.00601	0.00194
Cobalt	0.075	Not Listed	1/6	0.01	0.01	0.0250	0.0188	0.0146	0.00997
Copper	0.23	Not Listed	2/6	0.0044	0.0304	0.0130	0.0127	0.00977	0.00962
Cyanide	0.03	2	1/6	0.0045	0.0045	0.00500	0.00490	0.00490	0.000224
Iron	Not Listed	Not Listed	1/1	0.0469	0.134	0.0900	0.0900	0.0900	NA
Lead	0.01	0.15	1/6	0.0192	0.0192	0.00150	0.00450	0.00233	0.00712
Magnesium	Not Listed	Not Listed	1/1	24.1	28.4	26.0	26.0	26.0	NA
Manganese	Not Listed	Not Listed	1/1	0.0042	0.0044	0.00430	0.00430	0.00430	NA
Mercury	0.02	0.2	2/6	0.0002	0.0004	0.000100	0.000180	0.000152	0.000130
Nickel	0.2	2	2/6	0.0182	0.0182	0.0200	0.0174	0.0161	0.00557
Potassium	Not Listed	Not Listed	1/1	2.46	2.91	2.70	2.70	2.70	NA
Selenium	0.1	1	2/6	0.0067	0.0085	0.00250	0.00452	0.00388	0.00283
Sodium	Not Listed	Not Listed	1/1	56.8	65.4	61.0	61.0	61.0	NA
Vanadium	4	40	2/6	0.0015	0.0019	0.0140	0.0136	0.00715	0.0125
Zinc	0.9	50	4/6	0.0062	0.118	0.0100	0.0305	0.0165	0.0444

**Table D1-11**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**30s Complex GW-3 Perimeter (Downgradient) Monitoring Well RF-16 & RF-16R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>									
Antimony	8	80	1/4	0.0039	0.0039	0.0300	0.0235	0.0180	0.0131
Barium	50	100	3/4	0.013	0.026	0.0215	0.0390	0.0275	0.0410
Cyanide	0.03	2	1/4	0.0076	0.0076	0.00500	0.00565	0.00555	0.00130
Cyanide-MADEP (PAC)	0.03	2	0/2	ND	ND	0.00500	0.00500	0.00500	0
Mercury	0.02	0.2	2/4	0.00004	0.00068	0.000100	0.000230	0.000128	0.000301
Selenium	0.1	1	2/4	0.0057	0.007	0.00410	0.00443	0.00397	0.00229
Zinc	0.9	50	1/4	0.013	0.013	0.0100	0.0108	0.0107	0.00150

Notes:

1. Samples were collected between 1991 and 2006 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. Non-detect samples without reporting limits for the 3/1996 sample are included in detection frequency but did not participate in the remaining calculations.
7. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
8. Total TEQs (1998 WHO TEFs) could not be calculated for the 12/1991 sample due to insufficient data.
9. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D1-12**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**40s Complex GW-3 Perimeter (Downgradient) Monitoring Well RF-04**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Methylene Chloride	50	100	1/5	0.001	0.001	0.00250	0.00220	0.00208	0.000671
Total VOCs	Not Listed	Not Listed	1/5	0.001	0.001	0.100	0.0802	0.0398	0.0443
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	3/5	0.000024	0.000061	0.0000470	0.0000830	0.0000563	0.0000944
Aroclor-1260	Not Listed	Not Listed	2/5	0.000024	0.000049	0.0000330	0.0000778	0.0000502	0.0000967
Total PCBs	0.01	0.1	3/5	0.000024	0.00011	0.0000710	0.0000976	0.0000688	0.0000918
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	2/4	0.000022	0.000061	0.0000365	0.0000390	0.0000365	0.0000164
Aroclor-1260	Not Listed	Not Listed	1/4	0.000056	0.000056	0.0000365	0.0000405	0.0000395	0.0000108
Total PCBs	0.01	0.1	2/4	0.000022	0.000117	0.0000365	0.0000538	0.0000432	0.0000448
<b>Semivolatile Organics</b>									
bis(2-Ethylhexyl)phthalate	50	100	1/5	0.015	0.015	0.00300	0.00540	0.00414	0.00537
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
1,2,3,7,8-PeCDF	Not Listed	Not Listed	2/4	3.6E-09	1.3E-08	2.15E-09	4.63E-09	2.87E-09	5.62E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	1/4	1.1E-08	1.1E-08	1.85E-09	3.98E-09	2.57E-09	4.70E-09
PeCDFs (total)	Not Listed	Not Listed	2/5	3.6E-09	2.5E-08	3.70E-09	3.25E-08	8.28E-09	5.54E-08
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	2/4	1.1E-11	1.1E-08	1.35E-09	3.43E-09	6.83E-10	5.09E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	3/4	7.6E-12	1.2E-08	1.55E-09	3.78E-09	6.75E-10	5.54E-09
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	1/4	2.8E-08	2.8E-08	1.50E-09	7.75E-09	5.58E-10	1.35E-08
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	1/4	1.00E-08	1E-08	1.35E-09	3.18E-09	3.98E-10	4.60E-09
HxCDFs (total)	Not Listed	Not Listed	3/5	3.7E-11	6.1E-08	2.00E-09	3.48E-08	3.59E-09	4.94E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	1/4	1.8E-12	1.8E-12	1.35E-09	2.55E-09	3.95E-10	3.36E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	1/4	2.3E-08	2.3E-08	1.55E-09	6.53E-09	6.55E-10	1.10E-08
HpCDFs (total)	Not Listed	Not Listed	1/5	2.3E-08	2.3E-08	1.30E-08	4.78E-08	1.04E-08	8.56E-08
OCDF	Not Listed	Not Listed	2/5	3.2E-11	5.3E-08	4.10E-09	6.39E-08	5.38E-09	1.12E-07

**Table D1-12**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**40s Complex GW-3 Perimeter (Downgradient) Monitoring Well RF-04**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/5	ND	ND	2.00E-09	1.92E-08	9.44E-10	3.96E-08
TCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	2.00E-09	1.93E-08	9.92E-10	3.95E-08
1,2,3,7,8-PeCDD	Not Listed	Not Listed	1/4	1.5E-08	1.5E-08	1.80E-09	4.95E-09	2.76E-09	6.71E-09
PeCDDs (total)	Not Listed	Not Listed	1/5	1.5E-08	1.5E-08	2.20E-09	4.02E-08	7.19E-09	7.84E-08
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	1/4	9E-09	9E-09	1.90E-09	3.20E-09	4.59E-10	3.98E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.80E-09	2.65E-09	4.26E-10	3.03E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	1/4	2.2E-08	2.2E-08	1.85E-09	6.43E-09	5.65E-10	1.04E-08
HxCDDs (total)	Not Listed	Not Listed	1/5	3.1E-08	3.1E-08	2.30E-09	5.10E-08	2.01E-09	9.54E-08
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	2/4	6.5E-09	1.8E-08	2.93E-09	5.96E-09	9.45E-10	8.30E-09
HpCDDs (total)	Not Listed	Not Listed	2/5	6.5E-09	1.8E-08	4.90E-09	4.98E-08	1.02E-08	9.54E-08
OCDD	Not Listed	Not Listed	0/5	ND	ND	3.00E-08	8.25E-08	2.85E-08	1.34E-07
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	2.8E-09	3.4E-08	5.65E-09	1.20E-08	7.32E-09	1.48E-08
<b>Inorganics-Unfiltered</b>									
Aluminum	Not Listed	Not Listed	1/1	0.0752	0.0752	0.0750	0.0750	0.0750	NA
Arsenic	0.9	9	2/5	0.0049	0.005	0.00500	0.00450	0.00435	0.00112
Barium	50	100	4/5	0.01	0.0722	0.0360	0.0466	0.0330	0.0386
Beryllium	0.2	2	1/5	0	0.0002	0.000500	0.000470	0.000466	0.0000671
Cadmium	0.004	0.05	1/5	0.00078	0.00079	0.00250	0.00216	0.00199	0.000765
Calcium	Not Listed	Not Listed	1/1	66	66	66.0	66.0	66.0	NA
Chromium	0.3	3	2/5	0.0051	0.007	0.00500	0.00542	0.00537	0.000884
Cobalt	0.075	Not Listed	1/5	0.0067	0.0067	0.0250	0.0168	0.0121	0.0113
Copper	0.23	Not Listed	3/5	0.0042	0.018	0.00470	0.00858	0.00673	0.00659
Iron	Not Listed	Not Listed	1/1	0.0258	0.0258	0.0260	0.0260	0.0260	NA
Lead	0.01	0.15	2/5	0.0028	0.0088	0.00150	0.00312	0.00223	0.00324
Magnesium	Not Listed	Not Listed	1/1	24.2	24.2	24.0	24.0	24.0	NA
Manganese	Not Listed	Not Listed	1/1	0.0015	0.0015	0.00150	0.00150	0.00150	NA
Nickel	0.2	2	1/5	0.011	0.011	0.0200	0.0150	0.0129	0.00728
Potassium	Not Listed	Not Listed	1/1	2.31	2.31	2.30	2.30	2.30	NA
Selenium	0.1	1	2/5	0.0029	0.0049	0.00250	0.00302	0.00290	0.00105
Sodium	Not Listed	Not Listed	1/1	60.4	60.4	60.0	60.0	60.0	NA
Sulfide	Not Listed	Not Listed	1/4	0	8	2.50	3.20	3.02	1.40
Vanadium	4	40	2/5	0.0032	0.0064	0.00640	0.0126	0.00845	0.0114
Zinc	0.9	50	4/5	0.014	0.058	0.0240	0.0268	0.0225	0.0186

**Table D1-12**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**40s Complex GW-3 Perimeter (Downgradient) Monitoring Well RF-04**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>									
Antimony	8	80	1/4	0.0097	0.011	0.0300	0.0250	0.0228	0.0100
Arsenic	0.9	9	1/4	0	0.0038	0.00500	0.0161	0.00861	0.0226
Barium	50	100	3/4	0.01	0.012	0.0110	0.0330	0.0186	0.0447
Cadmium	0.004	0.05	1/4	0.00056	0.00072	0.00250	0.00266	0.00211	0.00179
Copper	0.23	Not Listed	1/4	0.0043	0.0043	0.0130	0.0108	0.00986	0.00435
Selenium	0.1	1	1/4	0.0031	0.004	0.00250	0.00278	0.00274	0.000550
Vanadium	4	40	1/4	0.0033	0.0037	0.0250	0.0196	0.0153	0.0108
Zinc	0.9	50	2/4	0.01	0.013	0.0100	0.0108	0.0107	0.00150

**Notes:**

1. Samples were collected between 1991 and 2003 and were submitted for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling

**Table D2-1**

**Statistical Summary Of Historical Groundwater Analytical Results**

**East Street Area 1-North GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well ES1-08 & ES1-08R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**

**Plant Site 1 Groundwater Management Area**

**General Electric Company - Pittsfield, Massachusetts**

**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
Toluene	50	40	100	1/3	0.0061	0.0061	0.00250	0.00370	0.00337	0.00208
Total VOCs	5	Not Listed	Not Listed	1/3	0.0061	0.0061	0.100	0.0687	0.0394	0.0542
<b>PCBs-Unfiltered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	1/4	0.0056	0.0056	0.00250	0.00266	0.00104	0.00228
Aroclor-1260	Not Listed	Not Listed	Not Listed	4/4	0.00093	0.11	0.0420	0.0487	0.0178	0.0507
Total PCBs	0.005	0.01	0.1	4/4	0.00093	0.11	0.0450	0.0502	0.0195	0.0494
<b>PCBs-Filtered</b>										
Aroclor-1260	Not Listed	Not Listed	Not Listed	1/3	0.0039	0.0039	0.0000330	0.00132	0.000162	0.00223
Total PCBs	0.005	0.01	0.1	1/3	0.0039	0.0039	0.0000330	0.00132	0.000162	0.00223
<b>Semivolatile Organics</b>										
1,3-Dichlorobenzene	2	50	100	1/3	0.0051	0.0051	0.00510	0.00670	0.00634	0.00286
1,4-Dichlorobenzene	0.2	8	80	1/3	0.027	0.027	0.0100	0.0140	0.0111	0.0115
<b>Organochlorine Pesticides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>										
2,3,7,8-TCDF	Not Listed	Not Listed	Not Listed	0/3	ND	ND	9.00E-10	2.63E-09	2.07E-10	3.81E-09
TCDFs (total)	Not Listed	Not Listed	Not Listed	2/3	1.7E-11	7.2E-09	7.00E-09	4.74E-09	9.50E-10	4.09E-09
1,2,3,7,8-PeCDF	Not Listed	Not Listed	Not Listed	0/3	ND	ND	1.30E-09	3.77E-09	1.93E-10	5.44E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	Not Listed	1/3	3.1E-09	3.1E-09	3.10E-09	4.20E-09	2.68E-10	4.84E-09
PeCDFs (total)	Not Listed	Not Listed	Not Listed	2/3	1.5E-11	1.9E-08	1.00E-08	9.67E-09	1.42E-09	9.50E-09
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	Not Listed	2/3	1.4E-08	1.00E-07	1.40E-08	3.80E-08	1.43E-09	5.41E-08
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	1/3	2.6E-09	2.6E-09	2.60E-09	5.53E-09	2.87E-10	7.45E-09
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	Not Listed	0/3	ND	ND	1.30E-09	6.10E-09	2.66E-10	9.46E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/3	ND	ND	1.60E-09	5.20E-09	2.56E-10	7.66E-09
HxCDFs (total)	Not Listed	Not Listed	Not Listed	3/3	1.3E-11	1.00E-07	4.00E-08	4.67E-08	3.73E-09	5.03E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	Not Listed	2/3	9.4E-12	1.6E-08	1.60E-08	1.23E-08	1.47E-09	1.10E-08
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	Not Listed	2/3	3.6E-12	7.9E-09	7.90E-09	1.20E-08	9.27E-10	1.44E-08
HpCDFs (total)	Not Listed	Not Listed	Not Listed	2/3	1.3E-11	4.5E-08	2.40E-08	2.30E-08	2.41E-09	2.25E-08
OCDF	Not Listed	Not Listed	Not Listed	2/3	5.00E-08	4.20E-07	5.00E-08	1.57E-07	6.14E-09	2.29E-07

**Table D2-1**

**Statistical Summary Of Historical Groundwater Analytical Results**

**East Street Area 1-North GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well ES1-08 & ES1-08R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**

**Plant Site 1 Groundwater Management Area**

**General Electric Company - Pittsfield, Massachusetts**

**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>										
2,3,7,8-TCDD	Not Listed	Not Listed	Not Listed	0/3	ND	ND	9.00E-10	3.13E-09	2.26E-10	4.67E-09
TCDDs (total)	Not Listed	Not Listed	Not Listed	0/3	ND	ND	9.00E-10	3.13E-09	2.26E-10	4.67E-09
1,2,3,7,8-PeCDD	Not Listed	Not Listed	Not Listed	0/3	ND	ND	1.30E-09	4.43E-09	2.05E-10	6.58E-09
PeCDDs (total)	Not Listed	Not Listed	Not Listed	0/3	ND	ND	1.30E-09	4.43E-09	2.16E-10	6.58E-09
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/3	ND	ND	1.50E-09	6.83E-09	3.72E-10	1.06E-08
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/3	ND	ND	1.10E-09	7.03E-09	3.28E-10	1.12E-08
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	Not Listed	0/3	ND	ND	1.30E-09	7.10E-09	3.46E-10	1.12E-08
HxCDDs (total)	Not Listed	Not Listed	Not Listed	0/3	ND	ND	2.10E-09	7.37E-09	4.59E-10	1.10E-08
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	Not Listed	1/3	2.00E-08	2.00E-08	2.00E-08	1.73E-08	1.52E-09	1.62E-08
HpCDDs (total)	Not Listed	Not Listed	Not Listed	1/3	2.00E-08	2.00E-08	2.00E-08	1.73E-08	1.76E-09	1.62E-08
OCDD	Not Listed	Not Listed	Not Listed	2/3	1.30E-07	8.20E-07	1.30E-07	3.17E-07	1.55E-08	4.41E-07
Total TEQs (1998 WHO TEFs)	Not Listed	4.00E-05	4.00E-04	3/3	3.7E-12	4.8E-08	6.60E-09	1.82E-08	1.05E-09	2.60E-08
<b>Inorganics-Unfiltered</b>										
Arsenic	Not Listed	0.9	9	1/3	0.066	0.066	0.00500	0.0253	0.0118	0.0352
Barium	Not Listed	50	100	3/3	0.11	0.24	0.210	0.187	0.177	0.0681
Beryllium	Not Listed	0.2	2	1/3	0.00076	0.00076	0.000500	0.000587	0.000575	0.000150
Chromium	Not Listed	0.3	3	1/3	0.013	0.013	0.00500	0.00767	0.00688	0.00462
Cobalt	Not Listed	0.075	Not Listed	1/3	0.005	0.005	0.0250	0.0183	0.0146	0.0115
Copper	Not Listed	0.23	Not Listed	1/3	0.034	0.034	0.0130	0.0200	0.0179	0.0121
Cyanide	Not Listed	0.03	2	2/3	0.0055	0.0091	0.00550	0.00653	0.00630	0.00224
Lead	Not Listed	0.01	0.15	2/3	0.0021	0.013	0.00250	0.00587	0.00409	0.00618
Mercury	Not Listed	0.02	0.2	1/3	0.00029	0.00029	0.000100	0.000163	0.000143	0.000110
Nickel	Not Listed	0.2	2	1/3	0.0054	0.0054	0.0200	0.0151	0.0129	0.00843
Thallium	Not Listed	3	30	1/3	0.021	0.021	0.00500	0.0103	0.00807	0.00924
Zinc	Not Listed	0.9	50	3/3	0.011	1.4	0.0490	0.487	0.0910	0.791



**Table D2-1**

**Statistical Summary Of Historical Groundwater Analytical Results  
East Street Area 1-North GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well ES1-08 & ES1-08R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>										
Antimony	Not Listed	8	80	1/3	0.0084	0.0084	0.0300	0.0228	0.0196	0.0125
Arsenic	Not Listed	0.9	9	2/3	0.0085	0.027	0.0270	0.0285	0.0226	0.0208
Barium	Not Listed	50	100	2/3	0.15	0.17	0.150	0.140	0.137	0.0361
Beryllium	Not Listed	0.2	2	2/3	0.00077	0.0059	0.000770	0.00239	0.00131	0.00304
Cadmium	Not Listed	0.004	0.05	2/3	0.0011	0.0063	0.00500	0.00413	0.00326	0.00271
Chromium	Not Listed	0.3	3	2/3	0.0063	0.0086	0.00860	0.00930	0.00890	0.00340
Cobalt	Not Listed	0.075	Not Listed	1/3	0.0072	0.0072	0.0250	0.0191	0.0165	0.0103
Copper	Not Listed	0.23	Not Listed	2/3	0.0048	0.03	0.0130	0.0159	0.0123	0.0129
Lead	Not Listed	0.01	0.15	1/3	0.012	0.012	0.00150	0.00500	0.00300	0.00606
Nickel	Not Listed	0.2	2	2/3	0.0066	0.013	0.0130	0.0132	0.0120	0.00670
Selenium	Not Listed	0.1	1	1/3	0.0059	0.0059	0.00250	0.00363	0.00333	0.00196
Silver	Not Listed	0.007	1	1/3	0.0057	0.0057	0.00250	0.00357	0.00329	0.00185
Thallium	Not Listed	3	30	1/3	0.027	0.027	0.00500	0.0123	0.00877	0.0127
Vanadium	Not Listed	4	40	1/3	0.006	0.006	0.0250	0.0187	0.0155	0.0110
Zinc	Not Listed	0.9	50	3/3	0.011	0.54	0.0260	0.192	0.0537	0.301

**Notes:**

1. Samples were collected between 2001 and 2002 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D2-2**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 1-North GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well ESA1N-52**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

Parameter	RAA Area : Sample ID: Date Collected:	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>											
None Detected		--	--	--	0/4	--	--	--	--	--	--
<b>PCBs-Unfiltered</b>											
Aroclor-1254		Not Listed	Not Listed	Not Listed	4/4	0.0002	0.0018	0.000900	0.000950	0.000670	0.000772
Aroclor-1260		Not Listed	Not Listed	Not Listed	3/4	0.000096	0.001	0.000323	0.000420	0.000204	0.000450
Total PCBs		0.005	0.01	0.1	4/4	0.000296	0.0028	0.00120	0.00138	0.000905	0.00123
<b>PCBs-Filtered</b>											
Aroclor-1254		Not Listed	Not Listed	Not Listed	3/8	0.000048	0.00058	0.0000345	0.000110	0.0000565	0.000191
Aroclor-1260		Not Listed	Not Listed	Not Listed	2/8	0.000067	0.00021	0.0000330	0.0000598	0.0000459	0.0000618
Total PCBs		0.005	0.01	0.1	4/8	0.000048	0.00079	0.0000420	0.000141	0.0000641	0.000263
<b>Semivolatile Organics</b>											
None Detected		--	--	--	0/4	--	--	--	--	--	--
<b>Organochlorine Pesticides</b>											
None Detected		--	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>											
None Detected		--	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>											
None Detected		--	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>											
2,3,7,8-TCDF		Not Listed	Not Listed	Not Listed	0/4	ND	ND	9.00E-10	7.75E-10	1.68E-10	5.73E-10
TCDFs (total)		Not Listed	Not Listed	Not Listed	1/4	1.00E-08	1.00E-08	1.00E-09	3.00E-09	2.92E-10	4.70E-09
1,2,3,7,8-PeCDF		Not Listed	Not Listed	Not Listed	0/4	ND	ND	9.50E-10	7.75E-10	1.53E-10	5.68E-10
2,3,4,7,8-PeCDF		Not Listed	Not Listed	Not Listed	1/4	1.6E-09	1.6E-09	1.15E-09	9.75E-10	1.85E-10	6.85E-10
PeCDFs (total)		Not Listed	Not Listed	Not Listed	2/4	4.4E-09	7.3E-09	5.45E-09	4.55E-09	5.82E-10	3.27E-09
1,2,3,4,7,8-HxCDF		Not Listed	Not Listed	Not Listed	2/4	4.6E-09	5.2E-09	4.05E-09	3.33E-09	5.51E-10	2.33E-09
1,2,3,6,7,8-HxCDF		Not Listed	Not Listed	Not Listed	2/4	2.6E-09	4E-09	2.05E-09	2.03E-09	3.49E-10	1.69E-09
1,2,3,7,8,9-HxCDF		Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.50E-09	1.18E-09	2.60E-10	7.88E-10
2,3,4,6,7,8-HxCDF		Not Listed	Not Listed	Not Listed	1/4	3.3E-09	3.3E-09	1.40E-09	1.53E-09	2.90E-10	1.36E-09
HxCDFs (total)		Not Listed	Not Listed	Not Listed	3/4	7.2E-09	1.6E-08	1.01E-08	9.05E-09	1.13E-09	7.05E-09
1,2,3,4,6,7,8-HpCDF		Not Listed	Not Listed	Not Listed	2/4	4.5E-09	5.4E-09	3.35E-09	3.03E-09	4.55E-10	2.43E-09
1,2,3,4,7,8,9-HpCDF		Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.85E-09	1.53E-09	3.01E-10	1.05E-09
HpCDFs (total)		Not Listed	Not Listed	Not Listed	3/4	4.5E-09	1.1E-08	5.10E-09	5.30E-09	7.10E-10	4.52E-09
OCDF		Not Listed	Not Listed	Not Listed	2/4	1.1E-08	1.6E-08	1.35E-08	1.50E-08	1.24E-08	9.83E-09

Table D2-2

Statistical Summary Of Historical Groundwater Analytical Results  
 East Street Area 1-North GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well ESA1N-52

Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
 Plant Site 1 Groundwater Management Area  
 General Electric Company - Pittsfield, Massachusetts  
 (Results are presented in parts per million, ppm)

RAA Area : Sample ID: Parameter Date Collected:	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>										
2,3,7,8-TCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.15E-09	1.08E-09	2.23E-10	8.30E-10
TCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	1.13E-09	2.33E-10	8.30E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.35E-09	1.10E-09	2.03E-10	7.61E-10
PeCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.60E-09	1.38E-09	2.38E-10	9.77E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	2.05E-09	1.85E-09	3.98E-10	1.41E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.95E-09	1.73E-09	3.72E-10	1.27E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	2.00E-09	1.80E-09	3.82E-10	1.35E-09
HxCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	2.05E-09	1.83E-09	3.86E-10	1.36E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	Not Listed	1/4	3.4E-09	3.4E-09	2.85E-09	2.28E-09	4.25E-10	1.56E-09
HpCDDs (total)	Not Listed	Not Listed	Not Listed	1/4	3.4E-09	3.4E-09	2.60E-09	2.15E-09	4.07E-10	1.48E-09
OCDD	Not Listed	Not Listed	Not Listed	3/4	5.6E-11	3.1E-08	1.70E-08	1.63E-08	4.13E-09	1.55E-08
Total TEQs (1998 WHO TEFs)	Not Listed	4.00E-05	4.00E-04	4/4	5.7E-12	5.7E-09	5.45E-09	4.15E-09	9.91E-10	2.77E-09
<b>Inorganics-Unfiltered</b>										
Barium	Not Listed	50	100	3/4	0.014	0.014	0.0140	0.0355	0.0229	0.0430
Chromium	Not Listed	0.3	3	1/4	0.0027	0.0027	0.00500	0.00443	0.00429	0.00115
Cyanide	Not Listed	0.03	2	2/4	0.0023	0.0038	0.00440	0.00403	0.00384	0.00128
Lead	Not Listed	0.01	0.15	2/4	0.0032	0.0043	0.00235	0.00263	0.00236	0.00137
Mercury	Not Listed	0.02	0.2	1/4	0.00092	0.00092	0.000100	0.000305	0.000174	0.000410
Zinc	Not Listed	0.9	50	4/4	0.0072	0.015	0.0124	0.0118	0.0112	0.00390
<b>Inorganics-Filtered</b>										
Barium	Not Listed	50	100	2/4	0.014	0.015	0.0575	0.0573	0.0381	0.0494
Copper	Not Listed	0.23	Not Listed	1/4	0.0083	0.0083	0.0130	0.0211	0.0163	0.0194
Cyanide	Not Listed	0.03	2	1/2	0.0035	0.0035	0.00425	0.00425	0.00418	0.00106
Mercury	Not Listed	0.02	0.2	1/4	0.00092	0.00092	0.000100	0.000305	0.000174	0.000410
Zinc	Not Listed	0.9	50	2/4	0.0082	0.11	0.0100	0.0346	0.0173	0.0503

Notes:

1. Samples were collected between 2001 and 2007 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D2-3  
Statistical Summary Of Historical Groundwater Analytical Results  
East Street Area 1-South GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well ESA1S-31R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
Bromodichloromethane	0.006	50	100	3/4	0.0014	0.0054	0.00185	0.00240	0.00174	0.00211
Chloroform	0.05	20	100	4/4	0.0014	0.028	0.0165	0.0154	0.0101	0.0114
Total VOCs	5	Not Listed	Not Listed	4/4	0.0028	0.03	0.0190	0.0175	0.0128	0.0125
<b>PCBs-Filtered</b>										
None Detected	--	--	--	0/5	--	--	--	--	--	--
<b>Semivolatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>Organochlorine Pesticides</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>Herbicides</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--

Notes:

1. Samples were collected between 2008 and 2013 and were submitted to SGS Environmental Services, Inc. and Accutest Laboratories for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D2-4  
 Statistical Summary Of Historical Groundwater Analytical Results  
 East Street Area 1-South GW-2 Sentinel Monitoring Well ESA1S-37R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
 Plant Site 1 Groundwater Management Area  
 General Electric Company - Pittsfield, Massachusetts  
 (Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>PCBs-Filtered</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>Semivolatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--

Notes:

1. Samples were collected between 2001 and 2010 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D2-5  
Statistical Summary Of Historical Groundwater Analytical Results  
East Street Area 1-South GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well ESA1S-72R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
Bromodichloromethane	0.006	50	100	1/9	0.0013	0.0013	0.000500	0.00126	0.000951	0.000968
Chloroform	0.05	20	100	1/9	0.017	0.017	0.000500	0.00300	0.00127	0.00534
Total VOCs	5	Not Listed	Not Listed	1/9	0.018	0.018	0.0500	0.0631	0.0562	0.0295
<b>PCBs-Filtered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	5/9	0.000029	0.00014	0.0000350	0.0000550	0.0000461	0.0000406
Total PCBs	0.005	0.01	0.1	5/9	0.000029	0.00014	0.0000350	0.0000550	0.0000461	0.0000406
<b>Semivolatile Organics</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Organochlorine Pesticides</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>Herbicides</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>Inorganics-Filtered</b>										
Barium	Not Listed	50	100	5/6	0.00071	0.0569	0.0220	0.0261	0.0130	0.0233
Beryllium	Not Listed	0.2	2	3/6	0	0.01	0.00500	0.00553	0.00533	0.00162
Cadmium	Not Listed	0.004	0.05	2/6	0.00003	0.00019	0.00100	0.000863	0.000443	0.000714
Copper	Not Listed	0.23	Not Listed	3/6	0.00165	0.026	0.00500	0.0219	0.00809	0.0386
Cyanide	Not Listed	0.03	2	2/2	0.0025	0.0028	0.00275	0.00275	0.00275	0.0000707
Lead	Not Listed	0.01	0.15	1/6	0.00706	0.00706	0.00500	0.00535	0.00530	0.000857
Mercury	Not Listed	0.02	0.2	1/6	2.52E-05	2.52E-05	0.000140	0.000160	0.000121	0.000110
Selenium	Not Listed	0.1	1	2/6	0.00301	0.00739	0.0100	0.00898	0.00885	0.00160
Silver	Not Listed	0.007	1	2/6	0.000054	0.00019	0.00190	0.00154	0.000994	0.00112
Thallium	Not Listed	3	30	1/6	0.00961	0.0166	0.00500	0.00633	0.00586	0.00327
Zinc	Not Listed	0.9	50	3/6	0.00174	0.00558	0.0100	0.0110	0.00818	0.00828

**Notes:**

1. Samples were collected between 2004 and 2013 and were submitted to SGS Environmental Services, Inc. and Accutest Laboratories for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D2-6**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 1-South GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well ES1-13R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
2-Chloroethylvinylether	Not Listed	Not Listed	Not Listed	0/2	ND	ND	0.00975	0.00975	0.00919	0.00460
Acetone	50	50	100	1/4	0.001	0.001	0.00465	0.00620	0.00485	0.00497
Chlorobenzene	0.2	1	10	2/4	0.00016	0.00061	0.000500	0.000445	0.000401	0.000191
Total VOCs	5	Not Listed	Not Listed	2/4	0.00016	0.0012	0.0253	0.0253	0.00567	0.0285
<b>PCBs-Filtered</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>Semivolatile Organics</b>										
1,4-Dichlorobenzene	0.2	8	80	3/4	0.0016	0.0051	0.00240	0.00275	0.00255	0.00129
3,3'-Dichlorobenzidine	Not Listed	2	20	0/4	ND	ND	0.00515	0.00515	0.00514	0.000404
<b>Furans</b>										
2,3,7,8-TCDF	Not Listed	Not Listed	Not Listed	1/4	1.4E-09	1.9E-09	1.65E-09	1.70E-09	1.41E-09	1.03E-09
TCDFs (total)	Not Listed	Not Listed	Not Listed	1/4	7.00E-09	1.80E-08	2.30E-09	4.52E-09	2.35E-09	5.74E-09
1,2,3,7,8-PeCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.65E-10	1.02E-09	8.23E-10	8.11E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	6.80E-10	9.78E-10	7.60E-10	8.41E-10
PeCDFs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.53E-09	1.60E-09	1.19E-09	1.21E-09
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	6.90E-10	7.10E-10	5.57E-10	5.10E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	6.40E-10	6.33E-10	5.14E-10	4.25E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.55E-10	8.03E-10	6.29E-10	5.80E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	6.90E-10	6.85E-10	5.45E-10	4.79E-10
HxCDFs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	9.65E-10	9.08E-10	7.79E-10	4.93E-10
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	8.55E-10	8.88E-10	6.39E-10	7.13E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.05E-09	1.10E-09	7.87E-10	8.81E-10
HpCDFs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.05E-09	1.10E-09	7.94E-10	8.78E-10
OCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.90E-09	2.09E-09	1.57E-09	1.62E-09

Table D2-6

## Statistical Summary Of Historical Groundwater Analytical Results

East Street Area 1-South GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well ES1-13R

## Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1

Plant Site 1 Groundwater Management Area

General Electric Company - Pittsfield, Massachusetts

(Results are presented in parts per million, ppm)

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>										
2,3,7,8-TCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.85E-10	1.19E-09	7.68E-10	1.22E-09
TCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.85E-10	1.19E-09	7.68E-10	1.22E-09
1,2,3,7,8-PeCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.02E-09	1.04E-09	8.42E-10	7.06E-10
PeCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.03E-09	1.05E-09	8.52E-10	7.00E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.13E-09	1.17E-09	8.59E-10	9.13E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.04E-09	1.10E-09	8.46E-10	8.24E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.14E-09	1.18E-09	8.75E-10	9.05E-10
HxCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.14E-09	1.20E-09	9.24E-10	8.81E-10
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.48E-09	1.50E-09	1.18E-09	1.06E-09
HpCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.48E-09	1.51E-09	1.20E-09	1.05E-09
OCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	2.10E-09	2.45E-09	1.88E-09	1.88E-09
Total TEQs (1998 WHO TEFs)	Not Listed	4.00E-05	4.00E-04	4/4	1.00E-09	6.3E-09	3.50E-09	3.70E-09	3.04E-09	2.46E-09
<b>Inorganics-Unfiltered</b>										
Sulfide	Not Listed	Not Listed	Not Listed	1/4	1.5	1.5	0.500	0.625	0.595	0.250
<b>Inorganics-Filtered</b>										
Barium	Not Listed	50	100	3/4	0.093	0.221	0.117	0.126	0.109	0.0728
Beryllium	Not Listed	0.2	2	1/4	0.0104	0.0104	0.00500	0.00568	0.00557	0.00135
Chromium	Not Listed	0.3	3	2/4	0.00415	0.00885	0.00500	0.00563	0.00543	0.00182
Cobalt	Not Listed	0.075	Not Listed	1/4	0.00303	0.00391	0.00500	0.00463	0.00457	0.000750
Copper	Not Listed	0.23	Not Listed	1/4	0.00215	0.00215	0.00500	0.0281	0.00861	0.0480
Nickel	Not Listed	0.2	2	1/4	0.00376	0.00599	0.00500	0.00498	0.00497	0.0000500
Selenium	Not Listed	0.1	1	2/4	0.00344	0.00617	0.00740	0.00733	0.00682	0.00309
Thallium	Not Listed	3	30	2/4	0.00918	0.0128	0.00730	0.00815	0.00747	0.00389
Tin	Not Listed	Not Listed	Not Listed	1/4	0.0258	0.0258	0.0500	0.0470	0.0467	0.00600
Zinc	Not Listed	0.9	50	4/4	0.00197	0.109	0.0104	0.0214	0.0104	0.0282

## Notes:

1. Samples were collected between 2010 and 2011 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.



**Table D2-7**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 1-North GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well ES1-14/GMA1-18**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>PCBs-Unfiltered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	1/4	0.00031	0.00031	3.3E-05	0.000102	0.0000578	0.000139
Total PCBs	0.005	0.01	0.1	1/4	0.00031	0.00031	3.3E-05	0.000102	0.0000578	0.000139
<b>PCBs-Filtered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	3/4	0.000042	0.00041	5.7E-05	0.000139	0.0000797	0.000181
Total PCBs	0.005	0.01	0.1	3/4	0.000042	0.00041	5.7E-05	0.000139	0.0000797	0.000181
<b>Semivolatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>Organochlorine Pesticides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>										
2,3,7,8-TCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	5.75E-10	4.75E-10	1.33E-10	3.32E-10
TCDFs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	5.75E-10	4.75E-10	1.33E-10	3.32E-10
1,2,3,7,8-PeCDF	Not Listed	Not Listed	Not Listed	1/4	2.40E-09	2.40E-09	5.30E-10	8.65E-10	1.34E-10	1.06E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	Not Listed	1/4	1.50E-09	1.50E-09	9.50E-10	8.50E-10	1.56E-10	6.85E-10
PeCDFs (total)	Not Listed	Not Listed	Not Listed	1/4	3.90E-09	3.90E-09	9.75E-10	1.46E-09	2.01E-10	1.71E-09
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	Not Listed	1/4	1.30E-09	1.30E-09	8.80E-10	7.65E-10	1.50E-10	6.45E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	1/4	1.60E-09	1.60E-09	9.25E-10	8.63E-10	1.62E-10	7.25E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	9.75E-10	8.13E-10	1.69E-10	6.22E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	9.25E-10	7.88E-10	1.57E-10	6.33E-10
HxCDFs (total)	Not Listed	Not Listed	Not Listed	3/4	2.40E-12	1.60E-09	6.55E-10	7.28E-10	1.97E-10	6.77E-10
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	9.50E-10	1.00E-09	9.43E-10	3.92E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.13E-09	8.88E-10	1.80E-10	6.14E-10
HpCDFs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.25E-10	6.88E-10	1.41E-10	5.42E-10
OCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	2.70E-09	2.65E-09	2.50E-09	9.98E-10

**Table D2-7**

**Statistical Summary Of Historical Groundwater Analytical Results**

**East Street Area 1-North GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well ES1-14/GMA1-18**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**

**Plant Site 1 Groundwater Management Area**

**General Electric Company - Pittsfield, Massachusetts**

**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>										
2,3,7,8-TCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.50E-10	6.00E-10	1.60E-10	4.06E-10
TCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.75E-10	7.38E-10	1.82E-10	5.73E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.00E-09	8.25E-10	1.37E-10	6.18E-10
PeCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.00E-09	9.75E-10	2.09E-10	8.14E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	Not Listed	1/4	2.20E-09	2.20E-09	1.03E-09	1.06E-09	2.46E-10	9.26E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	Not Listed	1/4	2.40E-09	2.40E-09	1.03E-09	1.11E-09	2.43E-10	1.01E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	Not Listed	1/4	2.00E-09	2.00E-09	1.03E-09	1.01E-09	2.33E-10	8.46E-10
HxCDDs (total)	Not Listed	Not Listed	Not Listed	1/4	6.70E-09	6.70E-09	1.03E-09	2.19E-09	3.15E-10	3.05E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	Not Listed	1/4	4.90E-09	4.90E-09	2.55E-09	2.83E-09	2.48E-09	1.62E-09
HpCDDs (total)	Not Listed	Not Listed	Not Listed	1/4	4.90E-09	4.90E-09	2.30E-09	2.70E-09	2.29E-09	1.74E-09
OCDD	Not Listed	Not Listed	Not Listed	1/4	1.20E-08	1.20E-08	1.25E-08	1.15E-08	8.88E-09	7.00E-09
Total TEQs (1998 WHO TEFs)	Not Listed	4.00E-05	4.00E-04	4/4	5.20E-11	4.40E-09	2.95E-09	2.59E-09	1.17E-09	1.90E-09
<b>Inorganics-Unfiltered</b>										
Arsenic	Not Listed	0.9	9	2/4	0.0046	0.026	0.005	0.0102	0.00739	0.0106
Barium	Not Listed	50	100	3/4	0.024	0.24	0.0895	0.111	0.0821	0.0919
Beryllium	Not Listed	0.2	2	1/4	0.0014	0.0014	0.0005	0.000725	0.000647	0.00045
Chromium	Not Listed	0.3	3	3/4	0.0047	0.061	0.008	0.0204	0.0112	0.0272
Cobalt	Not Listed	0.075	Not Listed	2/4	0.003	0.053	0.025	0.0265	0.0178	0.0205
Copper	Not Listed	0.23	Not Listed	2/4	0.023	0.096	0.018	0.0363	0.0247	0.0401
Cyanide	Not Listed	0.03	2	2/4	0.0026	0.004	0.0045	0.00415	0.00402	0.00114
Lead	Not Listed	0.01	0.15	3/4	0.0038	0.038	0.0074	0.0136	0.00699	0.0168
Mercury	Not Listed	0.02	0.2	1/4	0.00023	0.00023	0.0001	0.000133	0.000123	0.000065
Nickel	Not Listed	0.2	2	1/4	0.085	0.085	0.02	0.0363	0.0287	0.0325
Vanadium	Not Listed	4	40	1/4	0.043	0.043	0.025	0.0295	0.0286	0.009
Zinc	Not Listed	0.9	50	4/4	0.02	0.31	0.054	0.11	0.0639	0.135

**Table D2-7**

**Statistical Summary Of Historical Groundwater Analytical Results  
East Street Area 1-North GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well ES1-14/GMA1-18**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>										
Barium	Not Listed	50	100	2/4	0.026	0.049	0.0375	0.0473	0.0365	0.038
Copper	Not Listed	0.23	Not Listed	1/4	0.0045	0.0045	0.013	0.0201	0.014	0.0203
Zinc	Not Listed	0.9	50	1/4	0.0086	0.0086	0.01	0.0109	0.0107	0.00281

Notes:

1. Samples were collected between 2001 and 2008 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D2-8**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 1-South GW-2 Sentinel / GW-3 Perimeter (Downgradient) Monitoring Well ES1-23/ES1-23R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>PCBs-Unfiltered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	3/4	0.000029	0.000093	0.0000370	0.0000490	0.0000437	0.0000298
Aroclor-1260	Not Listed	Not Listed	Not Listed	1/4	0.000062	0.000062	0.0000330	0.0000403	0.0000386	0.0000145
Total PCBs	0.005	0.01	0.1	3/4	0.000029	0.000155	0.0000370	0.0000658	0.0000501	0.0000630
<b>PCBs-Filtered</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>Semivolatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>Organochlorine Pesticides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>										
2,3,7,8-TCDF	Not Listed	Not Listed	Not Listed	1/4	2.5E-09	2.5E-09	5.30E-10	8.90E-10	1.36E-10	1.11E-09
TCDFs (total)	Not Listed	Not Listed	Not Listed	1/4	2.5E-09	2.5E-09	5.30E-10	8.90E-10	1.36E-10	1.11E-09
1,2,3,7,8-PeCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.40E-10	1.87E-09	1.82E-10	2.80E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	Not Listed	1/4	5.9E-10	5.9E-10	4.40E-10	1.17E-09	1.38E-10	1.77E-09
PeCDFs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	2.90E-10	2.52E-09	1.45E-10	4.66E-09
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.00E-10	1.30E-09	1.46E-10	1.75E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.00E-10	1.45E-09	1.43E-10	2.04E-09
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.30E-10	1.37E-09	1.69E-10	1.83E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	1/4	4.9E-09	4.9E-09	7.10E-10	1.58E-09	1.59E-10	2.27E-09
HxCDFs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.00E-10	4.10E-09	2.06E-10	7.29E-09
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.55E-09	1.80E-09	1.69E-09	7.79E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	9.50E-10	1.05E-09	1.88E-10	9.68E-10
HpCDFs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.85E-09	2.22E-09	1.28E-09	2.08E-09
OCDF	Not Listed	Not Listed	Not Listed	2/4	1.1E-08	2.00E-08	7.20E-09	9.23E-09	6.58E-09	8.13E-09

Table D2-8

Statistical Summary Of Historical Groundwater Analytical Results

East Street Area 1-South GW-2 Sentinel / GW-3 Perimeter (Downgradient) Monitoring Well ES1-23/ES1-23R

Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1

Plant Site 1 Groundwater Management Area

General Electric Company - Pittsfield, Massachusetts

(Results are presented in parts per million, ppm)

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>										
2,3,7,8-TCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	6.20E-10	8.60E-10	1.46E-10	9.78E-10
TCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	6.20E-10	7.10E-10	1.35E-10	7.14E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.40E-10	1.62E-09	1.56E-10	2.31E-09
PeCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.40E-10	1.62E-09	2.00E-10	2.31E-09
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.20E-10	1.16E-09	1.59E-10	1.46E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.10E-10	1.21E-09	1.55E-10	1.55E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.10E-10	1.21E-09	1.52E-10	1.55E-09
HxCDDs (total)	Not Listed	Not Listed	Not Listed	1/4	1.8E-12	1.8E-12	7.10E-10	1.21E-09	2.00E-10	1.55E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	8.75E-10	1.29E-09	2.13E-10	1.48E-09
HpCDDs (total)	Not Listed	Not Listed	Not Listed	1/4	3.8E-12	3.8E-12	7.45E-10	1.22E-09	2.59E-10	1.54E-09
OCDD	Not Listed	Not Listed	Not Listed	1/4	9.6E-09	9.6E-09	9.05E-09	9.03E-09	8.53E-09	3.30E-09
Total TEQs (1998 WHO TEFs)	Not Listed	4.00E-05	4.00E-04	4/4	1.6E-11	1.20E-08	2.23E-09	4.12E-09	8.94E-10	5.46E-09
<b>Inorganics-Unfiltered</b>										
Antimony	Not Listed	8	80	1/4	0.012	0.012	0.0300	0.0255	0.0239	0.00900
Arsenic	Not Listed	0.9	9	2/4	0.01	0.014	0.00750	0.00850	0.00769	0.00436
Barium	Not Listed	50	100	3/4	0.052	0.12	0.0965	0.0913	0.0873	0.0286
Beryllium	Not Listed	0.2	2	1/4	0.012	0.012	0.000500	0.00338	0.00111	0.00575
Cadmium	Not Listed	0.004	0.05	2/4	0.0014	0.012	0.00250	0.00460	0.00320	0.00496
Chromium	Not Listed	0.3	3	4/4	0.0022	0.02	0.0118	0.0114	0.00783	0.00938
Cobalt	Not Listed	0.075	Not Listed	3/4	0.004	0.019	0.0170	0.0158	0.0130	0.00885
Copper	Not Listed	0.23	Not Listed	3/4	0.0031	0.034	0.0190	0.0188	0.0136	0.0135
Cyanide	Not Listed	0.03	2	1/4	0.013	0.013	0.00500	0.00700	0.00635	0.00400
Lead	Not Listed	0.01	0.15	3/4	0.0052	0.018	0.00540	0.00758	0.00530	0.00719
Mercury	Not Listed	0.02	0.2	1/4	0.00037	0.00037	0.000100	0.000168	0.000139	0.000135
Nickel	Not Listed	0.2	2	3/4	0.0029	0.031	0.0220	0.0195	0.0144	0.0119
Selenium	Not Listed	0.1	1	2/4	0.009	0.016	0.00575	0.00750	0.00548	0.00644
Silver	Not Listed	0.007	1	1/4	0.011	0.011	0.00250	0.00463	0.00362	0.00425
Thallium	Not Listed	3	30	1/4	0.011	0.011	0.00500	0.00650	0.00609	0.00300
Vanadium	Not Listed	4	40	3/4	0.0045	0.018	0.0175	0.0161	0.0136	0.00853
Zinc	Not Listed	0.9	50	4/4	0.022	0.17	0.0655	0.0808	0.0598	0.0674

**Table D2-8**

**Statistical Summary Of Historical Groundwater Analytical Results**

**East Street Area 1-South GW-2 Sentinel / GW-3 Perimeter (Downgradient) Monitoring Well ES1-23/ES1-23R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**

**Plant Site 1 Groundwater Management Area**

**General Electric Company - Pittsfield, Massachusetts**

**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>										
Antimony	Not Listed	8	80	2/4	0.0071	0.011	0.0205	0.0195	0.0163	0.0122
Barium	Not Listed	50	100	3/4	0.044	0.06	0.0540	0.0630	0.0597	0.0256
Beryllium	Not Listed	0.2	2	2/4	0.00066	0.00071	0.000580	0.000593	0.000585	0.000109
Cadmium	Not Listed	0.004	0.05	1/4	0.00063	0.00063	0.00250	0.00266	0.00211	0.00179
Chromium	Not Listed	0.3	3	1/4	0.0013	0.0013	0.00500	0.00608	0.00453	0.00494
Cobalt	Not Listed	0.075	Not Listed	1/4	0.0017	0.0017	0.0250	0.0192	0.0128	0.0117
Copper	Not Listed	0.23	Not Listed	1/4	0.0069	0.0069	0.0130	0.0207	0.0155	0.0197
Mercury	Not Listed	0.02	0.2	1/4	0.00019	0.00019	0.000100	0.000123	0.000117	0.0000450
Nickel	Not Listed	0.2	2	1/4	0.0022	0.0022	0.0200	0.0156	0.0115	0.00890
Silver	Not Listed	0.007	1	1/4	0.001	0.001	0.00250	0.00213	0.00199	0.000750
Vanadium	Not Listed	4	40	2/4	0.0024	0.0028	0.0139	0.0138	0.00805	0.0129
Zinc	Not Listed	0.9	50	3/4	0.003	0.06	0.0180	0.0248	0.0147	0.0254

**Notes:**

1. Samples were collected between 2001 and 2003 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D2-9**

**Statistical Summary Of Historical Groundwater Analytical Results**

**East Street Area 1-South GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well ESA1S-33**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**

**Plant Site 1 Groundwater Management Area**

**General Electric Company - Pittsfield, Massachusetts**

**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>PCBs-Unfiltered</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>PCBs-Filtered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	1/1	0.00008	0.00008	0.0000800	0.0000800	0.0000800	NA
Total PCBs	0.005	0.01	0.1	1/1	0.00008	0.00008	0.0000800	0.0000800	0.0000800	NA
<b>Semivolatile Organics</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>Furans</b>										
2,3,7,8-TCDF	Not Listed	Not Listed	Not Listed	0/1	ND	ND	2.10E-09	2.10E-09	2.10E-09	NA
TCDFs (total)	Not Listed	Not Listed	Not Listed	1/1	5.9E-08	5.9E-08	5.90E-08	5.90E-08	5.90E-08	NA
1,2,3,7,8-PeCDF	Not Listed	Not Listed	Not Listed	1/1	3.5E-09	3.5E-09	3.50E-09	3.50E-09	3.50E-09	NA
2,3,4,7,8-PeCDF	Not Listed	Not Listed	Not Listed	1/1	1.2E-08	1.2E-08	1.20E-08	1.20E-08	1.20E-08	NA
PeCDFs (total)	Not Listed	Not Listed	Not Listed	1/1	1.90E-07	1.90E-07	1.90E-07	1.90E-07	1.90E-07	NA
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	Not Listed	1/1	1.5E-08	1.5E-08	1.50E-08	1.50E-08	1.50E-08	NA
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	1/1	1.4E-08	1.4E-08	1.40E-08	1.40E-08	1.40E-08	NA
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	Not Listed	0/1	ND	ND	2.30E-09	2.30E-09	2.30E-09	NA
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	1/1	3.00E-08	3.00E-08	3.00E-08	3.00E-08	3.00E-08	NA
HxCDFs (total)	Not Listed	Not Listed	Not Listed	1/1	4.10E-07	4.10E-07	4.10E-07	4.10E-07	4.10E-07	NA
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	Not Listed	1/1	1.30E-07	1.30E-07	1.30E-07	1.30E-07	1.30E-07	NA
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	Not Listed	1/1	1.3E-08	1.3E-08	1.30E-08	1.30E-08	1.30E-08	NA
HpCDFs (total)	Not Listed	Not Listed	Not Listed	1/1	3.60E-07	3.60E-07	3.60E-07	3.60E-07	3.60E-07	NA
OCDF	Not Listed	Not Listed	Not Listed	1/1	3.80E-07	3.80E-07	3.80E-07	3.80E-07	3.80E-07	NA

**Table D2-9**

**Statistical Summary Of Historical Groundwater Analytical Results**

**East Street Area 1-South GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well ESA1S-33**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**

**Plant Site 1 Groundwater Management Area**

**General Electric Company - Pittsfield, Massachusetts**

**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>										
2,3,7,8-TCDD	Not Listed	Not Listed	Not Listed	0/1	ND	ND	1.10E-09	1.10E-09	1.10E-09	NA
TCDDs (total)	Not Listed	Not Listed	Not Listed	0/1	ND	ND	1.20E-09	1.20E-09	1.20E-09	NA
1,2,3,7,8-PeCDD	Not Listed	Not Listed	Not Listed	0/1	ND	ND	3.20E-09	3.20E-09	3.20E-09	NA
PeCDDs (total)	Not Listed	Not Listed	Not Listed	1/1	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	NA
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	Not Listed	1/1	1.1E-08	1.1E-08	1.10E-08	1.10E-08	1.10E-08	NA
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	Not Listed	1/1	2.2E-08	2.2E-08	2.20E-08	2.20E-08	2.20E-08	NA
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	Not Listed	1/1	2.2E-08	2.2E-08	2.20E-08	2.20E-08	2.20E-08	NA
HxCDDs (total)	Not Listed	Not Listed	Not Listed	1/1	1.60E-07	1.60E-07	1.60E-07	1.60E-07	1.60E-07	NA
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	Not Listed	1/1	3.70E-07	3.70E-07	3.70E-07	3.70E-07	3.70E-07	NA
HpCDDs (total)	Not Listed	Not Listed	Not Listed	1/1	6.50E-07	6.50E-07	6.50E-07	6.50E-07	6.50E-07	NA
OCDD	Not Listed	Not Listed	Not Listed	1/1	2.10E-06	2.10E-06	2.10E-06	2.10E-06	2.10E-06	NA
Total TEQs (1998 WHO TEFs)	Not Listed	4.00E-05	4.00E-04	1/1	2.8E-08	2.8E-08	2.80E-08	2.80E-08	2.80E-08	NA
<b>Inorganics-Unfiltered</b>										
Barium	Not Listed	50	100	1/1	0.16	0.16	0.160	0.160	0.160	NA
Chromium	Not Listed	0.3	3	1/1	0.0092	0.0092	0.00920	0.00920	0.00920	NA
Cobalt	Not Listed	0.075	Not Listed	1/1	0.0054	0.0054	0.00540	0.00540	0.00540	NA
Copper	Not Listed	0.23	Not Listed	1/1	0.013	0.013	0.0130	0.0130	0.0130	NA
Cyanide	Not Listed	0.03	2	1/1	0.054	0.054	0.0540	0.0540	0.0540	NA
Nickel	Not Listed	0.2	2	1/1	0.0099	0.0099	0.00990	0.00990	0.00990	NA
Vanadium	Not Listed	4	40	1/1	0.0042	0.0042	0.00420	0.00420	0.00420	NA
Zinc	Not Listed	0.9	50	1/1	0.047	0.047	0.0470	0.0470	0.0470	NA



**Table D2-9**

**Statistical Summary Of Historical Groundwater Analytical Results**

**East Street Area 1-South GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well ESA1S-33**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**

**Plant Site 1 Groundwater Management Area**

**General Electric Company - Pittsfield, Massachusetts**

**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>										
Barium	Not Listed	50	100	1/1	0.14	0.14	0.140	0.140	0.140	NA
Beryllium	Not Listed	0.2	2	1/1	0.00073	0.00073	0.000730	0.000730	0.000730	NA
Copper	Not Listed	0.23	Not Listed	1/1	0.0045	0.0045	0.00450	0.00450	0.00450	NA
Cyanide	Not Listed	0.03	2	1/1	0.05	0.05	0.0500	0.0500	0.0500	NA

Notes:

1. Samples were collected in 2003 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D2-10**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 1-South GW-2 Sentinel / GW-3 Perimeter (Downgradient) Monitoring Well ESA1S-139/ESA1S-139R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>PCBs-Unfiltered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	1/5	0.000042	0.000042	0.0000330	0.0000348	0.0000346	0.00000402
Aroclor-1260	Not Listed	Not Listed	Not Listed	2/5	0.00012	0.00015	0.0000340	0.0000740	0.0000582	0.0000567
Total PCBs	0.005	0.01	0.1	3/5	0.000042	0.00015	0.0000420	0.0000756	0.0000607	0.0000554
<b>PCBs-Filtered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	4/10	0.00009	0.00039	0.0000615	0.000122	0.0000787	0.000120
Aroclor-1260	Not Listed	Not Listed	Not Listed	1/10	0.00029	0.00029	0.0000330	0.0000761	0.0000501	0.0000915
Total PCBs	0.005	0.01	0.1	4/10	0.00009	0.00051	0.0000615	0.000151	0.0000856	0.000171
<b>Semivolatile Organics</b>										
bis(2-Ethylhexyl)phthalate	Not Listed	50	100	1/4	0.0039	0.0039	0.00300	0.00323	0.00320	0.000450
<b>Organochlorine Pesticides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--

**Table D2-10**

**Statistical Summary Of Historical Groundwater Analytical Results**

**East Street Area 1-South GW-2 Sentinel / GW-3 Perimeter (Downgradient) Monitoring Well ESA1S-139/ESA1S-139R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**

**Plant Site 1 Groundwater Management Area**

**General Electric Company - Pittsfield, Massachusetts**

**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>										
2,3,7,8-TCDF	Not Listed	Not Listed	Not Listed	1/4	1E-09	1E-09	9.25E-10	7.13E-10	1.59E-10	4.80E-10
TCDFs (total)	Not Listed	Not Listed	Not Listed	2/4	2.2E-09	3.2E-09	1.60E-09	1.60E-09	2.70E-10	1.39E-09
1,2,3,7,8-PeCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	6.50E-10	7.75E-10	1.28E-10	7.50E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	Not Listed	1/4	2.6E-09	2.6E-09	8.50E-10	1.08E-09	1.53E-10	1.13E-09
PeCDFs (total)	Not Listed	Not Listed	Not Listed	1/4	2.6E-08	2.6E-08	2.10E-09	7.55E-09	4.30E-10	1.24E-08
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	Not Listed	1/4	2.5E-09	2.5E-09	1.80E-09	1.53E-09	2.41E-10	1.14E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	1/4	2.7E-09	2.7E-09	1.25E-09	1.30E-09	2.09E-10	1.10E-09
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	9.75E-10	1.91E-10	6.50E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	2/4	1.5E-09	4.6E-09	1.40E-09	1.85E-09	2.65E-10	1.95E-09
HxCDFs (total)	Not Listed	Not Listed	Not Listed	2/4	8E-12	4.6E-08	2.95E-09	1.30E-08	1.22E-09	2.21E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	Not Listed	1/4	9.8E-09	9.8E-09	1.55E-09	3.50E-09	2.24E-09	4.21E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.75E-10	7.13E-10	1.55E-10	5.45E-10
HpCDFs (total)	Not Listed	Not Listed	Not Listed	1/4	2.2E-08	2.2E-08	2.45E-09	6.89E-09	2.86E-09	1.02E-08
OCDF	Not Listed	Not Listed	Not Listed	1/4	3.5E-09	3.5E-09	3.55E-09	3.90E-09	3.85E-09	7.35E-10
<b>Dioxins</b>										
2,3,7,8-TCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	8.50E-10	7.50E-10	1.86E-10	5.49E-10
TCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.03E-09	9.63E-10	2.19E-10	7.71E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.13E-09	9.63E-10	1.73E-10	6.94E-10
PeCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.45E-09	1.20E-09	2.57E-10	8.36E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.05E-09	1.08E-09	1.96E-10	9.21E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.20E-09	1.10E-09	2.15E-10	8.28E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	1.18E-09	2.21E-10	9.03E-10
HxCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.60E-09	1.35E-09	2.95E-10	1.03E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	Not Listed	1/4	1.6E-08	1.6E-08	2.65E-09	5.65E-09	3.30E-09	6.99E-09
HpCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	3.75E-09	5.20E-09	3.44E-09	5.03E-09
OCDD	Not Listed	Not Listed	Not Listed	1/4	6.7E-09	6.7E-09	1.04E-08	1.32E-08	1.02E-08	1.07E-08
Total TEQs (1998 WHO TEFs)	Not Listed	4.00E-05	4.00E-04	4/4	6E-11	4.7E-09	4.25E-09	3.32E-09	1.50E-09	2.18E-09

**Table D2-10**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 1-South GW-2 Sentinel / GW-3 Perimeter (Downgradient) Monitoring Well ESA1S-139/ESA1S-139R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Unfiltered</b>										
Antimony	Not Listed	8	80	1/4	0.01	0.01	0.0300	0.0250	0.0228	0.0100
Barium	Not Listed	50	100	2/4	0.014	0.03	0.0650	0.0610	0.0453	0.0455
Chromium	Not Listed	0.3	3	2/4	0.0032	0.0034	0.00420	0.00415	0.00406	0.000985
Cobalt	Not Listed	0.075	Not Listed	1/4	0.0048	0.0048	0.0250	0.0200	0.0165	0.0101
Copper	Not Listed	0.23	Not Listed	3/4	0.0047	0.027	0.0103	0.0131	0.0106	0.00990
Lead	Not Listed	0.01	0.15	2/4	0.0054	0.01	0.00395	0.00485	0.00377	0.00381
Mercury	Not Listed	0.02	0.2	1/4	0.00041	0.00041	0.000100	0.000178	0.000142	0.000155
Zinc	Not Listed	0.9	50	2/4	0.014	0.039	0.0125	0.0185	0.0157	0.0138
<b>Inorganics-Filtered</b>										
Arsenic	Not Listed	0.9	9	1/4	0.004	0.004	0.00500	0.0160	0.00841	0.0227
Barium	Not Listed	50	100	3/4	0.0039	0.022	0.0165	0.0342	0.0175	0.0445
Copper	Not Listed	0.23	Not Listed	1/4	0.0051	0.0051	0.0130	0.0203	0.0144	0.0202
Mercury	Not Listed	0.02	0.2	1/4	0.00056	0.00056	0.000100	0.000215	0.000154	0.000230
Zinc	Not Listed	0.9	50	2/4	0.0073	0.014	0.0100	0.0103	0.0101	0.00276

**Notes:**

1. Samples were collected between 2001 and 2008 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D2-11**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 1-South GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well GMA1-6**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
Acetone	50	50	100	1/13	0.0047	0.0047	0.005	0.00563	0.00491	0.00344
Chlorobenzene	0.2	1	10	1/13	0.00014	0.00014	0.0025	0.00155	0.00108	0.00107
Dibromomethane	Not Listed	Not Listed	Not Listed	1/13	0.0016	0.0016	0.0016	0.00151	0.00115	0.001
Total VOCs	5	Not Listed	Not Listed	2/13	0.0016	0.0048	0.05	0.0659	0.0441	0.0366
<b>PCBs-Unfiltered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	2/4	0.000059	0.00012	4.6E-05	0.0000613	0.0000527	0.000041
Total PCBs	0.005	0.01	0.1	2/4	0.000059	0.00012	4.6E-05	0.0000613	0.0000527	0.000041
<b>PCBs-Filtered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	2/13	0.000041	0.00005	3.3E-05	0.0000352	0.000035	0.00000495
Total PCBs	0.005	0.01	0.1	2/13	0.000041	0.00005	3.3E-05	0.0000352	0.000035	0.00000495
<b>Semivolatile Organics</b>										
1,4-Dichlorobenzene	0.2	8	80	6/13	0.00039	0.0011	0.0025	0.00241	0.0016	0.00196
<b>Organochlorine Pesticides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--

**Table D2-11**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 1-South GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well GMA1-6**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>										
2,3,7,8-TCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	9.75E-10	7.88E-10	2.07E-10	5.65E-10
TCDFs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	9.75E-10	7.88E-10	2.07E-10	5.65E-10
1,2,3,7,8-PeCDF	Not Listed	Not Listed	Not Listed	1/4	2.00E-09	2.00E-09	1.30E-09	1.15E-09	2.38E-10	8.34E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	9.75E-10	8.13E-10	1.75E-10	6.22E-10
PeCDFs (total)	Not Listed	Not Listed	Not Listed	1/4	2.00E-09	2.00E-09	1.30E-09	1.15E-09	2.35E-10	8.34E-10
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	Not Listed	1/4	1.20E-09	1.20E-09	1.25E-09	1.00E-09	2.05E-10	6.78E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	1/4	2.30E-09	2.30E-09	1.35E-09	1.25E-09	2.33E-10	9.47E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.50E-09	1.20E-09	2.48E-10	8.28E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.45E-09	1.13E-09	2.27E-10	7.63E-10
HxCDFs (total)	Not Listed	Not Listed	Not Listed	1/4	2.30E-09	2.30E-09	1.40E-09	1.28E-09	2.45E-10	9.53E-10
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	Not Listed	2/4	2.50E-09	2.70E-09	1.90E-09	1.63E-09	3.39E-10	1.25E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.03E-09	2.24E-10	6.89E-10
HpCDFs (total)	Not Listed	Not Listed	Not Listed	2/4	2.50E-09	2.70E-09	2.60E-09	2.38E-09	2.27E-09	7.46E-10
OCDF	Not Listed	Not Listed	Not Listed	1/4	7.40E-09	7.40E-09	5.80E-09	5.58E-09	5.09E-09	2.54E-09
<b>Dioxins</b>										
2,3,7,8-TCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.05E-09	9.01E-10	2.68E-10	6.47E-10
TCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.35E-09	1.08E-09	3.10E-10	7.35E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.03E-09	2.19E-10	6.89E-10
PeCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.55E-09	1.28E-09	2.56E-10	8.77E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	2.30E-09	1.98E-09	4.06E-10	1.44E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	2.05E-09	1.75E-09	3.69E-10	1.29E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	2.15E-09	1.83E-09	3.76E-10	1.33E-09
HxCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	2.45E-09	1.98E-09	4.12E-10	1.35E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.90E-09	1.78E-09	4.69E-10	1.36E-09
HpCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	3.50E-09	4.05E-09	3.36E-09	2.74E-09
OCDD	Not Listed	Not Listed	Not Listed	1/4	1.10E-08	1.10E-08	1.60E-08	1.54E-08	1.40E-08	7.23E-09
Total TEQs (1998 WHO TEFs)	Not Listed	4.00E-05	4.00E-04	4/4	8.50E-12	5.00E-09	4.40E-09	3.45E-09	9.52E-10	2.32E-09

**Table D2-11**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 1-South GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well GMA1-6**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Unfiltered</b>										
Antimony	Not Listed	8	80	1/4	0.0095	0.0095	0.03	0.0249	0.0225	0.0103
Arsenic	Not Listed	0.9	9	4/4	0.01	0.013	0.0125	0.012	0.0119	0.00141
Barium	Not Listed	50	100	3/4	0.08	0.1	0.0995	0.0948	0.0943	0.00984
Cadmium	Not Listed	0.004	0.05	1/4	0.0012	0.0012	0.0025	0.00218	0.00208	0.00065
Cobalt	Not Listed	0.075	Not Listed	4/4	0.0031	0.0037	0.0033	0.00335	0.00334	0.000252
Copper	Not Listed	0.23	Not Listed	2/4	0.0036	0.0063	0.00965	0.00898	0.00787	0.00478
Cyanide	Not Listed	0.03	2	1/4	0.0064	0.0064	0.005	0.00535	0.00532	0.0007
Vanadium	Not Listed	4	40	1/4	0.0038	0.0038	0.025	0.0197	0.0156	0.0106
Zinc	Not Listed	0.9	50	3/4	0.0062	0.013	0.0105	0.0101	0.0097	0.00285
<b>Inorganics-Filtered</b>										
Barium	Not Listed	50	100	3/4	0.058	0.074	0.0675	0.0733	0.0715	0.0191
Cobalt	Not Listed	0.075	Not Listed	4/4	0.0029	0.0035	0.0033	0.00325	0.00324	0.000265
Copper	Not Listed	0.23	Not Listed	2/4	0.0043	0.0056	0.0093	0.00898	0.00799	0.00468
Mercury	Not Listed	0.02	0.2	1/4	0.00064	0.00064	0.0001	0.000235	0.000159	0.00027
Zinc	Not Listed	0.9	50	1/4	0.034	0.034	0.01	0.016	0.0136	0.012

**Notes:**

1. Samples were collected between 2001 and 2012 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D2-12**

**Statistical Summary Of Historical Groundwater Analytical Results**

**East Street Area 1-South GW-2 Sentinel / GW-3 Perimeter (Downgradient) Monitoring Well GMA1-7**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**

**Plant Site 1 Groundwater Management Area**

**General Electric Company - Pittsfield, Massachusetts**

**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>PCBs-Unfiltered</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>PCBs-Filtered</b>										
Aroclor-1260	Not Listed	Not Listed	Not Listed	1/4	0.000027	0.000027	0.0000330	0.0000483	0.0000414	0.0000346
Total PCBs	0.005	0.01	0.1	1/4	0.000027	0.000027	0.0000330	0.0000483	0.0000414	0.0000346
<b>Semivolatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>Organochlorine Pesticides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>										
None Detected	--	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>										
2,3,7,8-TCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	7.50E-10	1.03E-09	1.80E-10	1.13E-09
TCDFs (total)	Not Listed	Not Listed	Not Listed	1/4	3.2E-09	3.2E-09	1.80E-09	1.70E-09	2.86E-10	1.46E-09
1,2,3,7,8-PeCDF	Not Listed	Not Listed	Not Listed	1/4	2.5E-09	2.5E-09	8.55E-10	1.05E-09	1.68E-10	1.11E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	8.25E-10	7.38E-10	1.37E-10	6.65E-10
PeCDFs (total)	Not Listed	Not Listed	Not Listed	1/4	2.5E-09	2.5E-09	8.55E-10	1.05E-09	1.68E-10	1.11E-09
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.08E-09	1.95E-10	7.41E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	1/4	3.7E-09	3.7E-09	1.30E-09	1.58E-09	2.36E-10	1.54E-09
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.13E-09	2.18E-10	8.01E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.08E-09	2.04E-10	7.41E-10
HxCDFs (total)	Not Listed	Not Listed	Not Listed	1/4	3.7E-09	3.7E-09	1.30E-09	1.58E-09	2.42E-10	1.54E-09
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	Not Listed	1/4	4.3E-09	4.3E-09	1.30E-09	2.03E-09	1.72E-09	1.52E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.28E-09	2.45E-10	1.02E-09
HpCDFs (total)	Not Listed	Not Listed	Not Listed	1/4	4.3E-09	4.3E-09	1.30E-09	2.03E-09	1.72E-09	1.52E-09
OCDF	Not Listed	Not Listed	Not Listed	0/4	ND	ND	3.15E-09	3.45E-09	3.30E-09	1.20E-09



**Table D2-12**

**Statistical Summary Of Historical Groundwater Analytical Results**

**East Street Area 1-South GW-2 Sentinel / GW-3 Perimeter (Downgradient) Monitoring Well GMA1-7**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**

**Plant Site 1 Groundwater Management Area**

**General Electric Company - Pittsfield, Massachusetts**

**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>										
2,3,7,8-TCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.07E-09	1.09E-09	2.23E-10	1.03E-09
TCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.60E-09	1.35E-09	3.03E-10	9.46E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.25E-09	2.27E-10	9.81E-10
PeCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.95E-09	1.58E-09	3.03E-10	1.11E-09
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.70E-09	1.38E-09	2.72E-10	9.91E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.55E-09	1.30E-09	2.71E-10	9.27E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	Not Listed	1/4	3.3E-09	3.3E-09	1.60E-09	1.63E-09	2.97E-10	1.37E-09
HxCDDs (total)	Not Listed	Not Listed	Not Listed	2/4	2.5E-12	3.3E-09	2.15E-09	1.90E-09	4.40E-10	1.39E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	Not Listed	0/4	ND	ND	1.40E-09	1.40E-09	3.78E-10	1.15E-09
HpCDDs (total)	Not Listed	Not Listed	Not Listed	0/4	ND	ND	2.20E-09	2.10E-09	1.97E-09	8.25E-10
OCDD	Not Listed	Not Listed	Not Listed	1/4	1.7E-08	1.7E-08	1.15E-08	1.09E-08	9.19E-09	6.25E-09
Total TEQs (1998 WHO TEFs)	Not Listed	4.00E-05	4.00E-04	4/4	1.7E-11	7.2E-09	3.85E-09	3.73E-09	1.14E-09	3.06E-09
<b>Inorganics-Unfiltered</b>										
Barium	Not Listed	50	100	3/4	0.027	0.05	0.0480	0.0558	0.0499	0.0312
Cadmium	Not Listed	0.004	0.05	1/4	0.00039	0.00039	0.00250	0.00197	0.00157	0.00106
Copper	Not Listed	0.23	Not Listed	1/4	0.0089	0.0089	0.0130	0.0120	0.0118	0.00205
Cyanide	Not Listed	0.03	2	1/4	0.0048	0.0048	0.00500	0.00495	0.00495	0.000100
Mercury	Not Listed	0.02	0.2	1/4	0.00048	0.00048	0.000100	0.000195	0.000148	0.000190
Selenium	Not Listed	0.1	1	1/4	0.0053	0.0053	0.00250	0.00320	0.00302	0.00140
Sulfide	Not Listed	Not Listed	Not Listed	1/4	8	8	2.50	3.88	3.34	2.75
Vanadium	Not Listed	4	40	1/4	0.0037	0.0037	0.0250	0.0197	0.0155	0.0107
Zinc	Not Listed	0.9	50	4/4	0.013	0.017	0.0150	0.0150	0.0149	0.00163

**Table D2-12**

**Statistical Summary Of Historical Groundwater Analytical Results**

**East Street Area 1-South GW-2 Sentinel / GW-3 Perimeter (Downgradient) Monitoring Well GMA1-7**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**

**Plant Site 1 Groundwater Management Area**

**General Electric Company - Pittsfield, Massachusetts**

**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>										
Antimony	Not Listed	8	80	1/4	0.0077	0.0077	0.0300	0.0244	0.0214	0.0112
Barium	Not Listed	50	100	2/4	0.042	0.047	0.0445	0.0508	0.0408	0.0359
Cadmium	Not Listed	0.004	0.05	1/4	0.00035	0.00035	0.00250	0.00259	0.00182	0.00190
Copper	Not Listed	0.23	Not Listed	1/4	0.0047	0.0047	0.0130	0.0202	0.0141	0.0203
Mercury	Not Listed	0.02	0.2	1/4	0.00079	0.00079	0.000100	0.000273	0.000168	0.000345
Selenium	Not Listed	0.1	1	1/4	0.0019	0.0019	0.00250	0.00235	0.00233	0.000300
Vanadium	Not Listed	4	40	1/4	0.0027	0.0027	0.0250	0.0194	0.0143	0.0112
Zinc	Not Listed	0.9	50	2/4	0.0059	0.0092	0.00960	0.00878	0.00858	0.00195

Notes:

1. Samples were collected between 2001 and 2012 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D2-13**

**Statistical Summary Of Historical Groundwater Analytical Results**

**East Street Area 1-South GW-2 Sentinel / GW-3 General/Source Area Sentinel Monitoring Well GMA1-18**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**

**Plant Site 1 Groundwater Management Area**

**General Electric Company - Pittsfield, Massachusetts**

**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>PCBs-Filtered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	3/5	0.000042	0.00011	4.2E-05	0.000054	0.0000484	0.000032
Total PCBs	0.005	0.01	0.1	3/5	0.000042	0.00011	4.2E-05	0.000054	0.0000484	0.000032

Notes:

1. Samples were collected between 2001 and 2008 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D3-1  
Statistical Summary Of Historical Groundwater Analytical Results  
East Street Area 2-North GW-2 Sentinel Monitoring Well 17A**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
Chloroform	0.05	20	100	1/5	0.001	0.001	0.00250	0.00220	0.00208	0.000671
Total VOCs	5	Not Listed	Not Listed	1/5	0.001	0.001	0.100	0.0802	0.0398	0.0443
<b>PCBs-Unfiltered</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>PCBs-Filtered</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>Semivolatile Organics</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>Organochlorine Pesticides</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>Inorganics-Unfiltered</b>										
Arsenic	Not Listed	0.9	9	1/1	0.15	0.15	0.150	0.150	0.150	NA
Cadmium	Not Listed	0.004	0.05	1/1	0.025	0.025	0.0250	0.0250	0.0250	NA
Lead	Not Listed	0.01	0.15	1/1	0.15	0.15	0.150	0.150	0.150	NA
Selenium	Not Listed	0.1	1	1/1	0.3	0.3	0.300	0.300	0.300	NA
Thallium	Not Listed	3	30	1/1	0.15	0.15	0.150	0.150	0.150	NA

**Notes:**

1. Samples were collected between 1990 and 2010 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP)
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling

**Table D3-2  
 Statistical Summary Of Historical Groundwater Analytical Results  
 East Street Area 2-North GW-2 Sentinel Monitoring Well 95-2C**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
 Plant Site 1 Groundwater Management Area  
 General Electric Company - Pittsfield, Massachusetts  
 (Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
Toluene	50	40	100	1/4	0.00098	0.00098	0.00250	0.00212	0.00198	0.000760
Trichloroethene	0.03	5	50	1/4	0.0014	0.0014	0.00250	0.00223	0.00216	0.000550
Total VOCs	5	Not Listed	Not Listed	1/4	0.0024	0.0024	0.100	0.0756	0.0394	0.0488
<b>PCBs-Filtered</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>Semivolatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--

**Notes:**

1. Samples were collected between 2001 and 2010 and were submitted to SGS Environmental Services, Inc for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP)
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling

**Table D3-3**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-North GW-2 Sentinel Monitoring Well A7/A7-R/A7-RF**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
Tetrachloroethene	0.05	30	100	1/5	0.01	0.01	0.00100	0.00280	0.00158	0.00402
Trichloroethene	0.03	5	50	1/5	0.002	0.002	0.00250	0.00240	0.00239	0.000224
Total VOCs	5	Not Listed	Not Listed	1/5	0.012	0.012	0.100	0.0824	0.0654	0.0394
<b>PCBs-Unfiltered</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>PCBs-Filtered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	4/8	0.0001	0.00037	0.000195	0.000211	0.000173	0.000116
Total PCBs	0.005	0.01	0.1	4/8	0.0001	0.00037	0.000195	0.000211	0.000173	0.000116
<b>Semivolatile Organics</b>										
1,2-Diphenylhydrazine	Not Listed	Not Listed	Not Listed	1/1	0.004	0.004	0.00400	0.00400	0.00400	NA
2,4,6-Trichlorophenol	5	0.5	50	1/1	0.003	0.003	0.00300	0.00300	0.00300	NA
2,6-Dinitrotoluene	Not Listed	Not Listed	Not Listed	1/1	0.004	0.004	0.00400	0.00400	0.00400	NA
4-Chloro-3-Methylphenol	Not Listed	Not Listed	Not Listed	1/1	0.003	0.003	0.00300	0.00300	0.00300	NA
4-Chlorophenyl-phenylether	Not Listed	Not Listed	Not Listed	1/1	0.008	0.008	0.00800	0.00800	0.00800	NA
Fluorene	Not Listed	0.04	0.4	1/1	0.004	0.004	0.00400	0.00400	0.00400	NA
Hexachlorobenzene	0.001	6	60	1/1	0.004	0.004	0.00400	0.00400	0.00400	NA
<b>Organochlorine Pesticides</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>Inorganics-Unfiltered</b>										
Copper	Not Listed	0.23	Not Listed	1/1	0.03	0.03	0.0300	0.0300	0.0300	NA
Zinc	Not Listed	0.9	50	1/1	0.15	0.15	0.150	0.150	0.150	NA

**Notes:**

1. Samples were collected between 1990 and 2013 and were submitted to SGS Environmental Services, Inc. and Accutest Laboratories for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D3-4**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-North GW-3 Perimeter (Downgradient) Monitoring Well ES1-05**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
1,1-Dichloroethane	20	100	1/4	0.0043	0.0043	0.00250	0.00295	0.00286	0.000900
Tetrachloroethene	30	100	4/4	0.0021	0.0069	0.00395	0.00423	0.00370	0.00240
trans-1,2-Dichloroethene	50	100	4/4	0.038	0.094	0.0580	0.0620	0.0574	0.0276
Trichloroethene	5	50	4/4	0.016	0.035	0.0260	0.0258	0.0243	0.00964
Vinyl Chloride	50	100	4/4	0.0026	0.0054	0.00485	0.00443	0.00426	0.00128
Total VOCs	Not Listed	Not Listed	4/4	0.066	0.14	0.0925	0.0978	0.0941	0.0314
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.00017	0.0012	0.000760	0.000723	0.000586	0.000423
Aroclor-1260	Not Listed	Not Listed	3/4	0.000082	0.002	0.000451	0.000734	0.000258	0.000918
Total PCBs	0.01	0.1	4/4	0.000252	0.0032	0.00119	0.00146	0.000996	0.00129
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	6/9	0.000028	0.00067	0.0000680	0.000169	0.0000909	0.000212
Aroclor-1260	Not Listed	Not Listed	3/9	0.000062	0.00018	0.0000330	0.0000614	0.0000493	0.0000514
Total PCBs	0.01	0.1	7/9	0.000068	0.00067	0.000130	0.000204	0.000131	0.000205
<b>Semivolatile Organics</b>									
1,2,4-Trichlorobenzene	50	100	1/4	0.0057	0.0057	0.00500	0.00518	0.00517	0.000350
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--

**Table D3-4**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-North GW-3 Perimeter (Downgradient) Monitoring Well ES1-05**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	3/4	1.5E-11	6.6E-09	1.58E-09	2.44E-09	6.33E-10	2.97E-09
TCDFs (total)	Not Listed	Not Listed	3/4	7.4E-11	5.7E-08	1.58E-09	1.51E-08	1.62E-09	2.80E-08
1,2,3,7,8-PeCDF	Not Listed	Not Listed	2/4	2.7E-09	4.1E-09	1.95E-09	2.00E-09	4.35E-10	1.78E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	3/4	2.6E-11	1.00E-08	2.20E-09	3.61E-09	9.06E-10	4.55E-09
PeCDFs (total)	Not Listed	Not Listed	4/4	1.5E-10	1.00E-07	7.85E-09	2.90E-08	4.79E-09	4.77E-08
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	3/4	2.5E-11	1.4E-08	3.90E-09	5.46E-09	1.29E-09	6.37E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	2/4	3.4E-09	5.4E-09	2.30E-09	2.50E-09	6.15E-10	2.39E-09
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	2/4	6.3E-12	4.4E-09	1.25E-09	1.73E-09	4.56E-10	1.88E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	2/4	3.1E-11	1.2E-08	1.50E-09	3.76E-09	9.47E-10	5.54E-09
HxCDFs (total)	Not Listed	Not Listed	4/4	3.2E-10	1.10E-07	1.70E-08	3.61E-08	9.00E-09	5.06E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	3/4	7.3E-11	1.9E-08	7.05E-09	8.29E-09	2.11E-09	9.24E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	3/4	1.8E-11	6.7E-09	1.75E-09	2.55E-09	7.60E-10	2.92E-09
HpCDFs (total)	Not Listed	Not Listed	4/4	1.7E-10	4.9E-08	9.80E-09	1.72E-08	4.38E-09	2.25E-08
OCDF	Not Listed	Not Listed	3/4	1.8E-10	4.2E-08	6.20E-09	1.36E-08	4.08E-09	1.91E-08
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	1.20E-09	9.76E-10	2.56E-10	6.64E-10
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.20E-09	9.76E-10	2.56E-10	6.64E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	1.03E-09	8.63E-10	1.99E-10	6.18E-10
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.55E-09	1.28E-09	2.66E-10	9.21E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.55E-09	1.40E-09	3.04E-10	1.07E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	1/4	3.2E-12	3.2E-12	1.50E-09	1.28E-09	3.47E-10	9.27E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.55E-09	1.35E-09	3.03E-10	1.01E-09
HxCDDs (total)	Not Listed	Not Listed	1/4	1.9E-11	1.9E-11	1.65E-09	1.40E-09	5.76E-10	1.04E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	2/4	6.4E-09	1.8E-08	1.22E-08	1.18E-08	6.71E-09	9.88E-09
HpCDDs (total)	Not Listed	Not Listed	4/4	4.3E-11	1.8E-08	7.30E-09	8.16E-09	2.00E-09	8.74E-09
OCDD	Not Listed	Not Listed	2/4	2.6E-08	1.10E-07	6.80E-08	6.79E-08	3.78E-08	6.13E-08
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	2.5E-10	1.3E-08	5.20E-09	5.91E-09	3.00E-09	5.41E-09



**Table D3-4**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-North GW-3 Perimeter (Downgradient) Monitoring Well ES1-05**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Unfiltered</b>									
Antimony	8	80	1/4	0.014	0.014	0.0300	0.0260	0.0248	0.00800
Arsenic	0.9	9	1/4	0.014	0.014	0.00500	0.00725	0.00647	0.00450
Barium	50	100	3/4	0.041	0.096	0.0735	0.0720	0.0669	0.0303
Cadmium	0.004	0.05	1/4	0.0011	0.0011	0.00250	0.00215	0.00204	0.000700
Chromium	0.3	3	2/4	0.012	0.038	0.00850	0.0150	0.0103	0.0157
Cobalt	0.075	Not Listed	2/4	0.0033	0.026	0.0250	0.0198	0.0152	0.0110
Copper	0.23	Not Listed	3/4	0.0041	0.087	0.00870	0.0271	0.0120	0.0401
Lead	0.01	0.15	3/4	0.0024	0.038	0.00240	0.0111	0.00426	0.0180
Mercury	0.02	0.2	1/5	0.039	0.039	0.000100	0.00657	0.000184	0.0159
Nickel	0.2	2	2/4	0.014	0.056	0.0200	0.0275	0.0237	0.0192
Vanadium	4	40	2/4	0.0018	0.024	0.0245	0.0190	0.0128	0.0114
Zinc	0.9	50	3/4	0.012	0.3	0.0745	0.115	0.0546	0.135
<b>Inorganics-Filtered</b>									
Antimony	8	80	1/4	0.011	0.011	0.0300	0.0253	0.0233	0.00950
Arsenic	0.9	9	1/4	0.0084	0.0084	0.00670	0.0171	0.0101	0.0220
Barium	50	100	2/4	0.023	0.037	0.0305	0.0460	0.0378	0.0366
Cobalt	0.075	Not Listed	1/4	0.0034	0.0034	0.0250	0.0196	0.0152	0.0108
Mercury	0.02	0.2	2/5	0.00002	0.039	0.000100	0.00657	0.000207	0.0159
Nickel	0.2	2	2/4	0.0076	0.0094	0.0147	0.0143	0.0130	0.00668
Vanadium	4	40	1/4	0.0043	0.0043	0.0250	0.0198	0.0161	0.0104
Zinc	0.9	50	2/4	0.018	0.027	0.0220	0.0203	0.0189	0.00793

**Notes:**

1. Samples were collected between 2001 and 2003 and were submitted to SGS Environmental Services, Inc for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling

**Table D3-5  
 Statistical Summary Of Historical Groundwater Analytical Results  
 East Street Area 2-North GW-2 Sentinel Monitoring Well ES1-10**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
 Plant Site 1 Groundwater Management Area  
 General Electric Company - Pittsfield, Massachusetts  
 (Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>PCBs-Filtered</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>Semivolatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--

**Notes:**

1. Samples were collected between 2001 and 2010 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP)
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling

**Table D3-6  
 Statistical Summary Of Historical Groundwater Analytical Results  
 East Street Area 2-North GW-2 Sentinel Monitoring Well ES1-18**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
 Plant Site 1 Groundwater Management Area  
 General Electric Company - Pittsfield, Massachusetts  
 (Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>PCBs-Filtered</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>Semivolatile Organics</b>										
1,2,4-Trichlorobenzene	2	50	100	1/4	0.012	0.012	0.00250	0.00370	0.00327	0.00240
1,4-Dichlorobenzene	0.2	8	80	1/4	0.0044	0.0044	0.00250	0.00275	0.00272	0.000500

Notes:

1. Samples were collected between 2001 and 2010 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP);
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling

**Table D3-7**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-North GW-3 Perimeter (Upgradient) Monitoring Well ES1-20**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Trichloroethene	5	50	1/5	ND	0.003	0.00250	0.00260	0.00259	0.000224
Total VOCs	Not Listed	Not Listed	1/5	ND	0.003	0.100	0.0806	0.0496	0.0434
<b>PCBs-Unfiltered</b>									
None Detected	--	--	0/4	--	--	--	--	--	--
<b>PCBs-Filtered</b>									
Aroclor-1242	Not Listed	Not Listed	1/4	0.000057	0.000057	0.0000330	0.0000390	0.0000378	0.0000120
Aroclor-1254	Not Listed	Not Listed	1/4	0.000081	0.000081	0.0000330	0.0000450	0.0000413	0.0000240
Total PCBs	0.01	0.1	2/4	0.000057	0.000081	0.0000450	0.0000510	0.0000474	0.0000230
<b>Semivolatile Organics</b>									
bis(2-Ethylhexyl)phthalate	50	100	1/5	0.005	0.005	0.00300	0.00350	0.00341	0.00100
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/3	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/4	ND	ND	6.75E-10	5.63E-10	1.19E-10	4.03E-10
TCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	6.75E-10	5.63E-10	1.19E-10	4.03E-10
1,2,3,7,8-PeCDF	Not Listed	Not Listed	1/4	1.9E-09	1.9E-09	9.50E-10	9.50E-10	1.50E-10	7.85E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	6.00E-10	6.25E-10	1.09E-10	5.33E-10
PeCDFs (total)	Not Listed	Not Listed	1/4	1.9E-09	1.9E-09	1.00E-09	9.75E-10	1.53E-10	7.93E-10
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	1/4	8E-13	8E-13	1.03E-09	8.38E-10	1.80E-10	5.90E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	6.25E-10	5.00E-10	9.96E-11	3.53E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.08E-09	8.63E-10	1.65E-10	5.93E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	8.50E-10	7.50E-10	1.37E-10	6.14E-10
HxCDFs (total)	Not Listed	Not Listed	1/4	2E-12	2E-12	1.25E-09	1.08E-09	2.74E-10	7.62E-10
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	0/4	ND	ND	8.25E-10	8.38E-10	2.51E-10	7.07E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/4	ND	ND	1.10E-09	1.08E-09	3.29E-10	8.90E-10
HpCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	1.00E-09	9.76E-10	2.92E-10	8.12E-10
OCDF	Not Listed	Not Listed	1/4	9.2E-12	9.2E-12	1.80E-09	1.95E-09	5.83E-10	1.77E-09

**Table D3-7  
Statistical Summary Of Historical Groundwater Analytical Results  
East Street Area 2-North GW-3 Perimeter (Upgradient) Monitoring Well ES1-20**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	9.25E-10	7.88E-10	1.50E-10	5.98E-10
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	9.75E-10	1.06E-09	2.02E-10	9.81E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	7.00E-10	6.75E-10	1.29E-10	5.38E-10
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.15E-09	1.15E-09	2.44E-10	1.04E-09
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.08E-09	9.13E-10	1.79E-10	7.28E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	9.75E-10	8.38E-10	1.73E-10	6.50E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	1/4	2.1E-09	2.1E-09	1.03E-09	1.04E-09	1.91E-10	9.10E-10
HxCDDs (total)	Not Listed	Not Listed	1/4	2.1E-09	2.1E-09	1.38E-09	1.24E-09	2.67E-10	1.09E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	1/4	4.7E-09	4.7E-09	2.25E-09	2.58E-09	2.23E-09	1.58E-09
HpCDDs (total)	Not Listed	Not Listed	2/4	5.5E-12	4.7E-09	1.40E-09	1.88E-09	4.69E-10	2.01E-09
OCDD	Not Listed	Not Listed	1/4	1.1E-08	1.1E-08	8.50E-09	7.68E-09	6.65E-09	4.07E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	3E-11	4.4E-09	2.75E-09	2.48E-09	9.85E-10	1.89E-09
<b>Inorganics-Unfiltered</b>									
Barium	50	100	2/5	0.019	0.021	0.0605	0.0600	0.0447	0.0462
Cyanide	0.03	2	1/5	0.0037	0.0037	0.00500	0.00468	0.00464	0.000650
Lead	0.01	0.15	1/5	0.0027	0.0027	0.00150	0.00194	0.00187	0.000607
Mercury	0.02	0.2	1/5	0.00024	0.00024	0.000100	0.000135	0.000124	0.0000700
Zinc	0.9	50	3/5	0.0047	0.0437	0.0100	0.0153	0.0124	0.0115
<b>Inorganics-Filtered</b>									
Barium	50	100	3/5	0.02	0.021	0.0210	0.0405	0.0306	0.0397
Beryllium	0.2	2	1/5	0.00049	0.00049	0.000500	0.000498	0.000497	0.00000500
Copper	0.23	Not Listed	1/5	0.00069	0.00069	0.0130	0.0179	0.00946	0.0187
Mercury	0.02	0.2	1/5	0.00065	0.00065	0.000100	0.000238	0.000160	0.000275
Nickel	0.2	2	1/5	ND	0.0437	0.0200	0.0248	0.0234	0.0107
Selenium	0.1	1	2/5	0.0048	0.019	0.00250	0.00606	0.00423	0.00675
Thallium	3	30	1/5	0.0093	0.0093	0.00500	0.00608	0.00584	0.00215
Vanadium	4	40	2/5	0.001	0.0036	0.0250	0.0159	0.00891	0.0125
Zinc	0.9	50	2/5	0.011	0.027	0.0105	0.0145	0.0131	0.00835

**Notes:**

1. Samples were collected between 2001 and 2003 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. Non-detect samples without reporting limits for the 6/1996 sample are included in detection frequency but did not participate in the remaining calculations.
8. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D3-8**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-North GW-3 General/ Source Area Sentinel Monitoring Well ES1-27F**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
None Detected	--	--	0/4	--	--	--	--	--	--
<b>PCBs-Unfiltered</b>									
Aroclor-1242	Not Listed	Not Listed	1/4	0.000092	0.000092	0.0000330	0.0000478	0.0000426	0.0000295
Aroclor-1254	Not Listed	Not Listed	4/4	0.00011	0.00041	0.000375	0.000318	0.000282	0.000140
Aroclor-1260	Not Listed	Not Listed	3/4	0.00017	0.00033	0.000180	0.000181	0.000137	0.000122
Total PCBs	0.01	0.1	4/4	0.000202	0.00069	0.000580	0.000513	0.000464	0.000215
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	6/9	0.000046	0.0019	0.0000530	0.000328	0.000114	0.000605
Aroclor-1260	Not Listed	Not Listed	2/9	0.0001	0.00036	0.0000330	0.0000769	0.0000488	0.000108
Total PCBs	0.01	0.1	6/9	0.000046	0.00226	0.0000530	0.000383	0.000119	0.000737
<b>Semivolatile Organics</b>									
bis(2-Ethylhexyl)phthalate	50	100	1/4	0.0043	0.0043	0.00300	0.00333	0.00328	0.000650
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	1/4	1.3E-09	1.3E-09	9.25E-10	7.88E-10	1.34E-10	5.72E-10
TCDFs (total)	Not Listed	Not Listed	1/4	1.3E-09	1.3E-09	9.25E-10	7.88E-10	1.34E-10	5.72E-10
1,2,3,7,8-PeCDF	Not Listed	Not Listed	1/4	1.8E-09	1.8E-09	1.05E-09	9.75E-10	1.54E-10	7.67E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	8.50E-10	7.75E-10	1.32E-10	5.79E-10
PeCDFs (total)	Not Listed	Not Listed	2/4	1.8E-09	7.3E-09	1.60E-09	2.81E-09	1.93E-09	3.02E-09
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	1/4	9E-13	9E-13	1.13E-09	9.88E-10	2.07E-10	7.46E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	1/4	1.8E-09	1.8E-09	7.00E-10	8.00E-10	1.32E-10	7.45E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.10E-09	1.74E-10	7.70E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	9.75E-10	1.53E-10	6.50E-10
HxCDFs (total)	Not Listed	Not Listed	3/4	1.7E-12	5.9E-09	1.55E-09	2.25E-09	3.91E-10	2.55E-09
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	1.38E-09	1.35E-09	2.87E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/4	ND	ND	1.10E-09	9.25E-10	1.72E-10	6.65E-10
HpCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	1.35E-09	1.43E-09	1.41E-09	2.63E-10
OCDF	Not Listed	Not Listed	0/4	ND	ND	3.50E-09	3.65E-09	3.55E-09	1.02E-09

**Table D3-8**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-North GW-3 General/ Source Area Sentinel Monitoring Well ES1-27F**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	8.50E-10	8.75E-10	1.59E-10	7.40E-10
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.33E-09	1.11E-09	2.26E-10	8.33E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	1.08E-09	8.63E-10	1.75E-10	6.13E-10
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.23E-09	1.06E-09	2.28E-10	8.17E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.55E-09	1.25E-09	2.18E-10	8.58E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.60E-09	1.23E-09	2.21E-10	8.22E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.60E-09	1.23E-09	2.16E-10	8.18E-10
HxCDDs (total)	Not Listed	Not Listed	1/4	2.7E-09	2.7E-09	1.85E-09	2.03E-09	1.99E-09	4.57E-10
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	1/4	7.4E-12	7.4E-12	1.55E-09	1.30E-09	4.34E-10	9.45E-10
HpCDDs (total)	Not Listed	Not Listed	1/4	7.4E-12	7.4E-12	1.55E-09	1.30E-09	4.34E-10	9.45E-10
OCDD	Not Listed	Not Listed	1/4	9.9E-09	9.9E-09	8.45E-09	8.98E-09	8.73E-09	2.44E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	2.1E-11	4.7E-09	3.65E-09	3.01E-09	1.07E-09	2.05E-09
<b>Inorganics-Unfiltered</b>									
Barium	50	100	3/4	0.0084	0.012	0.0115	0.0329	0.0182	0.0448
Chromium	0.3	3	2/4	0.0021	0.0029	0.00395	0.00375	0.00351	0.00148
Copper	0.23	Not Listed	1/4	0.0044	0.0044	0.0130	0.0109	0.00992	0.00430
Cyanide	0.03	2	1/4	0.0033	0.0033	0.00500	0.00458	0.00451	0.000850
Mercury	0.02	0.2	1/4	0.00067	0.00067	0.000100	0.000243	0.000161	0.000285
Zinc	0.9	50	2/4	0.012	0.022	0.0110	0.0135	0.0127	0.00574
<b>Inorganics-Filtered</b>									
Antimony	8	80	1/4	0.0098	0.0098	0.0300	0.0250	0.0227	0.0101
Barium	50	100	3/4	0.0088	0.013	0.0115	0.0330	0.0184	0.0447
Beryllium	0.2	2	1/4	0.0004	0.0004	0.000500	0.000475	0.000473	0.0000500
Mercury	0.02	0.2	1/4	0.0008	0.0008	0.000100	0.000275	0.000168	0.000350
Zinc	0.9	50	2/4	0.014	0.065	0.0120	0.0248	0.0174	0.0269

**Notes:**

1. Samples were collected between 2001 and 2008 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP)
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling

**Table D3-9  
Statistical Summary Of Historical Groundwater Analytical Results  
East Street Area 2-North GW-2 Sentinel Monitoring Well F-1**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
Chloroform	0.05	20	100	1/5	0.002	0.002	0.00250	0.00240	0.00239	0.000224
Total VOCs	5	Not Listed	Not Listed	1/5	0.002	0.002	0.100	0.0804	0.0457	0.0438
<b>PCBs-Unfiltered</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>PCBs-Filtered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	1/6	0.00028	0.00028	0.0000335	0.0000748	0.0000480	0.000101
Total PCBs	0.005	0.01	0.1	1/6	0.00028	0.00028	0.0000335	0.0000748	0.0000480	0.000101
<b>Semivolatile Organics</b>										
Diphenylamine	Not Listed	Not Listed	Not Listed	1/1	0.006	0.006	0.00600	0.00600	0.00600	NA
<b>Organochlorine Pesticides</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>Inorganics-Unfiltered</b>										
Copper	Not Listed	0.23	Not Listed	1/1	0.02	0.02	0.0200	0.0200	0.0200	NA
Zinc	Not Listed	0.9	50	1/1	0.083	0.083	0.0830	0.0830	0.0830	NA

**Notes:**

1. Samples were collected between 1990 and 2011 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling



**Table D3-10**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-North GW-2 Sentinel Monitoring Well GMA1-4**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
Bromodichloromethane	0.006	50	100	1/4	0.00089	0.00089	0.0025	0.0021	0.00193	0.000805
Chloroform	0.05	20	100	3/4	0.0041	0.0089	0.0049	0.0053	0.00478	0.00273
Toluene	50	40	100	1/4	0.0017	0.0017	0.0025	0.0023	0.00227	0.0004
Total VOCs	5	Not Listed	Not Listed	3/4	0.0057	0.0098	0.0078	0.0303	0.0134	0.0465
<b>PCBs-Filtered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	1/3	0.00022	0.00022	3.7E-05	9.67E-05	0.0000645	0.000107
Aroclor-1260	Not Listed	Not Listed	Not Listed	1/3	0.000056	0.000056	3.7E-05	0.000042	0.0000409	0.0000123
Total PCBs	0.005	0.01	0.1	1/3	0.000276	0.000276	3.7E-05	0.000117	0.0000699	0.000141
<b>Semivolatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--

**Notes:**

1. Samples were collected between 2003 and 2011 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D3-11**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-North GW-3 General/Source Area Sentinel Monitoring Well GMA1-11**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Chloroform	20	100	1/4	0.004	0.004	0.00250	0.00288	0.00281	0.000750
Total VOCs	Not Listed	Not Listed	1/4	0.004	0.004	0.100	0.0760	0.0447	0.0480
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	2/4	0.000037	0.000098	0.0000350	0.0000503	0.0000446	0.0000319
Total PCBs	0.01	0.1	2/4	0.000037	0.000098	0.0000350	0.0000503	0.0000446	0.0000319
<b>PCBs-Filtered</b>									
None Detected	--	--	0/4	--	--	--	--	--	--
<b>Semivolatile Organics</b>									
None Detected	--	--	0/4	--	--	--	--	--	--
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	1/4	4.3E-12	4.3E-12	6.25E-10	5.01E-10	1.86E-10	3.52E-10
TCDFs (total)	Not Listed	Not Listed	2/4	3.6E-11	3.6E-09	1.03E-09	1.42E-09	5.96E-10	1.54E-09
1,2,3,7,8-PeCDF	Not Listed	Not Listed	1/4	1.7E-12	1.7E-12	6.75E-10	6.63E-10	1.75E-10	5.49E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	1/4	1E-11	1E-11	7.25E-10	6.90E-10	2.80E-10	5.59E-10
PeCDFs (total)	Not Listed	Not Listed	4/4	1.2E-10	6.8E-09	3.20E-09	3.33E-09	1.69E-09	2.75E-09
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	9.50E-10	8.00E-10	2.11E-10	5.57E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	6.50E-10	6.50E-10	1.70E-10	5.44E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	1/4	1.4E-09	1.4E-09	9.50E-10	8.26E-10	2.21E-10	6.54E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	1/4	1.8E-11	1.8E-11	5.75E-10	6.17E-10	2.95E-10	5.29E-10
HxCDFs (total)	Not Listed	Not Listed	3/4	2.2E-10	6.4E-09	1.35E-09	2.33E-09	1.27E-09	2.77E-09
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	1/4	3.1E-11	3.1E-11	5.75E-10	7.20E-10	3.63E-10	7.02E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	1/4	1.6E-09	1.6E-09	1.00E-09	9.00E-10	2.12E-10	7.07E-10
HpCDFs (total)	Not Listed	Not Listed	2/4	6.9E-11	1.6E-09	9.75E-10	9.05E-10	5.53E-10	6.84E-10
OCDF	Not Listed	Not Listed	0/4	ND	ND	2.55E-09	4.28E-09	2.91E-09	4.54E-09

**Table D3-11**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-North GW-3 General/Source Area Sentinel Monitoring Well GMA1-11**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	6.50E-10	6.00E-10	1.45E-10	4.54E-10
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	7.50E-10	6.50E-10	1.54E-10	4.79E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	8.00E-10	7.25E-10	1.55E-10	5.91E-10
PeCDDs (total)	Not Listed	Not Listed	1/4	1.5E-12	1.5E-12	9.00E-10	7.75E-10	1.89E-10	6.39E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	1/4	1.7E-09	1.7E-09	1.00E-09	9.25E-10	1.71E-10	7.72E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	1/4	2.2E-12	2.2E-12	9.50E-10	8.01E-10	2.17E-10	6.26E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	1/4	2.4E-09	2.4E-09	9.50E-10	1.08E-09	1.83E-10	1.03E-09
HxCDDs (total)	Not Listed	Not Listed	2/4	3.2E-12	4.1E-09	1.28E-09	1.66E-09	3.71E-10	1.77E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	1/4	4E-09	4E-09	2.75E-09	4.00E-09	2.75E-09	3.89E-09
HpCDDs (total)	Not Listed	Not Listed	1/4	4E-09	4E-09	2.75E-09	5.88E-09	3.18E-09	7.53E-09
OCDD	Not Listed	Not Listed	0/4	ND	ND	6.15E-09	1.89E-08	9.01E-09	2.75E-08
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	1.1E-10	4E-09	2.60E-09	2.33E-09	1.29E-09	1.72E-09
<b>Inorganics-Unfiltered</b>									
Antimony	8	80	1/4	0.004	0.004	0.0300	0.0235	0.0181	0.0130
Barium	50	100	3/4	0.071	0.15	0.0995	0.105	0.101	0.0329
Chromium	0.3	3	2/4	0.0028	0.003	0.00400	0.00395	0.00381	0.00122
Cobalt	0.075	Not Listed	1/4	0.0025	0.0025	0.0250	0.0194	0.0141	0.0113
Copper	0.23	Not Listed	2/4	0.0045	0.0075	0.0103	0.00950	0.00869	0.00422
Cyanide	0.03	2	2/4	0.0035	0.0039	0.00445	0.00435	0.00430	0.000768
Mercury	0.02	0.2	1/4	0.00038	0.00038	0.000100	0.000170	0.000140	0.000140
Sulfide	Not Listed	Not Listed	1/4	6.4	6.4	2.50	3.48	3.16	1.95
Zinc	0.9	50	2/4	0.0019	0.013	0.0100	0.00873	0.00705	0.00476
<b>Inorganics-Filtered</b>									
Antimony	8	80	2/4	0.0048	0.0081	0.0191	0.0182	0.0137	0.0137
Barium	50	100	3/4	0.065	0.15	0.0995	0.104	0.0991	0.0350
Cobalt	0.075	Not Listed	1/4	0.0021	0.0021	0.0250	0.0193	0.0135	0.0115
Copper	0.23	Not Listed	1/4	0.0069	0.0069	0.0130	0.0207	0.0155	0.0197
Cyanide	0.03	2	1/2	0.0026	0.0026	0.00380	0.00380	0.00361	0.00170
Mercury	0.02	0.2	1/4	0.00071	0.00071	0.000100	0.000253	0.000163	0.000305
Zinc	0.9	50	1/4	0.0085	0.0085	0.0100	0.0101	0.0100	0.00144

**Notes:**

1. Samples were collected between 2001 and 2003 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP)
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling

**Table D4-1**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well 3-6C-EB-14/3-6C-EB-14R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
1,1,1-Trichloroethane	20	100	2/10	0.0009	0.0042	0.00710	0.0323	0.00912	0.0539
1,1-Dichloroethane	20	100	3/10	0.0019	0.0054	0.00440	0.0318	0.00905	0.0541
1,1-Dichloroethene	30	100	1/10	0.00023	0.00023	0.00625	0.0316	0.00545	0.0543
2-Butanone	50	100	1/10	0.022	0.027	0.0375	0.239	0.0456	0.302
Acetone	50	100	1/10	0.054	0.061	0.0540	0.243	0.0496	0.300
Benzene	10	100	4/10	0.00082	0.011	0.00625	0.0311	0.00778	0.0543
Chlorobenzene	1	10	9/10	0.28	1.4	0.535	0.600	0.297	0.377
Chloroform	20	100	1/10	0.00064	0.00064	0.00625	0.0321	0.00833	0.0540
Tetrachloroethene	30	100	1/10	0.00031	0.00031	0.00625	0.0316	0.00588	0.0543
Toluene	40	100	1/10	0.00047	0.00047	0.00625	0.0320	0.00807	0.0540
trans-1,2-Dichloroethene	50	100	1/10	0.00069	0.00069	0.00625	0.0321	0.00839	0.0540
Trichloroethene	5	50	1/10	0.0015	0.0015	0.00625	0.0322	0.00907	0.0539
Vinyl Chloride	50	100	1/10	0.0017	0.0017	0.00625	0.0317	0.00697	0.0542
Total VOCs	Not Listed	Not Listed	10/10	0.016	1.4	0.575	0.611	0.427	0.373
<b>PCBs-Unfiltered</b>									
Aroclor-1016	Not Listed	Not Listed	1/4	0.00064	0.00064	0.0000560	0.000196	0.0000861	0.000297
Aroclor-1254	Not Listed	Not Listed	4/4	0.00032	0.0016	0.00117	0.00119	0.00114	0.000376
Aroclor-1260	Not Listed	Not Listed	4/4	0.00011	0.00098	0.000365	0.000508	0.000451	0.000317
Total PCBs	0.01	0.1	4/4	0.00043	0.00322	0.00210	0.00213	0.00197	0.000892
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	2/4	0.00003	0.00011	0.0000330	0.0000515	0.0000435	0.0000390
Aroclor-1260	Not Listed	Not Listed	1/4	0.000046	0.000046	0.0000330	0.0000363	0.0000359	0.00000650
Total PCBs	0.01	0.1	2/4	0.00003	0.000156	0.0000330	0.0000640	0.0000478	0.0000640

**Table D4-1**

**Statistical Summary Of Historical Groundwater Analytical Results**

**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well 3-6C-EB-14/3-6C-EB-14R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**

**Plant Site 1 Groundwater Management Area**

**General Electric Company - Pittsfield, Massachusetts**

**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Semivolatile Organics</b>									
1,2,4,5-Tetrachlorobenzene	Not Listed	Not Listed	3/4	0.0026	0.01	0.00395	0.00513	0.00441	0.00342
1,2,4-Trichlorobenzene	50	100	5/5	0.05	0.3	0.0670	0.131	0.101	0.108
1,2-Dichlorobenzene	2	20	4/5	0.023	0.11	0.0800	0.0784	0.0693	0.0337
1,3-Dichlorobenzene	50	100	5/5	0.066	1	0.460	0.573	0.406	0.400
1,4-Dichlorobenzene	8	80	5/5	0.65	5.8	3.20	3.23	2.55	2.02
Acenaphthene	6	60	3/4	0.0081	0.013	0.00965	0.00883	0.00842	0.00285
Acetophenone	Not Listed	Not Listed	1/4	0.0026	0.0026	0.00500	0.00440	0.00425	0.00120
Pentachlorobenzene	Not Listed	Not Listed	1/4	0.0073	0.0073	0.00500	0.00558	0.00550	0.00115
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	1/4	2.4E-09	2.4E-09	1.10E-09	1.15E-09	1.99E-10	9.85E-10
TCDFs (total)	Not Listed	Not Listed	2/4	6.3E-12	8.00E-09	1.15E-09	2.58E-09	5.06E-10	3.66E-09
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	1.03E-09	8.38E-10	1.55E-10	6.15E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	2/4	2.1E-12	1.4E-09	1.15E-09	9.01E-10	2.45E-10	6.04E-10
PeCDFs (total)	Not Listed	Not Listed	2/4	6.2E-12	2.7E-09	1.55E-09	1.28E-09	4.13E-10	8.97E-10
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	2/4	2.9E-12	1.4E-09	1.30E-09	1.03E-09	2.93E-10	6.88E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	1/4	1.6E-09	1.6E-09	1.30E-09	1.05E-09	1.42E-10	7.14E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.03E-09	8.38E-10	1.55E-10	6.15E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	9.00E-10	7.75E-10	1.64E-10	6.39E-10
HxCDFs (total)	Not Listed	Not Listed	3/4	8E-12	2.7E-09	2.10E-09	2.25E-09	6.41E-10	1.97E-09
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	1/4	4.5E-12	4.5E-12	1.10E-09	9.01E-10	2.95E-10	6.14E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	2/4	1.7E-12	1.6E-09	1.35E-09	1.08E-09	2.65E-10	7.27E-10
HpCDFs (total)	Not Listed	Not Listed	1/4	1E-11	1E-11	1.30E-09	1.20E-09	4.39E-10	9.01E-10
OCDF	Not Listed	Not Listed	1/4	0.00E+00	2.9E-09	3.40E-09	4.10E-09	3.67E-09	2.35E-09

**Table D4-1**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well 3-6C-EB-14/3-6C-EB-14R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	1/4	9.8E-10	9.8E-10	9.80E-10	8.90E-10	1.66E-10	6.61E-10
TCDDs (total)	Not Listed	Not Listed	1/4	9.8E-10	9.8E-10	9.80E-10	8.90E-10	1.66E-10	6.61E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	8.25E-10	7.38E-10	1.28E-10	6.65E-10
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.45E-09	1.15E-09	2.00E-10	7.77E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	1.15E-09	2.18E-10	1.06E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	1.13E-09	2.09E-10	1.03E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.28E-09	1.16E-09	2.16E-10	1.05E-09
HxCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	2.15E-09	2.00E-09	3.57E-10	1.52E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	0/4	ND	ND	1.65E-09	1.43E-09	1.34E-09	4.86E-10
HpCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.85E-09	1.80E-09	1.61E-09	8.68E-10
OCDD	Not Listed	Not Listed	0/4	ND	ND	7.45E-09	9.18E-09	6.91E-09	7.49E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	2.3E-11	4.8E-09	3.55E-09	2.98E-09	1.07E-09	2.15E-09
<b>Inorganics-Unfiltered</b>									
Antimony	8	80	1/4	0.006	0.006	0.0300	0.0240	0.0201	0.0120
Arsenic	0.9	9	2/4	0.004	0.0045	0.00475	0.00463	0.00461	0.000479
Barium	50	100	3/4	0.15	0.21	0.185	0.170	0.163	0.0523
Beryllium	0.2	2	1/4	0	0.00036	0.000500	0.000483	0.000481	0.0000350
Cadmium	0.004	0.05	1/4	0.00054	0.00061	0.00250	0.00202	0.00174	0.000960
Copper	0.23	Not Listed	1/4	0.0033	0.0033	0.0130	0.0117	0.0115	0.00255
Cyanide	0.03	2	2/4	0.0022	0.0028	0.00430	0.00410	0.00398	0.00109
Mercury	0.02	0.2	3/4	0.00006	0.00023	0.000160	0.000153	0.000132	0.0000854
Nickel	0.2	2	1/4	0	0.003	0.0200	0.0180	0.0176	0.00400
Zinc	0.9	50	2/4	0.016	0.031	0.0130	0.0150	0.0140	0.00663

**Table D4-1**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well 3-6C-EB-14/3-6C-EB-14R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>									
Antimony	8	80	1/4	0.024	0.024	0.0300	0.0285	0.0284	0.00300
Arsenic	0.9	9	1/4	0.0054	0.0054	0.00510	0.0163	0.00898	0.0225
Barium	50	100	2/4	0.16	0.22	0.135	0.148	0.139	0.0585
Cadmium	0.004	0.05	1/4	0.00075	0.00075	0.00250	0.00290	0.00266	0.00146
Cyanide	0.03	2	1/2	0.0031	0.0031	0.00405	0.00405	0.00394	0.00134
Mercury	0.02	0.2	2/4	0.00008	0.00024	0.000100	0.000130	0.000118	0.0000739
Selenium	0.1	1	1/4	0.0061	0.0061	0.00250	0.00340	0.00312	0.00180
Thallium	3	30	1/4	0.012	0.012	0.00500	0.00675	0.00622	0.00350
Vanadium	4	40	1/4	0.0027	0.0027	0.0250	0.0194	0.0143	0.0112
Zinc	0.9	50	2/4	0.0022	0.0072	0.00860	0.00743	0.00651	0.00354

**Notes:**

1. Samples were collected between 2001 and 2012 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D4-2  
Statistical Summary Of Historical Groundwater Analytical Results  
East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well 3-6C-EB-29**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
2-Butanone	50	100	1/4	0.0093	0.0093	0.00500	0.00608	0.00584	0.00215
Acetone	50	100	1/4	0.027	0.027	0.00500	0.0105	0.00762	0.0110
Total VOCs	Not Listed	Not Listed	1/4	0.036	0.036	0.100	0.0840	0.0775	0.0320
<b>PCBs-Unfiltered</b>									
Aroclor-1248	Not Listed	Not Listed	2/4	0.0011	0.0012	0.000615	0.000640	0.000386	0.000590
Aroclor-1254	Not Listed	Not Listed	2/4	0.0015	0.0036	0.000815	0.00132	0.000390	0.00166
Aroclor-1260	Not Listed	Not Listed	3/4	0.0015	0.01	0.00190	0.00348	0.00146	0.00444
Total PCBs	0.01	0.1	4/4	0.0015	0.0112	0.00475	0.00550	0.00415	0.00434
<b>PCBs-Filtered</b>									
Aroclor-1248	Not Listed	Not Listed	1/4	0.00078	0.00078	0.0000330	0.000220	0.0000728	0.000374
Aroclor-1254	Not Listed	Not Listed	2/4	0.000051	0.00077	0.0000420	0.000222	0.0000809	0.000366
Aroclor-1260	Not Listed	Not Listed	1/4	0.00011	0.00011	0.0000715	0.0000765	0.0000628	0.0000509
Total PCBs	0.01	0.1	3/4	0.000051	0.00155	0.0000805	0.000449	0.000131	0.000768
<b>Semivolatile Organics</b>									
1,2,4,5-Tetrachlorobenzene	Not Listed	Not Listed	2/4	0.0083	0.014	0.00665	0.00808	0.00734	0.00425
1,2,4-Trichlorobenzene	50	100	3/4	0.067	0.1	0.0755	0.0640	0.0410	0.0416
1,4-Dichlorobenzene	8	80	3/4	0.0088	0.016	0.0104	0.0105	0.00959	0.00468
Pentachlorobenzene	Not Listed	Not Listed	4/4	0.012	0.027	0.0180	0.0188	0.0179	0.00665
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--



**Table D4-2**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well 3-6C-EB-29**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	1/4	1.2E-11	1.2E-11	1.08E-09	1.02E-09	3.86E-10	8.48E-10
TCDFs (total)	Not Listed	Not Listed	2/4	9.4E-11	6.5E-09	1.70E-09	2.50E-09	1.15E-09	2.78E-09
1,2,3,7,8-PeCDF	Not Listed	Not Listed	1/4	1E-09	1E-09	1.50E-09	1.95E-09	1.70E-09	1.27E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	1/4	2.9E-11	2.9E-11	1.65E-09	1.33E-09	6.27E-10	9.08E-10
PeCDFs (total)	Not Listed	Not Listed	2/4	1.7E-10	0.00000002	3.55E-09	6.82E-09	2.48E-09	8.99E-09
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	3/4	8E-11	1.1E-08	5.90E-09	5.72E-09	1.99E-09	5.58E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	2/4	1.6E-11	2.9E-09	1.70E-09	1.58E-09	6.05E-10	1.19E-09
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	1/4	9.5E-12	9.5E-12	1.10E-09	9.77E-10	3.71E-10	7.23E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	3/4	1.4E-11	2.7E-09	1.80E-09	1.58E-09	5.91E-10	1.13E-09
HxCDFs (total)	Not Listed	Not Listed	3/4	2.4E-10	3.3E-08	1.29E-08	1.47E-08	5.29E-09	1.51E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	1/4	6.3E-11	6.3E-11	3.00E-09	2.64E-09	1.23E-09	2.03E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	1/4	3.2E-11	3.2E-11	1.65E-09	1.33E-09	6.45E-10	8.91E-10
HpCDFs (total)	Not Listed	Not Listed	2/4	2.1E-10	2.2E-08	6.50E-09	8.80E-09	3.18E-09	9.99E-09
OCDF	Not Listed	Not Listed	2/4	3.1E-10	2.8E-08	1.15E-08	1.28E-08	5.45E-09	1.23E-08
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	1.20E-09	1.10E-09	2.14E-10	8.40E-10
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.20E-09	1.10E-09	2.36E-10	8.40E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.08E-09	2.52E-10	7.40E-10
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.10E-09	2.32E-10	7.70E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.60E-09	1.53E-09	3.16E-10	1.21E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.60E-09	1.50E-09	3.08E-10	1.17E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.60E-09	1.48E-09	2.99E-10	1.14E-09
HxCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.60E-09	1.50E-09	3.24E-10	1.17E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	0/4	ND	ND	2.40E-09	2.80E-09	2.56E-09	1.40E-09
HpCDDs (total)	Not Listed	Not Listed	1/4	3.5E-09	3.5E-09	3.25E-09	4.03E-09	3.40E-09	2.77E-09
OCDD	Not Listed	Not Listed	0/4	ND	ND	1.60E-08	1.54E-08	1.46E-08	5.41E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	2.7E-10	6.3E-09	5.75E-09	4.52E-09	2.74E-09	2.85E-09

**Table D4-2  
Statistical Summary Of Historical Groundwater Analytical Results  
East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well 3-6C-EB-29**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Unfiltered</b>									
Barium	50	100	3/4	0.013	0.071	0.0655	0.0610	0.0485	0.0362
Copper	0.23	Not Listed	2/4	0.0041	0.0046	0.00880	0.00868	0.00751	0.00500
Cyanide	0.03	2	2/4	0.0027	0.003	0.00400	0.00393	0.00377	0.00125
Nickel	0.2	2	1/4	0.003	0.003	0.0200	0.0158	0.0124	0.00850
Sulfide	Not Listed	Not Listed	1/4	5.6	5.6	2.50	3.28	3.06	1.55
Zinc	0.9	50	3/4	0.011	0.021	0.0135	0.0145	0.0139	0.00507
<b>Inorganics-Filtered</b>									
Barium	50	100	3/4	0.065	0.073	0.0720	0.0773	0.0762	0.0155
Nickel	0.2	2	1/4	0.0029	0.0029	0.0200	0.0157	0.0123	0.00855
Zinc	0.9	50	2/4	0.0071	0.013	0.0100	0.0100	0.00980	0.00241

Notes:

1. Samples were collected between 2001 and 2003 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D4-3**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 General/Source Area Sentinel Monitoring Well 95-09**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	1/2	0.00018	0.00018	0.000107	0.000107	0.0000771	0.000104
Aroclor-1260	Not Listed	Not Listed	1/2	0.00047	0.00047	0.000252	0.000252	0.000125	0.000309
Total PCBs	0.01	0.1	1/2	0.00065	0.00065	0.000342	0.000342	0.000146	0.000436
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	1/2	0.0002	0.0002	0.000117	0.000117	0.0000812	0.000118
Aroclor-1260	Not Listed	Not Listed	1/2	0.00052	0.00052	0.000277	0.000277	0.000131	0.000344
Total PCBs	0.01	0.1	1/2	0.00072	0.00072	0.000377	0.000377	0.000154	0.000486
<b>Semivolatile Organics</b>									
1,2,4-Trichlorobenzene	50	100	1/2	0.0093	0.0093	0.00715	0.00715	0.00682	0.00304
1,4-Dichlorobenzene	8	80	1/2	0.0095	0.0095	0.00725	0.00725	0.00689	0.00318
Acenaphthene	6	60	1/2	0.01	0.01	0.00750	0.00750	0.00707	0.00354
Acetophenone	Not Listed	Not Listed	1/2	0.0029	0.0029	0.00395	0.00395	0.00381	0.00148
Pyrene	0.02	0.8	1/2	0.0094	0.0094	0.00720	0.00720	0.00686	0.00311
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--

**Table D4-3**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 General/Source Area Sentinel Monitoring Well 95-09**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/2	ND	ND	2.50E-10	2.50E-10	1.73E-11	3.53E-10
TCDFs (total)	Not Listed	Not Listed	0/2	ND	ND	2.50E-10	2.50E-10	1.73E-11	3.53E-10
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/2	ND	ND	2.50E-10	2.50E-10	1.58E-11	3.53E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	0/2	ND	ND	2.51E-10	2.51E-10	2.55E-11	3.53E-10
PeCDFs (total)	Not Listed	Not Listed	0/2	ND	ND	2.50E-10	2.50E-10	1.58E-11	3.53E-10
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	0/2	ND	ND	2.76E-10	2.76E-10	3.48E-11	3.87E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	1/2	1.7E-12	1.7E-12	2.26E-10	2.26E-10	2.77E-11	3.17E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/2	ND	ND	2.50E-10	2.50E-10	2.00E-11	3.53E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	1/2	1.7E-12	1.7E-12	2.26E-10	2.26E-10	2.77E-11	3.17E-10
HxCDFs (total)	Not Listed	Not Listed	1/2	1.4E-11	1.4E-11	2.82E-10	2.82E-10	8.77E-11	3.79E-10
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	0/2	ND	ND	1.78E-09	1.78E-09	1.28E-09	1.73E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/2	ND	ND	3.26E-10	3.26E-10	2.55E-11	4.59E-10
HpCDFs (total)	Not Listed	Not Listed	0/2	ND	ND	3.80E-09	3.80E-09	2.05E-09	4.53E-09
OCDF	Not Listed	Not Listed	0/2	ND	ND	5.00E-09	5.00E-09	3.00E-09	5.66E-09
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/2	ND	ND	3.00E-10	3.00E-10	2.26E-11	4.24E-10
TCDDs (total)	Not Listed	Not Listed	0/2	ND	ND	3.00E-10	3.00E-10	2.26E-11	4.24E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/2	ND	ND	2.50E-10	2.50E-10	1.87E-11	3.53E-10
PeCDDs (total)	Not Listed	Not Listed	0/2	ND	ND	6.01E-10	6.01E-10	3.46E-11	8.48E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/2	ND	ND	2.75E-10	2.75E-10	2.16E-11	3.88E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/2	ND	ND	2.75E-10	2.75E-10	2.22E-11	3.88E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/2	ND	ND	2.75E-10	2.75E-10	2.16E-11	3.88E-10
HxCDDs (total)	Not Listed	Not Listed	0/2	ND	ND	2.76E-10	2.76E-10	2.57E-11	3.88E-10
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	0/2	ND	ND	2.93E-09	2.93E-09	2.06E-09	2.93E-09
HpCDDs (total)	Not Listed	Not Listed	0/2	ND	ND	5.18E-09	5.18E-09	2.84E-09	6.12E-09
OCDD	Not Listed	Not Listed	0/2	ND	ND	1.30E-08	1.30E-08	6.93E-09	1.56E-08
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	2/2	8.6E-11	1.8E-09	9.43E-10	9.43E-10	3.93E-10	1.21E-09

**Table D4-3  
Statistical Summary Of Historical Groundwater Analytical Results  
East Street Area 2-South GW-3 General/Source Area Sentinel Monitoring Well 95-09**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Unfiltered</b>									
Arsenic	0.9	9	1/2	0.025	0.025	0.0150	0.0150	0.0112	0.0141
Barium	50	100	1/2	0.22	0.22	0.160	0.160	0.148	0.0849
Beryllium	0.2	2	1/2	0.00073	0.00073	0.000615	0.000615	0.000604	0.000163
Cadmium	0.004	0.05	1/2	0.0015	0.0015	0.00200	0.00200	0.00194	0.000707
Chromium	0.3	3	1/2	0.063	0.063	0.0340	0.0340	0.0177	0.0410
Cobalt	0.075	Not Listed	1/2	0.041	0.041	0.0330	0.0330	0.0320	0.0113
Copper	0.23	Not Listed	1/2	0.11	0.11	0.0615	0.0615	0.0378	0.0686
Lead	0.01	0.15	1/2	0.032	0.032	0.0168	0.0168	0.00693	0.0216
Nickel	0.2	2	1/2	0.072	0.072	0.0460	0.0460	0.0379	0.0368
Vanadium	4	40	1/2	0.035	0.035	0.0300	0.0300	0.0296	0.00707
Zinc	0.9	50	2/2	0.0056	0.23	0.118	0.118	0.0359	0.159
<b>Inorganics-Filtered</b>									
Barium	50	100	1/2	0.037	0.037	0.0685	0.0685	0.0608	0.0445
Copper	0.23	Not Listed	1/2	0.012	0.012	0.0310	0.0310	0.0245	0.0269
Zinc	0.9	50	1/2	0.024	0.024	0.0170	0.0170	0.0155	0.00990

Notes:

1. Samples were collected between 2001 and 2002 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D4-4  
 Statistical Summary Of Historical Groundwater Analytical Results  
 East Street Area 2-South GW-2 Sentinel Monitoring Well 95-25**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
 Plant Site 1 Groundwater Management Area  
 General Electric Company - Pittsfield, Massachusetts  
 (Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>PCBs-Filtered</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>Semivolatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--

Notes:

1. Samples were collected between 2001 and 2010 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D4-5  
 Statistical Summary Of Historical Groundwater Analytical Results  
 East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well E2SC-23**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
 Plant Site 1 Groundwater Management Area  
 General Electric Company - Pittsfield, Massachusetts  
 (Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
None Detected	--	--	0/6	--	--	--	--	--	--
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.0025	0.49	0.00595	0.126	0.0130	0.243
Aroclor-1260	Not Listed	Not Listed	4/4	0.00063	0.35	0.00264	0.0890	0.00526	0.174
Total PCBs	0.01	0.1	4/4	0.00313	0.84	0.00865	0.215	0.0186	0.417
<b>PCBs-Filtered</b>									
Aroclor-1248	Not Listed	Not Listed	1/13	0.00022	0.00022	0.0000330	0.0000659	0.0000489	0.0000640
Aroclor-1254	Not Listed	Not Listed	9/13	0.000044	0.0056	0.000250	0.000972	0.000239	0.00157
Aroclor-1260	Not Listed	Not Listed	4/13	0.00053	0.0047	0.0000340	0.000516	0.0000946	0.00128
Total PCBs	0.01	0.1	10/13	0.000044	0.0103	0.000250	0.00145	0.000312	0.00273
<b>Semivolatile Organics</b>									
1,2,4-Trichlorobenzene	50	100	1/6	0.0044	0.0044	0.00500	0.00450	0.00439	0.000961
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--

**Table D4-5  
Statistical Summary Of Historical Groundwater Analytical Results  
East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well E2SC-23**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	3/6	1E-11	3.00E-07	3.25E-09	7.62E-08	3.57E-09	1.16E-07
TCDFs (total)	Not Listed	Not Listed	4/6	2.2E-10	3.60E-06	1.05E-08	8.37E-07	2.26E-08	1.46E-06
1,2,3,7,8-PeCDF	Not Listed	Not Listed	3/6	7.4E-12	2.50E-07	1.37E-08	5.78E-08	4.20E-09	9.78E-08
2,3,4,7,8-PeCDF	Not Listed	Not Listed	4/6	2.7E-11	7.60E-07	1.40E-08	1.60E-07	7.19E-09	3.01E-07
PeCDFs (total)	Not Listed	Not Listed	6/6	3E-10	8.10E-06	1.70E-08	1.61E-06	4.20E-08	3.24E-06
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	3/6	9.6E-11	2.60E-06	1.37E-08	5.46E-07	1.28E-08	1.04E-06
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	3/6	5.2E-11	1.00E-06	1.37E-08	2.10E-07	8.53E-09	3.97E-07
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	2/6	2.4E-11	4.40E-07	8.65E-09	8.08E-08	4.42E-09	1.76E-07
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	3/6	2.6E-11	8.70E-07	1.37E-08	1.76E-07	7.36E-09	3.45E-07
HxCDFs (total)	Not Listed	Not Listed	5/6	3.4E-10	1.20E-05	1.30E-08	2.40E-06	3.38E-08	4.80E-06
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	3/6	6.8E-11	2.10E-06	1.39E-08	4.46E-07	1.20E-08	8.39E-07
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	3/6	5.1E-11	1.00E-06	1.37E-08	2.28E-07	9.68E-09	4.01E-07
HpCDFs (total)	Not Listed	Not Listed	4/6	2.1E-10	5.90E-06	1.43E-08	1.27E-06	2.22E-08	2.37E-06
OCDF	Not Listed	Not Listed	4/6	2.1E-10	4.60E-06	2.86E-08	1.01E-06	2.99E-08	1.84E-06
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/6	ND	ND	2.35E-09	2.37E-09	6.36E-10	1.88E-09
TCDDs (total)	Not Listed	Not Listed	3/6	1.8E-12	2.60E-07	3.25E-09	5.24E-08	2.30E-09	1.03E-07
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/6	ND	ND	3.15E-09	1.48E-08	1.78E-09	2.20E-08
PeCDDs (total)	Not Listed	Not Listed	2/6	9.40E-08	5.60E-07	1.37E-08	1.23E-07	4.43E-09	2.22E-07
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	3/6	3.1E-12	8.70E-08	1.06E-08	2.26E-08	2.67E-09	3.33E-08
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	3/6	5.2E-12	1.20E-07	1.41E-08	2.92E-08	3.24E-09	4.61E-08
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	3/6	3.5E-12	9.80E-08	1.21E-08	2.49E-08	2.87E-09	3.75E-08
HxCDDs (total)	Not Listed	Not Listed	3/6	2.2E-11	1.50E-06	1.42E-08	3.17E-07	9.91E-09	5.98E-07
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	3/6	4.2E-11	7.80E-07	1.40E-08	1.73E-07	8.41E-09	3.11E-07
HpCDDs (total)	Not Listed	Not Listed	3/6	7.8E-11	1.60E-06	1.42E-08	3.45E-07	1.37E-08	6.39E-07
OCDD	Not Listed	Not Listed	3/6	3.2E-10	7.80E-06	3.00E-08	1.69E-06	5.15E-08	3.13E-06
Total TEQs (1998 WHO TEFs)	0.00004	0.0004	6/6	4.1E-11	1.00E-06	3.51E-08	2.31E-07	1.57E-08	3.95E-07



**Table D4-5  
Statistical Summary Of Historical Groundwater Analytical Results  
East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well E2SC-23**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Unfiltered</b>									
Antimony	8	80	1/4	0.0038	0.0038	0.0300	0.0235	0.0179	0.0131
Arsenic	0.9	9	1/4	0.0042	0.0042	0.00500	0.00480	0.00479	0.000400
Barium	50	100	3/4	0.0031	0.023	0.0210	0.0363	0.0192	0.0433
Cadmium	0.004	0.05	1/4	0.00052	0.00052	0.00250	0.00201	0.00169	0.000990
Chromium	0.3	3	2/4	0.0067	0.013	0.00585	0.00743	0.00683	0.00380
Cobalt	0.075	Not Listed	1/4	0.0022	0.0022	0.0250	0.0193	0.0136	0.0114
Copper	0.23	Not Listed	2/4	0.012	0.013	0.0130	0.0128	0.0127	0.000500
Lead	0.01	0.15	2/4	0.0045	0.0056	0.00300	0.00328	0.00274	0.00210
Mercury	0.02	0.2	1/4	0.00097	0.00097	0.000100	0.000318	0.000176	0.000435
Nickel	0.2	2	2/4	0.0074	0.0088	0.0144	0.0141	0.0127	0.00689
Vanadium	4	40	2/4	0.0045	0.0056	0.0153	0.0150	0.0112	0.0115
Zinc	0.9	50	2/4	0.02	0.051	0.0150	0.0228	0.0179	0.0194
<b>Inorganics-Filtered</b>									
Barium	50	100	3/5	0.0033	0.013	0.0130	0.0357	0.0191	0.0402
Lead	0.01	0.15	2/8	0.00647	0.015	0.00375	0.0665	0.00528	0.175
Mercury	0.02	0.2	1/5	0.00088	0.00088	0.000100	0.000251	0.000146	0.000352
Nickel	0.2	2	1/5	0.0027	0.0027	0.0200	0.0135	0.0102	0.00888
Silver	0.007	1	2/5	0.00009	0.0032	0.00250	0.00216	0.00135	0.00120
Zinc	0.9	50	2/5	0.011	0.049	0.0100	0.0180	0.0140	0.0173

**Notes:**

1. Samples were collected between 2001 and 2013 and were submitted to SGS Environmental Services, Inc. and Accutest Laboratories for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D4-6  
Statistical Summary Of Historical Groundwater Analytical Results  
East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well E2SC-24**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Benzene	10	100	4/5	0.0023	0.004	0.00270	0.00294	0.00288	0.000680
Chlorobenzene	1	10	3/5	0.0069	0.026	0.00690	0.00902	0.00605	0.00976
Vinyl Chloride	50	100	2/5	0.00068	0.0014	0.00100	0.00102	0.000990	0.000255
Total VOCs	Not Listed	Not Listed	4/5	0.0027	0.029	0.0120	0.0307	0.0157	0.0399
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.00024	0.0015	0.000950	0.000910	0.000742	0.000555
Aroclor-1260	Not Listed	Not Listed	2/4	0.00017	0.00038	0.000102	0.000154	0.0000916	0.000164
Total PCBs	0.01	0.1	4/4	0.00024	0.00188	0.00104	0.00105	0.000831	0.000691
<b>PCBs-Filtered</b>									
Aroclor-1248	Not Listed	Not Listed	1/13	0.00013	0.00013	0.0000330	0.0000408	0.0000370	0.0000268
Aroclor-1254	Not Listed	Not Listed	7/13	0.000042	0.00053	0.0000420	0.000161	0.0000838	0.000190
Total PCBs	0.01	0.1	8/13	0.000042	0.00053	0.0000560	0.000168	0.0000929	0.000186
<b>Semivolatile Organics</b>									
1,3-Dichlorobenzene	50	100	3/5	0.003	0.0092	0.00420	0.00482	0.00435	0.00262
1,4-Dichlorobenzene	8	80	4/5	0.0025	0.03	0.00760	0.0112	0.00793	0.0110
5-Nitro-o-toluidine	Not Listed	Not Listed	1/5	0.0083	0.0083	0.00500	0.00520	0.00489	0.00200
Acenaphthene	6	60	4/5	0.0035	0.0086	0.00500	0.00606	0.00570	0.00234
bis(2-Ethylhexyl)phthalate	50	100	1/5	0.008	0.008	0.00300	0.00394	0.00357	0.00227
Dimethylphthalate	50	100	1/5	0.004	0.004	0.00500	0.00434	0.00423	0.00101
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--

**Table D4-6  
Statistical Summary Of Historical Groundwater Analytical Results  
East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well E2SC-24**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/5	ND	ND	1.20E-09	1.77E-09	3.17E-10	2.16E-09
TCDFs (total)	Not Listed	Not Listed	2/5	5.5E-12	8.50E-08	1.20E-09	1.77E-08	8.86E-10	3.76E-08
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	6.40E-09	2.31E-09	1.15E-08
2,3,4,7,8-PeCDF	Not Listed	Not Listed	0/5	ND	ND	6.50E-10	6.02E-09	1.49E-09	1.17E-08
PeCDFs (total)	Not Listed	Not Listed	1/5	1.1E-11	1.1E-11	1.30E-09	6.02E-09	7.55E-10	1.17E-08
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	6.31E-09	2.04E-09	1.16E-08
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	6.44E-09	2.38E-09	1.15E-08
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	6.42E-09	2.31E-09	1.15E-08
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	6.29E-09	2.01E-09	1.16E-08
HxCDFs (total)	Not Listed	Not Listed	0/5	ND	ND	1.40E-09	6.97E-09	2.62E-09	1.13E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	0/5	ND	ND	1.60E-09	6.52E-09	2.40E-09	1.15E-08
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/5	ND	ND	1.60E-09	6.34E-09	5.71E-10	1.16E-08
HpCDFs (total)	Not Listed	Not Listed	0/5	ND	ND	1.40E-09	6.48E-09	2.34E-09	1.15E-08
OCDF	Not Listed	Not Listed	1/5	7.3E-09	7.3E-09	3.20E-09	1.39E-08	5.42E-09	2.31E-08
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/5	ND	ND	1.20E-09	1.76E-09	3.28E-10	2.15E-09
TCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.20E-09	1.76E-09	4.06E-10	2.15E-09
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	6.20E-09	5.02E-10	1.16E-08
PeCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	6.20E-09	6.75E-10	1.16E-08
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	1/5	1.6E-12	1.6E-12	2.10E-09	6.52E-09	7.64E-10	1.15E-08
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/5	ND	ND	2.10E-09	6.50E-09	6.67E-10	1.15E-08
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	1/5	2.1E-12	2.1E-12	2.10E-09	6.52E-09	8.06E-10	1.15E-08
HxCDDs (total)	Not Listed	Not Listed	1/5	5.2E-12	5.2E-12	2.10E-09	6.52E-09	9.66E-10	1.15E-08
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	1/5	4.8E-09	4.8E-09	2.30E-09	7.40E-09	3.58E-09	1.10E-08
HpCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	2.60E-09	7.66E-09	4.27E-09	1.09E-08
OCDD	Not Listed	Not Listed	0/5	ND	ND	8.50E-09	1.96E-08	1.27E-08	2.11E-08
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	5/5	8.2E-10	6.60E-08	4.30E-09	1.58E-08	5.12E-09	2.81E-08
<b>Inorganics-Unfiltered</b>									
Antimony	8	80	1/4	0.0061	0.0061	0.0300	0.0240	0.0201	0.0120
Barium	50	100	3/4	0.079	0.18	0.140	0.135	0.126	0.0529
Chromium	0.3	3	1/4	0.0052	0.0052	0.00500	0.00505	0.00505	0.000100
Cyanide	0.03	2	4/4	0.011	0.017	0.0150	0.0145	0.0143	0.00300
Mercury	0.02	0.2	1/4	0.00007	0.00007	0.000100	0.0000925	0.0000915	0.0000150
Nickel	0.2	2	1/4	0.0026	0.0026	0.0200	0.0157	0.0120	0.00870
Zinc	0.9	50	4/4	0.0069	0.034	0.0134	0.0169	0.0139	0.0124

**Table D4-6  
Statistical Summary Of Historical Groundwater Analytical Results  
East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well E2SC-24**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>									
Barium	50	100	4/5	0.074	0.16	0.160	0.131	0.125	0.0410
Cadmium	0.004	0.05	1/5	0.00005	0.00005	0.00250	0.00251	0.00131	0.00175
Cobalt	0.075	Not Listed	1/5	0.0017	0.0017	0.0250	0.0163	0.0106	0.0119
Cyanide	0.03	2	2/2	0.014	0.02	0.0170	0.0170	0.0167	0.00424
Cyanide-MADEP (PAC)	0.03	2	2/3	0.017	0.023	0.0180	0.0143	0.0122	0.00814
Mercury	0.02	0.2	1/5	0.00012	0.00012	0.000100	0.0000990	0.0000979	0.0000160
Nickel	0.2	2	1/5	0.0034	0.0034	0.0200	0.0137	0.0106	0.00867
Silver	0.007	1	1/5	0.00029	0.00029	0.00250	0.00206	0.00162	0.000988
Thallium	3	30	2/5	0.0086	0.0125	0.00500	0.00732	0.00675	0.00354
Zinc	0.9	50	2/5	0.013	0.016	0.0100	0.0118	0.0116	0.00268

**Notes:**

1. Samples were collected between 2001 and 2013 and were submitted to SGS Environmental Services, Inc. and Accutest Laboratories for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D4-7  
Statistical Summary Of Historical Groundwater Analytical Results  
East Street Area 2-South GW-3 General/Source Area Sentinel Monitoring Well 52**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Benzene	10	100	3/4	0.044	0.07	0.0660	0.0765	0.0706	0.0373
Chlorobenzene	1	10	4/4	4.4	7.7	6.10	6.08	5.93	1.53
Chloroethane	Not Listed	Not Listed	3/4	0.073	0.27	0.135	0.153	0.138	0.0832
Ethylbenzene	5	100	1/4	0.0026	0.0026	0.0500	0.0582	0.0303	0.0529
Vinyl Chloride	50	100	1/4	0.0031	0.0031	0.0500	0.0383	0.0249	0.0235
Total VOCs	Not Listed	Not Listed	4/4	4.5	7.9	6.25	6.23	6.08	1.52
<b>PCBs-Unfiltered</b>									
Aroclor-1242	Not Listed	Not Listed	2/4	0.005	0.0077	0.00275	0.00336	0.00148	0.00362
Aroclor-1248	Not Listed	Not Listed	1/4	0.002	0.002	0.000500	0.000813	0.000595	0.000800
Aroclor-1254	Not Listed	Not Listed	1/4	0.0049	0.0049	0.000375	0.00148	0.000626	0.00229
Aroclor-1260	Not Listed	Not Listed	4/4	0.00053	0.0048	0.00155	0.00211	0.00154	0.00189
Total PCBs	0.01	0.1	4/4	0.0031	0.0097	0.00760	0.00700	0.00633	0.00327
<b>PCBs-Filtered</b>									
Aroclor-1242	Not Listed	Not Listed	3/9	0.00037	0.015	0.0000650	0.00229	0.000188	0.00503
Aroclor-1248	Not Listed	Not Listed	1/9	0.0019	0.0019	0.0000340	0.000472	0.000119	0.000785
Aroclor-1254	Not Listed	Not Listed	2/9	0.00006	0.0046	0.0000600	0.000582	0.0000966	0.00151
Aroclor-1260	Not Listed	Not Listed	2/9	0.00014	0.02	0.0000650	0.00230	0.000125	0.00664
Total PCBs	0.01	0.1	5/9	0.00006	0.0396	0.000130	0.00529	0.000337	0.0131
<b>Semivolatile Organics</b>									
1,2-Dichlorobenzene	2	20	2/4	0.005	0.0074	0.00500	0.00560	0.00551	0.00120
1,3-Dichlorobenzene	50	100	4/4	0.0052	0.034	0.0143	0.0169	0.0126	0.0137
1,4-Dichlorobenzene	8	80	4/4	0.016	0.11	0.0485	0.0558	0.0413	0.0448
2-Chlorophenol	7	100	4/4	0.021	0.027	0.0230	0.0235	0.0234	0.00265
Naphthalene	20	100	2/4	0.0032	0.007	0.00500	0.00505	0.00486	0.00155
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--

**Table D4-7**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 General/Source Area Sentinel Monitoring Well 52**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	3/4	7.5E-12	1.80E-08	5.25E-09	7.13E-09	1.33E-09	7.86E-09
TCDFs (total)	Not Listed	Not Listed	4/4	6.5E-10	8.70E-07	6.15E-08	2.48E-07	3.56E-08	4.16E-07
1,2,3,7,8-PeCDF	Not Listed	Not Listed	2/4	3.3E-12	3.2E-09	2.25E-09	2.18E-09	4.90E-10	1.88E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	3/4	1.2E-11	2.70E-08	9.70E-09	1.16E-08	2.15E-09	1.20E-08
PeCDFs (total)	Not Listed	Not Listed	4/4	7.4E-10	8.50E-07	9.20E-08	2.59E-07	4.58E-08	3.98E-07
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	4/4	2.5E-11	4.70E-08	1.75E-08	2.05E-08	4.24E-09	2.00E-08
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	3/4	5.1E-11	6.10E-08	5.30E-09	1.79E-08	2.78E-09	2.89E-08
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	1/4	4.2E-12	4.2E-12	2.15E-09	2.83E-09	5.93E-10	3.01E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	4/4	6.8E-11	2.60E-08	1.02E-08	1.16E-08	3.53E-09	1.12E-08
HxCDFs (total)	Not Listed	Not Listed	4/4	5.9E-10	7.60E-07	1.27E-07	2.53E-07	5.02E-08	3.45E-07
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	4/4	6.7E-11	9.70E-08	2.35E-08	3.60E-08	7.59E-09	4.25E-08
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	4/4	1.3E-11	2.30E-08	8.00E-09	9.75E-09	2.06E-09	9.72E-09
HpCDFs (total)	Not Listed	Not Listed	4/4	1.2E-10	2.00E-07	5.85E-08	7.93E-08	1.66E-08	8.61E-08
OCDF	Not Listed	Not Listed	3/4	2.50E-08	1.20E-07	4.45E-08	5.85E-08	4.89E-08	4.26E-08
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	1.60E-09	1.43E-09	2.71E-10	1.04E-09
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.45E-09	1.15E-09	2.35E-10	7.76E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	2.25E-09	2.25E-09	5.79E-10	1.99E-09
PeCDDs (total)	Not Listed	Not Listed	2/4	2.9E-09	7.1E-09	3.70E-09	3.63E-09	6.11E-10	2.97E-09
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	2.35E-09	1.88E-09	4.64E-10	1.27E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.75E-09	1.48E-09	3.75E-10	1.03E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	1/4	2.6E-09	2.6E-09	2.55E-09	1.93E-09	4.62E-10	1.28E-09
HxCDDs (total)	Not Listed	Not Listed	3/4	1.2E-11	2.30E-08	1.06E-08	1.10E-08	2.24E-09	1.01E-08
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	2/4	1.50E-08	2.80E-08	1.05E-08	1.34E-08	1.03E-08	1.08E-08
HpCDDs (total)	Not Listed	Not Listed	2/4	2.90E-08	5.30E-08	2.00E-08	2.37E-08	1.34E-08	2.25E-08
OCDD	Not Listed	Not Listed	1/4	1.00E-07	1.00E-07	3.05E-08	4.45E-08	3.52E-08	3.78E-08
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	9.6E-11	3.90E-08	1.35E-08	1.65E-08	5.02E-09	1.65E-08

**Table D4-7  
Statistical Summary Of Historical Groundwater Analytical Results  
East Street Area 2-South GW-3 General/Source Area Sentinel Monitoring Well 52**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Unfiltered</b>									
Antimony	8	80	2/4	0.0052	0.0056	0.0178	0.0177	0.0127	0.0142
Barium	50	100	2/4	0.13	0.13	0.115	0.115	0.114	0.0173
Beryllium	0.2	2	1/4	0.00068	0.00068	0.000500	0.000545	0.000540	0.0000900
Chromium	0.3	3	1/4	0.0038	0.0038	0.00500	0.00470	0.00467	0.000600
Copper	0.23	Not Listed	2/4	0.0042	0.0045	0.00875	0.00868	0.00752	0.00500
Cyanide	0.03	2	4/4	0.0047	0.022	0.00660	0.00998	0.00817	0.00809
Lead	0.01	0.15	1/4	0.0024	0.0024	0.00195	0.00198	0.00192	0.000550
Mercury	0.02	0.2	2/4	0.00015	0.00027	0.000125	0.000155	0.000142	0.0000802
Nickel	0.2	2	1/4	0.0044	0.0044	0.0200	0.0161	0.0137	0.00780
Sulfide	Not Listed	Not Listed	1/4	8	8	2.50	3.88	3.34	2.75
Vanadium	4	40	4/4	0.052	0.09	0.0700	0.0705	0.0691	0.0161
<b>Inorganics-Filtered</b>									
Antimony	8	80	1/4	0.0051	0.0051	0.0300	0.0238	0.0193	0.0125
Barium	50	100	2/4	0.021	0.067	0.0835	0.0720	0.0612	0.0374
Chromium	0.3	3	1/4	0.0042	0.0042	0.00500	0.00480	0.00479	0.000400
Copper	0.23	Not Listed	1/4	0.0039	0.0039	0.0130	0.0200	0.0135	0.0205
Cyanide	0.03	2	4/4	0.0045	0.012	0.00540	0.00683	0.00626	0.00354
Cyanide-MADEP (PAC)	0.03	2	1/2	0.0055	0.0055	0.00525	0.00525	0.00524	0.000354
Vanadium	4	40	1/4	0.022	0.022	0.0250	0.0243	0.0242	0.00150

**Notes:**

1. Samples were collected between 2001 and 2013 and were submitted to SGS Environmental Services, Inc. and Accutest Laboratories for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D4-8**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well ES2-02A/ES2-02AR**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatiles Organics</b>									
1,1-Dichloroethane	20	100	1/11	0.00015	0.00015	0.0250	0.0271	0.0115	0.0289
1,2-Dichloroethane	20	100	1/11	0.00098	0.00098	0.0250	0.0272	0.0136	0.0289
2-Butanone	50	100	1/11	0.005	0.005	0.200	0.217	0.0672	0.235
Acetone	50	100	1/11	0.013	0.013	0.200	0.218	0.0733	0.234
Benzene	10	100	10/11	0.0047	0.27	0.0250	0.0758	0.0375	0.0891
Chlorobenzene	1	10	10/11	0.13	2.9	1.30	1.19	0.483	0.902
Chloroethane	Not Listed	Not Listed	2/11	0.0034	0.017	0.0250	0.0287	0.0182	0.0277
Ethylbenzene	5	100	6/11	0.0038	0.034	0.0200	0.0170	0.0128	0.0109
Methylene Chloride	50	100	2/11	0.012	0.022	0.0250	0.0874	0.0237	0.150
Toluene	40	100	1/11	0.00045	0.00045	0.0250	0.0271	0.0127	0.0289
trans-1,2-Dichloroethene	50	100	1/11	0.00024	0.00024	0.0250	0.0271	0.0120	0.0289
Xylenes (total)	5	100	4/11	0.0031	0.012	0.0250	0.0309	0.0187	0.0294
Total VOCs	Not Listed	Not Listed	11/11	0.037	3.2	1.30	1.28	0.761	0.982
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.00012	0.0012	0.000415	0.000538	0.000393	0.000468
Aroclor-1260	Not Listed	Not Listed	2/4	0.000066	0.00042	0.0000495	0.000138	0.0000741	0.000189
Total PCBs	0.01	0.1	4/4	0.000186	0.00162	0.000415	0.000655	0.000473	0.000643
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	3/4	0.000078	0.00038	0.0000780	0.000142	0.0000935	0.000160
Total PCBs	0.01	0.1	3/4	0.000078	0.00038	0.0000780	0.000142	0.0000935	0.000160
<b>Semivolatile Organics</b>									
1,2-Dichlorobenzene	2	20	1/4	0.0025	0.0025	0.00500	0.00438	0.00420	0.00125
1,3-Dichlorobenzene	50	100	4/4	0.0066	0.012	0.00850	0.00890	0.00863	0.00256
1,4-Dichlorobenzene	8	80	4/4	0.0055	0.025	0.0111	0.0132	0.0110	0.00890
2-Chlorophenol	7	100	1/4	0.0076	0.0076	0.00500	0.00565	0.00555	0.00130
2-Methylnaphthalene	20	100	2/4	0.0099	0.024	0.00745	0.0110	0.00878	0.00899
Acenaphthene	6	60	2/4	0.028	0.033	0.0165	0.0178	0.0123	0.0149
bis(2-Ethylhexyl)phthalate	50	100	1/4	0.011	0.011	0.00300	0.00500	0.00415	0.00400
Fluorene	0.04	0.4	2/4	0.0072	0.0099	0.00610	0.00678	0.00650	0.00233
Naphthalene	20	100	4/4	0.0033	0.095	0.0170	0.0331	0.0173	0.0418
Phenanthrene	10	100	2/4	0.0026	0.0064	0.00500	0.00475	0.00452	0.00158
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--



**Table D4-8**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well ES2-02A/ES2-02AR**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	1/4	6.3E-12	6.3E-12	1.30E-09	1.48E-09	4.22E-10	1.40E-09
TCDFs (total)	Not Listed	Not Listed	4/4	1.8E-10	2.60E-07	7.25E-08	1.01E-07	2.06E-08	1.15E-07
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	9.00E-10	7.76E-10	2.24E-10	6.38E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	4/4	3E-11	1.00E-08	5.85E-09	5.43E-09	1.78E-09	4.19E-09
PeCDFs (total)	Not Listed	Not Listed	4/4	4.9E-10	3.90E-07	1.03E-07	1.49E-07	3.75E-08	1.68E-07
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	2/4	2.2E-11	5.1E-08	1.95E-09	1.37E-08	1.42E-09	2.49E-08
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	2/4	2.1E-11	2.9E-08	2.30E-09	8.41E-09	1.27E-09	1.38E-08
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/4	ND	ND	2.90E-09	5.95E-09	8.16E-10	8.24E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	4/4	5.4E-11	5.4E-08	6.05E-09	1.65E-08	3.21E-09	2.51E-08
HxCDFs (total)	Not Listed	Not Listed	4/4	6.8E-10	7.20E-07	6.10E-08	2.11E-07	3.67E-08	3.41E-07
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	3/4	8.8E-11	8.5E-08	5.05E-09	2.38E-08	3.68E-09	4.09E-08
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	2/4	1.4E-11	1.8E-08	1.95E-09	5.48E-09	9.61E-10	8.41E-09
HpCDFs (total)	Not Listed	Not Listed	4/4	2E-10	2.00E-07	7.90E-09	5.40E-08	6.96E-09	9.74E-08
OCDF	Not Listed	Not Listed	0/4	ND	ND	1.15E-08	1.11E-08	8.54E-09	7.69E-09
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	8.00E-10	7.75E-10	1.58E-10	6.34E-10
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	8.00E-10	7.75E-10	1.66E-10	6.34E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	9.25E-10	8.63E-10	2.10E-10	7.24E-10
PeCDDs (total)	Not Listed	Not Listed	3/4	9.2E-12	2.9E-09	2.00E-09	1.73E-09	5.66E-10	1.26E-09
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	2/4	3.2E-12	3.6E-09	2.50E-09	2.35E-09	5.16E-10	2.01E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	1/4	3.1E-12	3.1E-12	1.30E-09	1.63E-09	3.78E-10	1.63E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	1/4	2.3E-12	2.3E-12	9.50E-10	1.58E-09	2.98E-10	1.96E-09
HxCDDs (total)	Not Listed	Not Listed	2/4	1.6E-11	1.5E-08	2.75E-09	5.13E-09	1.07E-09	6.81E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	3/4	3.8E-11	2.4E-08	3.10E-09	7.56E-09	1.66E-09	1.11E-08
HpCDDs (total)	Not Listed	Not Listed	3/4	7.2E-11	4.00E-08	2.75E-09	1.14E-08	1.99E-09	1.91E-08
OCDD	Not Listed	Not Listed	1/4	1.4E-08	1.4E-08	2.20E-08	2.55E-08	2.07E-08	1.80E-08
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	3.7E-11	2.4E-08	8.00E-09	1.00E-08	2.71E-09	1.01E-08

**Table D4-8**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well ES2-02A/ES2-02AR**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Unfiltered</b>									
Arsenic	0.9	9	1/4	0.0062	0.0062	0.00500	0.00530	0.00528	0.000600
Barium	50	100	3/4	0.033	0.12	0.100	0.0883	0.0793	0.0380
Cadmium	0.004	0.05	1/4	0.00064	0.00064	0.00250	0.00204	0.00178	0.000930
Chromium	0.3	3	2/4	0.0027	0.0028	0.00390	0.00388	0.00371	0.00130
Cobalt	0.075	Not Listed	3/4	0.0005	0.0062	0.00610	0.00943	0.00464	0.0107
Cyanide	0.03	2	2/4	0.0061	0.0075	0.00555	0.00590	0.00582	0.00119
Mercury	0.02	0.2	1/4	0.00061	0.00061	0.000100	0.000228	0.000157	0.000255
Nickel	0.2	2	2/4	0.021	0.023	0.0205	0.0210	0.0210	0.00141
Silver	0.007	1	1/4	0.0029	0.0029	0.00250	0.00260	0.00259	0.000200
Vanadium	4	40	1/4	0.01	0.01	0.0250	0.0213	0.0199	0.00750
Zinc	0.9	50	2/4	0.062	0.086	0.0360	0.0420	0.0270	0.0382
<b>Inorganics-Filtered</b>									
Barium	50	100	3/4	0.034	0.085	0.0735	0.0703	0.0651	0.0288
Chromium	0.3	3	1/4	0.003	0.003	0.00500	0.00650	0.00559	0.00443
Cobalt	0.075	Not Listed	2/4	0.0052	0.0059	0.0155	0.0153	0.0118	0.0112
Cyanide	0.03	2	2/4	0.0052	0.0076	0.00510	0.00570	0.00561	0.00127
Cyanide-MADEP (PAC)	0.03	2	2/2	0.0016	0.0054	0.00350	0.00350	0.00294	0.00269
Mercury	0.02	0.2	1/4	0.00076	0.00076	0.000100	0.000265	0.000166	0.000330
Nickel	0.2	2	2/4	0.018	0.022	0.0200	0.0200	0.0199	0.00163
Vanadium	4	40	2/4	0.0048	0.0049	0.0150	0.0149	0.0110	0.0116
Zinc	0.9	50	3/4	0.006	0.068	0.0230	0.0300	0.0196	0.0286

**Notes:**

1. Samples were collected between 2001 and 2012 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D4-9**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 General/ Source Area Sentinel Monitoring Well ES2-05**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Max Detect Location	Minimum Non-Detect	Maximum Non-Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>												
Methylene Chloride	50	100	1/5	0.002	0.002	ES2-05	0.005	0.005	0.00250	0.00240	0.00239	0.000224
Trichloroethene	5	50	3/5	0.0044	0.011	ES2-05	0.005	0.005	0.00440	0.00516	0.00439	0.00350
Total VOCs	Not Listed	Not Listed	4/5	0.002	0.011	ES2-05	0.2	0.2	0.00540	0.0246	0.00878	0.0423
<b>PCBs-Unfiltered</b>												
Aroclor-1254	Not Listed	Not Listed	3/5	0.000046	0.00025	ES2-05	0.000065	0.0005	0.0000880	0.000133	0.0000965	0.000108
Total PCBs	0.01	0.1	3/5	0.000046	0.00025	ES2-05	0.000065	0.0005	0.0000880	0.000133	0.0000965	0.000108
<b>PCBs-Filtered</b>												
Aroclor-1254	Not Listed	Not Listed	1/4	0.000033	0.000033	ES2-05	0.000065	0.000065	0.0000330	0.0000330	0.0000330	0
Total PCBs	0.01	0.1	1/4	0.000033	0.000033	ES2-05	0.000065	0.000065	0.0000330	0.0000330	0.0000330	0
<b>Semivolatile Organics</b>												
1,4-Dichlorobenzene	8	80	1/5	0.003	0.003	ES2-05	0.01	0.01	0.00500	0.00460	0.00451	0.000894
2,4-Dinitrotoluene	50	100	1/5	0.002	0.002	ES2-05	0.01	0.01	0.00500	0.00440	0.00416	0.00134
2-Methylnaphthalene	20	100	1/5	0.029	0.029	ES2-05	0.01	0.01	0.00500	0.00980	0.00711	0.0107
Acenaphthene	6	60	1/5	0.003	0.003	ES2-05	0.01	0.01	0.00500	0.00460	0.00451	0.000894
Anthracene	0.03	0.6	1/5	0.002	0.002	ES2-05	0.01	0.01	0.00500	0.00440	0.00416	0.00134
Diphenylamine	Not Listed	Not Listed	1/5	0.002	0.002	ES2-05	0.01	0.01	0.00500	0.00440	0.00416	0.00134
Fluorene	0.04	0.4	1/5	0.004	0.004	ES2-05	0.01	0.01	0.00500	0.00480	0.00478	0.000447
N-Nitrosodiphenylamine	Not Listed	Not Listed	1/5	0.002	0.002	ES2-05	0.01	0.01	0.00500	0.00440	0.00416	0.00134
Pentachlorophenol	0.2	2	1/4	0.008	0.008	ES2-05	0.05	0.05	0.0250	0.0208	0.0188	0.00850
Phenanthrene	10	100	1/5	0.002	0.002	ES2-05	0.01	0.01	0.00500	0.00440	0.00416	0.00134
Pyrene	0.02	0.8	1/5	0.001	0.001	ES2-05	0.01	0.01	0.00500	0.00420	0.00362	0.00179
<b>Organochlorine Pesticides</b>												
None Detected	--	--	0/3	--	--	--	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>												
None Detected	--	--	0/3	--	--	--	--	--	--	--	--	--
<b>Herbicides</b>												
None Detected	--	--	0/3	--	--	--	--	--	--	--	--	--

**Table D4-9**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 General/ Source Area Sentinel Monitoring Well ES2-05**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Max Detect Location	Minimum Non-Detect	Maximum Non-Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>												
2,3,7,8-TCDF	Not Listed	Not Listed	0/5	ND	ND		1.2E-12	3.80E-07	1.00E-09	3.87E-08	6.89E-10	8.46E-08
TCDFs (total)	Not Listed	Not Listed	0/5	ND	ND		1.2E-12	5.90E-07	1.00E-09	6.07E-08	7.55E-10	1.34E-07
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND		4E-13	2.5E-09	1.30E-09	9.75E-10	1.45E-10	6.50E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	1/4	2.8E-09	2.8E-09	ES2-05	4E-13	2.5E-09	9.25E-10	1.16E-09	1.41E-10	1.21E-09
PeCDFs (total)	Not Listed	Not Listed	2/5	2.6E-09	1.3E-08	ES2-05	4E-13	8.50E-07	2.60E-09	8.94E-08	1.30E-09	1.90E-07
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	1/4	3.4E-09	3.4E-09	ES2-05	1E-12	2.5E-09	1.30E-09	1.50E-09	2.32E-10	1.41E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND		9E-13	2.5E-09	1.30E-09	9.75E-10	1.77E-10	6.50E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/4	ND	ND		1.1E-12	2.8E-09	1.30E-09	1.00E-09	1.90E-10	6.68E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND		1E-12	2.6E-09	1.30E-09	9.75E-10	1.82E-10	6.50E-10
HxCDFs (total)	Not Listed	Not Listed	2/5	3.1E-09	1.1E-08	ES2-05	1E-12	1.20E-06	3.10E-09	1.23E-07	1.68E-09	2.67E-07
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	1/4	4.6E-09	4.6E-09	ES2-05	2.1E-09	2.5E-09	1.20E-09	2.03E-09	1.64E-09	1.72E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/4	ND	ND		5E-13	3.2E-09	1.30E-09	1.05E-09	1.61E-10	7.14E-10
HpCDFs (total)	Not Listed	Not Listed	2/5	4E-12	8.7E-09	ES2-05	2.2E-09	1.90E-06	1.30E-09	1.92E-07	2.16E-09	4.24E-07
OCDF	Not Listed	Not Listed	0/5	ND	ND		5E-09	1.60E-06	3.30E-09	1.62E-07	8.91E-09	3.56E-07
<b>Dioxins</b>												
2,3,7,8-TCDD	Not Listed	Not Listed	0/5	ND	ND		9E-13	6.80E-07	1.50E-09	6.89E-08	8.44E-10	1.52E-07
TCDDs (total)	Not Listed	Not Listed	0/5	ND	ND		9E-13	6.80E-07	1.50E-09	6.89E-08	8.44E-10	1.52E-07
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND		5E-13	2.6E-09	1.30E-09	9.75E-10	1.53E-10	6.50E-10
PeCDDs (total)	Not Listed	Not Listed	0/5	ND	ND		5E-13	1.10E-06	1.40E-09	1.11E-07	8.22E-10	2.45E-07
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND		1.3E-12	4.2E-09	1.50E-09	1.28E-09	2.34E-10	9.10E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND		1.1E-12	4E-09	1.45E-09	1.23E-09	2.18E-10	8.81E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND		1.2E-12	3.9E-09	1.50E-09	1.25E-09	2.27E-10	8.81E-10
HxCDDs (total)	Not Listed	Not Listed	0/5	ND	ND		1.2E-12	1.50E-06	1.90E-09	1.51E-07	1.17E-09	3.35E-07
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	1/4	1.7E-09	1.7E-09	ES2-05	4E-09	4.2E-09	2.05E-09	1.98E-09	1.97E-09	1.89E-10
HpCDDs (total)	Not Listed	Not Listed	2/5	1.7E-09	3.7E-09	ES2-05	4E-09	1.60E-06	2.20E-09	1.62E-07	7.40E-09	3.57E-07
OCDD	Not Listed	Not Listed	0/5	ND	ND		8.4E-09	2.80E-06	1.50E-08	2.89E-07	2.57E-08	6.21E-07
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	3.4E-11	5.9E-09	ES4.13E+04		N/A	4.20E-09	3.58E-09	1.37E-09	2.53E-09

**Table D4-9**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 General/ Source Area Sentinel Monitoring Well ES2-05**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Max Detect Location	Minimum Non-Detect	Maximum Non-Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Unfiltered</b>												
Antimony	8	80	1/5	0.0092	0.0092	ES2-05	0.01	0.06	0.0300	0.0208	0.0166	0.0126
Arsenic	0.9	9	1/5	0.013	0.013	ES2-05	0.01	0.01	0.00500	0.00660	0.00605	0.00358
Barium	50	100	3/5	0.027	0.25	ES2-05	0.2	0.2	0.100	0.108	0.0837	0.0852
Calcium	Not Listed	Not Listed	1/1	77	77	ES2-05		N/A	77.0	77.0	77.0	NA
Chromium	0.3	3	2/5	0.0026	0.0027	ES2-05	0.01	0.01	0.00500	0.00406	0.00388	0.00129
Cobalt	0.075	Not Listed	1/5	0.0019	0.0019	ES2-05	0.05	0.05	0.0250	0.0204	0.0149	0.0103
Copper	0.23	Not Listed	1/5	0.0037	0.0037	ES2-05	0.025	0.025	0.0130	0.0111	0.0101	0.00416
Cyanide	0.03	2	1/5	0.0058	0.0058	ES2-05	0.01	0.01	0.00500	0.00516	0.00515	0.000358
Iron	Not Listed	Not Listed	1/1	7	7	ES2-05		N/A	7.00	7.00	7.00	NA
Magnesium	Not Listed	Not Listed	1/1	15	15	ES2-05		N/A	15.0	15.0	15.0	NA
Manganese	Not Listed	Not Listed	1/1	2.3	2.3	ES2-05		N/A	2.30	2.30	2.30	NA
Mercury	0.02	0.2	2/5	0.00014	0.00021	ES2-05	0.0002	0.0002	0.000100	0.000130	0.000124	0.0000480
Potassium	Not Listed	Not Listed	1/1	5.4	5.4	ES2-05		N/A	5.40	5.40	5.40	NA
Silver	0.007	1	1/5	0.0026	0.0026	ES2-05	0.005	0.01	0.00250	0.00302	0.00289	0.00111
Sodium	Not Listed	Not Listed	1/1	66	66	ES2-05		N/A	66.0	66.0	66.0	NA
Zinc	0.9	50	4/5	0.0069	0.028	ES2-05	0.02	0.02	0.0100	0.0149	0.0127	0.00949
<b>Inorganics-Filtered</b>												
Barium	50	100	2/4	0.021	0.051	ES2-05	0.2	0.2	0.0755	0.0680	0.0572	0.0389
Mercury	0.02	0.2	3/4	0.00004	0.00022	ES2-05	0.0002	0.0002	0.000115	0.000123	0.000103	0.0000750
Vanadium	4	40	1/4	0.002	0.002	ES2-05	0.05	0.05	0.0250	0.0193	0.0133	0.0115
Zinc	0.9	50	2/4	0.008	0.014	ES2-05	0.02	0.02	0.0100	0.0105	0.0103	0.00252

**Notes:**

1. Samples were collected between 1991 and 2003 and were submitted to SGS Environmental Services, Inc. and CompuChem for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. Total TEQs (1998 WHO TEFs) could not be calculated for the 12/1991 sample due to insufficient data.
8. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D4-10**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well ES2-08**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Acetone	50	100	1/4	0.026	0.026	0.00500	0.0103	0.00755	0.0105
Total VOCs	Not Listed	Not Listed	1/4	0.026	0.026	0.100	0.0815	0.0714	0.0370
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.00042	0.0011	0.000610	0.000685	0.000644	0.000292
Aroclor-1260	Not Listed	Not Listed	4/4	0.00015	0.00032	0.000260	0.000248	0.000237	0.0000780
Total PCBs	0.01	0.1	4/4	0.00057	0.00132	0.000920	0.000928	0.000889	0.000300
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	2/4	0.000036	0.00034	0.0000345	0.000111	0.0000604	0.000153
Aroclor-1260	Not Listed	Not Listed	1/4	0.000021	0.000021	0.0000330	0.0000300	0.0000295	0.00000600
Total PCBs	0.01	0.1	2/4	0.000057	0.00034	0.0000450	0.000116	0.0000678	0.000150
<b>Semivolatile Organics</b>									
None Detected	--	--	0/4	--	--	--	--	--	--
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	1/4	8.9E-09	8.9E-09	1.25E-09	2.85E-09	2.95E-10	4.08E-09
TCDFs (total)	Not Listed	Not Listed	2/4	3E-09	1.90E-07	2.05E-09	4.85E-08	7.66E-10	9.43E-08
1,2,3,7,8-PeCDF	Not Listed	Not Listed	2/4	2.7E-09	1.1E-08	1.78E-09	3.64E-09	3.94E-10	5.04E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	3/4	2.1E-09	3.7E-08	2.30E-09	1.07E-08	3.82E-09	1.76E-08
PeCDFs (total)	Not Listed	Not Listed	3/4	5.2E-09	3.30E-07	9.60E-09	8.76E-08	1.27E-08	1.62E-07
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	2/4	1.4E-09	1.60E-07	1.75E-09	4.09E-08	8.18E-10	7.94E-08
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	2/4	1.2E-12	5.5E-08	1.38E-09	1.44E-08	5.80E-10	2.71E-08
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	1/4	3.4E-08	3.4E-08	2.00E-09	9.50E-09	4.92E-10	1.64E-08
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	1/4	3.6E-08	3.6E-08	1.40E-09	9.85E-09	2.42E-09	1.74E-08
HxCDFs (total)	Not Listed	Not Listed	3/4	4.5E-12	5.90E-07	1.75E-09	1.48E-07	1.67E-09	2.94E-07
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	2/4	3.4E-12	1.30E-07	2.15E-09	3.36E-08	1.17E-09	6.43E-08
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	1/4	8.00E-08	8.00E-08	2.80E-09	2.16E-08	4.64E-09	3.89E-08
HpCDFs (total)	Not Listed	Not Listed	1/4	3.90E-07	3.90E-07	3.15E-09	9.95E-08	8.87E-09	1.94E-07
OCDF	Not Listed	Not Listed	1/4	4.70E-07	4.70E-07	5.50E-09	1.21E-07	1.42E-08	2.33E-07

**Table D4-10**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well ES2-08**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	1.45E-09	1.23E-09	2.32E-10	8.65E-10
TCDDs (total)	Not Listed	Not Listed	1/4	5.7E-09	5.7E-09	1.80E-09	2.33E-09	3.36E-10	2.41E-09
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	1.40E-09	1.45E-09	2.43E-10	1.23E-09
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.90E-09	1.70E-09	3.34E-10	1.29E-09
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	2.45E-09	2.30E-09	3.37E-10	1.77E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	1/4	7E-09	7E-09	3.05E-09	3.28E-09	4.28E-10	2.93E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	2.25E-09	2.18E-09	3.21E-10	1.72E-09
HxCDDs (total)	Not Listed	Not Listed	2/4	9E-13	4.6E-08	3.25E-09	1.31E-08	7.99E-10	2.20E-08
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	1/4	5.4E-08	5.4E-08	3.50E-09	1.53E-08	1.12E-09	2.59E-08
HpCDDs (total)	Not Listed	Not Listed	1/4	1.20E-07	1.20E-07	3.50E-09	3.18E-08	1.16E-09	5.89E-08
OCDD	Not Listed	Not Listed	0/4	ND	ND	1.40E-08	6.58E-08	2.18E-08	1.10E-07
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	6.2E-10	5.7E-08	6.15E-09	1.75E-08	6.04E-09	2.65E-08
<b>Inorganics-Unfiltered</b>									
Arsenic	0.9	9	2/4	0.011	0.014	0.00800	0.00875	0.00788	0.00450
Barium	50	100	3/4	0.011	0.12	0.0995	0.0825	0.0601	0.0486
Beryllium	0.2	2	1/4	0.00097	0.00097	0.000500	0.000618	0.000590	0.000235
Cadmium	0.004	0.05	1/4	0.0012	0.0012	0.00250	0.00218	0.00208	0.000650
Chromium	0.3	3	2/4	0.026	0.045	0.0155	0.0203	0.0131	0.0192
Cobalt	0.075	Not Listed	2/4	0.023	0.029	0.0250	0.0255	0.0254	0.00252
Copper	0.23	Not Listed	2/4	0.04	0.055	0.0265	0.0303	0.0247	0.0208
Cyanide	0.03	2	1/4	0.0056	0.0056	0.00500	0.00515	0.00514	0.000300
Lead	0.01	0.15	2/4	0.021	0.024	0.0113	0.0120	0.00580	0.0122
Mercury	0.02	0.2	1/4	0.00086	0.00086	0.000100	0.000290	0.000171	0.000380
Nickel	0.2	2	2/4	0.042	0.064	0.0310	0.0365	0.0322	0.0211
Thallium	3	30	1/4	0.011	0.011	0.00500	0.00650	0.00609	0.00300
Vanadium	4	40	1/4	0.022	0.022	0.0250	0.0243	0.0242	0.00150
Zinc	0.9	50	3/4	0.014	0.17	0.0720	0.0810	0.0419	0.0813

**Table D4-10**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well ES2-08**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>									
Barium	50	100	3/4	0.012	0.017	0.0155	0.0358	0.0231	0.0429
Mercury	0.02	0.2	1/4	0.00083	0.00083	0.000100	0.000283	0.000170	0.000365
Nickel	0.2	2	1/4	0.0022	0.0022	0.0200	0.0156	0.0115	0.00890
Vanadium	4	40	1/4	0.0021	0.0021	0.0250	0.0193	0.0135	0.0115
Zinc	0.9	50	2/4	0.0047	0.0065	0.00825	0.00780	0.00743	0.00264

**Notes:**

1. Samples were collected between 2001 and 2003 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.



**Table D4-11**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well ES2-17**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Benzene	10	100	1/2	0.036	0.036	0.0305	0.0305	0.0300	0.00778
Chlorobenzene	1	10	2/2	2	5.2	3.60	3.60	3.22	2.26
Chloroethane	Not Listed	Not Listed	1/2	0.031	0.031	0.0280	0.0280	0.0278	0.00424
Ethylbenzene	5	100	1/2	0.0052	0.0052	0.0151	0.0151	0.0114	0.0140
Toluene	40	100	1/2	0.006	0.006	0.0155	0.0155	0.0122	0.0134
Xylenes (total)	5	100	1/2	0.015	0.015	0.0200	0.0200	0.0194	0.00707
Total VOCs	Not Listed	Not Listed	2/2	2	5.3	3.65	3.65	3.26	2.33
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	1/2	0.0048	0.0048	0.00490	0.00490	0.00490	0.000141
Aroclor-1260	Not Listed	Not Listed	2/2	0.0097	0.18	0.0949	0.0949	0.0418	0.120
Total PCBs	0.01	0.1	2/2	0.0145	0.18	0.0975	0.0975	0.0520	0.117
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	1/2	0.00053	0.00053	0.000282	0.000282	0.000132	0.000351
Aroclor-1260	Not Listed	Not Listed	1/2	0.00081	0.00081	0.000422	0.000422	0.000163	0.000549
Total PCBs	0.01	0.1	1/2	0.00134	0.00134	0.000667	0.000667	0.000207	0.000896
<b>Semivolatile Organics</b>									
1,2,4,5-Tetrachlorobenzene	Not Listed	Not Listed	2/2	0.062	0.089	0.0755	0.0755	0.0743	0.0191
1,2,4-Trichlorobenzene	50	100	2/2	1.3	3.6	2.45	2.45	2.16	1.63
1,2-Dichlorobenzene	2	20	2/2	0.012	0.038	0.0250	0.0250	0.0214	0.0184
1,3-Dichlorobenzene	50	100	2/2	0.029	0.069	0.0490	0.0490	0.0447	0.0283
1,4-Dichlorobenzene	8	80	2/2	0.1	0.6	0.350	0.350	0.245	0.354
2,4,5-Trichlorophenol	3	100	2/2	0.0043	0.01	0.00715	0.00715	0.00656	0.00403
2,4,6-Trichlorophenol	0.5	50	2/2	0.0064	0.012	0.00920	0.00920	0.00876	0.00396
2,4-Dichlorophenol	2	100	1/2	0.0033	0.0033	0.00415	0.00415	0.00406	0.00120
2-Chlorophenol	7	100	2/2	0.016	0.022	0.0190	0.0190	0.0188	0.00424
Aniline	Not Listed	Not Listed	2/2	0.0068	0.032	0.0194	0.0194	0.0148	0.0178
Pentachlorobenzene	Not Listed	Not Listed	2/2	0.045	0.063	0.0540	0.0540	0.0532	0.0127
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--

**Table D4-11  
Statistical Summary Of Historical Groundwater Analytical Results  
East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well ES2-17**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	2/2	6.9E-11	1.3E-07	6.50E-08	6.50E-08	2.99E-09	9.19E-08
TCDFs (total)	Not Listed	Not Listed	2/2	2.2E-10	7.8E-07	3.90E-07	3.90E-07	1.31E-08	5.51E-07
1,2,3,7,8-PeCDF	Not Listed	Not Listed	1/2	1.20E-07	1.2E-07	6.75E-08	6.75E-08	4.24E-08	7.42E-08
2,3,4,7,8-PeCDF	Not Listed	Not Listed	2/2	1.10E-07	3.9E-07	2.50E-07	2.50E-07	2.07E-07	1.98E-07
PeCDFs (total)	Not Listed	Not Listed	2/2	3.30E-07	2.40E-06	1.37E-06	1.37E-06	8.90E-07	1.46E-06
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	2/2	5.20E-07	2.10E-06	1.31E-06	1.31E-06	1.04E-06	1.12E-06
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	1/2	1.90E-07	1.9E-07	1.07E-07	1.07E-07	6.61E-08	1.18E-07
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	2/2	1.30E-07	1.8E-07	1.55E-07	1.55E-07	1.53E-07	3.54E-08
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	2/2	2.30E-07	3.3E-07	2.80E-07	2.80E-07	2.75E-07	7.07E-08
HxCDFs (total)	Not Listed	Not Listed	2/2	6.00E-08	5.30E-06	2.68E-06	2.68E-06	5.64E-07	3.71E-06
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	2/2	6.50E-07	2.40E-06	1.53E-06	1.53E-06	1.25E-06	1.24E-06
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	2/2	3.10E-07	8.8E-07	5.95E-07	5.95E-07	5.22E-07	4.03E-07
HpCDFs (total)	Not Listed	Not Listed	1/2	6.70E-06	6.70E-06	3.37E-06	3.37E-06	4.56E-07	4.72E-06
OCDF	Not Listed	Not Listed	2/2	6.60E-07	1.50E-05	7.83E-06	7.83E-06	3.15E-06	1.01E-05
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/2	ND	ND	1.34E-09	1.34E-09	1.02E-09	1.22E-09
TCDDs (total)	Not Listed	Not Listed	0/2	ND	ND	3.99E-09	3.99E-09	1.88E-09	4.97E-09
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/2	ND	ND	4.55E-09	4.55E-09	4.31E-09	2.05E-09
PeCDDs (total)	Not Listed	Not Listed	0/2	ND	ND	1.15E-08	1.15E-08	1.01E-08	7.78E-09
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/2	ND	ND	8.75E-09	8.75E-09	8.12E-09	4.60E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/2	ND	ND	7.85E-09	7.85E-09	7.19E-09	4.45E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/2	ND	ND	7.90E-09	7.90E-09	7.27E-09	4.38E-09
HxCDDs (total)	Not Listed	Not Listed	1/2	1.30E-06	1.30E-06	6.53E-07	6.53E-07	8.06E-08	9.16E-07
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	0/2	ND	ND	4.45E-09	4.45E-09	4.42E-09	7.78E-10
HpCDDs (total)	Not Listed	Not Listed	2/2	2.8E-08	2.30E-06	1.16E-06	1.16E-06	2.54E-07	1.61E-06
OCDD	Not Listed	Not Listed	0/2	ND	ND	1.27E-06	1.27E-06	3.20E-07	1.74E-06
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	2/2	1.60E-07	5.4E-07	3.50E-07	3.50E-07	2.94E-07	2.69E-07

**Table D4-11**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well ES2-17**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Unfiltered</b>									
Arsenic	0.9	9	2/2	0.011	0.011	0.0110	0.0110	0.0110	0
Barium	50	100	2/2	0.2	0.25	0.225	0.225	0.224	0.0354
Chromium	0.3	3	1/2	0.0039	0.0039	0.00445	0.00445	0.00442	0.000778
Cyanide	0.03	2	2/2	0.0036	0.005	0.00430	0.00430	0.00424	0.000990
Lead	0.01	0.15	1/2	0.0032	0.0032	0.00285	0.00285	0.00283	0.000495
Sulfide	Not Listed	Not Listed	1/2	6.4	6.4	4.45	4.45	4.00	2.76
Zinc	0.9	50	1/2	0.0058	0.0058	0.00790	0.00790	0.00762	0.00297
<b>Inorganics-Filtered</b>									
None Detected	--	--	0/2	--	--	--	--	--	--

**Notes:**

1. Samples were collected between 2001 and 2002 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D4-12**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well 64**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
1,1,1-Trichloroethane	20	100	8/11	0.0025	11	0.0260	1.04	0.0309	3.30
1,1-Dichloroethane	20	100	11/11	0.014	2.4	0.0680	0.335	0.104	0.697
1,1-Dichloroethene	30	100	1/11	0.24	0.24	0.0100	0.0340	0.0113	0.0693
1,2-Dichloroethane	20	100	4/11	0.0063	1.9	0.0100	0.192	0.0202	0.567
1,2-Dichloroethene (total)	Not Listed	Not Listed	1/1	5.4	5.4	5.40	5.40	5.40	NA
Benzene	10	100	11/11	0.0036	0.14	0.0110	0.0304	0.0154	0.0409
Carbon Tetrachloride	5	50	1/11	0.044	0.044	0.0100	0.0295	0.0134	0.0487
Chlorobenzene	1	10	11/11	0.14	0.87	0.460	0.495	0.441	0.222
Chloroethane	Not Listed	Not Listed	9/11	0.33	3.3	0.520	1.15	0.539	1.13
Chloroform	20	100	1/11	0.52	0.52	0.0100	0.0596	0.0141	0.153
Dichlorodifluoromethane	Not Listed	Not Listed	1/10	0.026	0.026	0.0165	0.0197	0.0136	0.0159
Ethylbenzene	5	100	11/11	0.0084	0.32	0.0550	0.127	0.0611	0.130
Methylene Chloride	50	100	7/11	0.0056	0.6	0.0310	0.0939	0.0344	0.172
Tetrachloroethene	30	100	2/11	0.003	0.1	0.0100	0.0208	0.0106	0.0286
Toluene	40	100	11/11	0.0017	1.7	0.00890	0.249	0.0280	0.507
trans-1,2-Dichloroethene	50	100	1/10	0.0061	0.0061	0.0100	0.0137	0.00999	0.0117
Trichloroethene	5	50	3/11	0.013	1.2	0.0130	0.123	0.0164	0.357
Vinyl Chloride	50	100	6/11	0.0017	1.5	0.0200	0.182	0.0289	0.443
Xylenes (total)	5	100	11/11	0.01	0.94	0.0950	0.288	0.105	0.360
Total VOCs	Not Listed	Not Listed	11/11	0.21	29	1.30	4.81	2.07	8.26
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.000055	0.00025	0.0000800	0.000116	0.0000953	0.0000914
Aroclor-1260	Not Listed	Not Listed	1/4	0.00017	0.00017	0.0000330	0.0000673	0.0000497	0.0000685
Total PCBs	0.01	0.1	4/4	0.000055	0.00027	0.000155	0.000159	0.000122	0.000117
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	2/4	0.000024	0.000053	0.0000415	0.0000400	0.0000381	0.0000138
Aroclor-1260	Not Listed	Not Listed	1/4	0.00003	0.00003	0.0000330	0.0000365	0.0000358	0.00000911
Total PCBs	0.01	0.1	2/4	0.000053	0.000054	0.0000515	0.0000475	0.0000466	0.00000981

**Table D4-12**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well 64**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Semivolatile Organics</b>									
1,2,4-Trichlorobenzene	50	100	2/5	0.0038	0.031	0.00500	0.00996	0.00682	0.0118
1,2-Dichlorobenzene	2	20	5/5	0.0083	0.039	0.0390	0.0268	0.0213	0.0167
1,3-Dichlorobenzene	50	100	5/5	0.006	0.05	0.0180	0.0246	0.0194	0.0174
1,4-Dichlorobenzene	8	80	5/5	0.022	0.19	0.0650	0.0854	0.0671	0.0649
2,4,5-Trichlorophenol	3	100	1/5	0.001	0.001	0.00500	0.00420	0.00362	0.00179
2,4-Dichlorophenol	2	100	1/5	0.02	0.02	0.00500	0.00800	0.00660	0.00671
2,4-Dimethylphenol	50	100	2/5	0.0067	0.03	0.00500	0.0103	0.00759	0.0110
2-Chlorophenol	7	100	1/5	0.005	0.005	0.00500	0.00500	0.00500	0
2-Methylnaphthalene	20	100	2/5	0.003	0.0031	0.00500	0.00422	0.00410	0.00107
2-Methylphenol	Not Listed	Not Listed	3/5	0.0048	0.096	0.00500	0.0239	0.0100	0.0403
3&4-Methylphenol	Not Listed	Not Listed	1/4	0.0069	0.0069	0.00500	0.00548	0.00542	0.000950
3-Methylphenol	Not Listed	Not Listed	1/1	0.078	0.078	0.0780	0.0780	0.0780	NA
4-Chloro-3-Methylphenol	Not Listed	Not Listed	2/5	0.0054	0.026	0.00500	0.00928	0.00706	0.00935
4-Methylphenol	Not Listed	Not Listed	1/1	0.078	0.078	0.0780	0.0780	0.0780	NA
Acenaphthene	6	60	1/5	0.002	0.002	0.00500	0.00440	0.00416	0.00134
Acetophenone	Not Listed	Not Listed	1/5	0.012	0.012	0.00500	0.00640	0.00596	0.00313
bis(2-Ethylhexyl)phthalate	50	100	2/5	0.002	0.013	0.00300	0.00480	0.00371	0.00460
Diethylphthalate	9	100	1/5	0.001	0.001	0.00500	0.00420	0.00362	0.00179
Di-n-Butylphthalate	Not Listed	Not Listed	1/5	0.003	0.003	0.00500	0.00460	0.00451	0.000894
Fluorene	0.04	0.4	1/5	0.001	0.001	0.00500	0.00420	0.00362	0.00179
Isophorone	Not Listed	Not Listed	1/5	0.002	0.002	0.00500	0.00440	0.00416	0.00134
Naphthalene	20	100	5/5	0.018	0.042	0.0280	0.0292	0.0279	0.00986
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--

**Table D4-12**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well 64**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/5	ND	ND	1.10E-09	3.46E-08	5.40E-10	7.57E-08
TCDFs (total)	Not Listed	Not Listed	1/5	1.2E-12	1.2E-12	1.90E-09	5.90E-08	1.09E-09	1.29E-07
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	8.75E-10	7.63E-10	1.74E-10	6.47E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	1/4	6E-12	6E-12	5.00E-10	5.77E-10	2.10E-10	5.37E-10
PeCDFs (total)	Not Listed	Not Listed	2/5	2.3E-11	1.3E-08	1.80E-09	7.32E-08	3.00E-09	1.55E-07
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	2/4	1.7E-11	2.3E-09	1.30E-09	1.23E-09	5.07E-10	9.36E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	1/4	6.3E-12	6.3E-12	8.95E-10	7.74E-10	2.69E-10	6.39E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	1/4	3.5E-12	3.5E-12	9.25E-10	7.88E-10	2.39E-10	6.31E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.34E-09	1.15E-09	7.56E-10
HxCDFs (total)	Not Listed	Not Listed	2/5	5.8E-11	9E-09	1.30E-09	1.22E-07	3.51E-09	2.67E-07
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	2/4	1.7E-11	2E-09	1.00E-09	1.00E-09	4.25E-10	8.26E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	1/4	1E-11	1E-11	1.00E-09	8.28E-10	3.30E-10	6.14E-10
HpCDFs (total)	Not Listed	Not Listed	2/5	5.1E-11	2E-09	1.30E-09	1.61E-07	2.64E-09	3.57E-07
OCDF	Not Listed	Not Listed	0/5	ND	ND	3.10E-09	2.28E-07	1.28E-08	4.88E-07
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	6.67E-08	7.43E-10	1.47E-07
TCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	6.67E-08	7.77E-10	1.47E-07
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	9.00E-10	7.75E-10	1.70E-10	6.39E-10
PeCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.01E-07	8.71E-10	2.23E-07
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.23E-09	1.14E-09	2.04E-10	9.82E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.20E-09	1.13E-09	2.08E-10	9.53E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.18E-09	1.14E-09	2.03E-10	9.96E-10
HxCDDs (total)	Not Listed	Not Listed	1/5	3.7E-12	3.7E-12	2.10E-09	2.01E-07	1.88E-09	4.47E-07
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	1/4	4.2E-09	4.2E-09	2.95E-09	3.25E-09	2.62E-09	2.27E-09
HpCDDs (total)	Not Listed	Not Listed	1/5	2.4E-11	2.4E-11	1.70E-09	1.61E-07	2.70E-09	3.57E-07
OCDD	Not Listed	Not Listed	1/5	4.2E-09	4.2E-09	1.20E-08	3.32E-07	2.70E-08	7.09E-07
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	3E-10	4.5E-09	3.20E-09	2.80E-09	1.86E-09	2.03E-09

**Table D4-12**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well 64**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Unfiltered</b>									
Antimony	8	80	1/5	0.0058	0.0058	0.0300	0.0202	0.0151	0.0135
Arsenic	0.9	9	5/5	0.015	0.021	0.0200	0.0188	0.0187	0.00239
Barium	50	100	4/5	0.082	0.3	0.100	0.136	0.119	0.0922
Calcium	Not Listed	Not Listed	1/1	110	110	110	110	110	NA
Copper	0.23	Not Listed	2/5	0.0046	0.0046	0.0130	0.00964	0.00858	0.00460
Cyanide	0.03	2	5/5	0.0039	0.013	0.0100	0.00954	0.00883	0.00356
Iron	Not Listed	Not Listed	1/1	23	23	23.0	23.0	23.0	NA
Magnesium	Not Listed	Not Listed	1/1	38	38	38.0	38.0	38.0	NA
Manganese	Not Listed	Not Listed	1/1	1.7	1.7	1.70	1.70	1.70	NA
Mercury	0.02	0.2	1/5	0.00011	0.00011	0.000100	0.000102	0.000102	0.00000447
Nickel	0.2	2	1/5	0.0059	0.0059	0.0200	0.0172	0.0157	0.00631
Sodium	Not Listed	Not Listed	1/1	48	48	48.0	48.0	48.0	NA
Sulfide	Not Listed	Not Listed	1/5	6.7	6.7	2.50	3.34	3.04	1.88
Zinc	0.9	50	4/5	0.0064	0.036	0.0100	0.0177	0.0140	0.0134

**Table D4-12**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well 64**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>									
Barium	50	100	3/4	0.017	0.057	0.0565	0.0575	0.0483	0.0339
Cyanide	0.03	2	2/2	0.011	0.012	0.0115	0.0115	0.0115	0.000707
Cyanide-MADEP (PAC)	0.03	2	1/1	0.0037	0.0037	0.00370	0.00370	0.00370	NA
Mercury	0.02	0.2	1/4	0.00009	0.00009	0.000100	0.0000975	0.0000974	0.00000500
Vanadium	4	40	1/4	0.0012	0.0012	0.0250	0.0191	0.0117	0.0119
Zinc	0.9	50	1/4	0.0081	0.0081	0.0100	0.00953	0.00949	0.000950

**Notes:**

1. Samples were collected between 1991 and 2012 and were submitted to SGS Environmental Services, Inc. and CompuChem for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.



