REMOVAL PROGRAM
INTERIM REPORT FOR THE
INSITU CHEMICAL OXIDATION TREATMENT
AT THE FISHERVILLE MILL SITE REMOVAL ACTION III
SOUTH GRAFTON, WORCESTER COUNTY, MASSACHUSETTS
6 MAY 2002 THROUGH 25 MARCH 2004

Prepared For:

U.S. Environmental Protection Agency
Region I
Emergency Planning and Response Branch
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Boston, Massachusetts 02114-2023

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Submitted By:

Weston Solutions, Inc. (WESTON®)
Superfund Technical Assessment and Response Team 2000 (START)
37 Upton Drive
Wilmington, Massachusetts 01887

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1.0 INTRODUCTION

The following report, entitled *Removal Program Interim Report for the InSitu Chemical Oxidation Treatment at the Fisherville Mill Site Removal Action III, South Grafton, Worcester County, Massachusetts, 6 May 2002 through 25 March 2004,* is a summary of the response actions taken by the U.S. Environmental Protection Agency (EPA), Region I, Emergency Planning and Response Branch (EPRB). The report details the situation as it developed, actions taken, and resources committed.

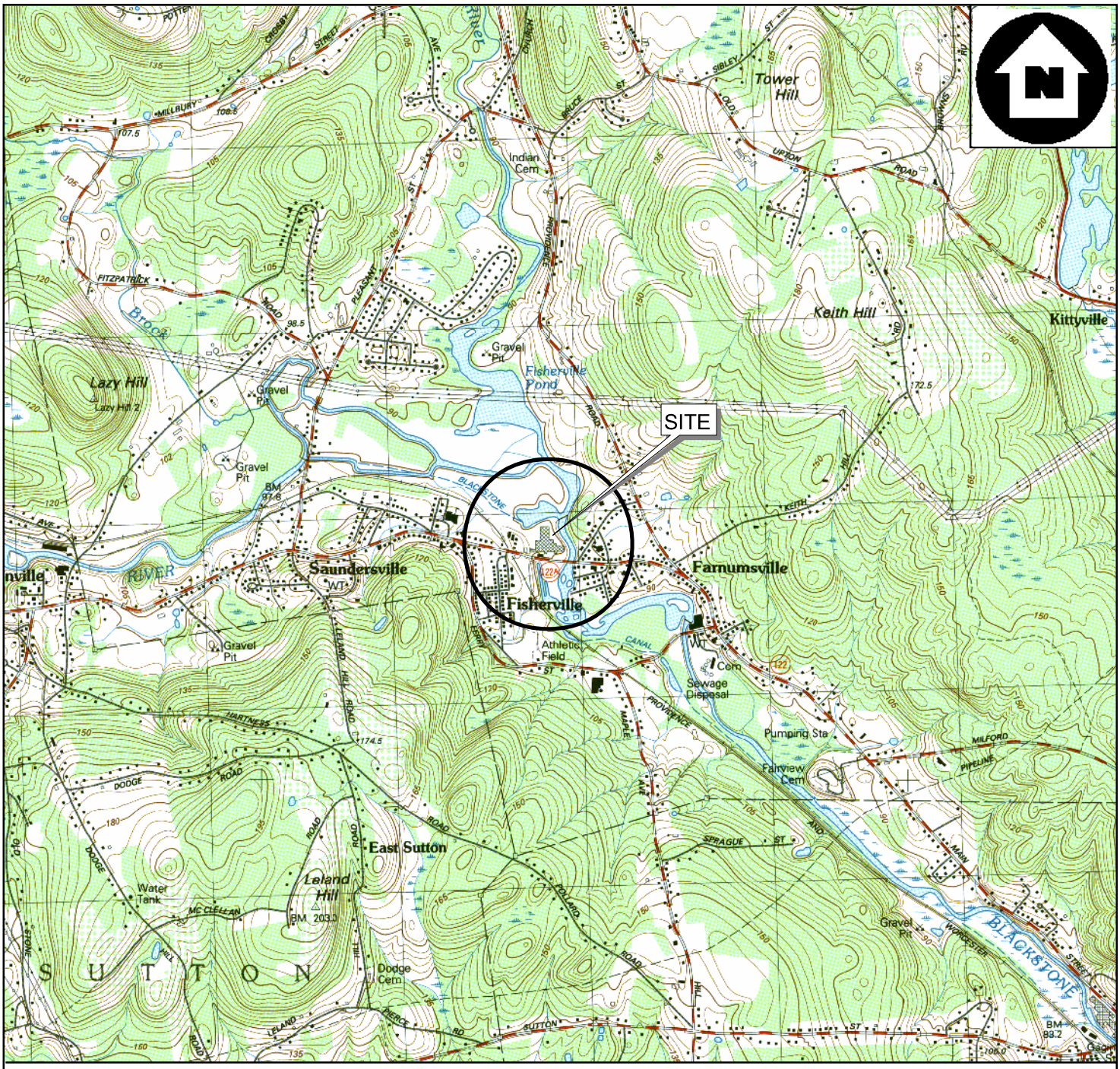
Site activities included the following: design and installation of a temporary sand bag dam; design and construction of a temporary sheet pile and stop log dam; design and construction of an In-Situ Chemical Oxidation (ISCO) injection system; collection of baseline groundwater and surface water samples; installation of overburden injection point (IP) wells and bedrock monitoring wells; collection of IP and bedrock well groundwater samples for volatile organic compound (VOC) analysis; on-site VOC screening analysis; establishing work zones; delivery, transfer, and storage of 40% sodium permanganate solution; dilution of 40% solution to 20% solution; an initial injection of 20% solution into 99 overburden injection wells; installation and recording of water level data loggers; second and third injections of 40% sodium permanganate solution into designated IP locations; two periods of injection grid groundwater re-circulation; additional groundwater profile sampling; additional installation of eight drive-point IP wells; and periodic groundwater VOC and sodium permanganate concentration monitoring sampling.

2.0 SITE CONDITIONS AND BACKGROUND

2.1 Site Location and Description

The Fisherville Mill Site (the site) is located at 60 Main Street, Grafton, Worcester County, Massachusetts at 42E 10' 40" north latitude and 71E 41' 25" west longitude [see Appendix A - Site Location Map (Figure 1)]. The approximately 30-acre site formerly contained an abandoned industrial fabrication/textile mill that included a four-story brick and concrete mill building situated along the western bank of the Blackstone River [see Appendix B - Site Diagram/Work Zones (Figure 2)]. Two smaller buildings, formerly located to the south and adjacent to Main Street, were used as a guard house and as a containment structure for a groundwater recovery and treatment system. A third building, the former electric control building, is located to the northwest of the former mill building. Private residences are located to the west of the site and on the opposite side of the Blackstone River to the east. A sluiceway, located on the western side of the site, is a section of the Blackstone Canal which flows through the turbine room portion of the former mill building, continues through a culvert beneath Main Street (Route 122A) and the remainder of the site, and empties into the Blackstone River. Debris piles are located along the northern and western sides of the mill building in the area that formerly contained dye ponds.

Two South Grafton Water District (SGWD) public water supply wells (Well #2 and Well #3) are located approximately 1,000 feet (Well #3) and 1,200 feet (Well #2) south and downgradient of the site on the west side of the Blackstone Canal. Both Well #2 and Well #3 are gravel packed, overburden wells. SGWD operates Well #2 year round and Well #3 on an as needed basis during drier conditions in late summer and fall.

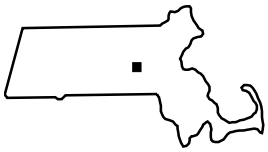


BASE MAP IS A PORTION OF THE FOLLOWING 7.5 X 15 ' U.S.G.S. QUADRANGLE(S):
GRAFTON, MASSACHUSETTS. 1969 PHOTOREVISED 1979.

1 0 1 Miles

5000 0 5000 Feet

1 0 1 Kilometers



QUADRANGLE LOCATION

SITE LOCATION

FISHERVILLE MILL
60-60 MAIN STREET (ROUTE 122A)
GRATON, MASSACHUSETTS

WESTON SOLUTIONS
Restoring Resource Efficiency

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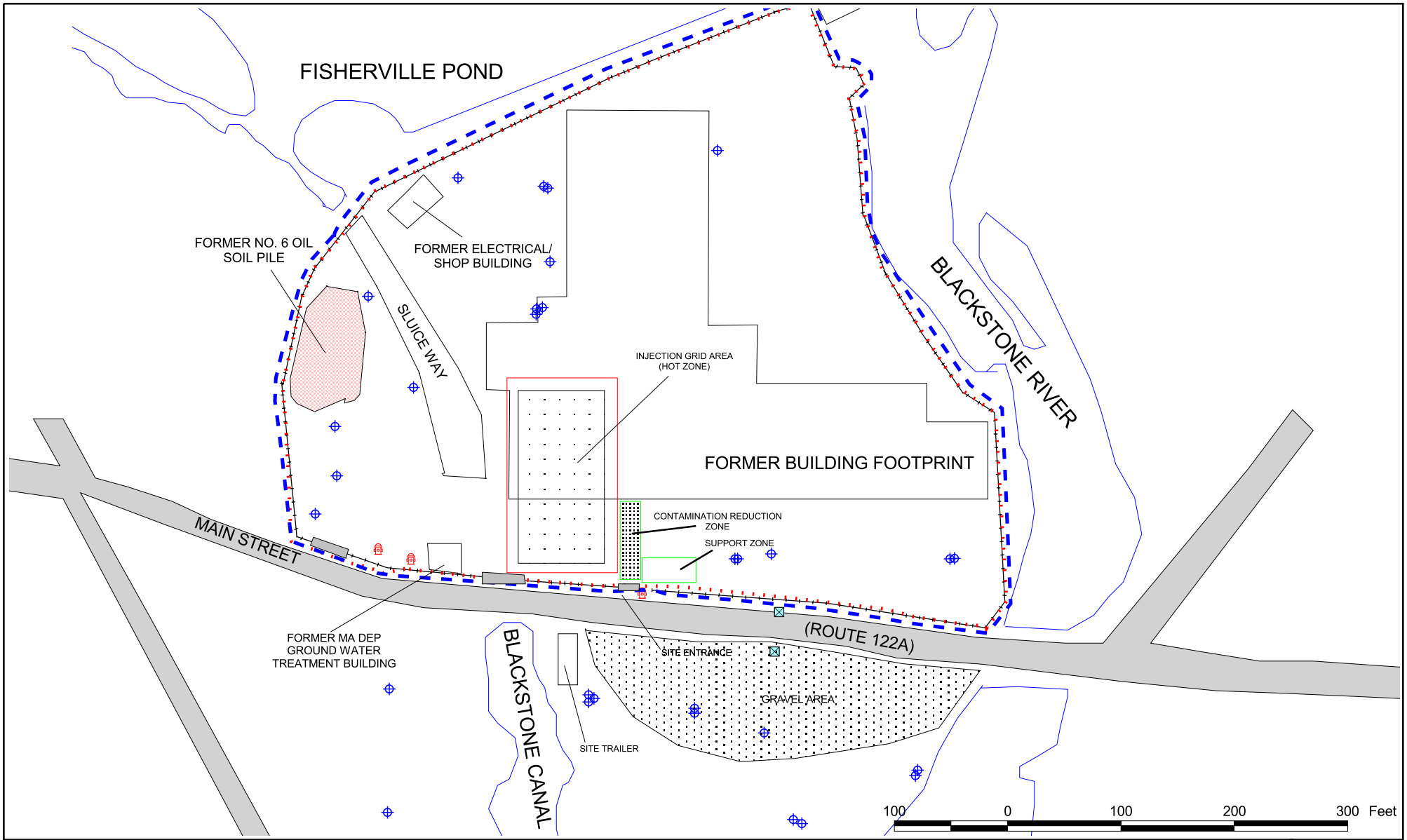
03-05-0181	D. Brammer	04/04/2004
FILE NAME: E:\ARC_APRS\START2\FISHERVILLEFIG1.APR		FIGURE 1



SITE DIAGRAM/ WORK ZONES

FISHERVILLE MILL SITE
60 MAIN STREET (ROUTE 122A)
GRAFTON, MA

LEGEND

- Contamination Reduction Zone (CRZ)
- Exclusion Zone (EZ)
- Monitoring Well
- Hydrants
- Fence

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03-05-0181	D. BRAMMER	04/06/2004

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Figure 2

2.2 Site History/Previous Actions

The Fisherville Mill was constructed in 1832, and manufactured cotton and woolen goods until 1942. During the 1940s, No. 6 fuel oil underground storage tanks (USTs) were installed to power furnaces that produced steam to heat the mill. At an unknown time prior to 1959, two areas were excavated to hold water from manufacturing processes (also referred to as dye ponds). One pond was excavated west of the mill building and discharged to the Blackstone Canal, and the other pond was excavated east of the building and discharged to the Blackstone River. The ponds were in use until the 1960s, possibly as late as 1969. From 1964, the site was used to manufacture aluminum lawn furniture, foam rubber for automobile seats, tool and dye parts, stamps, fabric, and aluminum frames. Starting in approximately 1970, the USTs were observed to be leaking contents into the canal. The mill ceased operations in 1986, and the USTs were removed in 1987. Soil contaminated with No. 6 fuel oil was subsequently excavated and stockpiled along the west side of the site. The Massachusetts Department of Environmental Protection (MA DEP) has placed, and continues to maintain, sorbent booms in the canal to retain the No. 6 fuel oil.

Numerous inspections/investigations have been conducted at the site. In addition, several Orders have been issued by the MA DEP since 1977 to address a number of environmental issues, including the discharge of No. 6 fuel oil to the Blackstone Canal and to the Blackstone River; and VOC contamination in groundwater and subsurface soils at the former dye ponds.

On 3 August 1999, a fire destroyed the former mill building and the groundwater treatment building. The fire caused the airborne dispersal of fire-damaged building debris, some of which was suspected to contain asbestos, to properties located downwind of the site. EPA and its contractors responded to the site, and between 4 and 27 August 1999, cleanup crews were deployed to retrieve and dispose of asbestos-containing material (ACM) fire debris. During that time, the remaining portions of the fire-damaged mill building were demolished. Samples collected by MA DEP indicated a distribution of friable ACM in the demolition debris and within other portions of the property.

In December 1999, the Central Massachusetts Economic Development Authority (CMEDA) and the Town of Grafton requested EPA assistance in assessing the demolition debris remaining on site in an effort to resume groundwater treatment. Subsequently, EPA and representatives of the Weston Solutions, Inc. [(Weston®), formerly known as Roy F. Weston, Inc.], Superfund Technical Assessment and Response Team (START) conducted a pre-removal sampling survey to provide data for waste characterization and classification, and to identify the extent of asbestos contamination within the debris. Samples were collected from the debris piles and analyzed for asbestos content. Asbestos was detected in approximately 20% of the samples analyzed, at levels ranging from trace to 30%.

On 22 January 2001, the SGWD notified MA DEP that samples collected from their water supply Well No. 3 indicated TCE levels of 0.7 parts per billion (ppb) during a November 2000 sampling event, and 1.5 ppb during a 2001 sampling event.

The site is currently listed under the MA DEP Bureau of Waste Site Cleanup as Kaltsas Omni-Duralite, Release Tracking Number (RTN) 2-0000206 and has a Tier 1A status under the Massachusetts Contingency Plan (MCP).

2.3 EPA Removal Program Hydrogeologic Study

From 3 May 2001 to 22 August 2001, START conducted a hydrogeologic study at the site. Activities conducted during the hydrogeologic investigation included the following: the installation of pressure transducer data loggers into selected monitoring wells to continuously measure groundwater levels; installation of 10 overburden monitoring wells (labeled MW-1S, MW-7S, MW-9S, MW-9D, MW-100S, MW-100M, MW-100D, MW-102, MW-103, MW-104) and three bedrock monitoring wells (labeled MW-7R, MW-9R and MW-101A); collection of 75 subsurface soil profile samples; performance of a pump test using SGWD Well No. 3 to simulate high demand pumping conditions; collection of groundwater samples from 35 monitoring wells; and performance of a detailed (5-foot) topographic and boundary survey of the site. The purpose of the study was to determine groundwater flow and contaminant transport patterns at the site under varying conditions. The conceptual model developed from the study data indicated that a source area of VOC contamination beneath the former mill building foundation was most likely migrating along a shallow to deep overburden pathway toward the south. During the drier late summer/early fall conditions, SGWD often uses water supply Well No. 3 to supplement the public water supply. Under these conditions, the continual pumping of Well No. 3 may draw the VOC contaminant plume beneath the canal toward the well posing a potential threat to the SGWD water supply Well No. 3.

The results of the hydrogeologic study are documented in the report, entitled *Removal Program Hydrogeologic Investigation Report for the Fisherville Mill Site, Grafton, Massachusetts*, dated April 2002 and completed under Technical Directive Document (TDD) No. 01-05-0180. Meetings were held at the MA DEP Central Regional Office to discuss the results of the hydrogeologic study. Attendees at the meetings included representatives of EPA, START, Weston-Manchester New Hampshire (MNH), MA DEP, CMEDA (and their consultant), SGWD (and their consultant), and the Town of Grafton. Based on discussion of the results of the hydrogeologic study, alternative approaches to protecting the SGWD water supply wells were considered, and it was concluded that the site provided an opportunity to use an alternative (insitu chemical oxidation treatment) approach.

2.4 EPA InSitu Chemical Oxidation Treatability Study

From January 2002 to April 2002, START personnel, with representatives from Weston-MNH, the EPA Environmental Response Team (ERT), and Response Engineering and Analytical Contract (REAC) personnel conducted an ISCO Treatability Study to evaluate potential effectiveness of implementing an ISCO treatment of the estimated VOC source area. START subcontracted drilling services (Technical Drilling Specialists, Inc.) to install an additional eight overburden monitoring wells (labeled MW-201 through MW-208) in the suspected source area. START personnel collected composite subsurface soil samples and representative groundwater samples, which were analyzed at the EPA ERT/REAC Laboratory, located in Edison, New Jersey. EPA ERT/REAC used the composite soil and groundwater samples to conduct a bench scale test to estimate the potential contaminant levels and natural organic content of the soil profile matrix. These soil matrix and groundwater factors were then used to calculate the treatment dosage requirements to conduct effective ISCO treatment of the suspected source area. Results of the bench scale treatability test indicated that the required dosage to achieve the treatment goal (reducing VOC concentrations in the source area by two orders of magnitude) was estimated to be between 1 and 3 grams of sodium permanganate for every 500 grams of soil.

