

program has been revised to reflect the sampling of certain subset of wells for certain analytes quarterly, while a larger group of wells are sampled for more analytes on a yearly basis.

To date, a Post-Construction Baseline Groundwater Sampling Event report (OBG, 2000a) and nine quarterly groundwater monitoring reports (OBG, 2001a, 2001b, 2002a, 2002c, 2002e, 2002f, 2002g, 2003a, 2003c) have been submitted.

### **Active Collection System**

The active collection system has been delivering contaminated groundwater to the treatment plant since startup in 1999. The cleanup goal identified in the ROD for the active collection system is the significant reduction in the mass of the bedrock contamination. Two criteria are used to evaluate this goal: (1) a concentration range of 1 to 10 ppm of total VOCs; and/or (2) an asymptotic curve using groundwater monitoring data indicating that significant concentration reductions are no longer being achieved. Several bedrock monitoring wells serve as points of compliance and were established in the PCEMP. A summary of the data is presented in Table A3-2 (located in Attachment 3) and summarized below.

In summary, concentrations of total VOCs are similar to treatment plant startup conditions in 1999 with some apparent increasing and decreasing trends in concentrations. Continuation of the compliance monitoring set forth in the ROD in accordance with the PCEMP should continue. Special attention to any wells manifesting increasing concentrations in total VOCs downgradient of the disposal area is warranted as more data is collected.

### **Passive Collection System**

The objective of the passive collection system is to prevent degradation of the unimpaired stream by collecting shallow contaminated groundwater. Cleanup levels are based on AWQC and the designated uses of the receiving waters. Compliance is measured at the influent to the treatment plant. Quarterly groundwater monitoring collects groundwater from the collection system for chemical analysis. Data is presented and summarized in Table A3-3 located in Attachment 3. In general, levels of total VOCs have remained stable since treatment plant startup. Levels of total VOCs and PCBs have generally been below the pretreatment discharge limitations set by the City of New Bedford even before treatment with the exception of approximately four months which exceeded PCB standards.

In summary, the passive collection system continues to collect shallow contaminated groundwater. Flow from the collection system is providing essential additional flow to the treatment plant to ensure continuous/semi-continuous operation. During dry weather periods and the resultant lower than expected flow rate from the passive collection system vault, the treatment plant has been operating intermittently. In general, the treatment plant has been online Monday through Friday and shut down over the weekend under those conditions.

#### **5.3.1.3 Sediment Monitoring**

Sediment samples were collected from the unnamed stream, OU1 diversion swale, sedimentation basin and OU1 cap swales in December 2000 and June 2001. Sediment samples were analyzed for PCBs, total combustible organics (TCO), and percent solids. In addition, five sediment samples were analyzed for PAHs and metals. This data was collected as a baseline precursor to the bi-annual sampling specified in the PCEMP (OBG, 1996b). Two sediment samples collected from the unnamed stream exceeded the sediment target level; one sample collected in December 2000 [78 micrograms of PCBs per gram of carbon (ug PCB/gC)] and one sample collected in June 2001 (59 ug PCB/gC). The-1 diversion channel had two

exceedances of the sediment target level in December 2000 (32.5 and 47 ug PCB/gC) and one in June 2001 (30 ug PCB/gC). Sedimentation basin sediment samples indicated PCB levels below the sediment target value of 20 ug PCB/gC. OU1 cap swale sediment samples have also shown decreasing levels of PCBs from 1.47 mg/kg (April 2000) to 0.13 mg/kg (June 2001) (OBG, 2001c).

## **5.3.2 Operable Unit 2**

### **5.3.2.1 Sediment and Soil Monitoring**

Sediment samples were collected from four locations along the unnamed stream in October 2001 and analyzed for PCBs and TCO as outlined in the Long Term Environmental Monitoring Section of the OU1 ROD (Section X.A.8), and the PCEMP. PCBs were detected in one of the four sediment samples collected from the unnamed stream, but at a concentration below the sediment target level of 20 ug/gC set forth in the OU1 ROD (Section X.B.2) (NBE, 2001).

Sediment samples were collected from six non-aquatic plot areas in the Middle Marsh and adjacent wetlands in October 2001 as part of the Long Term Environmental Monitoring Plan outlined in the OU2 ROD (Section X.B.1), PCBs were detected in three of the six sediment samples at levels well below the soil cleanup level of 15 mg/kg total PCBs (NEE, 2001).

Sediment samples were also collected in August 2002 from four locations within the unnamed stream, within the area of OU2 impacted by the remedial action construction, and analyzed for PCBs and TCO. Aroclor 1254 was detected in sediment samples from three out of four locations at levels below the sediment target level. Six wetland soil samples were also collected in August 2002, within the Middle Marsh and adjacent wetlands of OU2, and analyzed for PCBs, Low levels of Aroclor 1254 (well below the 15 mg/kg total PCBs cleanup level) were detected in four out of six soil samples.

### **5.3.2.2 Surface Water**

Surface water samples were collected in October 2001 from the same four locations where sediment was collected in the unnamed stream and analyzed for PCBs and pH. PCBs were not detected above the detection limit in any of the samples collected (NEE, 2001).

Surface water samples were also collected in August 2002 from four locations within the unnamed stream and analyzed for PCBs and pH. Again, PCBs were not detected above the detection limit in any of the samples collected (NEE, 2003).

### **5.3.2.3 Wetlands**

The first full year of wetlands monitoring occurred in 2002 and a report was submitted in 2003 summarizing the results (NEE, 2003), The Executive Summary stated in part:

During 2002, the performance standard which requires a minimum of 75% areal coverage of non-invasive wetland species has not yet been met for all plant plots. Two of the six OU2 plots, and seven of the thirteen OU1 plots have met or exceeded the performance standard. All of the remaining plant plots are progressing well, and they are expected to meet the 75% areal coverage by the end of the 2003 growing season.

The woody plant survival rate of greater than 80% has been met in the OU1 Mitigation Area East and the OU1 Stream Restoration Area. None of the other areas have met the standard. In response to

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# Five-Year Review Report

First Five-Year Review Report  
for  
Sullivan's Ledge Superfund Site  
New Bedford, MA

September 2003

Prepared by:  
The United States Environmental Protection Agency  
Region 1, New England  
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Approved by:

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9/29/03

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