**Table D4-13**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 General/Source Area Sentinel Monitoring Well GMA1-13**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Xylenes (total)	5	100	1/2	0.001	0.001	0.00400	0.00400	0.00387	0.00141
Total VOCs	Not Listed	Not Listed	1/2	0.001	0.001	0.0755	0.0755	0.0714	0.0346
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	2/2	0.000046	0.00007	0.0000615	0.0000615	0.0000609	0.0000120
Total PCBs	0.01	0.1	2/2	0.000046	0.00007	0.0000615	0.0000615	0.0000609	0.0000120
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	4/7	0.000033	0.00022	0.0000550	0.0000784	0.0000632	0.0000656
Total PCBs	0.01	0.1	4/7	0.000033	0.00022	0.0000550	0.0000784	0.0000632	0.0000656
<b>Semivolatile Organics</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/2	ND	ND	4.45E-10	4.45E-10	4.32E-10	1.48E-10
TCDFs (total)	Not Listed	Not Listed	0/2	ND	ND	4.45E-10	4.45E-10	4.32E-10	1.48E-10
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/2	ND	ND	3.15E-10	3.15E-10	3.00E-10	1.34E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	0/2	ND	ND	2.90E-10	2.90E-10	2.84E-10	8.49E-11
PeCDFs (total)	Not Listed	Not Listed	0/2	ND	ND	2.85E-10	2.85E-10	2.77E-10	9.19E-11
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	0/2	ND	ND	8.40E-10	8.40E-10	7.03E-10	6.51E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	0/2	ND	ND	7.35E-10	7.35E-10	4.70E-10	7.99E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/2	ND	ND	7.65E-10	7.65E-10	5.47E-10	7.57E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/2	ND	ND	7.50E-10	7.50E-10	5.10E-10	7.78E-10
HxCDFs (total)	Not Listed	Not Listed	0/2	ND	ND	7.35E-10	7.35E-10	4.70E-10	7.99E-10
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	0/2	ND	ND	1.60E-09	1.60E-09	1.57E-09	4.24E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/2	ND	ND	7.85E-10	7.85E-10	5.92E-10	7.28E-10
HpCDFs (total)	Not Listed	Not Listed	0/2	ND	ND	7.55E-10	7.55E-10	5.22E-10	7.71E-10
OCDF	Not Listed	Not Listed	1/2	1.8E-08	2.5E-08	1.23E-08	1.23E-08	7.42E-09	1.38E-08
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/2	ND	ND	5.85E-10	5.85E-10	4.93E-10	4.45E-10
TCDDs (total)	Not Listed	Not Listed	0/2	ND	ND	9.85E-10	9.85E-10	6.77E-10	1.01E-09
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/2	ND	ND	7.95E-10	7.95E-10	6.14E-10	7.14E-10
PeCDDs (total)	Not Listed	Not Listed	1/2	9.2E-10	9.2E-10	6.05E-10	6.05E-10	5.17E-10	4.45E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/2	ND	ND	7.75E-10	7.75E-10	5.70E-10	7.42E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/2	ND	ND	7.60E-10	7.60E-10	5.35E-10	7.64E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/2	ND	ND	7.60E-10	7.60E-10	5.35E-10	7.64E-10
HxCDDs (total)	Not Listed	Not Listed	0/2	ND	ND	7.60E-10	7.60E-10	5.35E-10	7.64E-10
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	2/2	1.1E-09	1.8E-09	1.23E-09	1.23E-09	1.08E-09	8.13E-10

**Table D4-13**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 General/Source Area Sentinel Monitoring Well GMA1-13**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
HpCDDs (total)	Not Listed	Not Listed	1/2	1.1E-09	1.1E-09	7.75E-10	7.75E-10	7.65E-10	1.77E-10
OCDD	Not Listed	Not Listed	1/2	0	4.6E-09	4.65E-09	4.65E-09	4.45E-09	1.91E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	2/2	8.7E-10	3.3E-09	2.13E-09	2.13E-09	1.77E-09	1.66E-09
<b>Inorganics-Unfiltered</b>									
Antimony	8	80	1/2	0.012	0.012	0.0210	0.0210	0.0190	0.0127
Barium	50	100	2/2	0.0073	0.0088	0.00810	0.00810	0.00807	0.000990
Beryllium	0.2	2	1/2	0.0011	0.0011	0.000800	0.000800	0.000742	0.000424
Cadmium	0.004	0.05	1/2	0.0013	0.0013	0.00190	0.00190	0.00180	0.000849
Chromium	0.3	3	1/2	0.002	0.0024	0.00360	0.00360	0.00332	0.00198
Copper	0.23	Not Listed	1/2	0.0015	0.0026	0.00755	0.00755	0.00522	0.00771
Selenium	0.1	1	2/2	0.0091	0.012	0.0106	0.0106	0.0104	0.00205
Thallium	3	30	1/2	0	0.0089	0.00600	0.00600	0.00592	0.00141
Zinc	0.9	50	2/2	0.0058	0.015	0.0104	0.0104	0.00933	0.00651
<b>Inorganics-Filtered</b>									
Antimony	8	80	1/2	0.0086	0.01	0.0197	0.0197	0.0167	0.0146
Barium	50	100	2/2	0.0079	0.0088	0.00845	0.00845	0.00844	0.000495
Beryllium	0.2	2	1/2	0.0004	0.00075	0.000540	0.000540	0.000539	0.0000566
Chromium	0.3	3	2/2	0.0014	0.0021	0.00175	0.00175	0.00171	0.000495
Copper	0.23	Not Listed	1/2	0.0062	0.007	0.00980	0.00980	0.00926	0.00453
Zinc	0.9	50	1/2	0.0026	0.003	0.00640	0.00640	0.00529	0.00509

**Notes:**

1. Samples were collected between 2003 and 2008 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D4-14**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 General/Source Area Sentinel Monitoring Well GMA1-24R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
1,1-Dichloroethane	20	100	1/4	0.0012	0.0013	0.00375	0.00345	0.003	0.00186
Benzene	10	100	4/4	0.0014	0.0054	0.00155	0.00248	0.00206	0.00195
Chlorobenzene	1	10	4/4	0.047	0.11	0.085	0.082	0.0783	0.0271
Toluene	40	100	2/4	0.00032	0.00075	0.00288	0.00277	0.00158	0.00258
Trichloroethene	5	50	1/4	0.00042	0.00042	0.00375	0.00323	0.00226	0.00221
Vinyl Chloride	50	100	1/4	0.00058	0.00058	0.00375	0.00327	0.00245	0.00215
Total VOCs	Not Listed	Not Listed	4/4	0.051	0.11	0.088	0.0845	0.0812	0.0259
<b>PCBs-Filtered</b>									
Aroclor-1248	Not Listed	Not Listed	2/4	0.000033	0.00012	0.000049	0.0000623	0.0000531	0.0000415
Total PCBs	0.01	0.1	2/4	0.000033	0.00012	0.000049	0.0000623	0.0000531	0.0000415
<b>Semivolatile Organics</b>									
1,2-Dichlorobenzene	2	20	3/4	0.0032	0.0045	0.0042	0.00415	0.00409	0.000777
1,3-Dichlorobenzene	50	100	4/4	0.019	0.026	0.024	0.0238	0.0236	0.00263
1,4-Dichlorobenzene	8	80	4/4	0.11	0.14	0.135	0.13	0.129	0.0141
2,4-Dimethylphenol	50	100	2/4	0.0043	0.048	0.005	0.0157	0.00862	0.0216
2-Methylnaphthalene	20	100	1/4	0.0014	0.0014	0.0049	0.00405	0.0036	0.00177
2-Methylphenol	Not Listed	Not Listed	1/4	0.011	0.011	0.005	0.00645	0.00603	0.00303
3&4-Methylphenol	Not Listed	Not Listed	1/4	0.1	0.1	0.005	0.0287	0.0105	0.0475
Acenaphthene	6	60	2/4	0.0049	0.0067	0.005	0.0054	0.00535	0.000868
Anthracene	0.03	0.6	1/4	0.0014	0.0014	0.0049	0.00405	0.0036	0.00177
Fluoranthene	0.2	2	1/4	0.0021	0.0021	0.0049	0.00423	0.00398	0.00142
Fluorene	0.04	0.4	1/4	0.0029	0.0029	0.0049	0.00443	0.00432	0.00102
Naphthalene	20	100	1/4	0.0025	0.0025	0.0049	0.00433	0.00416	0.00122
Phenanthrene	10	100	1/4	0.0077	0.0077	0.005	0.00563	0.00551	0.00139
Pyrene	0.02	0.8	1/4	0.0018	0.0018	0.0049	0.00415	0.00383	0.00157

**Table D4-14**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 General/Source Area Sentinel Monitoring Well GMA1-24R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/4	ND	ND	3.70E-09	3.63E-09	3.21E-09	1.92E-09
TCDFs (total)	Not Listed	Not Listed	2/4	3.10E-08	3.10E-08	5.25E-09	1.10E-08	6.86E-09	1.34E-08
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	2.70E-09	8.00E-09	2.98E-09	1.21E-08
2,3,4,7,8-PeCDF	Not Listed	Not Listed	2/4	0	5.20E-09	3.10E-09	5.69E-09	2.93E-09	7.04E-09
PeCDFs (total)	Not Listed	Not Listed	3/4	1.30E-08	3.60E-08	1.10E-08	1.34E-08	6.83E-09	1.28E-08
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	1/4	0	7.60E-09	4.20E-09	6.49E-09	3.58E-09	7.22E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	1/4	0	6.70E-09	2.40E-09	5.34E-09	2.54E-09	7.21E-09
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/4	ND	ND	3.15E-09	8.24E-09	3.39E-09	1.20E-08
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	2.65E-09	7.96E-09	3.00E-09	1.21E-08
HxCDFs (total)	Not Listed	Not Listed	2/4	0	4.40E-08	6.15E-09	1.20E-08	5.33E-09	1.56E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	2/4	0	1.20E-08	4.50E-09	7.16E-09	3.96E-09	8.11E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/4	ND	ND	3.55E-09	8.49E-09	3.90E-09	1.18E-08
HpCDFs (total)	Not Listed	Not Listed	2/4	0	1.20E-08	5.10E-09	7.51E-09	4.53E-09	7.92E-09
OCDF	Not Listed	Not Listed	1/4	0	2.20E-08	5.40E-09	1.21E-08	6.24E-09	1.61E-08
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	2.85E-09	2.88E-09	2.26E-09	2.00E-09
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	2.85E-09	2.88E-09	2.26E-09	2.00E-09
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	2.30E-09	7.80E-09	2.86E-09	1.22E-08
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	2.30E-09	7.80E-09	2.86E-09	1.22E-08
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	2.90E-09	8.15E-09	3.44E-09	1.20E-08
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	2.60E-09	8.01E-09	3.33E-09	1.21E-08
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	2.95E-09	8.19E-09	3.54E-09	1.20E-08
HxCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	3.25E-09	8.34E-09	3.82E-09	1.19E-08
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	0/4	ND	ND	3.60E-09	8.65E-09	4.47E-09	1.17E-08
HpCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	3.80E-09	8.75E-09	4.66E-09	1.16E-08
OCDD	Not Listed	Not Listed	1/4	0	3.60E-08	7.55E-09	1.50E-08	7.96E-09	1.89E-08
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	2.30E-09	6.50E-08	1.01E-08	2.19E-08	1.08E-08	2.91E-08

**Table D4-14**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 General/Source Area Sentinel Monitoring Well GMA1-24R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Unfiltered</b>									
None Detected	--	--	0/4	--	--	--	--	--	--
<b>Inorganics-Filtered</b>									
Barium	50	100	4/4	0.103	1.57	0.22	0.535	0.286	0.715
Beryllium	0.2	2	1/4	0.0112	0.0112	0.005	0.00578	0.00564	0.00155
Chromium	0.3	3	1/4	0.00192	0.00192	0.005	0.00423	0.00393	0.00155
Cobalt	0.075	Not Listed	2/4	0.00237	0.00484	0.0046	0.00415	0.00398	0.00123
Copper	0.23	Not Listed	1/4	0.0012	0.0012	0.005	0.00405	0.0035	0.0019
Nickel	0.2	2	1/4	0.0029	0.0029	0.005	0.00448	0.00436	0.00105
Selenium	0.1	1	1/4	0	0.00356	0.01	0.0092	0.00908	0.0016
Tin	Not Listed	Not Listed	1/4	0.00751	0.00751	0.05	0.0394	0.0311	0.0213
Zinc	0.9	50	2/4	0.00412	0.0681	0.01	0.0231	0.0131	0.0301

**Notes:**

1. Samples were collected between 2010 and 2012 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D4-15**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well GMA1-30**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
1,1-Dichloroethane	20	100	1/4	0.0013	0.0013	0.00450	0.00508	0.00402	0.00364
Benzene	10	100	4/4	0.012	0.25	0.0440	0.0850	0.0449	0.106
Chlorobenzene	1	10	4/4	0.12	0.46	0.170	0.225	0.197	0.145
Vinyl Chloride	50	100	1/4	0.0012	0.0012	0.00450	0.00505	0.00394	0.00367
Total VOCs	Not Listed	Not Listed	4/4	0.13	0.71	0.215	0.310	0.251	0.252
<b>PCBs-Filtered</b>									
Aroclor-1248	Not Listed	Not Listed	2/4	0.000044	0.000067	0.0000385	0.0000440	0.0000420	0.0000163
Aroclor-1254	Not Listed	Not Listed	1/4	0.00023	0.00023	0.0000330	0.0000820	0.0000532	0.0000987
Aroclor-1260	Not Listed	Not Listed	1/4	0.000094	0.000094	0.0000330	0.0000480	0.0000425	0.0000307
Total PCBs	0.01	0.1	2/4	0.000044	0.000391	0.0000385	0.000125	0.0000652	0.000177
<b>Semivolatile Organics</b>									
1,2,4,5-Tetrachlorobenzene	Not Listed	Not Listed	1/4	0.0035	0.0037	0.00290	0.00295	0.00292	0.000520
1,2-Dichlorobenzene	2	20	3/4	0.0022	0.0055	0.00250	0.00318	0.00294	0.00156
1,3-Dichlorobenzene	50	100	4/4	0.0082	0.014	0.00915	0.0101	0.00989	0.00266
1,4-Dichlorobenzene	8	80	4/4	0.038	0.065	0.0460	0.0488	0.0478	0.0115
2-Chlorophenol	7	100	1/4	0.0016	0.0017	0.00255	0.00248	0.00242	0.000591
Acenaphthene	6	60	4/4	0.0057	0.011	0.00720	0.00778	0.00754	0.00229
Fluorene	0.04	0.4	1/4	0.0026	0.0027	0.00270	0.00273	0.00271	0.000287
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/4	ND	ND	4.60E-09	4.18E-09	3.71E-09	1.93E-09
TCDFs (total)	Not Listed	Not Listed	1/4	2.20E-08	2.80E-08	4.60E-09	8.93E-09	5.30E-09	1.08E-08
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	3.30E-09	8.06E-09	3.47E-09	1.14E-08
2,3,4,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	3.30E-09	8.05E-09	3.40E-09	1.14E-08
PeCDFs (total)	Not Listed	Not Listed	2/4	8.2E-09	2.20E-08	5.05E-09	5.94E-09	3.39E-09	5.75E-09
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	2.20E-09	2.11E-09	1.74E-09	1.23E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	2.65E-09	7.71E-09	3.12E-09	1.16E-08
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/4	ND	ND	3.35E-09	8.09E-09	3.64E-09	1.14E-08
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	2.85E-09	7.83E-09	3.30E-09	1.15E-08
HxCDFs (total)	Not Listed	Not Listed	1/4	9.6E-09	9.6E-09	4.80E-09	8.81E-09	4.17E-09	1.11E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	0/4	ND	ND	2.00E-09	1.86E-09	1.60E-09	1.02E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/4	ND	ND	3.40E-09	8.16E-09	3.96E-09	1.13E-08
HpCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	3.40E-09	8.16E-09	3.96E-09	1.13E-08
OCDF	Not Listed	Not Listed	0/4	ND	ND	6.50E-09	1.61E-08	7.36E-09	2.27E-08

**Table D4-15**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well GMA1-30**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	3.30E-09	3.13E-09	2.62E-09	1.76E-09
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	3.30E-09	3.13E-09	2.62E-09	1.76E-09
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	2.75E-09	7.90E-09	3.76E-09	1.14E-08
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	2.75E-09	7.90E-09	3.76E-09	1.14E-08
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	3.15E-09	8.08E-09	3.95E-09	1.13E-08
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	2.90E-09	7.98E-09	3.89E-09	1.14E-08
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	3.20E-09	8.13E-09	4.08E-09	1.13E-08
HxCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	3.20E-09	8.13E-09	4.08E-09	1.13E-08
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	0/4	ND	ND	4.50E-09	8.78E-09	4.84E-09	1.09E-08
HpCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	4.50E-09	8.78E-09	4.84E-09	1.09E-08
OCDD	Not Listed	Not Listed	0/4	ND	ND	7.40E-09	6.25E-09	5.28E-09	3.16E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	3.00E-09	6.00E-08	1.06E-08	2.10E-08	1.17E-08	2.63E-08
<b>Inorganics-Unfiltered</b>									
Sulfide	Not Listed	Not Listed	0/4	--	--	--	--	--	--
<b>Inorganics-Filtered</b>									
Barium	50	100	4/4	0.378	0.656	0.495	0.503	0.492	0.119
Chromium	0.3	3	2/4	0.00156	0.00415	0.00460	0.00395	0.00360	0.00161
Cobalt	0.075	Not Listed	1/4	0.00208	0.00208	0.00500	0.00463	0.00457	0.000750
Copper	0.23	Not Listed	1/4	0.00136	0.00136	0.00500	0.00410	0.00364	0.00180
Lead	0.01	0.15	1/5	0.0069	0.0069	0.00500	0.00448	0.00336	0.00237
Nickel	0.2	2	1/4	0.00571	0.0113	0.00500	0.00588	0.00571	0.00175
Tin	Not Listed	Not Listed	1/4	0.00676	0.00676	0.0500	0.0392	0.0304	0.0216
Zinc	0.9	50	1/4	0.00494	0.00494	0.0100	0.00873	0.00837	0.00255

**Notes:**

1. Samples were collected between 2010 and 2013 and were submitted to SGS Environmental Services, Inc. and Accutest Laboratories for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D4-16**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well HR-G1-MW-3**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
1,1-Dichloroethane	20	100	4/4	0.0045	0.0093	0.00665	0.00678	0.00647	0.00234
1,2-Dichloroethane	20	100	1/4	0.003	0.003	0.0025	0.00263	0.00262	0.00025
Benzene	10	100	4/4	0.004	0.012	0.0076	0.0078	0.00725	0.00328
Chlorobenzene	1	10	4/4	0.19	0.28	0.2	0.218	0.215	0.0419
Chloroethane	Not Listed	Not Listed	4/4	0.013	0.065	0.026	0.0325	0.0268	0.0234
Total VOCs	Not Listed	Not Listed	4/4	0.22	0.33	0.255	0.265	0.261	0.0507
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.00009	0.00096	0.000265	0.000395	0.000279	0.000386
Aroclor-1260	Not Listed	Not Listed	2/4	0.00016	0.00096	0.0000965	0.000297	0.000114	0.000446
Total PCBs	0.01	0.1	4/4	0.00009	0.00124	0.000685	0.000665	0.000454	0.000506
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	1/4	0.00017	0.00017	0.000033	0.0000673	0.0000497	0.0000685
Total PCBs	0.01	0.1	1/4	0.00017	0.00017	0.000033	0.0000673	0.0000497	0.0000685
<b>Semivolatile Organics</b>									
1,3-Dichlorobenzene	50	100	4/4	0.0076	0.026	0.0175	0.0172	0.0156	0.00779
1,4-Dichlorobenzene	8	80	4/4	0.041	0.09	0.0585	0.062	0.0596	0.0205
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
TCDFs (total)	Not Listed	Not Listed	3/4	1.10E-11	4.30E-08	7.50E-09	1.45E-08	1.60E-09	2.00E-08
2,3,4,7,8-PeCDF	Not Listed	Not Listed	1/4	1.90E-09	1.90E-09	1.30E-09	1.33E-09	1.27E-09	4.50E-10
PeCDFs (total)	Not Listed	Not Listed	2/4	1.60E-08	3.90E-08	9.70E-09	1.49E-08	7.25E-09	1.73E-08
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	1/4	2.40E-12	2.40E-12	1.25E-09	1.00E-09	2.74E-10	6.77E-10
HxCDFs (total)	Not Listed	Not Listed	1/4	3.20E-09	3.20E-09	2.30E-09	2.73E-09	2.32E-09	1.75E-09



**Table D4-16**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well HR-G1-MW-3**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	1/4	2.30E-12	2.30E-12	1.45E-09	1.33E-09	3.26E-10	1.01E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	1/4	3.40E-12	3.40E-12	1.50E-09	1.35E-09	3.64E-10	1.02E-09
HxCDDs (total)	Not Listed	Not Listed	1/4	5.70E-12	5.70E-12	1.45E-09	1.35E-09	4.13E-10	1.04E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	1.10E-09	4.70E-09	3.80E-09	3.35E-09	2.92E-09	1.63E-09
<b>Inorganics-Unfiltered</b>									
Antimony	8	80	1/4	0.057	0.057	0.03	0.0368	0.0352	0.0135
Arsenic	0.9	9	4/4	0.0068	0.011	0.00845	0.00868	0.00848	0.00215
Barium	50	100	3/4	0.07	0.077	0.0735	0.0793	0.0784	0.0142
Beryllium	0.2	2	1/4	0.00074	0.00074	0.0005	0.00056	0.000551	0.00012
Cadmium	0.004	0.05	1/4	0.001	0.001	0.0025	0.00213	0.00199	0.00075
Chromium	0.3	3	1/4	0.0041	0.0041	0.005	0.00478	0.00476	0.00045
Copper	0.23	Not Listed	1/4	0.0057	0.0057	0.013	0.0112	0.0106	0.00365
Cyanide	0.03	2	4/4	0.0063	0.0089	0.0087	0.00815	0.00807	0.00125
Mercury	0.02	0.2	1/5	0.0019	0.0019	0.0001	0.00046	0.00018	0.000805
Nickel	0.2	2	1/4	0.0044	0.0044	0.02	0.0161	0.0137	0.0078
Zinc	0.9	50	3/4	0.011	0.012	0.011	0.011	0.011	0.000816
<b>Inorganics-Filtered</b>									
Barium	50	100	3/4	0.053	0.068	0.066	0.0713	0.0693	0.0202
Chromium	0.3	3	1/4	0.0027	0.0027	0.005	0.00643	0.00544	0.00452
Cyanide	0.03	2	4/4	0.0042	0.011	0.00845	0.00803	0.00751	0.00309
Cyanide-MADEP (PAC)	0.03	2	1/2	0.006	0.006	0.0055	0.0055	0.00548	0.000707
Mercury	0.02	0.2	1/5	0.0019	0.0019	0.0001	0.00046	0.00018	0.000805
Zinc	0.9	50	1/4	0.025	0.025	0.01	0.0138	0.0126	0.0075

**Notes:**

1. Samples were collected between 2001 and 2006 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D4-17**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well HR-G3-MW-1**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Benzene	10	100	4/4	0.032	0.18	0.098	0.102	0.0759	0.079
Chlorobenzene	1	10	4/4	0.89	2.2	1.6	1.57	1.49	0.542
Chloroethane	Not Listed	Not Listed	2/4	0.0036	0.013	0.019	0.0167	0.0131	0.0104
Total VOCs	Not Listed	Not Listed	4/4	0.94	2.4	1.7	1.69	1.6	0.596
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.00015	0.0015	0.00064	0.000733	0.000548	0.000567
Aroclor-1260	Not Listed	Not Listed	2/4	0.000092	0.00061	0.0000625	0.000192	0.0000884	0.00028
Total PCBs	0.01	0.1	4/4	0.00015	0.00211	0.000685	0.000905	0.000613	0.000844
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	4/9	0.000042	0.00081	0.000042	0.000211	0.0000975	0.000277
Aroclor-1260	Not Listed	Not Listed	2/9	0.000066	0.00042	0.000033	0.0000798	0.0000474	0.000128
Total PCBs	0.01	0.1	5/9	0.000042	0.00081	0.000042	0.000239	0.000109	0.000284
<b>Semivolatile Organics</b>									
1,3-Dichlorobenzene	50	100	2/4	0.0025	0.0026	0.0038	0.00378	0.00357	0.00142
1,4-Dichlorobenzene	8	80	2/4	0.0046	0.0055	0.005	0.00503	0.00501	0.000369
2-Chlorophenol	7	100	1/4	0.011	0.011	0.005	0.0065	0.00609	0.003
Acenaphthene	6	60	3/4	0.016	0.018	0.016	0.0138	0.0123	0.00591
Fluorene	0.04	0.4	3/4	0.0038	0.0055	0.0048	0.00473	0.00468	0.000718
Naphthalene	20	100	1/4	0.0068	0.0068	0.005	0.00545	0.0054	0.0009
Phenol	2	100	1/4	0.0062	0.0062	0.005	0.0053	0.00528	0.0006
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--

**Table D4-17**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well HR-G3-MW-1**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	2/4	9.20E-12	2.40E-09	1.80E-09	1.50E-09	5.07E-10	1.11E-09
TCDFs (total)	Not Listed	Not Listed	3/4	8.40E-11	3.60E-08	1.75E-08	1.78E-08	5.46E-09	1.49E-08
1,2,3,7,8-PeCDF	Not Listed	Not Listed	2/4	2.40E-09	5.00E-09	3.70E-09	3.33E-09	2.71E-09	2.03E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	3/4	1.10E-11	7.80E-09	1.90E-09	2.90E-09	7.27E-10	3.42E-09
PeCDFs (total)	Not Listed	Not Listed	2/4	1.10E-10	2.00E-08	1.28E-08	1.39E-08	4.36E-09	1.36E-08
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	3/4	2.90E-11	1.80E-08	3.15E-09	6.08E-09	1.36E-09	8.22E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	3/4	1.70E-11	9.60E-09	2.40E-09	3.60E-09	9.28E-10	4.25E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	1/4	4.50E-09	4.50E-09	2.20E-09	2.55E-09	2.20E-09	1.55E-09
HxCDFs (total)	Not Listed	Not Listed	3/4	9.00E-11	5.90E-08	8.65E-09	1.91E-08	3.24E-09	2.76E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	2/4	2.20E-11	1.10E-08	1.55E-09	3.53E-09	8.54E-10	5.04E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	2/4	9.60E-12	6.40E-09	1.30E-09	2.25E-09	5.68E-10	2.83E-09
HpCDFs (total)	Not Listed	Not Listed	1/4	4.30E-11	4.30E-11	2.70E-09	4.36E-09	1.29E-09	5.37E-09
OCDF	Not Listed	Not Listed	1/4	7.20E-09	7.20E-09	7.60E-09	7.88E-09	7.05E-09	3.99E-09
<b>Dioxins</b>									
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	1/4	6.20E-09	6.20E-09	1.95E-09	2.93E-09	2.48E-09	2.19E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	5.90E-10	1.00E-08	4.70E-09	5.00E-09	3.38E-09	3.86E-09
<b>Inorganics-Unfiltered</b>									
Barium	50	100	3/4	0.091	0.11	0.1	0.1	0.1	0.00776
Chromium	0.3	3	1/4	0.016	0.016	0.005	0.00775	0.00669	0.0055
Copper	0.23	Not Listed	2/4	0.0041	0.0074	0.0102	0.00938	0.00846	0.0044
Cyanide	0.03	2	3/4	0.0034	0.0054	0.0051	0.00475	0.00467	0.000915
Mercury	0.02	0.2	1/5	0.0015	0.0015	0.0001	0.000318	0.000107	0.00058
Nickel	0.2	2	1/4	0.011	0.011	0.02	0.0178	0.0172	0.0045
Silver	0.007	1	1/4	0.01	0.01	0.0025	0.00438	0.00354	0.00375
Vanadium	4	40	2/4	0.0012	0.0042	0.0146	0.0139	0.00749	0.0129
Zinc	0.9	50	3/4	0.0049	0.013	0.0099	0.00943	0.00889	0.00335

**Table D4-17**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well HR-G3-MW-1**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>									
Barium	50	100	3/4	0.07	0.081	0.08	0.0825	0.0818	0.0126
Chromium	0.3	3	1/4	0.0028	0.0028	0.005	0.00645	0.00549	0.00449
Cobalt	0.075	Not Listed	1/4	0.0031	0.0031	0.025	0.0195	0.0148	0.011
Cyanide	0.03	2	2/2	0.0032	0.0044	0.0038	0.0038	0.00375	0.000849
Mercury	0.02	0.2	1/5	0.0017	0.0017	0.0001	0.000352	0.000109	0.000662
Nickel	0.2	2	1/4	0.0088	0.0088	0.02	0.0172	0.0163	0.0056

Notes:

1. Samples were collected between 2001 and 2008 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D4-18**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well HR-G3-MW-2**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Acetone	50	100	1/4	0.0029	0.0029	0.0115	0.0127	0.00985	0.00921
Benzene	10	100	4/4	0.00024	0.006	0.00230	0.00271	0.00153	0.00259
Chlorobenzene	1	10	4/4	0.005	0.083	0.0410	0.0425	0.0285	0.0329
Chloroform	20	100	2/4	0.00034	0.00048	0.000740	0.000955	0.000756	0.000752
Ethylbenzene	5	100	2/4	0.00052	0.00058	0.000510	0.000525	0.000524	0.0000379
Trichloroethene	5	50	4/4	0.00034	0.0073	0.00470	0.00426	0.00265	0.00314
Vinyl Chloride	50	100	2/4	0.0015	0.0016	0.00155	0.00140	0.00124	0.000638
Total VOCs	Not Listed	Not Listed	4/4	0.012	0.093	0.0505	0.0515	0.0409	0.0335
<b>PCBs-Filtered</b>									
Aroclor-1248	Not Listed	Not Listed	2/4	0.00006	0.000089	0.0000465	0.0000533	0.0000483	0.0000273
Aroclor-1254	Not Listed	Not Listed	1/4	0.00022	0.00022	0.0000340	0.0000798	0.0000530	0.0000935
Aroclor-1260	Not Listed	Not Listed	1/4	0.00012	0.00012	0.0000340	0.0000548	0.0000455	0.0000435
Total PCBs	0.01	0.1	2/4	0.00006	0.000429	0.0000465	0.000139	0.0000717	0.000195
<b>Semivolatile Organics</b>									
Acenaphthene	6	60	3/4	0.0021	0.0053	0.00285	0.00328	0.00306	0.00144
bis(2-Ethylhexyl)phthalate	50	100	1/4	0.0016	0.0016	0.00245	0.00235	0.00230	0.000545
Naphthalene	20	100	1/4	0.0088	0.0088	0.00255	0.00408	0.00342	0.00315
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/4	ND	ND	2.85E-09	3.20E-09	2.82E-09	1.82E-09
TCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	2.85E-09	3.20E-09	2.82E-09	1.82E-09
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	1.80E-09	8.06E-09	2.66E-09	1.33E-08
2,3,4,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	1.80E-09	8.06E-09	2.66E-09	1.33E-08
PeCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	1.80E-09	8.06E-09	2.66E-09	1.33E-08
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	2.00E-09	8.12E-09	2.57E-09	1.33E-08
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.75E-09	7.99E-09	2.39E-09	1.34E-08
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/4	ND	ND	2.30E-09	8.29E-09	2.82E-09	1.32E-08
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.95E-09	8.10E-09	2.56E-09	1.33E-08
HxCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	2.30E-09	8.29E-09	2.82E-09	1.32E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	0/4	ND	ND	1.85E-09	8.06E-09	2.61E-09	1.33E-08
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/4	ND	ND	2.35E-09	8.35E-09	3.11E-09	1.31E-08
HpCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	2.35E-09	8.35E-09	3.11E-09	1.31E-08
OCDF	Not Listed	Not Listed	0/4	ND	ND	5.00E-09	1.66E-08	6.45E-09	2.57E-08

**Table D4-18**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**East Street Area 2-South GW-3 Perimeter (Downgradient) Monitoring Well HR-G3-MW-2**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	2.35E-09	2.79E-09	2.27E-09	2.00E-09
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	2.35E-09	2.79E-09	2.27E-09	2.00E-09
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	2.55E-09	8.44E-09	3.12E-09	1.31E-08
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	2.55E-09	8.44E-09	3.12E-09	1.31E-08
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	2.85E-09	8.64E-09	3.46E-09	1.30E-08
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	2.60E-09	8.53E-09	3.36E-09	1.31E-08
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	2.85E-09	8.65E-09	3.51E-09	1.30E-08
HxCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	2.85E-09	8.65E-09	3.51E-09	1.30E-08
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	0/4	ND	ND	3.55E-09	9.01E-09	4.09E-09	1.28E-08
HpCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	4.05E-09	9.26E-09	4.51E-09	1.26E-08
OCDD	Not Listed	Not Listed	0/4	ND	ND	6.85E-09	1.76E-08	7.55E-09	2.52E-08
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	2.6E-09	7.00E-08	7.85E-09	2.21E-08	9.85E-09	3.21E-08
<b>Inorganics-Unfiltered</b>									
Sulfide	Not Listed	Not Listed	1/3	1.3	1.3	0.500	0.602	0.148	0.653
<b>Inorganics-Filtered</b>									
Barium	50	100	4/4	0.0531	0.127	0.0675	0.0795	0.0749	0.0344
Chromium	0.3	3	1/4	0.00157	0.00157	0.00500	0.00415	0.00376	0.00170
Copper	0.23	Not Listed	1/4	0.00121	0.00121	0.00500	0.00405	0.00350	0.00190
Lead	0.01	0.15	1/5	0.00757	0.00757	0.00500	0.00462	0.00343	0.00256
Selenium	0.1	1	1/4	0.00378	0.00378	0.0100	0.00845	0.00785	0.00310
Tin	Not Listed	Not Listed	1/4	0.0065	0.0065	0.0500	0.0391	0.0300	0.0218
Zinc	0.9	50	2/4	0.00336	0.0152	0.0100	0.00960	0.00845	0.00476

**Notes:**

1. Samples were collected between 2010 and 2013 and were submitted to SGS Environmental Services, Inc. and Accutest Laboratories for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D5-1**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Lyman Street Area GW-3 Perimeter (Downgradient) Monitoring Well E-04**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
cis-1,2-Dichloroethene	50	100	1/1	0.004	0.004	0.00400	0.00400	0.00400	NA
Total VOCs	Not Listed	Not Listed	1/5	0.004	0.004	0.100	0.0808	0.0525	0.0429
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/5	0.000069	0.0028	0.000150	0.000736	0.000240	0.00118
Aroclor-1260	Not Listed	Not Listed	1/5	0.000061	0.000061	0.0000330	0.000128	0.0000637	0.000197
Total PCBs	0.01	0.1	4/5	0.000069	0.0028	0.000210	0.000748	0.000256	0.00117
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	3/5	0.000056	0.00044	0.0000510	0.000123	0.0000672	0.000178
Total PCBs	0.01	0.1	3/5	0.000056	0.00044	0.0000510	0.000123	0.0000672	0.000178
<b>Semivolatile Organics</b>									
bis(2-Ethylhexyl)phthalate	50	100	1/5	0.001	0.001	0.00300	0.00260	0.00241	0.000894
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/3	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/5	ND	ND	9.00E-10	9.60E-10	2.35E-10	8.26E-10
TCDFs (total)	Not Listed	Not Listed	1/5	2.8E-12	2.8E-12	9.00E-10	9.81E-10	3.22E-10	8.63E-10
1,2,3,7,8-PeCDF	Not Listed	Not Listed	1/5	2E-09	2E-09	1.30E-09	1.13E-09	2.66E-10	7.55E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	1/5	1.5E-09	1.5E-09	8.50E-10	9.10E-10	2.16E-10	6.27E-10
PeCDFs (total)	Not Listed	Not Listed	1/5	2E-09	2E-09	1.20E-09	1.09E-09	2.48E-10	7.60E-10
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	1/5	3.6E-09	3.6E-09	1.20E-09	1.40E-09	3.06E-10	1.37E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	1/5	2.1E-09	2.1E-09	1.10E-09	1.13E-09	2.88E-10	7.72E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	1/5	1.5E-09	1.5E-09	1.30E-09	1.01E-09	2.67E-10	7.12E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	1/5	1.7E-09	1.7E-09	1.30E-09	1.00E-09	2.48E-10	7.56E-10
HxCDFs (total)	Not Listed	Not Listed	2/5	5.6E-09	6.2E-09	1.60E-09	2.90E-09	5.25E-10	2.81E-09
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	2/5	2E-12	1.8E-09	1.30E-09	1.52E-09	4.55E-10	1.15E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/5	ND	ND	1.70E-09	1.26E-09	3.05E-10	9.21E-10
HpCDFs (total)	Not Listed	Not Listed	3/5	3.6E-12	6.4E-09	1.80E-09	2.52E-09	7.05E-10	2.42E-09
OCDF	Not Listed	Not Listed	1/5	1.5E-09	1.5E-09	2.30E-09	3.12E-09	2.75E-09	1.82E-09

**Table D5-1  
Statistical Summary Of Historical Groundwater Analytical Results  
Lyman Street Area GW-3 Perimeter (Downgradient) Monitoring Well E-04**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/5	ND	ND	1.00E-09	1.11E-09	3.00E-10	8.25E-10
TCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.00E-09	1.11E-09	3.00E-10	8.25E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/5	ND	ND	7.00E-10	8.60E-10	1.88E-10	6.43E-10
PeCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.06E-09	2.89E-10	7.57E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.56E-09	4.42E-10	1.31E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.58E-09	4.36E-10	1.34E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.53E-09	4.33E-10	1.26E-09
HxCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.59E-09	4.46E-10	1.34E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	0/5	ND	ND	2.30E-09	2.60E-09	1.86E-09	2.33E-09
HpCDDs (total)	Not Listed	Not Listed	1/5	1.5E-09	1.5E-09	2.70E-09	3.00E-09	2.19E-09	2.32E-09
OCDD	Not Listed	Not Listed	1/5	1.2E-08	1.2E-08	1.30E-08	1.17E-08	1.07E-08	4.38E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	5/5	2.8E-11	6.6E-09	3.30E-09	3.57E-09	1.52E-09	2.56E-09
<b>Inorganics-Unfiltered</b>									
Arsenic	0.9	9	2/5	0.004	0.0041	0.00500	0.00472	0.00470	0.000438
Barium	50	100	4/5	0.042	0.0699	0.0560	0.0632	0.0602	0.0231
Cadmium	0.004	0.05	1/5	0.004	0.004	0.00250	0.00280	0.00275	0.000671
Chromium	0.3	3	1/5	0.0032	0.0032	0.00500	0.00464	0.00457	0.000805
Cobalt	0.075	Not Listed	1/5	0.0041	0.0041	0.0250	0.0208	0.0174	0.00935
Copper	0.23	Not Listed	1/5	0.0176	0.0176	0.0130	0.0140	0.0139	0.00224
Cyanide	0.03	2	1/5	0.0034	0.0034	0.00500	0.00418	0.00403	0.00117
Lead	0.01	0.15	1/5	0.0039	0.0039	0.00150	0.00218	0.00201	0.00105
Nickel	0.2	2	1/5	0.0093	0.0093	0.0200	0.0179	0.0172	0.00479
Selenium	0.1	1	1/5	0.0077	0.0077	0.00250	0.00328	0.00270	0.00253
Sulfide	Not Listed	Not Listed	1/5	6.4	6.4	2.50	2.88	2.19	2.15
Vanadium	4	40	2/5	0.0024	0.003	0.0250	0.0184	0.0146	0.00984
Zinc	0.9	50	4/5	0.012	0.0458	0.0180	0.0210	0.0180	0.0145



**Table D5-1  
Statistical Summary Of Historical Groundwater Analytical Results  
Lyman Street Area GW-3 Perimeter (Downgradient) Monitoring Well E-04**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>									
Arsenic	0.9	9	1/5	0.0047	0.0047	0.00500	0.0131	0.00561	0.0207
Barium	50	100	4/5	0.042	0.06	0.0520	0.0598	0.0569	0.0232
Beryllium	0.2	2	3/5	0.00091	0.0012	0.000850	0.000674	0.000561	0.000344
Cadmium	0.004	0.05	1/5	0.0024	0.0024	0.00250	0.00298	0.00285	0.00113
Cobalt	0.075	Not Listed	1/5	0.0031	0.0031	0.0250	0.0181	0.0128	0.0104
Copper	0.23	Not Listed	2/5	0.0028	0.0035	0.0130	0.0174	0.0114	0.0187
Cyanide	0.03	2	1/2	0.0024	0.0031	0.00390	0.00390	0.00374	0.00156
Nickel	0.2	2	1/5	0.0042	0.0042	0.0200	0.0131	0.00872	0.00944
Selenium	0.1	1	1/5	0.013	0.013	0.00250	0.00434	0.00300	0.00487
Thallium	3	30	1/5	0.014	0.014	0.00500	0.00626	0.00526	0.00448
Vanadium	4	40	1/5	0.0015	0.0015	0.0250	0.0178	0.0112	0.0108
Zinc	0.9	50	3/5	0.0076	0.031	0.0100	0.0139	0.0121	0.00963

**Notes:**

1. Samples were collected between 1995 and 2003 and were submitted to SGS Environmental Services, Inc and Quanterra Environmental Services for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D5-2  
Statistical Summary Of Historical Groundwater Analytical Results  
Lyman Street Area GW-3 Perimeter (Upgradient) Monitoring Well E-07**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
None Detected	--	--	0/5	--	--	--	--	--	--
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	5/5	0.000042	0.00033	0.000110	0.000146	0.000108	0.000121
Aroclor-1260	Not Listed	Not Listed	1/5	0.000072	0.000072	0.0000330	0.0000416	0.0000395	0.0000171
Total PCBs	0.01	0.1	5/5	0.000042	0.00033	0.000110	0.000160	0.000115	0.000132
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	2/5	0.000028	0.00042	0.0000330	0.000109	0.0000531	0.000174
Total PCBs	0.01	0.1	2/5	0.000028	0.00042	0.0000330	0.000109	0.0000531	0.000174
<b>Semivolatile Organics</b>									
None Detected	--	--	0/5	--	--	--	--	--	--
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/3	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/5	ND	ND	5.00E-10	1.06E-09	2.28E-10	1.02E-09
TCDFs (total)	Not Listed	Not Listed	0/5	ND	ND	5.00E-10	1.06E-09	2.28E-10	1.02E-09
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.18E-09	3.00E-10	7.26E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.02E-09	2.63E-10	6.53E-10
PeCDFs (total)	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.40E-09	3.27E-10	1.10E-09
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	1/5	3.6E-09	3.6E-09	1.30E-09	1.58E-09	3.34E-10	1.30E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	0/5	ND	ND	1.10E-09	9.20E-10	2.26E-10	5.40E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.28E-09	3.06E-10	8.04E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.12E-09	2.73E-10	6.38E-10
HxCDFs (total)	Not Listed	Not Listed	1/5	6.7E-09	6.7E-09	1.30E-09	2.30E-09	3.98E-10	2.58E-09
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.24E-09	3.40E-10	8.17E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.18E-09	2.86E-10	7.53E-10
HpCDFs (total)	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.31E-09	1.26E-09	4.07E-10
OCDF	Not Listed	Not Listed	0/5	ND	ND	2.50E-09	3.50E-09	3.27E-09	1.49E-09

**Table D5-2  
Statistical Summary Of Historical Groundwater Analytical Results  
Lyman Street Area GW-3 Perimeter (Upgradient) Monitoring Well E-07**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/5	ND	ND	1.10E-09	1.21E-09	3.24E-10	9.59E-10
TCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.10E-09	1.21E-09	3.24E-10	9.59E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	9.80E-10	2.37E-10	5.80E-10
PeCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.08E-09	3.04E-10	7.01E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.38E-09	3.55E-10	1.15E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.38E-09	3.47E-10	1.15E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.42E-09	3.51E-10	1.19E-09
HxCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.50E-09	3.86E-10	1.16E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	1/5	3.5E-09	3.5E-09	1.70E-09	2.22E-09	2.03E-09	1.05E-09
HpCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	3.00E-09	2.62E-09	2.45E-09	9.73E-10
OCDD	Not Listed	Not Listed	1/5	8.3E-09	8.3E-09	9.50E-09	9.56E-09	9.52E-09	1.02E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	5/5	2E-11	5.8E-09	3.90E-09	3.74E-09	1.54E-09	2.28E-09
<b>Inorganics-Unfiltered</b>									
Antimony	8	80	1/5	0.005	0.005	0.0300	0.0198	0.0141	0.0139
Arsenic	0.9	9	1/5	0.041	0.041	0.00500	0.0122	0.00762	0.0161
Barium	50	100	4/5	0.021	0.321	0.0690	0.112	0.0740	0.120
Beryllium	0.2	2	1/5	0.0042	0.0042	0.000500	0.00214	0.00121	0.00226
Cadmium	0.004	0.05	1/5	0.0042	0.0042	0.00250	0.00284	0.00277	0.000760
Chromium	0.3	3	1/5	0.0893	0.0893	0.00500	0.0218	0.00889	0.0376
Cobalt	0.075	Not Listed	1/5	0.0955	0.0955	0.0250	0.0392	0.0327	0.0318
Copper	0.23	Not Listed	2/5	0.0038	0.15	0.0130	0.0386	0.0166	0.0624
Cyanide	0.03	2	1/5	0.0027	0.0027	0.00500	0.00404	0.00385	0.00132
Lead	0.01	0.15	1/5	0.0831	0.0831	0.00150	0.0180	0.00371	0.0363
Mercury	0.02	0.2	1/6	0.0018	0.0018	0.000100	0.000383	0.000162	0.000694
Nickel	0.2	2	1/5	0.149	0.149	0.0200	0.0460	0.0299	0.0581
Selenium	0.1	1	1/5	0.0047	0.0047	0.00250	0.00268	0.00245	0.00126
Sulfide	Not Listed	Not Listed	1/5	1	1	2.50	2.20	2.08	0.671
Tin	Not Listed	Not Listed	1/5	0.231	0.231	0.0150	0.0580	0.0259	0.0962
Vanadium	4	40	1/5	0.116	0.116	0.0250	0.0440	0.0342	0.0425
Zinc	0.9	50	4/5	0.0079	0.474	0.0100	0.103	0.0225	0.205

**Table D5-2  
Statistical Summary Of Historical Groundwater Analytical Results  
Lyman Street Area GW-3 Perimeter (Upgradient) Monitoring Well E-07**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>									
Antimony	8	80	1/5	0.0045	0.0045	0.0300	0.0197	0.0139	0.0140
Barium	50	100	4/5	0.0201	0.075	0.0400	0.0518	0.0428	0.0346
Beryllium	0.2	2	1/5	0.00064	0.00064	0.000500	0.000458	0.000413	0.000183
Copper	0.23	Not Listed	2/5	0.0034	0.004	0.0130	0.0167	0.0103	0.0192
Mercury	0.02	0.2	1/6	0.0018	0.0018	0.000100	0.000383	0.000162	0.000694
Selenium	0.1	1	1/5	0.0035	0.0035	0.00250	0.00270	0.00267	0.000447
Zinc	0.9	50	2/5	0.0038	0.0078	0.0100	0.00832	0.00784	0.00270

**Notes:**

1. Samples were collected between 1995 and 2003 and were submitted to SGS Environmental Services, Inc. and Quanterra Environmental Services for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D5-3  
Statistical Summary Of Historical Groundwater Analytical Results  
Lyman Street Area GW-3 Perimeter (Downgradient) Monitoring Well GMA1-5**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
None Detected	--	--	0/4	--	--	--	--	--	--
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	2/4	0.000036	0.00047	0.0000375	0.000145	0.0000683	0.000217
Aroclor-1260	Not Listed	Not Listed	1/4	0.000065	0.000065	0.000033	0.000041	0.0000391	0.000016
Total PCBs	0.01	0.1	3/4	0.000036	0.000535	0.0000565	0.000172	0.0000838	0.000246
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	3/4	0.000038	0.00007	0.0000525	0.0000533	0.0000518	0.0000145
Total PCBs	0.01	0.1	3/4	0.000038	0.00007	0.0000525	0.0000533	0.0000518	0.0000145
<b>Semivolatile Organics</b>									
None Detected	--	--	0/4	--	--	--	--	--	--
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	1/4	6.10E-10	6.10E-10	1.01E-09	9.53E-10	1.52E-10	8.05E-10
TCDFs (total)	Not Listed	Not Listed	1/4	6.10E-10	6.10E-10	1.01E-09	9.53E-10	1.52E-10	8.05E-10
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	1.15E-09	9.00E-10	1.43E-10	6.16E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	1.00E-09	8.25E-10	1.31E-10	6.18E-10
PeCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	1.00E-09	8.25E-10	1.31E-10	6.18E-10
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.03E-09	9.88E-10	1.41E-10	8.68E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.00E-09	9.25E-10	1.33E-10	7.41E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.09E-09	1.10E-09	1.52E-10	1.03E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.00E-09	9.50E-10	1.36E-10	8.43E-10
HxCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	1.65E-09	1.30E-09	1.50E-10	8.83E-10
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	0/4	ND	ND	1.50E-09	1.30E-09	1.77E-10	9.42E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/4	ND	ND	1.40E-09	1.43E-09	1.93E-10	1.20E-09
HpCDFs (total)	Not Listed	Not Listed	1/4	3.20E-12	3.20E-12	1.55E-09	1.40E-09	3.71E-10	1.04E-09
OCDF	Not Listed	Not Listed	1/4	1.40E-08	1.40E-08	5.75E-09	7.03E-09	5.86E-09	4.92E-09

**Table D5-3  
Statistical Summary Of Historical Groundwater Analytical Results  
Lyman Street Area GW-3 Perimeter (Downgradient) Monitoring Well GMA1-5**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	9.45E-10	9.23E-10	1.43E-10	8.64E-10
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.55E-09	1.23E-09	2.04E-10	8.26E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	1.00E-09	8.75E-10	1.53E-10	6.75E-10
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.00E-09	1.08E-09	1.20E-10	9.74E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.83E-09	1.76E-09	2.43E-10	1.74E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.88E-09	1.69E-09	2.53E-10	1.50E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.90E-09	1.78E-09	2.62E-10	1.58E-09
HxCDDs (total)	Not Listed	Not Listed	1/4	1.70E-09	1.70E-09	2.35E-09	1.98E-09	3.08E-10	1.47E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	0/4	ND	ND	2.45E-09	2.78E-09	2.70E-09	8.26E-10
HpCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	2.45E-09	2.78E-09	2.70E-09	8.26E-10
OCDD	Not Listed	Not Listed	1/4	1.30E-08	1.30E-08	1.65E-08	1.93E-08	1.65E-08	1.22E-08
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	2.70E-11	5.60E-09	3.70E-09	3.26E-09	1.14E-09	2.67E-09
<b>Inorganics-Unfiltered</b>									
Barium	50	100	2/4	0.047	0.051	0.0755	0.0745	0.07	0.0295
Cyanide	0.03	2	2/4	0.0058	0.0075	0.0054	0.00583	0.00574	0.00118
Mercury	0.02	0.2	1/4	0.00074	0.00074	0.0001	0.00026	0.000165	0.00032
Zinc	0.9	50	3/4	0.0087	0.02	0.00995	0.0122	0.0115	0.00527
<b>Inorganics-Filtered</b>									
Barium	50	100	2/4	0.047	0.053	0.0765	0.075	0.0706	0.029
Mercury	0.02	0.2	1/4	0.00066	0.00066	0.0001	0.00024	0.00016	0.00028
Nickel	0.2	2	1/4	0.0022	0.0022	0.02	0.0156	0.0115	0.0089
Zinc	0.9	50	2/4	0.014	0.06	0.012	0.0235	0.017	0.0244

**Notes:**

1. Samples were collected between 2001 and 2003 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D5-4**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Lyman Street Area GW-3 Perimeter (Upgradient) Monitoring Well LS-28**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
1,1,1-Trichloroethane	20	100	1/5	0.002	0.002	0.00250	0.00240	0.00239	0.000224
Tetrachloroethene	30	100	5/5	0.01	0.023	0.0150	0.0152	0.0146	0.00482
Total VOCs	Not Listed	Not Listed	5/5	0.01	0.025	0.0150	0.0156	0.0149	0.00564
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/5	0.00022	0.0077	0.000610	0.00198	0.000554	0.00323
Aroclor-1260	Not Listed	Not Listed	1/5	0.0018	0.0018	0.0000330	0.000410	0.0000994	0.000779
Total PCBs	0.01	0.1	4/5	0.00022	0.0095	0.000610	0.00234	0.000578	0.00403
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	2/5	0.00069	0.0012	0.0000330	0.000398	0.000124	0.000531
Total PCBs	0.01	0.1	2/5	0.00069	0.0012	0.0000330	0.000398	0.000124	0.000531
<b>Semivolatile Organics</b>									
None Detected	--	--	0/5	--	--	--	--	--	--
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/3	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/5	ND	ND	9.50E-10	1.19E-09	2.59E-10	9.54E-10
TCDFs (total)	Not Listed	Not Listed	2/5	8.3E-11	6.1E-09	1.50E-09	2.25E-09	1.13E-09	2.34E-09
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	2.92E-09	4.83E-10	4.03E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	2/5	6.5E-12	8.6E-10	1.30E-09	2.30E-09	6.40E-10	2.97E-09
PeCDFs (total)	Not Listed	Not Listed	2/5	1.6E-10	8.6E-10	1.30E-09	6.69E-09	2.17E-09	8.24E-09
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	1/5	2E-11	2E-11	1.60E-09	2.86E-09	1.05E-09	2.75E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	1/5	1.6E-11	1.6E-11	1.40E-09	2.44E-09	8.48E-10	2.74E-09
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	1/5	7.7E-12	7.7E-12	1.80E-09	3.28E-09	9.87E-10	3.02E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	1/5	6.6E-12	6.6E-12	1.50E-09	1.98E-09	6.76E-10	1.84E-09
HxCDFs (total)	Not Listed	Not Listed	1/5	1.4E-10	1.4E-10	1.60E-09	7.45E-09	2.38E-09	1.04E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	2/5	2.3E-11	1.3E-09	1.40E-09	2.32E-09	9.60E-10	2.05E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	1/5	1.6E-11	1.6E-11	1.70E-09	2.32E-09	9.18E-10	1.91E-09
HpCDFs (total)	Not Listed	Not Listed	2/5	6.6E-11	1.3E-09	1.50E-09	2.75E-09	1.30E-09	2.63E-09
OCDF	Not Listed	Not Listed	2/5	6E-11	2.9E-09	4.30E-09	4.99E-09	2.27E-09	3.87E-09

**Table D5-4**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Lyman Street Area GW-3 Perimeter (Upgradient) Monitoring Well LS-28**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	1/5	6.8E-09	6.8E-09	1.50E-09	2.26E-09	4.08E-10	2.62E-09
TCDDs (total)	Not Listed	Not Listed	1/5	6.8E-09	6.8E-09	1.50E-09	2.26E-09	4.59E-10	2.62E-09
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	2.52E-09	4.67E-10	3.66E-09
PeCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	2.52E-09	4.67E-10	3.66E-09
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	1/5	1.2E-08	1.2E-08	2.40E-09	3.82E-09	6.22E-10	4.72E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	2/5	1.6E-09	1.4E-08	2.40E-09	4.20E-09	6.46E-10	5.59E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/5	ND	ND	2.20E-09	2.48E-09	5.23E-10	2.03E-09
HxCDDs (total)	Not Listed	Not Listed	2/5	1.6E-09	2.5E-08	2.40E-09	6.42E-09	8.39E-10	1.05E-08
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	2/5	1.6E-11	2.9E-09	2.70E-09	3.22E-09	1.24E-09	2.53E-09
HpCDDs (total)	Not Listed	Not Listed	2/5	2.6E-11	2.9E-09	2.70E-09	3.23E-09	1.37E-09	2.52E-09
OCDD	Not Listed	Not Listed	3/5	1.2E-10	1.3E-07	1.40E-08	3.52E-08	8.84E-09	5.34E-08
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	5/5	1.1E-11	2.6E-08	5.50E-09	8.56E-09	2.19E-09	1.00E-08
<b>Inorganics-Unfiltered</b>									
Arsenic	0.9	9	1/5	0.0235	0.0235	0.00500	0.00880	0.00684	0.00850
Barium	50	100	4/5	0.0067	0.0962	0.0150	0.0450	0.0235	0.0485
Beryllium	0.2	2	1/5	0.0013	0.0013	0.000500	0.000660	0.000605	0.000358
Chromium	0.3	3	2/5	0.006	0.0276	0.00500	0.00980	0.00732	0.0102
Cobalt	0.075	Not Listed	2/5	0.0028	0.0387	0.0250	0.0234	0.0176	0.0130
Copper	0.23	Not Listed	2/5	0.011	0.112	0.0130	0.0320	0.0193	0.0436
Cyanide	0.03	2	2/5	0.0029	0.01	0.00500	0.00478	0.00434	0.00238
Lead	0.01	0.15	3/5	0.0026	0.0498	0.00210	0.0123	0.00431	0.0212
Nickel	0.2	2	1/5	0.0603	0.0603	0.0200	0.0280	0.0249	0.0179
Sulfide	Not Listed	Not Listed	2/5	6.4	6.4	2.50	3.28	2.46	2.25
Tin	Not Listed	Not Listed	1/5	0.0624	0.0624	0.0150	0.0244	0.0199	0.0210
Vanadium	4	40	1/5	0.0261	0.0261	0.0250	0.0252	0.0252	0.000447
Zinc	0.9	50	4/5	0.012	0.175	0.0160	0.0494	0.0251	0.0734



**Table D5-4  
Statistical Summary Of Historical Groundwater Analytical Results  
Lyman Street Area GW-3 Perimeter (Upgradient) Monitoring Well LS-28**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>									
Barium	50	100	4/5	0.0063	0.0081	0.00780	0.0260	0.0125	0.0414
Beryllium	0.2	2	1/5	0.00049	0.00049	0.000500	0.000498	0.000498	0.00000447
Chromium	0.3	3	2/5	0.0022	0.0022	0.00500	0.00548	0.00436	0.00443
Copper	0.23	Not Listed	2/5	0.004	0.0057	0.0130	0.0171	0.0114	0.0188
Cyanide	0.03	2	1/2	0.0024	0.0024	0.00370	0.00370	0.00346	0.00184
Selenium	0.1	1	1/5	0.0028	0.0028	0.00250	0.00256	0.00256	0.000134
Zinc	0.9	50	3/5	0.0042	0.0235	0.0100	0.0113	0.00960	0.00751

**Notes:**

1. Samples were collected between 1995 and 2003 and were submitted to SGS Environmental Services, Inc. and Quanterra Environmental Services for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D5-5**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Lyman Street Area GW-3 General/Source Area Sentinel Monitoring Well LS-29**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Chloroform	20	100	1/5	0.00094	0.00094	0.00250	0.00219	0.00206	0.000698
Tetrachloroethene	30	100	5/5	0.003	0.01	0.00370	0.00494	0.00445	0.00289
Total VOCs	Not Listed	Not Listed	5/5	0.003	0.01	0.00430	0.00512	0.00466	0.00280
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	5/5	0.00022	0.017	0.000710	0.00409	0.00106	0.00727
Aroclor-1260	Not Listed	Not Listed	2/5	0.00012	0.00023	0.000130	0.000723	0.000206	0.00133
Total PCBs	0.01	0.1	5/5	0.00022	0.017	0.000940	0.00416	0.00122	0.00723
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	7/10	0.000045	0.0081	0.000170	0.00104	0.000192	0.00250
Total PCBs	0.01	0.1	7/10	0.000045	0.0081	0.000170	0.00104	0.000192	0.00250
<b>Semivolatile Organics</b>									
bis(2-Ethylhexyl)phthalate	50	100	1/5	0.001	0.001	0.00300	0.00260	0.00241	0.000894
<b>Organochlorine Pesticides</b>									
4,4'-DDE	0.4	4	1/3	0.00092	0.00092	0.0000500	0.000340	0.000132	0.000502
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/5	ND	ND	8.00E-10	6.80E-10	1.82E-10	4.04E-10
TCDFs (total)	Not Listed	Not Listed	2/5	2.1E-11	1.1E-09	9.50E-10	1.00E-09	5.05E-10	8.34E-10
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	9.40E-10	2.55E-10	5.94E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.09E-09	2.88E-10	6.98E-10
PeCDFs (total)	Not Listed	Not Listed	1/5	6.2E-09	6.2E-09	1.30E-09	2.70E-09	5.02E-10	2.62E-09
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	2/5	4.3E-12	6.4E-09	1.30E-09	2.69E-09	6.69E-10	2.83E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	1/5	2.6E-12	2.6E-12	1.30E-09	1.38E-09	4.50E-10	9.93E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.08E-09	3.28E-10	6.41E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	1/5	2.2E-09	2.2E-09	1.30E-09	1.30E-09	3.63E-10	8.15E-10
HxCDFs (total)	Not Listed	Not Listed	2/5	2.4E-11	1.7E-08	1.30E-09	4.92E-09	1.28E-09	7.00E-09
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.82E-09	1.66E-09	8.64E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.46E-09	3.84E-10	1.05E-09
HpCDFs (total)	Not Listed	Not Listed	1/5	4.6E-09	4.6E-09	2.90E-09	2.60E-09	2.31E-09	1.37E-09
OCDF	Not Listed	Not Listed	0/5	ND	ND	5.50E-09	4.64E-09	4.42E-09	1.48E-09

**Table D5-5  
Statistical Summary Of Historical Groundwater Analytical Results  
Lyman Street Area GW-3 General/Source Area Sentinel Monitoring Well LS-29**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/5	ND	ND	8.50E-10	7.50E-10	2.00E-10	5.10E-10
TCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	8.50E-10	7.90E-10	2.37E-10	5.32E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	9.00E-10	2.71E-10	5.87E-10
PeCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	9.00E-10	2.71E-10	5.87E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.17E-09	3.06E-10	9.15E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.11E-09	3.02E-10	8.09E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.18E-09	3.14E-10	9.09E-10
HxCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.24E-09	3.68E-10	8.84E-10
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	2/5	2.2E-09	3.1E-09	2.20E-09	1.88E-09	5.78E-10	1.23E-09
HpCDDs (total)	Not Listed	Not Listed	2/5	2.2E-09	3.1E-09	2.20E-09	1.88E-09	4.76E-10	1.23E-09
OCDD	Not Listed	Not Listed	3/5	2.5E-11	1.1E-08	1.00E-08	7.93E-09	2.82E-09	5.57E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	5/5	3.3E-11	5.1E-09	3.50E-09	3.29E-09	1.55E-09	1.94E-09
<b>Inorganics-Unfiltered</b>									
Barium	50	100	4/5	0.0068	0.0091	0.00730	0.0260	0.0126	0.0414
Copper	0.23	Not Listed	1/5	0.0049	0.0049	0.0130	0.00906	0.00685	0.00554
Cyanide	0.03	2	1/5	0.0044	0.0044	0.00500	0.00438	0.00424	0.00108
Lead	0.01	0.15	1/5	0.0025	0.0025	0.00150	0.00174	0.00158	0.000767
Zinc	0.9	50	4/5	0.0055	0.014	0.00660	0.00842	0.00789	0.00358
<b>Inorganics-Filtered</b>									
Barium	50	100	4/5	0.0066	0.0079	0.00700	0.0256	0.0120	0.0416
Copper	0.23	Not Listed	1/5	0.0045	0.0045	0.0130	0.0164	0.00882	0.0195
Zinc	0.9	50	2/5	0.004	0.0086	0.0100	0.00852	0.00808	0.00260

**Notes:**

1. Samples were collected between 1995 and 2008 and were submitted to SGS Environmental Services, Inc. and Quanterra Environmental Services for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D5-6  
Statistical Summary Of Historical Groundwater Analytical Results  
Lyman Street Area GW-3 Perimeter (Downgradient) Monitoring Well B-2**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
1,1,1-Trichloroethane	20	100	1/6	0.0023	0.0023	0.00250	0.00288	0.00277	0.00104
Chlorobenzene	1	10	1/6	0.0036	0.0036	0.00250	0.00242	0.00224	0.000926
Tetrachloroethene	30	100	2/6	0.023	0.024	0.00100	0.00850	0.00286	0.0116
Total VOCs	Not Listed	Not Listed	3/6	0.0036	0.025	0.0625	0.0588	0.0360	0.0458
<b>PCBs-Unfiltered</b>									
Aroclor-1248	Not Listed	Not Listed	1/4	0.000062	0.000062	0.0000325	0.0000399	0.0000382	0.0000148
Aroclor-1254	Not Listed	Not Listed	2/4	0.000092	0.00012	0.0000623	0.0000693	0.0000584	0.0000439
Aroclor-1260	Not Listed	Not Listed	1/4	0.000059	0.000059	0.0000325	0.0000391	0.0000377	0.0000133
Total PCBs	0.01	0.1	2/4	0.00012	0.000213	0.0000763	0.0000995	0.0000721	0.0000862
<b>PCBs-Filtered</b>									
None Detected	--	--	0/4						
<b>Semivolatile Organics</b>									
None Detected	--	--	0/4						
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2						
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2						
<b>Herbicides</b>									
None Detected	--	--	0/2						
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/4	ND	ND	5.65E-10	5.83E-10	1.06E-10	5.26E-10
TCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	5.65E-10	5.83E-10	1.06E-10	5.26E-10
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	9.38E-10	1.41E-10	6.25E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	9.38E-10	1.41E-10	6.25E-10
PeCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	9.38E-10	1.41E-10	6.25E-10
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	1/4	4E-13	4E-13	1.25E-09	1.09E-09	1.84E-10	7.78E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	1/4	4E-13	4E-13	1.25E-09	1.04E-09	1.79E-10	7.17E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	1.18E-09	1.62E-10	9.02E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	1.08E-09	1.43E-10	7.62E-10
HxCDFs (total)	Not Listed	Not Listed	2/4	7E-13	2.5E-09	1.40E-09	1.33E-09	2.35E-10	1.09E-09
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	0/4	ND	ND	1.35E-09	1.71E-09	1.46E-09	1.16E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	1.20E-09	1.52E-10	9.41E-10
HpCDFs (total)	Not Listed	Not Listed	1/4	2.8E-09	2.8E-09	2.35E-09	2.08E-09	1.86E-09	9.35E-10
OCDF	Not Listed	Not Listed	2/4	3.2E-09	7.7E-09	4.10E-09	3.98E-09	3.96E-10	3.23E-09

**Table D5-6  
Statistical Summary Of Historical Groundwater Analytical Results  
Lyman Street Area GW-3 Perimeter (Downgradient) Monitoring Well B-2**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	7.08E-10	6.41E-10	1.18E-10	5.32E-10
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.08E-09	1.00E-09	1.71E-10	7.62E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	1/4	4E-13	4E-13	1.25E-09	1.00E-09	1.75E-10	6.77E-10
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.60E-09	1.31E-09	1.65E-10	9.45E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.55E-09	1.79E-09	2.95E-10	1.69E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.43E-09	1.61E-09	2.66E-10	1.49E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.45E-09	1.73E-09	2.76E-10	1.67E-09
HxCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	2.45E-09	2.19E-09	3.59E-10	1.65E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	1/4	5.8E-09	5.8E-09	2.25E-09	3.01E-09	2.64E-09	1.92E-09
HpCDDs (total)	Not Listed	Not Listed	1/4	5.2E-12	5.2E-12	1.85E-09	2.43E-09	5.34E-10	2.64E-09
OCDD	Not Listed	Not Listed	0/4	ND	ND	9.75E-09	8.98E-09	6.42E-09	6.40E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	2.8E-11	5.4E-09	3.70E-09	3.21E-09	1.20E-09	2.29E-09
<b>Inorganics-Unfiltered</b>									
Arsenic	0.9	9	1/4	0.004	0.004	0.00500	0.00475	0.00473	0.000500
Barium	50	100	2/4	0.19	0.21	0.145	0.150	0.141	0.0583
Chromium	0.3	3	2/4	0.0028	0.0028	0.00390	0.00390	0.00374	0.00127
Cobalt	0.075	Not Listed	2/4	0.0029	0.003	0.0140	0.0140	0.00859	0.0127
Cyanide	0.03	2	2/4	0.0084	0.025	0.00670	0.0109	0.00851	0.00957
Lead	0.01	0.15	3/4	0.0026	0.0041	0.00290	0.00310	0.00304	0.000735
Mercury	0.02	0.2	1/5	0.0017	0.0017	0.000100	0.000420	0.000176	0.000716
Nickel	0.2	2	1/4	0.0041	0.0041	0.0200	0.0160	0.0135	0.00795
Zinc	0.9	50	4/4	0.029	0.49	0.0545	0.157	0.0766	0.223

**Table D5-6  
 Statistical Summary Of Historical Groundwater Analytical Results  
 Lyman Street Area GW-3 Perimeter (Downgradient) Monitoring Well B-2**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
 Plant Site 1 Groundwater Management Area  
 General Electric Company - Pittsfield, Massachusetts  
 (Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>									
Barium	50	100	2/4	0.097	0.16	0.100	0.114	0.112	0.0305
Cobalt	0.075	Not Listed	1/4	0.003	0.003	0.0250	0.0195	0.0147	0.0110
Lead	0.01	0.15	1/4	0.0037	0.0037	0.00200	0.00230	0.00214	0.00105
Mercury	0.02	0.2	1/5	0.0014	0.0014	0.000100	0.000360	0.000170	0.000581
Nickel	0.2	2	2/4	0.0044	0.0046	0.0123	0.0123	0.00949	0.00895
Thallium	3	30	1/4	0.0084	0.0084	0.00500	0.00585	0.00569	0.00170
Zinc	0.9	50	3/4	0.025	0.36	0.0335	0.109	0.0441	0.168

**Notes:**

1. Samples were collected by ARCADIS and Geraghty & Miller between 1986 and 2003 and were submitted to SGS Environmental Services, Inc. and ENESECO Incorporated for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. Non-detect samples without reporting limits for 9/1986 sample are included in Detection frequency but did not participate in the remaining calculations.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D5-7**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Lyman Street Area GW-3 Perimeter (Downgradient) Monitoring Well MW-4 & MW-4R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
1,1-Dichloroethane	20	100	1/11	0.00017	0.00017	0.00250	0.00306	0.00196	0.00341
Acetone	50	100	1/11	0.01	0.01	0.00500	0.00573	0.00512	0.00309
Benzene	10	100	5/11	0.0042	0.044	0.00250	0.00739	0.00430	0.0123
Chlorobenzene	1	10	1/11	0.0014	0.0014	0.00250	0.00299	0.00206	0.00342
Chloromethane	Not Listed	Not Listed	2/11	0.0014	0.0036	0.00250	0.00345	0.00285	0.00320
Toluene	40	100	2/11	0.00018	0.028	0.00250	0.00443	0.00212	0.00787
trans-1,2-Dichloroethene	50	100	1/10	0.00066	0.00066	0.00250	0.00317	0.00220	0.00355
Vinyl Chloride	50	100	2/11	0.00054	0.00095	0.00100	0.00218	0.00129	0.00362
Xylenes (total)	5	100	3/11	0.00065	0.09	0.00500	0.0122	0.00458	0.0259
Total VOCs	Not Listed	Not Listed	7/11	0.0014	0.16	0.0150	0.0555	0.0237	0.0568
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.00004	0.00021	0.0000930	0.000109	0.0000915	0.0000731
Total PCBs	0.01	0.1	4/4	0.00004	0.00021	0.0000930	0.000109	0.0000915	0.0000731
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	4/8	0.000041	0.00013	0.0000395	0.0000585	0.0000509	0.0000356
Aroclor-1260	Not Listed	Not Listed	1/8	0.000053	0.000053	0.0000330	0.0000355	0.0000350	0.00000707
Total PCBs	0.01	0.1	4/8	0.000041	0.00013	0.0000395	0.0000656	0.0000547	0.0000437
<b>Semivolatile Organics</b>									
Acenaphthene	6	60	2/7	0.0028	0.0032	0.00500	0.00440	0.00428	0.00103
Phenanthrene	10	100	1/7	0.0034	0.0042	0.00500	0.00483	0.00481	0.000454
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--

**Table D5-7**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Lyman Street Area GW-3 Perimeter (Downgradient) Monitoring Well MW-4 & MW-4R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/6	ND	ND	9.00E-10	8.52E-10	2.76E-10	6.42E-10
TCDFs (total)	Not Listed	Not Listed	1/6	1.2E-09	1.2E-09	9.00E-10	9.33E-10	3.07E-10	6.92E-10
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/6	ND	ND	1.35E-09	1.93E-09	4.98E-10	1.88E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	1/6	0.00E+00	1.4E-12	1.30E-09	1.49E-09	4.46E-10	1.25E-09
PeCDFs (total)	Not Listed	Not Listed	1/6	2.8E-09	2.8E-09	1.75E-09	2.67E-09	5.28E-10	3.26E-09
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	3/6	2.6E-12	3.7E-09	1.80E-09	2.08E-09	6.87E-10	1.57E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	2/6	1.4E-12	1E-09	1.30E-09	1.60E-09	4.69E-10	1.50E-09
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	1/6	1.9E-09	1.9E-09	1.60E-09	1.75E-09	5.27E-10	1.23E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	1/6	1E-12	1E-12	1.30E-09	1.50E-09	4.79E-10	1.02E-09
HxCDFs (total)	Not Listed	Not Listed	2/6	4.1E-09	5.5E-09	3.30E-09	4.50E-09	3.23E-09	4.02E-09
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	2/6	4.1E-09	4.1E-09	1.25E-09	1.98E-09	1.58E-09	1.45E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	1/6	1.5E-12	1.5E-12	1.35E-09	1.43E-09	4.91E-10	9.18E-10
HpCDFs (total)	Not Listed	Not Listed	1/6	6.8E-12	6.8E-12	1.60E-09	2.25E-09	1.69E-09	2.15E-09
OCDF	Not Listed	Not Listed	1/6	3E-09	3E-09	3.30E-09	3.15E-09	2.96E-09	1.09E-09
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	1/6	1.3E-09	1.3E-09	1.00E-09	8.99E-10	3.26E-10	6.68E-10
TCDDs (total)	Not Listed	Not Listed	1/6	1.3E-09	1.3E-09	1.40E-09	1.15E-09	4.42E-10	6.77E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/6	ND	ND	1.50E-09	2.15E-09	5.11E-10	1.94E-09
PeCDDs (total)	Not Listed	Not Listed	0/6	ND	ND	1.70E-09	2.22E-09	6.36E-10	1.91E-09
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	1/6	7.8E-09	7.8E-09	1.60E-09	2.45E-09	6.79E-10	2.75E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/6	ND	ND	1.60E-09	1.77E-09	5.85E-10	1.30E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/6	ND	ND	1.65E-09	1.85E-09	6.06E-10	1.44E-09
HxCDDs (total)	Not Listed	Not Listed	0/6	ND	ND	2.10E-09	2.72E-09	7.95E-10	2.74E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	0/6	ND	ND	2.00E-09	2.03E-09	1.90E-09	8.16E-10
HpCDDs (total)	Not Listed	Not Listed	0/6	ND	ND	2.05E-09	2.02E-09	1.87E-09	8.42E-10
OCDD	Not Listed	Not Listed	0/6	ND	ND	7.75E-09	6.88E-09	6.27E-09	2.86E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	6/6	1.9E-11	1.2E-08	4.30E-09	5.21E-09	2.36E-09	4.16E-09
<b>Inorganics-Unfiltered</b>									
Barium	50	100	4/4	0.23	0.41	0.290	0.305	0.298	0.0772
Chromium	0.3	3	1/4	0.0033	0.0033	0.00500	0.00458	0.00451	0.000850
Cyanide	0.03	2	4/4	0.0029	0.008	0.00510	0.00528	0.00492	0.00222
Mercury	0.02	0.2	1/4	0.0018	0.0018	0.000100	0.000525	0.000206	0.000850
Zinc	0.9	50	3/4	0.0088	0.045	0.0200	0.0235	0.0186	0.0173



**Table D5-7  
Statistical Summary Of Historical Groundwater Analytical Results  
Lyman Street Area GW-3 Perimeter (Downgradient) Monitoring Well MW-4 & MW-4R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>									
Arsenic	0.9	9	1/6	0.0049	0.0049	0.00500	0.0125	0.00731	0.0184
Barium	50	100	5/6	0.048	0.17	0.120	0.114	0.105	0.0470
Beryllium	0.2	2	1/6	0.00065	0.00065	0.000500	0.000525	0.000522	0.0000612
Chromium	0.3	3	1/6	0.0012	0.0012	0.00500	0.00570	0.00462	0.00389
Cyanide	0.03	2	1/4	0.0037	0.0037	0.00500	0.00468	0.00464	0.000650
Mercury	0.02	0.2	1/6	0.0018	0.0018	0.000100	0.000383	0.000162	0.000694
Selenium	0.1	1	1/6	0.0062	0.0062	0.00250	0.00312	0.00291	0.00151
Vanadium	4	40	1/6	0.0019	0.0019	0.0250	0.0212	0.0163	0.00943
Zinc	0.9	50	3/6	0.0056	0.16	0.0100	0.0352	0.0155	0.0612

**Notes:**

1. Samples were collected between 2000 and 2008 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D5-8**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Lyman Street Area GW-3 Perimeter (Upgradient) Monitoring Well MW-6R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Benzene	10	100	1/5	0.24	0.24	0.00250	0.0500	0.00623	0.106
Ethylbenzene	5	100	1/5	0.8	0.8	0.00250	0.162	0.00792	0.357
Toluene	40	100	1/5	3.2	3.2	0.00250	0.642	0.0105	1.43
Total VOCs	Not Listed	Not Listed	1/5	7.4	7.4	0.100	1.56	0.237	3.26
Xylenes (total)	5	100	1/5	3.2	3.2	0.00500	0.644	0.0182	1.43
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	1/3	0.000069	0.000069	0.0000330	0.0000450	0.0000422	0.0000208
Aroclor-1260	Not Listed	Not Listed	1/3	0.00011	0.00011	0.0000330	0.0000587	0.0000493	0.0000445
Total PCBs	0.01	0.1	1/3	0.000179	0.000179	0.0000330	0.0000820	0.0000581	0.0000849
<b>PCBs-Filtered</b>									
None Detected	--	--	0/4	--	--	--	--	--	--
<b>Semivolatile Organics</b>									
None Detected	--	--	0/4	--	--	--	--	--	--
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/4	ND	ND	4.25E-10	6.13E-10	1.11E-10	6.91E-10
TCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	4.25E-10	6.13E-10	1.11E-10	6.91E-10
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	9.75E-10	8.13E-10	1.57E-10	6.22E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	8.25E-10	7.38E-10	1.34E-10	6.65E-10
PeCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	9.75E-10	8.13E-10	1.57E-10	6.22E-10
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	1.23E-09	2.08E-10	9.81E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	9.00E-10	9.75E-10	1.57E-10	9.21E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.13E-09	1.26E-09	2.13E-10	1.16E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	1/4	2.1E-09	2.1E-09	1.70E-09	1.43E-09	2.42E-10	1.04E-09
HxCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	1.85E-09	1.85E-09	2.76E-10	1.58E-09
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	0/4	ND	ND	8.75E-10	9.38E-10	1.69E-10	8.90E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/4	ND	ND	9.50E-10	1.15E-09	2.11E-10	1.16E-09
HpCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	1.50E-09	1.45E-09	1.25E-09	8.06E-10
OCDF	Not Listed	Not Listed	1/4	4E-09	4E-09	3.90E-09	4.70E-09	3.51E-09	3.79E-09

**Table D5-8**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Lyman Street Area GW-3 Perimeter (Upgradient) Monitoring Well MW-6R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	6.25E-10	7.38E-10	1.61E-10	7.20E-10
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	6.75E-10	7.63E-10	1.66E-10	7.25E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	8.50E-10	8.25E-10	1.43E-10	7.50E-10
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	8.50E-10	9.00E-10	1.77E-10	8.60E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	9.00E-10	1.45E-09	2.20E-10	1.78E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	9.25E-10	1.36E-09	2.25E-10	1.58E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	9.00E-10	1.43E-09	2.22E-10	1.73E-09
HxCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	9.00E-10	1.40E-09	2.20E-10	1.69E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	0/4	ND	ND	1.85E-09	2.00E-09	4.35E-10	1.96E-09
HpCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.10E-09	1.63E-09	2.81E-10	1.87E-09
OCDD	Not Listed	Not Listed	0/4	ND	ND	1.55E-08	1.46E-08	1.10E-08	9.32E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	4.5E-12	6.3E-09	2.70E-09	2.93E-09	6.50E-10	2.71E-09
<b>Inorganics-Unfiltered</b>									
Barium	50	100	3/4	0.011	0.075	0.0440	0.0498	0.0322	0.0448
Cobalt	0.075	Not Listed	1/4	0.0037	0.0037	0.0250	0.0197	0.0155	0.0107
Copper	0.23	Not Listed	1/4	0.0033	0.0033	0.0130	0.0106	0.00923	0.00485
Cyanide	0.03	2	2/4	0.0036	0.0081	0.00500	0.00543	0.00520	0.00190
Mercury	0.02	0.2	1/5	0.0017	0.0017	0.000100	0.000352	0.000109	0.000662
Nickel	0.2	2	1/4	0.003	0.003	0.0200	0.0158	0.0124	0.00850
Sulfide	Not Listed	Not Listed	1/4	5.6	5.6	2.50	3.28	3.06	1.55
Zinc	0.9	50	3/4	0.0072	0.021	0.0135	0.0138	0.0127	0.00633
<b>Inorganics-Filtered</b>									
Antimony	8	80	1/4	0.0055	0.0055	0.0300	0.0239	0.0196	0.0123
Barium	50	100	3/4	0.011	0.078	0.0450	0.0503	0.0319	0.0456
Chromium	0.3	3	1/4	0.0023	0.0023	0.00500	0.00633	0.00523	0.00463
Cobalt	0.075	Not Listed	1/4	0.0039	0.0039	0.0250	0.0197	0.0157	0.0106
Mercury	0.02	0.2	1/5	0.0017	0.0017	0.000100	0.000352	0.000109	0.000662
Nickel	0.2	2	2/4	0.0022	0.0094	0.0147	0.0129	0.00954	0.00871
Zinc	0.9	50	2/4	0.0055	0.012	0.0100	0.00938	0.00901	0.00275

**Notes:**

1. Samples were collected between 2001 and 2003 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D5-9**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Lyman Street Area Supplemental Monitoring (Deep Downgradient) Monitoring Well LSSC-08I**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Carbon Tetrachloride	5	50	1/1	0.85	0.85	0.85	0.85	0.85	NA
Chloroethane	Not Listed	Not Listed	1/1	0.079	0.079	0.079	0.079	0.079	NA
Chloroform	20	100	1/1	0.43	0.43	0.43	0.43	0.43	NA
Trichloroethene	5	50	1/1	0.56	0.56	0.56	0.56	0.56	NA
Xylenes (total)	5	100	1/1	0.22	0.22	0.22	0.22	0.22	NA
Total VOCs	Not Listed	Not Listed	1/1	2.1	2.1	2.1	2.1	2.1	NA
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	1/1	0.29	0.29	0.29	0.29	0.29	NA
Total PCBs	0.01	0.1	1/1	0.29	0.29	0.29	0.29	0.29	NA
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	1/1	0.005	0.005	0.005	0.005	0.005	NA
Total PCBs	0.01	0.1	1/1	0.005	0.005	0.005	0.005	0.005	NA
<b>Semivolatile Organics</b>									
1,2,4-Trichlorobenzene	50	100	1/1	0.05	0.05	0.05	0.05	0.05	NA
1,2-Dichlorobenzene	2	20	1/1	0.016	0.016	0.016	0.016	0.016	NA
1,4-Dichlorobenzene	8	80	1/1	0.018	0.018	0.018	0.018	0.018	NA
2-Methylnaphthalene	20	100	1/1	0.0026	0.0026	0.0026	0.0026	0.0026	NA
Naphthalene	20	100	1/1	0.005	0.005	0.005	0.005	0.005	NA

Notes:

1. Samples were collected in 2003 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D5-10**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Lyman Street Area GW-3 Perimeter (Downgradient) Monitoring Well LSSC-08S**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Acetone	50	100	1/4	0.022	0.022	0.00500	0.00925	0.00724	0.00850
Total VOCs	Not Listed	Not Listed	1/4	0.022	0.022	0.100	0.0805	0.0685	0.0390
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.00033	0.0022	0.00114	0.00120	0.000885	0.000940
Total PCBs	0.01	0.1	4/4	0.00033	0.0022	0.00114	0.00120	0.000885	0.000940
<b>PCBs-Filtered</b>									
Aroclor-1248	Not Listed	Not Listed	4/15	0.00032	0.0023	0.0000343	0.000385	0.0000891	0.000702
Aroclor-1254	Not Listed	Not Listed	7/15	0.000029	0.0018	0.0000525	0.000252	0.0000976	0.000449
Total PCBs	0.01	0.1	9/15	0.000029	0.0032	0.000163	0.000591	0.000174	0.000938
<b>Semivolatile Organics</b>									
None Detected	--	--	0/4						
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/4						
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/4						
<b>Herbicides</b>									
None Detected	--	--	0/4						
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/4	ND	ND	1.00E-09	7.75E-10	2.13E-10	5.24E-10
TCDFs (total)	Not Listed	Not Listed	2/4	5.4E-11	2.2E-09	1.00E-09	1.06E-09	5.86E-10	8.83E-10
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	1.23E-09	9.88E-10	2.18E-10	6.71E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	1/4	3.9E-12	3.9E-12	9.25E-10	8.38E-10	2.66E-10	6.19E-10
PeCDFs (total)	Not Listed	Not Listed	3/4	3.9E-11	4.9E-09	2.80E-09	2.63E-09	1.04E-09	2.26E-09
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	2/4	1.2E-11	3.7E-09	1.03E-09	1.44E-09	4.61E-10	1.59E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	2/4	1.6E-09	2E-09	1.18E-09	1.09E-09	2.77E-10	8.92E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	1/4	5.2E-12	5.2E-12	1.23E-09	9.89E-10	3.29E-10	6.69E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	2/4	4.7E-12	1.6E-09	1.38E-09	1.09E-09	3.45E-10	7.37E-10
HxCDFs (total)	Not Listed	Not Listed	3/4	5.6E-11	1.2E-08	3.45E-09	4.74E-09	1.55E-09	5.32E-09
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	1/4	2E-09	2E-09	1.75E-09	2.29E-09	2.02E-09	1.44E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	1/4	5.1E-12	5.1E-12	1.28E-09	1.01E-09	3.34E-10	6.84E-10
HpCDFs (total)	Not Listed	Not Listed	3/4	1.4E-11	4.7E-09	1.80E-09	2.08E-09	6.75E-10	1.96E-09
OCDF	Not Listed	Not Listed	2/4	2.4E-11	5.4E-09	3.25E-09	2.98E-09	1.07E-09	2.26E-09

**Table D5-10**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Lyman Street Area GW-3 Perimeter (Downgradient) Monitoring Well LSSC-08S**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	1.08E-09	8.76E-10	2.82E-10	6.04E-10
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.08E-09	1.04E-09	3.11E-10	8.22E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	1.23E-09	9.88E-10	2.20E-10	6.71E-10
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.45E-09	1.18E-09	2.49E-10	8.26E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.35E-09	1.33E-09	3.20E-10	1.07E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.35E-09	1.29E-09	3.19E-10	1.01E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.38E-09	1.29E-09	3.15E-10	9.94E-10
HxCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.38E-09	1.31E-09	3.20E-10	1.03E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	2/4	2.9E-09	4.5E-09	2.48E-09	2.36E-09	5.81E-10	1.87E-09
HpCDDs (total)	Not Listed	Not Listed	3/4	7.5E-12	4.7E-09	3.30E-09	2.83E-09	7.60E-10	2.22E-09
OCDD	Not Listed	Not Listed	2/4	5.4E-11	1.9E-08	8.00E-09	8.76E-09	2.59E-09	8.61E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	5.5E-11	5E-09	4.10E-09	3.31E-09	1.47E-09	2.22E-09
<b>Inorganics-Unfiltered</b>									
Antimony	8	80	1/4	0.008	0.008	0.0300	0.0245	0.0216	0.0110
Barium	50	100	4/4	0.14	0.22	0.200	0.190	0.187	0.0383
Chromium	0.3	3	1/4	0.0026	0.0026	0.00500	0.00440	0.00425	0.00120
Copper	0.23	Not Listed	1/4	0.0054	0.0054	0.0125	0.0107	0.0101	0.00355
Cyanide	0.03	2	3/4	0.0037	0.0049	0.00445	0.00440	0.00436	0.000648
Zinc	0.9	50	4/4	0.0062	0.04	0.0175	0.0203	0.0166	0.0142
<b>Inorganics-Filtered</b>									
Barium	50	100	3/4	0.013	0.13	0.0920	0.0818	0.0614	0.0496
Copper	0.23	Not Listed	1/4	0.0034	0.0034	0.0125	0.0196	0.0128	0.0207
Cyanide	0.03	2	2/2	0.0032	0.0043	0.00375	0.00375	0.00371	0.000778
Mercury	0.02	0.2	1/4	0.00016	0.00016	0.000100	0.000115	0.000112	0.0000300
Vanadium	4	40	1/4	0.0013	0.0013	0.0250	0.0191	0.0119	0.0119
Zinc	0.9	50	1/4	0.012	0.012	0.0110	0.0110	0.0110	0.00115

**Notes:**

1. Samples were collected by ARCADIS between 2002 and 2012 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D5-11**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Lyman Street Area GW-2 Sentinel Monitoring Well LSSC-16S**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
1,1,1-Trichloroethane	4	20	100	4/14	0.00014	0.0002	0.00250	0.00148	0.000851	0.00116
2-Butanone	50	50	100	1/14	0.062	0.062	0.00500	0.00985	0.00568	0.0161
Acetone	50	50	100	2/14	0.0046	0.03	0.00500	0.00719	0.00531	0.00740
Bromoform	0.7	50	100	1/14	0.00055	0.00055	0.00250	0.00158	0.00120	0.00103
Chloroform	0.05	20	100	7/14	0.00048	0.0028	0.00250	0.00180	0.00152	0.000910
Tetrachloroethene	0.05	30	100	12/14	0.0048	0.012	0.00640	0.00697	0.00614	0.00288
Trichloroethene	0.03	5	50	7/14	0.00048	0.0011	0.00110	0.00155	0.00125	0.000936
Trichlorofluoromethane	Not Listed	Not Listed	Not Listed	2/13	0.00019	0.0014	0.00250	0.00162	0.00120	0.00102
Total VOCs	5	Not Listed	Not Listed	13/14	0.0046	0.097	0.00960	0.0218	0.0121	0.0326
<b>PCBs-Unfiltered</b>										
Total PCBs	0.005	0.01	0.1	1/1	0.0012	0.0012	0.00120	0.00120	0.00120	NA
<b>PCBs-Filtered</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>Semivolatile Organics</b>										
1,2,4-Trichlorobenzene	2	50	100	2/14	0.00018	0.0059	0.00250	0.00181	0.00117	0.00160
1,3-Dichlorobenzene	2	50	100	2/14	0.00045	0.0079	0.00250	0.00199	0.00129	0.00204
1,4-Dichlorobenzene	0.2	8	80	2/14	0.00034	0.0056	0.00250	0.00180	0.00123	0.00153
<b>Organochlorine Pesticides</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>Furans</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--

**Table D5-11**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Lyman Street Area GW-2 Sentinel Monitoring Well LSSC-16S**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>										
OCDD	Not Listed	Not Listed	Not Listed	1/1	1.2E-05	1.2E-05	1.20E-05	1.20E-05	1.20E-05	NA
<b>Inorganics-Unfiltered</b>										
Barium	Not Listed	50	100	1/1	0.0298	0.0298	0.0300	0.0300	0.0300	NA
Chromium	Not Listed	0.3	3	1/1	0.00097	0.00097	0.000970	0.000970	0.000970	NA
Copper	Not Listed	0.23	Not Listed	1/1	0.0014	0.0014	0.00140	0.00140	0.00140	NA
Selenium	Not Listed	0.1	1	1/1	0.0041	0.0041	0.00410	0.00410	0.00410	NA
Thallium	Not Listed	3	30	1/1	0.0042	0.0042	0.00420	0.00420	0.00420	NA
Zinc	Not Listed	0.9	50	1/1	0.0528	0.0528	0.0530	0.0530	0.0530	NA

Notes:

1. Samples were collected between 2001 and 2012 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. Total TEQs (1998 WHO TEFs) could not be calculated for the 3/1999 sample due to insufficient data.
8. Non-detect samples without reporting limits for the 3/1999 sample are included in detection frequency but did not participate in the remaining calculations.
9. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.



**Table D5-12**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Lyman Street Area GW-3 Perimeter (Downgradient) Monitoring Well LSSC-18**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Acetone	50	100	1/4	0.01	0.01	0.00500	0.00625	0.00595	0.00250
Chlorobenzene	1	10	1/4	0.0037	0.0037	0.00250	0.00280	0.00276	0.000600
Total VOCs	Not Listed	Not Listed	2/4	0.0037	0.01	0.0550	0.0534	0.0247	0.0538
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.00024	0.011	0.000635	0.00313	0.000991	0.00525
Aroclor-1260	Not Listed	Not Listed	1/4	0.0018	0.0018	0.0000330	0.000475	0.0000897	0.000884
Total PCBs	0.01	0.1	4/4	0.00024	0.0128	0.000635	0.00363	0.00103	0.00625
<b>PCBs-Filtered</b>									
Aroclor-1248	Not Listed	Not Listed	2/15	0.00037	0.00054	0.0000340	0.000107	0.0000567	0.000151
Aroclor-1254	Not Listed	Not Listed	6/15	0.000051	0.0048	0.0000550	0.000423	0.0000992	0.00118
Aroclor-1260	Not Listed	Not Listed	1/15	0.0014	0.0014	0.0000340	0.000142	0.0000528	0.000341
Total PCBs	0.01	0.1	8/15	0.000051	0.0062	0.0000675	0.000554	0.000126	0.00152
<b>Semivolatile Organics</b>									
1,4-Dichlorobenzene	8	80	1/4	0.0033	0.0033	0.00500	0.00683	0.00583	0.00485
p-Dimethylaminoazobenzene	Not Listed	Not Listed	1/4	0.013	0.013	0.00900	0.00925	0.00821	0.00492
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/4	ND	ND	1.03E-09	1.64E-09	2.97E-10	1.97E-09
TCDFs (total)	Not Listed	Not Listed	2/4	1.9E-11	8.9E-09	2.85E-09	3.65E-09	9.78E-10	3.98E-09
1,2,3,7,8-PeCDF	Not Listed	Not Listed	1/4	2.3E-09	2.3E-09	1.80E-09	4.90E-09	4.99E-10	7.46E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	2/4	4E-12	1.1E-08	6.15E-09	6.58E-09	9.46E-10	6.97E-09
PeCDFs (total)	Not Listed	Not Listed	2/4	3.4E-11	5.2E-08	1.77E-08	2.18E-08	2.97E-09	2.55E-08
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	2/4	1.7E-11	3.2E-08	1.02E-08	1.31E-08	1.91E-09	1.53E-08
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	2/4	8.7E-12	1.5E-08	8.15E-09	8.08E-09	1.28E-09	8.60E-09
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	1/4	7.2E-09	7.2E-09	4.25E-09	5.38E-09	7.57E-10	5.97E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	1/4	7.2E-09	7.2E-09	4.25E-09	4.88E-09	7.19E-10	5.15E-09
HxCDFs (total)	Not Listed	Not Listed	3/4	4.9E-11	1.2E-07	5.07E-08	5.53E-08	5.26E-09	6.36E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	1/4	1.6E-08	1.6E-08	8.25E-09	8.45E-09	5.96E-09	6.41E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	1/4	9.7E-09	9.7E-09	5.50E-09	5.50E-09	8.23E-10	5.65E-09
HpCDFs (total)	Not Listed	Not Listed	2/4	2.2E-11	4.5E-08	1.12E-08	1.68E-08	2.28E-09	2.11E-08
OCDF	Not Listed	Not Listed	2/4	2.4E-11	3.1E-08	1.28E-08	1.42E-08	2.58E-09	1.52E-08

**Table D5-12**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Lyman Street Area GW-3 Perimeter (Downgradient) Monitoring Well LSSC-18**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	1.50E-09	3.90E-10	1.46E-09
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	1.50E-09	3.90E-10	1.46E-09
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	4.15E-09	4.34E-10	6.59E-09
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.40E-09	4.20E-09	4.50E-10	6.57E-09
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	1/4	1.9E-08	1.9E-08	1.45E-09	5.48E-09	5.30E-10	9.04E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	2/4	1.2E-09	2.1E-08	1.40E-09	5.95E-09	5.39E-10	1.01E-08
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.45E-09	3.73E-09	4.67E-10	5.56E-09
HxCDDs (total)	Not Listed	Not Listed	2/4	7.7E-09	4.1E-08	4.80E-09	1.27E-08	1.05E-09	1.92E-08
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	1/4	1.1E-11	1.1E-11	3.05E-09	5.03E-09	1.04E-09	6.25E-09
HpCDDs (total)	Not Listed	Not Listed	2/4	2.4E-11	6.8E-09	4.25E-09	7.38E-09	1.55E-09	9.53E-09
OCDD	Not Listed	Not Listed	2/4	5.7E-11	7.6E-08	2.97E-08	3.38E-08	5.66E-09	3.76E-08
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	6.7E-11	3.7E-08	9.55E-09	1.40E-08	3.51E-09	1.66E-08
<b>Inorganics-Unfiltered</b>									
Antimony	8	80	1/4	0.0056	0.0056	0.0300	0.0239	0.0197	0.0122
Barium	50	100	3/4	0.022	0.037	0.0370	0.0490	0.0417	0.0347
Copper	0.23	Not Listed	1/4	0.0064	0.0064	0.0130	0.0114	0.0109	0.00330
Lead	0.01	0.15	1/4	0.0072	0.0072	0.00200	0.00318	0.00252	0.00272
Vanadium	4	40	2/4	0.0012	0.0049	0.0150	0.0140	0.00779	0.0128
Zinc	0.9	50	3/4	0.0065	0.016	0.0125	0.0119	0.0112	0.00444
<b>Inorganics-Filtered</b>									
Antimony	8	80	1/4	0.0064	0.0064	0.0300	0.0241	0.0204	0.0118
Barium	50	100	3/4	0.025	0.031	0.0300	0.0463	0.0387	0.0359
Beryllium	0.2	2	1/4	0.0008	0.0008	0.000500	0.000575	0.000562	0.000150
Nickel	0.2	2	1/4	0.0028	0.0028	0.0200	0.0157	0.0122	0.00860
Vanadium	4	40	1/4	0.0051	0.0051	0.0250	0.0200	0.0168	0.00995
Zinc	0.9	50	1/4	0.0088	0.0088	0.0100	0.00970	0.00969	0.000600

**Notes:**

1. Samples were collected between 2001 and 2012 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D5-13**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Lyman Street Area GW-2 Sentinel Monitoring Well MW-3 & MW-3R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
Acetone	50	50	100	2/5	0.16	0.2	0.005	0.071	0.0205	0.0907
Benzene	2	10	100	4/5	0.00064	0.013	0.0081	0.00718	0.00612	0.00382
Ethylbenzene	20	5	100	3/5	0.0057	0.13	0.0057	0.0178	0.00853	0.0271
Toluene	50	40	100	2/5	0.00091	0.0068	0.0025	0.00328	0.00302	0.00147
Xylenes (total)	9	5	100	5/5	0.00061	0.44	0.180	0.171	0.0662	0.173
Total VOCs	5	Not Listed	Not Listed	5/5	0.0013	0.53	0.210	0.261	0.130	0.194
<b>PCBs-Filtered</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>Semivolatile Organics</b>										
Naphthalene	1	20	100	5/5	0.002	0.061	0.024	0.0323	0.0221	0.027

**Notes:**

1. Samples were collected between 2000 and 2010 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D6-1**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area I GW-3 Perimeter (Downgradient) Monitoring Well FW-16/FW-16R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Methylene Chloride	50	100	1/7	0.005	0.005	0.00250	0.00254	0.00199	0.00137
Toluene	40	100	1/7	0.00055	0.00055	0.00250	0.00190	0.00145	0.00103
Total VOCs	Not Listed	Not Listed	2/7	0.00055	0.005	0.100	0.0723	0.0145	0.0747
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/5	0.000069	0.009	0.000120	0.00187	0.000214	0.00398
Aroclor-1260	Not Listed	Not Listed	1/5	0.0042	0.0042	0.0000330	0.000866	0.0000870	0.00186
Total PCBs	0.01	0.1	4/5	0.000069	0.0132	0.000120	0.00267	0.000230	0.00577
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	1/6	0.0071	0.0071	0.0000330	0.00129	0.000127	0.00285
Aroclor-1260	Not Listed	Not Listed	1/6	0.0033	0.0033	0.0000330	0.000655	0.000112	0.00131
Total PCBs	0.01	0.1	1/6	0.0104	0.0104	0.0000330	0.00177	0.000135	0.00404
<b>Semivolatile Organics</b>									
2,3,4,6-Tetrachlorophenol	Not Listed	Not Listed	0/5	ND	ND	0.00500	0.00500	0.00500	0
2,4,5-Trichlorophenol	3	100	0/5	ND	ND	0.00500	0.00660	0.00605	0.00358
2,4,6-Trichlorophenol	0.5	50	0/5	ND	ND	0.00500	0.00500	0.00500	0
2,4-Dichlorophenol	2	100	0/5	ND	ND	0.00500	0.00500	0.00500	0
2,4-Dimethylphenol	50	100	0/5	ND	ND	0.00500	0.00500	0.00500	0
2,4-Dinitrophenol	20	100	0/5	ND	ND	0.0250	0.0226	0.0219	0.00537
2,6-Dichlorophenol	Not Listed	Not Listed	0/5	ND	ND	0.00500	0.00500	0.00500	0
2-Chlorophenol	7	100	0/5	ND	ND	0.00500	0.00500	0.00500	0
2-Methylphenol	Not Listed	Not Listed	0/5	ND	ND	0.00500	0.00500	0.00500	0
2-Nitrophenol	Not Listed	Not Listed	0/5	ND	ND	0.00500	0.00600	0.00574	0.00224
3&4-Methylphenol	Not Listed	Not Listed	0/5	ND	ND	0.00500	0.00500	0.00500	0
4,6-Dinitro-2-methylphenol	Not Listed	Not Listed	0/5	ND	ND	0.0250	0.0226	0.0219	0.00537
4-Chloro-3-Methylphenol	Not Listed	Not Listed	0/5	ND	ND	0.00500	0.00500	0.00500	0
4-Nitrophenol	Not Listed	Not Listed	0/5	ND	ND	0.0250	0.0226	0.0219	0.00537
Acetophenone	Not Listed	Not Listed	1/5	0.009	0.009	0.00500	0.00580	0.00562	0.00179
Di-n-Butylphthalate	Not Listed	Not Listed	1/5	0.001	0.001	0.00500	0.00420	0.00362	0.00179
Pentachlorophenol	0.2	2	0/5	ND	ND	0.0250	0.0226	0.0219	0.00537
Phenol	2	100	0/5	ND	ND	0.00500	0.00500	0.00500	0
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--

**Table D6-1  
Statistical Summary Of Historical Groundwater Analytical Results  
Newell Street Area I GW-3 Perimeter (Downgradient) Monitoring Well FW-16/FW-16R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	1/5	5.10E-08	5.10E-08	9.00E-10	1.07E-08	4.27E-10	2.25E-08
TCDFs (total)	Not Listed	Not Listed	5/5	3.3E-12	2.20E-07	6.40E-09	4.78E-08	2.68E-09	9.63E-08
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	2.98E-09	4.10E-10	4.52E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	2/5	1.00E-09	3.10E-08	1.00E-09	6.74E-09	3.82E-10	1.36E-08
PeCDFs (total)	Not Listed	Not Listed	1/5	2.8E-09	2.8E-09	1.30E-09	2.30E-08	7.33E-10	4.86E-08
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	1/5	8.60E-08	8.60E-08	1.30E-09	1.80E-08	5.81E-10	3.80E-08
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	1/5	4.00E-08	4.00E-08	1.30E-09	8.78E-09	4.83E-10	1.75E-08
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	9.40E-10	2.34E-10	5.68E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.88E-09	3.35E-10	2.10E-09
HxCDFs (total)	Not Listed	Not Listed	1/5	2.20E-07	2.20E-07	1.30E-09	4.48E-08	7.01E-10	9.80E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	1/5	7.50E-08	7.50E-08	1.30E-09	1.60E-08	2.78E-09	3.30E-08
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	2.98E-09	3.95E-10	4.52E-09
HpCDFs (total)	Not Listed	Not Listed	1/5	1.10E-07	1.10E-07	1.30E-09	2.31E-08	3.33E-09	4.86E-08
OCDF	Not Listed	Not Listed	1/5	1.00E-07	1.00E-07	3.30E-09	2.24E-08	6.02E-09	4.34E-08
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/5	ND	ND	6.50E-10	6.84E-10	1.96E-10	4.98E-10
TCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.00E-09	7.90E-10	2.35E-10	4.98E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.04E-09	2.48E-10	5.81E-10
PeCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.34E-09	3.50E-10	9.91E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.44E-09	3.60E-10	9.50E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	1/5	1.4E-12	2.3E-12	1.30E-09	1.36E-09	4.26E-10	8.70E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.32E-09	3.20E-10	8.29E-10
HxCDDs (total)	Not Listed	Not Listed	1/5	1.4E-12	4.3E-12	1.90E-09	1.62E-09	5.33E-10	1.03E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	0/5	ND	ND	2.10E-09	2.06E-09	1.94E-09	8.02E-10
HpCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	2.20E-09	2.46E-09	2.22E-09	1.20E-09
OCDD	Not Listed	Not Listed	0/5	ND	ND	7.00E-09	7.40E-09	6.41E-09	3.51E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	5/5	2.6E-11	3.80E-08	3.50E-09	9.93E-09	2.46E-09	1.58E-08
<b>Inorganics-Unfiltered</b>									
Arsenic	0.9	9	2/5	0.0041	0.0042	0.00500	0.00468	0.00466	0.000438
Barium	50	100	4/5	0.054	0.064	0.0630	0.0672	0.0654	0.0188
Chromium	0.3	3	1/5	0.0056	0.0056	0.00500	0.00512	0.00511	0.000268
Cobalt	0.075	Not Listed	1/5	0.006	0.006	0.0250	0.0212	0.0188	0.00850
Copper	0.23	Not Listed	3/5	0.0044	0.0225	0.0130	0.0118	0.00984	0.00748
Lead	0.01	0.15	1/5	0.015	0.015	0.00150	0.00440	0.00263	0.00594
Mercury	0.02	0.2	1/5	0.00092	0.00092	0.000100	0.000264	0.000156	0.000367
Nickel	0.2	2	1/5	0.0137	0.0137	0.0200	0.0188	0.0186	0.00268
Zinc	0.9	50	5/5	0.0064	0.0879	0.0140	0.0350	0.0225	0.0348

**Table D6-1  
Statistical Summary Of Historical Groundwater Analytical Results  
Newell Street Area I GW-3 Perimeter (Downgradient) Monitoring Well FW-16/FW-16R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>									
Arsenic	0.9	9	1/5	0.0031	0.0031	0.00500	0.0136	0.00720	0.0204
Barium	50	100	4/5	0.0324	0.054	0.0500	0.0572	0.0533	0.0254
Chromium	0.3	3	1/5	0.0073	0.0073	0.00500	0.00603	0.00453	0.00437
Copper	0.23	Not Listed	1/5	0.0018	0.0018	0.0130	0.0168	0.00866	0.0192
Lead	0.01	0.15	1/5	0.00094	0.00094	0.00150	0.00159	0.00151	0.000565
Mercury	0.02	0.2	1/5	0.00092	0.00092	0.000100	0.000264	0.000156	0.000367
Nickel	0.2	2	1/5	0.0045	0.0045	0.0200	0.0154	0.0136	0.00684
Zinc	0.9	50	1/5	0.0074	0.0074	0.0100	0.00804	0.00681	0.00373

Notes:

1. Samples were collected between 1988 and 2003 and were submitted to SGS Environmental Services, Inc., Geraghty & Miller, and Quanterra Environmental Services for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D6-2**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area I GW-3 Perimeter (Downgradient) Monitoring Well IA-9R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Minimum Non-Detect	Maximum Non-Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>											
Benzene	10	100	1/7	0.0074	0.0074	0.0005	0.005	0.00250	0.00288	0.00210	0.00216
Chlorobenzene	1	10	3/7	0.003	0.04	0.0005	0.005	0.00250	0.00882	0.00339	0.0142
Toluene	40	100	1/7	0.014	0.014	0.0005	0.005	0.00250	0.00382	0.00230	0.00457
Total VOCs	Not Listed	Not Listed	3/7	0.003	0.061	0.0005	0.2	0.0610	0.0536	0.0175	0.0478
<b>PCBs-Unfiltered</b>											
Aroclor-1254	Not Listed	Not Listed	2/5	5.6E-05	0.0027	0.000065	0.000065	0.0000330	0.000571	0.0000885	0.00119
Aroclor-1260	Not Listed	Not Listed	1/5	0.0018	0.0018	0.000065	0.000065	0.0000330	0.000386	0.0000734	0.000790
Total PCBs	0.01	0.1	2/5	5.6E-05	0.0045	0.000065	0.000065	0.0000330	0.000931	0.0000980	0.00200
<b>PCBs-Filtered</b>											
None Detected	--	--	0/6	--	--	--	--	--	--	--	--
<b>Semivolatile Organics</b>											
bis(2-Ethylhexyl)phthalate	50	100	1/5	0.001	0.001	0.006	0.006	0.00300	0.00260	0.00241	0.000894
Di-n-Butylphthalate	Not Listed	Not Listed	1/5	0.002	0.002	0.01	0.01	0.00500	0.00440	0.00416	0.00134
<b>Organochlorine Pesticides</b>											
None Detected	--	--	0/2	--	--	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>											
None Detected	--	--	0/2	--	--	--	--	--	--	--	--
<b>Herbicides</b>											
None Detected	--	--	0/2	--	--	--	--	--	--	--	--
<b>Furans</b>											
2,3,7,8-TCDF	Not Listed	Not Listed	0/5	ND	ND	8E-13	4.00E-09	8.00E-10	8.90E-10	2.13E-10	7.14E-10
TCDFs (total)	Not Listed	Not Listed	0/5	ND	ND	8E-13	4.00E-09	8.00E-10	8.90E-10	2.13E-10	7.14E-10
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/5	ND	ND	1.1E-12	3.3E-09	1.20E-09	1.08E-09	2.81E-10	6.38E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	0/5	ND	ND	1E-12	2.7E-09	1.20E-09	1.02E-09	2.65E-10	5.76E-10
PeCDFs (total)	Not Listed	Not Listed	0/5	ND	ND	1E-12	1.30E-08	1.20E-09	2.04E-09	3.60E-10	2.55E-09
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	0/5	ND	ND	9E-13	9.8E-09	1.20E-09	1.72E-09	3.34E-10	1.86E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	0/5	ND	ND	8E-13	3.8E-09	1.20E-09	1.12E-09	2.70E-10	6.90E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/5	ND	ND	1.1E-12	2.5E-09	1.20E-09	9.00E-10	2.42E-10	5.38E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/5	ND	ND	1E-12	3.7E-09	1.20E-09	1.12E-09	2.82E-10	6.90E-10
HxCDFs (total)	Not Listed	Not Listed	0/5	ND	ND	1E-12	9.8E-09	1.20E-09	1.72E-09	3.41E-10	1.86E-09
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	1/5	1.2E-09	1.2E-09	2.00E-09	6.5E-09	1.20E-09	1.60E-09	1.44E-09	9.57E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/5	ND	ND	1E-12	4.00E-09	1.20E-09	1.14E-09	2.85E-10	7.20E-10
HpCDFs (total)	Not Listed	Not Listed	1/5	1.2E-09	1.2E-09	2.00E-09	6.5E-09	1.20E-09	1.60E-09	1.44E-09	9.57E-10
OCDF	Not Listed	Not Listed	0/5	ND	ND	4.8E-09	5.8E-09	2.50E-09	2.60E-09	2.59E-09	2.00E-10

**Table D6-2**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area I GW-3 Perimeter (Downgradient) Monitoring Well IA-9R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Minimum Non-Detect	Maximum Non-Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>											
2,3,7,8-TCDD	Not Listed	Not Listed	0/5	ND	ND	1.5E-12	2.3E-09	8.50E-10	7.28E-10	2.10E-10	4.90E-10
TCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.8E-12	3.00E-09	1.10E-09	9.30E-10	2.73E-10	5.69E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/5	ND	ND	8E-13	2.5E-09	1.20E-09	9.80E-10	2.46E-10	5.49E-10
PeCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.4E-12	3.9E-09	1.20E-09	1.14E-09	3.05E-10	7.19E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/5	ND	ND	1.8E-12	4.7E-09	1.20E-09	1.22E-09	3.32E-10	8.49E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/5	ND	ND	1.6E-12	4.1E-09	1.20E-09	1.16E-09	3.16E-10	7.50E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/5	ND	ND	1.5E-12	3.9E-09	1.20E-09	1.14E-09	3.09E-10	7.19E-10
HxCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.6E-12	4.7E-09	1.60E-09	1.52E-09	3.88E-10	9.96E-10
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	0/5	ND	ND	1.6E-09	4.3E-09	1.20E-09	1.46E-09	1.36E-09	6.07E-10
HpCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.6E-09	6.4E-09	1.20E-09	1.72E-09	1.52E-09	9.76E-10
OCDD	Not Listed	Not Listed	0/5	ND	ND	7.2E-09	2.80E-08	7.00E-09	8.26E-09	7.01E-09	4.99E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	5/5	3.3E-11	4.6E-09		N/A	3.90E-09	3.19E-09	1.52E-09	1.82E-09
<b>Inorganics-Unfiltered</b>											
Arsenic	0.9	9	1/5	0.012	0.012	0.01	0.01	0.00500	0.00640	0.00596	0.00313
Barium	50	100	4/5	0.13	0.263	0.2	0.2	0.140	0.160	0.152	0.0612
Cadmium	0.004	0.05	1/5	0.0009	0.0009	0.0035	0.005	0.00250	0.00204	0.00191	0.000706
Chromium	0.3	3	1/5	0.0293	0.0293	0.01	0.01	0.00500	0.00980	0.00711	0.0107
Cobalt	0.075	Not Listed	1/5	0.0197	0.0197	0.05	0.05	0.0250	0.0240	0.0239	0.00224
Copper	0.23	Not Listed	2/5	0.0044	0.059	0.025	0.025	0.0130	0.0205	0.0142	0.0219
Cyanide	0.03	2	1/5	0.016	0.016	0.01	0.01	0.00500	0.00720	0.00631	0.00492
Lead	0.01	0.15	1/5	0.086	0.086	0.003	0.005	0.00150	0.0186	0.00373	0.0377
Mercury	0.02	0.2	2/5	0.0002	0.001	0.0002	0.0002	0.000100	0.000300	0.000182	0.000394
Nickel	0.2	2	1/5	0.0295	0.0295	0.04	0.04	0.0200	0.0220	0.0217	0.00447
Selenium	0.1	1	1/5	0.0026	0.0026	0.005	0.005	0.00250	0.00252	0.00252	0.0000447
Silver	0.007	1	1/5	0.003	0.003	0.005	0.005	0.00250	0.00260	0.00259	0.000224
Thallium	3	30	1/5	0.0037	0.0037	0.01	0.01	0.00500	0.00474	0.00471	0.000581
Vanadium	4	40	1/5	0.035	0.035	0.05	0.05	0.0250	0.0270	0.0267	0.00447
Zinc	0.9	50	4/5	0.0061	0.21	0.02	0.02	0.0100	0.0513	0.0191	0.0889



**Table D6-2  
Statistical Summary Of Historical Groundwater Analytical Results  
Newell Street Area I GW-3 Perimeter (Downgradient) Monitoring Well IA-9R**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Minimum Non-Detect	Maximum Non-Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>											
Arsenic	0.9	9	1/5	0.0031	0.0031	0.01	0.1	0.00500	0.0136	0.00720	0.0204
Barium	50	100	4/5	0.076	0.152	0.2	0.2	0.0860	0.0978	0.0945	0.0307
Cobalt	0.075	Not Listed	1/5	0.0026	0.0026	0.05	0.05	0.0250	0.0205	0.0159	0.0100
Lead	0.01	0.15	1/5	0.00083	0.00083	0.003	0.005	0.00150	0.00157	0.00148	0.000597
Mercury	0.02	0.2	1/5	0.00093	0.00093	0.0002	0.0002	0.000100	0.000266	0.000156	0.000371
Nickel	0.2	2	1/5	0.0066	0.0066	0.0096	0.04	0.0200	0.0143	0.0120	0.00786

**Notes:**

1. Samples were collected between 1988 and 2003 and were submitted to SGS Environmental Services, Inc., Geraghty & Miller, and Quanterra Environmental Services for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D6-3**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area I GW-2 Sentinel (Downgradient) Monitoring Well MM-1**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
Acetone	50	50	100	1/5	0.0058	0.0058	0.00500	0.00516	0.00515	0.000358
Total VOCs	5	Not Listed	Not Listed	1/5	0.0058	0.0058	0.100	0.101	0.0650	0.0687
<b>PCBs-Unfiltered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	1/1	0.0012	0.0012	0.00120	0.00120	0.00120	NA
Total PCBs	0.005	0.01	0.1	1/1	0.0012	0.0012	0.00120	0.00120	0.00120	NA
<b>PCBs-Filtered</b>										
None Detected	--	--	--							
<b>Semivolatile Organics</b>										
Di-n-Butylphthalate	Not Listed	Not Listed	Not Listed	1/1	0.002	0.002	0.00200	0.00200	0.00200	NA
<b>Herbicides</b>										
None Detected	--	--	--	0/1	--	--	--	--	--	--
<b>Furans</b>										
2,3,7,8-TCDF	Not Listed	Not Listed	Not Listed	0/1	ND	ND	8.00E-10	8.00E-10	8.00E-10	NA
TCDFs (total)	Not Listed	Not Listed	Not Listed	1/1	4.9E-09	4.9E-09	4.90E-09	4.90E-09	4.90E-09	NA
1,2,3,7,8-PeCDF	Not Listed	Not Listed	Not Listed	0/1	ND	ND	8.50E-10	8.50E-10	8.50E-10	NA
2,3,4,7,8-PeCDF	Not Listed	Not Listed	Not Listed	0/1	ND	ND	9.00E-10	9.00E-10	9.00E-10	NA
PeCDFs (total)	Not Listed	Not Listed	Not Listed	0/1	ND	ND	2.10E-09	2.10E-09	2.10E-09	NA
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/1	ND	ND	8.50E-10	8.50E-10	8.50E-10	NA
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/1	ND	ND	8.00E-10	8.00E-10	8.00E-10	NA
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	Not Listed	0/1	ND	ND	1.00E-09	1.00E-09	1.00E-09	NA
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/1	ND	ND	9.00E-10	9.00E-10	9.00E-10	NA
HxCDFs (total)	Not Listed	Not Listed	Not Listed	0/1	ND	ND	1.00E-09	1.00E-09	1.00E-09	NA
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	Not Listed	0/1	ND	ND	8.00E-10	8.00E-10	8.00E-10	NA
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	Not Listed	0/1	ND	ND	3.00E-10	3.00E-10	3.00E-10	NA
HpCDFs (total)	Not Listed	Not Listed	Not Listed	0/1	ND	ND	8.00E-10	8.00E-10	8.00E-10	NA
OCDF	Not Listed	Not Listed	Not Listed	0/1	ND	ND	1.80E-09	1.80E-09	1.80E-09	NA
<b>Dioxins</b>										
2,3,7,8-TCDD	Not Listed	Not Listed	Not Listed	0/1	ND	ND	4.00E-10	4.00E-10	4.00E-10	NA
TCDDs (total)	Not Listed	Not Listed	Not Listed	0/1	ND	ND	7.50E-10	7.50E-10	7.50E-10	NA
1,2,3,7,8-PeCDD	Not Listed	Not Listed	Not Listed	0/1	ND	ND	1.10E-09	1.10E-09	1.10E-09	NA
PeCDDs (total)	Not Listed	Not Listed	Not Listed	0/1	ND	ND	1.10E-09	1.10E-09	1.10E-09	NA
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/1	ND	ND	1.90E-09	1.90E-09	1.90E-09	NA
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/1	ND	ND	1.70E-09	1.70E-09	1.70E-09	NA
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	Not Listed	0/1	ND	ND	1.60E-09	1.60E-09	1.60E-09	NA
HxCDDs (total)	Not Listed	Not Listed	Not Listed	0/1	ND	ND	1.90E-09	1.90E-09	1.90E-09	NA
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	Not Listed	0/1	ND	ND	6.00E-10	6.00E-10	6.00E-10	NA
HpCDDs (total)	Not Listed	Not Listed	Not Listed	0/1	ND	ND	6.00E-10	6.00E-10	6.00E-10	NA
OCDD	Not Listed	Not Listed	Not Listed	0/1	ND	ND	1.60E-09	1.60E-09	1.60E-09	NA
Total TEQs (1998 WHO TEFs)	Not Listed	4.00E-05	4.00E-04	1/1	3.00E-09	3.00E-09	3.00E-09	3.00E-09	3.00E-09	NA

**Table D6-3**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area I GW-2 Sentinel (Downgradient) Monitoring Well MM-1**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Unfiltered</b>										
Arsenic	Not Listed	0.9	9	1/1	0.0187	0.0187	0.0190	0.0190	0.0190	NA
Barium	Not Listed	50	100	1/1	0.105	0.105	0.110	0.110	0.110	NA
Chromium	Not Listed	0.3	3	1/1	0.0186	0.0186	0.0190	0.0190	0.0190	NA
Cobalt	Not Listed	0.075	Not Listed	1/1	0.0242	0.0242	0.0240	0.0240	0.0240	NA
Copper	Not Listed	0.23	Not Listed	1/1	0.0686	0.0686	0.0690	0.0690	0.0690	NA
Lead	Not Listed	0.01	0.15	1/1	0.0386	0.0386	0.0390	0.0390	0.0390	NA
Nickel	Not Listed	0.2	2	1/1	0.0357	0.0357	0.0360	0.0360	0.0360	NA
Vanadium	Not Listed	4	40	1/1	0.0193	0.0193	0.0190	0.0190	0.0190	NA
Zinc	Not Listed	0.9	50	1/1	0.129	0.129	0.130	0.130	0.130	NA
<b>Inorganics-Filtered</b>										
Arsenic	Not Listed	0.9	9	1/1	0.0021	0.0021	0.00210	0.00210	0.00210	NA
Barium	Not Listed	50	100	1/1	0.019	0.019	0.0190	0.0190	0.0190	NA
Lead	Not Listed	0.01	0.15	1/1	0.0067	0.0067	0.00670	0.00670	0.00670	NA

**Notes:**

1. Samples were collected between 1997 and 2010 and were submitted to SGS Environmental Services, Inc. and Quanterra Environmental Services for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D6-4**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area | GW-2 Sentinel / GW-3 Perimeter (Upgradient) Monitoring Well SZ-1**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
1,4-Dioxane	6	50	100	0/4	ND	ND	0.100	0.100	0.100	0
Acetone	50	50	100	1/5	0.0065	0.0065	0.00500	0.00530	0.00527	0.000671
Acetonitrile	Not Listed	Not Listed	Not Listed	0/4	ND	ND	0.0500	0.0388	0.0281	0.0225
Acrolein	Not Listed	Not Listed	Not Listed	0/5	ND	ND	0.0500	0.0320	0.0199	0.0246
Propionitrile	Not Listed	Not Listed	Not Listed	0/4	ND	ND	0.00500	0.0163	0.00889	0.0225
Toluene	50	40	100	1/7	0.007	0.007	0.00250	0.00251	0.00197	0.00131
Total VOCs	5	Not Listed	Not Listed	2/7	0.0065	0.007	0.100	0.0588	0.0187	0.0514
<b>PCBs-Unfiltered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	3/5	4.4E-05	0.00011	0.0000750	0.000152	0.0000903	0.000197
Total PCBs	0.005	0.01	0.1	3/5	4.4E-05	0.00011	0.0000750	0.000152	0.0000903	0.000197
<b>PCBs-Filtered</b>										
Aroclor-1254	Not Listed	Not Listed	Not Listed	2/6	3.7E-05	5.3E-05	0.0000450	0.000193	0.0000901	0.000238
Total PCBs	0.005	0.01	0.1	2/6	3.7E-05	5.3E-05	0.0000450	0.000193	0.0000901	0.000238
<b>Semivolatile Organics</b>										
bis(2-Ethylhexyl)phthalate	Not Listed	50	100	1/5	0	0.002	0.00300	0.00310	0.00309	0.000224
Di-n-Butylphthalate	Not Listed	Not Listed	Not Listed	1/5	0.002	0.002	0.00500	0.00440	0.00416	0.00134
<b>Organochlorine Pesticides</b>										
None Detected	--	--	--	0/3	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>										
None Detected	--	--	--	0/3	--	--	--	--	--	--
<b>Herbicides</b>										
None Detected	--	--	--	0/3	--	--	--	--	--	--
<b>Furans</b>										
2,3,7,8-TCDF	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.20E-09	1.74E-09	2.98E-10	2.17E-09
TCDFs (total)	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.20E-09	1.84E-09	3.33E-10	2.11E-09
1,2,3,7,8-PeCDF	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.10E-09	2.59E-10	7.48E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.09E-09	2.59E-10	7.14E-10
PeCDFs (total)	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.14E-09	2.71E-10	7.33E-10
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.80E-09	1.27E-09	2.73E-10	9.03E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.40E-09	1.07E-09	2.35E-10	7.29E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	Not Listed	0/5	ND	ND	2.00E-09	1.45E-09	3.13E-10	1.03E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.70E-09	1.32E-09	2.98E-10	8.10E-10
HxCDFs (total)	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.70E-09	1.32E-09	2.98E-10	8.10E-10
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.20E-09	1.11E-09	1.08E-09	2.76E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.40E-09	9.62E-10	2.20E-10	7.48E-10
HpCDFs (total)	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.40E-09	1.28E-09	1.24E-09	2.86E-10
OCDF	Not Listed	Not Listed	Not Listed	0/5	ND	ND	2.90E-09	2.86E-09	2.68E-09	1.10E-09

**Table D6-4**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area | GW-2 Sentinel / GW-3 Perimeter (Upgradient) Monitoring Well SZ-1**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>										
2,3,7,8-TCDD	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.00E-09	7.84E-10	2.08E-10	5.55E-10
TCDDs (total)	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.20E-09	8.96E-10	2.56E-10	5.39E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.20E-09	4.21E-10	7.89E-10
PeCDDs (total)	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.40E-09	1.24E-09	3.24E-10	8.02E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/5	ND	ND	2.10E-09	2.24E-09	5.12E-10	1.55E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	Not Listed	0/5	ND	ND	2.10E-09	1.88E-09	4.46E-10	1.20E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	Not Listed	0/5	ND	ND	2.10E-09	1.94E-09	4.45E-10	1.31E-09
HxCDDs (total)	Not Listed	Not Listed	Not Listed	0/5	ND	ND	2.10E-09	2.04E-09	5.45E-10	1.34E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	Not Listed	0/5	ND	ND	1.90E-09	1.69E-09	1.49E-09	7.00E-10
HpCDDs (total)	Not Listed	Not Listed	Not Listed	0/5	ND	ND	2.00E-09	1.97E-09	1.66E-09	1.01E-09
OCDD	Not Listed	Not Listed	Not Listed	1/5	7.7E-09	7.7E-09	8.00E-09	7.66E-09	7.11E-09	2.73E-09
Total TEQs (1998 WHO TEFs)	Not Listed	4.00E-05	4.00E-04	5/5	3.3E-11	6.1E-09	5.00E-09	3.85E-09	1.72E-09	2.43E-09
<b>Inorganics-Unfiltered</b>										
Antimony	Not Listed	8	80	1/5	0.0083	0.0083	0.0300	0.0217	0.0186	0.0114
Arsenic	Not Listed	0.9	9	1/5	0.0039	0.0042	0.00500	0.00482	0.00481	0.000402
Barium	Not Listed	50	100	4/5	0.039	0.201	0.100	0.117	0.103	0.0606
Beryllium	Not Listed	0.2	2	1/5	0.0014	0.0014	0.000500	0.000600	0.000445	0.000480
Cadmium	Not Listed	0.004	0.05	1/5	0.0019	0.0019	0.00250	0.00224	0.00222	0.000358
Chromium	Not Listed	0.3	3	2/5	0.0021	0.0045	0.00500	0.00446	0.00440	0.000780
Cobalt	Not Listed	0.075	Not Listed	2/5	0.003	0.0095	0.0250	0.0172	0.0131	0.0108
Copper	Not Listed	0.23	Not Listed	3/5	0.0048	0.0165	0.0130	0.0105	0.00957	0.00448
Cyanide	Not Listed	0.03	2	1/5	0.0046	0.0046	0.00500	0.00492	0.00492	0.000179
Lead	Not Listed	0.01	0.15	1/5	0.0092	0.0104	0.00150	0.00336	0.00242	0.00363
Nickel	Not Listed	0.2	2	1/5	0.0037	0.0037	0.0200	0.0137	0.0107	0.00864
Selenium	Not Listed	0.1	1	1/5	0.007	0.007	0.00250	0.00316	0.00270	0.00221
Silver	Not Listed	0.007	1	1/5	0.0032	0.0032	0.00250	0.00244	0.00237	0.000607
Vanadium	Not Listed	4	40	1/5	0.0015	0.0015	0.0250	0.0162	0.0100	0.0121
Zinc	Not Listed	0.9	50	3/5	0.0075	0.0402	0.0100	0.0163	0.0136	0.0121

**Table D6-4**  
**Statistical Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area I GW-2 Sentinel / GW-3 Perimeter (Upgradient) Monitoring Well SZ-1**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>										
Arsenic	Not Listed	0.9	9	1/5	0.0021	0.0021	0.00500	0.0133	0.00623	0.0206
Barium	Not Listed	50	100	4/5	0.041	0.203	0.100	0.110	0.0987	0.0535
Cobalt	Not Listed	0.075	Not Listed	1/5	0.0038	0.0049	0.0250	0.0209	0.0177	0.00921
Copper	Not Listed	0.23	Not Listed	1/5	0	0.002	0.0130	0.0181	0.0109	0.0185
Nickel	Not Listed	0.2	2	1/5	0.0024	0.0024	0.0200	0.0134	0.00984	0.00902
Zinc	Not Listed	0.9	50	1/5	0.011	0.011	0.0100	0.00910	0.00801	0.00378

**Notes:**

1. Samples were collected between 1988 and 2003 and were submitted to SGS Environmental Services, Inc., Geraghty & Miller, and Quanterra Environmental Services for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D6-5  
Summary Of Historical Groundwater Analytical Results  
Newell Street Area II GW-3 Perimeter (Downgradient) Monitoring Well GMA1-8**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
None Detected	--	--	0/4	--	--	--	--	--	--
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	3/4	0.000066	0.00041	0.000118	0.00017	0.000111	0.00017
Total PCBs	0.01	0.1	3/4	0.000066	0.00041	0.000118	0.00017	0.000111	0.00017
<b>PCBs-Filtered</b>									
None Detected	--	--	0/4	--	--	--	--	--	--
<b>Semivolatile Organics</b>									
None Detected	--	--	0/4	--	--	--	--	--	--
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/4	ND	ND	7.65E-10	7.33E-10	1.35E-10	6.35E-10
TCDFs (total)	Not Listed	Not Listed	1/4	4.60E-09	4.60E-09	9.15E-10	1.61E-09	1.93E-10	2.08E-09
1,2,3,7,8-PeCDF	Not Listed	Not Listed	1/4	1.40E-09	1.40E-09	1.05E-09	8.75E-10	1.79E-10	6.39E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	1/4	1.20E-09	1.20E-09	1.05E-09	1.00E-09	9.58E-10	3.16E-10
PeCDFs (total)	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.33E-09	1.21E-09	6.13E-10
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	9.25E-10	7.88E-10	1.43E-10	6.33E-10
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	1/4	1.20E-09	1.20E-09	1.25E-09	9.50E-10	1.69E-10	6.35E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.03E-09	1.84E-10	6.90E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.00E-09	1.75E-10	6.68E-10
HxCDFs (total)	Not Listed	Not Listed	2/4	1.30E-12	1.20E-09	1.25E-09	9.75E-10	2.31E-10	6.54E-10
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	1/4	2.00E-09	2.00E-09	1.55E-09	1.60E-09	1.57E-09	3.56E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.05E-09	1.87E-10	7.14E-10
HpCDFs (total)	Not Listed	Not Listed	1/4	2.00E-09	2.00E-09	1.75E-09	2.05E-09	1.91E-09	9.47E-10
OCDF	Not Listed	Not Listed	0/4	ND	ND	3.10E-09	3.10E-09	3.06E-09	5.89E-10

**Table D6-5  
Summary Of Historical Groundwater Analytical Results  
Newell Street Area II GW-3 Perimeter (Downgradient) Monitoring Well GMA1-8**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	6.50E-10	7.00E-10	1.49E-10	6.20E-10
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.60E-09	1.23E-09	2.43E-10	8.22E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	9.75E-10	1.60E-10	6.50E-10
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.70E-09	1.38E-09	2.64E-10	9.91E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.55E-09	1.33E-09	2.46E-10	9.43E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.40E-09	1.23E-09	2.43E-10	8.84E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.45E-09	1.23E-09	2.24E-10	8.58E-10
HxCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	2.10E-09	1.60E-09	3.47E-10	1.07E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	0/4	ND	ND	1.85E-09	1.93E-09	1.73E-09	9.78E-10
HpCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	2.45E-09	2.68E-09	2.25E-09	1.70E-09
OCDD	Not Listed	Not Listed	1/4	6.60E-09	6.60E-09	9.30E-09	1.02E-08	9.06E-09	5.46E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	3.50E-10	4.50E-09	3.60E-09	3.01E-09	2.13E-09	1.83E-09
<b>Inorganics-Unfiltered</b>									
Antimony	8	80	1/4	0.01	0.01	0.03	0.025	0.0228	0.01
Barium	50	100	3/4	0.036	0.05	0.0455	0.0568	0.0521	0.0294
Chromium	0.3	3	2/4	0.0028	0.0035	0.00425	0.00408	0.00396	0.00111
Cobalt	0.075	Not Listed	1/4	0.002	0.002	0.025	0.0193	0.0133	0.0115
Copper	0.23	Not Listed	2/4	0.0037	0.0055	0.00925	0.0088	0.00766	0.00491
Cyanide	0.03	2	2/4	0.0032	0.0068	0.005	0.005	0.00483	0.00147
Lead	0.01	0.15	1/4	0.0025	0.0025	0.002	0.002	0.00194	0.000577
Mercury	0.02	0.2	1/4	0.00073	0.00073	0.0001	0.000258	0.000164	0.000315
Nickel	0.2	2	1/4	0.0037	0.0037	0.02	0.0159	0.0131	0.00815
Vanadium	4	40	1/4	0.0014	0.0014	0.025	0.0191	0.0122	0.0118
Zinc	0.9	50	3/4	0.0075	0.016	0.013	0.0124	0.0118	0.00431



**Table D6-5  
Summary Of Historical Groundwater Analytical Results  
Newell Street Area II GW-3 Perimeter (Downgradient) Monitoring Well GMA1-8**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
Plant Site 1 Groundwater Management Area  
General Electric Company - Pittsfield, Massachusetts  
(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>									
Antimony	8	80	1/4	0.0087	0.0087	0.03	0.0247	0.022	0.0107
Barium	50	100	3/4	0.022	0.042	0.037	0.049	0.0415	0.035
Copper	0.23	Not Listed	1/4	0.0035	0.0035	0.013	0.0199	0.0131	0.0206
Cyanide	0.03	2	1/2	0.0031	0.0031	0.00405	0.00405	0.00394	0.00134
Mercury	0.02	0.2	1/4	0.00076	0.00076	0.0001	0.000265	0.000166	0.00033
Vanadium	4	40	1/4	0.0012	0.0012	0.025	0.0191	0.0117	0.0119

**Notes:**

1. Samples were collected between 2001 and 2003 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D6-6**  
**Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area II GW-3 Perimeter (Downgradient) Monitoring Well GMA1-9**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Chlorobenzene	1	10	1/4	0.0025	0.0025	0.0025	0.0025	0.0025	0
Total VOCs	Not Listed	Not Listed	1/4	0.0025	0.0025	0.1	0.0756	0.0398	0.0488
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.000049	0.00087	0.00019	0.000325	0.000193	0.000373
Aroclor-1260	Not Listed	Not Listed	1/4	0.00013	0.00013	0.000033	0.0000573	0.0000465	0.0000485
Total PCBs	0.01	0.1	4/4	0.000049	0.001	0.00019	0.000357	0.0002	0.000436
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	2/4	0.000045	0.000075	0.000039	0.0000465	0.0000438	0.0000198
Total PCBs	0.01	0.1	2/4	0.000045	0.000075	0.000039	0.0000465	0.0000438	0.0000198
<b>Semivolatile Organics</b>									
None Detected	--	--	0/4	--	--	--	--	--	--
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/4	ND	ND	1.05E-09	1.10E-09	1.73E-10	9.83E-10
TCDFs (total)	Not Listed	Not Listed	1/4	1.70E-08	1.70E-08	1.50E-09	5.00E-09	3.23E-10	8.06E-09
1,2,3,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	1.25E-09	1.26E-09	1.20E-09	4.46E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	0/4	ND	ND	9.00E-10	1.06E-09	9.87E-10	5.06E-10
PeCDFs (total)	Not Listed	Not Listed	1/4	1.20E-08	1.20E-08	2.00E-09	4.19E-09	2.45E-09	5.24E-09
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	2/4	1.90E-12	3.60E-09	1.20E-09	1.50E-09	2.93E-10	1.59E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.05E-09	9.75E-10	1.98E-10	8.26E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.35E-09	1.15E-09	2.22E-10	8.10E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	1/4	1.60E-12	1.60E-12	1.35E-09	1.13E-09	2.69E-10	7.80E-10
HxCDFs (total)	Not Listed	Not Listed	2/4	3.60E-12	3.60E-09	1.60E-09	1.70E-09	4.23E-10	1.49E-09
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	1/4	2.50E-09	2.50E-09	1.60E-09	1.58E-09	1.39E-09	7.93E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	1/4	1.10E-12	1.10E-12	1.45E-09	1.28E-09	2.66E-10	9.28E-10
HpCDFs (total)	Not Listed	Not Listed	1/4	2.50E-09	2.50E-09	2.25E-09	1.95E-09	1.69E-09	9.47E-10
OCDF	Not Listed	Not Listed	0/4	ND	ND	3.65E-09	4.08E-09	3.81E-09	1.76E-09

**Table D6-6**  
**Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area II GW-3 Perimeter (Downgradient) Monitoring Well GMA1-9**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	1.20E-09	1.20E-09	2.13E-10	9.83E-10
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.70E-09	1.45E-09	2.69E-10	1.07E-09
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	1.35E-09	1.38E-09	1.35E-09	3.30E-10
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.70E-09	1.68E-09	1.58E-09	6.24E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.45E-09	1.55E-09	2.68E-10	1.36E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	1/4	2.60E-12	2.60E-12	1.35E-09	1.40E-09	3.42E-10	1.19E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	1/4	1.60E-12	1.60E-12	1.45E-09	1.48E-09	3.16E-10	1.23E-09
HxCDDs (total)	Not Listed	Not Listed	1/4	2.60E-12	2.60E-12	1.40E-09	1.45E-09	3.51E-10	1.23E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	0/4	ND	ND	2.40E-09	2.24E-09	1.99E-09	1.07E-09
HpCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	2.40E-09	2.35E-09	2.21E-09	8.81E-10
OCDD	Not Listed	Not Listed	0/4	ND	ND	8.75E-09	7.75E-09	6.76E-09	3.71E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	1.50E-09	7.10E-09	4.10E-09	4.20E-09	3.65E-09	2.30E-09
<b>Inorganics-Unfiltered</b>									
Antimony	8	80	1/4	0.0065	0.0065	0.03	0.0241	0.0205	0.0118
Barium	50	100	3/4	0.032	0.044	0.0395	0.0528	0.0471	0.0319
Copper	0.23	Not Listed	1/4	0.0039	0.0039	0.013	0.0107	0.00962	0.00455
Cyanide	0.03	2	1/4	0.0031	0.0031	0.005	0.00453	0.00444	0.00095
Lead	0.01	0.15	2/4	0.0024	0.0033	0.00245	0.00243	0.00233	0.000737
Mercury	0.02	0.2	1/5	0.0032	0.0032	0.0001	0.00072	0.0002	0.00139
Sulfide	Not Listed	Not Listed	1/4	16	16	2.5	5.88	3.98	6.75
Zinc	0.9	50	4/4	0.0071	0.036	0.0123	0.0169	0.0134	0.0135
<b>Inorganics-Filtered</b>									
Barium	50	100	3/4	0.011	0.033	0.0285	0.042	0.0306	0.0397
Mercury	0.02	0.2	1/5	0.0018	0.0018	0.0001	0.00044	0.000178	0.00076

**Notes:**

1. Samples were collected between 2001 and 2003 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D6-7  
 Summary Of Historical Groundwater Analytical Results  
 Newell Street Area II GW-2 Sentinel / GW-3 Perimeter (Upgradient) Monitoring Well GMA1-25**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
 Plant Site 1 Groundwater Management Area  
 General Electric Company - Pittsfield, Massachusetts  
 (Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
Acetone	50	50	100	1/4	0.0025	0.0025	0.0025	0.0025	0.0025	0
Methylene Chloride	10	50	100	1/4	0.00024	0.00053	0.0025	0.00197	0.00157	0.00106
Toluene	50	40	100	1/4	0.00017	0.00017	0.0005	0.000418	0.000382	0.000165
Total VOCs	5	Not Listed	Not Listed	3/4	0.00017	0.0025	0.0132	0.0191	0.00305	0.0239
<b>PCBs-Filtered</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>Semivolatile Organics</b>										
bis(2-Ethylhexyl)phthalate	Not Listed	50	100	2/4	0.00099	0.0081	0.0025	0.00335	0.00294	0.00219

Notes:

1. Samples were collected between 2007 and 2009 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D6-8  
 Summary Of Historical Groundwater Analytical Results  
 Newell Street Area II GW-2 Sentinel / GW-3 Perimeter (Upgradient) Monitoring Well GMA1-27**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
 Plant Site 1 Groundwater Management Area  
 General Electric Company - Pittsfield, Massachusetts  
 (Results are presented in parts per million, ppm)**

	Method 1 GW-2 Standards	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>										
Methylene Chloride	10	50	100	2/4	0.00042	0.00061	0.00156	0.00151	0.00112	0.00115
Total VOCs	5	Not Listed	Not Listed	2/4	0.00042	0.00061	0.0253	0.0253	0.00503	0.0286
<b>PCBs-Filtered</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--
<b>Semivolatile Organics</b>										
None Detected	--	--	--	0/4	--	--	--	--	--	--

Notes:

1. Samples were collected between 2007 and 2009 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. The Method 1 GW-2, GW-3, and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D6-9**  
**Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area II GW-3 Perimeter (Downgradient) Monitoring Well N2SC-07S**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
1,1-Dichloroethene	30	100	2/7	0.0035	0.016	0.0160	0.0157	0.0116	0.00992
Benzene	10	100	4/7	0.0066	0.065	0.0130	0.0223	0.0169	0.0202
Chlorobenzene	1	10	7/7	0.058	0.87	0.140	0.236	0.159	0.284
Ethylbenzene	5	100	1/7	0.0075	0.0075	0.0130	0.0144	0.00993	0.0106
Toluene	40	100	2/7	0.0016	0.01	0.0130	0.0146	0.00971	0.0105
trans-1,2-Dichloroethene	50	100	3/7	0.0033	0.033	0.0130	0.0151	0.00972	0.0126
Trichloroethene	5	50	1/7	0.034	0.034	0.0250	0.0181	0.0123	0.0123
Vinyl Chloride	50	100	7/7	0.38	6.9	0.890	1.66	0.991	2.34
Xylenes (total)	5	100	1/7	0.021	0.021	0.0250	0.0206	0.0163	0.0119
Total VOCs	Not Listed	Not Listed	7/7	0.46	7.9	1.00	1.93	1.18	2.66
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.00033	0.00084	0.000630	0.000608	0.000572	0.000225
Total PCBs	0.01	0.1	4/4	0.00033	0.00084	0.000630	0.000608	0.000572	0.000225
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	5/9	0.000041	0.00048	0.0000420	0.000151	0.0000892	0.000159
Aroclor-1260	Not Listed	Not Listed	1/9	0.00015	0.00015	0.0000330	0.0000461	0.0000392	0.0000390
Total PCBs	0.01	0.1	5/9	0.000041	0.00048	0.0000420	0.000168	0.0000960	0.000168
<b>Semivolatile Organics</b>									
1,2,4-Trichlorobenzene	50	100	4/5	0.0045	0.006	0.00580	0.00676	0.00620	0.00356
1,2-Dichlorobenzene	2	20	2/5	0.0027	0.007	0.00500	0.00654	0.00572	0.00392
1,3-Dichlorobenzene	50	100	4/5	0.012	0.033	0.0160	0.0210	0.0191	0.0102
1,4-Dichlorobenzene	8	80	5/5	0.055	0.15	0.0700	0.0852	0.0798	0.0379
Phenol	2	100	2/4	0.0031	0.0092	0.00500	0.00558	0.00517	0.00258
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--

**Table D6-9**  
**Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area II GW-3 Perimeter (Downgradient) Monitoring Well N2SC-07S**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/4	ND	ND	5.70E-10	4.60E-10	1.21E-10	3.19E-10
TCDFs (total)	Not Listed	Not Listed	4/4	2.8E-11	8.1E-08	2.65E-08	3.35E-08	6.00E-09	3.53E-08
1,2,3,7,8-PeCDF	Not Listed	Not Listed	2/4	9.8E-10	1.1E-09	1.04E-09	8.45E-10	1.43E-10	5.78E-10
2,3,4,7,8-PeCDF	Not Listed	Not Listed	1/4	3.1E-09	3.1E-09	1.20E-09	1.38E-09	2.65E-10	1.28E-09
PeCDFs (total)	Not Listed	Not Listed	3/4	1.8E-11	2.8E-08	1.16E-08	1.28E-08	2.83E-09	1.17E-08
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	1/4	2.9E-09	2.9E-09	1.35E-09	1.40E-09	2.32E-10	1.19E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	1/4	1.9E-09	1.9E-09	1.35E-09	1.15E-09	1.93E-10	8.10E-10
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.00E-09	1.90E-10	6.68E-10
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.00E-09	1.85E-10	6.68E-10
HxCDFs (total)	Not Listed	Not Listed	2/4	2.7E-12	4.8E-09	1.25E-09	1.83E-09	3.76E-10	2.07E-09
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	2/4	1.8E-09	2.3E-09	1.60E-09	1.51E-09	1.34E-09	7.40E-10
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	1/4	2E-09	2E-09	1.35E-09	1.18E-09	2.07E-10	8.42E-10
HpCDFs (total)	Not Listed	Not Listed	2/4	1.8E-09	4.3E-09	2.00E-09	2.21E-09	1.75E-09	1.56E-09
OCDF	Not Listed	Not Listed	2/4	6.1E-12	6.2E-09	2.70E-09	2.90E-09	7.24E-10	2.54E-09
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	5.25E-10	6.13E-10	1.47E-10	5.80E-10
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.50E-09	1.20E-09	2.69E-10	8.16E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.00E-09	1.56E-10	6.68E-10
PeCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.65E-09	1.33E-09	2.77E-10	9.21E-10
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.30E-09	1.03E-09	2.67E-10	6.89E-10
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.03E-09	8.63E-10	2.23E-10	6.41E-10
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.03E-09	8.63E-10	2.23E-10	6.41E-10
HxCDDs (total)	Not Listed	Not Listed	1/4	1.1E-09	1.1E-09	1.25E-09	1.23E-09	2.93E-10	9.87E-10
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	0/4	ND	ND	1.45E-09	1.43E-09	1.40E-09	3.20E-10
HpCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.45E-09	1.68E-09	1.58E-09	7.04E-10
OCDD	Not Listed	Not Listed	0/4	ND	ND	4.90E-09	4.70E-09	1.06E-09	3.71E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	3.3E-11	4.5E-09	3.90E-09	3.08E-09	1.22E-09	2.11E-09
<b>Inorganics-Unfiltered</b>									
Barium	50	100	3/4	0.027	0.042	0.0400	0.0518	0.0456	0.0328
Cadmium	0.004	0.05	1/4	0.00089	0.00089	0.00250	0.00210	0.00193	0.000805
Copper	0.23	Not Listed	1/4	0.0054	0.0054	0.0130	0.0111	0.0104	0.00380
Cyanide	0.03	2	1/4	0.0036	0.0036	0.00500	0.00465	0.00461	0.000700
Mercury	0.02	0.2	1/5	0.0022	0.0022	0.000100	0.000520	0.000186	0.000939
Thallium	3	30	1/4	0.015	0.015	0.00500	0.00750	0.00658	0.00500
Vanadium	4	40	1/4	0.002	0.002	0.0250	0.0193	0.0133	0.0115
Zinc	0.9	50	3/4	0.0029	0.02	0.00855	0.0100	0.00801	0.00728

**Table D6-9  
 Summary Of Historical Groundwater Analytical Results  
 Newell Street Area II GW-3 Perimeter (Downgradient) Monitoring Well N2SC-07S**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1  
 Plant Site 1 Groundwater Management Area  
 General Electric Company - Pittsfield, Massachusetts  
 (Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>									
Antimony	8	80	1/4	0.0062	0.0062	0.0300	0.0241	0.0202	0.0119
Barium	50	100	3/4	0.021	0.04	0.0375	0.0490	0.0414	0.0349
Beryllium	0.2	2	1/4	0.00086	0.00086	0.000500	0.000590	0.000573	0.000180
Cadmium	0.004	0.05	1/4	0.00067	0.00067	0.00250	0.00267	0.00214	0.00178
Mercury	0.02	0.2	1/5	0.0015	0.0015	0.000100	0.000380	0.000172	0.000626
Vanadium	4	40	1/4	0.0012	0.0012	0.0250	0.0191	0.0117	0.0119
Zinc	0.9	50	3/4	0.0014	0.009	0.00880	0.00725	0.00574	0.00394

**Notes:**

1. Samples were collected between 2001 and 2008 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.



**Table D6-10**  
**Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area II GW-3 Perimeter (Downgradient) Monitoring Well NS-09**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Benzene	10	100	2/6	0.0007	0.001	0.00205	0.00177	0.00152	0.000876
Chlorobenzene	1	10	4/6	0.003	0.026	0.00750	0.00983	0.00658	0.00879
Chloromethane	Not Listed	Not Listed	1/6	0.008	0.008	0.00250	0.00360	0.00315	0.00246
Dibromomethane	Not Listed	Not Listed	1/6	0.007	0.007	0.00250	0.00340	0.00307	0.00201
Methylene Chloride	50	100	2/6	0.008	0.024	0.00250	0.00800	0.00486	0.00909
Trichloroethene	5	50	2/6	0.0013	0.004	0.00250	0.00225	0.00190	0.00117
Vinyl Chloride	50	100	3/6	0.0012	0.014	0.00180	0.00516	0.00289	0.00575
Total VOCs	Not Listed	Not Listed	5/6	0.003	0.062	0.0285	0.0393	0.0244	0.0358
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.000072	0.0014	0.000865	0.000726	0.000491	0.000461
Aroclor-1260	Not Listed	Not Listed	3/4	0.00017	0.00053	0.000215	0.000208	0.000152	0.000143
Total PCBs	0.01	0.1	5/6	0.000072	0.0022	0.00140	0.00120	0.000777	0.000780
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	1/4	0.00034	0.00034	0.0000330	0.000110	0.0000591	0.000154
Total PCBs	0.01	0.1	2/5	0.00034	0.00084	0.0000330	0.000256	0.000101	0.000353
<b>Semivolatile Organics</b>									
1,3-Dichlorobenzene	50	100	1/6	0	0.001	0.00500	0.00433	0.00382	0.00163
1,4-Dichlorobenzene	8	80	2/6	0.001	0.0028	0.00500	0.00423	0.00392	0.00141
bis(2-Ethylhexyl)phthalate	50	100	1/6	0.003	0.004	0.00300	0.00475	0.00393	0.00405
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/3	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--

**Table D6-10**  
**Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area II GW-3 Perimeter (Downgradient) Monitoring Well NS-09**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	1/6	2E-09	2E-09	1.40E-09	1.74E-09	3.46E-10	1.66E-09
TCDFs (total)	Not Listed	Not Listed	3/6	1.3E-11	1.4E-07	1.40E-09	2.97E-08	1.71E-09	6.17E-08
1,2,3,7,8-PeCDF	Not Listed	Not Listed	1/6	6.8E-09	6.8E-09	1.80E-09	3.68E-09	5.83E-10	3.73E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	1/6	1.3E-09	1.3E-09	1.80E-09	2.92E-09	5.22E-10	3.30E-09
PeCDFs (total)	Not Listed	Not Listed	4/6	1.7E-11	3.8E-07	1.80E-09	7.88E-08	2.78E-09	1.68E-07
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	4/6	1.4E-12	4.3E-08	1.90E-09	1.07E-08	1.05E-09	1.82E-08
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	2/6	1.4E-09	3.8E-08	1.80E-09	8.98E-09	6.93E-10	1.63E-08
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	1/6	5.6E-09	5.6E-09	2.00E-09	3.08E-09	5.54E-10	2.82E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	2/6	8E-13	4.9E-09	1.90E-09	2.53E-09	4.25E-10	2.55E-09
HxCDFs (total)	Not Listed	Not Listed	3/6	1.2E-11	1.8E-08	3.00E-09	4.06E-08	2.95E-09	7.83E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	2/6	1.6E-09	4.9E-09	1.60E-09	4.84E-09	2.92E-09	5.88E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	2/6	1.2E-12	3.4E-09	1.80E-09	3.50E-09	6.37E-10	4.37E-09
HpCDFs (total)	Not Listed	Not Listed	2/6	1.6E-09	8.3E-09	1.80E-09	1.19E-08	4.56E-09	1.93E-08
OCDF	Not Listed	Not Listed	1/6	9E-09	9E-09	2.80E-09	1.09E-08	1.49E-09	1.66E-08
<b>Dioxins</b>									
1,2,3,7,8-PeCDD	Not Listed	Not Listed	1/6	7E-09	7E-09	1.80E-09	3.62E-09	6.52E-10	3.62E-09
PeCDDs (total)	Not Listed	Not Listed	1/6	7E-09	7E-09	2.20E-09	3.72E-09	6.89E-10	3.56E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	1/6	5.6E-09	5.6E-09	2.80E-09	3.20E-09	6.18E-10	2.58E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	1/6	5.5E-09	5.5E-09	2.90E-09	3.32E-09	6.27E-10	2.68E-09
HxCDDs (total)	Not Listed	Not Listed	1/6	1.1E-08	1.1E-08	3.30E-09	4.70E-09	8.90E-10	4.34E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	1/6	6.4E-09	6.4E-09	2.60E-09	3.66E-09	3.17E-09	2.14E-09
HpCDDs (total)	Not Listed	Not Listed	2/6	4.3E-12	6.4E-09	2.60E-09	3.16E-09	8.75E-10	2.73E-09
OCDD	Not Listed	Not Listed	3/6	1.5E-08	6.2E-08	1.50E-08	2.04E-08	1.29E-08	2.38E-08
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	5/5	3.6E-11	3E-08	7.20E-09	1.10E-08	3.34E-09	1.18E-08
<b>Inorganics-Unfiltered</b>									
Antimony	8	80	1/6	0.0039	0.0039	0.0300	0.0219	0.0163	0.0122
Arsenic	0.9	9	1/6	0.0048	0.0061	0.00500	0.00492	0.00489	0.000492
Barium	50	100	5/6	0.024	1.8	0.0810	0.207	0.0930	0.346
Copper	0.23	Not Listed	4/6	0.0037	0.0196	0.0110	0.0109	0.00962	0.00533
Cyanide	0.03	2	1/6	0.0042	0.0042	0.00500	0.00784	0.00637	0.00681
Lead	0.01	0.15	1/6	0.0058	0.006	0.00150	0.00223	0.00171	0.00190
Mercury	0.02	0.2	1/6	0.002	0.0023	0.000100	0.000520	0.000186	0.000939
Nickel	0.2	2	1/6	0.0035	0.004	0.0200	0.0130	0.00788	0.00969
Silver	0.007	1	1/6	1.9	1.9	0.00250	0.192	0.00582	0.424
Zinc	0.9	50	5/6	0.01	0.0538	0.0205	0.0241	0.0175	0.0181

**Table D6-10**  
**Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area II GW-3 Perimeter (Downgradient) Monitoring Well NS-09**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>									
Antimony	8	80	1/5	0.03	0.03	0.0300	0.0300	0.0300	0
Barium	50	100	4/5	0.015	0.038	0.0270	0.0408	0.0326	0.0341
Cobalt	0.075	Not Listed	1/5	0.0026	0.0026	0.0250	0.0156	0.00677	0.0129
Copper	0.23	Not Listed	5/5	0.003	0.0087	0.00460	0.00476	0.00457	0.00158
Cyanide	0.03	2	1/2	0	0.0023	0.00435	0.00435	0.00430	0.000919
Mercury	0.02	0.2	1/5	0.0018	0.0023	0.000100	0.000500	0.000184	0.000894
Nickel	0.2	2	1/5	0.0037	0.0042	0.0200	0.0130	0.00796	0.00964
Silver	0.007	1	1/5	0.03	0.03	0.00250	0.00800	0.00411	0.0123
Tin	Not Listed	Not Listed	1/5	0.006	0.006	0.0150	0.0132	0.0125	0.00402
Zinc	0.9	50	3/5	0.007	0.013	0.0100	0.0106	0.0103	0.00251

**Notes:**

1. Samples were collected between 1995 and 2003 and were submitted to SGS Environmental Services, Inc. and Maxymillian lab for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. Non-detect samples without reporting limits for the 9/1986 sample are included in detection frequency but did not participate in the remaining calculations .
8. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D6-11**  
**Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area II GW-3 Perimeter (Downgradient) Monitoring Well NS-17**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
Benzene	10	100	6/8	0.0014	0.044	0.00715	0.0174	0.00808	0.0198
Chlorobenzene	1	10	6/8	0.0094	0.24	0.0195	0.0626	0.0238	0.0842
Ethylbenzene	5	100	1/8	0.0081	0.0081	0.00375	0.00976	0.00501	0.0164
Toluene	40	100	1/8	0.0032	0.0032	0.00285	0.00915	0.00446	0.0165
Vinyl Chloride	50	100	8/8	0.0067	2.7	0.435	0.831	0.168	1.04
Xylenes (total)	5	100	1/8	0.0076	0.0076	0.00500	0.0110	0.00703	0.0158
Total VOCs	Not Listed	Not Listed	8/8	0.0067	2.9	0.485	0.918	0.294	1.13
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.00012	0.0014	0.000525	0.000643	0.000419	0.000595
Aroclor-1260	Not Listed	Not Listed	2/4	0.00024	0.00035	0.000137	0.000157	0.0000956	0.000146
Total PCBs	0.01	0.1	5/5	0.00012	0.0041	0.00110	0.00145	0.000727	0.00162
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	3/4	0.000081	0.00026	0.000101	0.000114	0.0000917	0.0000794
Total PCBs	0.01	0.1	4/5	0.000081	0.00026	0.000120	0.000137	0.000110	0.0000863
<b>Semivolatile Organics</b>									
1,2,4-Trichlorobenzene	50	100	1/6	0.0029	0.0029	0.00395	0.00382	0.00362	0.00130
1,3-Dichlorobenzene	50	100	5/6	0.0028	0.013	0.00560	0.00710	0.00604	0.00435
1,4-Dichlorobenzene	8	80	5/6	0.0037	0.069	0.0235	0.0321	0.0193	0.0294
Phenol	2	100	1/5	0.01	0.01	0.00500	0.00650	0.00623	0.00224
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--

**Table D6-11**  
**Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area II GW-3 Perimeter (Downgradient) Monitoring Well NS-17**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	0/5	ND	ND	1.20E-09	4.78E-09	3.48E-10	9.08E-09
TCDFs (total)	Not Listed	Not Listed	4/5	4.9E-12	1.30E-06	1.20E-08	2.71E-07	6.01E-09	5.75E-07
1,2,3,7,8-PeCDF	Not Listed	Not Listed	1/5	5.9E-08	5.9E-08	1.30E-09	1.26E-08	5.71E-10	2.59E-08
2,3,4,7,8-PeCDF	Not Listed	Not Listed	1/5	4.5E-08	4.5E-08	1.60E-09	9.94E-09	5.77E-10	1.96E-08
PeCDFs (total)	Not Listed	Not Listed	3/5	7.7E-12	1.70E-06	1.60E-09	3.42E-07	3.08E-09	7.59E-07
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	2/5	5.5E-09	1.20E-07	1.60E-09	2.57E-08	8.78E-10	5.28E-08
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	2/5	2.5E-09	5.80E-07	1.60E-09	1.17E-07	1.03E-09	2.59E-07
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	1/5	2.9E-09	2.9E-09	1.60E-09	2.26E-09	4.41E-10	2.08E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	1/5	2.6E-08	2.6E-08	1.30E-09	5.96E-09	4.61E-10	1.12E-08
HxCDFs (total)	Not Listed	Not Listed	3/5	3.3E-12	1.70E-06	1.60E-09	3.44E-07	2.55E-09	7.58E-07
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	2/5	4.3E-09	2.20E-07	1.80E-09	4.55E-08	1.06E-09	9.76E-08
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	2/5	3E-09	3.6E-08	2.20E-09	8.50E-09	7.62E-10	1.54E-08
HpCDFs (total)	Not Listed	Not Listed	2/5	1.3E-08	3.10E-07	2.00E-09	6.53E-08	1.49E-09	1.37E-07
OCDF	Not Listed	Not Listed	1/5	6.5E-09	6.5E-09	4.30E-09	1.47E-08	1.50E-09	2.55E-08
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/5	ND	ND	1.00E-09	3.90E-09	3.60E-10	6.81E-09
TCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.70E-09	4.16E-09	5.43E-10	6.67E-09
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	3.94E-09	4.70E-10	6.23E-09
PeCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	2.00E-09	4.08E-09	6.29E-10	6.16E-09
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/5	ND	ND	1.80E-09	7.52E-09	6.37E-10	1.32E-08
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/5	ND	ND	1.80E-09	6.60E-09	5.87E-10	1.15E-08
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/5	ND	ND	1.80E-09	6.64E-09	6.00E-10	1.14E-08
HxCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	2.00E-09	7.61E-09	2.42E-09	1.31E-08
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	0/5	ND	ND	1.90E-09	4.84E-09	2.86E-09	6.32E-09
HpCDDs (total)	Not Listed	Not Listed	1/5	2.5E-12	2.8E-12	1.80E-09	4.56E-09	8.21E-10	6.53E-09
OCDD	Not Listed	Not Listed	1/5	1.30E-07	1.30E-07	6.00E-09	2.95E-08	7.80E-09	5.62E-08
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	5/5	1.4E-11	1.40E-07	5.10E-09	3.10E-08	3.03E-09	6.10E-08

**Table D6-11**  
**Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area II GW-3 Perimeter (Downgradient) Monitoring Well NS-17**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Unfiltered</b>									
Antimony	8	80	1/5	0.01	0.01	0.0300	0.0260	0.0241	0.00894
Arsenic	0.9	9	1/5	0.009	0.009	0.00500	0.00580	0.00562	0.00179
Barium	50	100	4/5	0.021	0.259	0.0400	0.0918	0.0610	0.0986
Chromium	0.3	3	1/5	0.084	0.084	0.00500	0.0208	0.00879	0.0353
Cobalt	0.075	Not Listed	1/5	0.088	0.088	0.0250	0.0376	0.0322	0.0282
Copper	0.23	Not Listed	1/5	0.307	0.307	0.0130	0.0724	0.0245	0.133
Cyanide	0.03	2	1/5	0.0045	0.0045	0.00500	0.00790	0.00646	0.00677
Lead	0.01	0.15	1/5	0.596	0.596	0.00150	0.121	0.00551	0.268
Mercury	0.02	0.2	1/5	0.0016	0.0016	0.000100	0.000400	0.000174	0.000671
Nickel	0.2	2	1/5	0.0123	0.0123	0.0200	0.0184	0.0181	0.00358
Tin	Not Listed	Not Listed	1/5	0.004	0.004	0.0150	0.0128	0.0115	0.00492
Vanadium	4	40	1/5	0.101	0.101	0.0250	0.0400	0.0330	0.0335
Zinc	0.9	50	5/5	0.0062	0.545	0.0160	0.121	0.0263	0.240
<b>Inorganics-Filtered</b>									
Antimony	8	80	1/5	0.015	0.015	0.0300	0.0270	0.0261	0.00671
Barium	50	100	4/5	0.019	0.074	0.0400	0.0542	0.0466	0.0322
Chromium	0.3	3	1/5	0.01	0.01	0.00500	0.00670	0.00439	0.00487
Copper	0.23	Not Listed	2/5	0.004	0.0066	0.0130	0.0179	0.0127	0.0183
Mercury	0.02	0.2	1/5	0.0015	0.0015	0.000100	0.000380	0.000172	0.000626
Nickel	0.2	2	1/5	0.0029	0.0029	0.0200	0.0128	0.00747	0.00991
Selenium	0.1	1	1/5	0.005	0.005	0.00250	0.00280	0.00259	0.00130
Tin	Not Listed	Not Listed	1/5	0.002	0.002	0.0150	0.0124	0.0100	0.00581
Zinc	0.9	50	3/5	0.0022	0.076	0.0100	0.0226	0.0120	0.0302

**Notes:**

1. Samples were collected between 1995 and 2006 and were submitted to SGS Environmental Services, Inc. and Maxymillian lab for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D6-12**  
**Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area II GW-3 Perimeter (Upgradient) Monitoring Well NS-20**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
None Detected	--	--	0/5	--	--	--	--	--	--
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.00012	0.00066	0.000425	0.000408	0.000337	0.000247
Aroclor-1260	Not Listed	Not Listed	2/4	0.00032	0.00045	0.000177	0.000209	0.000112	0.000210
Total PCBs	0.01	0.1	5/5	0.00012	0.0015	0.000980	0.000778	0.000552	0.000566
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.000025	0.00017	0.0000445	0.0000710	0.0000535	0.0000669
Total PCBs	0.01	0.1	4/5	0.000025	0.00017	0.0000500	0.0000668	0.0000528	0.0000587
<b>Semivolatile Organics</b>									
None Detected	--	--	0/5	--	--	--	--	--	--
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	1/5	3.9E-09	3.9E-09	1.30E-09	6.70E-09	5.74E-10	1.14E-08
TCDFs (total)	Not Listed	Not Listed	2/5	1E-11	3.2E-08	1.30E-09	8.72E-09	1.37E-09	1.35E-08
1,2,3,7,8-PeCDF	Not Listed	Not Listed	1/5	2.4E-09	2.4E-09	1.40E-09	2.42E-09	4.42E-10	2.70E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	2.16E-09	3.78E-10	2.76E-09
PeCDFs (total)	Not Listed	Not Listed	2/5	1.7E-11	1.20E-07	1.40E-09	2.73E-08	2.20E-09	5.21E-08
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	0/5	ND	ND	1.40E-09	2.38E-09	4.26E-10	2.32E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	0/5	ND	ND	1.40E-09	1.88E-09	3.62E-10	1.86E-09
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	2.23E-09	3.65E-10	3.01E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	0/5	ND	ND	1.50E-09	2.08E-09	3.93E-10	2.28E-09
HxCDFs (total)	Not Listed	Not Listed	1/5	6.4E-08	6.4E-08	3.70E-09	1.77E-08	6.00E-09	2.68E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	1/5	8.4E-09	8.4E-09	1.50E-09	3.26E-09	6.38E-10	3.41E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	0/5	ND	ND	1.60E-09	2.11E-09	3.92E-10	2.57E-09
HpCDFs (total)	Not Listed	Not Listed	0/5	ND	ND	1.70E-09	2.76E-09	5.39E-10	2.58E-09
OCDF	Not Listed	Not Listed	1/5	1.3E-08	1.3E-08	4.10E-09	5.52E-09	1.25E-09	4.97E-09

**Table D6-12**  
**Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area II GW-3 Perimeter (Upgradient) Monitoring Well NS-20**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.49E-09	2.80E-10	1.51E-09
TCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.54E-09	3.12E-10	1.47E-09
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.43E-09	2.79E-10	1.61E-09
PeCDDs (total)	Not Listed	Not Listed	0/5	ND	ND	1.30E-09	1.59E-09	3.80E-10	1.55E-09
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/5	ND	ND	2.00E-09	1.83E-09	3.20E-10	1.66E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	0/5	ND	ND	2.00E-09	1.67E-09	3.13E-10	1.46E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	0/5	ND	ND	2.00E-09	1.79E-09	3.15E-10	1.64E-09
HxCDDs (total)	Not Listed	Not Listed	1/5	2.7E-09	2.7E-09	2.40E-09	2.24E-09	6.03E-10	1.48E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	1/5	5.2E-09	5.2E-09	2.30E-09	3.16E-09	2.80E-09	1.68E-09
HpCDDs (total)	Not Listed	Not Listed	2/5	4.9E-12	5.2E-09	2.30E-09	2.88E-09	9.05E-10	2.11E-09
OCDD	Not Listed	Not Listed	0/5	ND	ND	8.50E-09	9.34E-09	7.66E-09	5.98E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	5/5	1.6E-11	1.8E-08	4.50E-09	6.18E-09	1.82E-09	6.94E-09
<b>Inorganics-Unfiltered</b>									
Barium	50	100	4/5	0.012	0.145	0.0160	0.0588	0.0341	0.0630
Chromium	0.3	3	2/5	0.0038	0.046	0.00500	0.0130	0.00738	0.0185
Cobalt	0.075	Not Listed	1/5	0.032	0.032	0.0250	0.0264	0.0263	0.00313
Copper	0.23	Not Listed	4/5	0.013	0.131	0.0130	0.0366	0.0209	0.0522
Cyanide	0.03	2	2/5	0.0024	0.0055	0.00500	0.00758	0.00581	0.00705
Lead	0.01	0.15	4/5	0.0022	0.261	0.00270	0.0548	0.00765	0.115
Mercury	0.02	0.2	1/5	0.0018	0.0018	0.000100	0.000440	0.000178	0.000760
Nickel	0.2	2	2/5	0.004	0.055	0.0200	0.0238	0.0177	0.0188
Vanadium	4	40	5/5	0.0018	0.05	0.00490	0.0133	0.00638	0.0206
Zinc	0.9	50	5/5	0.02	0.179	0.0350	0.0608	0.0423	0.0673



**Table D6-12**  
**Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area II GW-3 Perimeter (Upgradient) Monitoring Well NS-20**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Inorganics-Filtered</b>									
Antimony	8	80	2/5	0.0046	0.015	0.0300	0.0219	0.0179	0.0117
Barium	50	100	4/5	0.01	0.126	0.0170	0.0546	0.0323	0.0562
Copper	0.23	Not Listed	4/5	0.011	0.015	0.0120	0.0200	0.0164	0.0168
Mercury	0.02	0.2	1/5	0.0018	0.0018	0.000100	0.000440	0.000178	0.000760
Nickel	0.2	2	1/5	0.0038	0.0038	0.0200	0.0130	0.00788	0.00969
Tin	Not Listed	Not Listed	1/5	0.004	0.004	0.0150	0.0128	0.0115	0.00492
Vanadium	4	40	4/5	0.001	0.0048	0.00470	0.00778	0.00453	0.00975
Zinc	0.9	50	3/5	0.024	0.134	0.0240	0.0420	0.0257	0.0504

**Notes:**

1. Samples were collected between 1995 and 2003 and were submitted to SGS Environmental Services, Inc. and Maxymillian lab for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.