In addition, START personnel advanced six borings using direct push equipment to conduct a potable water injection test of the soil matrix. Personnel from START, Weston-MNH, and MA DEP conducted potable water injection tests under various conditions, including the following: deep within the soil profile near the top of bedrock and/or dense till layer; shallow depths within the soil profile; and injection into open borings versus screened polyvinyl chloride (PVC) well points. Water levels of surrounding monitoring wells and injection points were recorded during each injection test. Results of the potable water injection tests indicated the permeability of the soil matrix was sufficient to support high volumes of injected water and/or an oxidant solution.

The results of the bench scale treatability study and potable water injection test are documented in the REAC report, entitled *Engineering Evaluation Unit - Fisherville Mill Treatability Study WA#R1A00054 - Technical Memorandum*, dated 1 August 2002 and the Weston-MNH report, entitled *In-Situ Oxidation Treatability Study for the Former Fisherville Mill Site, South Grafton, Massachusetts, Results and Recommendations*, dated January 2003, completed under TDD No. 02-05-0168.

Based on the results of the treatability study and potable water injection test, EPA Region I On-Scene Coordinator (OSC) Janis Tsang, with the consultation of MA DEP, SGWD, and CMEDA, decided to implement the proposed ISCO treatment of the VOC source area at the site. On-site meetings were held to discuss the correlation between the treatability study results and the field scale conditions of the site, and to coordinate potential field activities (see Section 3.2, Project Planning).

3.0 SUMMARY OF FEDERAL RESPONSE ACTIONS

3.1 Project Planning

On 6 May 2002, the Removal Action Memorandum was signed by Deputy Director of the EPA Office of Site Remediation and Restoration Richard Cavagnero, authorizing a $1,980,000 project ceiling, of which $1,300,000 was appropriated for the Emergency Rapid Response Services (ERRS) contractor, Shaw Environmental and Infrastructure, Inc. (Shaw). This Scope of Work was initiated to conduct an ISCO treatment using sodium permanganate to decrease the VOC contaminant mass in the source area, thereby decreasing the contaminant concentrations in the downgradient plume. Previously, maximum detected concentrations of TCE in groundwater in the source area (*i.e.*, in bedrock monitoring well MW-101A) were in the range of 240,000 ppb (February 2002) to 370,000 ppb (August 2001). The goal of the ISCO treatment removal action is to reduce these VOC concentrations by approximately two orders of magnitude (to the levels in 1,000 ppb range). The MA DEP MCP GW-1 groundwater standard for TCE is 5 ppb.

A series of meetings and site visits were conducted by EPA Region I and the project team of START, Weston-MNH, ERRS, and MA DEP personnel to discuss the design and scope of the ISCO injection system and the installation of a temporary dam structure in the Blackstone Canal. To address concerns expressed by SGWD regarding the time period required for the implementation of the ISCO treatment, construction of a temporary sand bag dam in the Blackstone Canal was proposed. The purpose of the temporary dam was to maintain surface water within the canal, beginning at Main Street (Route 122A), and extending south to the Blackstone River, providing an interim hydrologic barrier between the contaminant plume on the peninsula and SGWD Well No.

3 prior to, during, and after the ISCO site activities. The meetings and site visits included the following:

- On 10 May 2002, EPA, ERRS, MA DEP, and START conducted a site walk to discuss the proposed location and construction of the temporary sand bag dam.

- On 24 May 2002, EPA conducted a site walk to discuss the public awareness of the installation of a temporary sand bag dam and ISCO Treatment. Attendees included representatives from the EPA American Heritage River Program, the US Army Corps of Engineers, MA DEP, Weston-MNH, the Grafton Conservation Commission, SGWD, and START.

- On 29 May 2002, EPA conducted a site walk and meeting to review previous site work and discuss the potential applicability of an ISCO treatment of the on-site VOC source area. Attendees included representatives from EPA-ERT; EPA National Risk Management Laboratory; REAC; MA DEP; ERRS; Weston-MNH; and START. After the site walk, a meeting was held to discuss the installation of a temporary sand bag dam, previous hydrogeologic study data, and potential design and implementation of an ISCO system to treat the VOC source area.

- On 2 July 2002, EPA held a meeting at the MA DEP Central Regional Office to review the ISCO Treatability Study and discuss the proposed ISCO treatment draft scope of work. Attendees included representatives from EPA Region I; EPA-ERT; EPA National Risk Management Laboratory; REAC; ERRS; ERM (consultant to ERRS); MA DEP; CMEDA; Tighe & Bond (consultants to CMEDA); SGWD; Coler & Colantonio (consultants to SGWD); START; and Weston-MNH.

- On 23 October 2002, a multi-agency coordination meeting was held at the Grafton Municipal Center. Attendees included representatives from the following organizations: EPA Region 1; EPA-ERT; the EPA American Heritage Rivers Program; the U.S. Army Corps of Engineers; MA DEP; the Massachusetts Department of Environmental Management (MA DEM); Massachusetts Development; CMEDA; the Town of Grafton; the Rhode Island Department of Environmental Management (RI DEM); the University of Rhode Island; the Narragansett Bay National Estuary Program; RI Sea Grant; the Blackstone Headwaters Coalition; Tighe and Bond; and Weston-MNH. The temporary sand bag dam and the continuing ISCO treatment at the site were presented by EPA and Weston-MNH and discussed in relation to proposed restoration projects along the Blackstone River.

3.2 Temporary Dam Construction

The removal health and safety plan (HASP) for the temporary dam construction was prepared by START personnel, and reviewed and signed by all site personnel before any site work commenced. In addition, emergency telephone numbers and directions to the hospital were discussed, and site work zones were delineated. All site activities were performed in appropriate personal protective equipment (PPE) in accordance with the HASP. The delivery and staging of ERRS equipment and supplies for the construction of the temporary sand bag dam was initiated on 21 June 2002.

3.2.1 Temporary Sand Bag Dam Installation

The temporary sand bag dam design and scope of work was prepared by Weston-MNH personnel as a separate document, entitled *Dam Implementation Plan for Interim Protection of the South Grafton Municipal Water Supply Wells, Grafton, Massachusetts*, dated April 2002. Appendix A contains the design drawings for the temporary sand bag dam construction.

On 21 June 2002, START personnel mobilized to the site to monitor construction of a temporary sand bag dam in the Blackstone Canal. ERRS personnel mobilized to the site to stage equipment and supplies and to initiate construction activities. Prior to the initiation of site activities, the HASP was signed by all personnel. Daily health and safety meetings were held for the duration of site activities. START personnel photodocumented site features/activities and changing site conditions for the duration of the project. The Photodocumentation Log was prepared as a separate document and is located within the EPA site file.

On 24 June 2002, ERRS personnel mobilized to the site to repair the peninsula access road to the temporary dam location that was damaged during construction, and to conduct site restoration activities. START personnel mobilized to site to monitor/document site restoration activities.

From 4 March 2003 to 25 June 2003, the condition of the temporary sand bag dam was periodically inspected by START personnel. During this time period, the condition of the sand bag dam deteriorated, and erosion occurred around the edges of the dam due to periodic flooding and vandalism. However, the dam remained functional and continued to impound water in the canal upstream of the dam.

On 9 July 2003, ERRS personnel mobilized to site to make repairs to the temporary sand bag dam after spare sandbags had been stacked along the crest of the dam by unknown parties, apparently to create a pathway across the Blackstone Canal. The increased height of the dam crest and large rainfall events had created a large impoundment of water, causing erosion to occur along the northern (peninsula) side of the dam as the impounded water flowed around the edges of the dam.

3.2.2 Temporary Sheet Pile and Stop Log Dam Installation

Weather conditions and vandalism decreased the temporary sand bag dam's ability to perform the desired impoundment of water, and caused additional erosion to occur on either edge of the dam. Subsequently, EPA Region I, ERRS, MA DEP, and Weston-MNH personnel discussed the design and construction of a temporary sheet pile/stop log dam to replace the damaged and eroding temporary sand bag dam. The temporary sheet pile/stop log dam design drawings were prepared by Weston-MNH personnel as a separate document, entitled *Temporary Dam - Blackstone Canal, Fisherville Mill Site, Grafton Massachusetts, 31 October 2003*. Appendix B contains the design drawings for the sheet pile and stop log dam construction.

On 13 November 2003, ERRS conducted a bid walk for installation of the proposed sheet pile/stop log dam. The bid was awarded to Cyn Environmental, and from 4 to 23 and 29 December 2003, EPA, EPA-ERT, ERRS and START personnel monitored the construction of the temporary sheet pile/stop log dam in the Blackstone Canal. ERRS subcontractor Cyn Environmental initiated the delivery and staging of equipment and supplies for the construction of the sheet pile/stop log dam.

Cyn Environmental subcontracted the metal sheet pile work to Carter Pile. An approximately 15-foot wide access path leading to the dam construction site was cleared of vegetation to allow the staging of the heavy crane and associated equipment. Inclement weather and flooding conditions in the canal caused a 3-day delay in the construction schedule. Limited site restoration was completed due to weather conditions and the end of the existing ERRS contract.

On 23 and 24 March 2004, ERRS personnel mobilized to site to re-grade the banks of the canal downstream of the dam, plant grass seed, and install erosion control matting to prevent erosion of southern peninsula area during spring rainfall and snowmelt. MA DEP and SGWD assumed responsibility for monitoring the post-installation condition of the dam and appropriate stop log elevation.

3.3 InSitu Chemical Oxidation System

The ISCO design and scope of work was prepared by Weston-MNH personnel as two separate documents, entitled *Scope of Work, Oxidant Injection Point Construction and Installation, Time Critical Action, Fisherville Mill Site Grafton, Massachusetts* and *Scope of Work, Injection of Sodium Permanganate, Time Critical Removal Action Fisherville Mill Site Grafton, Massachusetts*. Appendix C contains the schematic diagram of the ISCO injection system.

The comprehensive site HASP was prepared by START personnel, and reviewed and signed by all site personnel before any site work commenced. The HASP was prepared by START personnel as a separate document, entitled *Health and Safety Plan for the Fisherville Mill Site, Grafton, Worcester County, Massachusetts.*

On 8 July 2002, EPA, START, and ERRS personnel mobilized to site to monitor the delivery of two portable restrooms, a copier/facsimile machine, and the mobilization and staging of ERRS heavy equipment and supplies for construction of the ISCO injection system. ERRS and EPA Region I coordinated the usage of an existing office trailer on site with Scientific Applications International Corporation (SAIC), a contractor for an EPA Superfund Innovative Technology Evaluation (SITE) project also being conducted at the site. ERRS initiated 24-hour security for the trailer to take place during sampling activities.

ERRS personnel initiated site preparation activities for the ISCO injection system, including clearing brick, scrap metal, and granite demolition debris from the proposed 100-foot by 200-foot injection grid area, located along the eastern edge of the former mill building footprint. No demolition debris was transported off site.

3.3.1 Air Monitoring and Debris Clearing

On 8 July 2002, START personnel mobilized to the site to establish perimeter air sampling/monitoring for asbestos and particulates, and to monitor ERRS debris clearing activities within the proposed injection well grid area. An air monitoring plan was prepared by START personnel as a separate document, entitled *Air Monitoring Plan for the Fisherville Mill Site, Grafton, Worcester County, Massachusetts*. Perimeter air monitoring was conducted by START personnel from 8 to 11 July 2002 using DataRAM and personnel DataRAM particulate monitors, and low-flow pumps equipped with cartridges for asbestos analysis. ERRS personnel conducted personal air

sampling for asbestos during debris clearing activities. Air monitoring/sampling results are contained within the EPA site file.

For all subsequent site activities, START performed air monitoring in the exclusion zone (EZ) using a Photoionization Detector (PID), a Flame Ionization Detector (FID), and a Combustible Gas Indicator/Oxygen Meter (CGI/O_2). No readings above background were noted on the PID, FID, or CGI/O_2. A multi-gas meter equipped with a chlorine sensor and a Draeger Gas Detector Pump with short-term colorimetric tubes for chlorine were available during injection and post-injection sampling as chlorine gas was a possible by-product of the oxidation process.

On 15 July 2002, after debris clearing activities were completed, START and ERRS personnel established a 100-foot by 200-foot injection grid area and marked the location of each of the 99 proposed injection wells. On 18 and 19 July 2002, ERRS personnel advanced pilot borings at the proposed injection well locations on the concrete basement floor and western wall of the former mill building. After clearing the proposed injection grid area, ERRS established the EZ, the contamination reduction zone (CRZ), and the clean zone.

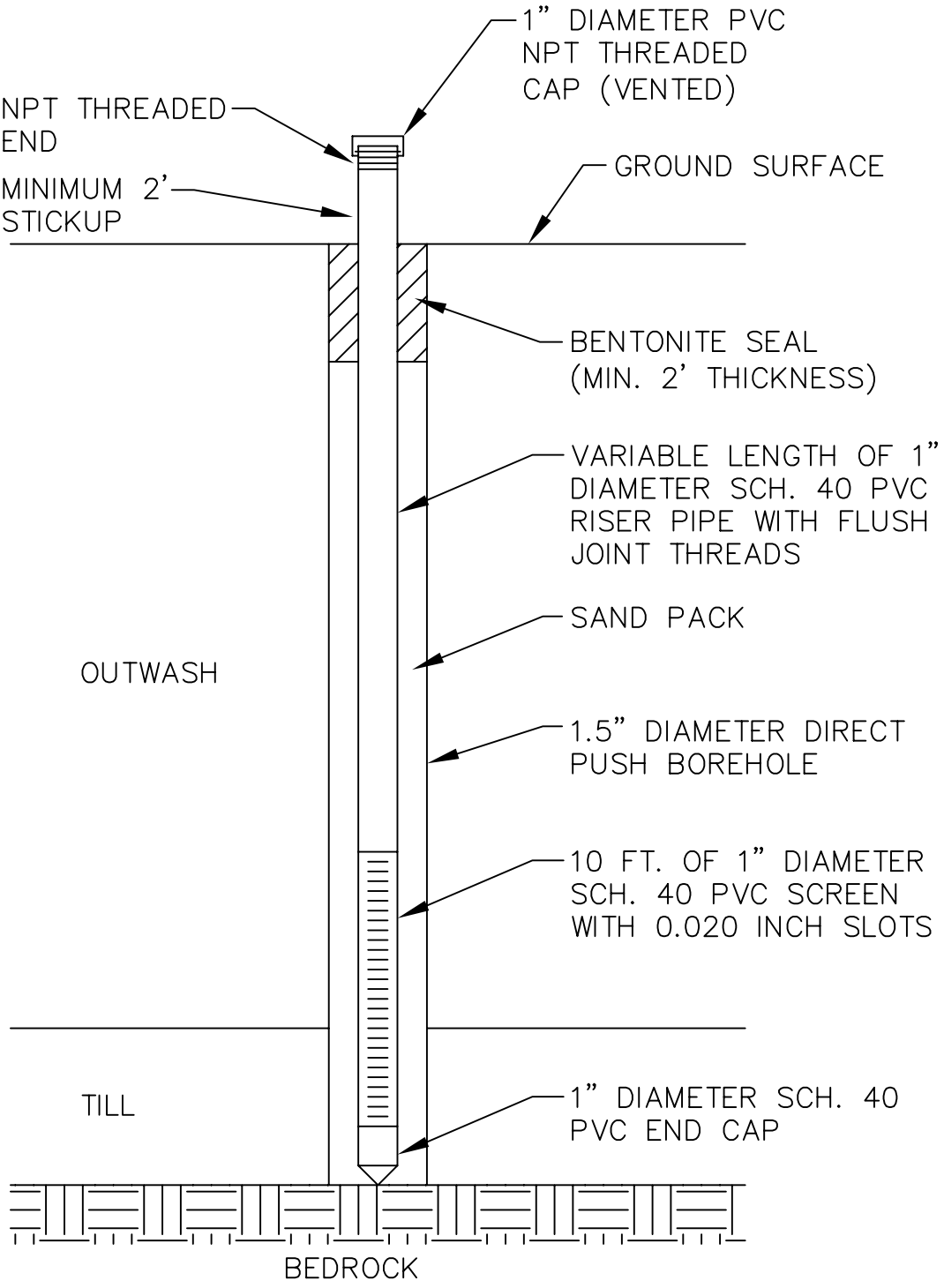
3.4 Drilling Activities

3.4.1 Installation of Injection Point and Monitoring Wells

As delineated in the document, entitled *Scope of Work, Oxidant Injection Point Construction and Installation, Time Critical Action, Fisherville Mill Site Grafton, Massachusetts*, the injection well specifications called for borings to be advanced to the top of bedrock and 1-inch diameter PVC injection well points to be installed with 10-foot PVC screens at the top of bedrock. Figure 3 presents a schematic of typical injection point well construction.

On 22 July 2002, representatives from ERRS subcontractor Zebra Environmental Corporation mobilized to site to begin installation of injection wells using direct-push drilling methods. No injection wells were installed by direct-push methods due to difficult drilling conditions (*i.e.*, shallow subsurface boulders). Fourteen well borings were attempted, with all but two resulting in shallow refusal. Two direct-push monitoring wells, MW-29M and MW-301, were installed south of Route 122A in the vicinity of the trailer and gravel parking area.

From 23 to 26 July 2002, ERRS rebid the drilling scope of work specifying conventional drilling methods (hollow-stem augers and air hammer) to area drilling companies. The amended drilling subcontract was awarded to American Drilling Services, Inc. (American Drilling) of Westminster, Massachusetts.