**Table D6-13**  
**Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area II GW-3 Perimeter (Downgradient) Monitoring Well NS-37**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Volatile Organics</b>									
None Detected	--	--	0/4	--	--	--	--	--	--
<b>PCBs-Unfiltered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.00085	0.014	0.00330	0.00536	0.00337	0.00588
Aroclor-1260	Not Listed	Not Listed	3/4	0.0011	0.0057	0.00145	0.00216	0.000781	0.00247
Total PCBs	0.01	0.1	4/4	0.00085	0.0197	0.00475	0.00759	0.00442	0.00848
<b>PCBs-Filtered</b>									
Aroclor-1254	Not Listed	Not Listed	4/4	0.00005	0.0019	0.000595	0.000785	0.000389	0.000833
Aroclor-1260	Not Listed	Not Listed	1/4	0.00061	0.00061	0.0000330	0.000177	0.0000684	0.000289
Total PCBs	0.01	0.1	4/4	0.00005	0.0019	0.000880	0.000928	0.000439	0.000911
<b>Semivolatile Organics</b>									
None Detected	--	--	0/4	--	--	--	--	--	--
<b>Organochlorine Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Organophosphate Pesticides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Herbicides</b>									
None Detected	--	--	0/2	--	--	--	--	--	--
<b>Furans</b>									
2,3,7,8-TCDF	Not Listed	Not Listed	2/4	1.2E-09	4.2E-09	1.35E-09	1.73E-09	2.42E-10	1.77E-09
TCDFs (total)	Not Listed	Not Listed	3/4	4.7E-11	5.2E-07	6.08E-08	1.60E-07	8.14E-09	2.46E-07
1,2,3,7,8-PeCDF	Not Listed	Not Listed	2/4	2.6E-09	3.4E-09	2.10E-09	1.90E-09	3.61E-10	1.46E-09
2,3,4,7,8-PeCDF	Not Listed	Not Listed	1/4	6.7E-09	6.7E-09	2.25E-09	2.80E-09	4.46E-10	2.82E-09
PeCDFs (total)	Not Listed	Not Listed	4/4	5.4E-11	2E-07	5.67E-08	7.84E-08	7.97E-09	9.58E-08
1,2,3,4,7,8-HxCDF	Not Listed	Not Listed	3/4	4.3E-12	1.8E-08	6.35E-09	7.68E-09	1.32E-09	7.56E-09
1,2,3,6,7,8-HxCDF	Not Listed	Not Listed	4/4	5.3E-12	1.7E-08	7.40E-09	7.95E-09	1.39E-09	7.56E-09
1,2,3,7,8,9-HxCDF	Not Listed	Not Listed	1/4	5E-09	5E-09	2.60E-09	2.55E-09	4.27E-10	2.06E-09
2,3,4,6,7,8-HxCDF	Not Listed	Not Listed	3/4	2.4E-09	4.5E-09	3.25E-09	2.75E-09	4.47E-10	2.05E-09
HxCDFs (total)	Not Listed	Not Listed	4/4	3.4E-11	1.3E-07	4.60E-08	5.55E-08	8.76E-09	5.88E-08
1,2,3,4,6,7,8-HpCDF	Not Listed	Not Listed	2/4	5.3E-12	1.4E-08	4.20E-09	5.60E-09	1.02E-09	6.12E-09
1,2,3,4,7,8,9-HpCDF	Not Listed	Not Listed	1/4	8.2E-09	8.2E-09	2.70E-09	3.40E-09	4.85E-10	3.46E-09
HpCDFs (total)	Not Listed	Not Listed	1/4	3.9E-08	3.9E-08	8.85E-09	1.48E-08	7.76E-09	1.72E-08
OCDF	Not Listed	Not Listed	2/4	8.8E-09	2.2E-08	1.29E-08	1.33E-08	1.16E-08	7.54E-09

**Table D6-13**  
**Summary Of Historical Groundwater Analytical Results**  
**Newell Street Area II GW-3 Perimeter (Downgradient) Monitoring Well NS-37**

**Baseline Assessment Final Report and Long-Term Monitoring Program Proposal for Groundwater Management Area 1**  
**Plant Site 1 Groundwater Management Area**  
**General Electric Company - Pittsfield, Massachusetts**  
**(Results are presented in parts per million, ppm)**

	Method 1 GW-3 Standards	MCP UCL for GroundWater	Detection Frequency	Minimum Detect	Maximum Detect	Median Value	Arithmetic Average	Geometric Mean	Standard Deviation
<b>Dioxins</b>									
2,3,7,8-TCDD	Not Listed	Not Listed	0/4	ND	ND	6.35E-10	7.93E-10	1.34E-10	8.37E-10
TCDDs (total)	Not Listed	Not Listed	0/4	ND	ND	1.33E-09	1.14E-09	2.23E-10	8.61E-10
1,2,3,7,8-PeCDD	Not Listed	Not Listed	0/4	ND	ND	1.45E-09	1.30E-09	2.75E-10	9.62E-10
PeCDDs (total)	Not Listed	Not Listed	1/4	2.6E-09	2.6E-09	2.25E-09	1.78E-09	3.54E-10	1.19E-09
1,2,3,4,7,8-HxCDD	Not Listed	Not Listed	0/4	ND	ND	1.45E-09	1.65E-09	2.61E-10	1.53E-09
1,2,3,6,7,8-HxCDD	Not Listed	Not Listed	1/4	2.4E-09	2.4E-09	2.00E-09	1.83E-09	3.01E-10	1.40E-09
1,2,3,7,8,9-HxCDD	Not Listed	Not Listed	1/4	2.4E-09	2.4E-09	1.85E-09	1.78E-09	2.82E-10	1.46E-09
HxCDDs (total)	Not Listed	Not Listed	1/4	1.3E-08	1.3E-08	3.00E-09	4.75E-09	5.96E-10	5.69E-09
1,2,3,4,6,7,8-HpCDD	Not Listed	Not Listed	1/4	5.4E-09	5.4E-09	3.00E-09	3.25E-09	2.96E-09	1.60E-09
HpCDDs (total)	Not Listed	Not Listed	2/4	3.1E-12	8.7E-09	3.90E-09	4.13E-09	7.96E-10	3.59E-09
OCDD	Not Listed	Not Listed	1/4	1.8E-08	1.8E-08	1.35E-08	1.18E-08	2.00E-09	9.18E-09
Total TEQs (1998 WHO TEFs)	4.00E-05	4.00E-04	4/4	2E-11	1.1E-08	7.30E-09	6.41E-09	1.85E-09	4.63E-09
<b>Inorganics-Unfiltered</b>									
Barium	50	100	3/4	0.07	0.1	0.0900	0.0875	0.0865	0.0150
Chromium	0.3	3	1/4	0.0085	0.0085	0.00500	0.00588	0.00571	0.00175
Copper	0.23	Not Listed	2/4	0.0049	0.0079	0.0105	0.00970	0.00899	0.00400
Cyanide	0.03	2	1/4	0.0036	0.0036	0.00500	0.00465	0.00461	0.000700
Mercury	0.02	0.2	1/5	0.0022	0.0022	0.000100	0.000428	0.000103	0.000869
Zinc	0.9	50	4/4	0.0052	0.022	0.00995	0.0118	0.0101	0.00759
<b>Inorganics-Filtered</b>									
Antimony	8	80	1/4	0.012	0.012	0.0300	0.0255	0.0239	0.00900
Barium	50	100	3/4	0.073	0.084	0.0810	0.0838	0.0832	0.0117
Copper	0.23	Not Listed	2/4	0.0034	0.0059	0.00945	0.0181	0.0107	0.0217
Mercury	0.02	0.2	1/5	0.0022	0.0022	0.000100	0.000428	0.000103	0.000869
Vanadium	4	40	1/4	0.0019	0.0019	0.0250	0.0192	0.0131	0.0116
Zinc	0.9	50	2/4	0.0056	0.017	0.0100	0.0107	0.00988	0.00471

**Notes:**

1. Samples were collected between 2001 and 2003 and were submitted to SGS Environmental Services, Inc. for analysis of PCBs and Appendix IX+3 constituents.
2. Samples have been validated in accordance with the applicable EPA-approved Field Sampling/Quality Assurance Project Plan (FSP/QAPP).
3. ND - Analyte was not detected.
4. Only constituents which were detected during at least one prior sampling event and were analyzed are summarized.
5. The statistical information presented above was calculated based on all analytical results reported for each constituent, incorporating a value of one-half of the associated detection limit for any non-detected results.
6. For PCDD/PCDF compounds, total Toxicity Equivalency Quotient (TEQ) concentrations were calculated using the Toxicity Equivalency Factors (TEFs) published by the World Health Organization in 1998 (van den Berg et al., Environ. Health Perspectives, vol. 106, no. 12), as required by the Statement of Work for Removal Actions Outside the River, and representing non-detected compounds as one-half the detection limit.
7. The Method 1 GW-3 and MCP UCL Groundwater Standards listed above are those in effect at the time of sampling.



**Appendix E**

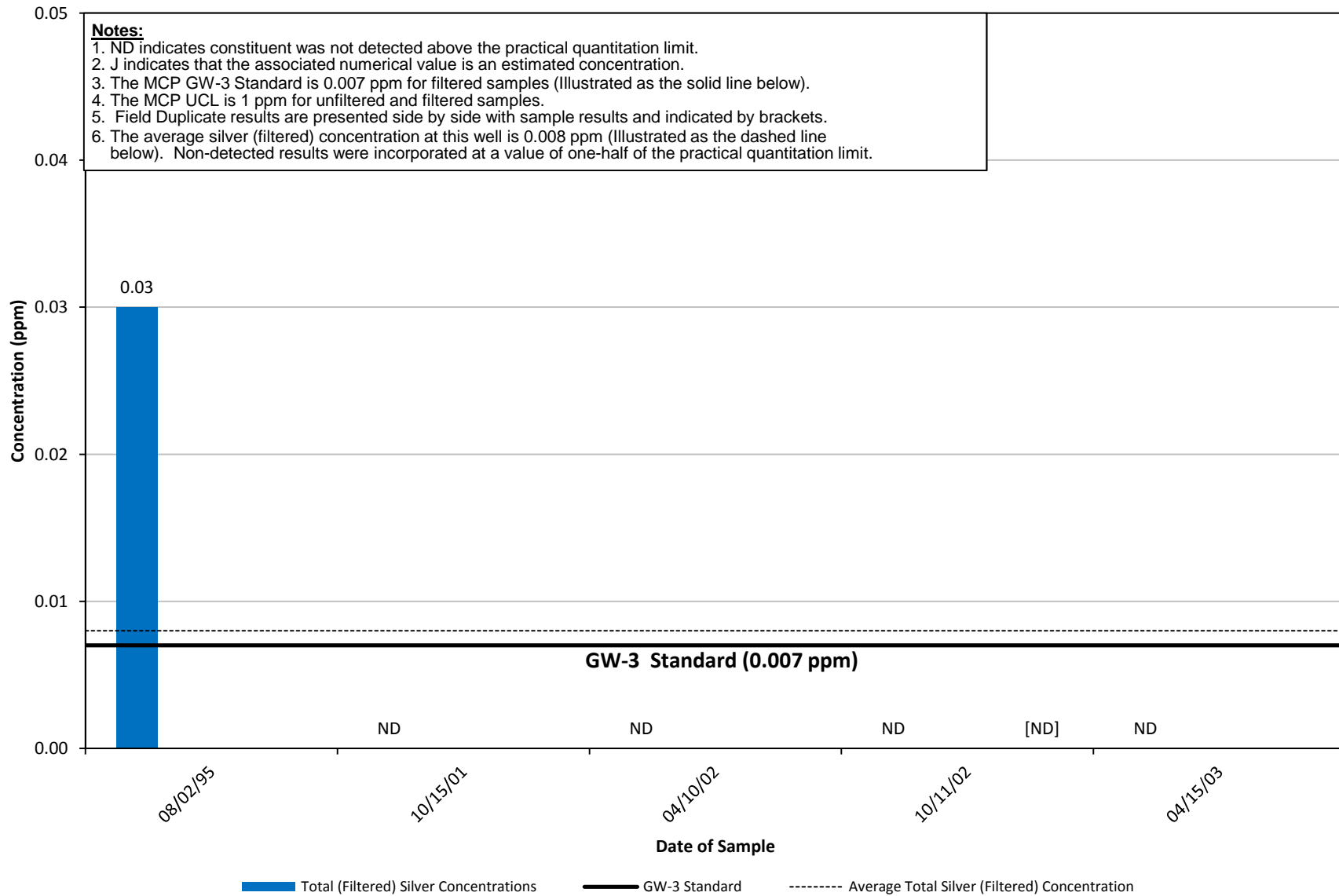
Time vs. Concentration Graphs for  
Selected Historical Data



Historical Silver (Filtered)  
Concentrations

**Appendix E**  
**Well NS-09 Historical Silver (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**

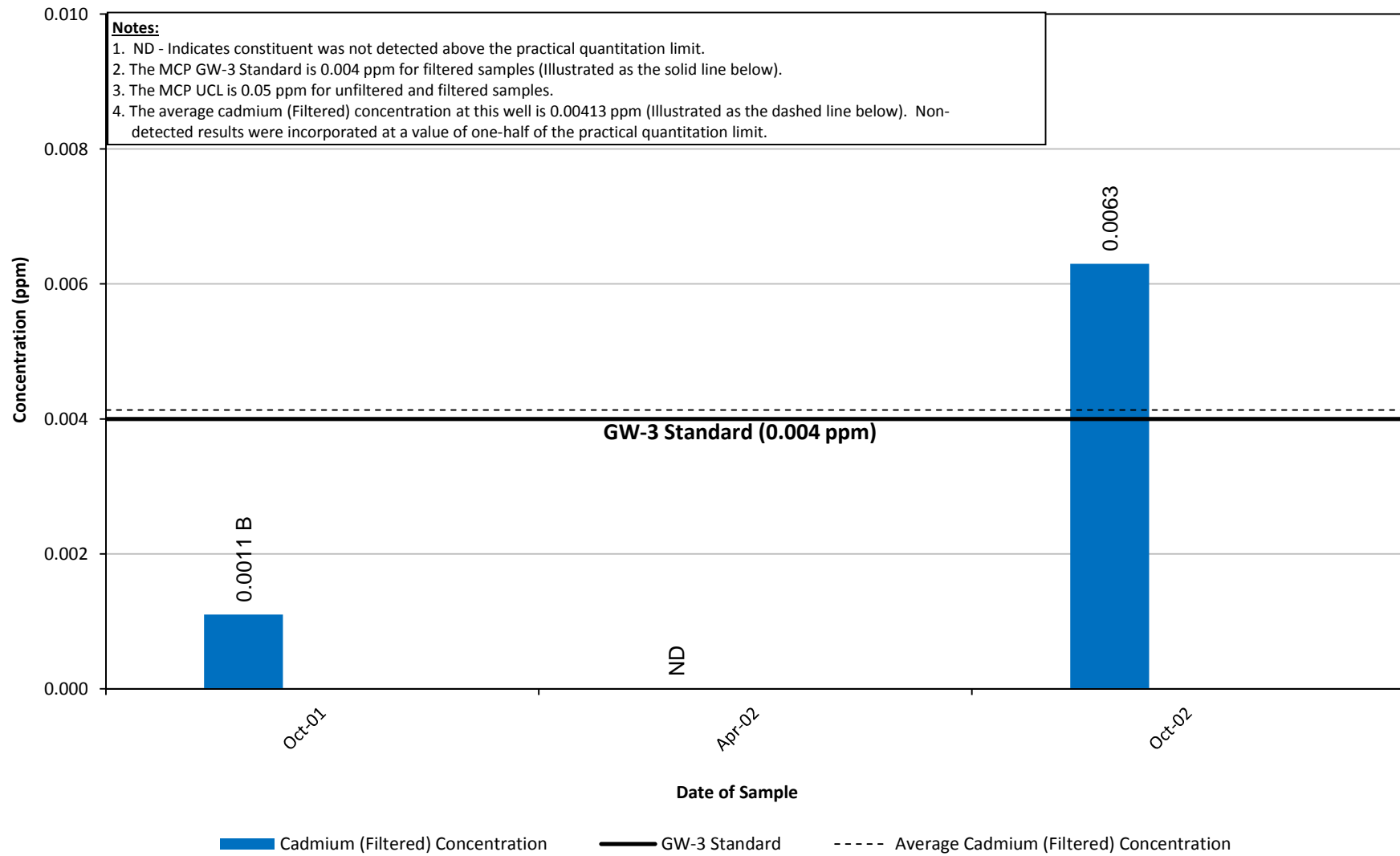




Historical Cadmium (Filtered)  
Concentrations

**Appendix E**  
**Well ES1-08 Historical Cadmium (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



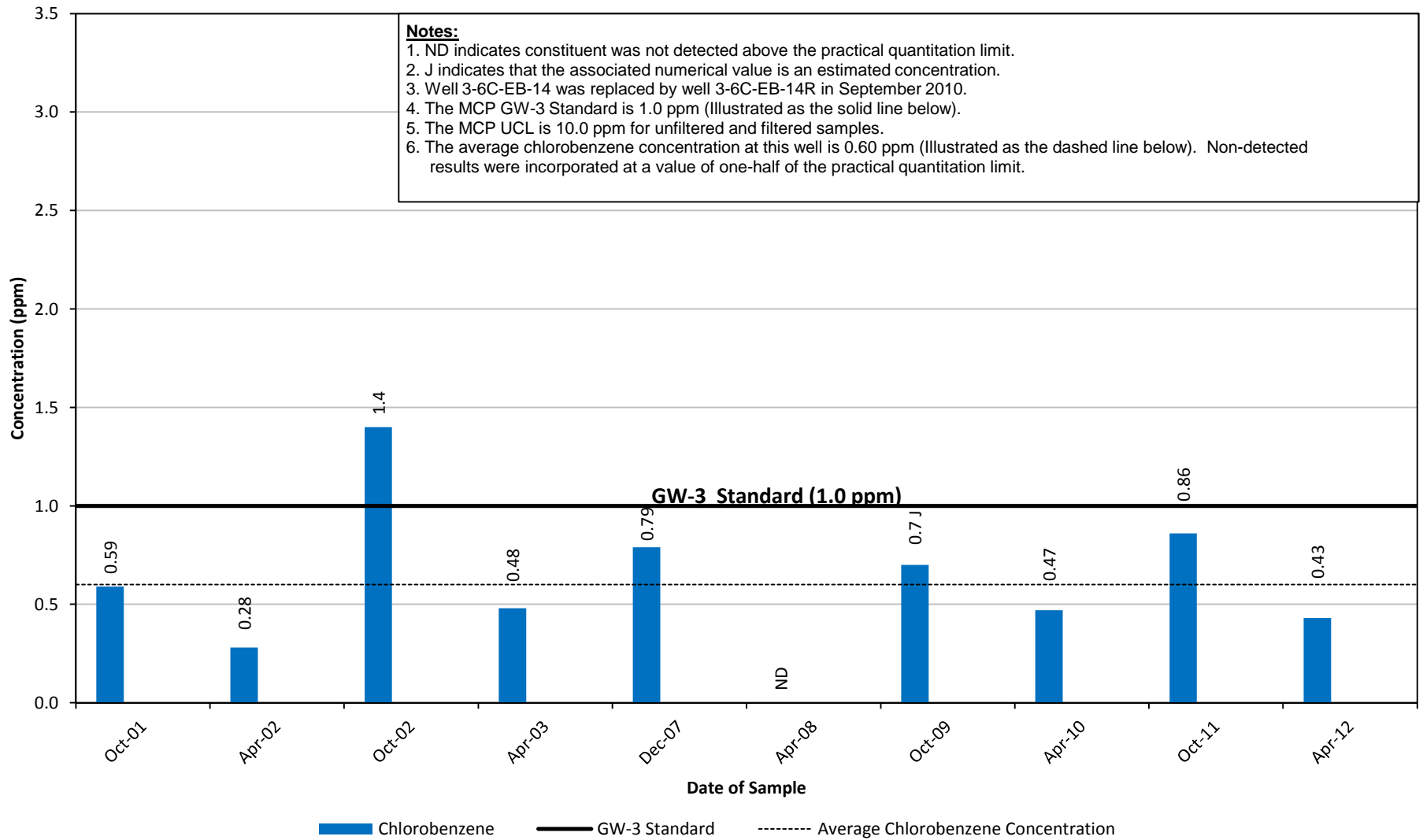




Historical Chlorobenzene  
Concentrations

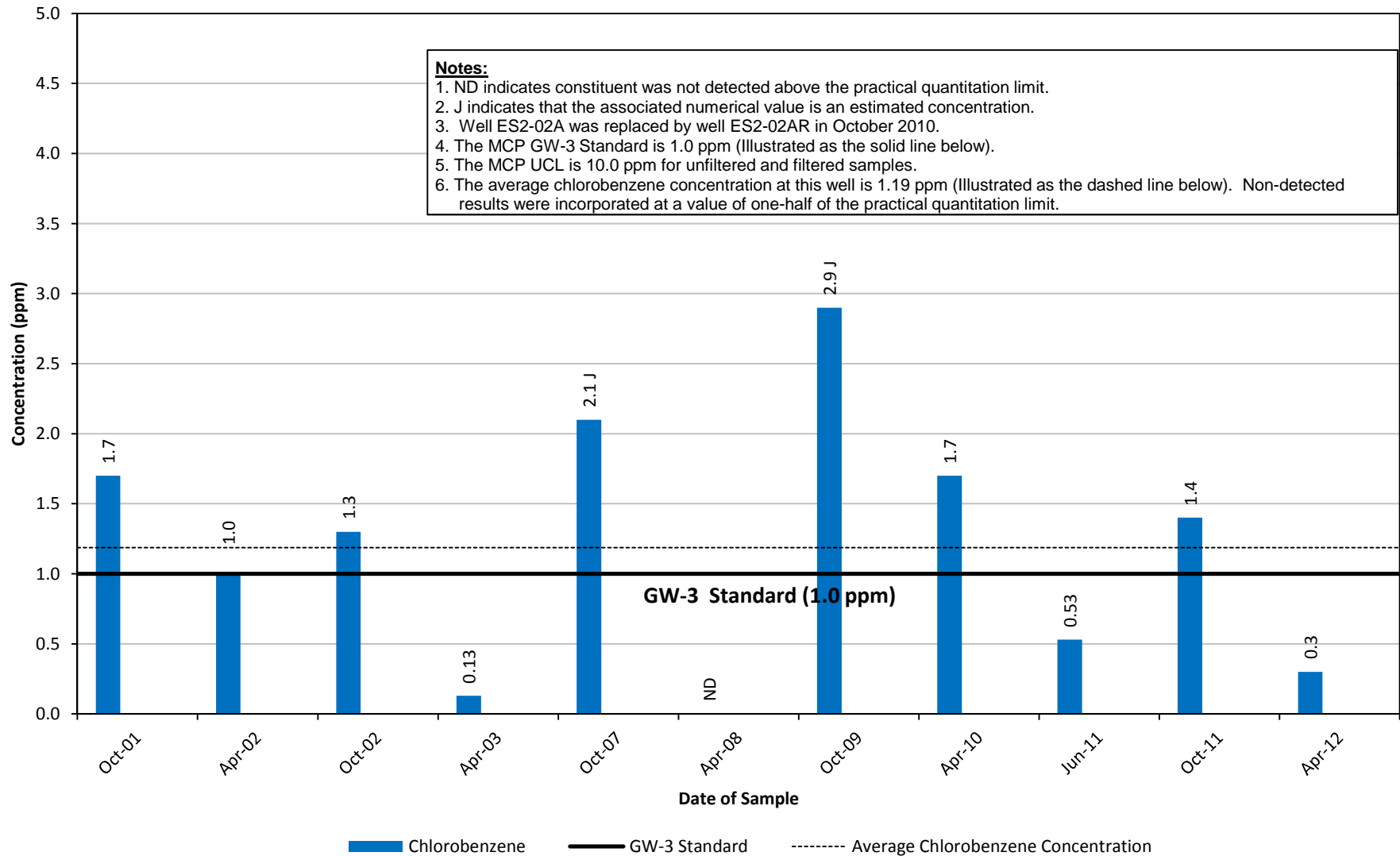
**Appendix E**  
**Wells 3-6C-EB-14 and 3-6C-EB-14R Historical Chlorobenzene Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



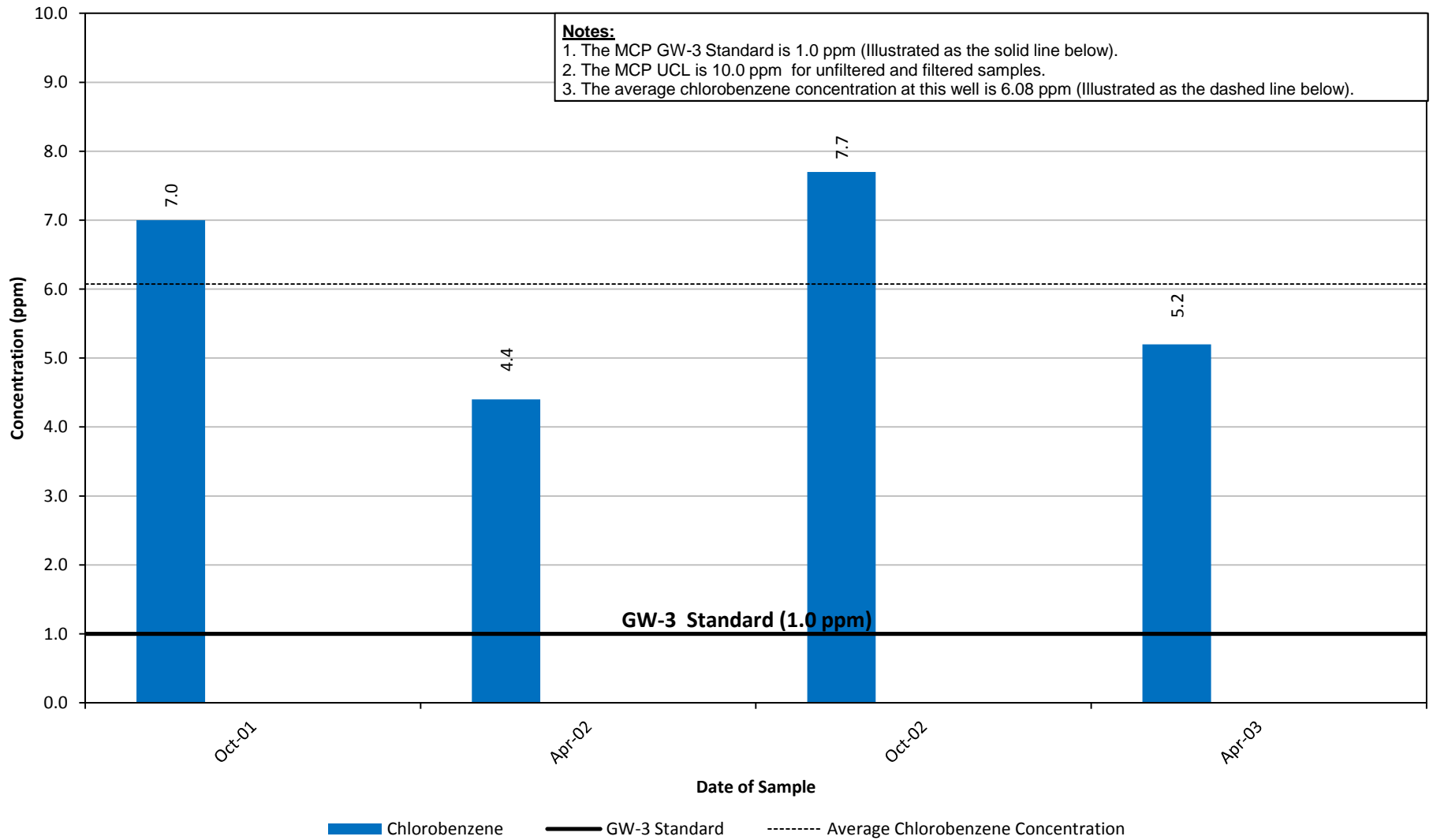
**Appendix E**  
**Wells ES2-02A and ES2-02AR Historical Chlorobenzene Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



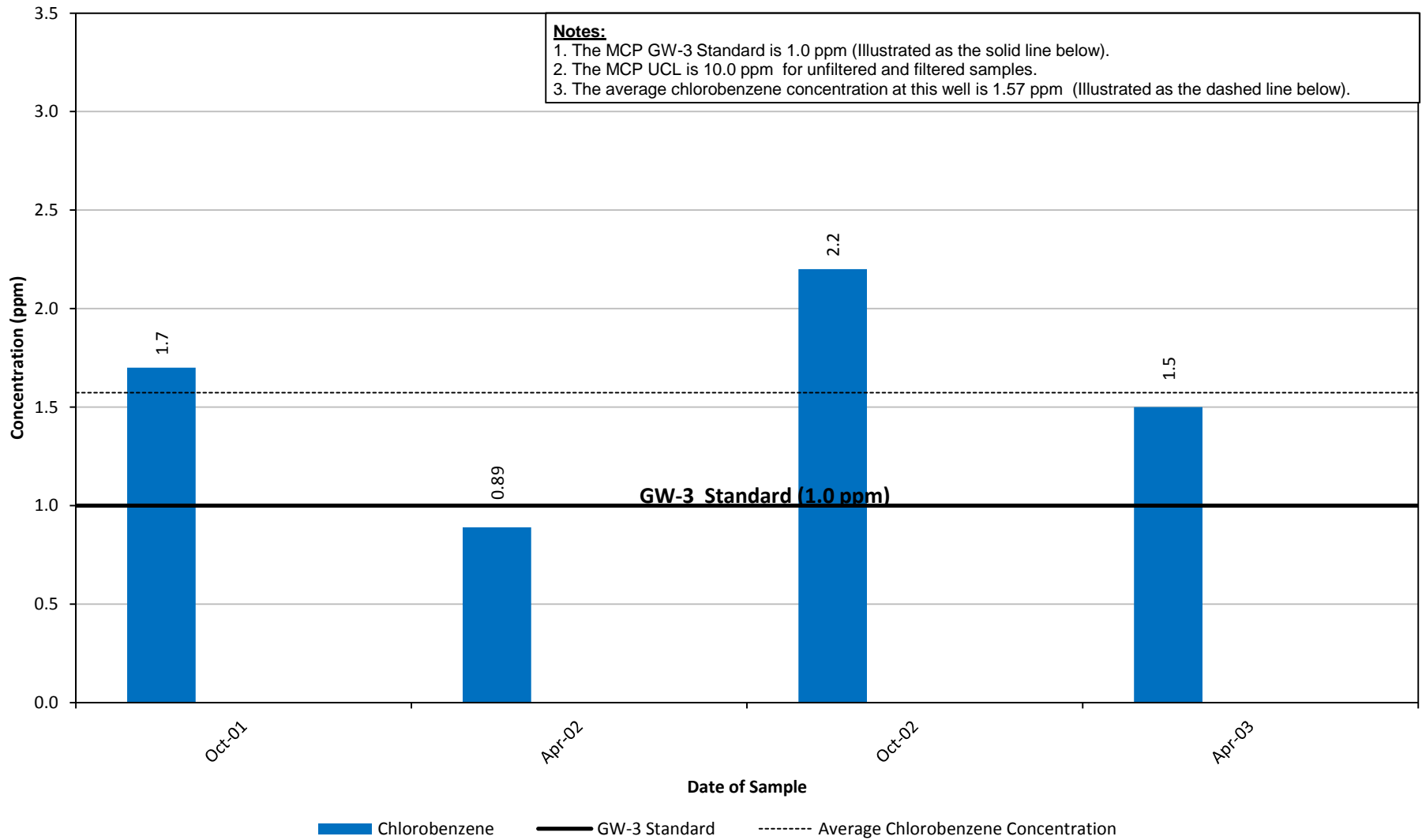
**Appendix E**  
**Well 52 Historical Chlorobenzene Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



**Appendix E**  
**Well HR-G3-MW-1 Historical Chlorobenzene Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**

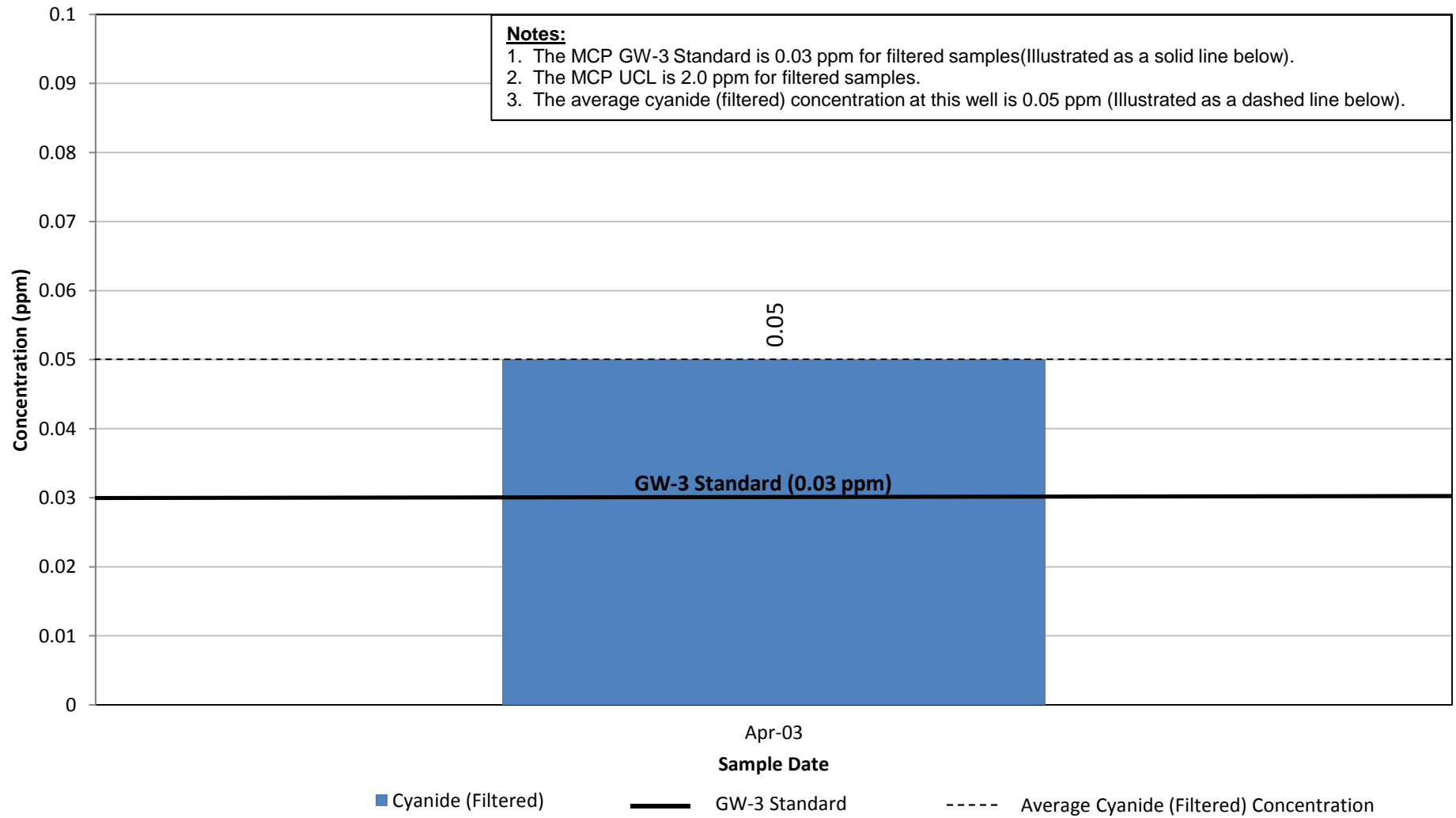




Historical Cyanide (Filtered)  
Concentrations

**Appendix E**  
**Well ESA1S-33 Historical Cyanide (Filtered) Concentrations**

**Groundwater Management Area 1**  
**General Electric Company - Pittsfield, Massachusetts**



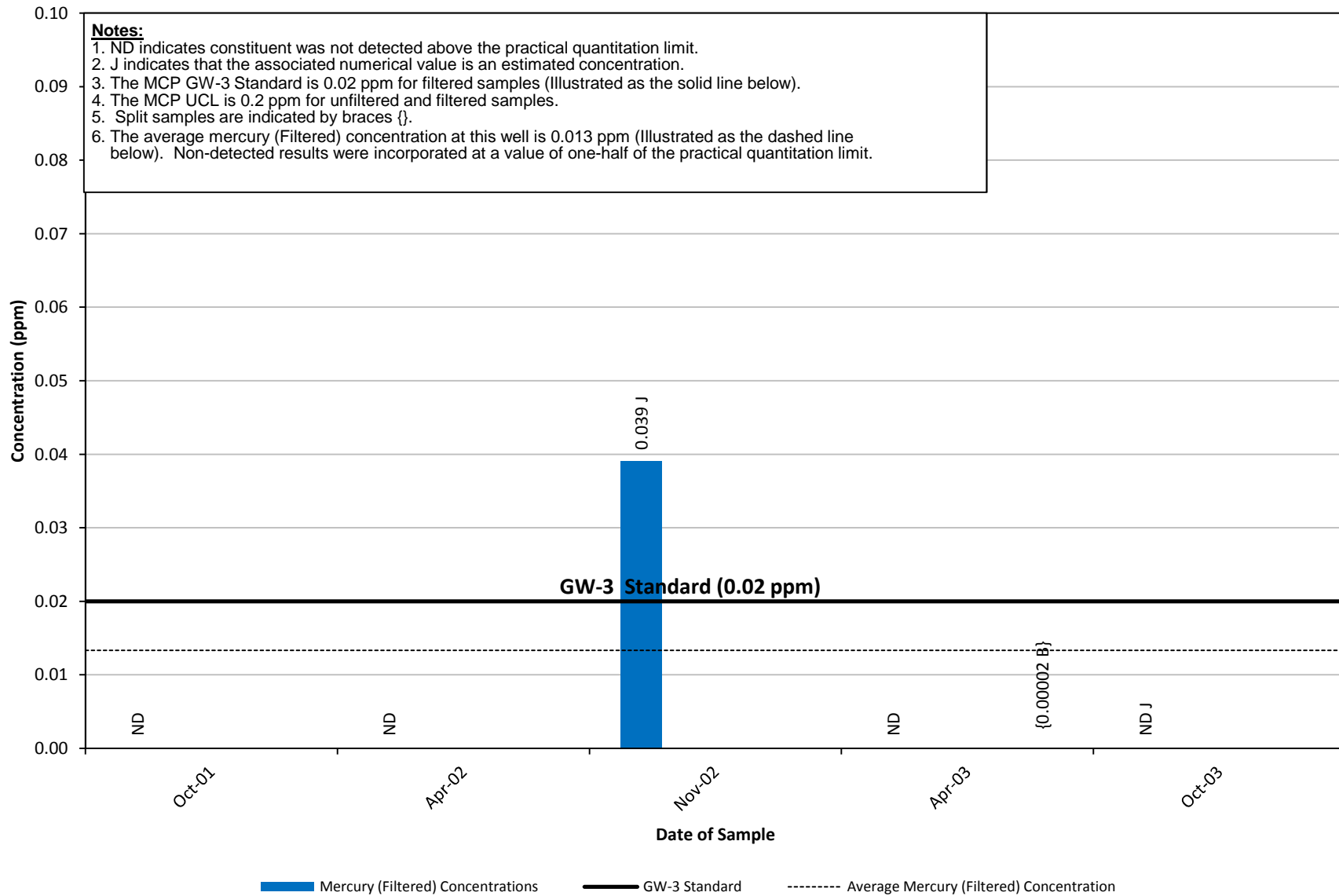


Historical Mercury (Filtered)  
Concentrations



**Appendix E**  
**Well ES1-05 Historical Mercury (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**

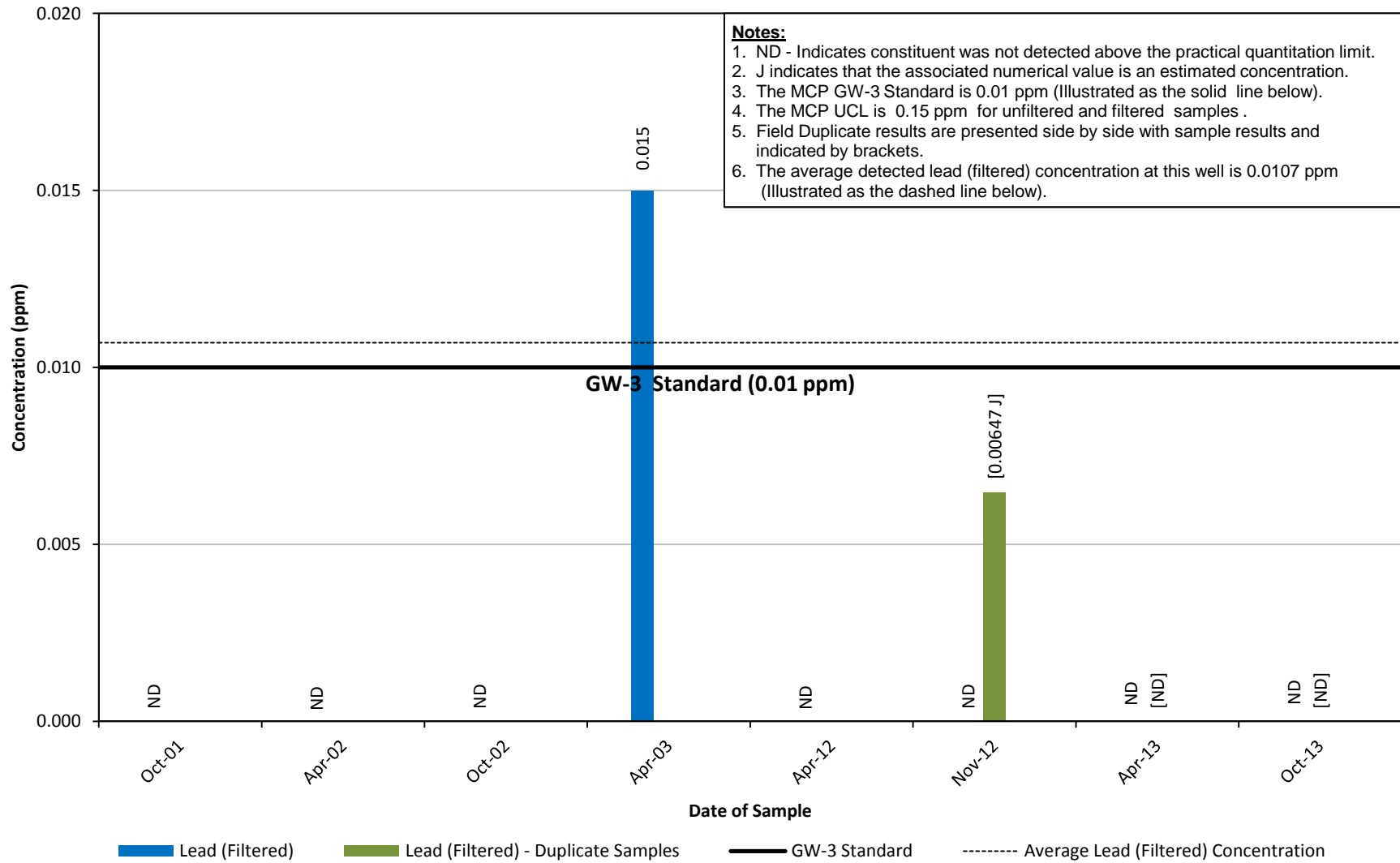




Historical Lead (Filtered)  
Concentrations

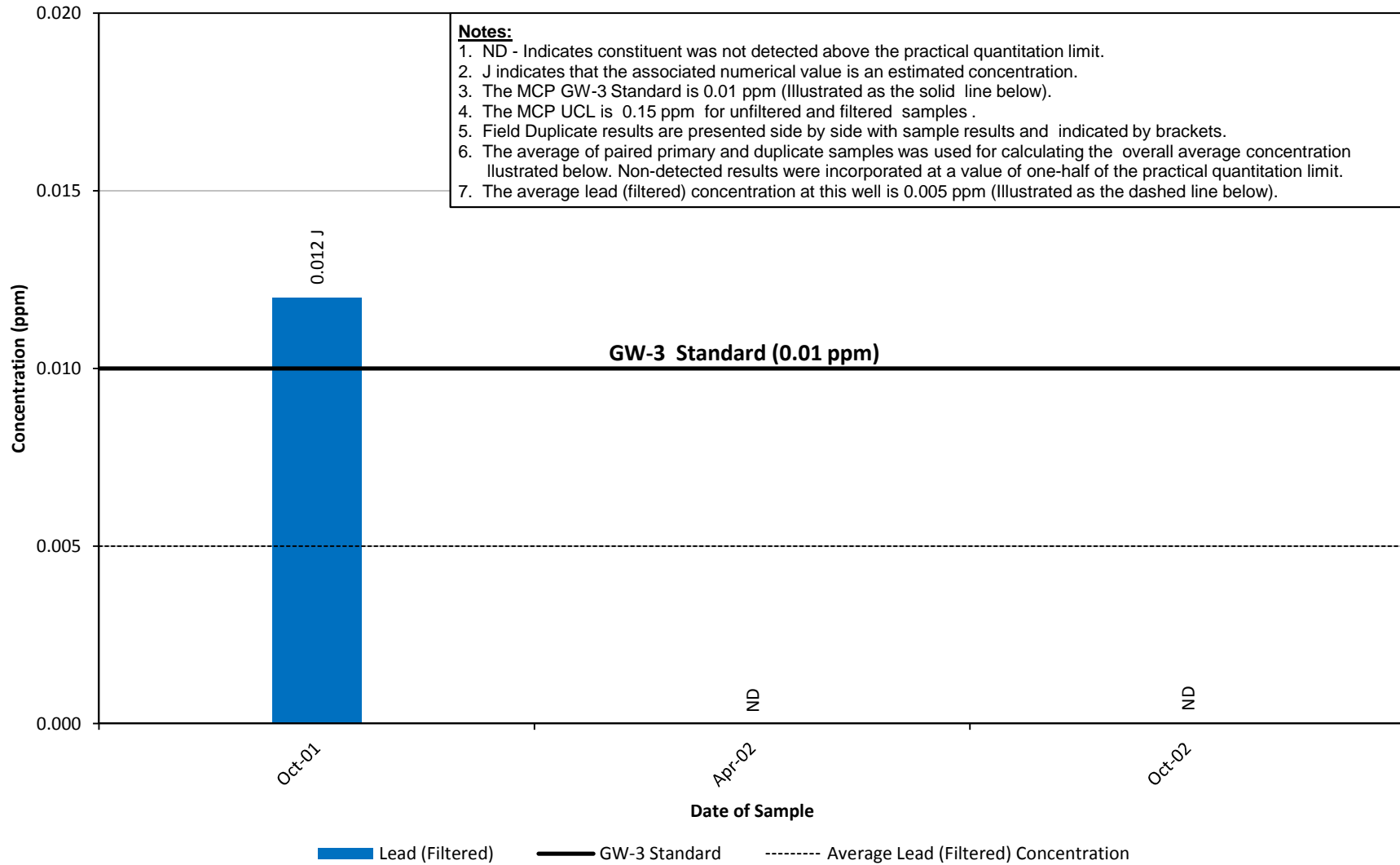
**Appendix E**  
**Well E2SC-23 Historical Lead (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



**Appendix E**  
**Well ES1-08 Historical Lead (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**

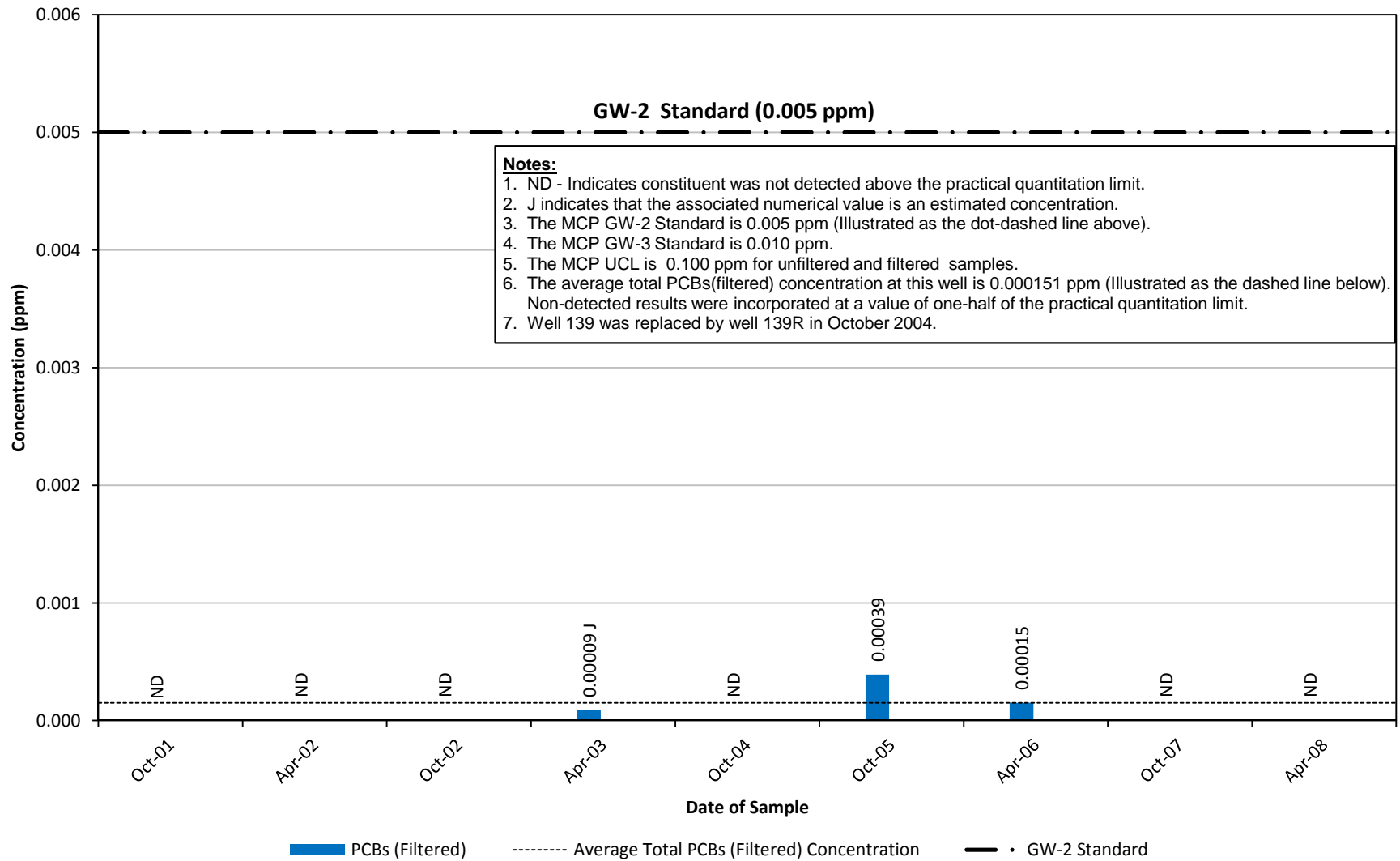




Historical Total PCBs (Filtered)  
Concentrations

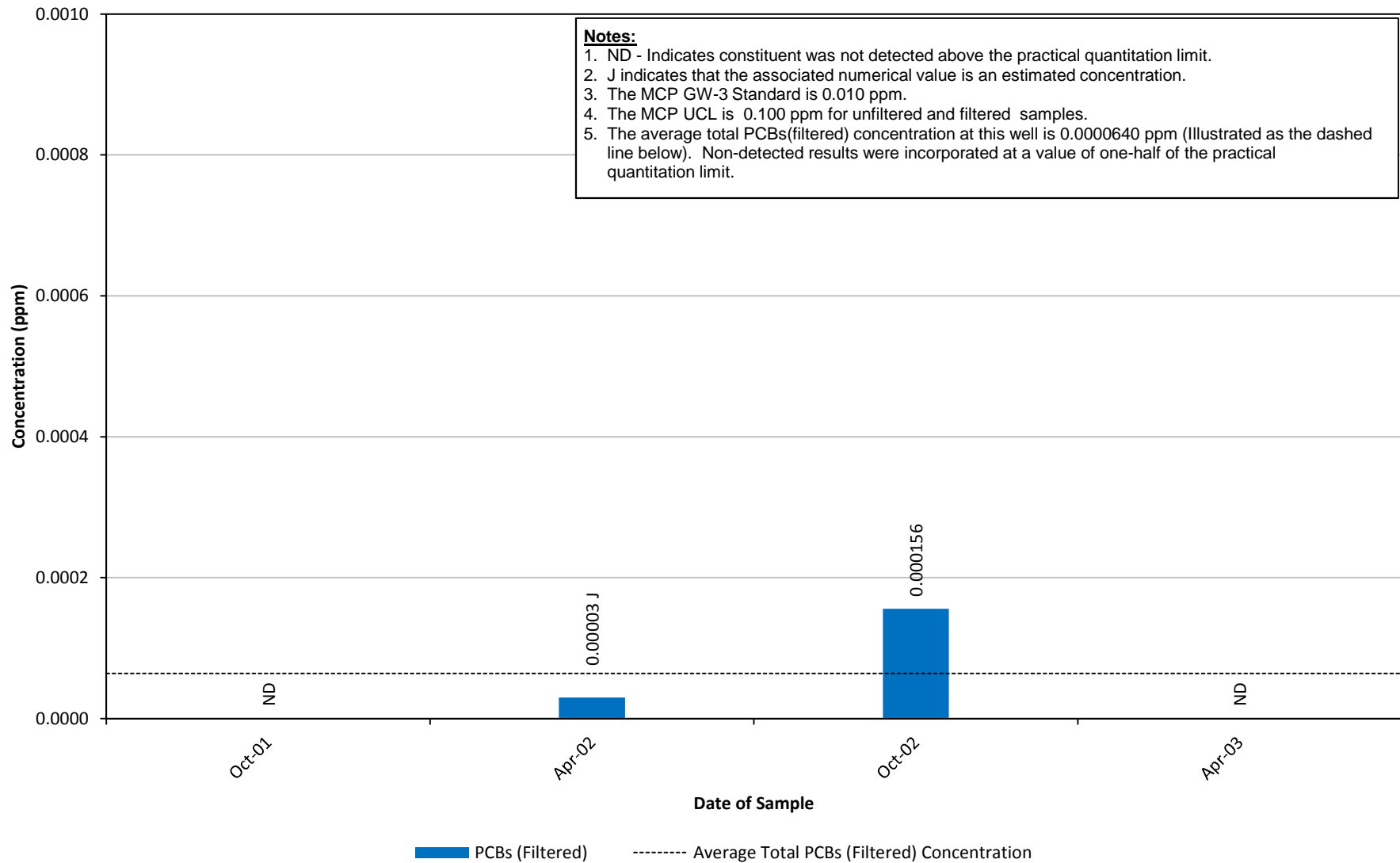
**Appendix E**  
**Wells ESA1S-139 & ESA1S-139R Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



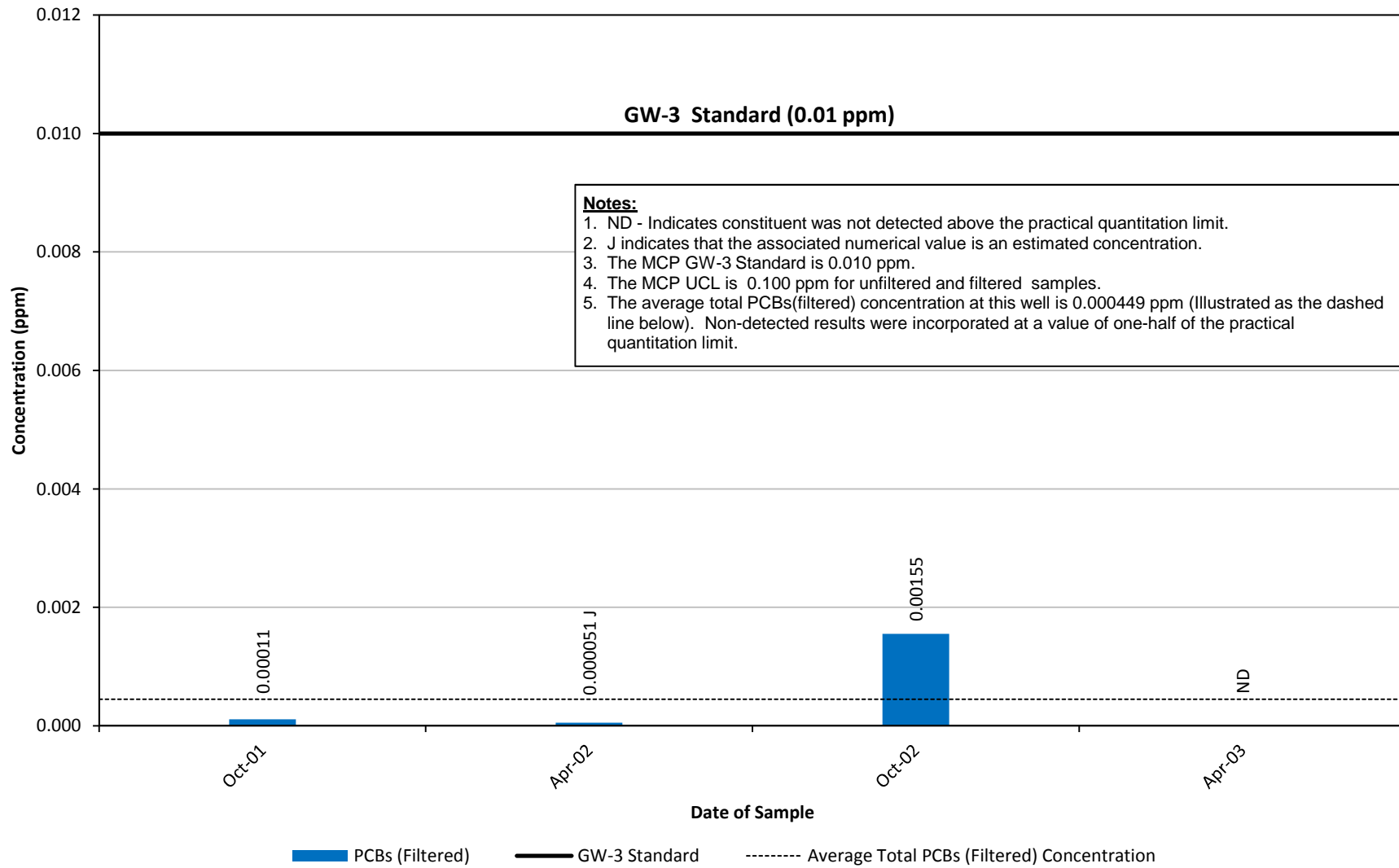
**Appendix E**  
**Well 3-6C-EB-14 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



**Appendix E**  
**Well 3-6C-EB-29 Historical Total PCBs (Filtered) Concentrations**

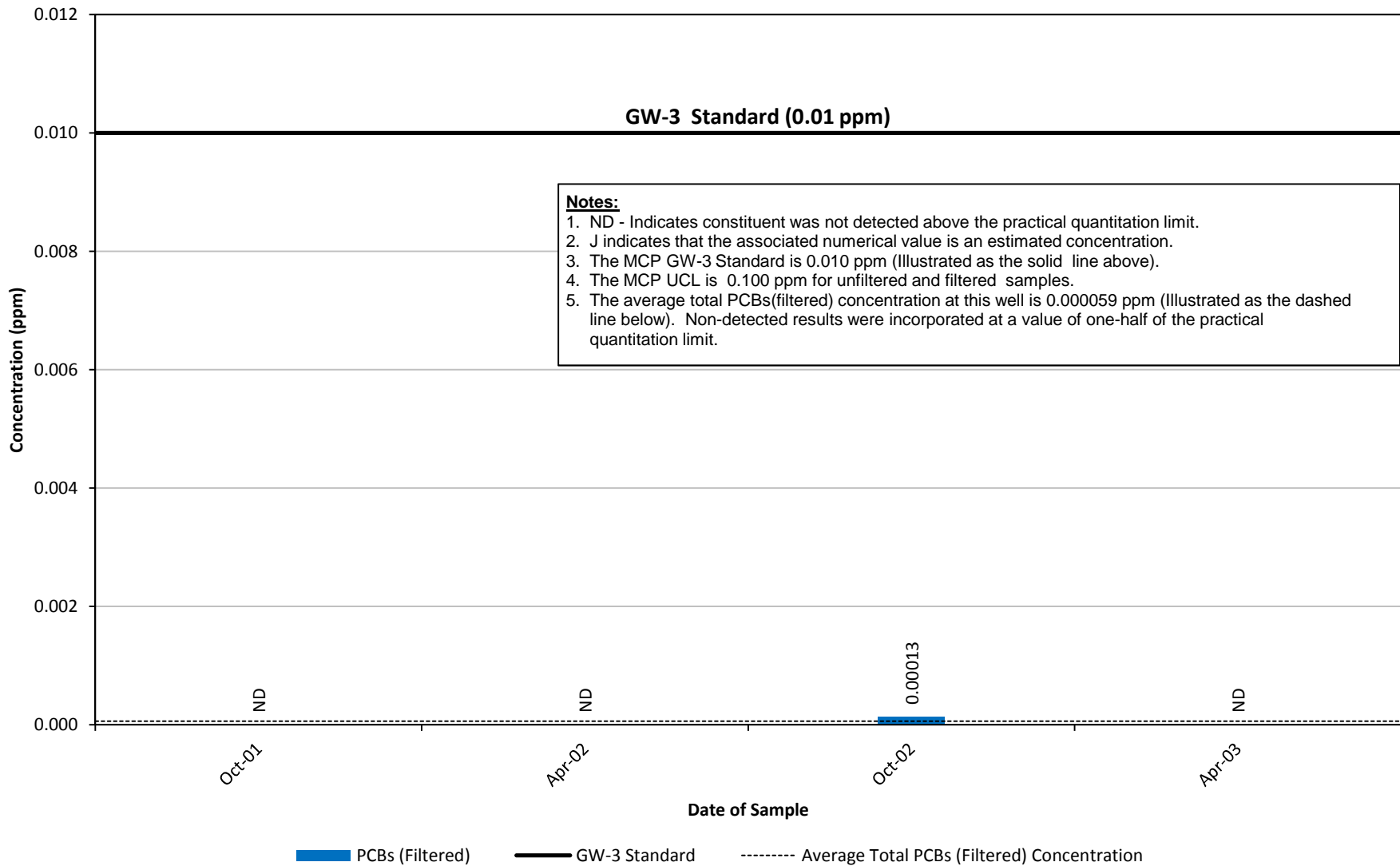
**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**





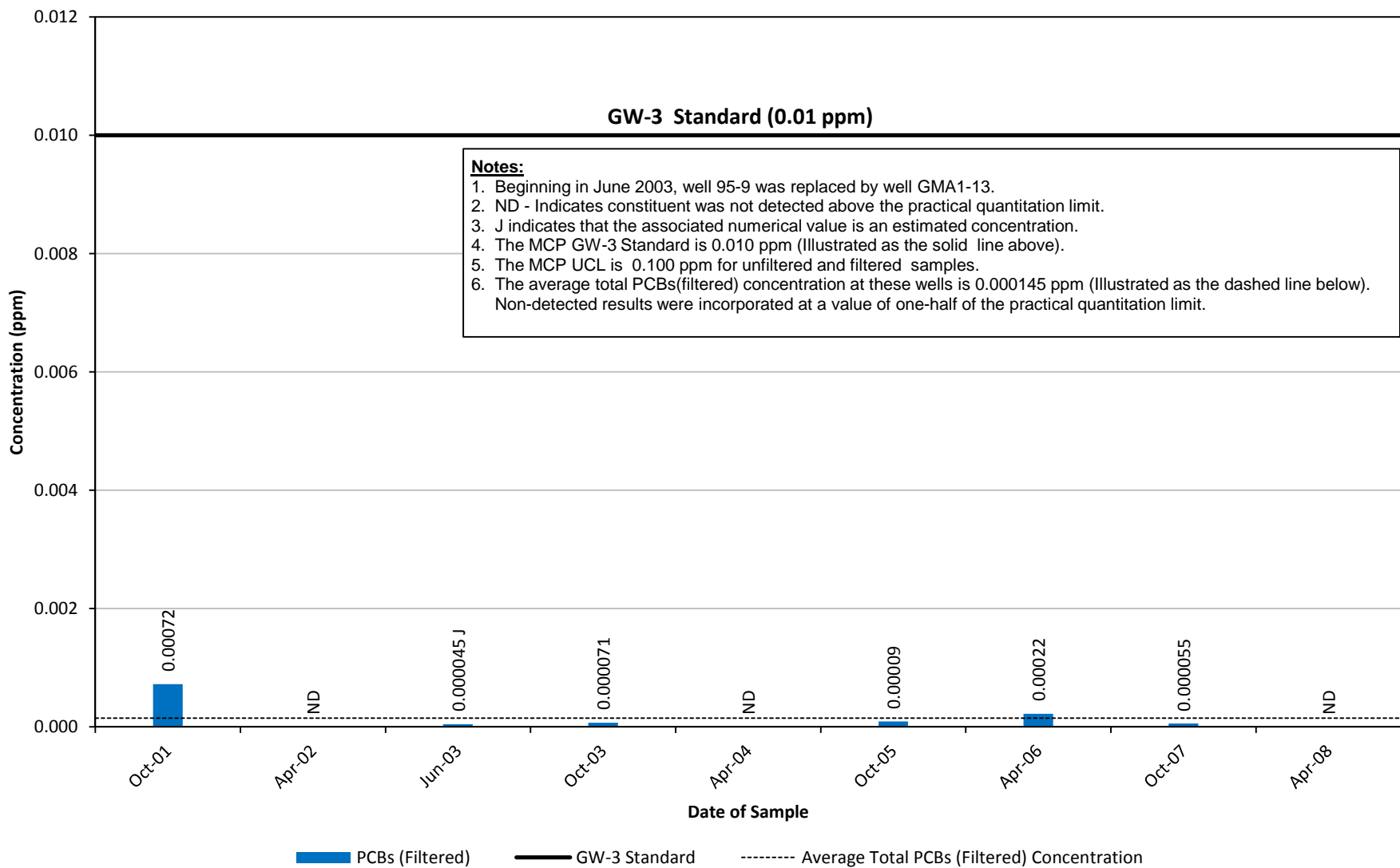
**Appendix E**  
**Well 95-23 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



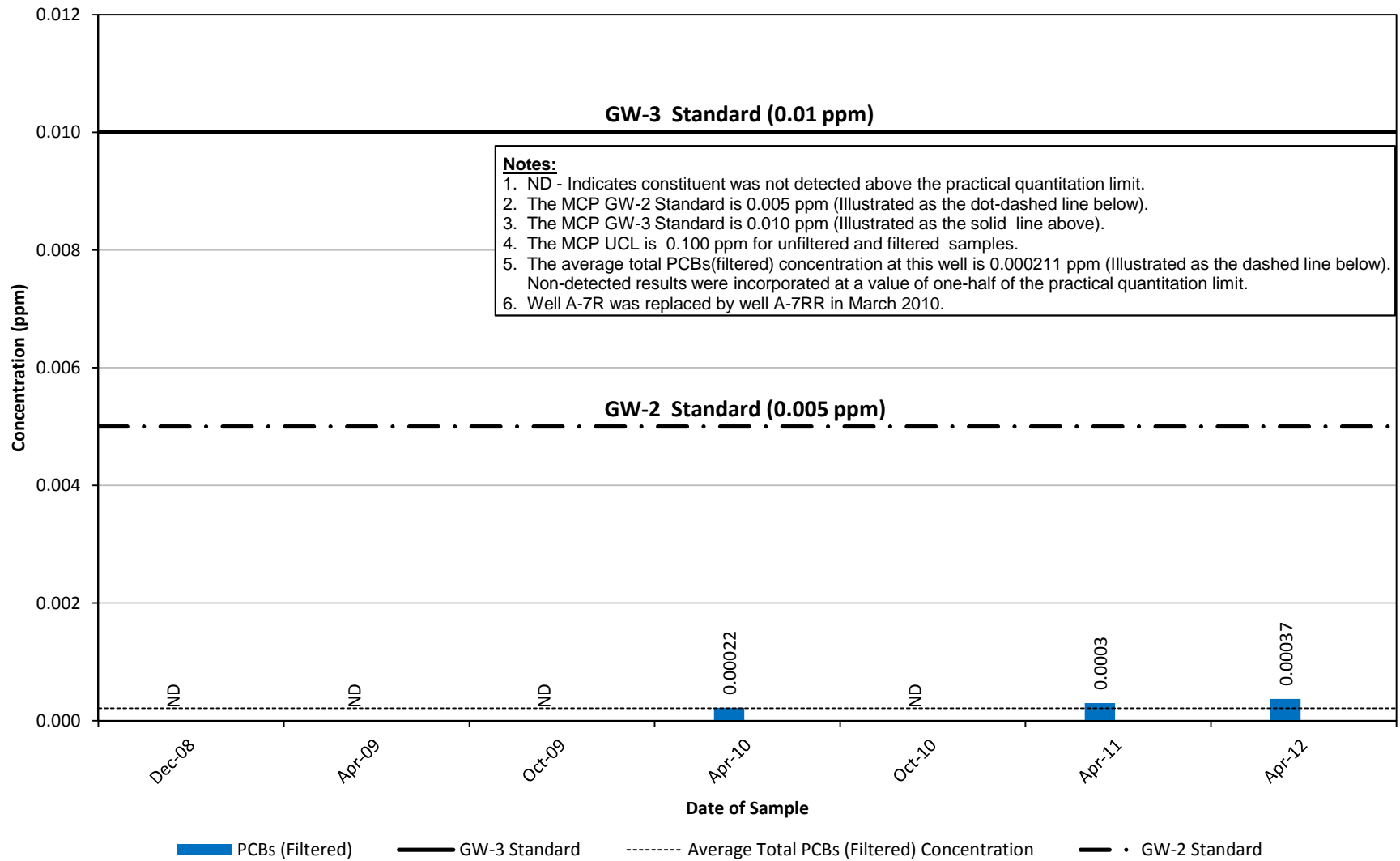
**Appendix E**  
**Wells 95-09 & GMA1-13 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



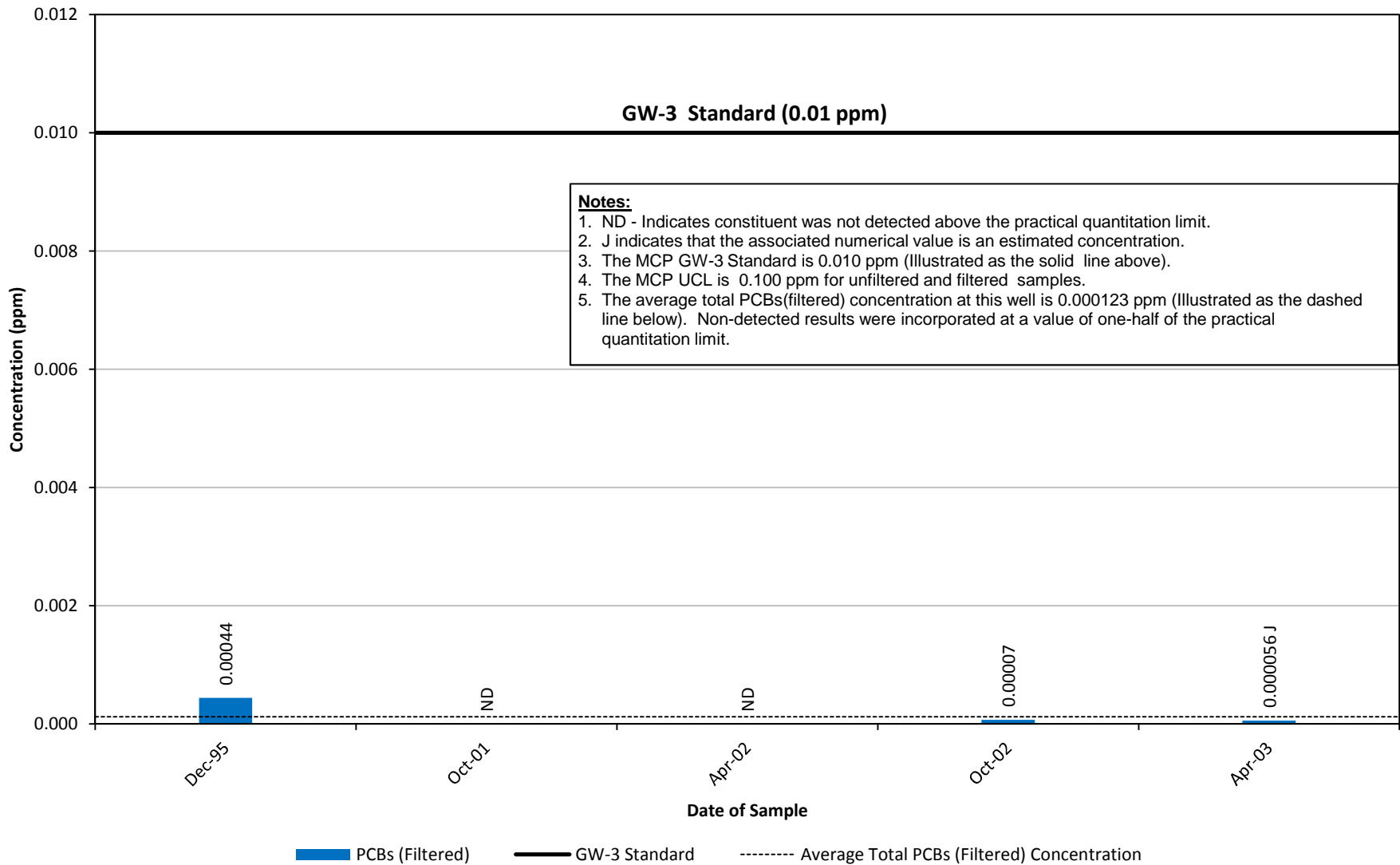
**Appendix E**  
**Well A7-R & A7-RR Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



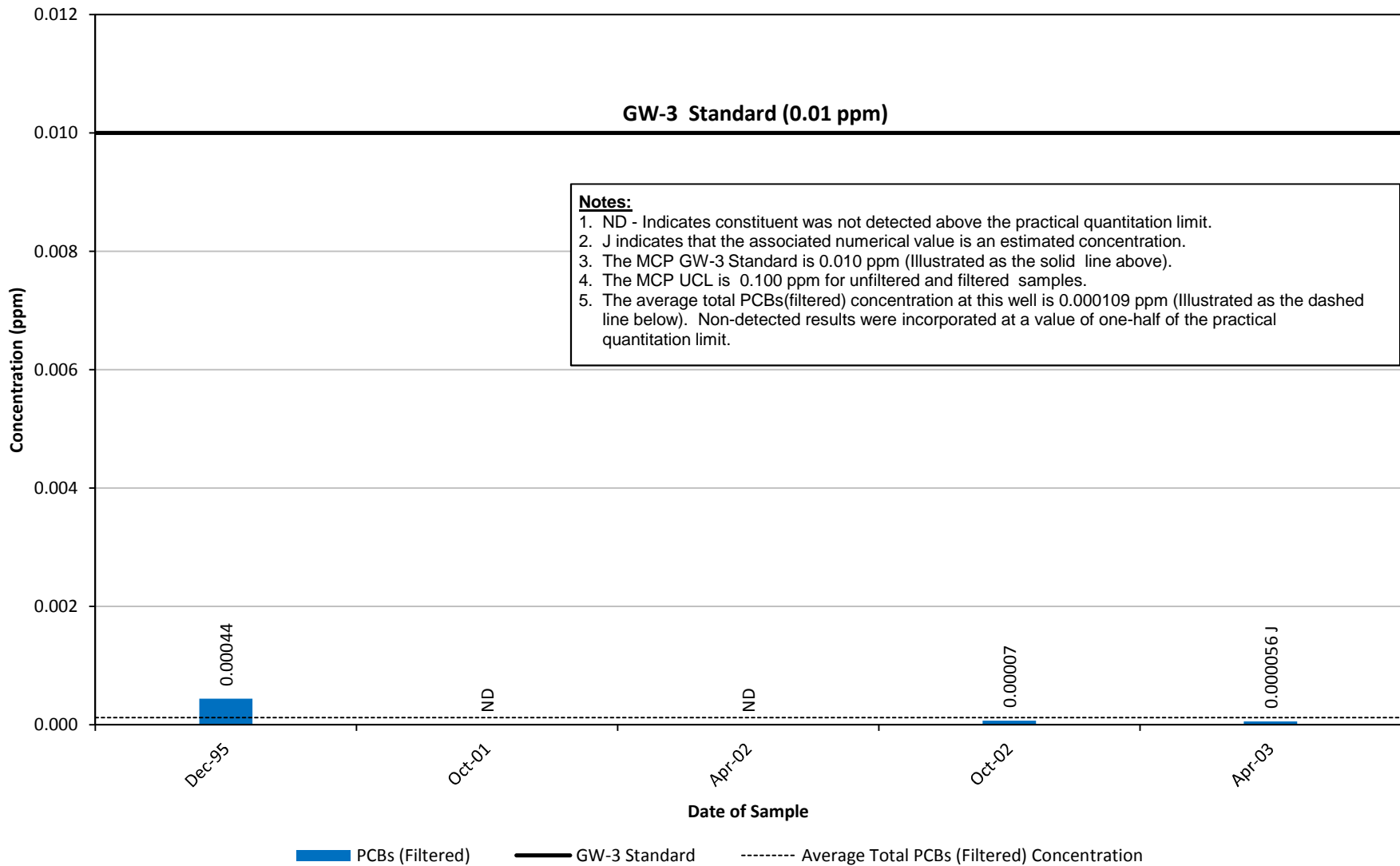
**Appendix E**  
**Well E-04 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



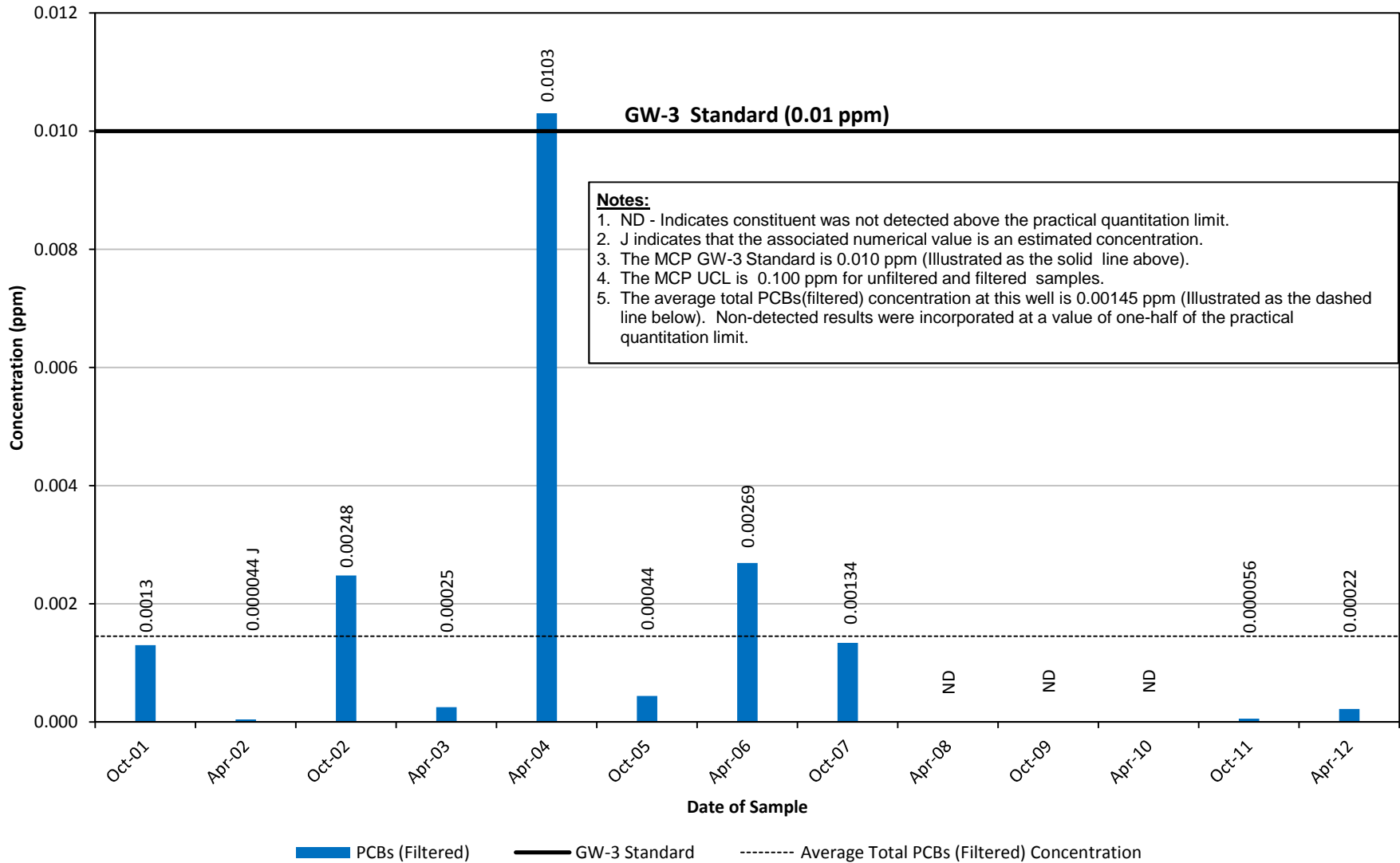
**Appendix E**  
**Well E-07 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



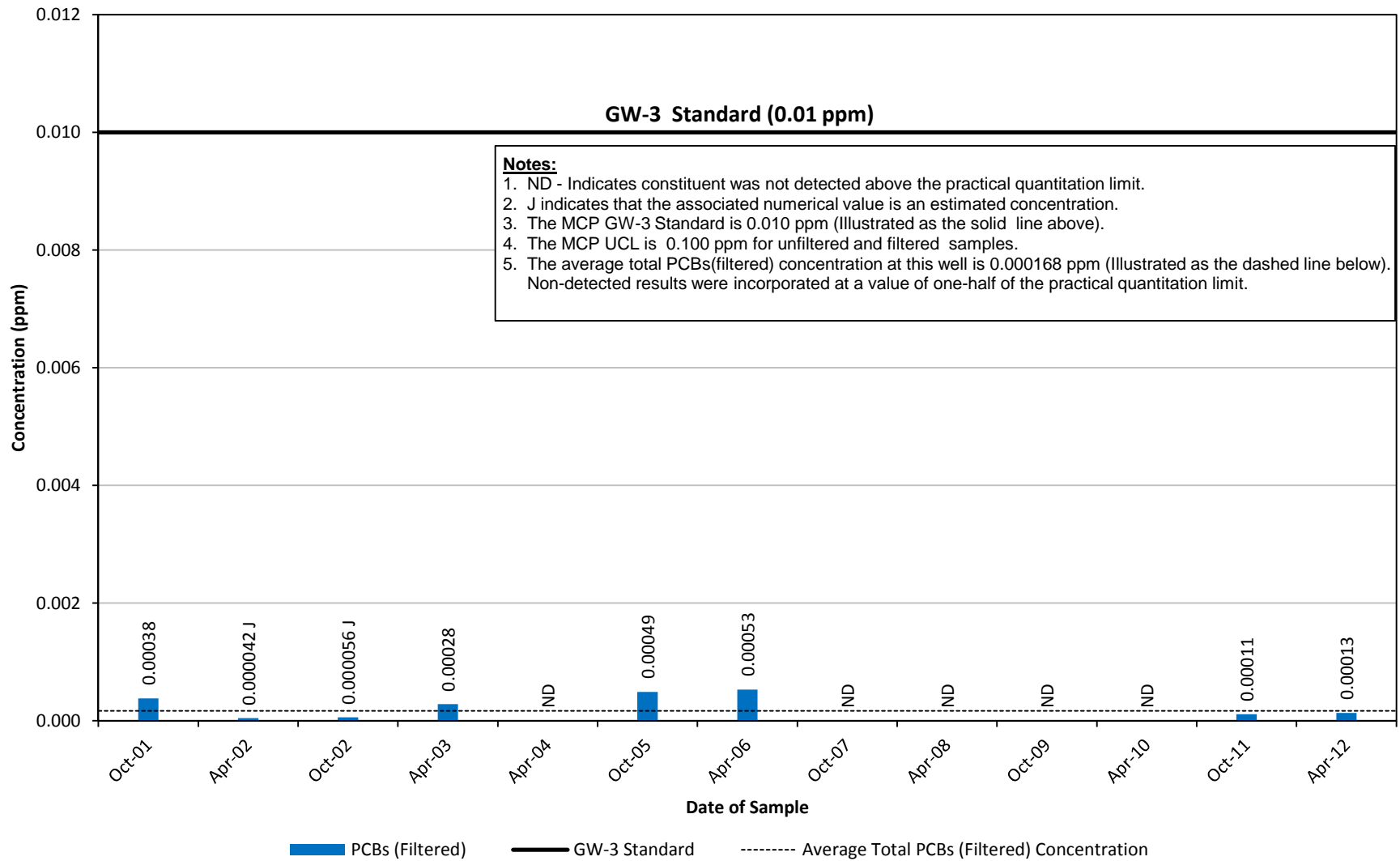
**Appendix E**  
**Well E2SC-23 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



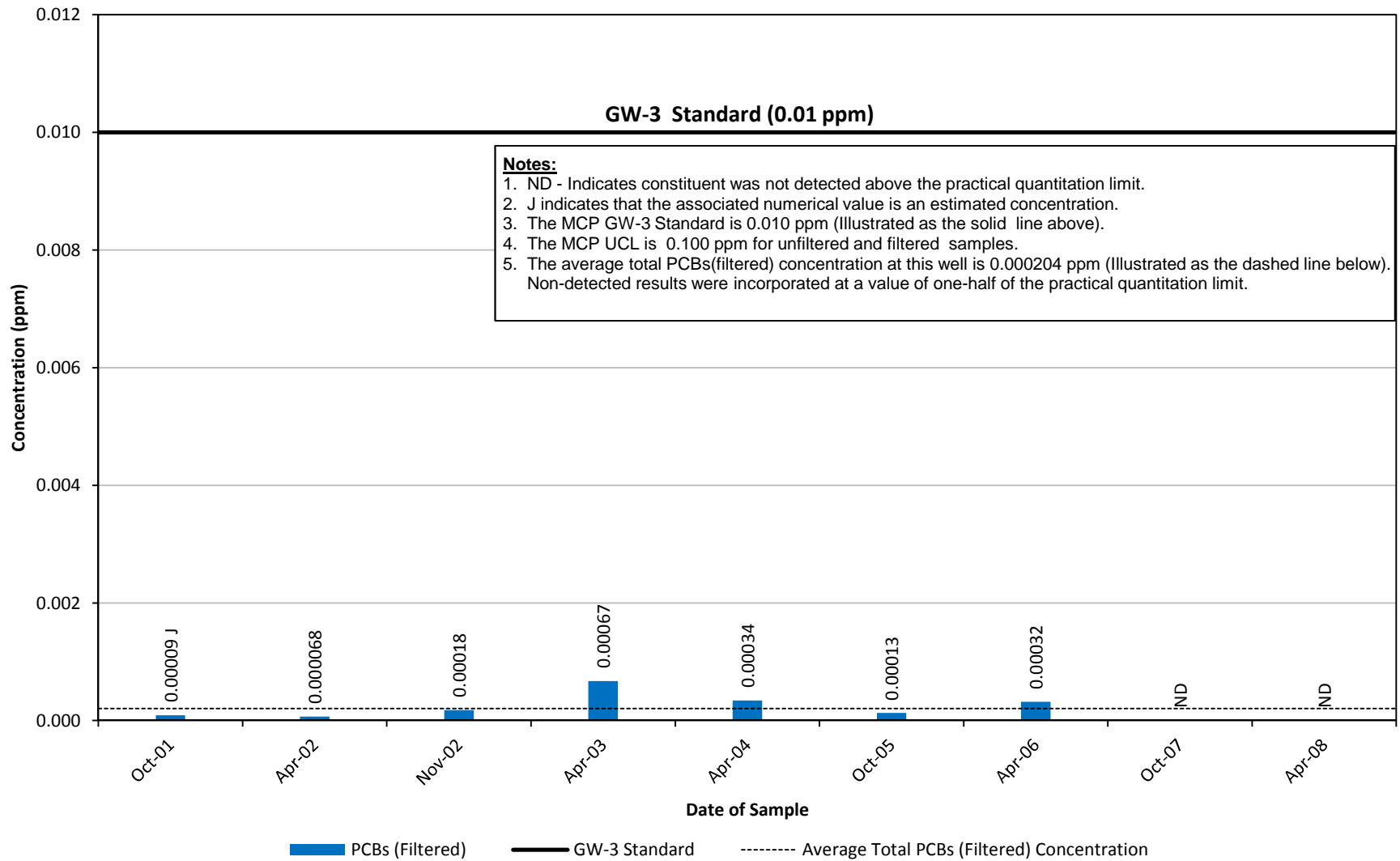
**Appendix E**  
**Well E2SC-24 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



**Appendix E**  
**Well ES1-05 Historical Total PCBs (Filtered) Concentrations**

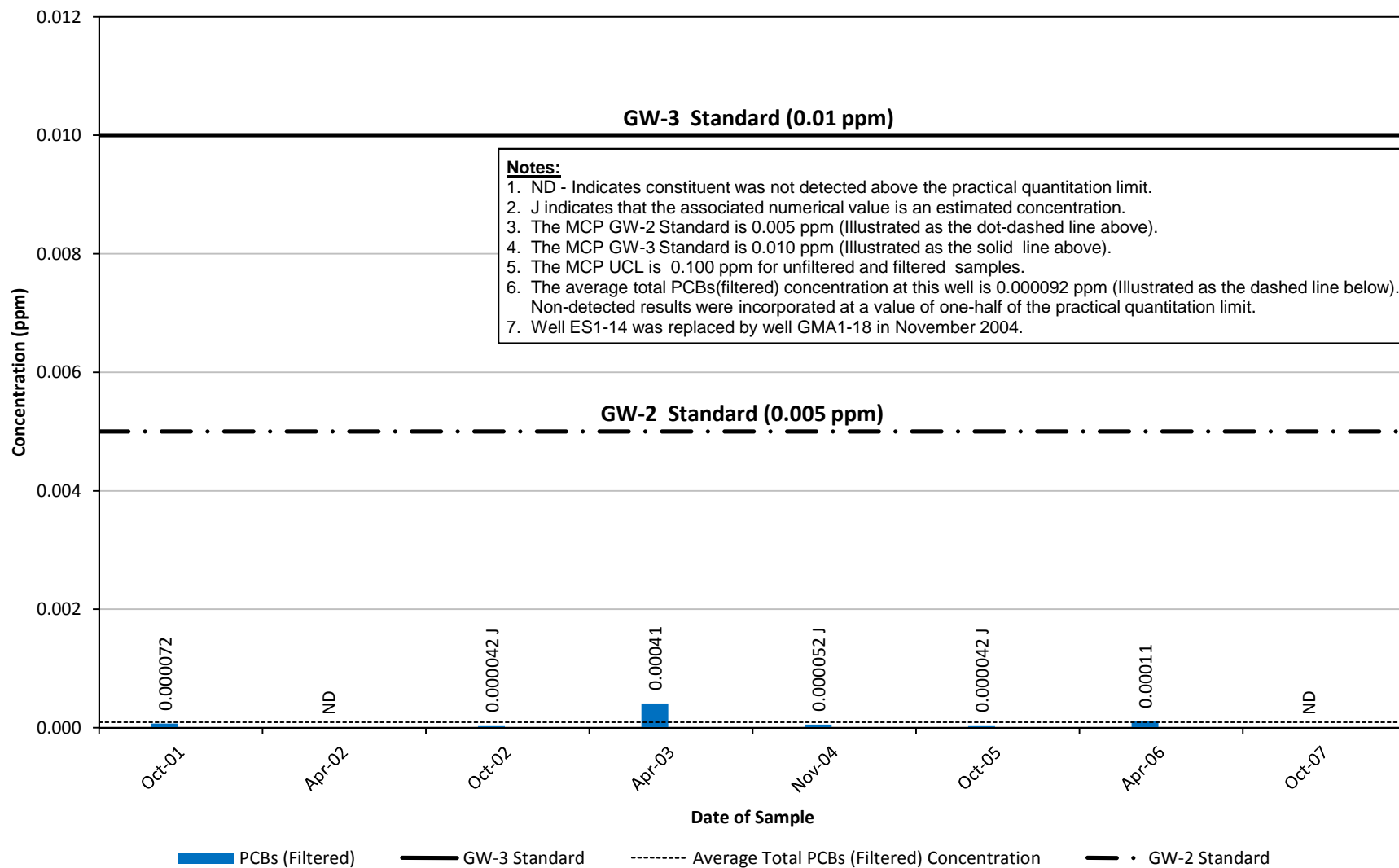
**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**





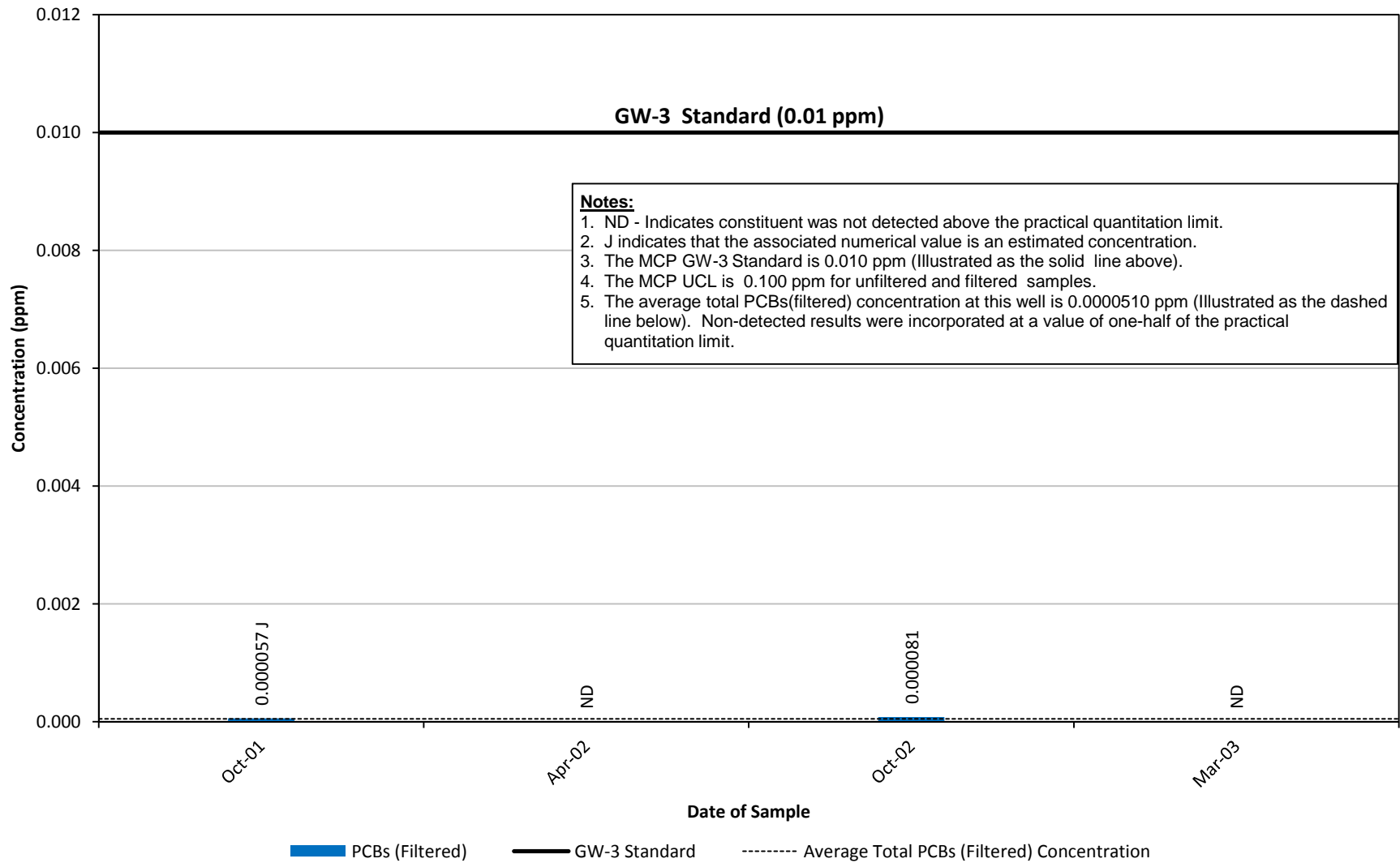
**Appendix E**  
**Wells ES1-14 & GMA1-18 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



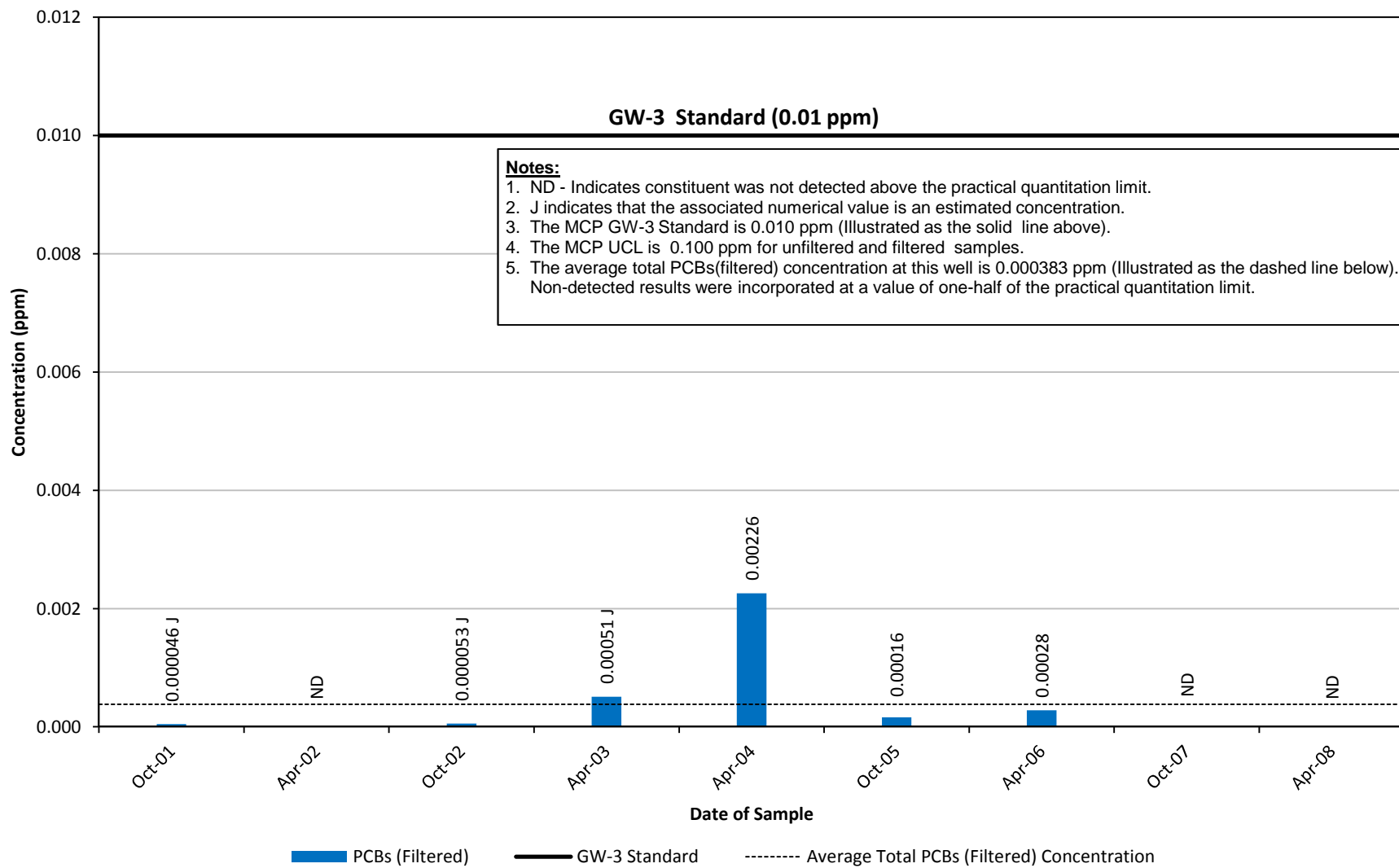
**Appendix E**  
**Well ES1-20 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



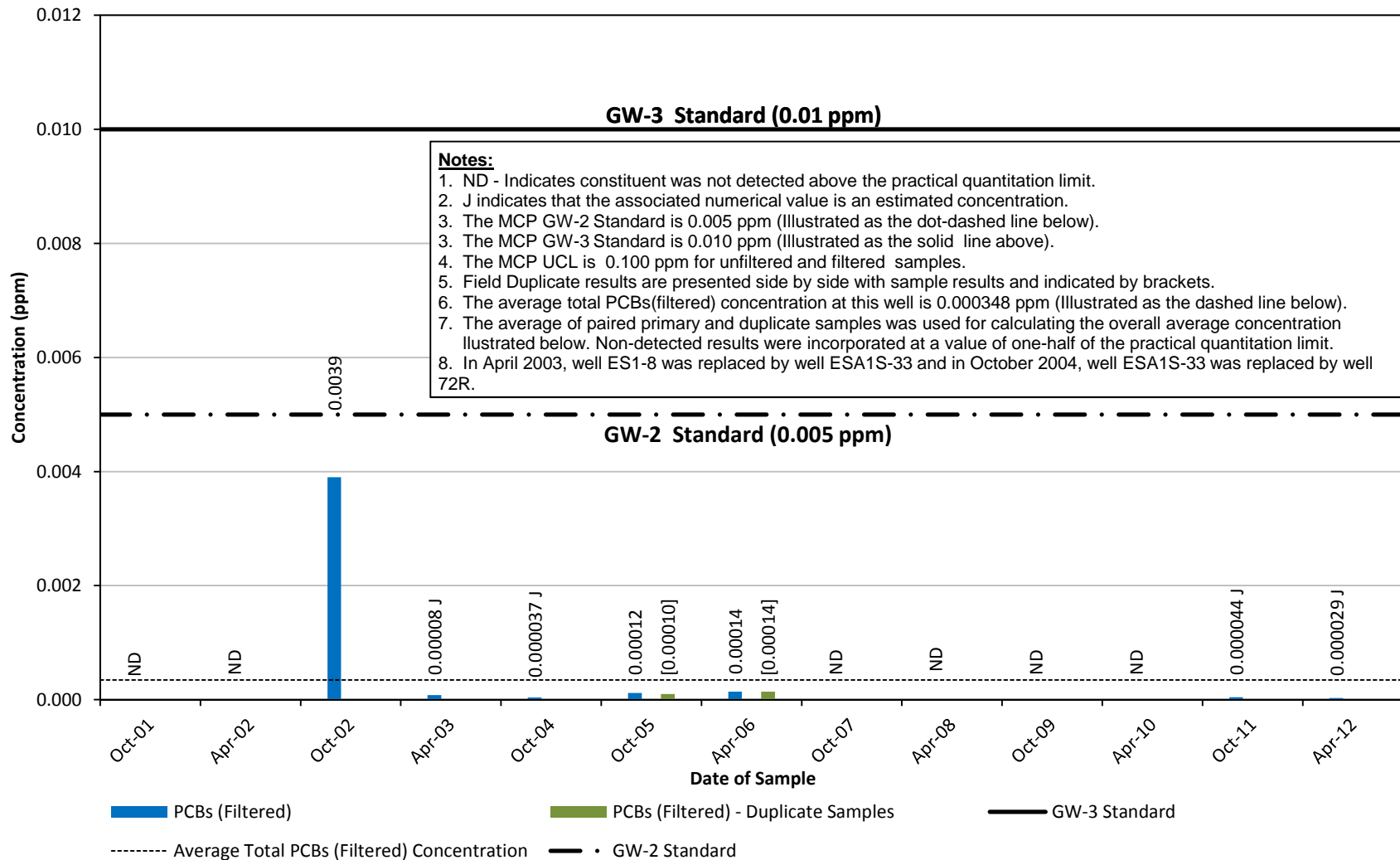
**Appendix E**  
**Well ES1-27R Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



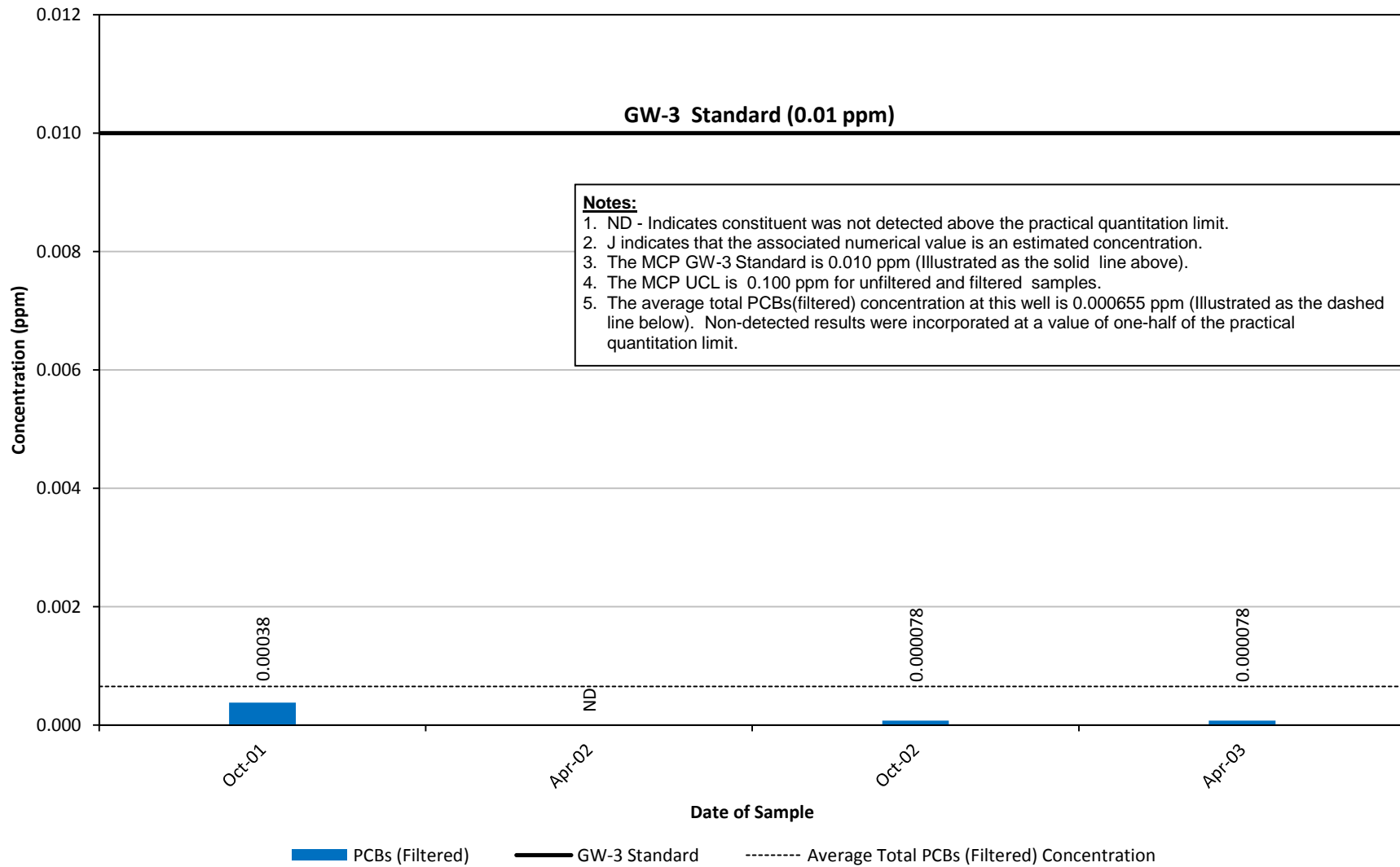
**Appendix E**  
**Wells ES1-08, ESA1S-33, & ESA1S-72R Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



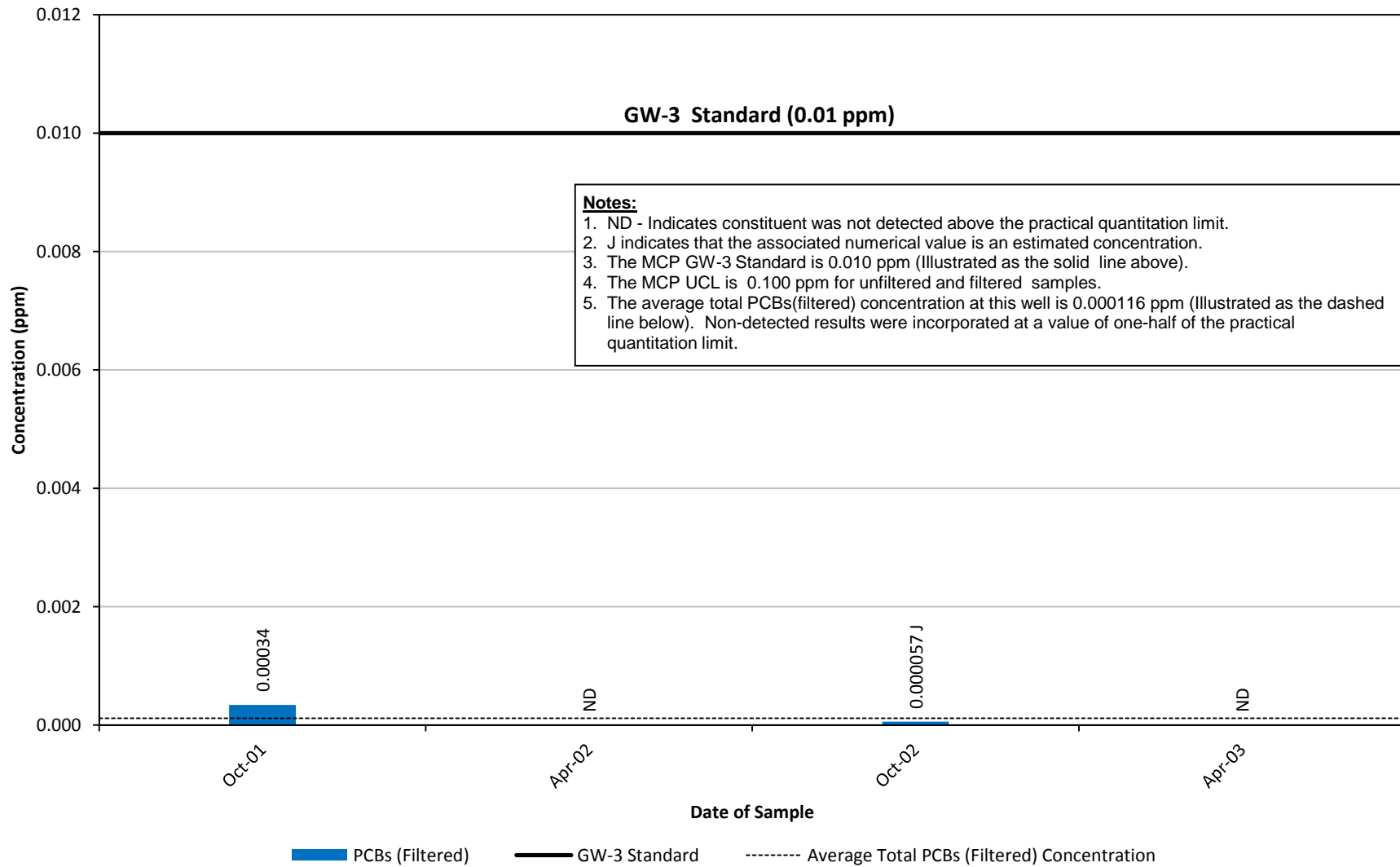
**Appendix E**  
**Well ES2-02A Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



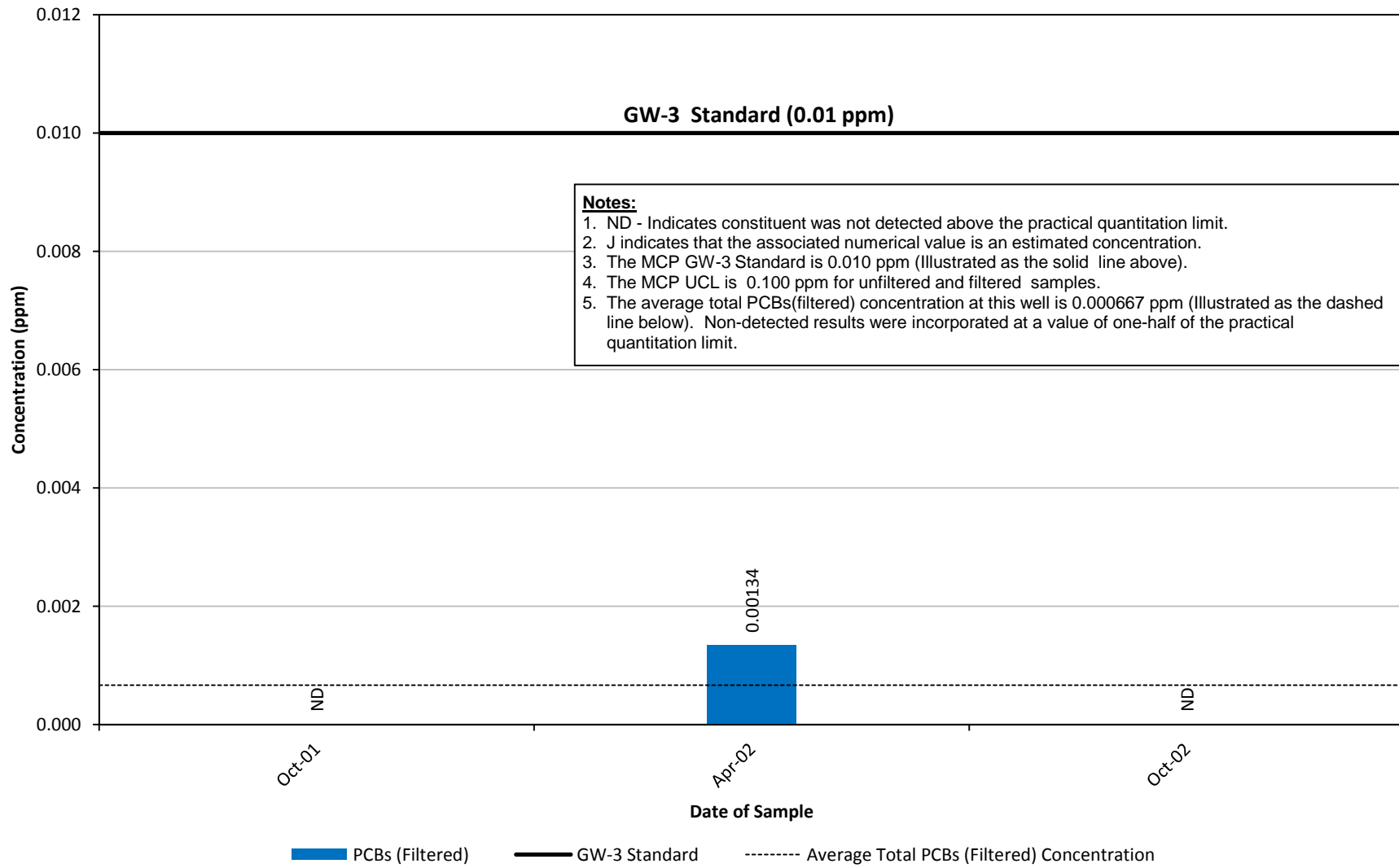
**Appendix E**  
**Well ES2-08 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



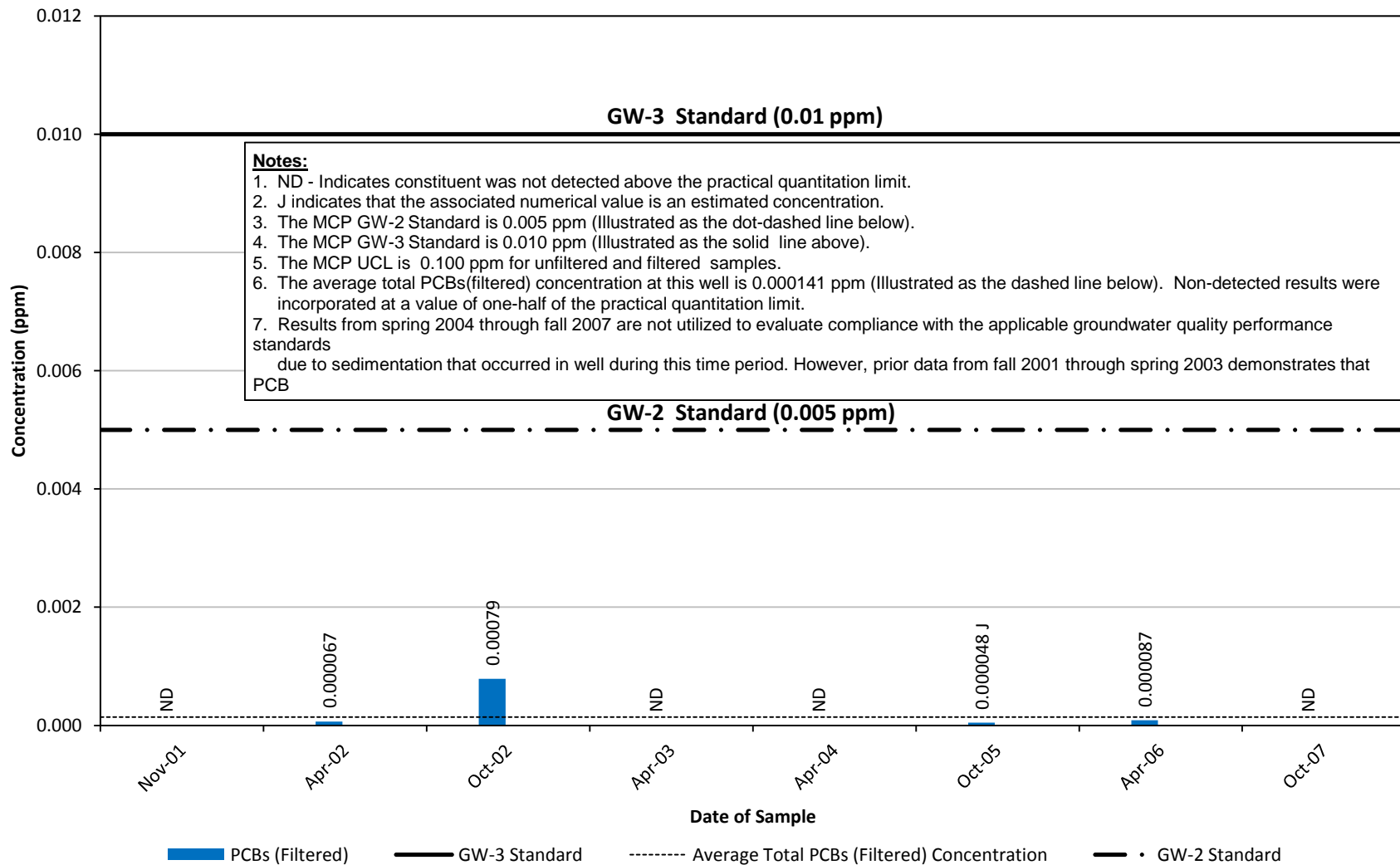
**Appendix E**  
**Well ES2-17 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



**Appendix E**  
**Well ESA1N-52 Historical Total PCBs (Filtered) Concentrations**

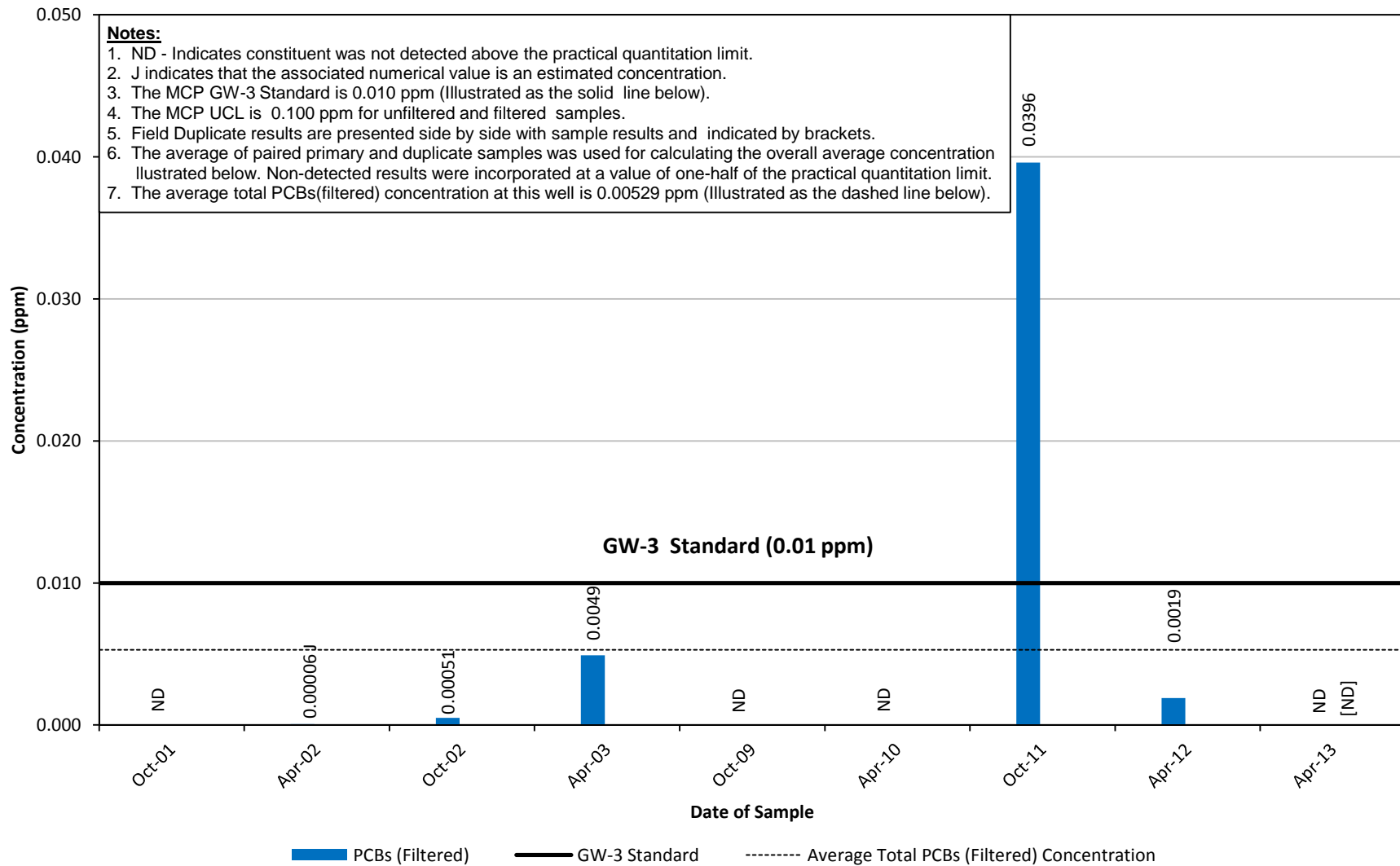
**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**





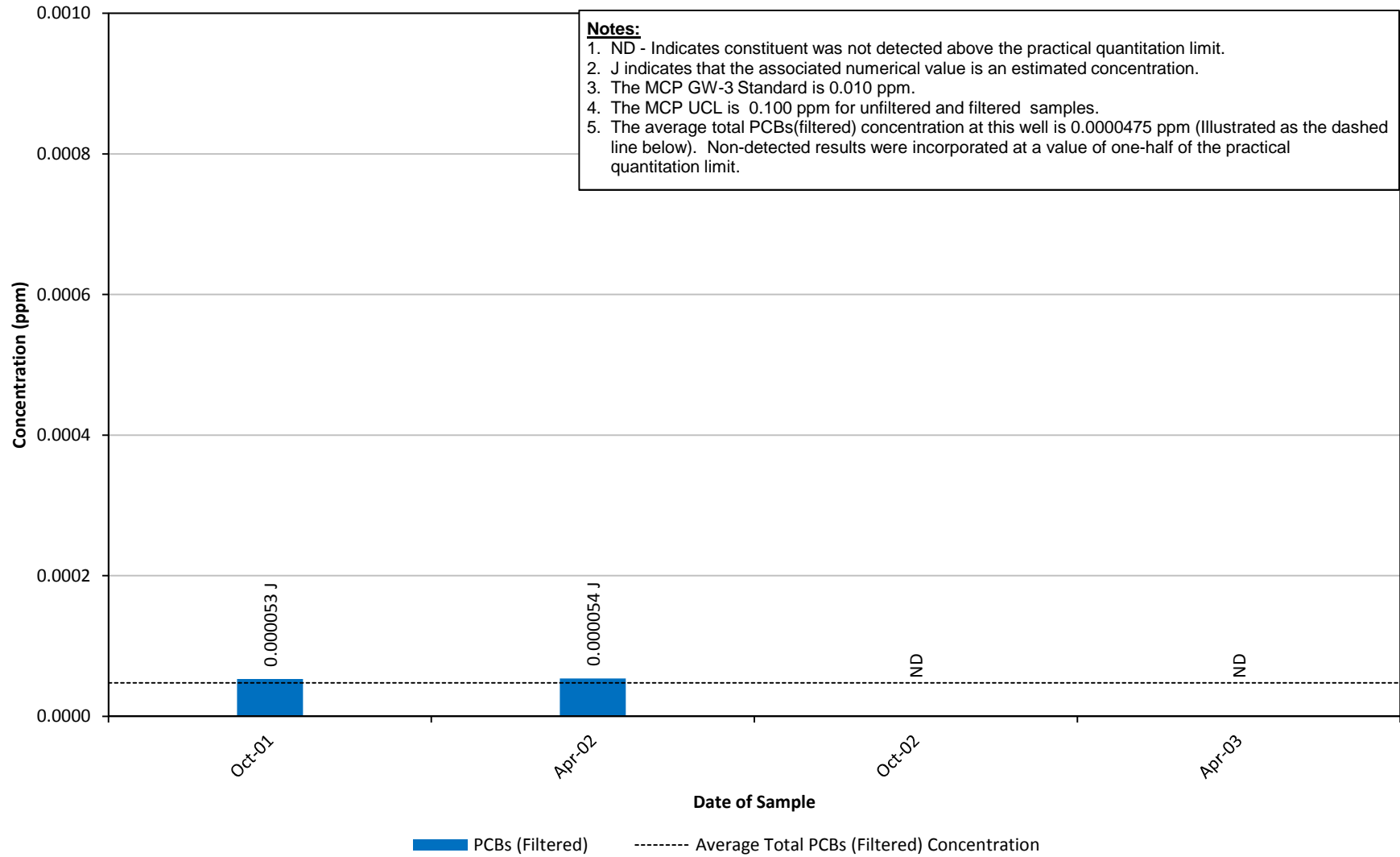
**Appendix E**  
**Well 52 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



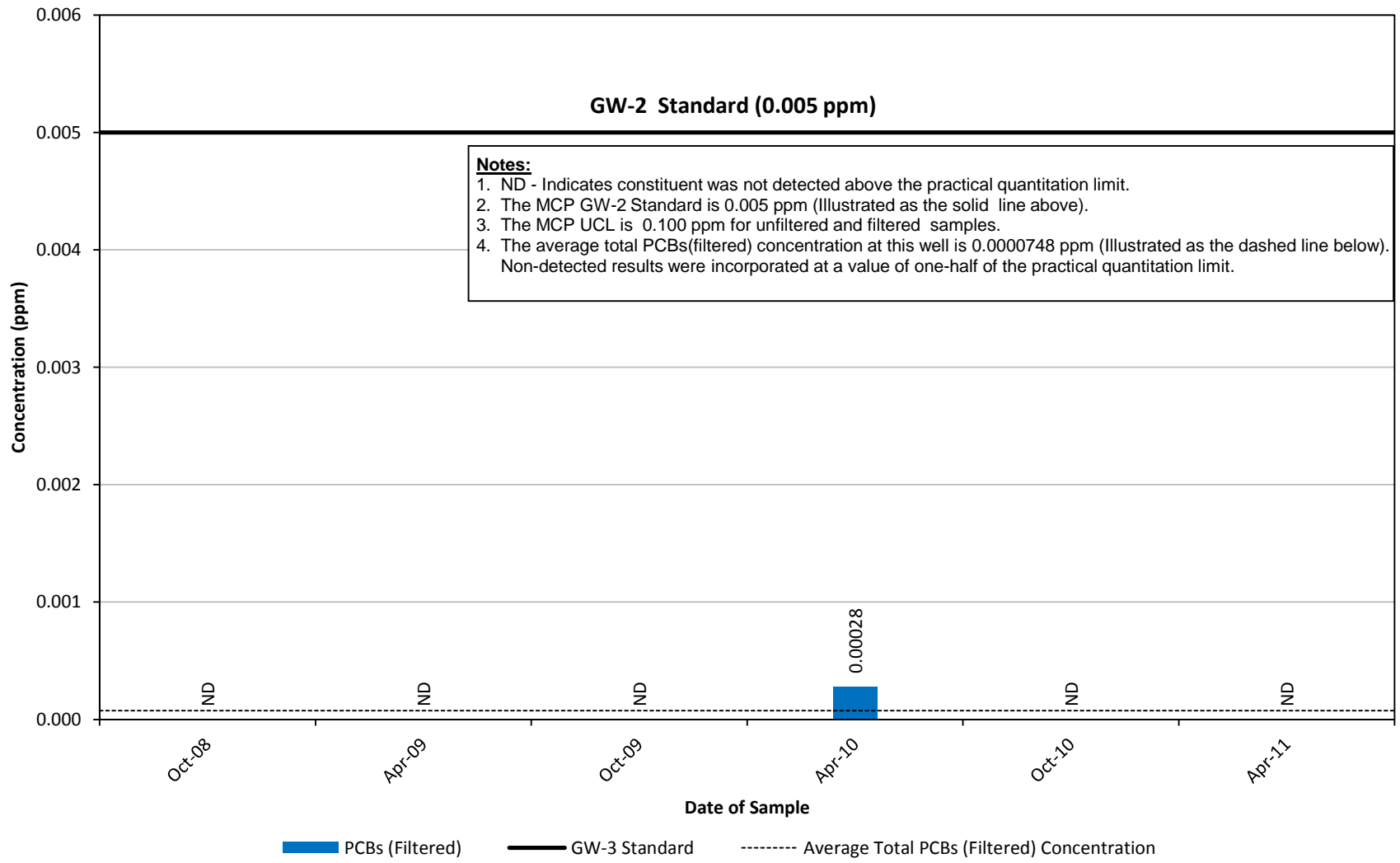
**Appendix E**  
**Well 64 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



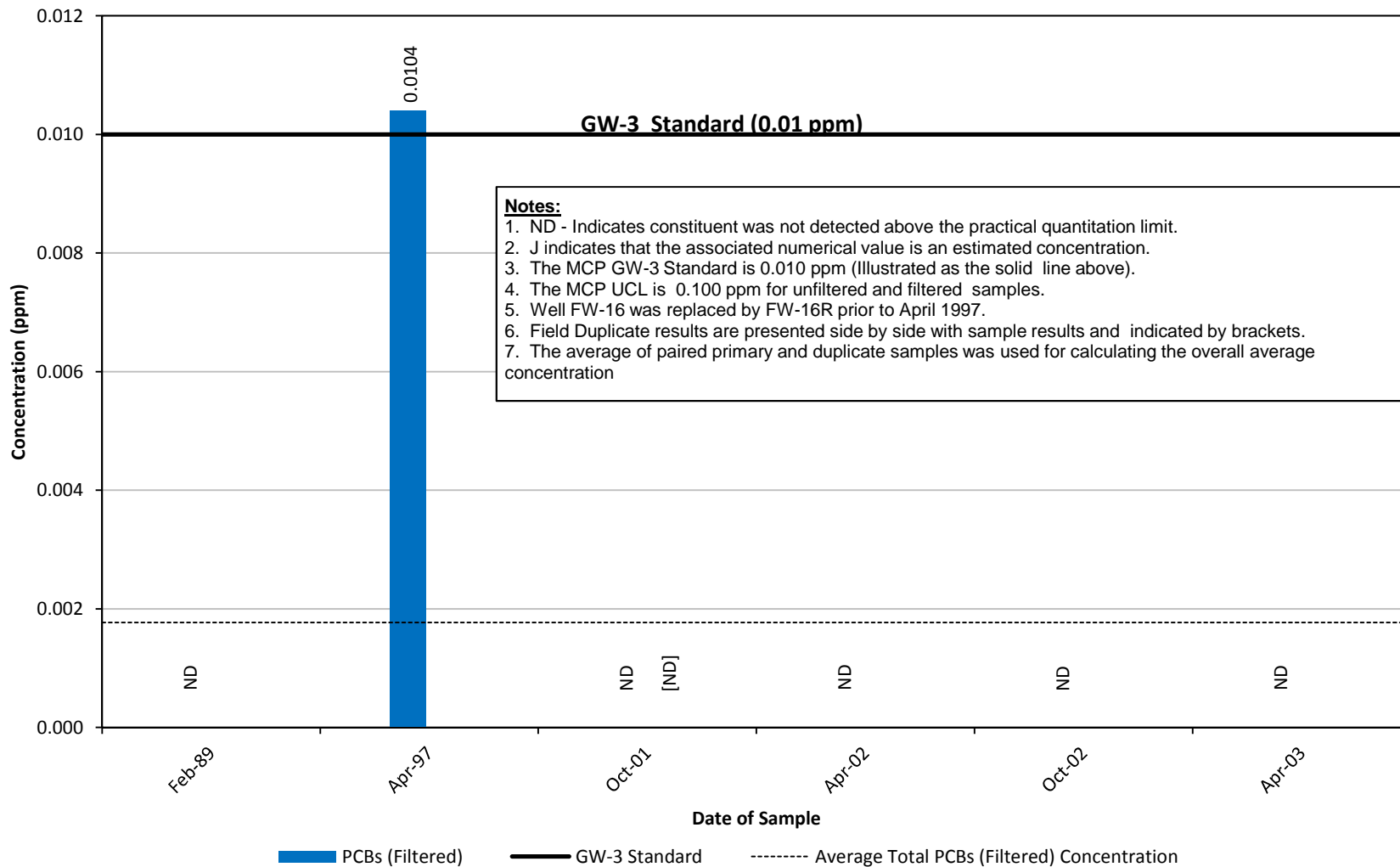
**Appendix E**  
**Well F-1 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



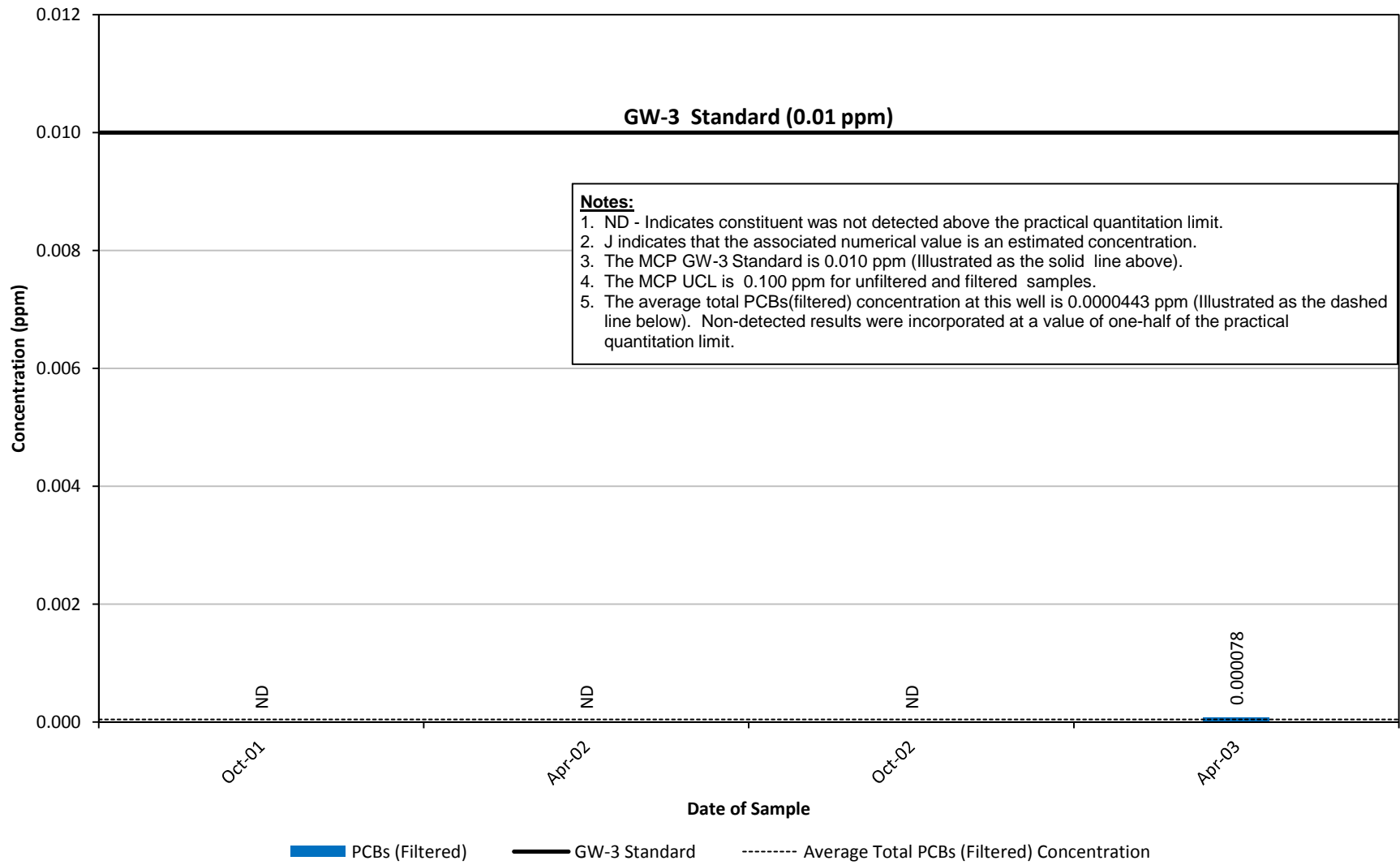
**Appendix D**  
**Wells FW-16 and FW-16R Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



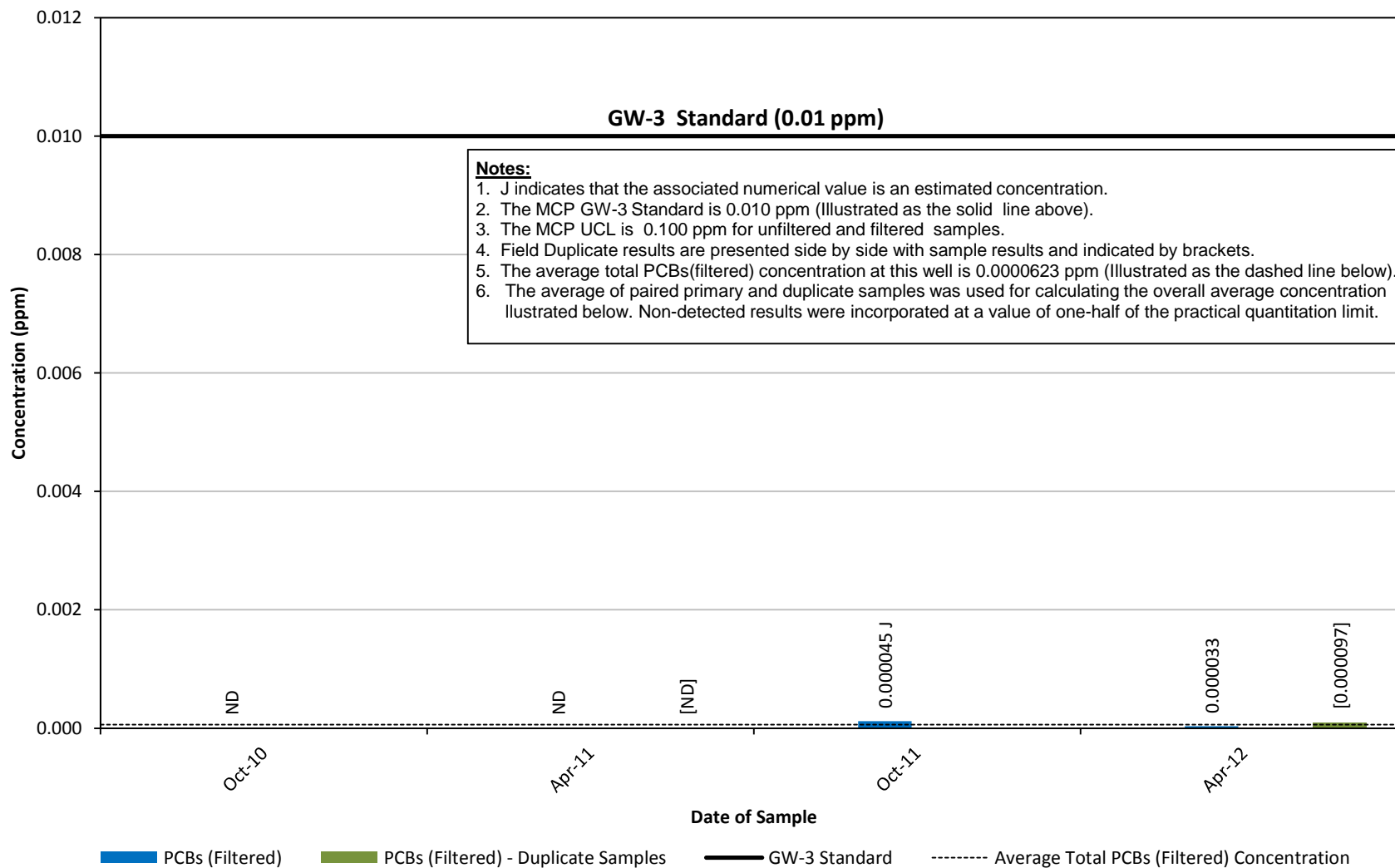
**Appendix E**  
**Well GMA1-12 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



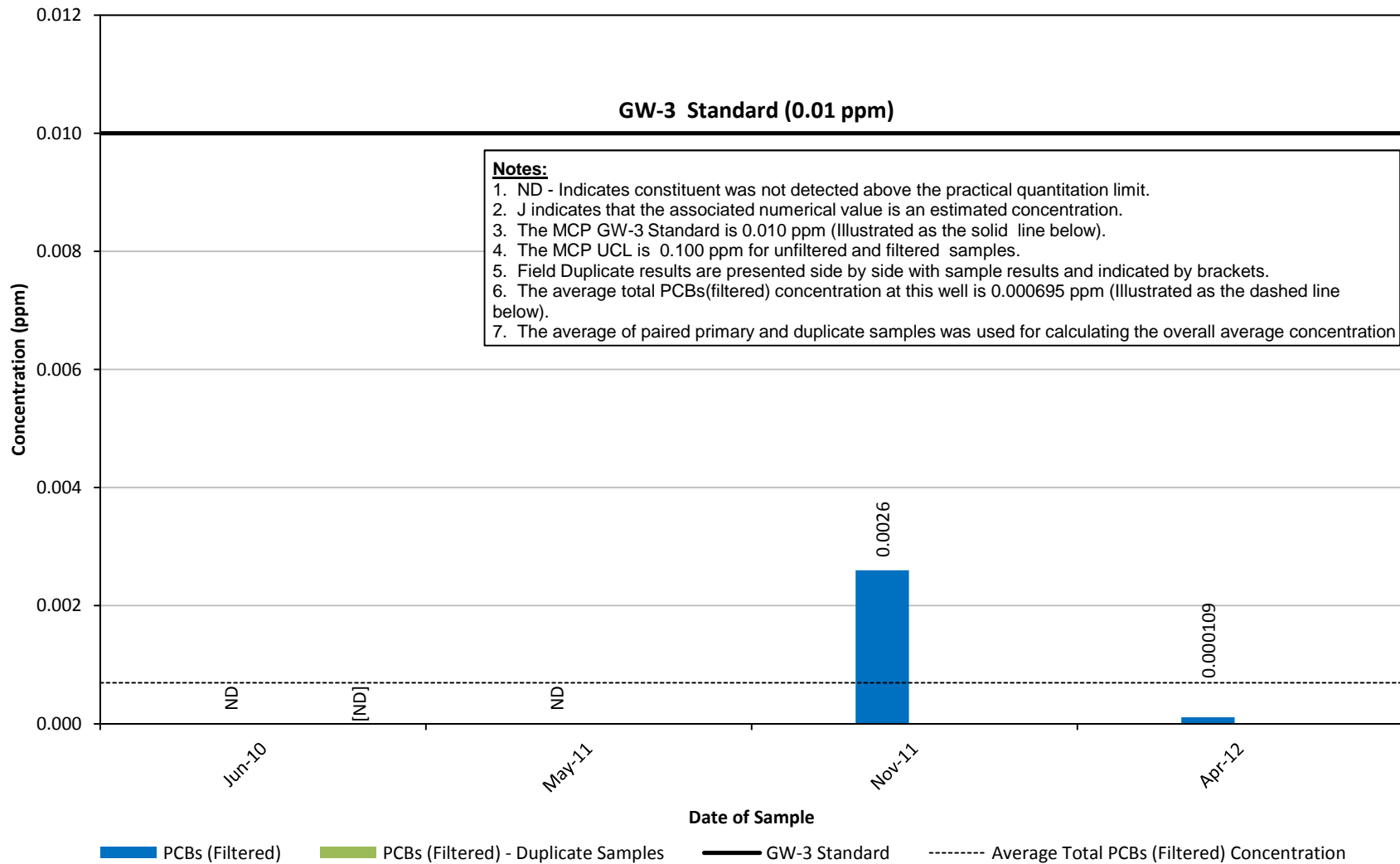
**Appendix E**  
**Wells GMA1-24R Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



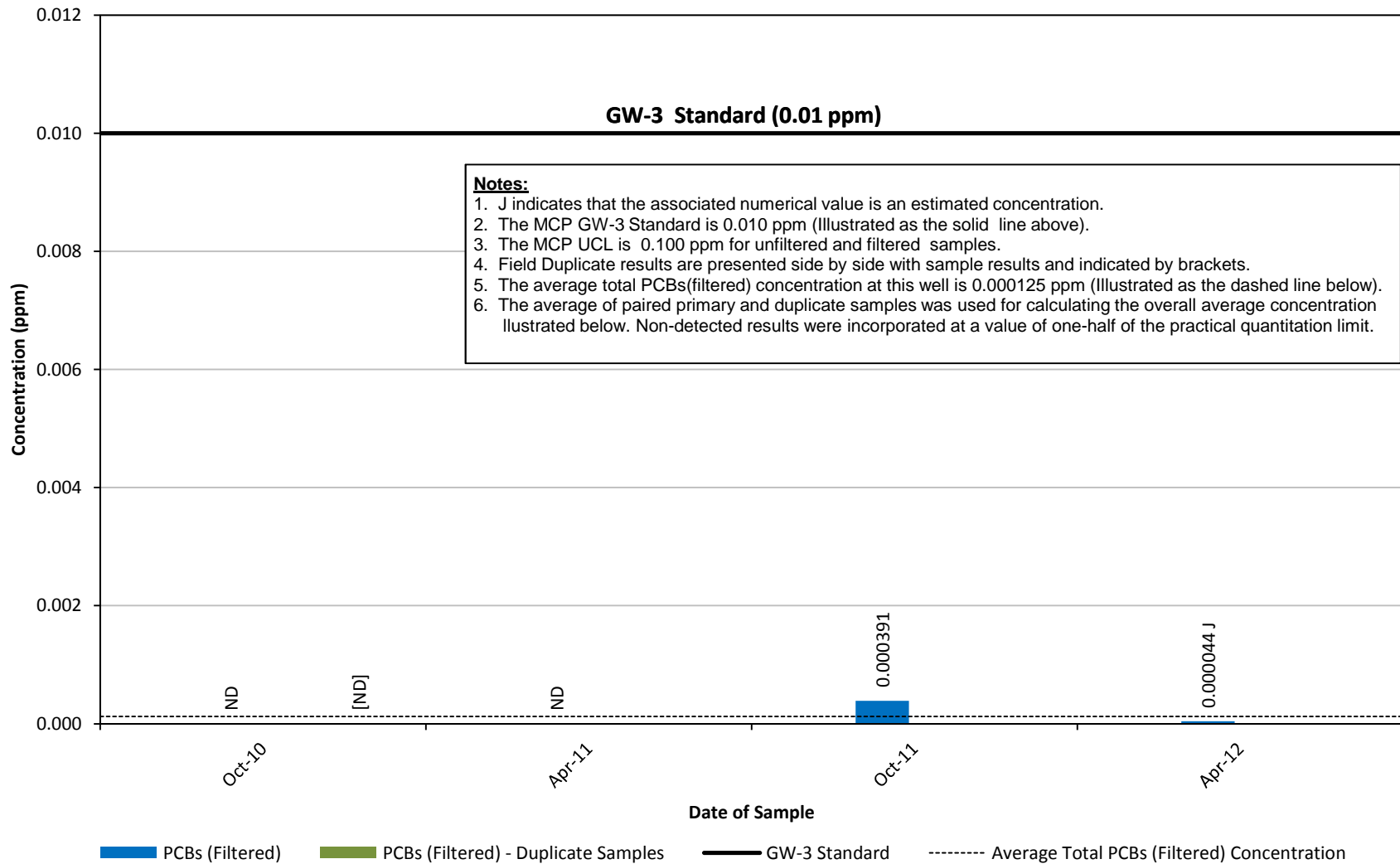
**Appendix E**  
**Well GMA1-29 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



**Appendix E**  
**Wells GMA1-30 Historical Total PCBs (Filtered) Concentrations**

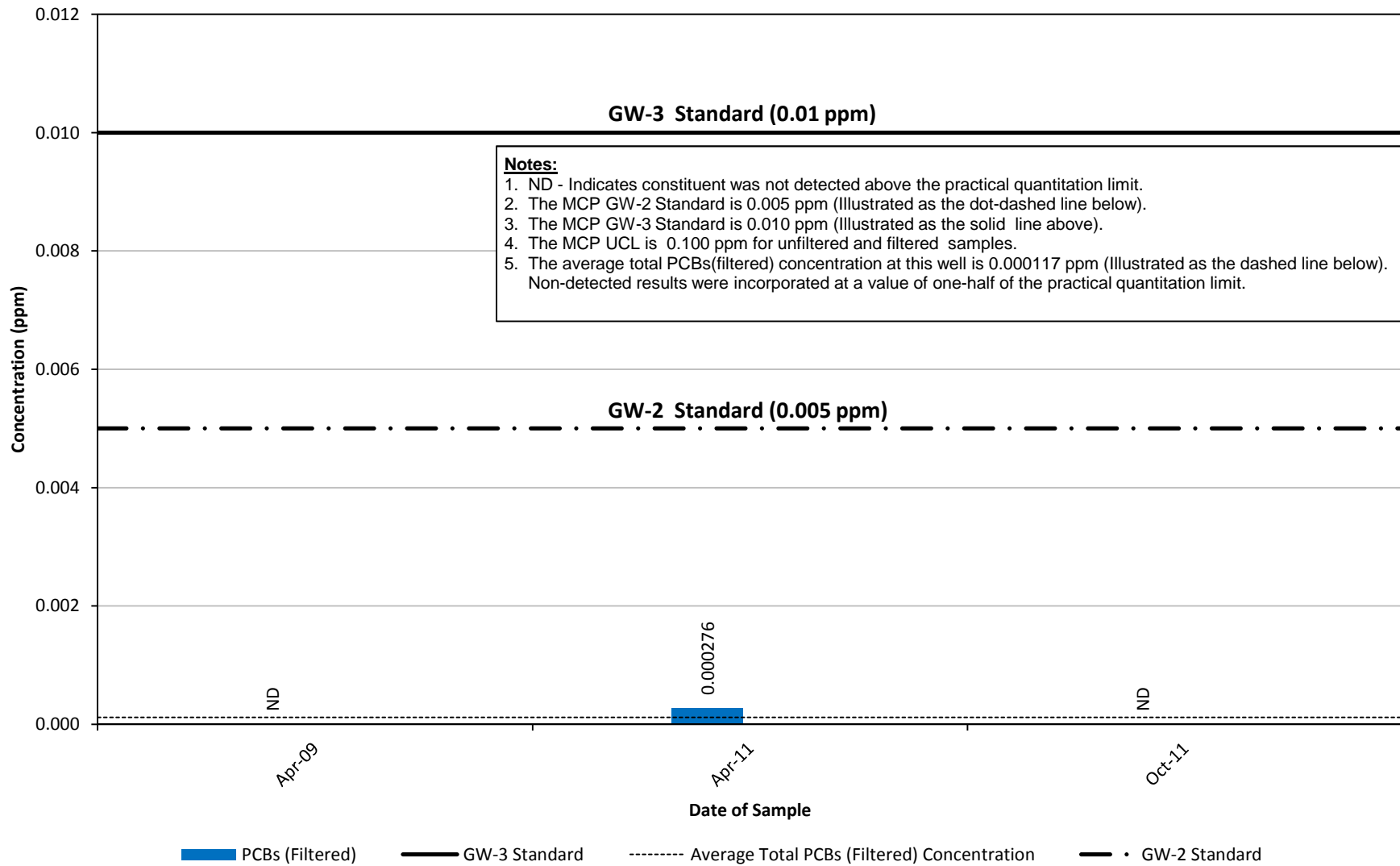
**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**





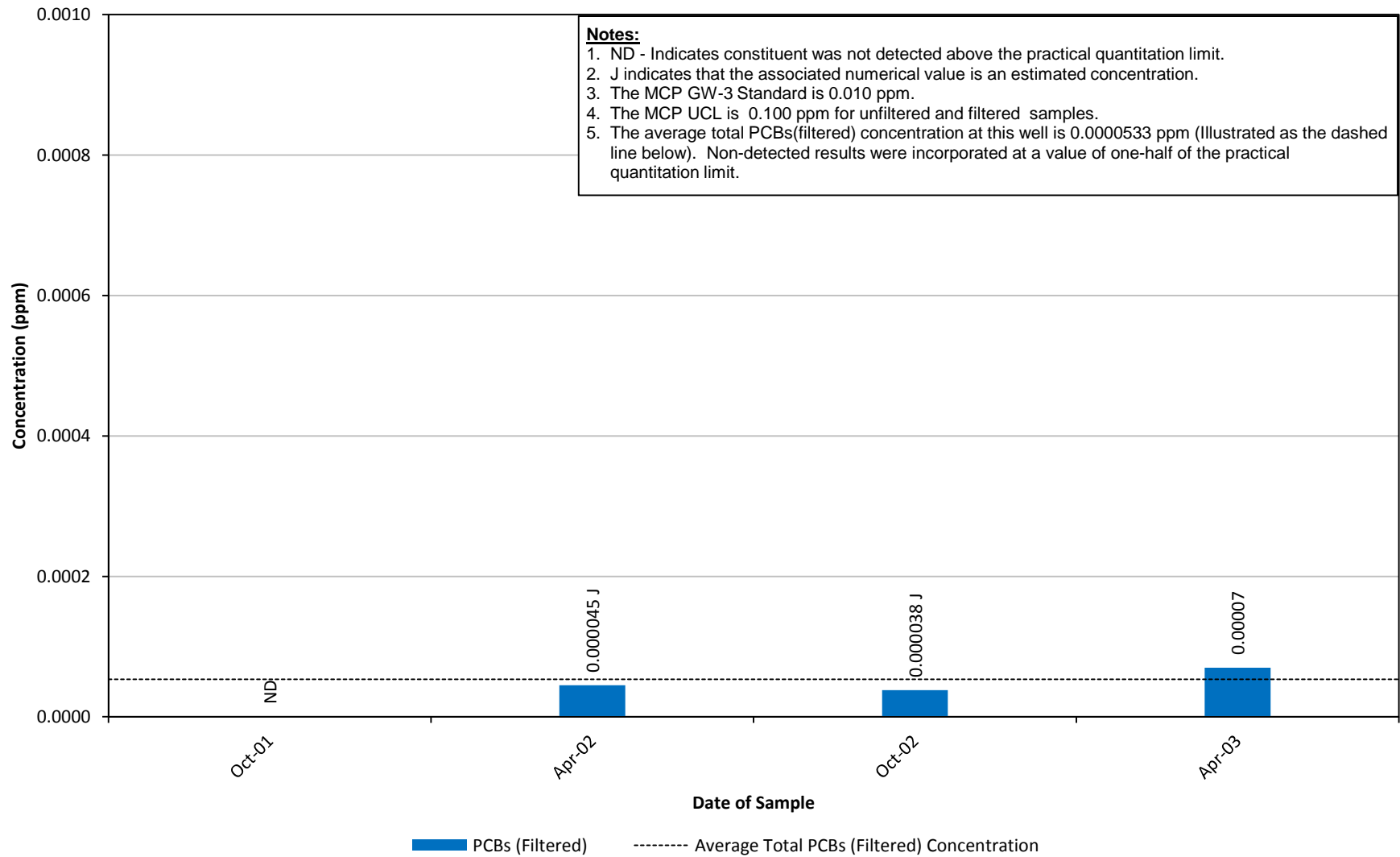
**Appendix E**  
**Well GMA1-4 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



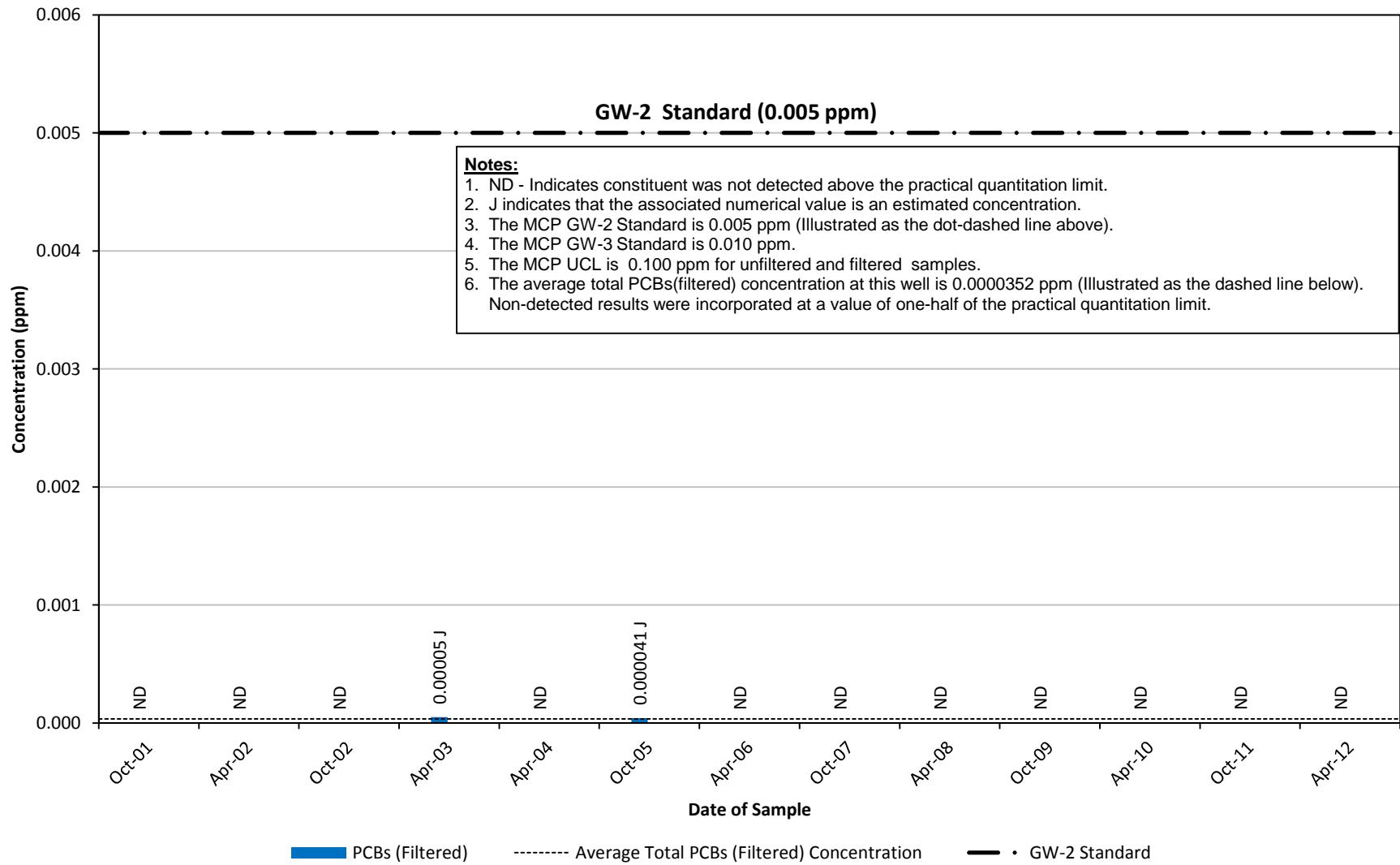
**Appendix E**  
**Well GMA1-5 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



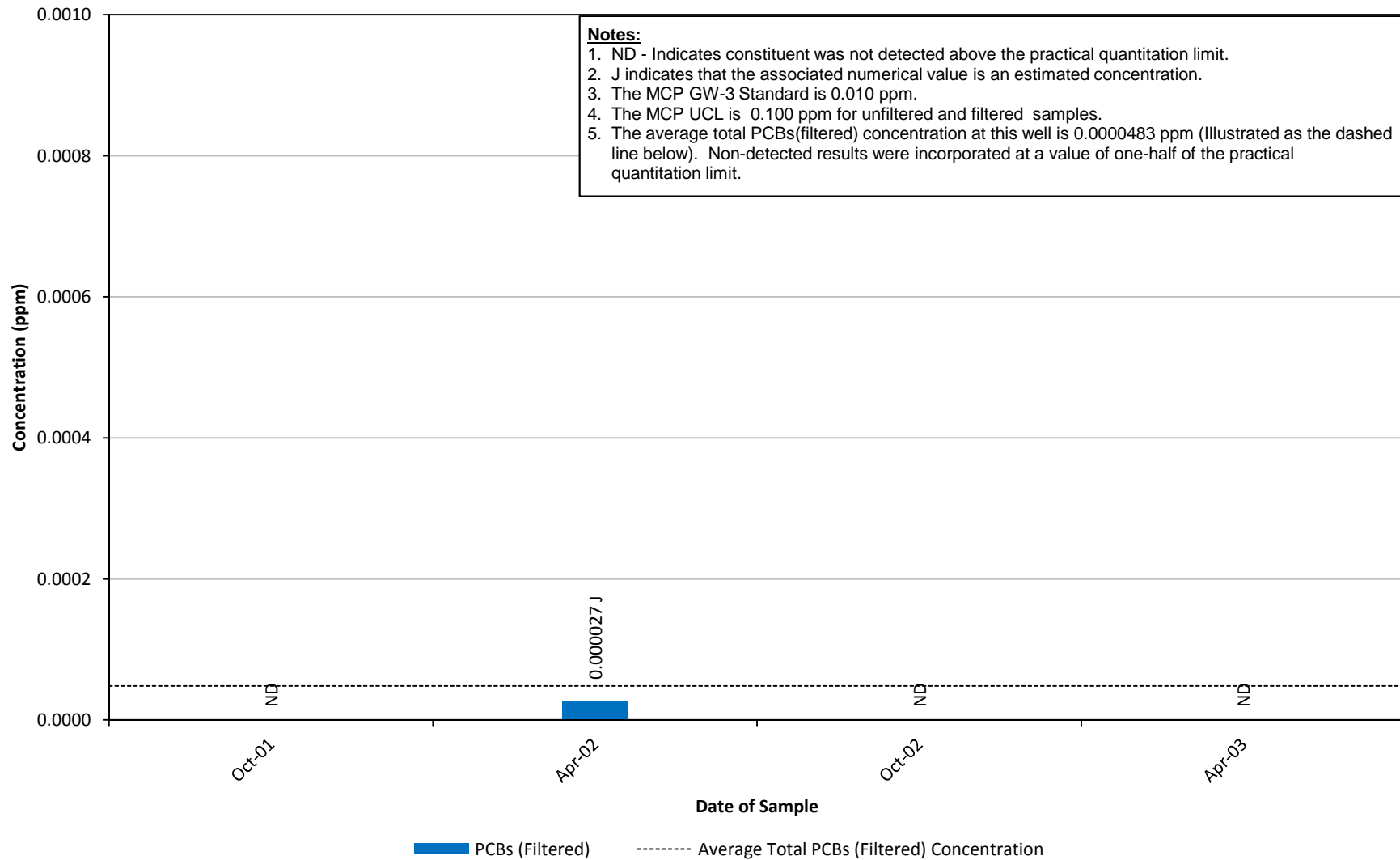
**Appendix E**  
**Well GMA1-6 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



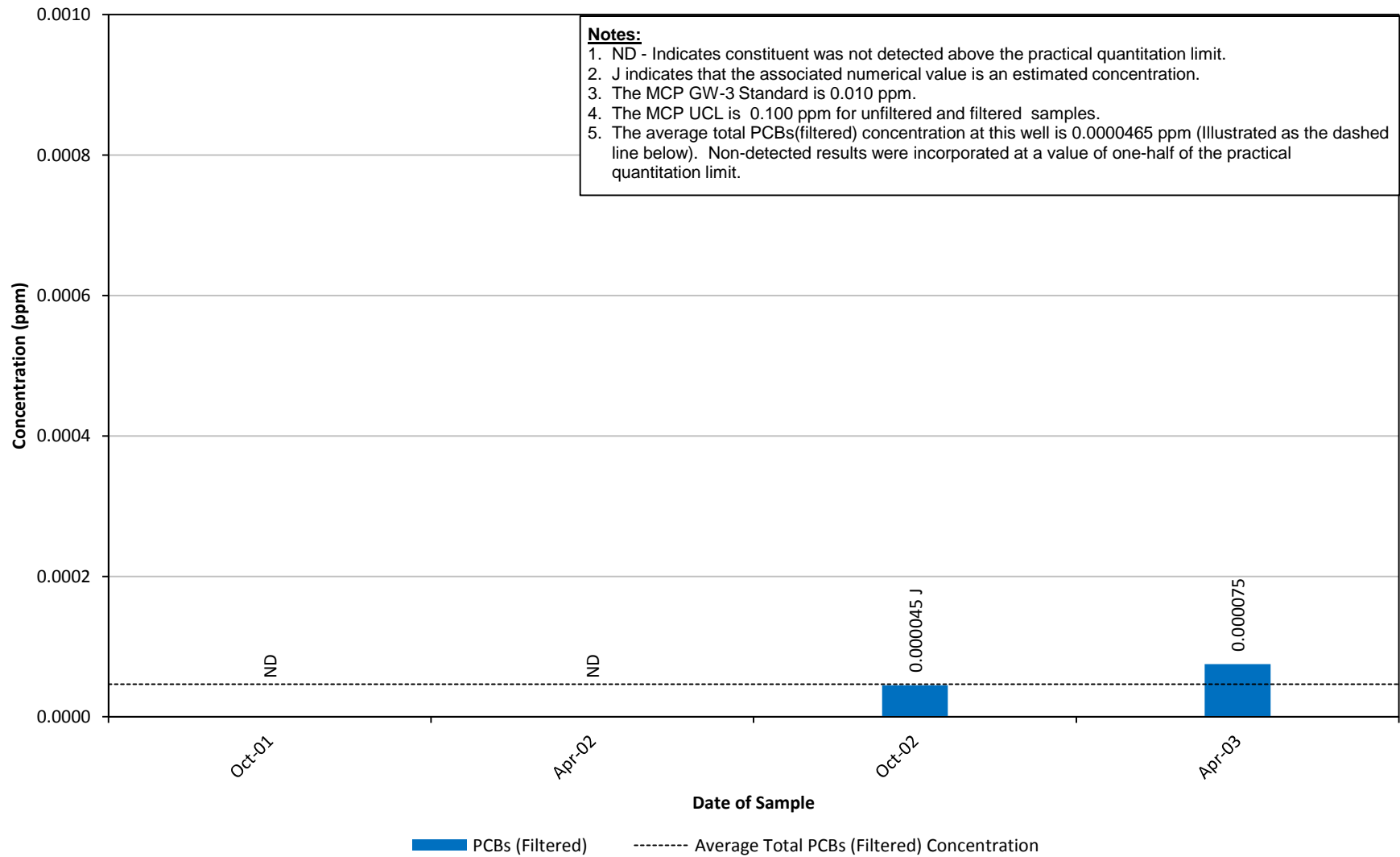
**Appendix E**  
**Well GMA1-7 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



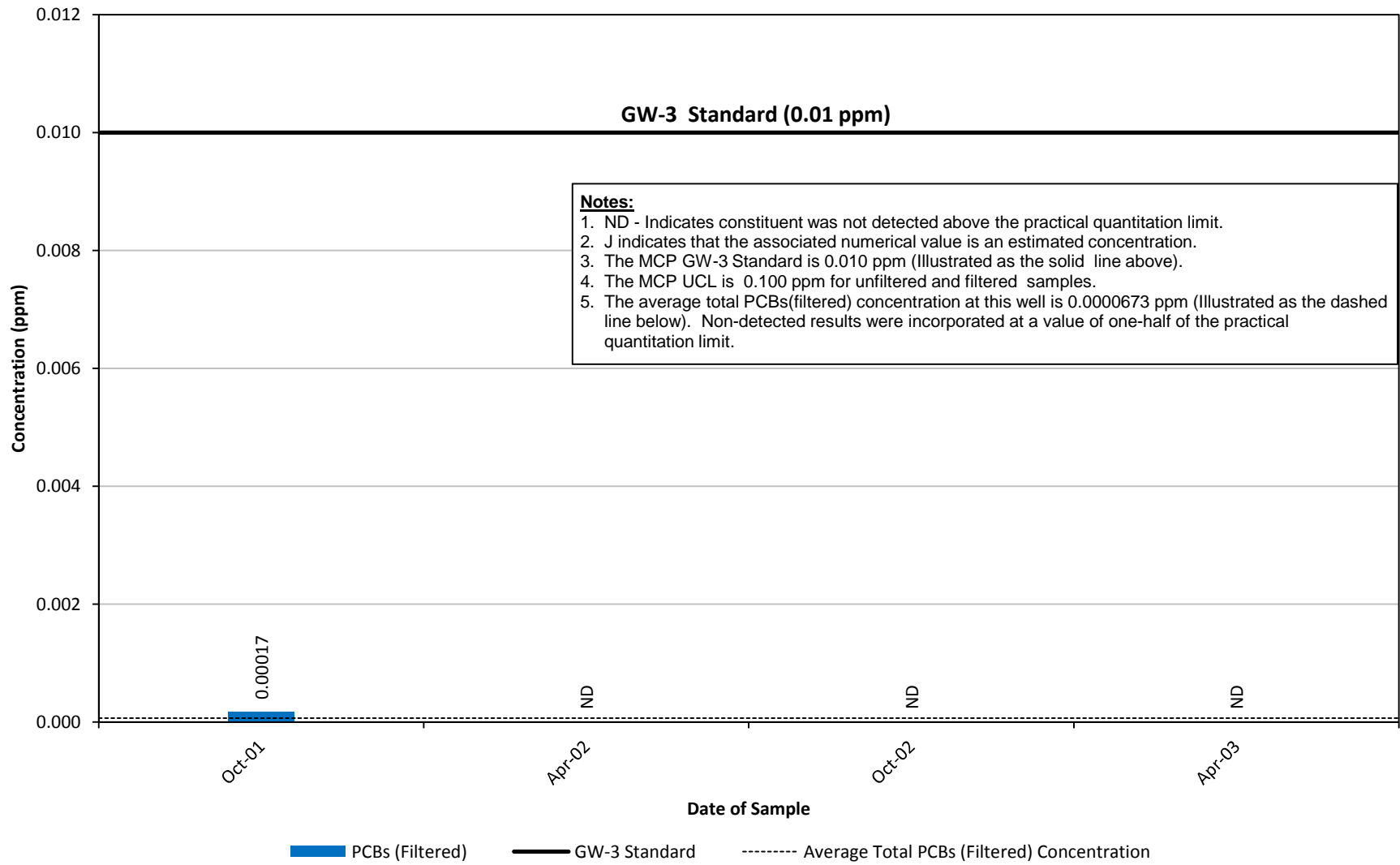
**Appendix E**  
**Well GMA1-9 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



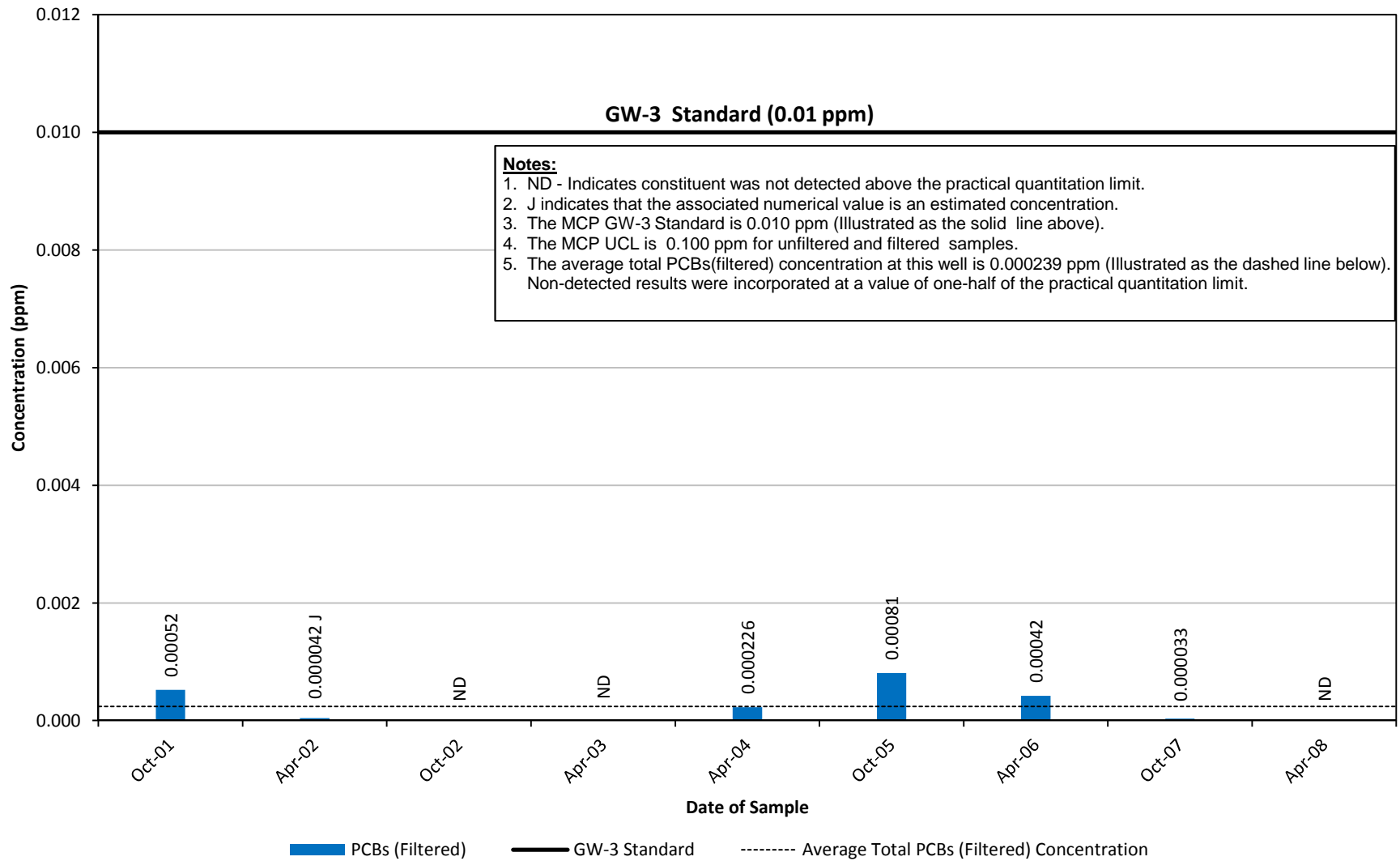
**Appendix E**  
**Well HR-G1-MW-3 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



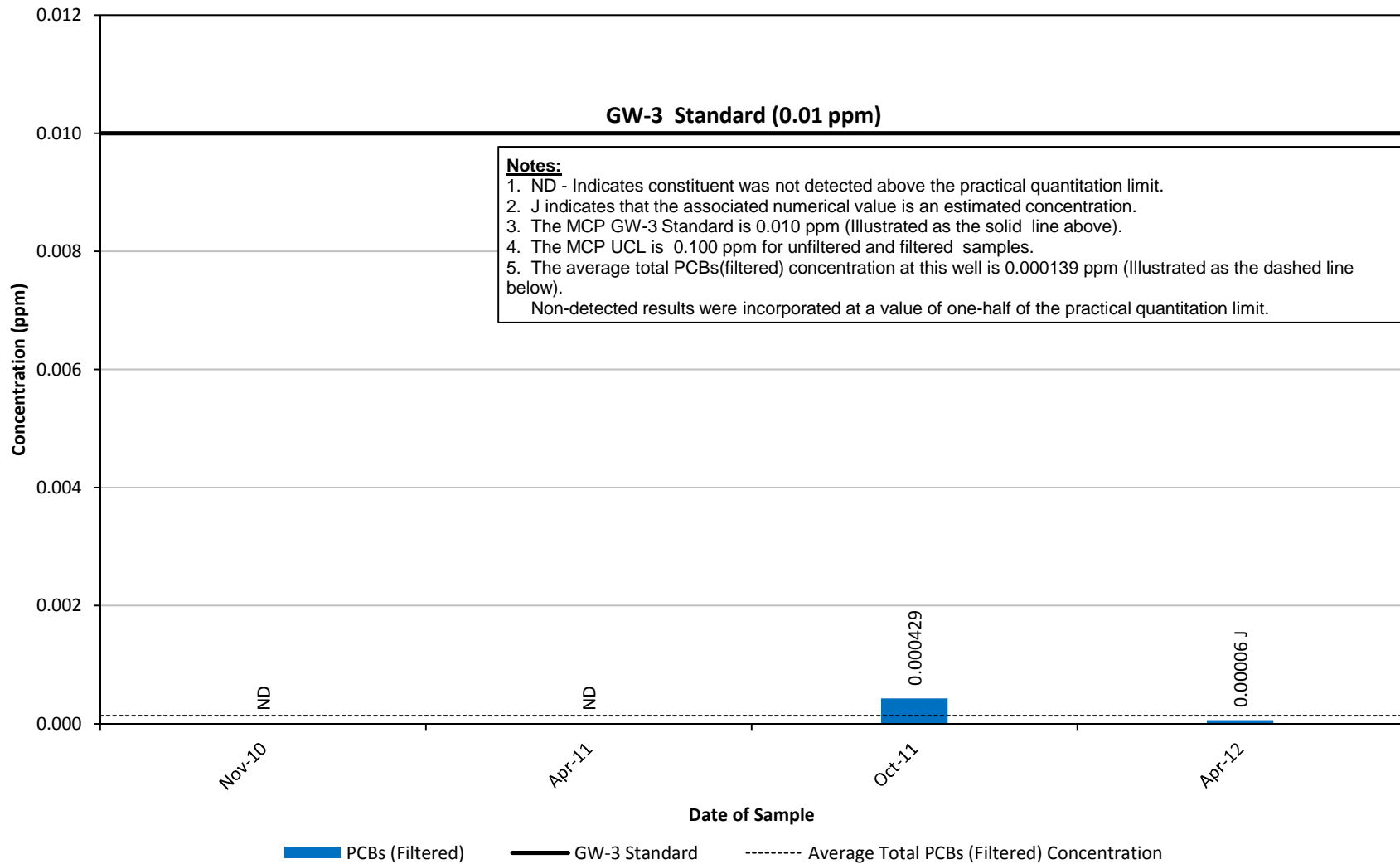
**Appendix E**  
**Well HR-G3-MW-1 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



**Appendix E**  
**Well HR-G3-MW-2 Historical Total PCBs (Filtered) Concentrations**

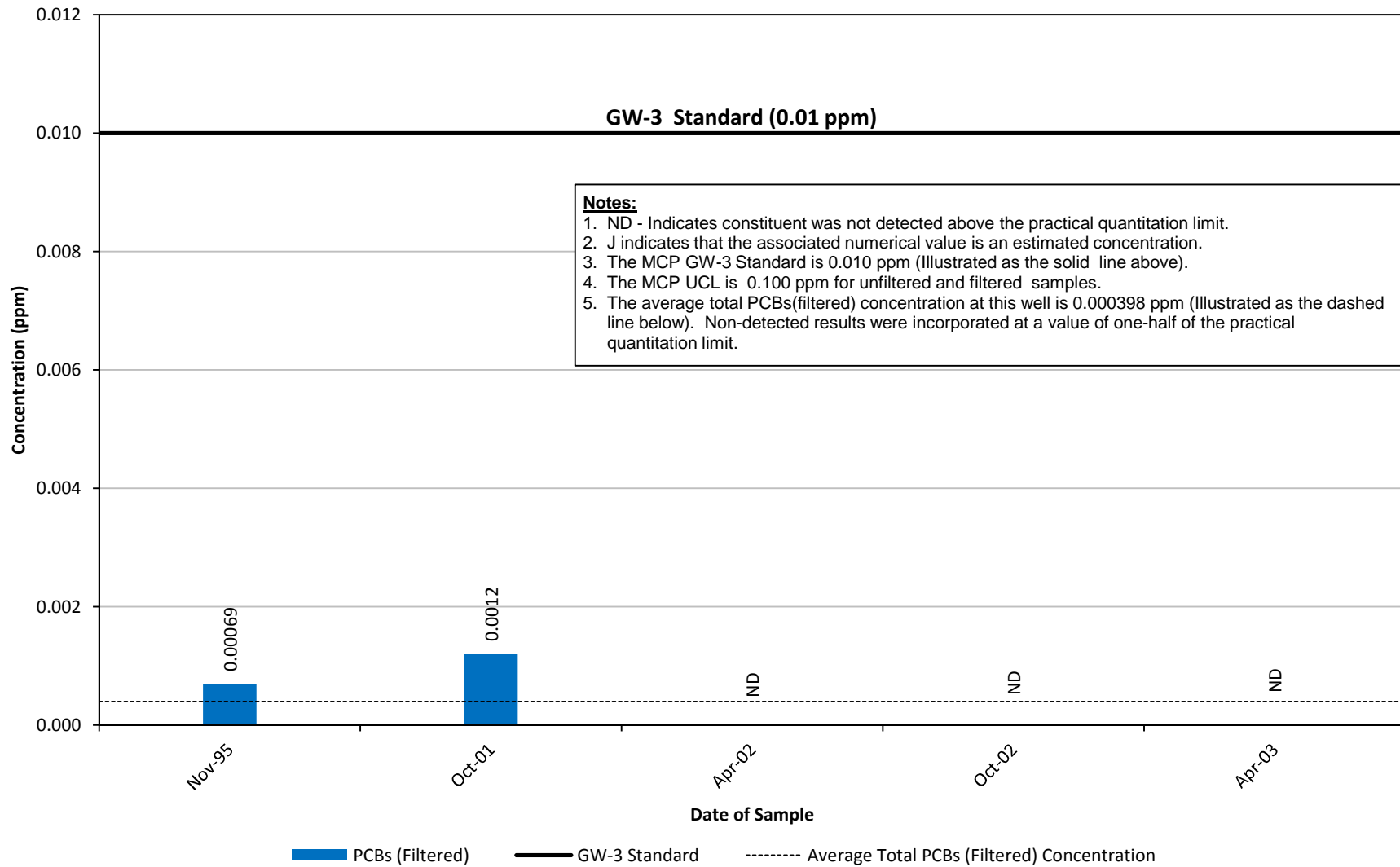
**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**





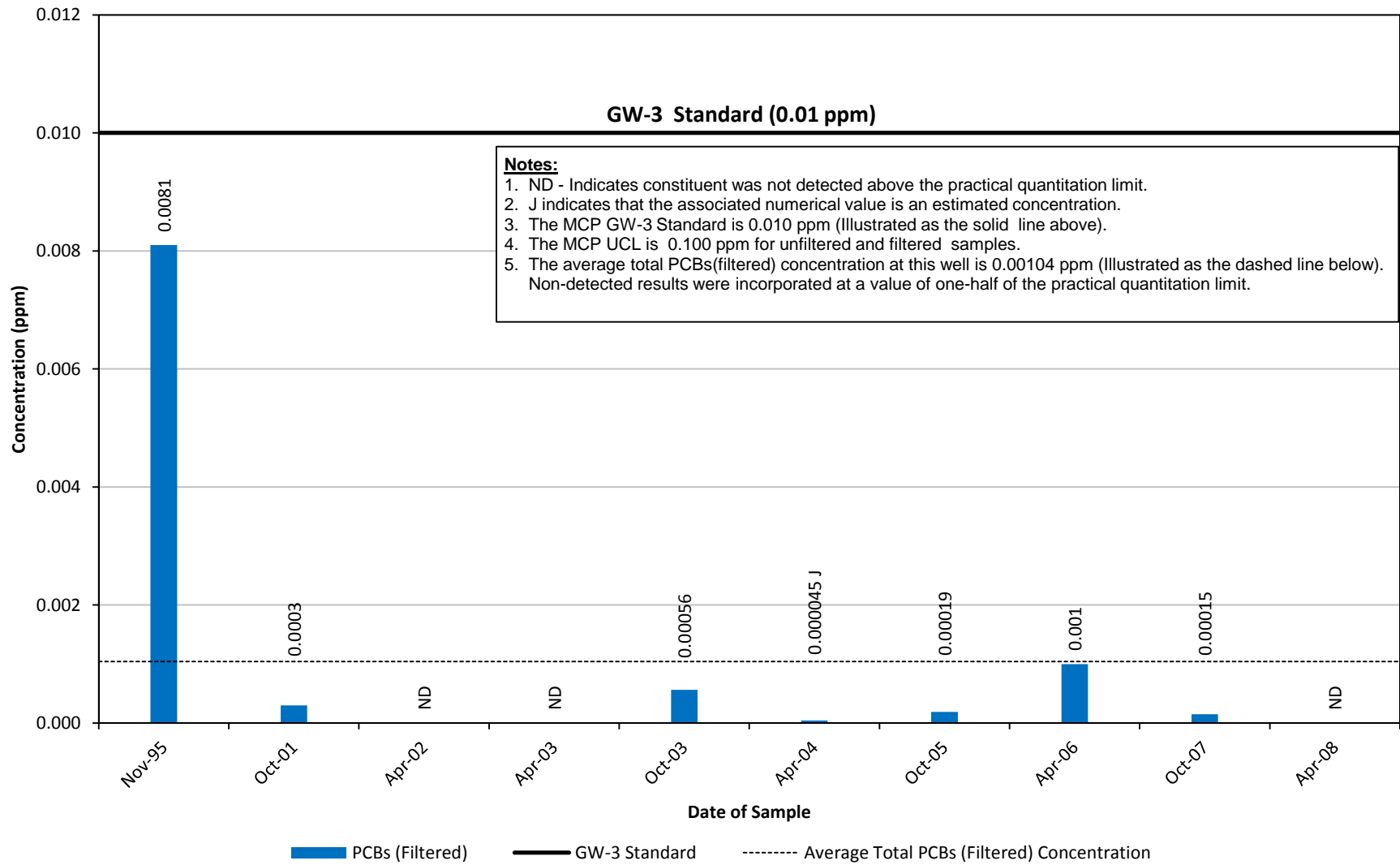
**Appendix E**  
**Well LS-28 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



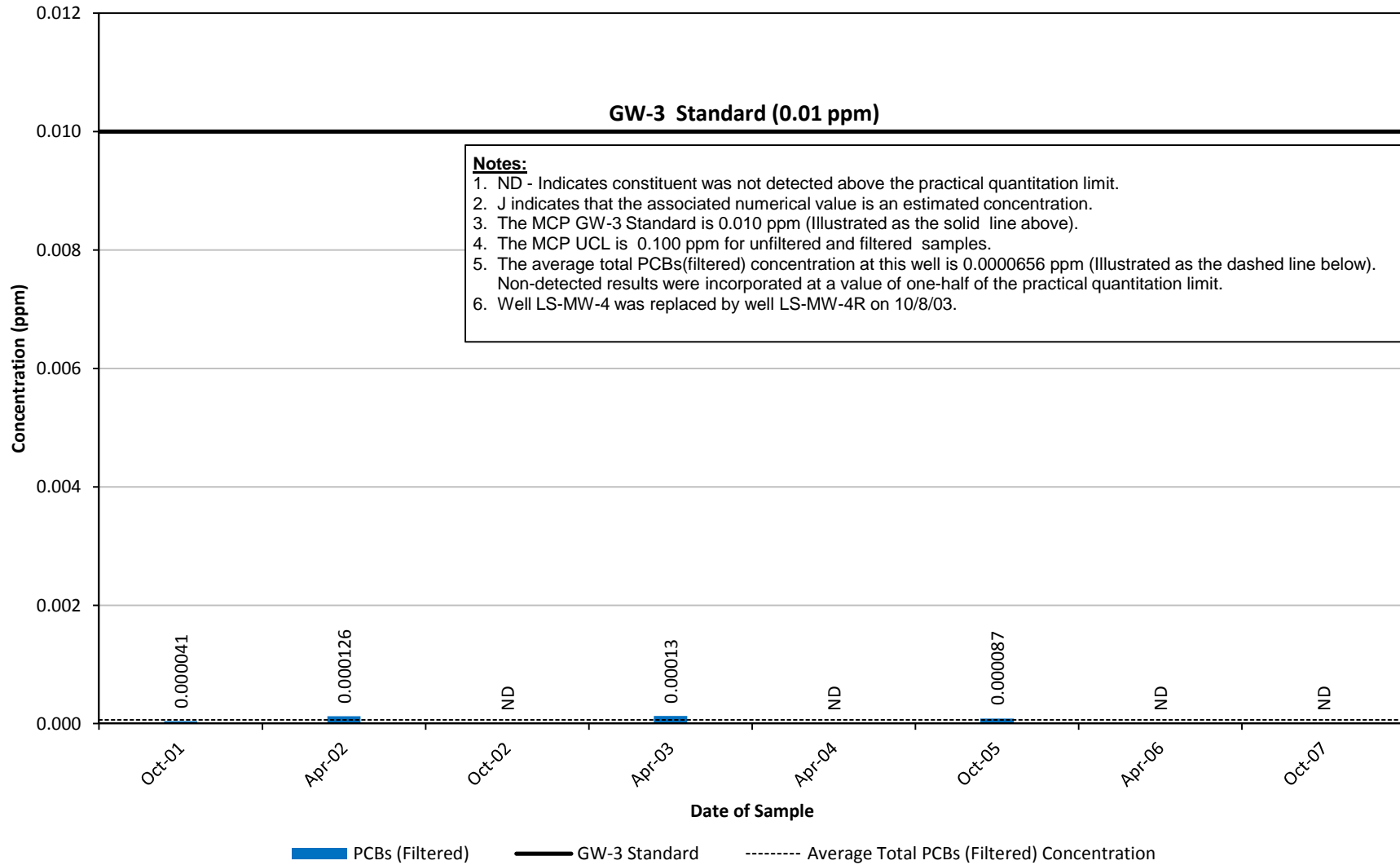
**Appendix E**  
**Well LS-29 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



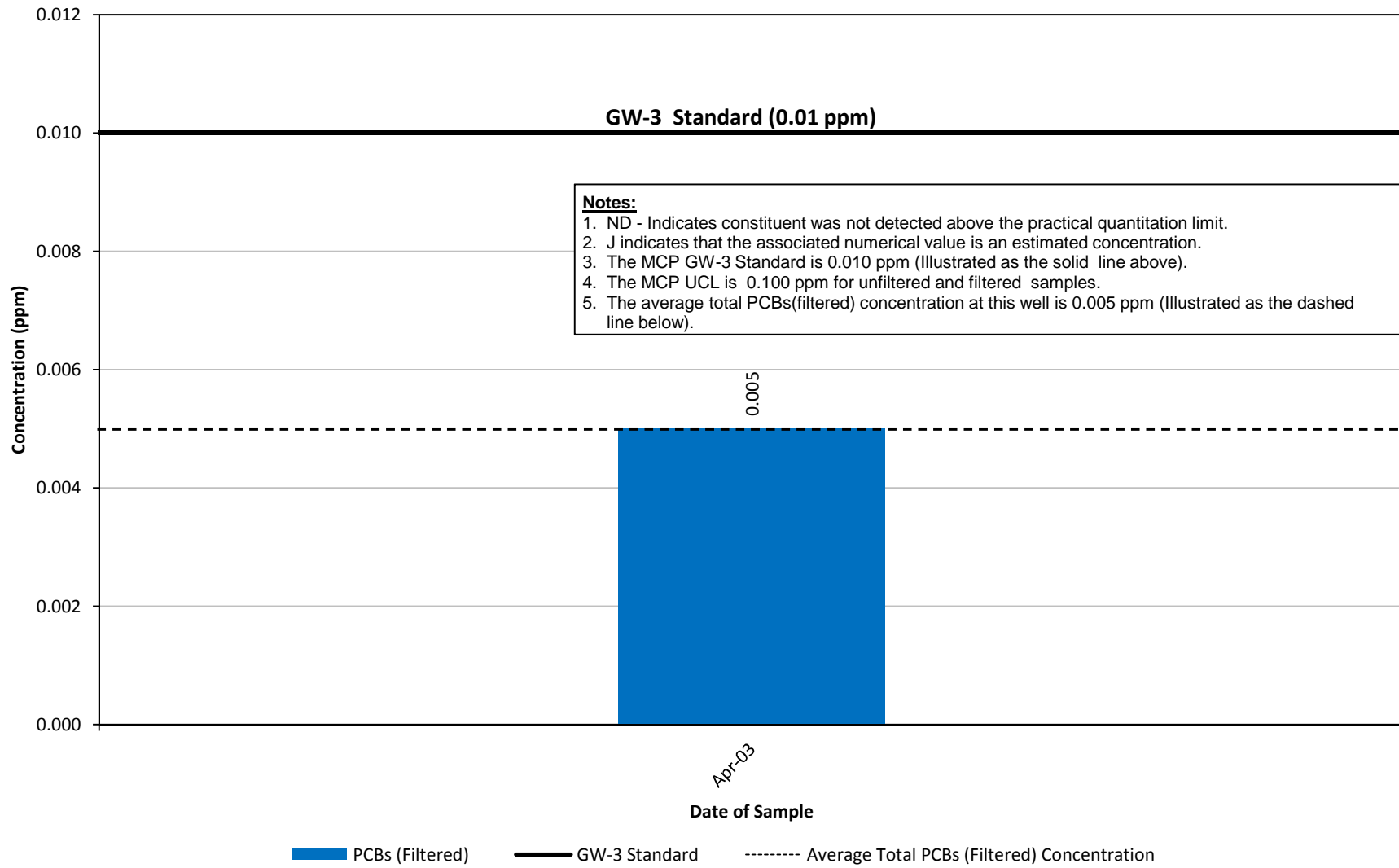
**Appendix E**  
**Well MW-4 & MW-4R Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



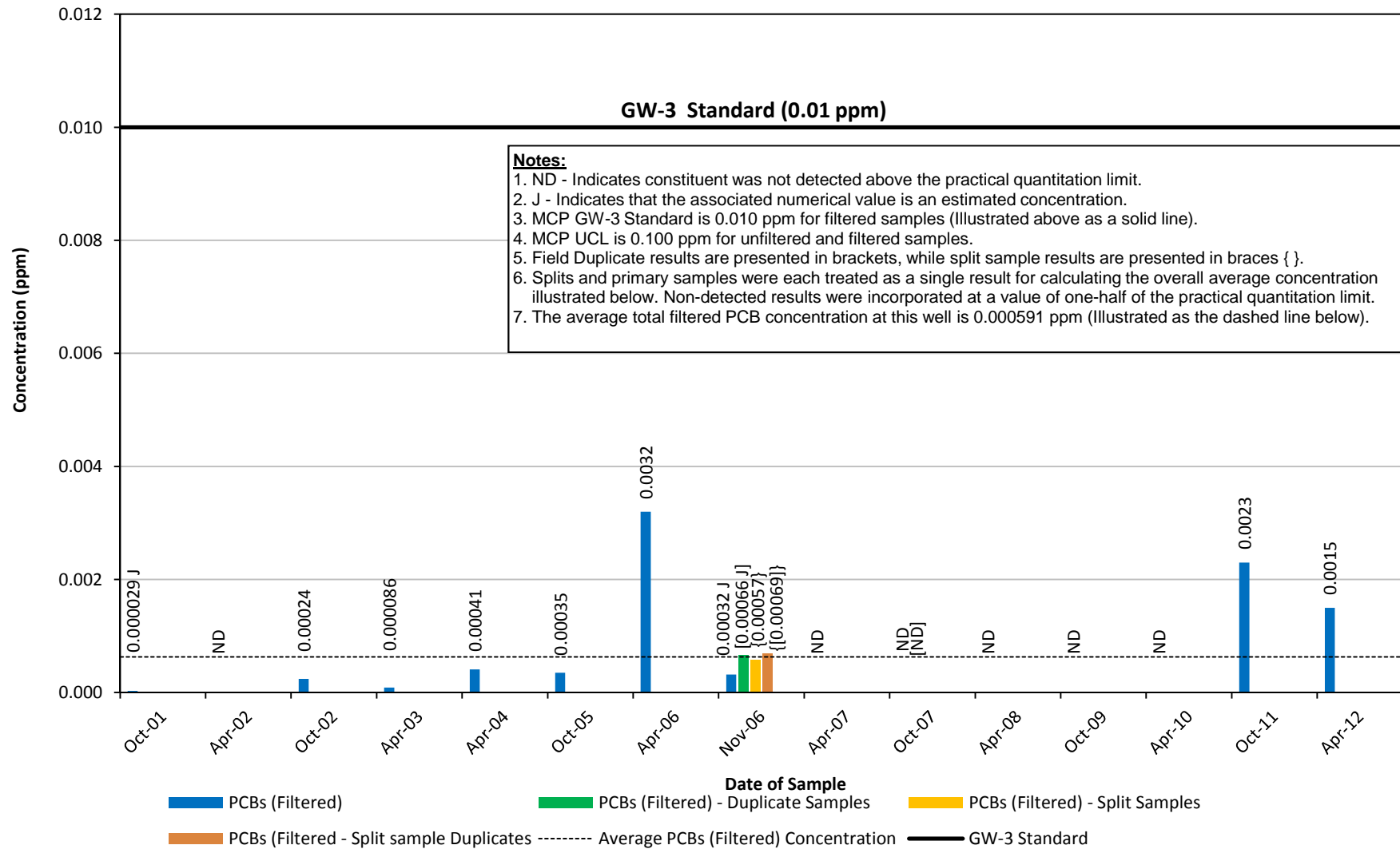
**Appendix E**  
**Well LSSC-08I Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



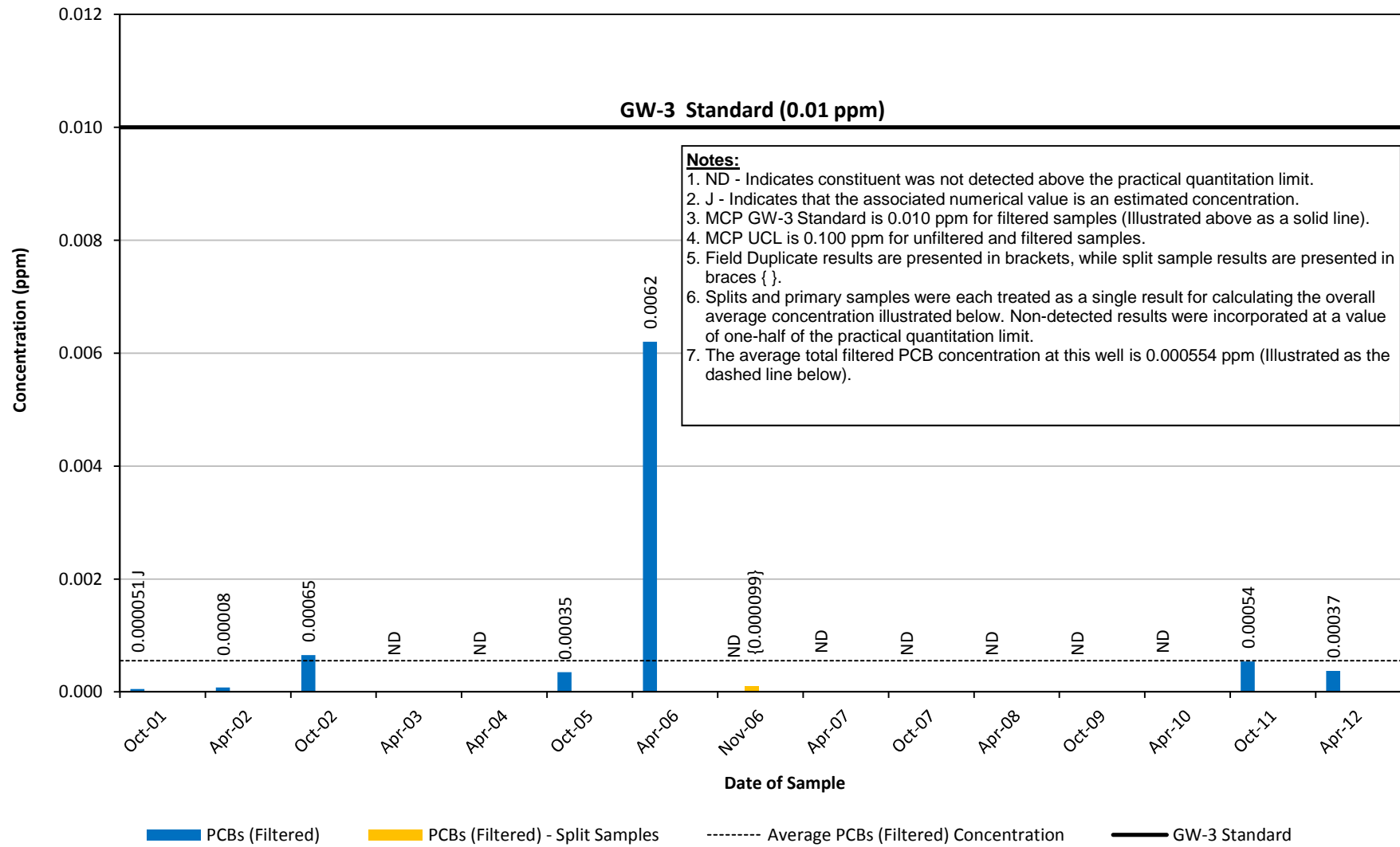
**Appendix E**  
**Well LSSC-08S Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



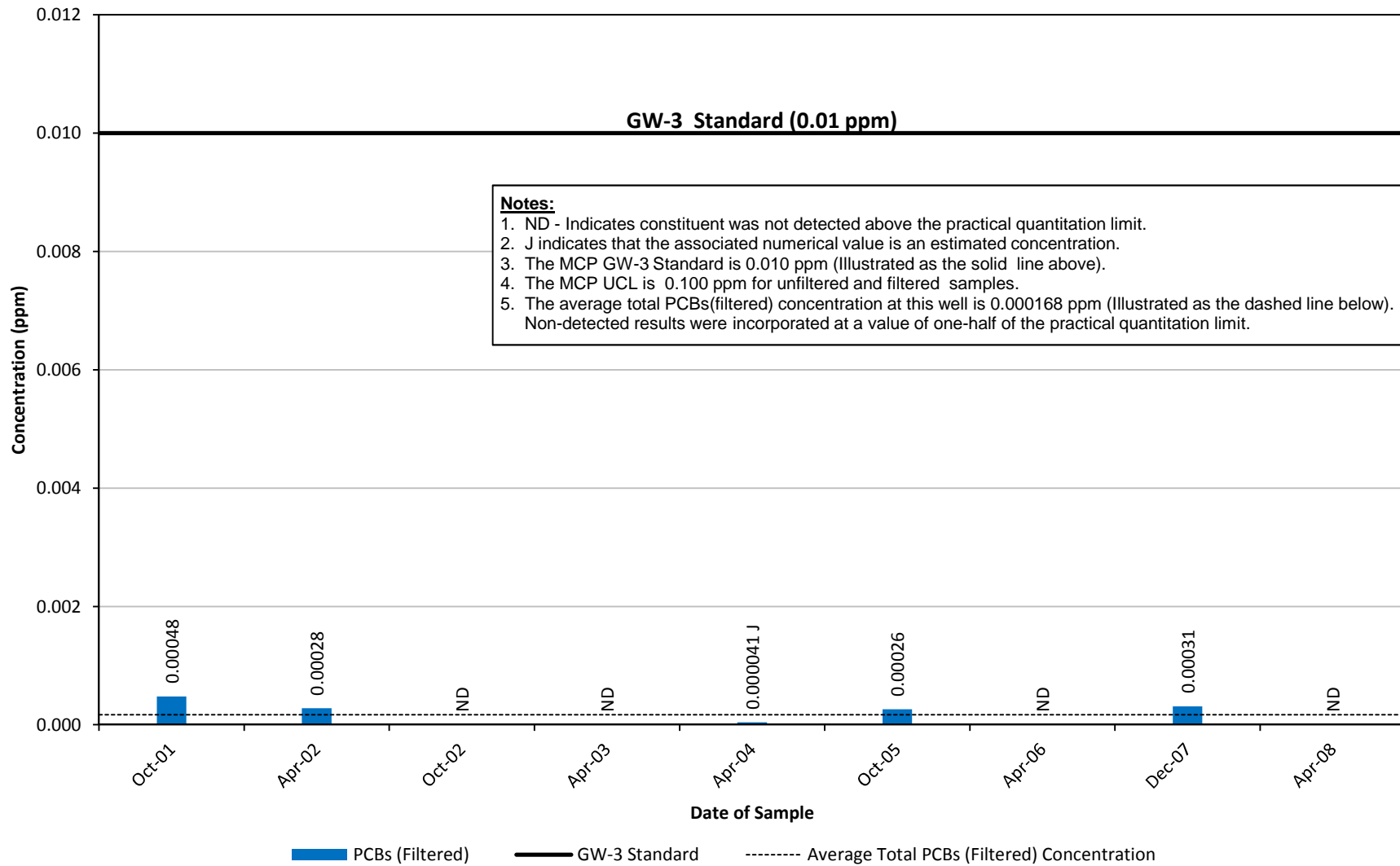
**Appendix E**  
**Well LSSC-18 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



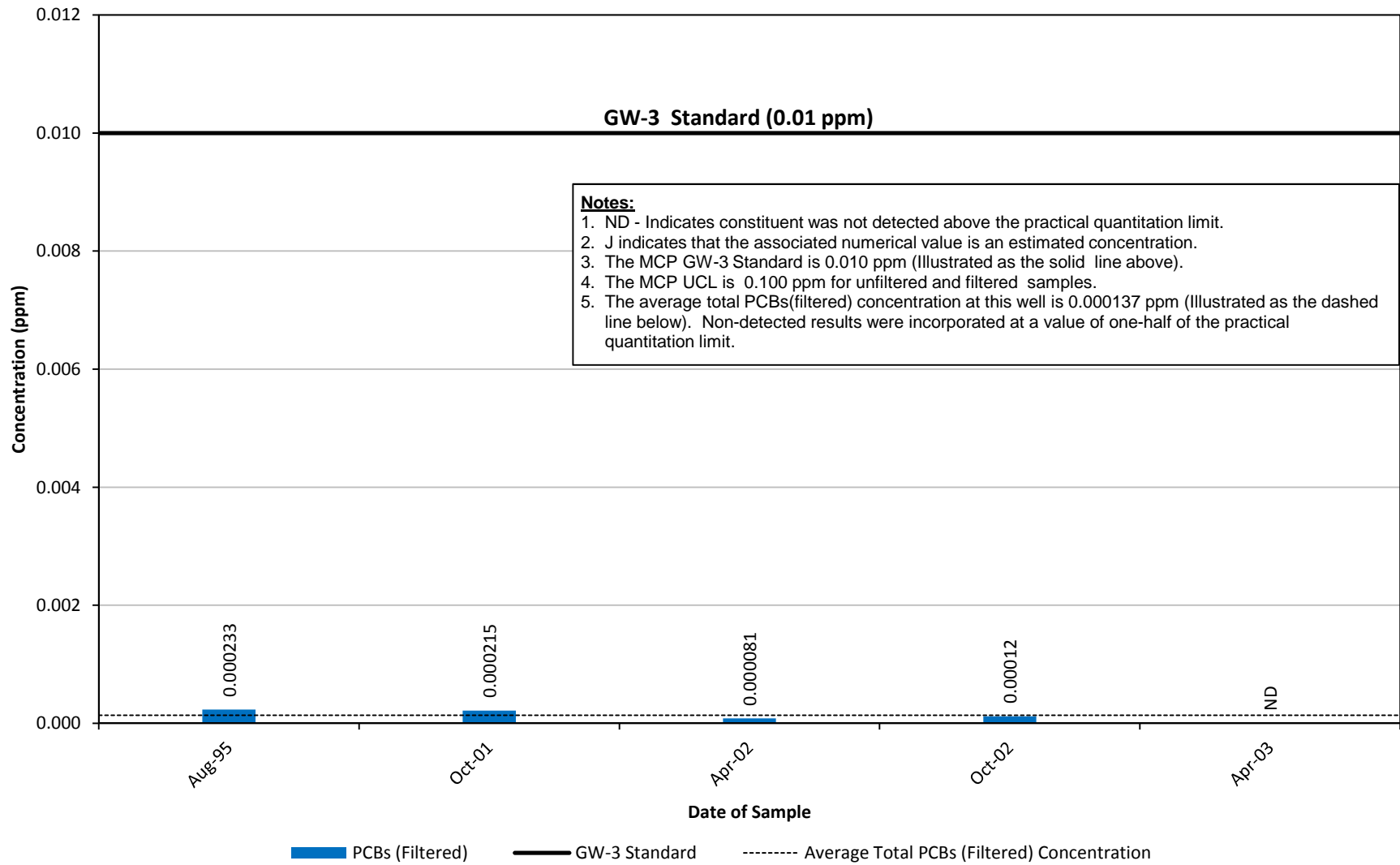
**Appendix D**  
**Well N2SC-07S Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



**Appendix E**  
**Well NS-17 Historical Total PCBs (Filtered) Concentrations**

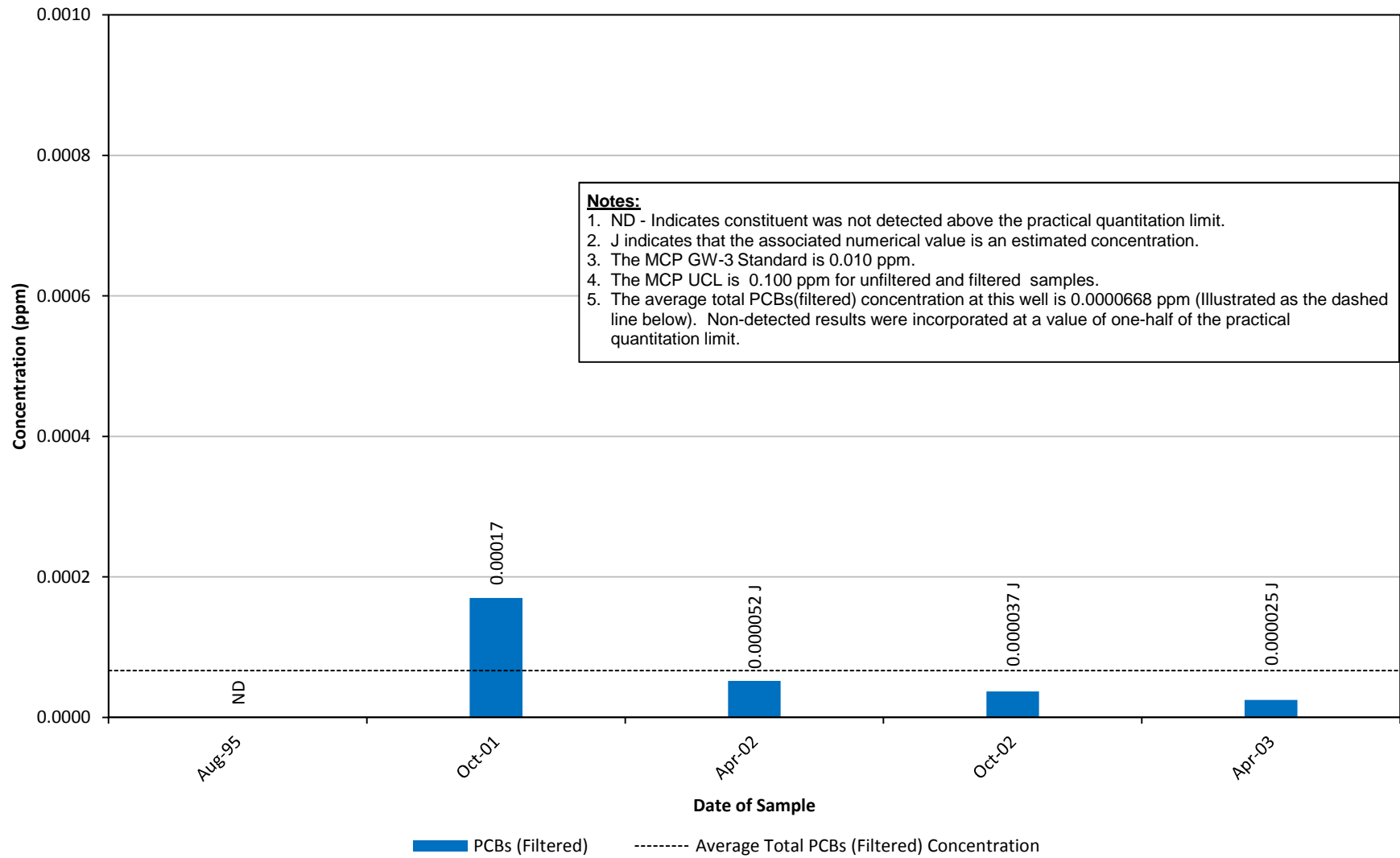
**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**





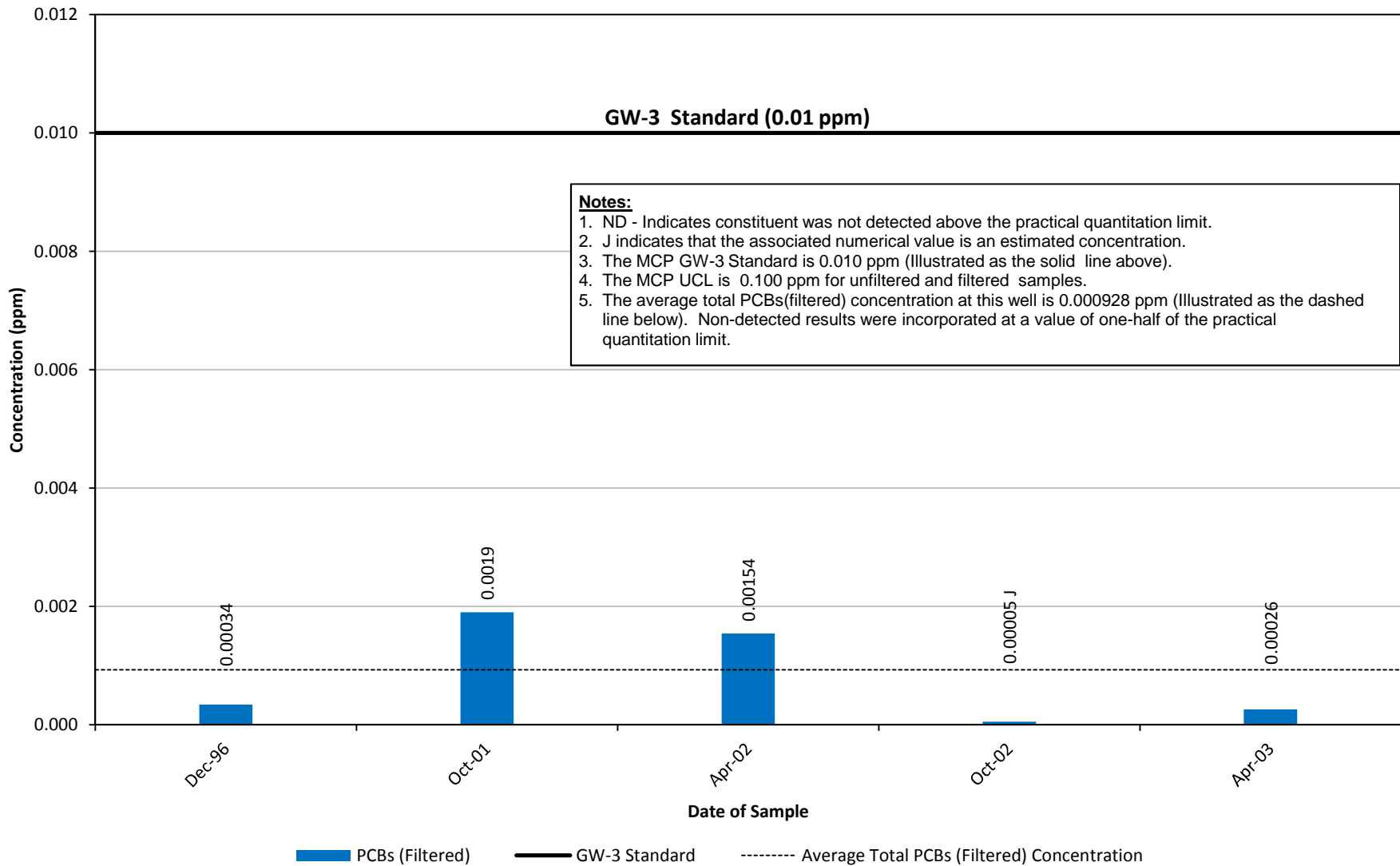
**Appendix E**  
**Well NS-20 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



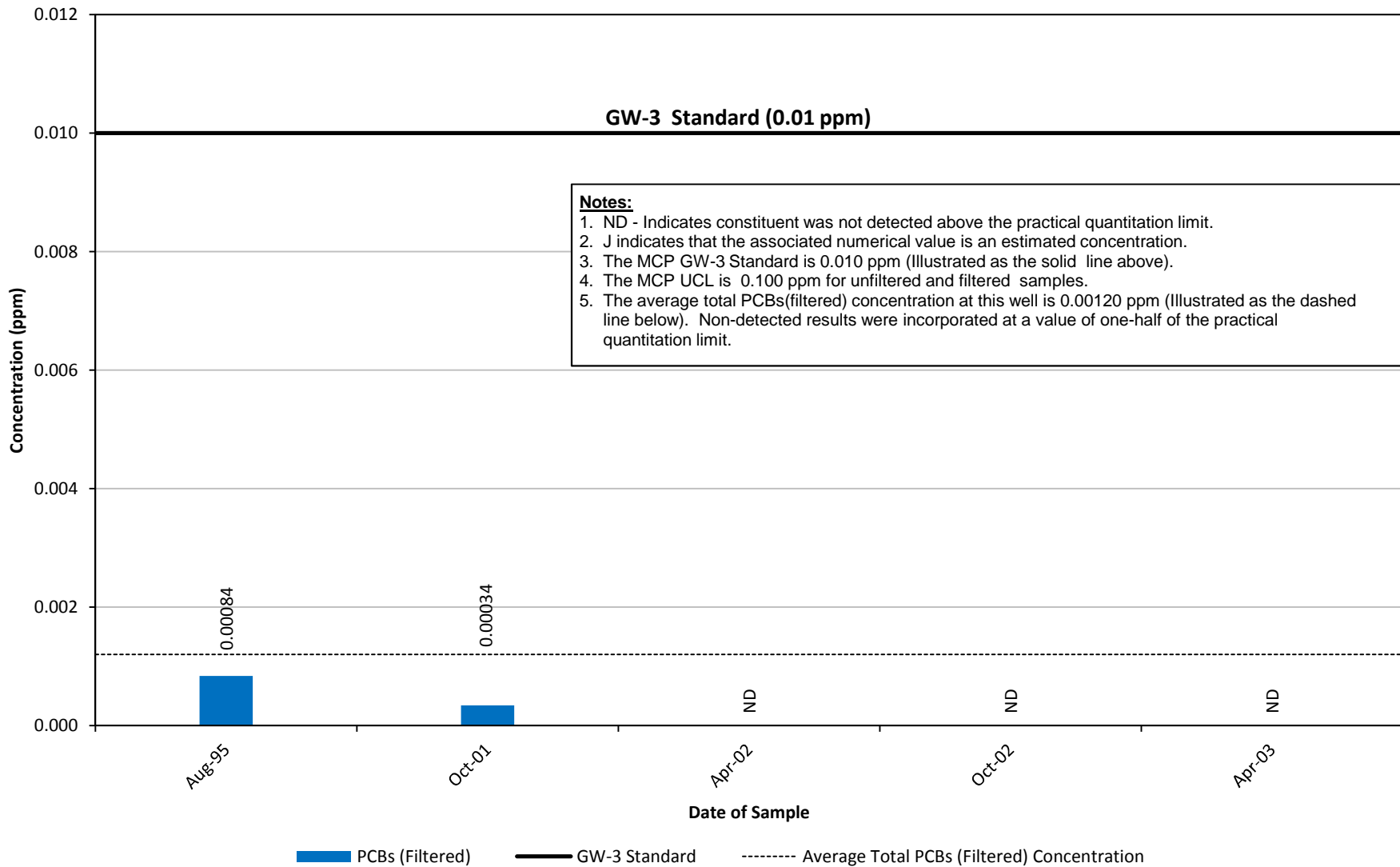
**Appendix E**  
**Well NS-37 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



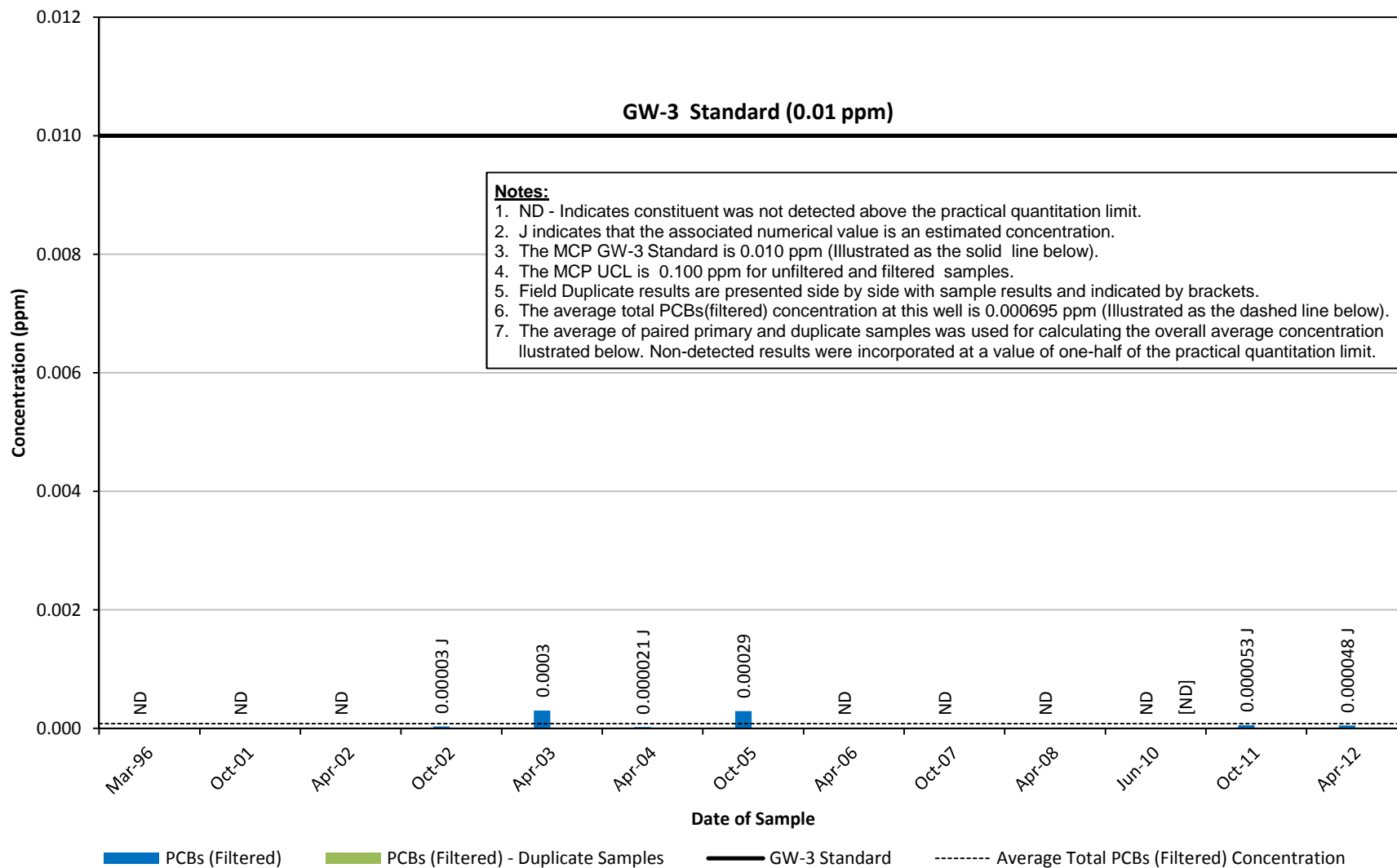
**Appendix E**  
**Well NS-09 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



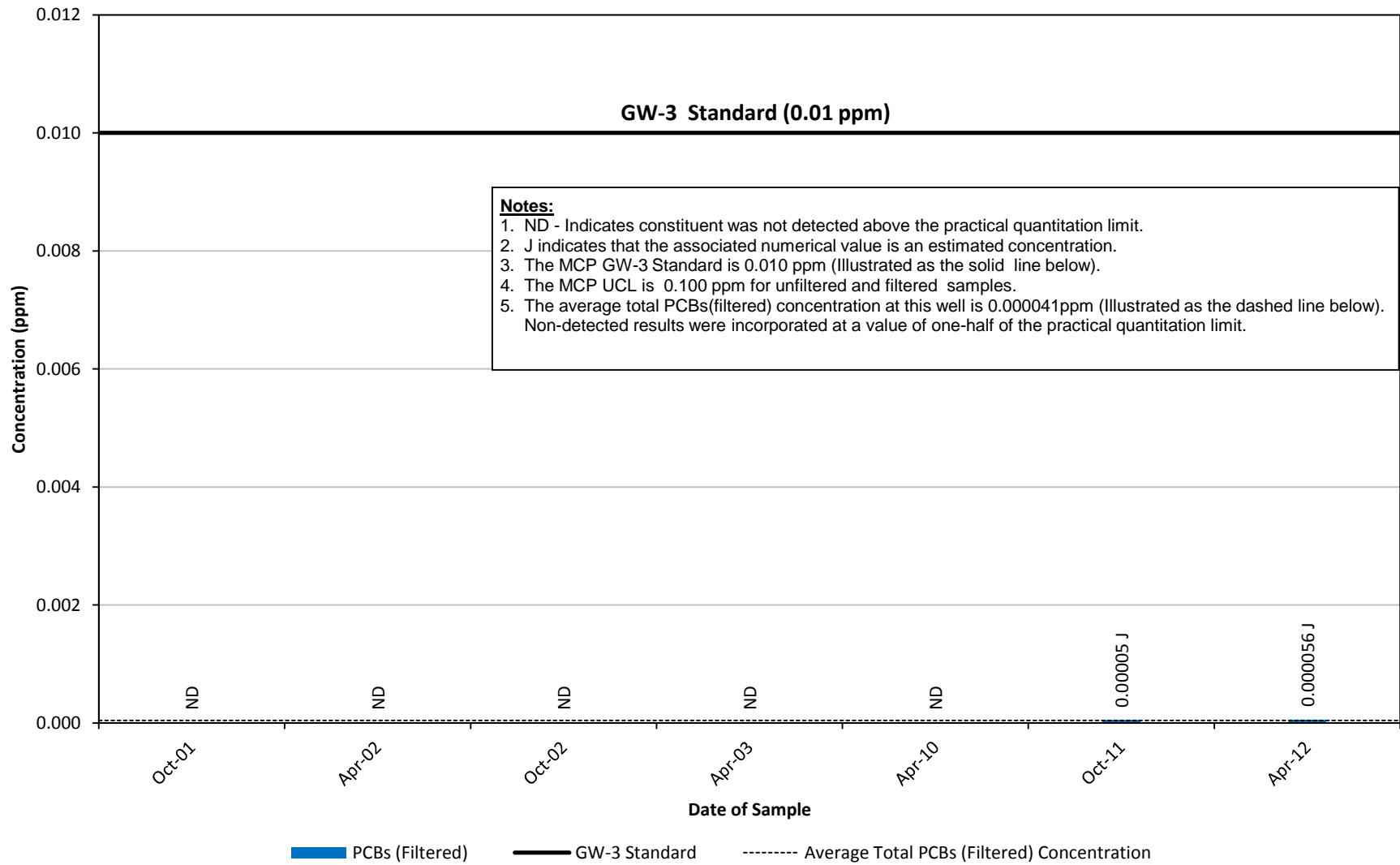
**Appendix E**  
**Well RF-02 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



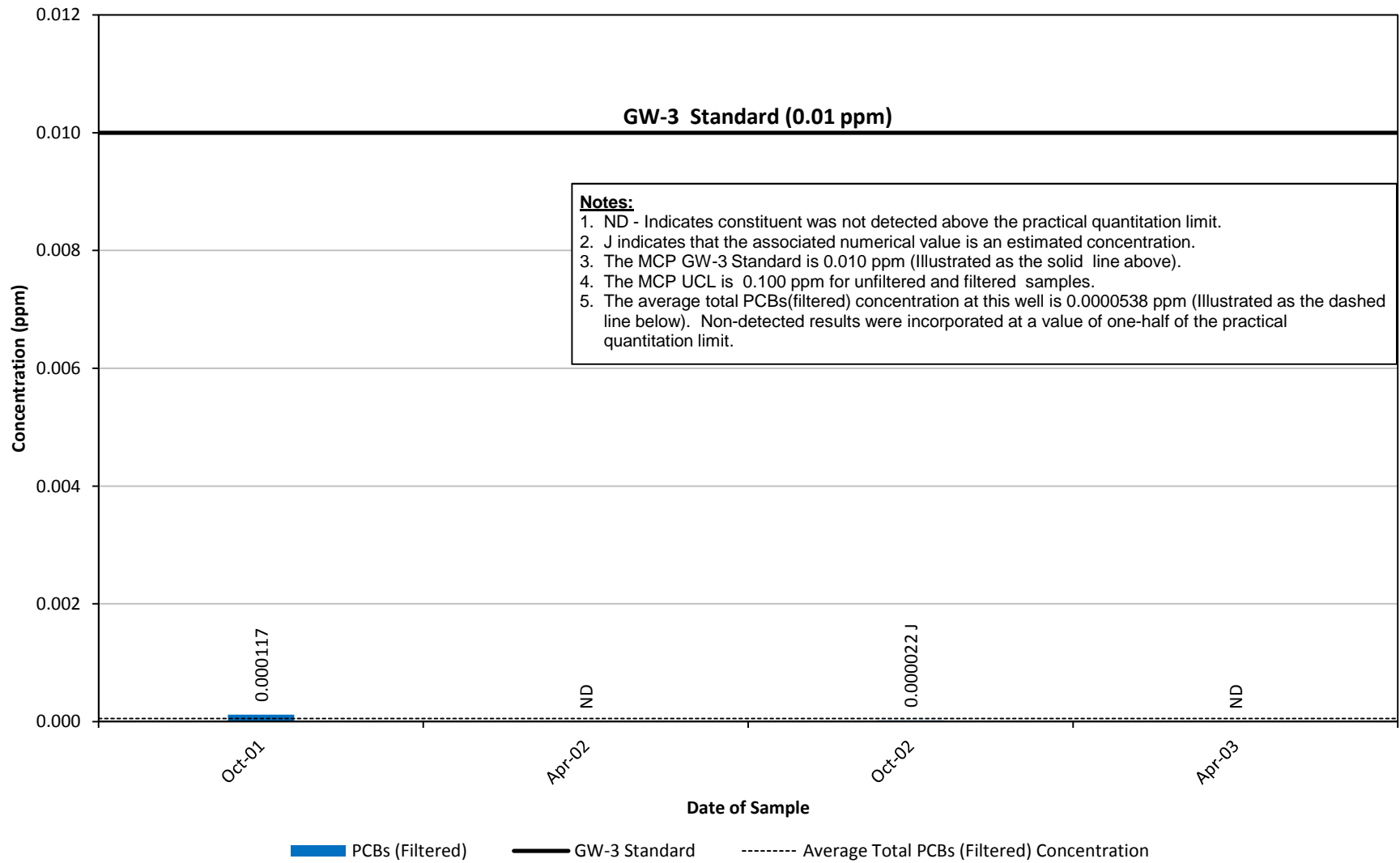
**Appendix E**  
**Well RF-03D Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



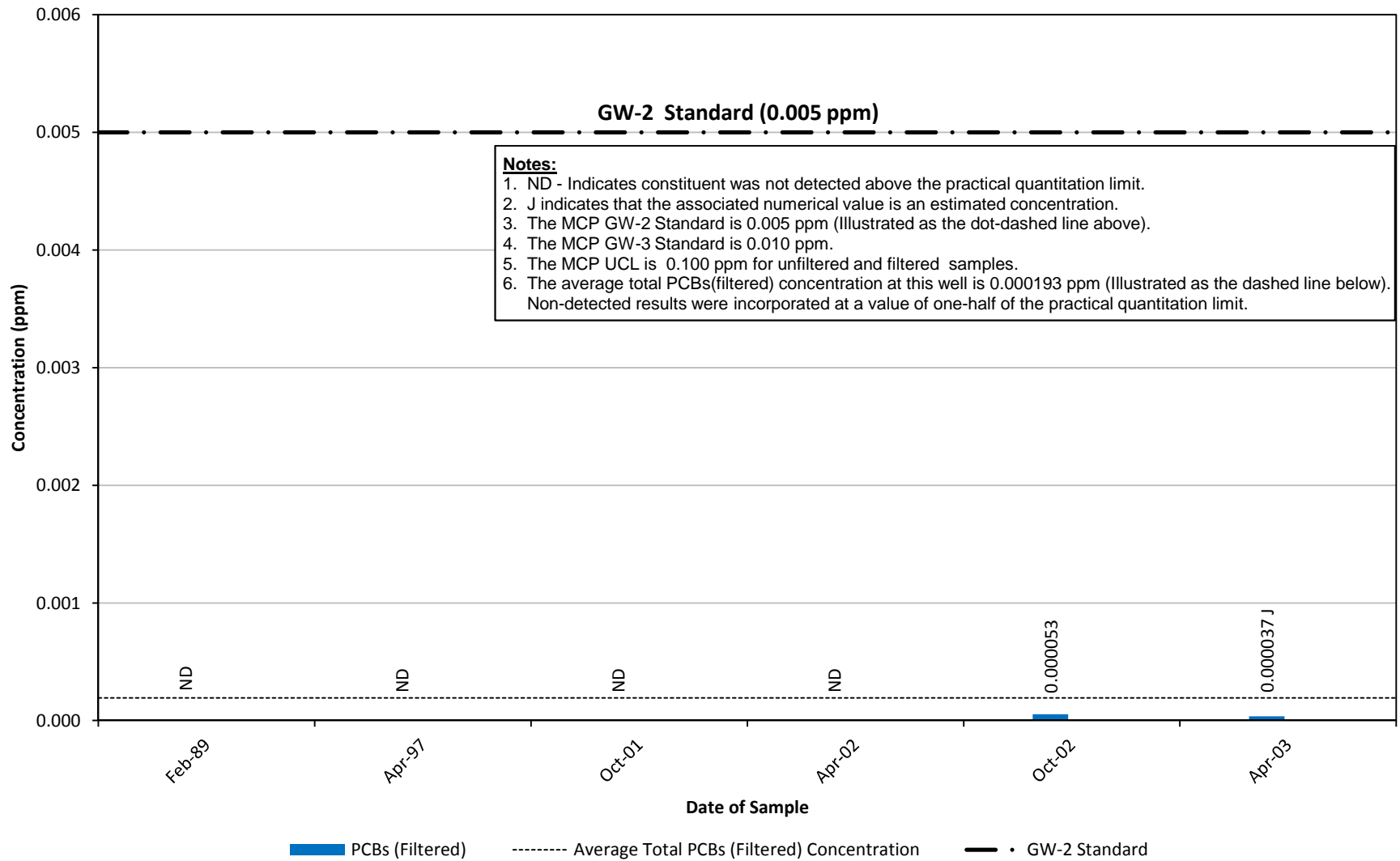
**Appendix E**  
**Well RF-04 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



**Appendix E**  
**Wells SZ-1 Historical Total PCBs (Filtered) Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



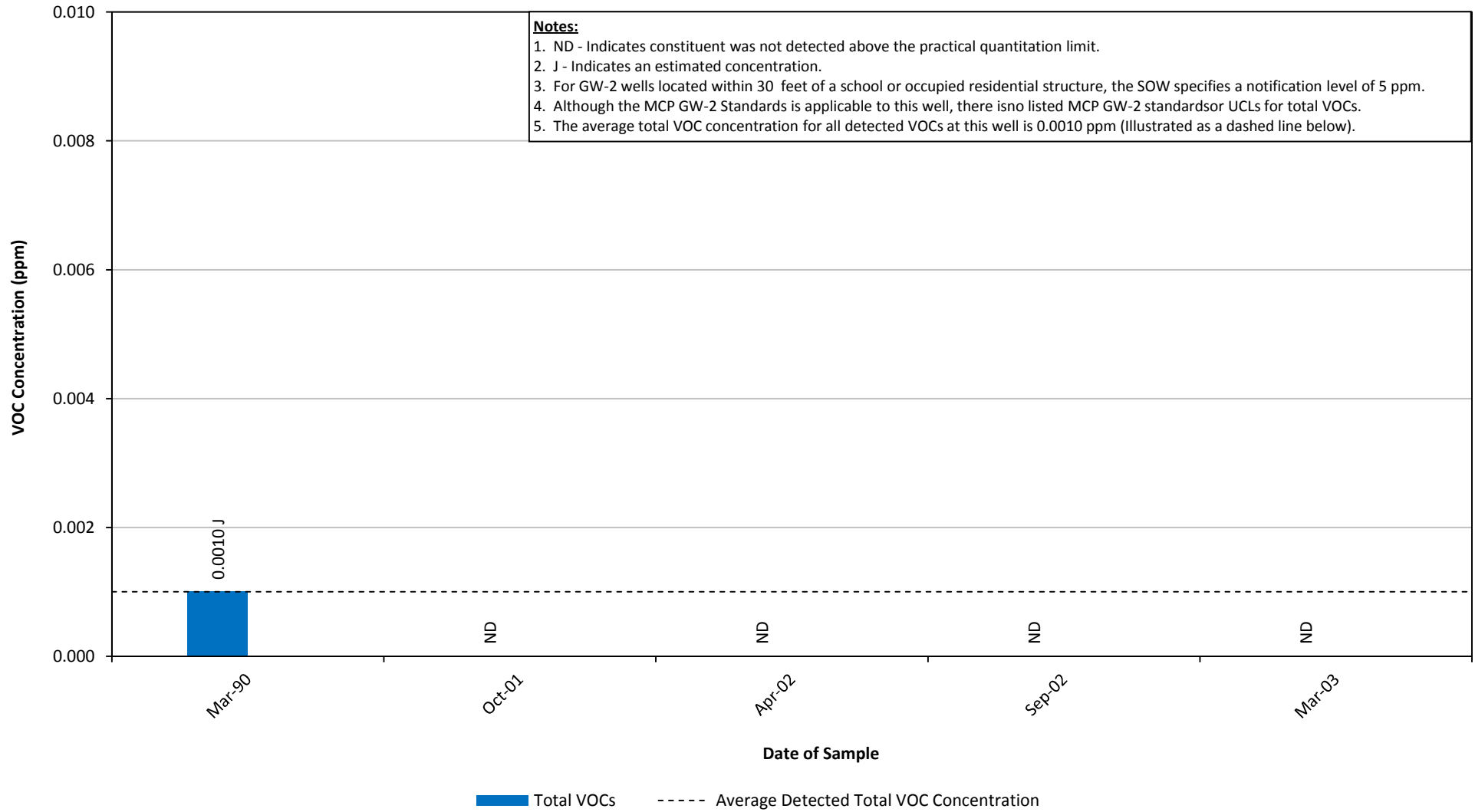


Historical Total VOC  
Concentrations



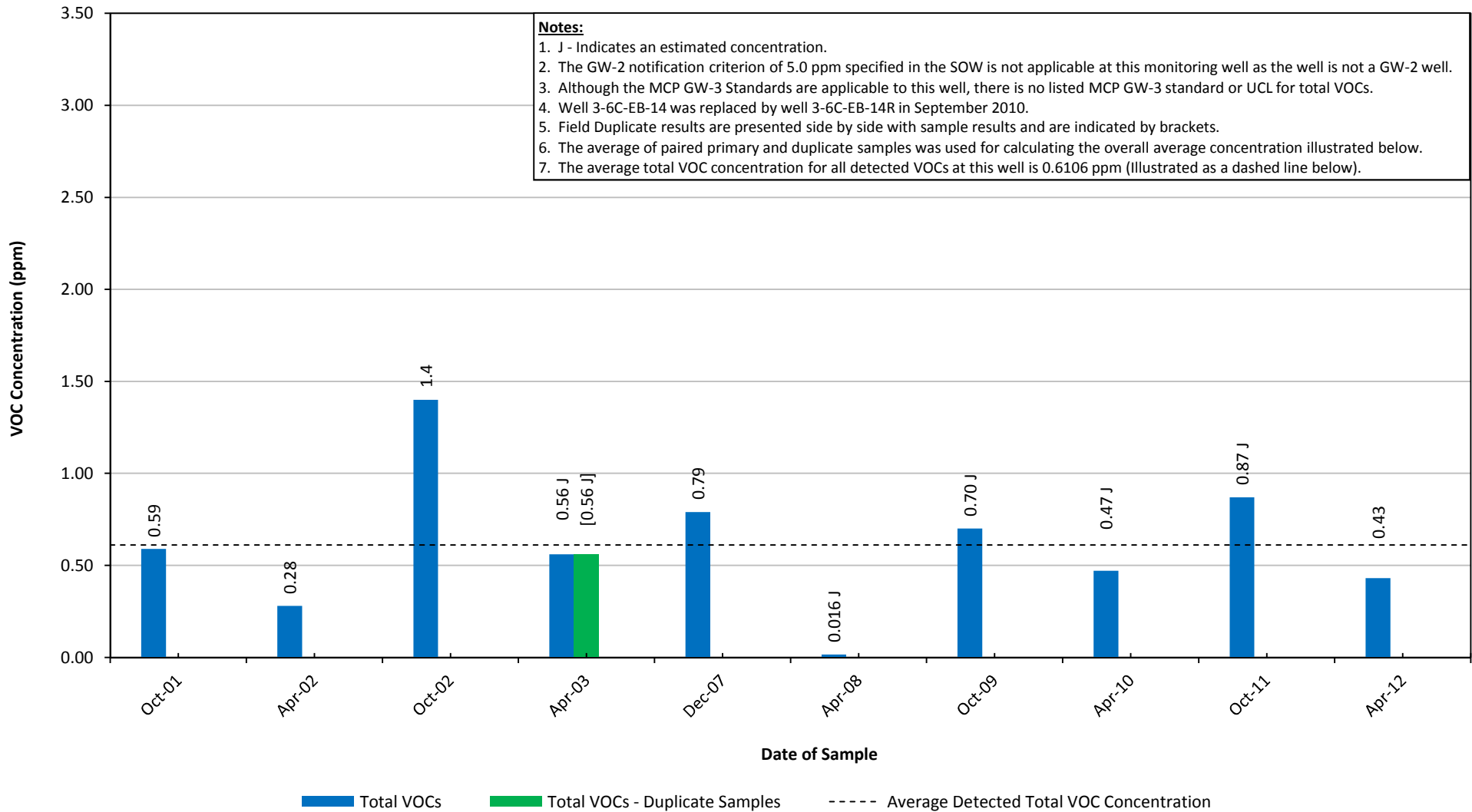
**Appendix E  
Well 17A Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1  
General Electric Company - Pittsfield, Massachusetts**



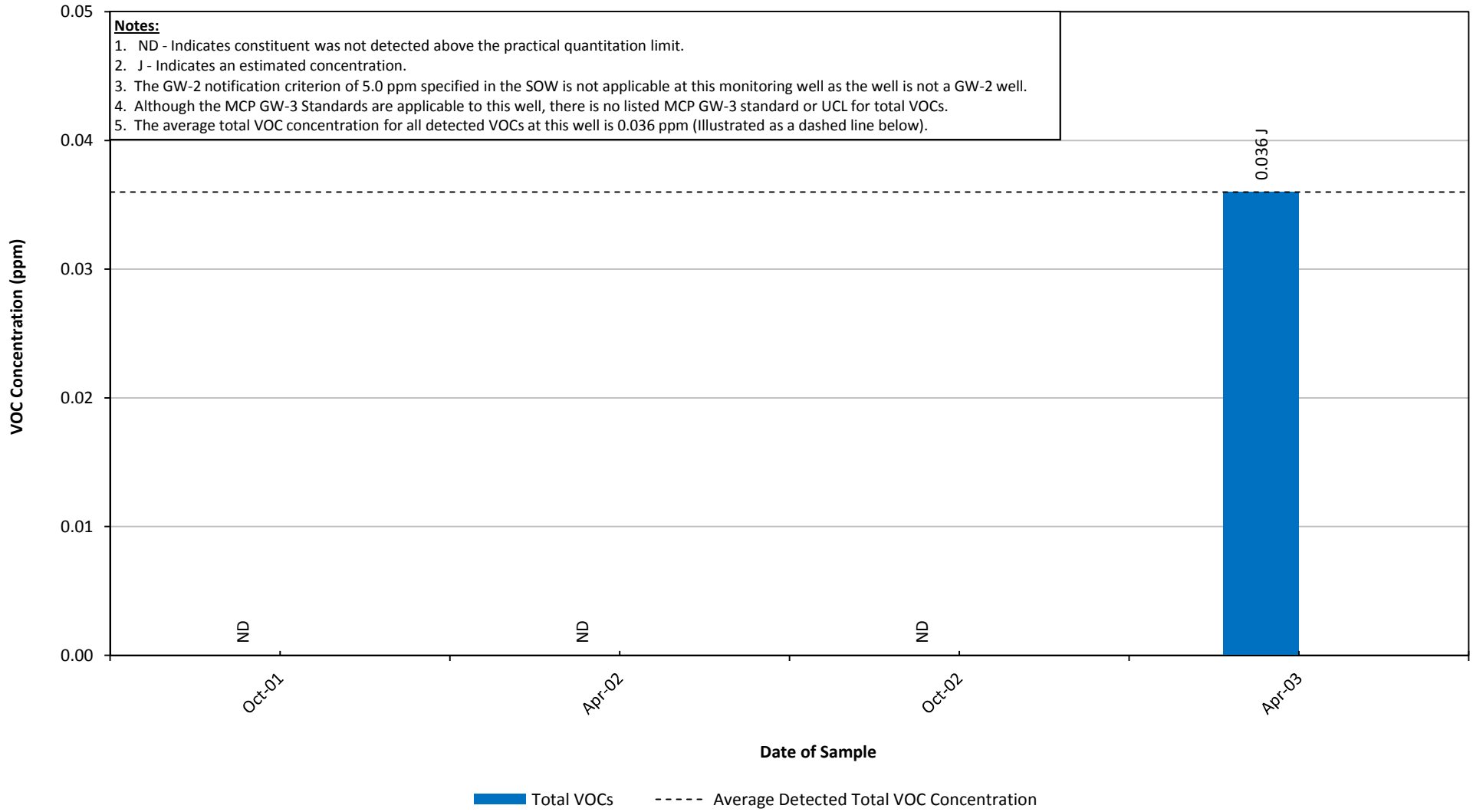
**Appendix E**  
**Well 3-6C-EB-14 and 3-6C-EB-14R Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



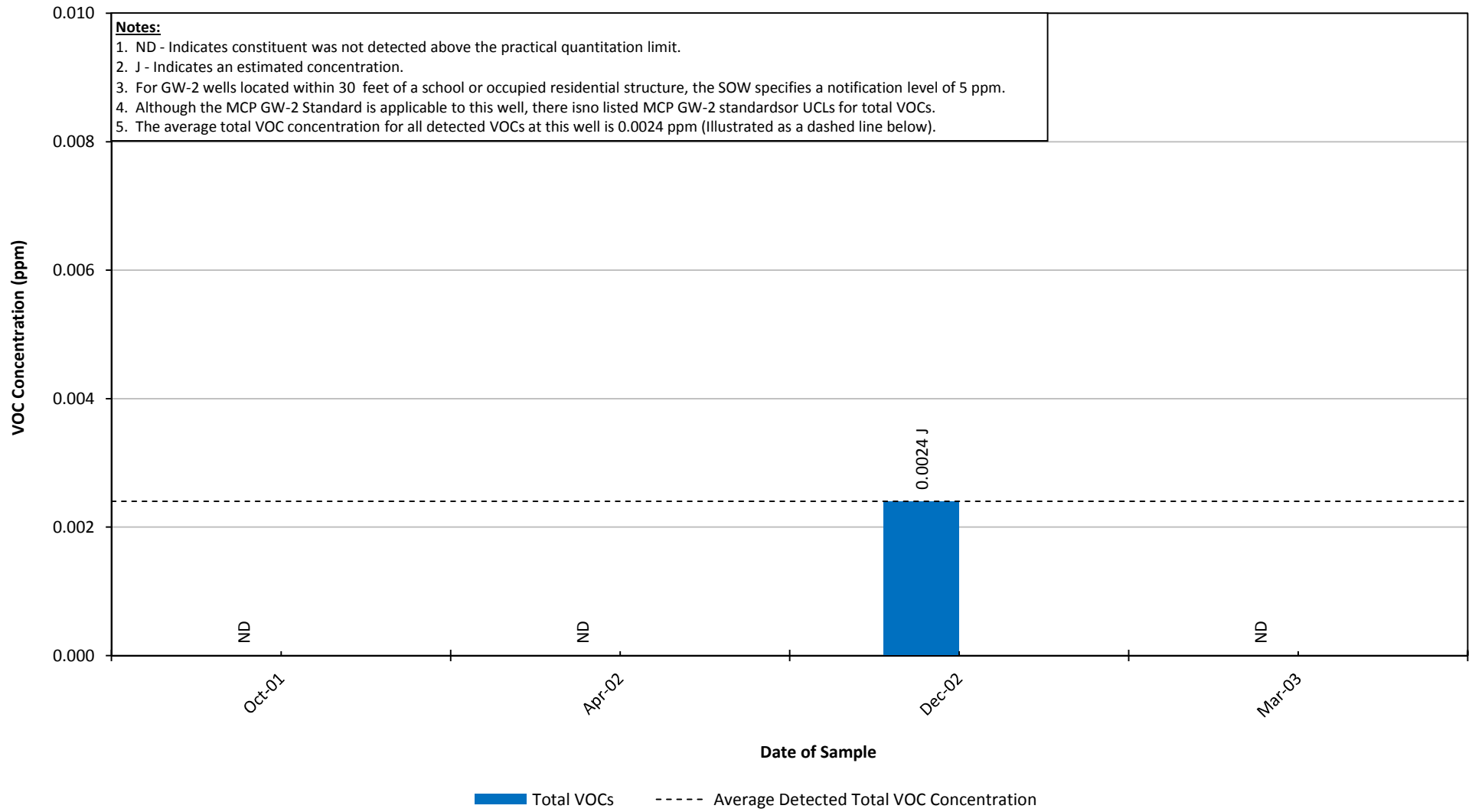
**Appendix E**  
**Well 3-6C-EB-29 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



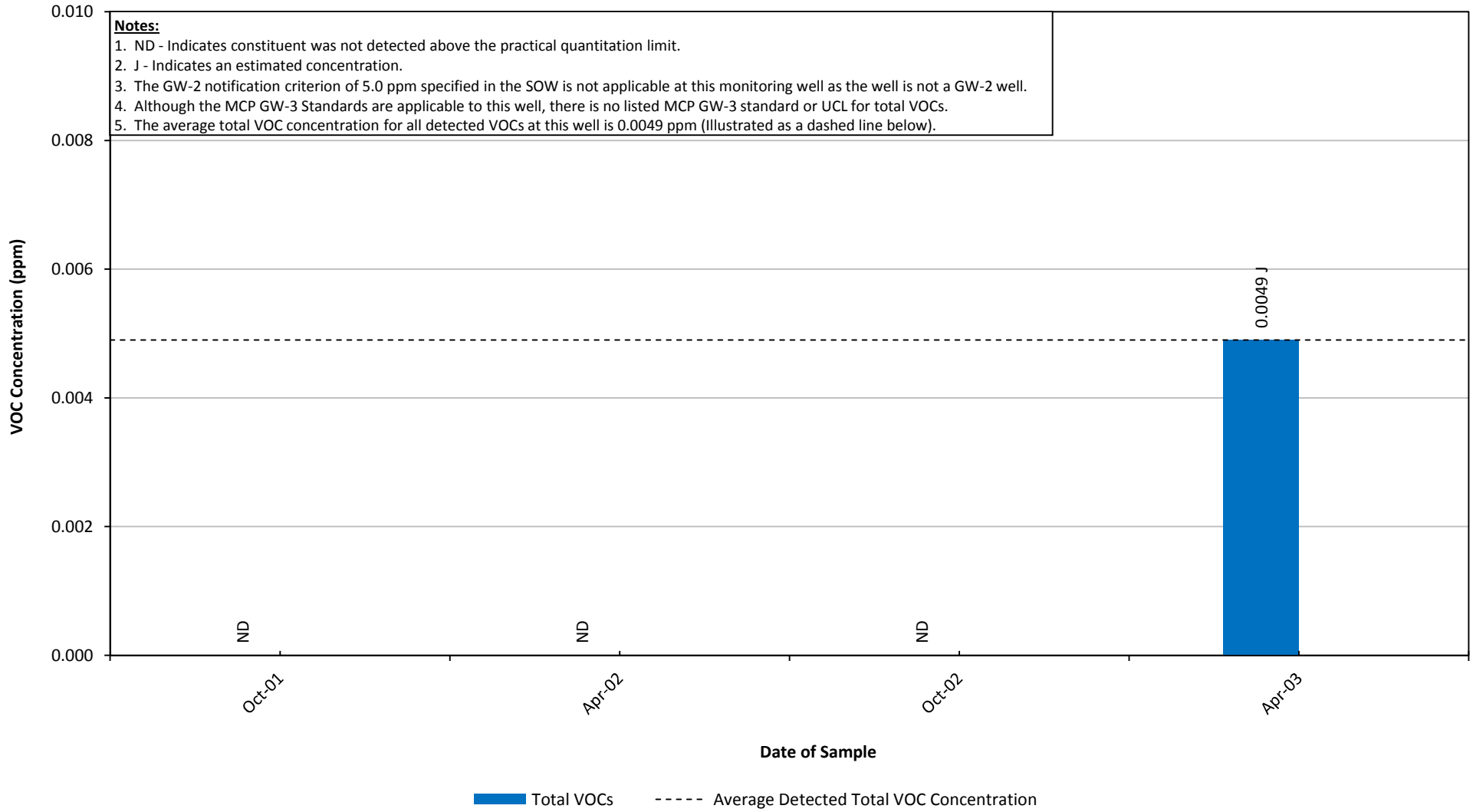
**Appendix E**  
**Well 95-20 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



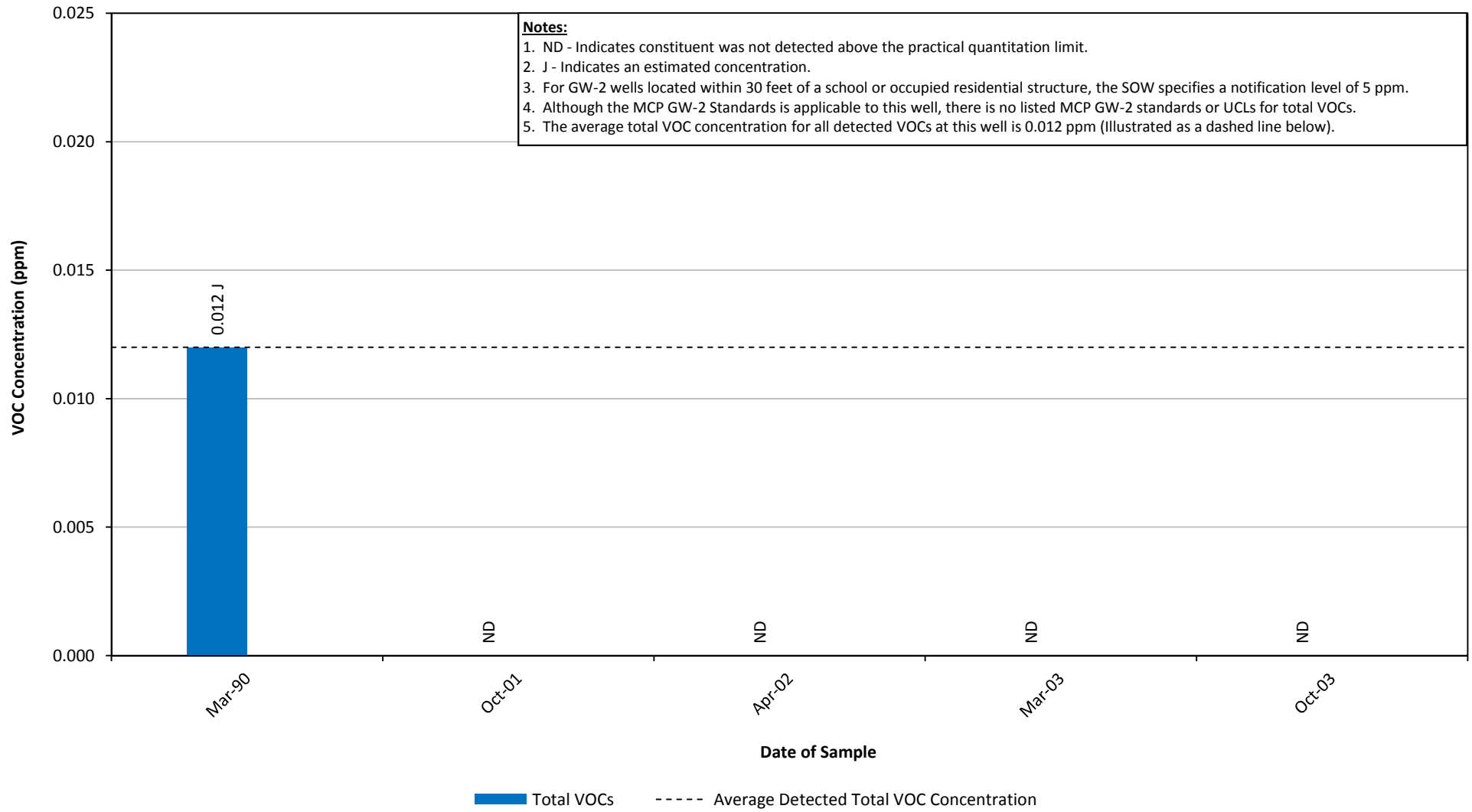
**Appendix E**  
**Well 95-23 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



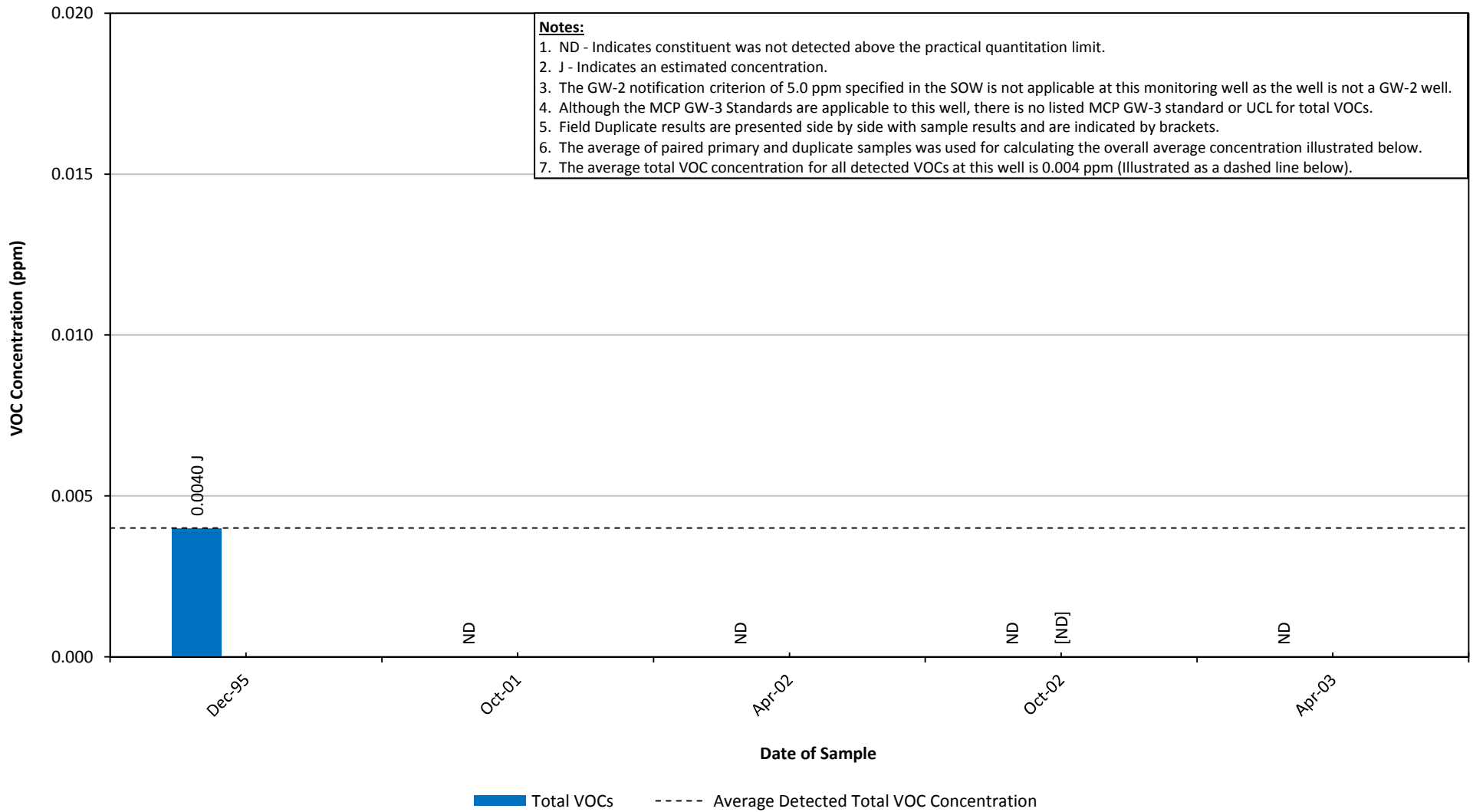
**Appendix E**  
**Well A7 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



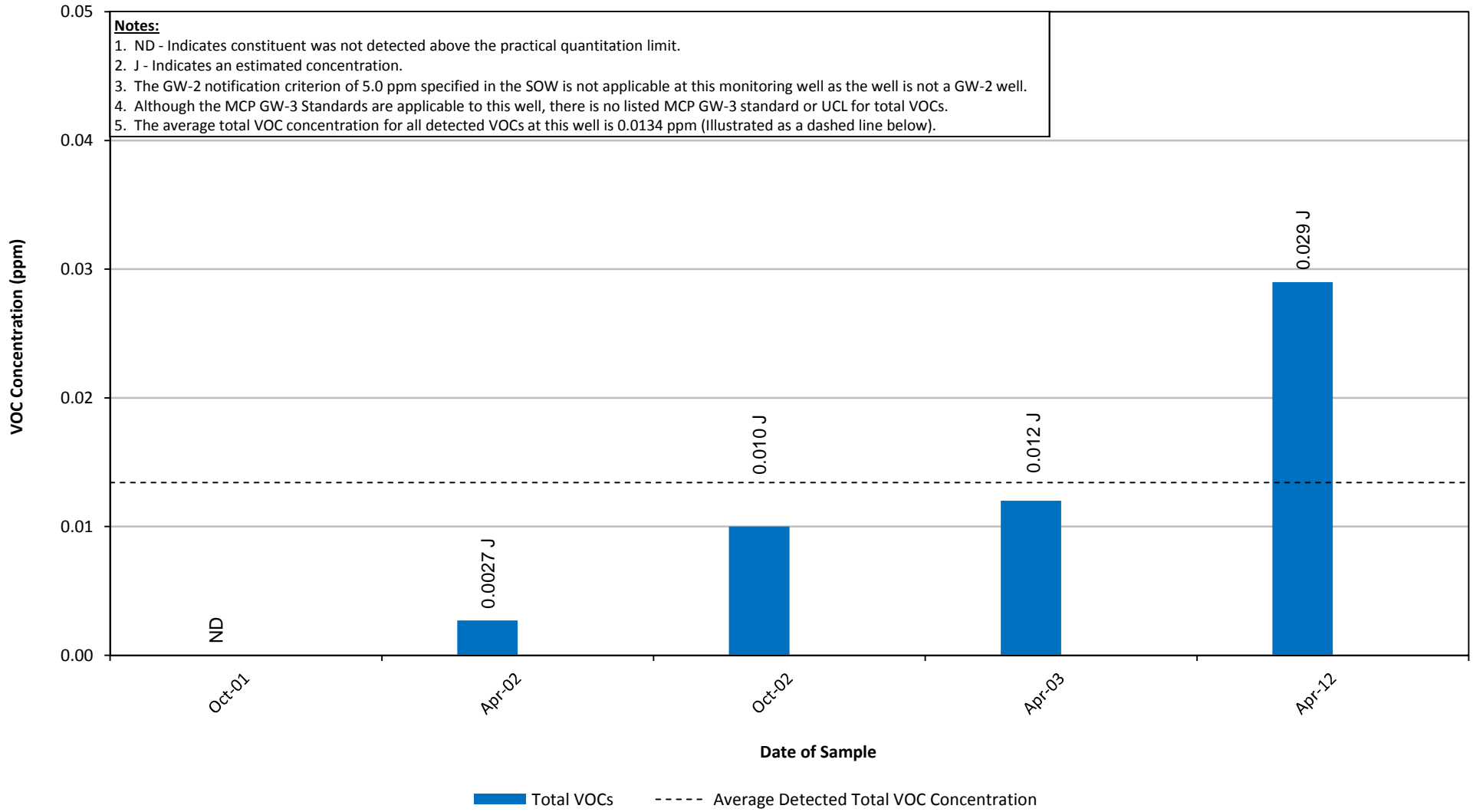
**Appendix E  
Well E-04 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1  
General Electric Company - Pittsfield, Massachusetts**



**Appendix E**  
**Well E2SC-24 Historical Total VOC Concentrations**

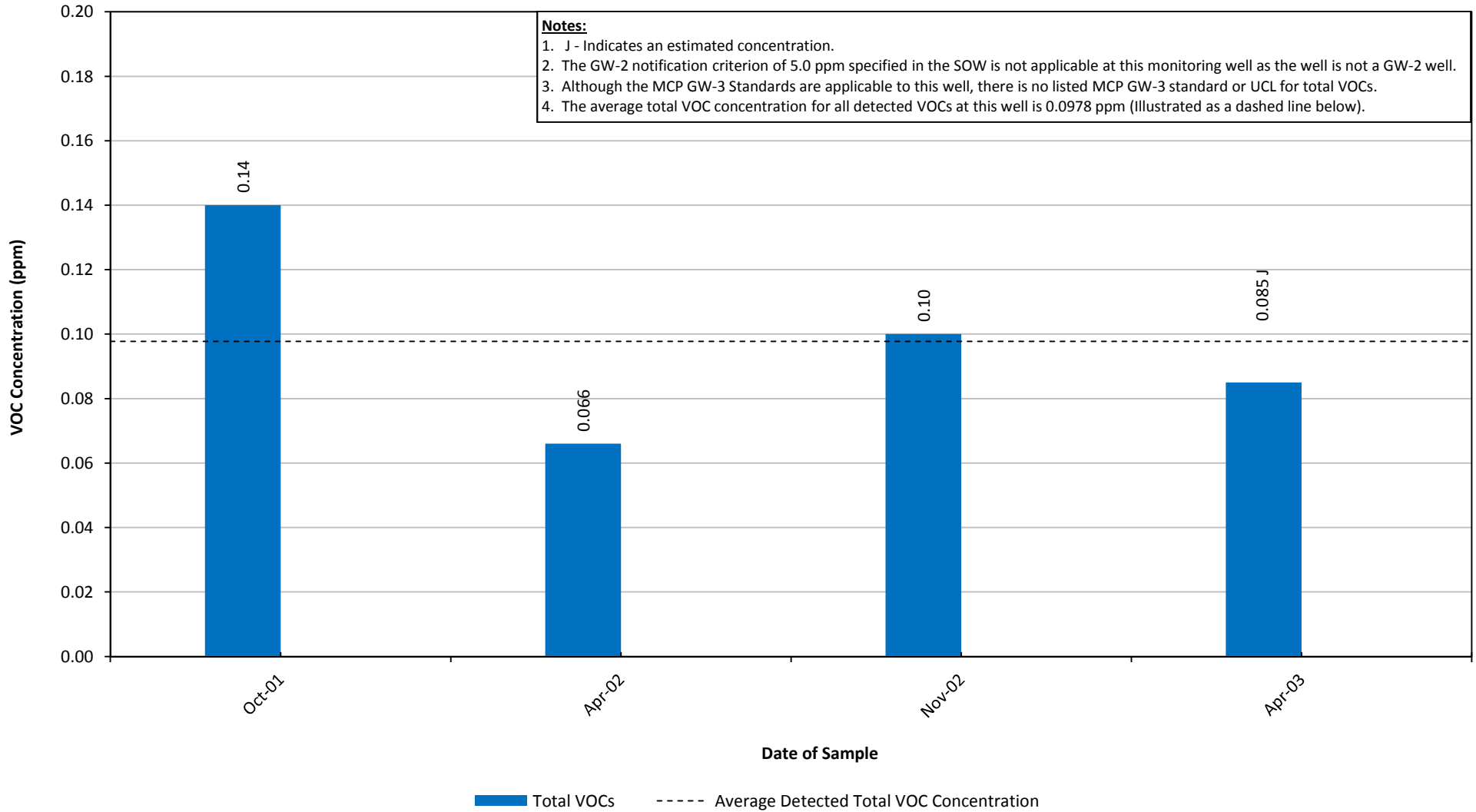
**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**





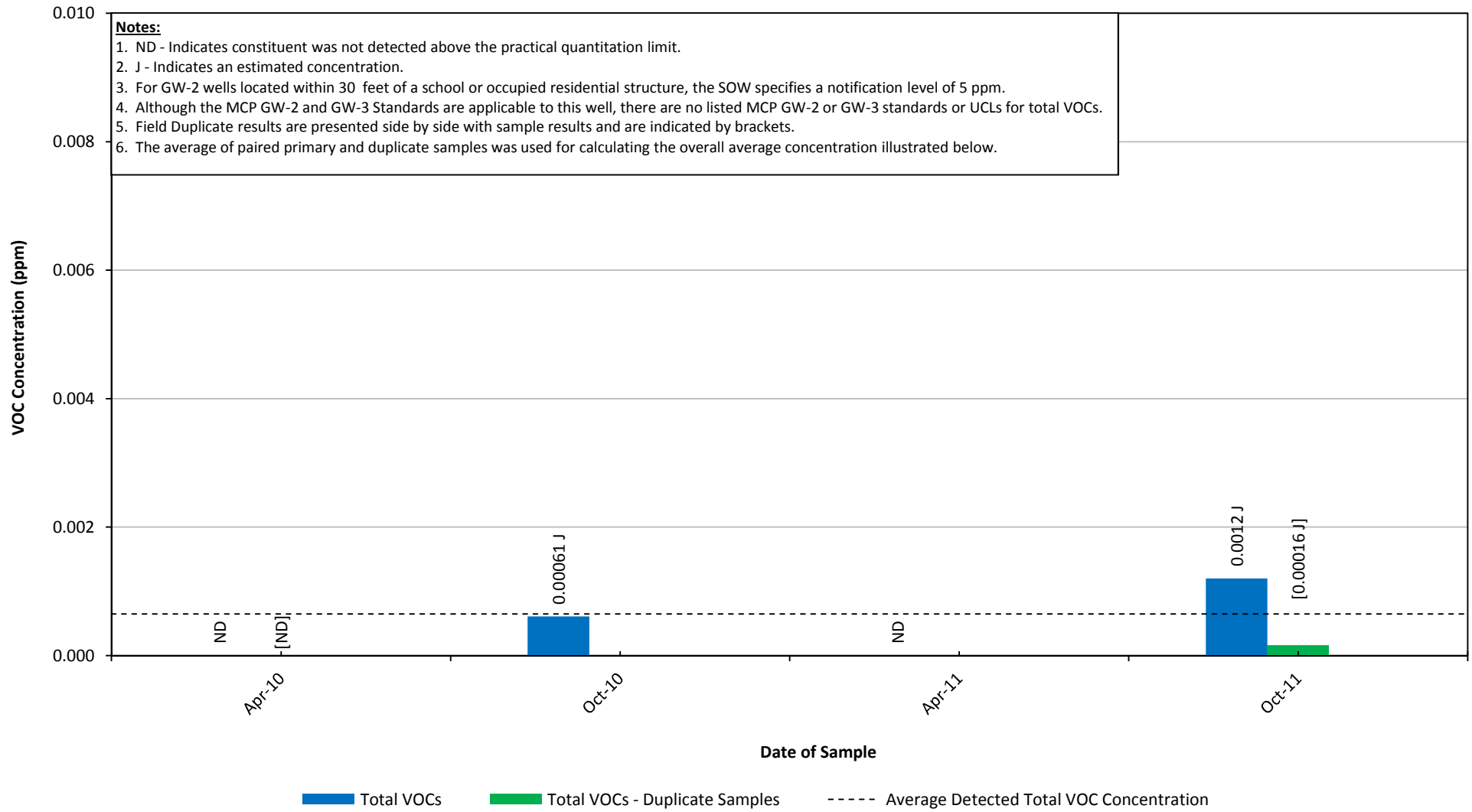
Appendix E  
Well ES1-05 Historical Total VOC Concentrations

Groundwater Monitoring Program for GMA 1  
General Electric Company - Pittsfield, Massachusetts



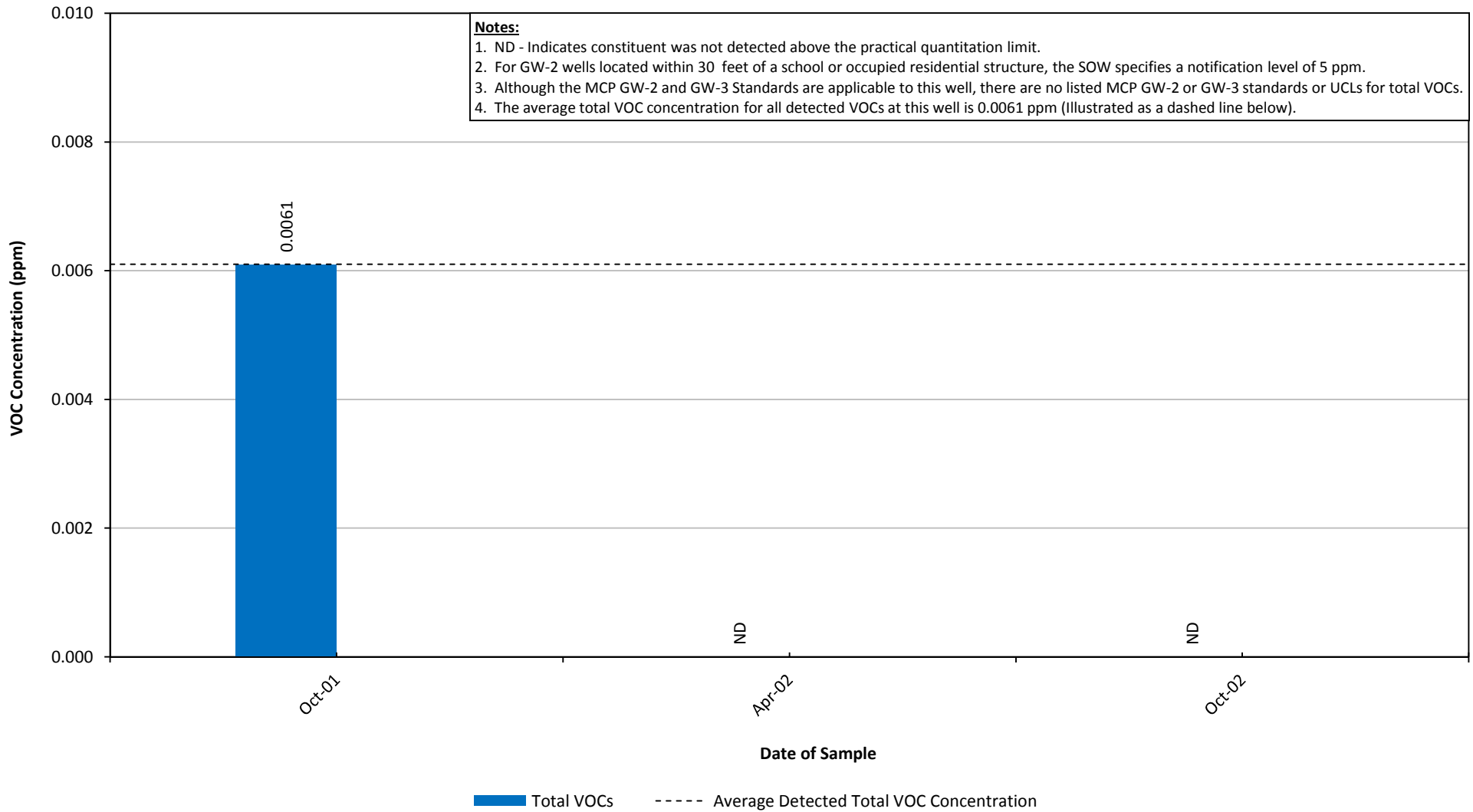
**Appendix E**  
**Well ES1-13R Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



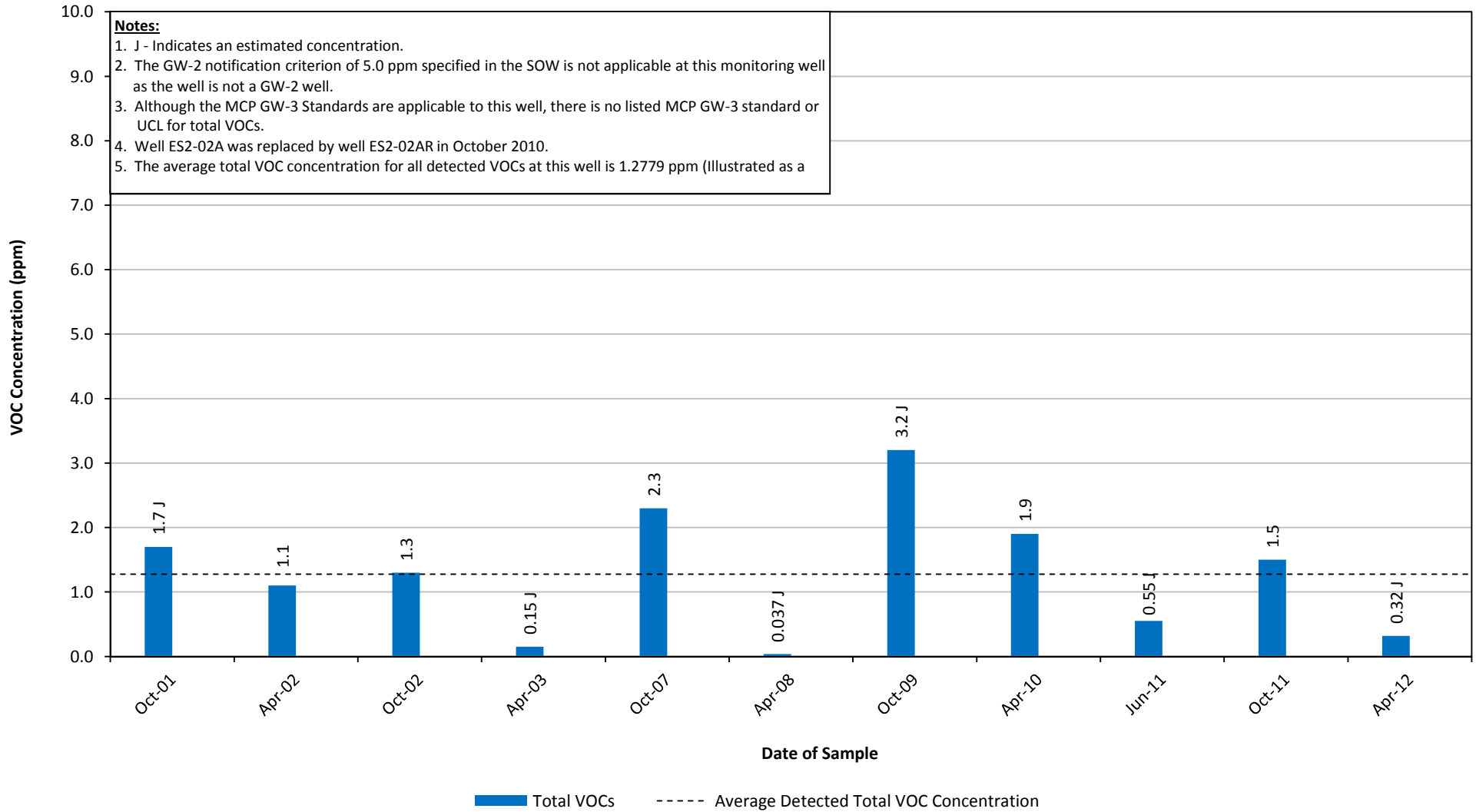
**Appendix E**  
**Well ES1-08 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



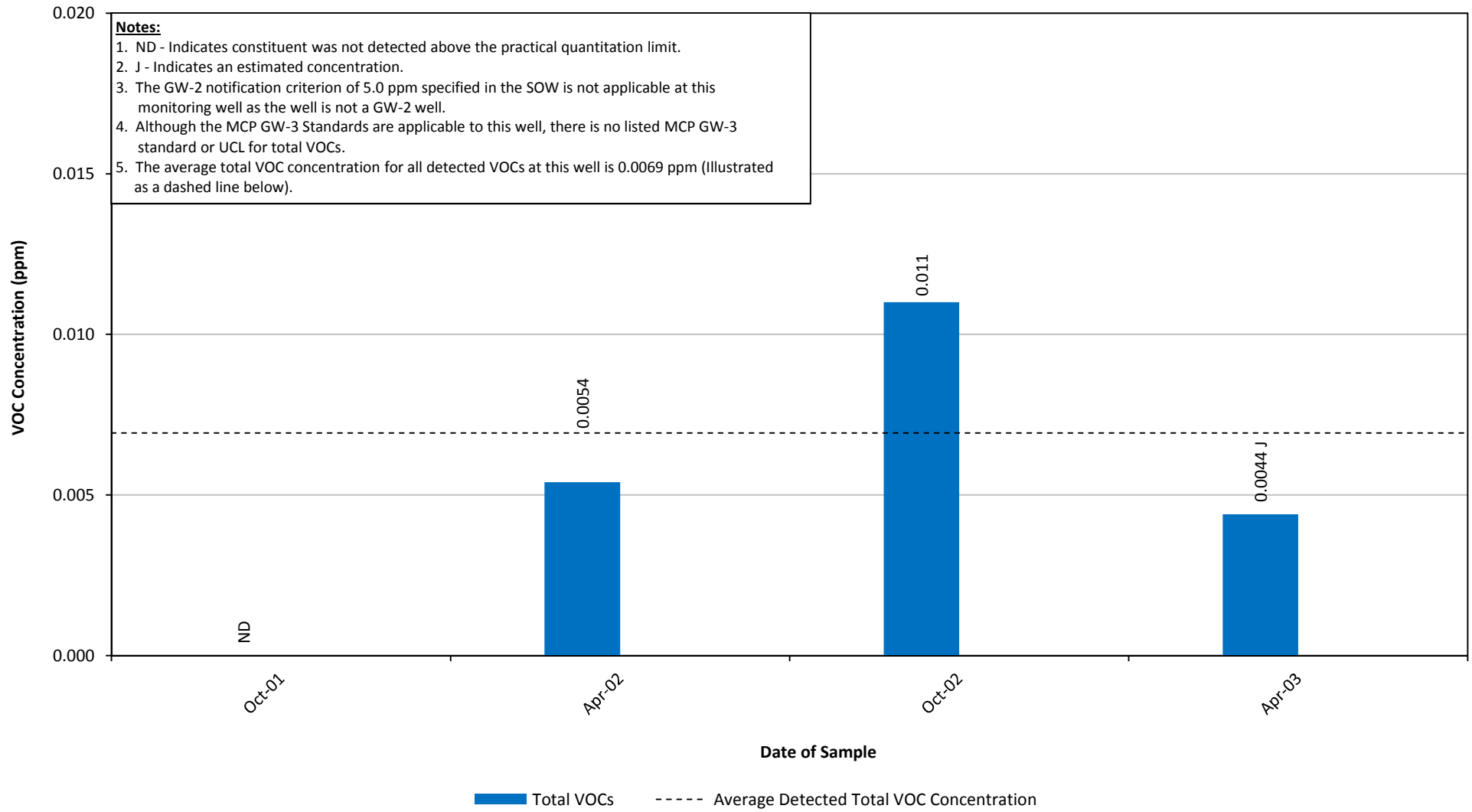
**Appendix E**  
**Well ES2-02A and ES2-02AR Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



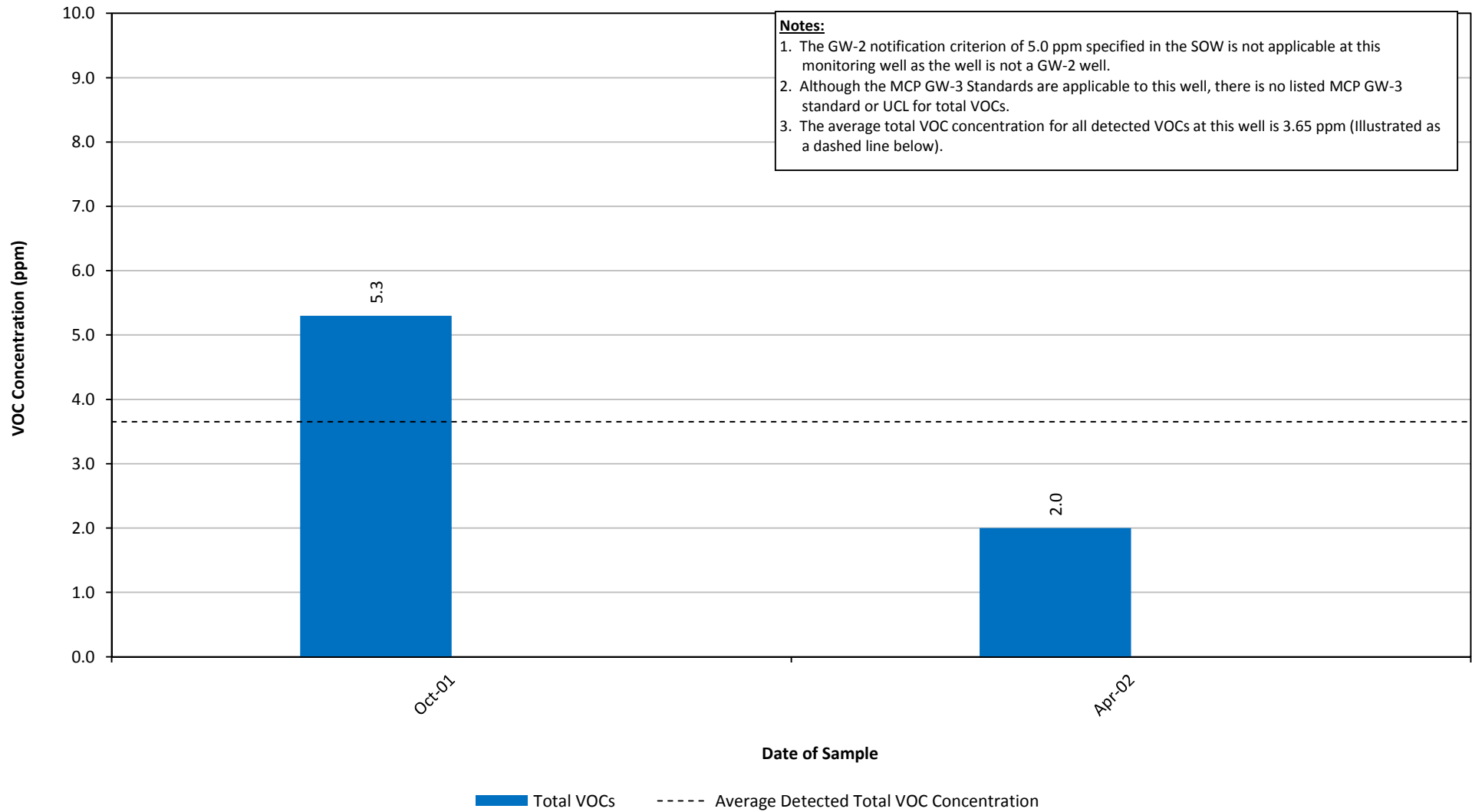
**Appendix E**  
**Well ES2-05 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



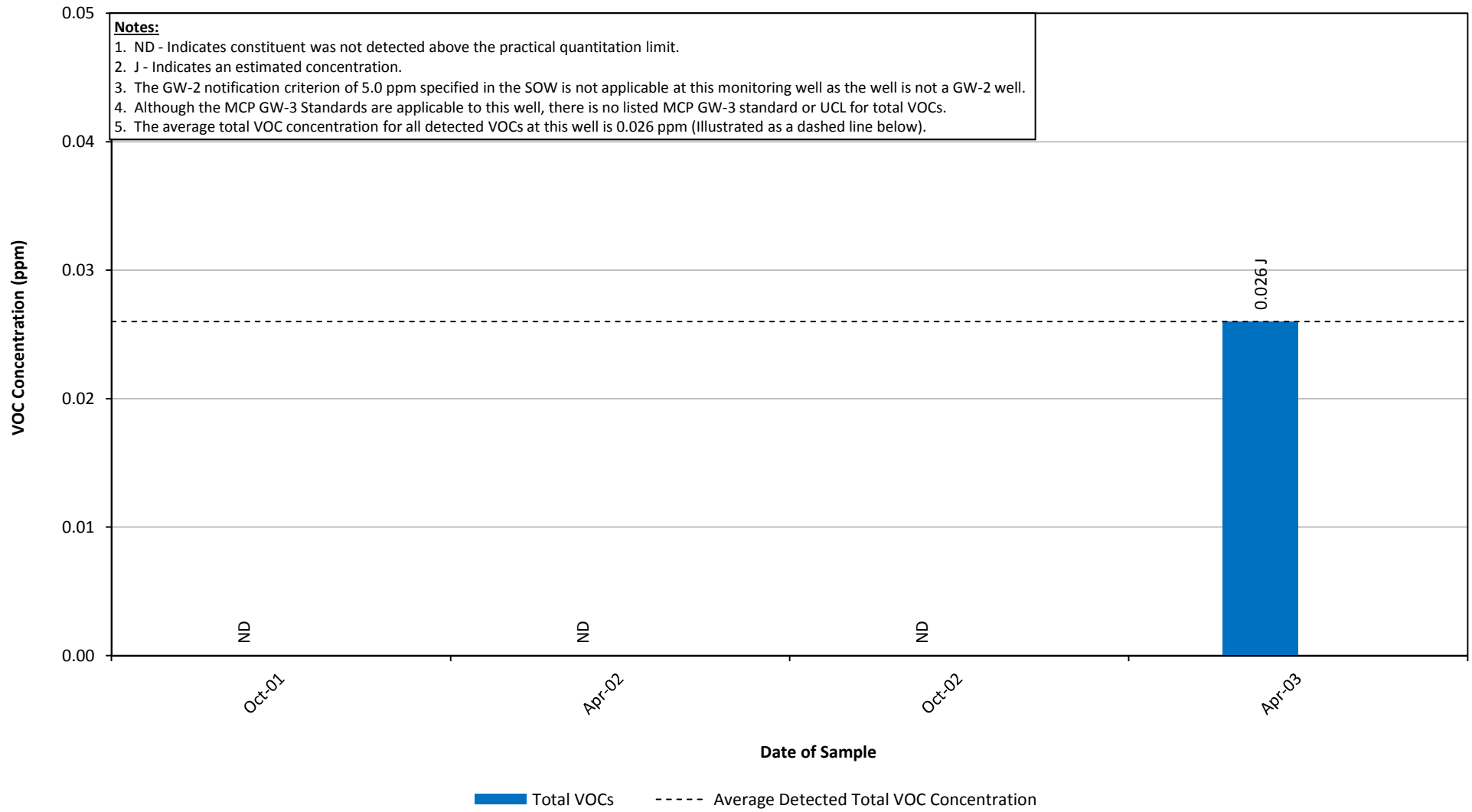
Appendix E  
Well ES2-17 Historical Total VOC Concentrations

Groundwater Monitoring Program for GMA 1  
General Electric Company - Pittsfield, Massachusetts



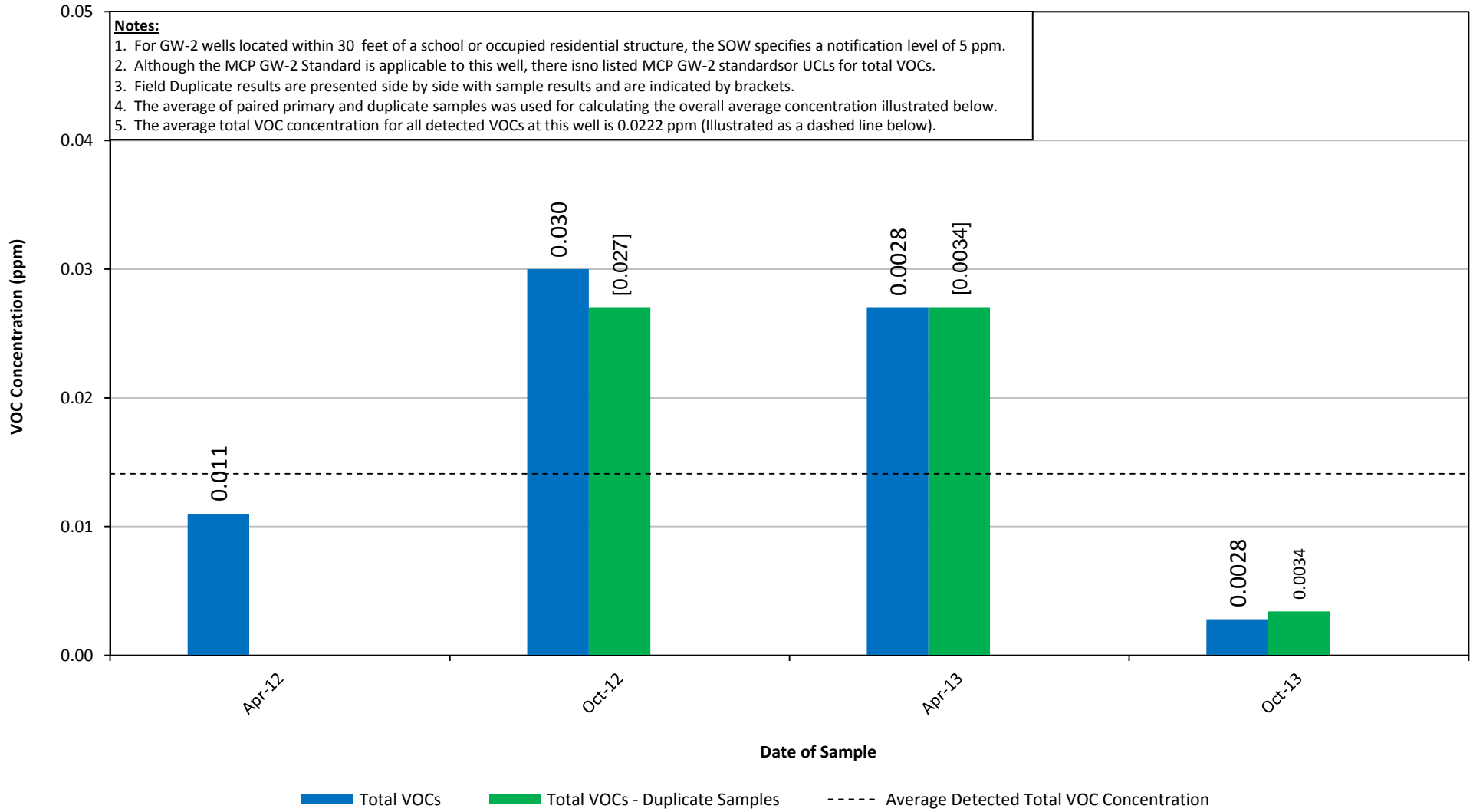
**Appendix E**  
**Well ES2-08 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



**Appendix E**  
**Well ESA1S-31R Historical Total VOC Concentrations**

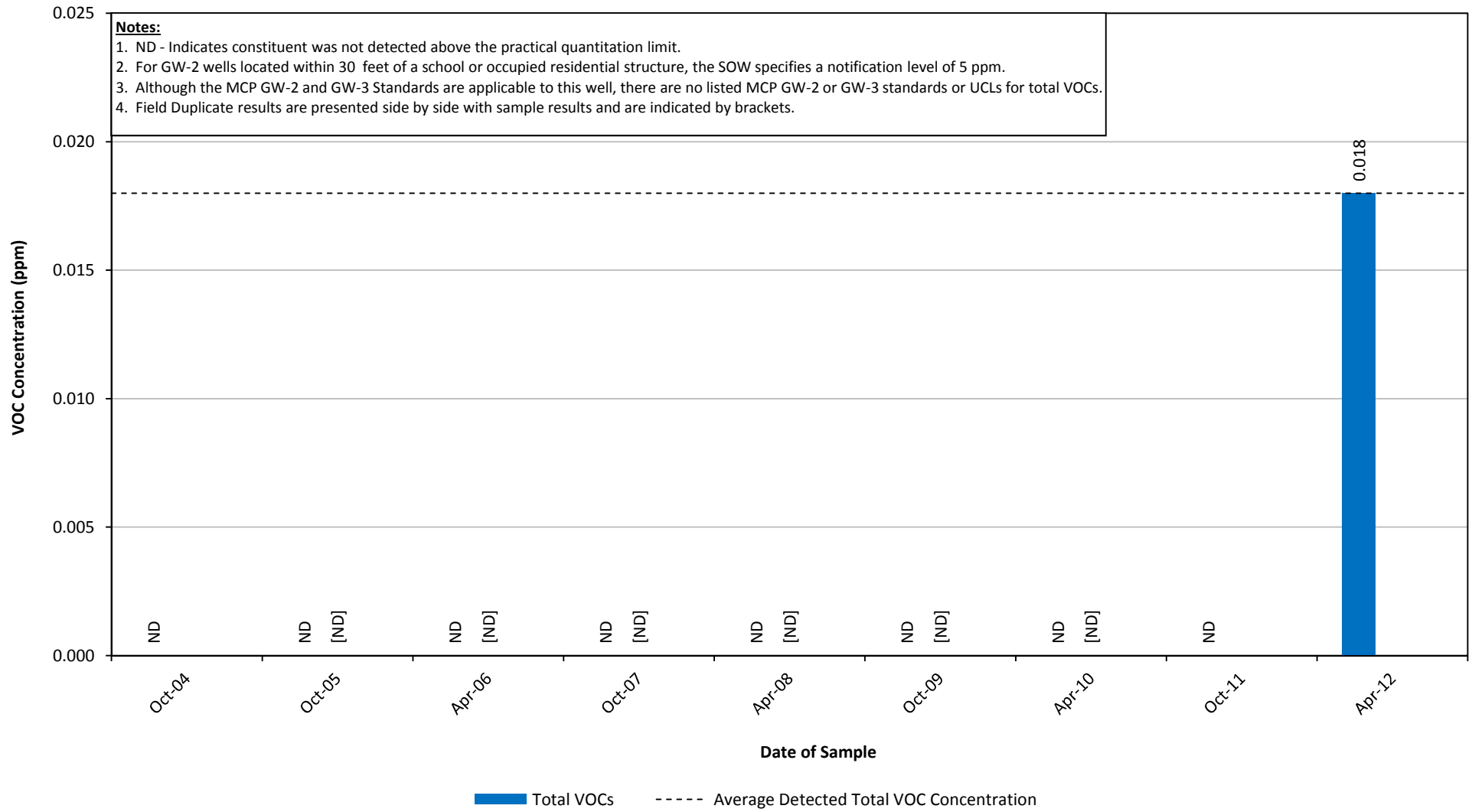
**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**





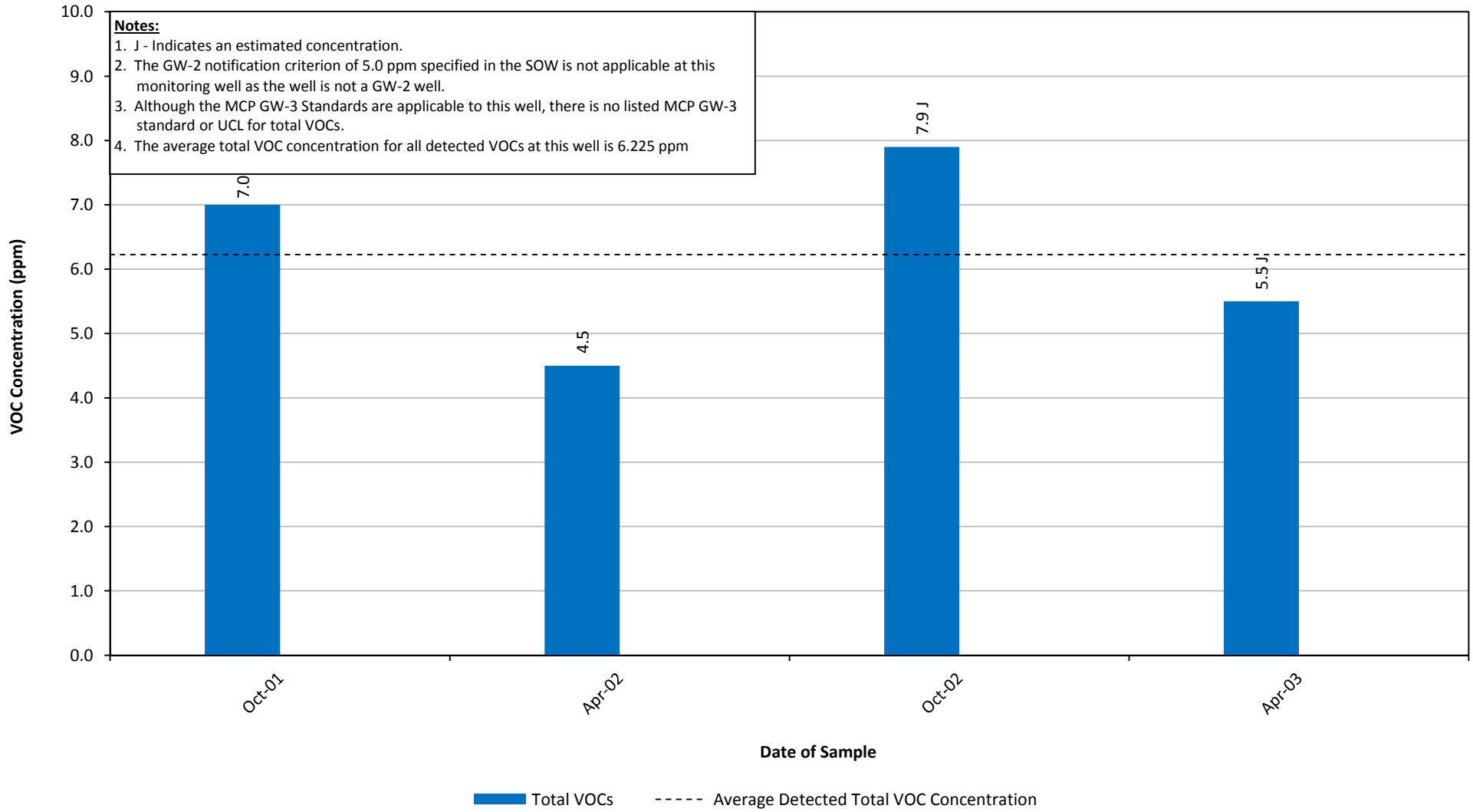
**Appendix E**  
**Well ESA1S-72R Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



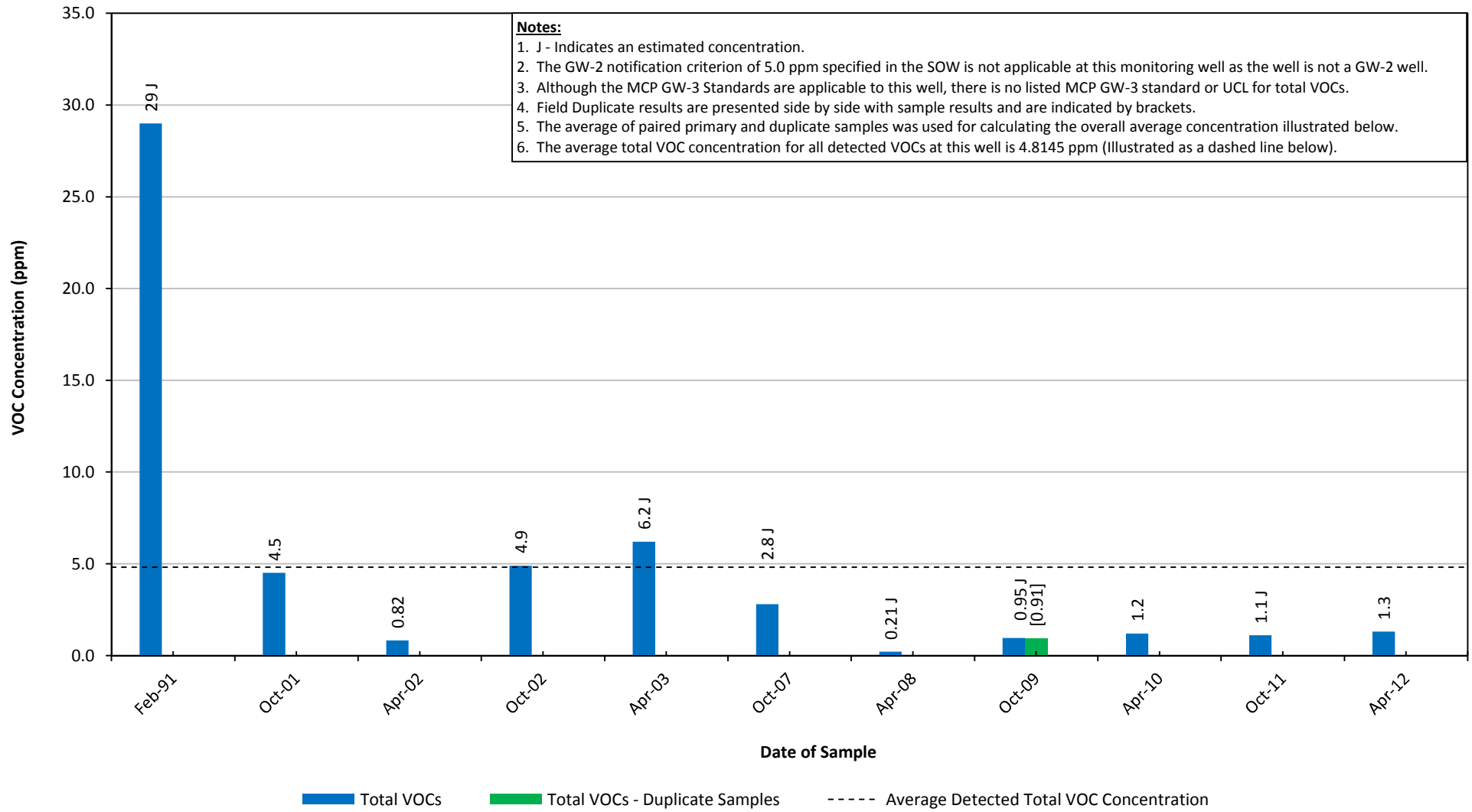
**Appendix E**  
**Well 52 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



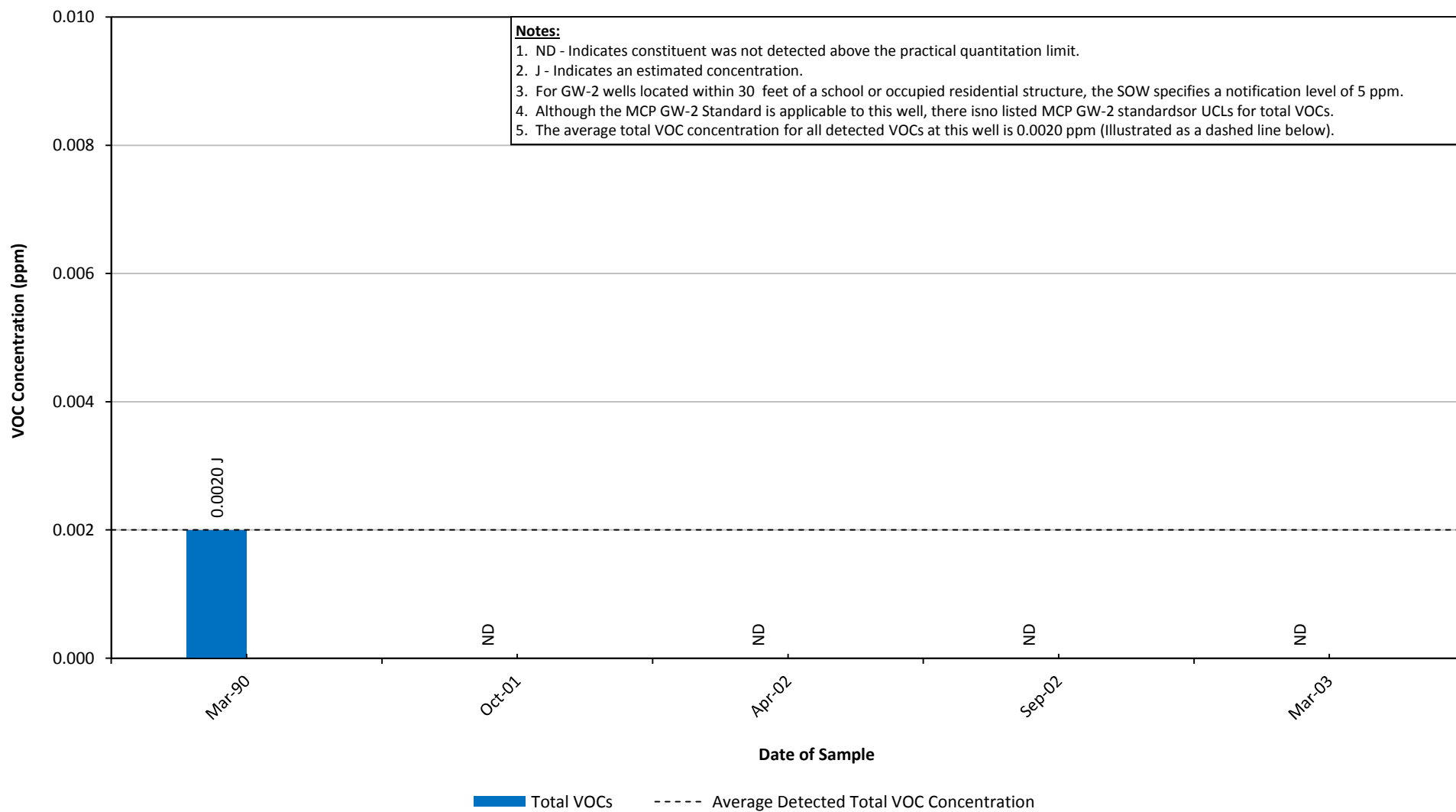
**Appendix E**  
**Well 64 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



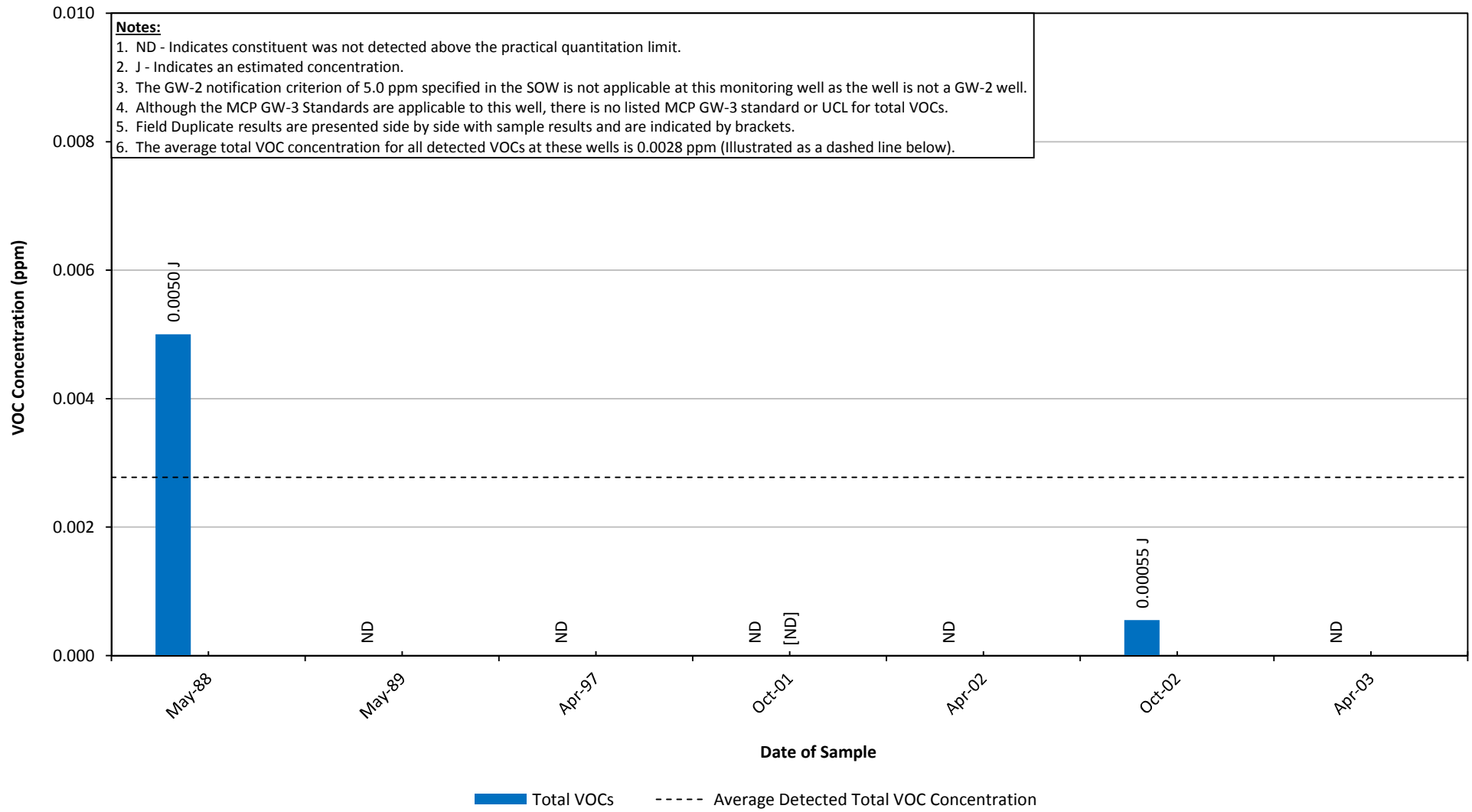
**Appendix E**  
**Well F-1 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



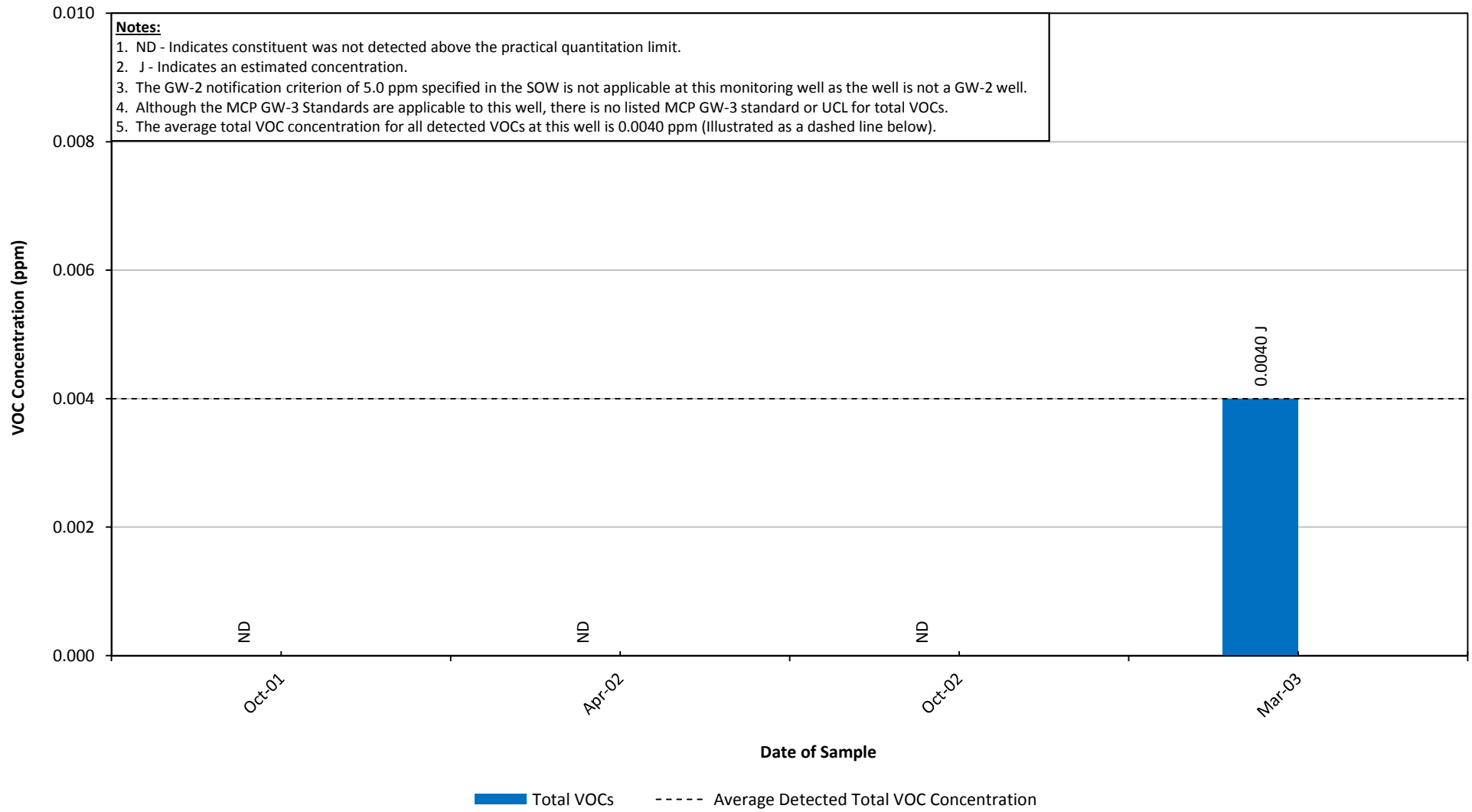
**Appendix E**  
**Well FW-16 and FW-16R Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



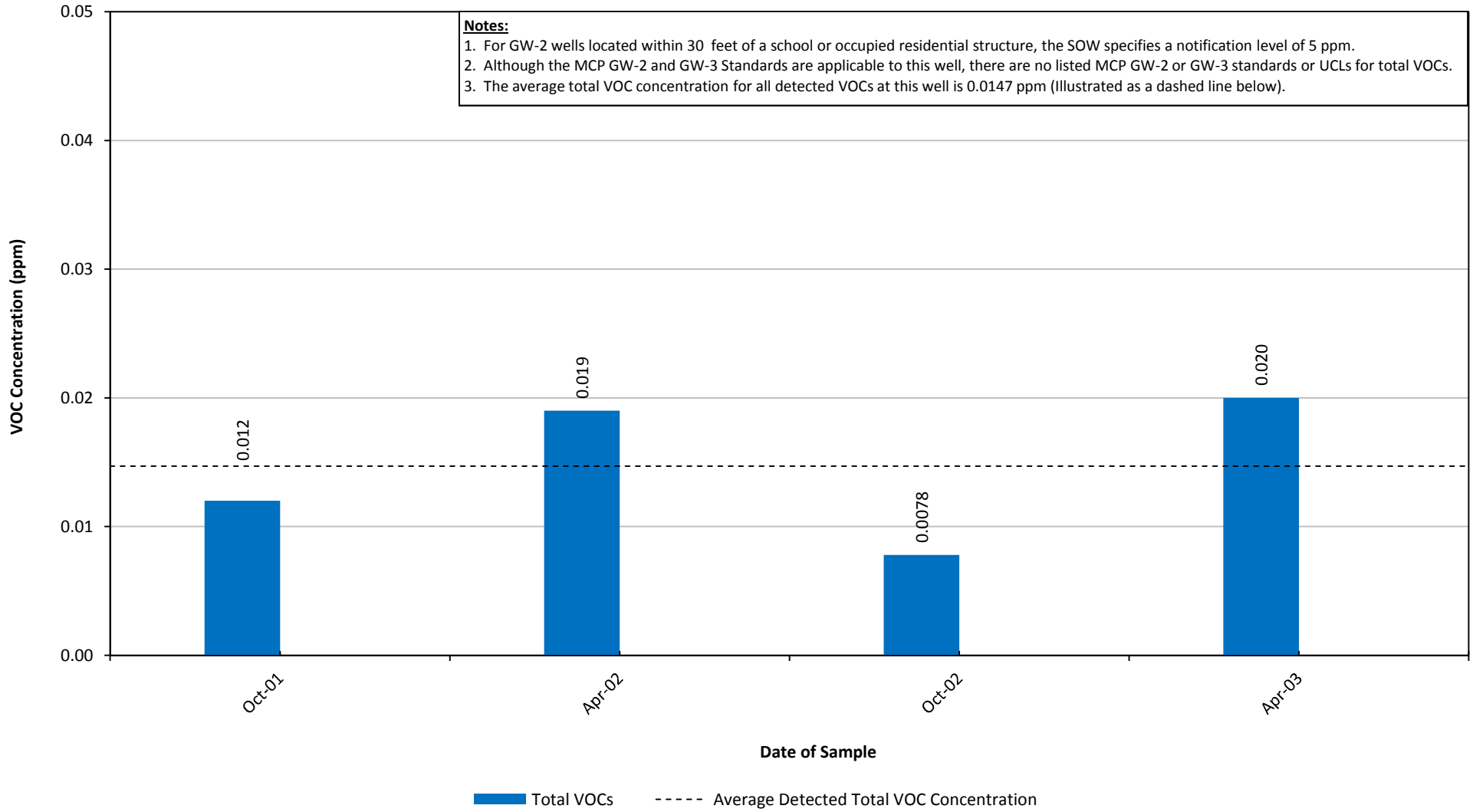
**Appendix E**  
**Well GMA1-11 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



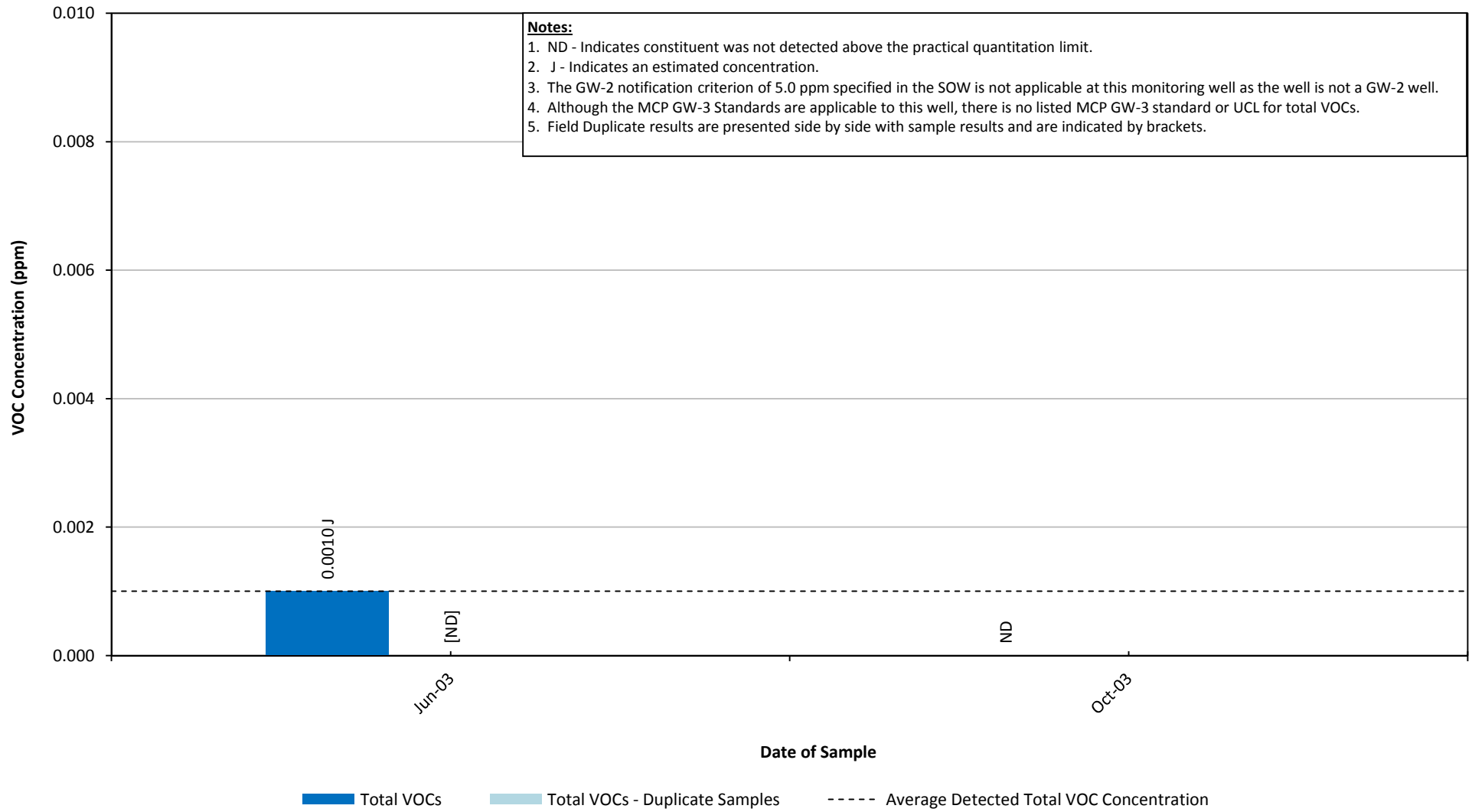
Appendix E  
Well GMA1-12 Historical Total VOC Concentrations

Groundwater Monitoring Program for GMA 1  
General Electric Company - Pittsfield, Massachusetts



**Appendix E  
Well GMA1-13 Historical Total VOC Concentrations**

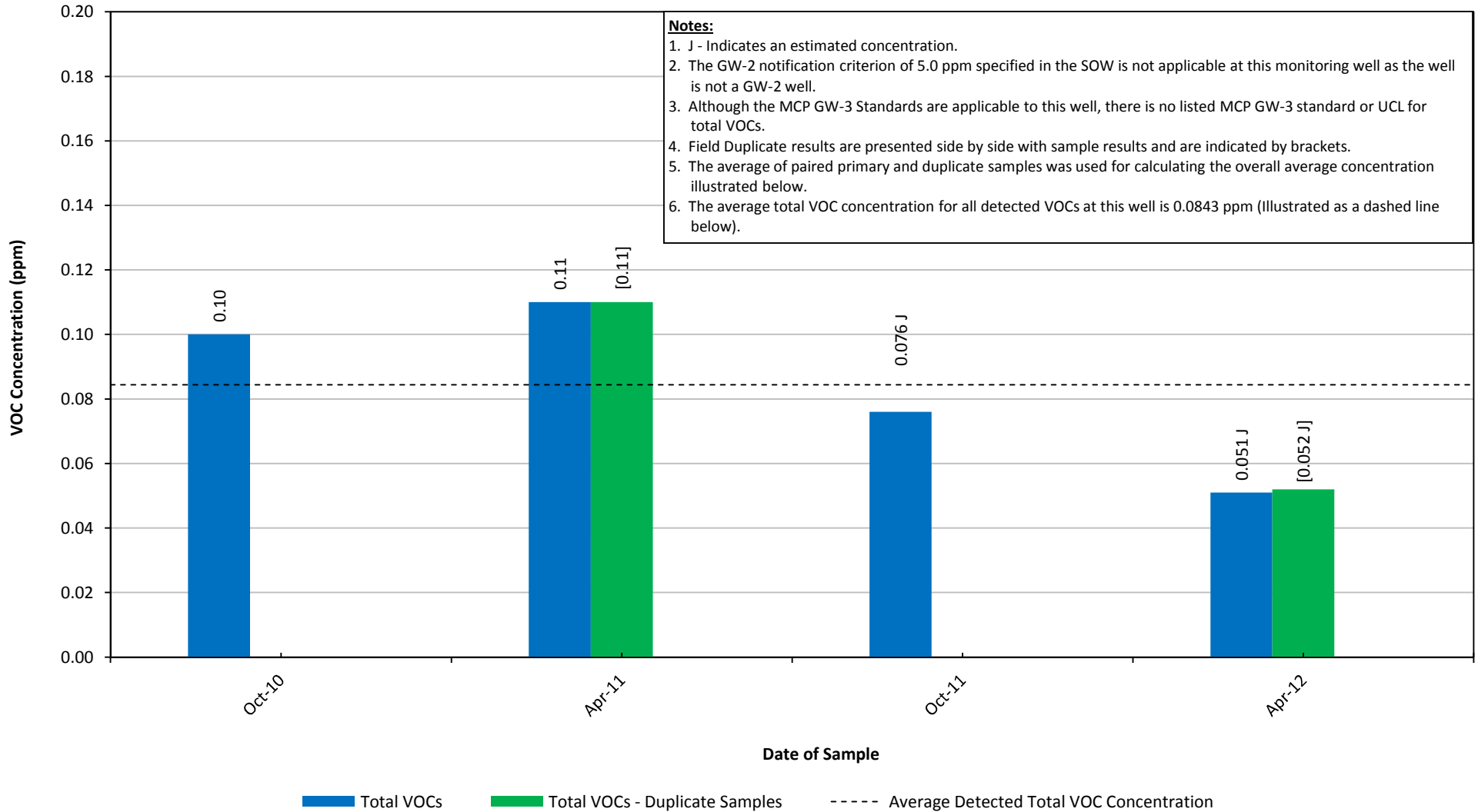
**Groundwater Monitoring Program for GMA 1  
General Electric Company - Pittsfield, Massachusetts**





**Appendix E**  
**Well GMA1-24R Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**

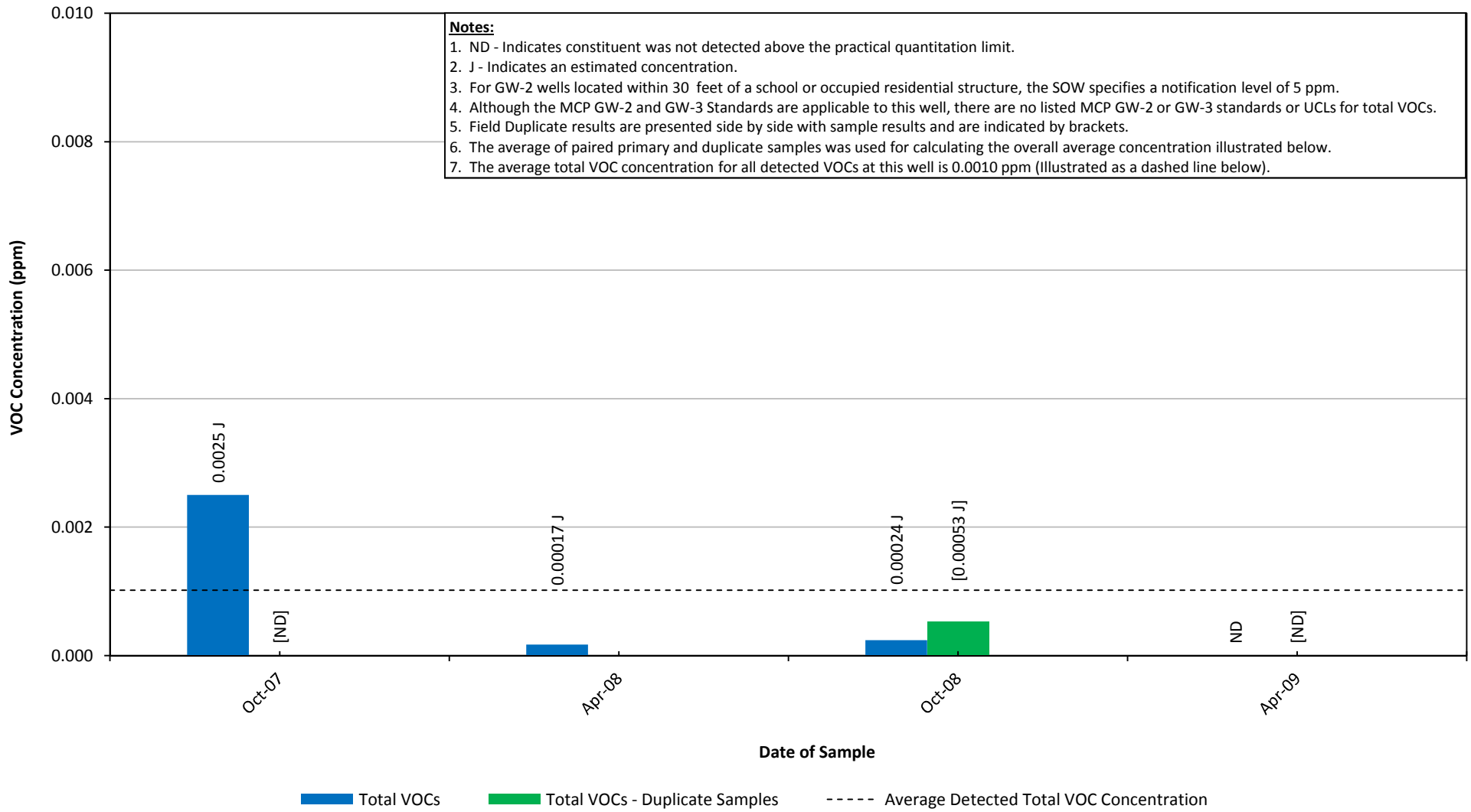


**Appendix E**  
**Well GMA1-25 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**

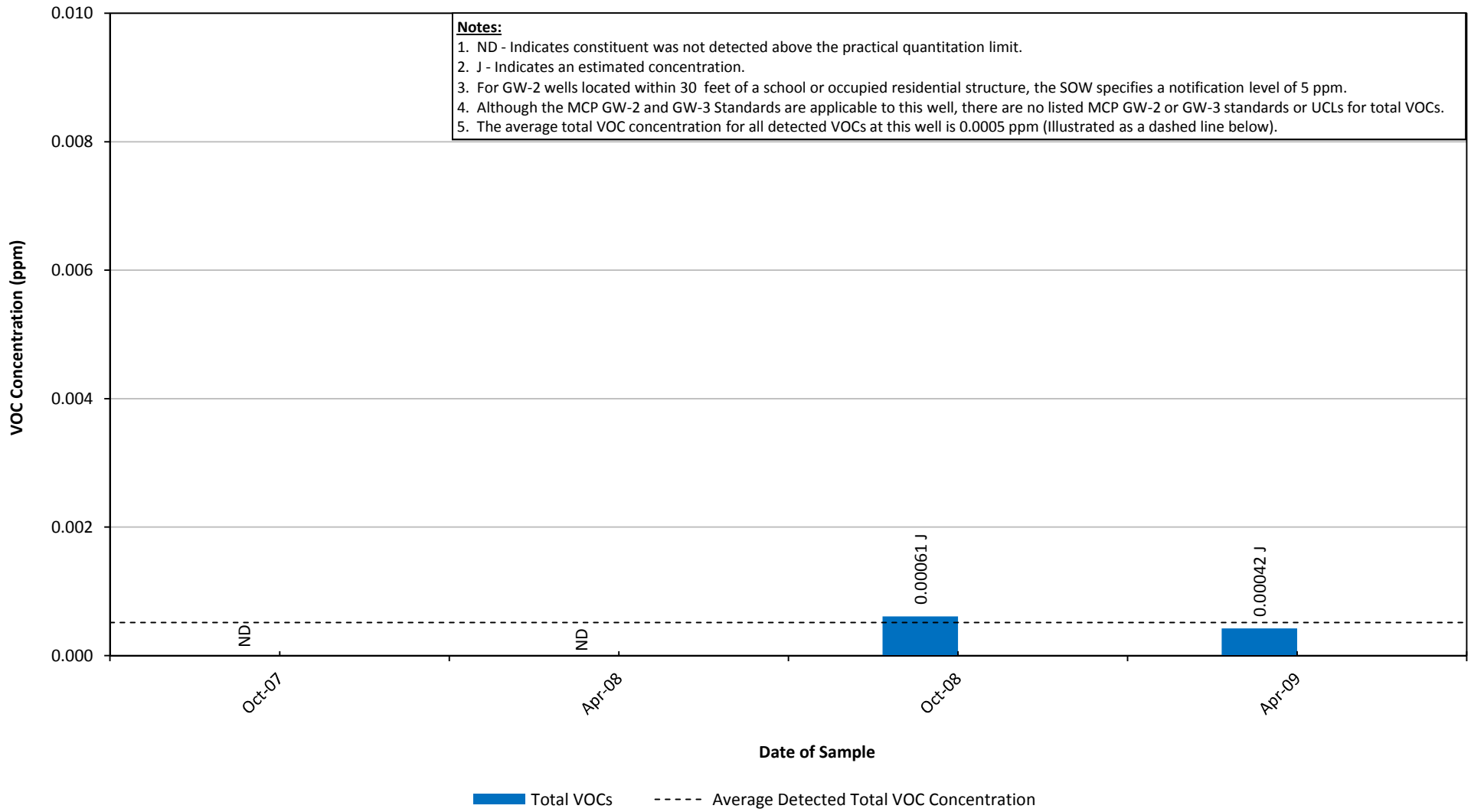
**Notes:**

1. ND - Indicates constituent was not detected above the practical quantitation limit.
2. J - Indicates an estimated concentration.
3. For GW-2 wells located within 30 feet of a school or occupied residential structure, the SOW specifies a notification level of 5 ppm.
4. Although the MCP GW-2 and GW-3 Standards are applicable to this well, there are no listed MCP GW-2 or GW-3 standards or UCLs for total VOCs.
5. Field Duplicate results are presented side by side with sample results and are indicated by brackets.
6. The average of paired primary and duplicate samples was used for calculating the overall average concentration illustrated below.
7. The average total VOC concentration for all detected VOCs at this well is 0.0010 ppm (Illustrated as a dashed line below).



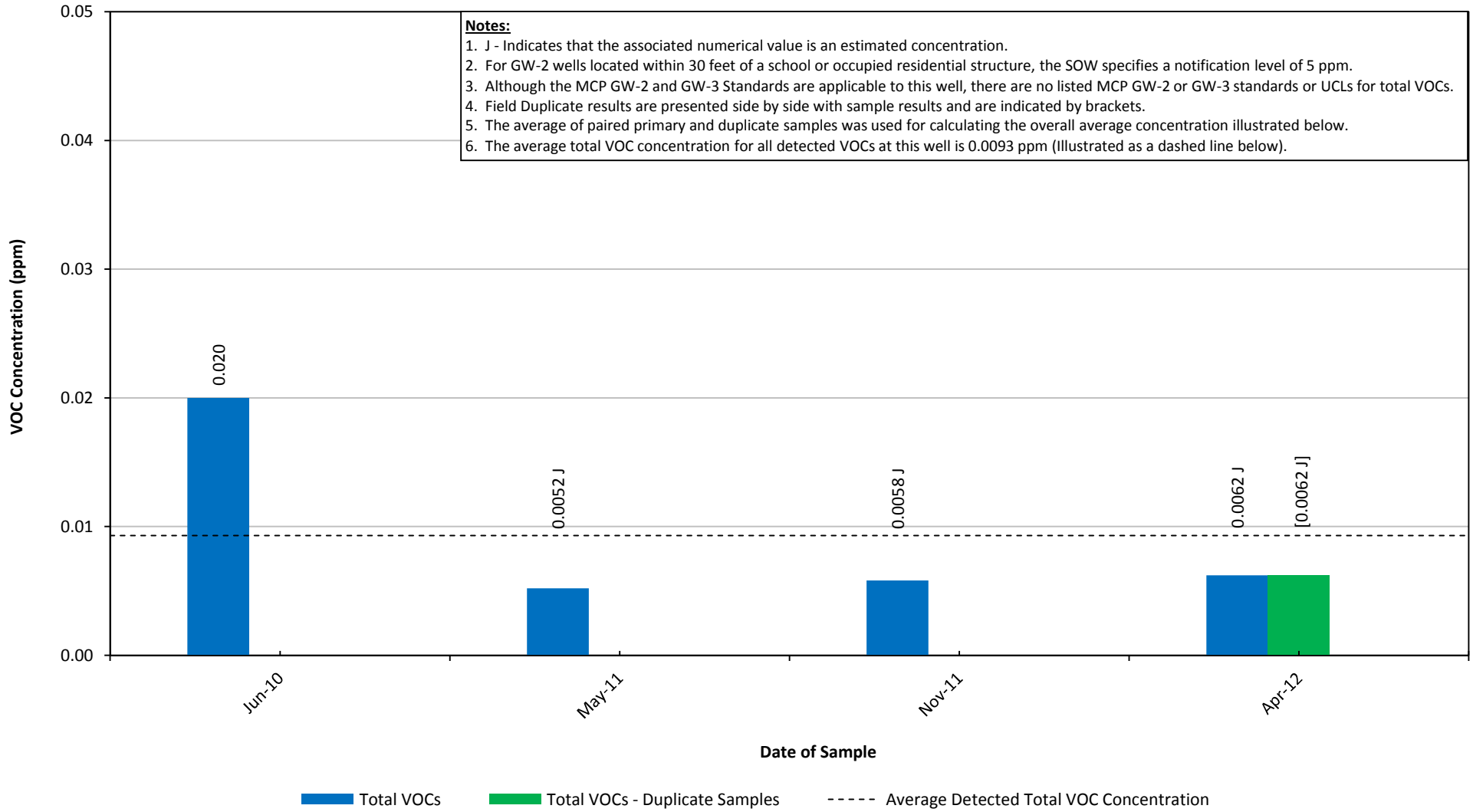
**Appendix E**  
**Well GMA1-27 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



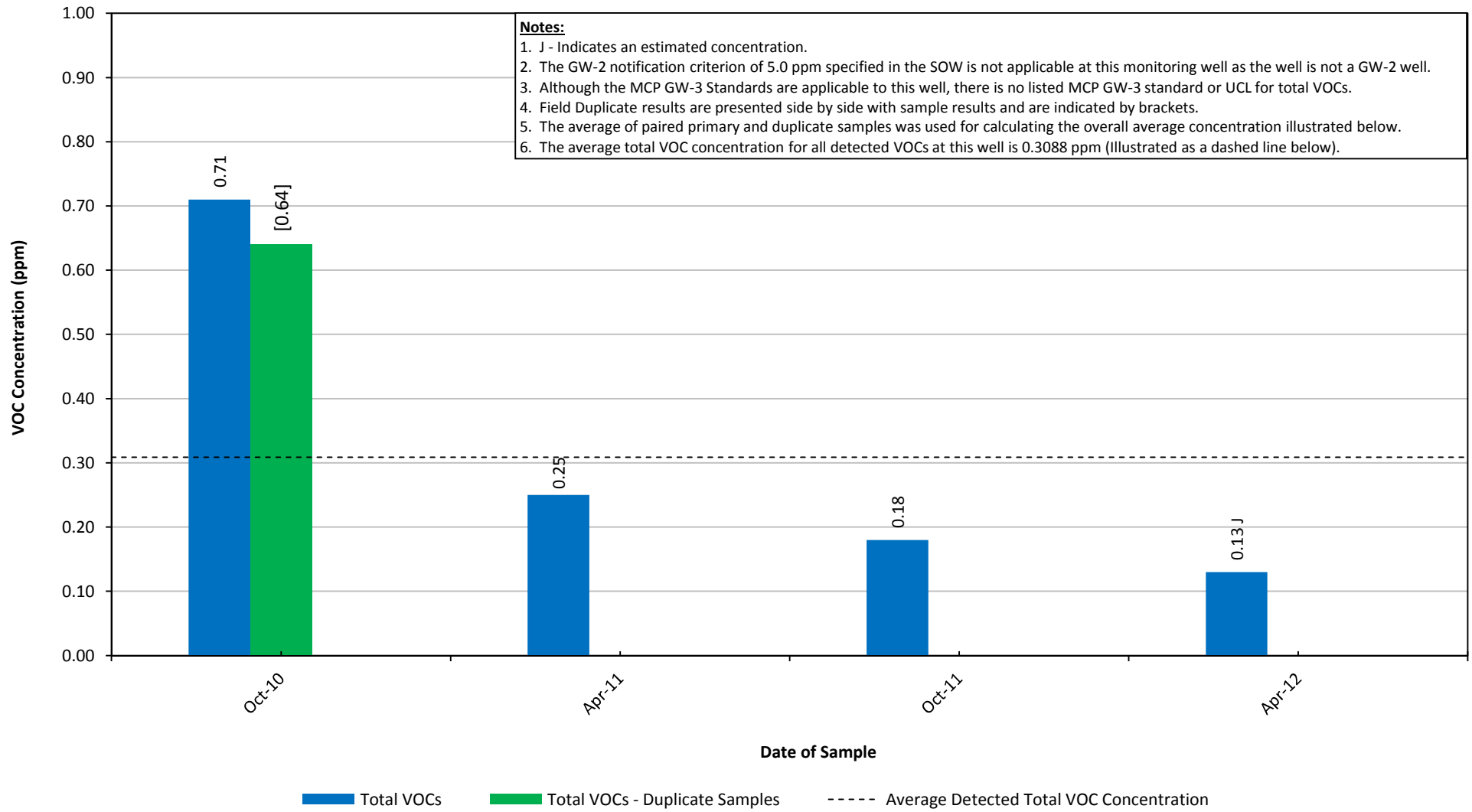
**Appendix E**  
**Well GMA1-29 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



**Appendix E**  
**Well GMA1-30 Historical Total VOC Concentrations**

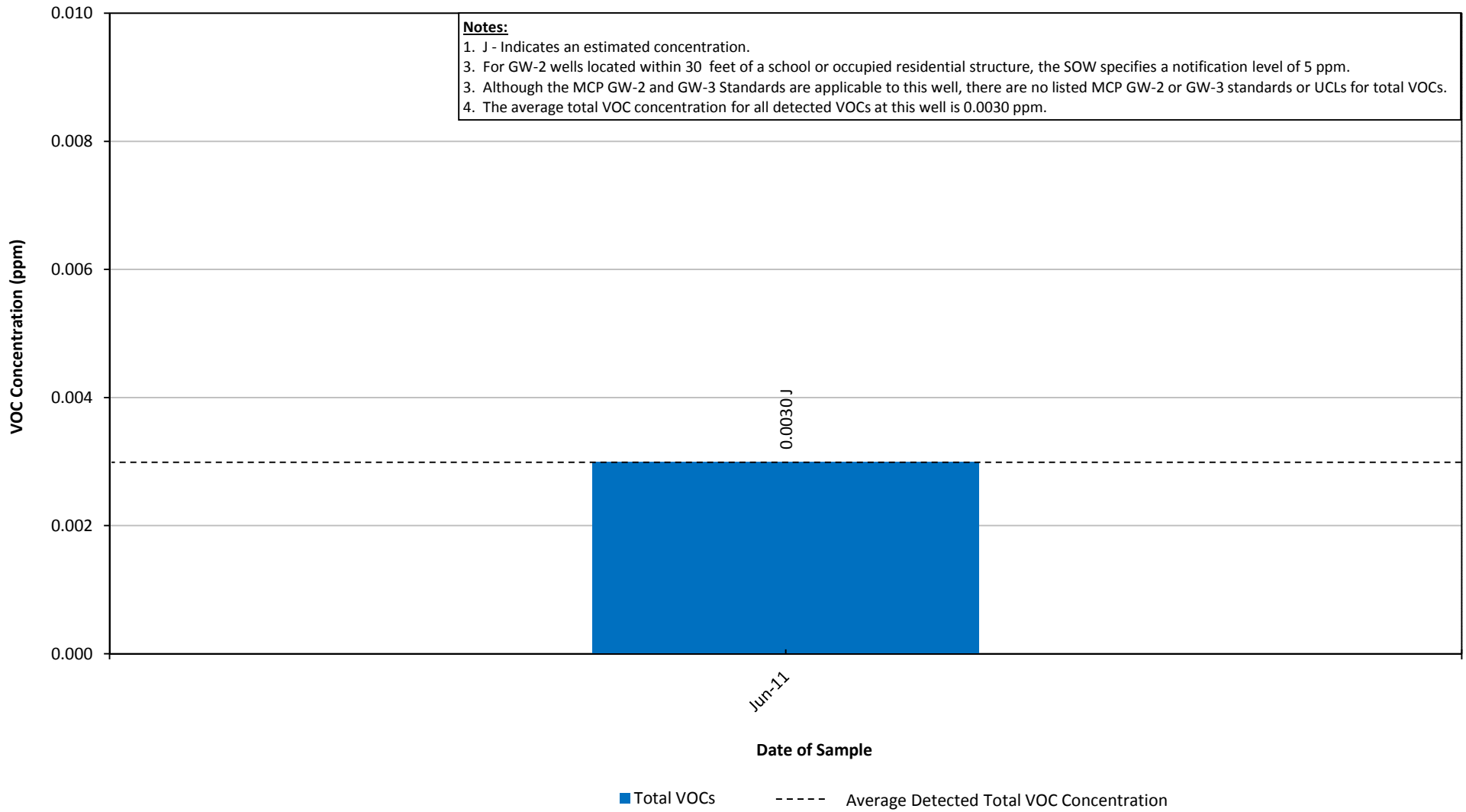
**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



**Appendix E**  
**Well GMA1-31 Historical Total VOC Concentrations**

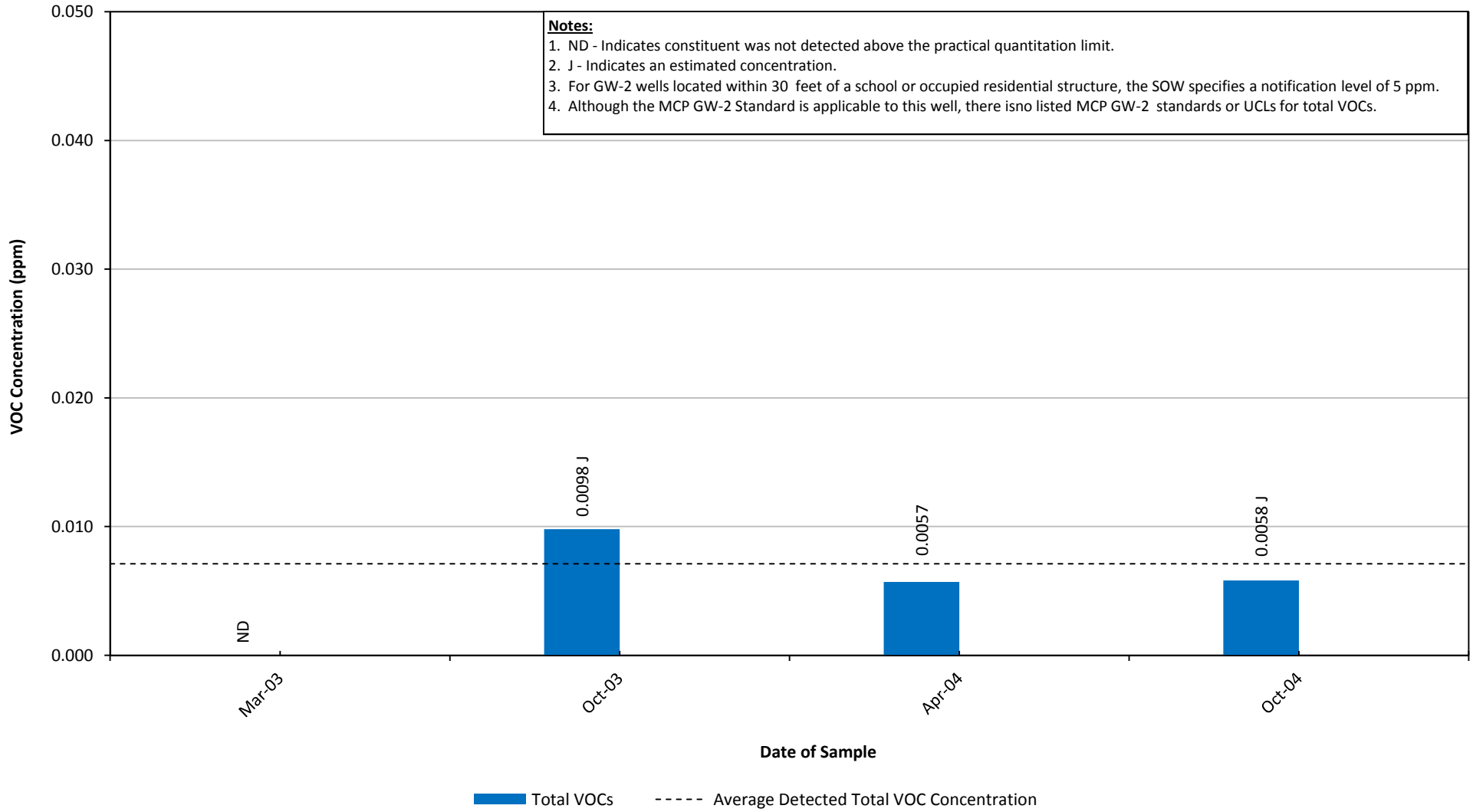
**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**

**Notes:**  
 1. J - Indicates an estimated concentration.  
 3. For GW-2 wells located within 30 feet of a school or occupied residential structure, the SOW specifies a notification level of 5 ppm.  
 3. Although the MCP GW-2 and GW-3 Standards are applicable to this well, there are no listed MCP GW-2 or GW-3 standards or UCLs for total VOCs.  
 4. The average total VOC concentration for all detected VOCs at this well is 0.0030 ppm.