NOT TO SCALE

TYPICAL OXIDANT INJECTION POINT SCHEMATIC

TIME CRITICAL REMOVAL ACTION
FISHERVILLE MILL SITE
GRAFTON, MASSACHUSETTS

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FIGURE 3

On 29 July 2002, EPA, START, and ERRS personnel mobilized to site to monitor ERRS drilling subcontractor American Drilling for the installation of injection point wells. From 29 July to 26 August 2002, 99 overburden injection wells were installed to the estimated top of bedrock (*i.e.*, refusal). American Drilling mobilized up to three drilling rigs at various intervals to complete the well installation. No soil samples were collected from any of the borings. The first 15 injection wells completed (labeled IP-15, IP-20, IP-25, IP-30, IP-35, IP-31, IP-82, IP-40, IP-32, IP-45, IP-83, IP-33, IP-16, IP-65, and IP-70) were installed without a sand pack around the screened interval. Soil cuttings were backfilled around the screened interval with a bentonite seal above the backfilled soil cuttings. All subsequent injection well locations were constructed with a sand pack along the screened interval and a bentonite seal above the sand pack.

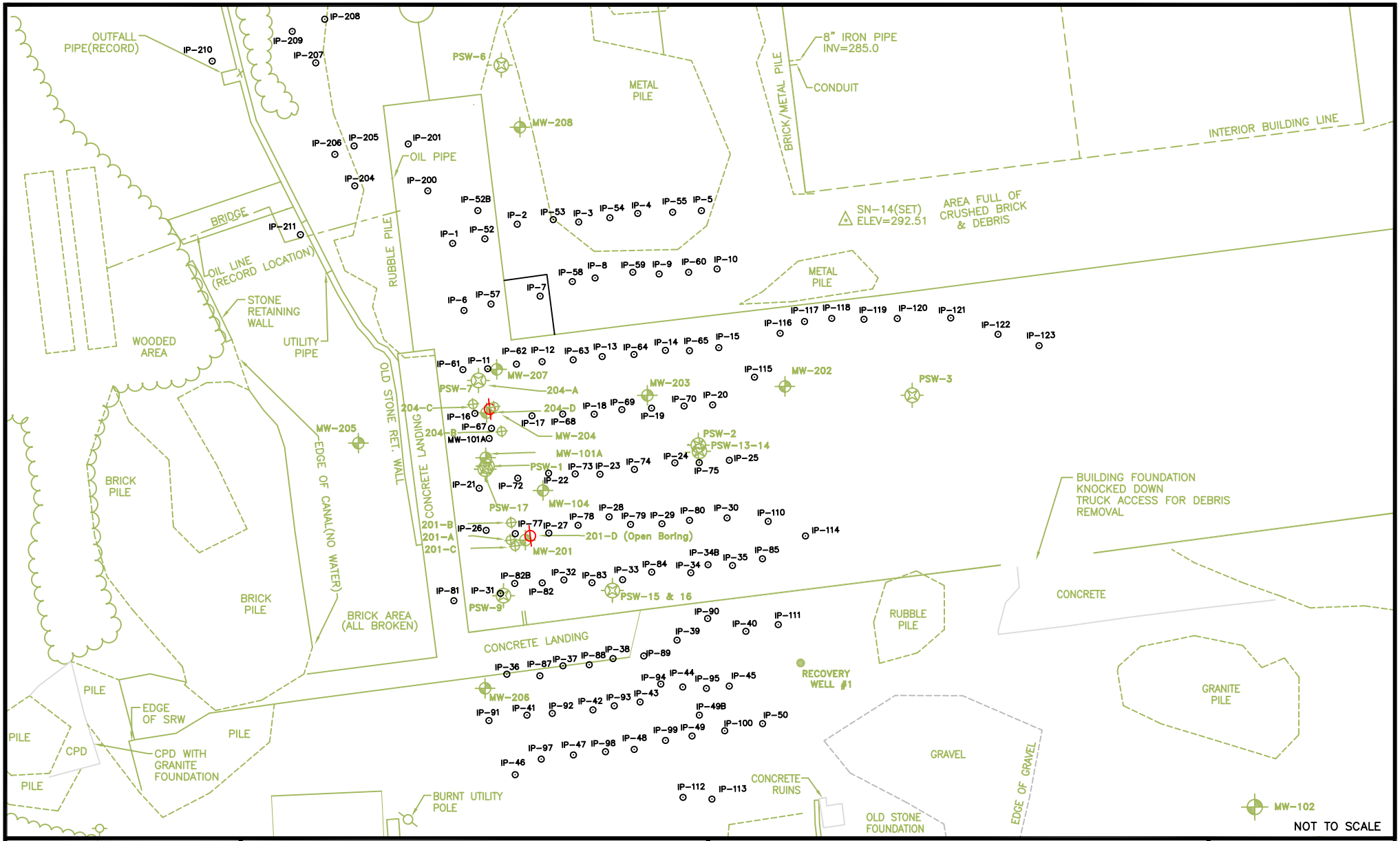
Previous discussions with EPA-ERT/REAC and MA DEP had identified the limited number of bedrock monitoring well locations and associated groundwater data as an area of concern, in light of the fact that the highest detected VOC concentration was recorded in the bedrock monitoring well MW-01A. As a result, during the course of overburden IP well installation, an additional five bedrock wells (labeled IP-34B, IP-49B, IP-52B, IP-82B, and MW-3T-B) were installed in the vicinity of the injection grid. The five bedrock wells were constructed with 10-foot 2-inch slotted PVC screen into bedrock and 2-inch solid PVC riser to the ground surface. No soil samples were collected from any of the borings.

The following seven IP wells were not installed along the western edge of the proposed injection grid due to access constraints: IP-51, IP-56, IP-66, IP-71, IP-76, IP-86, and IP-96. The following six IP wells were subsequently added as replacements along the southern and eastern edges of the injection grid: IP-110, IP-111, IP-112, IP-113, IP-114, and IP-115. Figure 4 presents the locations of the completed IP wells.

A letter report summarizing the drilling activities was prepared by ERRS personnel as a separate document, entitled *Permanganate Addition Report Summary #1 (July - September, 2002) Fisherville Mill Site, Grafton, Massachusetts, 17 October 2002*. Appendix D, Table D-1 summarizes the installed well construction details.

3.4.2 Injection Point Well Elevation Survey

On 10 September 2002, START personnel conducted an elevation survey of the 99 IP wells using a rod and transit. The location of each IP well was also recorded using a Global Positioning System (GPS) unit. A known elevation (monitoring well MW-101A) was used as a reference point for the survey. Figure 5 presents the estimated bedrock surface elevations based on the results of the drilling (recorded refusals and bedrock confirmation depths bgs). A summary of the IP elevation survey is contained in Appendix D, Table D-1.



LEGEND

- INJECTION POINT (IP) WELL
- START-INSTALLED MONITORING WELL
- PINE & SWALLOW-INSTALLED MONITORING WELL
- START-INSTALLED CLEAN WATER INJECTION BORING

INJECTION POINT (IP) WELL LOCATIONS

FISHERVILLE MILL
GRAFTON, MA

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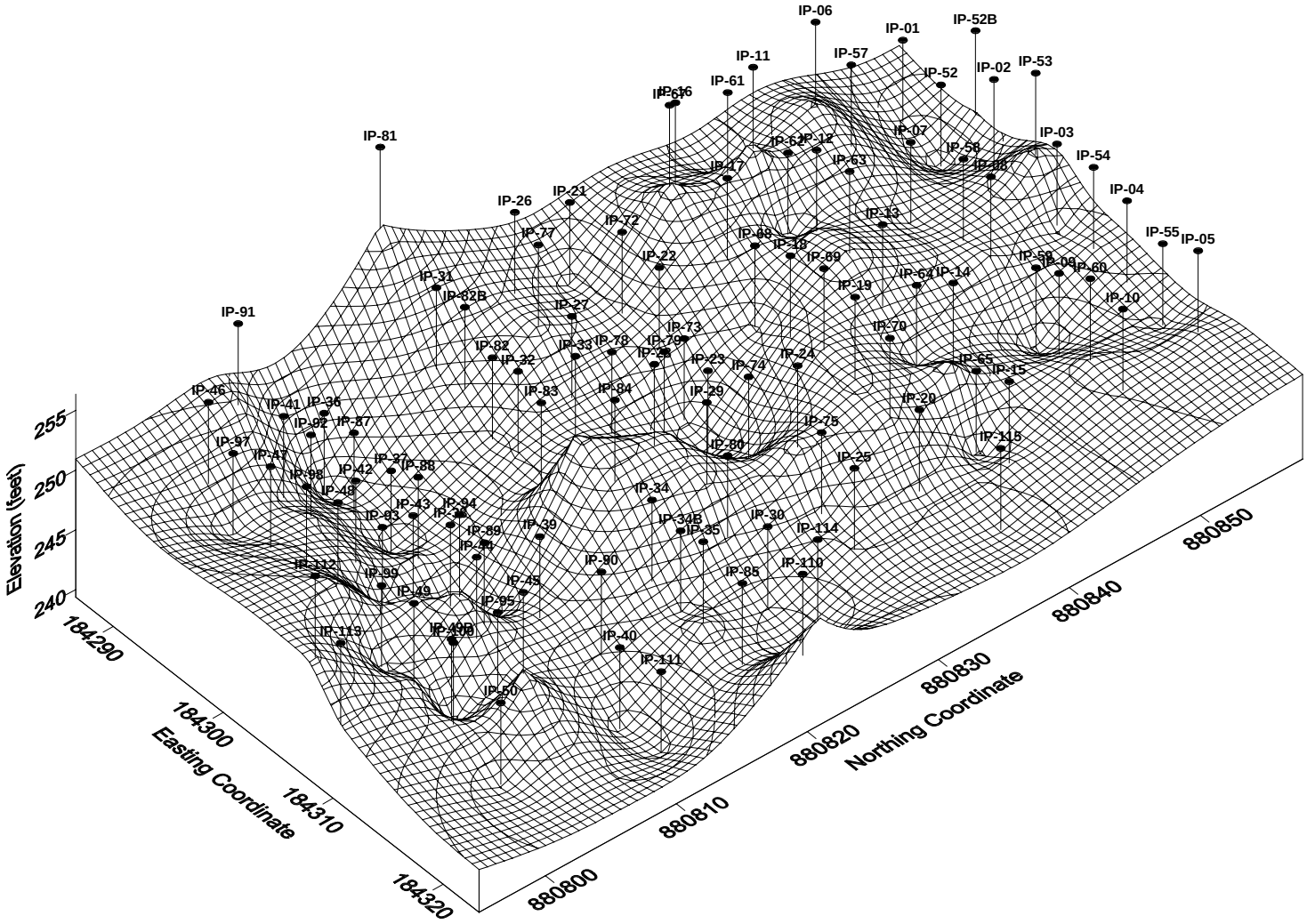
REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #	DRAWN BY:	DATE
04-05-0009	D. Brammer	05/03/2004

FILE NAME: R:\04xxxxxx\Figures\New_IP_Locations.dwg

FIGURE 4



BEDROCK SURFACE CONTOUR MAP
FISHERVILLE MILL
GRAFTON, MASSACHUSETTS

Based on injection well (IP) refusal and bedrock monitoring well installion July - August 2002

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	3/05/2004

FILE NAME:	
S:03050181_BedrockContourMap	FIGURE 5

3.5 Sodium Permanganate Injection

On 19 August 2002, ERRS personnel initiated field activities for the sodium permanganate injections. ERRS subcontracted equipment suppliers, and supervised the placement and coordination of the injection storage and pumping equipment including three 6,500-gallon polyethylene storage tanks, three 250-gallon stainless steel tanks, two containment berms, and two 3.5-horsepower centrifugal pumps. Two of the 6,500-gallon tanks used for the sodium permanganate solution storage were placed within the containment berms. The third 6,500-gallon tank and the three 250-gallon tanks were utilized for clean water storage.

On 20 August 2002, ERRS personnel initiated the construction of the injection piping system. The piping system was constructed using system specifications provided in the Weston-MNH scope of work, entitled *Scope of Work, Injection of Sodium Permanganate, Time Critical Removal Action Fisherville Mill Site Grafton, Massachusetts*. The piping consisted of 2-inch inside diameter, schedule 40 PVC piping. Outlet piping from each pump was connected to a central pipe trunk line. The three 250-gallon stainless steel tanks containing clean, potable water were also connected to the central trunk line. The central trunk line was connected to four manifolds, with four distribution valves on each manifold. From the manifolds, 1-inch inside diameter braided vinyl hose was used to distribute the sodium permanganate solution from the manifold to the well head. The wellhead connection consisted of a threaded union to allow a tight seal with the well. The closed pumping system was also outfitted with check-valves, pressure gauges, and ball valves. Totalizers were installed at the wellhead connections to track total injected volumes. A re-circulation loop was piped in at each sodium permanganate storage tank to allow the mixing of the permanganate solution. The piping from the pumps to the distribution manifolds was lain on the ground surface with sand berms lined with polyethylene sheeting for spill protection. On 27 August 2002, ERRS personnel conducted a clean water pressure test of the system, and after repairs of detected leaks, the piping and distribution system was completed.

On 23 and 26 August 2002, initial deliveries of the 40% sodium permanganate solution arrived at the site. Approximately 5,400 gallons of the sodium permanganate solution was evenly divided and stored within the two 6,500-gallon storage tanks. Approximately 7,450 gallons of water was added to the sodium permanganate solution to create a 20% (by weight) solution. The 20% solution was divided between each of the 6,500-gallon tanks with each tank holding approximately 6,425 gallons of the solution. Additional deliveries of 40% sodium permanganate solution were made on 4, 5, 6, and 10 September 2002. A total of 16,720 gallons of 40% sodium permanganate solution were delivered to site for the first injection round.

3.5.1 First Sodium Permanganate Injection (28 August 2002 to 10 September 2002)

From 28 August to 10 September 2002, EPA, EPA-ERT/REAC, ERRS, START, Weston-MNH, and MA DEP personnel mobilized to site to monitor the first round of sodium permanganate injection. On 28 August 2002, ERRS personnel started the initial injection of the sodium permanganate solution. Prior to beginning injection activities each morning, ERRS personnel followed an injection system startup checklist to review equipment condition and injection status. The injection was conducted in an ascending progression using the injection point well ID's, (starting with IP-1, IP-2, etc.,) and advancing from hydrologic upgradient (north) to downgradient (south) (Figure 4). The sodium permanganate solution was injected at flow rates ranging up to 15 pounds per square

inch (psi). The target amount of 373 gallons of the solution was injected into each of the 99 IP well locations, with the following exceptions: IP-32, IP-78, and IP-100. During injection at IP-32 and IP-78, permanganate solution began to rise within the well boring annulus to the surface, and it was determined that the well casings were broken below the ground surface. Injection well IP-32 received approximately 75 gallons of solution and IP-78 received approximately 90 gallons before injection was stopped. Injection well IP-100 received approximately 517 gallons of 15% sodium permanganate solution in order to utilize a diluted sodium permanganate solution that was to be contained in the storage tanks until the proposed second injection round.

During the first injection round activities, START personnel manually collected water level measurements of IP locations near the ongoing injection to monitor potential groundwater mounding. START personnel also collected groundwater samples using 0.5-inch diameter disposable polyethylene bailers and field screened the groundwater samples for sodium permanganate concentrations using a ThermoSpectronic Model Genesys 20 spectrophotometer. Spectrophotometer calibration and permanganate concentration field screening results were recorded in a separate field log book (Log Book No. LR45227) which is contained within the EPA site file. Complete permanganate concentration field screening results and chain-of-custody forms are also contained in the EPA site file.

On 10 September 2002, the first injection round was completed and ERRS personnel conducted cleanup activities including flushing the system pumps, hoses and piping with clean water; cleaning of the pumps for return to the vendor; and draining fluid from the flexible hoses. The remaining sodium permanganate solution in each storage tank was diluted with clean water to an approximate 5% solution (approximately 1,875 gallons in each tank).

A description of the first round of sodium permanganate injection is contained within a separate ERRS letter report, entitled *Permanganate Addition Report Summary #1 (July - September, 2002), Fisherville Mill Site, Grafton, Massachusetts.*

3.5.2 Second Sodium Permanganate Injection (26 to 28 March 2003)

Periodic groundwater sampling of selected monitoring and IP wells was conducted after the first injection round to monitor the effectiveness/impacts on VOC concentrations in the injection grid area and downgradient monitoring wells. A detailed discussion of these sampling events is contained within Section 3.7, Sampling and Monitoring Plan (page 20).

Based on the results of comprehensive permanganate concentration and groundwater VOC sampling rounds conducted since the first injection, a limited second injection of sodium permanganate was performed. From 26 to 28 March 2003, ERRS personnel mobilized to site and conducted a second injection of sodium permanganate solution into designated injection wells. EPA and START personnel mobilized to site to monitor the second injection. The IP wells selected to receive a second injection were based on analytical results of the 4 March 2003 groundwater sampling event where permanganate concentrations of less than 1% (10,000 parts per million) were identified, including IP-1, IP-2, IP-3, IP-6, IP-7, IP-12, IP-52, IP-53, IP-57, and IP-63. Ten drums of 40% solution of sodium permanganate were delivered to site from Specialty Products International, Inc. One drum of the 40% sodium permanganate solution was injected into each IP well.

The second injection was completed using an electric, stainless steel drum pump and polyethylene siphon pumps. For locations IP-1, IP-6, IP-7, IP-52, IP-57, and IP-63, the electric drum pump was used to pump approximately half of the contents from the drum of 40% solution into an empty polyethylene drum. Both drums were then refilled with water to create an approximate 20% solution of sodium permanganate. The on-site generator became inoperable and ERRS personnel could no longer use the drum pump. The remaining locations (IP-7, IP-2, IP-3, and IP-53) received an injection of one 55-gallon drum of 40% solution followed by 55-gallons of water using the polyethylene siphon pumps.