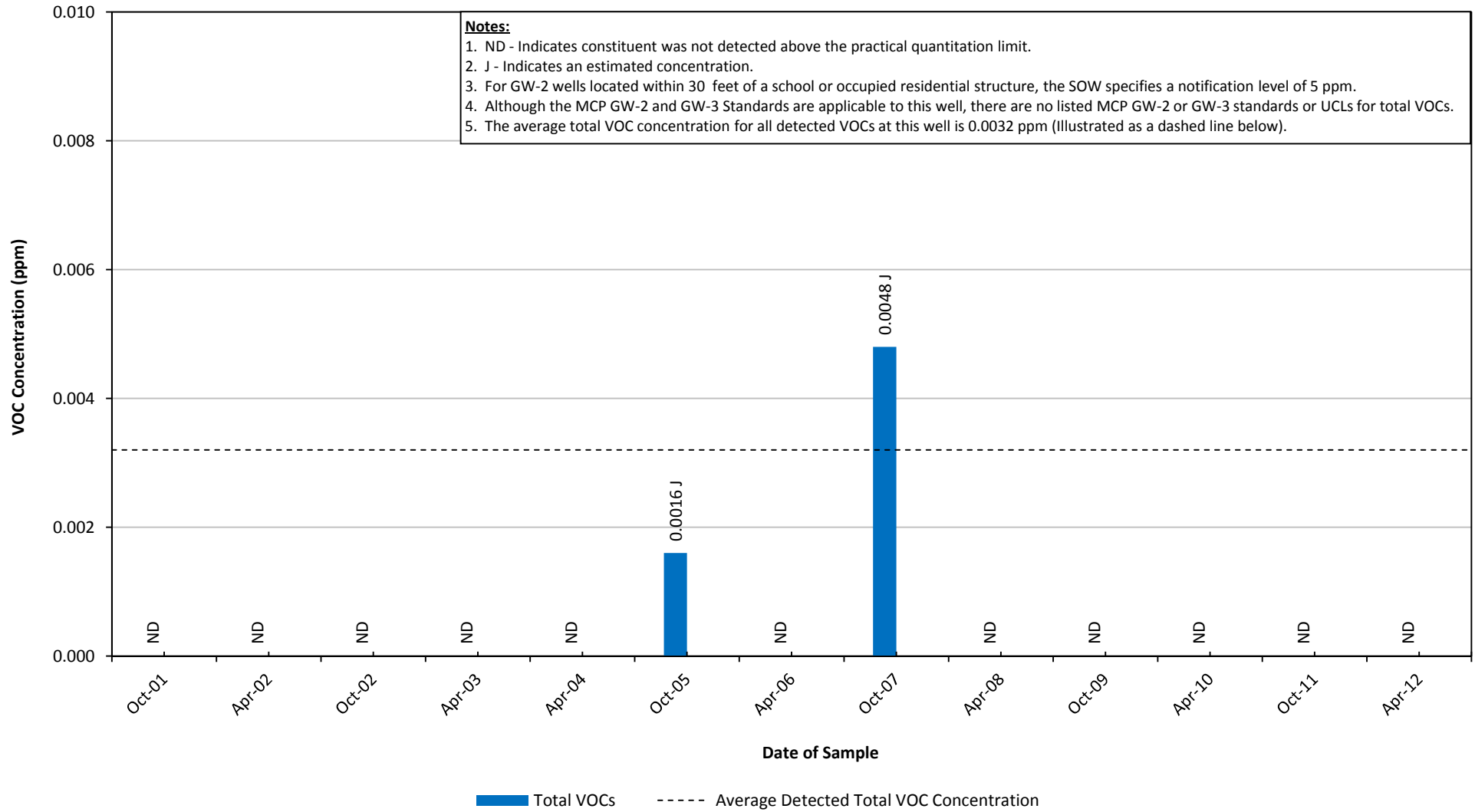
**Appendix E**  
**Well GMA1-4 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



**Appendix E**  
**Well GMA1-6 Historical Total VOC Concentrations**

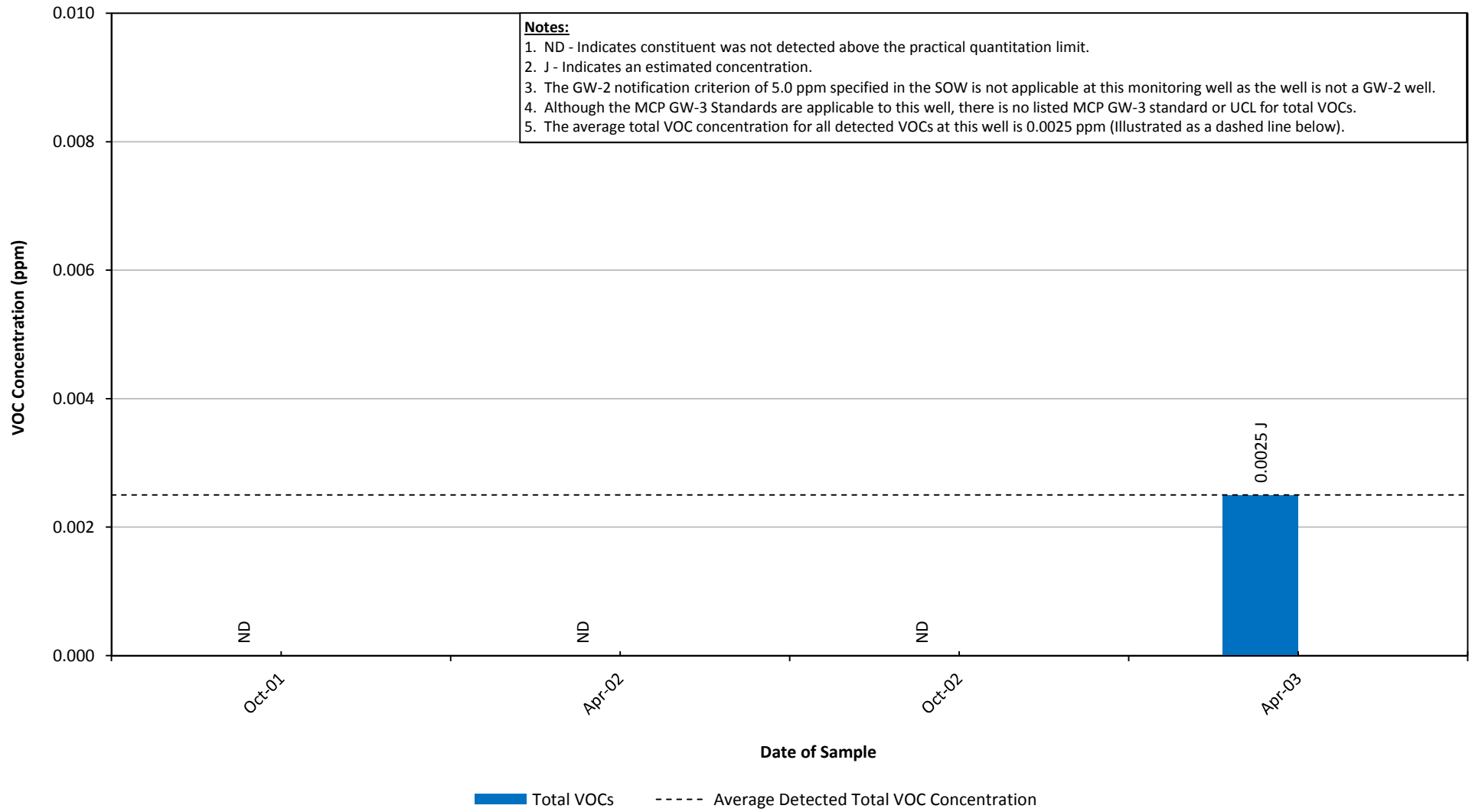
**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**





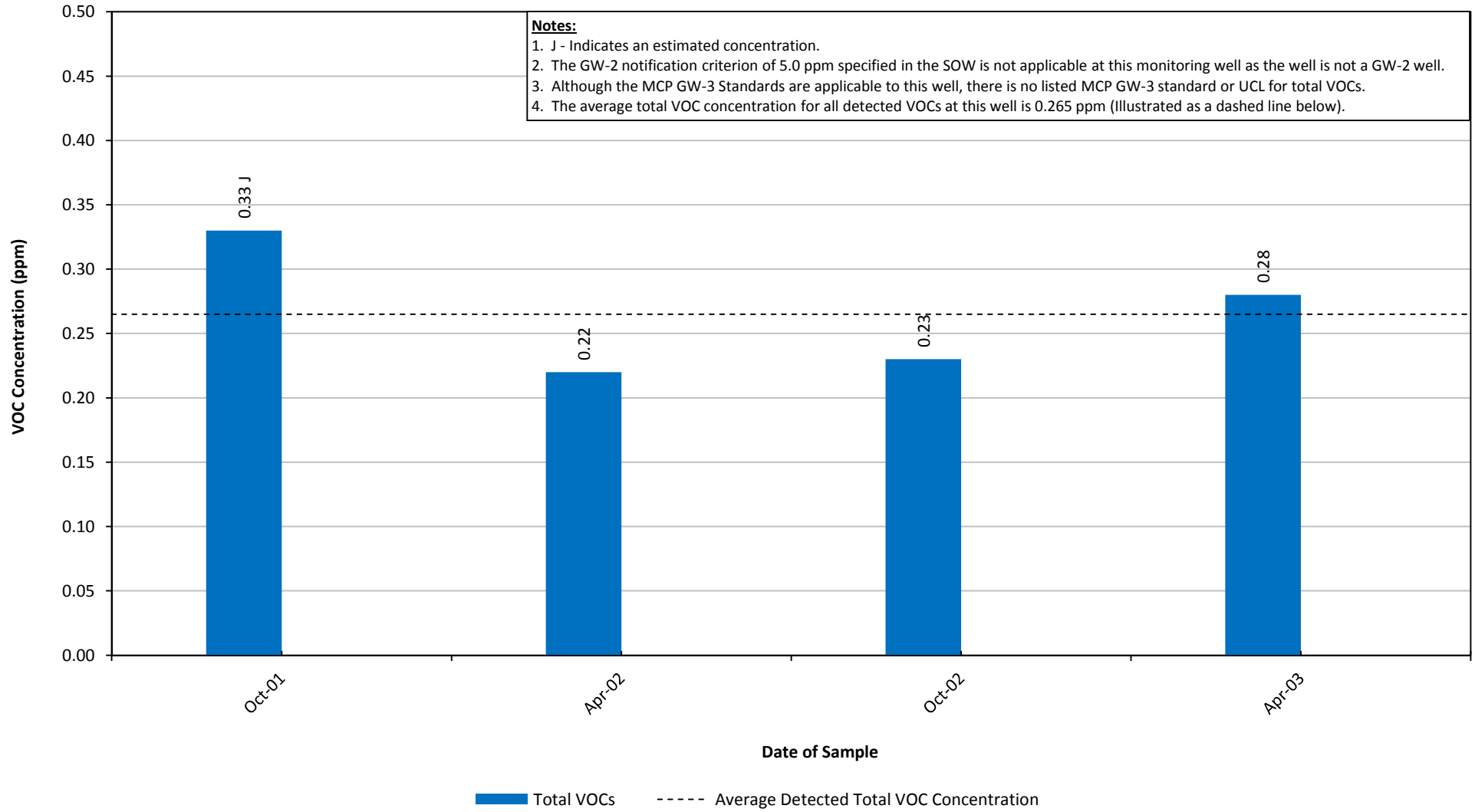
**Appendix E**  
**Well GMA1-9 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



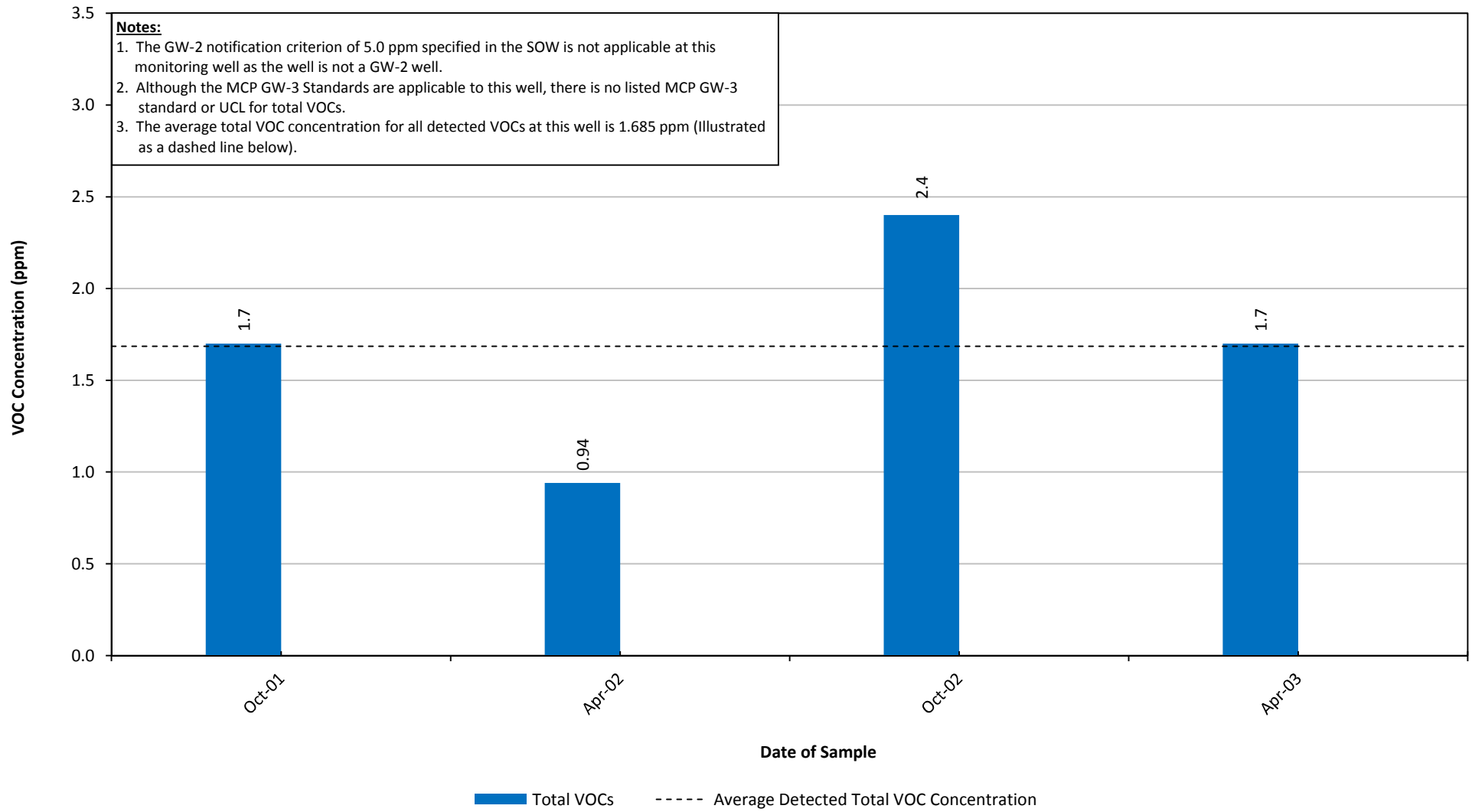
**Appendix E**  
**Well HR-G1-MW-3 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



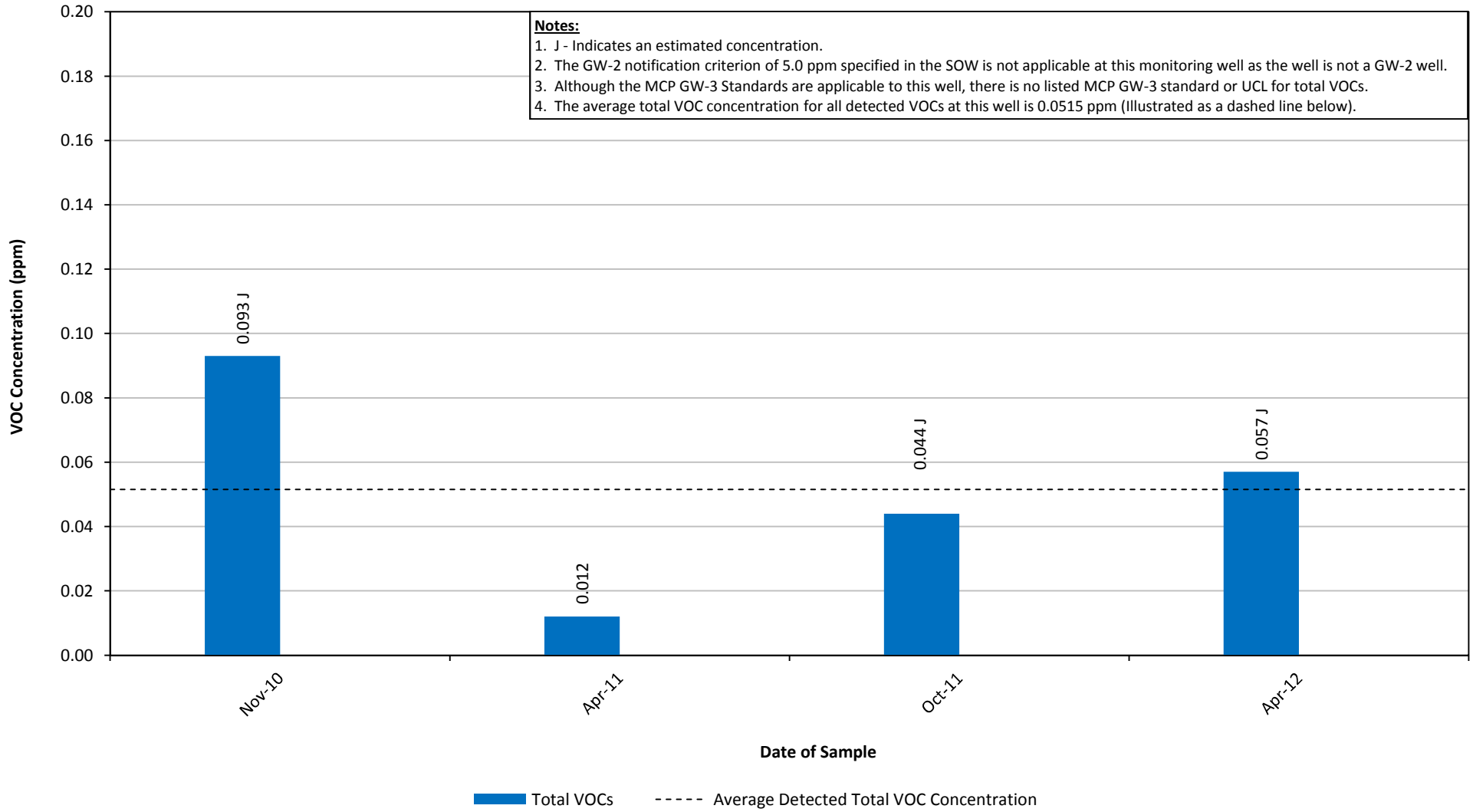
**Appendix E**  
**Well HR-G3-MW-1 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



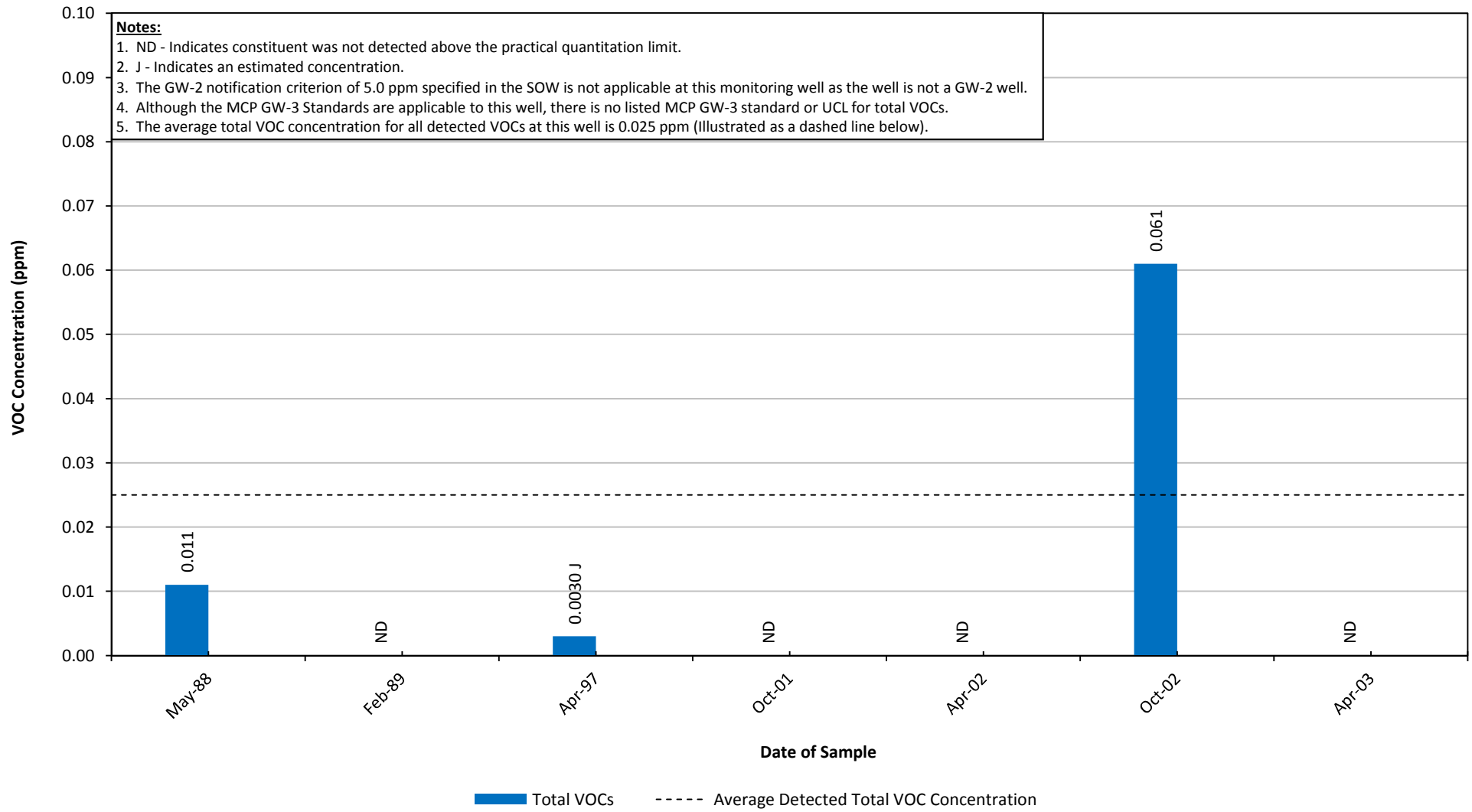
**Appendix E**  
**Well HR-G3-MW-2 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



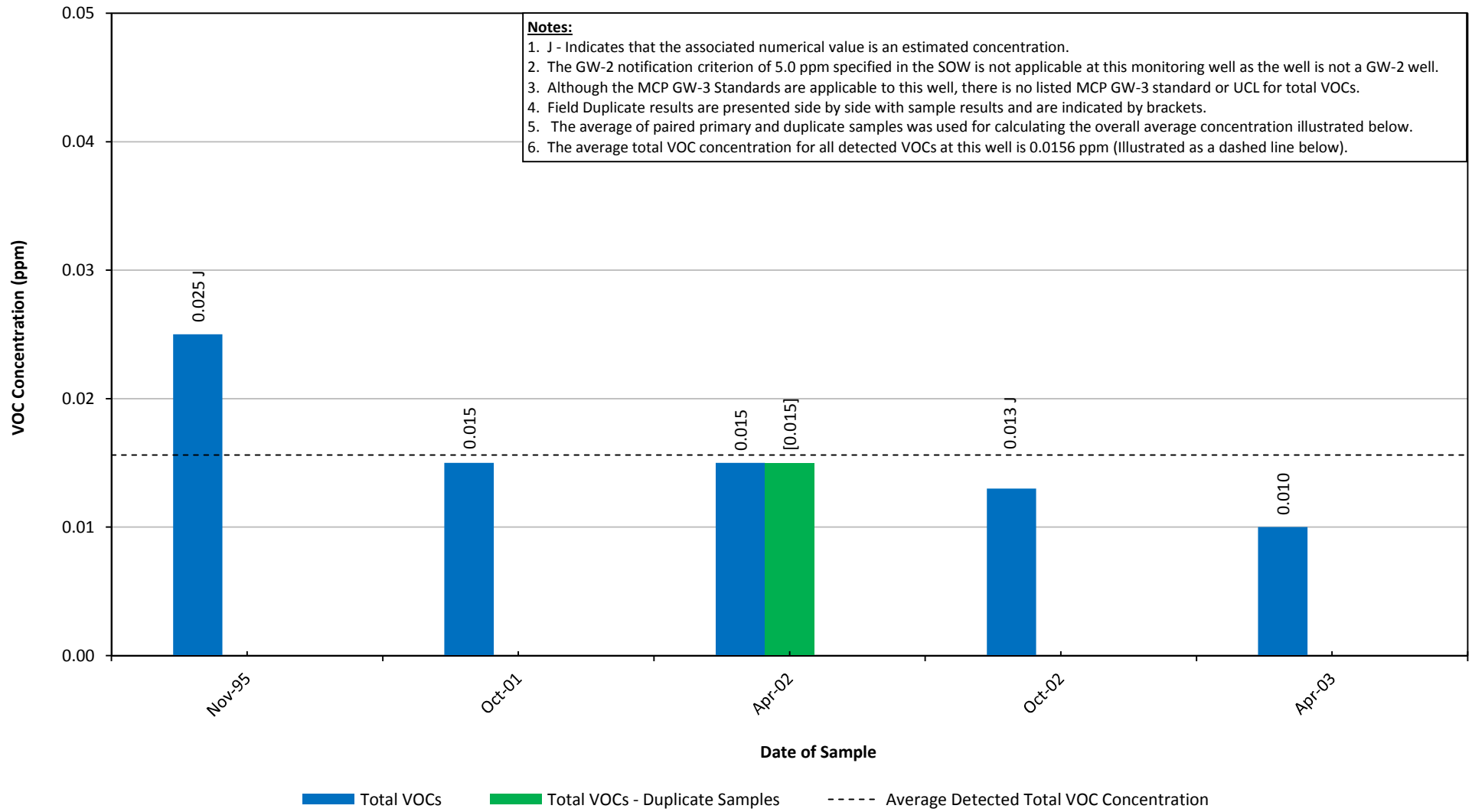
**Appendix E**  
**Well J9-23-17-IA-9R Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



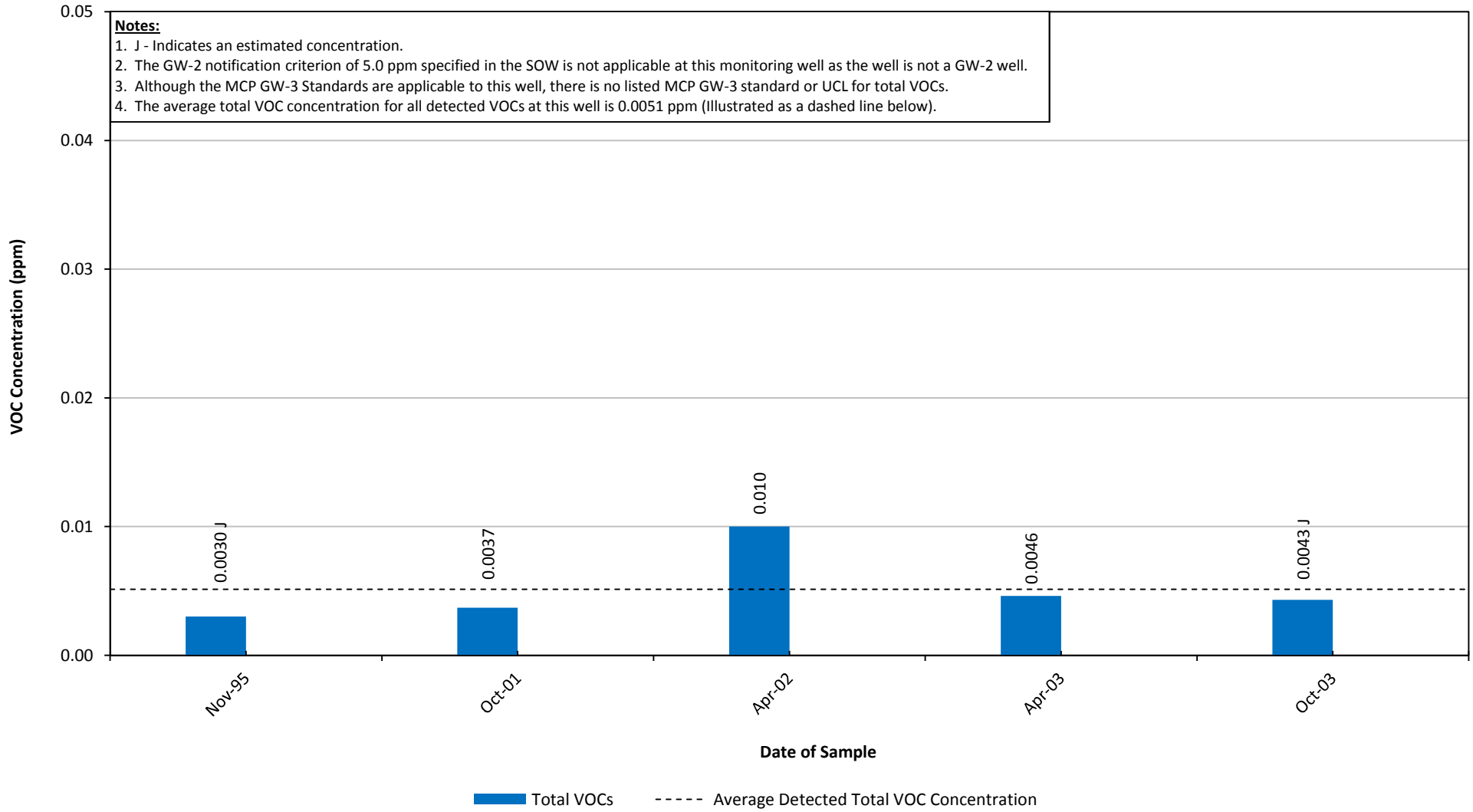
**Appendix E**  
**Well LS-28 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



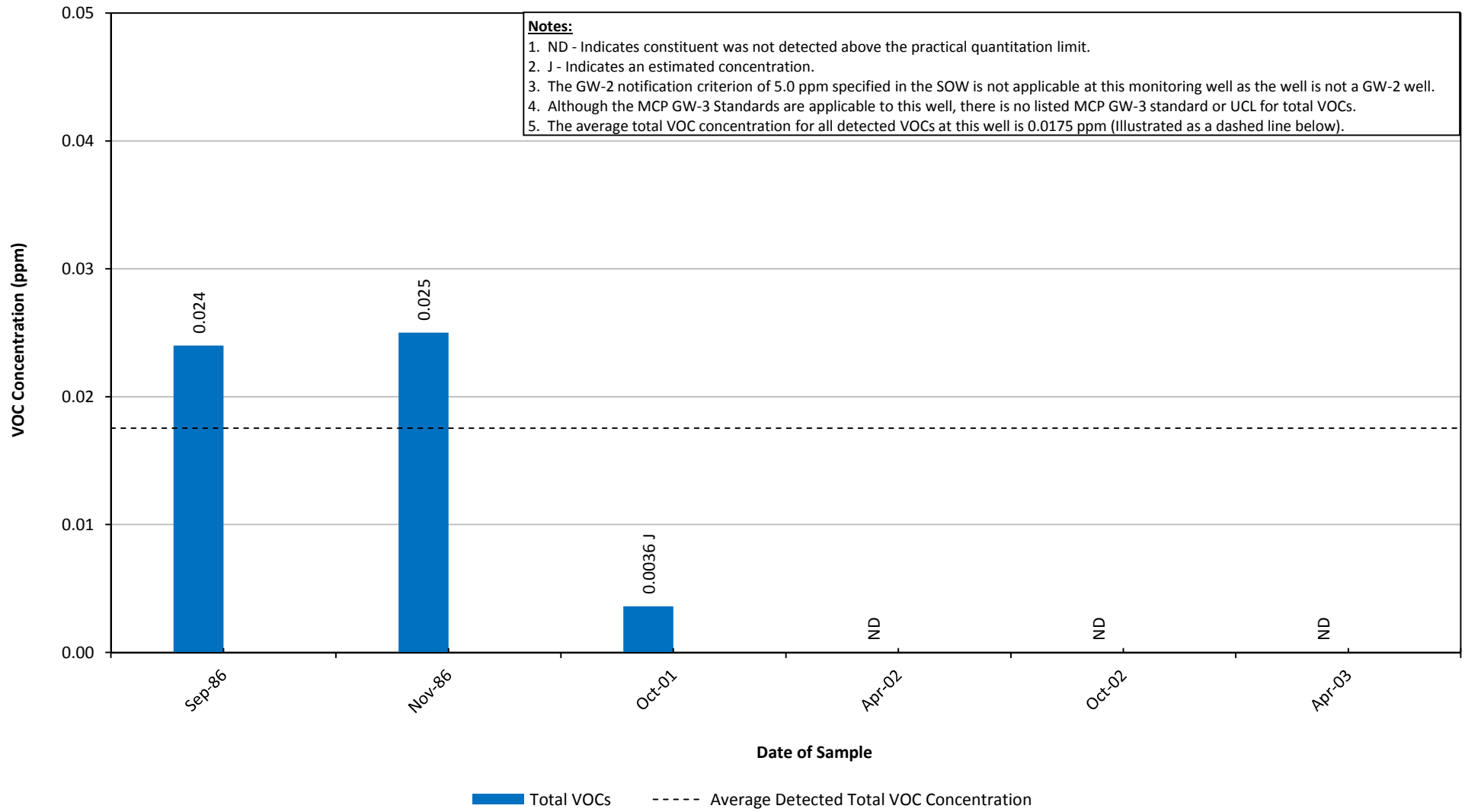
**Appendix E**  
**Well HR-G3-MW-1 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



**Appendix E**  
**Well B-2 Historical Total VOC Concentrations**

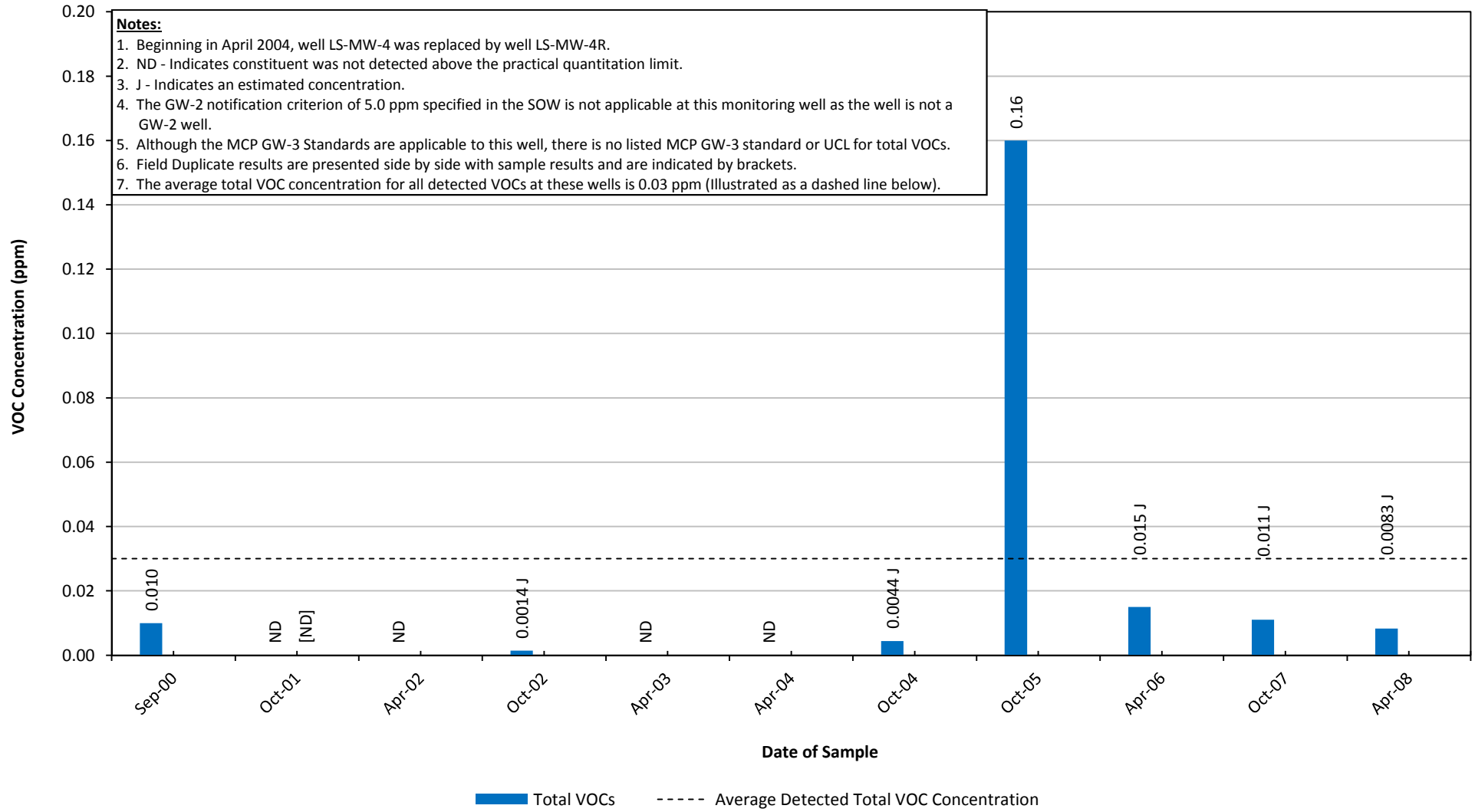
**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**





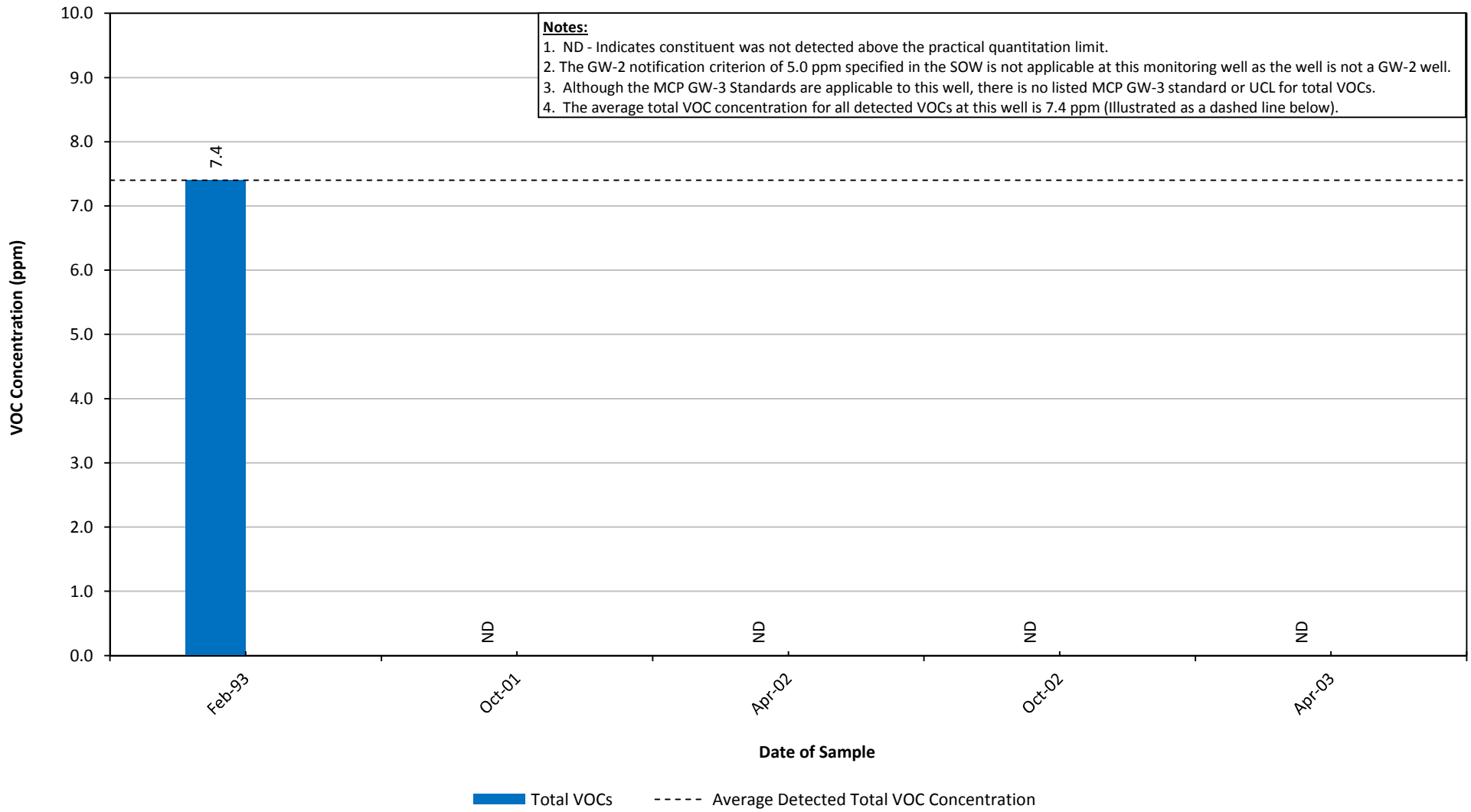
**Appendix E**  
**Well MW-4 and MW-4R Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



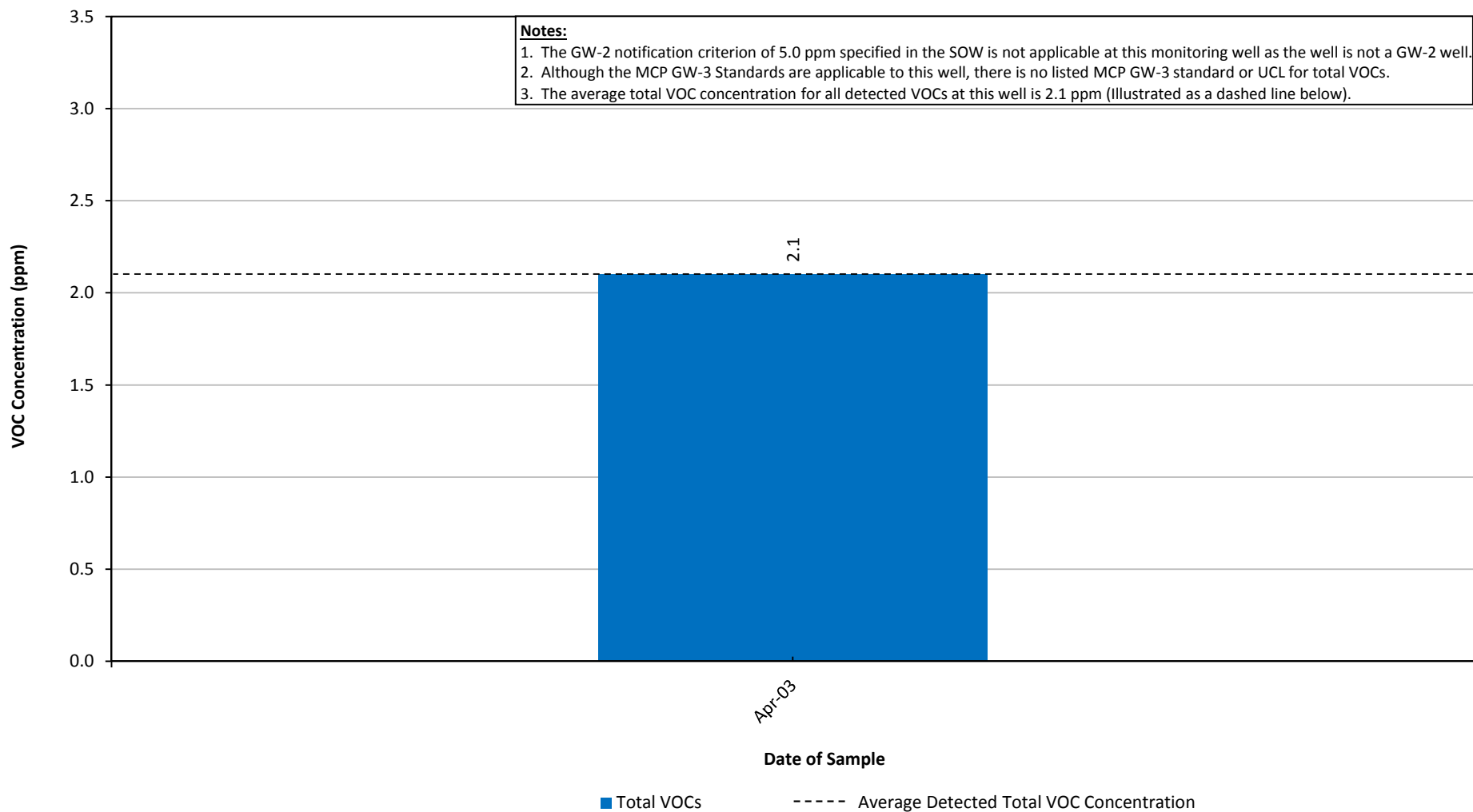
**Appendix E**  
**Well MW-6R Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



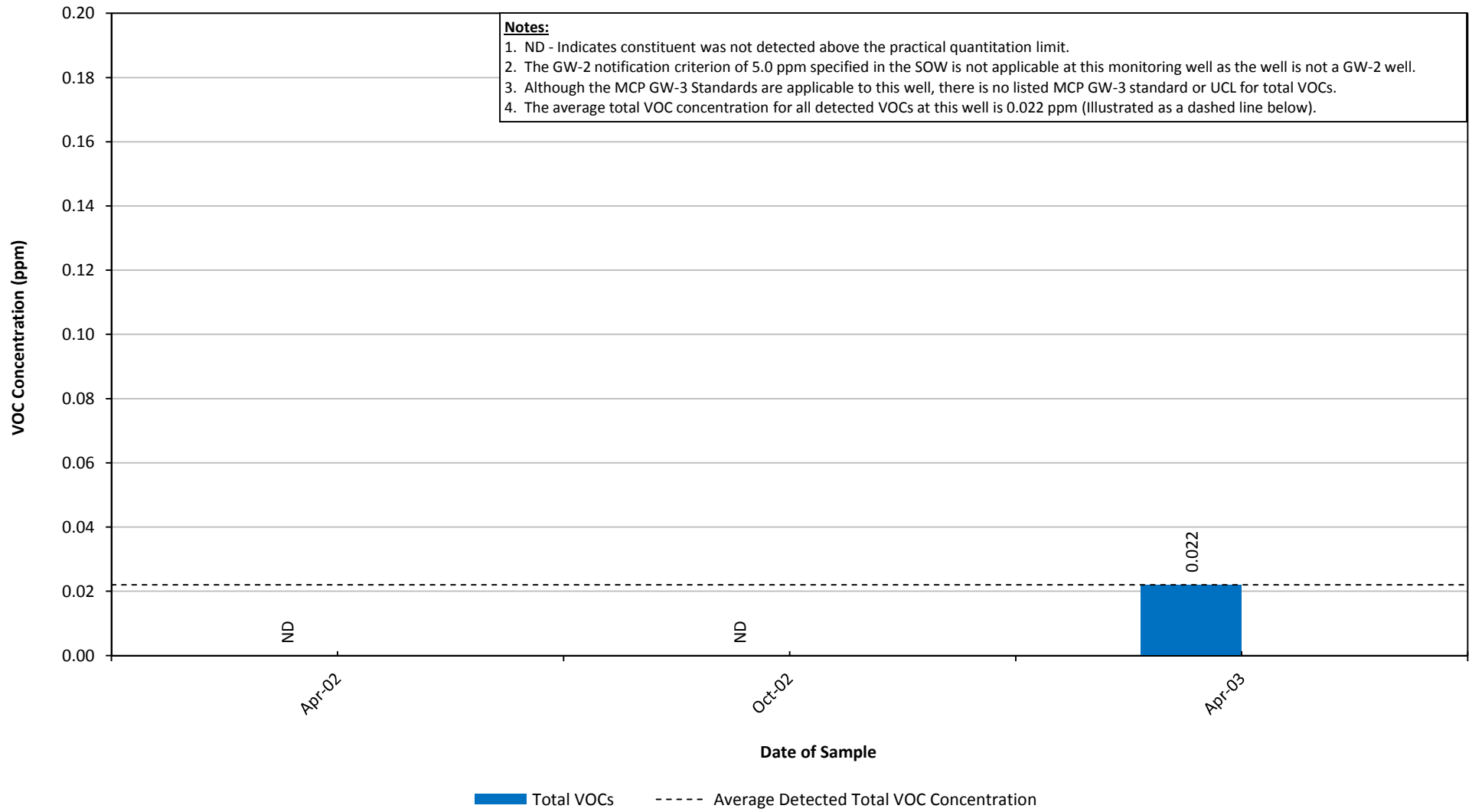
Appendix E  
Well LSSC-08I Historical Total VOC Concentrations

Groundwater Monitoring Program for GMA 1  
General Electric Company - Pittsfield, Massachusetts



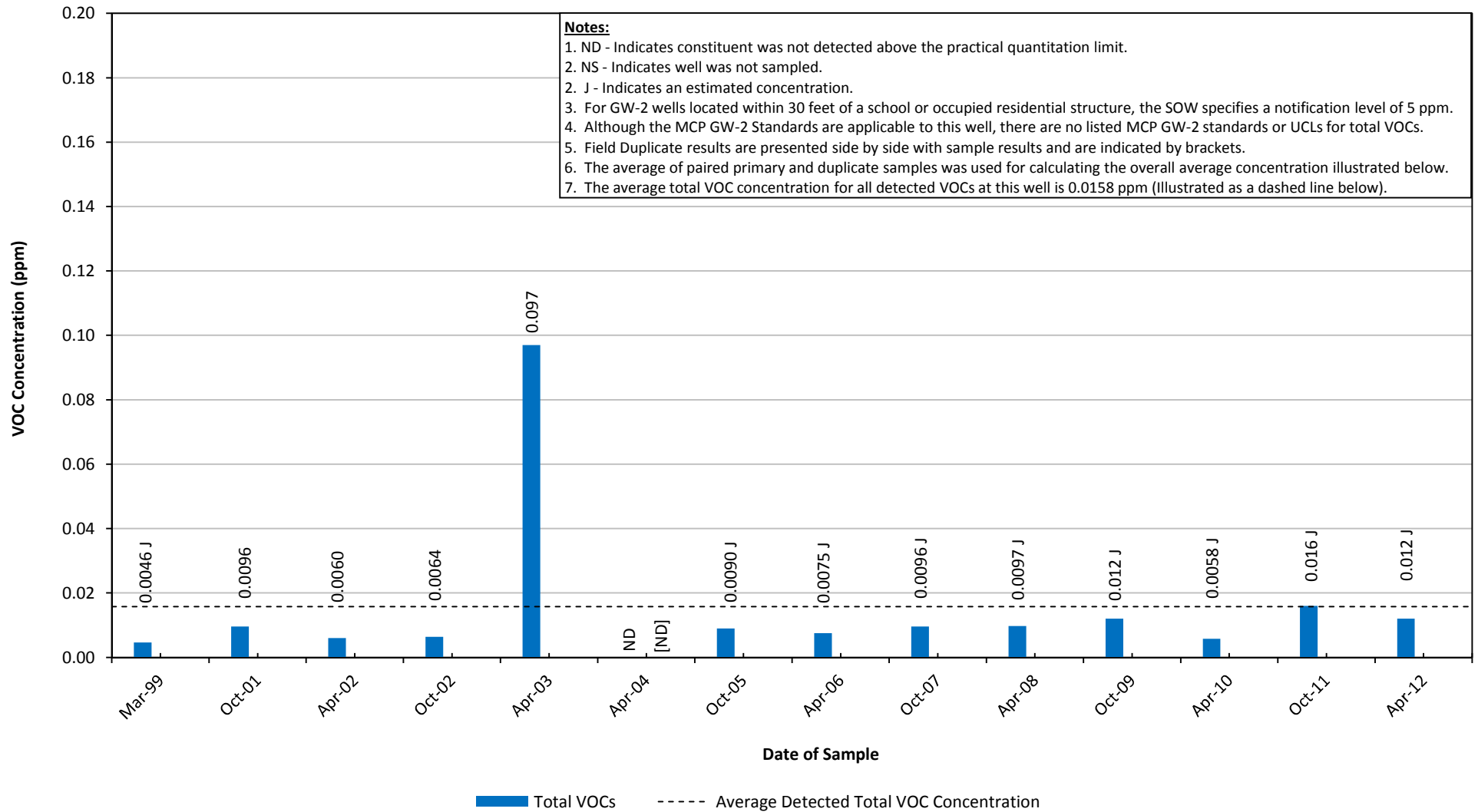
**Appendix E**  
**Well LSSC-08S Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



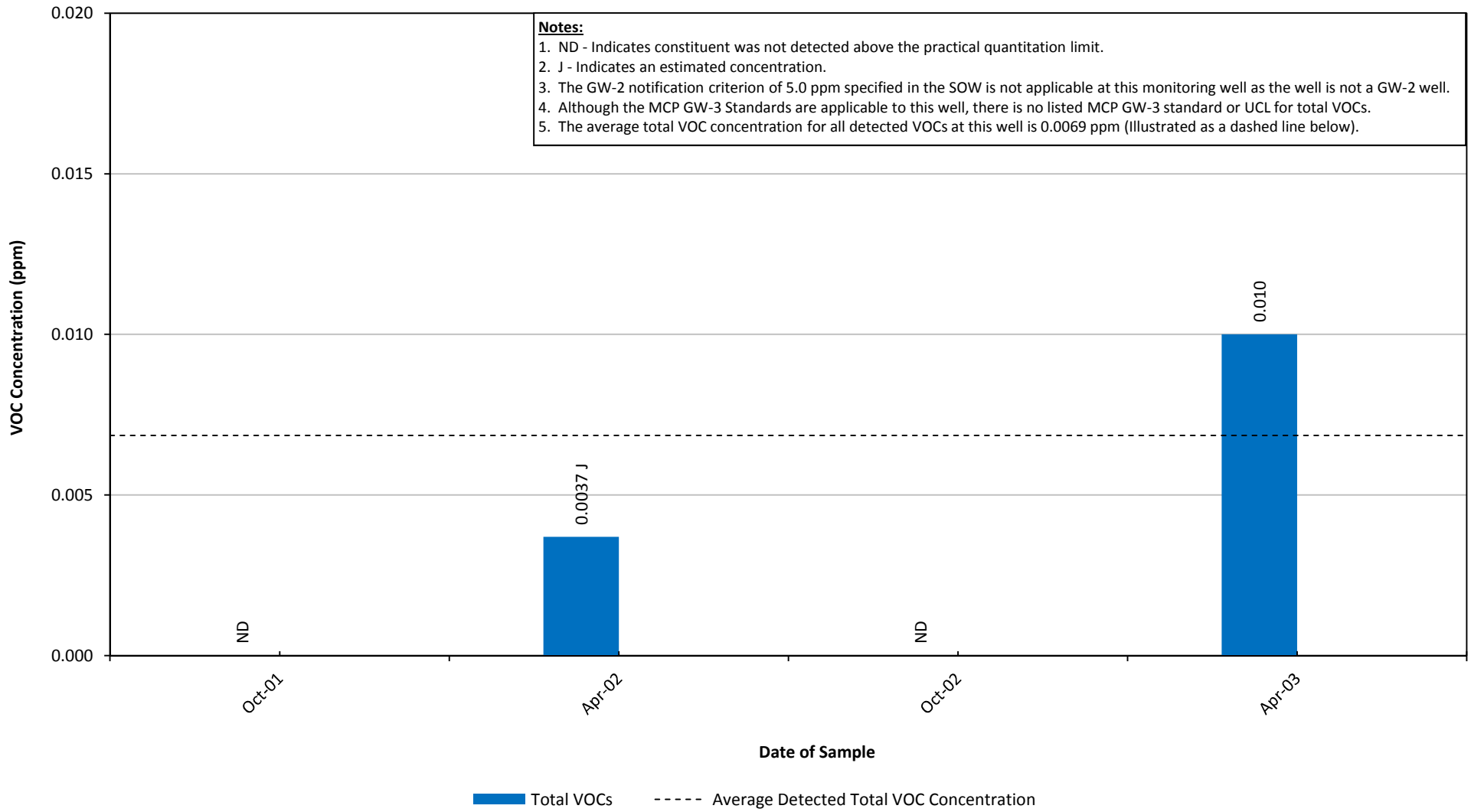
**Appendix E**  
**Well LSSC-16S Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



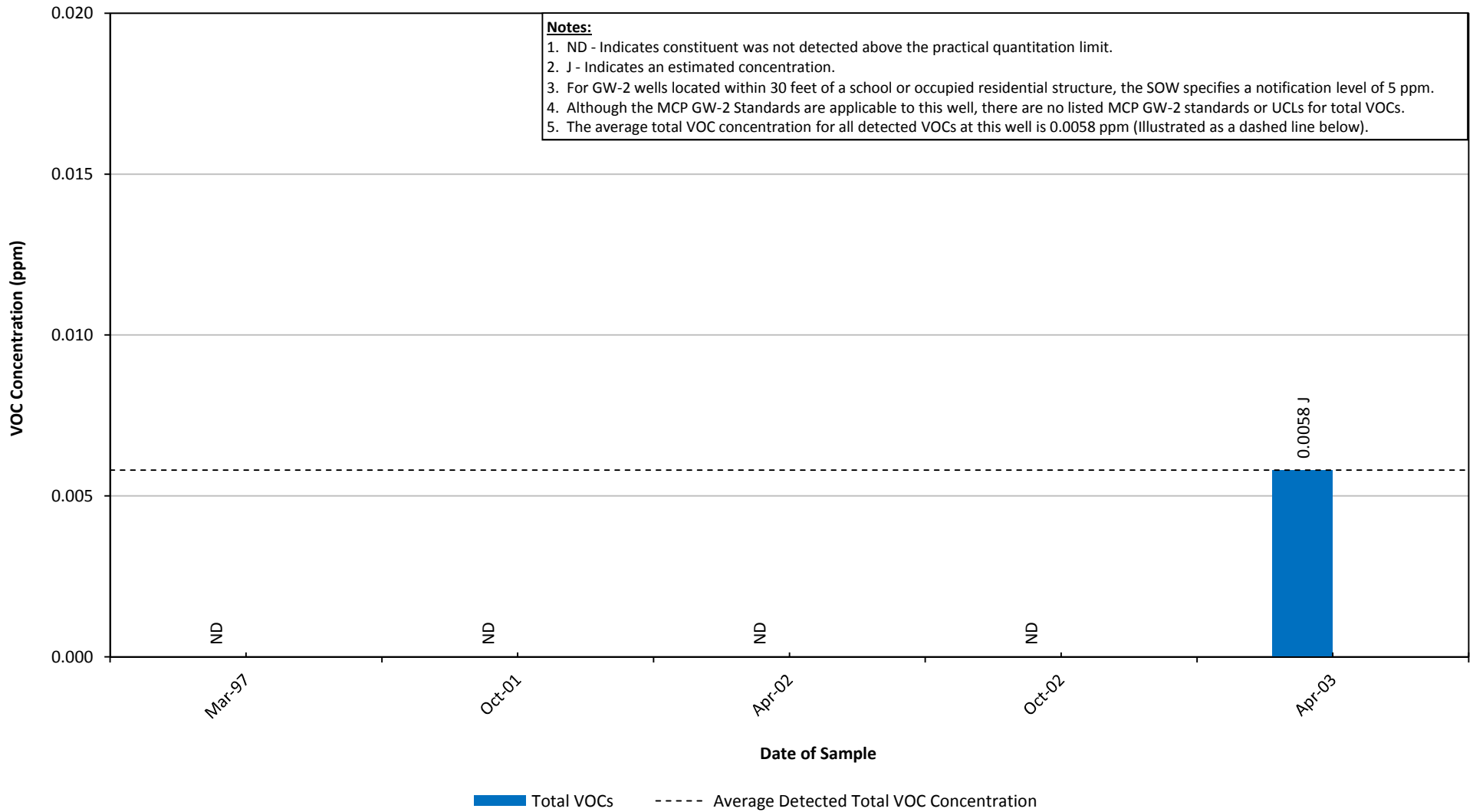
**Appendix E**  
**Well LSSC-18 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



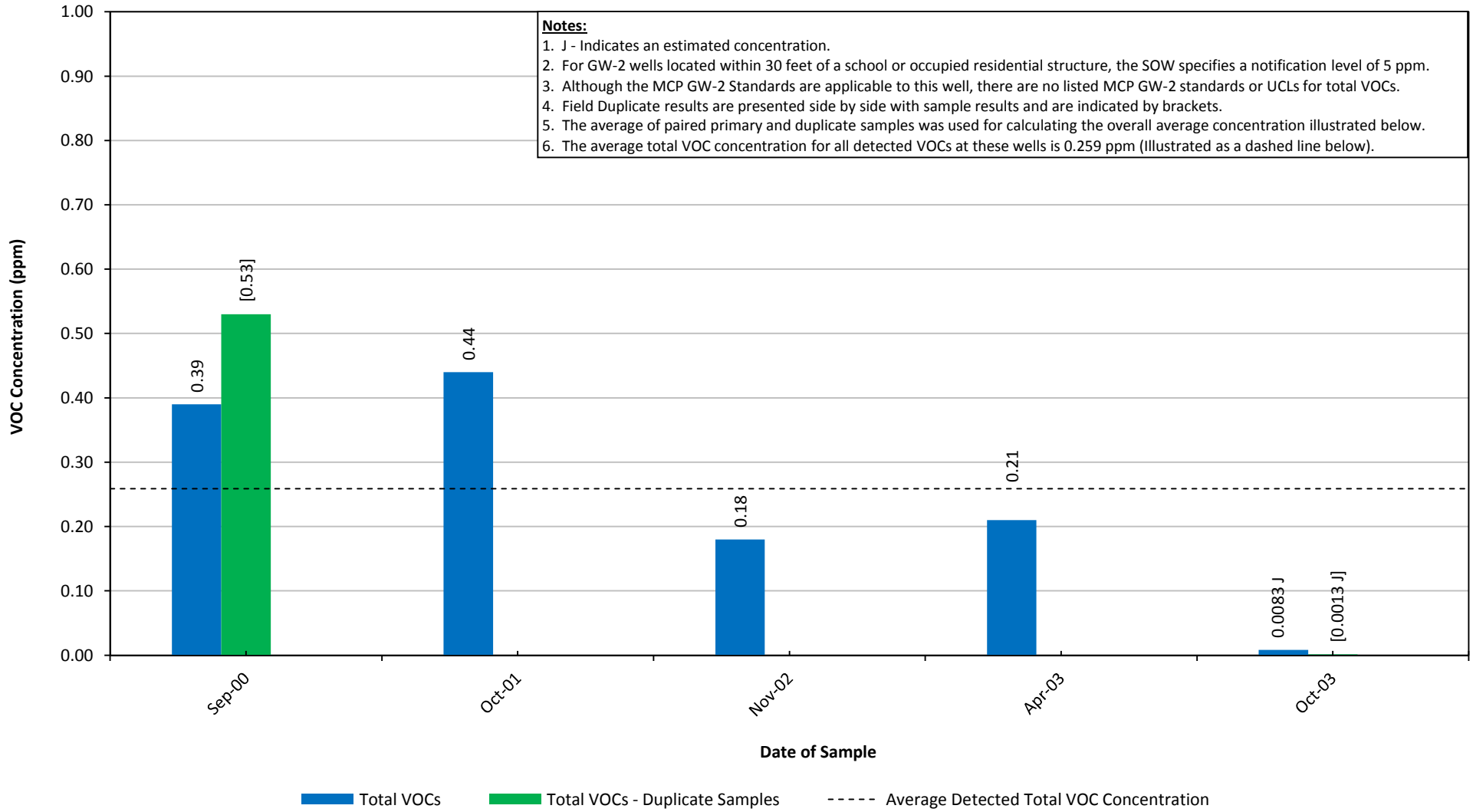
**Appendix E**  
**WeLL MM-1 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



**Appendix E**  
**Well MW-3 and MW-3R Historical Total VOC Concentrations**

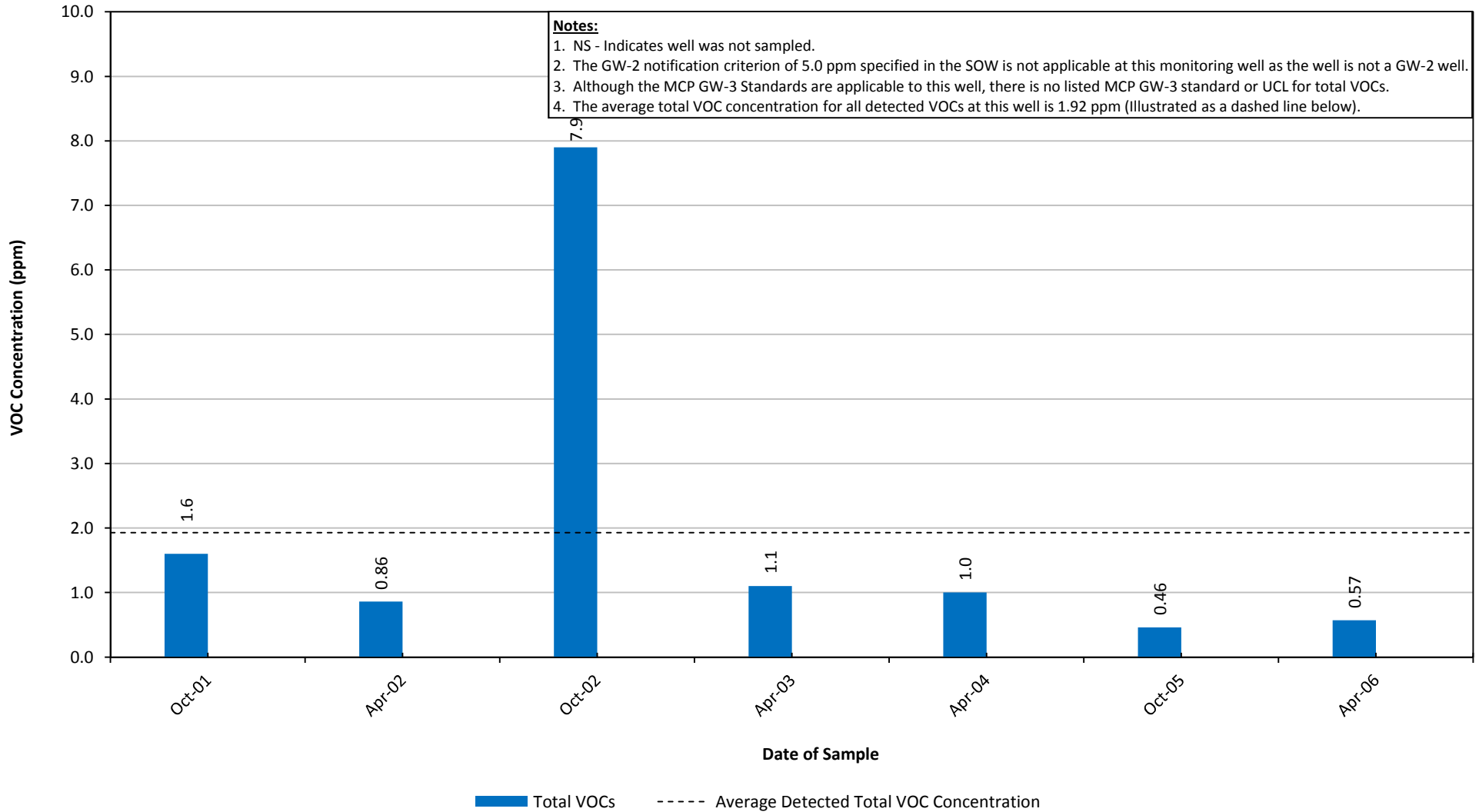
**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**





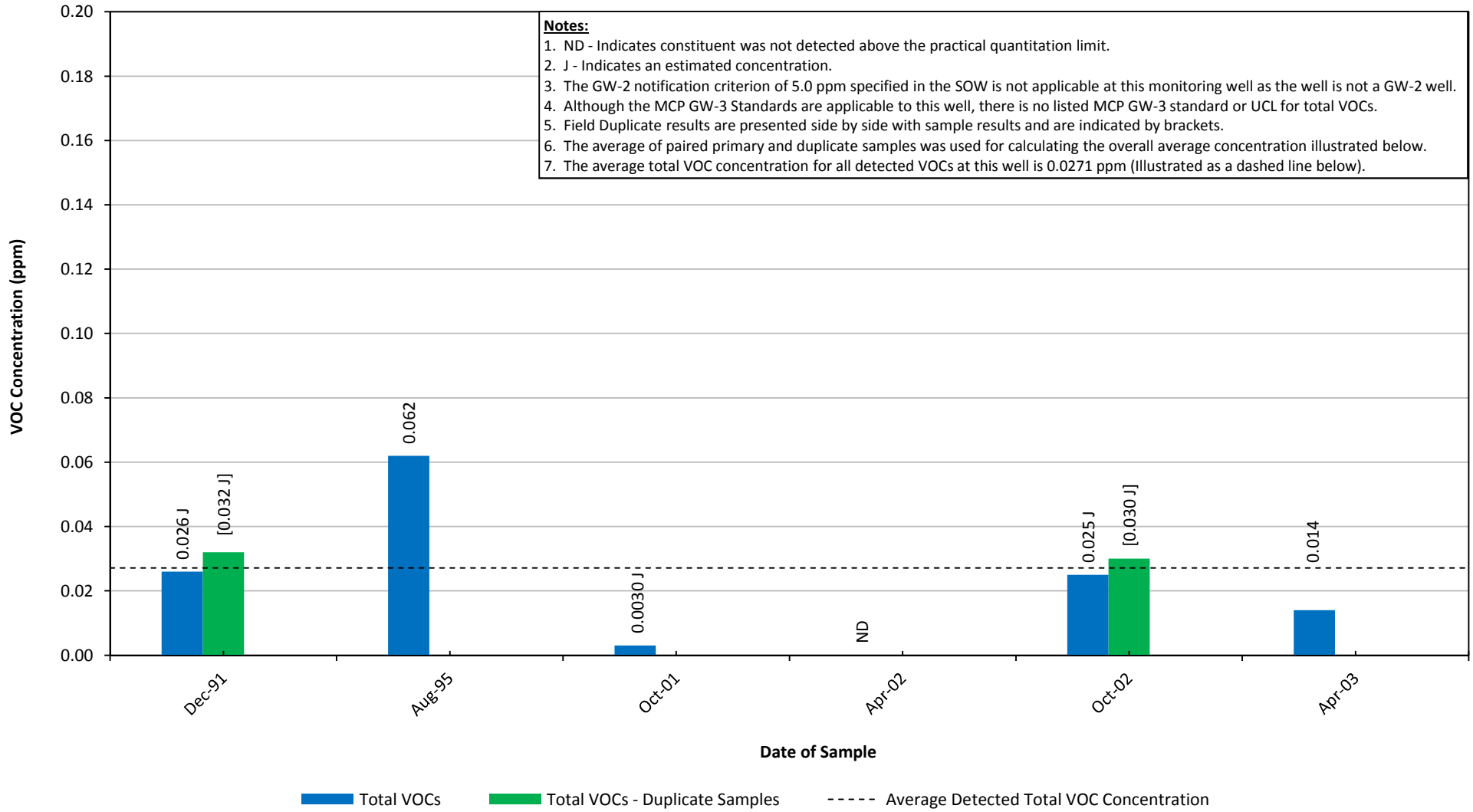
**Appendix E**  
**Well N2SC-07S Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



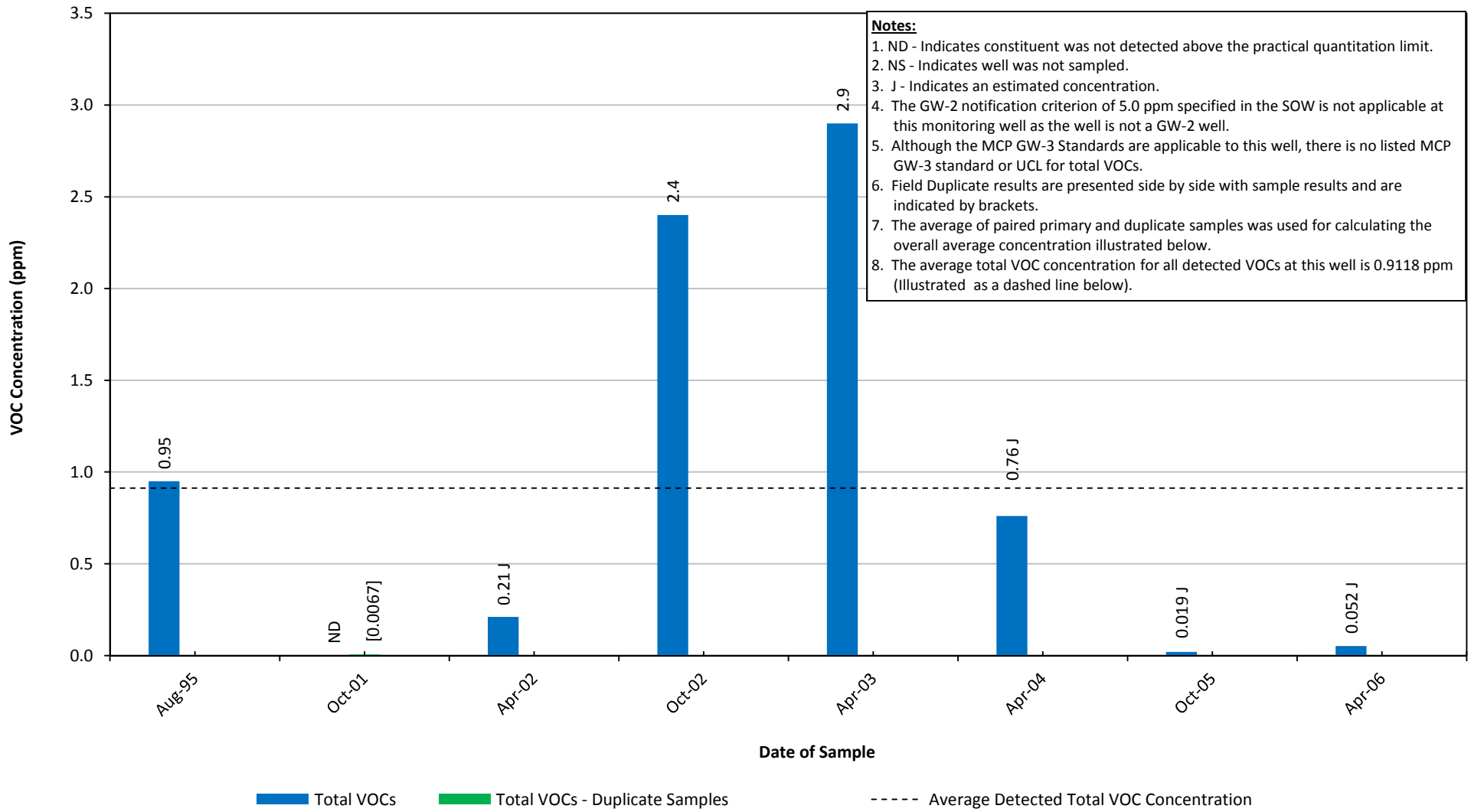
**Appendix E**  
**Well NS-09 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



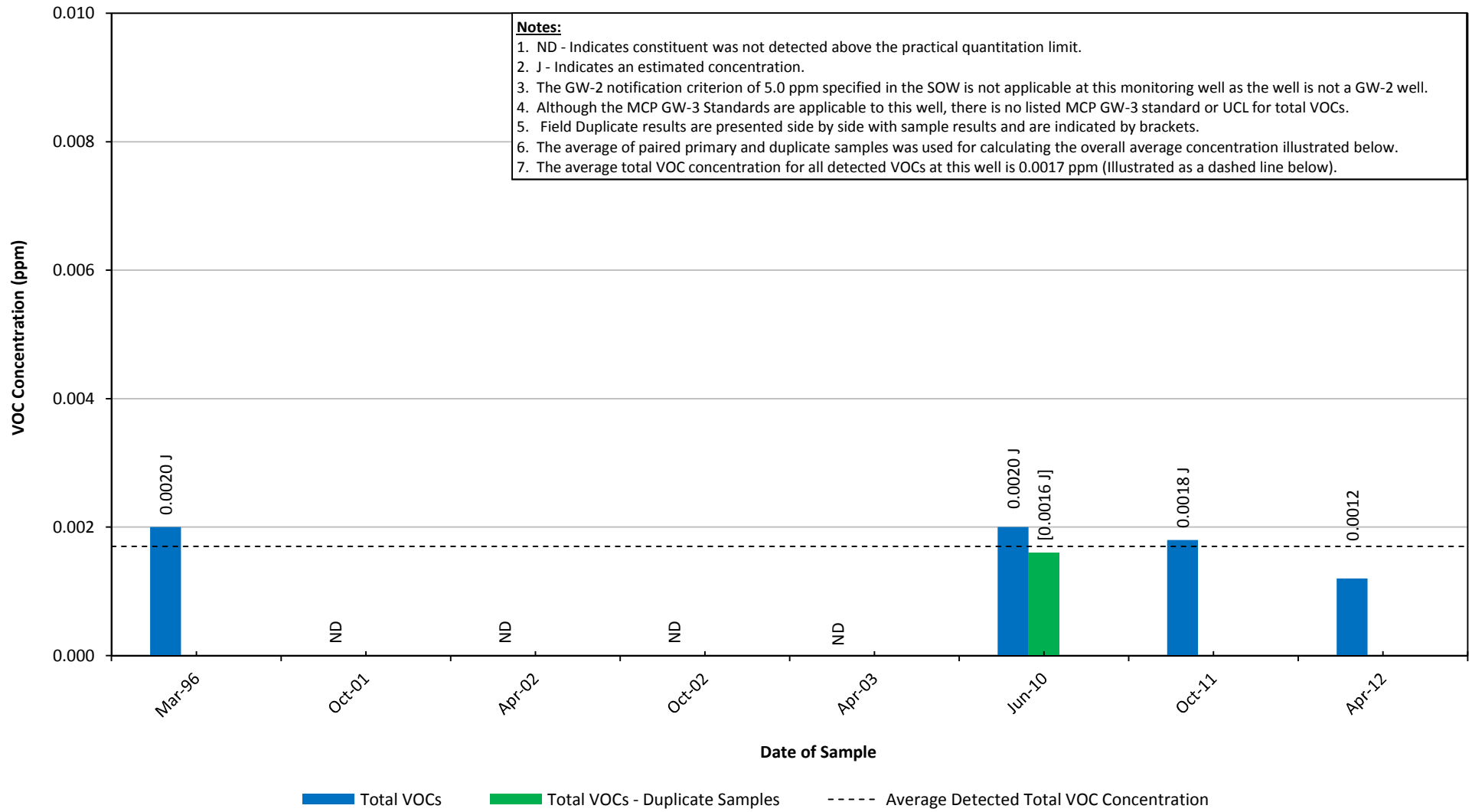
**Appendix E**  
**Well NS-17 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



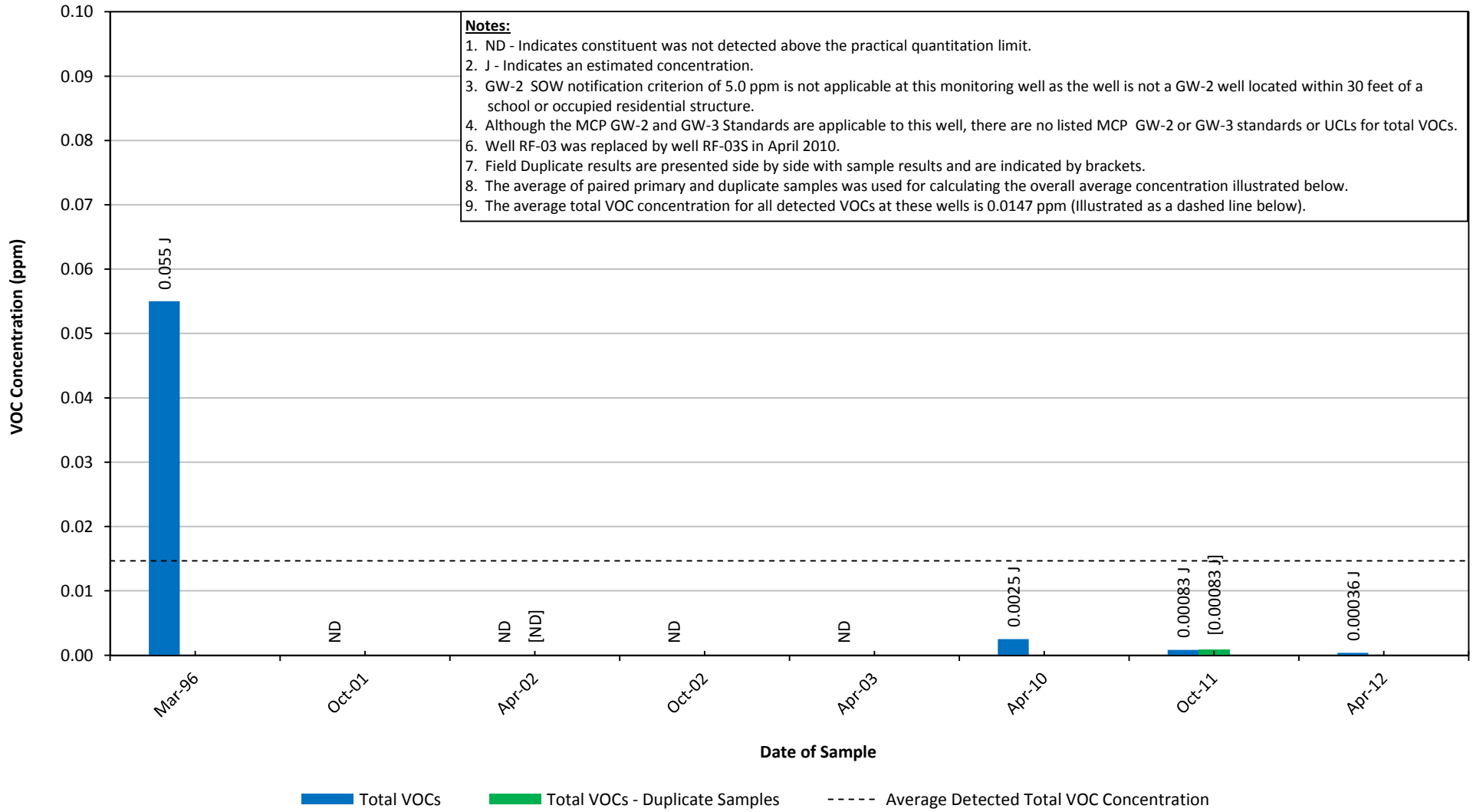
**Appendix E**  
**Well RF-02 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



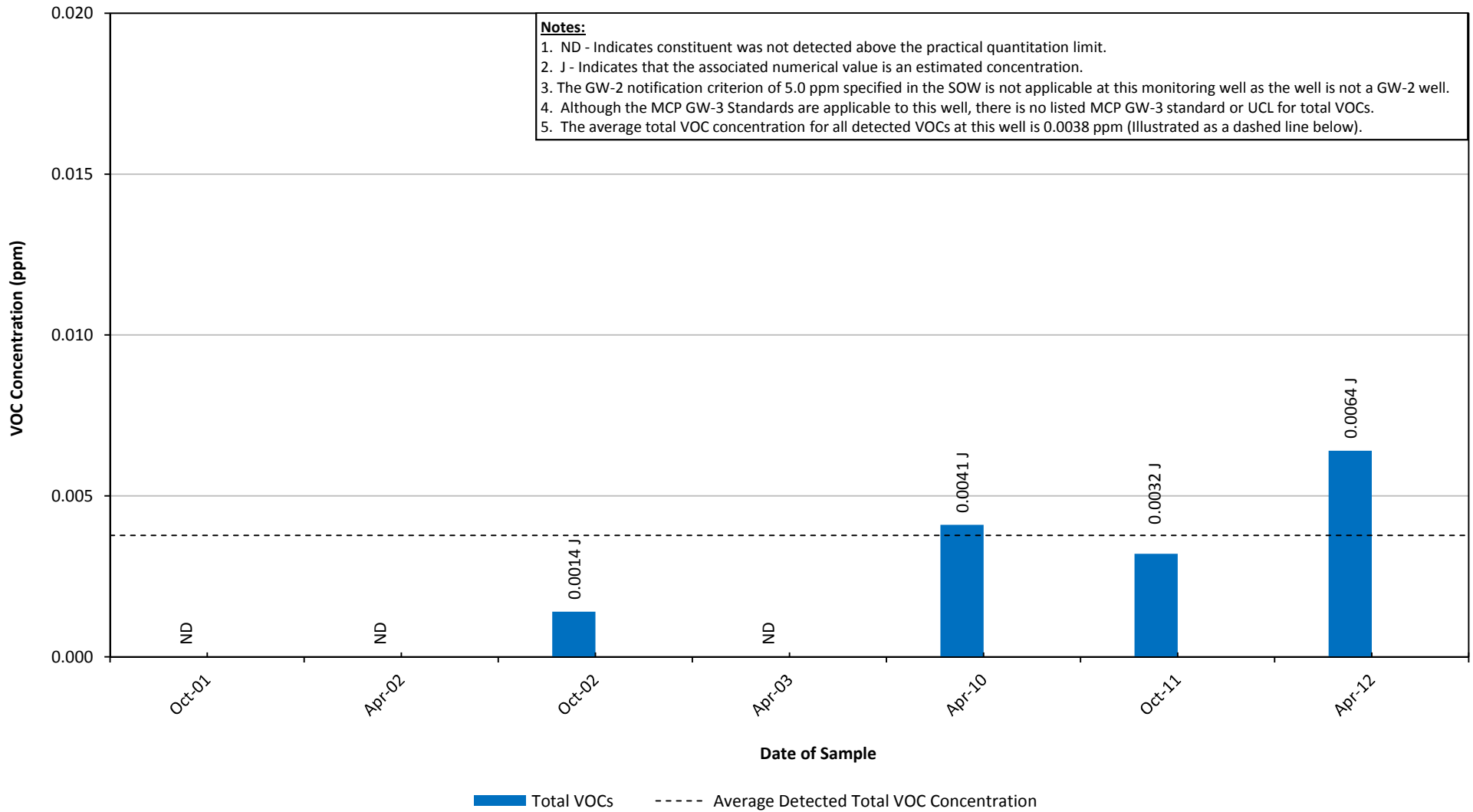
**Appendix E**  
**Well RF-03 and RF-03S Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



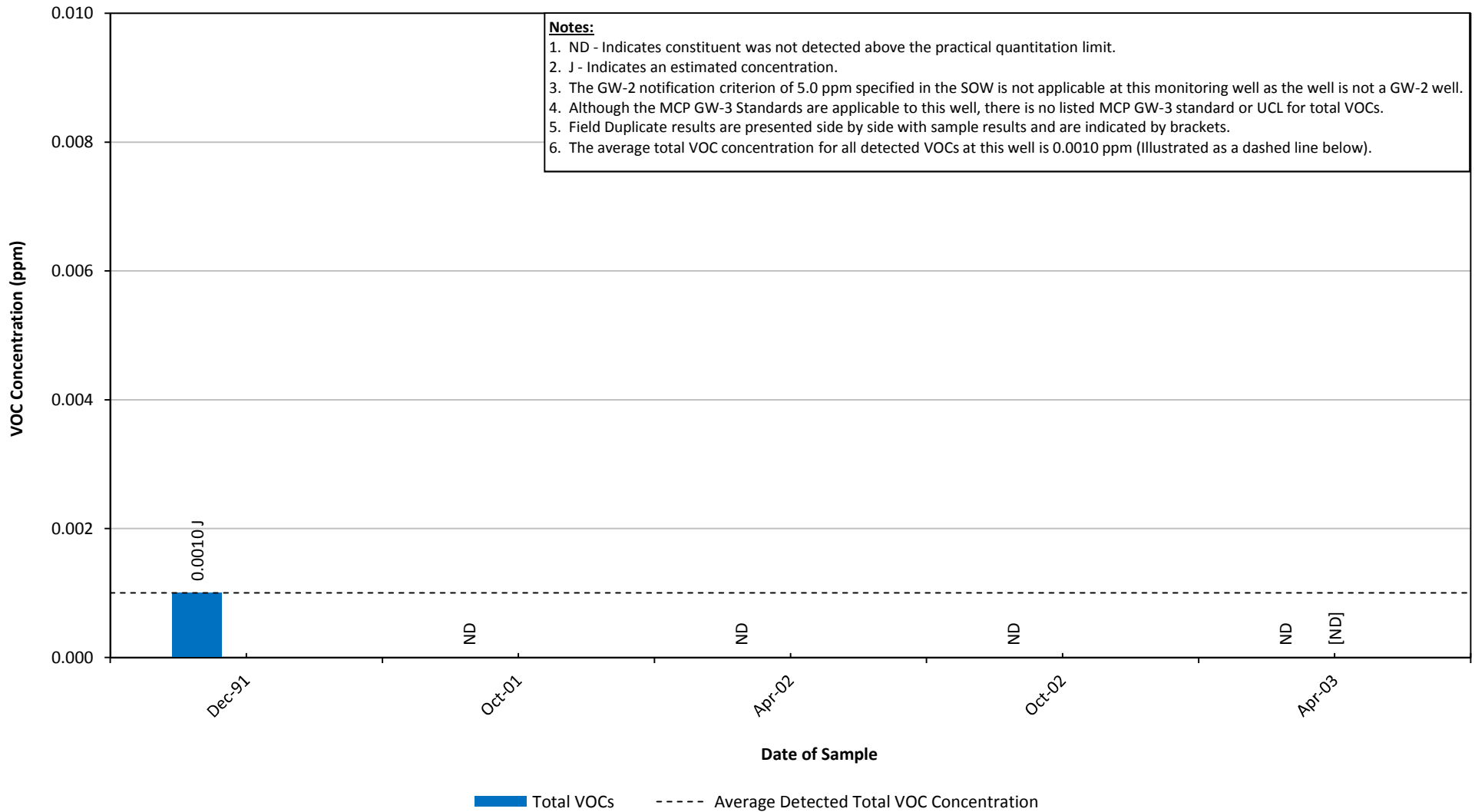
**Appendix E**  
**Well RF-03D Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



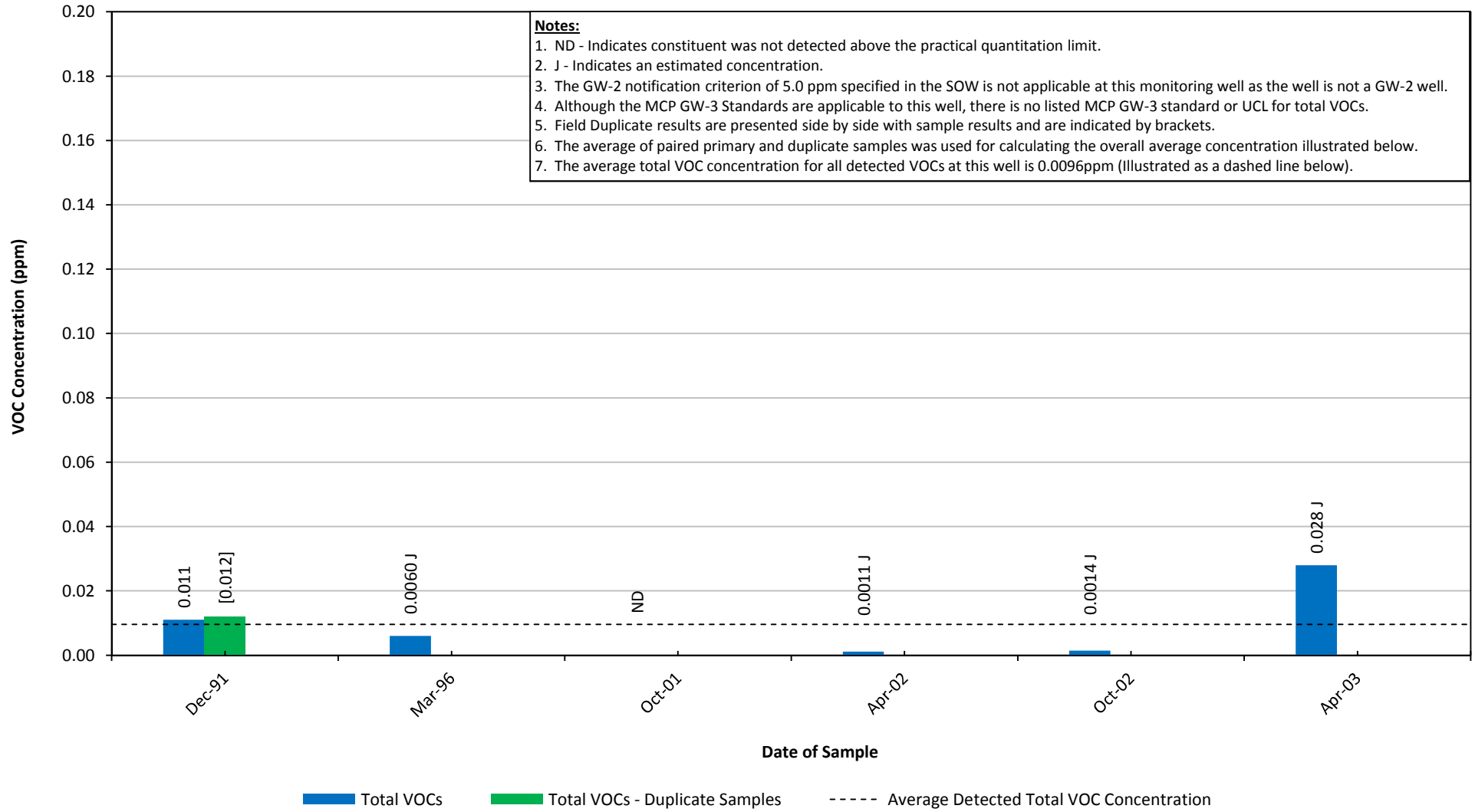
**Appendix E**  
**Well RF-04 Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**



**Appendix E**  
**Well RF-16 Historical Total VOC Concentrations**

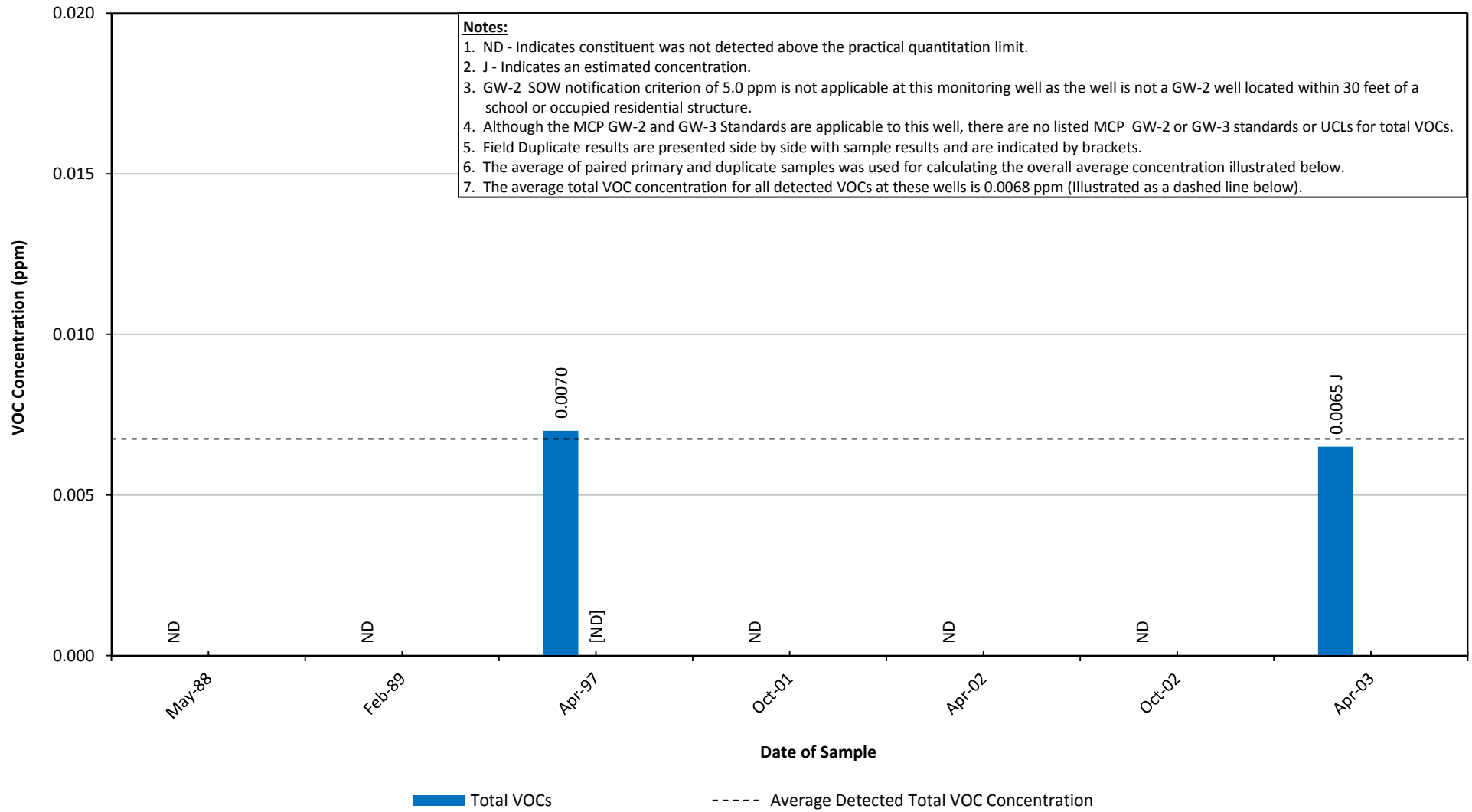
**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**





**Appendix E**  
**Well SZ-1 and SZ1-R Historical Total VOC Concentrations**

**Groundwater Monitoring Program for GMA 1**  
**General Electric Company - Pittsfield, Massachusetts**





**Appendix F**

Monitoring Results for Adjacent  
MCP Disposal Site



ROS Status Report

October 2012 to March 2013



**ROS STATUS REPORT  
OCTOBER 2012 TO MARCH 2013  
O'CONNELL MOBIL STATION  
730 EAST STREET  
PITTSFIELD, MASSACHUSETTS  
RTN 1-13347**

**WHERE BUSINESS AND THE ENVIRONMENT CONVERGE**

Prepared for:  
O'Connell Oil Associates, Inc.  
545 Merrill Road  
Pittsfield, MA 01201

Project No. J13632.20  
Document No. 41976  
April, 2013

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WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

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Mr. Richard Green  
Massachusetts Department  
Of Environmental Protection  
436 Dwight Street  
Springfield, MA 01103

April 4, 2013  
Project No. J13632.20  
Document No. 41976

RE: ROS Status Report  
October 2012 to March 2013  
O'Connell Mobil Station  
730 East Street  
Pittsfield, Massachusetts  
RTN 1-13347

Dear Mr. Green:

On behalf of O'Connell Oil Associates, Inc. (O'Connell), Environmental Compliance Services, Inc. (ECS) has prepared a Remedy Operation Status (ROS) Status Report for 730 East Street in Pittsfield, Massachusetts (the Site). A Site Locus is included as Figure 1. A Site Plan with system features, soil borings, monitoring well locations, and groundwater contours is included as Figure 2. A plan depicting the Disposal Site Area is provided as Figure 3.

The Potentially Responsible Party (PRP) and contact for the Site is:

O'Connell Oil Associates, Inc.  
545 Merrill Road  
Pittsfield, Massachusetts 01201  
Attn: Mr. James Sobon  
Phone: (413) 586-6800

The name and address of the Licensed Site Professional (LSP) of record for this Disposal Site is provided below. The transmittal form submitted in concert with this report is being submitted electronically bearing the signature and stamp of the LSP listed below.

Virginia Irvine, LSP #9687  
Environmental Compliance Services, Inc.  
588 Silver Street  
Agawam, MA 01001  
(413) 789-3530

## 1.0 SITE DESCRIPTION

The Site consists of 17,414 square feet of land and includes one building, currently utilized as a gasoline service station and convenience store, located on the southwest corner of the intersection of East and Lyman Streets in Pittsfield, Massachusetts. The Site is completely paved with the exception of a gravel parking area located south of the on-site building (Figure 2). Abutting properties are used for commercial and residential purposes.

Soils encountered during the soil borings performed at the Site consisted of a dark brown to dark tan, fine to medium sand with lesser amounts of silt observed in some borings. Bedrock was not encountered at the Site during the Phase II Comprehensive Site Assessment (Phase II CSA) field activities.

Groundwater is present at the Site at depths ranging from approximately 8 to 13 feet below grade (fbg). Groundwater flow direction fluctuates from south to southwest toward the East Branch of the Housatonic River located approximately 500 feet south of the Site. The average groundwater seepage velocity was determined to be 0.24 feet per day.

The closest surface water is Silver Lake located approximately 250 feet north of the Site.

The Massachusetts Contingency Plan (MCP) soil categories applicable to the Site are S-2 and S-3. Adult's frequency of use on the Site is characterized as high since workers are at the Site for eight or more hours per day on a continuing basis. Children's frequency of use is characterized as low since they are present at the Site only as infrequent visitors. Intensity of use is considered to be low since any Site activities are passive and do not have the potential to disturb soil. The impacted soil is considered to be "potentially accessible" from 0 to 15 feet fbg.

Potential receptors at the Site include: construction workers, which may be involved in future re-working or excavation of the Site; environmental consultants; adults who work at the Site; and/or customers at the convenience store/filling station.

The MCP Method 1 groundwater categories applicable to the Site are GW-2 and GW-3 based on shallow depth to water and discharge to surface water, respectively. GW-1 is not applicable because the Site is not located in a Potential or Current Drinking Water Source Area.

Based upon current use of the Site, the soil standards applicable to the Site are S-2/GW-2, S-2/GW-3, S-3/GW-2, and S-3/GW-3. Since no use restriction has been placed on the property, residential exposure scenarios exists under potential future use, and therefore soil categories S-1/GW-2 and S-1/GW-3 are also applicable to the Site for future use.

Current strategy for remediating soil and groundwater on the southeastern portion of the Site is the operation of a biosparge system and monitoring for monitored natural attenuation (MNA) parameters as a future viable remedial alternative. Current strategy for remediating soil and groundwater on the northwestern portion of the Site is MNA.

## 2.0 SITE HISTORY

The Site property has been used as a retail gasoline station since at least 1968 and was used as an automobile service station from approximately 1968 through 1986. During an investigation conducted for a previous waste oil underground storage tank (UST) release on the Site (RTN 1-10847), concentrations of volatile petroleum hydrocarbons (VPH) and volatile organic compounds (VOCs) in groundwater collected from wells located upgradient of the former waste oil UST exceeded the applicable reportable concentrations (RCs). The Massachusetts Department of Environmental Protection (MassDEP) assigned RTN 1-13347 to the new reportable condition. ECS submitted a Release Notification Form (RNF) to the MassDEP on March 10, 2000.

Two areas of historic soil and groundwater contamination have been identified at the Site. The first area is on the southeastern side of the Site property in an area which includes historic and current UST systems for the storage of gasoline and diesel fuel and the dispenser island for diesel fuel. The source of contamination in this area is due to unknown historic releases of petroleum from these UST systems or activities related to the dispensing of petroleum products. The second area of soil and groundwater contamination is located on the northwestern side of the Site property where a limited area of contaminated soil has been identified along with limited downgradient groundwater impact. The source of contamination on the northwestern portion of the Site is unknown but may represent releases of petroleum from the previous operation of an automobile service station and gasoline filling station from 1968 to 1986, prior to the purchase of the Site by O'Connell.

Phase I Initial Site Investigation (Phase I) activities were conducted at the Site in 2001. The data collected during the Phase I indicated that a release or releases of gasoline to groundwater had occurred at the Site resulting in concentrations of VPH in groundwater exceeding the RCs. Low levels of extractable petroleum hydrocarbons (EPH), and targeted polycyclic aromatic hydrocarbon (PAH) analytes were detected in the groundwater samples collected from monitoring wells ECS-2, ECS-3, ECS-4, and ECS-5; however, the concentrations detected did not exceed applicable RCGW-2 standards. The source of gasoline constituents in soil and groundwater appears to be the historical gasoline storage area in the eastern portion of the Site and the pump island in the northern portion of the Site. A Tier Classification Submittal was prepared for the Site and submitted concurrent with the Phase I Report. The Site was classified as Tier II.

A Phase II CSA and Phase III Remedial Action Plan (RAP) were completed for the Site by ECS in March 2003. Information obtained during Phase II investigations indicated that there were two potential source areas on the Site: the northwestern corner and the southeastern corner. Soil collected from a depth of 10 to 12 fbg in boring SB-2 on the northwestern corner of the Site property exceeded the S-1 soil standards in combination with GW-2 and GW-3 groundwater categories but not the applicable S-3 soil standards for C<sub>5</sub>-C<sub>8</sub> Aliphatics and C<sub>9</sub>-C<sub>10</sub> Aromatic VPH carbon fractions. Groundwater collected from well ECS-3, located in the southeastern portion of the Site, downgradient of the current gasoline and diesel USTs exceeded both the GW-2 and GW-3 standards for the C<sub>9</sub>-C<sub>10</sub> aromatic VPH carbon fraction. The current USTs, installed in 1984, are believed to be in the location of former USTs, which were installed in 1966 and removed in 1984. The Phase II determined that the average depth to groundwater is less than 15 feet; therefore, groundwater is a potential source of vapors to indoor air. In the past groundwater from monitoring wells located within 30 feet of the building (primarily ECS-2 and ECS-6) have had concentrations of VPH above GW-2 standards. Soil gas samples were collected on February 11, 2003 as

part of the Phase II from locations adjacent to the on-site building beneath paving (SG-1 through SG-4). No concentrations of total volatile organic vapors (TOVs) were detected above the detection limit of the photoionization detector (PID). Based on this data, it appears that it is unlikely that vapors from impacted groundwater will impact the indoor air of the on-site building.

Based on the results of the March 2003 Phase III RAP screening and analysis, the remedial action alternatives selected for the Site were the excavation and replacement of impacted soils (with dewatering if necessary), in conjunction with the implementation of an MNA program for the soil contamination on the northwestern corner of the Site and an MNA program for groundwater on the southeastern portion of the Site downgradient of the former and current diesel and gasoline USTs. A Phase IV Remedy Implementation Plan (RIP) detailing the implementation of the selected remediation alternatives was submitted in March 2004.

Based on groundwater analytical data collected in the fall of 2005, ECS determined that the MNA program detailed in the initial Phase IV RIP would not be sufficient to reduce dissolved-phase petroleum hydrocarbon concentrations in the southeastern portion of the Site, downgradient of the historic and current UST systems. Therefore, ECS submitted Phase III RAP and Phase IV RIP Addendums in August 2006, which presented a comprehensive plan for the implementation of an additional remedial alternative, biosparging for contamination in the southeastern portion of the Site with MNA as a future remedial option. On September 6 and 7, 2006 ECS personnel installed the trench system, laid ¼-inch diameter clear polyethylene tubing from the oxygen sparge wells to the area of the system enclosure, backfilled, compacted, and sealed the trench system, and configured the wellheads and connections. The manifold was installed on September 8, 2006. The biosparge system was activated on September 11, 2006 with all ten oxygen sparge legs in operation. A Phase IV Final Inspection Report and Completion Statement and a Phase IV As-Built Construction Report were submitted in September 2006 to present modifications to the construction of the active remedial system and document that the system had been constructed in accordance with the construction plans and appropriate modifications to such plans. An ROS Opinion was submitted to the MassDEP on March 7, 2007 approximately six months after the biosparging system start-up.

As specified in the March 2004 Phase IV RIP, subsurface investigations were performed in 2005 to delineate the horizontal and vertical extent of soil contamination in the northwestern portion of the Site. A soil-boring event conducted on May 19, 2005 was discussed in the Tier II Permit Extension Request (ECS, February 2006) and in the Phase III RAP Addendum (ECS, August 2006). The soil analytical results indicated that soil contamination is limited to a 12-foot area below the water table at a depth ranging from 10 to 16 fbg. Due to the limited area of contamination and location below the water table, ECS determined through cost-benefit analysis that excavation was not a feasible remedial alternative for soil contamination in the northwestern area of the Site thereby leaving the 2003 Phase III RAP and 2004 Phase IV RIP remedial alternative of MNA as the only remedial strategy for the northwestern area. Evidence that the MNA remedial strategy is effective in the northwest area of the Site was presented within the Revised ROS Opinion (ECS December 2007).

### **3.0 REMEDIAL SYSTEM DESCRIPTION**

The oxygen sparge system was activated on September 11, 2006 with all ten sparge legs in operation. The operation of the sparge wells was modified prior to the February 2009 sampling event in an attempt to concentrate the oxygen to the area of most impact (wells ECS-2 and ECS-3). Based on the fact that VPH



concentrations in groundwater from ECS-13, which is a deeper screened well (16 to 18 feet), were above Method 1 standards during the August sampling event, the system was modified to include AS-6 as a replacement for AS-7 in September 2009. A leak was detected at AS-5 and the sparge point was shut-off following the December 23, 2009 site visit. The sparge point (AS-5) was repaired on June 29, 2010 and put into operation on July 20, 2010. Two additional sparge points, AS-11 and AS-12, were installed in July 2012.

During this reporting period (October 2012 to March 2013), ECS personnel conducted site visits to complete required system operation, monitoring, and maintenance (OMM) on September 17, 2012, September 26, October 11, October 25, November 1, November 15, December 6, December 20, 2012, January 17, 2013, February 7, February 20, and March 7, 2013. System data is included in Table 1. Gauging and geochemical monitoring data associated with Site visits are provided in Table 2. Field notes are provided in Attachment I.

From September 17, 2012 until March 3, 2013, sparge wells AS-1, AS-2, AS-7, AS-8, AS-9 and AS-10 were closed and sparge wells AS-3, AS-4, AS-5, AS-6, AS-11, and AS-12 were operational. During this reporting period, oxygen flow rates measured to the oxygen sparge wells were 4 cubic feet per hour (cfh) during active sparging. Pressures measured in the oxygen sparge wells ranged from 2 pounds per square inch (psi) to 18 psi.

#### **4.0 GROUNDWATER MONITORING PROGRAM AND RESULTS**

As stated in the Phase IV Remedy Implementation Plan (RIP)(March 2004) and as revised in the Phase IV RIP Addendum (August 2006), groundwater monitoring is to be performed on a semiannual basis at select wells to evaluate the effectiveness of the remedial strategy in reducing dissolved-phase petroleum hydrocarbons to levels that pose No Significant Risk. The monitoring plan as written in the 2004 RIP is provided as Table II in Attachment II. The revised sampling program, as recommended in the 2006 RIP Addendum and currently in place, is provided as Table II-A. Groundwater is gauged and sampled for VPH and monitored for natural attenuation (MNA) parameters at select monitoring wells located upgradient, in the vicinity of, and downgradient of the former source areas and existing remedial well network. Samples were collected at ECS-2 and ECS-12 in 2011 and 2012 for analysis of Extractable Petroleum Hydrocarbons (EPH) to evaluate whether a spike in the concentrations of VPH observed at ECS-2 in 2011 could be related to the diesel UST at the Site. Since EPH Fractions and Target Analytes were not detected at concentrations greater than the Method 1 GW-2 or GW-3 Standards, samples were not collected in February 2013 for EPH analysis.

##### **4.1 Groundwater Monitoring Methodologies**

Sampling Dates:	February 20, 2013
Sample Method:	Low flow sampling
Laboratory Analysis:	VPH and select wells for nitrate, sulfate, and dissolved iron
Field Measurements:	Temperature, specific conductivity, DO, pH and ORP
Laboratory:	Spectrum Analytical of Agawam, Massachusetts
Sampling points planned:	8
Number of wells gauged:	10
Number of wells sampled:	7

Completeness:	87.5%
Depth to Groundwater:	10.55 feet below grade at ECS-9 to 12.48 feet below grade at ECS-5.
Wells sampled:	ECS-1, ECS-2, ECS-5, ECS-6, ECS-9, ECS-11, and ECS-12
Comments:	Duplicate sample collected at ECS-2; ECS-3 could not be sampled because of snow coverage.

The sampling logs for the sampling event are included as Attachment III. The Laboratory Certificates of Analysis are included as Attachment IV. A summary of historical groundwater gauging and geochemical values is presented in Table 2. A summary of historical groundwater sampling VPH results is presented in Table 3.

#### 4.2 Groundwater Gauging Results

Figure 2 provides groundwater contours based upon gauging data collected on that date. Groundwater elevations calculated from this gauging data suggest that groundwater flow is predominantly toward the southwest across the Site.

#### 4.3 Groundwater Sampling Results

All concentrations of VPH fractions and Target Analytes reported for the February 2013 samples were below Method 1 GW-2 and GW-3 Standards. These data are summarized on Table 3.

#### 4.4 Evaluation of Groundwater Results for the Southeastern Plume

The remedial method in the Southeastern Site Area is oxygen sparging with secondary MNA.

##### 4.4.1 VPH Concentrations and Groundwater Elevations

Charts 1 through 3 depict the total VPH Fractions and BTEX concentrations (as general indicators of groundwater quality) and groundwater elevations at ECS-2, ECS-3, and ECS-13 versus time from September 2005 through February 2013. Since the restart of the system in 2008, the concentrations of VPH fractions and BTEX have exhibited an overall decreasing trend. A correlation analysis of groundwater elevation and Total VPH Fractions concentrations at these three wells since the system was restarted (May 2008) did not indicate a significant correlation between these data (ranging from -0.12 to 0.23).

##### 4.4.2 ASTM Evaluation of Plume Stability in the Biosparge Area

In order to characterize the dissolved contaminant plume, the natural log of concentrations of total VPH carbon fractions versus time was plotted for three wells (ECS-2, ECS-3, and ECS-13) on Chart 4. The linear regression analysis for the best fit line for each well is depicted. A plume will become stable when the rate of gasoline contamination mass removal through natural attenuation equals the mass of gasoline contamination entering the plume. The plume will shrink when the rate of VPH carbons

fraction removal through natural attenuation is greater than the mass entering the plume. In all three wells concentrations of VPH in groundwater have remained stable, approaching zero since 2005.

Downgradient well ECS-9 was sampled on February 20, 2013 and analysis of the sample did not detect VPH fractions or target analytes at concentration above the reportable detection limits (RDLs). Based upon this information the plume appears to be stable or shrinking, providing primary evidence of attenuation of petroleum hydrocarbons.

#### 4.4.3 Analysis of Oxygen Sparging

The dissolved oxygen concentrations are measured in the wells within the influence of the oxygen sparge system (ECS-2, ECS-3, ECS-12, and ECS-13) during OMM events. Dissolved oxygen concentrations at monitoring wells ECS-4 and ECS-8, located within the contaminant plume and downgradient of the sparge area are also measured to provide data for this downgradient region of the aquifer.

Maximum DO Concentration Measured:	7.03 mg/L (ECS-13, December 20, 2012)
Minimum DO Concentration Measured:	0.17 mg/L (ECS-12, September 17, 2012)
Average DO Concentration:	1.72 mg/L

Sparge points AS-11 and AS-12 were installed to address the low concentrations of dissolved oxygen in the aquifer surrounding ECS-12 and ECS-2, respectively. Though concentrations of dissolved oxygen have averaged greater than 1.0 mg/L during this reporting period at ECS-2, the average dissolved oxygen concentration at ECS-12 has remained below 1.0 mg/L. An increase in the frequency of OMM visits from biweekly to weekly is recommended so that oxygen supply to the aquifer is more consistent with and so that periods of shutdown are shorter.

Concentrations of total VPH carbon fractions in groundwater from wells ECS-2, ECS-3, and ECS-13 were plotted against dissolved oxygen as a function of time in Charts 5 through 7, respectively. The trend of the data collected from these wells during groundwater monitoring events from September 2005 through August 2012 generally indicates a very slight inverse correlation between the dissolved oxygen concentration and VPH fractions.

#### 4.4.4 Discussion of Contaminant Isopleths

Since ECS-3 and ECS-13 were inaccessible during the February 2013 sampling event, and because only select wells are sampled during the winter sampling event, an isopleth was not generated for the February 2013 data.

#### 4.5 Evaluation of Groundwater Results in the Northwestern Plume

The sole remedial method in the northwestern portion of the Site is MNA.

##### 4.5.1 BTEX Concentrations and Groundwater Elevations

Charts 8 and 9 depict the total VPH Fractions and BTEX concentrations (as general indicators of groundwater quality) and groundwater elevations at ECS-5 and ECS-6 versus time from September 2005 through February 2013. The concentrations of BTEX reported in samples collected at wells ECS-5 have remained stable over the past four reporting periods. The concentrations of VPH Fractions have exhibited an overall decreasing trend during the past four sampling events. Concentrations of VPH fractions and BTEX have fluctuated somewhat at ECS-6. An overall decreasing trend has been observed in the concentrations of VPH fractions at ECS-6 during the past four sampling events. BTEX concentrations at ECS-6 have increased somewhat over the past four sampling events, but the concentrations have been below applicable Method 1 Standards.

A correlation analysis of groundwater elevation and Total VPH Fractions concentrations at these wells indicates a moderate positive correlation at ECS-5 (0.55) and insignificant low positive correlation at ECS-6 (0.18). BTEX and groundwater elevation are insignificantly correlative (0.13 and 0.16, respectively).

##### 4.5.2 ASTM Evaluation of Plume Stability in the Biosparge Area

In order to characterize the dissolved contaminant plume, the natural log of concentrations of total BTEX versus time was plotted for two wells (ECS-5 and ECS-6) on Chart 10. The linear regression analysis for the best fit line for each well is depicted.

In both wells concentrations of BTEX in groundwater have approached zero since 2005 with a decreasing trend indicating a stable and shrinking plume.

##### 4.5.3 Discussion of Contaminant Isopleths

Because only select wells are sampled during the winter sampling event, an isopleth was not generated for the February 2013 data.

#### 4.6 Evaluation of MNA

##### 4.6.1 General Geochemical Parameters Discussion

Selected monitoring wells at the Site are gauged for depth to groundwater, and geochemical monitoring, including temperature, pH, dissolved oxygen, and oxidation reduction potential, on an approximately semimonthly schedule, and during regularly scheduled groundwater sampling events, where specific conductivity is also collected. Groundwater samples from selected wells are collected during each sampling event for geochemical quantitative analysis of dissolved iron, nitrate, and sulfate. Geochemical data is presented in Table 2.

Samples were collected and analyzed for dissolved iron, nitrate, and sulfate from wells ECS-1 (upgradient well), ECS-2 (downgradient), ECS-6 (west of building), ECS-5 (upgradient of northwest plume), ECS-9 (downgradient), and ECS-12 (upgradient/crossgradient of current USTs) during the February 2013 groundwater sampling event.

#### 4.6.2 Evaluation of MNA in the Biosparge System Area

Dissolved Oxygen:	Ranged from 0.17 mg/L at ECS-12 to 7.03 mg/L at ECS-13
Nitrate:	Not detected at ECS-2 and ECS-12 (<0.100 mg/L); maximum concentration 3.42 mg/L at ECS-1
Dissolved Iron:	Not detected at ECS-1 (<0.0300 mg/L) to 5.57 mg/L at ECS-12
Sulfate:	Ranged from 8.63 mg/L at ECS-12 to 29.6 mg/L at ECS-1

The concentrations of dissolved oxygen are discussed in Section 4.4.3 the discussion of the oxygen sparging system results.

The absence of nitrate in groundwater at well ECS-2 and ECS-12 implies that microbial processes involving anaerobic nitrate reducing bacteria may still be occurring in groundwater at this area of the Site. New sparge points (AS-11 and AS-12) were installed in the area of ECS-12 and ECS-2 to increase oxygen flow to this region of the aquifer.

Iron reduction is most likely not occurring in the area of ECS-1 due to the absence of petroleum hydrocarbons in this region of the aquifer. Iron-reducing bacteria may be active in the areas of ECS-2 and ECS-12, where effectiveness of the sparge points was declining.

The presence of sulfate concentrations in groundwater at monitoring wells within the sparge network suggests that microbial degradation of petroleum hydrocarbons is not occurring via sulfate-reducing processes.

Total VPH Fractions concentrations, dissolved oxygen, dissolved iron, sulfate and nitrate concentrations at ECS-1, ECS-11, ECS-12, and ECS-2 (February 2013) are plotted versus approximate distance from the source area on Chart 11. The chart demonstrates that concentrations of VPH increase slightly within the sparge network. Nitrate concentrations decrease and dissolved iron concentrations increase in the area of ECS-2 and ECS-12. This may be attributable to inconsistent sparging of oxygen. During the next reporting period, the frequency of OMM events at the Site will be increased to weekly to assist in providing a more consistent supply of oxygen in the aquifer surrounding ECS-2 and ECS-12.

#### 4.6.3 Evaluation of MNA in the Northwest Plume

##### *Northwest Plume*

Dissolved Oxygen:	Ranged from 0.70 mg/L at ECS-9 to 2.01 at ECS-5
Nitrate:	Not detected at ECS-9 (<0.100 mg/L); maximum concentration 2.39 mg/L at ECS-5
Dissolved Iron:	Ranged from 0.530 mg/L at ECS-5 to 13.9 mg/L at ECS-9

Sulfate: Ranged from 6.49 mg/L at ECS-9 to 27.2 at ECS-5

Concentrations of dissolved oxygen were measured to be less than 1 mg/L at ECS-9 during this reporting period.

The absence of detectable concentrations of nitrate in groundwater at well ECS-9 implies that microbial processes involving anaerobic nitrate reducing bacteria may have occurred in groundwater at these areas of the Site; however, the concentrations of nitrate in other wells at the Site have historically been <5 mg/L. Nitrate concentrations may be naturally low at the Site and not be related to nitrate-reducing activity.

The concentrations of dissolved iron at ECS-6 have decreased since 2008. Concentrations of dissolved iron have increased over the past two years at ECS-9, suggesting that the microbial degradation processes may have occurred via iron-reducing mechanisms.

Concentrations of sulfate were lower at downgradient well ECS-9 compared to ECS-5 and ECS-6. The presence of sulfate concentrations in groundwater at monitoring wells located upgradient of and in center of the northwest plume suggests that microbial degradation of petroleum hydrocarbons is not occurring via sulfate-reducing processes in these areas of the plume, but may be occurring in the downgradient region of the aquifer. The presence of sulfate at detectable concentrations at these three locations suggests that microbial degradation of petroleum hydrocarbons via sulfate-reducing processes are slowing or are not the preferred degradation mechanism since other electron receptors are available in the aquifer.

Total VPH Fractions concentrations, dissolved oxygen, dissolved iron, sulfate and nitrate concentrations at ECS-5, ECS-6, and ECS-9 (February 2013) are plotted versus approximate distance from the source area on Chart 12. The chart demonstrates that concentrations of VPH decline with distance from the source. Near ECS-9, nitrate-, sulfate-, and iron-reducing activities are occurring resulting in lower concentrations of nitrate and sulfate and higher concentrations of dissolved iron. Dissolved oxygen concentrations decline in the vicinity of the source area, and remain below 1.0 mg/L downgradient of the source area.

## 5.0 ADDITIONAL FIELD ACTIVITIES

Soil gas screening with a Photoionization Detector (PID) is conducted at sub-slab soil gas point SG-5, located within the office of the Site building, during regular OMM events. Total Organic Vapors (TOV) were not detected at levels greater than the PID instrument detection limit of 0.1 parts per million by volume (ppmV).

A sub-slab soil gas sample was collected at SG-5 since VPH fractions had been detected at concentrations greater than Method 1 GW-2 Standards at ECS-2 in 2011. On October 25, 2012, ECS personnel screened the soil gas point for TOV with a PID. TOV was not measured at levels above the instrument detection limit. A sample was collected with laboratory provided stainless steel SUMMA canisters equipped with 1 hour flow controllers. The sample was submitted to Spectrum for analysis of Air Phase Petroleum Hydrocarbons (APH) by the MassDEP APH Method. A copy of the laboratory report is provided as

Attachment IV. The results of analysis are summarized on Table 4. Soil gas data were compared to the MassDEP Soil Gas Screening levels listed in the Interim Final Vapor Intrusion Guidance (WSC#11-435, as revised 2013). The concentrations of all APH Fractions and Target Analytes reported did not exceed the Soil Gas Screening Levels for commercial/industrial properties.

## **6.0 DATA USABILITY AND REPRESENTATIVENESS**

Groundwater samples collected during the February 2013 groundwater sampling event were analyzed for VPH according to the MassDEP Compendium of Analytical Method (CAM) VPH Methods Rev. 1.1. The soil gas sample collected in October 2012 was analyzed by the CAM APH Method. Sampling was performed according to CAM, revisions which were effective July 1, 2010.

Field precision was demonstrated by the use of a field duplicate groundwater sample collected from monitoring well ECS-2 during the February 20, 2013 event and analyzed for VPH. The relative percentage differences (RPDs) for VPH Fractions and Target Analytes for the field duplicates were within the range of  $\pm 30\%$ . The highest concentrations reported for each analyte will be utilized in future risk assessments; concentrations did not exceed Method 1 Standards applicable to the Site. A Trip blank of deionized water did accompany the groundwater samples collected on February 20, 2013; however, upon receipt at the laboratory, it was determined that the glass VOA was broken. Therefore, the trip blank was not analyzed.

QAQC information for the groundwater samples collected during this reporting period is provided as Table 5.

Accuracy for VPH and APH analyses was determined by the laboratory use of surrogate recoveries, which were all within the control limits of 70% to 130%. The laboratory did note some nonconformances in the VPH and APH analyses for the laboratory control samples. The nonconformances are not expected to affect the usability of the data. These data are retained for use in this and future reports.

To assure sample representativeness all sampling methods were in accordance with MassDEP and/or USEPA groundwater and soil gas sampling procedures as described in ECS sampling SOPs and documented in sampling field notes. Sampling containers, preservation methods, and holding times met Method requirements. The groundwater samples were submitted to the laboratory on ice. The temperature of the groundwater samples collected on February 20, 2013 as measured immediately upon submittal to the laboratory was 1.8°C, outside the USEPA recommended temperature range of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ . The groundwater samples were collected on a day that the ambient temperature was less than 4.0°C and were submitted to the laboratory approximately 2 hours after the final sample was collected at the Site. The samples were reported to be received on ice and were not frozen. It is unlikely that the short term temperature excursion affected the integrity of the samples. These data are retained and will be used to support the conclusion of this and future reports.

Groundwater samples were collected from select monitoring wells based on the planned sampling program submitted in the Phase IV RIP. These data are therefore considered sufficient to characterize groundwater quality at the Site. A detailed history of seasonal groundwater concentrations at the Site has been compiled.

The completeness of the February 2013 groundwater sampling event was 87.5%. The completeness of the October 2012 soil gas sampling event was 100%. These meet the DQO of 80% for all samples. However, completeness for critical samples was less than 100% since ECS-3 was not sampled. Supplemental samples will be collected at ECS-3 and ECS-13 in April 2013 to provide data for this region of the Site.

A review of the precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) indicates that the data collected during this reporting period are of suitable quality to support the conclusions of this report and future reports.

## **7.0 WASTE MANAGEMENT**

No waste material was generated during this reporting period.

## **8.0 PUBLIC INVOLVEMENT**

Notices of Environmental Sampling, as required by 310 CMR 40.1403(10), were sent to the owners of properties where groundwater sampling is routinely performed. The property owners were provided with the analytical results, a summary table of the analytical data, and a copy of the Disposal Site Map. Proof of this notification is provided as Attachment V.

## **9.0 ROS PERFORMANCE STANDARD**

The following conditions have been achieved to maintain the Performance Standard for Remedy Operation Status:

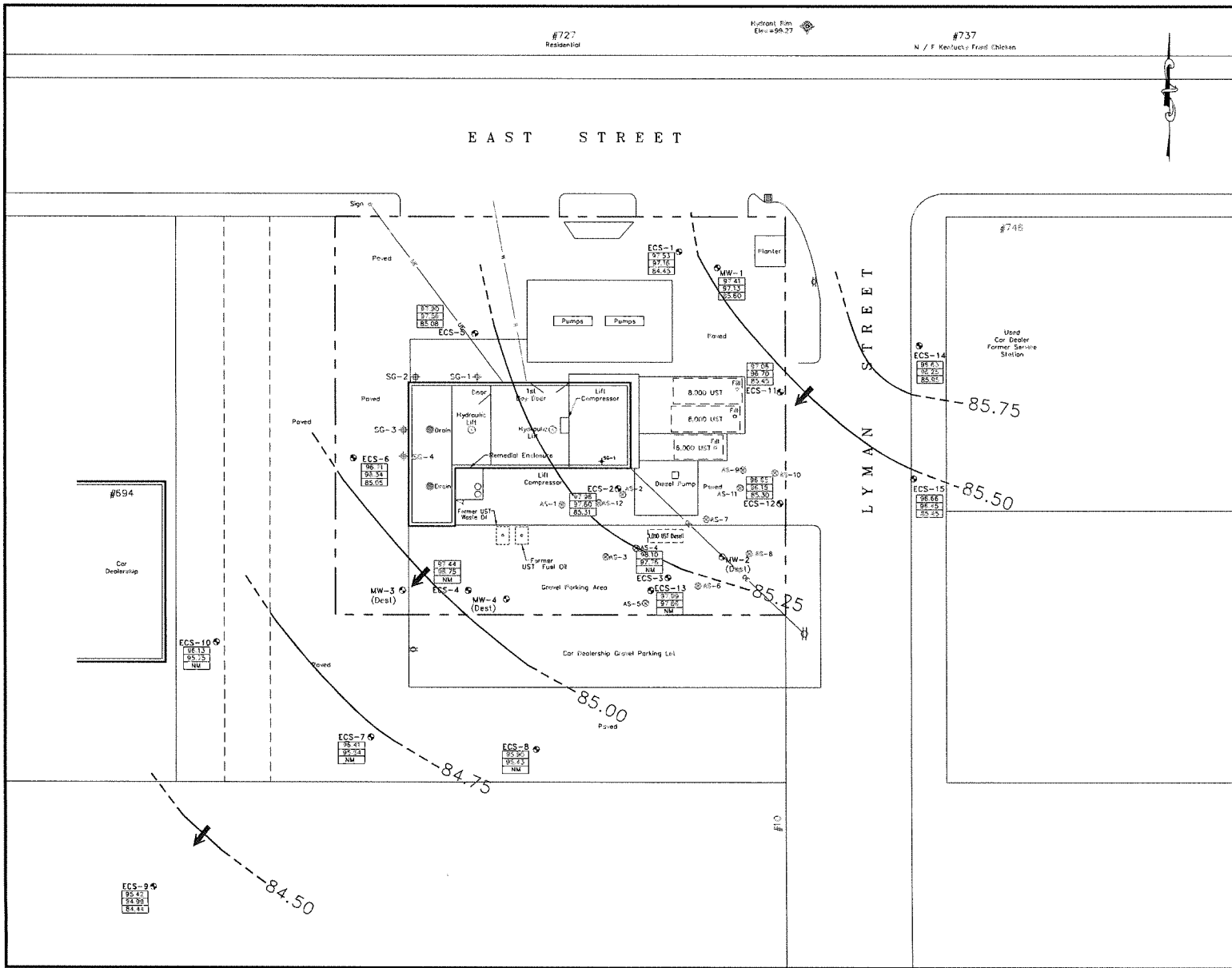
- A Phase IV RIP detailing the selected remedial action alternatives for the Site was submitted to the MassDEP in March 2004. At the time the Phase IV was submitted, excavation and replacement of impacted soil (with dewatering, if necessary), in conjunction with the implementation of a MNA program, for the soil contamination on the northwestern corner of the Site and an MNA program for groundwater on the southeastern portion of the Site, downgradient of the former and current diesel and gasoline USTs, were the selected alternatives. Based on the groundwater analytical data collected in the fall of 2005, ECS determined that the MNA program detailed in the initial Phase IV RIP would not be sufficient to reduce dissolved-phase petroleum hydrocarbon concentrations in the southeastern portion of the Site. Therefore, ECS submitted Phase III RAP and Phase IV RIP Addendums in August 2006, which presented a comprehensive plan for the implementation of a biosparging system for contamination in the southeastern portion of the Site, with MNA as a future option. The system construction was detailed in the Phase IV Completion, As-Built, and Final Inspection Reports submitted to the DEP in September 2006. An ROS opinion was submitted on March 7, 2007. As specified in the March 2004 Phase IV RIP, subsurface investigations were performed in 2005 to delineate the horizontal and vertical extent of soil contamination in the northwestern portion of the Site. The soil analytical results indicated that soil contamination is limited to a 12-foot area below the water table at a depth ranging from 10 to 16 fbg. Due to the limited area of contamination and location below the water table, ECS determined through cost-benefit analysis that excavation was not a feasible remedial alternative for soil contamination in the northwestern area of the Site thereby leaving the 2003 Phase III RAP and 2004 Phase IV RIP remedial alternative of MNA as the only remedial strategy for the northwestern area. Evidence that the MNA remedial strategy is effective in the northwest



area of the Site was first presented within the Revised ROS Opinion (ECS December 2007) and subsequent ROS Status reports;

- The biosparge remedial system and monitoring program have been designed in accordance with 310 CMR 40.0893(2)(b) in order to achieve a Permanent Solution. Data for the August 2012 sampling event supports the conclusion that the plumes on-site are stable and/or shrinking, and that natural attenuation processes are occurring on the Site that are reducing the concentrations of petroleum hydrocarbons in groundwater over time. Given that concentrations of petroleum hydrocarbons have been declining and are below Method 1 Standards at wells located within the northwestern plume, sampling of these wells may be discontinued following the February 2013 sampling event;
- The source(s) of oil and hazardous materials (OHM) have been eliminated and/or controlled in accordance with 310 CMR 40.0893(2)(d). Two areas of historic soil and groundwater contamination have been identified at the Site.
  - The first area is on the southeastern side of the Site property in an area, which includes historic and current UST systems for the storage of gasoline and diesel fuel and the dispenser island for diesel fuel. The source of contamination in this area is due to unknown historic releases of petroleum from these UST systems or activities related to the dispensing of petroleum products. The operation of a biosparge system on the southeastern portion of the Site decreases concentrations of dissolved contaminants in groundwater as documented in Table 3. Data collected during 2011 and 2012 related to EPH concentrations in groundwater at the Site does not suggest that the diesel UST or dispenser are continuing sources at the Site. Concentrations of dissolved contaminants increase when the biosparge system is not operating. The collection of samples at ECS-2, ECS-3, and ECS-12 for analysis of EPH will occur annually until a Permanent Solution is achieved at the Site. The groundwater sampling program Table II-A has been amended accordingly.
  - The second area of soil and groundwater contamination is located on the northwestern side of the Site property where a limited area of contaminated soil has been identified along with limited downgradient groundwater impact. The source of the contamination on the northwestern portion of the Site is unknown but may represent releases of petroleum from the previous operation of an automobile service and gasoline filling station from 1966 to 1986. The implementation of MNA on the northwestern portion of the Site has produced data showing that the dissolved contaminant plume is stable and that biodecay is occurring.
- There are no Substantial Hazards at the Site: light non-aqueous phase liquid (LNAPL) has never been detected in any monitoring wells; sub-slab soil gas samples did not contain APH Fractions or Target Analytes at concentrations above the MassDEP sub-slab screening levels for commercial/industrial properties; and, dissolved-phase concentrations of VPH and EPH constituents are below Upper Concentration Limits;
- Continued generally decreasing trends observed in on and off-Site wells located in, adjacent and downgradient of the source area is indicative of the success and appropriateness of the current remediation strategy and supports the validity of the Site's current ROS designation;

- In accordance with 310 CMR 40.0893(2)(c) the remedial system and monitoring program are being operated and maintained in accordance with the design criteria found in the 2006 Phase IV RIP Addendum Operation, Maintenance, and Monitoring Plan;
- The following operation and maintenance activities will be conducted until a Permanent Solution has been achieved, as detailed in the Final Inspection Report (ECS, September 2006) and modified in subsequent reports:
  - Sparging has been adjusted to focus on the regions of the aquifer near ECS-2 and ECS-12;
  - Soil gas sampling will occur in the Spring of 2013 to provide data regarding the potential for indoor air impact for the final Risk Characterization for the Site;
  - More closely scheduled Site visits that were proposed in previous ROS Status report were tried during this reporting period in order to reduce the down time between replacements of oxygen tanks. Optimally, oxygen tank replacement should occur approximately once every two to three weeks based upon information gathered since July 2011. The OMM schedule has been amended to weekly based upon oxygen use and delivery schedule;
  - The biosparging system will be monitored at least weekly to optimize system performance. A planned shutdown of the system may occur in order to conduct rebound monitoring;
  - Groundwater gauging and geochemical monitoring will be conducted during OMM visits; and
  - Groundwater samples will be collected on a semiannual basis. The next groundwater sampling event is scheduled to occur in August 2013.
- ECS will submit operation, maintenance, and monitoring reports on a semi-annual basis as described in 310 CMR 40.0893 to maintain ROS. The next status report will be submitted on or before September 28, 2013.



### Legend

- Approximate Property Line
- Sanitary Sewer Line
- Storm Sewer Line
- Water Line
- Natural Gas Line
- Overhead Electric Line
- ⊕ Manhole
- ⊕ Catchbasin
- ⊕ Water Gate
- ⊕ Fire Hydrant
- ⊕ Utility Pole
- ⊕ Soil Boring
- ⊕ Soil Gas Point
- ⊕ Monitoring Well
- ⊕ Air Sparge Well
- ⊕ Proposed Soil Boring
- ⊕ Well I.D.
- ⊕ Rim Elevation
- ⊕ P.C. Elevation
- ⊕ Water Table Elevation
- ➔ Flow Direction Indicator
- 90.0 Water Table Contour (Dashed where inferred)

**General Notes:**

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

Horizontal, and vertical locations of wells, and selected site features determined through measurements made by representatives of ECS.

Water table elevations are based on an assumed benchmark of 89.27 feet located at the hydrant rim.

Water table elevations are based on measurements made on February 20, 2013.

Water table contours, and flow directions assume homogenous, isotropic aquifer conditions, and horizontal flow.

Fluctuations in the level of the water table may occur due to factors not accounted for at the time of measurement.

Water table contours are interpolated between data points, and inferred in other areas.

**ECS**

588 Silver Street • Agawam, MA 01001  
Phone: 1-800-789-3530 Fax: 413-789-2778  
www.ecsconsult.com

**PROJECT**

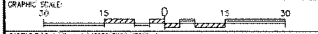
**O'Connell Mobil Station**  
730 East Street—Route 9  
Pittsfield, Massachusetts

**TITLE**

Site Plan with Groundwater Contours (2/20/13)

**CLIENT**

O'Connell Oil Associates, Inc.



**DESIGNED BY:** LM

**CHECKED BY:** LM

**APPROVED BY:** VAL

**SCALE:** 1" = 30'

**DATE:** 4/4/13

**JOB NO.:** 13632

**FIGURE NO.:** 2

## **TABLES**

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**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-1*</b>	<b>11/8/99</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>97.19</b>	<b>12/19/02</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<i>97.02</i>	<i>9/8/05</i>	11.78	85.24	5.06	750	4.91	549	4.48	26.2	0.015
	<i>1/25/06</i>	8.49	88.53	7.31	108	2.71	68.0	2.16	23.4	3.90
	<i>4/11/06</i>	11.38	85.64	7.04	926	4.00	10.0	4.45	27.6	<0.01
	<i>7/20/06</i>	11.72	85.30	4.78	814	2.98	590	3.85	27.5	<0.01
	<b>10/10/06</b>	12.21	84.81	NA	NA	NA	NA	NS	NS	NS
	<i>1/25/07</i>	11.34	85.68	7.65	620	4.87	33.0	3.70	25.9	<0.01
	<i>2/26/07</i>	11.29	85.73	7.82	NM	2.67	182.6	NS	NS	NS
	<i>4/24/07</i>	9.89	87.13	NA	NA	NA	NA	NS	NS	NS
	<i>10/4/07</i>	12.74	84.28	7.45	743	4.49	88	3.81	27.3	<0.0300
	<i>3/11/08</i>	9.82	87.20	7.37	708	4.06	160	3.35	25.9	<0.0300
	<i>5/1/08</i>	11.5	85.52	7.56	822	5.37	33	3.79	27.8	<0.0300
	<i>11/24/08</i>	11.61	85.41	7.51	836	1.93	-10	3.73	25.5	<0.0300
	<i>2/18/09</i>	11.6	85.42	7.51	841	4.19	69	3.64	26.9	<0.0300
	<i>8/24/09</i>	10.47	86.55	7.41	807	5.09	86	3.77	29.8	<0.0300
	<i>2/11/10</i>	11.6	85.42	7.49	830	4.01	-10	3.42	27.7	<0.0300
	<i>9/9/10</i>	12.61	84.41	7.66	757	0.63	212	3.38	27.0	<0.0300
	<i>3/28/11</i>	NA	NA	NA	NA	NA	NA	NA	NA	NA
	<i>9/14/11</i>	9.51	87.51	7.60	688	4.07	-18.2	3.30	29.8	0.0523
	<i>2/15/12</i>	11.27	85.75	7.85	727	4.97	-30.2	3.23	25.1	<0.0300
	<i>8/20/12</i>	12.07	84.95	7.46	665	3.64	-12.3	10.3	33.6	<0.0300
	<i>2/20/12</i>	11.71	85.31	7.43	723	4.59	14.7	3.4	29.6	<0.0300
<b>ECS-2**</b>	<b>11/8/99</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>97.76</b>	<b>12/19/02</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<i>97.60</i>	<i>9/8/05</i>	12.44	85.16	5.94	975	0.48	-9.5	NS	NS	NS
	<i>11/1/05</i>	10.65	86.95	6.89	1410	0.87	-65.9	NS	NS	NS
	<i>1/25/06</i>	10.16	87.44	6.84	781	1.52	-93.0	NS	NS	NS
	<i>4/10/06</i>	12.09	85.51	6.70	1,118	0.62	10.0	NS	NS	NS
	<i>7/20/06</i>	12.42	85.18	3.40	1,601	0.29	572	NS	NS	NS
	<i>9/15/06</i>	13.44	84.16	6.99	NM	3.88	-36.8	NS	NS	NS
	<i>9/21/06</i>	13.00	84.60	6.97	NM	11.68	237	NS	NS	NS
	<i>10/6/06</i>	12.84	84.76	6.97	NM	2.27	60.3	NS	NS	NS
	<b>10/10/06</b>	12.92	84.68	NM	805	0.63	28.0	NS	NS	NS
	<i>10/23/06</i>	12.25	85.35	6.28	NM	0.80	NM	NS	NS	NS
	<i>11/7/06</i>	12.21	85.39	6.67	NM	8.83	-60.8	NS	NS	NS
	<i>11/20/06</i>	11.58	86.02	7.12	NM	8.94	161.7	NS	NS	NS
	<i>12/4/06</i>	12.06	85.54	7.19	NM	9.96	228.8	NS	NS	NS
	<i>12/18/06</i>	12.54	85.06	6.20	NM	9.40	10.9	NS	NS	NS
	<i>1/2/07</i>	12.44	85.16	7.34	NM	8.68	-122.3	NS	NS	NS
	<i>1/15/07</i>	11.94	85.66	7.41	NM	8.76	-133.6	NS	NS	NS
	<b>1/25/07</b>	12.06	85.54	7.10	838	1.84	6.0	NS	NS	NS
	<i>1/29/07</i>	12.21	85.39	7.07	NM	12.24	-98.9	NS	NS	NS
	<i>2/12/07</i>	12.74	84.86	7.34	NM	11.84	-6.2	NS	NS	NS
	<i>2/26/07</i>	12.01	85.59	7.28	NM	6.63	252.3	NS	NS	NS
	<i>3/12/07</i>	12.92	84.68	6.68	NM	14.60	32.2	NS	NS	NS
	<i>3/26/07</i>	11.91	85.69	6.67	NM	11.34	-66.9	NS	NS	NS
	<i>4/10/07</i>	11.26	86.34	7.09	NM	5.75	-1.8	NS	NS	NS
	<b>4/24/07</b>	10.39	87.21	4.94	1,015	0.60	-27.6	NS	NS	NS
	<i>5/7/07</i>	11.27	86.33	5.66	NM	11.98	32.9	NS	NS	NS
	<i>5/24/07</i>	11.02	86.58	5.82	NM	10.45	45.7	NS	NS	NS
	<i>6/4/07</i>	12.13	85.47	5.52	NM	*24.65	-8.6	NS	NS	NS
	<i>6/18/07</i>	12.38	85.22	6.48	NM	15.23	-67.2	NS	NS	NS
	<i>7/3/07</i>	12.52	85.08	7.60	NM	15.09	37.0	NS	NS	NS
	<i>7/16/07</i>	12.81	84.79	7.25	NM	15.37	58.0	NS	NS	NS
	<i>8/1/07</i>	12.95	84.65	6.61	NM	14.28	-57.4	NS	NS	NS
	<i>8/13/07</i>	13.01	84.59	5.22	NM	15.20	-265.0	NS	NS	NS
	<i>8/27/07</i>	13.23	84.37	6.48	NM	19.17	-92.2	NS	NS	NS
	<i>9/10/07</i>	13.32	84.28	7.72	NM	12.07	-61.6	NS	NS	NS
	<i>9/25/07</i>	13.39	84.21	7.69	NM	7.23	-73.5	NS	NS	NS
	<b>10/4/07</b>	13.50	84.10	6.55	1436	1.34	-73.0	NS	NS	NS
	<i>10/9/07</i>	13.54	84.06	6.07	NM	1.97	-308.7	NS	NS	NS
	<i>10/22/07</i>	13.29	84.31	6.81	NM	5.91	-51.9	NS	NS	NS
	<i>11/5/07</i>	13.13	84.47	7.41	NM	9.97	-24.2	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-2 (continued)</b>	11/19/07	12.84	84.76	6.71	NM	4.31	-50.1	NS	NS	NS
	12/3/07	13.83	83.77	7.06	NM	9.75	-199.7	NS	NS	NS
	12/17/07	12.94	84.66	7.06	NM	8.15	-111.5	NS	NS	NS
	1/2/08	12.42	85.18	6.46	NM	6.47	-139.1	NS	NS	NS
	1/14/08	12.03	85.57	6.41	NM	7.01	-130.4	NS	NS	NS
	1/29/08	12.41	85.19	6.36	NM	9.21	61.5	NS	NS	NS
	2/11/08	12.23	85.37	NM	NM	NM	NM	NS	NS	NS
	3/7/08	11.06	86.54	6.36	227	0.60	129.6	NS	NS	NS
	<b>3/11/08</b>	10.38	87.22	6.47	245	4.21	61	NS	NS	NS
	<b>5/1/08</b>	11.13	86.47	6.29	194	0.74	38	NS	NS	NS
	5/27/08	10.95	86.65	NM	NM	NM	NM	NS	NS	NS
	6/4/08	12.28	85.32	5.21	NM	11.40	44.4	NS	NS	NS
	6/17/08	12.08	85.52	6.27	NM	4.56	143.6	NS	NS	NS
	7/1/08	12.02	85.58	6.59	NM	8.22	60.3	NS	NS	NS
	7/9/08	NM	85.58	NM	NM	NM	NM	NS	NS	NS
	7/14/08	12.43	85.17	6.60	NM	0.88	-82.9	NS	NS	NS
	7/30/08	11.62	85.98	6.54	NM	9.87	61.7	NS	NS	NS
	8/12/08	12.05	85.55	6.39	NM	1.80	5.4	NS	NS	NS
	8/20/08	11.68	85.92	NM	NM	NM	NM	NS	NS	NS
	8/26/08	12.48	85.12	6.43	NM	1.74	-18	NS	NS	NS
	9/9/08	11.56	86.04	6.25	NM	1.42	23.8	NS	NS	NS
	9/22/08	12.60	85.00	6.34	NM	2.02	-95.4	NS	NS	NS
	10/17/08	12.71	84.89	6.32	NM	1.70	43.0	NS	NS	NS
	10/27/08	12.35	85.25	6.13	NM	0.74	42.8	NS	NS	NS
	11/11/08	12.00	85.60	6.27	NM	2.32	19.8	NS	NS	NS
	<b>11/24/08</b>	12.24	85.36	6.20	312	0.33	14.0	NS	NS	NS
	11/25/08	12.18	85.42	6.25	NM	3.14	76.1	NS	NS	NS
	12/11/08	11.85	85.75	6.65	NM	0.60	-42.1	NS	NS	NS
	12/23/08	11.18	86.42	6.50	NM	6.67	6.7	NS	NS	NS
	1/6/09	11.09	86.51	6.61	NM	4.43	94.1	NS	NS	NS
	1/23/09	11.82	85.78	5.60	NM	26.36	113.1	NS	NS	NS
	2/3/09	12.15	85.45	6.16	NM	9.11	151.6	NS	NS	NS
	2/18/09	12.23	85.37	6.54	239	2.91	143.0	NS	NS	NS
	2/24/09	12.30	85.30	6.18	NM	18.36	122.0	NS	NS	NS
	3/4/09	12.18	85.42	6.14	NM	22.40	237.7	NS	NS	NS
	3/19/09	11.28	86.32	6.97	NM	19.11	15.0	NS	NS	NS
	4/9/09	11.30	86.30	5.86	NM	21.72	181.6	NS	NS	NS
	4/23/09	11.69	85.91	6.57	NM	7.45	75.0	NS	NS	NS
	5/5/09	12.10	85.50	6.12	NM	9.21	64.9	NS	NS	NS
	5/19/09	11.92	85.68	6.03	NM	1.31	123.0	NS	NS	NS
	6/11/09	12.50	85.10	6.15	660	1.06	-102.9	NS	NS	NS
	6/26/09	11.23	86.37	6.10	1210	1.09	110.3	NS	NS	NS
	7/6/09	11.45	86.15	5.98	467	3.30	78.6	NS	NS	NS
7/22/09	11.70	85.90	6.73	1459	3.86	-18.9	NS	NS	NS	
8/6/09	10.68	86.92	6.49	164	11.46	43.5	NS	NS	NS	
<b>8/24/09</b>	11.07	86.53	6.11	850	9.61	51.0	NS	NS	NS	
9/10/09	11.60	86.00	6.38	770	3.08	119.6	NS	NS	NS	
9/23/09	12.00	85.60	6.50	909	5.51	-48.0	NS	NS	NS	
10/6/09	12.13	85.47	6.19	228	6.90	130.6	NS	NS	NS	
10/13/09	12.15	85.45	6.65	577	4.65	25.0	NS	NS	NS	
10/23/09	12.31	85.29	6.45	207	16.27	86.4	NS	NS	NS	
11/5/09	11.62	85.98	6.57	318	6.26	54.1	NS	NS	NS	
11/17/09	11.80	85.80	6.96	214	9.52	30.9	NS	NS	NS	
12/8/09	11.76	85.84	6.80	218	10.24	16.7	NS	NS	NS	
12/23/09	11.96	85.64	7.01	159	6.29	-6.9	NS	NS	NS	
1/8/10	12.12	85.48	6.60	166	8.85	74.8	NS	NS	NS	
1/20/10	12.23	85.37	7.01	259	10.48	54.0	NS	NS	NS	
2/3/10	11.93	85.67	6.75	NM	27.64	199.3	NS	NS	NS	
2/11/10	12.76	84.84	5.94	204	9.19	94.0	NS	NS	NS	
2/18/10	12.38	85.22	6.75	NM	9.44	25.0	NS	NS	NS	
3/3/10	11.83	85.77	6.90	244	5.62	59.0	NS	NS	NS	
3/17/10	11.07	86.53	6.81	664	4.28	47.5	NS	NS	NS	
4/15/10	11.29	86.31	6.49	985	8.12	65.7	NS	NS	NS	
4/28/10	11.80	85.80	6.68	NM	2.40	118.0	NS	NS	NS	
5/13/10	12.03	85.57	6.94	1,696	4.60	-83.1	NS	NS	NS	
5/27/10	12.30	85.30	6.51	NM	9.09	77.5	NS	NS	NS	
6/9/10	12.47	85.13	6.66	NM	1.18	-72.3	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
ECS-2 (continued)	6/24/10	12.54	85.06	6.84	NM	0.59	-80.4	NS	NS	NS
	7/9/10	12.88	84.72	4.60	NM	3.75	120.6	NS	NS	NS
	7/20/10	12.92	84.68	7.07	NM	5.82	-377.0	NS	NS	NS
	8/5/10	12.95	84.65	6.84	NM	1.80	-31.4	NS	NS	NS
	8/18/10	13.15	84.45	6.41	NM	2.19	-25.3	NS	NS	NS
	9/9/10	13.37	84.23	6.99	1,357	0.42	-66.0	NS	NS	NS
	9/15/10	13.48	84.12	6.50	NM	1.11	-36.1	NS	NS	NS
	9/30/10	13.49	84.11	6.33	NM	2.82	185.6	NS	NS	NS
	10/5/10	12.80	84.80	6.90	1,716	0.30	-106.2	NS	NS	NS
	10/21/10	12.55	85.05	6.78	NM	2.82	-72.8	NS	NS	NS
	11/5/10	12.44	85.16	6.77	1,336	15.33	-5.5	NS	NS	NS
	11/19/10	12.41	85.19	6.79	NM	3.00	-11.6	NS	NS	NS
	12/9/10	12.14	85.46	6.31	NM	1.81	-47.2	NS	NS	NS
	12/22/10	12.02	85.58	6.25	1,586	1.70	-55.3	NS	NS	NS
	1/7/11	12.41	85.19	6.37	NM	6.18	-64.4	NS	NS	NS
	1/19/11	12.74	84.86	6.89	NM	1.10	-105.2	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/3/11	12.76	84.84	6.42	NM	11.90	232.5	NS	NS	NS
	3/28/11	10.88	86.72	6.73	1,485	2.11	-78.1	NS	NS	NS
	4/7/11	10.99	86.61	7.23	NM	4.05	-85.9	NS	NS	NS
	4/22/11	10.90	86.70	6.75	1,505	4.17	-80.6	NS	NS	NS
	5/7/11	10.98	86.62	8.22	1,418	1.00	-25.6	NS	NS	NS
	6/2/11	11.85	85.75	6.81	1,532	1.60	-38.0	NS	NS	NS
	6/14/11	11.86	85.74	6.82	NM	0.52	-75.5	NS	NS	NS
	7/7/11	11.63	85.97	6.12	NM	1.24	-40.6	NS	NS	NS
	7/25/11	12.24	85.36	6.80	NM	1.82	-95.3	NS	NS	NS
	8/15/11	12.60	85.00	6.91	NM	0.60	-104.6	NS	NS	NS
	8/26/11	12.04	85.56	7.08	1,175	0.30	-132.3	NS	NS	NS
	9/14/11	10.00	87.60	6.79	1,241	0.33	-100.6	<-0.100	19.8	19.6
	10/6/11	10.57	87.03	6.88	NM	0.50	-58.7	NS	NS	NS
	10/20/11	11.18	86.42	6.95	NM	2.40	-99.8	NS	NS	NS
	11/3/11	11.35	86.25	6.69	1,331	2.59	-99.3	NS	NS	NS
	11/17/11	11.57	86.03	6.71	NM	0.86	-69.0	NS	NS	NS
	12/7/11	11.57	86.03	6.87	861	4.15	225.3	NS	NS	NS
	12/21/11	11.40	86.20	7.07	885	5.12	209.2	NS	NS	NS
	1/4/12	11.37	86.23	7.25	919	7.18	160.8	NS	NS	NS
	1/17/12	11.78	85.82	7.27	1,008	7.80	243.8	NS	NS	NS
	2/1/12	11.37	86.23	7.23	1,272	7.36	259.5	NS	NS	NS
	2/15/12	11.82	85.78	7.23	1,125	1.00	-65.0	<1.00	15.6	21.6
	3/1/12	12.04	85.56	7.33	894	10.02	279.3	NS	NS	NS
	3/15/12	11.64	85.96	7.11	1,049	2.28	291.3	NS	NS	NS
	4/5/12	12.15	85.45	6.96	NM	6.26	328.6	NS	NS	NS
4/19/12	12.46	85.14	7.60	NM	6.20	323.8	NS	NS	NS	
5/3/12	12.33	85.27	7.45	NM	1.47	242.2	NS	NS	NS	
5/17/12	11.71	85.89	6.68	1,058	3.18	230.7	NS	NS	NS	
5/31/12	11.95	85.65	6.76	1,182	9.82	380.8	NS	NS	NS	
6/14/12	12.09	85.51	6.52	1,014	5.50	308.8	NS	NS	NS	
6/26/12	12.43	85.17	7.29	1,051	1.61	-40.0	NS	NS	NS	
7/3/12	12.68	84.92	6.62	NM	1.03	-169.0	NS	NS	NS	
7/19/12	12.95	84.65	6.85	811	2.20	60.4	NS	NS	NS	
8/1/12	12.95	84.65	7.01	983	1.16	-87.7	NS	NS	NS	
8/15/12	NM	NA	NM	NM	NM	NM	NS	NS	NS	
8/20/12	12.86	84.74	6.85	1,013	0.30	-100.8	<-0.200	16.1	13.8	
8/30/12	13.08	84.52	NM	NM	NM	NM	NS	NS	NS	
9/17/12	13.14	84.46	6.36	1,085	0.68	-71.0	NS	NS	NS	
9/26/12	12.88	84.72	6.47	1,039	0.54	49.8	NS	NS	NS	
10/11/12	12.85	84.75	6.89	1,021	0.64	-20.7	NS	NS	NS	
10/25/12	12.41	85.19	6.67	1,078	0.48	-46.5	NS	NS	NS	
11/1/12	12.26	85.34	6.45	1,038	0.88	-53.3	NS	NS	NS	
11/15/12	12.56	85.04	6.52	962	4.46	-62.6	NS	NS	NS	
12/6/12	12.80	84.80	6.14	968	1.16	-63.5	NS	NS	NS	
12/20/12	12.50	85.10	6.41	1,083	0.83	-76.2	NS	NS	NS	
1/17/13	12.28	85.32	6.79	409	1.18	-43.2	NS	NS	NS	
2/7/13	12.02	85.58	5.74	538	0.81	75.7	NS	NS	NS	
2/20/13	12.29	85.31	7.00	511	0.46	-6.2	<-0.100	16.1	4.05	
3/7/13	12.30	85.30	7.13	418	3.93	23.2	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
ECS-3*( <sup>TM</sup> )	11/8/99	NA	NA	NA	NA	NA	NA	NS	NS	NS
97.95	12/19/02	NA	NA	NA	NA	NA	NA	NS	NS	NS
97.76	9/8/05	12.65	85.11	5.64	1,418	0.87	-69.9	<1.0	<10.0	53.9
	11/1/05	10.87	86.89	6.23	694	1.52	-0.4	NS	NS	NS
	1/25/06	NG	NA	NM	NM	NM	NM	NS	NS	NS
	4/11/06	12.34	85.42	6.69	2,070	0.36	-40.0	<0.100	<1.0	10.3
	7/20/06	12.56	85.20	3.10	908	0.32	610	<0.500	27.5	14.4
	9/15/06	13.61	84.15	6.89	NM	5.24	-57.3	NS	NS	NS
	9/21/06	13.24	84.52	7.19	NM	10.88	255	NS	NS	NS
	10/6/06	13.08	84.68	6.97	NM	3.19	8.2	NS	NS	NS
	10/10/06	13.17	84.59	7.05	599	0.55	78.0	NS	NS	NS
	10/23/06	12.25	85.51	6.28	NM	2.18	NM	NS	NS	NS
	11/7/06	12.45	85.31	6.60	NM	9.35	-68.8	NS	NS	NS
	11/20/06	11.81	85.95	6.52	NM	10.34	177.8	NS	NS	NS
	12/4/06	12.31	85.45	7.24	NM	3.85	342.4	NS	NS	NS
	12/18/06	12.77	84.99	6.27	NM	8.35	-31.9	NS	NS	NS
	1/2/07	12.64	85.12	7.19	NM	7.25	-209.7	NS	NS	NS
	1/15/07	12.19	85.57	7.12	NM	7.39	-209.4	NS	NS	NS
	1/25/07	12.27	85.49	7.25	627	1.20	6.0	<0.5	28.4	5.98
	1/29/07	12.47	85.29	7.18	NM	8.72	-125.6	NS	NS	NS
	2/12/07	12.96	84.80	7.55	NM	10.63	-89.0	NS	NS	NS
	2/26/07	NG-S	NA	NM	NM	NM	NM	NS	NS	NS
	3/12/07	NG-S	NA	NM	NM	NM	NM	NS	NS	NS
	3/26/07	12.13	85.63	6.72	NM	8.71	-80.60	NS	NS	NS
	4/10/07	11.51	86.25	7.00	NM	14.93	-8.40	NS	NS	NS
	4/24/07	10.62	87.14	6.70	819	1.43	-66.8	NS	NS	NS
	5/7/07	11.52	86.24	5.24	NM	12.26	38.2	NS	NS	NS
	5/24/07	11.38	86.38	5.43	NM	9.37	49.2	NS	NS	NS
	6/4/07	12.4	85.36	5.72	NM	8.62	-16.7	NS	NS	NS
	6/18/07	12.59	85.17	6.64	NM	12.59	-141.8	NS	NS	NS
	7/3/07	12.98	84.78	7.98	NM	15.82	37.7	NS	NS	NS
	7/16/07	13.27	84.49	7.92	NM	15.98	56.4	NS	NS	NS
	8/1/07	13.18	84.58	6.78	NM	18.48	-76.9	NS	NS	NS
	8/13/07	13.26	84.50	6.77	NM	2.18	-262.7	NS	NS	NS
	8/27/07	13.48	84.28	6.77	NM	11.05	-115.8	NS	NS	NS
	9/10/07	13.55	84.21	7.58	NM	9.23	-48.2	NS	NS	NS
	9/25/07	13.63	84.13	7.55	NM	7.23	-50.1	NS	NS	NS
	10/4/07	13.73	84.03	7.04	800	5.31	-99.0	<0.100	37.8	5.21
	10/9/07	13.77	83.99	6.47	NM	5.10	-329.9	NS	NS	NS
	10/22/07	13.50	84.26	7.63	NM	4.38	-50.3	NS	NS	NS
	11/5/07	13.36	84.40	7.88	NM	7.21	-42.7	NS	NS	NS
	11/19/07	13.09	84.67	7.52	NM	3.71	-48.5	NS	NS	NS
	12/3/07	13.04	84.72	7.21	NM	7.07	-127.1	NS	NS	NS
	12/17/07	13.18	84.58	7.17	NM	7.01	-125.1	NS	NS	NS
	1/2/08	12.71	85.05	6.17	NM	5.21	41.4	NS	NS	NS
	1/14/08	12.24	85.52	6.09	NM	5.02	40.1	NS	NS	NS
	1/29/08	12.64	85.12	7.12	NM	8.75	8.2	NS	NS	NS
	2/11/08	12.27	85.49	NM	NM	NM	NM	NS	NS	NS
	3/7/08	11.33	86.43	NM	NM	NM	NM	NS	NS	NS
	3/11/08	10.68	87.08	7.12	932	2.97	-77	<0.5	27.1	2.08
	5/1/08	11.41	86.35	6.56	1,810	1.45	1.0	<1.0	28.9	21.6
	5/27/08	11.08	86.68	NM	NM	NM	NM	NS	NS	NS
	6/4/08	12.51	85.25	5.83	NM	2.11	100.1	NS	NS	NS
	6/17/08	12.33	85.43	6.33	NM	2.85	-102.2	NS	NS	NS
	7/1/08	12.30	85.46	6.45	NM	0.95	-50.7	NS	NS	NS
	7/9/08	NM	85.46	NM	NM	NM	NM	NS	NS	NS
	7/14/08	10.7	87.06	6.37	NM	1.68	-31.9	NS	NS	NS
	7/30/08	11.88	85.88	6.26	NM	2.68	-40.0	NS	NS	NS
	8/12/08	12.31	85.45	6.59	NM	6.81	-31.6	NS	NS	NS
	8/20/08	11.91	85.85	NM	NM	NM	NM	NS	NS	NS
	8/26/08	12.78	84.98	6.65	NM	1.78	-35.6	NS	NS	NS
	9/9/08	11.83	85.93	6.48	NM	5.38	-47.2	NS	NS	NS
	9/22/08	12.86	84.90	6.46	NM	6.51	-105.1	NS	NS	NS
	10/17/08	12.98	84.78	6.62	NM	0.72	-39.8	NS	NS	NS
	10/27/08	12.6	85.16	6.42	NM	2.96	-7.5	NS	NS	NS
	11/11/08	12.29	85.47	6.59	NM	1.10	-36.1	NS	NS	NS



**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-3</b>	<b>11/24/08</b>	12.51	85.25	6.53	1,265	0.31	-25.0	<0.100	22.5	13.6
<b>(continued)</b>	11/25/08	12.44	85.32	6.55	NM	2.59	-70.9	NS	NS	NS
	12/11/08	12.13	85.63	6.75	NM	1.30	-13.6	NS	NS	NS
	3/19/09	11.55	86.21	6.54	NM	2.51	1.3	NS	NS	NS
	<b>4/9/09</b>	11.48	86.28	5.56	855	0.67	-6.2	0.78	29.8	25.6
	4/23/09	11.89	85.87	6.34	1,479	1.43	86.6	NS	NS	NS
	5/5/09	12.37	85.39	6.34	NM	1.32	74.3	NS	NS	NS
	5/19/09	12.21	85.55	6.29	1,864	2.57	37.1	NS	NS	NS
	6/11/09	12.76	85.00	6.46	1,617	0.87	-133.7	NS	NS	NS
	6/26/09	11.5	86.26	6.30	1,706	1.11	47.6	NS	NS	NS
	7/6/09	11.67	86.09	6.44	1,198	0.99	-52.6	NS	NS	NS
	7/22/09	12.00	85.76	6.37	1,577	1.31	-19.7	NS	NS	NS
	8/6/09	10.91	86.85	6.62	1,142	1.04	-66.7	NS	NS	NS
	<b>8/24/09</b>	11.34	86.42	6.41	1,660	0.44	-49.0	<1.00	10.3	27.0
	9/10/09	11.83	85.93	6.51	1,846	0.50	5.6	NS	NS	NS
	9/23/09	12.29	85.47	6.60	1,314	10.79	-56.6	NS	NS	NS
	10/6/09	12.4	85.36	6.13	1,370	0.92	50.1	NS	NS	NS
	<b>10/13/09</b>	12.43	85.33	6.68	1,147	3.90	-3.6	<0.100	2.76	17.4
	10/23/09	12.62	85.14	6.85	453	1.92	-25.1	NS	NS	NS
	11/5/09	11.90	85.86	6.60	1,276	0.57	-14.2	NS	NS	NS
	11/17/09	12.09	85.67	6.66	1,544	0.20	-10.1	NS	NS	NS
	12/8/09	11.97	85.79	6.55	1,335	1.46	-25.3	NS	NS	NS
	2/3/10	12.20	85.56	6.71	NM	12.16	-70.0	NS	NS	NS
	2/11/10	12.43	85.33	6.59	1,299	0.43	-67.0	<0.100	<1.0	15.4
	2/18/10	12.68	85.08	6.60	NM	9.44	25.0	NS	NS	NS
	3/3/10	12.11	85.65	6.56	1,532	1.61	-28.8	NS	NS	NS
	3/17/10	11.34	86.42	6.39	752	17.45	58.5	NS	NS	NS
	4/15/10	11.52	86.24	6.66	792	1.11	49.7	NS	NS	NS
	4/28/10	12.03	85.73	6.60	NM	4.04	12.4	NS	NS	NS
	5/13/10	12.3	85.46	6.48	1,474	4.36	-18.9	NS	NS	NS
	5/27/10	12.53	85.23	6.66	NM	2.10	12.2	NS	NS	NS
	6/9/10	12.73	85.03	6.40	NM	1.22	-29.0	NS	NS	NS
	6/24/10	12.95	84.81	6.69	NM	0.58	-42.2	NS	NS	NS
	7/9/10	13.12	84.64	6.14	NM	10.41	35.1	NS	NS	NS
	7/20/10	13.18	84.58	7.01	NM	2.21	-348.4	NS	NS	NS
	8/5/10	13.21	84.55	7.15	NM	2.34	-24.0	NS	NS	NS
	8/18/10	13.4	84.36	6.96	NM	1.37	-16.5	NS	NS	NS
	<b>9/9/10</b>	13.63	84.13	7.42	815	0.27	-61.0	<0.100	35.5	4.86
	9/15/10	13.51	84.25	6.56	NM	1.27	-21.4	NS	NS	NS
	9/30/10	13.72	84.04	6.90	NM	6.70	198.9	NS	NS	NS
	10/5/10	13.03	84.73	7.00	744	1.32	6.4	NS	NS	NS
	10/21/10	12.76	85.00	6.74	NM	1.06	-60.7	NS	NS	NS
	11/5/10	12.68	85.08	7.11	936	11.90	-34.5	NS	NS	NS
	11/19/10	12.58	85.18	6.96	NM	1.73	-60.2	NS	NS	NS
	12/9/10	12.40	85.36	6.51	NM	0.81	-51.6	NS	NS	NS
	12/22/10	12.27	85.49	6.54	784	1.64	-53.5	NS	NS	NS
	1/7/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	1/19/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/3/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	<b>3/28/11</b>	11.15	86.61	7.19	778	7.18	-35.1	0.11	40.7	2.05
	4/7/11	11.23	86.53	7.43	NM	5.01	-88.6	NS	NS	NS
	4/22/11	11.15	86.61	7.10	1,181	0.83	-103.6	NS	NS	NS
	5/7/11	11.21	86.55	7.77	1,087	0.88	-34.0	NS	NS	NS
	6/2/11	12.11	85.65	6.64	1,364	2.73	-6.3	NS	NS	NS
	6/14/11	12.12	85.64	6.53	NM	0.41	-40.6	NS	NS	NS
	7/7/11	11.91	85.85	6.07	NM	1.93	-69.6	NS	NS	NS
	7/25/11	12.50	85.26	6.90	NM	0.88	-97.5	NS	NS	NS
	8/15/11	12.85	84.91	7.01	NM	0.28	-109.1	NS	NS	NS
	8/26/11	12.29	85.47	7.24	828	1.57	-126.5	NS	NS	NS
	<b>9/14/11</b>	10.24	87.52	6.91	730	0.41	-40.6	1.28	43.0	2.11
	10/6/11	10.80	86.96	7.41	NM	0.89	50.1	NS	NS	NS
	10/20/11	11.42	86.34	6.96	NM	1.31	-98.7	NS	NS	NS
	11/3/11	11.60	86.16	7.00	1,044	1.09	-97.2	NS	NS	NS
	11/17/11	11.82	85.94	6.73	NM	2.91	-42.1	NS	NS	NS
	12/7/11	11.82	85.94	7.37	722	4.23	251.6	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-3</b>	12/21/11	11.63	86.13	7.26	807	6.88	220.8	NS	NS	NS
<b>(continued)</b>	1/4/12	11.64	86.12	7.57	792	7.71	132.5	NS	NS	NS
	2/1/12	11.62	86.14	7.22	985	9.60	210.7	NS	NS	NS
	2/15/12	12.09	85.67	7.46	742	0.77	-72.1	<0.100	27.2	2.77
	3/1/12	12.28	85.48	7.86	814	10.58	242.8	NS	NS	NS
	3/15/12	11.18	86.58	7.59	710	3.38	263.7	NS	NS	NS
	4/5/12	12.40	85.36	6.36	NM	8.27	302.2	NS	NS	NS
	4/19/12	12.71	85.05	7.77	740	4.03	312.2	NS	NS	NS
	5/3/12	12.59	85.17	8.00	872	1.74	176.1	NS	NS	NS
	5/17/12	11.95	85.81	7.33	853	5.58	237.0	NS	NS	NS
	5/31/12	12.21	85.55	7.22	702	8.79	321.3	NS	NS	NS
	6/14/12	12.35	85.41	7.02	681	8.11	301.3	NS	NS	NS
	6/26/12	12.70	85.06	7.48	639	1.20	-66.2	NS	NS	NS
	7/3/12	12.84	84.92	7.32	NM	0.65	-118.1	NS	NS	NS
	7/19/12	13.20	84.56	7.01	643	1.26	-59.3	NS	NS	NS
	8/1/12	13.22	84.54	7.31	795	1.15	-114.7	NS	NS	NS
	8/15/12	NM	NM	NM	NM	NM	NM	NS	NS	NS
	8/20/12	13.10	84.66	7.21	707	1.48	-80.3	3.80	42.2	1.04
	8/30/12	13.33	84.43	NM	NM	NM	NM	NS	NS	NS
	9/17/12	13.39	84.37	7.15	821	1.39	16.0	NS	NS	NS
	9/26/12	13.13	84.63	6.67	895	5.34	58.1	NS	NS	NS
	10/11/12	13.10	84.66	7.21	757	0.36	-35.4	NS	NS	NS
	10/25/12	12.67	85.09	6.98	762	0.63	-43.5	NS	NS	NS
	11/1/12	12.51	85.25	6.63	801	1.45	-53.1	NS	NS	NS
	11/15/12	12.82	84.94	6.40	856	1.42	-79.2	NS	NS	NS
	12/6/12	13.06	84.70	6.14	865	0.63	-84.6	NS	NS	NS
	12/20/12	12.76	85.00	6.74	804	0.61	-80.8	NS	NS	NS
	1/17/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	2/7/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	2/20/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	3/7/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
<b>ECS-4**</b>	<b>11/8/99</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>97.06</b>	<b>12/19/02</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>96.75</b>	<b>9/8/05</b>	11.94	84.81	NM	NM	NM	NM	NS	NS	NS
	<b>1/25/06</b>	NG	NA	NM	NM	NM	NM	NS	NS	NS
	<b>4/10/06</b>	11.51	85.24	NM	NM	NM	NM	NS	NS	NS
	<b>7/20/06</b>	11.96	84.79	5.67	1,013	246	932	NS	NS	NS
	9/15/06	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	9/21/06	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	10/6/06	12.36	84.39	NM	NM	NM	NM	NS	NS	NS
	<b>10/10/06</b>	12.43	84.32	NS	NS	NS	NS	NS	NS	NS
	10/23/06	11.75	85.00	5.94	NM	2.51	NM	NS	NS	NS
	11/7/06	11.72	85.03	6.54	NM	10.47	-42.90	NS	NS	NS
	11/20/06	11.08	85.67	7.01	NM	10.25	166.30	NS	NS	NS
	12/4/06	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	12/18/06	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	1/2/07	11.93	84.82	6.78	NM	10.48	-36.50	NS	NS	NS
	1/15/07	11.41	85.34	6.95	NM	10.82	-86.90	NS	NS	NS
	<b>1/25/07</b>	11.55	85.20	NS	NM	NS	NS	NS	NS	NS
	1/29/07	11.72	85.03	6.95	NM	12.86	-35.2	NS	NS	NS
	2/12/07	12.23	84.52	NM	NM	NM	NM	NS	NS	NS
	2/26/07	NG	NA	NM	NM	NM	NM	NS	NS	NS
	3/12/07	12.42	84.33	NM	NM	NM	NM	NS	NS	NS
	3/26/07	11.39	85.36	5.87	NM	13.76	179.60	NS	NS	NS
	4/10/07	10.46	86.29	6.75	NM	12.17	64.50	NS	NS	NS
	<b>4/24/07</b>	9.88	86.87	5.83	891	4.95	202	NS	NS	NS
	5/7/07	11.79	84.96	6.42	NM	5.34	136	NS	NS	NS
	5/24/07	11.65	85.10	6.23	NM	4.21	150	NS	NS	NS
	6/4/07	11.63	85.12	5.72	NM	9.72	38	NS	NS	NS
	6/18/07	11.81	84.94	6.53	NM	12.81	123	NS	NS	NS
	7/3/07	12.25	84.50	7.65	NM	7.17	87	NS	NS	NS
	7/16/07	12.31	84.44	7.41	NM	7.23	83	NS	NS	NS
	8/1/07	12.47	84.28	6.58	NM	20.52	101	NS	NS	NS
	8/13/07	12.53	84.22	6.40	NM	6.61	265	NS	NS	NS
	8/27/07	12.61	84.14	6.59	NM	9.21	-89	NS	NS	NS
	9/10/07	DRY	96.75	NM	NM	NM	NM	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-4 (continued)</b>	9/25/07	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	10/4/07	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	10/9/07	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	10/22/07	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	11/5/07	12.62	84.13	NM	NM	NM	NM	NS	NS	NS
	11/19/07	12.31	84.44	NM	NM	NM	NM	NS	NS	NS
	12/3/07	12.31	84.44	NM	NM	NM	NM	NS	NS	NS
	12/17/07	NG	NG	NM	NM	NM	NM	NS	NS	NS
	1/2/08	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	1/14/08	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	1/29/08	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	2/11/08	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	3/7/08	10.55	86.20	6.72	827	4.20	72.8	NS	NS	NS
	3/11/08	9.93	86.82	6.78	887	9.81	92	NS	NS	NS
	5/1/08	10.71	86.04	6.64	984	1.21	46	NS	NS	NS
	5/27/08	11.32	85.43	NM	NM	NM	NM	NS	NS	NS
	6/4/08	11.65	85.10	6.03	NM	1.16	12.3	NS	NS	NS
	6/17/08	11.88	84.87	6.61	NM	1.96	88.4	NS	NS	NS
	7/1/08	11.73	85.02	6.63	NM	2.12	99.7	NS	NS	NS
	7/9/08	NM	85.02	NM	NM	NM	NM	NS	NS	NS
	7/14/08	12.08	84.67	6.45	NM	1.93	84	NS	NS	NS
	7/30/08	11.16	85.59	6.20	NM	4.24	112	NS	NS	NS
	8/12/08	11.65	85.10	6.55	NM	5.18	66.6	NS	NS	NS
	8/20/08	11.38	85.37	NM	NM	NM	NM	NS	NS	NS
	8/26/08	11.97	84.78	6.58	NM	3.12	-21	NS	NS	NS
	9/9/08	11.13	85.62	6.51	NM	4.37	47.6	NS	NS	NS
	9/22/08	12.04	84.71	6.41	NM	4.65	208.8	NS	NS	NS
	10/17/08	12.31	84.44	6.46	NM	3.60	59.8	NS	NS	NS
	10/27/08	11.94	84.81	6.61	NM	4.80	30.2	NS	NS	NS
	11/11/08	11.54	85.21	6.51	NM	0.90	26.9	NS	NS	NS
	11/24/08	11.77	84.98	6.62	918	0.71	-12.0	NS	NS	NS
	11/25/08	11.68	85.07	6.48	NM	1.96	30.5	NS	NS	NS
	12/11/08	12.6	84.15	6.71	NM	1.38	134.3	NS	NS	NS
	12/23/08	10.7	86.05	6.66	NM	0.40	75.7	NS	NS	NS
	3/4/09	11.62	85.13	6.51	NM	5.62	173.9	NS	NS	NS
	3/19/09	10.82	85.93	6.81	NM	8.00	36.0	NS	NS	NS
	4/9/09	10.72	86.03	6.21	821	2.58	288.4	NS	NS	NS
	4/23/09	10.8	85.95	6.79	893	1.86	72.2	NS	NS	NS
	5/5/09	11.9	84.85	6.58	NM	0.88	217.0	NS	NS	NS
	5/19/09	11.7	85.05	6.50	881	1.83	117.8	NS	NS	NS
	6/26/09	10.74	86.01	6.56	1011	1.91	176.3	NS	NS	NS
	7/6/09	10.96	85.79	6.61	816	1.50	107.4	NS	NS	NS
	7/22/09	11.47	85.28	6.47	787	1.22	143.5	NS	NS	NS
8/6/09	10.19	86.56	6.39	717	4.55	204.8	NS	NS	NS	
9/10/09	11.11	85.64	6.69	727	1.27	75.6	NS	NS	NS	
9/23/09	11.55	85.20	6.58	797	6.08	-47.0	NS	NS	NS	
10/6/09	11.26	85.49	6.05	767	3.46	63.7	NS	NS	NS	
10/13/09	11.69	85.06	6.66	799	3.13	10.6	<0.100	2.76	17.4	
10/23/09	11.9	84.85	6.47	812	1.63	2.3	NS	NS	NS	
11/5/09	11.12	85.63	6.62	812	1.31	65.5	NS	NS	NS	
11/17/09	11.09	85.66	6.92	841	1.86	85.3	NS	NS	NS	
12/8/09	11.24	85.51	7.08	861	6.05	3.4	NS	NS	NS	
12/23/09	11.47	85.28	6.88	703	2.11	49.8	NS	NS	NS	
1/8/10	11.73	85.02	6.89	798	3.31	84.8	NS	NS	NS	
1/20/10	12.00	84.75	6.83	720	5.06	67.5	NS	NS	NS	
2/18/10	11.90	84.85	7.00	NM	4.95	12.1	NS	NS	NS	
3/3/10	11.91	84.84	6.72	1014	4.01	1.9	NS	NS	NS	
3/17/10	10.57	86.18	NM	NM	NM	NM	NS	NS	NS	
4/15/10	10.54	86.21	6.70	690	1.35	54.0	NS	NS	NS	
4/28/10	12.10	84.65	6.53	NM	2.45	8.4	NS	NS	NS	
5/13/10	11.57	85.18	6.50	819	6.01	61.8	NS	NS	NS	
5/27/10	11.80	84.95	6.57	NM	2.17	26.4	NS	NS	NS	
6/9/10	11.99	84.76	6.31	NM	1.41	5.6	NS	NS	NS	
6/24/10	12.10	84.65	6.52	NM	1.87	20.1	NS	NS	NS	
7/9/10	12.40	84.35	5.02	NM	7.08	337.3	NS	NS	NS	
7/20/10	12.44	84.31	6.88	NM	8.70	-246.0	NS	NS	NS	
8/5/10	12.48	84.27	7.04	NM	1.20	41.8	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
ECS-4 (continued)	8/18/10	12.66	84.09	6.48	NM	8.08	39.9	NS	NS	NS
	9/9/10	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	9/15/10	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	9/30/10	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	10/5/10	12.29	84.46	6.66	80	5.21	152.9	NS	NS	NS
	10/21/10	12.00	84.75	6.83	NM	3.24	82.4	NS	NS	NS
	11/5/10	11.94	84.81	6.90	806	11.43	13.8	NS	NS	NS
	11/19/10	11.35	85.40	6.87	NM	1.86	243.6	NS	NS	NS
	12/9/10	NM	NM	NM	NM	NM	NM	NS	NS	NS
	12/22/10	11.52	85.23	6.17	843	4.81	24.7	NS	NS	NS
	1/7/11	11.92	84.83	6.59	NM	11.01	5.8	NS	NS	NS
	1/19/11	12.22	84.53	6.81	NM	6.82	-9.0	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/3/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/28/11	10.38	86.37	6.76	0.826	5.81	136.1	NS	NS	NS
	4/7/11	10.48	86.27	6.91	NM	6.36	-39.1	NS	NS	NS
	4/22/11	10.40	86.35	6.70	0.863	0.48	-12.7	NS	NS	NS
	5/7/11	10.50	86.25	7.95	0.902	1.70	2.2	NS	NS	NS
	6/2/11	11.38	85.37	6.66	0.869	2.70	18.8	NS	NS	NS
	6/14/11	11.39	85.36	6.63	NM	3.11	107.1	NS	NS	NS
	7/7/11	11.17	85.58	6.03	NM	1.70	11.9	NS	NS	NS
	7/25/11	11.75	85.00	6.65	NM	5.31	-8.7	NS	NS	NS
	8/15/11	11.99	84.76	6.64	NM	1.62	-29.5	NS	NS	NS
	8/26/11	11.43	85.32	6.69	0.839	2.53	36.5	NS	NS	NS
	9/14/11	9.41	87.34	NM	NM	NM	NM	NS	NS	NS
	10/6/11	9.96	86.79	6.76	NM	2.97	138.6	NS	NS	NS
	10/20/11	10.56	86.19	6.72	NM	1.26	60.1	NS	NS	NS
	11/3/11	10.73	86.02	6.92	940	2.19	-51.0	NS	NS	NS
	11/17/11	10.96	85.79	6.93	NM	1.14	62.3	NS	NS	NS
	12/7/11	10.94	85.81	6.98	794	3.42	241.3	NS	NS	NS
	12/21/11	10.77	85.98	7.22	763	4.35	194.6	NS	NS	NS
	1/17/12	11.17	85.58	7.36	764	7.33	157.5	NS	NS	NS
	2/1/12	10.76	85.99	7.31	924	8.97	248.3	NS	NS	NS
	2/15/12	11.22	85.53	NM	NM	NM	NM	NS	NS	NS
	3/1/12	11.42	85.33	7.58	795	9.47	313.6	NS	NS	NS
	3/15/12	11.00	85.75	7.37	749	6.47	272.2	NS	NS	NS
	4/5/12	11.54	85.21	6.81	NM	7.34	284.9	NS	NS	NS
	4/19/12	11.84	84.91	6.58	809	6.75	290.8	NS	NS	NS
	5/3/12	11.72	85.03	7.34	771	2.10	165.1	NS	NS	NS
	5/17/12	11.08	85.67	6.65	794	5.28	265.7	NS	NS	NS
	5/31/12	11.34	85.41	6.15	851	6.15	367.0	NS	NS	NS
6/14/12	11.48	85.27	6.12	849	6.12	285.9	NS	NS	NS	
6/26/12	11.83	84.92	6.93	5	3.28	-12.2	NS	NS	NS	
7/3/12	12.00	84.75	6.63	NM	2.32	9.3	NS	NS	NS	
7/19/12	12.35	84.40	6.77	753	1.93	-9.8	NS	NS	NS	
8/1/12	12.35	84.40	6.73	963	6.73	-80.1	NS	NS	NS	
8/15/12	NM	NM	NM	NM	NM	NM	NS	NS	NS	
8/20/12	12.24	84.51	NM	NM	NM	NM	NS	NS	NS	
8/30/12	12.47	84.28	NM	NM	NM	NM	NS	NS	NS	
9/17/12	12.53	84.22	6.63	479	6.49	72.8	NS	NS	NS	
9/26/12	12.28	84.47	6.37	885	2.54	54.4	NS	NS	NS	
10/11/12	12.23	84.52	6.80	814	2.14	-14.0	NS	NS	NS	
10/25/12	11.79	84.96	6.38	834	2.96	-0.4	NS	NS	NS	
11/1/12	11.61	85.14	6.40	844	1.61	-15.1	NS	NS	NS	
11/15/12	11.94	84.81	6.41	821	2.96	-36.4	NS	NS	NS	
12/6/11	12.18	84.57	6.21	799	4.74	-43.9	NS	NS	NS	
12/20/12	11.87	84.88	6.29	802	4.88	-38.3	NS	NS	NS	
1/17/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
2/7/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
2/20/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
3/7/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
ECS-5	11/8/99	NA	NA	NA	NA	NA	NA	NS	NS	NS
97.73	12/19/02	NA	NA	NA	NA	NA	NA	NS	NS	NS
97.56	9/8/05	12.44	85.12	5.12	893	1.47	484	NS	NS	NS
	1/25/06	10.22	87.34	7.31	830	1.67	6.0	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
ECS-5 (continued)	4/11/06	11.15	86.41	6.81	910	2.61	18.0	NS	NS	NS
	7/20/06	12.48	85.08	4.93	803	2.63	559	NS	NS	NS
	10/10/06	12.98	84.58	NM	NM	NM	NM	NS	NS	NS
	1/25/07	12.14	85.42	NM	NM	NM	NM	NS	NS	NS
	2/26/07	12.11	85.45	8.06	NM	2.21	193.8	NS	NS	NS
	4/24/07	10.43	87.13	NA	NA	NA	NA	NS	NS	NS
	10/4/07	13.57	82.77	7.30	813	3.98	82.0	NS	NS	NS
	3/7/08	11.20	85.14	6.94	726	3.34	90.6	NS	NS	NS
	3/11/08	10.54	85.80	7.10	834	1.52	105	NS	NS	NS
	5/1/08	11.27	85.07	NA	NA	NA	NA	NS	NS	NS
	11/24/08	12.38	83.96	NA	NA	NA	NA	NS	NS	NS
	10/21/10	12.58	83.76	6.39	818	1.45	39.9	NS	NS	NS
	12/22/10	12.12	84.22	6.82	822	2.18	-24.8	NS	NS	NS
	3/28/11	11.04	85.30	7.49	751	1.84	-9.1	NS	NS	NS
	9/14/11	10.17	86.17	7.49	709	1.32	-53.6	2.40	27.4	0.233
	2/15/12	12.00	84.34	6.25	715	2.77	-30.7	2.52	24.1	0.0777
	8/20/12	13.03	83.31	7.41	716	3.10	-35.3	0.350	31.9	0.0326
	2/20/12	12.48	83.86	7.13	781	2.01	14.5	2.390	27.2	0.530
	ECS-6	2/13/03	NA	NA	NA	NA	NA	NA	NS	NS
96.58	9/8/05	11.34	85.00	4.97	972	0.43	258	NS	NS	NS
96.34	11/1/05	9.57	86.77	6.67	893	1.22	26.8	NS	NS	NS
	1/25/06	9.10	87.24	6.90	907	0.60	-99.0	NS	NS	NS
	4/10/06	11.05	85.29	7.15	1,146	0.47	64.0	NS	NS	NS
	7/20/06	11.40	84.94	4.11	907	0.17	561	NS	NS	NS
	10/10/06	11.89	84.45	NM	657	0.84	86.4	NS	NS	NS
	1/25/07	10.99	85.35	7.12	802	1.91	49.0	NS	NS	NS
	4/24/07	9.35	86.99	6.71	885	0.26	-10.4	NS	NS	NS
	10/4/07	12.46	83.88	6.87	947	1.20	-4.0	NS	NS	NS
	3/7/08	10.05	86.29	6.16	1,721	1.18	68.4	NS	NS	NS
	3/11/08	10.44	85.90	6.04	1,408	0.35	83.0	22.8	252	30.6
	5/1/08	10.16	86.18	6.57	880	0.72	24.0	<2.0	100	5.70
	11/24/08	11.26	85.08	6.85	398	0.12	-40.0	0.14	38.5	5.29
	2/18/09	11.25	85.09	7.34	93	0.53	-24.0	0.13	24.8	2.12
	8/24/09	10.06	86.28	7.14	293	0.39	-38.0	0.26	29.8	1.15
	2/11/10	11.18	85.16	6.28	205	0.21	19.0	<0.100	22.8	2.18
	9/9/10	12.36	83.98	7.41	1,037	0.43	-4.0	<0.100	29.2	0.132
	3/28/11	9.91	86.43	6.61	1,301	0.62	7.9	0.970	48.0	2.85
	9/14/11	9.04	87.30	6.67	819	1.06	19.6	0.350	28.4	0.534
	2/15/12	10.82	85.52	5.61	835	0.68	-14.9	<0.200	23.4	2.06
	8/20/12	11.85	84.49	6.86	881	0.32	-61.1	0.242	24.7	3.81
	2/20/12	11.29	85.05	6.80	867	0.92	12.0	0.110	20.3	2.79
ECS-7	2/13/03	NA	NA	NA	NA	NA	NA	NS	NS	NS
95.97	9/8/05	9.75	85.79	5.55	1,398	1.20	243	NS	NS	NS
95.54	1/25/06	9.05	86.49	6.85	925	0.35	16.0	NS	NS	NS
	4/10/06	9.90	85.64	6.44	1,490	0.79	180	NS	NS	NS
	7/20/06	9.78	85.76	NM	NM	NM	NM	NS	NS	NS
	10/10/06	9.96	85.58	NM	NM	NM	NM	NS	NS	NS
	1/25/07	9.70	85.84	NM	NM	NM	NM	NS	NS	NS
	4/24/07	9.47	86.07	NM	NM	NM	NM	NS	NS	NS
	10/4/07	10.41	85.13	6.58	1,089	0.39	9	NS	NS	NS
	3/7/08	14.79	80.75	6.63	962	2.62	60.2	NS	NS	NS
	5/1/08	9.62	85.92	NM	NM	NM	NM	NS	NS	NS
	11/24/08	10.79	84.75	NM	NM	NM	NM	NS	NS	NS
	9/14/11	8.71	86.83	NM	NM	NM	NM	NS	NS	NS
	2/15/12	9.17	86.37	NM	NM	NM	NM	NS	NS	NS
	8/30/12	9.26	86.28	6.49	1,564	0.44	-70.5	NS	NS	NS
ECS-8**	2/13/03	NA	NA	NA	NA	NA	NA	NS	NS	NS
95.72	9/8/05	10.35	85.08	4.74	1,534	1.20	469	<0.100	52.6	18.3
95.43	1/25/06	NG	NA	NM	NM	NM	NM	NS	NS	NS
	4/11/06	9.98	85.45	6.51	193	0.16	4.0	<0.100	59.2	1.64
	7/20/06	10.28	85.15	NM	NM	NM	NM	NS	NS	NS
	9/15/06	11.29	84.14	6.62	NM	10.17	-2.8	NS	NS	NS
	9/21/06	10.31	85.12	6.75	NM	7.85	123	NS	NS	NS
	10/6/06	11.75	83.68	7.63	NM	1.23	27.0	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-8</b>	<b>10/10/06</b>	10.81	84.62	NM	NM	NM	NM	NS	NS	NS
<b>(continued)</b>	10/23/06	NG	NA	NM	NM	NM	NM	NS	NS	NS
	11/7/06	10.09	85.34	6.33	NM	7.43	-34.7	NS	NS	NS
	11/20/06	9.47	85.96	6.82	NM	3.53	78.6	NS	NS	NS
	12/4/06	9.92	85.51	7.92	NM	10.70	179.5	NS	NS	NS
	12/18/06	11.42	84.01	6.18	NM	7.30	27.2	NS	NS	NS
	1/2/07	10.33	85.10	6.69	NM	7.64	-98.5	NS	NS	NS
	1/15/07	9.87	85.56	6.82	NM	7.33	-109.6	NS	NS	NS
	<b>1/25/07</b>	9.91	85.52	NM	NM	NM	NM	NS	NS	NS
	1/29/07	10.08	85.35	7.13	NM	13.11	-79.2	NS	NS	NS
	2/12/07	11.62	83.81	6.93	NM	10.22	14.4	NS	NS	NS
	2/26/07	10.35	85.08	7.31	NM	6.41	246.7	NS	NS	NS
	3/12/07	10.22	85.21	7.14	NM	8.63	62.7	NS	NS	NS
	3/26/07	9.84	85.59	7.15	NM	9.40	39.7	NS	NS	NS
	4/10/07	9.16	86.27	7.06	NM	11.61	60.4	NS	NS	NS
	<b>4/24/07</b>	8.19	87.24	6.40	1,075	8.84	222.6	NS	NS	NS
	5/7/07	9.00	86.43	5.01	NM	11.69	90.8	NS	NS	NS
	5/24/07	9.83	85.60	5.47	NM	10.14	108.2	NS	NS	NS
	6/4/07	9.08	86.35	5.13	NM	8.03	43.6	NS	NS	NS
	6/18/07	10.18	85.25	6.28	NM	13.65	-14.7	NS	NS	NS
	7/3/07	10.62	84.81	7.36	NM	7.44	90.8	NS	NS	NS
	7/16/07	11.89	83.54	7.14	NM	7.54	104.7	NS	NS	NS
	8/1/07	10.83	84.60	6.45	NM	7.61	71.8	NS	NS	NS
	8/13/07	10.92	84.51	5.71	NM	3.10	-283.4	NS	NS	NS
	8/27/07	11.17	84.26	6.27	NM	7.42	-13.8	NS	NS	NS
	9/10/07	11.26	84.18	7.30	NM	9.71	-14.5	NS	NS	NS
	9/25/07	11.35	84.08	7.28	NM	7.10	-17.1	NS	NS	NS
	<b>10/4/07</b>	11.45	83.98	6.41	1,580	0.54	96.0	NS	NS	NS
	10/9/07	11.48	83.95	6.16	NM	2.85	-301.2	NS	NS	NS
	10/22/07	11.22	84.21	7.04	NM	4.01	-22.5	NS	NS	NS
	11/5/07	11.05	84.38	7.08	NM	3.01	39.9	NS	NS	NS
	11/19/07	10.79	84.64	7.03	NM	3.85	-25.2	NS	NS	NS
	12/3/07	9.74	85.69	7.01	NM	2.98	38.4	NS	NS	NS
	12/17/07	NG	NG	NM	NM	NM	NM	NS	NS	NS
	1/2/08	NG	NG	NM	NM	NM	NM	NS	NS	NS
	1/14/08	NG	NG	NM	NM	NM	NM	NS	NS	NS
	1/29/08	10.31	85.12	6.42	NM	4.51	73.0	NS	NS	NS
	2/11/08	NG	NG	NM	NM	NM	NM	NS	NS	NS
	3/11/08	NG	NG	NM	NM	NM	NM	NS	NS	NS
	<b>3/24/08</b>	8.56	86.87	6.33	1078	2.37	46	3.34	70.6	<0.0300
	<b>5/1/08</b>	9.02	86.41	6.64	1451	0.50	27	NS	NS	NS
	5/27/08	9.59	85.84	NM	NM	NM	NM	NS	NS	NS
	6/4/08	10.07	85.36	6.00	NM	1.06	-5	NS	NS	NS
	6/17/08	9.82	85.61	6.46	NM	1.87	49.5	NS	NS	NS
	7/1/08	9.72	85.71	6.49	NM	1.43	5.7	NS	NS	NS
	7/9/08	NM	85.71	NM	NM	NM	NM	NS	NS	NS
	7/14/08	10.23	85.20	6.32	NM	1.84	50.1	NS	NS	NS
	7/30/08	9.51	85.92	6.00	NM	2.77	57	NS	NS	NS
	8/12/08	9.81	85.62	6.30	NM	2.02	15.6	NS	NS	NS
	8/20/08	9.47	85.96	NM	NM	NM	NM	NS	NS	NS
	8/26/08	10.02	85.41	6.32	NM	2.00	9.4	NS	NS	NS
	9/9/08	8.89	86.54	6.22	NM	1.95	23.7	NS	NS	NS
	9/22/08	10.42	85.01	6.37	NM	2.04	11.7	NS	NS	NS
	10/17/08	10.65	84.78	6.59	NM	1.34	13.2	NS	NS	NS
	10/27/08	10.30	85.13	6.36	NM	1.14	11.7	NS	NS	NS
	11/11/08	10.99	84.44	6.21	NM	0.92	26.0	NS	NS	NS
	<b>11/24/08</b>	10.12	85.31	6.60	1640	0.36	7.0	NS	NS	NS
	11/25/08	11.12	84.31	6.39	NM	3.72	-26.6	NS	NS	NS
	12/11/08	9.60	85.83	6.56	NM	2.44	9.0	NS	NS	NS
	12/23/08	9.04	86.39	6.53	NM	2.26	13.9	NS	NS	NS
	3/19/09	9.00	86.43	6.49	NM	1.91	32.9	NS	NS	NS
	<b>4/9/09</b>	9.02	86.41	5.68	NM	0.67	205.9	NS	NS	NS
	5/5/09	9.80	85.63	6.41	NM	1.50	152.6	NS	NS	NS
	5/19/09	9.69	85.74	6.37	NM	1.77	96.2	NS	NS	NS
	6/11/09	10.30	85.13	6.34	1440	1.07	28.6	NS	NS	NS
	6/26/09	11.27	84.16	6.41	1568	1.43	90.1	NS	NS	NS
	7/6/09	9.30	86.13	6.24	816	0.46	82.6	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-8</b>	7/22/09	9.47	85.96	6.35	1,407	2.43	71.4	NS	NS	NS
<b>(continued)</b>	8/6/09	8.51	86.92	6.41	1,340	1.70	86.8	NS	NS	NS
	<b>8/24/09</b>	8.98	86.45	6.46	1,700	0.37	13.0	NS	NS	NS
	9/10/09	9.48	85.95	6.53	1,327	0.95	62.9	NS	NS	NS
	9/23/09	9.93	85.50	6.54	1,457	10.06	26.4	NS	NS	NS
	10/6/09	9.87	85.56	6.01	683	0.49	73.8	NS	NS	NS
	10/13/09	10.05	85.38	6.39	1,199	3.66	59.0	NS	NS	NS
	10/23/09	10.10	85.33	6.43	1,756	1.79	1.4	NS	NS	NS
	11/5/09	9.26	86.17	6.39	1,452	0.70	47.8	NS	NS	NS
	11/17/09	9.53	85.90	6.55	1,403	0.25	70.4	NS	NS	NS
	12/8/09	12.28	83.15	6.81	1,352	2.61	-5.9	NS	NS	NS
	3/17/10	8.76	86.67	6.48	2,322	6.49	114.0	NS	NS	NS
	4/15/10	8.80	86.63	6.74	994	4.21	99.4	NS	NS	NS
	5/13/10	9.84	85.59	6.24	1,589	6.37	50.4	NS	NS	NS
	5/27/10	10.10	85.33	6.51	NM	5.60	9.6	NS	NS	NS
	6/9/10	9.78	85.65	6.16	NM	1.63	-14.0	NS	NS	NS
	6/24/10	10.20	85.23	6.33	NM	0.73	39.2	NS	NS	NS
	7/9/10	10.71	84.72	5.15	NM	6.10	395.2	NS	NS	NS
	7/20/10	10.77	84.66	6.62	NM	0.92	-117.0	NS	NS	NS
	8/5/10	10.79	84.64	6.67	NM	0.69	10.3	NS	NS	NS
	8/18/10	11.05	84.38	6.23	NM	2.30	117.6	NS	NS	NS
	<b>9/9/10</b>	11.29	84.14	6.56	774	0.26	53.0	NS	NS	NS
	9/15/10	11.38	84.05	6.20	NM	1.81	106.1	NS	NS	NS
	9/30/10	NM	NM	NM	NM	NM	NM	NS	NS	NS
	10/5/10	NM	NM	NM	NM	NM	NM	NS	NS	NS
	10/21/10	NM	NM	NM	NM	NM	NM	NS	NS	NS
	11/5/10	NM	NM	NM	NM	NM	NM	NS	NS	NS
	11/19/10	9.30	86.13	6.84	NM	1.31	204.9	NS	NS	NS
	12/9/10	9.81	85.62	6.04	NM	0.75	-20.8	NS	NS	NS
	12/22/10	NM	NM	NM	NM	NM	NM	NS	NS	NS
	1/7/11	10.27	85.16	6.30	NM	7.56	-36.9	NS	NS	NS
	1/19/11	NM	NM	NM	NM	NM	NM	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/3/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	<b>3/28/11</b>	8.80	86.63	6.63	1,827	1.17	33.5	NS	NS	NS
	4/7/11	8.86	86.57	6.96	NM	4.21	-35.8	NS	NS	NS
	<b>4/22/11</b>	8.60	86.83	6.47	1,816	0.26	-13.4	NS	NS	NS
	<b>5/7/11</b>	8.65	86.78	7.70	1,768	0.95	-3.2	NS	NS	NS
	<b>6/2/11</b>	9.51	85.92	6.48	1,690	3.00	22.9	NS	NS	NS
	<b>6/14/11</b>	NM	NM	NM	NM	NM	NM	NS	NS	NS
	7/7/11	9.33	86.10	6.00	NM	1.32	15.3	NS	NS	NS
	<b>7/25/11</b>	9.87	85.56	6.50	NM	1.58	-10.0	NS	NS	NS
	8/15/11	NM	NM	NM	NM	NM	NM	NS	NS	NS
	<b>8/26/11</b>	9.80	85.63	6.64	1,426	0.35	-59.6	NS	NS	NS
	9/14/11	7.89	87.54	NM	NM	NM	NM	NS	NS	NS
	10/6/11	8.35	87.08	6.75	NM	1.20	39.3	NS	NS	NS
	10/20/11	NM	NM	NM	NM	NM	NM	NS	NS	NS
	11/3/11	NM	NM	NM	NM	NM	NM	NS	NS	NS
	11/17/11	NM	NM	NM	NM	NM	NM	NS	NS	NS
	12/7/11	NM	NM	NM	NM	NM	NM	NS	NS	NS
	12/21/11	9.06	86.37	6.74	1,460	4.23	228.4	NS	NS	NS
	1/4/12	9.06	86.37	7.07	1,360	7.46	193.6	NS	NS	NS
	2/1/12	NM	NM	NM	NM	NM	NM	NS	NS	NS
	2/15/12	9.56	85.87	NM	NM	NM	NM	NS	NS	NS
	3/1/12	NM	NM	NM	NM	NM	NM	NS	NS	NS
	3/15/12	9.08	86.35	6.96	1,535	2.01	290.3	NS	NS	NS
	4/5/12	9.74	85.69	6.54	NM	3.22	264.6	NS	NS	NS
	4/19/12	10.05	85.38	6.81	1,708	5.41	329.2	NS	NS	NS
	5/3/12	NM	NM	NM	NM	NM	NM	NS	NS	NS
	5/17/12	9.25	86.18	6.64	1,551	3.38	257.0	NS	NS	NS
	5/31/12	7.53	87.90	6.35	1,758	3.44	320.2	NS	NS	NS
	6/14/12	9.67	85.76	6.40	1,520	5.19	322.4	NS	NS	NS
	6/26/12	10.01	85.42	6.94	1,236	1.70	-2.6	NS	NS	NS
	7/3/12	10.19	85.24	6.63	NM	2.55	-22.7	NS	NS	NS
	7/19/12	10.58	84.85	6.60	1,474	0.74	-21.4	NS	NS	NS
	8/1/12	10.60	84.83	6.49	1,862	0.62	-20.2	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-8</b>	8/15/12	NM	NM	NM	NM	NM	NM	NS	NS	NS
<b>(continued)</b>	8/20/12	10.49	84.94	NM	NM	NM	NM	NS	NS	NS
	8/30/12	10.77	84.66	6.34	2050	0.34	-25.5	NS	NS	NS
	9/17/12	10.85	84.58	6.32	1949	0.37	9.0	NS	NS	NS
	9/26/12	10.56	84.87	6.04	1835	0.32	67.8	NS	NS	NS
	10/11/12	10.48	84.95	6.52	1695	0.41	-24.5	NS	NS	NS
	10/25/12	10.02	85.41	6.40	1656	1.10	-38.4	NS	NS	NS
	11/1/12	9.88	85.55	6.26	1666	0.60	-29.7	NS	NS	NS
	11/15/12	10.17	85.26	6.23	1610	1.59	-52.6	NS	NS	NS
	12/6/12	10.42	85.01	5.99	1567	0.70	-63.1	NS	NS	NS
	12/20/12	10.06	85.37	6.14	1541	0.83	-57.7	NS	NS	NS
	1/17/13	9.86	85.57	6.14	1499	0.75	-44.2	NS	NS	NS
	2/7/13	11.03	84.40	5.81	1145	1.25	34.7	NS	NS	NS
	2/20/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	3/7/13	9.88	85.55	NM	NM	NM	NM	NS	NS	NS
<b>ECS-9*</b>	2/13/03	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>95.22</b>	9/19/05	10.91	84.08	6.22	1,047	4.69	-46.8	<0.100	<1.0	11.5
<b>94.99</b>	1/25/06	8.38	86.61	6.32	944	0.80	-89.0	<0.100	7.27	9.75
	4/11/06	10.33	84.66	6.52	157	0.60	-13.0	<0.100	<1.0	0.945
	7/20/06	10.72	84.27	3.02	1,136	0.30	445	<0.100	<1.0	10.8
	10/10/06	11.12	83.87	NA	NA	NA	NA	NS	NS	NS
	1/25/07	10.31	84.68	6.64	995	1.42	-2	<0.5	<5.0	10.6
	4/24/07	8.57	86.42	6.40	1,609	0.58	-2.6	NS	NS	NS
	10/4/07	11.79	83.20	6.69	1,478	1.11	-94.0	<0.100	8.05	47.1
	3/7/08	9.22	85.77	6.57	1,195	2.80	36.5	NS	NS	NS
	3/11/08	8.63	86.36	6.75	1,217	0.32	12.0	<0.100	36.2	6.76
	5/1/08	9.47	85.52	6.77	1,730	0.52	46.0	<1.0	61.3	0.40
	11/24/08	10.6	84.39	6.81	1,146	0.21	-31.0	<0.100	<1.0	10.8
	2/18/09	10.62	84.37	6.77	1,060	0.46	-29.0	<0.100	1.05	8.64
	8/24/09	9.33	85.66	6.68	1,560	0.39	-8.0	<0.100	26.20	11.6
	2/11/10	10.49	84.50	6.43	1,600	0.40	-27.0	<0.100	5.32	9.45
	9/9/10	11.64	83.35	6.76	744	0.29	-16.0	<0.100	<1.0	10.8
	3/28/11	9.28	85.71	7.06	1,147	6.39	31.5	0.100	9.72	0.784
	9/14/11	8.41	86.58	6.67	1,622	0.30	83.2	0.280	58.8	0.224
	2/15/12	10.23	84.76	7.16	1,542	1.64	-9.6	0.250	6.75	3.46
	8/20/12	NM	NM	NM	NM	NM	NM	NS	NS	NS
	8/30/12	11.35	83.64	6.27	1,155	0.40	-24.1	<0.100	1.52	15.30
	2/20/13	10.55	84.44	6.73	939	0.70	8.2	<0.100	6.49	13.90
<b>ECS-10</b>	2/13/03	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>95.90</b>	9/8/05	9.59	86.16	4.40	1,624	0.93	601	NS	NS	NS
<b>95.75</b>	1/25/06	8.57	87.18	6.96	1,850	0.37	23.0	NS	NS	NS
	4/10/06	9.52	86.23	6.60	234	0.35	180	NS	NS	NS
	7/20/06	9.42	86.33	NM	NM	NM	NM	NS	NS	NS
	10/10/06	9.64	86.11	NM	NM	NM	NM	NS	NS	NS
	1/25/07	9.31	86.44	NM	NM	NM	NM	NS	NS	NS
	4/24/07	8.53	87.22	NM	NM	NM	NM	NS	NS	NS
	10/4/07	10.18	85.57	6.60	1,570	0.36	15.0	NS	NS	NS
	3/7/08	8.01	87.74	6.70	1,473	0.46	62.2	NS	NS	NS
	3/11/08	5.74	90.01	6.58	930	0.51	82.0	3.84	27.2	1.20
	5/1/08	8.87	86.88	6.93	1,650	0.57	47.0	13.3	45.2	<0.0300
	11/24/08	9.4	86.35	6.74	1,800	0.28	-30.0	<0.100	23.0	7.98
	2/18/09	9.62	86.13	6.85	1,670	0.59	42.0	<0.100	28.2	1.90
	8/24/09	8.75	87.00	6.20	314	0.37	56.0	0.12	2.67	3.00
	2/11/10	9.34	86.41	6.22	1,660	0.49	37.0	<0.100	8.79	1.65
	9/9/10	9.55	86.20	6.77	792	0.29	-39.0	<0.100	2.18	15.6
	3/28/11	8.70	87.05	6.78	664	0.59	15.1	0.420	6.41	1.48
	9/14/11	8.15	87.60	NM	NM	NM	NM	NS	NS	NS
	2/15/12	NM	NM	NM	NM	NM	NM	NS	NS	NS
	8/20/12	8.99	86.76	NM	NM	NM	NM	NS	NS	NS
	8/30/12	9.12	86.63	6.65	1,179	0.38	-87.2	NS	NS	NS
<b>ECS-11**</b>	1/25/06	9.28	87.42	6.42	1,033	0.70	-74.0	<0.100	25.2	10.4
<b>96.70</b>	4/10/06	10.94	85.76	6.92	1,103	0.67	-5.0	NS	NS	NS
	7/20/06	11.31	85.39	4.75	1,024	0.25	503	NS	NS	NS
	9/15/06	12.31	84.39	7.00	NM	8.92	-49.9	NS	NS	NS



**TABLE 2**  
**GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
ECS-11 (continued)	9/21/06	11.89	84.81	6.95	NM	10.01	266	NS	NS	NS
	10/6/06	11.74	84.96	8.10	NM	2.48	-41.5	NS	NS	NS
	<b>10/10/06</b>	11.81	84.89	NM	649	0.63	71.4	NS	NS	NS
	10/23/06	11.20	85.50	6.12	NM	1.60	NM	NS	NS	NS
	11/7/06	10.74	85.96	6.76	NM	10.43	-51.4	NS	NS	NS
	11/20/06	10.49	86.21	7.56	NM	8.52	-11.5	NS	NS	NS
	12/4/06	10.93	85.77	7.46	NM	12.59	232.5	NS	NS	NS
	12/18/06	11.40	85.30	6.44	NM	8.36	-8.5	NS	NS	NS
	1/2/07	11.34	85.36	7.69	NM	8.39	-127.5	NS	NS	NS
	1/15/07	10.89	85.81	7.34	NM	8.16	-133.4	NS	NS	NS
	<b>1/25/07</b>	10.98	85.72	7.03	849	1.58	4.0	NS	NS	NS
	1/29/07	11.11	85.59	7.43	NM	8.73	-105.0	NS	NS	NS
	2/12/07	11.54	85.16	7.22	NM	10.69	-48.6	NS	NS	NS
	2/26/07	11.14	85.56	7.14	NM	4.89	NM	NS	NS	NS
	3/12/07	11.91	84.79	7.07	NM	9.85	42.4	NS	NS	NS
	3/26/07	10.86	85.84	7.29	NM	10.23	-38.8	NS	NS	NS
	4/10/07	10.2	86.50	7.25	NM	12.52	66.7	NS	NS	NS
	<b>4/24/07</b>	9.35	87.35	5.70	1,163	0.30	149.2	NS	NS	NS
	5/7/07	10.18	86.52	5.37	NM	12.55	59.1	NS	NS	NS
	5/24/07	10.98	85.72	5.82	NM	11.23	58.6	NS	NS	NS
	6/4/07	11.05	85.65	6.63	NM	6.17	210.1	NS	NS	NS
	6/18/07	11.28	85.42	6.72	NM	9.23	10.2	NS	NS	NS
	7/3/07	11.65	85.05	7.85	NM	15.90	81.5	NS	NS	NS
	7/16/07	12.92	83.78	7.03	NM	13.29	98.3	NS	NS	NS
	8/1/07	11.87	84.83	6.94	NM	9.42	-0.6	NS	NS	NS
	8/13/07	11.97	84.73	6.27	NM	1.21	-319.1	NS	NS	NS
	8/27/07	12.2	84.50	6.65	NM	8.97	-51.7	NS	NS	NS
	9/10/07	12.29	84.41	7.28	NM	5.81	-41.1	NS	NS	NS
	9/25/07	12.36	84.34	7.26	NM	5.23	-42.3	NS	NS	NS
	<b>10/4/07</b>	12.47	84.23	6.64	1,176	1.07	-11.0	NS	NS	NS
	10/9/07	12.52	84.18	6.91	NM	5.33	-306.3	NS	NS	NS
	10/22/07	12.26	84.44	7.91	NM	4.20	-64.1	NS	NS	NS
	11/5/07	12.10	84.60	7.56	NM	2.80	-15.1	NS	NS	NS
	11/19/07	11.82	84.88	7.82	NM	4.07	-69.7	NS	NS	NS
	12/3/07	12.79	83.91	7.31	NM	2.68	-98.1	NS	NS	NS
	12/17/07	11.93	84.77	7.03	NM	2.97	-91.5	NS	NS	NS
	1/2/08	11.40	85.30	6.61	NM	4.95	-96.2	NS	NS	NS
	1/14/08	11.01	85.69	6.60	NM	4.52	-65.7	NS	NS	NS
	1/29/08	11.34	85.36	7.11	NM	5.47	20.9	NS	NS	NS
	2/11/08	11.19	85.51	NM	NM	NM	NM	NS	NS	NS
	3/7/08	9.84	86.86	6.86	1,999	0.16	70.7	NS	NS	NS
	<b>3/11/08</b>	9.36	87.34	6.88	1,601	0.86	-25.0	NS	NS	NS
	<b>5/1/08</b>	10.28	86.42	7.04	1,471	0.52	12.0	NS	NS	NS
5/27/08	10.63	86.07	NM	NM	NM	NM	NS	NS	NS	
6/4/08	11.01	85.69	6.48	NM	0.29	-28.7	NS	NS	NS	
6/17/08	11.03	85.67	7.22	NM	2.17	-37.3	NS	NS	NS	
7/1/08	10.55	86.15	7.29	NM	0.90	-32.4	NS	NS	NS	
7/9/08	NM	86.15	NM	NM	NM	NM	NS	NS	NS	
7/14/08	11.84	84.86	6.81	NM	1.70	19.0	NS	NS	NS	
7/30/08	10.58	86.12	6.55	NM	1.98	-17.8	NS	NS	NS	
8/12/08	10.58	86.12	6.86	NM	0.86	112.4	NS	NS	NS	
8/20/08	11.02	85.68	NM	NM	NM	NM	NS	NS	NS	
8/26/08	10.81	85.89	6.90	NM	1.93	-11.2	NS	NS	NS	
9/9/08	10.74	85.96	6.69	NM	0.72	118.2	NS	NS	NS	
9/22/08	11.57	85.13	6.60	NM	0.57	7.9	NS	NS	NS	
10/17/08	11.1	85.60	7.04	NM	0.71	-2.9	NS	NS	NS	
10/27/08	10.8	85.90	6.80	NM	1.50	-11.6	NS	NS	NS	
11/11/08	10.99	85.71	6.62	NM	1.01	-34.7	NS	NS	NS	
<b>11/24/08</b>	11.21	85.49	7.01	1,540	0.16	-34.0	NS	NS	NS	
11/25/08	11.12	85.58	6.68	NM	0.94	-161.0	NS	NS	NS	
12/11/08	10.88	85.82	7.06	NM	0.61	-18.0	NS	NS	NS	
12/23/08	9.67	87.03	6.60	NM	1.04	-33.7	NS	NS	NS	
1/6/09	9.87	86.83	6.47	NM	0.71	28.9	NS	NS	NS	
1/23/09	10.55	86.15	6.66	NM	2.88	48.1	NS	NS	NS	
2/18/09	11.25	85.45	7.03	1,501	0.65	11.0	NS	NS	NS	
3/4/09	10.72	85.98	6.83	NM	1.17	187.8	NS	NS	NS	
3/19/09	9.94	86.76	6.94	NM	0.44	-17.4	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
ECS-11 (continued)	4/9/09	9.87	86.83	7.40	NM	0.29	91.7	NS	NS	NS
	4/23/09	9.87	86.83	6.95	NM	1.00	39.4	NS	NS	NS
	5/5/09	10.62	86.08	6.94	NM	0.90	66.5	NS	NS	NS
	5/19/09	10.55	86.15	6.79	NM	1.21	20.9	NS	NS	NS
	6/11/09	10.86	85.84	6.77	NM	0.61	-10.1	NS	NS	NS
	6/26/09	11.17	85.53	6.60	NM	0.88	38.9	NS	NS	NS
	7/6/09	10.44	86.26	6.70	1,198	0.30	-25.8	NS	NS	NS
	7/22/09	10.75	85.95	6.70	1,223	4.62	28.5	NS	NS	NS
	8/6/09	9.38	87.32	6.82	1,290	0.75	-69.9	NS	NS	NS
	<b>8/24/09</b>	10.08	86.62	6.85	1,273	0.41	-22.0	NS	NS	NS
	9/10/09	10.57	86.13	7.21	1,151	0.57	-22.7	NS	NS	NS
	9/23/09	10.56	86.14	7.13	1,226	11.20	-77.7	NS	NS	NS
	10/6/09	10.75	85.95	6.64	1,214	0.71	16.9	NS	NS	NS
	10/13/09	11.20	85.50	7.15	1,039	3.17	12.6	NS	NS	NS
	10/23/09	10.85	85.85	6.91	1,285	2.19	-59.3	NS	NS	NS
	11/5/09	10.48	86.22	6.91	1,312	1.15	-58.9	NS	NS	NS
	11/17/09	10.44	86.26	7.01	1,254	3.15	-27.3	NS	NS	NS
	12/8/09	10.33	86.37	6.99	1,280	0.47	-36.1	NS	NS	NS
	12/23/09	10.55	86.15	7.21	1,002	1.30	58.3	NS	NS	NS
	1/8/10	10.70	86.00	7.04	1,077	0.88	28.2	NS	NS	NS
	1/20/10	11.36	85.34	7.11	1,095	1.41	-19.8	NS	NS	NS
	2/3/10	11.03	85.67	6.77	NM	10.84	-58.9	NS	NS	NS
	2/11/10	11.26	85.44	7.01	1,290	0.47	-39.0	NS	NS	NS
	2/18/10	11.68	85.02	6.95	NM	0.84	14.4	NS	NS	NS
	3/3/10	10.99	85.71	6.96	1,331	2.84	-2.7	NS	NS	NS
	3/17/10	10.19	86.51	7.00	1,204	1.64	-39.6	NS	NS	NS
	4/15/10	9.86	86.84	6.95	1,009	1.04	-38.6	NS	NS	NS
	4/28/10	10.34	86.36	6.82	NM	3.80	24.2	NS	NS	NS
	5/13/10	11.08	85.62	6.81	1,119	4.78	36.9	NS	NS	NS
	5/27/10	11.3	85.40	6.99	NM	1.11	-42.6	NS	NS	NS
	6/9/10	10.95	85.75	6.49	NM	0.97	8.9	NS	NS	NS
	6/24/10	11.34	85.36	6.50	NM	0.59	33.9	NS	NS	NS
	7/9/10	11.93	84.77	6.38	NM	6.59	37.7	NS	NS	NS
	7/20/10	11.26	85.44	7.10	NM	0.58	-291.1	NS	NS	NS
	8/5/10	12.02	84.68	6.68	NM	1.14	22.1	NS	NS	NS
	8/18/10	11.4	85.30	6.86	NM	2.41	39.4	NS	NS	NS
	<b>9/9/10</b>	12.48	84.22	7.19	1,100	0.48	6.0	NS	NS	NS
	9/15/10	12.56	84.14	6.91	NM	2.01	12.6	NS	NS	NS
	9/30/10	12.59	84.11	6.69	NM	3.19	190.7	NS	NS	NS
	10/5/10	11.90	84.80	6.93	1,101	0.83	60.0	NS	NS	NS
	10/21/10	11.02	85.68	7.01	NM	1.60	-20.0	NS	NS	NS
	11/5/10	11.53	85.17	6.98	NM	9.50	19.9	NS	NS	NS
	11/19/10	10.90	85.80	6.96	NM	3.64	39.4	NS	NS	NS
12/9/10	10.80	85.90	6.42	NM	1.05	-16.5	NS	NS	NS	
12/22/10	10.59	86.11	6.61	1,263	1.28	-39.8	NS	NS	NS	
1/7/11	11.49	85.21	6.48	NM	7.56	-36.9	NS	NS	NS	
1/19/11	NM	NA	NM	NM	NM	NM	NS	NS	NS	
2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS	
2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS	
3/3/11	11.86	84.84	6.24	NM	9.32	215.3	NS	NS	NS	
<b>3/28/11</b>	9.94	86.76	7.14	1,395	1.24	-71.9	NS	NS	NS	
4/7/11	10.08	86.62	7.29	NM	3.06	-66.1	NS	NS	NS	
4/22/11	10.00	86.70	6.94	1,261	1.38	-61.1	NS	NS	NS	
5/7/11	10.05	86.65	6.17	0.015	2.39	126.3	NS	NS	NS	
6/2/11	10.92	85.78	6.90	1,333	2.73	-4.0	NS	NS	NS	
6/14/11	10.95	85.75	7.20	NM	0.27	-87.1	NS	NS	NS	
7/7/11	10.72	85.98	6.10	NM	0.76	-20.4	NS	NS	NS	
7/25/11	11.29	85.41	6.73	NM	0.36	-32.1	NS	NS	NS	
8/15/11	11.66	85.04	6.96	NM	0.26	-47.0	NS	NS	NS	
8/26/11	11.12	85.58	7.02	1,255	0.04	-92.2	NS	NS	NS	
<b>9/14/11</b>	9.11	87.59	6.96	1,235	0.29	-103.1	NS	NS	NS	
10/6/11	9.65	87.05	7.05	NM	0.68	-58.0	NS	NS	NS	
10/20/11	10.27	86.43	6.92	NM	0.87	-85.3	NS	NS	NS	
11/3/11	10.44	86.26	6.70	1,405	0.60	-71.0	NS	NS	NS	
11/17/11	10.65	86.05	6.67	NM	0.72	-32.0	NS	NS	NS	
12/7/11	10.65	86.05	7.24	1,100	2.38	260.6	NS	NS	NS	
12/21/11	10.46	86.24	7.48	1,064	4.27	224.2	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-11 (continued)</b>	1/4/12	10.45	86.25	7.55	1,077	9.37	58.8	NS	NS	NS
	1/17/12	10.88	85.82	7.04	2,594	5.21	287.8	NS	NS	NS
	2/1/12	10.45	86.25	7.04	1,574	5.57	209.1	NS	NS	NS
	2/15/12	10.89	85.81	7.59	2,786	0.77	-56.5	NS	NS	NS
	3/1/12	11.08	85.62	7.50	1,552	6.22	300.6	NS	NS	NS
	3/15/12	10.73	85.97	7.32	1,287	3.12	280.3	NS	NS	NS
	4/5/12	11.2	85.50	7.12	NM	5.66	321.5	NS	NS	NS
	4/19/12	11.52	85.18	7.60	1,199	5.26	322.2	NS	NS	NS
	5/3/12	11.32	85.38	7.77	1,129	1.87	252.5	NS	NS	NS
	5/17/12	10.72	85.98	7.20	1,120	4.47	238.8	NS	NS	NS
	5/31/12	10.95	85.75	6.54	1,092	4.92	320.7	NS	NS	NS
	6/14/12	11.08	85.62	6.38	1,086	5.07	412.7	NS	NS	NS
	6/28/12	11.42	85.28	7.17	1,027	0.98	-21.7	NS	NS	NS
	7/3/12	11.57	85.13	7.21	NM	0.48	-67.8	NS	NS	NS
	7/19/12	11.95	84.75	6.98	966	0.85	-20.4	NS	NS	NS
	8/1/12	11.95	84.75	6.90	1,178	0.68	-50.8	NS	NS	NS
	8/20/12	11.86	84.84	6.94	1,022	0.23	-41.6	NS	NS	NS
	8/30/12	12.07	84.63	6.27	1,155	0.40	-24.1	NS	NS	NS
	9/17/12	12.15	84.55	6.89	1,184	0.18	-31.1	NS	NS	NS
	9/26/12	11.89	84.81	6.58	1,195	0.21	33.6	NS	NS	NS
	10/11/12	11.86	84.84	6.93	1,089	0.29	-36.6	NS	NS	NS
	10/25/12	11.43	85.27	6.81	1,101	0.42	-38.2	NS	NS	NS
	11/1/12	11.28	85.42	6.71	1,104	0.55	-35.8	NS	NS	NS
11/15/12	11.56	85.14	6.58	1,106	0.75	-42.5	NS	NS	NS	
12/6/12	11.81	84.89	6.42	1,128	0.40	-61.8	NS	NS	NS	
12/20/12	11.52	85.18	6.50	1,129	0.59	-59.5	NS	NS	NS	
1/17/13	11.29	85.41	5.99	3,685	0.73	-36.8	NS	NS	NS	
2/7/13	11.03	85.67	5.81	1,145	1.25	34.7	NS	NS	NS	
2/20/13	11.30	85.40	7.04	1,189	0.56	5.1	NS	NS	NS	
3/7/13	11.30	85.40	6.64	1,212	4.17	40.9	NS	NS	NS	
<b>ECS-12<sup>(**)</sup> 96.15</b>	<b>1/25/06</b>	8.64	87.51	6.44	1,207	0.53	-117	NS	NS	NS
	<b>4/10/06</b>	10.60	85.55	6.65	1,436	0.42	14.0	NS	NS	NS
	<b>7/20/06</b>	10.95	85.20	4.19	1,419	0.12	506	15.5	<5.0	15.5
	9/15/06	11.92	84.23	6.60	NM	8.11	-47.5	NS	NS	NS
	9/21/06	11.53	84.62	6.67	NM	9.63	283	NS	NS	NS
	10/6/06	11.35	84.80	7.68	NM	1.24	-22.7	NS	NS	NS
	<b>10/10/06</b>	11.42	84.73	6.58	1,291	0.48	-23.3	NS	NS	NS
	10/23/06	10.79	85.36	5.91	NM	1.46	NM	NS	NS	NS
	11/7/06	10.74	85.41	6.65	NM	5.74	-69.8	NS	NS	NS
	11/20/06	10.15	86.00	6.94	NM	8.77	72.5	NS	NS	NS
	12/4/06	10.58	85.57	7.32	NM	12.13	199.4	NS	NS	NS
	12/18/06	11.04	85.11	6.20	NM	7.52	-3.8	NS	NS	NS
	1/2/07	10.96	85.19	7.29	NM	8.41	-120.8	NS	NS	NS
	1/15/07	10.56	85.59	7.02	NM	8.29	-128.6	NS	NS	NS
	<b>1/25/07</b>	12.55	83.60	6.93	1,500	1.51	9.0	<2.0	<20.0	15.8
	1/29/07	11.74	84.41	7.22	NM	13.75	-94.7	NS	NS	NS
	2/12/07	11.23	84.92	6.95	NM	13.78	-52.9	NS	NS	NS
	2/26/07	NG-S	NA	NM	NM	NM	NM	NS	NS	NS
	3/12/07	NG-S	NA	NM	NM	NM	NM	NS	NS	NS
	3/26/07	10.42	85.73	7.06	NM	12.40	-89.60	NS	NS	NS
	4/10/07	9.77	86.38	6.76	NM	10.88	-14.00	NS	NS	NS
	<b>4/24/07</b>	8.83	87.32	5.48	1,642	0.30	-57.8	NS	NS	NS
	5/7/07	9.89	86.26	5.93	NM	16.80	-11.9	NS	NS	NS
	5/24/07	10.21	85.94	6.01	NM	13.25	24.3	NS	NS	NS
	6/4/07	10.66	85.49	5.99	NM	12.92	28.4	NS	NS	NS
	6/18/07	10.86	85.29	6.71	NM	12.56	-84.4	NS	NS	NS
	7/3/07	11.27	84.88	7.85	NM	21.14	46.2	NS	NS	NS
	7/16/07	12.54	83.61	7.88	NM	18.24	60.7	NS	NS	NS
	8/1/07	11.47	84.68	6.80	NM	9.79	-59.9	NS	NS	NS
	8/13/07	11.56	84.59	6.35	NM	1.35	-331.1	NS	NS	NS
	8/27/07	11.78	84.37	6.34	NM	8.73	-75.3	NS	NS	NS
	9/10/07	11.87	84.28	7.26	NM	5.96	-68.2	NS	NS	NS
9/25/07	11.95	84.20	7.23	NM	5.30	-69.9	NS	NS	NS	
<b>10/4/07</b>	12.04	84.66	6.71	1,740	1.11	-86.0	<0.100	10.0	21.3	
10/9/07	12.08	84.62	6.71	NM	4.22	-300.4	NS	NS	NS	
10/22/07	11.82	84.88	7.42	NM	3.31	-40.7	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-12 (continued)</b>	11/5/07	11.66	85.04	7.47	NM	6.90	-99.2	NS	NS	NS
	11/19/07	11.38	85.32	7.34	NM	2.97	-39.5	NS	NS	NS
	12/3/07	12.87	83.83	7.49	NM	6.95	-111.5	NS	NS	NS
	12/17/07	11.47	85.23	7.49	NM	6.51	-110.1	NS	NS	NS
	1/2/08	10.97	85.73	6.52	NM	6.51	-76.1	NS	NS	NS
	1/14/08	10.59	86.11	6.59	NM	6.01	-71.5	NS	NS	NS
	1/29/08	10.92	85.78	6.85	NM	6.38	16.1	NS	NS	NS
	2/11/08	10.82	85.88	NM	NM	NM	NM	NS	NS	NS
	<b>3/24/08</b>	9.15	87.55	6.75	1,510	0.44	-25	<0.100	2.72	16.3
	<b>5/1/08</b>	9.71	86.99	7.00	1,600	0.35	-29	<0.100	<1.0	6.31
	5/27/08	10.18	86.52	NM	NM	NM	NM	NS	NS	NS
	6/4/08	11.82	84.88	6.67	NM	0.45	-112.2	NS	NS	NS
	6/17/08	10.61	86.09	7.36	NM	0.36	-166.2	NS	NS	NS
	7/1/08	10.62	86.08	7.02	NM	1.66	-75	NS	NS	NS
	7/9/08	NM	86.08	NM	NM	NM	NM	NS	NS	NS
	7/14/08	10.96	85.74	6.63	NM	1.18	-62.7	NS	NS	NS
	7/30/08	10.18	86.52	6.48	NM	2.15	-52.3	NS	NS	NS
	8/12/08	10.60	86.10	6.77	NM	0.90	-63.5	NS	NS	NS
	8/20/08	10.67	86.03	NM	NM	NM	NM	NS	NS	NS
	8/26/08	11.02	85.68	6.71	NM	2.02	-52.2	NS	NS	NS
	9/9/08	10.71	85.99	6.80	NM	0.88	-88.1	NS	NS	NS
	9/22/08	11.17	85.53	6.80	NM	0.81	-74.3	NS	NS	NS
	10/17/08	11.3	85.40	6.91	NM	2.20	-35.8	NS	NS	NS
	10/27/08	10.9	85.80	6.60	NM	1.12	-22.1	NS	NS	NS
	11/1/08	10.59	86.11	6.67	NM	0.75	-51.3	NS	NS	NS
	<b>11/24/08</b>	10.79	85.91	6.81	1,840	0.17	-67.0	<0.100	<1.0	15.4
	11/25/08	10.78	85.92	5.71	NM	3.62	56.1	NS	NS	NS
	12/11/08	10.44	86.26	6.84	NM	2.06	-22.7	NS	NS	NS
	1/6/09	9.62	87.08	6.26	NM	4.00	85.0	NS	NS	NS
	2/3/09	11.01	85.69	6.50	NM	12.28	40.6	NS	NS	NS
	3/19/09	10.89	85.81	6.31	NM	2.09	39.1	NS	NS	NS
	<b>4/9/09</b>	9.77	86.93	6.50	1,390	0.49	-46.2	<0.100	1.98	11.5
	4/23/09	10.39	86.31	6.86	1,499	1.42	44.2	NS	NS	NS
	5/5/09	10.65	86.05	7.05	NM	2.19	9.6	NS	NS	NS
	5/19/09	10.52	86.18	6.88	1,474	1.42	-19.0	NS	NS	NS
	6/11/09	11.00	85.70	6.86	1,354	0.79	-106.9	NS	NS	NS
	6/26/09	11.70	85.00	6.91	1,387	2.04	-16.2	NS	NS	NS
	7/9/09	9.98	86.72	6.83	1,409	0.59	-54.1	NS	NS	NS
	7/22/09	10.28	86.42	6.76	1,411	2.02	-10.1	NS	NS	NS
	8/6/09	9.20	87.50	6.94	1,343	1.41	-76.1	NS	NS	NS
	<b>8/24/09</b>	9.62	87.08	6.83	1,520	0.31	-54.0	<0.100	<1.0	13.7
	9/10/09	10.36	86.34	7.01	1,301	1.12	-36.2	NS	NS	NS
	9/23/09	10.39	86.31	7.00	1,051	7.11	-37.6	NS	NS	NS
	10/6/09	10.75	85.95	6.57	1,293	3.77	80.1	NS	NS	NS
	<b>10/13/09</b>	10.73	85.97	6.99	1,141	3.48	-29.8	<0.100	<1.0	12.4
	10/23/09	10.86	85.84	6.79	1,473	2.69	-54.2	NS	NS	NS
	11/5/09	10.18	86.52	6.83	1,446	1.60	-60.9	NS	NS	NS
11/17/09	10.39	86.31	6.98	1,206	1.81	-30.0	NS	NS	NS	
12/8/09	10.2	86.50	6.96	1,120	1.49	-50.8	NS	NS	NS	
12/23/09	10.5	86.20	7.10	940	1.10	2.7	NS	NS	NS	
1/8/10	11.63	85.07	6.96	1,030	1.10	-19.2	NS	NS	NS	
1/20/10	10.89	85.81	6.96	1,066	1.66	-35.1	NS	NS	NS	
2/3/10	10.52	86.18	6.10	NM	13.67	-6.0	NS	NS	NS	
2/11/10	10.69	86.01	6.85	1,730	0.21	-82.0	<0.100	<1.0	12.5	
2/18/10	10.96	85.74	7.05	NM	1.84	-24.4	NS	NS	NS	
3/3/10	10.42	86.28	6.20	2,700	3.40	42.4	NS	NS	NS	
3/17/10	9.63	87.07	6.88	1,276	0.70	-66.4	NS	NS	NS	
4/15/10	9.82	86.88	7.02	931	1.86	-9.1	NS	NS	NS	
4/28/10	10.35	86.35	6.86	NM	4.11	30.9	NS	NS	NS	
5/13/10	10.59	86.11	6.75	1,328	4.88	-21.1	NS	NS	NS	
5/27/10	10.83	85.87	7.01	NM	0.97	-50.2	NS	NS	NS	
6/9/10	10.50	86.20	6.52	NM	2.22	-11.1	NS	NS	NS	
6/24/10	11.10	85.60	6.86	NM	0.84	-64.4	NS	NS	NS	
7/9/10	11.44	85.26	6.34	NM	9.29	88.3	NS	NS	NS	
7/20/10	11.48	85.22	7.03	NM	1.41	-209.1	NS	NS	NS	
8/5/10	11.54	85.16	6.77	NM	1.04	-17.9	NS	NS	NS	
8/18/10	11.71	84.99	6.77	NM	4.60	-14.8	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-12</b> (continued)	9/9/10	11.92	84.78	7.25	1,780	0.26	-76.0	<0.100	<1.0	10.6
	9/15/10	12.00	84.70	6.89	NM	2.81	-13.5	NS	NS	NS
	9/30/10	12.05	84.65	6.58	NM	3.12	511.7	NS	NS	NS
	10/5/10	11.36	85.34	6.97	1,687	0.50	-83.0	NS	NS	NS
	10/21/10	11.18	85.52	6.81	NM	1.00	-32.6	NS	NS	NS
	11/5/10	11.04	85.66	6.78	NM	9.31	-1.8	NS	NS	NS
	11/19/10	10.90	85.80	6.84	NM	2.01	-45.5	NS	NS	NS
	12/9/10	10.79	85.91	6.45	NM	1.13	-55.7	NS	NS	NS
	12/22/10	11.10	85.60	6.53	1,757	1.45	-79.0	NS	NS	NS
	1/7/11	10.97	85.73	6.46	NM	5.24	-62.6	NS	NS	NS
	1/19/11	11.30	85.40	6.94	NM	2.47	-98.8	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/3/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/28/11	9.43	87.27	7.10	1,528	0.29	-114.1	<0.100	1.50	15.6
	4/7/11	9.53	87.17	7.39	NM	3.98	-87.4	NS	NS	NS
	4/22/11	9.45	87.25	6.96	1,286	2.18	-59.8	NS	NS	NS
	5/7/11	9.53	87.17	7.77	1,332	1.75	-26.1	NS	NS	NS
	6/2/11	10.40	86.30	6.73	1,357	4.92	-42.8	NS	NS	NS
	6/14/11	10.42	86.28	6.88	NM	0.35	-91.0	NS	NS	NS
	7/7/11	10.18	86.52	6.09	NM	1.58	-48.7	NS	NS	NS
	7/25/11	10.79	85.91	6.52	NM	1.66	11.7	NS	NS	NS
	8/15/11	11.14	85.56	6.79	NM	0.54	-82.2	NS	NS	NS
	8/26/11	10.59	86.11	6.57	1,340	0.40	-79.3	NS	NS	NS
	9/14/11	8.55	88.15	6.97	1,510	0.28	-100.1	<0.100	<1.00	20.3
	10/6/11	9.09	87.61	6.95	NM	0.76	-45.3	NS	NS	NS
	10/20/11	9.72	86.98	6.93	NM	1.50	-101.6	NS	NS	NS
	11/3/11	9.88	86.82	6.42	887	1.46	-26.0	NS	NS	NS
	11/17/11	10.12	86.58	6.21	NM	1.54	-6.9	NS	NS	NS
	12/7/11	NM	NM	NM	NM	NM	NS	NS	NS	NS
	12/21/11	9.92	86.78	7.00	1,089	4.92	234.8	NS	NS	NS
	1/4/12	9.92	86.78	7.37	1,419	7.84	126.3	NS	NS	NS
	2/1/12	NM	NM	NM	NM	NM	NS	NS	NS	NS
	2/15/12	10.29	86.41	7.27	1,685	0.75	-46.8	<0.100	<1.00	20.7
	3/1/12	10.60	86.10	7.58	9,232	9.10	350	NS	NS	NS
	3/15/12	10.17	86.53	7.08	1,539	5.03	315.8	NS	NS	NS
	4/5/12	10.68	86.02	6.95	NM	6.42	333.2	NS	NS	NS
	4/19/12	10.98	85.72	7.43	1,619	5.74	338.0	NS	NS	NS
	5/3/12	10.72	85.98	7.61	1,423	1.87	252.5	NS	NS	NS
	5/17/12	10.27	86.43	7.10	1,542	4.41	232.5	NS	NS	NS
	5/31/12	10.50	86.20	6.58	864	6.24	352.5	NS	NS	NS
	6/14/12	10.64	86.06	6.71	162	5.5	408.6	NS	NS	NS
	6/26/12	10.98	85.72	6.90	1,080	0.94	-6.4	NS	NS	NS
	7/3/12	11.13	85.57	7.11	NM	0.71	-90.3	NS	NS	NS
	7/19/12	11.50	85.20	6.82	1,315	2.07	-38.5	NS	NS	NS
	8/1/12	11.50	85.20	6.77	1,709	0.75	-103.5	NS	NS	NS
	8/20/12	11.42	85.28	6.93	1,507	0.23	-92.7	3.54	<1.00	15.90
	8/30/12	11.62	85.08	NM	NM	NM	NS	NS	NS	NS
	9/17/12	11.67	85.03	6.75	1,789	0.17	-43.2	NS	NS	NS
	9/26/12	11.43	85.27	6.31	1,788	0.23	35.6	NS	NS	NS
	10/11/12	11.39	85.31	6.84	1,603	0.30	-35.3	NS	NS	NS
	10/25/12	10.97	85.73	6.76	1,617	0.47	-64.7	NS	NS	NS
11/1/12	10.82	85.88	6.64	1,625	1.03	-55.3	NS	NS	NS	
11/15/12	11.11	85.59	6.6	1,610	1.07	-70.5	NS	NS	NS	
12/6/12	11.36	85.34	6.32	1,602	0.44	-82.9	NS	NS	NS	
12/20/12	11.07	85.63	6.49	1,488	0.48	-74.5	NS	NS	NS	
1/17/13	10.85	85.85	6.31	1,087	0.67	-41.7	NS	NS	NS	
2/7/13	10.58	86.12	5.77	1,032	0.81	37.3	NS	NS	NS	
2/20/13	10.85	85.85	7.13	830	0.58	4.9	<0.100	8.63	5.57	
3/7/13	10.87	85.83	6.43	906	4.02	77.5	NS	NS	NS	
<b>ECS-13**</b> <b>97.66</b>	1/25/06	NG	NA	NM	NM	NM	NM	NS	NS	NS
	4/10/06	12.20	85.46	6.61	246	0.75	-2.0	NS	NS	NS
	7/20/06	12.53	85.13	3.00	890	0.28	543	NS	NS	NS
	9/15/06	10.45	87.21	7.10	NM	9.28	-40.2	NS	NS	NS
	9/21/06	13.11	84.55	7.76	NM	11.94	244	NS	NS	NS
	10/6/06	12.97	84.69	8.19	NM	4.94	-7.6	NS	NS	NS

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GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-13 (continued)</b>	10/10/06	13.01	84.65	6.32	533	0.73	14.2	NS	NS	NS
	10/23/06	12.34	85.32	6.40	NM	1.50	NM	NS	NS	NS
	11/7/06	12.31	85.35	6.25	NM	13.45	109.4	NS	NS	NS
	11/20/06	11.72	85.94	6.74	NM	3.33	16.3	NS	NS	NS
	12/4/06	12.18	85.48	7.42	NM	9.57	180.2	NS	NS	NS
	12/18/06	12.62	85.04	6.40	NM	5.97	-13.7	NS	NS	NS
	1/2/07	12.58	85.08	7.29	NM	6.41	-135.4	NS	NS	NS
	1/15/07	12.04	85.62	7.18	NM	6.27	-173.5	NS	NS	NS
	1/25/07	12.18	85.48	7.59	668	1.46	57.0	NS	NS	NS
	1/29/07	12.34	85.32	7.58	NM	12.82	-84.6	NS	NS	NS
	2/12/07	12.83	84.83	7.41	NM	8.54	-59.4	NS	NS	NS
	2/26/07	NG-S	NA	NM	NM	NM	NM	NS	NS	NS
	3/12/07	NG-S	NA	NM	NM	NM	NM	NS	NS	NS
	3/26/07	12.03	85.63	6.92	NM	14.41	104.5	NS	NS	NS
	4/10/07	11.41	86.25	6.69	NM	13.47	14.6	NS	NS	NS
	4/24/07	10.51	87.15	6.96	685	NA	-41.3	NS	NS	NS
	5/7/07	11.42	86.24	4.75	NM	15.95	125.6	NS	NS	NS
	5/24/07	11.27	86.39	5.06	NM	14.82	132.7	NS	NS	NS
	6/4/07	12.27	85.39	6.18	NM	11.05	21.8	NS	NS	NS
	6/18/07	12.50	85.16	7.31	NM	14.44	48.1	NS	NS	NS
	7/3/07	12.88	84.78	8.22	NM	12.65	73.3	NS	NS	NS
	7/16/07	12.95	84.71	7.81	NM	12.64	88.1	NS	NS	NS
	8/1/07	13.07	84.59	7.34	NM	24.48	110.5	NS	NS	NS
	8/13/07	13.17	84.49	6.97	NM	10.09	-256.6	NS	NS	NS
	8/27/07	13.39	84.27	6.61	NM	10.78	-111.8	NS	NS	NS
	9/10/07	13.45	84.21	7.73	NM	7.28	-83.8	NS	NS	NS
	9/25/07	13.52	84.14	7.72	NM	7.10	-86.7	NS	NS	NS
	10/4/07	13.64	84.02	7.22	937	0.53	-53.0	NS	NS	NS
	10/9/07	13.67	83.99	6.61	NM	3.41	-268.4	NS	NS	NS
	10/22/07	13.38	84.28	7.52	NM	4.81	-46.2	NS	NS	NS
	11/5/07	13.20	84.46	7.13	NM	8.19	-37.1	NS	NS	NS
	11/19/07	12.92	84.74	7.45	NM	4.02	-45.5	NS	NS	NS
	12/3/07	12.87	84.79	7.07	NM	8.12	-102.4	NS	NS	NS
	12/17/07	13.01	84.65	7.19	NM	7.15	-102.5	NS	NS	NS
	1/2/08	12.54	85.12	6.01	NM	5.10	39.8	NS	NS	NS
	1/14/08	12.06	85.60	6.05	NM	5.04	42.3	NS	NS	NS
	1/29/08	12.53	85.13	7.01	NM	8.13	-11.3	NS	NS	NS
	2/11/08	12.34	85.32	NM	NM	NM	NM	NS	NS	NS
	3/7/08	11.19	86.47	7.19	161	8.81	303	NS	NS	NS
	3/11/08	10.80	86.86	7.27	905	3.52	-39	NS	NS	NS
	5/1/08	11.28	86.38	6.44	1,350	1.00	-7	NS	NS	NS
	5/27/08	10.63	87.03	NM	NM	NM	NM	NS	NS	NS
	6/4/08	12.44	85.22	6.28	NM	4.81	49.1	NS	NS	NS
	6/17/08	12.18	85.48	7.08	NM	7.41	33.8	NS	NS	NS
	7/1/08	12.20	85.46	6.61	NM	0.80	25.1	NS	NS	NS
	7/9/08	NM	85.46	NM	NM	NM	NM	NS	NS	NS
	7/14/08	12.56	85.10	6.53	NM	2.29	-18	NS	NS	NS
	7/30/08	11.78	85.88	6.75	NM	2.52	47.2	NS	NS	NS
	8/12/08	12.21	85.45	6.69	NM	1.85	-28.3	NS	NS	NS
	8/20/08	11.49	86.17	NM	NM	NM	NM	NS	NS	NS
8/26/08	12.65	85.01	6.82	NM	0.96	-62.5	NS	NS	NS	
9/9/08	11.99	85.67	6.72	NM	1.37	-42.7	NS	NS	NS	
9/22/08	12.73	84.93	6.69	NM	1.36	-111.7	NS	NS	NS	
10/17/08	12.87	84.79	7.13	NM	1.31	-66.6	NS	NS	NS	
10/27/08	12.51	85.15	6.79	NM	1.20	-28.5	NS	NS	NS	
11/11/08	12.18	85.48	6.84	NM	1.60	-9.1	NS	NS	NS	
11/24/08	12.42	85.24	6.90	890	0.20	-71.0	NS	NS	NS	
11/25/08	12.36	85.30	6.50	NM	3.87	18.6	NS	NS	NS	
12/11/08	12.04	85.62	7.01	NM	3.67	-8.1	NS	NS	NS	
3/19/09	11.47	86.19	7.33	NM	15.94	5.4	NS	NS	NS	
4/9/09	11.53	86.13	5.89	652	0.89	-10.1	NS	NS	NS	
4/23/09	11.80	85.86	7.15	226	11.44	125.8	NS	NS	NS	
5/5/09	12.29	85.37	7.11	NM	11.22	156.3	NS	NS	NS	
5/19/09	12.09	85.57	7.03	258	6.59	78.9	NS	NS	NS	
6/11/09	12.66	85.00	6.91	243	5.71	-64.1	NS	NS	NS	
6/26/09	11.44	86.22	7.04	301	5.48	67.8	NS	NS	NS	
7/6/09	11.55	86.11	7.08	242	1.27	96.5	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
ECS-13 (continued)	7/22/09	11.79	85.87	7.06	236	2.84	54.2	NS	NS	NS
	8/6/09	10.84	86.82	7.03	220	1.73	105.1	NS	NS	NS
	8/24/09	11.22	86.44	6.54	1,720	0.34	-48.0	NS	NS	NS
	9/10/09	11.70	85.96	7.24	240	1.04	42.3	NS	NS	NS
	9/23/09	11.21	86.45	7.29	252	4.59	-64.6	NS	NS	NS
	10/6/09	12.20	85.46	6.52	273	1.80	69.9	NS	NS	NS
	10/13/09	12.34	85.32	6.60	1,096	2.90	-4.7	NS	NS	NS
	10/23/09	12.38	85.28	6.50	1,380	2.02	-28.6	NS	NS	NS
	11/5/09	11.82	85.84	6.86	415	2.28	-19.2	NS	NS	NS
	11/17/09	11.96	85.70	6.83	687	1.28	23.6	NS	NS	NS
	12/8/09	11.87	85.79	7.06	487	7.83	-33.1	NS	NS	NS
	2/3/10	12.13	85.53	6.66	NM	11.53	-76.6	NS	NS	NS
	2/11/10	12.34	85.32	6.36	2	0.46	-55.0	NS	NS	NS
	2/18/10	12.55	85.11	7.00	NM	6.99	-12.2	NS	NS	NS
	3/3/10	12.00	85.66	6.47	1,541	3.56	-5.8	NS	NS	NS
	3/17/10	11.23	86.43	7.65	187	7.55	84.4	NS	NS	NS
	4/15/10	11.30	86.36	6.87	254	3.18	-76.7	NS	NS	NS
	4/28/10	11.68	85.98	6.80	NM	3.18	52.2	NS	NS	NS
	5/13/10	12.11	85.55	6.67	276	2.13	52.8	NS	NS	NS
	5/27/10	12.45	85.21	6.56	NM	6.11	-22.9	NS	NS	NS
	6/9/10	12.56	85.10	6.58	NM	1.37	-24.0	NS	NS	NS
	6/24/10	12.63	85.03	6.70	NM	0.34	-31.7	NS	NS	NS
	7/9/10	12.93	84.73	6.23	NM	5.93	76.9	NS	NS	NS
	7/20/10	13.00	84.66	7.17	NM	0.97	-297.9	NS	NS	NS
	8/5/10	13.06	84.60	7.36	NM	3.41	-45.3	NS	NS	NS
	8/18/10	13.21	84.45	6.79	NM	1.50	13.7	NS	NS	NS
	9/9/10	13.47	84.19	7.42	947	0.27	-72.0	NS	NS	NS
	9/15/10	13.67	83.99	6.31	NM	1.50	-16.7	NS	NS	NS
	9/30/10	13.60	84.06	6.99	NM	6.21	200.4	NS	NS	NS
	10/5/10	12.92	84.74	7.21	588	3.24	-49.1	NS	NS	NS
	10/21/10	12.63	85.03	6.89	NM	2.45	-41.5	NS	NS	NS
	11/5/10	12.57	85.09	7.19	NM	11.01	-35.1	NS	NS	NS
	11/19/10	12.40	85.26	6.91	NM	1.40	-46.4	NS	NS	NS
	12/9/10	12.27	85.39	6.57	NM	1.78	-15.0	NS	NS	NS
	12/22/10	12.12	85.54	6.60	634	4.97	15.0	NS	NS	NS
	1/7/11	12.52	85.14	6.66	NM	10.21	-69.8	NS	NS	NS
	1/19/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/3/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/28/11	11.00	86.66	7.21	0.795	5.41	-51.7	NS	NS	NS
	4/7/11	11.05	86.61	7.58	NM	10.91	-36.7	NS	NS	NS
	4/22/11	10.99	86.67	7.38	0.752	5.15	-62.4	NS	NS	NS
5/7/11	11.09	86.57	8.13	1.808	9.27	-5.9	NS	NS	NS	
6/2/11	11.95	85.71	7.23	0.842	7.96	33.4	NS	NS	NS	
6/14/11	11.98	85.68	7.06	NM	1.93	-47.4	NS	NS	NS	
7/7/11	11.17	86.49	6.05	NM	6.55	-37.9	NS	NS	NS	
7/25/11	12.34	85.32	7.13	NM	1.25	4.4	NS	NS	NS	
8/15/11	12.70	84.96	7.06	NM	0.67	-46.7	NS	NS	NS	
8/26/11	12.13	85.53	7.31	0.728	1.18	-25.2	NS	NS	NS	
9/14/11	10.10	87.56	7.29	675	0.23	-99.1	NS	NS	NS	
10/6/11	10.65	87.01	7.41	NM	2.18	14.0	NS	NS	NS	
10/20/11	11.26	86.40	7.58	NM	0.59	-89.8	NS	NS	NS	
11/3/11	11.44	86.22	7.46	789	3.55	-36.1	NS	NS	NS	
11/17/11	11.67	85.99	7.43	NM	5.07	52.3	NS	NS	NS	
12/7/11	11.66	86.00	7.49	667	3.35	244.9	NS	NS	NS	
12/21/11	11.50	86.16	7.00	1,089	4.92	234.8	NS	NS	NS	
1/4/12	11.46	86.20	7.86	662	11.42	139.6	NS	NS	NS	
2/1/12	11.47	86.19	7.97	1,574	5.57	209.1	NS	NS	NS	
2/15/12	11.91	85.75	7.65	756	0.82	-75.8	NS	NS	NS	
3/1/12	12.13	85.53	8.03	694	9.34	287.3	NS	NS	NS	
3/15/12	11.72	85.94	7.76	673	6.36	255.0	NS	NS	NS	
4/5/12	12.20	85.46	6.95	NM	8.07	288.0	NS	NS	NS	
4/19/12	12.55	85.11	7.75	132	7.31	304.5	NS	NS	NS	
5/3/12	12.44	85.22	8.10	701	1.96	195.9	NS	NS	NS	
5/17/12	11.80	85.86	7.45	710	5.29	212.2	NS	NS	NS	
5/31/12	12.07	85.59	7.23	715	5.90	284.1	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)	
ECS-13 (continued)	6/14/12	12.18	85.48	7.12	718	8.18	372.7	NS	NS	NS	
	6/26/12	12.52	85.14	7.36	670	2.34	-36.8	NS	NS	NS	
	7/3/12	12.70	84.96	7.41	NM	2.04	-18.3	NS	NS	NS	
	7/19/12	13.05	84.61	7.34	643	1.26	-63.7	NS	NS	NS	
	8/1/12	13.07	84.59	7.32	797	10.20	122.1	NS	NS	NS	
	8/20/12	12.95	84.71	7.38	704	0.36	-120.4	NS	NS	NS	
	8/30/12	13.17	84.49	NM	NM	NM	NM	NS	NS	NS	
	9/17/12	13.23	84.43	7.16	805	0.77	-80.1	NS	NS	NS	
	9/26/12	13.00	84.66	6.93	796	1.25	43.7	NS	NS	NS	
	10/1/12	12.95	84.71	7.24	717	1.34	-26.2	NS	NS	NS	
	10/25/12	12.50	85.16	7.10	724	1.59	-39.2	NS	NS	NS	
	11/1/12	12.36	85.30	6.88	718	2.99	-20.2	NS	NS	NS	
	11/15/12	12.66	85.00	6.92	714	3.80	-53.3	NS	NS	NS	
	12/6/12	12.90	84.76	6.63	713	6.43	-55.2	NS	NS	NS	
	12/20/12	12.59	85.07	6.94	718	7.03	-58.7	NS	NS	NS	
	1/17/13	NM	NM	NM	NM	NM	NM	NM	NS	NS	NS
	2/7/13	NM	NM	NM	NM	NM	NM	NM	NS	NS	NS
2/20/13	NM	NM	NM	NM	NM	NM	NM	NS	NS	NS	
3/7/13	NM	NM	NM	NM	NM	NM	NM	NS	NS	NS	
ECS-14 96.25	4/10/06	10.00	86.25	6.92	1,310	0.20	4.0	NS	NS	NS	
	7/20/06	10.31	85.94	NM	NM	NM	NM	NS	NS	NS	
	10/10/06	10.79	85.46	NM	NM	NM	NM	NS	NS	NS	
	1/25/07	9.87	86.38	NM	NM	NM	NM	NS	NS	NS	
	4/24/07	8.51	87.74	NM	NM	NM	NM	NS	NS	NS	
	10/4/07	11.35	84.90	6.90	1,720	1.21	-81	NS	NS	NS	
	3/7/08	9.13	87.12	6.83	1,698	0.42	16.6	NS	NS	NS	
	11/24/08	10.22	86.03	NM	NM	NM	NM	NS	NS	NS	
	9/14/11	8.23	88.02	NM	NM	NM	NM	NS	NS	NS	
	2/15/12	9.84	86.41	NM	NM	NM	NM	NS	NS	NS	
	8/20/12	11.48	84.77	NM	NM	NM	NM	NS	NS	NS	
	2/20/13	10.30	85.95	NM	NM	NM	NM	NS	NS	NS	
ECS-15 96.45	4/10/06	10.47	85.98	6.54	1,357	0.97	68.0	NS	NS	NS	
	7/20/06	10.72	85.73	NM	NM	NM	NM	NS	NS	NS	
	10/10/06	11.23	85.22	NM	NM	NM	NM	NS	NS	NS	
	1/25/07	10.37	86.08	NM	NM	NM	NM	NS	NS	NS	
	4/24/07	8.93	87.52	NM	NM	NM	NM	NS	NS	NS	
	10/4/07	11.91	84.54	6.24	1,082	0.90	80	NS	NS	NS	
	3/7/08	9.68	86.77	6.61	898	3.06	34.6	NS	NS	NS	
	11/24/08	10.70	85.75	NM	NM	NM	NM	NS	NS	NS	
	9/14/11	8.73	87.72	NM	NM	NM	NM	NS	NS	NS	
	2/15/12	10.50	85.95	NM	NM	NM	NM	NS	NS	NS	
	8/20/12	10.83	85.62	NM	NM	NM	NM	NS	NS	NS	
	2/20/13	11.00	85.45	NM	NM	NM	NM	NS	NS	NS	
MW-1	3/28/11	10.07	NM	6.91	961	0.27	-91.7	<0.100	26.8	12.4	
	8/20/12	12.11	NM	NM	NM	NM	NM	NS	NS	NS	
	2/20/12	11.53	NM	NM	NM	NM	NM	NS	NS	NS	

**NOTES:** System shut down between 2/11/08 and 5/26/08

ft = feet; SU = standard units; mS/cm = milliSiemens per centimeter; mg/L = milligrams per liter; mV = millivolts.

NG = Not gauged; NS = Not sampled; NA = Not applicable; NM = Not measured. NG-S= Not gauged due to snow.

97.02 = PVC elevations following well repairs on 8/29/05 & 9/1/05. **Bold** date denotes a groundwater sampling event.

\* indicates these wells are sampled for secondary MNA parameters. \*\*Wells ECS-2, ECS-3, ECS-4, ECS-8, ECS-11, ECS-12, and ECS-13 are within O2 remediation



**TABLE 3  
RESULTS OF ANALYSIS OF GROUNDWATER SAMPLES FOR VPH**

O'Connell Oil Associates (Mobil Station)  
730 East Street, Pittsfield, MA  
MassDEP RTN 1-13347

Results reported in milligrams per liter (mg/L) or micrograms per liter (µg/L), as noted

Monitoring Well & Elevation (ft)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft)	C <sub>5</sub> - C <sub>8</sub>	C <sub>9</sub> - C <sub>12</sub>	C <sub>10</sub> - C <sub>14</sub>	Benzene (µg/L)	Ethyl-benzene (µg/L)	MtBE (µg/L)	Naphthalene (µg/L)	Toluene (µg/L)	Xylenes (µg/L)	Σ BTEX (µg/L)
				Aliphatics (mg/L)	Aliphatics (mg/L)	Aromatics (mg/L)							
MCP Method 1 Standards			GW-2:	3	5	7	2,000	20,000	50,000	1,000	50,000	9,000	NA
			GW-3:	50	50	50	10,000	5,000	50,000	20,000	40,000	5,000	NA
MW-1 97.13	3/28/2011	10.07	87.06	0.984	<0.0250	<0.0250	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/20/2012	12.11	85.02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/20/2013	11.53	85.60	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
ECS-1 97.19 97.02 97.16	11/8/99	11.48	85.71	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	12/19/02	11.60	85.59	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	9/8/05	11.78	85.38	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	1/25/06	8.49	88.67	0.263	<0.025	<0.025	<5.0	<5.0	6.5	<5.0	<5.0	<10	ND
	4/11/06	11.38	85.78	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	7/20/06	11.72	85.44	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	10/10/06	12.21	84.95	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
	1/25/07	11.34	85.82	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	4/24/07	9.89	87.27	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/4/07	12.74	84.42	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	3/11/08	9.82	87.34	<0.075	<0.025	<0.025	<5.0	<5.0	8.5	<5.0	<5.0	<10	ND
	5/1/08	11.50	85.66	<0.075	<0.025	<0.025	<5.0	<5.0	8.5	<5.0	<5.0	<10	ND
	11/24/08	11.61	85.55	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/18/09	11.60	85.56	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/24/09	10.47	86.69	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
2/11/10	11.60	85.56	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND	
9/9/10	12.61	84.55	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND	
3/28/11	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
9/14/11	9.51	87.65	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND	
2/15/12	11.27	85.89	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND	
8/20/12	12.07	85.09	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND	
2/20/13	11.71	85.45	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND	
*ECS-2 97.76 97.60	11/8/99	12.35	85.41	<1.50	<0.500	5.0	<100	1,600	190	260	670	7,400	9,670
	12/19/02	12.56	85.20	0.501	<0.100	0.54	<20	420	5,700	34	1,000	1,920	3,340
	9/8/05	12.44	85.16	2.35	1.52	3.13	<5.0	463	3,330	92	754	2,396	3,613
	11/1/05	10.65	86.95	2.37	0.44	2.81	<5.0	366	4,590	<50	425	1,502	2,293
	1/25/06	10.16	87.44	5.23	1.39	4.31	32.2	781	1,970	163	778	3,827	5,418
	4/10/06	12.09	85.51	9.29	3.63	6.64	42.1	1,040	1,590	244	600	5,820	7,502
	7/20/06	12.42	85.18	2.70	2.85	4.53	<100	1,090	31,700	240	670	5,460	7,220
	10/10/06	12.92	84.68	<0.750	0.763	1.82	<50	232	4,860	<50	81.9	951	1,265
	1/25/07	12.06	85.54	0.793	0.533	1.01	<10	139	1,180	29.9	79.1	642	860
	4/24/07	10.39	87.21	1.92	1.12	2.39	<25	479	2,080	81.6	114	2,113	2,706
	10/4/07	13.50	84.10	1.53	0.544	1.19	8.2	247	350	66.7	<5.0	399	654
	3/11/08	10.38	87.22	0.623	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	5/1/08	11.13	86.47	1.60	<0.025	0.0477	<5.0	<5.0	<5.0	<5.0	<5.0	7.6	7.6
	11/24/08	12.24	85.36	4.81	2.980	3.3	<10.0	232	54.7	87.9	<10.0	3,590	3,822
	2/18/09	12.23	85.37	2.37	1.020	2.98	16.7	101	<10.0	56.7	10.3	1,999	2,127
	8/24/09	11.07	86.53	3.04	2.870	2.28	53.5	243	185.0	112.0	31.9	4,720	5,048
	10/13/09	12.15	85.45	0.74	3.650	1.73	48.9	333	130.0	121.0	36.9	4,990	5,409
	2/11/10	12.76	84.84	0.438	0.828	0.514	<10.0	<10.0	<10.0	12.0	<10.0	69.8	69.8
	9/9/10	13.37	84.23	1.460	2.780	1.520	<20.0	182	36.7	56.8	<20.0	1,056	1,238
	3/28/11	10.88	86.72	2.420	6,310	3,650	<20.0	209	<20.0	131	<20.0	2,013	2,243
9/14/11	10.00	87.60	0.712	0.757	0.660	7.5	30.1	16.4	22.1	31.6	762	831	
9/14/11D	10.00	87.60	0.774	0.592	0.525	<10.0	23.2	15.0	20.9	23.4	579	626	
2/15/12	11.82	85.78	1.210	1.790	1.270	6.0	48.8	25.8	22.6	26.3	432	513	
2/15/12D	11.82	85.78	1.950	2.260	1.610	<20.0	58.9	32.8	26.5	37.4	532	628	
8/20/12	12.86	84.74	0.348	0.553	0.670	<5.0	<5.0	<5.0	<5.0	8.5	34.0	42.5	
8/20/12D	12.86	84.74	0.319	0.540	0.632	<10.0	<10.0	<10.0	<10.0	10.3	11.5	21.8	
2/20/13	12.29	85.31	0.734	0.473	0.649	<5.0	5.7	20.7	5.7	6.1	44.8	56.6	
2/20/13D	12.29	85.31	0.824	0.473	0.666	<5.0	6.0	20.8	6.1	6.7	45.6	58.3	





**TABLE 3  
RESULTS OF ANALYSIS OF GROUNDWATER SAMPLES FOR VPH**

O'Connell Oil Associates (Mobil Station)  
730 East Street, Pittsfield, MA  
MassDEP RTN 1-13347

Results reported in milligrams per liter (mg/L) or micrograms per liter (µg/L), as noted

Monitoring Well & Elevation (ft)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft)	C <sub>5</sub> - C <sub>8</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>12</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>10</sub> Aromatics (mg/L)	Benzene (µg/L)	Ethyl-benzene (µg/L)	MtBE (µg/L)	Naphthalene (µg/L)	Toluene (ug/L)	Xylenes (µg/L)	Σ BTEX (µg/L)
<b>MCP Method 1 Standards</b>			GW-2:	3	5	7	2,000	20,000	50,000	1,000	50,000	9,000	NA
			GW-3:	50	50	50	10,000	5,000	50,000	20,000	40,000	5,000	NA
ECS-8	2/13/03	11.63	84.09	3.6	3.7	3.4	<5.0	1,100	40	120	160	4,400	5,660
95.72	9/8/05	10.35	85.08	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
95.43	9/8/05D	NG	NA	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	1/25/06	NG	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	4/11/06	9.98	85.45	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	7/20/06	10.28	85.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/10/06	10.81	84.62	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	4/24/07	8.19	87.24	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/4/07	11.45	83.98	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	3/11/08	NG	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	3/24/08	8.56	86.87	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	5/1/08	9.02	86.41	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	11/24/08	10.12	85.31	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	4/9/09	9.02	86.41	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/24/09	8.98	86.45	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	10/13/09	10.05	85.38	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	9/9/10	11.29	84.14	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	3/28/11	8.80	86.63	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	9/14/11	7.89	87.54	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	2/15/12	9.56	85.87	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	8/30/12	10.77	84.66	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
ECS-9	2/13/03	10.82	84.40	0.540	0.240	0.300	<5.0	<5.0	16	<5.0	<5.0	85	85.0
95.22	9/19/05	10.91	84.08	0.652	0.611	1.41	9.6	60.7	831	40.2	6.7	730	807
94.99	1/25/06	8.38	86.61	0.660	0.429	1.11	<10	57.9	1,090	26.6	12.7	568	639
	4/11/06	10.33	84.66	1.73	0.770	1.53	<25	98.3	3,970	47.3	<25	915	1,013.3
	7/20/06	10.72	84.27	0.913	0.970	1.24	<25	51.5	1,980	51.9	<25	626	678
	10/10/06	11.12	83.87	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	1/25/07	10.31	84.68	0.356	0.522	0.949	<10	28.5	1,370	28.8	<10	336	365
	4/24/07	8.57	86.42	<0.075	0.262	0.571	<5.0	12.6	1,540	15.1	5.3	145	163
	10/4/07	11.79	83.20	<0.75	0.399	1.290	<50	<50	4,260	<50	<50	<100	ND
	3/11/08	8.63	86.36	<0.075	0.140	0.400	5.6	<5.0	666	11.6	<5.0	38.7	44.3
	5/1/08	9.47	85.52	<0.075	0.0523	0.0995	<5.0	<5.0	335	5.0	12.7	31.9	44.6
	11/24/08	10.60	84.39	0.377	0.3080	0.3480	<5.0	<5.0	133	8.8	<5.0	52.8	52.8
	2/18/09	10.62	84.37	0.314	0.2110	0.5800	<5.0	<5.0	149	18.5	<5.0	38.5	38.5
	8/24/09	9.33	85.66	<0.075	0.0836	0.0625	<5.0	<5.0	56	<5.0	<5.0	<10.0	ND
	2/11/10	10.49	84.50	<0.075	0.0745	0.0392	<5.0	<5.0	28.5	<5.0	<5.0	<10.0	ND
	9/9/10	11.64	83.35	0.155	0.1300	0.0618	<5.0	<5.0	11.7	<5.0	<5.0	<10.0	ND
	3/28/11	9.28	85.71	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	9/14/11	8.41	86.58	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/15/12	10.23	84.76	<0.075	<0.025	0.0377	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/30/12	11.35	83.64	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/20/13	10.55	84.44	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND

**TABLE 3  
RESULTS OF ANALYSIS OF GROUNDWATER SAMPLES FOR VPH**

O'Connell Oil Associates (Mobil Station)  
730 East Street, Pittsfield, MA  
MassDEP RTN I-13347

Results reported in milligrams per liter (mg/L) or micrograms per liter (µg/L), as noted

Monitoring Well & Elevation (ft)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft)	C <sub>2</sub> - C <sub>6</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>12</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>10</sub> Aromatics (mg/L)	Benzene (µg/L)	Ethyl-benzene (µg/L)	MtBE (µg/L)	Naphthalene (µg/L)	Toluene (µg/L)	Xylenes (µg/L)	Σ BTEX (µg/L)
<b>MCP Method 1 Standards</b>			<b>GW-2:</b>	<b>3</b>	<b>5</b>	<b>7</b>	<b>2,000</b>	<b>20,000</b>	<b>50,000</b>	<b>1,000</b>	<b>50,000</b>	<b>9,000</b>	<b>NA</b>
			<b>GW-3:</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>10,000</b>	<b>5,000</b>	<b>50,000</b>	<b>20,000</b>	<b>40,000</b>	<b>5,000</b>	<b>NA</b>
<b>ECS-10</b>	2/13/03	10.11	85.79	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
<b>95.90</b>	9/8/05	9.59	86.16	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
<b>95.75</b>	1/25/06	8.57	87.18	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	4/10/06	9.52	86.23	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	7/20/06	9.42	86.33	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/10/06	9.64	86.11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	4/24/07	8.53	87.22	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/4/07	10.18	85.57	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	3/11/08	5.74	90.01	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	5/1/08	8.87	86.88	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	11/24/08	9.40	86.35	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/18/09	9.62	86.13	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/24/09	8.75	87.00	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/11/10	9.34	86.41	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	9/9/10	9.55	86.20	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	3/28/11	8.70	87.05	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	9/14/11	8.15	87.60	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	2/15/12	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	8/30/12	9.12	86.63	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
<b>ECS-11</b>	1/25/06	9.28	87.42	1.08	0.056	0.059	18.0	<10	1,040	12.5	<10	<30	18.0
<b>96.70</b>	4/10/06	10.94	85.76	0.226	<0.025	0.029	<5.0	<5.0	277	<5.0	<5.0	<10.0	ND
	7/20/06	11.31	85.39	0.164	<0.025	0.025	<5.0	<5.0	243	<5.0	<5.0	<10.0	ND
	10/10/06	11.81	84.89	0.261	0.047	0.077	<5.0	<5.0	598	<5.0	<5.0	<10.0	ND
	1/25/07	10.98	85.72	0.133	<0.025	0.041	<5.0	<5.0	359	<5.0	<5.0	<10.0	ND
	4/24/07	9.35	87.35	0.369	<0.025	0.026	5.8	<5.0	628	<5.0	5.1	<10.0	10.9
	10/4/07	12.47	84.23	0.899	0.124	0.072	5	<5.0	207	<5.0	<5.0	<10.0	5.0
	3/11/08	9.36	87.34	0.982	0.029	0.093	14.5	<5.0	387	6.9	<5.0	<10.0	14.5
	5/1/08	10.28	86.42	0.639	0.0685	0.0669	<5.0	<5.0	81.4	13.0	5.7	<10.0	5.7
	11/24/08	11.21	85.49	0.376	0.0384	0.0305	5	<5.0	20.9	<5.0	<5.0	<10.0	5.0
	2/18/09	11.25	85.45	0.497	0.0352	0.0521	6.1	<5.0	24.2	<5.0	5.1	<10.0	11.2
	8/24/09	10.08	86.62	0.34	0.0336	<0.025	6.3	<5.0	53	<5.0	<5.0	<10.0	6.3
	10/13/09	11.20	85.50	0.452	0.0434	<0.025	16.3	<5.0	73.3	<5.0	<5.0	<10.0	16.3
	2/11/10	11.26	85.44	0.335	0.0467	<0.025	8.1	<5.0	90.7	<5.0	<5.0	<10.0	8.1
	9/9/10	12.48	84.22	0.361	0.0547	<0.025	14.9	<5.0	41.3	<5.0	<5.0	<10.0	14.9
	3/28/11	9.94	86.76	0.746	0.0609	0.0273	5.6	<5.0	<5.0	<5.0	<5.0	<10.0	5.6
	9/14/11	9.11	87.59	0.536	0.0329	<0.025	6.3	<5.0	18.5	<5.0	<5.0	<10.0	6.3
	2/15/12	10.89	85.81	0.559	0.0894	0.0357	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/20/12	11.86	84.84	0.275	<0.025	0.0389	5.8	<5.0	33.1	<5.0	<5.0	<10.0	5.8
	2/20/13	11.30	85.40	0.487	0.0713	0.0626	<5.0	<5.0	15.2	6.8	<5.0	<10.0	ND

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Results reported in milligrams per liter (mg/L) or micrograms per liter (µg/L), as noted

Monitoring Well & Elevation (ft)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft)	C <sub>5</sub> - C <sub>8</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>12</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>10</sub> Aromatics (mg/L)	Benzene (µg/L)	Ethyl-benzene (µg/L)	MtBE (µg/L)	Naphthalene (µg/L)	Toluene (µg/L)	Xylenes (µg/L)	Σ BTEX (µg/L)
MCP Method 1 Standards			GW-2:	3	5	7	2,000	20,000	50,000	1,000	50,000	9,000	NA
			GW-3:	50	50	50	10,000	5,000	50,000	20,000	40,000	5,000	NA
ECS-12 96.15	1/25/06	8.64	87.51	14.1	6.04	13.6	47.0	1,960	<20	399	54.0	9,690	11,751
	4/10/06	10.60	85.55	5.94	6.69	12.9	<10	86.6	20.9	98.9	37.3	437	560.6
	7/20/06	10.95	85.20	3.38	4.39	6.60	<10	19.9	14.7	53.9	32.4	59	111.3
	10/10/06	11.42	84.73	2.72	3.07	6.17	<10	53.0	32.2	69.3	33.7	270	356.9
	10/10/06D	NA	NA	4.14	3.21	7.13	<10	53.9	45.9	102	70.9	288	412.4
	1/25/07	12.55	83.60	3.22	2.07	3.82	<5.0	29.8	17.1	63.8	50	149.6	229.4
	1/25/07D	12.55	83.60	3.03	2.14	4.10	<25	30	<25.0	64.5	40.3	147	217.3
	4/24/07	8.83	87.32	3.95	1.20	4.31	<10	18.8	<10	74.6	56.2	29.7	104.7
	4/24/07D	8.83	87.32	2.06	1.46	2.88	<5.0	11.7	<5.0	54.5	33.3	17.5	62.5
	10/4/07	12.04	84.11	2.88	1.44	3.44	5.7	12.2	<5.0	54	<5.0	30.3	48.2
	10/4/07D	12.04	84.11	2.21	1.10	2.74	<5.0	10.7	<5.0	46.9	<5.0	29.9	40.6
	3/11/08	NG	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	3/24/08	9.15	87.00	2.20	1.76	1.95	<10	17.1	<10	60	<10	67.9	85.0
	3/24/08D	9.15	87.00	2.39	2.33	2.63	<10	24.5	<10	76	<10	78.7	103.2
	5/1/08	9.71	86.44	2.47	1.58	4.48	<25.0	43.7	<25.0	96.9	<25.0	151.3	195.0
	5/1/08D	9.71	86.44	2.48	1.48	4.48	<25.0	29.4	<25.0	87.4	<25.0	66.5	95.9
	11/24/08	10.79	85.36	1.76	1.61	1.42	<5.0	<5.0	<5.0	65.4	22.9	20.4	43.3
	11/24/08D	10.79	85.36	1.67	1.28	1.12	<5.0	<5.0	<5.0	45	19.9	17.6	37.5
	4/9/09	9.77	86.38	1.55	2.87	2.16	<25	<25	<25	48.2	<25	<50	ND
	4/9/09D	9.77	86.38	1.58	2.88	2.15	<25	<25	<25	49.6	<25	<50	ND
	8/24/09	9.62	86.53	1.20	1.55	1.13	<5.0	<5.0	<5.0	39.4	19.8	<10	19.8
	8/24/09D	9.62	86.53	1.19	1.55	1.14	<5.0	11.8	<5.0	46.8	20.3	53.5	85.6
	10/13/09	10.73	85.42	1.19	1.55	0.915	<5.0	<5.0	<5.0	60.7	20.3	<10.0	20.3
10/13/09D	10.73	85.42	1.37	1.29	0.605	<10	<10	<10	41.1	24.3	<20	24.3	
2/11/10	10.69	85.46	1.07	1.43	0.818	<5.0	<5.0	20.5	39.9	19.4	<10.0	19.4	
2/11/10D	10.69	85.46	1.01	1.36	0.779	<5.0	<5.0	18	39.8	17.6	<10.0	17.6	
9/9/10	11.92	84.23	0.84	0.969	0.466	<5.0	<5.0	<5.0	25.6	14.7	<10.0	14.7	
9/9/10D	11.92	84.23	1.73	1.41	0.663	<20.0	<20.0	<20.0	37.4	21.3	<40.0	21.3	
3/28/11	9.43	86.72	1.27	1.42	0.739	<5.0	<5.0	<5.0	35.8	<5.0	<10.0	ND	
3/28/11D	9.43	86.72	1.23	1.43	0.746	<5.0	<5.0	<5.0	35.7	<5.0	<10.0	ND	
9/14/11	8.55	87.60	1.46	1.46	1.26	<10.0	<10.0	11.3	32.6	27.2	<20.0	27.2	
2/15/12	10.29	85.86	2.17	2.53	1.74	<20.0	<20.0	<20.0	49.0	33.2	<40.0	33.2	
8/20/12	11.42	84.73	0.793	1.24	1.41	<10.0	<10.0	<10.0	30.5	13.8	<20.0	13.8	
2/20/13	10.85	85.30	0.803	0.546	0.660	<5.0	<5.0	<5.0	20.9	10.6	<10.0	10.6	
ECS-13 97.66	1/25/06	NG	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	4/10/06	12.20	85.46	28.9	5.66	11.0	77.8	4,780	342	566	9,600	22,430	36,888
	7/20/06	12.53	85.13	0.727	0.454	0.809	<5.0	223	<5.0	36.5	9.2	753	985
	10/10/06	13.01	84.65	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	1/25/07	12.18	85.48	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	4/24/07	10.51	87.15	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	10/4/07	13.64	84.02	0.598	0.434	1.29	<5.0	451	<5.0	33.0	11.1	206.3	668
	3/11/08	10.80	86.86	0.50	0.345	0.704	<5.0	266	<5.0	11.4	<5.0	22.9	289
	5/1/08	11.28	86.38	6.00	2.35	7.54	<5.0	2,470	<5.0	371	178.0	6,044	8,692
	11/24/08	12.42	85.24	<0.075	0.084	0.0892	<5.0	5.4	<5.0	5.5	<5.0	<10	5.4
	4/9/09	11.53	86.13	0.468	0.215	0.1900	<5.0	6.6	<5.0	17.6	<10	<10	24.2
	8/24/09	11.22	86.44	8.99	9.15	7.29	<5.0	3,560	52.9	521.0	610	16,570	20,740
	10/13/09	12.34	85.32	3.97	12.0	5.38	<100	889	<100	276.0	<100	5,290	6,179
	2/11/10	12.34	85.32	8.98	11.5	7.33	<50.0	2,550	<50.0	571.0	89.6	14,550	17,190
	9/9/10	13.47	84.19	3.46	2.33	1.21	<50.0	536	<50.0	76.2	<50.0	1,469	2,005
3/28/11	11.80	86.66	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND	
9/14/11	10.10	87.56	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND	
2/15/12	11.91	85.75	0.0906	0.116	0.0648	<5.0	<5.0	<5.0	16.8	<5.0	6.2	23	
8/20/12	12.95	84.71	<0.075	<0.025	0.0364	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND	

TABLE 3  
RESULTS OF ANALYSIS OF GROUNDWATER SAMPLES FOR VPH

O'Connell Oil Associates (Mobil Station)  
730 East Street, Pittsfield, MA  
MassDEP RTN 1-13347

Results reported in milligrams per liter (mg/L) or micrograms per liter (µg/L), as noted

Monitoring Well & Elevation (ft)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft)	C <sub>5</sub> - C <sub>8</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>12</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>10</sub> Aromatics (mg/L)	Benzene (µg/L)	Ethyl-benzene (µg/L)	MtBE (µg/L)	Naphthalene (µg/L)	Toluene (µg/L)	Xylenes (µg/L)	Σ BTEX (µg/L)
<b>MCP Method 1 Standards</b>			GW-2:	3	5	7	2,000	20,000	50,000	1,000	50,000	9,000	NA
			GW-3:	50	50	50	10,000	5,000	50,000	20,000	40,000	5,000	NA
ECS-14	4/10/06	10.00	86.25	1.22	0.278	0.328	<5.0	<5.0	<5.0	15.2	11.7	<15	11.7
<b>96.25</b>	7/20/06	10.31	85.94	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/10/06	10.79	85.46	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	1/25/07	9.87	86.38	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	4/24/07	8.51	87.74	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/4/07	11.35	84.90	2.32	0.710	1.22	7.2	<5.0	57.6	5.0	42.8	42.8	55.0
	3/11/08	8.80	87.45	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	5/1/08	9.19	87.06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	11/24/08	10.22	86.03	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	9/14/11	8.23	88.02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	2/15/12	9.84	86.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	8/20/12	11.48	84.77	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	2/20/13	10.30	85.95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	ECS-15	4/10/06	10.47	85.98	0.307	<0.025	0.032	<5.0	<5.0	<5.0	<5.0	<5.0	<10
<b>96.45</b>	7/20/06	10.72	85.73	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/10/06	11.23	85.22	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	1/25/07	10.37	86.08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	4/24/07	8.93	87.52	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/4/07	11.91	84.54	<0.075	<0.025	<0.025	<5.0	<5.0	52.7	<5.0	<5.0	<10	ND
	3/11/08	9.92	86.53	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	5/1/08	9.76	86.69	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	11/24/08	10.70	85.75	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	9/14/11	8.73	87.72	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	2/15/12	10.50	85.95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	8/20/12	10.83	85.62	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	2/20/13	11.00	85.45	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA

NOTES: Depth to water in feet from PVC.

ft = feet.

\*Denotes well where the GW-2 standards apply.

Bolded text indicates value or detection limit exceeds GW-2 standard.

Italicized text indicates value or detection limit exceeds GW-3 standard.

D = Duplicate sample.

Elevation of PVC in feet.

NA = Not applicable/available.

97.02 = PVC elevations following well repairs on 8/29/05 & 9/1/05

**TABLE 4  
SUMMARY OF SOIL GAS ANALYTICAL DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

MassDEP APH Method

Results and Standards reported in parts per billion by volume (ppbv) and micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), as noted

Sampling Location	SG-5		MassDEP Residential Sub-Slab Soil Gas Screening Values (2/2013) <sup>1</sup>		MassDEP Commercial/Industrial Sub-Slab Soil Gas Screening Values (2/2013) <sup>1</sup>	
	Sampling Date	TOV (ppmV)	ppbv	$\mu\text{g}/\text{m}^3$	ppbv	$\mu\text{g}/\text{m}^3$
TOV (ppmV)	10/25/12	ND				
Depth to Groundwater (ECS-2)	12.41					
<b>APH Target Analytes</b>						
C <sub>5</sub> -C <sub>8</sub> Aliphatics	NA	350	NA	4,100	NA	23,000
C <sub>9</sub> -C <sub>12</sub> Aliphatics	NA	419	NA	4,800	NA	15,000
C <sub>9</sub> -C <sub>10</sub> Aromatics	NA	75.3	NA	700	NA	3,100
<b>Targeted APH Analytes</b>						
1,3-Butadiene	<0.500	<1.10	NA	NA	NA	NA
Benzene	0.690	2.20	50	160	240	770
Ethylbenzene	2.17	9.41	120	520	4,700	62,000
m,p- Xylenes	8.21	35.59				
o-Xylene	3.10	13.44	320	1,400	1,400	6,200
Methyl tert-butyl ether	<0.500	<1.80	760	2,700	52,000	190,000
Naphthalene	<0.500	<2.62	8.0	42	36	190
Toluene	7.86	29.58	1,000	3,800	82,000	310,000

NOTES: NA = Not applicable

<sup>1</sup> Subslab Soil Gas Screening Levels based upon the MassDEP Interim Final Vapor Intrusion Policy, as revised (3/2013)






ROS Status Report

March 2013 to September 2013



ROS STATUS REPORT  
MARCH 2013 - SEPTEMBER 2013  
O'CONNELL MOBIL STATION  
730 EAST STREET  
PITTSFIELD, MASSACHUSETTS  
RTN 1-13347

A large, stylized silhouette of a tree with a rounded canopy and a thick trunk, centered on a light green background. The tree is positioned above a horizontal band containing the text 'WHERE BUSINESS AND THE ENVIRONMENT CONVERGE'.

WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

Prepared for:  
O'Connell Oil Associates, Inc.  
545 Merrill Road  
Pittsfield, MA 01201

Project No. J13632.20  
Document No. 42493  
September, 2013

Prepared by:  
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WHERE BUSINESS AND THE ENVIRONMENT CONVERGE



588 Silver Street, Agawam, MA 01001 tel 413.789.3530 fax 413.789.2776 www.ecsconsult.com

Mr. Richard Green  
Massachusetts Department  
of Environmental Protection  
436 Dwight Street  
Springfield, MA 01103

September 27, 2013  
Project No. J13632.20  
Document No. 42493

RE: ROS Status Report  
March 2013 to September 2013  
O'Connell Mobil Station  
730 East Street  
Pittsfield, Massachusetts  
RTN 1-13347

Dear Mr. Green:

On behalf of O'Connell Oil Associates, Inc. (O'Connell), Environmental Compliance Services, Inc. (ECS) has prepared a Remedy Operation Status (ROS) Status Report for 730 East Street in Pittsfield, Massachusetts (the Site). A Site Locus is included as Figure 1. A Site Plan with system features, soil borings, monitoring well locations, and groundwater contours is included as Figure 2. A plan depicting the Disposal Site Area is provided as Figure 3.

The Potentially Responsible Party (PRP) and contact for the Site is:

O'Connell Oil Associates, Inc.  
545 Merrill Road  
Pittsfield, Massachusetts 01201  
Attn: Mr. James Sobon  
Phone: (413) 586-6800

The name and address of the Licensed Site Professional (LSP) of record for this Disposal Site is provided below. The transmittal form submitted in concert with this report is being submitted electronically bearing the signature and stamp of the LSP listed below.

Virginia Irvine, LSP #9687  
Environmental Compliance Services, Inc.  
588 Silver Street  
Agawam, MA 01001  
(413) 789-3530

WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

## **1.0 SITE DESCRIPTION**

The Site consists of 17,414 square feet of land and includes one building, currently utilized as a gasoline service station and convenience store, located on the southwest corner of the intersection of East and Lyman Streets in Pittsfield, Massachusetts. The Site is completely paved with the exception of a gravel parking area located south of the on-site building (Figure 2). Abutting properties are used for commercial and residential purposes.

Soils encountered during the soil borings performed at the Site consisted of a dark brown to dark tan, fine to medium sand with lesser amounts of silt observed in some borings. Bedrock was not encountered at the Site during the Phase II Comprehensive Site Assessment (Phase II CSA) field activities.

Groundwater is present at the Site at depths ranging from approximately 8 to 13 feet below grade (fbg). Groundwater flow direction fluctuates from south to southwest toward the East Branch of the Housatonic River located approximately 500 feet south of the Site. The average groundwater seepage velocity was determined to be 0.24 feet per day.

The closest surface water is Silver Lake located approximately 250 feet north of the Site.

The Massachusetts Contingency Plan (MCP) soil categories applicable to the Site are S-2 and S-3. Adult's frequency of use on the Site is characterized as high since workers are at the Site for eight or more hours per day on a continuing basis. Children's frequency of use is characterized as low since they are present at the Site only as infrequent visitors. Intensity of use is considered to be low since any Site activities are passive and do not have the potential to disturb soil. The impacted soil is considered to be "potentially accessible" from 0 to 15 feet fbg.

Potential receptors at the Site include: construction workers, which may be involved in future re-working or excavation of the Site; environmental consultants; adults who work at the Site; and/or customers at the convenience store/filling station.

The MCP Method 1 groundwater categories applicable to the Site are GW-2 and GW-3 based on shallow depth to water and discharge to surface water, respectively. GW-1 is not applicable because the Site is not located in a Potential or Current Drinking Water Source Area.

Based upon current use of the Site, the soil standards applicable to the Site are S-2/GW-2, S-2/GW-3, S-3/GW-2, and S-3/GW-3. Since no use restriction has been placed on the property, residential exposure scenarios exists under potential future use, and therefore soil categories S-1/GW-2 and S-1/GW-3 are also applicable to the Site for future use.

Current strategy for remediating soil and groundwater on the southeastern portion of the Site is the operation of a biosparge system and monitoring for monitored natural attenuation (MNA) parameters as a future viable remedial alternative. Current strategy for remediating soil and groundwater on the northwestern portion of the Site is MNA.

## 2.0 SITE HISTORY

The Site property has been used as a retail gasoline station since at least 1968 and was used as an automobile service station from approximately 1968 through 1986. During an investigation conducted for a previous waste oil underground storage tank (UST) release on the Site (RTN 1-10847), concentrations of volatile petroleum hydrocarbons (VPH) and volatile organic compounds (VOCs) in groundwater collected from wells located upgradient of the former waste oil UST exceeded the applicable reportable concentrations (RCs). The Massachusetts Department of Environmental Protection (MassDEP) assigned RTN 1-13347 to the new reportable condition. ECS submitted a Release Notification Form (RNF) to the MassDEP on March 10, 2000.

Two areas of historic soil and groundwater contamination have been identified at the Site. The first area is on the southeastern side of the Site property in an area which includes historic and current UST systems for the storage of gasoline and diesel fuel and the dispenser island for diesel fuel. The source of contamination in this area is due to unknown historic releases of petroleum from these UST systems or activities related to the dispensing of petroleum products. The second area of soil and groundwater contamination is located on the northwestern side of the Site property where a limited area of contaminated soil has been identified along with limited downgradient groundwater impact. The source of contamination on the northwestern portion of the Site is unknown but may represent releases of petroleum from the previous operation of an automobile service station and gasoline filling station from 1968 to 1986, prior to the purchase of the Site by O'Connell.

Phase I Initial Site Investigation (Phase I) activities were conducted at the Site in 2001. The data collected during the Phase I indicated that a release or releases of gasoline to groundwater had occurred at the Site resulting in concentrations of VPH in groundwater exceeding the RCs. Low levels of extractable petroleum hydrocarbons (EPH), and targeted polyaromatic hydrocarbon (PAH) analytes were detected in the groundwater samples collected from monitoring wells ECS-2, ECS-3, ECS-4, and ECS-5; however, the concentrations detected did not exceed applicable RCGW-2 standards. The source of gasoline constituents in soil and groundwater appears to be the historical gasoline storage area in the eastern portion of the Site and the pump island in the northern portion of the Site. A Tier Classification Submittal was prepared for the Site and submitted concurrent with the Phase I Report. The Site was classified as Tier II.

A Phase II CSA and Phase III Remedial Action Plan (RAP) were completed for the Site by ECS in March 2003. Information obtained during Phase II investigations indicated that there were two potential source areas on the Site: the northwestern corner and the southeastern corner. Soil collected from a depth of 10 to 12 fbg in boring SB-2 on the northwestern corner of the Site property exceeded the S-1 soil standards in combination with GW-2 and GW-3 groundwater categories but not the applicable S-3 soil standards for C<sub>5</sub>-C<sub>8</sub> Aliphatics and C<sub>9</sub>-C<sub>10</sub> Aromatic VPH carbon fractions. Groundwater collected from well ECS-3, located in the southeastern portion of the Site, downgradient of the current gasoline and diesel USTs exceeded both the GW-2 and GW-3 standards for the C<sub>9</sub>-C<sub>10</sub> aromatic VPH carbon fraction. The current USTs, installed in 1984, are believed to be in the location of former USTs, which were installed in 1966 and removed in 1984. The Phase II determined that the average depth to groundwater is less than 15 feet; therefore, groundwater is a potential source of vapors to indoor air. In the past groundwater from monitoring wells located within 30 feet of the building (primarily ECS-2 and ECS-6) have had concentrations of VPH above GW-2 standards. Soil gas samples were collected on February 11, 2003 as

part of the Phase II from locations adjacent to the on-site building beneath paving (SG-1 through SG-4). No concentrations of total volatile organic vapors (TOVs) were detected above the detection limit of the photoionization detector (PID). Based on this data, it appears that it is unlikely that vapors from impacted groundwater will impact the indoor air of the on-site building.

Based on the results of the March 2003 Phase III RAP screening and analysis, the remedial action alternatives selected for the Site were the excavation and replacement of impacted soils (with dewatering if necessary), in conjunction with the implementation of an MNA program for the soil contamination on the northwestern corner of the Site and an MNA program for groundwater on the southeastern portion of the Site downgradient of the former and current diesel and gasoline USTs. A Phase IV Remedy Implementation Plan (RIP) detailing the implementation of the selected remediation alternatives was submitted in March 2004.

Based on groundwater analytical data collected in the fall of 2005, ECS determined that the MNA program detailed in the initial Phase IV RIP would not be sufficient to reduce dissolved-phase petroleum hydrocarbon concentrations in the southeastern portion of the Site, downgradient of the historic and current UST systems. Therefore, ECS submitted Phase III RAP and Phase IV RIP Addendums in August 2006, which presented a comprehensive plan for the implementation of an additional remedial alternative, biosparging for contamination in the southeastern portion of the Site with MNA as a future remedial option. On September 6 and 7, 2006 ECS personnel installed the trench system, laid ¼-inch diameter clear polyethylene tubing from the oxygen sparge wells to the area of the system enclosure, backfilled, compacted, and sealed the trench system, and configured the wellheads and connections. The manifold was installed on September 8, 2006. The biosparge system was activated on September 11, 2006 with all ten oxygen sparge legs in operation. A Phase IV Final Inspection Report and Completion Statement and a Phase IV As-Built Construction Report were submitted in September 2006 to present modifications to the construction of the active remedial system and document that the system had been constructed in accordance with the construction plans and appropriate modifications to such plans. An ROS Opinion was submitted to the MassDEP on March 7, 2007 approximately six months after the biosparging system start-up.

As specified in the March 2004 Phase IV RIP, subsurface investigations were performed in 2005 to delineate the horizontal and vertical extent of soil contamination in the northwestern portion of the Site. A soil-boring event conducted on May 19, 2005 was discussed in the Tier II Permit Extension Request (ECS, February 2006) and in the Phase III RAP Addendum (ECS, August 2006). The soil analytical results indicated that soil contamination is limited to a 12-foot area below the water table at a depth ranging from 10 to 16 fbg. Due to the limited area of contamination and location below the water table, ECS determined through cost-benefit analysis that excavation was not a feasible remedial alternative for soil contamination in the northwestern area of the Site thereby leaving the 2003 Phase III RAP and 2004 Phase IV RIP remedial alternative of MNA as the only remedial strategy for the northwestern area. Evidence that the MNA remedial strategy is effective in the northwest area of the Site was presented within the Revised ROS Opinion (ECS December 2007).

### **3.0 REMEDIAL SYSTEM DESCRIPTION**

The oxygen sparge system was activated on September 11, 2006 with all ten sparge legs in operation. The operation of the sparge wells was modified prior to the February 2009 sampling event in an attempt to concentrate the oxygen to the area of most impact (wells ECS-2 and ECS-3). Based on the fact that VPH

concentrations in groundwater from ECS-13, which is a deeper screened well (16 to 18 feet), were above Method 1 standards during the August sampling event, the system was modified to include AS-6 as a replacement for AS-7 in September 2009. A leak was detected at AS-5 and the sparge point was shut-off following the December 23, 2009 site visit. The sparge point (AS-5) was repaired on June 29, 2010 and put into operation on July 20, 2010. Two additional sparge points, AS-11 and AS-12, were installed in July 2012.

During this reporting period (March to September 2013), ECS personnel conducted weekly site visits to complete required system operation, monitoring, and maintenance (OMM). OMM events occurred on March 20, April 4, April 12, April 18, April 26, May 2, May 10, May 15, May 23, June 6, June 13, June 20, June 26, July 3, July 11, July 18, July 25, August 8, August 15, August 21, August 29, and September 5, 2013. System data is included in Table 1. Gauging and geochemical monitoring data associated with Site visits are provided in Table 2. Field notes are provided in Attachment I.

During this reporting period, sparge wells AS-1, AS-2, AS-7, AS-8, AS-9 and AS-10 were closed and sparge wells AS-3, AS-4, AS-5, AS-6, AS-11, and AS-12 were operational. Oxygen flow rates measured to the oxygen sparge wells ranged from 4 cubic feet per hour (cfh) to 9.5 cfh during active sparging. Pressures measured in the oxygen sparge wells ranged from 5 pounds per square inch (psi) to 24.5 psi.

#### **4.0 GROUNDWATER MONITORING PROGRAM AND RESULTS**

As stated in the Phase IV Remedy Implementation Plan (RIP)(March 2004) and as revised in the Phase IV RIP Addendum (August 2006), groundwater monitoring is to be performed on a semiannual basis at select wells to evaluate the effectiveness of the remedial strategy in reducing dissolved-phase petroleum hydrocarbons to levels that pose No Significant Risk. The monitoring plan as written in the 2004 RIP is provided as Table II in Attachment II. The revised sampling program, as recommended in the 2006 RIP Addendum and currently in place, is provided as Table II-A. Groundwater is gauged and sampled for VPH and monitored for natural attenuation (MNA) parameters at select monitoring wells located upgradient, in the vicinity of, and downgradient of the former source areas and existing remedial well network. Samples were collected at ECS-2 and ECS-12 in 2011 and 2012 for analysis of Extractable Petroleum Hydrocarbons (EPH) to evaluate whether a spike in the concentrations of VPH observed at ECS-2 in 2011 could be related to the diesel UST at the Site. Groundwater samples were collected at ECS-2, ECS-3, and ECS-12 in August 2013 for EPH analysis.

##### **4.1 Groundwater Monitoring Methodologies**

Sampling Dates:	August 21, 2013
Sample Method:	Low flow sampling
Laboratory Analysis:	VPH and select wells for nitrate, sulfate, and dissolved iron and EPH
Field Measurements:	Temperature, specific conductivity, DO, pH and ORP
Laboratory:	Spectrum Analytical of Agawam, Massachusetts
Sampling points planned:	13
Number of wells gauged:	16
Number of wells sampled:	13
Completeness:	100%

Depth to Groundwater:	8.83 feet below grade at ECS-10 to 12.62 feet below grade at ECS-3.
Wells sampled:	ECS-1, ECS-2, ECS-3, ECS-4, ECS-5, ECS-6, ECS-7, ECS-8, ECS-9, ECS-10, ECS-11, ECS-12, and ECS-13
Comments:	Duplicate sample collected at ECS-2.

The sampling logs for the sampling event are included as Attachment III. The Laboratory Certificates of Analysis are included as Attachment IV. A summary of historical groundwater gauging and geochemical values is presented in Table 2. VPH and EPH analytical results are presented in Tables 3 and 4.

#### 4.2 Groundwater Gauging Results

Figure 2 provides groundwater contours based upon gauging data collected on that date. Groundwater elevations calculated from this gauging data suggest that groundwater flow is predominantly toward the southwest across the Site.

#### 4.3 Groundwater Sampling Results

The concentrations of the C<sub>9</sub>-C<sub>12</sub> Aliphatic and C<sub>9</sub>-C<sub>10</sub> Aromatic VPH Fractions in the sample collected at ECS-3 exceed the Method 1 GW-2 Standards. The concentration of xylenes in the sample collected at ECS-3 exceeds the Method 1 GW-3 Standard. All other concentrations of VPH fractions and Target Analytes and EPH Fractions and Target Analytes reported for the August 2013 samples were below Method 1 GW-2 and GW-3 Standards. These data are summarized on Table 3.

#### 4.4 Evaluation of Groundwater Results for the Southeastern Plume

The remedial method in the Southeastern Site Area is oxygen sparging with secondary MNA.

##### 4.4.1 VPH Concentrations and Groundwater Elevations

Charts 1 through 3 depict the total VPH Fractions and BTEX concentrations (as general indicators of groundwater quality) and groundwater elevations at ECS-2, ECS-3, and ECS-13 versus time from September 2005 through August 2013. Since the restart of the system in 2008, the concentrations of VPH fractions and BTEX have exhibited an overall decreasing trend, though concentrations of BTEX at these three wells increased from August 2012 to August 2013, and concentrations of VPH at ECS-3 and ECS-13 increased from August 2012 to August 2013. A correlation analysis of groundwater elevation and Total VPH Fractions concentrations at these three wells since the system was restarted (May 2008) did not indicate a significant correlation between these data (ranging from -0.09 to 0.25).

##### 4.4.2 ASTM Evaluation of Plume Stability in the Biosparge Area

In order to characterize the dissolved contaminant plume, the natural log of concentrations of total VPH carbon fractions versus time was plotted for three wells



(ECS-2, ECS-3, and ECS-13) on Chart 4. The linear regression analysis for the best fit line for each well is depicted. A plume will become stable when the rate of gasoline contamination mass removal through natural attenuation equals the mass of gasoline contamination entering the plume. The plume will shrink when the rate of VPH carbons fraction removal through natural attenuation is greater than the mass entering the plume. In all three wells concentrations of VPH in groundwater have remained stable, approaching zero since 2005.

Downgradient wells ECS-7, ECS-8, and ECS-9 were sampled on August 21, 2013. Analysis of the samples did not detect VPH fractions or target analytes at concentration above the reportable detection limits (RDLs). Based upon this information the plume appears to be stable or shrinking, providing primary evidence of attenuation of petroleum hydrocarbons.

#### 4.4.3 Analysis of Oxygen Sparging

The dissolved oxygen concentrations are measured in the wells within the influence of the oxygen sparge system (ECS-2, ECS-3, ECS-12, and ECS-13) during OMM events. Dissolved oxygen concentrations at monitoring wells ECS-4 and ECS-8, located within the contaminant plume and downgradient of the sparge area are also measured to provide data for this downgradient region of the aquifer.

Maximum DO Concentration Measured:	9.88 mg/L (ECS-12, May 23, 2013)
Minimum DO Concentration Measured:	0.57 mg/L (ECS-12, August 21, 2013)
Average DO Concentration:	4.88 mg/L

Sparge points AS-11 and AS-12 were installed to address the low concentrations of dissolved oxygen in the aquifer surrounding ECS-12 and ECS-2, respectively. Average dissolved oxygen concentrations at ECS-2 and ECS-12 were 4.95 and 4.91 mg/L during this reporting period.

Concentrations of total VPH carbon fractions in groundwater from wells ECS-2, ECS-3, and ECS-13 were plotted against dissolved oxygen as a function of time in Charts 5 through 7, respectively. The trend of the data collected from these wells during groundwater monitoring events from September 2005 through August 2013 generally indicates a very slight inverse correlation between the dissolved oxygen concentration and VPH fractions.

#### 4.4.4 Discussion of Contaminant Isopleths

An isopleth was generated for the August 2013 data (Figure 4). Figure 5 provides isopleths for September 2005 sampling event, which occurred prior to the startup of the remedial system. The contaminant isopleth geometry for the sparge area has shrunk since 2005, and the magnitude of the center of the contaminant plume has decreased by approximately one-third. These data provide primary evidence of that natural attenuation of petroleum hydrocarbons in groundwater at the Site.

#### 4.5 Evaluation of Groundwater Results in the Northwestern Plume

The sole remedial method in the northwestern portion of the Site is MNA.

##### 4.5.1 BTEX Concentrations and Groundwater Elevations

Charts 8 and 9 depict the total VPH Fractions and BTEX concentrations (as general indicators of groundwater quality) and groundwater elevations at ECS-5 and ECS-6 versus time from September 2005 through August 2013. The concentrations of BTEX reported in samples collected at wells ECS-5 have remained stable over the past seven reporting periods. The concentrations of VPH Fractions and BTEX have exhibited a slightly increasing trend over the past six sampling events, but the concentrations have been below applicable Method 1 Standards. A correlation analysis of groundwater elevation and Total VPH Fractions concentrations at these wells indicates a moderate positive correlation at ECS-5 (0.55) and insignificant low positive correlation at ECS-6 (0.18). BTEX and groundwater elevation are insignificantly correlative (0.14 and 0.16, respectively).

##### 4.5.2 ASTM Evaluation of Plume Stability in the Northwestern Area of the Site

In order to characterize the dissolved contaminant plume, the natural log of concentrations of total BTEX versus time was plotted for two wells (ECS-5 and ECS-6) on Chart 10. The linear regression analysis for the best fit line for each well is depicted. In both wells concentrations of BTEX in groundwater have approached zero since 2005 with a decreasing trend indicating a stable and shrinking plume.

##### 4.5.3 Discussion of Contaminant Isopleths

Based upon this information and the absence of VPH analytes at monitoring well ECS-10 and ECS-9 during the most recent sampling event, the plume appears to be shrinking, providing primary evidence of attenuation of petroleum hydrocarbons. Figure 4 illustrates the VPH Fractions isopleths for the August 2013 data. As a comparison, Figure 5 provides VPH Fractions isopleths for the September 2005 data. The plume geometry has shrunk significantly during this period of time, decreasing in both size and magnitude.

#### 4.6 Evaluation of MNA

##### 4.6.1 General Geochemical Parameters Discussion

Selected monitoring wells at the Site are gauged for depth to groundwater, and geochemical monitoring, including temperature, pH, dissolved oxygen, and oxidation reduction potential, on an approximately semimonthly schedule, and during regularly scheduled groundwater sampling events, where specific conductivity is also collected. Groundwater samples from selected wells are collected during each sampling event for geochemical quantitative analysis of dissolved iron, nitrate, and sulfate. Geochemical data is presented in Table 2.

Samples were collected and analyzed for dissolved iron, nitrate, and sulfate from wells ECS-1 (upgradient well), ECS-2 (downgradient), ECS-3 (center of plume), ECS-9 (downgradient), and ECS-12 (upgradient/crossgradient of current USTs) during the August 2013 groundwater sampling event.

#### 4.6.2 Evaluation of MNA in the Biosparge System Area

Dissolved Oxygen:	Ranged from 0.57 mg/L at ECS-12 to 9.88 mg/L at ECS-12
Nitrate:	Not detected at ECS-12 (<0.100 mg/L); maximum concentration 3.50 mg/L at ECS-1
Dissolved Iron:	Not detected at ECS-1 (<0.0300 mg/L) to 11.3 mg/L at ECS-12
Sulfate:	Ranged from 4.01 mg/L at ECS-12 to 27.1 mg/L at ECS-1

The concentrations of dissolved oxygen are discussed in Section 4.4.3 the discussion of the oxygen sparging system results.

The absence of nitrate in groundwater at well ECS-12 implies that microbial processes involving anaerobic nitrate reducing bacteria may still be occurring in groundwater at this area of the Site. New sparge points (AS-11 and AS-12) were installed in the area of ECS-12 to increase oxygen flow to this region of the aquifer.

Iron reduction is most likely not occurring in the area of ECS-1 due to the absence of petroleum hydrocarbons in this region of the aquifer. Iron-reducing bacteria may be active in the areas of ECS-12. Concentrations of dissolved iron in groundwater samples collected at ECS-2 and ECS-12 in August 2013 were lower than those detected in August 2012.

The presence of sulfate concentrations in groundwater at monitoring wells within the sparge network suggests that microbial degradation of petroleum hydrocarbons is not occurring via sulfate-reducing processes.

Total VPH Fractions concentrations, dissolved oxygen, dissolved iron, sulfate and nitrate concentrations at ECS-1, ECS-11, ECS-12, and ECS-2 (August 2013) are plotted versus approximate distance from the source area on Chart 11. The chart demonstrates that concentrations of VPH increase slightly within the sparge network. Nitrate and sulfate concentrations decrease and dissolved iron concentrations increase in the area of ECS-2 and ECS-12. Dissolved oxygen concentrations were lowest at ECS-11 and increased slightly at ECS-2 and ECS-12, within the sparge zone.

#### 4.6.3 Evaluation of MNA in the Northwest Plume

Concentrations of dissolved oxygen ranged from 2.36 mg/L at ECS-5 to 0.58 at ECS-10. Concentrations of dissolved oxygen were measured to be less than 1 mg/L at ECS-6, ECS-9, and ECS10 during this reporting period.

Samples were not collected for nitrate, sulfate, and dissolved iron during this reporting period.

Total VPH Fractions and dissolved oxygen concentration at ECS-5, ECS-6, and ECS-9 (August 2013) are plotted versus approximate distance from the source area on Chart 12. The chart demonstrates that concentrations of VPH decline with distance from the source. Dissolved oxygen concentrations decline in the vicinity of the source area, and remain below 1.0 mg/L downgradient of the source area.

## **5.0 ADDITIONAL FIELD ACTIVITIES**

Soil gas screening with a Photoionization Detector (PID) is conducted at sub-slab soil gas point SG-5, located within the office of the Site building, during regular OMM events. Total Organic Vapors (TOV) were not detected at levels greater than the PID instrument detection limit of 0.1 parts per million by volume (ppmV).

## **6.0 DATA USABILITY AND REPRESENTATIVENESS**

Groundwater samples collected during the August 2013 groundwater sampling event were analyzed for VPH according to the MassDEP Compendium of Analytical Method (CAM) VPH Methods Rev. 1.1. The soil gas sample collected in October 2012 was analyzed by the CAM APH Method. Sampling was performed according to CAM, revisions which were effective July 1, 2010.

Field precision was demonstrated by the use of a field duplicate groundwater sample collected from monitoring well ECS-2 during the August 21, 2013 event and analyzed for VPH. The relative percentage differences (RPDs) for VPH Fractions and Target Analytes for the field duplicates were within the range of  $\pm 30\%$ . The highest concentrations reported for each analyte will be utilized in future risk assessments; concentrations did not exceed Method 1 Standards applicable to the Site. A Trip blank of deionized water accompanied the groundwater samples collected on August 21, 2013 and was submitted to the laboratory for VPH analysis. The analysis did not detect any VPH fractions or Target Analytes at concentrations above the laboratory RDLs.

QAQC information for the groundwater samples collected during this reporting period is provided as Table 5.

Accuracy for VPH analyses was determined by the laboratory use of surrogate recoveries, which were all within the control limits of 70% to 130%. The laboratory noted that sample dilution was required for samples ECS-3, ECS-12, and ECS-13. The laboratory did note some nonconformances in the VPH for the laboratory control samples. The nonconformances are not expected to affect the usability of the data. These data are retained for use in this and future reports.

To assure sample representativeness all sampling methods were in accordance with MassDEP and/or USEPA groundwater and soil gas sampling procedures as described in ECS sampling SOPs and documented in sampling field notes. Sampling containers, preservation methods, and holding times met Method requirements. The groundwater samples were submitted to the laboratory on ice. The temperature

of the groundwater samples collected on August 21, 2013 as measured immediately upon submittal to the laboratory was 3.8°C, within the USEPA recommended temperature range of 4°C ± 2°C.

Groundwater samples were collected from select monitoring wells based on the planned sampling program submitted in the Phase IV RIP. These data are therefore considered sufficient to characterize groundwater quality at the Site. A detailed history of seasonal groundwater concentrations at the Site has been compiled.

The completeness of the August 2013 groundwater sampling event was 100%. This meets the DQO of 80% for all samples.

A review of the precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) indicates that the data collected during this reporting period are of suitable quality to support the conclusions of this report and future reports.

## **7.0 WASTE MANAGEMENT**

No waste material was generated during this reporting period.

## **8.0 PUBLIC INVOLVEMENT**

Notices of Environmental Sampling, as required by 310 CMR 40.1403(10), were sent to the owners of properties where groundwater sampling is routinely performed. The property owners were provided with the analytical results, a summary table of the analytical data, and a copy of the Disposal Site Map. Proof of this notification is provided as Attachment V.

## **9.0 ROS PERFORMANCE STANDARD**

The following conditions have been achieved to maintain the Performance Standard for Remedy Operation Status:

- A Phase IV RIP detailing the selected remedial action alternatives for the Site was submitted to the MassDEP in March 2004. At the time the Phase IV was submitted, excavation and replacement of impacted soil (with dewatering, if necessary), in conjunction with the implementation of a MNA program, for the soil contamination on the northwestern corner of the Site and an MNA program for groundwater on the southeastern portion of the Site, downgradient of the former and current diesel and gasoline USTs, were the selected alternatives. Based on the groundwater analytical data collected in the fall of 2005, ECS determined that the MNA program detailed in the initial Phase IV RIP would not be sufficient to reduce dissolved-phase petroleum hydrocarbon concentrations in the southeastern portion of the Site. Therefore, ECS submitted Phase III RAP and Phase IV RIP Addendums in August 2006, which presented a comprehensive plan for the implementation of a biosparging system for contamination in the southeastern portion of the Site, with MNA as a future option. The system construction was detailed in the Phase IV Completion, As-Built, and Final Inspection Reports submitted to the DEP in September 2006. An ROS opinion was submitted on March 7, 2007. As specified in the March 2004 Phase IV RIP, subsurface investigations were performed in 2005 to delineate the horizontal and vertical extent of soil contamination in the northwestern portion of the Site. The soil analytical results indicated that soil contamination is limited to a 12-foot area below the water table at a depth

ranging from 10 to 16 fbg. Due to the limited area of contamination and location below the water table, ECS determined through cost-benefit analysis that excavation was not a feasible remedial alternative for soil contamination in the northwestern area of the Site thereby leaving the 2003 Phase III RAP and 2004 Phase IV RIP remedial alternative of MNA as the only remedial strategy for the northwestern area. Evidence that the MNA remedial strategy is effective in the northwest area of the Site was first presented within the Revised ROS Opinion (ECS December 2007) and subsequent ROS Status reports;

- The biosparge remedial system and monitoring program have been designed in accordance with 310 CMR 40.0893(2)(b) in order to achieve a Permanent Solution. Data for the August 2013 sampling event supports the conclusion that the plumes on-site are stable and/or shrinking, and that natural attenuation processes are occurring on the Site that are reducing the concentrations of petroleum hydrocarbons in groundwater over time. Given that concentrations of petroleum hydrocarbons have been declining and are below Method 1 Standards at wells located within the northwestern plume, sampling of these wells is discontinued. Table II-A has been amended accordingly;
- The source(s) of oil and hazardous materials (OHM) have been eliminated and/or controlled in accordance with 310 CMR 40.0893(2)(d). Two areas of historic soil and groundwater contamination have been identified at the Site.
  - The first area is on the southeastern side of the Site property in an area, which includes historic and current UST systems for the storage of gasoline and diesel fuel and the dispenser island for diesel fuel. The source of contamination in this area is due to unknown historic releases of petroleum from these UST systems or activities related to the dispensing of petroleum products. The operation of a biosparge system on the southeastern portion of the Site decreases concentrations of dissolved contaminants in groundwater as documented in Table 3. Data collected during 2011 and 2012 related to EPH concentrations in groundwater at the Site does not suggest that the diesel UST or dispenser are continuing sources at the Site. Concentrations of dissolved contaminants increase when the biosparge system is not operating. The collection of samples at ECS-2, ECS-3, and ECS-12 for analysis of EPH will occur annually until a Permanent Solution is achieved at the Site. The groundwater sampling program Table II-A has been amended accordingly.
  - The second area of soil and groundwater contamination is located on the northwestern side of the Site property where a limited area of contaminated soil has been identified along with limited downgradient groundwater impact. The source of the contamination on the northwestern portion of the Site is unknown but may represent releases of petroleum from the previous operation of an automobile service and gasoline filling station from 1966 to 1986. The implementation of MNA on the northwestern portion of the Site has produced data showing that the dissolved contaminant plume is stable and that biodecay is occurring.
- There are no Substantial Hazards at the Site: light non-aqueous phase liquid (LNAPL) has never been detected in any monitoring wells; sub-slab soil gas samples did not contain APH Fractions or Target Analytes at concentrations above the MassDEP sub-slab screening levels for commercial/industrial properties; and, dissolved-phase concentrations of VPH and EPH constituents are below Upper Concentration Limits;

- Continued generally decreasing trends observed in on- and off-Site wells located in, adjacent and downgradient of the source area is indicative of the success and appropriateness of the current remediation strategy and supports the validity of the Site's current ROS designation;
- In accordance with 310 CMR 40.0893(2)(c) the remedial system and monitoring program are being operated and maintained in accordance with the design criteria found in the 2006 Phase IV RIP Addendum Operation, Maintenance, and Monitoring Plan;
- The following operation and maintenance activities will be conducted until a Permanent Solution has been achieved, as detailed in the Final Inspection Report (ECS, September 2006) and modified in subsequent reports:
  - Sparging has been adjusted to focus on the regions of the aquifer near ECS-2 and ECS-12;
  - Soil gas sampling will occur if groundwater samples collected at wells within 30 feet of the Site contain VPH or EPH at concentrations greater than the Method 1 GW-2 Standards;
  - The more closely scheduled Site visits that were proposed in previous ROS Status report resulted in more consistent oxygen sparging during this reporting period. Some alterations to the flow rate and wells at which sparging is occurring will be made to focus sparging in the region of ECS-3 and ECS-12, where highest concentrations of VPH fractions were reporting during this reporting period;
  - The biosparging system will be monitored at least weekly to optimize system performance. A planned shutdown of the system may occur in order to conduct rebound monitoring;
  - Groundwater gauging and geochemical monitoring will be conducted during OMM visits; and
  - Groundwater samples will be collected on a semiannual basis. The next groundwater sampling event is scheduled to occur in February 2014.
- ECS will submit operation, maintenance, and monitoring reports on a semi-annual basis as described in 310 CMR 40.0893 to maintain ROS. The next status report will be submitted on or before March 28, 2014.

Project No. J13632.20/ Document No. 42493  
Mr. Richard Green  
MassDEP  
September 27, 2013

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If there are any questions regarding this submittal, please contact the undersigned at (413) 789-3530.

Sincerely,  
ENVIRONMENTAL COMPLIANCE SERVICES, INC.



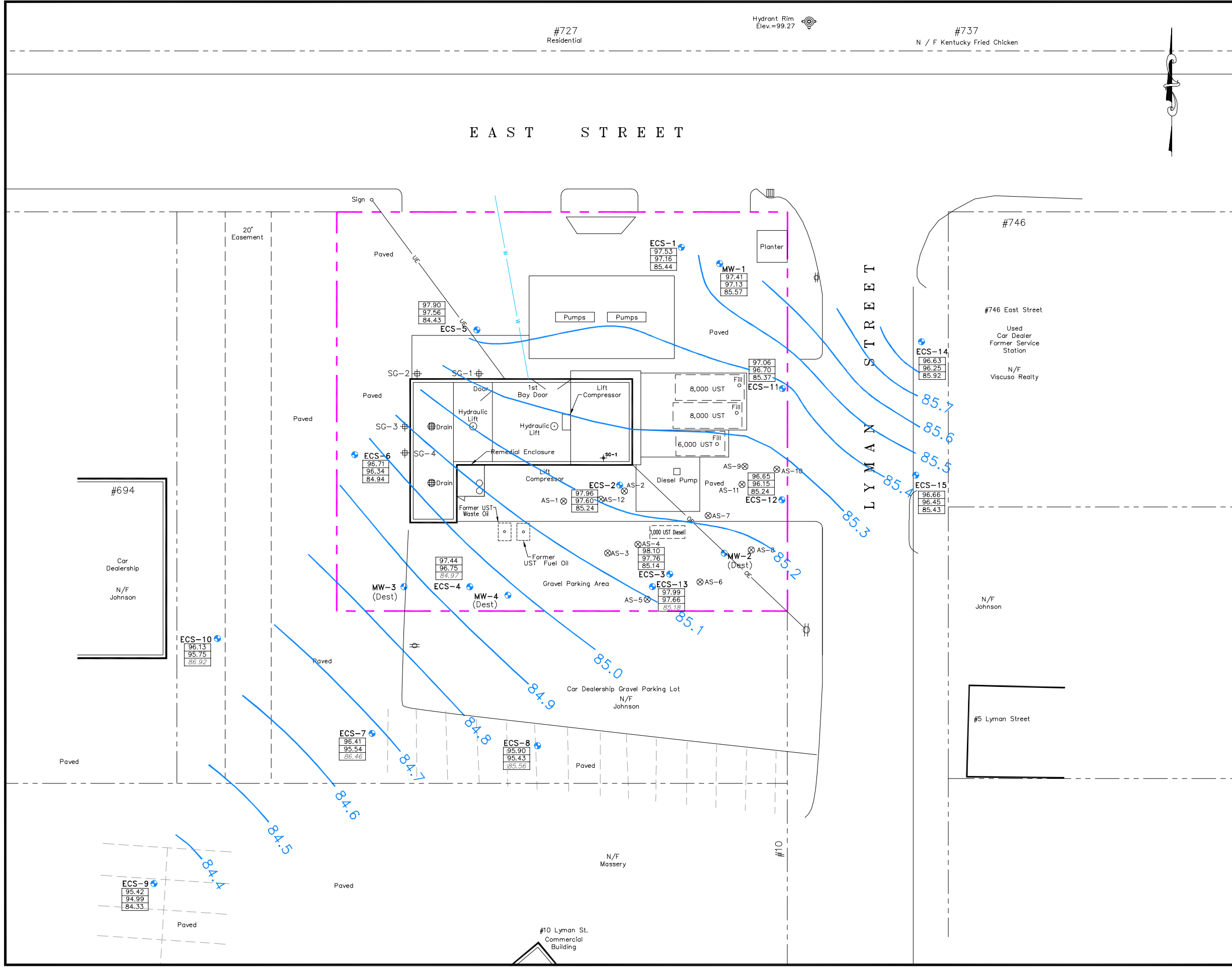
Lori A. McCarthy  
*Project Manager*



Virginia A. Irvine, PG, LSP  
*Senior Hydrogeologist*

LAM/VAI/kab  
Attachments





### Legend

- Approximate Property Line
- SS Sanitary Sewer Line
- SW Storm Sewer Line
- W Water Line
- NG Natural Gas Line
- OE Overhead Electric Line
- Manhole
- Catchbasin
- Water Gate
- Fire Hydrant
- Utility Pole
- Soil Boring
- Soil Gas Point
- Monitoring Well
- Air Sparge Well
- Proposed Soil Boring

**ECS-1 Well I.D.**

97.53	Rim Elevation
97.16	PVC Elevation
85.55	Water Table Elevation

Flow Direction Indicator

--- 90.0 Water Table Contour (Dashed where inferred)

**General Notes:**

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

Reference Plans BMRD Plat E192 (Massery) Horizontal, and vertical locations of wells, and selected site features determined through measurements made by representatives of ECS.

Water table elevations are based on an assumed benchmark of 99.27 feet located at the hydrant rim.

Water table elevations are based on measurements made on August 21, 2013.

Water table contours, and flow directions assume homogenous, isotropic aquifer conditions, and horizontal flow.

Fluctuations in the level of the water table may occur due to factors not accounted for at the time of measurement.

Water table contours are interpolated between data points, and inferred in other areas.

Wells ECS-4, 7, 8, 10 & 13 were not used in the generation of the groundwater contours.