On 28 March 2003, MA DEP was on site with its contractors to conduct a periodic vacuum truck clean up of the No. 6 oil in the canal, and replace the sorbent booms. During the vacuum truck clean up, a plume of permanganate was observed in the canal that appeared to originate from beneath the Main Street (Route 122A) bridge overpass. The exact point of origin of the plume beneath the overpass could not be determined due to high water levels and lack of access to the upstream opening of the overpass. Grab surface water samples were collected from the permanganate plume and field screened using the spectrophotometer for permanganate concentrations. After collection of the surface water samples, the light purple to pink samples turned tan/clear, possibly reacting with the organics and PAHs from the No. 6 oil present in the surface water. Permanganate concentrations in all samples were below calibrated instrument detection limits.

Due to the persistence of permanganate in the soil and groundwater matrix, all future injections were planned to be conducted using drums with gravity feed into selected injection wells. At the conclusion of the limited second injection, the PVC piping, manifolds, and storage tank system were dismantled (see Section 3.10, Site Closure Activities and Demobilization).

3.5.3 Third Sodium Permanganate Injection (17 and 18 December 2003)

Based on continued groundwater sampling conducted following the second injection, a limited third injection of sodium permanganate was performed. On 17 and 18 December 2003, ERRS personnel conducted a third injection of sodium permanganate solution into designated injection wells. The criteria used to select the injection wells to receive a third injection were based on the 21 October 2003 permanganate screening round where permanganate concentrations less than 1% and the 17 to 18 November 2003 groundwater VOC sampling round where there was a detection of VOCs. The selected IP wells included the following: IP-6, IP-7, IP-11, IP-12, IP-16, IP-21, IP-57, IP-63, IP-67, IP-116 through IP-120, IP-122, and IP-123. On 12 December 2003, new IP wells numbers IP-116 through IP-123, were installed by a MA DEP subcontractor and sampled for VOCs on 16 December 2003 (see Section 3.9, Additional Site Activities).

The proposed injections into IP-62 and IP-121 were moved to IP-11 and IP-21 due to damaged or bent PVC and steel risers. Sixteen drums of 40% solution of sodium permanganate were delivered to site from Specialty Products International, Inc. One drum of the sodium permanganate solution was injected into each location. The permanganate solution was pumped directly from the drums using gas-powered impeller pumps and wellhead fittings with valves and flow meters. Flow rates of approximately 10 to 12 gallons per minute (gpm) were recorded for each IP well injection location.

3.6 Sampling and Monitoring Plan

The site-specific removal sampling Quality Assurance/Quality Control Plan (QA/QC Plan) was prepared by START personnel and reviewed by EPA Region I, EPA-ERT/REAC, and Weston-MNH personnel. The sampling QA/QC Plan was prepared by START personnel as a separate document, entitled *Removal Program Sampling Quality Assurance/Quality Control Plan for the In-Situ Chemical Oxidation at the Fisherville Mill Site, South Grafton, Worcester County, Massachusetts.* All sampling activities conducted at the site were in accordance with the QA/QC plan and approved amendments. Table 1 summarizes the sampling plan for pre- and post-injection groundwater and surface water sampling and post-injection monitoring of permanganate concentrations in groundwater.

Table 1

Sampling Plan Summary

Pre-Injection/Baseline Sampling	
Purpose:	Establish baseline water quality parameters and VOC concentrations in the vicinity of the site (downgradient plume) and water quality parameters and VOC concentrations in the treatment area, and to better delineate the VOC source area.
Dates Conducted:	22 to 24 July 2002; 29 July to 27 August 2002
Permanganate Monitoring Sampling	
Purpose:	To evaluate distribution of permanganate in subsurface and to detect early signs of movement of permanganate into the canal.
Dates Conducted:	August 2002 to March 2004
Groundwater VOC Sampling	
Purpose:	To evaluate the effectiveness of the permanganate injections; to identify areas where permanganate dosage should be increased, decreased, or eliminated during subsequent injections; and to identify any areas that do not have decreasing concentrations of TCE (possible indication of DNAPL).
Dates Conducted:	11 to 13 November 2002; 24 and 25 March 2003; 28 and 29 May 2003; 17 and 18 November 2003
Post-Removal Sampling	
Purpose:	To compare post-ISCO treatment conditions with baseline sampling conditions in the vicinity of site, to identify any contaminant concentration rebound, and to evaluate whether treatment goals have been achieved.
Dates Conducted:	15 and 16 March 2004

Due to the persistence of permanganate in the soil and groundwater matrices, the sampling QA/QC plan was modified over the course of site activities. Seven amendments to the sampling QA/QC plan were developed to respond to post-injection site conditions, and were dated 16 September 2002, 24 October 2002, 14 March 2003, 23 May 2003, 6 August 2003, 3 November 2003, and 12 March 2004. Appendix E contains a detailed summary table of all the data collected during ISCO removal activities.

3.6.1 Groundwater and Surface Water Baseline Sampling (22 to 24 July 2002)

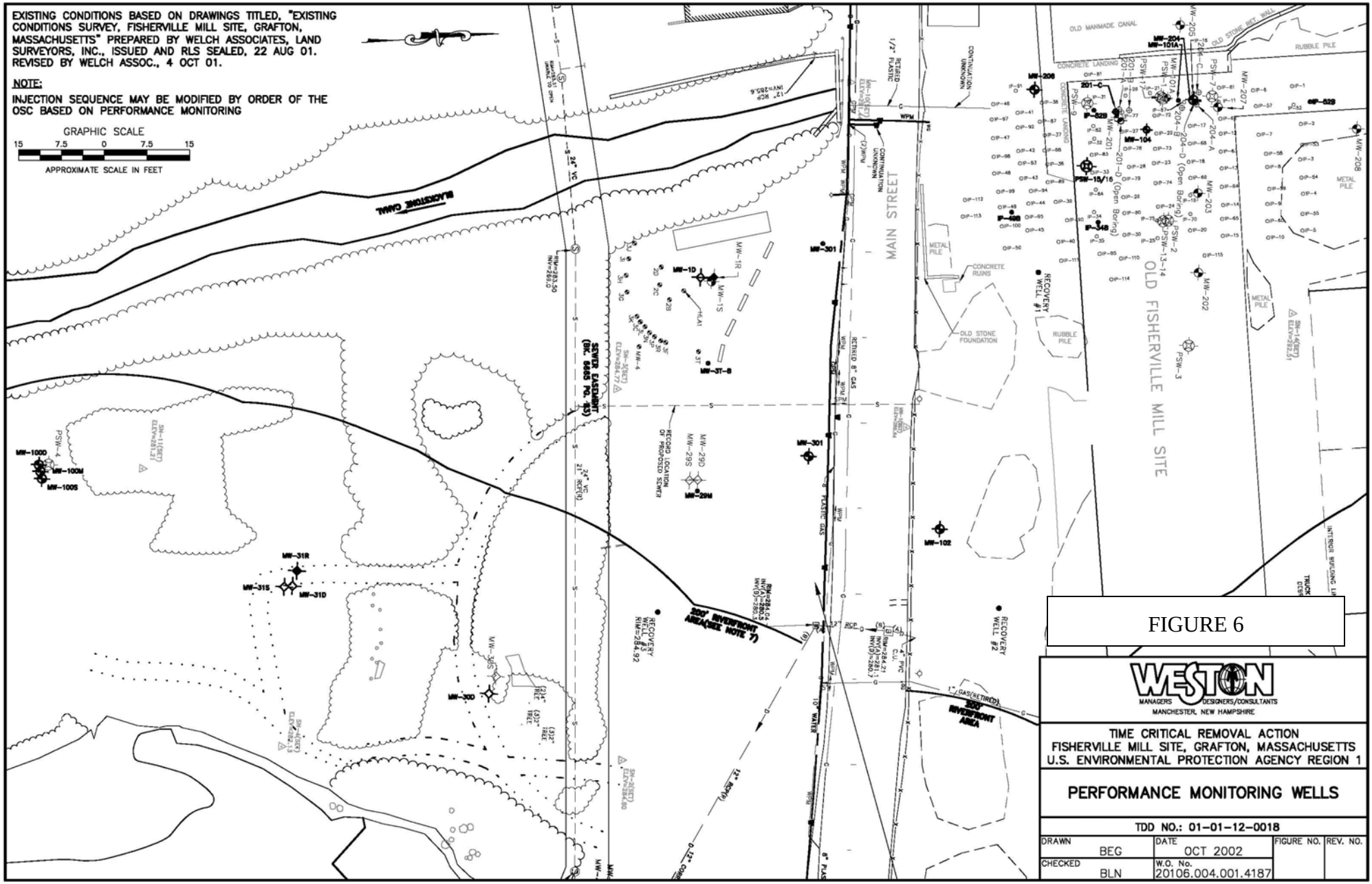
From 22 to 24 July 2002, START members mobilized to site to collect 16 groundwater samples (including one duplicate) from 15 surrounding monitoring wells (labeled MW-1D, MW-29M, MW-31S, MW-31D, MW-31R, MW-100S, MW-100M, MW-100D, MW-101A, MW-104, MW-201C, MW-204, MW-206, MW-301, and PSW-15) and three surface water samples (labeled SW-101 through SW-103) from the Blackstone Canal immediately downstream of the proposed injection grid area. Figure 6 presents the locations of the surrounding monitoring wells. The samples were analyzed for VOCs, Target Analyte List (TAL) metals, and dissolved metals at the EPA-ERT/REAC laboratory. An ERRS-subcontracted laboratory, AMRO Laboratory, located in Merrimack, New Hampshire analyzed the samples for background concentrations of hexavalent chromium. Groundwater samples were also field screened for chloride using a Hach Model 8-P Test Kit for background concentrations of chloride. Chloride ions are a possible byproduct of the breakdown reaction of chlorinated VOCs with the proposed injected sodium permanganate. No hexavalent chromium was detected in any of the groundwater samples. Results of the field screening for chloride indicated concentrations between 100 to 160 ppm for all monitoring well locations. Appendix F, Table F-1 contains a summary of water quality parameters and analytical results of the existing monitoring well and surface water VOC baseline sampling.

A summary of Lockheed Martin/REAC laboratory analytical results was prepared as a separate document, entitled *Analytical Report Fisherville Mill South Grafton, Massachusetts, November 2002*. Appendix I contains a summary and comparison table of the analytical results from this report.

3.6.2 Injection Well VOC Baseline Sampling (29 July 2002 to 27 August 2002)

From 29 July 2002 to 27 August 2002, during the drilling activities for installation of the 99 IP locations and five bedrock monitoring wells, START members mobilized to the site to collect VOC samples from each completed injection well and bedrock monitoring well. The purpose of the groundwater sampling was to establish baseline VOC concentrations in the injection grid area prior to the ISCO treatment. Sampling was conducted in accordance with the approved QA/QC sampling plan; however, interference in water quality parameter stabilization (*i.e.*, turbidity) was noted during low-flow groundwater sampling in the vicinity of ongoing drilling activities. On 1 August 2002, representatives from EPA-ERT and REAC mobilized to site to analyze the injection and bedrock well VOC samples using portable HAP Site Gas Chromatograph/Mass Spectrometer (GC/MS). Ten percent of the field screened VOC samples were sent to the ERT-REAC laboratory for confirmatory analysis. The IP groundwater samples were also field screened for chloride background concentrations. Results of the field screening for chloride indicated concentrations between 100 to 160 ppm for all IP and monitoring wells.

A summary of Lockheed Martin/REAC site activities and VOC field screening results was prepared as a separate document, entitled *Trip Report Fisherville Mill South Grafton, Massachusetts, September 2002*. Appendix G contains the summary table of the VOC field screening results from this report, and plots the TCE and cis-DCE data (Figures G-1 and G-2).


EXISTING CONDITIONS BASED ON DRAWINGS TITLED, "EXISTING CONDITIONS SURVEY, FISHERVILLE MILL SITE, GRAFTON, MASSACHUSETTS" PREPARED BY WELCH ASSOCIATES, LAND SURVEYORS, INC., ISSUED AND RLS SEALED, 22 AUG 01. REVISED BY WELCH ASSOC., 4 OCT 01.
NOTE:
INJECTION SEQUENCE MAY BE MODIFIED BY ORDER OF THE OSC BASED ON PERFORMANCE MONITORING
GRAPHIC SCALE
15 7.5 0 7.5 15
APPROXIMATE SCALE IN FEET
MAIN STREET
OLD FISHERVILLE MILL SITE
BLACKSTONE CANAL
SEWER EASEMENT (BK. 6669 PG. 45)
200' RIVERFRONT AREA(SEE NOTE 7)
200' RIVERFRONT AREA
OLD MANMADE CANAL
CONCRETE LANDING
RUBBLE PILE
METAL PILE
CONCRETE RUINS
OLD STONE FOUNDATION
RECOVERY WELL #1
RECOVERY WELL #2
MW-100D
MW-100M
MW-100S
MW-31R
MW-31S
MW-31D
MW-30D
MW-30S
MW-1D
MW-1R
MW-1S
MW-3T-B
MW-29D
MW-29S
MW-29M
MW-301
MW-102
MW-202
MW-203
MW-204
MW-101A
MW-204-A
MW-204-B
MW-204-D (Open Boring)
MW-201-D (Open Boring)
MW-104
MW-206
201-C
MW-207
MW-208
MW-205
PSW-1
PSW-2
PSW-3
PSW-4
PSW-7
PSW-9
PSW-13-14
PSW-15/16
IP-529
IP-408
IP-348
FIGURE 6
WESTON
MANAGERS DESIGNERS/CONSULTANTS
MANCHESTER, NEW HAMPSHIRE
TIME CRITICAL REMOVAL ACTION
FISHERVILLE MILL SITE, GRAFTON, MASSACHUSETTS
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 1
PERFORMANCE MONITORING WELLS
TDD NO.: 01-01-12-0018
DRAWN BEG
DATE OCT 2002
FIGURE NO.
REV. NO.
CHECKED BLN
W.O. No. 20106.004.001.4187

During installation of IP wells in the vicinity of the former boiler room area, a petroleum odor was intermittently noted by drill rig crews at the opening of the hollow-stem augers. Grab groundwater samples were collected from borings IP-1, IP-6, IP-52, IP-57, and IP-61 for VOC and semivolatile organic compound (SVOC) analysis. The SVOC samples were hand delivered by START personnel to the EPA New England Regional Laboratory (NERL). No significant concentrations of SVOCs were detected.

A summary of NERL SVOC analytical results was prepared as a separate document, entitled *Laboratory Report, Fisherville Mill - Grafton, MA, Semivolatile Organic Compounds, 11 September 2002*. Appendix H contains the SVOC analytical results for these IP locations.

3.6.3 First Post-Injection VOC Sampling Event (11 to 13 November 2002)

From 11 to 13 November 2002, START members mobilized to site to collect 16 groundwater samples from 15 surrounding monitoring wells and three surface water samples from the Blackstone Canal immediately downstream of the proposed injection grid area. On 11 November 2002, representatives from EPA-ERT and REAC mobilized to site to analyze the injection and bedrock well VOC samples using portable HAP Site GC/MS. Ten percent of the field screened VOC samples were sent to the ERT-REAC laboratory for confirmatory analysis. An ERRS-subcontracted laboratory, Rhode Island Analytical Laboratory, located in Hudson, Massachusetts analyzed the samples for hexavalent chromium. The groundwater samples were also field screened for chloride background concentrations. Appendix F, Table F-2 contains a summary of water quality parameters collected during the groundwater, surface water, and IP VOC sampling.

Due to the presence of permanganate in groundwater samples, a procedure was developed to neutralize VOC samples as they were collected to stop any permanganate reaction from occurring after sample collection. Samples collected from IP locations where permanganate concentrations were evident (visually purple) were neutralized by adding 0.8 grams of sodium thiosulfate ($Na_2S_2O_3$) to each 40-milliliter (ml) sample vial prior to sample collection. Samples were considered neutralized if the visual purple color disappeared. In addition, replicate un-neutralized samples were collected for comparison purposes. All samples that were neutralized with $Na_2S_2O_3$ during this sampling event were designated with a "-S" in the sample name. Analytical results of all samples containing permanganate "as sampled" and neutralized with $Na_2S_2O_3$ indicated the absence of VOCs, except for one sample, which was collected from bedrock well MW-101A. This location, "as sampled", contained no detectable VOCs; however, analytical results of the neutralized sample indicated the presence of TCE (76,000 ppb). These sample results indicate that mixing may be occurring during sampling, and that permanganate may not be reaching all sources (fractures) of VOCs in this bedrock location.

Summaries of REAC site activities and VOC field screening and laboratory confirmation analytical results were prepared as separate documents, entitled *Trip Report, Fisherville Mill South Grafton, Massachusetts, January 2003;Analytical Report, Fisherville Mill, South Grafton, Massachusetts, February 2003;* and *Analytical Report, Fisherville Mill, South Grafton, Massachusetts, March 2003*. Appendix I contains the summary tables of the VOC field screening and laboratory confirmation analytical results from these reports, including comparison to August 2002 results and plots of the TCE and cis-DCE data (Figures I-1 and I-2).

3.6.4 Second Post-Injection VOC Sampling Event (24 and 25 March 2003)

From 24 to 25 March 2003, START members mobilized to site to collect 20 groundwater samples for VOC analysis from the proposed injection wells scheduled to receive a second injection of sodium permanganate, and the bedrock monitoring wells in the vicinity of the injection grid. Groundwater samples were collected from the following locations: IP wells IP-1, IP-2, IP-3, IP-6, IP-7, IP-12, IP-52, IP-53, IP-57, and IP-63 and bedrock wells IP-34B, 49B, 52B, 82B, MW-101A, and MW-3T-B. Prior to pumping/purging the wells for VOC samples, a groundwater grab sample was collected for field screening of permanganate concentration. All VOC sample vials were prepared with the $Na_2S_2O_3$. The samples were analyzed for VOCs at the EPA-ERT/REAC laboratory.

A summary of REAC VOC analytical results was prepared as a separate document, entitled *Analytical Report, Fisherville Mill South Grafton, Massachusetts, May 2003*. Appendix J contains the VOC field screening confirmation analysis results from this report and plots of the TCE and cis-DCE data (Figures J-1 and J-2).

3.6.5 Third Post-Injection VOC Sampling Event (28 and 29 May 2003)

On 28 and 29 May 2003, START members mobilized to site to collect 37 groundwater samples for VOC analysis based on the on-site screening results of the 22 May 2003 comprehensive permanganate sampling. Groundwater samples were collected from following locations: IP wells IP-4, IP-6, IP-7, IP-8, IP-11, IP-12, IP-13, IP-14, IP-17, IP-18, IP-19, IP-24, IP-25, IP-26, IP-29, IP-53, IP-54, IP-55, IP-57, IP-58, IP-59, IP-61, IP-62, IP-63, IP-64, IP-67, IP-68, IP-69, IP-70, IP-73, IP-77, and IP-91; and bedrock wells IP-34B, 49B, 52B, 82B, and MW-101A. Prior to pumping/purging the wells for VOC samples, a groundwater grab sample was collected for field screening of permanganate concentration. All VOC sample vials were prepared with the $Na_2S_2O_3$. The samples were analyzed for VOCs at the EPA-ERT/REAC laboratory.

A summary of REAC VOC analytical results was prepared as a separate document, entitled *Analytical Report, Fisherville Mill South Grafton, Massachusetts, June 2003*. Appendix K contains the VOC field screening confirmation analysis results from this report and plots of the TCE and cis-DCE data (Figures K-1 and K-2).

3.6.6 Fourth Post-Injection VOC Sampling Event (17 and 18 November 2003)

On 17 and 18 November 2003, START personnel mobilized to site to collect 44 groundwater samples for VOC analysis based on the on-site screening results of the 21 October 2003 comprehensive permanganate sampling. Groundwater samples were collected from the following locations: IP wells IP-1 through IP-8; IP-10; IP-12; IP-17; IP-52 through IP-55; IP-57; IP-59 through IP-63; IP-67; IP-68; IP-69; and monitoring wells MW-1D; MW-3T; MW-3T-B; MW-101A; MW-102; MW-104; MW-205; MW-207; and MW-208. Groundwater samples were collected by MA DEP using submersible whale pumps (purging three well volumes) from the following monitoring wells: MW-29D; MW-30D; MW-31D; MW-31R; MW-32; MW-100M; MW-100D; and SG-6. A surface water sample (SW-4A) was also collected by MA DEP from the canal just south of the Route 122A bridge/culvert. The groundwater samples were field screened for VOCs on site by the NERL Mobile Laboratory and confirmation samples were sent to NERL.

Summaries of NERL VOC field screening and confirmation laboratory analytical results were prepared as separate documents, entitled *Memorandum Report, Fisherville Mill, Grafton, MA - VOCs Analysis of Aqueous Samples, 21 November 2003* and *Laboratory Report, Fisherville Mill - Grafton, MA VOAs in Water, 24 November 2003*. Appendix L contains a summary of the VOC field screening analytical results and plots of the TCE and cis-DCE data (Figures L-1 and L-2).

On 18 November 2003, at the conclusion of the groundwater sampling, approximately 5 gallons of purge water from the sampling event containing permanganate were siphoned into MW-101A. The permanganate concentration of the purge water injected into MW-101A was field screened as approximately 2,500 ppm.

3.6.7 Fifth Post-Injection VOC Sampling Event (15 and 16 March 2004)

On 15 and 16 March 2004, START personnel mobilized to site to collect 54 groundwater samples for VOC analysis based on the on-site screening results of the 25 February 2004 comprehensive permanganate sampling. Groundwater samples were collected by START personnel from the following locations: IP wells IP-1; IP-5; IP-6; IP-7; IP-9; IP-11; IP-12; IP-17; IP-18; IP-22; IP-25; IP-28; IP-29; IP-31; IP-32; IP-35; IP-39; IP-42; IP-44; IP-47; IP-49; IP-50; IP-57; IP-61; IP-63; IP-67; IP-73; IP-80; IP-82; IP-82B; IP-83; IP-84; IP-85; IP-88; IP-90; IP-92; IP-94; IP-95; IP-113; IP-123; and monitoring wells MW-3T; MW-3T-B; MW-101A; MW-102; MW-104; MW-204; MW-205; and MW-207. Groundwater samples were collected by MA DEP using submersible whale pumps (purging three well volumes) from the following monitoring wells: MW-1D; MW-30D; MW-31D, MW-31R; and MW-100D. Two surface water samples (SW-4A and SW-05) were also collected from the canal just south (SW-4A collected by MA DEP) and just north (SW-05 collected by START) of the Route 122A bridge/culvert. The groundwater samples were field screened for VOCs on site by the NERL Mobile Laboratory, and 11 confirmation samples (including one replicate) were sent to NERL. Concentrations of VOCs had generally decreased in the IP wells and surrounding monitoring wells. Significantly, TCE concentrations in MW-101A were the lowest recorded (9.4 ppm field screening and 12 ppm laboratory confirmation sample).

Summaries of NERL VOC field screening and confirmation laboratory analytical results were prepared as separate documents, entitled *Memorandum Report, Fisherville Mill, Grafton, MA - VOCs Analysis of Aqueous Samples, 22 March 2004* and *Laboratory Report, Fisherville Mill - Grafton, MA VOAs in Water, 29 March 2003*. Appendix M contains a summary and plots (Figures M-1 and M-2) of the VOC field screening analytical results.

3.7 Sodium Permanganate Sampling

All groundwater samples field screened for sodium permanganate concentrations were analyzed using a spectrophotometer. The permanganate samples were not filtered and turbid samples were allowed to settle before field screening analysis; however, residual turbidity was observed to affect recorded permanganate concentrations on the spectrophotometer. Therefore, the color of each sample was also inspected visually. The field screening log book (No. LR45227) and chain-of-custody forms for all permanganate samples are contained within the site file. Appendix N contains a summary table of all permanganate samples collected from August 2002 until March 2004. Appendix N, Figures N-1 to N-4 also present the field screening results for the cross-gradient and down-gradient IP locations used for monitoring permanganate concentrations in the injection grid.

In addition, depth to groundwater measurements were collected from all the IP wells and from surrounding monitoring wells. Appendix O, Figures O-1 to O-9 contains contour plots for selected dates during the removal activities.

3.7.1 First Injection Weekly Monitoring (11 September 2002 to 24 October 2002)

Following the first injection, START personnel mobilized to site to conduct groundwater sampling of selected IP wells to monitor permanganate concentrations in the injection grid and possible movement of permanganate downgradient. The groundwater samples were initially collected using 0.5-inch diameter disposable polyethylene bailers. Fluctuations in permanganate concentrations at individual IP wells were noted and indicated that the grab groundwater samples were possibly being collected from stagnant groundwater in the well casing, or from inconsistent sample depths. Peristaltic pumps equipped with dedicated tubing set at a discreet sample depths were used for several permanganate sampling events; however, inclimate weather (*i.e.*, freezing temperatures) did not allow the use of the dedicated tubing left in the IP wells, and repeated installation of the tubing was judged to be too time intensive.

From 11 September to 24 October 2002, START personnel conducted weekly monitoring of permanganate concentrations. The locations sampled, and variations in sampling methods are summarized in Table 2.

Table 2

First Injection Weekly Monitoring Summary

Sampling Date	Locations	Sampling Method(s)	Notes
11 September 2002	IP-1, IP-2, IP-3, IP-4, IP-5, IP-34B, IP-49B, IP-52, IP-52B, IP-53, IP-54, IP-55, IP-82B, MW-101A	0.5-inch polyethylene bailers	No permanganate detected in bedrock well locations.
19 September 2002	IP-1, IP-2, IP-3, IP-4, IP-5, IP-34B, IP-44, IP-49B, IP-52, IP-52B, IP-53, IP-54, IP-55, IP-57, IP-77, IP-80, IP-82B, MW-3T-B, MW-101A, MW-102, MW-208, MW-301	0.5-inch polyethylene bailers; water quality parameters oxidation reduction potential (ORP) were recorded from monitoring wells MW-208 (upgradient), MW-102 (crossgradient), and MW-301 (downgradient).*	Permanganate detected in bedrock well IP-52B.
26 September 2002	IP-1, IP-2, IP-3, IP-4, IP-5, IP-34B, IP-44, IP-49B, IP-52, IP-52B, IP-53, IP-54, IP-55, IP-57, IP-77, IP-90, IP-82B, MW-3T-B, MW-101A, MW-102, MW-208, MW-301	0.5-inch polyethylene bailers; water quality parameters (ORP) were recorded from monitoring wells MW-208 (upgradient), MW-102 (crossgradient), and MW-301 (downgradient).*	Permanganate detected in bedrock wells IP-49B and IP-52B.

Table 2

First Injection Weekly Monitoring Summary (Concluded)

Sampling Date	Locations	Sampling Method(s)	Notes
3 October 2002	IP-1, IP-2, IP-3, IP-4, IP-5, IP-34B, IP-44, IP-49B, IP-52, IP-52B, IP-53, IP-54, IP-55, IP-57, IP-77, IP-90, IP-82B, MW-3T-B, MW-101A, MW-102, MW-208, MW-301	0.5-inch polyethylene bailers; water quality parameters (ORP) were recorded from monitoring wells MW-208 (upgradient), MW-102 (crossgradient), and MW-301 (downgradient).*	Permanganate detected in bedrock wells IP-49B and IP-52B.
10 October 2002	IP-1, IP-2, IP-3, IP-4, IP-5, IP-34B, IP-44, IP-49B, IP-52, IP-52B, IP-53, IP-54, IP-55, IP-57, IP-77, IP-90, IP-82B, MW-3T-B, MW-101A, MW-102, MW-208, MW-301	0.5-inch polyethylene bailers; water quality parameters (ORP) were recorded from monitoring wells MW-208 (upgradient), MW-102 (crossgradient), and MW-301 (downgradient).*	Permanganate detected in bedrock wells IP-34B, IP-49B and IP-52B.
16 October 2002	IP-1, IP-2, IP-3, IP-4, IP-5, IP-34B, IP-44, IP-49B, IP-52, IP-52B, IP-53, IP-54, IP-55, IP-57, IP-77, IP-90, IP-82B, MW-3T-B, MW-101A, MW-102, MW-208, MW-301	0.5-inch polyethylene bailers; water quality parameters (ORP) were recorded from monitoring wells MW-208 (upgradient), MW-102 (crossgradient), and MW-301 (downgradient).*	Permanganate detected in bedrock wells IP-34B, IP-49B and IP-52B and overburden monitoring well MW-301 (light pink). Permanganate was not detected again south of Route 122A.
24 October 2002**	IP-13, IP-15, IP-18, IP-20, IP-23, IP-28, IP-33, IP-34, IP-34B, IP-38, IP-43, IP-48, IP-49, IP-49B, IP-52B, IP-53, IP-55, IP-58, IP-60, IP-75, IP-80, IP-82B, IP-90, IP-95, IP-113, MW-1D, MW-3T-B, MW-101A, MW-102, MW-208, MW-301	0.5-inch polyethylene bailers and peristaltic pumps and dedicated tubing; water quality parameters were recorded (ORP) from monitoring wells MW-208 (upgradient), MW-102 (crossgradient), and MW-301 (downgradient).*	Permanganate detected in bedrock wells IP-34B, IP-49B, IP-52B, and MW-101A.

*From 19 September to 24 October 2002, START personnel also collected water quality parameter data using YSI low-flow meters from monitoring wells MW-102, MW-208, and MW-301. Of particular interest was the oxidation reduction potential (ORP) readings. The ORP data was collected to monitor any changes from pre- to post-oxidant injection on groundwater upgradient (MW-208), crossgradient (MW-102), and downgradient (MW-301) of the injection grid.

**The selected IP wells were changed from the two hydrologically upgradient rows to two lines of IP wells running along the estimated groundwater flow gradient. In an attempt to confirm a consistent sampling depth, groundwater samples were collected using dedicated tubing with peristaltic pumps where possible. However, where difficulties in inserting tubing to depth at certain IP wells, a 0.5-inch diameter disposable polyethylene bailer was used.

Appendix P contains summary plots of the weekly YSI ORP readings collected from 19 September to 24 October 2002.

3.7.2 First Injection Monthly Monitoring (5 December 2002 to 4 March 2003)

Based on the weekly permanganate monitoring, it was apparent that the majority of the injected permanganate solution had not reacted with the contaminant plume, but persisted in deep soil and overburden groundwater. It appeared that the injected permanganate had overwhelmed the soil organic content and any VOC contamination encountered, and was relatively immobile in the denser till layer above bedrock. A second injection was delayed, and from 5 December 2002 to 4 March 2003, START personnel conducted monthly groundwater sampling of selected IP wells to monitor permanganate concentrations in the injection grid, and possible movement of permanganate downgradient. The groundwater samples were collected using 0.5-inch diameter disposable polyethylene bailers or peristaltic pumps with dedicated tubing where noted, and field screened for sodium permanganate concentrations. No sampling was conducted during January 2003 due to weather conditions.

On 5 and 6 December 2002, START members mobilized to the site and collected groundwater samples for field screening of permanganate concentrations. Water quality parameters (ORP) were recorded using YSI meters during sampling activities. Due to freezing conditions, groundwater samples were collected using 0.5-inch diameter disposable polyethylene bailers. Groundwater samples were collected from the following locations: IP wells IP-55, IP-60, IP-15, IP-20, IP-75, IP-80, IP-34, IP-90, IP-95, IP-49, IP-113, IP-48, IP-43, IP-38, IP-33, IP-28, IP-23, IP-18, IP-13, IP-58, and IP-53; bedrock wells IP-34B, IP-49B, IP-52B, IP-82B, MW-101A, and MW-3T-B; and monitoring wells MW-1D, MW-102, MW-208, and MW-301. Permanganate was detected in bedrock well locations IP-34B, IP-49B, IP-52B, IP-82B, and MW-101A.

On 4 February 2003, START members mobilized to the site to collected groundwater samples for field screening of permanganate concentrations. As agreed upon during a 16 January 2003 conference call, the collection of YSI ORP data was no longer required. Due to freezing conditions, groundwater samples were collected using 0.5-inch diameter disposable polyethylene bailers. Groundwater samples were collected from the following locations: IP wells IP-55, IP-60, IP-15, IP-20, IP-75, IP-80, IP-34, IP-90, IP-95, IP-49, IP-113, IP-48, IP-43, IP-38, IP-33, IP-28, IP-23, IP-18, IP-13, IP-58, and IP-53; bedrock wells IP-34B, IP-49B, IP-52B, IP-82B, MW-101A, and MW-3T-B; and monitoring wells MW-1D and MW-301.

On 4 March 2003, START members mobilized to the site to collect groundwater samples for field screening of permanganate concentrations. Due to freezing conditions, groundwater samples were collected using 0.5-inch diameter disposable polyethylene bailers. Groundwater samples were collected from the following locations: IP wells IP-55, IP-60, IP-15, IP-20, IP-75, IP-90, IP-95, IP-49, IP-113, IP-48, IP-43, IP-38, IP-33, IP-28, IP-23, IP-18, IP-13, IP-58, and IP-53; bedrock wells IP-34B, IP-49B, IP-52B, IP-82B, and MW-3T-B; and monitoring wells MW-1D and MW-301. Injection wells IP-34 and IP-80 could not be located under an ice-encrusted snowpack. In addition, monitoring well MW-101A (flush mount) was under 2 to 3 inches of ice and could not be opened to collect a sample.

3.7.3 Second Injection Weekly Monitoring (3 to 24 April 2003)

From 3 April to 24 April 2003, START personnel conducted weekly groundwater sampling of selected IP wells to monitor permanganate concentrations in the injection grid and possible movement of permanganate downgradient after the second injection. Groundwater samples were collected from the previously monitored IP wells as well as the IP locations receiving the second injection of sodium permanganate. The groundwater samples were collected using 0.5-inch diameter disposable polyethylene bailers and field screened for sodium permanganate concentrations using a spectrophotometer. The locations sampled are summarized in Table 3.

Table 3

Second Injection Weekly Monitoring Summary

Sampling Date	Locations	Sampling Method(s)	Notes
3 April 2003	IP-55, IP-60, IP-15, IP-20, IP-75, IP-80, IP-34, IP-90, IP-95, IP-49, IP-113, IP-48, IP-43, IP-38, IP-33, IP-28, IP-23, IP-18, IP-13, IP-58, and IP-53; additional IP wells (that received the second injection) IP-1, IP-2, IP-3, IP-6, IP-7, IP-12, IP-52, IP-57, and IP-63; bedrock wells IP-34B, IP-49B, IP-52B, IP-82B, MW-101A, and MW-3T-B; and monitoring wells MW-1D and MW-301.	0.5-inch polyethylene bailers	
10 April 2003	IP-55, IP-60, IP-15, IP-20, IP-75, IP-80, IP-34, IP-90, IP-95, IP-49, IP-113, IP-48, IP-43, IP-38, IP-33, IP-28, IP-23, IP-18, IP-13, IP-58, and IP-53; additional IP wells (that received the second injection) IP-1, IP-2, IP-3, IP-6, IP-7, IP-12, IP-52, IP-57, and IP-63; bedrock wells IP-34B, IP-49B, IP-52B, IP-82B, MW-101A, and MW-3T-B; and monitoring wells MW-1D and MW-301.	0.5-inch polyethylene bailers	START members also installed passive diffusion bag samplers in selected on-site monitoring wells (see Section 3.9.2 Passive Diffusion Bag Sampler Comparison Test).
17 April 2003	IP-55, IP-60, IP-15, IP-20, IP-75, IP-80, IP-34, IP-90, IP-95, IP-49, IP-113, IP-48, IP-43, IP-38, IP-33, IP-28, IP-23, IP-18, IP-13, IP-58, and IP-53; additional IP wells (that received the second injection) IP-1, IP-2, IP-3, IP-6, IP-7, IP-12, IP-52, IP-57, and IP-63; bedrock wells IP-34B, IP-49B, IP-52B, IP-82B, MW-101A, and MW-3T-B; and monitoring well MW-301.	0.5-inch polyethylene bailers	No sample was collected from MW-1D due to presence of a passive diffusion bag sampler installed by START.