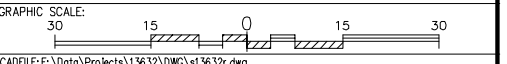


588 Silver Street • Agawam, MA 01001  
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 www.ecsconsult.com

PROJECT: **O'Connell Mobil Station**  
 730 East Street—Route 9  
 Pittsfield, Massachusetts

TITLE: **Site Plan with Groundwater Contours (8/21/13)**

CLIENT: **O'Connell Oil Associates, Inc.**



CADFILE: F:\Data\Projects\13632\DWG\st13632r.dwg

SAVED BY: RSTARODD

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
RAS	LM	LM	VAI
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1" = 30'	9/23/13	13632	2

## **TABLES**

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**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
ECS-1* 97.19 97.02	11/8/99	NA	NA	NA	NA	NA	NA	NS	NS	NS
	12/19/02	NA	NA	NA	NA	NA	NA	NS	NS	NS
	9/8/05	11.78	85.24	5.06	750	4.91	549	4.48	26.2	0.015
	1/25/06	8.49	88.53	7.31	108	2.71	68.0	2.16	23.4	3.90
	4/11/06	11.38	85.64	7.04	926	4.00	10.0	4.45	27.6	<0.01
	7/20/06	11.72	85.30	4.78	814	2.98	590	3.85	27.5	<0.01
	10/10/06	12.21	84.81	NA	NA	NA	NA	NS	NS	NS
	1/25/07	11.34	85.68	7.65	620	4.87	33.0	3.70	25.9	<0.01
	2/26/07	11.29	85.73	7.82	NM	2.67	182.6	NS	NS	NS
	4/24/07	9.89	87.13	NA	NA	NA	NA	NS	NS	NS
	10/4/07	12.74	84.28	7.45	743	4.49	88	3.81	27.3	<0.0300
	3/11/08	9.82	87.20	7.37	708	4.06	160	3.35	25.9	<0.0300
	5/1/08	11.5	85.52	7.56	822	5.37	33	3.79	27.8	<0.0300
	11/24/08	11.61	85.41	7.51	836	1.93	-10	3.73	25.5	<0.0300
	2/18/09	11.6	85.42	7.51	841	4.19	69	3.64	26.9	<0.0300
	8/24/09	10.47	86.55	7.41	807	5.09	86	3.77	29.8	<0.0300
	2/11/10	11.6	85.42	7.49	830	4.01	-10	3.42	27.7	<0.0300
9/9/10	12.61	84.41	7.66	757	0.63	212	3.38	27.0	<0.0300	
3/28/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	
9/14/11	9.51	87.51	7.60	688	4.07	-18.2	3.30	29.8	0.0523	
2/15/12	11.27	85.75	7.85	727	4.97	-30.2	3.23	25.1	<0.0300	
8/20/12	12.07	84.95	7.46	665	3.64	-12.3	10.3	33.6	<0.0300	
2/20/12	11.71	85.31	7.43	723	4.59	14.7	3.4	29.6	<0.0300	
8/21/13	11.72	85.30	7.30	705	4.86	93.8	3.5	27.1	<0.0300	
ECS-2** 97.76 97.60	11/8/99	NA	NA	NA	NA	NA	NA	NS	NS	NS
	12/19/02	NA	NA	NA	NA	NA	NA	NS	NS	NS
	9/8/05	12.44	85.16	5.94	975	0.48	-9.5	NS	NS	NS
	11/1/05	10.65	86.95	6.89	1410	0.87	-65.9	NS	NS	NS
	1/25/06	10.16	87.44	6.84	781	1.52	-93.0	NS	NS	NS
	4/10/06	12.09	85.51	6.70	1,118	0.62	10.0	NS	NS	NS
	7/20/06	12.42	85.18	3.40	1,601	0.29	572	NS	NS	NS
	9/15/06	13.44	84.16	6.99	NM	3.88	-36.8	NS	NS	NS
	9/21/06	13.00	84.60	6.97	NM	11.68	237	NS	NS	NS
	10/6/06	12.84	84.76	6.97	NM	2.27	60.3	NS	NS	NS
	10/10/06	12.92	84.68	NM	805	0.63	28.0	NS	NS	NS
	10/23/06	12.25	85.35	6.28	NM	0.80	NM	NS	NS	NS
	11/7/06	12.21	85.39	6.67	NM	8.83	-60.8	NS	NS	NS
	11/20/06	11.58	86.02	7.12	NM	8.94	161.7	NS	NS	NS
	12/4/06	12.06	85.54	7.19	NM	9.96	228.8	NS	NS	NS
	12/18/06	12.54	85.06	6.20	NM	9.40	10.9	NS	NS	NS
	1/2/07	12.44	85.16	7.34	NM	8.68	-122.3	NS	NS	NS
	1/15/07	11.94	85.66	7.41	NM	8.76	-133.6	NS	NS	NS
	1/25/07	12.06	85.54	7.10	838	1.84	6.0	NS	NS	NS
	1/29/07	12.21	85.39	7.07	NM	12.24	-98.9	NS	NS	NS
	2/12/07	12.74	84.86	7.34	NM	11.84	-6.2	NS	NS	NS
	2/26/07	12.01	85.59	7.28	NM	6.63	252.3	NS	NS	NS
	3/12/07	12.92	84.68	6.68	NM	14.60	32.2	NS	NS	NS
	3/26/07	11.91	85.69	6.67	NM	11.34	-66.9	NS	NS	NS
	4/10/07	11.26	86.34	7.09	NM	5.75	-1.8	NS	NS	NS
	4/24/07	10.39	87.21	4.94	1,015	0.60	-27.6	NS	NS	NS
	5/7/07	11.27	86.33	5.66	NM	11.98	32.9	NS	NS	NS
	5/24/07	11.02	86.58	5.82	NM	10.45	45.7	NS	NS	NS
	6/4/07	12.13	85.47	5.52	NM	*24.65	-8.6	NS	NS	NS
	6/18/07	12.38	85.22	6.48	NM	15.23	-67.2	NS	NS	NS
	7/3/07	12.52	85.08	7.60	NM	15.09	37.0	NS	NS	NS
	7/16/07	12.81	84.79	7.25	NM	15.37	58.0	NS	NS	NS
8/1/07	12.95	84.65	6.61	NM	14.28	-57.4	NS	NS	NS	
8/13/07	13.01	84.59	5.22	NM	15.20	-265.0	NS	NS	NS	
8/27/07	13.23	84.37	6.48	NM	19.17	-92.2	NS	NS	NS	
9/10/07	13.32	84.28	7.72	NM	12.07	-61.6	NS	NS	NS	
9/25/07	13.39	84.21	7.69	NM	7.23	-73.5	NS	NS	NS	
10/4/07	13.50	84.10	6.55	1436	1.34	-73.0	NS	NS	NS	
10/9/07	13.54	84.06	6.07	NM	1.97	-308.7	NS	NS	NS	
10/22/07	13.29	84.31	6.81	NM	5.91	-51.9	NS	NS	NS	
11/5/07	13.13	84.47	7.41	NM	9.97	-24.2	NS	NS	NS	
11/19/07	12.84	84.76	6.71	NM	4.31	-50.1	NS	NS	NS	
12/3/07	13.83	83.77	7.06	NM	9.75	-199.7	NS	NS	NS	

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GROUNDWATER GEOCHEMICAL MONITORING DATA**

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730 East Street, Pittsfield, Massachusetts

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<b>ECS-2 (continued)</b>	12/17/07	12.94	84.66	7.06	NM	8.15	-111.5	NS	NS	NS
	1/2/08	12.42	85.18	6.46	NM	6.47	-139.1	NS	NS	NS
	1/14/08	12.03	85.57	6.41	NM	7.01	-130.4	NS	NS	NS
	1/29/08	12.41	85.19	6.36	NM	9.21	61.5	NS	NS	NS
	2/11/08	12.23	85.37	NM	NM	NM	NM	NS	NS	NS
	3/7/08	11.06	86.54	6.36	227	0.60	129.6	NS	NS	NS
	<b>3/11/08</b>	10.38	87.22	6.47	245	4.21	61	NS	NS	NS
	<b>5/1/08</b>	11.13	86.47	6.29	194	0.74	38	NS	NS	NS
	5/27/08	10.95	86.65	NM	NM	NM	NM	NS	NS	NS
	6/4/08	12.28	85.32	5.21	NM	11.40	44.4	NS	NS	NS
	6/17/08	12.08	85.52	6.27	NM	4.56	143.6	NS	NS	NS
	7/1/08	12.02	85.58	6.59	NM	8.22	60.3	NS	NS	NS
	7/9/08	NM	85.58	NM	NM	NM	NM	NS	NS	NS
	7/14/08	12.43	85.17	6.60	NM	0.88	-82.9	NS	NS	NS
	7/30/08	11.62	85.98	6.54	NM	9.87	61.7	NS	NS	NS
	8/12/08	12.05	85.55	6.39	NM	1.80	5.4	NS	NS	NS
	8/20/08	11.68	85.92	NM	NM	NM	NM	NS	NS	NS
	8/26/08	12.48	85.12	6.43	NM	1.74	-18	NS	NS	NS
	9/9/08	11.56	86.04	6.25	NM	1.42	23.8	NS	NS	NS
	9/22/08	12.60	85.00	6.34	NM	2.02	-95.4	NS	NS	NS
	10/17/08	12.71	84.89	6.32	NM	1.70	43.0	NS	NS	NS
	10/27/08	12.35	85.25	6.13	NM	0.74	42.8	NS	NS	NS
	11/11/08	12.00	85.60	6.27	NM	2.32	19.8	NS	NS	NS
	<b>11/24/08</b>	12.24	85.36	6.20	312	0.33	14.0	NS	NS	NS
	11/25/08	12.18	85.42	6.25	NM	3.14	76.1	NS	NS	NS
	12/11/08	11.85	85.75	6.65	NM	0.60	-42.1	NS	NS	NS
	12/23/08	11.18	86.42	6.50	NM	6.67	6.7	NS	NS	NS
	1/6/09	11.09	86.51	6.61	NM	4.43	94.1	NS	NS	NS
	1/23/09	11.82	85.78	5.60	NM	26.36	113.1	NS	NS	NS
	2/3/09	12.15	85.45	6.16	NM	9.11	151.6	NS	NS	NS
	2/18/09	12.23	85.37	6.54	239	2.91	143.0	NS	NS	NS
	2/24/09	12.30	85.30	6.18	NM	18.36	122.0	NS	NS	NS
	3/4/09	12.18	85.42	6.14	NM	22.40	237.7	NS	NS	NS
	3/19/09	11.28	86.32	6.97	NM	19.11	15.0	NS	NS	NS
	4/9/09	11.30	86.30	5.86	NM	21.72	181.6	NS	NS	NS
	4/23/09	11.69	85.91	6.57	NM	7.45	75.0	NS	NS	NS
	5/5/09	12.10	85.50	6.12	NM	9.21	64.9	NS	NS	NS
	5/19/09	11.92	85.68	6.03	NM	1.31	123.0	NS	NS	NS
	6/11/09	12.50	85.10	6.15	660	1.06	-102.9	NS	NS	NS
	6/26/09	11.23	86.37	6.10	1210	1.09	110.3	NS	NS	NS
	7/6/09	11.45	86.15	5.98	467	3.30	78.6	NS	NS	NS
	7/22/09	11.70	85.90	6.73	1459	3.86	-18.9	NS	NS	NS
	8/6/09	10.68	86.92	6.49	164	11.46	43.5	NS	NS	NS
	<b>8/24/09</b>	11.07	86.53	6.11	850	9.61	51.0	NS	NS	NS
	9/10/09	11.60	86.00	6.38	770	3.08	119.6	NS	NS	NS
	9/23/09	12.00	85.60	6.50	909	5.51	-48.0	NS	NS	NS
	10/6/09	12.13	85.47	6.19	228	6.90	130.6	NS	NS	NS
	10/13/09	12.15	85.45	6.65	577	4.65	25.0	NS	NS	NS
	10/23/09	12.31	85.29	6.45	207	16.27	86.4	NS	NS	NS
	11/5/09	11.62	85.98	6.57	318	6.26	54.1	NS	NS	NS
	11/17/09	11.80	85.80	6.96	214	9.52	30.9	NS	NS	NS
	12/8/09	11.76	85.84	6.80	218	10.24	16.7	NS	NS	NS
	12/23/09	11.96	85.64	7.01	159	6.29	-6.9	NS	NS	NS
1/8/10	12.12	85.48	6.60	166	8.85	74.8	NS	NS	NS	
1/20/10	12.23	85.37	7.01	259	10.48	54.0	NS	NS	NS	
2/3/10	11.93	85.67	6.75	NM	27.64	199.3	NS	NS	NS	
2/11/10	12.76	84.84	5.94	204	9.19	94.0	NS	NS	NS	
2/18/10	12.38	85.22	6.75	NM	9.44	25.0	NS	NS	NS	
3/3/10	11.83	85.77	6.90	244	5.62	59.0	NS	NS	NS	
3/17/10	11.07	86.53	6.81	664	4.28	47.5	NS	NS	NS	
4/15/10	11.29	86.31	6.49	985	8.12	65.7	NS	NS	NS	
4/28/10	11.80	85.80	6.68	NM	2.40	118.0	NS	NS	NS	
5/13/10	12.03	85.57	6.94	1,696	4.60	-83.1	NS	NS	NS	
5/27/10	12.30	85.30	6.51	NM	9.09	77.5	NS	NS	NS	
6/9/10	12.47	85.13	6.66	NM	1.18	-72.3	NS	NS	NS	
6/24/10	12.54	85.06	6.84	NM	0.59	-80.4	NS	NS	NS	
7/9/10	12.88	84.72	4.60	NM	3.75	120.6	NS	NS	NS	
7/20/10	12.92	84.68	7.07	NM	5.82	-377.0	NS	NS	NS	
8/5/10	12.95	84.65	6.84	NM	1.80	-31.4	NS	NS	NS	
8/18/10	13.15	84.45	6.41	NM	2.19	-25.3	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-2</b>	<b>9/9/10</b>	13.37	84.23	6.99	1,357	0.42	-66.0	NS	NS	NS
<b>(continued)</b>	9/15/10	13.48	84.12	6.50	NM	1.11	-36.1	NS	NS	NS
	9/30/10	13.49	84.11	6.33	NM	2.82	185.6	NS	NS	NS
	10/5/10	12.80	84.80	6.90	1,716	0.30	-106.2	NS	NS	NS
	10/21/10	12.55	85.05	6.78	NM	2.82	-72.8	NS	NS	NS
	11/5/10	12.44	85.16	6.77	1,336	15.33	-5.5	NS	NS	NS
	11/19/10	12.41	85.19	6.79	NM	3.00	-11.6	NS	NS	NS
	12/9/10	12.14	85.46	6.31	NM	1.81	-47.2	NS	NS	NS
	12/22/10	12.02	85.58	6.25	1,586	1.70	-55.3	NS	NS	NS
	1/7/11	12.41	85.19	6.37	NM	6.18	-64.4	NS	NS	NS
	1/19/11	12.74	84.86	6.89	NM	1.10	-105.2	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/3/11	12.76	84.84	6.42	NM	11.90	232.5	NS	NS	NS
	<b>3/28/11</b>	10.88	86.72	6.73	1,485	2.11	-78.1	NS	NS	NS
	4/7/11	10.99	86.61	7.23	NM	4.05	-85.9	NS	NS	NS
	4/22/11	10.90	86.70	6.75	1,505	4.17	-80.6	NS	NS	NS
	5/7/11	10.98	86.62	8.22	1,418	1.00	-25.6	NS	NS	NS
	6/2/11	11.85	85.75	6.81	1,532	1.60	-38.0	NS	NS	NS
	6/14/11	11.86	85.74	6.82	NM	0.52	-75.5	NS	NS	NS
	7/7/11	11.63	85.97	6.12	NM	1.24	-40.6	NS	NS	NS
	7/25/11	12.24	85.36	6.80	NM	1.82	-95.3	NS	NS	NS
	8/15/11	12.60	85.00	6.91	NM	0.60	-104.6	NS	NS	NS
	8/26/11	12.04	85.56	7.08	1,175	0.30	-132.3	NS	NS	NS
	<b>9/14/11</b>	10.00	87.60	6.79	1,241	0.33	-100.6	<0.100	19.8	19.6
	10/6/11	10.57	87.03	6.88	NM	0.50	-58.7	NS	NS	NS
	10/20/11	11.18	86.42	6.95	NM	2.40	-99.8	NS	NS	NS
	11/3/11	11.35	86.25	6.69	1,331	2.59	-99.3	NS	NS	NS
	11/17/11	11.57	86.03	6.71	NM	0.86	-69.0	NS	NS	NS
	12/7/11	11.57	86.03	6.87	861	4.15	225.3	NS	NS	NS
	12/21/11	11.40	86.20	7.07	885	5.12	209.2	NS	NS	NS
	1/4/12	11.37	86.23	7.25	919	7.18	160.8	NS	NS	NS
	1/17/12	11.78	85.82	7.27	1,008	7.80	243.8	NS	NS	NS
	2/1/12	11.37	86.23	7.23	1,272	7.36	259.5	NS	NS	NS
	2/15/12	11.82	85.78	7.23	1,125	1.00	-65.0	<1.00	15.6	21.6
	3/1/12	12.04	85.56	7.33	894	10.02	279.3	NS	NS	NS
	3/15/12	11.64	85.96	7.11	1,049	2.28	291.3	NS	NS	NS
	4/5/12	12.15	85.45	6.96	NM	6.26	328.6	NS	NS	NS
	4/19/12	12.46	85.14	7.60	NM	6.20	323.8	NS	NS	NS
	5/3/12	12.33	85.27	7.45	NM	1.47	242.2	NS	NS	NS
	5/17/12	11.71	85.89	6.68	1,058	3.18	230.7	NS	NS	NS
	5/31/12	11.95	85.65	6.76	1,182	9.82	380.8	NS	NS	NS
	6/14/12	12.09	85.51	6.52	1,014	5.50	308.8	NS	NS	NS
	6/26/12	12.43	85.17	7.29	1,051	1.61	-40.0	NS	NS	NS
	7/3/12	12.68	84.92	6.62	NM	1.03	-169.0	NS	NS	NS
	7/19/12	12.95	84.65	6.85	811	2.20	60.4	NS	NS	NS
	8/1/12	12.95	84.65	7.01	983	1.16	-87.7	NS	NS	NS
	8/15/12	NM	NA	NM	NM	NM	NM	NS	NS	NS
	8/20/12	12.86	84.74	6.85	1,013	0.30	-100.8	<0.200	16.1	13.8
	8/30/12	13.08	84.52	NM	NM	NM	NM	NS	NS	NS
	9/17/12	13.14	84.46	6.36	1,085	0.68	-71.0	NS	NS	NS
	9/26/12	12.88	84.72	6.47	1,039	0.54	49.8	NS	NS	NS
	10/11/12	12.85	84.75	6.89	1,021	0.64	-20.7	NS	NS	NS
	10/25/12	12.41	85.19	6.67	1,078	0.48	-46.5	NS	NS	NS
	11/1/12	12.26	85.34	6.45	1,038	0.88	-53.3	NS	NS	NS
	11/15/12	12.56	85.04	6.52	962	4.46	-62.6	NS	NS	NS
	12/6/12	12.80	84.80	6.14	968	1.16	-63.5	NS	NS	NS
	12/20/12	12.50	85.10	6.41	1,083	0.83	-76.2	NS	NS	NS
	1/3/13	12.23	85.37	6.56	652	3.15	-42.7	NS	NS	NS
	1/17/13	12.28	85.32	6.79	409	1.18	-43.2	NS	NS	NS
	2/7/13	12.02	85.58	5.74	538	0.81	75.7	NS	NS	NS
	2/20/13	12.29	85.31	7.00	511	0.46	-6.2	<0.100	16.1	4.05
	3/7/13	12.30	85.30	7.13	418	3.93	23.2	NS	NS	NS
	3/20/13	11.83	85.77	6.87	295	4.82	20.6	NS	NS	NS
	4/4/13	11.92	85.68	5.70	400	3.56	-15.1	NS	NS	NS
	4/12/13	11.66	85.94	6.23	197	6.39	31.2	NS	NS	NS
	4/18/13	11.59	86.01	5.75	190	7.66	112.0	NS	NS	NS
	4/26/13	11.76	85.84	6.58	468	6.82	-50.1	NS	NS	NS
	5/2/13	12.00	85.60	7.23	328	9.53	-87.4	NS	NS	NS
	5/10/13	12.22	85.38	5.38	205	6.42	156.3	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-2 (continued)</b>	5/15/13	12.13	85.47	6.88	195	0.99	-82.1	NS	NS	NS
	5/23/13	12.08	85.52	5.87	706	7.40	-11.8	NS	NS	NS
	6/6/13	11.57	86.03	5.88	357	4.62	78.1	NS	NS	NS
	6/20/13	10.62	86.98	5.20	240	3.77	110.5	NS	NS	NS
	7/3/13	11.22	86.38	6.09	NM	5.12	99.2	NS	NS	NS
	7/11/13	11.01	86.59	6.05	NM	2.71	110.0	NS	NS	NS
	7/18/13	11.78	85.82	5.35	569	8.37	84.9	NS	NS	NS
	7/25/13	12.00	85.60	5.23	514	2.64	139.8	NS	NS	NS
	8/8/13	12.35	85.25	5.80	229	4.30	120.0	NS	NS	NS
	8/15/13	12.16	85.44	6.58	215	4.49	151.0	NS	NS	NS
	8/21/13	12.36	85.24	6.76	212	1.19	95.7	0.1	19.7	3.5
	8/29/13	12.33	85.27	6.55	200	4.03	106.4	NS	NS	NS
	9/5/13	12.12	85.48	7.14	194	4.10	105.3	NS	NS	NS
<b>ECS-3<sup>st</sup> (**)</b>	<b>11/8/99</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>97.95</b>	<b>12/19/02</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>97.76</b>	<b>9/8/05</b>	12.65	85.11	5.64	1,418	0.87	-69.9	<1.0	<10.0	53.9
	<b>11/1/05</b>	10.87	86.89	6.23	694	1.52	-0.4	NS	NS	NS
	<b>1/25/06</b>	NG	NA	NM	NM	NM	NM	NS	NS	NS
	<b>4/11/06</b>	12.34	85.42	6.69	2,070	0.36	-40.0	<0.100	<1.0	10.3
	<b>7/20/06</b>	12.56	85.20	3.10	908	0.32	610	<0.500	27.5	14.4
	9/15/06	13.61	84.15	6.89	NM	5.24	-57.3	NS	NS	NS
	9/21/06	13.24	84.52	7.19	NM	10.88	255	NS	NS	NS
	10/6/06	13.08	84.68	6.97	NM	3.19	8.2	NS	NS	NS
	<b>10/10/06</b>	13.17	84.59	7.05	599	0.55	78.0	NS	NS	NS
	10/23/06	12.25	85.51	6.28	NM	2.18	NM	NS	NS	NS
	11/7/06	12.45	85.31	6.60	NM	9.35	-68.8	NS	NS	NS
	11/20/06	11.81	85.95	6.52	NM	10.34	177.8	NS	NS	NS
	12/4/06	12.31	85.45	7.24	NM	3.85	342.4	NS	NS	NS
	12/18/06	12.77	84.99	6.27	NM	8.35	-31.9	NS	NS	NS
	1/2/07	12.64	85.12	7.19	NM	7.25	-209.7	NS	NS	NS
	1/15/07	12.19	85.57	7.12	NM	7.39	-209.4	NS	NS	NS
	<b>1/25/07</b>	12.27	85.49	7.25	627	1.20	6.0	<0.5	28.4	5.98
	1/29/07	12.47	85.29	7.18	NM	8.72	-125.6	NS	NS	NS
	2/12/07	12.96	84.80	7.55	NM	10.63	-89.0	NS	NS	NS
	2/26/07	NG-S	NA	NM	NM	NM	NM	NS	NS	NS
	3/12/07	NG-S	NA	NM	NM	NM	NM	NS	NS	NS
	3/26/07	12.13	85.63	6.72	NM	8.71	-80.60	NS	NS	NS
	4/10/07	11.51	86.25	7.00	NM	14.93	-8.40	NS	NS	NS
	<b>4/24/07</b>	10.62	87.14	6.70	819	1.43	-66.8	NS	NS	NS
	5/7/07	11.52	86.24	5.24	NM	12.26	38.2	NS	NS	NS
	5/24/07	11.38	86.38	5.43	NM	9.37	49.2	NS	NS	NS
	6/4/07	12.4	85.36	5.72	NM	8.62	-16.7	NS	NS	NS
	6/18/07	12.59	85.17	6.64	NM	12.59	-141.8	NS	NS	NS
	7/3/07	12.98	84.78	7.98	NM	15.82	37.7	NS	NS	NS
	7/16/07	13.27	84.49	7.92	NM	15.98	56.4	NS	NS	NS
	8/1/07	13.18	84.58	6.78	NM	18.48	-76.9	NS	NS	NS
	8/13/07	13.26	84.50	6.77	NM	2.18	-262.7	NS	NS	NS
	8/27/07	13.48	84.28	6.77	NM	11.05	-115.8	NS	NS	NS
	9/10/07	13.55	84.21	7.58	NM	9.23	-48.2	NS	NS	NS
	9/25/07	13.63	84.13	7.55	NM	7.23	-50.1	NS	NS	NS
	<b>10/4/07</b>	13.73	84.03	7.04	800	5.31	-99.0	<0.100	37.8	5.21
	10/9/07	13.77	83.99	6.47	NM	5.10	-329.9	NS	NS	NS
	10/22/07	13.50	84.26	7.63	NM	4.38	-50.3	NS	NS	NS
	11/5/07	13.36	84.40	7.88	NM	7.21	-42.7	NS	NS	NS
	11/19/07	13.09	84.67	7.52	NM	3.71	-48.5	NS	NS	NS
	12/3/07	13.04	84.72	7.21	NM	7.07	-127.1	NS	NS	NS
	12/17/07	13.18	84.58	7.17	NM	7.01	-125.1	NS	NS	NS
	1/2/08	12.71	85.05	6.17	NM	5.21	41.4	NS	NS	NS
	1/14/08	12.24	85.52	6.09	NM	5.02	40.1	NS	NS	NS
	1/29/08	12.64	85.12	7.12	NM	8.75	8.2	NS	NS	NS
	2/11/08	12.27	85.49	NM	NM	NM	NM	NS	NS	NS
	3/7/08	11.33	86.43	NM	NM	NM	NM	NS	NS	NS
	<b>3/11/08</b>	10.68	87.08	7.12	932	2.97	-77	<0.5	27.1	2.08
	<b>5/1/08</b>	11.41	86.35	6.56	1,810	1.45	1.0	<1.0	28.9	21.6
	5/27/08	11.08	86.68	NM	NM	NM	NM	NS	NS	NS
	6/4/08	12.51	85.25	5.83	NM	2.11	100.1	NS	NS	NS
	6/17/08	12.33	85.43	6.33	NM	2.85	-102.2	NS	NS	NS
	7/1/08	12.30	85.46	6.45	NM	0.95	-50.7	NS	NS	NS
	7/9/08	NM	85.46	NM	NM	NM	NM	NS	NS	NS

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O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-3 (continued)</b>	7/14/08	10.7	87.06	6.37	NM	1.68	-31.9	NS	NS	NS
	7/30/08	11.88	85.88	6.26	NM	2.68	-40.0	NS	NS	NS
	8/12/08	12.31	85.45	6.59	NM	6.81	-31.6	NS	NS	NS
	8/20/08	11.91	85.85	NM	NM	NM	NM	NS	NS	NS
	8/26/08	12.78	84.98	6.65	NM	1.78	-35.6	NS	NS	NS
	9/9/08	11.83	85.93	6.48	NM	5.38	-47.2	NS	NS	NS
	9/22/08	12.86	84.90	6.46	NM	6.51	-105.1	NS	NS	NS
	10/17/08	12.98	84.78	6.62	NM	0.72	-39.8	NS	NS	NS
	10/27/08	12.6	85.16	6.42	NM	2.96	-7.5	NS	NS	NS
	11/11/08	12.29	85.47	6.59	NM	1.10	-36.1	NS	NS	NS
	<b>11/24/08</b>	12.51	85.25	6.53	1,265	0.31	-25.0	<0.100	22.5	13.6
	11/25/08	12.44	85.32	6.55	NM	2.59	-70.9	NS	NS	NS
	12/11/08	12.13	85.63	6.75	NM	1.30	-13.6	NS	NS	NS
	3/19/09	11.55	86.21	6.54	NM	2.51	1.3	NS	NS	NS
	<b>4/9/09</b>	11.48	86.28	5.56	855	0.67	-6.2	0.78	29.8	25.6
	4/23/09	11.89	85.87	6.34	1,479	1.43	86.6	NS	NS	NS
	5/5/09	12.37	85.39	6.34	NM	1.32	74.3	NS	NS	NS
	5/19/09	12.21	85.55	6.29	1,864	2.57	37.1	NS	NS	NS
	6/11/09	12.76	85.00	6.46	1,617	0.87	-133.7	NS	NS	NS
	6/26/09	11.5	86.26	6.30	1,706	1.11	47.6	NS	NS	NS
	7/6/09	11.67	86.09	6.44	1,198	0.99	-52.6	NS	NS	NS
	7/22/09	12.00	85.76	6.37	1,577	1.31	-19.7	NS	NS	NS
	8/6/09	10.91	86.85	6.62	1,142	1.04	-66.7	NS	NS	NS
	<b>8/24/09</b>	11.34	86.42	6.41	1,660	0.44	-49.0	<1.00	10.8	27.0
	9/10/09	11.83	85.93	6.51	1,846	0.50	5.6	NS	NS	NS
	9/23/09	12.29	85.47	6.60	1,314	10.79	-56.6	NS	NS	NS
	10/6/09	12.4	85.36	6.13	1,370	0.92	50.1	NS	NS	NS
	<b>10/13/09</b>	12.43	85.33	6.68	1,147	3.90	-3.6	<0.100	2.76	17.4
	10/23/09	12.62	85.14	6.85	453	1.92	-25.1	NS	NS	NS
	11/5/09	11.90	85.86	6.60	1,276	0.57	-14.2	NS	NS	NS
	11/17/09	12.09	85.67	6.66	1,544	0.20	-10.1	NS	NS	NS
	12/8/09	11.97	85.79	6.55	1,335	1.46	-25.3	NS	NS	NS
	2/3/10	12.20	85.56	6.71	NM	12.16	-70.0	NS	NS	NS
	2/11/10	12.43	85.33	6.59	1,299	0.43	-67.0	<0.100	<1.0	15.4
	2/18/10	12.68	85.08	6.60	NM	9.44	25.0	NS	NS	NS
	3/3/10	12.11	85.65	6.56	1,532	1.61	-28.8	NS	NS	NS
	3/17/10	11.34	86.42	6.39	752	17.45	58.5	NS	NS	NS
	4/15/10	11.52	86.24	6.66	792	1.11	49.7	NS	NS	NS
	4/28/10	12.03	85.73	6.60	NM	4.04	12.4	NS	NS	NS
	5/13/10	12.3	85.46	6.48	1,474	4.36	-18.9	NS	NS	NS
	5/27/10	12.53	85.23	6.66	NM	2.10	12.2	NS	NS	NS
	6/9/10	12.73	85.03	6.40	NM	1.22	-29.0	NS	NS	NS
	6/24/10	12.95	84.81	6.69	NM	0.58	-42.2	NS	NS	NS
	7/9/10	13.12	84.64	6.14	NM	10.41	35.1	NS	NS	NS
	7/20/10	13.18	84.58	7.01	NM	2.21	-348.4	NS	NS	NS
	8/5/10	13.21	84.55	7.15	NM	2.34	-24.0	NS	NS	NS
	8/18/10	13.4	84.36	6.96	NM	1.37	-16.5	NS	NS	NS
	<b>9/9/10</b>	13.63	84.13	7.42	815	0.27	-61.0	<0.100	35.5	4.86
	9/15/10	13.51	84.25	6.56	NM	1.27	-21.4	NS	NS	NS
	9/30/10	13.72	84.04	6.90	NM	6.70	198.9	NS	NS	NS
	10/5/10	13.03	84.73	7.00	744	1.32	6.4	NS	NS	NS
	10/21/10	12.76	85.00	6.74	NM	1.06	-60.7	NS	NS	NS
11/5/10	12.68	85.08	7.11	936	11.90	-34.5	NS	NS	NS	
11/19/10	12.58	85.18	6.96	NM	1.73	-60.2	NS	NS	NS	
12/9/10	12.40	85.36	6.51	NM	0.81	-51.6	NS	NS	NS	
12/22/10	12.27	85.49	6.54	784	1.64	-53.5	NS	NS	NS	
1/7/11	NM	NA	NM	NM	NM	NM	NS	NS	NS	
1/19/11	NM	NA	NM	NM	NM	NM	NS	NS	NS	
2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS	
2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS	
3/3/11	NM	NA	NM	NM	NM	NM	NS	NS	NS	
<b>3/28/11</b>	11.15	86.61	7.19	778	7.18	-35.1	0.11	40.7	2.05	
4/7/11	11.23	86.53	7.43	NM	5.01	-88.6	NS	NS	NS	
4/22/11	11.15	86.61	7.10	1,181	0.83	-103.6	NS	NS	NS	
5/7/11	11.21	86.55	7.77	1,087	0.88	-34.0	NS	NS	NS	
6/2/11	12.11	85.65	6.64	1,364	2.73	-6.3	NS	NS	NS	
6/14/11	12.12	85.64	6.53	NM	0.41	-40.6	NS	NS	NS	
7/7/11	11.91	85.85	6.07	NM	1.93	-69.6	NS	NS	NS	
7/25/11	12.50	85.26	6.90	NM	0.88	-97.5	NS	NS	NS	
8/15/11	12.85	84.91	7.01	NM	0.28	-109.1	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-3</b>	8/26/11	12.29	85.47	7.24	828	1.57	-126.5	NS	NS	NS
<b>(continued)</b>	<b>9/14/11</b>	10.24	87.52	6.91	730	0.41	-40.6	1.28	43.0	2.11
	10/6/11	10.80	86.96	7.41	NM	0.89	50.1	NS	NS	NS
	10/20/11	11.42	86.34	6.96	NM	1.31	-98.7	NS	NS	NS
	11/3/11	11.60	86.16	7.00	1,044	1.09	-97.2	NS	NS	NS
	11/17/11	11.82	85.94	6.73	NM	2.91	-42.1	NS	NS	NS
	12/7/11	11.82	85.94	7.37	722	4.23	251.6	NS	NS	NS
	12/21/11	11.63	86.13	7.26	807	6.88	220.8	NS	NS	NS
	1/4/12	11.64	86.12	7.57	792	7.71	132.5	NS	NS	NS
	2/1/12	11.62	86.14	7.22	985	9.60	210.7	NS	NS	NS
	2/15/12	12.09	85.67	7.46	742	0.77	-72.1	<0.100	27.2	2.77
	3/1/12	12.28	85.48	7.86	814	10.58	242.8	NS	NS	NS
	3/15/12	11.18	86.58	7.59	710	3.38	263.7	NS	NS	NS
	4/5/12	12.40	85.36	6.36	NM	8.27	302.2	NS	NS	NS
	4/19/12	12.71	85.05	7.77	740	4.03	312.2	NS	NS	NS
	5/3/12	12.59	85.17	8.00	872	1.74	176.1	NS	NS	NS
	5/17/12	11.95	85.81	7.33	853	5.58	237.0	NS	NS	NS
	5/31/12	12.21	85.55	7.22	702	8.79	321.3	NS	NS	NS
	6/14/12	12.35	85.41	7.02	681	8.11	301.3	NS	NS	NS
	6/26/12	12.70	85.06	7.48	639	1.20	-66.2	NS	NS	NS
	7/3/12	12.84	84.92	7.32	NM	0.65	-118.1	NS	NS	NS
	7/19/12	13.20	84.56	7.01	643	1.26	-59.3	NS	NS	NS
	8/1/12	13.22	84.54	7.31	795	1.15	-114.7	NS	NS	NS
	8/15/12	NM	NM	NM	NM	NM	NM	NS	NS	NS
	8/20/12	13.10	84.66	7.21	707	1.48	-80.3	3.80	42.2	1.04
	8/30/12	13.33	84.43	NM	NM	NM	NM	NS	NS	NS
	9/17/12	13.39	84.37	7.15	821	1.39	16.0	NS	NS	NS
	9/26/12	13.13	84.63	6.67	895	5.34	58.1	NS	NS	NS
	10/11/12	13.10	84.66	7.21	757	0.36	-35.4	NS	NS	NS
	10/25/12	12.67	85.09	6.98	762	0.63	-43.5	NS	NS	NS
	11/1/12	12.51	85.25	6.63	801	1.45	-53.1	NS	NS	NS
	11/15/12	12.82	84.94	6.40	856	1.42	-79.2	NS	NS	NS
	12/6/12	13.06	84.70	6.14	865	0.63	-84.6	NS	NS	NS
	12/20/12	12.76	85.00	6.74	804	0.61	-80.8	NS	NS	NS
	1/3/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	1/17/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	2/7/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	2/20/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	3/7/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	3/20/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	4/4/13	12.08	85.68	6.24	697	4.38	34.2	NS	NS	NS
	4/12/13	11.93	85.83	5.86	698	5.62	51.0	NS	NS	NS
	4/18/13	11.86	85.90	6.33	692	3.00	29.8	NS	NS	NS
	4/26/13	12.02	85.74	6.71	809	6.34	-44.0	NS	NS	NS
	5/2/13	12.26	85.50	7.24	807	6.49	-84.5	NS	NS	NS
	5/10/13	12.47	85.29	5.73	730	5.45	116.2	NS	NS	NS
	5/15/13	12.40	85.36	6.21	601	2.91	71.4	NS	NS	NS
	5/23/13	12.34	85.42	6.18	822	9.68	17.0	NS	NS	NS
	6/6/13	11.83	85.93	6.30	803	6.39	44.4	NS	NS	NS
	6/20/13	10.88	86.88	5.67	918	6.37	102.7	NS	NS	NS
	7/3/13	11.47	86.29	6.28	NM	4.49	88.9	NS	NS	NS
	7/11/13	11.31	86.45	6.25	NM	3.99	74.0	NS	NS	NS
	7/18/13	12.05	85.71	5.29	940	7.32	81.5	NS	NS	NS
	7/25/13	12.27	85.49	5.29	1107	4.55	134.3	NS	NS	NS
	8/8/13	12.62	85.14	5.75	1078	2.68	103.6	NS	NS	NS
	8/15/13	12.42	85.34	6.97	780	2.87	119.2	NS	NS	NS
	8/21/13	12.62	85.14	6.90	964	0.67	85.8	0.13	13.1	5.25
	8/29/13	12.60	85.16	6.45	725	4.17	81.5	NS	NS	NS
	9/5/13	12.37	85.39	7.24	680	4.25	90.0	NS	NS	NS
<b>ECS-4**</b>	<b>11/8/99</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>97.06</b>	<b>12/19/02</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
96.75	<b>9/8/05</b>	11.94	84.81	NM	NM	NM	NM	NS	NS	NS
	<b>1/25/06</b>	NG	NA	NM	NM	NM	NM	NS	NS	NS
	<b>4/10/06</b>	11.51	85.24	NM	NM	NM	NM	NS	NS	NS
	<b>7/20/06</b>	11.96	84.79	5.67	1,013	246	932	NS	NS	NS
	9/15/06	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	9/21/06	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	10/6/06	12.36	84.39	NM	NM	NM	NM	NS	NS	NS
	<b>10/10/06</b>	12.43	84.32	NS	NS	NS	NS	NS	NS	NS



**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-4</b>	10/23/06	11.75	85.00	5.94	NM	2.51	NM	NS	NS	NS
<b>(continued)</b>	11/7/06	11.72	85.03	6.54	NM	10.47	-42.90	NS	NS	NS
	11/20/06	11.08	85.67	7.01	NM	10.25	166.30	NS	NS	NS
	12/4/06	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	12/18/06	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	1/2/07	11.93	84.82	6.78	NM	10.48	-36.50	NS	NS	NS
	1/15/07	11.41	85.34	6.95	NM	10.82	-86.90	NS	NS	NS
	<b>1/25/07</b>	11.55	85.20	NS	NM	NS	NS	NS	NS	NS
	1/29/07	11.72	85.03	6.95	NM	12.86	-35.2	NS	NS	NS
	2/12/07	12.23	84.52	NM	NM	NM	NM	NS	NS	NS
	2/26/07	NG	NA	NM	NM	NM	NM	NS	NS	NS
	3/12/07	12.42	84.33	NM	NM	NM	NM	NS	NS	NS
	3/26/07	11.39	85.36	5.87	NM	13.76	179.60	NS	NS	NS
	4/10/07	10.46	86.29	6.75	NM	12.17	64.50	NS	NS	NS
	<b>4/24/07</b>	9.88	86.87	5.83	891	4.95	202	NS	NS	NS
	5/7/07	11.79	84.96	6.42	NM	5.34	136	NS	NS	NS
	5/24/07	11.65	85.10	6.23	NM	4.21	150	NS	NS	NS
	6/4/07	11.63	85.12	5.72	NM	9.72	38	NS	NS	NS
	6/18/07	11.81	84.94	6.53	NM	12.81	123	NS	NS	NS
	7/3/07	12.25	84.50	7.65	NM	7.17	87	NS	NS	NS
	7/16/07	12.31	84.44	7.41	NM	7.23	83	NS	NS	NS
	8/1/07	12.47	84.28	6.58	NM	20.52	101	NS	NS	NS
	8/13/07	12.53	84.22	6.40	NM	6.61	265	NS	NS	NS
	8/27/07	12.61	84.14	6.59	NM	9.21	-89	NS	NS	NS
	9/10/07	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	9/25/07	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	<b>10/4/07</b>	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	10/9/07	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	10/22/07	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	11/5/07	12.62	84.13	NM	NM	NM	NM	NS	NS	NS
	11/19/07	12.31	84.44	NM	NM	NM	NM	NS	NS	NS
	12/3/07	12.31	84.44	NM	NM	NM	NM	NS	NS	NS
	12/17/07	NG	NG	NM	NM	NM	NM	NS	NS	NS
	1/2/08	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	1/14/08	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	1/29/08	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	2/11/08	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	3/7/08	10.55	86.20	6.72	827	4.20	72.8	NS	NS	NS
	<b>3/11/08</b>	9.93	86.82	6.78	887	9.81	92	NS	NS	NS
	<b>5/1/08</b>	10.71	86.04	6.64	984	1.21	46	NS	NS	NS
	5/27/08	11.32	85.43	NM	NM	NM	NM	NS	NS	NS
	6/4/08	11.65	85.10	6.03	NM	1.16	12.3	NS	NS	NS
	6/17/08	11.88	84.87	6.61	NM	1.96	88.4	NS	NS	NS
	7/1/08	11.73	85.02	6.63	NM	2.12	99.7	NS	NS	NS
	7/9/08	NM	85.02	NM	NM	NM	NM	NS	NS	NS
	7/14/08	12.08	84.67	6.45	NM	1.93	84	NS	NS	NS
	7/30/08	11.16	85.59	6.20	NM	4.24	112	NS	NS	NS
	8/12/08	11.65	85.10	6.55	NM	5.18	66.6	NS	NS	NS
	8/20/08	11.38	85.37	NM	NM	NM	NM	NS	NS	NS
	8/26/08	11.97	84.78	6.58	NM	3.12	-21	NS	NS	NS
	9/9/08	11.13	85.62	6.51	NM	4.37	47.6	NS	NS	NS
	9/22/08	12.04	84.71	6.41	NM	4.65	208.8	NS	NS	NS
	10/17/08	12.31	84.44	6.46	NM	3.60	59.8	NS	NS	NS
	10/27/08	11.94	84.81	6.61	NM	4.80	30.2	NS	NS	NS
	11/11/08	11.54	85.21	6.51	NM	0.90	26.9	NS	NS	NS
	<b>11/24/08</b>	11.77	84.98	6.62	918	0.71	-12.0	NS	NS	NS
	11/25/08	11.68	85.07	6.48	NM	1.96	30.5	NS	NS	NS
	12/11/08	12.6	84.15	6.71	NM	1.38	134.3	NS	NS	NS
	12/23/08	10.7	86.05	6.66	NM	0.40	75.7	NS	NS	NS
	3/4/09	11.62	85.13	6.51	NM	5.62	173.9	NS	NS	NS
	3/19/09	10.82	85.93	6.81	NM	8.00	36.0	NS	NS	NS
	<b>4/9/09</b>	10.72	86.03	6.21	821	2.58	288.4	NS	NS	NS
	4/23/09	10.8	85.95	6.79	893	1.86	72.2	NS	NS	NS
	5/5/09	11.9	84.85	6.58	NM	0.88	217.0	NS	NS	NS
	5/19/09	11.7	85.05	6.50	881	1.83	117.8	NS	NS	NS
	6/26/09	10.74	86.01	6.56	1011	1.91	176.3	NS	NS	NS
	7/6/09	10.96	85.79	6.61	816	1.50	107.4	NS	NS	NS
	7/22/09	11.47	85.28	6.47	787	1.22	143.5	NS	NS	NS
	8/6/09	10.19	86.56	6.39	717	4.55	204.8	NS	NS	NS
	9/10/09	11.11	85.64	6.69	727	1.27	75.6	NS	NS	NS

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GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-4</b>	9/23/09	11.55	85.20	6.58	797	6.08	-47.0	NS	NS	NS
<b>(continued)</b>	10/6/09	11.26	85.49	6.05	767	3.46	63.7	NS	NS	NS
	10/13/09	11.69	85.06	6.66	799	3.13	10.6	<0.100	2.76	17.4
	10/23/09	11.9	84.85	6.47	812	1.63	2.3	NS	NS	NS
	11/5/09	11.12	85.63	6.62	812	1.31	65.5	NS	NS	NS
	11/17/09	11.09	85.66	6.92	841	1.86	85.3	NS	NS	NS
	12/8/09	11.24	85.51	7.08	861	6.05	3.4	NS	NS	NS
	12/23/09	11.47	85.28	6.88	703	2.11	49.8	NS	NS	NS
	1/8/10	11.73	85.02	6.89	798	3.31	84.8	NS	NS	NS
	1/20/10	12.00	84.75	6.83	720	5.06	67.5	NS	NS	NS
	2/18/10	11.90	84.85	7.00	NM	4.95	12.1	NS	NS	NS
	3/3/10	11.91	84.84	6.72	1014	4.01	1.9	NS	NS	NS
	3/17/10	10.57	86.18	NM	NM	NM	NM	NS	NS	NS
	4/15/10	10.54	86.21	6.70	690	1.35	54.0	NS	NS	NS
	4/28/10	12.10	84.65	6.53	NM	2.45	8.4	NS	NS	NS
	5/13/10	11.57	85.18	6.50	819	6.01	61.8	NS	NS	NS
	5/27/10	11.80	84.95	6.57	NM	2.17	26.4	NS	NS	NS
	6/9/10	11.99	84.76	6.31	NM	1.41	5.6	NS	NS	NS
	6/24/10	12.10	84.65	6.52	NM	1.87	20.1	NS	NS	NS
	7/9/10	12.40	84.35	5.02	NM	7.08	337.3	NS	NS	NS
	7/20/10	12.44	84.31	6.88	NM	8.70	-246.0	NS	NS	NS
	8/5/10	12.48	84.27	7.04	NM	1.20	41.8	NS	NS	NS
	8/18/10	12.66	84.09	6.48	NM	8.08	39.9	NS	NS	NS
	<b>9/9/10</b>	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	9/15/10	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	9/30/10	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	10/5/10	12.29	84.46	6.66	80	5.21	152.9	NS	NS	NS
	10/21/10	12.00	84.75	6.83	NM	3.24	82.4	NS	NS	NS
	11/5/10	11.94	84.81	6.90	806	11.43	13.8	NS	NS	NS
	11/19/10	11.35	85.40	6.87	NM	1.86	243.6	NS	NS	NS
	12/9/10	NM	NM	NM	NM	NM	NM	NS	NS	NS
	12/22/10	11.52	85.23	6.17	843	4.81	24.7	NS	NS	NS
	1/7/11	11.92	84.83	6.59	NM	11.01	5.8	NS	NS	NS
	1/19/11	12.22	84.53	6.81	NM	6.82	-9.0	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/3/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	<b>3/28/11</b>	10.38	86.37	6.76	0.826	5.81	136.1	NS	NS	NS
	4/7/11	10.48	86.27	6.91	NM	6.36	-39.1	NS	NS	NS
	4/22/11	10.40	86.35	6.70	0.863	0.48	-12.7	NS	NS	NS
	5/7/11	10.50	86.25	7.95	0.902	1.70	2.2	NS	NS	NS
	6/2/11	11.38	85.37	6.66	0.869	2.70	18.8	NS	NS	NS
	6/14/11	11.39	85.36	6.63	NM	3.11	107.1	NS	NS	NS
	7/7/11	11.17	85.58	6.03	NM	1.70	11.9	NS	NS	NS
	7/25/11	11.75	85.00	6.65	NM	5.31	-8.7	NS	NS	NS
	8/15/11	11.99	84.76	6.64	NM	1.62	-29.5	NS	NS	NS
	8/26/11	11.43	85.32	6.69	0.839	2.53	36.5	NS	NS	NS
	<b>9/14/11</b>	9.41	87.34	NM	NM	NM	NM	NS	NS	NS
	10/6/11	9.96	86.79	6.76	NM	2.97	138.6	NS	NS	NS
	10/20/11	10.56	86.19	6.72	NM	1.26	60.1	NS	NS	NS
	11/3/11	10.73	86.02	6.92	940	2.19	-51.0	NS	NS	NS
	11/17/11	10.96	85.79	6.93	NM	1.14	62.3	NS	NS	NS
	12/7/11	10.94	85.81	6.98	794	3.42	241.3	NS	NS	NS
	12/21/11	10.77	85.98	7.22	763	4.35	194.6	NS	NS	NS
	1/17/12	11.17	85.58	7.36	764	7.33	157.5	NS	NS	NS
	2/1/12	10.76	85.99	7.31	924	8.97	248.3	NS	NS	NS
	2/15/12	11.22	85.53	NM	NM	NM	NM	NS	NS	NS
	3/1/12	11.42	85.33	7.58	795	9.47	313.6	NS	NS	NS
	3/15/12	11.00	85.75	7.37	749	6.47	272.2	NS	NS	NS
	4/5/12	11.54	85.21	6.81	NM	7.34	284.9	NS	NS	NS
	4/19/12	11.84	84.91	6.58	809	6.75	290.8	NS	NS	NS
	5/3/12	11.72	85.03	7.34	771	2.10	165.1	NS	NS	NS
	5/17/12	11.08	85.67	6.65	794	5.28	265.7	NS	NS	NS
	5/31/12	11.34	85.41	6.15	851	6.15	367.0	NS	NS	NS
	6/14/12	11.48	85.27	6.12	849	6.12	285.9	NS	NS	NS
	6/26/12	11.83	84.92	6.93	5	3.28	-12.2	NS	NS	NS
	7/3/12	12.00	84.75	6.63	NM	2.32	9.3	NS	NS	NS
	7/19/12	12.35	84.40	6.77	753	1.93	-9.8	NS	NS	NS
	8/1/12	12.35	84.40	6.73	963	6.73	-80.1	NS	NS	NS
	8/15/12	NM	NM	NM	NM	NM	NM	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)	
<b>ECS-4</b> (continued)	8/20/12	12.24	84.51	NM	NM	NM	NM	NS	NS	NS	
	8/30/12	12.47	84.28	NM	NM	NM	NM	NS	NS	NS	
	9/17/12	12.53	84.22	6.63	479	6.49	72.8	NS	NS	NS	
	9/26/12	12.28	84.47	6.37	885	2.54	54.4	NS	NS	NS	
	10/11/12	12.23	84.52	6.80	814	2.14	-14.0	NS	NS	NS	
	10/25/12	11.79	84.96	6.38	834	2.96	-0.4	NS	NS	NS	
	11/1/12	11.61	85.14	6.40	844	1.61	-15.1	NS	NS	NS	
	11/15/12	11.94	84.81	6.41	821	2.96	-36.4	NS	NS	NS	
	12/6/11	12.18	84.57	6.21	799	4.74	-43.9	NS	NS	NS	
	12/20/12	11.87	84.88	6.29	802	4.88	-38.3	NS	NS	NS	
	1/3/13	NM	NM	NM	NM	NM	NM	NM	NS	NS	NS
	1/17/13	NM	NM	NM	NM	NM	NM	NM	NS	NS	NS
	2/7/13	NM	NM	NM	NM	NM	NM	NM	NS	NS	NS
	2/20/13	NM	NM	NM	NM	NM	NM	NM	NS	NS	NS
	3/7/13	NM	NM	NM	NM	NM	NM	NM	NS	NS	NS
	3/20/13	11.22	85.53	6.45	684	6.44	35.7	NS	NS	NS	
	4/4/13	NM	NM	NM	NM	NM	NM	NM	NS	NS	NS
	4/12/13	11.03	85.72	5.86	745	7.52	58.8	NS	NS	NS	
	4/18/13	10.98	85.77	5.90	1243	5.38	40.9	NS	NS	NS	
	4/26/13	11.15	85.60	6.01	718	6.84	39.2	NS	NS	NS	
	5/2/13	11.42	85.33	6.33	713	6.9	-17.2	NS	NS	NS	
	5/10/13	11.60	85.15	4.75	724	7.6	73.2	NS	NS	NS	
	5/15/13	NM	NM	NM	NM	NM	NM	NM	NS	NS	NS
	5/23/13	11.46	85.29	5.93	735	10.61	17.1	NS	NS	NS	
	6/6/13	10.97	85.78	5.77	693	6.51	67.5	NS	NS	NS	
	6/20/13	NM	NM	NM	NM	NM	NM	NM	NS	NS	NS
	7/3/13	10.63	86.12	6.11	NM	7.76	135	NS	NS	NS	
	7/11/13	10.54	86.21	6.01	NM	5.11	151	NS	NS	NS	
	7/18/13	11.20	85.55	5.15	725	5.8	102	NS	NS	NS	
	7/25/13	11.42	85.33	5.49	736	4.64	136.5	NS	NS	NS	
	8/8/13	11.78	84.97	5.63	649	4.77	109.4	NS	NS	NS	
	8/15/13	11.58	85.17	6.69	696	2.85	128.0	NS	NS	NS	
	8/21/13	11.78	84.97	6.78	767	0.81	98.7	NS	NS	NS	
	8/29/13	11.83	84.92	6.42	747	4.82	81.4	NS	NS	NS	
	9/5/13	11.51	85.24	7.26	734	3.98	80.7	NS	NS	NS	
	<b>ECS-5</b>	<b>11/8/99</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>97.73</b>	<b>12/19/02</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS	
<i>97.56</i>	<b>9/8/05</b>	12.44	85.12	5.12	893	1.47	484	NS	NS	NS	
	<b>1/25/06</b>	10.22	87.34	7.31	830	1.67	6.0	NS	NS	NS	
	<b>4/11/06</b>	11.15	86.41	6.81	910	2.61	18.0	NS	NS	NS	
	<b>7/20/06</b>	12.48	85.08	4.93	803	2.63	559	NS	NS	NS	
	<b>10/10/06</b>	12.98	84.58	NM	NM	NM	NM	NS	NS	NS	
	<b>1/25/07</b>	12.14	85.42	NM	NM	NM	NM	NS	NS	NS	
	<b>2/26/07</b>	12.11	85.45	8.06	NM	2.21	193.8	NS	NS	NS	
	<b>4/24/07</b>	10.43	87.13	NA	NA	NA	NA	NS	NS	NS	
	<b>10/4/07</b>	13.57	82.77	7.30	813	3.98	82.0	NS	NS	NS	
	<b>3/7/08</b>	11.20	85.14	6.94	726	3.34	90.6	NS	NS	NS	
	<b>3/11/08</b>	10.54	85.80	7.10	834	1.52	105	NS	NS	NS	
	<b>5/1/08</b>	11.27	85.07	NA	NA	NA	NA	NS	NS	NS	
	<b>11/24/08</b>	12.38	83.96	NA	NA	NA	NA	NS	NS	NS	
	<b>10/21/10</b>	12.58	83.76	6.39	818	1.45	39.9	NS	NS	NS	
	<b>12/22/10</b>	12.12	84.22	6.82	822	2.18	-24.8	NS	NS	NS	
	<b>3/28/11</b>	11.04	85.30	7.49	751	1.84	-9.1	NS	NS	NS	
	<b>9/14/11</b>	10.17	86.17	7.49	709	1.32	-53.6	2.40	27.4	0.233	
	<b>2/15/12</b>	12.00	84.34	6.25	715	2.77	-30.7	2.52	24.1	0.0777	
	<b>8/20/12</b>	13.03	83.31	7.41	716	3.10	-35.3	0.350	31.9	0.0326	
	<b>2/20/12</b>	12.48	83.86	7.13	781	2.01	14.5	2.390	27.2	0.530	
	<b>8/21/13</b>	12.53	83.81	7.35	690	2.36	100.1	NS	NS	NS	
<b>ECS-6</b>	<b>2/13/03</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS	
<b>96.58</b>	<b>9/8/05</b>	11.34	85.00	4.97	972	0.43	258	NS	NS	NS	
<i>96.34</i>	<b>11/1/05</b>	9.57	86.77	6.67	893	1.22	26.8	NS	NS	NS	
	<b>1/25/06</b>	9.10	87.24	6.90	907	0.60	-99.0	NS	NS	NS	
	<b>4/10/06</b>	11.05	85.29	7.15	1,146	0.47	64.0	NS	NS	NS	
	<b>7/20/06</b>	11.40	84.94	4.11	907	0.17	561	NS	NS	NS	
	<b>10/10/06</b>	11.89	84.45	NM	657	0.84	86.4	NS	NS	NS	
	<b>1/25/07</b>	10.99	85.35	7.12	802	1.91	49.0	NS	NS	NS	
	<b>4/24/07</b>	9.35	86.99	6.71	885	0.26	-10.4	NS	NS	NS	
	<b>10/4/07</b>	12.46	83.88	6.87	947	1.20	-4.0	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-6</b>	3/7/08	10.05	86.29	6.16	1,721	1.18	68.4	NS	NS	NS
<b>(continued)</b>	<b>3/11/08</b>	10.44	85.90	6.04	1,408	0.35	83.0	22.8	252	30.6
	<b>5/1/08</b>	10.16	86.18	6.57	880	0.72	24.0	<2.0	100	5.70
	<b>11/24/08</b>	11.26	85.08	6.85	398	0.12	-40.0	0.14	38.5	5.29
	<b>2/18/09</b>	11.25	85.09	7.34	93	0.53	-24.0	0.13	24.8	2.12
	<b>8/24/09</b>	10.06	86.28	7.14	293	0.39	-38.0	0.26	29.8	1.15
	<b>2/11/10</b>	11.18	85.16	6.28	205	0.21	19.0	<0.100	22.8	2.18
	<b>9/9/10</b>	12.36	83.98	7.41	1,037	0.43	-4.0	<0.100	29.2	0.132
	<b>3/28/11</b>	9.91	86.43	6.61	1,301	0.62	7.9	0.970	48.0	2.85
	<b>9/14/11</b>	9.04	87.30	6.67	819	1.06	19.6	0.350	28.4	0.534
	<b>2/15/12</b>	10.82	85.52	5.61	835	0.68	-14.9	<0.200	23.4	2.06
	<b>8/20/12</b>	11.85	84.49	6.86	881	0.32	-61.1	0.242	24.7	3.81
	<b>2/20/12</b>	11.29	85.05	6.80	867	0.92	12.0	0.110	20.3	2.79
	<b>8/21/13</b>	11.40	84.94	7.27	916	0.78	87.3	NS	NS	NS
<b>ECS-7</b>	<b>2/13/03</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>95.97</b>	<b>9/8/05</b>	9.75	85.79	5.55	1,398	1.20	243	NS	NS	NS
<i>95.54</i>	<b>1/25/06</b>	9.05	86.49	6.85	925	0.35	16.0	NS	NS	NS
	<b>4/10/06</b>	9.90	85.64	6.44	1,490	0.79	180	NS	NS	NS
	<b>7/20/06</b>	9.78	85.76	NM	NM	NM	NM	NS	NS	NS
	<b>10/10/06</b>	9.96	85.58	NM	NM	NM	NM	NS	NS	NS
	<b>1/25/07</b>	9.70	85.84	NM	NM	NM	NM	NS	NS	NS
	<b>4/24/07</b>	9.47	86.07	NM	NM	NM	NM	NS	NS	NS
	<b>10/4/07</b>	10.41	85.13	6.58	1,089	0.39	9	NS	NS	NS
	3/7/08	14.79	80.75	6.63	962	2.62	60.2	NS	NS	NS
	<b>5/1/08</b>	9.62	85.92	NM	NM	NM	NM	NS	NS	NS
	<b>11/24/08</b>	10.79	84.75	NM	NM	NM	NM	NS	NS	NS
	9/14/11	8.71	86.83	NM	NM	NM	NM	NS	NS	NS
	2/15/12	9.17	86.37	NM	NM	NM	NM	NS	NS	NS
	8/30/12	9.26	86.28	6.49	1,564	0.44	-70.5	NS	NS	NS
	8/21/13	9.08	86.46	6.78	1,117	0.65	97.4	NS	NS	NS
<b>ECS-8**</b>	<b>2/13/03</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>95.72</b>	<b>9/8/05</b>	10.35	85.08	4.74	1,534	1.20	469	<0.100	52.6	18.3
<i>95.43</i>	<b>1/25/06</b>	NG	NA	NM	NM	NM	NM	NS	NS	NS
	<b>4/11/06</b>	9.98	85.45	6.51	193	0.16	4.0	<0.100	59.2	1.64
	<b>7/20/06</b>	10.28	85.15	NM	NM	NM	NM	NS	NS	NS
	9/15/06	11.29	84.14	6.62	NM	10.17	-2.8	NS	NS	NS
	9/21/06	10.31	85.12	6.75	NM	7.85	123	NS	NS	NS
	10/6/06	11.75	83.68	7.63	NM	1.23	27.0	NS	NS	NS
	<b>10/10/06</b>	10.81	84.62	NM	NM	NM	NM	NS	NS	NS
	10/23/06	NG	NA	NM	NM	NM	NM	NS	NS	NS
	11/7/06	10.09	85.34	6.33	NM	7.43	-34.7	NS	NS	NS
	11/20/06	9.47	85.96	6.82	NM	3.53	78.6	NS	NS	NS
	12/4/06	9.92	85.51	7.92	NM	10.70	179.5	NS	NS	NS
	12/18/06	11.42	84.01	6.18	NM	7.30	27.2	NS	NS	NS
	1/2/07	10.33	85.10	6.69	NM	7.64	-98.5	NS	NS	NS
	1/15/07	9.87	85.56	6.82	NM	7.33	-109.6	NS	NS	NS
	<b>1/25/07</b>	9.91	85.52	NM	NM	NM	NM	NS	NS	NS
	1/29/07	10.08	85.35	7.13	NM	13.11	-79.2	NS	NS	NS
	2/12/07	11.62	83.81	6.93	NM	10.22	14.4	NS	NS	NS
	2/26/07	10.35	85.08	7.31	NM	6.41	246.7	NS	NS	NS
	3/12/07	10.22	85.21	7.14	NM	8.63	62.7	NS	NS	NS
	3/26/07	9.84	85.59	7.15	NM	9.40	39.7	NS	NS	NS
	4/10/07	9.16	86.27	7.06	NM	11.61	60.4	NS	NS	NS
	<b>4/24/07</b>	8.19	87.24	6.40	1,075	8.84	222.6	NS	NS	NS
	5/7/07	9.00	86.43	5.01	NM	11.69	90.8	NS	NS	NS
	5/24/07	9.83	85.60	5.47	NM	10.14	108.2	NS	NS	NS
	6/4/07	9.08	86.35	5.13	NM	8.03	43.6	NS	NS	NS
	6/18/07	10.18	85.25	6.28	NM	13.65	-14.7	NS	NS	NS
	7/3/07	10.62	84.81	7.36	NM	7.44	90.8	NS	NS	NS
	7/16/07	11.89	83.54	7.14	NM	7.54	104.7	NS	NS	NS
	8/1/07	10.83	84.60	6.45	NM	7.61	71.8	NS	NS	NS
	8/13/07	10.92	84.51	5.71	NM	3.10	-283.4	NS	NS	NS
	8/27/07	11.17	84.26	6.27	NM	7.42	-13.8	NS	NS	NS
	9/10/07	11.26	84.18	7.30	NM	9.71	-14.5	NS	NS	NS
	9/25/07	11.35	84.08	7.28	NM	7.10	-17.1	NS	NS	NS
	<b>10/4/07</b>	11.45	83.98	6.41	1,580	0.54	96.0	NS	NS	NS
	10/9/07	11.48	83.95	6.16	NM	2.85	-301.2	NS	NS	NS
	10/22/07	11.22	84.21	7.04	NM	4.01	-22.5	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-8</b>	11/5/07	11.05	84.38	7.08	NM	3.01	39.9	NS	NS	NS
<b>(continued)</b>	11/19/07	10.79	84.64	7.03	NM	3.85	-25.2	NS	NS	NS
	12/3/07	9.74	85.69	7.01	NM	2.98	38.4	NS	NS	NS
	12/17/07	NG	NG	NM	NM	NM	NM	NS	NS	NS
	1/2/08	NG	NG	NM	NM	NM	NM	NS	NS	NS
	1/14/08	NG	NG	NM	NM	NM	NM	NS	NS	NS
	1/29/08	10.31	85.12	6.42	NM	4.51	73.0	NS	NS	NS
	2/11/08	NG	NG	NM	NM	NM	NM	NS	NS	NS
	3/11/08	NG	NG	NM	NM	NM	NM	NS	NS	NS
	<b>3/24/08</b>	8.56	86.87	6.33	1078	2.37	46	3.34	70.6	<0.0300
	<b>5/1/08</b>	9.02	86.41	6.64	1451	0.50	27	NS	NS	NS
	5/27/08	9.59	85.84	NM	NM	NM	NM	NS	NS	NS
	6/4/08	10.07	85.36	6.00	NM	1.06	-5	NS	NS	NS
	6/17/08	9.82	85.61	6.46	NM	1.87	49.5	NS	NS	NS
	7/1/08	9.72	85.71	6.49	NM	1.43	5.7	NS	NS	NS
	7/9/08	NM	85.71	NM	NM	NM	NM	NS	NS	NS
	7/14/08	10.23	85.20	6.32	NM	1.84	50.1	NS	NS	NS
	7/30/08	9.51	85.92	6.00	NM	2.77	57	NS	NS	NS
	8/12/08	9.81	85.62	6.30	NM	2.02	15.6	NS	NS	NS
	8/20/08	9.47	85.96	NM	NM	NM	NM	NS	NS	NS
	8/26/08	10.02	85.41	6.32	NM	2.00	9.4	NS	NS	NS
	9/9/08	8.89	86.54	6.22	NM	1.95	23.7	NS	NS	NS
	9/22/08	10.42	85.01	6.37	NM	2.04	11.7	NS	NS	NS
	10/17/08	10.65	84.78	6.59	NM	1.34	13.2	NS	NS	NS
	10/27/08	10.30	85.13	6.36	NM	1.14	11.7	NS	NS	NS
	11/11/08	10.99	84.44	6.21	NM	0.92	26.0	NS	NS	NS
	<b>11/24/08</b>	10.12	85.31	6.60	1640	0.36	7.0	NS	NS	NS
	11/25/08	11.12	84.31	6.39	NM	3.72	-26.6	NS	NS	NS
	12/11/08	9.60	85.83	6.56	NM	2.44	9.0	NS	NS	NS
	12/23/08	9.04	86.39	6.53	NM	2.26	13.9	NS	NS	NS
	3/19/09	9.00	86.43	6.49	NM	1.91	32.9	NS	NS	NS
	<b>4/9/09</b>	9.02	86.41	5.68	NM	0.67	205.9	NS	NS	NS
	5/5/09	9.80	85.63	6.41	NM	1.50	152.6	NS	NS	NS
	5/19/09	9.69	85.74	6.37	NM	1.77	96.2	NS	NS	NS
	6/11/09	10.30	85.13	6.34	1440	1.07	28.6	NS	NS	NS
	6/26/09	11.27	84.16	6.41	1568	1.43	90.1	NS	NS	NS
	7/6/09	9.30	86.13	6.24	816	0.46	82.6	NS	NS	NS
	7/22/09	9.47	85.96	6.35	1,407	2.43	71.4	NS	NS	NS
	8/6/09	8.51	86.92	6.41	1,340	1.70	86.8	NS	NS	NS
	<b>8/24/09</b>	8.98	86.45	6.46	1,700	0.37	13.0	NS	NS	NS
	9/10/09	9.48	85.95	6.53	1,327	0.95	62.9	NS	NS	NS
	9/23/09	9.93	85.50	6.54	1,457	10.06	26.4	NS	NS	NS
	10/6/09	9.87	85.56	6.01	683	0.49	73.8	NS	NS	NS
	10/13/09	10.05	85.38	6.39	1,199	3.66	59.0	NS	NS	NS
	10/23/09	10.10	85.33	6.43	1,756	1.79	1.4	NS	NS	NS
	11/5/09	9.26	86.17	6.39	1,452	0.70	47.8	NS	NS	NS
	11/17/09	9.53	85.90	6.55	1,403	0.25	70.4	NS	NS	NS
	12/8/09	12.28	83.15	6.81	1,352	2.61	-5.9	NS	NS	NS
	3/17/10	8.76	86.67	6.48	2,322	6.49	114.0	NS	NS	NS
	4/15/10	8.80	86.63	6.74	994	4.21	99.4	NS	NS	NS
	5/13/10	9.84	85.59	6.24	1,589	6.37	50.4	NS	NS	NS
	5/27/10	10.10	85.33	6.51	NM	5.60	9.6	NS	NS	NS
	6/9/10	9.78	85.65	6.16	NM	1.63	-14.0	NS	NS	NS
	6/24/10	10.20	85.23	6.33	NM	0.73	39.2	NS	NS	NS
	7/9/10	10.71	84.72	5.15	NM	6.10	395.2	NS	NS	NS
	7/20/10	10.77	84.66	6.62	NM	0.92	-117.0	NS	NS	NS
	8/5/10	10.79	84.64	6.67	NM	0.69	10.3	NS	NS	NS
	8/18/10	11.05	84.38	6.23	NM	2.30	117.6	NS	NS	NS
	<b>9/9/10</b>	11.29	84.14	6.56	774	0.26	53.0	NS	NS	NS
	9/15/10	11.38	84.05	6.20	NM	1.81	106.1	NS	NS	NS
	9/30/10	NM	NM	NM	NM	NM	NM	NS	NS	NS
	10/5/10	NM	NM	NM	NM	NM	NM	NS	NS	NS
	10/21/10	NM	NM	NM	NM	NM	NM	NS	NS	NS
	11/5/10	NM	NM	NM	NM	NM	NM	NS	NS	NS
	11/19/10	9.30	86.13	6.84	NM	1.31	204.9	NS	NS	NS
	12/9/10	9.81	85.62	6.04	NM	0.75	-20.8	NS	NS	NS
	12/22/10	NM	NM	NM	NM	NM	NM	NS	NS	NS
	1/7/11	10.27	85.16	6.30	NM	7.56	-36.9	NS	NS	NS
	1/19/11	NM	NM	NM	NM	NM	NM	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-8 (continued)</b>	2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/3/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	<b>3/28/11</b>	8.80	86.63	6.63	1.827	1.17	33.5	NS	NS	NS
	<b>4/7/11</b>	8.86	86.57	6.96	NM	4.21	-35.8	NS	NS	NS
	<b>4/22/11</b>	8.60	86.83	6.47	1.816	0.26	-13.4	NS	NS	NS
	<b>5/7/11</b>	8.65	86.78	7.70	1.768	0.95	-3.2	NS	NS	NS
	<b>6/2/11</b>	9.51	85.92	6.48	1.690	3.00	22.9	NS	NS	NS
	<b>6/14/11</b>	NM	NM	NM	NM	NM	NM	NS	NS	NS
	<b>7/7/11</b>	9.33	86.10	6.00	NM	1.32	15.3	NS	NS	NS
	<b>7/25/11</b>	9.87	85.56	6.50	NM	1.58	-10.0	NS	NS	NS
	8/15/11	NM	NM	NM	NM	NM	NM	NS	NS	NS
	<b>8/26/11</b>	9.80	85.63	6.64	1.426	0.35	-59.6	NS	NS	NS
	9/14/11	7.89	87.54	NM	NM	NM	NM	NS	NS	NS
	10/6/11	8.35	87.08	6.75	NM	1.20	39.3	NS	NS	NS
	10/20/11	NM	NM	NM	NM	NM	NM	NS	NS	NS
	11/3/11	NM	NM	NM	NM	NM	NM	NS	NS	NS
	11/17/11	NM	NM	NM	NM	NM	NM	NS	NS	NS
	12/7/11	NM	NM	NM	NM	NM	NM	NS	NS	NS
	12/21/11	9.06	86.37	6.74	1,460	4.23	228.4	NS	NS	NS
	1/4/12	9.06	86.37	7.07	1,360	7.46	193.6	NS	NS	NS
	2/1/12	NM	NM	NM	NM	NM	NM	NS	NS	NS
	2/15/12	9.56	85.87	NM	NM	NM	NM	NS	NS	NS
	3/1/12	NM	NM	NM	NM	NM	NM	NS	NS	NS
	3/15/12	9.08	86.35	6.96	1,535	2.01	290.3	NS	NS	NS
	4/5/12	9.74	85.69	6.54	NM	3.22	264.6	NS	NS	NS
	4/19/12	10.05	85.38	6.81	1,708	5.41	329.2	NS	NS	NS
	5/3/12	NM	NM	NM	NM	NM	NM	NS	NS	NS
	5/17/12	9.25	86.18	6.64	1,551	3.38	257.0	NS	NS	NS
	5/31/12	7.53	87.90	6.35	1,758	3.44	320.2	NS	NS	NS
	6/14/12	9.67	85.76	6.40	1,520	5.19	322.4	NS	NS	NS
	6/26/12	10.01	85.42	6.94	1,236	1.70	-2.6	NS	NS	NS
	7/3/12	10.19	85.24	6.63	NM	2.55	-22.7	NS	NS	NS
	7/19/12	10.58	84.85	6.60	1,474	0.74	-21.4	NS	NS	NS
	8/1/12	10.60	84.83	6.49	1,862	0.62	-20.2	NS	NS	NS
	8/15/12	NM	NM	NM	NM	NM	NM	NS	NS	NS
	8/20/12	10.49	84.94	NM	NM	NM	NM	NS	NS	NS
	8/30/12	10.77	84.66	6.34	2050	0.34	-25.5	NS	NS	NS
	9/17/12	10.85	84.58	6.32	1949	0.37	9.0	NS	NS	NS
	9/26/12	10.56	84.87	6.04	1835	0.32	67.8	NS	NS	NS
	10/11/12	10.48	84.95	6.52	1695	0.41	-24.5	NS	NS	NS
	10/25/12	10.02	85.41	6.40	1656	1.10	-38.4	NS	NS	NS
	11/1/12	9.88	85.55	6.26	1666	0.60	-29.7	NS	NS	NS
	11/15/12	10.17	85.26	6.23	1610	1.59	-52.6	NS	NS	NS
12/6/12	10.42	85.01	5.99	1567	0.70	-63.1	NS	NS	NS	
12/20/12	10.06	85.37	6.14	1541	0.83	-57.7	NS	NS	NS	
1/3/13	9.86	85.57	6.05	1500	1.07	-41.6	NS	NS	NS	
1/17/13	9.86	85.57	6.14	1499	0.75	-44.2	NS	NS	NS	
2/7/13	11.03	84.40	5.81	1145	1.25	34.7	NS	NS	NS	
2/20/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
3/7/13	9.88	85.55	NM	NM	NM	NM	NS	NS	NS	
3/20/13	9.35	86.08	6.24	1024	5.91	52.0	NS	NS	NS	
4/4/13	9.34	86.09	6.19	1119	3.82	15.6	NS	NS	NS	
4/12/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
4/18/13	9.13	86.30	5.90	1243	5.38	40.9	NS	NS	NS	
4/26/13	9.28	86.15	6.16	706	8.15	-10.1	NS	NS	NS	
5/2/13	9.51	85.92	6.44	1307	6.00	-79.7	NS	NS	NS	
5/10/13	9.71	85.72	5.25	1169	4.76	54.3	NS	NS	NS	
5/23/13	9.60	85.83	5.83	1282	7.63	9.0	NS	NS	NS	
6/6/13	9.04	86.39	5.85	1073	4.60	72.7	NS	NS	NS	
6/20/13	8.22	87.21	5.65	1274	5.29	103.4	NS	NS	NS	
7/3/13	8.76	86.67	5.96	NM	6.81	125.0	NS	NS	NS	
7/11/13	8.59	86.84	5.88	NM	5.99	111.0	NS	NS	NS	
7/18/13	9.32	86.11	5.10	1397	6.39	106.1	NS	NS	NS	
7/25/13	9.52	85.91	5.51	1336	4.64	126.7	NS	NS	NS	
8/8/13	9.85	85.58	5.59	1448	2.14	99.4	NS	NS	NS	
8/15/13	9.69	85.74	6.57	1516	3.14	131.8	NS	NS	NS	
8/21/13	9.87	85.56	6.80	1656	0.70	95.6	NS	NS	NS	
8/29/13	9.82	85.61	6.20	1616	3.77	79.1	NS	NS	NS	
9/5/13	9.58	85.85	6.78	1367	4.32	90.7	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-9*</b>	<b>2/13/03</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>95.22</b>	<b>9/19/05</b>	10.91	84.08	6.22	1,047	4.69	-46.8	<0.100	<1.0	11.5
<i>94.99</i>	<b>1/25/06</b>	8.38	86.61	6.32	944	0.80	-89.0	<0.100	7.27	9.75
	<b>4/11/06</b>	10.33	84.66	6.52	157	0.60	-13.0	<0.100	<1.0	0.945
	<b>7/20/06</b>	10.72	84.27	3.02	1,136	0.30	445	<0.100	<1.0	10.8
	<b>10/10/06</b>	11.12	83.87	NA	NA	NA	NA	NS	NS	NS
	<b>1/25/07</b>	10.31	84.68	6.64	995	1.42	-2	<0.5	<5.0	10.6
	<b>4/24/07</b>	8.57	86.42	6.40	1,609	0.58	-2.6	NS	NS	NS
	<b>10/4/07</b>	11.79	83.20	6.69	1,478	1.11	-94.0	<0.100	8.05	47.1
	<i>3/7/08</i>	9.22	85.77	6.57	1,195	2.80	36.5	NS	NS	NS
	<b>3/11/08</b>	8.63	86.36	6.75	1,217	0.32	12.0	<0.100	36.2	6.76
	<b>5/1/08</b>	9.47	85.52	6.77	1,730	0.52	46.0	<1.0	61.3	0.40
	<b>11/24/08</b>	10.6	84.39	6.81	1,146	0.21	-31.0	<0.100	<1.0	10.8
	<b>2/18/09</b>	10.62	84.37	6.77	1,060	0.46	-29.0	<0.100	1.05	8.64
	<b>8/24/09</b>	9.33	85.66	6.68	1,560	0.39	-8.0	<0.100	26.20	11.6
	<b>2/11/10</b>	10.49	84.50	6.43	1,600	0.40	-27.0	<0.100	5.32	9.45
	<b>9/9/10</b>	11.64	83.35	6.76	744	0.29	-16.0	<0.100	<1.0	10.8
	<b>3/28/11</b>	9.28	85.71	7.06	1,147	6.39	31.5	0.100	9.72	0.784
	<b>9/14/11</b>	8.41	86.58	6.67	1,622	0.30	83.2	0.280	58.8	0.224
	<b>2/15/12</b>	10.23	84.76	7.16	1,542	1.64	-9.6	0.250	6.75	3.46
	<i>8/20/12</i>	NM	NM	NM	NM	NM	NM	NS	NS	NS
	<b>8/30/12</b>	11.35	83.64	6.27	1,155	0.40	-24.1	<0.100	1.52	15.30
	<b>2/20/13</b>	10.55	84.44	6.73	939	0.70	8.2	<0.100	6.49	13.90
	<b>8/21/13</b>	10.66	84.33	6.77	980	0.85	93.5	<0.100	3.17	24.20
<b>ECS-10</b>	<b>2/13/03</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>95.90</b>	<b>9/8/05</b>	9.59	86.16	4.40	1,624	0.93	601	NS	NS	NS
<i>95.75</i>	<b>1/25/06</b>	8.57	87.18	6.96	1,850	0.37	23.0	NS	NS	NS
	<b>4/10/06</b>	9.52	86.23	6.60	234	0.35	180	NS	NS	NS
	<b>7/20/06</b>	9.42	86.33	NM	NM	NM	NM	NS	NS	NS
	<b>10/10/06</b>	9.64	86.11	NM	NM	NM	NM	NS	NS	NS
	<b>1/25/07</b>	9.31	86.44	NM	NM	NM	NM	NS	NS	NS
	<b>4/24/07</b>	8.53	87.22	NM	NM	NM	NM	NS	NS	NS
	<b>10/4/07</b>	10.18	85.57	6.60	1,570	0.36	15.0	NS	NS	NS
	<i>3/7/08</i>	8.01	87.74	6.70	1,473	0.46	62.2	NS	NS	NS
	<b>3/11/08</b>	5.74	90.01	6.58	930	0.51	82.0	3.84	27.2	1.20
	<b>5/1/08</b>	8.87	86.88	6.93	1,650	0.57	47.0	13.3	45.2	<0.0300
	<b>11/24/08</b>	9.4	86.35	6.74	1,800	0.28	-30.0	<0.100	23.0	7.98
	<b>2/18/09</b>	9.62	86.13	6.85	1,670	0.59	42.0	<0.100	28.2	1.90
	<b>8/24/09</b>	8.75	87.00	6.20	314	0.37	56.0	0.12	2.67	3.00
	<b>2/11/10</b>	9.34	86.41	6.22	1,660	0.49	37.0	<0.100	8.79	1.65
	<b>9/9/10</b>	9.55	86.20	6.77	792	0.29	-39.0	<0.100	2.18	15.6
	<b>3/28/11</b>	8.70	87.05	6.78	664	0.59	15.1	0.420	6.41	1.48
	<b>9/14/11</b>	8.15	87.60	NM	NM	NM	NM	NS	NS	NS
	<b>2/15/12</b>	NM	NM	NM	NM	NM	NM	NS	NS	NS
	<i>8/20/12</i>	8.99	86.76	NM	NM	NM	NM	NS	NS	NS
	<b>8/30/12</b>	9.12	86.63	6.65	1,179	0.38	-87.2	NS	NS	NS
	<b>8/21/13</b>	8.83	86.92	6.92	1,614	0.58	77.4	NS	NS	NS
<b>ECS-11**</b>	<b>1/25/06</b>	9.28	87.42	6.42	1,033	0.70	-74.0	<0.100	25.2	10.4
<b>96.70</b>	<b>4/10/06</b>	10.94	85.76	6.92	1,103	0.67	-5.0	NS	NS	NS
	<b>7/20/06</b>	11.31	85.39	4.75	1,024	0.25	503	NS	NS	NS
	<i>9/15/06</i>	12.31	84.39	7.00	NM	8.92	-49.9	NS	NS	NS
	<i>9/21/06</i>	11.89	84.81	6.95	NM	10.01	266	NS	NS	NS
	<i>10/6/06</i>	11.74	84.96	8.10	NM	2.48	-41.5	NS	NS	NS
	<b>10/10/06</b>	11.81	84.89	NM	649	0.63	71.4	NS	NS	NS
	<i>10/23/06</i>	11.20	85.50	6.12	NM	1.60	NM	NS	NS	NS
	<i>11/7/06</i>	10.74	85.96	6.76	NM	10.43	-51.4	NS	NS	NS
	<i>11/20/06</i>	10.49	86.21	7.56	NM	8.52	-11.5	NS	NS	NS
	<i>12/4/06</i>	10.93	85.77	7.46	NM	12.59	232.5	NS	NS	NS
	<i>12/18/06</i>	11.40	85.30	6.44	NM	8.36	-8.5	NS	NS	NS
	<i>1/2/07</i>	11.34	85.36	7.69	NM	8.39	-127.5	NS	NS	NS
	<i>1/15/07</i>	10.89	85.81	7.34	NM	8.16	-133.4	NS	NS	NS
	<b>1/25/07</b>	10.98	85.72	7.03	849	1.58	4.0	NS	NS	NS
	<i>1/29/07</i>	11.11	85.59	7.43	NM	8.73	-105.0	NS	NS	NS
	<i>2/12/07</i>	11.54	85.16	7.22	NM	10.69	-48.6	NS	NS	NS
	<i>2/26/07</i>	11.14	85.56	7.14	NM	4.89	NM	NS	NS	NS
	<i>3/12/07</i>	11.91	84.79	7.07	NM	9.85	42.4	NS	NS	NS
	<i>3/26/07</i>	10.86	85.84	7.29	NM	10.23	-38.8	NS	NS	NS
	<i>4/10/07</i>	10.2	86.50	7.25	NM	12.52	66.7	NS	NS	NS

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GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-11</b>	<b>4/24/07</b>	9.35	87.35	5.70	1,163	0.30	149.2	NS	NS	NS
<b>(continued)</b>	5/7/07	10.18	86.52	5.37	NM	12.55	59.1	NS	NS	NS
	5/24/07	10.98	85.72	5.82	NM	11.23	58.6	NS	NS	NS
	6/4/07	11.05	85.65	6.63	NM	6.17	210.1	NS	NS	NS
	6/18/07	11.28	85.42	6.72	NM	9.23	10.2	NS	NS	NS
	7/3/07	11.65	85.05	7.85	NM	15.90	81.5	NS	NS	NS
	7/16/07	12.92	83.78	7.03	NM	13.29	98.3	NS	NS	NS
	8/1/07	11.87	84.83	6.94	NM	9.42	-0.6	NS	NS	NS
	8/13/07	11.97	84.73	6.27	NM	1.21	-319.1	NS	NS	NS
	8/27/07	12.2	84.50	6.65	NM	8.97	-51.7	NS	NS	NS
	9/10/07	12.29	84.41	7.28	NM	5.81	-41.1	NS	NS	NS
	9/25/07	12.36	84.34	7.26	NM	5.23	-42.3	NS	NS	NS
	<b>10/4/07</b>	12.47	84.23	6.64	1,176	1.07	-11.0	NS	NS	NS
	10/9/07	12.52	84.18	6.91	NM	5.33	-306.3	NS	NS	NS
	10/22/07	12.26	84.44	7.91	NM	4.20	-64.1	NS	NS	NS
	11/5/07	12.10	84.60	7.56	NM	2.80	-15.1	NS	NS	NS
	11/19/07	11.82	84.88	7.82	NM	4.07	-69.7	NS	NS	NS
	12/3/07	12.79	83.91	7.31	NM	2.68	-98.1	NS	NS	NS
	12/17/07	11.93	84.77	7.03	NM	2.97	-91.5	NS	NS	NS
	1/2/08	11.40	85.30	6.61	NM	4.95	-96.2	NS	NS	NS
	1/14/08	11.01	85.69	6.60	NM	4.52	-65.7	NS	NS	NS
	1/29/08	11.34	85.36	7.11	NM	5.47	20.9	NS	NS	NS
	2/11/08	11.19	85.51	NM	NM	NM	NM	NS	NS	NS
	3/7/08	9.84	86.86	6.86	1,999	0.16	70.7	NS	NS	NS
	<b>3/11/08</b>	9.36	87.34	6.88	1,601	0.86	-25.0	NS	NS	NS
	<b>5/1/08</b>	10.28	86.42	7.04	1,471	0.52	12.0	NS	NS	NS
	5/27/08	10.63	86.07	NM	NM	NM	NM	NS	NS	NS
	6/4/08	11.01	85.69	6.48	NM	0.29	-28.7	NS	NS	NS
	6/17/08	11.03	85.67	7.22	NM	2.17	-37.3	NS	NS	NS
	7/1/08	10.55	86.15	7.29	NM	0.90	-32.4	NS	NS	NS
	7/9/08	NM	86.15	NM	NM	NM	NM	NS	NS	NS
	7/14/08	11.84	84.86	6.81	NM	1.70	19.0	NS	NS	NS
	7/30/08	10.58	86.12	6.55	NM	1.98	-17.8	NS	NS	NS
	8/12/08	10.58	86.12	6.86	NM	0.86	112.4	NS	NS	NS
	8/20/08	11.02	85.68	NM	NM	NM	NM	NS	NS	NS
	8/26/08	10.81	85.89	6.90	NM	1.93	-11.2	NS	NS	NS
	9/9/08	10.74	85.96	6.69	NM	0.72	118.2	NS	NS	NS
	9/22/08	11.57	85.13	6.60	NM	0.57	7.9	NS	NS	NS
	10/17/08	11.1	85.60	7.04	NM	0.71	-2.9	NS	NS	NS
	10/27/08	10.8	85.90	6.80	NM	1.50	-11.6	NS	NS	NS
	11/11/08	10.99	85.71	6.62	NM	1.01	-34.7	NS	NS	NS
	<b>11/24/08</b>	11.21	85.49	7.01	1,540	0.16	-34.0	NS	NS	NS
	11/25/08	11.12	85.58	6.68	NM	0.94	-161.0	NS	NS	NS
	12/11/08	10.88	85.82	7.06	NM	0.61	-18.0	NS	NS	NS
	12/23/08	9.67	87.03	6.60	NM	1.04	-33.7	NS	NS	NS
	1/6/09	9.87	86.83	6.47	NM	0.71	28.9	NS	NS	NS
	1/23/09	10.55	86.15	6.66	NM	2.88	48.1	NS	NS	NS
	2/18/09	11.25	85.45	7.03	1,501	0.65	11.0	NS	NS	NS
	3/4/09	10.72	85.98	6.83	NM	1.17	187.8	NS	NS	NS
	3/19/09	9.94	86.76	6.94	NM	0.44	-17.4	NS	NS	NS
	4/9/09	9.87	86.83	7.40	NM	0.29	91.7	NS	NS	NS
	4/23/09	9.87	86.83	6.95	NM	1.00	39.4	NS	NS	NS
	5/5/09	10.62	86.08	6.94	NM	0.90	66.5	NS	NS	NS
	5/19/09	10.55	86.15	6.79	NM	1.21	20.9	NS	NS	NS
	6/11/09	10.86	85.84	6.77	NM	0.61	-10.1	NS	NS	NS
	6/26/09	11.17	85.53	6.60	NM	0.88	38.9	NS	NS	NS
	7/6/09	10.44	86.26	6.70	1,198	0.30	-25.8	NS	NS	NS
	7/22/09	10.75	85.95	6.70	1,223	4.62	28.5	NS	NS	NS
	8/6/09	9.38	87.32	6.82	1,290	0.75	-69.9	NS	NS	NS
	<b>8/24/09</b>	10.08	86.62	6.85	1,273	0.41	-22.0	NS	NS	NS
	9/10/09	10.57	86.13	7.21	1,151	0.57	-22.7	NS	NS	NS
	9/23/09	10.56	86.14	7.13	1,226	11.20	-77.7	NS	NS	NS
	10/6/09	10.75	85.95	6.64	1,214	0.71	16.9	NS	NS	NS
	10/13/09	11.20	85.50	7.15	1,039	3.17	12.6	NS	NS	NS
	10/23/09	10.85	85.85	6.91	1,285	2.19	-59.3	NS	NS	NS
	11/5/09	10.48	86.22	6.91	1,312	1.15	-58.9	NS	NS	NS
	11/17/09	10.44	86.26	7.01	1,254	3.15	-27.3	NS	NS	NS
	12/8/09	10.33	86.37	6.99	1,280	0.47	-36.1	NS	NS	NS
	12/23/09	10.55	86.15	7.21	1,002	1.30	58.3	NS	NS	NS
	1/8/10	10.70	86.00	7.04	1,077	0.88	28.2	NS	NS	NS



**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-11 (continued)</b>	1/20/10	11.36	85.34	7.11	1,095	1.41	-19.8	NS	NS	NS
	2/3/10	11.03	85.67	6.77	NM	10.84	-58.9	NS	NS	NS
	2/11/10	11.26	85.44	7.01	1,290	0.47	-39.0	NS	NS	NS
	2/18/10	11.68	85.02	6.95	NM	0.84	14.4	NS	NS	NS
	3/3/10	10.99	85.71	6.96	1,331	2.84	-2.7	NS	NS	NS
	3/17/10	10.19	86.51	7.00	1,204	1.64	-39.6	NS	NS	NS
	4/15/10	9.86	86.84	6.95	1,009	1.04	-38.6	NS	NS	NS
	4/28/10	10.34	86.36	6.82	NM	3.80	24.2	NS	NS	NS
	5/13/10	11.08	85.62	6.81	1,119	4.78	36.9	NS	NS	NS
	5/27/10	11.3	85.40	6.99	NM	1.11	-42.6	NS	NS	NS
	6/9/10	10.95	85.75	6.49	NM	0.97	8.9	NS	NS	NS
	6/24/10	11.34	85.36	6.50	NM	0.59	33.9	NS	NS	NS
	7/9/10	11.93	84.77	6.38	NM	6.59	37.7	NS	NS	NS
	7/20/10	11.26	85.44	7.10	NM	0.58	-291.1	NS	NS	NS
	8/5/10	12.02	84.68	6.68	NM	1.14	22.1	NS	NS	NS
	8/18/10	11.4	85.30	6.86	NM	2.41	39.4	NS	NS	NS
	<b>9/9/10</b>	12.48	84.22	7.19	1,100	0.48	6.0	NS	NS	NS
	9/15/10	12.56	84.14	6.91	NM	2.01	12.6	NS	NS	NS
	9/30/10	12.59	84.11	6.69	NM	3.19	190.7	NS	NS	NS
	10/5/10	11.90	84.80	6.93	1,101	0.83	60.0	NS	NS	NS
	10/21/10	11.02	85.68	7.01	NM	1.60	-20.0	NS	NS	NS
	11/5/10	11.53	85.17	6.98	NM	9.50	19.9	NS	NS	NS
	11/19/10	10.90	85.80	6.96	NM	3.64	39.4	NS	NS	NS
	12/9/10	10.80	85.90	6.42	NM	1.05	-16.5	NS	NS	NS
	12/22/10	10.59	86.11	6.61	1,263	1.28	-39.8	NS	NS	NS
	1/7/11	11.49	85.21	6.48	NM	7.56	-36.9	NS	NS	NS
	1/19/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/3/11	11.86	84.84	6.24	NM	9.32	215.3	NS	NS	NS
	<b>3/28/11</b>	9.94	86.76	7.14	1,395	1.24	-71.9	NS	NS	NS
	4/7/11	10.08	86.62	7.29	NM	3.06	-66.1	NS	NS	NS
	4/22/11	10.00	86.70	6.94	1,261	1.38	-61.1	NS	NS	NS
	5/7/11	10.05	86.65	6.17	0,015	2.39	126.3	NS	NS	NS
	6/2/11	10.92	85.78	6.90	1,333	2.73	-4.0	NS	NS	NS
	6/14/11	10.95	85.75	7.20	NM	0.27	-87.1	NS	NS	NS
	7/7/11	10.72	85.98	6.10	NM	0.76	-20.4	NS	NS	NS
	7/25/11	11.29	85.41	6.73	NM	0.36	-32.1	NS	NS	NS
	8/15/11	11.66	85.04	6.96	NM	0.26	-47.0	NS	NS	NS
	8/26/11	11.12	85.58	7.02	1,255	0.04	-92.2	NS	NS	NS
	<b>9/14/11</b>	9.11	87.59	6.96	1,235	0.29	-103.1	NS	NS	NS
	10/6/11	9.65	87.05	7.05	NM	0.68	-58.0	NS	NS	NS
	10/20/11	10.27	86.43	6.92	NM	0.87	-85.3	NS	NS	NS
	11/3/11	10.44	86.26	6.70	1,405	0.60	-71.0	NS	NS	NS
	11/17/11	10.65	86.05	6.67	NM	0.72	-32.0	NS	NS	NS
	12/7/11	10.65	86.05	7.24	1,100	2.38	260.6	NS	NS	NS
	12/21/11	10.46	86.24	7.48	1,064	4.27	224.2	NS	NS	NS
	1/4/12	10.45	86.25	7.55	1,077	9.37	58.8	NS	NS	NS
	1/17/12	10.88	85.82	7.04	2,594	5.21	287.8	NS	NS	NS
	2/1/12	10.45	86.25	7.04	1,574	5.57	209.1	NS	NS	NS
	2/15/12	10.89	85.81	7.59	2,786	0.77	-56.5	NS	NS	NS
	3/1/12	11.08	85.62	7.50	1,552	6.22	300.6	NS	NS	NS
	3/15/12	10.73	85.97	7.32	1,287	3.12	280.3	NS	NS	NS
4/5/12	11.2	85.50	7.12	NM	5.66	321.5	NS	NS	NS	
4/19/12	11.52	85.18	7.60	1,199	5.26	322.2	NS	NS	NS	
5/3/12	11.32	85.38	7.77	1,129	1.87	252.5	NS	NS	NS	
5/17/12	10.72	85.98	7.20	1,120	4.47	238.8	NS	NS	NS	
5/31/12	10.95	85.75	6.54	1,092	4.92	320.7	NS	NS	NS	
6/14/12	11.08	85.62	6.38	1,086	5.07	412.7	NS	NS	NS	
6/28/12	11.42	85.28	7.17	1,027	0.98	-21.7	NS	NS	NS	
7/3/12	11.57	85.13	7.21	NM	0.48	-67.8	NS	NS	NS	
7/19/12	11.95	84.75	6.98	966	0.85	-20.4	NS	NS	NS	
8/1/12	11.95	84.75	6.90	1,178	0.68	-50.8	NS	NS	NS	
8/20/12	11.86	84.84	6.94	1,022	0.23	-41.6	NS	NS	NS	
8/30/12	12.07	84.63	6.27	1,155	0.40	-24.1	NS	NS	NS	
9/17/12	12.15	84.55	6.89	1,184	0.18	-31.1	NS	NS	NS	
9/26/12	11.89	84.81	6.58	1,195	0.21	33.6	NS	NS	NS	
10/11/12	11.86	84.84	6.93	1,089	0.29	-36.6	NS	NS	NS	
10/25/12	11.43	85.27	6.81	1,101	0.42	-38.2	NS	NS	NS	
11/1/12	11.28	85.42	6.71	1,104	0.55	-35.8	NS	NS	NS	

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GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-11 (continued)</b>	11/15/12	11.56	85.14	6.58	1,106	0.75	-42.5	NS	NS	NS
	12/6/12	11.81	84.89	6.42	1,128	0.40	-61.8	NS	NS	NS
	12/20/12	11.52	85.18	6.50	1,129	0.59	-59.5	NS	NS	NS
	1/3/13	11.35	85.35	6.33	1,120	0.74	-55.1	NS	NS	NS
	1/17/13	11.29	85.41	5.99	3,685	0.73	-36.8	NS	NS	NS
	2/7/13	11.03	85.67	5.81	1,145	1.25	34.7	NS	NS	NS
	2/20/13	11.30	85.40	7.04	1,189	0.56	5.1	NS	NS	NS
	3/7/13	11.30	85.40	6.64	1,212	4.17	40.9	NS	NS	NS
	3/20/13	10.82	85.88	6.51	1,201	4.14	7.7	NS	NS	NS
	4/4/13	10.84	85.86	6.30	1,118	6.31	11.7	NS	NS	NS
	4/12/13	10.53	86.17	4.75	353	7.99	93.8	NS	NS	NS
	4/18/13	10.52	86.18	6.20	1,064	6.79	31.0	NS	NS	NS
	4/26/13	10.77	85.93	6.75	1,147	4.00	-52.9	NS	NS	NS
	5/2/13	11.00	85.70	6.99	1,024	8.17	-84.6	NS	NS	NS
	5/10/13	11.19	85.51	5.01	1,204	5.01	22.2	NS	NS	NS
	5/23/13	11.08	85.62	6.09	1,151	9.07	27.6	NS	NS	NS
	6/6/13	10.56	86.14	6.18	1,033	4.85	34.6	NS	NS	NS
	6/20/13	9.62	87.08	6.07	1,114	3.26	100.2	NS	NS	NS
	7/3/13	10.22	86.48	6.29	NM	5.27	112.7	NS	NS	NS
	7/11/13	10.13	86.57	6.21	NM	5.21	94.0	NS	NS	NS
	7/18/13	10.76	85.94	5.49	1,206	5.83	101.4	NS	NS	NS
	7/25/13	10.98	85.72	5.48	1,162	5.47	135.5	NS	NS	NS
	8/8/13	11.32	85.38	6.11	1,227	1.44	101.0	NS	NS	NS
	8/15/13	11.15	85.55	7.10	842	0.83	112.1	NS	NS	NS
	8/21/13	11.33	85.37	7.14	1,262	0.60	83.5	NS	NS	NS
	8/29/13	11.34	85.36	6.71	1,245	2.69	63.8	NS	NS	NS
	9/5/13	11.10	85.60	7.36	1,206	3.87	74.2	NS	NS	NS
<b>ECS-12<sup>(**)</sup> 96.15</b>	<b>1/25/06</b>	8.64	87.51	6.44	1,207	0.53	-117	NS	NS	NS
	<b>4/10/06</b>	10.60	85.55	6.65	1,436	0.42	14.0	NS	NS	NS
	<b>7/20/06</b>	10.95	85.20	4.19	1,419	0.12	506	15.5	<5.0	15.5
	9/15/06	11.92	84.23	6.60	NM	8.11	-47.5	NS	NS	NS
	9/21/06	11.53	84.62	6.67	NM	9.63	283	NS	NS	NS
	10/6/06	11.35	84.80	7.68	NM	1.24	-22.7	NS	NS	NS
	<b>10/10/06</b>	11.42	84.73	6.58	1,291	0.48	-23.3	NS	NS	NS
	10/23/06	10.79	85.36	5.91	NM	1.46	NM	NS	NS	NS
	11/7/06	10.74	85.41	6.65	NM	5.74	-69.8	NS	NS	NS
	11/20/06	10.15	86.00	6.94	NM	8.77	72.5	NS	NS	NS
	12/4/06	10.58	85.57	7.32	NM	12.13	199.4	NS	NS	NS
	12/18/06	11.04	85.11	6.20	NM	7.52	-3.8	NS	NS	NS
	1/2/07	10.96	85.19	7.29	NM	8.41	-120.8	NS	NS	NS
	1/15/07	10.56	85.59	7.02	NM	8.29	-128.6	NS	NS	NS
	<b>1/25/07</b>	12.55	83.60	6.93	1,500	1.51	9.0	<2.0	<20.0	15.8
	1/29/07	11.74	84.41	7.22	NM	13.75	-94.7	NS	NS	NS
	2/12/07	11.23	84.92	6.95	NM	13.78	-52.9	NS	NS	NS
	2/26/07	NG-S	NA	NM	NM	NM	NM	NS	NS	NS
	3/12/07	NG-S	NA	NM	NM	NM	NM	NS	NS	NS
	3/26/07	10.42	85.73	7.06	NM	12.40	-89.60	NS	NS	NS
	4/10/07	9.77	86.38	6.76	NM	10.88	-14.00	NS	NS	NS
	<b>4/24/07</b>	8.83	87.32	5.48	1,642	0.30	-57.8	NS	NS	NS
	5/7/07	9.89	86.26	5.93	NM	16.80	-11.9	NS	NS	NS
	5/24/07	10.21	85.94	6.01	NM	13.25	24.3	NS	NS	NS
	6/4/07	10.66	85.49	5.99	NM	12.92	28.4	NS	NS	NS
	6/18/07	10.86	85.29	6.71	NM	12.56	-84.4	NS	NS	NS
	7/3/07	11.27	84.88	7.85	NM	21.14	46.2	NS	NS	NS
	7/16/07	12.54	83.61	7.88	NM	18.24	60.7	NS	NS	NS
	8/1/07	11.47	84.68	6.80	NM	9.79	-59.9	NS	NS	NS
	8/13/07	11.56	84.59	6.35	NM	1.35	-331.1	NS	NS	NS
	8/27/07	11.78	84.37	6.34	NM	8.73	-75.3	NS	NS	NS
	9/10/07	11.87	84.28	7.26	NM	5.96	-68.2	NS	NS	NS
9/25/07	11.95	84.20	7.23	NM	5.30	-69.9	NS	NS	NS	
<b>10/4/07</b>	12.04	84.66	6.71	1,740	1.11	-86.0	<0.100	10.0	21.3	
10/9/07	12.08	84.62	6.71	NM	4.22	-300.4	NS	NS	NS	
10/22/07	11.82	84.88	7.42	NM	3.31	-40.7	NS	NS	NS	
11/5/07	11.66	85.04	7.47	NM	6.90	-99.2	NS	NS	NS	
11/19/07	11.38	85.32	7.34	NM	2.97	-39.5	NS	NS	NS	
12/3/07	12.87	83.83	7.49	NM	6.95	-111.5	NS	NS	NS	
12/17/07	11.47	85.23	7.49	NM	6.51	-110.1	NS	NS	NS	
1/2/08	10.97	85.73	6.52	NM	6.51	-76.1	NS	NS	NS	
1/14/08	10.59	86.11	6.59	NM	6.01	-71.5	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-12</b>	1/29/08	10.92	85.78	6.85	NM	6.38	16.1	NS	NS	NS
<b>(continued)</b>	2/11/08	10.82	85.88	NM	NM	NM	NM	NS	NS	NS
	<b>3/24/08</b>	9.15	87.55	6.75	1,510	0.44	-25	<0.100	2.72	16.3
	<b>5/1/08</b>	9.71	86.99	7.00	1,600	0.35	-29	<0.100	<1.0	6.31
	5/27/08	10.18	86.52	NM	NM	NM	NM	NS	NS	NS
	6/4/08	11.82	84.88	6.67	NM	0.45	-112.2	NS	NS	NS
	6/17/08	10.61	86.09	7.36	NM	0.36	-166.2	NS	NS	NS
	7/1/08	10.62	86.08	7.02	NM	1.66	-75	NS	NS	NS
	7/9/08	NM	86.08	NM	NM	NM	NM	NS	NS	NS
	7/14/08	10.96	85.74	6.63	NM	1.18	-62.7	NS	NS	NS
	7/30/08	10.18	86.52	6.48	NM	2.15	-52.3	NS	NS	NS
	8/12/08	10.60	86.10	6.77	NM	0.90	-63.5	NS	NS	NS
	8/20/08	10.67	86.03	NM	NM	NM	NM	NS	NS	NS
	8/26/08	11.02	85.68	6.71	NM	2.02	-52.2	NS	NS	NS
	9/9/08	10.71	85.99	6.80	NM	0.88	-88.1	NS	NS	NS
	9/22/08	11.17	85.53	6.80	NM	0.81	-74.3	NS	NS	NS
	10/17/08	11.3	85.40	6.91	NM	2.20	-35.8	NS	NS	NS
	10/27/08	10.9	85.80	6.60	NM	1.12	-22.1	NS	NS	NS
	11/11/08	10.59	86.11	6.67	NM	0.75	-51.3	NS	NS	NS
	<b>11/24/08</b>	10.79	85.91	6.81	1,840	0.17	-67.0	<0.100	<1.0	15.4
	11/25/08	10.78	85.92	5.71	NM	3.62	56.1	NS	NS	NS
	12/11/08	10.44	86.26	6.84	NM	2.06	-22.7	NS	NS	NS
	1/6/09	9.62	87.08	6.26	NM	4.00	85.0	NS	NS	NS
	2/3/09	11.01	85.69	6.50	NM	12.28	40.6	NS	NS	NS
	3/19/09	10.89	85.81	6.31	NM	2.09	39.1	NS	NS	NS
	<b>4/9/09</b>	9.77	86.93	6.50	1,390	0.49	-46.2	<0.100	1.98	11.5
	4/23/09	10.39	86.31	6.86	1,499	1.42	44.2	NS	NS	NS
	5/5/09	10.65	86.05	7.05	NM	2.19	9.6	NS	NS	NS
	5/19/09	10.52	86.18	6.88	1,474	1.42	-19.0	NS	NS	NS
	6/11/09	11.00	85.70	6.86	1,354	0.79	-106.9	NS	NS	NS
	6/26/09	11.70	85.00	6.91	1,387	2.04	-16.2	NS	NS	NS
	7/9/09	9.98	86.72	6.83	1,409	0.59	-54.1	NS	NS	NS
	7/22/09	10.28	86.42	6.76	1,411	2.02	-10.1	NS	NS	NS
	8/6/09	9.20	87.50	6.94	1,343	1.41	-76.1	NS	NS	NS
	<b>8/24/09</b>	9.62	87.08	6.83	1,520	0.31	-54.0	<0.100	<1.0	13.7
	9/10/09	10.36	86.34	7.01	1,301	1.12	-36.2	NS	NS	NS
	9/23/09	10.39	86.31	7.00	1,051	7.11	-37.6	NS	NS	NS
	10/6/09	10.75	85.95	6.57	1,293	3.77	80.1	NS	NS	NS
	<b>10/13/09</b>	10.73	85.97	6.99	1,141	3.48	-29.8	<0.100	<1.0	12.4
	10/23/09	10.86	85.84	6.79	1,473	2.69	-54.2	NS	NS	NS
	11/5/09	10.18	86.52	6.83	1,446	1.60	-60.9	NS	NS	NS
	11/17/09	10.39	86.31	6.98	1,206	1.81	-30.0	NS	NS	NS
	12/8/09	10.2	86.50	6.96	1,120	1.49	-50.8	NS	NS	NS
	12/23/09	10.5	86.20	7.10	940	1.10	2.7	NS	NS	NS
	1/8/10	11.63	85.07	6.96	1,030	1.10	-19.2	NS	NS	NS
	1/20/10	10.89	85.81	6.96	1,066	1.66	-35.1	NS	NS	NS
	2/3/10	10.52	86.18	6.10	NM	13.67	-6.0	NS	NS	NS
	2/11/10	10.69	86.01	6.85	1,730	0.21	-82.0	<0.100	<1.0	12.5
	2/18/10	10.96	85.74	7.05	NM	1.84	-24.4	NS	NS	NS
	3/3/10	10.42	86.28	6.20	2,700	3.40	42.4	NS	NS	NS
	3/17/10	9.63	87.07	6.88	1,276	0.70	-66.4	NS	NS	NS
	4/15/10	9.82	86.88	7.02	931	1.86	-9.1	NS	NS	NS
	4/28/10	10.35	86.35	6.86	NM	4.11	30.9	NS	NS	NS
	5/13/10	10.59	86.11	6.75	1,328	4.88	-21.1	NS	NS	NS
	5/27/10	10.83	85.87	7.01	NM	0.97	-50.2	NS	NS	NS
	6/9/10	10.50	86.20	6.52	NM	2.22	-11.1	NS	NS	NS
	6/24/10	11.10	85.60	6.86	NM	0.84	-64.4	NS	NS	NS
	7/9/10	11.44	85.26	6.34	NM	9.29	88.3	NS	NS	NS
	7/20/10	11.48	85.22	7.03	NM	1.41	-209.1	NS	NS	NS
	8/5/10	11.54	85.16	6.77	NM	1.04	-17.9	NS	NS	NS
	8/18/10	11.71	84.99	6.77	NM	4.60	-14.8	NS	NS	NS
	<b>9/9/10</b>	11.92	84.78	7.25	1,780	0.26	-76.0	<0.100	<1.0	10.6
	9/15/10	12.00	84.70	6.89	NM	2.81	-13.5	NS	NS	NS
	9/30/10	12.05	84.65	6.58	NM	3.12	511.7	NS	NS	NS
	10/5/10	11.36	85.34	6.97	1,687	0.50	-83.0	NS	NS	NS
	10/21/10	11.18	85.52	6.81	NM	1.00	-32.6	NS	NS	NS
	11/5/10	11.04	85.66	6.78	NM	9.31	-1.8	NS	NS	NS
	11/19/10	10.90	85.80	6.84	NM	2.01	-45.5	NS	NS	NS
	12/9/10	10.79	85.91	6.45	NM	1.13	-55.7	NS	NS	NS
	12/22/10	11.10	85.60	6.53	1,757	1.45	-79.0	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-12</b>	1/7/11	10.97	85.73	6.46	NM	5.24	-62.6	NS	NS	NS
<b>(continued)</b>	1/19/11	11.30	85.40	6.94	NM	2.47	-98.8	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/3/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	<b>3/28/11</b>	9.43	87.27	7.10	1,528	0.29	-114.1	<0.100	1.50	15.6
	4/7/11	9.53	87.17	7.39	NM	3.98	-87.4	NS	NS	NS
	4/22/11	9.45	87.25	6.96	1,286	2.18	-59.8	NS	NS	NS
	5/7/11	9.53	87.17	7.77	1,332	1.75	-26.1	NS	NS	NS
	6/2/11	10.40	86.30	6.73	1,357	4.92	-42.8	NS	NS	NS
	6/14/11	10.42	86.28	6.88	NM	0.35	-91.0	NS	NS	NS
	7/7/11	10.18	86.52	6.09	NM	1.58	-48.7	NS	NS	NS
	7/25/11	10.79	85.91	6.52	NM	1.66	11.7	NS	NS	NS
	8/15/11	11.14	85.56	6.79	NM	0.54	-82.2	NS	NS	NS
	8/26/11	10.59	86.11	6.57	1,340	0.40	-79.3	NS	NS	NS
	<b>9/14/11</b>	8.55	88.15	6.97	1,510	0.28	-100.1	<0.100	<1.00	20.3
	10/6/11	9.09	87.61	6.95	NM	0.76	-45.3	NS	NS	NS
	10/20/11	9.72	86.98	6.93	NM	1.50	-101.6	NS	NS	NS
	11/3/11	9.88	86.82	6.42	887	1.46	-26.0	NS	NS	NS
	11/17/11	10.12	86.58	6.21	NM	1.54	-6.9	NS	NS	NS
	12/7/11	NM	NM	NM	NM	NM	NM	NS	NS	NS
	12/21/11	9.92	86.78	7.00	1,089	4.92	234.8	NS	NS	NS
	1/4/12	9.92	86.78	7.37	1,419	7.84	126.3	NS	NS	NS
	2/1/12	NM	NM	NM	NM	NM	NM	NS	NS	NS
	2/15/12	10.29	86.41	7.27	1,685	0.75	-46.8	<0.100	<1.00	20.7
	3/1/12	10.60	86.10	7.58	9,232	9.10	350	NS	NS	NS
	3/15/12	10.17	86.53	7.08	1,539	5.03	315.8	NS	NS	NS
	4/5/12	10.68	86.02	6.95	NM	6.42	333.2	NS	NS	NS
	4/19/12	10.98	85.72	7.43	1,619	5.74	338.0	NS	NS	NS
	5/3/12	10.72	85.98	7.61	1,423	1.87	252.5	NS	NS	NS
	5/17/12	10.27	86.43	7.10	1,542	4.41	232.5	NS	NS	NS
	5/31/12	10.50	86.20	6.58	864	6.24	352.5	NS	NS	NS
	6/14/12	10.64	86.06	6.71	162	5.5	408.6	NS	NS	NS
	6/26/12	10.98	85.72	6.90	1,080	0.94	-6.4	NS	NS	NS
	7/3/12	11.13	85.57	7.11	NM	0.71	-90.3	NS	NS	NS
	7/19/12	11.50	85.20	6.82	1,315	2.07	-38.5	NS	NS	NS
	8/1/12	11.50	85.20	6.77	1,709	0.75	-103.5	NS	NS	NS
	<b>8/20/12</b>	11.42	85.28	6.93	1,507	0.23	-92.7	3.54	<1.00	15.90
	8/30/12	11.62	85.08	NM	NM	NM	NM	NS	NS	NS
	9/17/12	11.67	85.03	6.75	1,789	0.17	-43.2	NS	NS	NS
	9/26/12	11.43	85.27	6.31	1,788	0.23	35.6	NS	NS	NS
	10/11/12	11.39	85.31	6.84	1,603	0.30	-35.3	NS	NS	NS
	10/25/12	10.97	85.73	6.76	1,617	0.47	-64.7	NS	NS	NS
	11/1/12	10.82	85.88	6.64	1,625	1.03	-55.3	NS	NS	NS
	11/15/12	11.11	85.59	6.6	1,610	1.07	-70.5	NS	NS	NS
	12/6/12	11.36	85.34	6.32	1,602	0.44	-82.9	NS	NS	NS
	12/20/12	11.07	85.63	6.49	1,488	0.48	-74.5	NS	NS	NS
	1/3/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	1/17/13	10.85	85.85	6.31	1,087	0.67	-41.7	NS	NS	NS
	2/7/13	10.58	86.12	5.77	1,032	0.81	37.3	NS	NS	NS
	<b>2/20/13</b>	10.85	85.85	7.13	830	0.58	4.9	<0.100	8.63	5.57
	3/7/13	10.87	85.83	6.43	906	4.02	77.5	NS	NS	NS
	3/20/13	10.38	86.32	6.51	1,342	5.57	20.6	NS	NS	NS
	4/4/12	10.84	85.86	6.30	1,118	6.31	11.7	NS	NS	NS
	4/12/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	4/18/13	10.15	86.55	6.34	732	6.29	13.2	NS	NS	NS
	4/26/13	10.30	86.40	7.23	713	5.97	-41.0	NS	NS	NS
	5/2/13	10.56	86.14	7.24	652	8.57	-102.5	NS	NS	NS
	5/10/13	10.74	85.96	5.12	602	6.24	19.7	NS	NS	NS
	5/15/13	10.69	86.01	6.65	608	1.97	6.0	NS	NS	NS
	5/23/13	10.64	86.06	6.24	543	9.88	37.9	NS	NS	NS
	6/6/13	10.11	86.59	6.35	580	5.86	35.9	NS	NS	NS
	6/20/13	9.16	87.54	5.99	767	2.87	93.5	NS	NS	NS
	7/3/13	9.87	86.83	6.04	NM	5.54	117.6	NS	NS	NS
	7/11/13	9.69	87.01	5.94	NM	5.10	109.0	NS	NS	NS
	7/18/13	10.33	86.37	5.43	1,096	7.50	96.6	NS	NS	NS
	7/25/13	10.56	86.14	5.56	1,049	5.56	130.2	NS	NS	NS
	8/8/13	10.90	85.80	5.87	892	2.82	100.2	NS	NS	NS
	8/15/13	10.82	85.88	7.07	842	2.78	118.5	NS	NS	NS
	8/21/13	10.91	85.79	7.07	697	0.57	66.3	<0.100	4.01	11.3

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-12</b> (continued)	8/29/13	10.90	85.80	6.90	656	1.28	56.2	NS	NS	NS
	9/5/13	10.64	86.06	7.34	635	2.58	76.6	NS	NS	NS
<b>ECS-13**</b> <b>97.66</b>	<b>1/25/06</b>	NG	NA	NM	NM	NM	NM	NS	NS	NS
	<b>4/10/06</b>	12.20	85.46	6.61	246	0.75	-2.0	NS	NS	NS
	<b>7/20/06</b>	12.53	85.13	3.00	890	0.28	543	NS	NS	NS
	9/15/06	10.45	87.21	7.10	NM	9.28	-40.2	NS	NS	NS
	9/21/06	13.11	84.55	7.76	NM	11.94	244	NS	NS	NS
	10/6/06	12.97	84.69	8.19	NM	4.94	-7.6	NS	NS	NS
	<b>10/10/06</b>	13.01	84.65	6.32	533	0.73	14.2	NS	NS	NS
	10/23/06	12.34	85.32	6.40	NM	1.50	NM	NS	NS	NS
	11/7/06	12.31	85.35	6.25	NM	13.45	109.4	NS	NS	NS
	11/20/06	11.72	85.94	6.74	NM	3.33	16.3	NS	NS	NS
	12/4/06	12.18	85.48	7.42	NM	9.57	180.2	NS	NS	NS
	12/18/06	12.62	85.04	6.40	NM	5.97	-13.7	NS	NS	NS
	1/2/07	12.58	85.08	7.29	NM	6.41	-135.4	NS	NS	NS
	1/15/07	12.04	85.62	7.18	NM	6.27	-173.5	NS	NS	NS
	<b>1/25/07</b>	12.18	85.48	7.59	668	1.46	57.0	NS	NS	NS
	1/29/07	12.34	85.32	7.58	NM	12.82	-84.6	NS	NS	NS
	2/12/07	12.83	84.83	7.41	NM	8.54	-59.4	NS	NS	NS
	2/26/07	NG-S	NA	NM	NM	NM	NM	NS	NS	NS
	3/12/07	NG-S	NA	NM	NM	NM	NM	NS	NS	NS
	3/26/07	12.03	85.63	6.92	NM	14.41	104.5	NS	NS	NS
	4/10/07	11.41	86.25	6.69	NM	13.47	14.6	NS	NS	NS
	<b>4/24/07</b>	10.51	87.15	6.96	685	NA	-41.3	NS	NS	NS
	5/7/07	11.42	86.24	4.75	NM	15.95	125.6	NS	NS	NS
	5/24/07	11.27	86.39	5.06	NM	14.82	132.7	NS	NS	NS
	6/4/07	12.27	85.39	6.18	NM	11.05	21.8	NS	NS	NS
	6/18/07	12.50	85.16	7.31	NM	14.44	48.1	NS	NS	NS
	7/3/07	12.88	84.78	8.22	NM	12.65	73.3	NS	NS	NS
	7/16/07	12.95	84.71	7.81	NM	12.64	88.1	NS	NS	NS
	8/1/07	13.07	84.59	7.34	NM	24.48	110.5	NS	NS	NS
	8/13/07	13.17	84.49	6.97	NM	10.09	-256.6	NS	NS	NS
	8/27/07	13.39	84.27	6.61	NM	10.78	-111.8	NS	NS	NS
	9/10/07	13.45	84.21	7.73	NM	7.28	-83.8	NS	NS	NS
	9/25/07	13.52	84.14	7.72	NM	7.10	-86.7	NS	NS	NS
	<b>10/4/07</b>	13.64	84.02	7.22	937	0.53	-53.0	NS	NS	NS
	10/9/07	13.67	83.99	6.61	NM	3.41	-268.4	NS	NS	NS
	10/22/07	13.38	84.28	7.52	NM	4.81	-46.2	NS	NS	NS
	11/5/07	13.20	84.46	7.13	NM	8.19	-37.1	NS	NS	NS
	11/19/07	12.92	84.74	7.45	NM	4.02	-45.5	NS	NS	NS
	12/3/07	12.87	84.79	7.07	NM	8.12	-102.4	NS	NS	NS
	12/17/07	13.01	84.65	7.19	NM	7.15	-102.5	NS	NS	NS
	1/2/08	12.54	85.12	6.01	NM	5.10	39.8	NS	NS	NS
	1/14/08	12.06	85.60	6.05	NM	5.04	42.3	NS	NS	NS
	1/29/08	12.53	85.13	7.01	NM	8.13	-11.3	NS	NS	NS
	2/11/08	12.34	85.32	NM	NM	NM	NM	NS	NS	NS
	3/7/08	11.19	86.47	7.19	161	8.81	303	NS	NS	NS
	<b>3/11/08</b>	10.80	86.86	7.27	905	3.52	-39	NS	NS	NS
	<b>5/1/08</b>	11.28	86.38	6.44	1,350	1.00	-7	NS	NS	NS
	5/27/08	10.63	87.03	NM	NM	NM	NM	NS	NS	NS
	6/4/08	12.44	85.22	6.28	NM	4.81	49.1	NS	NS	NS
	6/17/08	12.18	85.48	7.08	NM	7.41	33.8	NS	NS	NS
	7/1/08	12.20	85.46	6.61	NM	0.80	25.1	NS	NS	NS
	7/9/08	NM	85.46	NM	NM	NM	NM	NS	NS	NS
7/14/08	12.56	85.10	6.53	NM	2.29	-18	NS	NS	NS	
7/30/08	11.78	85.88	6.75	NM	2.52	47.2	NS	NS	NS	
8/12/08	12.21	85.45	6.69	NM	1.85	-28.3	NS	NS	NS	
8/20/08	11.49	86.17	NM	NM	NM	NM	NS	NS	NS	
8/26/08	12.65	85.01	6.82	NM	0.96	-62.5	NS	NS	NS	
9/9/08	11.99	85.67	6.72	NM	1.37	-42.7	NS	NS	NS	
9/22/08	12.73	84.93	6.69	NM	1.36	-111.7	NS	NS	NS	
10/17/08	12.87	84.79	7.13	NM	1.31	-66.6	NS	NS	NS	
10/27/08	12.51	85.15	6.79	NM	1.20	-28.5	NS	NS	NS	
11/11/08	12.18	85.48	6.84	NM	1.60	-9.1	NS	NS	NS	
<b>11/24/08</b>	12.42	85.24	6.90	890	0.20	-71.0	NS	NS	NS	
11/25/08	12.36	85.30	6.50	NM	3.87	18.6	NS	NS	NS	
12/11/08	12.04	85.62	7.01	NM	3.67	-8.1	NS	NS	NS	
3/19/09	11.47	86.19	7.33	NM	15.94	5.4	NS	NS	NS	
<b>4/9/09</b>	11.53	86.13	5.89	652	0.89	-10.1	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-13 (continued)</b>	4/23/09	11.80	85.86	7.15	226	11.44	125.8	NS	NS	NS
	5/5/09	12.29	85.37	7.11	NM	11.22	156.3	NS	NS	NS
	5/19/09	12.09	85.57	7.03	258	6.59	78.9	NS	NS	NS
	6/11/09	12.66	85.00	6.91	243	5.71	-64.1	NS	NS	NS
	6/26/09	11.44	86.22	7.04	301	5.48	67.8	NS	NS	NS
	7/6/09	11.55	86.11	7.08	242	1.27	96.5	NS	NS	NS
	7/22/09	11.79	85.87	7.06	236	2.84	54.2	NS	NS	NS
	8/6/09	10.84	86.82	7.03	220	1.73	105.1	NS	NS	NS
	<b>8/24/09</b>	11.22	86.44	6.54	1,720	0.34	-48.0	NS	NS	NS
	9/10/09	11.70	85.96	7.24	240	1.04	42.3	NS	NS	NS
	9/23/09	11.21	86.45	7.29	252	4.59	-64.6	NS	NS	NS
	10/6/09	12.20	85.46	6.52	273	1.80	69.9	NS	NS	NS
	10/13/09	12.34	85.32	6.60	1,096	2.90	-4.7	NS	NS	NS
	10/23/09	12.38	85.28	6.50	1,380	2.02	-28.6	NS	NS	NS
	11/5/09	11.82	85.84	6.86	415	2.28	-19.2	NS	NS	NS
	11/17/09	11.96	85.70	6.83	687	1.28	23.6	NS	NS	NS
	12/8/09	11.87	85.79	7.06	487	7.83	-33.1	NS	NS	NS
	2/3/10	12.13	85.53	6.66	NM	11.53	-76.6	NS	NS	NS
	2/11/10	12.34	85.32	6.36	2	0.46	-55.0	NS	NS	NS
	2/18/10	12.55	85.11	7.00	NM	6.99	-12.2	NS	NS	NS
	3/3/10	12.00	85.66	6.47	1,541	3.56	-5.8	NS	NS	NS
	3/17/10	11.23	86.43	7.65	187	7.55	84.4	NS	NS	NS
	4/15/10	11.30	86.36	6.87	254	3.18	-76.7	NS	NS	NS
	4/28/10	11.68	85.98	6.80	NM	3.18	52.2	NS	NS	NS
	5/13/10	12.11	85.55	6.67	276	2.13	52.8	NS	NS	NS
	5/27/10	12.45	85.21	6.56	NM	6.11	-22.9	NS	NS	NS
	6/9/10	12.56	85.10	6.58	NM	1.37	-24.0	NS	NS	NS
	6/24/10	12.63	85.03	6.70	NM	0.34	-31.7	NS	NS	NS
	7/9/10	12.93	84.73	6.23	NM	5.93	76.9	NS	NS	NS
	7/20/10	13.00	84.66	7.17	NM	0.97	-297.9	NS	NS	NS
	8/5/10	13.06	84.60	7.36	NM	3.41	-45.3	NS	NS	NS
	8/18/10	13.21	84.45	6.79	NM	1.50	13.7	NS	NS	NS
	<b>9/9/10</b>	13.47	84.19	7.42	947	0.27	-72.0	NS	NS	NS
	9/15/10	13.67	83.99	6.31	NM	1.50	-16.7	NS	NS	NS
	9/30/10	13.60	84.06	6.99	NM	6.21	200.4	NS	NS	NS
	10/5/10	12.92	84.74	7.21	588	3.24	-49.1	NS	NS	NS
	10/21/10	12.63	85.03	6.89	NM	2.45	-41.5	NS	NS	NS
	11/5/10	12.57	85.09	7.19	NM	11.01	-35.1	NS	NS	NS
	11/19/10	12.40	85.26	6.91	NM	1.40	-46.4	NS	NS	NS
	12/9/10	12.27	85.39	6.57	NM	1.78	-15.0	NS	NS	NS
	12/22/10	12.12	85.54	6.60	634	4.97	15.0	NS	NS	NS
	1/7/11	12.52	85.14	6.66	NM	10.21	-69.8	NS	NS	NS
	1/19/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/3/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	<b>3/28/11</b>	11.00	86.66	7.21	0.795	5.41	-51.7	NS	NS	NS
	4/7/11	11.05	86.61	7.58	NM	10.91	-36.7	NS	NS	NS
	4/22/11	10.99	86.67	7.38	0.752	5.15	-62.4	NS	NS	NS
	5/7/11	11.09	86.57	8.13	1.808	9.27	-5.9	NS	NS	NS
	6/2/11	11.95	85.71	7.23	0.842	7.96	33.4	NS	NS	NS
	6/14/11	11.98	85.68	7.06	NM	1.93	-47.4	NS	NS	NS
7/7/11	11.17	86.49	6.05	NM	6.55	-37.9	NS	NS	NS	
7/25/11	12.34	85.32	7.13	NM	1.25	4.4	NS	NS	NS	
8/15/11	12.70	84.96	7.06	NM	0.67	-46.7	NS	NS	NS	
8/26/11	12.13	85.53	7.31	0.728	1.18	-25.2	NS	NS	NS	
<b>9/14/11</b>	10.10	87.56	7.29	675	0.23	-99.1	NS	NS	NS	
10/6/11	10.65	87.01	7.41	NM	2.18	14.0	NS	NS	NS	
10/20/11	11.26	86.40	7.58	NM	0.59	-89.8	NS	NS	NS	
11/3/11	11.44	86.22	7.46	789	3.55	-36.1	NS	NS	NS	
11/17/11	11.67	85.99	7.43	NM	5.07	52.3	NS	NS	NS	
12/7/11	11.66	86.00	7.49	667	3.35	244.9	NS	NS	NS	
12/21/11	11.50	86.16	7.00	1,089	4.92	234.8	NS	NS	NS	
1/4/12	11.46	86.20	7.86	662	11.42	139.6	NS	NS	NS	
2/1/12	11.47	86.19	7.97	1,574	5.57	209.1	NS	NS	NS	
2/15/12	11.91	85.75	7.65	756	0.82	-75.8	NS	NS	NS	
3/1/12	12.13	85.53	8.03	694	9.34	287.3	NS	NS	NS	
3/15/12	11.72	85.94	7.76	673	6.36	255.0	NS	NS	NS	
4/5/12	12.20	85.46	6.95	NM	8.07	288.0	NS	NS	NS	
4/19/12	12.55	85.11	7.75	132	7.31	304.5	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)	
<b>ECS-13</b> (continued)	5/3/12	12.44	85.22	8.10	701	1.96	195.9	NS	NS	NS	
	5/17/12	11.80	85.86	7.45	710	5.29	212.2	NS	NS	NS	
	5/31/12	12.07	85.59	7.23	715	5.90	284.1	NS	NS	NS	
	6/14/12	12.18	85.48	7.12	718	8.18	372.7	NS	NS	NS	
	6/26/12	12.52	85.14	7.36	670	2.34	-36.8	NS	NS	NS	
	7/3/12	12.70	84.96	7.41	NM	2.04	-18.3	NS	NS	NS	
	7/19/12	13.05	84.61	7.34	643	1.26	-63.7	NS	NS	NS	
	8/1/12	13.07	84.59	7.32	797	10.20	122.1	NS	NS	NS	
	8/20/12	12.95	84.71	7.38	704	0.36	-120.4	NS	NS	NS	
	8/30/12	13.17	84.49	NM	NM	NM	NM	NS	NS	NS	
	9/17/12	13.23	84.43	7.16	805	0.77	-80.1	NS	NS	NS	
	9/26/12	13.00	84.66	6.93	796	1.25	43.7	NS	NS	NS	
	10/11/12	12.95	84.71	7.24	717	1.34	-26.2	NS	NS	NS	
	10/25/12	12.50	85.16	7.10	724	1.59	-39.2	NS	NS	NS	
	11/1/12	12.36	85.30	6.88	718	2.99	-20.2	NS	NS	NS	
	11/15/12	12.66	85.00	6.92	714	3.80	-53.3	NS	NS	NS	
	12/6/12	12.90	84.76	6.63	713	6.43	-55.2	NS	NS	NS	
	12/20/12	12.59	85.07	6.94	718	7.03	-58.7	NS	NS	NS	
	1/3/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
	1/17/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
	2/7/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
	2/20/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
	3/7/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
	3/20/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
	4/4/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
	4/12/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
	4/18/13	11.73	85.93	6.26	908	7.11	42.5	NS	NS	NS	
	4/26/13	11.88	85.78	6.60	862	8.35	-7.6	NS	NS	NS	
	5/2/13	12.15	85.51	8.85	872	7.24	-75.3	NS	NS	NS	
	5/10/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
	5/15/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
	5/23/13	12.20	85.46	6.07	783	6.88	25.0	NS	NS	NS	
	6/6/13	11.68	85.98	6.44	714	5.61	42.8	NS	NS	NS	
	6/20/13	10.75	86.91	5.72	648	2.71	97.2	NS	NS	NS	
	7/3/13	11.34	86.32	6.34	NM	5.19	114.9	NS	NS	NS	
	7/11/13	11.21	86.45	5.99	NM	4.95	101.0	NS	NS	NS	
	7/18/13	11.92	85.74	5.51	587	5.73	83.6	NS	NS	NS	
	7/25/13	12.13	85.53	5.64	588	4.40	134.4	NS	NS	NS	
	8/8/13	12.48	85.18	6.02	581	2.90	100.3	NS	NS	NS	
	8/15/13	12.29	85.37	6.93	47	2.78	118.5	NS	NS	NS	
	8/21/13	12.48	85.18	6.90	805	0.69	93.5	NS	NS	NS	
	8/29/13	12.45	85.21	6.37	75	4.28	83.4	NS	NS	NS	
	9/5/13	12.24	85.42	7.25	68	4.48	88.2	NS	NS	NS	
	<b>ECS-14</b> 96.25	<b>4/10/06</b>	10.00	86.25	6.92	1,310	0.20	4.0	NS	NS	NS
		<b>7/20/06</b>	10.31	85.94	NM	NM	NM	NM	NS	NS	NS
		<b>10/10/06</b>	10.79	85.46	NM	NM	NM	NM	NS	NS	NS
		<b>1/25/07</b>	9.87	86.38	NM	NM	NM	NM	NS	NS	NS
		<b>4/24/07</b>	8.51	87.74	NM	NM	NM	NM	NS	NS	NS
		<b>10/4/07</b>	11.35	84.90	6.90	1,720	1.21	-81	NS	NS	NS
		3/7/08	9.13	87.12	6.83	1,698	0.42	16.6	NS	NS	NS
		11/24/08	10.22	86.03	NM	NM	NM	NM	NS	NS	NS
		9/14/11	8.23	88.02	NM	NM	NM	NM	NS	NS	NS
		2/15/12	9.84	86.41	NM	NM	NM	NM	NS	NS	NS
		8/20/12	11.48	84.77	NM	NM	NM	NM	NS	NS	NS
		2/20/13	10.30	85.95	NM	NM	NM	NM	NS	NS	NS
<b>ECS-15</b> 96.45		<b>4/10/06</b>	10.47	85.98	6.54	1,357	0.97	68.0	NS	NS	NS
	<b>7/20/06</b>	10.72	85.73	NM	NM	NM	NM	NS	NS	NS	
	<b>10/10/06</b>	11.23	85.22	NM	NM	NM	NM	NS	NS	NS	
	<b>1/25/07</b>	10.37	86.08	NM	NM	NM	NM	NS	NS	NS	
	<b>4/24/07</b>	8.93	87.52	NM	NM	NM	NM	NS	NS	NS	
	<b>10/4/07</b>	11.91	84.54	6.24	1,082	0.90	80	NS	NS	NS	
	3/7/08	9.68	86.77	6.61	898	3.06	34.6	NS	NS	NS	
	11/24/08	10.70	85.75	NM	NM	NM	NM	NS	NS	NS	
	9/14/11	8.73	87.72	NM	NM	NM	NM	NS	NS	NS	
	2/15/12	10.50	85.95	NM	NM	NM	NM	NS	NS	NS	
	8/20/12	10.83	85.62	NM	NM	NM	NM	NS	NS	NS	
	2/20/13	11.00	85.45	NM	NM	NM	NM	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>MW-1</b>	<b>3/28/11</b>	10.07	NM	6.91	961	0.27	-91.7	<0.100	26.8	12.4
	8/20/12	12.11	NM	NM	NM	NM	NM	NS	NS	NS
	2/20/12	11.53	NM	NM	NM	NM	NM	NS	NS	NS

**NOTES:** System shut down between 2/11/08 and 5/26/08

ft = feet; SU = standard units; mS/cm = milliSiemens per centimeter; mg/L = milligrams per liter; mV = millivolts.

NG = Not gauged; NS = Not sampled; NA = Not applicable; NM = Not measured. NG-S= Not gauged due to snow.

97.02 = PVC elevations following well repairs on 8/29/05 & 9/1/05. **Bold** date denotes a groundwater sampling event.

\* indicates these wells are sampled for secondary MNA parameters. \*\*Wells ECS-2, ECS-3, ECS-4, ECS-8, ECS-11, ECS-12, and ECS-13 are within O2 remediation zone



TABLE 3  
RESULTS OF ANALYSIS OF GROUNDWATER SAMPLES FOR VPH

O'Connell Oil Associates (Mobil Station)  
730 East Street, Pittsfield, MA  
MassDEP RTN 1-13347

Results reported in milligrams per liter (mg/L) or micrograms per liter (µg/L), as noted

Monitoring Well & Elevation (ft)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft)	C <sub>5</sub> - C <sub>8</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>12</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>10</sub> Aromatics (mg/L)	Benzene (µg/L)	Ethyl-benzene (µg/L)	MtBE (µg/L)	Naphthalene (µg/L)	Toluene (µg/L)	Xylenes (µg/L)	Σ BTEX (µg/L)
MCP Method 1 Standards			GW-2:	3	5	7	2,000	20,000	50,000	1,000	50,000	9,000	NA
			GW-3:	50	50	50	10,000	5,000	50,000	20,000	40,000	5,000	NA
MW-1 97.13	3/28/2011	10.07	87.06	0.984	<0.0250	<0.0250	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/20/2012	12.11	85.02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/20/2013	11.53	85.60	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/21/2013	11.56	85.57	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
ECS-1 97.19 97.02 97.16	11/8/99	11.48	85.71	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	12/19/02	11.60	85.59	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	9/8/05	11.78	85.38	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	1/25/06	8.49	88.67	0.263	<0.025	<0.025	<5.0	<5.0	6.5	<5.0	<5.0	<10	ND
	4/11/06	11.38	85.78	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	7/20/06	11.72	85.44	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	10/10/06	12.21	84.95	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
	1/25/07	11.34	85.82	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	4/24/07	9.89	87.27	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/4/07	12.74	84.42	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	3/11/08	9.82	87.34	<0.075	<0.025	<0.025	<5.0	<5.0	8.5	<5.0	<5.0	<10	ND
	5/1/08	11.50	85.66	<0.075	<0.025	<0.025	<5.0	<5.0	8.5	<5.0	<5.0	<10	ND
	11/24/08	11.61	85.55	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/18/09	11.60	85.56	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/24/09	10.47	86.69	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/11/10	11.60	85.56	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	9/9/10	12.61	84.55	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	3/28/11	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/14/11	9.51	87.65	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/15/12	11.27	85.89	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
8/20/12	12.07	85.09	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND	
2/20/13	11.71	85.45	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND	
8/21/13	11.72	85.44	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND	
*ECS-2 97.76 97.60	11/8/99	12.35	85.41	<1.50	<0.500	5.0	<100	1,600	190	260	670	7,400	9,670
	12/19/02	12.56	85.20	0.501	<0.100	0.54	<20	420	5,700	34	1,000	1,920	3,340
	9/8/05	12.44	85.16	2.35	1.52	3.13	<5.0	463	3,330	92	754	2,396	3,613
	11/1/05	10.65	86.95	2.37	0.44	2.81	<50	366	4,590	<50	425	1,502	2,293
	1/25/06	10.16	87.44	<b>5.23</b>	1.39	4.31	32.2	781	1,970	163	778	3,827	5,418
	4/10/06	12.09	85.51	<b>9.29</b>	3.63	6.64	42.1	1,040	1,590	244	600	5,820	7,502
	7/20/06	12.42	85.18	2.70	2.85	4.53	<100	1,090	31,700	240	670	5,460	7,220
	10/10/06	12.92	84.68	<0.750	0.763	1.82	<50	232	4,860	<50	81.9	951	1,265
	1/25/07	12.06	85.54	0.793	0.533	1.01	<10	139	1,180	29.9	79.1	642	860
	4/24/07	10.39	87.21	1.92	1.12	2.39	<25	479	2,080	81.6	114	2,113	2,706
	10/4/07	13.50	84.10	1.53	0.544	1.19	8.2	247	350	66.7	<50	399	654
	3/11/08	10.38	87.22	0.623	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	5/1/08	11.13	86.47	1.60	<0.025	0.0477	<5.0	<5.0	<5.0	<5.0	<5.0	7.6	7.6
	11/24/08	12.24	85.36	<b>4.81</b>	2.980	3.3	<10.0	232	54.7	87.9	<10.0	3,590	3,822
	2/18/09	12.23	85.37	2.37	1.020	2.98	16.7	101	<10.0	56.7	10.3	1,999	2,127
	8/24/09	11.07	86.53	<b>3.04</b>	2.870	2.28	53.5	243	185.0	112.0	31.9	4,720	5,048
	10/13/09	12.15	85.45	0.74	3.650	1.73	48.9	333	130.0	121.0	36.9	4,990	5,409
	2/11/10	12.76	84.84	0.438	0.828	0.514	<10.0	<10.0	<10.0	12.0	<10.0	69.8	69.8
	9/9/10	13.37	84.23	1.460	2.780	1.520	<20.0	182	36.7	56.8	<20.0	1,056	1,238
	3/28/11	10.88	86.72	2.420	<b>6.310</b>	3.650	21.0	209	<20.0	131	<20.0	2,013	2,243
	9/14/11	10.00	87.60	0.712	0.660	0.757	7.5	30.1	16.4	22.1	31.6	762	831
	9/14/11D	10.00	87.60	0.774	0.592	0.525	<10.0	23.2	15.0	20.9	23.4	579	626
	2/15/12	11.82	85.78	1.210	1.790	1.270	6.0	48.8	25.8	22.6	26.3	432	513
2/15/12D	11.82	85.78	1.950	2.260	1.610	<20.0	58.9	32.8	26.5	37.4	532	628	
8/20/12	12.86	84.74	0.348	0.553	0.670	<5.0	<5.0	<5.0	<5.0	8.5	34.0	42.5	
8/20/12D	12.86	84.74	0.319	0.540	0.632	<10.0	<10.0	<10.0	10.3	11.5	21.8	21.8	
2/20/13	12.29	85.31	0.734	0.473	0.649	<5.0	5.7	20.7	5.7	6.1	44.8	56.6	
2/20/13D	12.29	85.31	0.824	0.473	0.666	<5.0	6.0	20.8	6.1	6.7	45.6	58.3	
8/21/13	12.36	85.24	0.275	0.440	0.574	<5.0	<5.0	<5.0	8.9	7.7	112.2	119.9	
8/21/13D	12.36	85.24	0.266	0.464	0.618	<5.00	5.03	<5.0	9.20	6.48	125.4	136.9	





**TABLE 3  
RESULTS OF ANALYSIS OF GROUNDWATER SAMPLES FOR VPH**

O'Connell Oil Associates (Mobil Station)  
730 East Street, Pittsfield, MA  
MassDEP RTN 1-13347

Results reported in milligrams per liter (mg/L) or micrograms per liter (µg/L), as noted

Monitoring Well & Elevation (ft)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft)	C <sub>5</sub> - C <sub>8</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>12</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>10</sub> Aromatics (mg/L)	Benzene (µg/L)	Ethyl-benzene (µg/L)	MtBE (µg/L)	Naphthalene (µg/L)	Toluene (ug/L)	Xylenes (µg/L)	Σ BTEX (µg/L)
<b>MCP Method 1 Standards</b>			<b>GW-2:</b>	<b>3</b>	<b>5</b>	<b>7</b>	<b>2,000</b>	<b>20,000</b>	<b>50,000</b>	<b>1,000</b>	<b>50,000</b>	<b>9,000</b>	<b>NA</b>
			<b>GW-3:</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>10,000</b>	<b>5,000</b>	<b>50,000</b>	<b>20,000</b>	<b>40,000</b>	<b>5,000</b>	<b>NA</b>
<b>ECS-8</b>	2/13/03	11.63	84.09	3.6	3.7	3.4	<5.0	1,100	40	120	160	4,400	5,660
<b>95.72</b>	9/8/05	10.35	85.08	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
<i>95.43</i>	9/8/05D	NG	NA	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	1/25/06	NG	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	4/11/06	9.98	85.45	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	7/20/06	10.28	85.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/10/06	10.81	84.62	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	4/24/07	8.19	87.24	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/4/07	11.45	83.98	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	3/11/08	NG	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	3/24/08	8.56	86.87	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	5/1/08	9.02	86.41	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	11/24/08	10.12	85.31	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	4/9/09	9.02	86.41	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/24/09	8.98	86.45	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	10/13/09	10.05	85.38	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	9/9/10	11.29	84.14	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	3/28/11	8.80	86.63	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	9/14/11	7.89	87.54	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	2/15/12	9.56	85.87	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	8/30/12	10.77	84.66	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/21/13	9.87	85.56	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
<b>ECS-9</b>	2/13/03	10.82	84.40	0.540	0.240	0.300	<5.0	<5.0	16	<5.0	<5.0	85	85.0
<b>95.22</b>	9/19/05	10.91	84.08	0.652	0.611	1.41	9.6	60.7	831	40.2	6.7	730	807
<i>94.99</i>	1/25/06	8.38	86.61	0.660	0.429	1.11	<10	57.9	1,090	26.6	12.7	568	639
	4/11/06	10.33	84.66	1.73	0.770	1.53	<25	98.3	3,970	47.3	<25	915	1,013.3
	7/20/06	10.72	84.27	0.913	0.970	1.24	<25	51.5	1,980	51.9	<25	626	678
	10/10/06	11.12	83.87	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	1/25/07	10.31	84.68	0.356	0.522	0.949	<10	28.5	1,370	28.8	<10	336	365
	4/24/07	8.57	86.42	<0.075	0.262	0.571	<5.0	12.6	1,540	15.1	5.3	145	163
	10/4/07	11.79	83.20	<0.75	0.399	1.290	<50	<50	4,260	<50	<50	<100	ND
	3/11/08	8.63	86.36	<0.075	0.140	0.400	5.6	<5.0	666	11.6	<5.0	38.7	44.3
	5/1/08	9.47	85.52	<0.075	0.0523	0.0995	<5.0	<5.0	335	5.0	12.7	31.9	44.6
	11/24/08	10.60	84.39	0.377	0.3080	0.3480	<5.0	<5.0	133	8.8	<5.0	52.8	52.8
	2/18/09	10.62	84.37	0.314	0.2110	0.5800	<5.0	<5.0	149	18.5	<5.0	38.5	38.5
	8/24/09	9.33	85.66	<0.075	0.0836	0.0625	<5.0	<5.0	56	<5.0	<5.0	<10.0	ND
	2/11/10	10.49	84.50	<0.075	0.0745	0.0392	<5.0	<5.0	28.5	<5.0	<5.0	<10.0	ND
	9/9/10	11.64	83.35	0.155	0.1300	0.0618	<5.0	<5.0	11.7	<5.0	<5.0	<10.0	ND
	3/28/11	9.28	85.71	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	9/14/11	8.41	86.58	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/15/12	10.23	84.76	<0.075	<0.025	0.0377	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/30/12	11.35	83.64	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/20/13	10.55	84.44	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/21/13	10.66	84.33	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND

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Results reported in milligrams per liter (mg/L) or micrograms per liter (µg/L), as noted

Monitoring Well & Elevation (ft)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft)	C <sub>5</sub> - C <sub>8</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>12</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>10</sub> Aromatics (mg/L)	Benzene (µg/L)	Ethyl-benzene (µg/L)	MtBE (µg/L)	Naphthalene (µg/L)	Toluene (ug/L)	Xylenes (µg/L)	Σ BTEX (µg/L)
MCP Method 1 Standards			GW-2:	3	5	7	2,000	20,000	50,000	1,000	50,000	9,000	NA
			GW-3:	50	50	50	10,000	5,000	50,000	20,000	40,000	5,000	NA
<b>ECS-10</b>	2/13/03	10.11	85.79	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
<b>95.90</b>	9/8/05	9.59	86.16	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
<b>95.75</b>	1/25/06	8.57	87.18	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	4/10/06	9.52	86.23	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	7/20/06	9.42	86.33	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/10/06	9.64	86.11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	4/24/07	8.53	87.22	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/4/07	10.18	85.57	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	3/11/08	5.74	90.01	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	5/1/08	8.87	86.88	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	11/24/08	9.40	86.35	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/18/09	9.62	86.13	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/24/09	8.75	87.00	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/11/10	9.34	86.41	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	9/9/10	9.55	86.20	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	3/28/11	8.70	87.05	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	9/14/11	8.15	87.60	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	2/15/12	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	8/30/12	9.12	86.63	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/21/13	8.83	86.92	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
<b>ECS-11</b>	1/25/06	9.28	87.42	1.08	0.056	0.059	18.0	<10	1,040	12.5	<10	<30	18.0
<b>96.70</b>	4/10/06	10.94	85.76	0.226	<0.025	0.029	<5.0	<5.0	277	<5.0	<5.0	<10.0	ND
	7/20/06	11.31	85.39	0.164	<0.025	0.025	<5.0	<5.0	243	<5.0	<5.0	<10.0	ND
	10/10/06	11.81	84.89	0.261	0.047	0.077	<5.0	<5.0	598	<5.0	<5.0	<10.0	ND
	1/25/07	10.98	85.72	0.133	<0.025	0.041	<5.0	<5.0	359	<5.0	<5.0	<10.0	ND
	4/24/07	9.35	87.35	0.369	<0.025	0.026	5.8	<5.0	628	<5.0	5.1	<10.0	10.9
	10/4/07	12.47	84.23	0.899	0.124	0.072	5	<5.0	207	<5.0	<5.0	<10.0	5.0
	3/11/08	9.36	87.34	0.982	0.029	0.093	14.5	<5.0	387	6.9	<5.0	<10.0	14.5
	5/1/08	10.28	86.42	0.639	0.0685	0.0669	<5.0	<5.0	81.4	13.0	5.7	<10.0	5.7
	11/24/08	11.21	85.49	0.376	0.0384	0.0305	5	<5.0	20.9	<5.0	<5.0	<10.0	5.0
	2/18/09	11.25	85.45	0.497	0.0352	0.0521	6.1	<5.0	24.2	<5.0	5.1	<10.0	11.2
	8/24/09	10.08	86.62	0.34	0.0336	<0.025	6.3	<5.0	53	<5.0	<5.0	<10.0	6.3
	10/13/09	11.20	85.50	0.452	0.0434	<0.025	16.3	<5.0	73.3	<5.0	<5.0	<10.0	16.3
	2/11/10	11.26	85.44	0.335	0.0467	<0.025	8.1	<5.0	90.7	<5.0	<5.0	<10.0	8.1
	9/9/10	12.48	84.22	0.361	0.0547	<0.025	14.9	<5.0	41.3	<5.0	<5.0	<10.0	14.9
	3/28/11	9.94	86.76	0.746	0.0609	0.0273	5.6	<5.0	<5.0	<5.0	<5.0	<10.0	5.6
	9/14/11	9.11	87.59	0.536	0.0329	<0.025	6.3	<5.0	18.5	<5.0	<5.0	<10.0	6.3
	2/15/12	10.89	85.81	0.559	0.0894	0.0357	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/20/12	11.86	84.84	0.275	<0.025	0.0389	5.8	<5.0	33.1	<5.0	<5.0	<10.0	5.8
	2/20/13	11.30	85.40	0.487	0.0713	0.0626	<5.0	<5.0	15.2	6.8	<5.0	<10.0	ND
	8/21/13	11.33	85.37	0.697	0.0774	0.0980	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND

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Results reported in milligrams per liter (mg/L) or micrograms per liter (µg/L), as noted

Monitoring Well & Elevation (ft)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft)	C <sub>5</sub> - C <sub>8</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>12</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>10</sub> Aromatics (mg/L)	Benzene (µg/L)	Ethyl-benzene (µg/L)	MtBE (µg/L)	Naphthalene (µg/L)	Toluene (ug/L)	Xylenes (µg/L)	Σ BTEX (µg/L)
MCP Method 1 Standards			GW-2:	3	5	7	2,000	20,000	50,000	1,000	50,000	9,000	NA
			GW-3:	50	50	50	10,000	5,000	50,000	20,000	40,000	5,000	NA
<b>ECS-12 96.15</b>	1/25/06	8.64	87.51	14.1	6.04	13.6	47.0	1,960	<20	399	54.0	9,690	11,751
	4/10/06	10.60	85.55	5.94	6.69	12.9	<10	86.6	20.9	98.9	37.3	437	560.6
	7/20/06	10.95	85.20	3.38	4.39	6.60	<10	19.9	14.7	53.9	32.4	59	111.3
	10/10/06	11.42	84.73	2.72	3.07	6.17	<10	53.0	32.2	69.3	33.7	270	356.9
	10/10/06D	NA	NA	4.14	3.21	7.13	<10	53.9	45.9	102	70.9	288	412.4
	1/25/07	12.55	83.60	3.22	2.07	3.82	<5.0	29.8	17.1	63.8	50	149.6	229.4
	1/25/07D	12.55	83.60	3.03	2.14	4.10	<25	30	<25.0	64.5	40.3	147	217.3
	4/24/07	8.83	87.32	3.95	1.20	4.31	<10	18.8	<10	74.6	56.2	29.7	104.7
	4/24/07D	8.83	87.32	2.06	1.46	2.88	<5.0	11.7	<5.0	54.5	33.3	17.5	62.5
	10/4/07	12.04	84.11	2.88	1.44	3.44	5.7	12.2	<5.0	54	<5.0	30.3	48.2
	10/4/07D	12.04	84.11	2.21	1.10	2.74	<5.0	10.7	<5.0	46.9	<5.0	29.9	40.6
	3/11/08	NG	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	3/24/08	9.15	87.00	2.20	1.76	1.95	<10	17.1	<10	60	<10	67.9	85.0
	3/24/08D	9.15	87.00	2.39	2.33	2.68	<10	24.5	<10	76	<10	78.7	103.2
	5/1/08	9.71	86.44	2.47	1.58	4.48	<25.0	43.7	<25.0	96.9	<25.0	151.3	195.0
	5/1/08D	9.71	86.44	2.48	1.48	4.48	<25.0	29.4	<25.0	87.4	<25.0	66.5	95.9
	11/24/08	10.79	85.36	1.76	1.61	1.42	<5.0	<5.0	<5.0	65.4	22.9	20.4	43.3
	11/24/08D	10.79	85.36	1.67	1.28	1.12	<5.0	<5.0	<5.0	45	19.9	17.6	37.5
	4/9/09	9.77	86.38	1.55	2.87	2.16	<25	<25	<25	48.2	<25	<50	ND
	4/9/09D	9.77	86.38	1.58	2.88	2.15	<25	<25	<25	49.6	<25	<50	ND
8/24/09	9.62	86.53	1.20	1.55	1.13	<5.0	<5.0	<5.0	39.4	19.8	<10	19.8	
8/24/09D	9.62	86.53	1.19	1.55	1.14	<5.0	11.8	<5.0	46.8	20.3	53.5	85.6	
10/13/09	10.73	85.42	1.19	1.55	0.915	<5.0	<5	<5.0	60.7	20.3	<10.0	20.3	
10/13/09D	10.73	85.42	1.37	1.29	0.605	<10	<10	<10	41.1	24.3	<20	24.3	
2/11/10	10.69	85.46	1.07	1.43	0.818	<5.0	<5.0	20.5	39.9	19.4	<10.0	19.4	
2/11/10D	10.69	85.46	1.01	1.36	0.779	<5.0	<5.0	18	39.8	17.6	<10.0	17.6	
9/9/10	11.92	84.23	0.84	0.969	0.466	<5.0	<5.0	<5.0	25.6	14.7	<10.0	14.7	
9/9/10D	11.92	84.23	1.73	1.41	0.663	<20.0	<20.0	<20.0	37.4	21.3	<40.0	21.3	
3/28/11	9.43	86.72	1.27	1.42	0.739	<5.0	<5.0	<5.0	35.8	<5.0	<10.0	ND	
3/28/11D	9.43	86.72	1.23	1.43	0.746	<5.0	<5.0	<5.0	35.7	<5.0	<10.0	ND	
9/14/11	8.55	87.60	1.46	1.46	1.26	<10.0	<10.0	11.3	32.6	27.2	<20.0	27.2	
2/15/12	10.29	85.86	2.17	2.53	1.74	<20.0	<20.0	<20.0	49.0	33.2	<40.0	33.2	
8/20/12	11.42	84.73	0.793	1.24	1.41	<10.0	<10.0	<10.0	30.5	13.8	<20.0	13.8	
2/20/13	10.85	85.30	0.803	0.546	0.660	<5.0	<5.0	<5.0	20.9	10.6	<10.0	10.6	
8/21/13	10.91	85.24	1.080	0.677	2.270	<10.0	<10.0	<10.0	53.0	20.4	<20.0	20.4	
<b>ECS-13 97.66</b>	1/25/06	NG	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	4/10/06	12.20	85.46	28.9	5.66	11.0	77.8	4,780	342	566	9,600	22,430	36,888
	7/20/06	12.53	85.13	0.727	0.454	0.809	<5.0	223	<5.0	36.5	9.2	753	985
	10/10/06	13.01	84.65	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	1/25/07	12.18	85.48	<0.075	<0.025	<0.025	<5.0	<5.0	36.3	<5.0	<5.0	<10	ND
	4/24/07	10.51	87.15	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	10/4/07	13.64	84.02	0.598	0.434	1.29	<5.0	451	<5.0	33.0	11.1	206.3	668
	3/11/08	10.80	86.86	0.50	0.345	0.704	<5.0	266	<5.0	11.4	<5.0	22.9	289
	5/1/08	11.28	86.38	6.00	2.35	7.54	<50.0	2,470	<50	371	178.0	6,044	8,692
	11/24/08	12.42	85.24	<0.075	0.084	0.0892	<5.0	5.4	<5.0	5.5	<5.0	<10	5.4
	4/9/09	11.53	86.13	0.468	0.215	0.1900	<5.0	6.6	<5.0	18.9	17.6	<10	24.2
	8/24/09	11.22	86.44	8.99	9.15	7.29	<5.0	3,560	52.9	521.0	610	16,570	20,740
	10/13/09	12.34	85.32	3.97	12.0	5.38	<100	889	<100	276.0	<100	5,290	6,179
	2/11/10	12.34	85.32	8.98	11.5	7.33	<50.0	2,550	<50.0	571.0	89.6	14,550	17,190
	9/9/10	13.47	84.19	3.46	2.33	1.21	<50.0	536	<50.0	76.2	<50.0	1,469	2,005
	3/28/11	11.00	86.66	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	9/14/11	10.10	87.56	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
2/15/12	11.91	85.75	0.0906	0.116	0.0648	<5.0	16.8	<5.0	<5.0	<5.0	6.2	23	
8/20/12	12.95	84.71	<0.075	<0.025	0.0364	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND	
8/21/13	12.48	85.18	0.5850	0.585	3.0100	<10.0	260	<10.0	100	11.3	1,515	1,786	

**TABLE 3  
RESULTS OF ANALYSIS OF GROUNDWATER SAMPLES FOR VPH**

O'Connell Oil Associates (Mobil Station)  
730 East Street, Pittsfield, MA  
MassDEP RTN 1-13347

Results reported in milligrams per liter (mg/L) or micrograms per liter (µg/L), as noted

Monitoring Well & Elevation (ft)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft)	C <sub>5</sub> - C <sub>8</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>12</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>10</sub> Aromatics (mg/L)	Benzene (µg/L)	Ethyl-benzene (µg/L)	MtBE (µg/L)	Naphthalene (µg/L)	Toluene (ug/L)	Xylenes (µg/L)	Σ BTEX (µg/L)
<b>MCP Method 1 Standards</b>			GW-2:	<b>3</b>	<b>5</b>	<b>7</b>	<b>2,000</b>	<b>20,000</b>	<b>50,000</b>	<b>1,000</b>	<b>50,000</b>	<b>9,000</b>	<b>NA</b>
			GW-3:	<b>50</b>	<b>50</b>	<b>50</b>	<b>10,000</b>	<b>5,000</b>	<b>50,000</b>	<b>20,000</b>	<b>40,000</b>	<b>5,000</b>	<b>NA</b>
<b>ECS-14</b>	4/10/06	10.00	86.25	1.22	0.278	0.328	<5.0	<5.0	<5.0	15.2	11.7	<15	11.7
<b>96.25</b>	7/20/06	10.31	85.94	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/10/06	10.79	85.46	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	1/25/07	9.87	86.38	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	4/24/07	8.51	87.74	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/4/07	11.35	84.90	2.32	0.710	1.22	7.2	<5.0	<5.0	57.6	5.0	42.8	55.0
	3/11/08	8.80	87.45	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	5/1/08	9.19	87.06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	11/24/08	10.22	86.03	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	9/14/11	8.23	88.02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	2/15/12	9.84	86.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	8/20/12	11.48	84.77	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	2/20/13	10.30	85.95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	8/21/13	10.33	85.92	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
<b>ECS-15</b>	4/10/06	10.47	85.98	0.307	<0.025	0.032	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
<b>96.45</b>	7/20/06	10.72	85.73	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/10/06	11.23	85.22	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	1/25/07	10.37	86.08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	4/24/07	8.93	87.52	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/4/07	11.91	84.54	<0.075	<0.025	<0.025	<5.0	<5.0	52.7	<5.0	<5.0	<10	ND
	3/11/08	9.92	86.53	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	5/1/08	9.76	86.69	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	11/24/08	10.70	85.75	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	9/14/11	8.73	87.72	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	2/15/12	10.50	85.95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	8/20/12	10.83	85.62	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	2/20/13	11.00	85.45	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	8/21/13	11.02	85.43	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA

NOTES: Depth to water in feet from PVC.  
ft = feet.

\*Denotes well where the GW-2 standards apply.

Bolded text indicates value or detection limit exceeds GW-2 standard.

Italicized text indicates value or detection limit exceeds GW-3 standard.

D = Duplicate sample.

Elevation of PVC in feet.

NA = Not applicable/available.

97.02 = PVC elevations following well repairs on 8/29/05 & 9/1/05

**TABLE 4**

**SUMMARY OF EPH GROUNDWATER ANALYTICAL DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

MassDEP EPH Method 5/2004 Rev. 1.1

Results and standards reported in milligrams per liter (mg/L) or micrograms per liter (µg/L), as noted

Monitoring Well & Elevation (Ft)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft)	Naphthalene (µg/L)	2-Methyl Naphthalene (µg/L)	Acenaphthene (µg/L)	Phenanthrene (µg/L)	Fluorene (µg/L)	C <sub>9</sub> - C <sub>18</sub> Aliphatic Hydrocarbons (mg/L)	C <sub>19</sub> -C <sub>36</sub> Aliphatic Hydrocarbons (mg/L)	C <sub>11</sub> -C <sub>22</sub> Aromatic Hydrocarbons (mg/L)
			Method 1 GW-2	1,000	2,000	NA	NA		5	NA	50
			Method 1 GW-3	20,000	20,000	6,000	10,000		50	50	5
			Method 3 UCL	100,000	100,000	50,000	3,000		100	100	100
ECS-2 97.60	9/14/2011 2/15/2012 8/20/2012 8/21/2013	10.00 11.82 12.86 12.36	87.60 85.78 84.74 85.24	10.0 12.2 1.57 4.99	4.60 17.0 2.18 2.15	<1.00 <1.00 <1.00 <1.00	<1.00 <1.00 <1.00 <1.00	<1.00 <1.00 <1.00 <1.00	<0.108 <0.110 <0.112 <0.100	<0.108 <0.110 <0.112 <0.100	0.286 <0.110 <0.112 <0.100
ECS-3 97.76	8/21/2013	12.62	85.14	126	27.2	<1.00	<1.00	<1.00	0.117	<0.100	0.134
ECS-12 96.15	9/14/2011 2/15/2012 8/20/2012 8/21/2013	8.55 10.29 11.42 10.91	87.60 85.86 84.73 85.24	<1.00 <1.00 <1.00 6.47	21.9 49.6 9.27 25.8	<1.00 <1.00 <1.00 <1.00	<1.00 <1.00 <1.00 <1.00	<1.00 1.57 <1.00 <1.00	<0.111 <0.145 <0.111 <0.100	<0.111 <0.145 <0.111 <0.100	0.466 0.237 0.122 0.214





ROS Status Report

September 2013 to March 2014



ROS STATUS REPORT  
SEPTEMBER 2013 TO MARCH 2014  
O'CONNELL MOBIL STATION  
730 EAST STREET  
PITTSFIELD, MASSACHUSETTS  
RTN 1-13347

A large, stylized silhouette of a tree with a thick trunk and a rounded, leafy canopy. The tree is rendered in a dark green color and is positioned in the center of the page. The background behind the tree is a lighter green, and the overall design is minimalist and environmental.

WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

Prepared for:  
O'Connell Oil Associates, Inc.  
545 Merrill Road  
Pittsfield, MA 01201

Project No. J13632.20  
Document No. 42995  
March, 2014

Prepared by:  
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ENVIRONMENTAL COMPLIANCE SERVICES, INC.

588 Silver Street, Agawam, MA 01001 tel 413. 789.3530 fax 413.789.2776 www.ecsconsult.com

Mr. Richard Green  
Massachusetts Department  
of Environmental Protection  
436 Dwight Street  
Springfield, MA 01103

March 31, 2014  
Project No. J13632.20  
Document No. 42995

RE: ROS Status Report  
September 2013 to March 2014  
O'Connell Mobil Station  
730 East Street  
Pittsfield, Massachusetts  
RTN 1-13347

Dear Mr. Green:

On behalf of O'Connell Oil Associates, Inc. (O'Connell), Environmental Compliance Services, Inc. (ECS) has prepared a Remedy Operation Status (ROS) Status Report for 730 East Street in Pittsfield, Massachusetts (the Site). A Site Locus is included as Figure 1. A Site Plan with system features, soil borings, monitoring well locations, and the Disposal Site Area is provided as Figure 2.

The Potentially Responsible Party (PRP) and contact for the Site is:

O'Connell Oil Associates, Inc.  
545 Merrill Road  
Pittsfield, Massachusetts 01201  
Attn: Mr. James Sobon  
Phone: (413) 586-6800

The name and address of the Licensed Site Professional (LSP) of record for this Disposal Site is provided below. The transmittal form submitted in concert with this report is being submitted electronically bearing the signature and stamp of the LSP listed below.

Virginia Irvine, LSP #9687  
Environmental Compliance Services, Inc.  
588 Silver Street  
Agawam, MA 01001  
(413) 789-3530

WHERE BUSINESS AND THE ENVIRONMENT CONVERGE

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## **1.0 SITE DESCRIPTION**

The Site consists of 17,414 square feet of land and includes one building, currently utilized as a gasoline service station and convenience store, located on the southwest corner of the intersection of East and Lyman Streets in Pittsfield, Massachusetts. The Site is completely paved with the exception of a gravel parking area located south of the on-site building (Figure 2). Abutting properties are used for commercial and residential purposes.

Soils encountered during the soil borings performed at the Site consisted of a dark brown to dark tan, fine to medium sand with lesser amounts of silt observed in some borings. Bedrock was not encountered at the Site during the Phase II Comprehensive Site Assessment (Phase II CSA) field activities.

Groundwater is present at the Site at depths ranging from approximately 8 to 13 feet below grade (fbg). Groundwater flow direction fluctuates from south to southwest toward the East Branch of the Housatonic River located approximately 500 feet south of the Site. The average groundwater seepage velocity was determined to be 0.24 feet per day.

The closest surface water is Silver Lake located approximately 250 feet north of the Site.

The Massachusetts Contingency Plan (MCP) soil categories applicable to the Site are S-2 and S-3. Adult's frequency of use on the Site is characterized as high since workers are at the Site for eight or more hours per day on a continuing basis. Children's frequency of use is characterized as low since they are present at the Site only as infrequent visitors. Intensity of use is considered to be low since any Site activities are passive and do not have the potential to disturb soil. The impacted soil is considered to be "potentially accessible" from 0 to 15 feet fbg.

Potential receptors at the Site include: construction workers, which may be involved in future re-working or excavation of the Site; environmental consultants; adults who work at the Site; and/or customers at the convenience store/filling station.

The MCP Method 1 groundwater categories applicable to the Site are GW-2 and GW-3 based on shallow depth to water and discharge to surface water, respectively. GW-1 is not applicable because the Site is not located in a Potential or Current Drinking Water Source Area.

Based upon current use of the Site, the soil standards applicable to the Site are S-2/GW-2, S-2/GW-3, S-3/GW-2, and S-3/GW-3. Since no use restriction has been placed on the property, residential exposure scenarios exists under potential future use, and therefore soil categories S-1/GW-2 and S-1/GW-3 are also applicable to the Site for future use.

Current strategy for remediating soil and groundwater on the southeastern portion of the Site is the operation of a biosparge system and monitoring for monitored natural attenuation (MNA) parameters as a future viable remedial alternative. Current strategy for remediating soil and groundwater on the northwestern portion of the Site is MNA.

## **2.0 SITE HISTORY**

The Site property has been used as a retail gasoline station since at least 1968 and was used as an automobile service station from approximately 1968 through 1986. During an investigation conducted for a previous waste oil underground storage tank (UST) release on the Site (RTN 1-10847), concentrations of volatile petroleum hydrocarbons (VPH) and volatile organic compounds (VOCs) in groundwater collected from wells located upgradient of the former waste oil UST exceeded the applicable reportable concentrations (RCs). The Massachusetts Department of Environmental Protection (MassDEP) assigned RTN 1-13347 to the new reportable condition. ECS submitted a Release Notification Form (RNF) to the MassDEP on March 10, 2000.

Two areas of historic soil and groundwater contamination have been identified at the Site. The first area is on the southeastern side of the Site property in an area which includes historic and current UST systems for the storage of gasoline and diesel fuel and the dispenser island for diesel fuel. The source of contamination in this area is due to unknown historic releases of petroleum from these UST systems or activities related to the dispensing of petroleum products. The second area of soil and groundwater contamination is located on the northwestern side of the Site property where a limited area of contaminated soil has been identified along with limited downgradient groundwater impact. The source of contamination on the northwestern portion of the Site is unknown but may represent releases of petroleum from the previous operation of an automobile service station and gasoline filling station from 1968 to 1986, prior to the purchase of the Site by O'Connell.

Phase I Initial Site Investigation (Phase I) activities were conducted at the Site in 2001. The data collected during the Phase I indicated that a release or releases of gasoline to groundwater had occurred at the Site resulting in concentrations of VPH in groundwater exceeding the RCs. Low levels of extractable petroleum hydrocarbons (EPH), and targeted polyaromatic hydrocarbon (PAH) analytes were detected in the groundwater samples collected from monitoring wells ECS-2, ECS-3, ECS-4, and ECS-5; however, the concentrations detected did not exceed applicable RCGW-2 standards. The source of gasoline constituents in soil and groundwater appears to be the historical gasoline storage area in the eastern portion of the Site and the pump island in the northern portion of the Site. A Tier Classification Submittal was prepared for the Site and submitted concurrent with the Phase I Report. The Site was classified as Tier II.

A Phase II CSA and Phase III Remedial Action Plan (RAP) were completed for the Site by ECS in March 2003. Information obtained during Phase II investigations indicated that there were two potential source areas on the Site: the northwestern corner and the southeastern corner. Soil collected from a depth of 10 to 12 fbg in boring SB-2 on the northwestern corner of the Site property exceeded the S-1 soil standards in combination with GW-2 and GW-3 groundwater categories but not the applicable S-3 soil standards for C<sub>5</sub>-C<sub>8</sub> Aliphatics and C<sub>9</sub>-C<sub>10</sub> Aromatic VPH carbon fractions. Groundwater collected from well ECS-3, located in the southeastern portion of the Site, downgradient of the current gasoline and diesel USTs exceeded both the GW-2 and GW-3 standards for the C<sub>9</sub>-C<sub>10</sub> aromatic VPH carbon fraction. The current USTs, installed in 1984, are believed to be in the location of former USTs, which were installed in 1966 and removed in 1984. The Phase II determined that the average depth to groundwater is less than 15 feet; therefore, groundwater is a potential source of vapors to indoor air. In the past groundwater from monitoring wells located within 30 feet of the building (primarily ECS-2 and ECS-6) have had concentrations of VPH above GW-2 standards. Soil gas samples were collected on February 11, 2003 as

part of the Phase II from locations adjacent to the on-site building beneath paving (SG-1 through SG-4). No concentrations of total volatile organic vapors (TOVs) were detected above the detection limit of the photoionization detector (PID). Based on this data, it appears that it is unlikely that vapors from impacted groundwater will impact the indoor air of the on-site building.

Based on the results of the March 2003 Phase III RAP screening and analysis, the remedial action alternatives selected for the Site were the excavation and replacement of impacted soils (with dewatering if necessary), in conjunction with the implementation of an MNA program for the soil contamination on the northwestern corner of the Site and an MNA program for groundwater on the southeastern portion of the Site downgradient of the former and current diesel and gasoline USTs. A Phase IV Remedy Implementation Plan (RIP) detailing the implementation of the selected remediation alternatives was submitted in March 2004.

Based on groundwater analytical data collected in the fall of 2005, ECS determined that the MNA program detailed in the initial Phase IV RIP would not be sufficient to reduce dissolved-phase petroleum hydrocarbon concentrations in the southeastern portion of the Site, downgradient of the historic and current UST systems. Therefore, ECS submitted Phase III RAP and Phase IV RIP Addendums in August 2006, which presented a comprehensive plan for the implementation of an additional remedial alternative, biosparging for contamination in the southeastern portion of the Site with MNA as a future remedial option. On September 6 and 7, 2006 ECS personnel installed the trench system, laid ¼-inch diameter clear polyethylene tubing from the oxygen sparge wells to the area of the system enclosure, backfilled, compacted, and sealed the trench system, and configured the wellheads and connections. The manifold was installed on September 8, 2006. The biosparge system was activated on September 11, 2006 with all ten oxygen sparge legs in operation. A Phase IV Final Inspection Report and Completion Statement and a Phase IV As-Built Construction Report were submitted in September 2006 to present modifications to the construction of the active remedial system and document that the system had been constructed in accordance with the construction plans and appropriate modifications to such plans. An ROS Opinion was submitted to the MassDEP on March 7, 2007 approximately six months after the biosparging system start-up.

As specified in the March 2004 Phase IV RIP, subsurface investigations were performed in 2005 to delineate the horizontal and vertical extent of soil contamination in the northwestern portion of the Site. A soil-boring event conducted on May 19, 2005 was discussed in the Tier II Permit Extension Request (ECS, February 2006) and in the Phase III RAP Addendum (ECS, August 2006). The soil analytical results indicated that soil contamination is limited to a 12-foot area below the water table at a depth ranging from 10 to 16 fbg. Due to the limited area of contamination and location below the water table, ECS determined through cost-benefit analysis that excavation was not a feasible remedial alternative for soil contamination in the northwestern area of the Site thereby leaving the 2003 Phase III RAP and 2004 Phase IV RIP remedial alternative of MNA as the only remedial strategy for the northwestern area. Evidence that the MNA remedial strategy is effective in the northwest area of the Site was presented within the Revised ROS Opinion (ECS December 2007).

### **3.0 REMEDIAL SYSTEM DESCRIPTION**

The oxygen sparge system was activated on September 11, 2006 with all ten sparge legs in operation. The operation of the sparge wells was modified prior to the February 2009 sampling event in an attempt to concentrate the oxygen to the area of most impact (wells ECS-2 and ECS-3). Based on the fact that VPH

concentrations in groundwater from ECS-13, which is a deeper screened well (16 to 18 feet), were above Method 1 standards during the August sampling event, the system was modified to include AS-6 as a replacement for AS-7 in September 2009. A leak was detected at AS-5 and the sparge point was shut-off following the December 23, 2009 site visit. The sparge point (AS-5) was repaired on June 29, 2010 and put into operation on July 20, 2010. Two additional sparge points, AS-11 and AS-12, were installed in July 2012.

During this reporting period (September 2013 to March 2014), ECS personnel conducted weekly site visits to complete required system operation, monitoring, and maintenance (OMM). OMM events occurred on September 10, September 19, September 25, October 3, October 10, October 17, October 25, October 31, November 6, November 15, November 22, December 5, December 10, December 19, and December 26, 2013 and January 9, January 16, January 22, January 30, February 6, February 12, February 20, and March 6, 2014. System data is included in Table 1. Gauging and geochemical monitoring data associated with Site visits are provided in Table 2. Field notes are provided in Attachment I.

During this reporting period, sparge wells AS-1, AS-2, AS-7, AS-8, AS-9 and AS-10 were closed and sparge wells AS-3, AS-4, AS-5, AS-6, AS-11, and AS-12 were operational. Oxygen flow rates measured to the oxygen sparge wells ranged from 2 standard cubic feet per hour (scfh) to 4 scfh during active sparging. Pressures measured in the oxygen sparge wells ranged from 2.5 pounds per square inch (psi) to 19 psi.

#### **4.0 GROUNDWATER MONITORING PROGRAM AND RESULTS**

As stated in the Phase IV Remedy Implementation Plan (RIP)(March 2004) and as revised in the Phase IV RIP Addendum (August 2006), groundwater monitoring is to be performed on a semiannual basis at select wells to evaluate the effectiveness of the remedial strategy in reducing dissolved-phase petroleum hydrocarbons to levels that pose No Significant Risk. The monitoring plan as written in the 2004 RIP is provided as Table II in Attachment II. The revised sampling program, as recommended in the 2006 RIP Addendum and currently in place, is provided as Table II-A. Groundwater is gauged and sampled for VPH and monitored for natural attenuation (MNA) parameters at select monitoring wells located upgradient, in the vicinity of, and downgradient of the former source areas and existing remedial well network. Samples were collected at ECS-2 and ECS-12 in 2011, 2012, 2013, and 2014 for analysis of Extractable Petroleum Hydrocarbons (EPH) to evaluate whether a spike in the concentrations of VPH observed at ECS-2 in 2011 could be related to the diesel UST at the Site. Groundwater samples were collected at ECS-2 and ECS-12 in February 2014 for EPH analysis.

##### **4.1 Groundwater Monitoring Methodologies**

Sampling Dates:	February 12, 2014
Sample Method:	Low flow sampling
Laboratory Analysis:	VPH and select wells for nitrate, sulfate, and dissolved iron and EPH
Field Measurements:	Temperature, specific conductivity, DO, pH and ORP
Laboratory:	Spectrum Analytical of Agawam, Massachusetts
Sampling points planned:	13
Number of wells gauged:	11

Number of wells sampled:	10
Completeness:	76.9%
Depth to Groundwater:	9.43 feet below grade at ECS-10 to 12.90 feet below grade at ECS-5.
Wells sampled:	ECS-1, ECS-2, ECS-4, ECS-5, ECS-7, ECS-8, ECS-9, ECS-10, ECS-11, and ECS-12
Comments:	Duplicate sample collected at ECS-2.

The sampling logs for the sampling event are included as Attachment III. The Laboratory Certificates of Analysis are included as Attachment IV. A summary of historical groundwater gauging and geochemical values is presented in Table 2. VPH and EPH analytical results are presented in Tables 3 and 4.

#### 4.2 Groundwater Gauging Results

A groundwater contour was not generated since several wells were inaccessible during the February 2014 sampling event. Groundwater elevations calculated from previous gauging data suggest that groundwater flow is predominantly toward the southwest across the Site.

#### 4.3 Groundwater Sampling Results

The VPH and EPH Fractions and Target Analytes in the samples collected on February 12, 2014 were not present at concentrations greater than the Method 1 GW-2 and GW-3 Standards. These data are summarized on Tables 2 and 3.

#### 4.4 Evaluation of Groundwater Results for the Southeastern Plume

The remedial method in the Southeastern Site Area is oxygen sparging with secondary MNA.

##### 4.4.1 VPH Concentrations and Groundwater Elevations

Charts 1 through 3 depict the total VPH Fractions and BTEX concentrations (as general indicators of groundwater quality) and groundwater elevations at ECS-2, ECS-3, and ECS-13 versus time from September 2005 through February 2014. Monitoring wells ECS-3, ECS-6, and ECS-13 were inaccessible during the February 2014 sampling event because they were buried beneath large snowbanks. Since the restart of the system in 2008, the concentrations of VPH fractions and BTEX have exhibited an overall decreasing trend, though concentrations of BTEX at these three wells increased from August 2012 to August 2013, and a slight increase was observed from August 2013 to February 2014 at ECS-2. A correlation analysis of groundwater elevation and Total VPH Fractions concentrations at these three wells since the system was restarted (May 2008) did not indicate a significant correlation between these data (ranging from -0.09 to 0.25).



#### 4.4.2 ASTM Evaluation of Plume Stability in the Biosparge Area

In order to characterize the dissolved contaminant plume, the natural log of concentrations of total VPH carbon fractions versus time was plotted for three wells (ECS-2, ECS-3, and ECS-13) on Chart 4. The linear regression analysis for the best fit line for each well is depicted. A plume will become stable when the rate of gasoline contamination mass removal through natural attenuation equals the mass of gasoline contamination entering the plume. The plume will shrink when the rate of VPH carbon fraction removal through natural attenuation is greater than the mass entering the plume. In all three wells concentrations of VPH in groundwater have remained stable, approaching zero since 2005.

Downgradient wells ECS-7, ECS-8, and ECS-9 were sampled on February 12, 2014. Analysis of the samples did not detect VPH fractions or target analytes at concentration above the reportable detection limits (RDLs). Based upon this information the plume appears to be stable or shrinking, providing primary evidence of attenuation of petroleum hydrocarbons.

#### 4.4.3 Analysis of Oxygen Sparging

The dissolved oxygen concentrations are measured in the wells within the influence of the oxygen sparge system (ECS-2, ECS-3, ECS-12, and ECS-13) during OMM events. Dissolved oxygen concentrations at monitoring wells ECS-4 and ECS-8, located within the contaminant plume and downgradient of the sparge area are also measured to provide data for this downgradient region of the aquifer.

Maximum DO Concentration Measured:	9.15 mg/L (ECS-4)
Minimum DO Concentration Measured:	0.16 mg/L (ECS-13)
Average DO Concentration:	4.37 mg/L

Concentrations of total VPH carbon fractions in groundwater from wells ECS-2, ECS-3, and ECS-13 were plotted against dissolved oxygen as a function of time in Charts 5 through 7, respectively. The trend of the data collected from these wells during groundwater monitoring events from September 2005 through February 2014 generally indicates a very slight inverse correlation between the dissolved oxygen concentration and VPH fractions.

#### 4.4.4 Discussion of Contaminant Plumes

An isopleth map was not generated for the February 2014 data since ECS-3 was inaccessible during the sampling event. Concentrations of VPH and EPH Fractions and Target Analytes did not exceed applicable Method 1 Standards at wells surrounding ECS-3, and since downgradient wells ECS-7, ECS-8 and ECS-9 did not contain VPH fractions or Target Analytes at detectable concentrations. A decreasing trend in the concentrations of VPH Fractions and Target Analytes has been noted over time. These

data provide primary evidence of that natural attenuation of petroleum hydrocarbons in groundwater at the Site.

#### 4.5 Evaluation of Groundwater Results in the Northwestern Plume

The sole remedial method in the northwestern portion of the Site is MNA.

##### 4.5.1 BTEX Concentrations and Groundwater Elevations

Charts 8 and 9 depict the total VPH Fractions and BTEX concentrations (as general indicators of groundwater quality) and groundwater elevations at ECS-5 and ECS-6 versus time from September 2005 through February 2014. ECS-6 was inaccessible during the February 2014 sampling event. The concentrations of BTEX reported in samples collected at wells ECS-5 have remained stable over the past eight reporting periods. The concentrations of VPH Fractions and BTEX have exhibited a slightly increasing trend over the past six sampling events at ECS-6, but the concentrations have been below applicable Method 1 Standards. A correlation analysis of groundwater elevation and Total VPH Fractions concentrations at these wells indicates a moderate positive correlation at ECS-5 (0.55) and insignificant low positive correlation at ECS-6 (0.18). BTEX and groundwater elevation are insignificantly correlative (0.14 and 0.16, respectively).

##### 4.5.2 ASTM Evaluation of Plume Stability in the Northwestern Area of the Site

In order to characterize the dissolved contaminant plume, the natural log of concentrations of total BTEX versus time was plotted for two wells (ECS-5 and ECS-6) on Chart 10. The linear regression analysis for the best fit line for each well is depicted. In both wells concentrations of BTEX in groundwater have approached zero since 2005 with a decreasing trend indicating a stable and shrinking plume.

##### 4.5.3 Discussion of Contaminant Isopleths

Based upon this information and the absence of VPH fractions and target analytes in samples collected at monitoring well ECS-10 and ECS-9 during the most recent sampling event, the plume appears to be shrinking, providing primary evidence of attenuation of petroleum hydrocarbons.

#### 4.6 Evaluation of MNA

##### 4.6.1 General Geochemical Parameters Discussion

Selected monitoring wells at the Site are gauged for depth to groundwater, and geochemical monitoring, including temperature, pH, dissolved oxygen, and oxidation reduction potential, on an approximately weekly schedule, and during regularly scheduled groundwater sampling events, where specific conductivity is also collected. Groundwater samples from selected wells are collected during each sampling event for

geochemical quantitative analysis of dissolved iron, nitrate, and sulfate. Geochemical data is presented in Table 2.

Samples were collected and analyzed for dissolved iron, nitrate, and sulfate from wells ECS-1 (upgradient well), ECS-2 (downgradient), ECS-9 (downgradient), and ECS-12 (upgradient/crossgradient of current USTs) during the February 2014 groundwater sampling event.

#### 4.6.2 Evaluation of MNA in the Biosparge System Area

Dissolved Oxygen:	Ranged from 0.09 mg/L at ECS-11 to 7.224 mg/L at ECS-12
Nitrate:	Not detected at ECS-2 and ECS-12 (<0.100 mg/L); maximum concentration 3.45 mg/L at ECS-1
Dissolved Iron:	Not detected at ECS-1 (<0.0300 mg/L) to 11.3 mg/L at ECS-12
Sulfate:	Ranged from 6.98 mg/L at ECS-12 to 25.4 mg/L at ECS-2

The concentrations of dissolved oxygen are discussed in Section 4.4.3 the discussion of the oxygen sparging system results.

Several wells within the sparge area were inaccessible during this reporting period. The absence of nitrate in groundwater at well ECS-2 and ECS-12 implies that microbial processes involving anaerobic nitrate reducing bacteria may still be occurring in groundwater at this area of the Site. New sparge points (AS-11 and AS-12) were installed in the area of ECS-12 to increase oxygen flow to this region of the aquifer.

Iron reduction is most likely not occurring in the area of ECS-1 due to the absence of petroleum hydrocarbons in this region of the aquifer. Iron-reducing bacteria may be active in the areas of ECS-12. Concentrations of dissolved iron in groundwater samples collected at ECS-2 in February 2014 were slightly lower than those detected in 2012 and 2013, and the concentrations of dissolved iron were slightly higher at ECS-12 in February 2014 compared to 2012 and 2013.

The presence of sulfate concentrations in groundwater at monitoring wells within the sparge network suggests that microbial degradation of petroleum hydrocarbons is not occurring via sulfate-reducing processes.

#### 4.6.3 Evaluation of MNA in the Northwest Plume

Concentrations of dissolved oxygen ranged from 0.98 mg/L at ECS-9 to 1.44 at ECS-10. Samples were not collected for nitrate, sulfate, and dissolved iron during this reporting period.

## 5.0 ADDITIONAL FIELD ACTIVITIES

Soil gas screening with a Photoionization Detector (PID) is conducted at sub-slab soil gas point SG-5, located within the office of the Site building, during regular OMM events. Total Organic Vapors (TOV)

were not detected at levels greater than the PID instrument detection limit of 0.1 parts per million by volume (ppmV).

A subslab soil gas sample was collected at SG-5 on February 12, 2014. The sample was collected in a laboratory provided stainless steel Summa<sup>tm</sup> canister fitted with a 1-hour flow controller. The sample was submitted to Spectrum for analysis of Air Phase Petroleum Hydrocarbons (APH). The results are summarized on Table 5. The concentrations of APH Fractions and Target Analytes reported in the sample collected at SG-5 did not exceed the MassDEP Subslab Screening Levels.

## **6.0 DATA USABILITY AND REPRESENTATIVENESS**

Groundwater samples collected during the February 2014 groundwater sampling event were analyzed for VPH according to the MassDEP Compendium of Analytical Method (CAM) VPH Methods Rev. 1.1. The soil gas sample collected in February 2014 was analyzed by the CAM APH Method. Sampling was performed according to CAM, revisions which were effective July 1, 2010.

Field precision was demonstrated by the use of a field duplicate groundwater sample collected from monitoring well ECS-2 during the February 12, 2014 event and analyzed for VPH. The relative percentage differences (RPDs) for VPH Fractions and Target Analytes for the field duplicates were within the range of  $\pm 30\%$ . The highest concentrations reported for each analyte will be utilized in future risk assessments; concentrations did not exceed Method 1 Standards applicable to the Site. A Trip blank of deionized water accompanied the groundwater samples collected on February 12, 2014 and was submitted to the laboratory for VPH analysis. The analysis did not detect any VPH fractions or Target Analytes at concentrations above the laboratory RDLs.

QAQC information for the groundwater samples collected during this reporting period is provided as Table 6.

Accuracy for VPH analyses was determined by the laboratory use of surrogate recoveries, which were all within the control limits of 70% to 130%. The laboratory did note some nonconformances in the VPH for the laboratory control samples. The nonconformances are not expected to affect the usability of the data. These data are retained for use in this and future reports.

To assure sample representativeness all sampling methods were in accordance with MassDEP and/or USEPA groundwater and soil gas sampling procedures as described in ECS sampling SOPs and documented in sampling field notes. Sampling containers, preservation methods, and holding times met Method requirements. The groundwater samples were submitted to the laboratory on ice. The temperature of the groundwater samples collected on February 12, 2014 as measured immediately upon submittal to the laboratory was 2.2°C, within the USEPA recommended temperature range of  $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ .

Groundwater samples were collected from select monitoring wells based on the planned sampling program submitted in the Phase IV RIP. These data are therefore considered sufficient to characterize groundwater quality at the Site. A detailed history of seasonal groundwater concentrations at the Site has been compiled.

The completeness of the February 2014 groundwater sampling event was 76.9%. This does not meet the DQO of 80% for all samples. A supplemental sampling event is scheduled to occur in April 2014 to collect samples at ECS-3, ECS-6, and ECS-13.

A review of the precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS) indicates that the data collected during this reporting period are of suitable quality to support the conclusions of this report and future reports.

## **7.0 WASTE MANAGEMENT**

No waste material was generated during this reporting period.

## **8.0 PUBLIC INVOLVEMENT**

Notices of Environmental Sampling, as required by 310 CMR 40.1403(10), were sent to the owners of properties where groundwater sampling is routinely performed. The property owners were provided with the analytical results, a summary table of the analytical data, and a copy of the Disposal Site Map. Proof of this notification is provided as Attachment V.

## **9.0 ROS PERFORMANCE STANDARD**

The following conditions have been achieved to maintain the Performance Standard for Remedy Operation Status:

- A Phase IV RIP detailing the selected remedial action alternatives for the Site was submitted to the MassDEP in March 2004. At the time the Phase IV was submitted, excavation and replacement of impacted soil (with dewatering, if necessary), in conjunction with the implementation of a MNA program, for the soil contamination on the northwestern corner of the Site and an MNA program for groundwater on the southeastern portion of the Site, downgradient of the former and current diesel and gasoline USTs, were the selected alternatives. Based on the groundwater analytical data collected in the fall of 2005, ECS determined that the MNA program detailed in the initial Phase IV RIP would not be sufficient to reduce dissolved-phase petroleum hydrocarbon concentrations in the southeastern portion of the Site. Therefore, ECS submitted Phase III RAP and Phase IV RIP Addendums in August 2006, which presented a comprehensive plan for the implementation of a biosparging system for contamination in the southeastern portion of the Site, with MNA as a future option. The system construction was detailed in the Phase IV Completion, As-Built, and Final Inspection Reports submitted to the DEP in September 2006. An ROS opinion was submitted on March 7, 2007. As specified in the March 2004 Phase IV RIP, subsurface investigations were performed in 2005 to delineate the horizontal and vertical extent of soil contamination in the northwestern portion of the Site. The soil analytical results indicated that soil contamination is limited to a 12-foot area below the water table at a depth ranging from 10 to 16 fbg. Due to the limited area of contamination and location below the water table, ECS determined through cost-benefit analysis that excavation was not a feasible remedial alternative for soil contamination in the northwestern area of the Site thereby leaving the 2003 Phase III RAP and 2004 Phase IV RIP remedial alternative of MNA as the only remedial strategy for the northwestern area. Evidence that the MNA remedial strategy is effective in the northwest area of the Site was first presented within the Revised ROS Opinion (ECS December 2007) and subsequent ROS Status reports;

- The biosparge remedial system and monitoring program have been designed in accordance with 310 CMR 40.0893(2)(b) in order to achieve a Permanent Solution. Data for the February 2014 sampling event supports the conclusion that the plumes on-site are stable and/or shrinking, and that natural attenuation processes are occurring on the Site that are reducing the concentrations of petroleum hydrocarbons in groundwater over time. ;
- The source(s) of oil and hazardous materials (OHM) have been eliminated and/or controlled in accordance with 310 CMR 40.0893(2)(d). Two areas of historic soil and groundwater contamination have been identified at the Site.
  - The first area is on the southeastern side of the Site property in an area, which includes historic and current UST systems for the storage of gasoline and diesel fuel and the dispenser island for diesel fuel. The source of contamination in this area is due to unknown historic releases of petroleum from these UST systems or activities related to the dispensing of petroleum products. The operation of a biosparge system on the southeastern portion of the Site decreases concentrations of dissolved contaminants in groundwater as documented in Table 3. Data collected from 2011 to 2014 related to EPH concentrations in groundwater at the Site does not suggest that the diesel UST or dispenser are continuing sources at the Site. Concentrations of dissolved contaminants increase when the biosparge system is not operating. The collection of samples at ECS-2, ECS-3, and ECS-12 for analysis of EPH will occur annually until a Permanent Solution is achieved at the Site. The groundwater sampling program Table II-A has been amended accordingly.
  - The second area of soil and groundwater contamination is located on the northwestern side of the Site property where a limited area of contaminated soil has been identified along with limited downgradient groundwater impact. The source of the contamination on the northwestern portion of the Site is unknown but may represent releases of petroleum from the previous operation of an automobile service and gasoline filling station from 1966 to 1986. The implementation of MNA on the northwestern portion of the Site has produced data showing that the dissolved contaminant plume is stable and that biodecay is occurring.
- There are no Substantial Hazards at the Site: light non-aqueous phase liquid (LNAPL) has never been detected in any monitoring wells; sub-slab soil gas samples did not contain APH Fractions or Target Analytes at concentrations above the MassDEP sub-slab screening levels for commercial/industrial properties; and, dissolved-phase concentrations of VPH and EPH constituents are below Upper Concentration Limits;
- Continued generally decreasing trends observed in on- and off-Site wells located in, adjacent and downgradient of the source area is indicative of the success and appropriateness of the current remediation strategy and supports the validity of the Site's current ROS designation;
- In accordance with 310 CMR 40.0893(2)(c) the remedial system and monitoring program are being operated and maintained in accordance with the design criteria found in the 2006 Phase IV RIP Addendum Operation, Maintenance, and Monitoring Plan;

- The following operation and maintenance activities will be conducted until a Permanent Solution has been achieved, as detailed in the Final Inspection Report (ECS, September 2006) and modified in subsequent reports:
  - Sparging has been adjusted to focus on the regions of the aquifer near ECS-2 and ECS-12;
  - Soil gas sampling will occur if groundwater samples collected at wells within 30 feet of the Site contain VPH or EPH at concentrations greater than the Method 1 GW-2 Standards;
  - The more closely scheduled Site visits that were proposed in previous ROS Status report resulted in more consistent oxygen sparging during this reporting period. Some alterations to the flow rate and wells at which sparging is occurring will be made to focus sparging in the region of ECS-3 and ECS-12, where highest concentrations of VPH fractions were reporting during this reporting period;
  - The biosparging system will continue to be monitored at least weekly to optimize system performance. A planned shutdown of the system may occur in order to conduct rebound monitoring;
  - Groundwater gauging and geochemical monitoring will be conducted during OMM visits; and
  - Groundwater samples will be collected on a semiannual basis. A supplemental groundwater sampling event will occur in April 2014. The next full groundwater sampling event is scheduled to occur in August 2014.
- ECS will submit operation, maintenance, and monitoring reports on a semi-annual basis as described in 310 CMR 40.0893 to maintain ROS. The next status report will be submitted on or before September 28, 2014.

Project No. J13632.20/ Document No. 42995  
Mr. Richard Green  
MassDEP  
March 31, 2014

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If there are any questions regarding this submittal, please contact the undersigned at (413) 789-3530.

Sincerely,  
ENVIRONMENTAL COMPLIANCE SERVICES, INC.



Lori A. McCarthy  
*Project Manager*



Virginia A. Irvine, PG, LSP  
*Senior Hydrogeologist*

LAM/VAI/kab  
Attachments



## **FIGURES**

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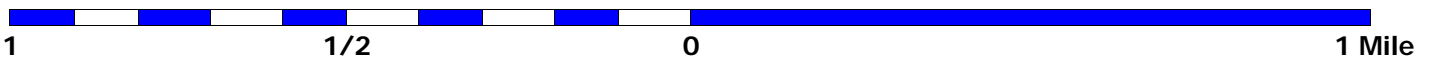
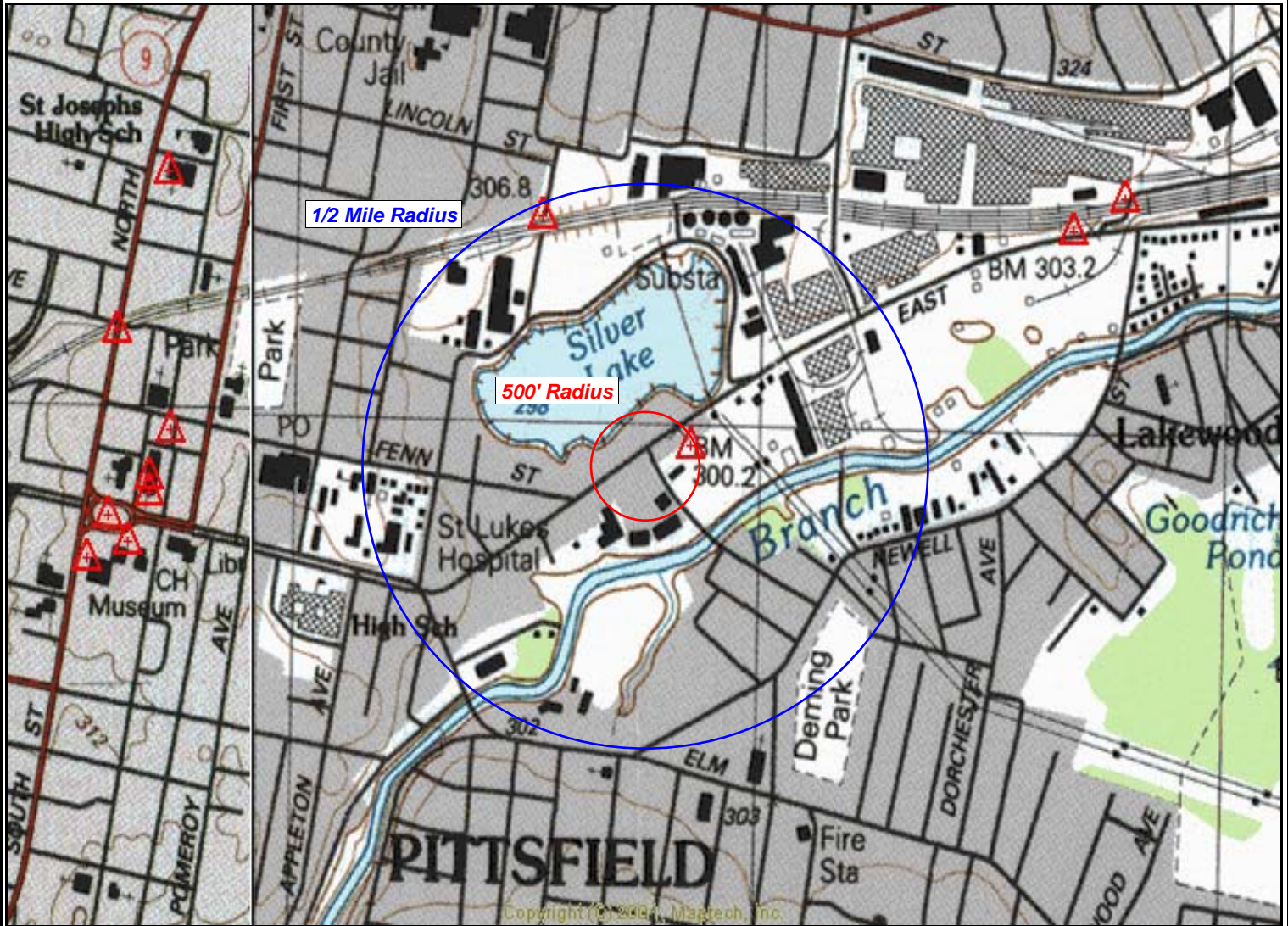
Environmental Compliance Services, Inc.  
 588 Silver Street, Agawam, MA 01001  
 Phone (413)-789-3530 Fax (413)-789-2776  
 www.ecsconsult.com

# SITE LOCUS

Figure: 1

**O'Connell Mobil**  
 730 East Street  
 Pittsfield, MA  
 01201

Job Number J13632.20



1 inch = 1500 feet

Contour Interval: 6 Meters

North

Base Map: U.S. Geological Survey; Quadrangle Location: Pittsfield East

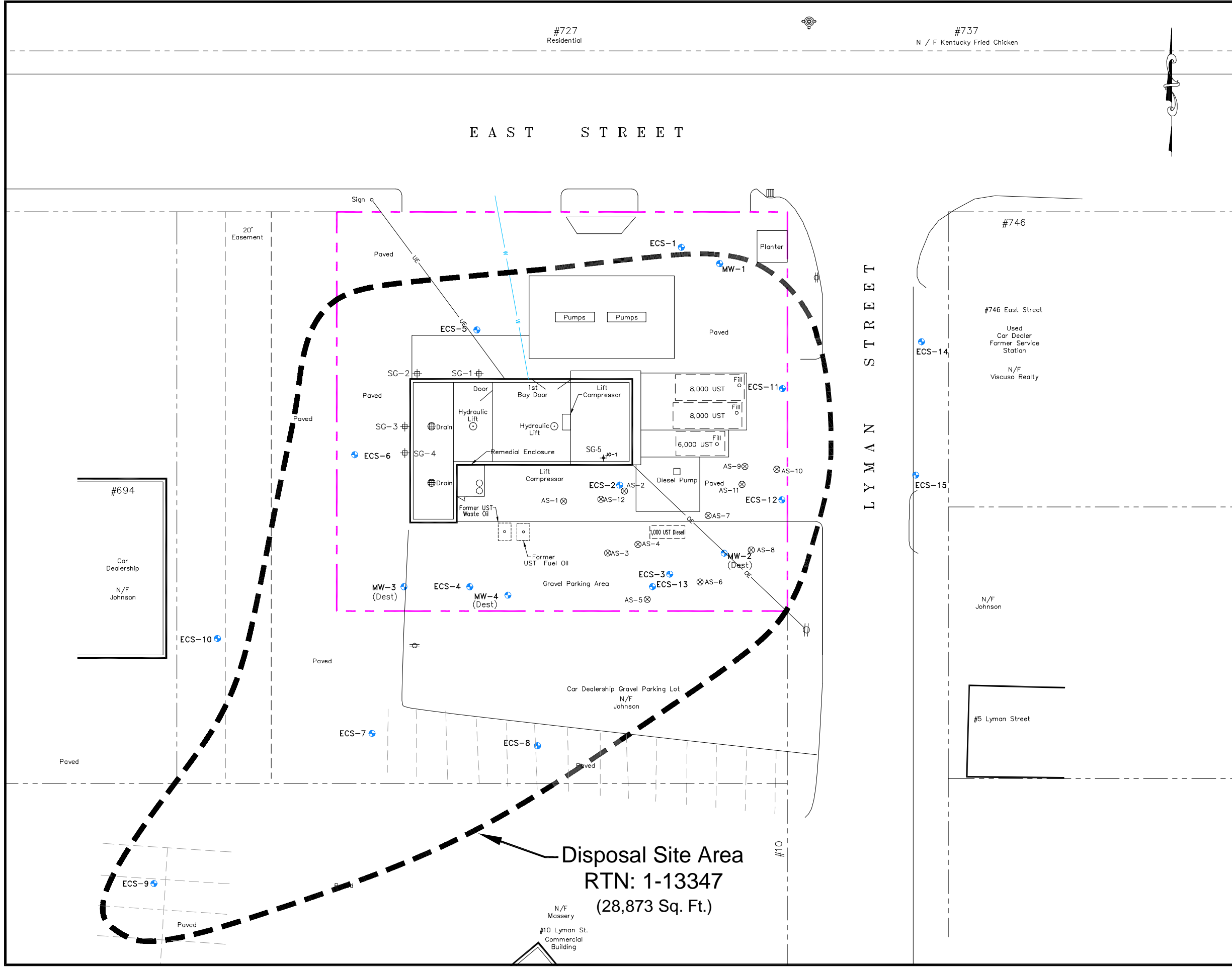
UTM Coordinates: 18 0644791 East / 47 01149 North



Map Edited: 1988

Map Revised: NA

Generated By: JBS



- ### Legend
- Approximate Property Line
  - SS Sanitary Sewer Line
  - SW Storm Sewer Line
  - W Water Line
  - NG Natural Gas Line
  - OE Overhead Electric Line
  - Manhole
  - Catchbasin
  - Water Gate
  - Fire Hydrant
  - Utility Pole
  - Soil Boring
  - Soil Gas Point
  - Monitoring Well
  - Air Sparge Well
  - Proposed Soil Boring
- ECS-1 Well I.D.

**General Notes:**  
 All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.  
 Reference Plans BMDRD Plat E192 (Massery)

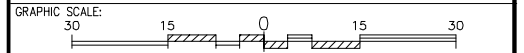


588 Silver Street • Agawam, MA 01001  
 Phone: 1-800-789-3530 Fax: 413-789-2776  
 www.ecsconsult.com

PROJECT: **O'Connell Mobil Station**  
 730 East Street—Route 9  
 Pittsfield, Massachusetts

TITLE: **Site Plan with Disposal Site Area**

CLIENT: **O'Connell Oil Associates, Inc.**



CADFILE: F:\Data\Projects\13632\DWG\st13632r.dwg  
 SAVED BY: RSTAR000

DRAWN BY:	DESIGNED BY:	CHECKED BY:	APPROVED BY:
RAS	LM	LM	VAI
SCALE:	DATE:	JOB NO.:	FIGURE NO.:
1" = 30'	9/25/13	13632	2

## **TABLES**

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**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-1*</b> <b>97.19</b> 97.02	<b>11/8/99</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
	<b>12/19/02</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
	<b>9/8/05</b>	11.78	85.24	5.06	750	4.91	549	4.48	26.2	0.015
	<b>1/25/06</b>	8.49	88.53	7.31	108	2.71	68.0	2.16	23.4	3.90
	<b>4/11/06</b>	11.38	85.64	7.04	926	4.00	10.0	4.45	27.6	<0.01
	<b>7/20/06</b>	11.72	85.30	4.78	814	2.98	590	3.85	27.5	<0.01
	<b>10/10/06</b>	12.21	84.81	NA	NA	NA	NA	NS	NS	NS
	<b>1/25/07</b>	11.34	85.68	7.65	620	4.87	33.0	3.70	25.9	<0.01
	<b>2/26/07</b>	11.29	85.73	7.82	NM	2.67	182.6	NS	NS	NS
	<b>4/24/07</b>	9.89	87.13	NA	NA	NA	NA	NS	NS	NS
	<b>10/4/07</b>	12.74	84.28	7.45	743	4.49	88	3.81	27.3	<0.0300
	<b>3/11/08</b>	9.82	87.20	7.37	708	4.06	160	3.35	25.9	<0.0300
	<b>5/1/08</b>	11.5	85.52	7.56	822	5.37	33	3.79	27.8	<0.0300
	<b>11/24/08</b>	11.61	85.41	7.51	836	1.93	-10	3.73	25.5	<0.0300
	<b>2/18/09</b>	11.6	85.42	7.51	841	4.19	69	3.64	26.9	<0.0300
	<b>8/24/09</b>	10.47	86.55	7.41	807	5.09	86	3.77	29.8	<0.0300
	<b>2/11/10</b>	11.6	85.42	7.49	830	4.01	-10	3.42	27.7	<0.0300
	<b>9/9/10</b>	12.61	84.41	7.66	757	0.63	212	3.38	27.0	<0.0300
	<b>3/28/11</b>	NA	NA	NA	NA	NA	NA	NA	NA	NA
	<b>9/14/11</b>	9.51	87.51	7.60	688	4.07	-18.2	3.30	29.8	0.0523
<b>2/15/12</b>	11.27	85.75	7.85	727	4.97	-30.2	3.23	25.1	<0.0300	
<b>8/20/12</b>	12.07	84.95	7.46	665	3.64	-12.3	10.3	33.6	<0.0300	
<b>2/20/12</b>	11.71	85.31	7.43	723	4.59	14.7	3.4	29.6	<0.0300	
<b>8/21/13</b>	11.72	85.30	7.30	705	4.86	93.8	3.5	27.1	<0.0300	
<b>2/12/14</b>	12.00	85.02	7.69	866	6.34	-61.7	3.5	24.1	<0.0300	
<b>ECS-2**</b> <b>97.76</b> 97.60	<b>11/8/99</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
	<b>12/19/02</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
	<b>9/8/05</b>	12.44	85.16	5.94	975	0.48	-9.5	NS	NS	NS
	<b>11/1/05</b>	10.65	86.95	6.89	1410	0.87	-65.9	NS	NS	NS
	<b>1/25/06</b>	10.16	87.44	6.84	781	1.52	-93.0	NS	NS	NS
	<b>4/10/06</b>	12.09	85.51	6.70	1,118	0.62	10.0	NS	NS	NS
	<b>7/20/06</b>	12.42	85.18	3.40	1,601	0.29	572	NS	NS	NS
	9/15/06	13.44	84.16	6.99	NM	3.88	-36.8	NS	NS	NS
	9/21/06	13.00	84.60	6.97	NM	11.68	237	NS	NS	NS
	10/6/06	12.84	84.76	6.97	NM	2.27	60.3	NS	NS	NS
	<b>10/10/06</b>	12.92	84.68	NM	805	0.63	28.0	NS	NS	NS
	10/23/06	12.25	85.35	6.28	NM	0.80	NM	NS	NS	NS
	11/7/06	12.21	85.39	6.67	NM	8.83	-60.8	NS	NS	NS
	11/20/06	11.58	86.02	7.12	NM	8.94	161.7	NS	NS	NS
	12/4/06	12.06	85.54	7.19	NM	9.96	228.8	NS	NS	NS
	12/18/06	12.54	85.06	6.20	NM	9.40	10.9	NS	NS	NS
	1/2/07	12.44	85.16	7.34	NM	8.68	-122.3	NS	NS	NS
	1/15/07	11.94	85.66	7.41	NM	8.76	-133.6	NS	NS	NS
	<b>1/25/07</b>	12.06	85.54	7.10	838	1.84	6.0	NS	NS	NS
	1/29/07	12.21	85.39	7.07	NM	12.24	-98.9	NS	NS	NS
	2/12/07	12.74	84.86	7.34	NM	11.84	-6.2	NS	NS	NS
	2/26/07	12.01	85.59	7.28	NM	6.63	252.3	NS	NS	NS
	3/12/07	12.92	84.68	6.68	NM	14.60	32.2	NS	NS	NS
	3/26/07	11.91	85.69	6.67	NM	11.34	-66.9	NS	NS	NS
	4/10/07	11.26	86.34	7.09	NM	5.75	-1.8	NS	NS	NS
	<b>4/24/07</b>	10.39	87.21	4.94	1,015	0.60	-27.6	NS	NS	NS
	5/7/07	11.27	86.33	5.66	NM	11.98	32.9	NS	NS	NS
	5/24/07	11.02	86.58	5.82	NM	10.45	45.7	NS	NS	NS
	6/4/07	12.13	85.47	5.52	NM	*24.65	-8.6	NS	NS	NS
	6/18/07	12.38	85.22	6.48	NM	15.23	-67.2	NS	NS	NS
	7/3/07	12.52	85.08	7.60	NM	15.09	37.0	NS	NS	NS
	7/16/07	12.81	84.79	7.25	NM	15.37	58.0	NS	NS	NS
	8/1/07	12.95	84.65	6.61	NM	14.28	-57.4	NS	NS	NS
	8/13/07	13.01	84.59	5.22	NM	15.20	-265.0	NS	NS	NS
	8/27/07	13.23	84.37	6.48	NM	19.17	-92.2	NS	NS	NS
9/10/07	13.32	84.28	7.72	NM	12.07	-61.6	NS	NS	NS	
9/25/07	13.39	84.21	7.69	NM	7.23	-73.5	NS	NS	NS	
<b>10/4/07</b>	13.50	84.10	6.55	1436	1.34	-73.0	NS	NS	NS	
10/9/07	13.54	84.06	6.07	NM	1.97	-308.7	NS	NS	NS	
10/22/07	13.29	84.31	6.81	NM	5.91	-51.9	NS	NS	NS	
11/5/07	13.13	84.47	7.41	NM	9.97	-24.2	NS	NS	NS	
11/19/07	12.84	84.76	6.71	NM	4.31	-50.1	NS	NS	NS	
12/3/07	13.83	83.77	7.06	NM	9.75	-199.7	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-2</b>	12/17/07	12.94	84.66	7.06	NM	8.15	-111.5	NS	NS	NS
<b>(continued)</b>	1/2/08	12.42	85.18	6.46	NM	6.47	-139.1	NS	NS	NS
	1/14/08	12.03	85.57	6.41	NM	7.01	-130.4	NS	NS	NS
	1/29/08	12.41	85.19	6.36	NM	9.21	61.5	NS	NS	NS
	2/11/08	12.23	85.37	NM	NM	NM	NS	NS	NS	NS
	3/7/08	11.06	86.54	6.36	227	0.60	129.6	NS	NS	NS
	<b>3/11/08</b>	10.38	87.22	6.47	245	4.21	61	NS	NS	NS
	<b>5/1/08</b>	11.13	86.47	6.29	194	0.74	38	NS	NS	NS
	5/27/08	10.95	86.65	NM	NM	NM	NS	NS	NS	NS
	6/4/08	12.28	85.32	5.21	NM	11.40	44.4	NS	NS	NS
	6/17/08	12.08	85.52	6.27	NM	4.56	143.6	NS	NS	NS
	7/1/08	12.02	85.58	6.59	NM	8.22	60.3	NS	NS	NS
	7/9/08	NM	85.58	NM	NM	NM	NS	NS	NS	NS
	7/14/08	12.43	85.17	6.60	NM	0.88	-82.9	NS	NS	NS
	7/30/08	11.62	85.98	6.54	NM	9.87	61.7	NS	NS	NS
	8/12/08	12.05	85.55	6.39	NM	1.80	5.4	NS	NS	NS
	8/20/08	11.68	85.92	NM	NM	NM	NS	NS	NS	NS
	8/26/08	12.48	85.12	6.43	NM	1.74	-18	NS	NS	NS
	9/9/08	11.56	86.04	6.25	NM	1.42	23.8	NS	NS	NS
	9/22/08	12.60	85.00	6.34	NM	2.02	-95.4	NS	NS	NS
	10/17/08	12.71	84.89	6.32	NM	1.70	43.0	NS	NS	NS
	10/27/08	12.35	85.25	6.13	NM	0.74	42.8	NS	NS	NS
	11/11/08	12.00	85.60	6.27	NM	2.32	19.8	NS	NS	NS
	<b>11/24/08</b>	12.24	85.36	6.20	312	0.33	14.0	NS	NS	NS
	11/25/08	12.18	85.42	6.25	NM	3.14	76.1	NS	NS	NS
	12/11/08	11.85	85.75	6.65	NM	0.60	-42.1	NS	NS	NS
	12/23/08	11.18	86.42	6.50	NM	6.67	6.7	NS	NS	NS
	1/6/09	11.09	86.51	6.61	NM	4.43	94.1	NS	NS	NS
	1/23/09	11.82	85.78	5.60	NM	26.36	113.1	NS	NS	NS
	2/3/09	12.15	85.45	6.16	NM	9.11	151.6	NS	NS	NS
	2/18/09	12.23	85.37	6.54	239	2.91	143.0	NS	NS	NS
	2/24/09	12.30	85.30	6.18	NM	18.36	122.0	NS	NS	NS
	3/4/09	12.18	85.42	6.14	NM	22.40	237.7	NS	NS	NS
	3/19/09	11.28	86.32	6.97	NM	19.11	15.0	NS	NS	NS
	4/9/09	11.30	86.30	5.86	NM	21.72	181.6	NS	NS	NS
	4/23/09	11.69	85.91	6.57	NM	7.45	75.0	NS	NS	NS
	5/5/09	12.10	85.50	6.12	NM	9.21	64.9	NS	NS	NS
	5/19/09	11.92	85.68	6.03	NM	1.31	123.0	NS	NS	NS
	6/11/09	12.50	85.10	6.15	660	1.06	-102.9	NS	NS	NS
	6/26/09	11.23	86.37	6.10	1210	1.09	110.3	NS	NS	NS
	7/6/09	11.45	86.15	5.98	467	3.30	78.6	NS	NS	NS
	7/22/09	11.70	85.90	6.73	1459	3.86	-18.9	NS	NS	NS
	8/6/09	10.68	86.92	6.49	164	11.46	43.5	NS	NS	NS
	<b>8/24/09</b>	11.07	86.53	6.11	850	9.61	51.0	NS	NS	NS
	9/10/09	11.60	86.00	6.38	770	3.08	119.6	NS	NS	NS
	9/23/09	12.00	85.60	6.50	909	5.51	-48.0	NS	NS	NS
	10/6/09	12.13	85.47	6.19	228	6.90	130.6	NS	NS	NS
	10/13/09	12.15	85.45	6.65	577	4.65	25.0	NS	NS	NS
	10/23/09	12.31	85.29	6.45	207	16.27	86.4	NS	NS	NS
	11/5/09	11.62	85.98	6.57	318	6.26	54.1	NS	NS	NS
	11/17/09	11.80	85.80	6.96	214	9.52	30.9	NS	NS	NS
	12/8/09	11.76	85.84	6.80	218	10.24	16.7	NS	NS	NS
	12/23/09	11.96	85.64	7.01	159	6.29	-6.9	NS	NS	NS
	1/8/10	12.12	85.48	6.60	166	8.85	74.8	NS	NS	NS
	1/20/10	12.23	85.37	7.01	259	10.48	54.0	NS	NS	NS
	2/3/10	11.93	85.67	6.75	NM	27.64	199.3	NS	NS	NS
	2/11/10	12.76	84.84	5.94	204	9.19	94.0	NS	NS	NS
	2/18/10	12.38	85.22	6.75	NM	9.44	25.0	NS	NS	NS
	3/3/10	11.83	85.77	6.90	244	5.62	59.0	NS	NS	NS
	3/17/10	11.07	86.53	6.81	664	4.28	47.5	NS	NS	NS
	4/15/10	11.29	86.31	6.49	985	8.12	65.7	NS	NS	NS
	4/28/10	11.80	85.80	6.68	NM	2.40	118.0	NS	NS	NS
	5/13/10	12.03	85.57	6.94	1,696	4.60	-83.1	NS	NS	NS
	5/27/10	12.30	85.30	6.51	NM	9.09	77.5	NS	NS	NS
	6/9/10	12.47	85.13	6.66	NM	1.18	-72.3	NS	NS	NS
	6/24/10	12.54	85.06	6.84	NM	0.59	-80.4	NS	NS	NS
	7/9/10	12.88	84.72	4.60	NM	3.75	120.6	NS	NS	NS
	7/20/10	12.92	84.68	7.07	NM	5.82	-377.0	NS	NS	NS
	8/5/10	12.95	84.65	6.84	NM	1.80	-31.4	NS	NS	NS
	8/18/10	13.15	84.45	6.41	NM	2.19	-25.3	NS	NS	NS
	<b>9/9/10</b>	13.37	84.23	6.99	1,357	0.42	-66.0	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-2 (continued)</b>	9/15/10	13.48	84.12	6.50	NM	1.11	-36.1	NS	NS	NS
	9/30/10	13.49	84.11	6.33	NM	2.82	185.6	NS	NS	NS
	10/5/10	12.80	84.80	6.90	1,716	0.30	-106.2	NS	NS	NS
	10/21/10	12.55	85.05	6.78	NM	2.82	-72.8	NS	NS	NS
	11/5/10	12.44	85.16	6.77	1,336	15.33	-5.5	NS	NS	NS
	11/19/10	12.41	85.19	6.79	NM	3.00	-11.6	NS	NS	NS
	12/9/10	12.14	85.46	6.31	NM	1.81	-47.2	NS	NS	NS
	12/22/10	12.02	85.58	6.25	1,586	1.70	-55.3	NS	NS	NS
	1/7/11	12.41	85.19	6.37	NM	6.18	-64.4	NS	NS	NS
	1/19/11	12.74	84.86	6.89	NM	1.10	-105.2	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/3/11	12.76	84.84	6.42	NM	11.90	232.5	NS	NS	NS
	<b>3/28/11</b>	10.88	86.72	6.73	1,485	2.11	-78.1	NS	NS	NS
	4/7/11	10.99	86.61	7.23	NM	4.05	-85.9	NS	NS	NS
	4/22/11	10.90	86.70	6.75	1,505	4.17	-80.6	NS	NS	NS
	5/7/11	10.98	86.62	8.22	1,418	1.00	-25.6	NS	NS	NS
	6/2/11	11.85	85.75	6.81	1,532	1.60	-38.0	NS	NS	NS
	6/14/11	11.86	85.74	6.82	NM	0.52	-75.5	NS	NS	NS
	7/7/11	11.63	85.97	6.12	NM	1.24	-40.6	NS	NS	NS
	7/25/11	12.24	85.36	6.80	NM	1.82	-95.3	NS	NS	NS
	8/15/11	12.60	85.00	6.91	NM	0.60	-104.6	NS	NS	NS
	8/26/11	12.04	85.56	7.08	1,175	0.30	-132.3	NS	NS	NS
	<b>9/14/11</b>	10.00	87.60	6.79	1,241	0.33	-100.6	<0.100	19.8	19.6
	10/6/11	10.57	87.03	6.88	NM	0.50	-58.7	NS	NS	NS
	10/20/11	11.18	86.42	6.95	NM	2.40	-99.8	NS	NS	NS
	11/3/11	11.35	86.25	6.69	1,331	2.59	-99.3	NS	NS	NS
	11/17/11	11.57	86.03	6.71	NM	0.86	-69.0	NS	NS	NS
	12/7/11	11.57	86.03	6.87	861	4.15	225.3	NS	NS	NS
	12/21/11	11.40	86.20	7.07	885	5.12	209.2	NS	NS	NS
	1/4/12	11.37	86.23	7.25	919	7.18	160.8	NS	NS	NS
	1/17/12	11.78	85.82	7.27	1,008	7.80	243.8	NS	NS	NS
	2/1/12	11.37	86.23	7.23	1,272	7.36	259.5	NS	NS	NS
	2/15/12	11.82	85.78	7.23	1,125	1.00	-65.0	<1.00	15.6	21.6
	3/1/12	12.04	85.56	7.33	894	10.02	279.3	NS	NS	NS
	3/15/12	11.64	85.96	7.11	1,049	2.28	291.3	NS	NS	NS
	4/5/12	12.15	85.45	6.96	NM	6.26	328.6	NS	NS	NS
	4/19/12	12.46	85.14	7.60	NM	6.20	323.8	NS	NS	NS
	5/3/12	12.33	85.27	7.45	NM	1.47	242.2	NS	NS	NS
	5/17/12	11.71	85.89	6.68	1,058	3.18	230.7	NS	NS	NS
	5/31/12	11.95	85.65	6.76	1,182	9.82	380.8	NS	NS	NS
	6/14/12	12.09	85.51	6.52	1,014	5.50	308.8	NS	NS	NS
	6/26/12	12.43	85.17	7.29	1,051	1.61	-40.0	NS	NS	NS
	7/3/12	12.68	84.92	6.62	NM	1.03	-169.0	NS	NS	NS
	7/19/12	12.95	84.65	6.85	811	2.20	60.4	NS	NS	NS
	8/1/12	12.95	84.65	7.01	983	1.16	-87.7	NS	NS	NS
	8/15/12	NM	NA	NM	NM	NM	NM	NS	NS	NS
	8/20/12	12.86	84.74	6.85	1,013	0.30	-100.8	<0.200	16.1	13.8
	8/30/12	13.08	84.52	NM	NM	NM	NM	NS	NS	NS
	9/17/12	13.14	84.46	6.36	1,085	0.68	-71.0	NS	NS	NS
	9/26/12	12.88	84.72	6.47	1,039	0.54	49.8	NS	NS	NS
	10/11/12	12.85	84.75	6.89	1,021	0.64	-20.7	NS	NS	NS
10/25/12	12.41	85.19	6.67	1,078	0.48	-46.5	NS	NS	NS	
11/1/12	12.26	85.34	6.45	1,038	0.88	-53.3	NS	NS	NS	
11/15/12	12.56	85.04	6.52	962	4.46	-62.6	NS	NS	NS	
12/6/12	12.80	84.80	6.14	968	1.16	-63.5	NS	NS	NS	
12/20/12	12.50	85.10	6.41	1,083	0.83	-76.2	NS	NS	NS	
1/3/13	12.23	85.37	6.56	652	3.15	-42.7	NS	NS	NS	
1/17/13	12.28	85.32	6.79	409	1.18	-43.2	NS	NS	NS	
2/7/13	12.02	85.58	5.74	538	0.81	75.7	NS	NS	NS	
2/20/13	12.29	85.31	7.00	511	0.46	-6.2	<0.100	16.1	4.05	
3/7/13	12.30	85.30	7.13	418	3.93	23.2	NS	NS	NS	
3/20/13	11.83	85.77	6.87	295	4.82	20.6	NS	NS	NS	
4/4/13	11.92	85.68	5.70	400	3.56	-15.1	NS	NS	NS	
4/12/13	11.66	85.94	6.23	197	6.39	31.2	NS	NS	NS	
4/18/13	11.59	86.01	5.75	190	7.66	112.0	NS	NS	NS	
4/26/13	11.76	85.84	6.58	468	6.82	-50.1	NS	NS	NS	
5/2/13	12.00	85.60	7.23	328	9.53	-87.4	NS	NS	NS	
5/10/13	12.22	85.38	5.38	205	6.42	156.3	NS	NS	NS	
5/15/13	12.13	85.47	6.88	195	0.99	-82.1	NS	NS	NS	
5/23/13	12.08	85.52	5.87	706	7.40	-11.8	NS	NS	NS	

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GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-2</b>	6/6/13	11.57	86.03	5.88	357	4.62	78.1	NS	NS	NS
<b>(continued)</b>	6/20/13	10.62	86.98	5.20	240	3.77	110.5	NS	NS	NS
	7/3/13	11.22	86.38	6.09	NM	5.12	99.2	NS	NS	NS
	7/11/13	11.01	86.59	6.05	NM	2.71	110.0	NS	NS	NS
	7/18/13	11.78	85.82	5.35	569	8.37	84.9	NS	NS	NS
	7/25/13	12.00	85.60	5.23	514	2.64	139.8	NS	NS	NS
	8/8/13	12.35	85.25	5.80	229	4.30	120.0	NS	NS	NS
	8/15/13	12.16	85.44	6.58	215	4.49	151.0	NS	NS	NS
	8/21/13	12.36	85.24	6.76	212	1.19	95.7	0.1	19.7	3.5
	8/29/13	12.33	85.27	6.55	200	4.03	106.4	NS	NS	NS
	9/5/13	12.12	85.48	7.14	194	4.10	105.3	NS	NS	NS
	9/10/13	12.26	85.34	6.75	176	1.34	38.1	NS	NS	NS
	9/19/13	12.25	85.35	7.07	202	6.19	61.6	NS	NS	NS
	9/25/13	12.11	85.49	6.73	224	4.36	33.1	NS	NS	NS
	10/3/13	12.39	85.21	7.34	214	3.82	48.4	NS	NS	NS
	10/10/13	12.30	85.30	6.46	334	3.89	123.7	NS	NS	NS
	10/17/13	12.46	85.14	6.79	306	2.65	89.0	NS	NS	NS
	10/25/13	12.56	85.04	6.87	223	4.16	-12.4	NS	NS	NS
	10/31/13	12.58	85.02	7.32	220	4.24	-84.3	NS	NS	NS
	11/6/13	12.53	85.07	7.16	220	4.19	-70.4	NS	NS	NS
	11/15/13	12.60	85.00	7.33	206	5.04	-39.5	NS	NS	NS
	11/22/13	12.62	84.98	5.97	191	6.09	-18.2	NS	NS	NS
	12/5/13	12.58	85.02	7.78	385	5.48	-99.9	NS	NS	NS
	12/19/13	12.80	84.80	7.07	234	5.34	-97.2	NS	NS	NS
	12/26/13	12.28	85.32	6.02	200	0.95	-55.0	NS	NS	NS
	1/9/14	12.09	85.51	6.53	224	4.47	-179.8	NS	NS	NS
	1/16/14	11.73	85.87	6.64	245	6.05	-151.9	NS	NS	NS
	1/22/14	11.98	85.62	NM	NM	NM	NM	NS	NS	NS
	2/6/14	12.53	85.07	6.86	347	4.74	-194.7	NS	NS	NS
	2/12/14	12.68	84.92	7.01	351	1.17	-169.8	<0.100	25.4	7.36
	2/20/14	12.58	85.02	6.46	246	6.20	-67.4	NS	NS	NS
	3/6/14	12.80	84.80	6.37	229	5.83	86.2	NS	NS	NS
<b>ECS-3<sup>(**)</sup></b>	<b>11/8/99</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>97.95</b>	<b>12/19/02</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
97.76	9/8/05	12.65	85.11	5.64	1,418	0.87	-69.9	<1.0	<10.0	53.9
	11/1/05	10.87	86.89	6.23	694	1.52	-0.4	NS	NS	NS
	1/25/06	NG	NA	NM	NM	NM	NM	NS	NS	NS
	4/11/06	12.34	85.42	6.69	2,070	0.36	-40.0	<0.100	<1.0	10.3
	7/20/06	12.56	85.20	3.10	908	0.32	610	<0.500	27.5	14.4
	9/15/06	13.61	84.15	6.89	NM	5.24	-57.3	NS	NS	NS
	9/21/06	13.24	84.52	7.19	NM	10.88	255	NS	NS	NS
	10/6/06	13.08	84.68	6.97	NM	3.19	8.2	NS	NS	NS
	10/10/06	13.17	84.59	7.05	599	0.55	78.0	NS	NS	NS
	10/23/06	12.25	85.51	6.28	NM	2.18	NM	NS	NS	NS
	11/7/06	12.45	85.31	6.60	NM	9.35	-68.8	NS	NS	NS
	11/20/06	11.81	85.95	6.52	NM	10.34	177.8	NS	NS	NS
	12/4/06	12.31	85.45	7.24	NM	3.85	342.4	NS	NS	NS
	12/18/06	12.77	84.99	6.27	NM	8.35	-31.9	NS	NS	NS
	1/2/07	12.64	85.12	7.19	NM	7.25	-209.7	NS	NS	NS
	1/15/07	12.19	85.57	7.12	NM	7.39	-209.4	NS	NS	NS
	1/25/07	12.27	85.49	7.25	627	1.20	6.0	<0.5	28.4	5.98
	1/29/07	12.47	85.29	7.18	NM	8.72	-125.6	NS	NS	NS
	2/12/07	12.96	84.80	7.55	NM	10.63	-89.0	NS	NS	NS
	2/26/07	NG-S	NA	NM	NM	NM	NM	NS	NS	NS
	3/12/07	NG-S	NA	NM	NM	NM	NM	NS	NS	NS
	3/26/07	12.13	85.63	6.72	NM	8.71	-80.60	NS	NS	NS
	4/10/07	11.51	86.25	7.00	NM	14.93	-8.40	NS	NS	NS
	4/24/07	10.62	87.14	6.70	819	1.43	-66.8	NS	NS	NS
	5/7/07	11.52	86.24	5.24	NM	12.26	38.2	NS	NS	NS
	5/24/07	11.38	86.38	5.43	NM	9.37	49.2	NS	NS	NS
	6/4/07	12.4	85.36	5.72	NM	8.62	-16.7	NS	NS	NS
	6/18/07	12.59	85.17	6.64	NM	12.59	-141.8	NS	NS	NS
	7/3/07	12.98	84.78	7.98	NM	15.82	37.7	NS	NS	NS
	7/16/07	13.27	84.49	7.92	NM	15.98	56.4	NS	NS	NS
	8/1/07	13.18	84.58	6.78	NM	18.48	-76.9	NS	NS	NS
	8/13/07	13.26	84.50	6.77	NM	2.18	-262.7	NS	NS	NS
	8/27/07	13.48	84.28	6.77	NM	11.05	-115.8	NS	NS	NS
	9/10/07	13.55	84.21	7.58	NM	9.23	-48.2	NS	NS	NS
	9/25/07	13.63	84.13	7.55	NM	7.23	-50.1	NS	NS	NS
	10/4/07	13.73	84.03	7.04	800	5.31	-99.0	<0.100	37.8	5.21



**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

<b>Monitoring Well &amp; PVC Elevation (ft)</b>	<b>Monitoring Date</b>	<b>Depth to Water (ft)</b>	<b>Groundwater Elevation (ft)</b>	<b>pH (SU)</b>	<b>Specific Conductivity (µS/cm)</b>	<b>Dissolved Oxygen (mg/L)</b>	<b>Redox (mV)</b>	<b>Nitrate (mg/L)</b>	<b>Sulfate (mg/L)</b>	<b>Dissolved Iron (mg/L)</b>
<b>ECS-3</b>	10/9/07	13.77	83.99	6.47	NM	5.10	-329.9	NS	NS	NS
<b>(continued)</b>	10/22/07	13.50	84.26	7.63	NM	4.38	-50.3	NS	NS	NS
	11/5/07	13.36	84.40	7.88	NM	7.21	-42.7	NS	NS	NS
	11/19/07	13.09	84.67	7.52	NM	3.71	-48.5	NS	NS	NS
	12/3/07	13.04	84.72	7.21	NM	7.07	-127.1	NS	NS	NS
	12/17/07	13.18	84.58	7.17	NM	7.01	-125.1	NS	NS	NS
	1/2/08	12.71	85.05	6.17	NM	5.21	41.4	NS	NS	NS
	1/14/08	12.24	85.52	6.09	NM	5.02	40.1	NS	NS	NS
	1/29/08	12.64	85.12	7.12	NM	8.75	8.2	NS	NS	NS
	2/11/08	12.27	85.49	NM	NM	NM	NM	NS	NS	NS
	3/7/08	11.33	86.43	NM	NM	NM	NM	NS	NS	NS
	<b>3/11/08</b>	10.68	87.08	7.12	932	2.97	-77	<0.5	27.1	2.08
	<b>5/1/08</b>	11.41	86.35	6.56	1,810	1.45	1.0	<1.0	28.9	21.6
	5/27/08	11.08	86.68	NM	NM	NM	NM	NS	NS	NS
	6/4/08	12.51	85.25	5.83	NM	2.11	100.1	NS	NS	NS
	6/17/08	12.33	85.43	6.33	NM	2.85	-102.2	NS	NS	NS
	7/1/08	12.30	85.46	6.45	NM	0.95	-50.7	NS	NS	NS
	7/9/08	NM	85.46	NM	NM	NM	NM	NS	NS	NS
	7/14/08	10.7	87.06	6.37	NM	1.68	-31.9	NS	NS	NS
	7/30/08	11.88	85.88	6.26	NM	2.68	-40.0	NS	NS	NS
	8/12/08	12.31	85.45	6.59	NM	6.81	-31.6	NS	NS	NS
	8/20/08	11.91	85.85	NM	NM	NM	NM	NS	NS	NS
	8/26/08	12.78	84.98	6.65	NM	1.78	-35.6	NS	NS	NS
	9/9/08	11.83	85.93	6.48	NM	5.38	-47.2	NS	NS	NS
	9/22/08	12.86	84.90	6.46	NM	6.51	-105.1	NS	NS	NS
	10/17/08	12.98	84.78	6.62	NM	0.72	-39.8	NS	NS	NS
	10/27/08	12.6	85.16	6.42	NM	2.96	-7.5	NS	NS	NS
	11/11/08	12.29	85.47	6.59	NM	1.10	-36.1	NS	NS	NS
	<b>11/24/08</b>	12.51	85.25	6.53	1,265	0.31	-25.0	<0.100	22.5	13.6
	11/25/08	12.44	85.32	6.55	NM	2.59	-70.9	NS	NS	NS
	12/11/08	12.13	85.63	6.75	NM	1.30	-13.6	NS	NS	NS
	3/19/09	11.55	86.21	6.54	NM	2.51	1.3	NS	NS	NS
	<b>4/9/09</b>	11.48	86.28	5.56	855	0.67	-6.2	0.78	29.8	25.6
	4/23/09	11.89	85.87	6.34	1,479	1.43	86.6	NS	NS	NS
	5/5/09	12.37	85.39	6.34	NM	1.32	74.3	NS	NS	NS
	5/19/09	12.21	85.55	6.29	1,864	2.57	37.1	NS	NS	NS
	6/11/09	12.76	85.00	6.46	1,617	0.87	-133.7	NS	NS	NS
	6/26/09	11.5	86.26	6.30	1,706	1.11	47.6	NS	NS	NS
	7/6/09	11.67	86.09	6.44	1,198	0.99	-52.6	NS	NS	NS
	7/22/09	12.00	85.76	6.37	1,577	1.31	-19.7	NS	NS	NS
	8/6/09	10.91	86.85	6.62	1,142	1.04	-66.7	NS	NS	NS
	<b>8/24/09</b>	11.34	86.42	6.41	1,660	0.44	-49.0	<1.00	10.8	27.0
	9/10/09	11.83	85.93	6.51	1,846	0.50	5.6	NS	NS	NS
	9/23/09	12.29	85.47	6.60	1,314	10.79	-56.6	NS	NS	NS
	10/6/09	12.4	85.36	6.13	1,370	0.92	50.1	NS	NS	NS
	<b>10/13/09</b>	12.43	85.33	6.68	1,147	3.90	-3.6	<0.100	2.76	17.4
	10/23/09	12.62	85.14	6.85	453	1.92	-25.1	NS	NS	NS
	11/5/09	11.90	85.86	6.60	1,276	0.57	-14.2	NS	NS	NS
	11/17/09	12.09	85.67	6.66	1,544	0.20	-10.1	NS	NS	NS
	12/8/09	11.97	85.79	6.55	1,335	1.46	-25.3	NS	NS	NS
	2/3/10	12.20	85.56	6.71	NM	12.16	-70.0	NS	NS	NS
	2/11/10	12.43	85.33	6.59	1,299	0.43	-67.0	<0.100	<1.0	15.4
	2/18/10	12.68	85.08	6.60	NM	9.44	25.0	NS	NS	NS
	3/3/10	12.11	85.65	6.56	1,532	1.61	-28.8	NS	NS	NS
	3/17/10	11.34	86.42	6.39	752	17.45	58.5	NS	NS	NS
	4/15/10	11.52	86.24	6.66	792	1.11	49.7	NS	NS	NS
	4/28/10	12.03	85.73	6.60	NM	4.04	12.4	NS	NS	NS
	5/13/10	12.3	85.46	6.48	1,474	4.36	-18.9	NS	NS	NS
	5/27/10	12.53	85.23	6.66	NM	2.10	12.2	NS	NS	NS
	6/9/10	12.73	85.03	6.40	NM	1.22	-29.0	NS	NS	NS
	6/24/10	12.95	84.81	6.69	NM	0.58	-42.2	NS	NS	NS
	7/9/10	13.12	84.64	6.14	NM	10.41	35.1	NS	NS	NS
	7/20/10	13.18	84.58	7.01	NM	2.21	-348.4	NS	NS	NS
	8/5/10	13.21	84.55	7.15	NM	2.34	-24.0	NS	NS	NS
	8/18/10	13.4	84.36	6.96	NM	1.37	-16.5	NS	NS	NS
	<b>9/9/10</b>	13.63	84.13	7.42	815	0.27	-61.0	<0.100	35.5	4.86
	9/15/10	13.51	84.25	6.56	NM	1.27	-21.4	NS	NS	NS
	9/30/10	13.72	84.04	6.90	NM	6.70	198.9	NS	NS	NS
	10/5/10	13.03	84.73	7.00	744	1.32	6.4	NS	NS	NS
	10/21/10	12.76	85.00	6.74	NM	1.06	-60.7	NS	NS	NS
	11/5/10	12.68	85.08	7.11	936	11.90	-34.5	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-3 (continued)</b>	11/19/10	12.58	85.18	6.96	NM	1.73	-60.2	NS	NS	NS
	12/9/10	12.40	85.36	6.51	NM	0.81	-51.6	NS	NS	NS
	12/22/10	12.27	85.49	6.54	784	1.64	-53.5	NS	NS	NS
	1/7/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	1/19/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/3/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	<b>3/28/11</b>	11.15	86.61	7.19	778	7.18	-35.1	0.11	40.7	2.05
	4/7/11	11.23	86.53	7.43	NM	5.01	-88.6	NS	NS	NS
	4/22/11	11.15	86.61	7.10	1,181	0.83	-103.6	NS	NS	NS
	5/7/11	11.21	86.55	7.77	1,087	0.88	-34.0	NS	NS	NS
	6/2/11	12.11	85.65	6.64	1,364	2.73	-6.3	NS	NS	NS
	6/14/11	12.12	85.64	6.53	NM	0.41	-40.6	NS	NS	NS
	7/7/11	11.91	85.85	6.07	NM	1.93	-69.6	NS	NS	NS
	7/25/11	12.50	85.26	6.90	NM	0.88	-97.5	NS	NS	NS
	8/15/11	12.85	84.91	7.01	NM	0.28	-109.1	NS	NS	NS
	8/26/11	12.29	85.47	7.24	828	1.57	-126.5	NS	NS	NS
	<b>9/14/11</b>	10.24	87.52	6.91	730	0.41	-40.6	1.28	43.0	2.11
	10/6/11	10.80	86.96	7.41	NM	0.89	50.1	NS	NS	NS
	10/20/11	11.42	86.34	6.96	NM	1.31	-98.7	NS	NS	NS
	11/3/11	11.60	86.16	7.00	1,044	1.09	-97.2	NS	NS	NS
	11/17/11	11.82	85.94	6.73	NM	2.91	-42.1	NS	NS	NS
	12/7/11	11.82	85.94	7.37	722	4.23	251.6	NS	NS	NS
	12/21/11	11.63	86.13	7.26	807	6.88	220.8	NS	NS	NS
	1/4/12	11.64	86.12	7.57	792	7.71	132.5	NS	NS	NS
	2/1/12	11.62	86.14	7.22	985	9.60	210.7	NS	NS	NS
	2/15/12	12.09	85.67	7.46	742	0.77	-72.1	<0.100	27.2	2.77
	3/1/12	12.28	85.48	7.86	814	10.58	242.8	NS	NS	NS
	3/15/12	11.18	86.58	7.59	710	3.38	263.7	NS	NS	NS
	4/5/12	12.40	85.36	6.36	NM	8.27	302.2	NS	NS	NS
	4/19/12	12.71	85.05	7.77	740	4.03	312.2	NS	NS	NS
	5/3/12	12.59	85.17	8.00	872	1.74	176.1	NS	NS	NS
	5/17/12	11.95	85.81	7.33	853	5.58	237.0	NS	NS	NS
	5/31/12	12.21	85.55	7.22	702	8.79	321.3	NS	NS	NS
	6/14/12	12.35	85.41	7.02	681	8.11	301.3	NS	NS	NS
	6/26/12	12.70	85.06	7.48	639	1.20	-66.2	NS	NS	NS
	7/3/12	12.84	84.92	7.32	NM	0.65	-118.1	NS	NS	NS
	7/19/12	13.20	84.56	7.01	643	1.26	-59.3	NS	NS	NS
	8/1/12	13.22	84.54	7.31	795	1.15	-114.7	NS	NS	NS
	8/15/12	NM	NM	NM	NM	NM	NM	NS	NS	NS
	8/20/12	13.10	84.66	7.21	707	1.48	-80.3	3.80	42.2	1.04
	8/30/12	13.33	84.43	NM	NM	NM	NM	NS	NS	NS
	9/17/12	13.39	84.37	7.15	821	1.39	16.0	NS	NS	NS
	9/26/12	13.13	84.63	6.67	895	5.34	58.1	NS	NS	NS
	10/11/12	13.10	84.66	7.21	757	0.36	-35.4	NS	NS	NS
	10/25/12	12.67	85.09	6.98	762	0.63	-43.5	NS	NS	NS
	11/1/12	12.51	85.25	6.63	801	1.45	-53.1	NS	NS	NS
	11/15/12	12.82	84.94	6.40	856	1.42	-79.2	NS	NS	NS
	12/6/12	13.06	84.70	6.14	865	0.63	-84.6	NS	NS	NS
	12/20/12	12.76	85.00	6.74	804	0.61	-80.8	NS	NS	NS
	1/3/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	1/17/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
2/7/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
2/20/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
3/7/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
3/20/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
4/4/13	12.08	85.68	6.24	697	4.38	34.2	NS	NS	NS	
4/12/13	11.93	85.83	5.86	698	5.62	51.0	NS	NS	NS	
4/18/13	11.86	85.90	6.33	692	3.00	29.8	NS	NS	NS	
4/26/13	12.02	85.74	6.71	809	6.34	-44.0	NS	NS	NS	
5/2/13	12.26	85.50	7.24	807	6.49	-84.5	NS	NS	NS	
5/10/13	12.47	85.29	5.73	730	5.45	116.2	NS	NS	NS	
5/15/13	12.40	85.36	6.21	601	2.91	71.4	NS	NS	NS	
5/23/13	12.34	85.42	6.18	822	9.68	17.0	NS	NS	NS	
6/6/13	11.83	85.93	6.30	803	6.39	44.4	NS	NS	NS	
6/20/13	10.88	86.88	5.67	918	6.37	102.7	NS	NS	NS	
7/3/13	11.47	86.29	6.28	NM	4.49	88.9	NS	NS	NS	
7/11/13	11.31	86.45	6.25	NM	3.99	74.0	NS	NS	NS	
7/18/13	12.05	85.71	5.29	940	7.32	81.5	NS	NS	NS	
7/25/13	12.27	85.49	5.29	1107	4.55	134.3	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-3</b>	8/8/13	12.62	85.14	5.75	1078	2.68	103.6	NS	NS	NS
<b>(continued)</b>	8/15/13	12.42	85.34	6.97	780	2.87	119.2	NS	NS	NS
	8/21/13	12.62	85.14	6.90	964	0.67	85.8	0.13	13.1	5.25
	8/29/13	12.60	85.16	6.45	725	4.17	81.5	NS	NS	NS
	9/5/13	12.37	85.39	7.24	680	4.25	90.0	NS	NS	NS
	9/10/13	12.53	85.23	6.78	676	0.31	-27.0	NS	NS	NS
	9/19/13	12.51	85.25	6.87	703	2.25	60.8	NS	NS	NS
	9/25/13	12.36	85.40	7.18	809	4.96	-13.6	NS	NS	NS
	10/3/13	12.65	85.11	7.11	736	4.67	64.1	NS	NS	NS
	10/10/13	12.56	85.20	6.96	716	4.36	67.2	NS	NS	NS
	10/17/13	12.72	85.04	7.07	735	2.42	5.4	NS	NS	NS
	10/25/13	12.83	84.93	7.52	711	4.09	-25.8	NS	NS	NS
	10/31/13	12.84	84.92	7.87	740	4.52	-160.9	NS	NS	NS
	11/6/13	12.78	84.98	7.75	745	4.26	-114.6	NS	NS	NS
	11/15/13	12.86	84.90	8.04	723	4.65	-102.4	NS	NS	NS
	11/22/13	12.90	84.86	6.40	673	5.22	-118.3	NS	NS	NS
	12/5/13	12.84	84.92	8.45	856	6.80	-120.0	NS	NS	NS
	2/12/14	NM	NM	NM	NM	NM	NM	NM	NM	NM
<b>ECS-4**</b>	<b>11/8/99</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>97.06</b>	<b>12/19/02</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>96.75</b>	<b>9/8/05</b>	11.94	84.81	NM	NM	NM	NM	NS	NS	NS
	<b>1/25/06</b>	NG	NA	NM	NM	NM	NM	NS	NS	NS
	<b>4/10/06</b>	11.51	85.24	NM	NM	NM	NM	NS	NS	NS
	<b>7/20/06</b>	11.96	84.79	5.67	1,013	246	932	NS	NS	NS
	9/15/06	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	9/21/06	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	10/6/06	12.36	84.39	NM	NM	NM	NM	NS	NS	NS
	<b>10/10/06</b>	12.43	84.32	NS	NS	NS	NS	NS	NS	NS
	10/23/06	11.75	85.00	5.94	NM	2.51	NM	NS	NS	NS
	11/7/06	11.72	85.03	6.54	NM	10.47	-42.90	NS	NS	NS
	11/20/06	11.08	85.67	7.01	NM	10.25	166.30	NS	NS	NS
	12/4/06	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	12/18/06	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	1/2/07	11.93	84.82	6.78	NM	10.48	-36.50	NS	NS	NS
	1/15/07	11.41	85.34	6.95	NM	10.82	-86.90	NS	NS	NS
	<b>1/25/07</b>	11.55	85.20	NS	NM	NS	NS	NS	NS	NS
	1/29/07	11.72	85.03	6.95	NM	12.86	-35.2	NS	NS	NS
	2/12/07	12.23	84.52	NM	NM	NM	NM	NS	NS	NS
	2/26/07	NG	NA	NM	NM	NM	NM	NS	NS	NS
	3/12/07	12.42	84.33	NM	NM	NM	NM	NS	NS	NS
	3/26/07	11.39	85.36	5.87	NM	13.76	179.60	NS	NS	NS
	4/10/07	10.46	86.29	6.75	NM	12.17	64.50	NS	NS	NS
	<b>4/24/07</b>	9.88	86.87	5.83	891	4.95	202	NS	NS	NS
	5/7/07	11.79	84.96	6.42	NM	5.34	136	NS	NS	NS
	5/24/07	11.65	85.10	6.23	NM	4.21	150	NS	NS	NS
	6/4/07	11.63	85.12	5.72	NM	9.72	38	NS	NS	NS
	6/18/07	11.81	84.94	6.53	NM	12.81	123	NS	NS	NS
	7/3/07	12.25	84.50	7.65	NM	7.17	87	NS	NS	NS
	7/16/07	12.31	84.44	7.41	NM	7.23	83	NS	NS	NS
	8/1/07	12.47	84.28	6.58	NM	20.52	101	NS	NS	NS
	8/13/07	12.53	84.22	6.40	NM	6.61	265	NS	NS	NS
	8/27/07	12.61	84.14	6.59	NM	9.21	-89	NS	NS	NS
	9/10/07	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	9/25/07	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	<b>10/4/07</b>	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	10/9/07	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	10/22/07	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	11/5/07	12.62	84.13	NM	NM	NM	NM	NS	NS	NS
	11/19/07	12.31	84.44	NM	NM	NM	NM	NS	NS	NS
	12/3/07	12.31	84.44	NM	NM	NM	NM	NS	NS	NS
	12/17/07	NG	NG	NM	NM	NM	NM	NS	NS	NS
	1/2/08	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	1/14/08	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	1/29/08	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	2/11/08	DRY	96.75	NM	NM	NM	NM	NS	NS	NS
	3/7/08	10.55	86.20	6.72	827	4.20	72.8	NS	NS	NS
	<b>3/11/08</b>	9.93	86.82	6.78	887	9.81	92	NS	NS	NS
	<b>5/1/08</b>	10.71	86.04	6.64	984	1.21	46	NS	NS	NS
	5/27/08	11.32	85.43	NM	NM	NM	NM	NS	NS	NS
	6/4/08	11.65	85.10	6.03	NM	1.16	12.3	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

<b>Monitoring Well &amp; PVC Elevation (ft)</b>	<b>Monitoring Date</b>	<b>Depth to Water (ft)</b>	<b>Groundwater Elevation (ft)</b>	<b>pH (SU)</b>	<b>Specific Conductivity (µS/cm)</b>	<b>Dissolved Oxygen (mg/L)</b>	<b>Redox (mV)</b>	<b>Nitrate (mg/L)</b>	<b>Sulfate (mg/L)</b>	<b>Dissolved Iron (mg/L)</b>
<b>ECS-4</b>	6/17/08	11.88	84.87	6.61	NM	1.96	88.4	NS	NS	NS
<b>(continued)</b>	7/1/08	11.73	85.02	6.63	NM	2.12	99.7	NS	NS	NS
	7/9/08	NM	85.02	NM	NM	NM	NM	NS	NS	NS
	7/14/08	12.08	84.67	6.45	NM	1.93	84	NS	NS	NS
	7/30/08	11.16	85.59	6.20	NM	4.24	112	NS	NS	NS
	8/12/08	11.65	85.10	6.55	NM	5.18	66.6	NS	NS	NS
	8/20/08	11.38	85.37	NM	NM	NM	NM	NS	NS	NS
	8/26/08	11.97	84.78	6.58	NM	3.12	-21	NS	NS	NS
	9/9/08	11.13	85.62	6.51	NM	4.37	47.6	NS	NS	NS
	9/22/08	12.04	84.71	6.41	NM	4.65	208.8	NS	NS	NS
	10/17/08	12.31	84.44	6.46	NM	3.60	59.8	NS	NS	NS
	10/27/08	11.94	84.81	6.61	NM	4.80	30.2	NS	NS	NS
	11/11/08	11.54	85.21	6.51	NM	0.90	26.9	NS	NS	NS
	<b>11/24/08</b>	11.77	84.98	6.62	918	0.71	-12.0	NS	NS	NS
	11/25/08	11.68	85.07	6.48	NM	1.96	30.5	NS	NS	NS
	12/11/08	12.6	84.15	6.71	NM	1.38	134.3	NS	NS	NS
	12/23/08	10.7	86.05	6.66	NM	0.40	75.7	NS	NS	NS
	3/4/09	11.62	85.13	6.51	NM	5.62	173.9	NS	NS	NS
	3/19/09	10.82	85.93	6.81	NM	8.00	36.0	NS	NS	NS
	<b>4/9/09</b>	10.72	86.03	6.21	821	2.58	288.4	NS	NS	NS
	4/23/09	10.8	85.95	6.79	893	1.86	72.2	NS	NS	NS
	5/5/09	11.9	84.85	6.58	NM	0.88	217.0	NS	NS	NS
	5/19/09	11.7	85.05	6.50	881	1.83	117.8	NS	NS	NS
	6/26/09	10.74	86.01	6.56	1011	1.91	176.3	NS	NS	NS
	7/6/09	10.96	85.79	6.61	816	1.50	107.4	NS	NS	NS
	7/22/09	11.47	85.28	6.47	787	1.22	143.5	NS	NS	NS
	8/6/09	10.19	86.56	6.39	717	4.55	204.8	NS	NS	NS
	9/10/09	11.11	85.64	6.69	727	1.27	75.6	NS	NS	NS
	9/23/09	11.55	85.20	6.58	797	6.08	-47.0	NS	NS	NS
	10/6/09	11.26	85.49	6.05	767	3.46	63.7	NS	NS	NS
	10/13/09	11.69	85.06	6.66	799	3.13	10.6	<0.100	2.76	17.4
	10/23/09	11.9	84.85	6.47	812	1.63	2.3	NS	NS	NS
	11/5/09	11.12	85.63	6.62	812	1.31	65.5	NS	NS	NS
	11/17/09	11.09	85.66	6.92	841	1.86	85.3	NS	NS	NS
	12/8/09	11.24	85.51	7.08	861	6.05	3.4	NS	NS	NS
	12/23/09	11.47	85.28	6.88	703	2.11	49.8	NS	NS	NS
	1/8/10	11.73	85.02	6.89	798	3.31	84.8	NS	NS	NS
	1/20/10	12.00	84.75	6.83	720	5.06	67.5	NS	NS	NS
	2/18/10	11.90	84.85	7.00	NM	4.95	12.1	NS	NS	NS
	3/3/10	11.91	84.84	6.72	1014	4.01	1.9	NS	NS	NS
	3/17/10	10.57	86.18	NM	NM	NM	NM	NS	NS	NS
	4/15/10	10.54	86.21	6.70	690	1.35	54.0	NS	NS	NS
	4/28/10	12.10	84.65	6.53	NM	2.45	8.4	NS	NS	NS
	5/13/10	11.57	85.18	6.50	819	6.01	61.8	NS	NS	NS
	5/27/10	11.80	84.95	6.57	NM	2.17	26.4	NS	NS	NS
	6/9/10	11.99	84.76	6.31	NM	1.41	5.6	NS	NS	NS
	6/24/10	12.10	84.65	6.52	NM	1.87	20.1	NS	NS	NS
	7/9/10	12.40	84.35	5.02	NM	7.08	337.3	NS	NS	NS
	7/20/10	12.44	84.31	6.88	NM	8.70	-246.0	NS	NS	NS
	8/5/10	12.48	84.27	7.04	NM	1.20	41.8	NS	NS	NS
	8/18/10	12.66	84.09	6.48	NM	8.08	39.9	NS	NS	NS
	<b>9/9/10</b>	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	9/15/10	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	9/30/10	DRY	NA	NM	NM	NM	NM	NS	NS	NS
	10/5/10	12.29	84.46	6.66	80	5.21	152.9	NS	NS	NS
	10/21/10	12.00	84.75	6.83	NM	3.24	82.4	NS	NS	NS
	11/5/10	11.94	84.81	6.90	806	11.43	13.8	NS	NS	NS
	11/19/10	11.35	85.40	6.87	NM	1.86	243.6	NS	NS	NS
	12/9/10	NM	NM	NM	NM	NM	NM	NS	NS	NS
	12/22/10	11.52	85.23	6.17	843	4.81	24.7	NS	NS	NS
	1/7/11	11.92	84.83	6.59	NM	11.01	5.8	NS	NS	NS
	1/19/11	12.22	84.53	6.81	NM	6.82	-9.0	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/3/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	<b>3/28/11</b>	10.38	86.37	6.76	0.826	5.81	136.1	NS	NS	NS
	4/7/11	10.48	86.27	6.91	NM	6.36	-39.1	NS	NS	NS
	4/22/11	10.40	86.35	6.70	0.863	0.48	-12.7	NS	NS	NS
	5/7/11	10.50	86.25	7.95	0.902	1.70	2.2	NS	NS	NS
	6/2/11	11.38	85.37	6.66	0.869	2.70	18.8	NS	NS	NS
	6/14/11	11.39	85.36	6.63	NM	3.11	107.1	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-4</b>	7/7/11	11.17	85.58	6.03	NM	1.70	11.9	NS	NS	NS
<b>(continued)</b>	7/25/11	11.75	85.00	6.65	NM	5.31	-8.7	NS	NS	NS
	8/15/11	11.99	84.76	6.64	NM	1.62	-29.5	NS	NS	NS
	8/26/11	11.43	85.32	6.69	0.839	2.53	36.5	NS	NS	NS
	<b>9/14/11</b>	9.41	87.34	NM	NM	NM	NS	NS	NS	NS
	10/6/11	9.96	86.79	6.76	NM	2.97	138.6	NS	NS	NS
	10/20/11	10.56	86.19	6.72	NM	1.26	60.1	NS	NS	NS
	11/3/11	10.73	86.02	6.92	940	2.19	-51.0	NS	NS	NS
	11/17/11	10.96	85.79	6.93	NM	1.14	62.3	NS	NS	NS
	12/7/11	10.94	85.81	6.98	794	3.42	241.3	NS	NS	NS
	12/21/11	10.77	85.98	7.22	763	4.35	194.6	NS	NS	NS
	1/17/12	11.17	85.58	7.36	764	7.33	157.5	NS	NS	NS
	2/1/12	10.76	85.99	7.31	924	8.97	248.3	NS	NS	NS
	2/15/12	11.22	85.53	NM	NM	NM	NM	NS	NS	NS
	3/1/12	11.42	85.33	7.58	795	9.47	313.6	NS	NS	NS
	3/15/12	11.00	85.75	7.37	749	6.47	272.2	NS	NS	NS
	4/5/12	11.54	85.21	6.81	NM	7.34	284.9	NS	NS	NS
	4/19/12	11.84	84.91	6.58	809	6.75	290.8	NS	NS	NS
	5/3/12	11.72	85.03	7.34	771	2.10	165.1	NS	NS	NS
	5/17/12	11.08	85.67	6.65	794	5.28	265.7	NS	NS	NS
	5/31/12	11.34	85.41	6.15	851	6.15	367.0	NS	NS	NS
	6/14/12	11.48	85.27	6.12	849	6.12	285.9	NS	NS	NS
	6/26/12	11.83	84.92	6.93	5	3.28	-12.2	NS	NS	NS
	7/3/12	12.00	84.75	6.63	NM	2.32	9.3	NS	NS	NS
	7/19/12	12.35	84.40	6.77	753	1.93	-9.8	NS	NS	NS
	8/1/12	12.35	84.40	6.73	963	6.73	-80.1	NS	NS	NS
	8/15/12	NM	NM	NM	NM	NM	NS	NS	NS	NS
	8/20/12	12.24	84.51	NM	NM	NM	NS	NS	NS	NS
	8/30/12	12.47	84.28	NM	NM	NM	NS	NS	NS	NS
	9/17/12	12.53	84.22	6.63	479	6.49	72.8	NS	NS	NS
	9/26/12	12.28	84.47	6.37	885	2.54	54.4	NS	NS	NS
	10/11/12	12.23	84.52	6.80	814	2.14	-14.0	NS	NS	NS
	10/25/12	11.79	84.96	6.38	834	2.96	-0.4	NS	NS	NS
	11/1/12	11.61	85.14	6.40	844	1.61	-15.1	NS	NS	NS
	11/15/12	11.94	84.81	6.41	821	2.96	-36.4	NS	NS	NS
	12/6/11	12.18	84.57	6.21	799	4.74	-43.9	NS	NS	NS
	12/20/12	11.87	84.88	6.29	802	4.88	-38.3	NS	NS	NS
	1/3/13	NM	NM	NM	NM	NM	NS	NS	NS	NS
	1/17/13	NM	NM	NM	NM	NM	NS	NS	NS	NS
	2/7/13	NM	NM	NM	NM	NM	NS	NS	NS	NS
	2/20/13	NM	NM	NM	NM	NM	NS	NS	NS	NS
	3/7/13	NM	NM	NM	NM	NM	NS	NS	NS	NS
	3/20/13	11.22	85.53	6.45	684	6.44	35.7	NS	NS	NS
	4/4/13	NM	NM	NM	NM	NM	NS	NS	NS	NS
	4/12/13	11.03	85.72	5.86	745	7.52	58.8	NS	NS	NS
	4/18/13	10.98	85.77	5.90	1243	5.38	40.9	NS	NS	NS
	4/26/13	11.15	85.60	6.01	718	6.84	39.2	NS	NS	NS
	5/2/13	11.42	85.33	6.33	713	6.9	-17.2	NS	NS	NS
	5/10/13	11.60	85.15	4.75	724	7.6	73.2	NS	NS	NS
	5/15/13	NM	NM	NM	NM	NM	NS	NS	NS	NS
	5/23/13	11.46	85.29	5.93	735	10.61	17.1	NS	NS	NS
	6/6/13	10.97	85.78	5.77	693	6.51	67.5	NS	NS	NS
	6/20/13	NM	NM	NM	NM	NM	NS	NS	NS	NS
	7/3/13	10.63	86.12	6.11	NM	7.76	135	NS	NS	NS
	7/11/13	10.54	86.21	6.01	NM	5.11	151	NS	NS	NS
	7/18/13	11.20	85.55	5.15	725	5.8	102	NS	NS	NS
	7/25/13	11.42	85.33	5.49	736	4.64	136.5	NS	NS	NS
	8/8/13	11.78	84.97	5.63	649	4.77	109.4	NS	NS	NS
	8/15/13	11.58	85.17	6.69	696	2.85	128.0	NS	NS	NS
	8/21/13	11.78	84.97	6.78	767	0.81	98.7	NS	NS	NS
	8/29/13	11.83	84.92	6.42	747	4.82	81.4	NS	NS	NS
	9/5/13	11.51	85.24	7.26	734	3.98	80.7	NS	NS	NS
	9/10/13	NM	NM	NM	NM	NM	NS	NS	NS	NS
	9/19/14	11.67	85.08	6.22	738	5.37	74	NS	NS	NS
	9/25/13	11.50	85.25	6.46	862	3.12	29.1	NS	NS	NS
	10/3/13	11.80	84.95	6.65	751	4.67	64.1	NS	NS	NS
	10/10/13	NM	NM	NM	NM	NM	NS	NS	NS	NS
	10/17/13	11.97	84.78	6.76	754	1.62	4.40	NS	NS	NS
	10/25/13	NM	NM	NM	NM	NM	NS	NS	NS	NS
	10/31/13	NM	NM	NM	NM	NM	NS	NS	NS	NS
	11/6/13	11.92	84.83	7.14	771	5.56	-65.3	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-4</b> (continued)	11/15/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	11/22/13	12.03	84.72	6.43	716	5.34	-139.20	NS	NS	NS
	12/5/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	2/6/14	11.95	84.80	6.05	770	9.15	4.5	NS	NS	NS
	2/12/14	12.00	84.75	7.15	793	6.62	-49.5	NS	NS	NS
<b>ECS-5</b> <b>97.73</b> <i>97.56</i>	<b>11/8/99</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
	<b>12/19/02</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
	<b>9/8/05</b>	12.44	85.12	5.12	893	1.47	484	NS	NS	NS
	<b>1/25/06</b>	10.22	87.34	7.31	830	1.67	6.0	NS	NS	NS
	<b>4/11/06</b>	11.15	86.41	6.81	910	2.61	18.0	NS	NS	NS
	<b>7/20/06</b>	12.48	85.08	4.93	803	2.63	559	NS	NS	NS
	<b>10/10/06</b>	12.98	84.58	NM	NM	NM	NM	NS	NS	NS
	<b>1/25/07</b>	12.14	85.42	NM	NM	NM	NM	NS	NS	NS
	2/26/07	12.11	85.45	8.06	NM	2.21	193.8	NS	NS	NS
	<b>4/24/07</b>	10.43	87.13	NA	NA	NA	NA	NS	NS	NS
	<b>10/4/07</b>	13.57	82.77	7.30	813	3.98	82.0	NS	NS	NS
	3/7/08	11.20	85.14	6.94	726	3.34	90.6	NS	NS	NS
	<b>3/11/08</b>	10.54	85.80	7.10	834	1.52	105	NS	NS	NS
	<b>5/1/08</b>	11.27	85.07	NA	NA	NA	NA	NS	NS	NS
	<b>11/24/08</b>	12.38	83.96	NA	NA	NA	NA	NS	NS	NS
	<b>10/21/10</b>	12.58	83.76	6.39	818	1.45	39.9	NS	NS	NS
	12/22/10	12.12	84.22	6.82	822	2.18	-24.8	NS	NS	NS
	<b>3/28/11</b>	11.04	85.30	7.49	751	1.84	-9.1	NS	NS	NS
	<b>9/14/11</b>	10.17	86.17	7.49	709	1.32	-53.6	2.40	27.4	0.233
	<b>2/15/12</b>	12.00	84.34	6.25	715	2.77	-30.7	2.52	24.1	0.0777
<b>8/20/12</b>	13.03	83.31	7.41	716	3.10	-35.3	0.350	31.9	0.0326	
<b>2/20/12</b>	12.48	83.86	7.13	781	2.01	14.5	2.390	27.2	0.530	
<b>8/21/13</b>	12.53	83.81	7.35	690	2.36	100.1	NS	NS	NS	
<b>2/12/14</b>	12.90	83.44	7.33	848	1.40	-101.4	NS	NS	NS	
<b>ECS-6</b> <b>96.58</b> <i>96.34</i>	<b>2/13/03</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
	<b>9/8/05</b>	11.34	85.00	4.97	972	0.43	258	NS	NS	NS
	<b>11/1/05</b>	9.57	86.77	6.67	893	1.22	26.8	NS	NS	NS
	<b>1/25/06</b>	9.10	87.24	6.90	907	0.60	-99.0	NS	NS	NS
	<b>4/10/06</b>	11.05	85.29	7.15	1,146	0.47	64.0	NS	NS	NS
	<b>7/20/06</b>	11.40	84.94	4.11	907	0.17	561	NS	NS	NS
	<b>10/10/06</b>	11.89	84.45	NM	657	0.84	86.4	NS	NS	NS
	<b>1/25/07</b>	10.99	85.35	7.12	802	1.91	49.0	NS	NS	NS
	<b>4/24/07</b>	9.35	86.99	6.71	885	0.26	-10.4	NS	NS	NS
	<b>10/4/07</b>	12.46	83.88	6.87	947	1.20	-4.0	NS	NS	NS
	3/7/08	10.05	86.29	6.16	1,721	1.18	68.4	NS	NS	NS
	<b>3/11/08</b>	10.44	85.90	6.04	1,408	0.35	83.0	22.8	252	30.6
	<b>5/1/08</b>	10.16	86.18	6.57	880	0.72	24.0	<2.0	100	5.70
	<b>11/24/08</b>	11.26	85.08	6.85	398	0.12	-40.0	0.14	38.5	5.29
	<b>2/18/09</b>	11.25	85.09	7.34	93	0.53	-24.0	0.13	24.8	2.12
	<b>8/24/09</b>	10.06	86.28	7.14	293	0.39	-38.0	0.26	29.8	1.15
	<b>2/11/10</b>	11.18	85.16	6.28	205	0.21	19.0	<0.100	22.8	2.18
	<b>9/9/10</b>	12.36	83.98	7.41	1,037	0.43	-4.0	<0.100	29.2	0.132
	<b>3/28/11</b>	9.91	86.43	6.61	1,301	0.62	7.9	0.970	48.0	2.85
	<b>9/14/11</b>	9.04	87.30	6.67	819	1.06	19.6	0.350	28.4	0.534
<b>2/15/12</b>	10.82	85.52	5.61	835	0.68	-14.9	<0.200	23.4	2.06	
<b>8/20/12</b>	11.85	84.49	6.86	881	0.32	-61.1	0.242	24.7	3.81	
<b>2/20/12</b>	11.29	85.05	6.80	867	0.92	12.0	0.110	20.3	2.79	
<b>8/21/13</b>	11.40	84.94	7.27	916	0.78	87.3	NS	NS	NS	
<b>2/12/14</b>	NM	NM	NM	NM	NM	NM	NS	NS	NS	
<b>ECS-7</b> <b>95.97</b> <i>95.54</i>	<b>2/13/03</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
	<b>9/8/05</b>	9.75	85.79	5.55	1,398	1.20	243	NS	NS	NS
	<b>1/25/06</b>	9.05	86.49	6.85	925	0.35	16.0	NS	NS	NS
	<b>4/10/06</b>	9.90	85.64	6.44	1,490	0.79	180	NS	NS	NS
	<b>7/20/06</b>	9.78	85.76	NM	NM	NM	NM	NS	NS	NS
	<b>10/10/06</b>	9.96	85.58	NM	NM	NM	NM	NS	NS	NS
	<b>1/25/07</b>	9.70	85.84	NM	NM	NM	NM	NS	NS	NS
	<b>4/24/07</b>	9.47	86.07	NM	NM	NM	NM	NS	NS	NS
	<b>10/4/07</b>	10.41	85.13	6.58	1,089	0.39	9	NS	NS	NS
	3/7/08	14.79	80.75	6.63	962	2.62	60.2	NS	NS	NS
	<b>5/1/08</b>	9.62	85.92	NM	NM	NM	NM	NS	NS	NS
	<b>11/24/08</b>	10.79	84.75	NM	NM	NM	NM	NS	NS	NS
	9/14/11	8.71	86.83	NM	NM	NM	NM	NS	NS	NS
	2/15/12	9.17	86.37	NM	NM	NM	NM	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

<b>Monitoring Well &amp; PVC Elevation (ft)</b>	<b>Monitoring Date</b>	<b>Depth to Water (ft)</b>	<b>Groundwater Elevation (ft)</b>	<b>pH (SU)</b>	<b>Specific Conductivity (µS/cm)</b>	<b>Dissolved Oxygen (mg/L)</b>	<b>Redox (mV)</b>	<b>Nitrate (mg/L)</b>	<b>Sulfate (mg/L)</b>	<b>Dissolved Iron (mg/L)</b>
<b>ECS-7</b>	8/30/12	9.26	86.28	6.49	1,564	0.44	-70.5	NS	NS	NS
<b>(continued)</b>	8/21/13	9.08	86.46	6.78	1,117	0.65	97.4	NS	NS	NS
	2/12/14	10.15	85.39	7.00	1,290	0.89	-112.3	NS	NS	NS
<b>ECS-8**</b>	<b>2/13/03</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>95.72</b>	<b>9/8/05</b>	10.35	85.08	4.74	1,534	1.20	469	<0.100	52.6	18.3
<i>95.43</i>	<b>1/25/06</b>	NG	NA	NM	NM	NM	NM	NS	NS	NS
	<b>4/11/06</b>	9.98	85.45	6.51	193	0.16	4.0	<0.100	59.2	1.64
	<b>7/20/06</b>	10.28	85.15	NM	NM	NM	NM	NS	NS	NS
	9/15/06	11.29	84.14	6.62	NM	10.17	-2.8	NS	NS	NS
	9/21/06	10.31	85.12	6.75	NM	7.85	123	NS	NS	NS
	10/6/06	11.75	83.68	7.63	NM	1.23	27.0	NS	NS	NS
	<b>10/10/06</b>	10.81	84.62	NM	NM	NM	NM	NS	NS	NS
	10/23/06	NG	NA	NM	NM	NM	NM	NS	NS	NS
	11/7/06	10.09	85.34	6.33	NM	7.43	-34.7	NS	NS	NS
	11/20/06	9.47	85.96	6.82	NM	3.53	78.6	NS	NS	NS
	12/4/06	9.92	85.51	7.92	NM	10.70	179.5	NS	NS	NS
	12/18/06	11.42	84.01	6.18	NM	7.30	27.2	NS	NS	NS
	1/2/07	10.33	85.10	6.69	NM	7.64	-98.5	NS	NS	NS
	1/15/07	9.87	85.56	6.82	NM	7.33	-109.6	NS	NS	NS
	<b>1/25/07</b>	9.91	85.52	NM	NM	NM	NM	NS	NS	NS
	1/29/07	10.08	85.35	7.13	NM	13.11	-79.2	NS	NS	NS
	2/12/07	11.62	83.81	6.93	NM	10.22	14.4	NS	NS	NS
	2/26/07	10.35	85.08	7.31	NM	6.41	246.7	NS	NS	NS
	3/12/07	10.22	85.21	7.14	NM	8.63	62.7	NS	NS	NS
	3/26/07	9.84	85.59	7.15	NM	9.40	39.7	NS	NS	NS
	4/10/07	9.16	86.27	7.06	NM	11.61	60.4	NS	NS	NS
	<b>4/24/07</b>	8.19	87.24	6.40	1,075	8.84	222.6	NS	NS	NS
	5/7/07	9.00	86.43	5.01	NM	11.69	90.8	NS	NS	NS
	5/24/07	9.83	85.60	5.47	NM	10.14	108.2	NS	NS	NS
	6/4/07	9.08	86.35	5.13	NM	8.03	43.6	NS	NS	NS
	6/18/07	10.18	85.25	6.28	NM	13.65	-14.7	NS	NS	NS
	7/3/07	10.62	84.81	7.36	NM	7.44	90.8	NS	NS	NS
	7/16/07	11.89	83.54	7.14	NM	7.54	104.7	NS	NS	NS
	8/1/07	10.83	84.60	6.45	NM	7.61	71.8	NS	NS	NS
	8/13/07	10.92	84.51	5.71	NM	3.10	-283.4	NS	NS	NS
	8/27/07	11.17	84.26	6.27	NM	7.42	-13.8	NS	NS	NS
	9/10/07	11.26	84.18	7.30	NM	9.71	-14.5	NS	NS	NS
	9/25/07	11.35	84.08	7.28	NM	7.10	-17.1	NS	NS	NS
	<b>10/4/07</b>	11.45	83.98	6.41	1,580	0.54	96.0	NS	NS	NS
	10/9/07	11.48	83.95	6.16	NM	2.85	-301.2	NS	NS	NS
	10/22/07	11.22	84.21	7.04	NM	4.01	-22.5	NS	NS	NS
	11/5/07	11.05	84.38	7.08	NM	3.01	39.9	NS	NS	NS
	11/19/07	10.79	84.64	7.03	NM	3.85	-25.2	NS	NS	NS
	12/3/07	9.74	85.69	7.01	NM	2.98	38.4	NS	NS	NS
	12/17/07	NG	NG	NM	NM	NM	NM	NS	NS	NS
	1/2/08	NG	NG	NM	NM	NM	NM	NS	NS	NS
	1/14/08	NG	NG	NM	NM	NM	NM	NS	NS	NS
	1/29/08	10.31	85.12	6.42	NM	4.51	73.0	NS	NS	NS
	2/11/08	NG	NG	NM	NM	NM	NM	NS	NS	NS
	3/11/08	NG	NG	NM	NM	NM	NM	NS	NS	NS
	<b>3/24/08</b>	8.56	86.87	6.33	1078	2.37	46	3.34	70.6	<0.0300
	<b>5/1/08</b>	9.02	86.41	6.64	1451	0.50	27	NS	NS	NS
	5/27/08	9.59	85.84	NM	NM	NM	NM	NS	NS	NS
	6/4/08	10.07	85.36	6.00	NM	1.06	-5	NS	NS	NS
	6/17/08	9.82	85.61	6.46	NM	1.87	49.5	NS	NS	NS
	7/1/08	9.72	85.71	6.49	NM	1.43	5.7	NS	NS	NS
	7/9/08	NM	85.71	NM	NM	NM	NM	NS	NS	NS
	7/14/08	10.23	85.20	6.32	NM	1.84	50.1	NS	NS	NS
	7/30/08	9.51	85.92	6.00	NM	2.77	57	NS	NS	NS
	8/12/08	9.81	85.62	6.30	NM	2.02	15.6	NS	NS	NS
	8/20/08	9.47	85.96	NM	NM	NM	NM	NS	NS	NS
	8/26/08	10.02	85.41	6.32	NM	2.00	9.4	NS	NS	NS
	9/9/08	8.89	86.54	6.22	NM	1.95	23.7	NS	NS	NS
	9/22/08	10.42	85.01	6.37	NM	2.04	11.7	NS	NS	NS
	10/17/08	10.65	84.78	6.59	NM	1.34	13.2	NS	NS	NS
	10/27/08	10.30	85.13	6.36	NM	1.14	11.7	NS	NS	NS
	11/11/08	10.99	84.44	6.21	NM	0.92	26.0	NS	NS	NS
	<b>11/24/08</b>	10.12	85.31	6.60	1640	0.36	7.0	NS	NS	NS
	11/25/08	11.12	84.31	6.39	NM	3.72	-26.6	NS	NS	NS
	12/11/08	9.60	85.83	6.56	NM	2.44	9.0	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-8 (continued)</b>	12/23/08	9.04	86.39	6.53	NM	2.26	13.9	NS	NS	NS
	3/19/09	9.00	86.43	6.49	NM	1.91	32.9	NS	NS	NS
	<b>4/9/09</b>	9.02	86.41	5.68	NM	0.67	205.9	NS	NS	NS
	5/5/09	9.80	85.63	6.41	NM	1.50	152.6	NS	NS	NS
	5/19/09	9.69	85.74	6.37	NM	1.77	96.2	NS	NS	NS
	6/11/09	10.30	85.13	6.34	1440	1.07	28.6	NS	NS	NS
	6/26/09	11.27	84.16	6.41	1568	1.43	90.1	NS	NS	NS
	7/6/09	9.30	86.13	6.24	816	0.46	82.6	NS	NS	NS
	7/22/09	9.47	85.96	6.35	1,407	2.43	71.4	NS	NS	NS
	8/6/09	8.51	86.92	6.41	1,340	1.70	86.8	NS	NS	NS
	<b>8/24/09</b>	8.98	86.45	6.46	1,700	0.37	13.0	NS	NS	NS
	9/10/09	9.48	85.95	6.53	1,327	0.95	62.9	NS	NS	NS
	9/23/09	9.93	85.50	6.54	1,457	10.06	26.4	NS	NS	NS
	10/6/09	9.87	85.56	6.01	683	0.49	73.8	NS	NS	NS
	10/13/09	10.05	85.38	6.39	1,199	3.66	59.0	NS	NS	NS
	10/23/09	10.10	85.33	6.43	1,756	1.79	1.4	NS	NS	NS
	11/5/09	9.26	86.17	6.39	1,452	0.70	47.8	NS	NS	NS
	11/17/09	9.53	85.90	6.55	1,403	0.25	70.4	NS	NS	NS
	12/8/09	12.28	83.15	6.81	1,352	2.61	-5.9	NS	NS	NS
	3/17/10	8.76	86.67	6.48	2,322	6.49	114.0	NS	NS	NS
	4/15/10	8.80	86.63	6.74	994	4.21	99.4	NS	NS	NS
	5/13/10	9.84	85.59	6.24	1,589	6.37	50.4	NS	NS	NS
	5/27/10	10.10	85.33	6.51	NM	5.60	9.6	NS	NS	NS
	6/9/10	9.78	85.65	6.16	NM	1.63	-14.0	NS	NS	NS
	6/24/10	10.20	85.23	6.33	NM	0.73	39.2	NS	NS	NS
	7/9/10	10.71	84.72	5.15	NM	6.10	395.2	NS	NS	NS
	7/20/10	10.77	84.66	6.62	NM	0.92	-117.0	NS	NS	NS
	8/5/10	10.79	84.64	6.67	NM	0.69	10.3	NS	NS	NS
	8/18/10	11.05	84.38	6.23	NM	2.30	117.6	NS	NS	NS
	<b>9/9/10</b>	11.29	84.14	6.56	774	0.26	53.0	NS	NS	NS
	9/15/10	11.38	84.05	6.20	NM	1.81	106.1	NS	NS	NS
	9/30/10	NM	NM	NM	NM	NM	NM	NS	NS	NS
	10/5/10	NM	NM	NM	NM	NM	NM	NS	NS	NS
	10/21/10	NM	NM	NM	NM	NM	NM	NS	NS	NS
	11/5/10	NM	NM	NM	NM	NM	NM	NS	NS	NS
	11/19/10	9.30	86.13	6.84	NM	1.31	204.9	NS	NS	NS
	12/9/10	9.81	85.62	6.04	NM	0.75	-20.8	NS	NS	NS
	12/22/10	NM	NM	NM	NM	NM	NM	NS	NS	NS
	1/7/11	10.27	85.16	6.30	NM	7.56	-36.9	NS	NS	NS
	1/19/11	NM	NM	NM	NM	NM	NM	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/3/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	<b>3/28/11</b>	8.80	86.63	6.63	1,827	1.17	33.5	NS	NS	NS
	<b>4/7/11</b>	8.86	86.57	6.96	NM	4.21	-35.8	NS	NS	NS
	<b>4/22/11</b>	8.60	86.83	6.47	1,816	0.26	-13.4	NS	NS	NS
	<b>5/7/11</b>	8.65	86.78	7.70	1,768	0.95	-3.2	NS	NS	NS
	<b>6/2/11</b>	9.51	85.92	6.48	1,690	3.00	22.9	NS	NS	NS
	<b>6/14/11</b>	NM	NM	NM	NM	NM	NM	NS	NS	NS
	<b>7/7/11</b>	9.33	86.10	6.00	NM	1.32	15.3	NS	NS	NS
	<b>7/25/11</b>	9.87	85.56	6.50	NM	1.58	-10.0	NS	NS	NS
	8/15/11	NM	NM	NM	NM	NM	NM	NS	NS	NS
<b>8/26/11</b>	9.80	85.63	6.64	1,426	0.35	-59.6	NS	NS	NS	
9/14/11	7.89	87.54	NM	NM	NM	NM	NS	NS	NS	
10/6/11	8.35	87.08	6.75	NM	1.20	39.3	NS	NS	NS	
10/20/11	NM	NM	NM	NM	NM	NM	NS	NS	NS	
11/3/11	NM	NM	NM	NM	NM	NM	NS	NS	NS	
11/17/11	NM	NM	NM	NM	NM	NM	NS	NS	NS	
12/7/11	NM	NM	NM	NM	NM	NM	NS	NS	NS	
12/21/11	9.06	86.37	6.74	1,460	4.23	228.4	NS	NS	NS	
1/4/12	9.06	86.37	7.07	1,360	7.46	193.6	NS	NS	NS	
2/1/12	NM	NM	NM	NM	NM	NM	NS	NS	NS	
2/15/12	9.56	85.87	NM	NM	NM	NM	NS	NS	NS	
3/1/12	NM	NM	NM	NM	NM	NM	NS	NS	NS	
3/15/12	9.08	86.35	6.96	1,535	2.01	290.3	NS	NS	NS	
4/5/12	9.74	85.69	6.54	NM	3.22	264.6	NS	NS	NS	
4/19/12	10.05	85.38	6.81	1,708	5.41	329.2	NS	NS	NS	
5/3/12	NM	NM	NM	NM	NM	NM	NS	NS	NS	
5/17/12	9.25	86.18	6.64	1,551	3.38	257.0	NS	NS	NS	
5/31/12	7.53	87.90	6.35	1,758	3.44	320.2	NS	NS	NS	
6/14/12	9.67	85.76	6.40	1,520	5.19	322.4	NS	NS	NS	



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GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-8 (continued)</b>	6/26/12	10.01	85.42	6.94	1,236	1.70	-2.6	NS	NS	NS
	7/3/12	10.19	85.24	6.63	NM	2.55	-22.7	NS	NS	NS
	7/19/12	10.58	84.85	6.60	1,474	0.74	-21.4	NS	NS	NS
	8/1/12	10.60	84.83	6.49	1,862	0.62	-20.2	NS	NS	NS
	8/15/12	NM	NM	NM	NM	NM	NM	NS	NS	NS
	8/20/12	10.49	84.94	NM	NM	NM	NM	NS	NS	NS
	8/30/12	10.77	84.66	6.34	2050	0.34	-25.5	NS	NS	NS
	9/17/12	10.85	84.58	6.32	1949	0.37	9.0	NS	NS	NS
	9/26/12	10.56	84.87	6.04	1835	0.32	67.8	NS	NS	NS
	10/11/12	10.48	84.95	6.52	1695	0.41	-24.5	NS	NS	NS
	10/25/12	10.02	85.41	6.40	1656	1.10	-38.4	NS	NS	NS
	11/1/12	9.88	85.55	6.26	1666	0.60	-29.7	NS	NS	NS
	11/15/12	10.17	85.26	6.23	1610	1.59	-52.6	NS	NS	NS
	12/6/12	10.42	85.01	5.99	1567	0.70	-63.1	NS	NS	NS
	12/20/12	10.06	85.37	6.14	1541	0.83	-57.7	NS	NS	NS
	1/3/13	9.86	85.57	6.05	1500	1.07	-41.6	NS	NS	NS
	1/17/13	9.86	85.57	6.14	1499	0.75	-44.2	NS	NS	NS
	2/7/13	11.03	84.40	5.81	1145	1.25	34.7	NS	NS	NS
	2/20/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	3/7/13	9.88	85.55	NM	NM	NM	NM	NS	NS	NS
	3/20/13	9.35	86.08	6.24	1024	5.91	52.0	NS	NS	NS
	4/4/13	9.34	86.09	6.19	1119	3.82	15.6	NS	NS	NS
	4/12/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	4/18/13	9.13	86.30	5.90	1,243	5.38	40.9	NS	NS	NS
	4/26/13	9.28	86.15	6.16	706	8.15	-10.1	NS	NS	NS
	5/2/13	9.51	85.92	6.44	1,307	6.00	-79.7	NS	NS	NS
	5/10/13	9.71	85.72	5.25	1,169	4.76	54.3	NS	NS	NS
	5/23/13	9.60	85.83	5.83	1,282	7.63	9.0	NS	NS	NS
	6/6/13	9.04	86.39	5.85	1,073	4.60	72.7	NS	NS	NS
	6/20/13	8.22	87.21	5.65	1,274	5.29	103.4	NS	NS	NS
	7/3/13	8.76	86.67	5.96	NM	6.81	125.0	NS	NS	NS
	7/11/13	8.59	86.84	5.88	NM	5.99	111.0	NS	NS	NS
	7/18/13	9.32	86.11	5.10	1,397	6.39	106.1	NS	NS	NS
	7/25/13	9.52	85.91	5.51	1,336	4.64	126.7	NS	NS	NS
	8/8/13	9.85	85.58	5.59	1,448	2.14	99.4	NS	NS	NS
	8/15/13	9.69	85.74	6.57	1,516	3.14	131.8	NS	NS	NS
	8/21/13	9.87	85.56	6.80	1,656	0.70	95.6	NS	NS	NS
	8/29/13	9.82	85.61	6.20	1,616	3.77	79.1	NS	NS	NS
	9/5/13	9.58	85.85	6.78	1,367	4.32	90.7	NS	NS	NS
	9/10/13	9.70	85.73	6.65	1,519	2.46	61.1	NS	NS	NS
	9/25/13	9.52	85.91	6.43	1,698	2.71	5.5	NS	NS	NS
	10/3/13	9.82	85.61	6.58	1,481	4.33	55.6	NS	NS	NS
	10/10/13	9.68	85.75	6.80	1,445	4.30	65.1	NS	NS	NS
	10/17/13	9.86	85.57	6.67	1,410	1.69	-2.9	NS	NS	NS
	10/25/13	9.94	85.49	6.87	1,297	5.11	-35.9	NS	NS	NS
	10/31/13	9.92	85.51	7.11	1,289	4.73	-77.7	NS	NS	NS
	11/6/13	9.84	85.59	7.10	1,255	3.83	-127.9	NS	NS	NS
11/15/13	9.92	85.51	7.41	1,118	5.03	-80.8	NS	NS	NS	
11/22/13	NM	NM	NM	NM	NM	NM	NS	NS	NS	
12/5/13	10.30	85.13	7.72	1,162	6.02	-43.3	NS	NS	NS	
12/26/13	10.03	85.40	6.30	1,402	2.95	55.2	NS	NS	NS	
1/16/14	9.59	85.84	NM	NM	NM	NM	NS	NS	NS	
1/9/14	9.96	85.47	6.26	700	7.05	-104.9	NS	NS	NS	
2/6/14	10.64	84.79	6.33	1,064	5.33	-48.4	NS	NS	NS	
2/12/14	10.53	84.90	6.77	1,075	1.24	-80.1	NS	NS	NS	
3/6/14	10.70	84.73	6.42	6,060	5.55	33.3	NS	NS	NS	
<b>ECS-9*</b>	<b>2/13/03</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
<b>95.22</b>	<b>9/19/05</b>	10.91	84.08	6.22	1,047	4.69	-46.8	<0.100	<1.0	11.5
<b>94.99</b>	<b>1/25/06</b>	8.38	86.61	6.32	944	0.80	-89.0	<0.100	7.27	9.75
	<b>4/11/06</b>	10.33	84.66	6.52	157	0.60	-13.0	<0.100	<1.0	0.945
	<b>7/20/06</b>	10.72	84.27	3.02	1,136	0.30	445	<0.100	<1.0	10.8
	<b>10/10/06</b>	11.12	83.87	NA	NA	NA	NA	NS	NS	NS
	<b>1/25/07</b>	10.31	84.68	6.64	995	1.42	-2	<0.5	<5.0	10.6
	<b>4/24/07</b>	8.57	86.42	6.40	1,609	0.58	-2.6	NS	NS	NS
	<b>10/4/07</b>	11.79	83.20	6.69	1,478	1.11	-94.0	<0.100	8.05	47.1
	3/7/08	9.22	85.77	6.57	1,195	2.80	36.5	NS	NS	NS
	<b>3/11/08</b>	8.63	86.36	6.75	1,217	0.32	12.0	<0.100	36.2	6.76
	<b>5/1/08</b>	9.47	85.52	6.77	1,730	0.52	46.0	<1.0	61.3	0.40
	<b>11/24/08</b>	10.6	84.39	6.81	1,146	0.21	-31.0	<0.100	<1.0	10.8
	<b>2/18/09</b>	10.62	84.37	6.77	1,060	0.46	-29.0	<0.100	1.05	8.64

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)	
<b>ECS-9 (continued)</b>	<b>8/24/09</b>	9.33	85.66	6.68	1,560	0.39	-8.0	<0.100	26.20	11.6	
	<b>2/11/10</b>	10.49	84.50	6.43	1,600	0.40	-27.0	<0.100	5.32	9.45	
	<b>9/9/10</b>	11.64	83.35	6.76	744	0.29	-16.0	<0.100	<1.0	10.8	
	<b>3/28/11</b>	9.28	85.71	7.06	1,147	6.39	31.5	0.100	9.72	0.784	
	<b>9/14/11</b>	8.41	86.58	6.67	1,622	0.30	83.2	0.280	58.8	0.224	
	<b>2/15/12</b>	10.23	84.76	7.16	1,542	1.64	-9.6	0.250	6.75	3.46	
	<b>8/20/12</b>	NM	NM	NM	NM	NM	NM	NS	NS	NS	
	<b>8/30/12</b>	11.35	83.64	6.27	1,155	0.40	-24.1	<0.100	1.52	15.3	
	<b>2/20/13</b>	10.55	84.44	6.73	939	0.70	8.2	<0.100	6.49	13.9	
	<b>8/21/13</b>	10.66	84.33	6.77	980	0.85	93.5	<0.100	3.17	24.2	
	<b>2/12/14</b>	11.01	83.98	7.15	1,219	0.98	-145.0	<0.100	<1.00	26.9	
	<b>ECS-10 95.90 95.75</b>	<b>2/13/03</b>	NA	NA	NA	NA	NA	NA	NS	NS	NS
		<b>9/8/05</b>	9.59	86.16	4.40	1,624	0.93	601	NS	NS	NS
	<b>1/25/06</b>	8.57	87.18	6.96	1,850	0.37	23.0	NS	NS	NS	
	<b>4/10/06</b>	9.52	86.23	6.60	234	0.35	180	NS	NS	NS	
	<b>7/20/06</b>	9.42	86.33	NM	NM	NM	NM	NS	NS	NS	
	<b>10/10/06</b>	9.64	86.11	NM	NM	NM	NM	NS	NS	NS	
	<b>1/25/07</b>	9.31	86.44	NM	NM	NM	NM	NS	NS	NS	
	<b>4/24/07</b>	8.53	87.22	NM	NM	NM	NM	NS	NS	NS	
	<b>10/4/07</b>	10.18	85.57	6.60	1,570	0.36	15.0	NS	NS	NS	
	<b>3/7/08</b>	8.01	87.74	6.70	1,473	0.46	62.2	NS	NS	NS	
	<b>3/11/08</b>	5.74	90.01	6.58	930	0.51	82.0	3.84	27.2	1.20	
	<b>5/1/08</b>	8.87	86.88	6.93	1,650	0.57	47.0	13.3	45.2	<0.0300	
	<b>11/24/08</b>	9.4	86.35	6.74	1,800	0.28	-30.0	<0.100	23.0	7.98	
	<b>2/18/09</b>	9.62	86.13	6.85	1,670	0.59	42.0	<0.100	28.2	1.90	
	<b>8/24/09</b>	8.75	87.00	6.20	314	0.37	56.0	0.12	2.67	3.00	
	<b>2/11/10</b>	9.34	86.41	6.22	1,660	0.49	37.0	<0.100	8.79	1.65	
	<b>9/9/10</b>	9.55	86.20	6.77	792	0.29	-39.0	<0.100	2.18	15.6	
	<b>3/28/11</b>	8.70	87.05	6.78	664	0.59	15.1	0.420	6.41	1.48	
	<b>9/14/11</b>	8.15	87.60	NM	NM	NM	NM	NS	NS	NS	
	<b>2/15/12</b>	NM	NM	NM	NM	NM	NM	NS	NS	NS	
	<b>8/20/12</b>	8.99	86.76	NM	NM	NM	NM	NS	NS	NS	
	<b>8/30/12</b>	9.12	86.63	6.65	1,179	0.38	-87.2	NS	NS	NS	
	<b>8/21/13</b>	8.83	86.92	6.92	1,614	0.58	77.4	NS	NS	NS	
	<b>2/14/14</b>	9.43	86.32	7.64	1,642	1.44	-124.6	NS	NS	NS	
<b>ECS-11** 96.70</b>	<b>1/25/06</b>	9.28	87.42	6.42	1,033	0.70	-74.0	<0.100	25.2	10.4	
	<b>4/10/06</b>	10.94	85.76	6.92	1,103	0.67	-5.0	NS	NS	NS	
	<b>7/20/06</b>	11.31	85.39	4.75	1,024	0.25	503	NS	NS	NS	
	<b>9/15/06</b>	12.31	84.39	7.00	NM	8.92	-49.9	NS	NS	NS	
	<b>9/21/06</b>	11.89	84.81	6.95	NM	10.01	266	NS	NS	NS	
	<b>10/6/06</b>	11.74	84.96	8.10	NM	2.48	-41.5	NS	NS	NS	
	<b>10/10/06</b>	11.81	84.89	NM	649	0.63	71.4	NS	NS	NS	
	<b>10/23/06</b>	11.20	85.50	6.12	NM	1.60	NM	NS	NS	NS	
	<b>11/7/06</b>	10.74	85.96	6.76	NM	10.43	-51.4	NS	NS	NS	
	<b>11/20/06</b>	10.49	86.21	7.56	NM	8.52	-11.5	NS	NS	NS	
	<b>12/4/06</b>	10.93	85.77	7.46	NM	12.59	232.5	NS	NS	NS	
	<b>12/18/06</b>	11.40	85.30	6.44	NM	8.36	-8.5	NS	NS	NS	
	<b>1/2/07</b>	11.34	85.36	7.69	NM	8.39	-127.5	NS	NS	NS	
	<b>1/15/07</b>	10.89	85.81	7.34	NM	8.16	-133.4	NS	NS	NS	
	<b>1/25/07</b>	10.98	85.72	7.03	849	1.58	4.0	NS	NS	NS	
	<b>1/29/07</b>	11.11	85.59	7.43	NM	8.73	-105.0	NS	NS	NS	
	<b>2/12/07</b>	11.54	85.16	7.22	NM	10.69	-48.6	NS	NS	NS	
	<b>2/26/07</b>	11.14	85.56	7.14	NM	4.89	NM	NS	NS	NS	
	<b>3/12/07</b>	11.91	84.79	7.07	NM	9.85	42.4	NS	NS	NS	
	<b>3/26/07</b>	10.86	85.84	7.29	NM	10.23	-38.8	NS	NS	NS	
	<b>4/10/07</b>	10.2	86.50	7.25	NM	12.52	66.7	NS	NS	NS	
	<b>4/24/07</b>	9.35	87.35	5.70	1,163	0.30	149.2	NS	NS	NS	
	<b>5/7/07</b>	10.18	86.52	5.37	NM	12.55	59.1	NS	NS	NS	
	<b>5/24/07</b>	10.98	85.72	5.82	NM	11.23	58.6	NS	NS	NS	
	<b>6/4/07</b>	11.05	85.65	6.63	NM	6.17	210.1	NS	NS	NS	
	<b>6/18/07</b>	11.28	85.42	6.72	NM	9.23	10.2	NS	NS	NS	
	<b>7/3/07</b>	11.65	85.05	7.85	NM	15.90	81.5	NS	NS	NS	
	<b>7/16/07</b>	12.92	83.78	7.03	NM	13.29	98.3	NS	NS	NS	
	<b>8/1/07</b>	11.87	84.83	6.94	NM	9.42	-0.6	NS	NS	NS	
	<b>8/13/07</b>	11.97	84.73	6.27	NM	1.21	-319.1	NS	NS	NS	
	<b>8/27/07</b>	12.2	84.50	6.65	NM	8.97	-51.7	NS	NS	NS	
	<b>9/10/07</b>	12.29	84.41	7.28	NM	5.81	-41.1	NS	NS	NS	
	<b>9/25/07</b>	12.36	84.34	7.26	NM	5.23	-42.3	NS	NS	NS	
	<b>10/4/07</b>	12.47	84.23	6.64	1,176	1.07	-11.0	NS	NS	NS	

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O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-11 (continued)</b>	10/9/07	12.52	84.18	6.91	NM	5.33	-306.3	NS	NS	NS
	10/22/07	12.26	84.44	7.91	NM	4.20	-64.1	NS	NS	NS
	11/5/07	12.10	84.60	7.56	NM	2.80	-15.1	NS	NS	NS
	11/19/07	11.82	84.88	7.82	NM	4.07	-69.7	NS	NS	NS
	12/3/07	12.79	83.91	7.31	NM	2.68	-98.1	NS	NS	NS
	12/17/07	11.93	84.77	7.03	NM	2.97	-91.5	NS	NS	NS
	1/2/08	11.40	85.30	6.61	NM	4.95	-96.2	NS	NS	NS
	1/14/08	11.01	85.69	6.60	NM	4.52	-65.7	NS	NS	NS
	1/29/08	11.34	85.36	7.11	NM	5.47	20.9	NS	NS	NS
	2/11/08	11.19	85.51	NM	NM	NM	NM	NS	NS	NS
	3/7/08	9.84	86.86	6.86	1,999	0.16	70.7	NS	NS	NS
	<b>3/11/08</b>	9.36	87.34	6.88	1,601	0.86	-25.0	NS	NS	NS
	<b>5/1/08</b>	10.28	86.42	7.04	1,471	0.52	12.0	NS	NS	NS
	5/27/08	10.63	86.07	NM	NM	NM	NM	NS	NS	NS
	6/4/08	11.01	85.69	6.48	NM	0.29	-28.7	NS	NS	NS
	6/17/08	11.03	85.67	7.22	NM	2.17	-37.3	NS	NS	NS
	7/1/08	10.55	86.15	7.29	NM	0.90	-32.4	NS	NS	NS
	7/9/08	NM	86.15	NM	NM	NM	NM	NS	NS	NS
	7/14/08	11.84	84.86	6.81	NM	1.70	19.0	NS	NS	NS
	7/30/08	10.58	86.12	6.55	NM	1.98	-17.8	NS	NS	NS
	8/12/08	10.58	86.12	6.86	NM	0.86	112.4	NS	NS	NS
	8/20/08	11.02	85.68	NM	NM	NM	NM	NS	NS	NS
	8/26/08	10.81	85.89	6.90	NM	1.93	-11.2	NS	NS	NS
	9/9/08	10.74	85.96	6.69	NM	0.72	118.2	NS	NS	NS
	9/22/08	11.57	85.13	6.60	NM	0.57	7.9	NS	NS	NS
	10/17/08	11.1	85.60	7.04	NM	0.71	-2.9	NS	NS	NS
	10/27/08	10.8	85.90	6.80	NM	1.50	-11.6	NS	NS	NS
	11/11/08	10.99	85.71	6.62	NM	1.01	-34.7	NS	NS	NS
	<b>11/24/08</b>	11.21	85.49	7.01	1,540	0.16	-34.0	NS	NS	NS
	11/25/08	11.12	85.58	6.68	NM	0.94	-161.0	NS	NS	NS
	12/11/08	10.88	85.82	7.06	NM	0.61	-18.0	NS	NS	NS
	12/23/08	9.67	87.03	6.60	NM	1.04	-33.7	NS	NS	NS
	1/6/09	9.87	86.83	6.47	NM	0.71	28.9	NS	NS	NS
	1/23/09	10.55	86.15	6.66	NM	2.88	48.1	NS	NS	NS
	2/18/09	11.25	85.45	7.03	1,501	0.65	11.0	NS	NS	NS
	3/4/09	10.72	85.98	6.83	NM	1.17	187.8	NS	NS	NS
	3/19/09	9.94	86.76	6.94	NM	0.44	-17.4	NS	NS	NS
	4/9/09	9.87	86.83	7.40	NM	0.29	91.7	NS	NS	NS
	4/23/09	9.87	86.83	6.95	NM	1.00	39.4	NS	NS	NS
	5/5/09	10.62	86.08	6.94	NM	0.90	66.5	NS	NS	NS
	5/19/09	10.55	86.15	6.79	NM	1.21	20.9	NS	NS	NS
	6/11/09	10.86	85.84	6.77	NM	0.61	-10.1	NS	NS	NS
	6/26/09	11.17	85.53	6.60	NM	0.88	38.9	NS	NS	NS
	7/6/09	10.44	86.26	6.70	1,198	0.30	-25.8	NS	NS	NS
	7/22/09	10.75	85.95	6.70	1,223	4.62	28.5	NS	NS	NS
	8/6/09	9.38	87.32	6.82	1,290	0.75	-69.9	NS	NS	NS
	<b>8/24/09</b>	10.08	86.62	6.85	1,273	0.41	-22.0	NS	NS	NS
	9/10/09	10.57	86.13	7.21	1,151	0.57	-22.7	NS	NS	NS
	9/23/09	10.56	86.14	7.13	1,226	11.20	-77.7	NS	NS	NS
	10/6/09	10.75	85.95	6.64	1,214	0.71	16.9	NS	NS	NS
	10/13/09	11.20	85.50	7.15	1,039	3.17	12.6	NS	NS	NS
	10/23/09	10.85	85.85	6.91	1,285	2.19	-59.3	NS	NS	NS
11/5/09	10.48	86.22	6.91	1,312	1.15	-58.9	NS	NS	NS	
11/17/09	10.44	86.26	7.01	1,254	3.15	-27.3	NS	NS	NS	
12/8/09	10.33	86.37	6.99	1,280	0.47	-36.1	NS	NS	NS	
12/23/09	10.55	86.15	7.21	1,002	1.30	58.3	NS	NS	NS	
1/8/10	10.70	86.00	7.04	1,077	0.88	28.2	NS	NS	NS	
1/20/10	11.36	85.34	7.11	1,095	1.41	-19.8	NS	NS	NS	
2/3/10	11.03	85.67	6.77	NM	10.84	-58.9	NS	NS	NS	
2/11/10	11.26	85.44	7.01	1,290	0.47	-39.0	NS	NS	NS	
2/18/10	11.68	85.02	6.95	NM	0.84	14.4	NS	NS	NS	
3/3/10	10.99	85.71	6.96	1,331	2.84	-2.7	NS	NS	NS	
3/17/10	10.19	86.51	7.00	1,204	1.64	-39.6	NS	NS	NS	
4/15/10	9.86	86.84	6.95	1,009	1.04	-38.6	NS	NS	NS	
4/28/10	10.34	86.36	6.82	NM	3.80	24.2	NS	NS	NS	
5/13/10	11.08	85.62	6.81	1,119	4.78	36.9	NS	NS	NS	
5/27/10	11.3	85.40	6.99	NM	1.11	-42.6	NS	NS	NS	
6/9/10	10.95	85.75	6.49	NM	0.97	8.9	NS	NS	NS	
6/24/10	11.34	85.36	6.50	NM	0.59	33.9	NS	NS	NS	
7/9/10	11.93	84.77	6.38	NM	6.59	37.7	NS	NS	NS	
7/20/10	11.26	85.44	7.10	NM	0.58	-291.1	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-11</b>	8/5/10	12.02	84.68	6.68	NM	1.14	22.1	NS	NS	NS
<b>(continued)</b>	8/18/10	11.4	85.30	6.86	NM	2.41	39.4	NS	NS	NS
	<b>9/9/10</b>	12.48	84.22	7.19	1,100	0.48	6.0	NS	NS	NS
	9/15/10	12.56	84.14	6.91	NM	2.01	12.6	NS	NS	NS
	9/30/10	12.59	84.11	6.69	NM	3.19	190.7	NS	NS	NS
	10/5/10	11.90	84.80	6.93	1,101	0.83	60.0	NS	NS	NS
	10/21/10	11.02	85.68	7.01	NM	1.60	-20.0	NS	NS	NS
	11/5/10	11.53	85.17	6.98	NM	9.50	19.9	NS	NS	NS
	11/19/10	10.90	85.80	6.96	NM	3.64	39.4	NS	NS	NS
	12/9/10	10.80	85.90	6.42	NM	1.05	-16.5	NS	NS	NS
	12/22/10	10.59	86.11	6.61	1,263	1.28	-39.8	NS	NS	NS
	1/7/11	11.49	85.21	6.48	NM	7.56	-36.9	NS	NS	NS
	1/19/11	NM	NA	NM	NM	NM	NS	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NS	NS	NS	NS
	2/15/11	NM	NA	NM	NM	NM	NS	NS	NS	NS
	3/3/11	11.86	84.84	6.24	NM	9.32	215.3	NS	NS	NS
	<b>3/28/11</b>	9.94	86.76	7.14	1,395	1.24	-71.9	NS	NS	NS
	4/7/11	10.08	86.62	7.29	NM	3.06	-66.1	NS	NS	NS
	4/22/11	10.00	86.70	6.94	1,261	1.38	-61.1	NS	NS	NS
	5/7/11	10.05	86.65	6.17	0,015	2.39	126.3	NS	NS	NS
	6/2/11	10.92	85.78	6.90	1,333	2.73	-4.0	NS	NS	NS
	6/14/11	10.95	85.75	7.20	NM	0.27	-87.1	NS	NS	NS
	7/7/11	10.72	85.98	6.10	NM	0.76	-20.4	NS	NS	NS
	7/25/11	11.29	85.41	6.73	NM	0.36	-32.1	NS	NS	NS
	8/15/11	11.66	85.04	6.96	NM	0.26	-47.0	NS	NS	NS
	8/26/11	11.12	85.58	7.02	1,255	0.04	-92.2	NS	NS	NS
	<b>9/14/11</b>	9.11	87.59	6.96	1,235	0.29	-103.1	NS	NS	NS
	10/6/11	9.65	87.05	7.05	NM	0.68	-58.0	NS	NS	NS
	10/20/11	10.27	86.43	6.92	NM	0.87	-85.3	NS	NS	NS
	11/3/11	10.44	86.26	6.70	1,405	0.60	-71.0	NS	NS	NS
	11/17/11	10.65	86.05	6.67	NM	0.72	-32.0	NS	NS	NS
	12/7/11	10.65	86.05	7.24	1,100	2.38	260.6	NS	NS	NS
	12/21/11	10.46	86.24	7.48	1,064	4.27	224.2	NS	NS	NS
	1/4/12	10.45	86.25	7.55	1,077	9.37	58.8	NS	NS	NS
	1/17/12	10.88	85.82	7.04	2,594	5.21	287.8	NS	NS	NS
	2/1/12	10.45	86.25	7.04	1,574	5.57	209.1	NS	NS	NS
	2/15/12	10.89	85.81	7.59	2,786	0.77	-56.5	NS	NS	NS
	3/1/12	11.08	85.62	7.50	1,552	6.22	300.6	NS	NS	NS
	3/15/12	10.73	85.97	7.32	1,287	3.12	280.3	NS	NS	NS
	4/5/12	11.2	85.50	7.12	NM	5.66	321.5	NS	NS	NS
	4/19/12	11.52	85.18	7.60	1,199	5.26	322.2	NS	NS	NS
	5/3/12	11.32	85.38	7.77	1,129	1.87	252.5	NS	NS	NS
	5/17/12	10.72	85.98	7.20	1,120	4.47	238.8	NS	NS	NS
	5/31/12	10.95	85.75	6.54	1,092	4.92	320.7	NS	NS	NS
	6/14/12	11.08	85.62	6.38	1,086	5.07	412.7	NS	NS	NS
	6/28/12	11.42	85.28	7.17	1,027	0.98	-21.7	NS	NS	NS
	7/3/12	11.57	85.13	7.21	NM	0.48	-67.8	NS	NS	NS
	7/19/12	11.95	84.75	6.98	966	0.85	-20.4	NS	NS	NS
	8/1/12	11.95	84.75	6.90	1,178	0.68	-50.8	NS	NS	NS
	8/20/12	11.86	84.84	6.94	1,022	0.23	-41.6	NS	NS	NS
	8/30/12	12.07	84.63	6.27	1,155	0.40	-24.1	NS	NS	NS
	9/17/12	12.15	84.55	6.89	1,184	0.18	-31.1	NS	NS	NS
	9/26/12	11.89	84.81	6.58	1,195	0.21	33.6	NS	NS	NS
	10/11/12	11.86	84.84	6.93	1,089	0.29	-36.6	NS	NS	NS
	10/25/12	11.43	85.27	6.81	1,101	0.42	-38.2	NS	NS	NS
	11/1/12	11.28	85.42	6.71	1,104	0.55	-35.8	NS	NS	NS
	11/15/12	11.56	85.14	6.58	1,106	0.75	-42.5	NS	NS	NS
	12/6/12	11.81	84.89	6.42	1,128	0.40	-61.8	NS	NS	NS
	12/20/12	11.52	85.18	6.50	1,129	0.59	-59.5	NS	NS	NS
	1/3/13	11.35	85.35	6.33	1,120	0.74	-55.1	NS	NS	NS
	1/17/13	11.29	85.41	5.99	3,685	0.73	-36.8	NS	NS	NS
	2/7/13	11.03	85.67	5.81	1,145	1.25	34.7	NS	NS	NS
	2/20/13	11.30	85.40	7.04	1,189	0.56	5.1	NS	NS	NS
	3/7/13	11.30	85.40	6.64	1,212	4.17	40.9	NS	NS	NS
	3/20/13	10.82	85.88	6.51	1,201	4.14	7.7	NS	NS	NS
	4/4/13	10.84	85.86	6.30	1,118	6.31	11.7	NS	NS	NS
	4/12/13	10.53	86.17	4.75	353	7.99	93.8	NS	NS	NS
	4/18/13	10.52	86.18	6.20	1,064	6.79	31.0	NS	NS	NS
	4/26/13	10.77	85.93	6.75	1,147	4.00	-52.9	NS	NS	NS
	5/2/13	11.00	85.70	6.99	1,024	8.17	-84.6	NS	NS	NS
	5/10/13	11.19	85.51	5.01	1,204	5.01	22.2	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

<b>Monitoring Well &amp; PVC Elevation (ft)</b>	<b>Monitoring Date</b>	<b>Depth to Water (ft)</b>	<b>Groundwater Elevation (ft)</b>	<b>pH (SU)</b>	<b>Specific Conductivity (µS/cm)</b>	<b>Dissolved Oxygen (mg/L)</b>	<b>Redox (mV)</b>	<b>Nitrate (mg/L)</b>	<b>Sulfate (mg/L)</b>	<b>Dissolved Iron (mg/L)</b>
<b>ECS-11 (continued)</b>	5/23/13	11.08	85.62	6.09	1,151	9.07	27.6	NS	NS	NS
	6/6/13	10.56	86.14	6.18	1,033	4.85	34.6	NS	NS	NS
	6/20/13	9.62	87.08	6.07	1,114	3.26	100.2	NS	NS	NS
	7/3/13	10.22	86.48	6.29	NM	5.27	112.7	NS	NS	NS
	7/11/13	10.13	86.57	6.21	NM	5.21	94.0	NS	NS	NS
	7/18/13	10.76	85.94	5.49	1,206	5.83	101.4	NS	NS	NS
	7/25/13	10.98	85.72	5.48	1,162	5.47	135.5	NS	NS	NS
	8/8/13	11.32	85.38	6.11	1,227	1.44	101.0	NS	NS	NS
	8/15/13	11.15	85.55	7.10	842	0.83	112.1	NS	NS	NS
	8/21/13	11.33	85.37	7.14	1,262	0.60	83.5	NS	NS	NS
	8/29/13	11.34	85.36	6.71	1,245	2.69	63.8	NS	NS	NS
	9/5/13	11.10	85.60	7.36	1,206	3.87	74.2	NS	NS	NS
	9/10/13	11.26	85.44	7.00	1,210	0.09	-74.6	NS	NS	NS
	9/19/13	11.23	85.47	7.03	1,175	1.03	53.1	NS	NS	NS
	9/25/13	11.11	85.59	6.99	1,406	2.25	-45.9	NS	NS	NS
	10/3/13	11.37	85.33	7.01	1,243	4.00	-8.4	NS	NS	NS
	10/10/13	11.30	85.40	7.02	1,233	4.41	-12.9	NS	NS	NS
	10/17/13	11.47	85.23	7.03	1,257	2.16	-73.1	NS	NS	NS
	10/25/13	11.56	85.14	7.44	1,222	4.35	-66.3	NS	NS	NS
	10/31/13	11.58	85.12	7.69	1,238	3.40	-100.8	NS	NS	NS
	11/6/13	11.55	85.15	7.73	1,255	3.83	-127.9	NS	NS	NS
	11/15/13	11.61	85.09	7.86	1,159	5.59	-75.4	NS	NS	NS
	11/22/13	11.65	85.05	6.15	996	5.92	-95.9	NS	NS	NS
	12/5/13	11.57	85.13	7.94	1,226	5.76	-29.5	NS	NS	NS
	12/19/13	11.83	84.87	7.13	1,097	6.04	-63.3	NS	NS	NS
	12/26/13	11.23	85.47	6.40	1,143	0.90	5.8	NS	NS	NS
	1/9/14	11.16	85.54	6.34	1,189	7.10	-123.5	NS	NS	NS
	1/16/14	10.80	85.90	NM	NM	NM	NM	NS	NS	NS
	2/6/14	11.61	85.09	6.72	1,177	6.99	-35.7	NS	NS	NS
	2/12/14	11.74	84.96	7.64	1,642	1.44	-124.6	NS	NS	NS
	2/20/14	11.86	84.84	6.92	1,333	6.78	-80.7	NS	NS	NS
	3/6/14	11.90	84.80	7.14	1,384	6.12	4.8	NS	NS	NS
<b>ECS-12*<sup>(**)</sup> 96.15</b>	<b>1/25/06</b>	8.64	87.51	6.44	1,207	0.53	-117	NS	NS	NS
	<b>4/10/06</b>	10.60	85.55	6.65	1,436	0.42	14.0	NS	NS	NS
	<b>7/20/06</b>	10.95	85.20	4.19	1,419	0.12	506	15.5	<5.0	15.5
	9/15/06	11.92	84.23	6.60	NM	8.11	-47.5	NS	NS	NS
	9/21/06	11.53	84.62	6.67	NM	9.63	283	NS	NS	NS
	10/6/06	11.35	84.80	7.68	NM	1.24	-22.7	NS	NS	NS
	<b>10/10/06</b>	11.42	84.73	6.58	1,291	0.48	-23.3	NS	NS	NS
	10/23/06	10.79	85.36	5.91	NM	1.46	NM	NS	NS	NS
	11/7/06	10.74	85.41	6.65	NM	5.74	-69.8	NS	NS	NS
	11/20/06	10.15	86.00	6.94	NM	8.77	72.5	NS	NS	NS
	12/4/06	10.58	85.57	7.32	NM	12.13	199.4	NS	NS	NS
	12/18/06	11.04	85.11	6.20	NM	7.52	-3.8	NS	NS	NS
	1/2/07	10.96	85.19	7.29	NM	8.41	-120.8	NS	NS	NS
	1/15/07	10.56	85.59	7.02	NM	8.29	-128.6	NS	NS	NS
	<b>1/25/07</b>	12.55	83.60	6.93	1,500	1.51	9.0	<2.0	<20.0	15.8
	1/29/07	11.74	84.41	7.22	NM	13.75	-94.7	NS	NS	NS
	2/12/07	11.23	84.92	6.95	NM	13.78	-52.9	NS	NS	NS
	2/26/07	NG-S	NA	NM	NM	NM	NM	NS	NS	NS
	3/12/07	NG-S	NA	NM	NM	NM	NM	NS	NS	NS
	3/26/07	10.42	85.73	7.06	NM	12.40	-89.60	NS	NS	NS
	4/10/07	9.77	86.38	6.76	NM	10.88	-14.00	NS	NS	NS
	<b>4/24/07</b>	8.83	87.32	5.48	1,642	0.30	-57.8	NS	NS	NS
	5/7/07	9.89	86.26	5.93	NM	16.80	-11.9	NS	NS	NS
	5/24/07	10.21	85.94	6.01	NM	13.25	24.3	NS	NS	NS
	6/4/07	10.66	85.49	5.99	NM	12.92	28.4	NS	NS	NS
	6/18/07	10.86	85.29	6.71	NM	12.56	-84.4	NS	NS	NS
	7/3/07	11.27	84.88	7.85	NM	21.14	46.2	NS	NS	NS
	7/16/07	12.54	83.61	7.88	NM	18.24	60.7	NS	NS	NS
	8/1/07	11.47	84.68	6.80	NM	9.79	-59.9	NS	NS	NS
	8/13/07	11.56	84.59	6.35	NM	1.35	-331.1	NS	NS	NS
	8/27/07	11.78	84.37	6.34	NM	8.73	-75.3	NS	NS	NS
9/10/07	11.87	84.28	7.26	NM	5.96	-68.2	NS	NS	NS	
9/25/07	11.95	84.20	7.23	NM	5.30	-69.9	NS	NS	NS	
<b>10/4/07</b>	12.04	84.66	6.71	1,740	1.11	-86.0	<0.100	10.0	21.3	
10/9/07	12.08	84.62	6.71	NM	4.22	-300.4	NS	NS	NS	
10/22/07	11.82	84.88	7.42	NM	3.31	-40.7	NS	NS	NS	
11/5/07	11.66	85.04	7.47	NM	6.90	-99.2	NS	NS	NS	
11/19/07	11.38	85.32	7.34	NM	2.97	-39.5	NS	NS	NS	

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

<b>Monitoring Well &amp; PVC Elevation (ft)</b>	<b>Monitoring Date</b>	<b>Depth to Water (ft)</b>	<b>Groundwater Elevation (ft)</b>	<b>pH (SU)</b>	<b>Specific Conductivity (µS/cm)</b>	<b>Dissolved Oxygen (mg/L)</b>	<b>Redox (mV)</b>	<b>Nitrate (mg/L)</b>	<b>Sulfate (mg/L)</b>	<b>Dissolved Iron (mg/L)</b>
<b>ECS-12</b>	12/3/07	12.87	83.83	7.49	NM	6.95	-111.5	NS	NS	NS
<b>(continued)</b>	12/17/07	11.47	85.23	7.49	NM	6.51	-110.1	NS	NS	NS
	1/2/08	10.97	85.73	6.52	NM	6.51	-76.1	NS	NS	NS
	1/14/08	10.59	86.11	6.59	NM	6.01	-71.5	NS	NS	NS
	1/29/08	10.92	85.78	6.85	NM	6.38	16.1	NS	NS	NS
	2/11/08	10.82	85.88	NM	NM	NM	NS	NS	NS	NS
	<b>3/24/08</b>	9.15	87.55	6.75	1,510	0.44	-25	<0.100	2.72	16.3
	<b>5/1/08</b>	9.71	86.99	7.00	1,600	0.35	-29	<0.100	<1.0	6.31
	5/27/08	10.18	86.52	NM	NM	NM	NS	NS	NS	NS
	6/4/08	11.82	84.88	6.67	NM	0.45	-112.2	NS	NS	NS
	6/17/08	10.61	86.09	7.36	NM	0.36	-166.2	NS	NS	NS
	7/1/08	10.62	86.08	7.02	NM	1.66	-75	NS	NS	NS
	7/9/08	NM	86.08	NM	NM	NM	NS	NS	NS	NS
	7/14/08	10.96	85.74	6.63	NM	1.18	-62.7	NS	NS	NS
	7/30/08	10.18	86.52	6.48	NM	2.15	-52.3	NS	NS	NS
	8/12/08	10.60	86.10	6.77	NM	0.90	-63.5	NS	NS	NS
	8/20/08	10.67	86.03	NM	NM	NM	NS	NS	NS	NS
	8/26/08	11.02	85.68	6.71	NM	2.02	-52.2	NS	NS	NS
	9/9/08	10.71	85.99	6.80	NM	0.88	-88.1	NS	NS	NS
	9/22/08	11.17	85.53	6.80	NM	0.81	-74.3	NS	NS	NS
	10/17/08	11.3	85.40	6.91	NM	2.20	-35.8	NS	NS	NS
	10/27/08	10.9	85.80	6.60	NM	1.12	-22.1	NS	NS	NS
	11/11/08	10.59	86.11	6.67	NM	0.75	-51.3	NS	NS	NS
	<b>11/24/08</b>	10.79	85.91	6.81	1,840	0.17	-67.0	<0.100	<1.0	15.4
	11/25/08	10.78	85.92	5.71	NM	3.62	56.1	NS	NS	NS
	12/11/08	10.44	86.26	6.84	NM	2.06	-22.7	NS	NS	NS
	1/6/09	9.62	87.08	6.26	NM	4.00	85.0	NS	NS	NS
	2/3/09	11.01	85.69	6.50	NM	12.28	40.6	NS	NS	NS
	3/19/09	10.89	85.81	6.31	NM	2.09	39.1	NS	NS	NS
	<b>4/9/09</b>	9.77	86.93	6.50	1,390	0.49	-46.2	<0.100	1.98	11.5
	4/23/09	10.39	86.31	6.86	1,499	1.42	44.2	NS	NS	NS
	5/5/09	10.65	86.05	7.05	NM	2.19	9.6	NS	NS	NS
	5/19/09	10.52	86.18	6.88	1,474	1.42	-19.0	NS	NS	NS
	6/11/09	11.00	85.70	6.86	1,354	0.79	-106.9	NS	NS	NS
	6/26/09	11.70	85.00	6.91	1,387	2.04	-16.2	NS	NS	NS
	7/9/09	9.98	86.72	6.83	1,409	0.59	-54.1	NS	NS	NS
	7/22/09	10.28	86.42	6.76	1,411	2.02	-10.1	NS	NS	NS
	8/6/09	9.20	87.50	6.94	1,343	1.41	-76.1	NS	NS	NS
	<b>8/24/09</b>	9.62	87.08	6.83	1,520	0.31	-54.0	<0.100	<1.0	13.7
	9/10/09	10.36	86.34	7.01	1,301	1.12	-36.2	NS	NS	NS
	9/23/09	10.39	86.31	7.00	1,051	7.11	-37.6	NS	NS	NS
	10/6/09	10.75	85.95	6.57	1,293	3.77	80.1	NS	NS	NS
	<b>10/13/09</b>	10.73	85.97	6.99	1,141	3.48	-29.8	<0.100	<1.0	12.4
	10/23/09	10.86	85.84	6.79	1,473	2.69	-54.2	NS	NS	NS
	11/5/09	10.18	86.52	6.83	1,446	1.60	-60.9	NS	NS	NS
	11/17/09	10.39	86.31	6.98	1,206	1.81	-30.0	NS	NS	NS
	12/8/09	10.2	86.50	6.96	1,120	1.49	-50.8	NS	NS	NS
	12/23/09	10.5	86.20	7.10	940	1.10	2.7	NS	NS	NS
	1/8/10	11.63	85.07	6.96	1,030	1.10	-19.2	NS	NS	NS
	1/20/10	10.89	85.81	6.96	1,066	1.66	-35.1	NS	NS	NS
	2/3/10	10.52	86.18	6.10	NM	13.67	-6.0	NS	NS	NS
	2/11/10	10.69	86.01	6.85	1,730	0.21	-82.0	<0.100	<1.0	12.5
	2/18/10	10.96	85.74	7.05	NM	1.84	-24.4	NS	NS	NS
	3/3/10	10.42	86.28	6.20	2,700	3.40	42.4	NS	NS	NS
	3/17/10	9.63	87.07	6.88	1,276	0.70	-66.4	NS	NS	NS
	4/15/10	9.82	86.88	7.02	931	1.86	-9.1	NS	NS	NS
	4/28/10	10.35	86.35	6.86	NM	4.11	30.9	NS	NS	NS
	5/13/10	10.59	86.11	6.75	1,328	4.88	-21.1	NS	NS	NS
	5/27/10	10.83	85.87	7.01	NM	0.97	-50.2	NS	NS	NS
	6/9/10	10.50	86.20	6.52	NM	2.22	-11.1	NS	NS	NS
	6/24/10	11.10	85.60	6.86	NM	0.84	-64.4	NS	NS	NS
	7/9/10	11.44	85.26	6.34	NM	9.29	88.3	NS	NS	NS
	7/20/10	11.48	85.22	7.03	NM	1.41	-209.1	NS	NS	NS
	8/5/10	11.54	85.16	6.77	NM	1.04	-17.9	NS	NS	NS
	8/18/10	11.71	84.99	6.77	NM	4.60	-14.8	NS	NS	NS
	<b>9/9/10</b>	11.92	84.78	7.25	1,780	0.26	-76.0	<0.100	<1.0	10.6
	9/15/10	12.00	84.70	6.89	NM	2.81	-13.5	NS	NS	NS
	9/30/10	12.05	84.65	6.58	NM	3.12	511.7	NS	NS	NS
	10/5/10	11.36	85.34	6.97	1,687	0.50	-83.0	NS	NS	NS
	10/21/10	11.18	85.52	6.81	NM	1.00	-32.6	NS	NS	NS
	11/5/10	11.04	85.66	6.78	NM	9.31	-1.8	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-12</b>	11/19/10	10.90	85.80	6.84	NM	2.01	-45.5	NS	NS	NS
<b>(continued)</b>	12/9/10	10.79	85.91	6.45	NM	1.13	-55.7	NS	NS	NS
	12/22/10	11.10	85.60	6.53	1,757	1.45	-79.0	NS	NS	NS
	1/7/11	10.97	85.73	6.46	NM	5.24	-62.6	NS	NS	NS
	1/19/11	11.30	85.40	6.94	NM	2.47	-98.8	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/3/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	<b>3/28/11</b>	9.43	87.27	7.10	1,528	0.29	-114.1	<0.100	1.50	15.6
	4/7/11	9.53	87.17	7.39	NM	3.98	-87.4	NS	NS	NS
	4/22/11	9.45	87.25	6.96	1,286	2.18	-59.8	NS	NS	NS
	5/7/11	9.53	87.17	7.77	1,332	1.75	-26.1	NS	NS	NS
	6/2/11	10.40	86.30	6.73	1,357	4.92	-42.8	NS	NS	NS
	6/14/11	10.42	86.28	6.88	NM	0.35	-91.0	NS	NS	NS
	7/7/11	10.18	86.52	6.09	NM	1.58	-48.7	NS	NS	NS
	7/25/11	10.79	85.91	6.52	NM	1.66	11.7	NS	NS	NS
	8/15/11	11.14	85.56	6.79	NM	0.54	-82.2	NS	NS	NS
	8/26/11	10.59	86.11	6.57	1,340	0.40	-79.3	NS	NS	NS
	<b>9/14/11</b>	8.55	88.15	6.97	1,510	0.28	-100.1	<0.100	<1.00	20.3
	10/6/11	9.09	87.61	6.95	NM	0.76	-45.3	NS	NS	NS
	10/20/11	9.72	86.98	6.93	NM	1.50	-101.6	NS	NS	NS
	11/3/11	9.88	86.82	6.42	887	1.46	-26.0	NS	NS	NS
	11/17/11	10.12	86.58	6.21	NM	1.54	-6.9	NS	NS	NS
	12/7/11	NM	NM	NM	NM	NM	NM	NS	NS	NS
	12/21/11	9.92	86.78	7.00	1,089	4.92	234.8	NS	NS	NS
	1/4/12	9.92	86.78	7.37	1,419	7.84	126.3	NS	NS	NS
	2/1/12	NM	NM	NM	NM	NM	NM	NS	NS	NS
	2/15/12	10.29	86.41	7.27	1,685	0.75	-46.8	<0.100	<1.00	20.7
	3/1/12	10.60	86.10	7.58	9,232	9.10	350	NS	NS	NS
	3/15/12	10.17	86.53	7.08	1,539	5.03	315.8	NS	NS	NS
	4/5/12	10.68	86.02	6.95	NM	6.42	333.2	NS	NS	NS
	4/19/12	10.98	85.72	7.43	1,619	5.74	338.0	NS	NS	NS
	5/3/12	10.72	85.98	7.61	1,423	1.87	252.5	NS	NS	NS
	5/17/12	10.27	86.43	7.10	1,542	4.41	232.5	NS	NS	NS
	5/31/12	10.50	86.20	6.58	864	6.24	352.5	NS	NS	NS
	6/14/12	10.64	86.06	6.71	162	5.5	408.6	NS	NS	NS
	6/26/12	10.98	85.72	6.90	1,080	0.94	-6.4	NS	NS	NS
	7/3/12	11.13	85.57	7.11	NM	0.71	-90.3	NS	NS	NS
	7/19/12	11.50	85.20	6.82	1,315	2.07	-38.5	NS	NS	NS
	8/1/12	11.50	85.20	6.77	1,709	0.75	-103.5	NS	NS	NS
	<b>8/20/12</b>	11.42	85.28	6.93	1,507	0.23	-92.7	3.54	<1.00	15.90
	8/30/12	11.62	85.08	NM	NM	NM	NM	NS	NS	NS
	9/17/12	11.67	85.03	6.75	1789	0.17	-43.2	NS	NS	NS
	9/26/12	11.43	85.27	6.31	1788	0.23	35.6	NS	NS	NS
	10/11/12	11.39	85.31	6.84	1603	0.30	-35.3	NS	NS	NS
	10/25/12	10.97	85.73	6.76	1617	0.47	-64.7	NS	NS	NS
	11/1/12	10.82	85.88	6.64	1625	1.03	-55.3	NS	NS	NS
	11/15/12	11.11	85.59	6.6	1610	1.07	-70.5	NS	NS	NS
	12/6/12	11.36	85.34	6.32	1602	0.44	-82.9	NS	NS	NS
	12/20/12	11.07	85.63	6.49	1488	0.48	-74.5	NS	NS	NS
	1/3/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	1/17/13	10.85	85.85	6.31	1087	0.67	-41.7	NS	NS	NS
	2/7/13	10.58	86.12	5.77	1032	0.81	37.3	NS	NS	NS
	<b>2/20/13</b>	10.85	85.85	7.13	830	0.58	4.9	<0.100	8.63	5.57
	3/7/13	10.87	85.83	6.43	906	4.02	77.5	NS	NS	NS
	3/20/13	10.38	86.32	6.51	1342	5.57	20.6	NS	NS	NS
	4/4/13	10.84	85.86	6.30	1118	6.31	11.7	NS	NS	NS
	4/12/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	4/18/13	10.15	86.55	6.34	732	6.29	13.2	NS	NS	NS
	4/26/13	10.30	86.40	7.23	713	5.97	-41.0	NS	NS	NS
	5/2/13	10.56	86.14	7.24	652	8.57	-102.5	NS	NS	NS
	5/10/13	10.74	85.96	5.12	602	6.24	19.7	NS	NS	NS
	5/15/13	10.69	86.01	6.65	608	1.97	6.0	NS	NS	NS
	5/23/13	10.64	86.06	6.24	543	9.88	37.9	NS	NS	NS
	6/6/13	10.11	86.59	6.35	580	5.86	35.9	NS	NS	NS
	6/20/13	9.16	87.54	5.99	767	2.87	93.5	NS	NS	NS
	7/3/13	9.87	86.83	6.04	NM	5.54	117.6	NS	NS	NS
	7/11/13	9.69	87.01	5.94	NM	5.10	109.0	NS	NS	NS
	7/18/13	10.33	86.37	5.43	1096	7.50	96.6	NS	NS	NS
	7/25/13	10.56	86.14	5.56	1049	5.56	130.2	NS	NS	NS
	8/8/13	10.90	85.80	5.87	892	2.82	100.2	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-12 (continued)</b>	8/15/13	10.82	85.88	7.07	842	2.78	118.5	NS	NS	NS
	8/21/13	10.91	85.79	7.07	697	0.57	66.3	<0.100	4.01	11.3
	8/29/13	10.90	85.80	6.90	656	1.28	56.2	NS	NS	NS
	9/5/13	10.64	86.06	7.34	635	2.58	76.6	NS	NS	NS
	9/10/13	10.83	85.87	6.85	599	0.22	-70.3	NS	NS	NS
	9/19/13	10.81	85.89	6.97	647	2.63	59.1	NS	NS	NS
	9/25/13	10.54	86.16	7.01	797	3.60	-69.0	NS	NS	NS
	10/3/13	10.95	85.75	7.04	719	4.56	-3.4	NS	NS	NS
	10/10/13	10.85	85.85	7.02	708	4.09	-8.1	NS	NS	NS
	10/17/13	11.02	85.68	7.19	704	1.92	-65.8	NS	NS	NS
	10/25/13	11.12	85.58	7.38	669	2.74	-117.8	NS	NS	NS
	10/31/13	11.11	85.59	7.74	644	4.34	-143.0	NS	NS	NS
	11/6/13	11.08	85.62	7.60	607	5.25	-147.6	NS	NS	NS
	11/15/13	11.15	85.55	8.06	518	5.00	-133.4	NS	NS	NS
	11/22/13	11.2	85.50	6.56	460	5.74	-141.2	NS	NS	NS
	12/5/13	11.15	85.55	7.59	500	6.74	-125.3	NS	NS	NS
	12/19/13	11.37	85.33	7.49	409	5.29	-109.5	NS	NS	NS
	12/26/13	10.85	85.85	6.76	406	0.87	-64.1	NS	NS	NS
	1/9/14	11.16	85.54	6.34	1189	7.10	-123.5	NS	NS	NS
	1/16/14	10.28	86.42	6.19	490	7.10	-161.4	NS	NS	NS
	2/6/14	11.12	85.58	7.30	510	6.18	-176.3	NS	NS	NS
	2/12/14	11.25	85.45	7.60	729	1.44	-124.6	<0.100	6.98	11.3
	2/20/14	11.38	85.32	7.08	649	6.18	-157.5	NS	NS	NS
	3/6/14	11.4	85.30	6.85	507	7.03	-26.8	NS	NS	NS
	<b>ECS-13** 97.66</b>	<b>1/25/06</b>	NG	NA	NM	NM	NM	NM	NS	NS
	<b>4/10/06</b>	12.20	85.46	6.61	246	0.75	-2.0	NS	NS	NS
	<b>7/20/06</b>	12.53	85.13	3.00	890	0.28	543	NS	NS	NS
	9/15/06	10.45	87.21	7.10	NM	9.28	-40.2	NS	NS	NS
	9/21/06	13.11	84.55	7.76	NM	11.94	244	NS	NS	NS
	10/6/06	12.97	84.69	8.19	NM	4.94	-7.6	NS	NS	NS
	<b>10/10/06</b>	13.01	84.65	6.32	533	0.73	14.2	NS	NS	NS
	10/23/06	12.34	85.32	6.40	NM	1.50	NM	NS	NS	NS
	11/7/06	12.31	85.35	6.25	NM	13.45	109.4	NS	NS	NS
	11/20/06	11.72	85.94	6.74	NM	3.33	16.3	NS	NS	NS
	12/4/06	12.18	85.48	7.42	NM	9.57	180.2	NS	NS	NS
	12/18/06	12.62	85.04	6.40	NM	5.97	-13.7	NS	NS	NS
	1/2/07	12.58	85.08	7.29	NM	6.41	-135.4	NS	NS	NS
	1/15/07	12.04	85.62	7.18	NM	6.27	-173.5	NS	NS	NS
	<b>1/25/07</b>	12.18	85.48	7.59	668	1.46	57.0	NS	NS	NS
	1/29/07	12.34	85.32	7.58	NM	12.82	-84.6	NS	NS	NS
	2/12/07	12.83	84.83	7.41	NM	8.54	-59.4	NS	NS	NS
	2/26/07	NG-S	NA	NM	NM	NM	NM	NS	NS	NS
	3/12/07	NG-S	NA	NM	NM	NM	NM	NS	NS	NS
	3/26/07	12.03	85.63	6.92	NM	14.41	104.5	NS	NS	NS
	4/10/07	11.41	86.25	6.69	NM	13.47	14.6	NS	NS	NS
	<b>4/24/07</b>	10.51	87.15	6.96	685	NA	-41.3	NS	NS	NS
	5/7/07	11.42	86.24	4.75	NM	15.95	125.6	NS	NS	NS
	5/24/07	11.27	86.39	5.06	NM	14.82	132.7	NS	NS	NS
	6/4/07	12.27	85.39	6.18	NM	11.05	21.8	NS	NS	NS
	6/18/07	12.50	85.16	7.31	NM	14.44	48.1	NS	NS	NS
	7/3/07	12.88	84.78	8.22	NM	12.65	73.3	NS	NS	NS
	7/16/07	12.95	84.71	7.81	NM	12.64	88.1	NS	NS	NS
	8/1/07	13.07	84.59	7.34	NM	24.48	110.5	NS	NS	NS
	8/13/07	13.17	84.49	6.97	NM	10.09	-256.6	NS	NS	NS
	8/27/07	13.39	84.27	6.61	NM	10.78	-111.8	NS	NS	NS
	9/10/07	13.45	84.21	7.73	NM	7.28	-83.8	NS	NS	NS
	9/25/07	13.52	84.14	7.72	NM	7.10	-86.7	NS	NS	NS
	<b>10/4/07</b>	13.64	84.02	7.22	937	0.53	-53.0	NS	NS	NS
	10/9/07	13.67	83.99	6.61	NM	3.41	-268.4	NS	NS	NS
	10/22/07	13.38	84.28	7.52	NM	4.81	-46.2	NS	NS	NS
	11/5/07	13.20	84.46	7.13	NM	8.19	-37.1	NS	NS	NS
	11/19/07	12.92	84.74	7.45	NM	4.02	-45.5	NS	NS	NS
	12/3/07	12.87	84.79	7.07	NM	8.12	-102.4	NS	NS	NS
	12/17/07	13.01	84.65	7.19	NM	7.15	-102.5	NS	NS	NS
	1/2/08	12.54	85.12	6.01	NM	5.10	39.8	NS	NS	NS
	1/14/08	12.06	85.60	6.05	NM	5.04	42.3	NS	NS	NS
	1/29/08	12.53	85.13	7.01	NM	8.13	-11.3	NS	NS	NS
	2/11/08	12.34	85.32	NM	NM	NM	NM	NS	NS	NS
	3/7/08	11.19	86.47	7.19	161	8.81	303	NS	NS	NS
	<b>3/11/08</b>	10.80	86.86	7.27	905	3.52	-39	NS	NS	NS



**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

<b>Monitoring Well &amp; PVC Elevation (ft)</b>	<b>Monitoring Date</b>	<b>Depth to Water (ft)</b>	<b>Groundwater Elevation (ft)</b>	<b>pH (SU)</b>	<b>Specific Conductivity (µS/cm)</b>	<b>Dissolved Oxygen (mg/L)</b>	<b>Redox (mV)</b>	<b>Nitrate (mg/L)</b>	<b>Sulfate (mg/L)</b>	<b>Dissolved Iron (mg/L)</b>
<b>ECS-13</b>	<b>5/1/08</b>	11.28	86.38	6.44	1,350	1.00	-7	NS	NS	NS
<b>(continued)</b>	5/27/08	10.63	87.03	NM	NM	NM	NM	NS	NS	NS
	6/4/08	12.44	85.22	6.28	NM	4.81	49.1	NS	NS	NS
	6/17/08	12.18	85.48	7.08	NM	7.41	33.8	NS	NS	NS
	7/1/08	12.20	85.46	6.61	NM	0.80	25.1	NS	NS	NS
	7/9/08	NM	85.46	NM	NM	NM	NM	NS	NS	NS
	7/14/08	12.56	85.10	6.53	NM	2.29	-18	NS	NS	NS
	7/30/08	11.78	85.88	6.75	NM	2.52	47.2	NS	NS	NS
	8/12/08	12.21	85.45	6.69	NM	1.85	-28.3	NS	NS	NS
	8/20/08	11.49	86.17	NM	NM	NM	NM	NS	NS	NS
	8/26/08	12.65	85.01	6.82	NM	0.96	-62.5	NS	NS	NS
	9/9/08	11.99	85.67	6.72	NM	1.37	-42.7	NS	NS	NS
	9/22/08	12.73	84.93	6.69	NM	1.36	-111.7	NS	NS	NS
	10/17/08	12.87	84.79	7.13	NM	1.31	-66.6	NS	NS	NS
	10/27/08	12.51	85.15	6.79	NM	1.20	-28.5	NS	NS	NS
	11/11/08	12.18	85.48	6.84	NM	1.60	-9.1	NS	NS	NS
	<b>11/24/08</b>	12.42	85.24	6.90	890	0.20	-71.0	NS	NS	NS
	11/25/08	12.36	85.30	6.50	NM	3.87	18.6	NS	NS	NS
	12/11/08	12.04	85.62	7.01	NM	3.67	-8.1	NS	NS	NS
	3/19/09	11.47	86.19	7.33	NM	15.94	5.4	NS	NS	NS
	<b>4/9/09</b>	11.53	86.13	5.89	652	0.89	-10.1	NS	NS	NS
	4/23/09	11.80	85.86	7.15	226	11.44	125.8	NS	NS	NS
	5/5/09	12.29	85.37	7.11	NM	11.22	156.3	NS	NS	NS
	5/19/09	12.09	85.57	7.03	258	6.59	78.9	NS	NS	NS
	6/11/09	12.66	85.00	6.91	243	5.71	-64.1	NS	NS	NS
	6/26/09	11.44	86.22	7.04	301	5.48	67.8	NS	NS	NS
	7/6/09	11.55	86.11	7.08	242	1.27	96.5	NS	NS	NS
	7/22/09	11.79	85.87	7.06	236	2.84	54.2	NS	NS	NS
	8/6/09	10.84	86.82	7.03	220	1.73	105.1	NS	NS	NS
	<b>8/24/09</b>	11.22	86.44	6.54	1,720	0.34	-48.0	NS	NS	NS
	9/10/09	11.70	85.96	7.24	240	1.04	42.3	NS	NS	NS
	9/23/09	11.21	86.45	7.29	252	4.59	-64.6	NS	NS	NS
	10/6/09	12.20	85.46	6.52	273	1.80	69.9	NS	NS	NS
	10/13/09	12.34	85.32	6.60	1,096	2.90	-4.7	NS	NS	NS
	10/23/09	12.38	85.28	6.50	1,380	2.02	-28.6	NS	NS	NS
	11/5/09	11.82	85.84	6.86	415	2.28	-19.2	NS	NS	NS
	11/17/09	11.96	85.70	6.83	687	1.28	23.6	NS	NS	NS
	12/8/09	11.87	85.79	7.06	487	7.83	-33.1	NS	NS	NS
	2/3/10	12.13	85.53	6.66	NM	11.53	-76.6	NS	NS	NS
	2/11/10	12.34	85.32	6.36	2	0.46	-55.0	NS	NS	NS
	2/18/10	12.55	85.11	7.00	NM	6.99	-12.2	NS	NS	NS
	3/3/10	12.00	85.66	6.47	1,541	3.56	-5.8	NS	NS	NS
	3/17/10	11.23	86.43	7.65	187	7.55	84.4	NS	NS	NS
	4/15/10	11.30	86.36	6.87	254	3.18	-76.7	NS	NS	NS
	4/28/10	11.68	85.98	6.80	NM	3.18	52.2	NS	NS	NS
	5/13/10	12.11	85.55	6.67	276	2.13	52.8	NS	NS	NS
	5/27/10	12.45	85.21	6.56	NM	6.11	-22.9	NS	NS	NS
	6/9/10	12.56	85.10	6.58	NM	1.37	-24.0	NS	NS	NS
	6/24/10	12.63	85.03	6.70	NM	0.34	-31.7	NS	NS	NS
	7/9/10	12.93	84.73	6.23	NM	5.93	76.9	NS	NS	NS
	7/20/10	13.00	84.66	7.17	NM	0.97	-297.9	NS	NS	NS
	8/5/10	13.06	84.60	7.36	NM	3.41	-45.3	NS	NS	NS
	8/18/10	13.21	84.45	6.79	NM	1.50	13.7	NS	NS	NS
	<b>9/9/10</b>	13.47	84.19	7.42	947	0.27	-72.0	NS	NS	NS
	9/15/10	13.67	83.99	6.31	NM	1.50	-16.7	NS	NS	NS
	9/30/10	13.60	84.06	6.99	NM	6.21	200.4	NS	NS	NS
	10/5/10	12.92	84.74	7.21	588	3.24	-49.1	NS	NS	NS
	10/21/10	12.63	85.03	6.89	NM	2.45	-41.5	NS	NS	NS
	11/5/10	12.57	85.09	7.19	NM	11.01	-35.1	NS	NS	NS
	11/19/10	12.40	85.26	6.91	NM	1.40	-46.4	NS	NS	NS
	12/9/10	12.27	85.39	6.57	NM	1.78	-15.0	NS	NS	NS
	12/22/10	12.12	85.54	6.60	634	4.97	15.0	NS	NS	NS
	1/7/11	12.52	85.14	6.66	NM	10.21	-69.8	NS	NS	NS
	1/19/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/4/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	2/15/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	3/3/11	NM	NA	NM	NM	NM	NM	NS	NS	NS
	<b>3/28/11</b>	11.00	86.66	7.21	0.795	5.41	-51.7	NS	NS	NS
	4/7/11	11.05	86.61	7.58	NM	10.91	-36.7	NS	NS	NS
	4/22/11	10.99	86.67	7.38	0.752	5.15	-62.4	NS	NS	NS
	5/7/11	11.09	86.57	8.13	1.808	9.27	-5.9	NS	NS	NS

**TABLE 2**  
**GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-13</b>	6/2/11	11.95	85.71	7.23	0.842	7.96	33.4	NS	NS	NS
<b>(continued)</b>	6/14/11	11.98	85.68	7.06	NM	1.93	-47.4	NS	NS	NS
	7/7/11	11.17	86.49	6.05	NM	6.55	-37.9	NS	NS	NS
	7/25/11	12.34	85.32	7.13	NM	1.25	4.4	NS	NS	NS
	8/15/11	12.70	84.96	7.06	NM	0.67	-46.7	NS	NS	NS
	8/26/11	12.13	85.53	7.31	0.728	1.18	-25.2	NS	NS	NS
	<b>9/14/11</b>	10.10	87.56	7.29	675	0.23	-99.1	NS	NS	NS
	10/6/11	10.65	87.01	7.41	NM	2.18	14.0	NS	NS	NS
	10/20/11	11.26	86.40	7.58	NM	0.59	-89.8	NS	NS	NS
	11/3/11	11.44	86.22	7.46	789	3.55	-36.1	NS	NS	NS
	11/17/11	11.67	85.99	7.43	NM	5.07	52.3	NS	NS	NS
	12/7/11	11.66	86.00	7.49	667	3.35	244.9	NS	NS	NS
	12/21/11	11.50	86.16	7.00	1,089	4.92	234.8	NS	NS	NS
	1/4/12	11.46	86.20	7.86	662	11.42	139.6	NS	NS	NS
	2/1/12	11.47	86.19	7.97	1,574	5.57	209.1	NS	NS	NS
	2/15/12	11.91	85.75	7.65	756	0.82	-75.8	NS	NS	NS
	3/1/12	12.13	85.53	8.03	694	9.34	287.3	NS	NS	NS
	3/15/12	11.72	85.94	7.76	673	6.36	255.0	NS	NS	NS
	4/5/12	12.20	85.46	6.95	NM	8.07	288.0	NS	NS	NS
	4/19/12	12.55	85.11	7.75	132	7.31	304.5	NS	NS	NS
	5/3/12	12.44	85.22	8.10	701	1.96	195.9	NS	NS	NS
	5/17/12	11.80	85.86	7.45	710	5.29	212.2	NS	NS	NS
	5/31/12	12.07	85.59	7.23	715	5.90	284.1	NS	NS	NS
	6/14/12	12.18	85.48	7.12	718	8.18	372.7	NS	NS	NS
	6/26/12	12.52	85.14	7.36	670	2.34	-36.8	NS	NS	NS
	7/3/12	12.70	84.96	7.41	NM	2.04	-18.3	NS	NS	NS
	7/19/12	13.05	84.61	7.34	643	1.26	-63.7	NS	NS	NS
	8/1/12	13.07	84.59	7.32	797	10.20	122.1	NS	NS	NS
	8/20/12	12.95	84.71	7.38	704	0.36	-120.4	NS	NS	NS
	8/30/12	13.17	84.49	NM	NM	NM	NM	NS	NS	NS
	9/17/12	13.23	84.43	7.16	805	0.77	-80.1	NS	NS	NS
	9/26/12	13.00	84.66	6.93	796	1.25	43.7	NS	NS	NS
	10/11/12	12.95	84.71	7.24	717	1.34	-26.2	NS	NS	NS
	10/25/12	12.50	85.16	7.10	724	1.59	-39.2	NS	NS	NS
	11/1/12	12.36	85.30	6.88	718	2.99	-20.2	NS	NS	NS
	11/15/12	12.66	85.00	6.92	714	3.80	-53.3	NS	NS	NS
	12/6/12	12.90	84.76	6.63	713	6.43	-55.2	NS	NS	NS
	12/20/12	12.59	85.07	6.94	718	7.03	-58.7	NS	NS	NS
	1/3/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	1/17/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	2/7/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	2/20/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	3/7/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	3/20/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	4/4/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	4/12/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	4/18/13	11.73	85.93	6.26	908	7.11	42.5	NS	NS	NS
	4/26/13	11.88	85.78	6.60	862	8.35	-7.6	NS	NS	NS
	5/2/13	12.15	85.51	8.85	872	7.24	-75.3	NS	NS	NS
	5/10/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	5/15/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	5/23/13	12.20	85.46	6.07	783	6.88	25.0	NS	NS	NS
	6/6/13	11.68	85.98	6.44	714	5.61	42.8	NS	NS	NS
	6/20/13	10.75	86.91	5.72	648	2.71	97.2	NS	NS	NS
	7/3/13	11.34	86.32	6.34	NM	5.19	114.9	NS	NS	NS
	7/11/13	11.21	86.45	5.99	NM	4.95	101.0	NS	NS	NS
	7/18/13	11.92	85.74	5.51	587	5.73	83.6	NS	NS	NS
	7/25/13	12.13	85.53	5.64	588	4.40	134.4	NS	NS	NS
	8/8/13	12.48	85.18	6.02	581	2.90	100.3	NS	NS	NS
	8/15/13	12.29	85.37	6.93	47	2.78	118.5	NS	NS	NS
	8/21/13	12.48	85.18	6.90	805	0.69	93.5	NS	NS	NS
	8/29/13	12.45	85.21	6.37	75	4.28	83.4	NS	NS	NS
	9/5/13	12.24	85.42	7.25	68	4.48	88.2	NS	NS	NS
	9/10/13	12.39	85.27	6.97	68	0.16	8.2	NS	NS	NS
	9/19/13	12.37	85.29	6.81	52	3.61	74.9	NS	NS	NS
	9/25/13	12.27	85.39	6.99	58	2.62	3.7	NS	NS	NS
	10/3/13	12.50	85.16	7.37	53	4.26	30.3	NS	NS	NS
	10/10/13	12.43	85.23	7.28	56	3.52	51.8	NS	NS	NS
	10/17/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	10/25/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	10/31/13	NM	NM	NM	NM	NM	NM	NS	NS	NS

**TABLE 2  
GROUNDWATER GEOCHEMICAL MONITORING DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

Monitoring Well & PVC Elevation (ft)	Monitoring Date	Depth to Water (ft)	Groundwater Elevation (ft)	pH (SU)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Redox (mV)	Nitrate (mg/L)	Sulfate (mg/L)	Dissolved Iron (mg/L)
<b>ECS-13</b> (continued)	11/6/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	11/15/13	NM	NM	NM	NM	NM	NM	NS	NS	NS
	11/22/13	12.75	84.91	6.06	65	6.36	-68.8	NS	NS	NS
	12/5/13	12.70	84.96	8.21	26	7.22	-42.4	NS	NS	NS
<b>ECS-14</b> 96.25	<b>4/10/06</b>	10.00	86.25	6.92	1,310	0.20	4.0	NS	NS	NS
	<b>7/20/06</b>	10.31	85.94	NM	NM	NM	NM	NS	NS	NS
	<b>10/10/06</b>	10.79	85.46	NM	NM	NM	NM	NS	NS	NS
	<b>1/25/07</b>	9.87	86.38	NM	NM	NM	NM	NS	NS	NS
	<b>4/24/07</b>	8.51	87.74	NM	NM	NM	NM	NS	NS	NS
	<b>10/4/07</b>	11.35	84.90	6.90	1,720	1.21	-81	NS	NS	NS
	3/7/08	9.13	87.12	6.83	1,698	0.42	16.6	NS	NS	NS
	11/24/08	10.22	86.03	NM	NM	NM	NM	NS	NS	NS
	9/14/11	8.23	88.02	NM	NM	NM	NM	NS	NS	NS
	2/15/12	9.84	86.41	NM	NM	NM	NM	NS	NS	NS
	8/20/12	11.48	84.77	NM	NM	NM	NM	NS	NS	NS
	2/20/13	10.30	85.95	NM	NM	NM	NM	NS	NS	NS
	<b>ECS-15</b> 96.45	<b>4/10/06</b>	10.47	85.98	6.54	1,357	0.97	68.0	NS	NS
<b>7/20/06</b>		10.72	85.73	NM	NM	NM	NM	NS	NS	NS
<b>10/10/06</b>		11.23	85.22	NM	NM	NM	NM	NS	NS	NS
<b>1/25/07</b>		10.37	86.08	NM	NM	NM	NM	NS	NS	NS
<b>4/24/07</b>		8.93	87.52	NM	NM	NM	NM	NS	NS	NS
<b>10/4/07</b>		11.91	84.54	6.24	1,082	0.90	80	NS	NS	NS
3/7/08		9.68	86.77	6.61	898	3.06	34.6	NS	NS	NS
11/24/08		10.70	85.75	NM	NM	NM	NM	NS	NS	NS
9/14/11		8.73	87.72	NM	NM	NM	NM	NS	NS	NS
2/15/12		10.50	85.95	NM	NM	NM	NM	NS	NS	NS
8/20/12		10.83	85.62	NM	NM	NM	NM	NS	NS	NS
2/20/13		11.00	85.45	NM	NM	NM	NM	NS	NS	NS
<b>MW-1</b>		<b>3/28/11</b>	10.07	NM	6.91	961	0.27	-91.7	<0.100	26.8
	8/20/12	12.11	NM	NM	NM	NM	NM	NS	NS	NS
	2/20/12	11.53	NM	NM	NM	NM	NM	NS	NS	NS

**NOTES:** System shut down between 2/11/08 and 5/26/08

ft = feet; SU = standard units; mS/cm = milliSiemens per centimeter; mg/L = milligrams per liter; mV = millivolts.

NG = Not gauged; NS = Not sampled; NA = Not applicable; NM = Not measured. NG-S= Not gauged due to snow.

97.02 = PVC elevations following well repairs on 8/29/05 & 9/1/05. **Bold** date denotes a groundwater sampling event.

\* indicates these wells are sampled for secondary MNA parameters. \*\*Wells ECS-2, ECS-3, ECS-4, ECS-8, ECS-11, ECS-12, and ECS-13 are within O2 remediation

**TABLE 3  
RESULTS OF ANALYSIS OF GROUNDWATER SAMPLES FOR VPH**

O'Connell Oil Associates (Mobil Station)  
730 East Street, Pittsfield, MA  
MassDEP RTN 1-13347

Results reported in milligrams per liter (mg/L) or micrograms per liter (µg/L), as noted

Monitoring Well & Elevation (ft)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft)	C <sub>2</sub> - C <sub>8</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>12</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>10</sub> Aromatics (mg/L)	Benzene (µg/L)	Ethyl-benzene (µg/L)	MtBE (µg/L)	Naphthalene (µg/L)	Toluene (µg/L)	Xylenes (µg/L)	Σ BTEX (µg/L)
<b>MCP Method 1 Standards</b>			GW-2:	3	5	7	2,000	20,000	50,000	1,000	50,000	9,000	NA
			GW-3:	50	50	50	10,000	5,000	50,000	20,000	40,000	5,000	NA
<b>MW-1 97.13</b>	3/28/2011	10.07	87.06	0.984	<0.0250	<0.0250	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/20/2012	12.11	85.02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/20/2013	11.53	85.60	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/21/2013	11.56	85.57	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
<b>ECS-1 97.19 97.02 97.16</b>	11/8/99	11.48	85.71	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	12/19/02	11.60	85.59	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	9/8/05	11.78	85.38	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	1/25/06	8.49	88.67	0.263	<0.025	<0.025	<5.0	<5.0	6.5	<5.0	<5.0	<10	ND
	4/11/06	11.38	85.78	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	7/20/06	11.72	85.44	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	10/10/06	12.21	84.95	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND
	1/25/07	11.34	85.82	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	4/24/07	9.89	87.27	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/4/07	12.74	84.42	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	3/11/08	9.82	87.34	<0.075	<0.025	<0.025	<5.0	<5.0	8.5	<5.0	<5.0	<10	ND
	5/1/08	11.50	85.66	<0.075	<0.025	<0.025	<5.0	<5.0	8.5	<5.0	<5.0	<10	ND
	11/24/08	11.61	85.55	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/18/09	11.60	85.56	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/24/09	10.47	86.69	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/11/10	11.60	85.56	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	9/9/10	12.61	84.55	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	3/28/11	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/14/11	9.51	87.65	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/15/12	11.27	85.89	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
8/20/12	12.07	85.09	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND	
2/20/13	11.71	85.45	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND	
8/21/13	11.72	85.44	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND	
2/12/14	12.00	85.16	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND	
<b>*ECS-2 97.76 97.60</b>	11/8/99	12.35	85.41	<1.50	<0.500	5.0	<100	1,600	190	260	670	7,400	9,670
	12/19/02	12.56	85.20	0.501	<0.100	0.54	<20	420	5,700	34	1,000	1,920	3,340
	9/8/05	12.44	85.16	2.35	1.52	3.13	<5.0	463	3,330	92	754	2,396	3,613
	11/1/05	10.65	86.95	2.37	0.44	2.81	<5.0	366	4,590	<50	425	1,502	2,293
	1/25/06	10.16	87.44	<b>5.23</b>	1.39	4.31	32.2	781	1,970	163	778	3,827	5,418
	4/10/06	12.09	85.51	<b>9.29</b>	3.63	6.64	42.1	1,040	1,590	244	600	5,820	7,502
	7/20/06	12.42	85.18	2.70	2.85	4.53	<100	1,090	31,700	240	670	5,460	7,220
	10/10/06	12.92	84.68	<0.750	0.763	1.82	<50	232	4,860	<50	81.9	951	1,265
	1/25/07	12.06	85.54	0.793	0.533	1.01	<10	139	1,180	29.9	79.1	642	860
	4/24/07	10.39	87.21	1.92	1.12	2.39	<25	479	2,080	81.6	114	2,113	2,706
	10/4/07	13.50	84.10	1.53	0.544	1.19	8.2	247	350	66.7	<5.0	399	654
	3/11/08	10.38	87.22	0.623	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	5/1/08	11.13	86.47	1.60	<0.025	0.0477	<5.0	<5.0	<5.0	<5.0	<5.0	7.6	7.6
	11/24/08	12.24	85.36	<b>4.81</b>	2.980	3.3	<10.0	232	54.7	87.9	<10.0	3,590	3,822
	2/18/09	12.23	85.37	2.37	1.020	2.98	16.7	101	<10.0	56.7	10.3	1,999	2,127
	8/24/09	11.07	86.53	<b>3.04</b>	2.870	2.28	53.5	243	185.0	112.0	31.9	4,720	5,048
	10/13/09	12.15	85.45	0.74	3.650	1.73	48.9	333	130.0	121.0	36.9	4,990	5,409
	2/11/10	12.76	84.84	0.438	0.828	0.514	<10.0	<10.0	<10.0	12.0	<10.0	69.8	69.8
	9/9/10	13.37	84.23	1.460	2.780	1.520	<20.0	182	36.7	56.8	<20.0	1,056	1,238
	3/28/11	10.88	86.72	2.420	<b>6.310</b>	3.650	21.0	209	<20.0	131	<20.0	2,013	2,243
	9/14/11	10.00	87.60	0.712	0.757	0.660	7.5	30.1	16.4	22.1	31.6	762	831
	9/14/11D	10.00	87.60	0.774	0.592	0.525	<10.0	23.2	15.0	20.9	23.4	579	626
	2/15/12	11.82	85.78	1.210	1.790	1.270	6.0	48.8	25.8	22.6	26.3	432	513
	2/15/12D	11.82	85.78	1.950	2.260	1.610	<20.0	58.9	32.8	26.5	37.4	532	628
	8/20/12	12.86	84.74	0.348	0.553	0.670	<5.0	<5.0	<5.0	8.5	34.0	42.5	42.5
8/20/12D	12.86	84.74	0.319	0.540	0.632	<10.0	<10.0	<10.0	10.3	11.5	21.8	21.8	
2/20/13	12.29	85.31	0.734	0.473	0.649	<5.0	5.7	20.7	5.7	6.1	44.8	56.6	
2/20/13D	12.29	85.31	0.824	0.473	0.666	<5.0	6.0	20.8	6.1	6.7	45.6	58.3	
8/21/13	12.36	85.24	0.275	0.440	0.574	<5.0	<5.0	<5.0	8.9	7.7	112.2	119.9	
8/21/13D	12.36	85.24	0.266	0.464	0.618	<5.0	5.03	<5.0	9.20	6.48	125.4	136.9	
2/12/14	12.68	84.92	0.554	0.488	1.06	<10.0	<10.0	<10.0	<10.0	<10.0	147.2	147.2	
2/12/14	12.68	84.92	0.678	0.499	1.30	<10.0	<10.0	<10.0	12.6	<10.0	173.4	173.4	





**TABLE 3  
RESULTS OF ANALYSIS OF GROUNDWATER SAMPLES FOR VPH**

O'Connell Oil Associates (Mobil Station)  
730 East Street, Pittsfield, MA  
MassDEP RTN 1-13347

Results reported in milligrams per liter (mg/L) or micrograms per liter (µg/L), as noted

Monitoring Well & Elevation (ft)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft)	C <sub>5</sub> - C <sub>8</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>12</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>10</sub> Aromatics (mg/L)	Benzene (µg/L)	Ethyl-benzene (µg/L)	MtBE (µg/L)	Naphthalene (µg/L)	Toluene (µg/L)	Xylenes (µg/L)	Σ BTEX (µg/L)
<b>MCP Method 1 Standards</b>			<b>GW-2:</b>	<b>3</b>	<b>5</b>	<b>7</b>	<b>2,000</b>	<b>20,000</b>	<b>50,000</b>	<b>1,000</b>	<b>50,000</b>	<b>9,000</b>	<b>NA</b>
			<b>GW-3:</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>10,000</b>	<b>5,000</b>	<b>50,000</b>	<b>20,000</b>	<b>40,000</b>	<b>5,000</b>	<b>NA</b>
<b>ECS-8</b>	2/13/03	11.63	84.09	3.6	3.7	3.4	<5.0	1,100	40	120	160	4,400	5,660
<b>95.72</b>	9/8/05	10.35	85.08	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
<b>95.43</b>	9/8/05D	NG	NA	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	1/25/06	NG	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	4/11/06	9.98	85.45	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	7/20/06	10.28	85.15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/10/06	10.81	84.62	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	4/24/07	8.19	87.24	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/4/07	11.45	83.98	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	3/11/08	NG	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	3/24/08	8.56	86.87	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	5/1/08	9.02	86.41	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	11/24/08	10.12	85.31	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	4/9/09	9.02	86.41	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/24/09	8.98	86.45	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	10/13/09	10.05	85.38	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	9/9/10	11.29	84.14	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	3/28/11	8.80	86.63	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	9/14/11	7.89	87.54	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	2/15/12	9.56	85.87	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	8/30/12	10.77	84.66	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/21/13	9.87	85.56	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/12/14	10.53	84.90	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
<b>ECS-9</b>	2/13/03	10.82	84.40	0.540	0.240	0.300	<5.0	<5.0	16	<5.0	<5.0	85	85.0
<b>95.22</b>	9/19/05	10.91	84.08	0.652	0.611	1.41	9.6	60.7	831	40.2	6.7	730	807
<b>94.99</b>	1/25/06	8.38	86.61	0.660	0.429	1.11	<10	57.9	1,090	26.6	12.7	568	639
	4/11/06	10.33	84.66	1.73	0.770	1.53	<25	98.3	3,970	47.3	<25	915	1,013.3
	7/20/06	10.72	84.27	0.913	0.970	1.24	<25	51.5	1,980	51.9	<25	626	678
	10/10/06	11.12	83.87	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	1/25/07	10.31	84.68	0.356	0.522	0.949	<10	28.5	1,370	28.8	<10	336	365
	4/24/07	8.57	86.42	<0.075	0.262	0.571	<5.0	12.6	1,540	15.1	5.3	145	163
	10/4/07	11.79	83.20	<0.75	0.399	1.290	<50	<50	4,260	<50	<50	<100	ND
	3/11/08	8.63	86.36	<0.075	0.140	0.400	5.6	<5.0	666	11.6	<5.0	38.7	44.3
	5/1/08	9.47	85.52	<0.075	0.0523	0.0995	<5.0	<5.0	335	5.0	12.7	31.9	44.6
	11/24/08	10.60	84.39	0.377	0.3080	0.3480	<5.0	<5.0	133	8.8	<5.0	52.8	52.8
	2/18/09	10.62	84.37	0.314	0.2110	0.5800	<5.0	<5.0	149	18.5	<5.0	38.5	38.5
	8/24/09	9.33	85.66	<0.075	0.0836	0.0625	<5.0	<5.0	56	<5.0	<5.0	<10.0	ND
	2/11/10	10.49	84.50	<0.075	0.0745	0.0392	<5.0	<5.0	28.5	<5.0	<5.0	<10.0	ND
	9/9/10	11.64	83.35	0.155	0.1300	0.0618	<5.0	<5.0	11.7	<5.0	<5.0	<10.0	ND
	3/28/11	9.28	85.71	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	9/14/11	8.41	86.58	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/15/12	10.23	84.76	<0.075	<0.025	0.0377	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/30/12	11.35	83.64	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/20/13	10.55	84.44	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/21/13	10.66	84.33	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/12/14	11.01	83.98	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND

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O'Connell Oil Associates (Mobil Station)  
730 East Street, Pittsfield, MA  
MassDEP RTN 1-13347

Results reported in milligrams per liter (mg/L) or micrograms per liter (µg/L), as noted

Monitoring Well & Elevation (ft)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft)	C <sub>5</sub> - C <sub>8</sub>	C <sub>9</sub> - C <sub>12</sub>	C <sub>9</sub> - C <sub>10</sub>	Benzene (µg/L)	Ethyl-benzene	MtBE (µg/L)	Naphthalene (µg/L)	Toluene (ug/L)	Xylenes (µg/L)	Σ BTEX (µg/L)
				Aliphatics (mg/L)	Aliphatics (mg/L)	Aromatics (mg/L)		(µg/L)					
MCP Method 1 Standards			GW-2:	3	5	7	2,000	20,000	50,000	1,000	50,000	9,000	NA
			GW-3:	50	50	50	10,000	5,000	50,000	20,000	40,000	5,000	NA
<b>ECS-10</b>	2/13/03	10.11	85.79	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
<b>95.90</b>	9/8/05	9.59	86.16	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
<b>95.75</b>	1/25/06	8.57	87.18	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	4/10/06	9.52	86.23	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	7/20/06	9.42	86.33	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/10/06	9.64	86.11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	4/24/07	8.53	87.22	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/4/07	10.18	85.57	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	3/11/08	5.74	90.01	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	5/1/08	8.87	86.88	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	11/24/08	9.40	86.35	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/18/09	9.62	86.13	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/24/09	8.75	87.00	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/11/10	9.34	86.41	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	9/9/10	9.55	86.20	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	3/28/11	8.70	87.05	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	9/14/11	8.15	87.60	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	2/15/12	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	8/30/12	9.12	86.63	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/21/13	8.83	86.92	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/12/14	9.43	86.32	<0.075	<0.025	<0.025	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
<b>ECS-11</b>	1/25/06	9.28	87.42	1.08	0.056	0.059	18.0	<10	1,040	12.5	<10	<30	18.0
<b>96.70</b>	4/10/06	10.94	85.76	0.226	<0.025	0.029	<5.0	<5.0	277	<5.0	<5.0	<10.0	ND
	7/20/06	11.31	85.39	0.164	<0.025	0.025	<5.0	<5.0	243	<5.0	<5.0	<10.0	ND
	10/10/06	11.81	84.89	0.261	0.047	0.077	<5.0	<5.0	598	<5.0	<5.0	<10.0	ND
	1/25/07	10.98	85.72	0.133	<0.025	0.041	<5.0	<5.0	359	<5.0	<5.0	<10.0	ND
	4/24/07	9.35	87.35	0.369	<0.025	0.026	5.8	<5.0	628	<5.0	5.1	<10.0	10.9
	10/4/07	12.47	84.23	0.899	0.124	0.072	5	<5.0	207	<5.0	<5.0	<10.0	5.0
	3/11/08	9.36	87.34	0.982	0.029	0.093	14.5	<5.0	387	6.9	<5.0	<10.0	14.5
	5/1/08	10.28	86.42	0.639	0.0685	0.0669	<5.0	<5.0	81.4	13.0	5.7	<10.0	5.7
	11/24/08	11.21	85.49	0.376	0.0384	0.0305	5	<5.0	20.9	<5.0	<5.0	<10.0	5.0
	2/18/09	11.25	85.45	0.497	0.0352	0.0521	6.1	<5.0	24.2	<5.0	5.1	<10.0	11.2
	8/24/09	10.08	86.62	0.34	0.0336	<0.025	6.3	<5.0	53	<5.0	<5.0	<10.0	6.3
	10/13/09	11.20	85.50	0.452	0.0434	<0.025	16.3	<5.0	73.3	<5.0	<5.0	<10.0	16.3
	2/11/10	11.26	85.44	0.335	0.0467	<0.025	8.1	<5.0	90.7	<5.0	<5.0	<10.0	8.1
	9/9/10	12.48	84.22	0.361	0.0547	<0.025	14.9	<5.0	41.3	<5.0	<5.0	<10.0	14.9
	3/28/11	9.94	86.76	0.746	0.0609	0.0273	5.6	<5.0	<5.0	<5.0	<5.0	<10.0	5.6
	9/14/11	9.11	87.59	0.536	0.0329	<0.025	6.3	<5.0	18.5	<5.0	<5.0	<10.0	6.3
	2/15/12	10.89	85.81	0.559	0.0894	0.0357	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	8/20/12	11.86	84.84	0.275	<0.025	0.0389	5.8	<5.0	33.1	<5.0	<5.0	<10.0	5.8
	2/20/13	11.30	85.40	0.487	0.0713	0.0626	<5.0	<5.0	15.2	6.8	<5.0	<10.0	ND
	8/21/13	11.33	85.37	0.697	0.0774	0.0980	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND
	2/12/14	11.74	84.96	0.786	0.0372	0.1810	<5.0	<5.0	<5.0	<5.0	<5.0	<10.0	ND





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Monitoring Well & Elevation (ft)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft)	C <sub>5</sub> - C <sub>8</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>12</sub> Aliphatics (mg/L)	C <sub>9</sub> - C <sub>10</sub> Aromatics (mg/L)	Benzene (µg/L)	Ethyl-benzene (µg/L)	MtBE (µg/L)	Naphthalene (µg/L)	Toluene (ug/L)	Xylenes (µg/L)	Σ BTEX (µg/L)
<b>MCP Method 1 Standards</b>			GW-2:	3	5	7	2,000	20,000	50,000	1,000	50,000	9,000	NA
			GW-3:	50	50	50	10,000	5,000	50,000	20,000	40,000	5,000	NA
<b>ECS-14 96.25</b>	4/10/06	10.00	86.25	1.22	0.278	0.328	<5.0	<5.0	<5.0	15.2	11.7	<15	11.7
	7/20/06	10.31	85.94	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/10/06	10.79	85.46	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	1/25/07	9.87	86.38	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	4/24/07	8.51	87.74	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/4/07	11.35	84.90	2.32	0.710	1.22	7.2	<5.0	<5.0	57.6	5.0	42.8	55.0
	3/11/08	8.80	87.45	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	5/1/08	9.19	87.06	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	11/24/08	10.22	86.03	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	9/14/11	8.23	88.02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	2/15/12	9.84	86.41	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	8/20/12	11.48	84.77	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	2/20/13	10.30	85.95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	8/21/13	10.33	85.92	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
2/12/14	10.59	85.66	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA	
<b>ECS-15 96.45</b>	4/10/06	10.47	85.98	0.307	<0.025	0.032	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	7/20/06	10.72	85.73	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/10/06	11.23	85.22	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	1/25/07	10.37	86.08	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	4/24/07	8.93	87.52	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	10/4/07	11.91	84.54	<0.075	<0.025	<0.025	<5.0	<5.0	52.7	<5.0	<5.0	<10	ND
	3/11/08	9.92	86.53	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	5/1/08	9.76	86.69	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	11/24/08	10.70	85.75	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	9/14/11	8.73	87.72	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	2/15/12	10.50	85.95	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	8/20/12	10.83	85.62	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	2/20/13	11.00	85.45	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
	8/21/13	11.02	85.43	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA
2/12/14	NG	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA	

NOTES: Depth to water in feet from PVC.  
ft = feet.

\*Denotes well where the GW-2 standards apply.

Bolded text indicates value or detection limit exceeds GW-2 standard.

Italicized text indicates value or detection limit exceeds GW-3 standard.

D = Duplicate sample.

Elevation of PVC in feet.

NA = Not applicable/available.

97.02 = PVC elevations following well repairs on 8/29/05 & 9/1/05

**TABLE 4**

**SUMMARY OF EPH GROUNDWATER ANALYTICAL DATA**

O'Connell Oil Associates  
730 East Street, Pittsfield, Massachusetts

MassDEP EPH Method 5/2004 Rev. 1.1

Results and standards reported in milligrams per liter (mg/L) or micrograms per liter (µg/L), as noted

Monitoring Well & Elevation (Ft)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft)	2-Methyl		Acenaphthene (µg/L)	Phenanthrene (µg/L)	Fluorene (µg/L)	C <sub>9</sub> - C <sub>18</sub>	C <sub>19</sub> -C <sub>36</sub>	C <sub>11</sub> -C <sub>22</sub>
				Naphthalene (µg/L)	Naphthalene (µg/L)				Aliphatic Hydrocarbons (mg/L)	Aliphatic Hydrocarbons (mg/L)	Aromatic Hydrocarbons (mg/L)
			Method 1 GW-2	1,000	2,000	NA	NA	NA	5	NA	50
			Method 1 GW-3	20,000	20,000	6,000	10,000	40	50	50	5
			Method 3 UCL	100,000	100,000	50,000	3,000	400	100	100	100
<b>ECS-2</b>	9/14/2011	10.00	87.60	10.0	4.60	<1.00	<1.00	<1.00	<0.108	<0.108	0.286
<b>97.60</b>	2/15/2012	11.82	85.78	12.2	17.0	<1.00	<1.00	<1.00	<0.110	<0.110	<0.110
	8/20/2012	12.86	84.74	1.57	2.18	<1.00	<1.00	<1.00	<0.112	<0.112	<0.112
	8/21/2013	12.36	85.24	4.99	2.15	<1.00	<1.00	<1.00	<0.100	<0.100	<0.100
	2/12/2014	12.68	84.92	6.07	4.95	<1.00	<1.00	<1.00	<0.100	<0.100	<0.100
<b>ECS-3</b>	8/21/2013	12.62	85.14	126	27.2	<1.00	<1.00	<1.00	0.117	<0.100	0.134
<b>97.76</b>											
<b>ECS-12</b>	9/14/2011	8.55	87.60	<1.00	21.9	<1.00	<1.00	<1.00	<0.111	<0.111	0.466
<b>96.15</b>	2/15/2012	10.29	85.86	<1.00	49.6	<1.00	<1.00	1.57	<0.145	<0.145	0.237
	8/20/2012	11.42	84.73	<1.00	9.27	<1.00	<1.00	<1.00	<0.111	<0.111	0.122
	8/21/2013	10.91	85.24	6.47	25.8	<1.00	<1.00	<1.00	<0.100	<0.100	0.214
	2/12/2014	11.25	84.90	2.02	2.90	<1.00	<1.00	1.05	<0.100	<0.100	<0.100