Table 3

Second Injection Weekly Monitoring Summary (Concluded)

Sampling Date	Locations	Sampling Method(s)	Notes
24 April 2003	IP-55, IP-60, IP-15, IP-20, IP-75, IP-80, IP-34, IP-90, IP-95, IP-49, IP-113, IP-48, IP-43, IP-38, IP-33, IP-28, IP-23, IP-18, IP-13, IP-58, and IP-53; additional IP wells (that received the second injection) IP-1, IP-2, IP-3, IP-6, IP-7, IP-12, IP-52, IP-57, and IP-63; bedrock wells IP-34B, IP-49B, IP-52B, IP-82B, MW-101A, and MW-3T-B; and monitoring well MW-301.	0.5-inch polyethylene bailers	No sample was collected from MW-1D due to presence of a passive diffusion bag sampler installed by START.

3.7.4 Second Injection Monthly Monitoring (25 June 2003 to 18 September 2003)

From 25 June to 18 September 2003, START personnel conducted monthly groundwater sampling of selected IP wells to monitor permanganate concentrations in the injection grid and possible movement of permanganate downgradient after the second injection. Groundwater samples were collected from the previously monitored IP wells, as well as the IP wells receiving the second injection of sodium permanganate. The groundwater samples were collected using 0.5-inch diameter disposable polyethylene bailers and field screened for sodium permanganate concentrations. The locations sampled are summarized in Table 4.

Table 4

Second Injection Monthly Monitoring Summary

Sampling Date	Locations	Sampling Method(s)	Notes
25 June 2003	IP-55, IP-60, IP-15, IP-20, IP-75, IP-80, IP-34, IP-90, IP-95, IP-49, IP-113, IP-48, IP-43, IP-38, IP-33, IP-28, IP-23, IP-18, IP-13, IP-58, and IP-53; additional IP wells (that received the second injection) IP-1, IP-2, IP-3, IP-6, IP-7, IP-12, IP-52, IP-57, and IP-63; bedrock wells IP-34B, IP-49B, IP-52B, IP-82B, MW-101A, and MW-3T-B; and monitoring wells MW-1D and MW-301.	0.5-inch polyethylene bailers	Water level measurements were recorded for selected monitoring wells and all of the injection wells.

Table 4

Second Injection Monthly Monitoring Summary (Concluded)

Sampling Date	Locations	Sampling Method(s)	Notes
22 July 2003	IP-55, IP-60, IP-15, IP-20, IP-75, IP-80, IP-34, IP-90, IP-95, IP-49, IP-113, IP-48, IP-43, IP-38, IP-33, IP-28, IP-23, IP-18, IP-13, IP-58, and IP-53; additional IP wells (that received the second injection) IP-1, IP-2, IP-3, IP-6, IP-7, IP-12, IP-52, IP-57, and IP-63; bedrock wells IP-34B, IP-49B, IP-52B, IP-82B, MW-101A, and MW-3T-B; and monitoring wells MW-1D and MW-301.	0.5-inch polyethylene bailers	Water level measurements were recorded for selected monitoring wells and all of the injection wells.
18 August 2003	IP-55, IP-60, IP-15, IP-20, IP-75, IP-80, IP-34, IP-90, IP-95, IP-49, IP-113, IP-48, IP-43, IP-38, IP-33, IP-28, IP-23, IP-18, IP-13, IP-58, and IP-53; additional IP wells (that received the second injection) IP-1, IP-2, IP-3, IP-6, IP-7, IP-12, IP-52, IP-57, and IP-63; bedrock wells IP-34B, IP-49B, IP-52B, IP-82B, MW-101A, and MW-3T-B; and monitoring wells MW-1D and MW-301.	0.5-inch polyethylene bailers	Water level measurements were recorded for selected monitoring wells and all of the injection wells.
18 September 2003	IP-55, IP-60, IP-15, IP-20, IP-75, IP-80, IP-34, IP-90, IP-95, IP-49, IP-113, IP-48, IP-43, IP-38, IP-33, IP-28, IP-23, IP-18, IP-13, IP-58, and IP-53; additional IP wells (that received the second injection) IP-1, IP-2, IP-3, IP-6, IP-7, IP-12, IP-52, IP-57, and IP-63; bedrock wells IP-34B, IP-49B, IP-52B, IP-82B, MW-101A, and MW-3T-B; and monitoring wells MW-1D and MW-301.	0.5-inch polyethylene bailers	Water level measurements were recorded for selected monitoring wells and all of the injection wells.

3.7.5 Comprehensive Sodium Permanganate Sampling Events November 2002, May 2003, October 2003, February 2004)

START personnel conducted four comprehensive sampling rounds of all IP wells and designated on-site monitoring wells. Groundwater samples were collected using both dedicated tubing with peristaltic pumps and 0.5-inch diameter disposable polyethylene bailers, and field screened for sodium permanganate concentrations using a spectrophotometer. The sampling rounds were conducted in November 2002, May 2003, October 2003, and February 2004 and are summarized below.

From 4 to 6 November 2002, START members mobilized to site to conduct a comprehensive sampling of all 99 IP wells (IP-1 through IP-115), six bedrock wells (IP-34B, IP-49B, IP-52B, IP-82B, MW-3T-B, and MW-101A), and selected existing surrounding monitoring wells (MW-1D, MW-29M, MW-102, MW-201, MW-201C, MW-202, MW-206, MW-208, and MW-301) for permanganate concentrations. Groundwater samples were collected using both dedicated tubing with peristaltic pumps and 0.5-inch diameter disposable polyethylene bailers. On 4 November 2002, representatives from EPA-ERT and REAC also mobilized to site to monitor the comprehensive permanganate concentration screening prior to the VOC sampling scheduled for 9 November 2002.

On 22 May 2003, START personnel mobilized to site to conduct a second comprehensive sampling of all 99 IP wells, six bedrock wells (IP-34B, IP-49B, IP-52B, IP-82B, MW-3T-B, and MW-101A), and selected existing surrounding monitoring wells (MW-1D, MW-29M, MW-102, MW-201, MW-201C, MW-202, MW-206, MW-208, and MW-301) for permanganate concentrations. Groundwater samples were collected using both dedicated tubing with peristaltic pumps and 0.5-inch diameter disposable polyethylene bailers.

On 21 October 2003, START personnel mobilized to site to conduct a third comprehensive sampling of all 99 IP wells, six bedrock wells (IP-34B, IP-49B, IP-52B, IP-82B, MW-3T-B, and MW-101A), and selected existing surrounding monitoring wells (MW-1D, MW-29M, MW-102, MW-201, MW-201C, MW-202, MW-206, MW-208, and MW-301) for permanganate concentrations. Groundwater samples were collected using 0.5-inch diameter disposable polyethylene bailers.

On 25 February 2004, START personnel mobilized to site to conduct a fourth comprehensive sampling of all 107 IP wells (IP-1 through IP-123), six bedrock wells (IP-34B, IP-49B, IP-52B, IP-82B, MW-3T-B, and MW-101A), and selected existing surrounding monitoring wells (MW-1D, MW-102, MW-104; MW-205, MW-207, and MW-3T) for permanganate concentrations. Samples could not be collected from locations IP-16 (bent PVC riser), IP-45 (damaged PVC riser blocked with ice), IP-121 (steel riser bent), and MW-301 (well destroyed). Groundwater samples were collected using 0.5-inch diameter disposable polyethylene bailers.

Appendix N, Figures N-1 to N-4, present the permanganate concentrations overlaid on the bedrock contour surface.

3.8 Additional Site Activities

The following activities were conducted in addition to the proposed scope of work and sampling QA/QC plan.

3.8.1 Water Level Pressure Transducer Data Loggers

On 15 August 2002, START members mobilized to site to install pressure transducer data loggers (In Situ, Inc. Mini-Troll model) at monitoring wells MW-100D and SG-6 to monitor vertical gradients of groundwater between the peninsula and the SGWD Well No. 3. From 15 August to 5 December 2002, the data loggers were downloaded approximately weekly and water levels were recorded manually for monitoring wells MW-100D and SG-6. The data logger data were used in conjunction with monthly monitoring well sampling conducted by the SGWD and MA DEP to monitor the effect of the temporary dam on the movement of the VOC contaminant plume on the peninsula. Appendix Q contains a summary plot of the data logger downloads.

3.8.2 Passive Diffusion Bag Sampler Comparison Test

During the 14 March 2003 conference call, EPA, START, and MA DEP agreed to conduct a test of passive diffusion bag (PDB) samplers installed in selected wells for comparison to previous sampling techniques and analytical results. MA DEP representative Paul Ollila suggested selecting monitoring wells that MA DEP was planning to sample during their periodic groundwater sampling rounds. A methodology for comparison test, including the installation and sampling of the PDB samplers, was prepared by Weston-MNH personnel as a separate document, entitled *Fisherville Mill Site Diffusion Sampling Plan, 3 April 2003*. The PDB samplers were to be deployed by START, and the collection and laboratory analysis of the VOC samples were coordinated between START and MA DEP so as to be completed a month after deployment. On 10 April 2003, START personnel installed pre-fabricated passive diffusion bag samplers from EON Products, Inc., in six existing on-site monitoring wells, MW-1D, MW-29D, MW-30D, MW-31D, MW-31R, and MW-100D. Table 5 summarizes the installation details for the deployment of the PDB samplers.

Table 5

Passive Diffusion Sampler Installation Details

Well Location	Diameter (inches)	Screen Interval (feet bgs)	Estimated Depth to Water (feet bgs)	PDB Sampler Deployment Depth(s) (feet bgs)
MW-1D	2	35-50	7	39 and 46
MW-29D	2	45-60	7	49 and 56
MW-30D	2	33-43	7	38
MW-31D	2	44-59	6	48 and 55
MW-31R	2	76-91	6	80 and 87
MW-100D	2	32-42	5	37

bgs = below ground surface.
PDB = Passive diffusion bag.

On 8 May 2003, START members mobilized to site to collect VOC groundwater samples from the PDB samplers deployed in the six monitoring wells listed above. A MA DEP representative was on site to monitor the collection of groundwater samples by the MA DEP subcontractor, SEA, Inc. The PDB VOC samples were analyzed by a laboratory procured by MA DEP. A summary of the analytical results of the PDB groundwater samples is included in Appendix R. After collection of the PDB groundwater samples, START members recorded water level measurements for selected monitoring wells and all of the IP wells.

Analytical results of the diffusion VOC samples did not indicate a close correlation with previous three-well-volume purge and low-flow sampling techniques in the deeper wells where the PDB samplers were deployed (MW-31D and MW-31R). Based on the uniform sand and gravel overburden, and since previous profile sampling across the screened intervals of selected injection and monitoring wells did not indicate VOC stratification, the PDB samplers were installed to cover

10 feet of screened interval instead of the recommended 5 feet. This may have resulted in the poor correlation between the sampling methods. MA DEP is conducting additional VOC monitoring sampling using PDB samplers across a 5-foot interval to confirm/correlate the START results.

3.8.3 Groundwater Profile Sampling Investigation

Results of the field screening of IP well permanganate concentrations indicated that in addition to reaction with VOC contaminants and soil organic material, groundwater flow gradients appeared to be "flushing" permanganate out of the northwest corner of the injection grid. The persistence of permanganate in this area of the injection grid was lower than the remainder of the downgradient area of the grid. Due to the "flushing" of permanganate, and detections of VOCs in the northwest corner of the injection grid, additional investigation tasks were initiated to determine if there was an upgradient source area. ERRS personnel conducted a bid-walk for the groundwater profile sampling drilling activities and awarded the subcontract to American Drilling. The scope of work was prepared by START and Weston-MNH personnel as a separate document, entitled *Scope of Work Additional Investigation Activities Groundwater Profiling, Time Critical Removal Action Fisherville Mill Site, Grafton, Massachusetts, 4 August 2003*. From 2 to 10 September 2003, START personnel mobilized to site to conduct groundwater profile sampling using a Solist Drive-Point Profiler. The scope of work proposed twelve locations (labeled IP-200 through IP-211) to advance borings for the groundwater profile sampling. Shallow refusal was encountered in borings IP-202 and IP-203 in the concrete pad of the former boiler room, and the borings were abandoned. The remaining ten borings were advanced to the specified depth. The locations of these boring are shown on Figure 4. Groundwater profile samples were collected at discreet 5-foot intervals and field screened for VOCs by the NERL Mobile Laboratory. Confirmation samples were sent to NERL. Due to the low concentration of VOCs detected in the groundwater profile samples, no additional injection point wells were installed and the borings were backfilled and abandoned. START personnel recorded the locations of the borings using a GPS unit. Table 6 summarizes the groundwater profile samples collected and VOC analytical results.

Table 6

Summary of Groundwater Profile Sampling: 4 to 10 September 2003

Boring/Sample Location	Date/Time	Groundwater Profile Depth (feet bgs)	Analytical Results
Boring IP-200 (refusal encountered at approximately 35 feet bgs)			
IP-200B	9/4/03; 1230	10	trichloroethylene (154 ppb)* cis-1,2-dichloroethylene (582 ppb)* tetrachlorethene (0.6 ppb)*
IP-200C	9/4/03; 1300	15	trichloroethylene (21 ppb)* cis-1,2-dichloroethylene (27 ppb)*
IP-200D	9/4/03; 1310	20	trichloroethylene (7 ppb)* cis-1,2-dichloroethylene (6 ppb)* tetrachlorethene (0.12 ppb)*
IP-200E	9/4/03; 1335	25	trichloroethylene (4.1 ppb)* cis-1,2-dichloroethylene (3.6 ppb)* tetrachlorethene (0.12 ppb)*
IP-200F	9/4/03; 1355	30	methyl-t-butyl ether (1.2 ppb) trichloroethylene (4.5 ppb) vinyl chloride (1.7 ppb) cis-1,2-dichloroethylene (47 ppb)
Boring IP-201 (refusal encountered at approximately 25 feet bgs)			
IP-201A	9/3/03; 1515	5	trichloroethylene (0.4 ppb)* toluene (1.3 ppb)*
IP-201C	9/3/03; 1545	15	No target VOCs detected*
IP-201D	9/3/03; 1555	20	No target VOCs detected*
IP-201E	9/3/03; 1640	25	No target VOCs detected*
Boring IP-204 (refusal encountered at approximately 33 feet bgs)			
IP-204C	9/5/03; 0940	15	No target VOCs detected*
IP-204D	9/5/03; 1000	20	No target VOCs detected*
IP-204E	9/5/03; 1030	25	cis-1,2-dichloroethylene (2.2 ppb)*
IP-204F	9/5/03; 1045	30	No target VOCs detected*

Table 6

Summary of Groundwater Profile Sampling: 4 to 10 September 2003 (Continued)

Boring/Sample Location	Date/Time	Groundwater Profile Depth (feet bgs)	Analytical Results
Boring IP-205 (refusal encountered at approximately 37 feet bgs)			
IP-205D	9/8/03; 0920	20	cis-1,2-dichloroethylene (4.4 ppb)* toluene (2.1 ppb)*
IP-205E	9/8/03; 0946	25	2-butanone (MEK) (2.5 ppb) acetone (8.7 J ppb) methyl-t-butyl ether (3.8 ppb) toluene (1.1 ppb) vinyl chloride (1.5 ppb)
IP-205F	9/8/03; 1012	30	2-butanone (MEK) (5.1 ppb) acetone (11 J ppb) methyl-t-butyl ether (4.4 ppb)
IP-205G	9/8/03; 1105	35	2-butanone (MEK) (4.2 ppb) acetone (11 J ppb) methyl-t-butyl ether (4.5 ppb)
Boring IP-206 (refusal encountered at approximately 35 feet bgs)			
IP-206E	9/5/03; 1425	25	acetone (9 J ppb) vinyl chloride (1 ppb) cis-1,2-dichloroethylene (3.1 ppb)
IP-206F	9/5/03; 1500	30	2-butanone (MEK) (1.1 B ppb)
IP-206G	9/5/03; 1530	35	No target VOCs detected*
Boring IP-207 (refusal encountered at approximately 39 feet bgs)			
IP-207E	9/8/03; 1320	25	2-butanone (MEK) (1.3 ppb) methyl-t-butyl ether (2 ppb)
IP-207F	9/8/03; 1335	30	methyl-t-butyl ether (1.7 ppb) cis-1,2-dichloroethylene (1.8 ppb)
IP-207G	9/8/03; 1400	35	methyl-t-butyl ether (1.9 ppb)
IP-207H	9/8/03; 1430	38	methyl-t-butyl ether (1.4 ppb)
Boring IP-208 (refusal encountered at approximately 40 feet bgs)			
IP-208E	9/8/03; 1542	25	methyl-t-butyl ether (2 ppb) cis-1,2-dichloroethylene (1.6 ppb)
IP-208F	9/9/03; 0856	30	methyl-t-butyl ether (2 ppb) cis-1,2-dichloroethylene (1.9 ppb)
IP-208G	9/9/03; 0921	35	methyl-t-butyl ether (1.5 ppb)

Table 6

Summary of Groundwater Profile Sampling: 4 to 10 September 2003 (Concluded)

Boring/Sample Location	Date/Time	Groundwater Profile Depth (feet bgs)	Analytical Results
Boring IP–209 (refusal encountered at approximately 40 feet bgs)			
IP-209E	9/9/03; 1252	25	2-butanone (MEK) (1 ppb) acetone (5.4 J ppb) methyl-t-butyl ether (1.6 ppb)
IP-209F	9/9/03; 1300	30	trichloroethylene (0.1 ppb)* cis-1,2-dichloroethylene (0.8 ppb)* toluene (1.2 ppb)*
IP-209G	9/9/03; 1326	35	toluene (0.7 ppb)*
Boring IP-210 (refusal encountered at approximately 28 feet bgs)			
IP-210C	9/10/03; 1340	15	2-butanone (MEK) (3.7 ppb) acetone (16 J ppb)
IP-210D	9/10/03; 1400	20	No target VOCs detected*
IP-210E	9/10/03; 1428	25	No target VOCs detected*
IP-210F	9/10/03; 1442	28	No target VOCs detected*
Boring IP-211 (refusal encountered at approximately 30 feet bgs)			
IP-211C	9/10/03; 0955	15	2-butanone (MEK) (2.1 ppb) acetone (13 J ppb) vinyl chloride (1.2 ppb)
IP-211D	9/10/03; 1015	20	No target VOCs detected*

* = Field screening results only. No confirmation sample collected.
Bgs = Below ground surface.
ppb = Parts per billion.

Summaries of NERL VOC analytical results were prepared as separate documents, entitled *Laboratory Report, Fisherville Mill - Grafton, MA, 16 September 2003* and *Laboratory Report, Fisherville Mill - Grafton, MA, 17 September 2003*. Appendix S contains the NERL VOC field screening results.

3.8.4 First Sodium Permanganate/Groundwater Re-Circulation

Due to the persistence of permanganate concentrations in groundwater observed during the sampling conducted following the second injection of permanganate (March 2003), a re-circulation of groundwater was proposed in order to verify that the injected permanganate was distributed effectively. A groundwater re-circulation work plan was prepared by ERRS personnel as a separate document, entitled *Fisherville Mill Site, Work Plan for Groundwater/Permanganate Re-circulation, Revised 2 October 2003*. The work plan proposed that groundwater be extracted/pumped from designated IP and monitoring wells with high concentrations of permanganate and re-injected into

areas of the grid where permanganate concentrations were low or non-detectable. The objective was to re-circulate approximately one pore volume of groundwater estimated to be contained within the overburden soil profile of the injection grid area.

From 6 to 15 October 2003, ERRS personnel conducted the first groundwater/permanganate re-circulation. ERRS personnel constructed a groundwater pumping and distribution system utilizing existing tubing, flow valves, and connectors. A 4,000-gallon storage tank was delivered to site to provide a reservoir to combine and store permanganate groundwater before re-injecting it. Small diameter centrifugal pumps (Honda General Purpose Lightweight Pump WX10) were used to pump groundwater from the designated extraction/pumping wells into the storage tank and then re-inject the stored/mixed groundwater into designated injection point wells. ERRS personnel re-circulated approximately 384,000 gallons of groundwater. Table 7 summarizes the groundwater extraction and injection locations.

Table 7

Summary of Groundwater/Permanganate Re-Circulation: 6 to 15 October 2003

Date	Extraction Locations and Pump Rates	Re-Injection Locations and Injection Rates
6 October	RW-1, 5-6 gpm MW-104, 16 gpm MW-205, 12 gpm	IP-1, 1 gpm IP-15, 5 gpm IP-20, 5-6 gpm
7 October	MW-102, 10-11 gpm (switched from RW-1) MW-104, 16 gpm MW-207, 12 gpm (switched from MW-205)	IP-1, 5-6 gpm IP-15, 8-9 gpm IP-16, 8-9 gpm IP-20, 7-8 gpm IP-40, 8 gpm IP-112, 1-2 gpm
8 October	MW-102, 12 gpm MW-104, 12 gpm MW-207, 16-17 gpm	IP-1, 4 gpm IP-15, 7 gpm IP-16, 6 gpm IP-20, 5-6 gpm IP-40, 6 gpm IP-112, 6-7 gpm
9 October	MW-102, 12 gpm MW-104, 15 gpm MW-207, 9-10 gpm	IP-1, 6-7 gpm IP-20, 9 gpm IP-37, 5-6 gpm IP-40, 8-9 gpm
10 October	MW-102, 12 gpm MW-104, 16 gpm MW-207, 8 gpm	IP-1, 4-5 gpm IP-20, 6-7 gpm IP-31, 8-9 gpm IP-37, 3-4 gpm IP-40, 7-8 gpm IP-89, 6-7 gpm

Table 7

Summary of Groundwater/Permanganate Re-circulation: 6 to 15 October 2003 (Concluded)

Date	Extraction Locations and Pump Rates	Re-Injection Locations and Injection Rates
11 October	MW-102, 11-12 gpm MW-104, 15 gpm MW-207, 10-11 gpm	IP-1, 3 gpm IP-20, 6 gpm IP-31, 7 gpm IP-37, 3 gpm IP-40, 6 gpm IP-89, 5 gpm
12 October	MW-102, 11-12 gpm MW-104, 15-16 gpm MW-207, 10-11 gpm	IP-1, 4 gpm IP-20, 6 gpm IP-31, 7 gpm IP-37, 3 gpm IP-40, 6-7 gpm IP-89, 5-6 gpm
13 October	MW-102, 12 gpm MW-104, 15 gpm MW-207, 10-11 gpm	IP-1, 4-5 gpm IP-20, 6-7 gpm IP-31, 7-8 gpm IP-37, 3-4 gpm IP-40, 6-7 gpm IP-89, 6 gpm
14 October	MW-102, 11-12 gpm MW-104, 15-16 gpm MW-207, 10-11 gpm	IP-1, 5 gpm IP-20, 7-8 gpm IP-31, 7-8 gpm IP-37, 4 gpm IP-40, 7-8 gpm IP-89, 6-7 gpm
15 October	MW-102, 12 gpm MW-104, 13 gpm MW-207, 6-7 gpm	IP-1, 5-6 gpm IP-20, 5 gpm IP-31, 4-5 gpm IP-37, 4-5 gpm IP-40, 4 gpm IP-89, 4-5 gpm

gpm = Gallons per minute.

In addition, selected injection wells and monitoring wells were screened for permanganate concentrations during the groundwater re-circulation. Appendix T, EPA-ERT/REAC Figure 1 through Figure 11, present a summary of permanganate concentrations and depth to groundwater measurements from selected monitoring and IP wells during the re-circulation.

3.8.5 Additional Injection Well Installation

On 12 December 2003, MA DEP subcontractors Pine & Swallow, Inc. installed eight steel drive-point wells (labeled IP-116 through IP-123) using direct-push methods. The drive point wells were

installed to investigate any possible additional VOC source areas and serve as a line of permanganate injection locations to treat any VOC contamination flowing east of the injection grid. The wells were installed in a line heading east from the location of IP-15. Four of the wells (IP-117, IP-119, IP-121, and IP-122) were installed and screened at shallower soil depths to inject permanganate solution in the shallow groundwater profile and allow it to migrate down toward the bedrock surface. Table 8 summarizes the well construction details.

Table 8

Well Construction Detail for MA DEP Installed Drive Point Wells IP-116 through IP-123

Location	Well Depth (feet below ground surface)	Screen Interval (feet below ground surface)
IP-116	40	30-40
IP-117	25	15-25
IP-118	34	24-34
IP-119	25	15-25
IP-120	38	28-38
IP-121	29	19-29
IP-122	26	16-26
IP-123	40	30-40

On 17 December 2003, Pine & Swallow and MA DEP personnel collected groundwater samples from wells IP-116 through IP-123 using dedicated tubing and check valves to purge three well volumes. The samples were signed over to START personnel and hand delivered to EPA NERL for VOC analysis. Analytical results of the ground water samples did not indicate significant concentrations of VOCs. START personnel also recorded the locations of IP-116 through IP-123 using a GPS unit.

The NERL VOC analytical results were prepared as a separate document, entitled *Memorandum Report, Fisherville Mill - Grafton, MA, Volatile Organics Analysis of Aqueous Samples, 18 December 2003*. Appendix U contains a summary of the NERL analytical results.

3.8.6 Second Sodium Permanganate/Groundwater Re-Circulation

From 18 to 23 December 2003, ERRS personnel conducted a second groundwater re-circulation to move groundwater with high permanganate concentrations from the southern rows of IP wells to flush IP locations that had received a third injection of 40% sodium permanganate. Based on calculations to ensure complete coverage/spread of permanganate injection between the MA DEP-installed drive-point injection wells, approximately 7,000 gallons of groundwater was proposed for re-injection into IP wells IP-7, IP-116, IP-117, IP-118, IP-119, IP-120, IP-122, and IP-123. However, due to contractual time constraints affecting ERRS, actual re-injection volumes ranged from approximately 5,000 to 7,000 gallons per location. The groundwater re-circulation was

conducted using the small centrifugal pumps to circulate groundwater directly from extraction/pumping wells into re-injection wells. Table 9 summarizes the groundwater extraction and injection locations.

Table 9

Summary of Groundwater/Permanganate Re-circulation: 18 to 23 December 2003

Date	Extraction Locations and Pump Rates	Re-Injection Locations and Injection Rates
18 December	IP-89, 5 gpm IP-99, 5-6 gpm	IP-116, 4 gpm IP-123, 2 gpm
19 December	IP-87, 6 gpm IP-89, 5 gpm IP-99, 5-6 gpm	IP-116, 4-5 gpm (5,000 gallons total) IP-118, 4-5 gpm IP-123, 3 gpm
20 December	IP-87, 6 gpm IP-89, 5 gpm IP-99, 5-6 gpm	IP-117, 5 gpm (5,000 gallons total) IP-118, 5 gpm (5,000 gallons total) IP-123, 3 gpm
21 December	IP-89, 5 gpm IP-99, 5-6 gpm	IP-119, 5 gpm (5,000 gallons total) IP-120, 5 gpm
22 December	IP-89, 5 gpm IP-99, 5-6 gpm MW-104, 6 gpm	IP-120, 4 gpm (5,000 gallons total) IP-122, 2-3 gpm IP-7, 5-6 gpm
23 December	IP-89, 5 gpm IP-99, 5 gpm MW-104, 6 gpm	IP-7, 5-6 gpm (7,000 gallons total) IP-122, 5 gpm (5,900 gallons total) IP-123, 5 gpm (5,400 gallons total)

gpm = Gallons per minute.
Note: Amount in parentheses indicates the approximate total gallons of groundwater re-injected.

On 5, 19, and 29 December 2003, groundwater samples were collected from wells IP-50, IP-87, IP-89, IP-99, IP-123, MW-101A, and MW-104 using disposable 0.5-inch diameter bailers to monitor the permanganate concentrations of the re-circulated groundwater.

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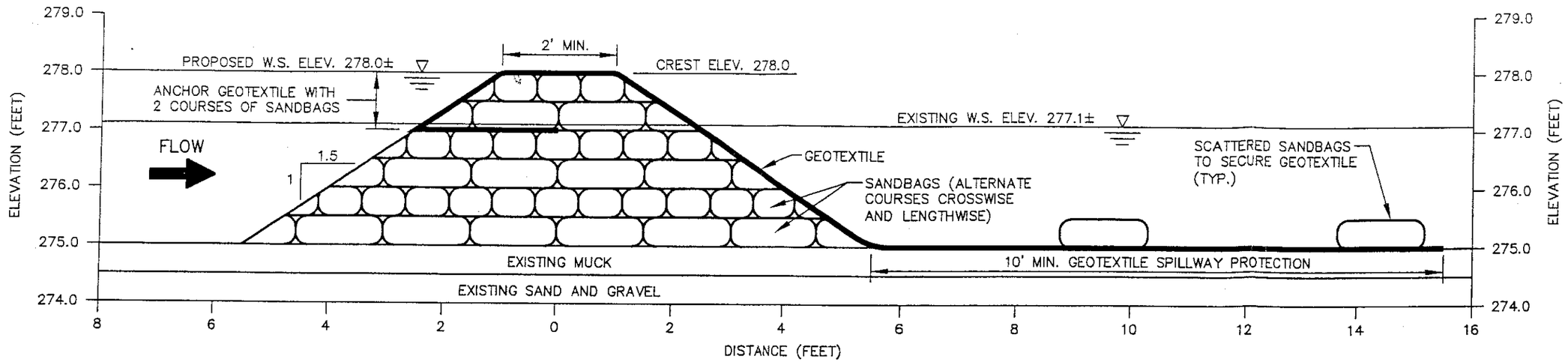
APPENDICES

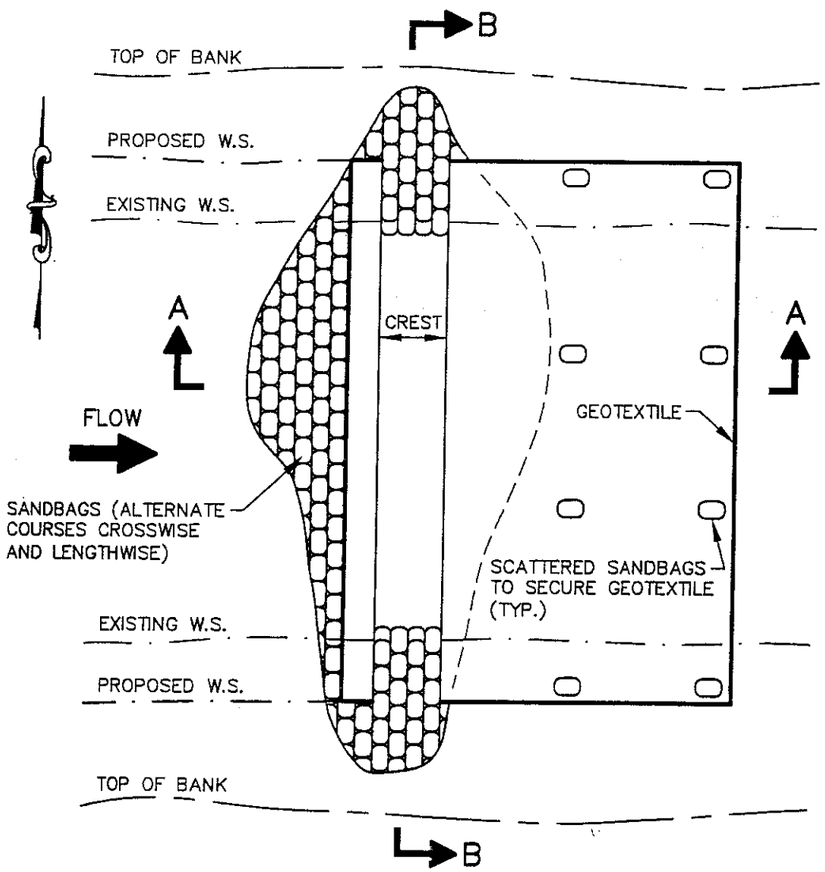
APPENDIX A

Temporary Sand Bag Dam Design Schematic



SECTION A–A

SCALE: AS SHOWN



PLAN

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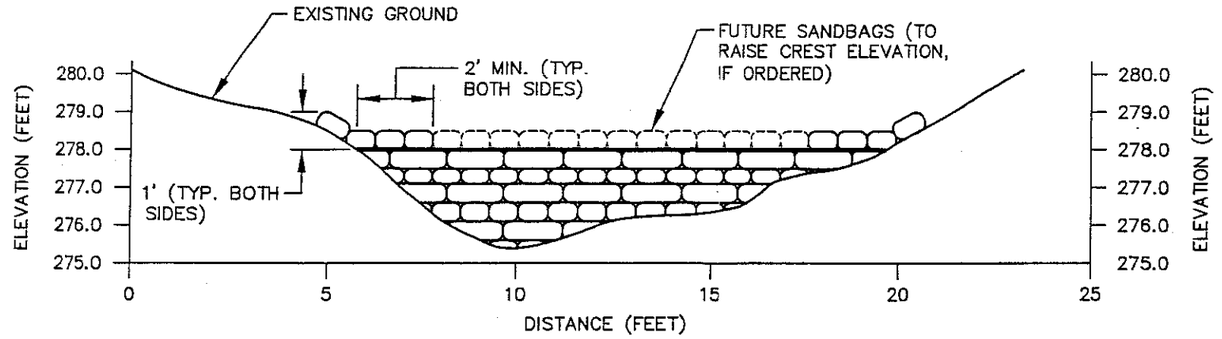


SECTION B–B

SCALE: AS SHOWN

NOTE

INDIVIDUAL SANDBAGS ARE SHOWN FOR PICTORIAL PURPOSES ONLY AND ARE NOT INTENDED TO REPRESENT ACTUAL QUANTITIES OR SIZES.

TEMPORARY DAM

TIME CRITICAL REMOVAL ACTION
FISHERVILLE MILL SITE
GRAFTON, MASSACHUSETTS
US EPA, REGION 1

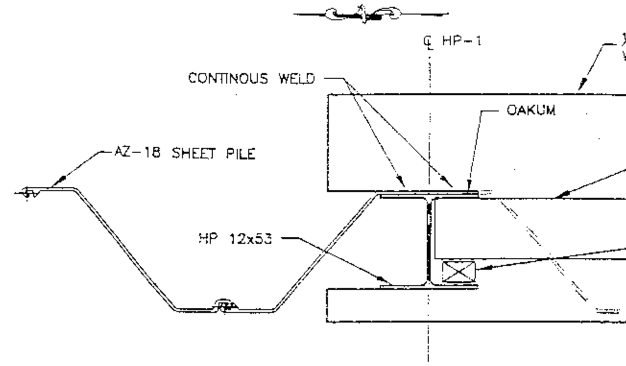
ROY F. WESTON, INC.
WESTON
MANAGERS DESIGNERS/CONSULTANTS

DRAWN	DATE	DES. ENG.	DATE	W. O. NO.
A.J.M.	4/02	L.J.B.	4/02	20104-004-001-3208
APPROVED	DATE	REVISION	DATE	FIGURE NO.
B.L.N.	4/02	0	5/1/02	3

M:\Design\DWG\START\FISHERVILLE MILL\TEMP DAM\SANDBAG DAM.dwg, FIG 3, 05/01/2002 01:06:48 PM, MURROT, 1:1

APPENDIX B

Temporary Sheet Pile and Stop Log Dam Design Schematic



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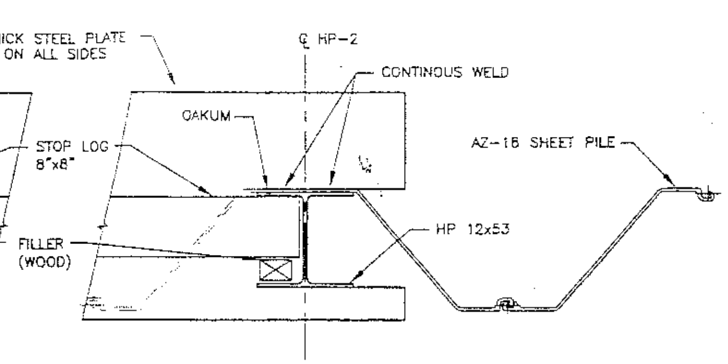

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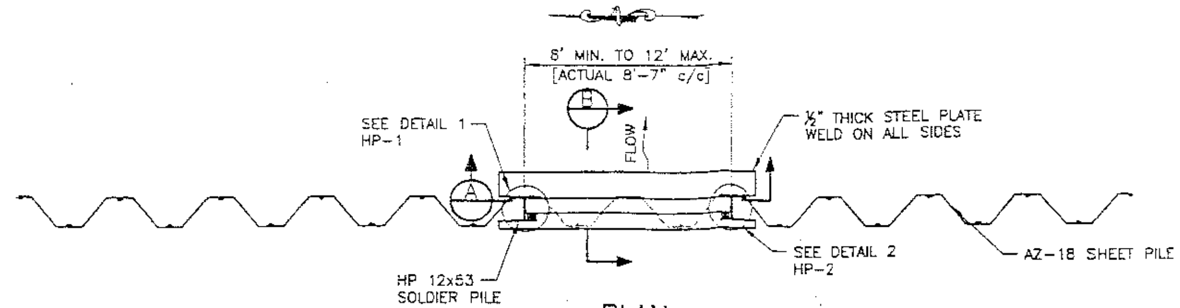

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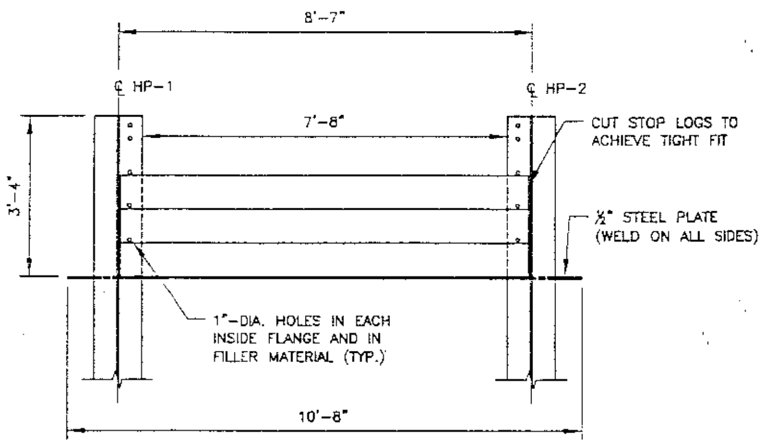

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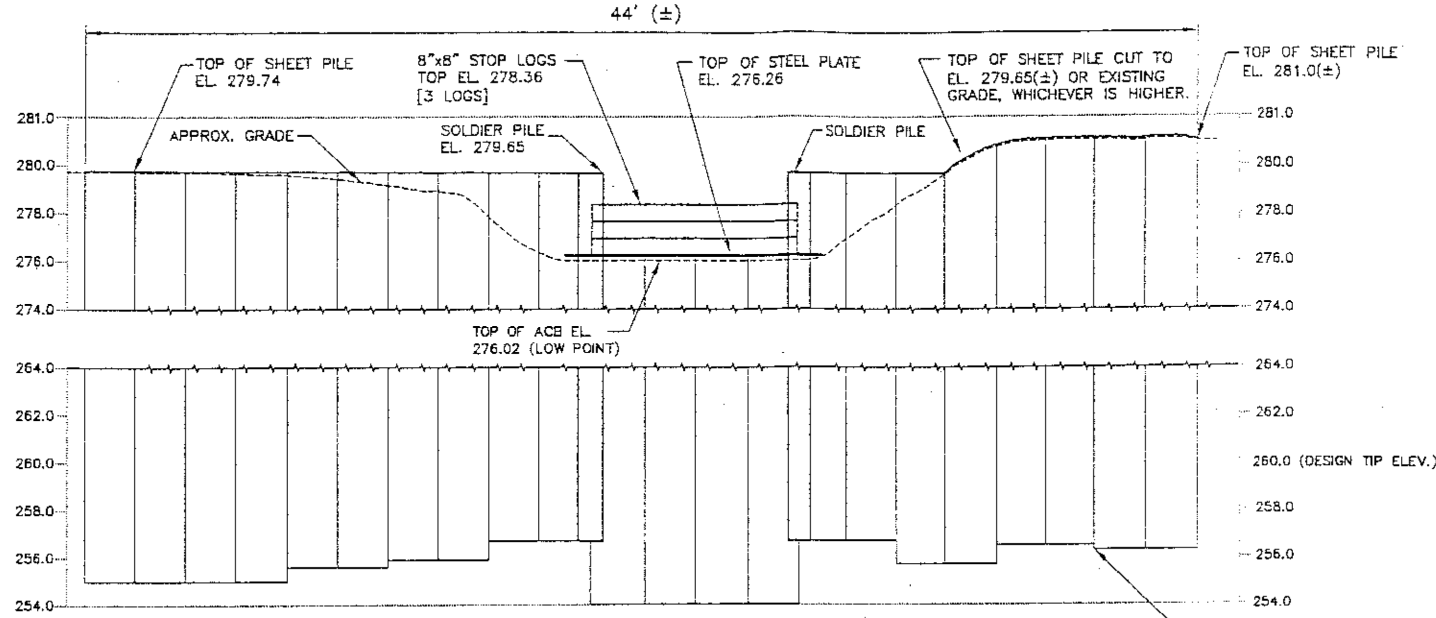
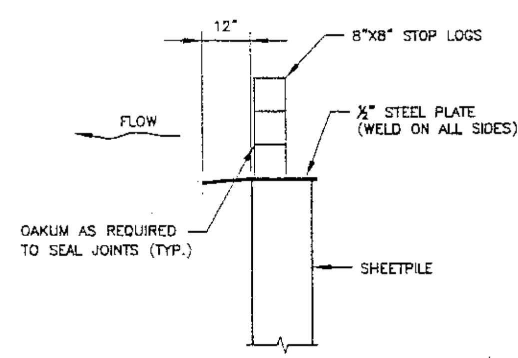


PROFILE
1"=4'

NOTES:

1. MAXIMUM SPACING BETWEEN H-PILES SHALL BE 12.5 FEET UNLESS OTHERWISE APPROVED BY THE ENGINEER. THE H-PILE SPACING MAY BE DECREASED TO APPROXIMATELY 8 FEET OR THE LENGTH OF 4 SINGLE SHEET PILES, DEPENDING ON THE GEOMETRY OF THE CANAL BED AND BANKS. [H-PILES SET 8'-7" C/C]
2. PROVIDE FIVE (5) PAIRS OF 1-INCH DIAMETER HOLES ON EACH INSIDE FLANGE TO RETAIN STOP LOGS. CENTER OF EACH HOLE SHOULD BE LOCATED BETWEEN ½ AND 1-INCH ABOVE THE TOP OF THE STOP LOG IMMEDIATELY BELOW THE HOLE LOCATION, EXCEPT TOP HOLE SHALL ALLOW BOLT THROUGH CENTER OF TOP STOP LOG.
3. PROVIDE TWO (2) ¾-INCH DIAMETER STAINLESS STEEL BOLTS, NUTS AND WASHERS. INSTALL BOLTS IN HOLES IMMEDIATELY ABOVE UPPER STOP LOG TO PREVENT UNAUTHORIZED REMOVAL OF STOP LOGS.
4. EXCAVATE EXISTING GROUND AS NECESSARY TO ACHIEVE REQUIRED SHEETPILE TOP ELEVATION. BACKFILL EXCAVATIONS WITH EXCAVATED MATERIAL. COMPACT UNTIL OBSERVED TO BE DENSE, STABLE AND UNYIELDING. INSTALL EROSION CONTROL MATTING AND SEED DISTURBED AREAS.
5. SEAL ALL SHEETPILE LIFTING HOLES USING STEEL PLATES.
6. A GEOTEXTILE SHALL BE PLACED BELOW THE ACB. THE IN-PLACE BLOCKS SHALL BE CABLED TOGETHER.
7. REGRADE CANAL BED AND BANK AS NECESSARY TO ALLOW INSTALLATION OF ACB. INSTALL ACB PER MANUFACTURE'S RECOMMENDED PROCEDURE.
8. PLACE GEOTEXTILE BELOW ACB.
9. TERMINATE EDGES AND END OF ACB (3 LOCATIONS) IN ANCHOR TRENCHES.
10. PROVIDE TEMPORARY BY-PASS PUMPING AND DEWATERING AS NECESSARY TO COMPLETE WORK.
11. PROVIDE E&S CONTROLS.
12. MINIMIZE EXCAVATION/DISTURBANCE TO THE GREATEST EXTENT PRACTICABLE.
13. LOCATE DAM AS DIRECTED BY THE ENGINEER. ANTICIPATED TO BE IMMEDIATELY DOWNSTREAM OF EXISTING SANDBAG DAM. [DAM PLACED DOWNSTREAM OF SANDBAG DAM AND SANDBAG DAM WAS REMOVED.]



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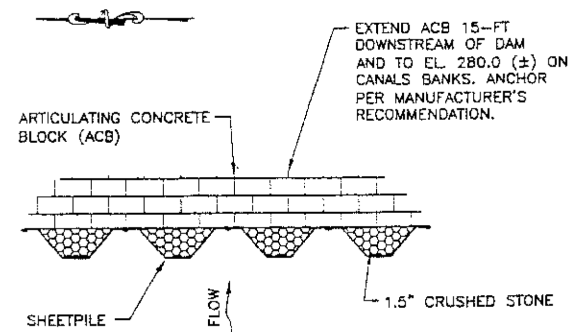
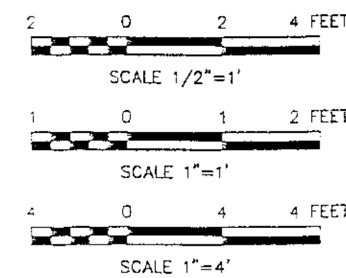


ACB DETAIL
1"=4'

MATERIALS

1. SHEETPILE SHALL BE SKYLINE STEEL AZ-18, ASTM A572 GRADE 50 STEEL DELIVERED IN 20-FOOT LENGTHS. [25-FOOT LENGTHS WERE INSTALLED]
2. STOP LOGS SHALL BE 8" BY 8" RED PINE OR SOUTHERN YELLOW PINE SUPPLIED IN 16-FOOT LENGTHS. FURNISH 5 SPARES.
3. BOLTS SHALL BE ¾-INCH DIAMETER, 316 STAINLESS STEEL WITH WASHERS AND LOCKING NUTS.
4. ARTICULATING CONCRETE BLOCK (ACB) SHALL BE TERRAFIRM, DISTRIBUTED BY INTERGEO SERVICES, INC. OR APPROVED EQUAL. [TERRAFIRM T-45 BLOCKS WERE USED]
5. OAKUM SHALL BE IMPREGNATED WITH BENTONITE.



RECORD DRAWING LJB 3/11/04

NO.	DATE	APPR.	REVISION
1	2/04	LJB	RECORD DRAWING OF FINAL CONSTRUCTION
0	10/3/03	BLN	ISSUED FOR IMPLEMENTATION

TEMPORARY DAM - BLACKSTONE CANAL
FISHERVILLE MILL SITE, GRAFTON, MA
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 1
TDD NUMBER 03-05-0181

WESTON SOLUTIONS — MANCHESTER, NEW HAMPSHIRE

CHECKED	LJB/WAZ
DES. ENG.	WA HARPUR
PROJ. ENG.	WA HARPUR
PROJ. MGR.	BL NOWACK
APPROVED	BL NOWACK
APPROVED	

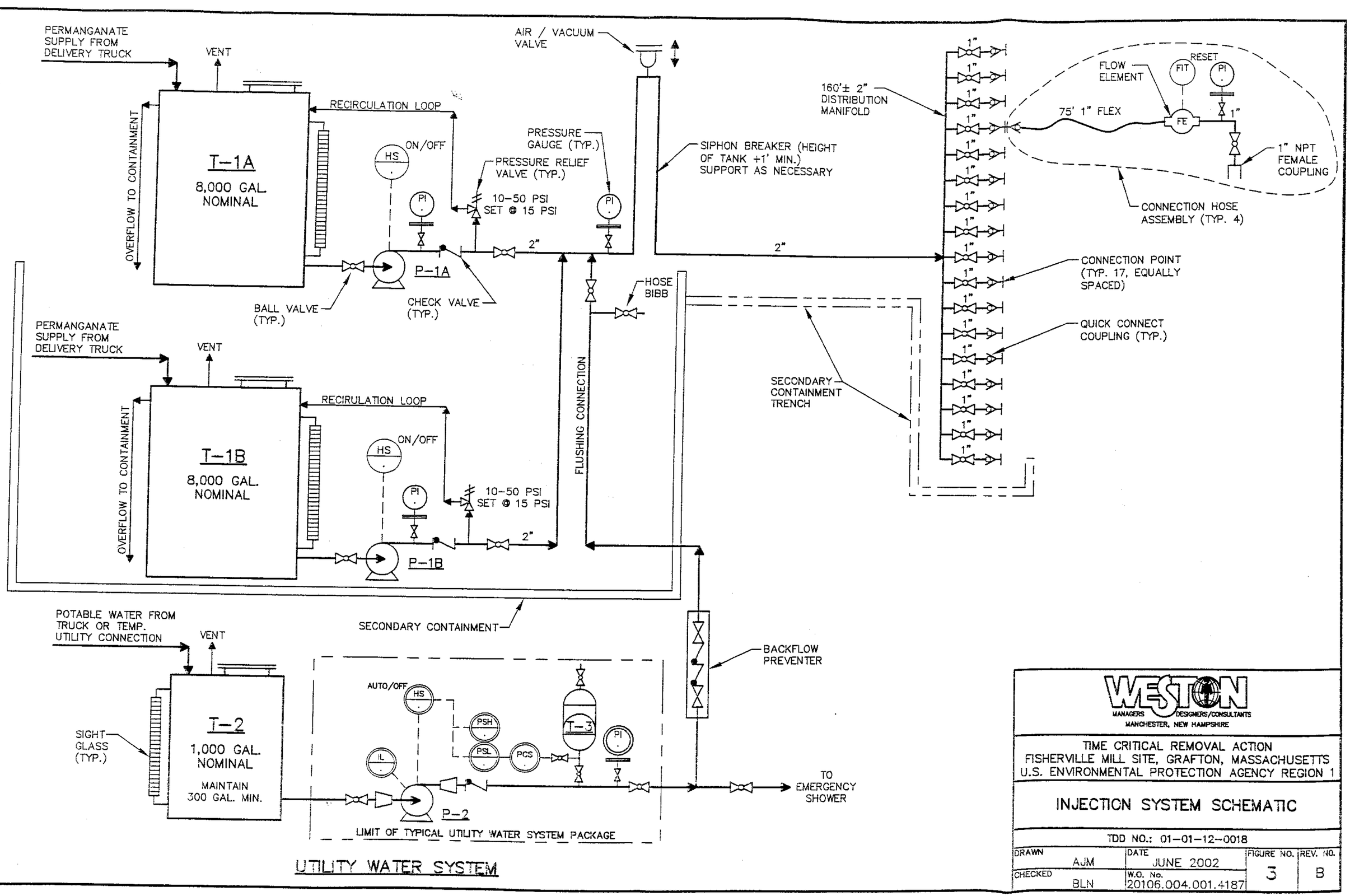
CLIENT APPROVALS — DATE
ISSUED FOR — DATE

TEMPORARY DAM PLAN

DRAWN	DATE	DWG. NO.	REV. NO.
E.DIFATTA	OCT 2003	C-1	1
SCALE: AS SHOWN	W.O. NO. 20110.004.001		

APPENDIX C

Injection System Design Schematic



UTILITY WATER SYSTEM

WESTON MANAGERS DESIGNERS/CONSULTANTS MANCHESTER, NEW HAMPSHIRE

TIME CRITICAL REMOVAL ACTION
FISHERVILLE MILL SITE, GRAFTON, MASSACHUSETTS
U.S. ENVIRONMENTAL PROTECTION AGENCY REGION 1

INJECTION SYSTEM SCHEMATIC

TDD NO.: 01-01-12-0018

DRAWN	DATE	FIGURE NO.	REV. NO.
AJM	JUNE 2002	3	B
CHECKED: BLN	W.O. No. 20106.004.001.4187		

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APPENDIX D

Injection Point Well Elevation Survey Summary

TABLE D-1

Fisherville Mill Injection Point and Monitoring Well Construction Details and Elevation Survey Summary

Well Location	Total Boring Depth (feet bgs)	Screen Interval (feet bgs)	Top of PVC Riser Elevation (feet above MSL)	PVC Riser Height (feet ags)
IP-1	39	29-39	285.82	0.92 (3.00)*
IP-2	46	36-46	293.65	0.86 (3.00)*
IP-3	47	37-47	294.17	1.33 (3.08)*
IP-4	47	37-47	295.13	2.29
IP-5	46	36-46	294.92	2.33
IP-6	32	22-32	286.25	2.04 (2.08)*
IP-7	37	27-37	285.21	1.00 (3.50)*
IP-8	44.5	34.5-44.5	292.86	0.38
IP-9	48	38-48	285.21	1.13
IP-10	46.5	36.5-46.5	295.01	2.42
IP-11	29.5	19-29	284.31	0.75
IP-12	33	23-33	286.67	3.17
IP-13	35.5	25-35	284.4	0.79
IP-14	35	25-35	285.44	1.75
IP-15	39	29-39	284.58	1.04
IP-16	32	22-32	284.35	0.88
IP-17	33.5	23.5-33.5	286.39	2.83
IP-18	35	25-35	287.10	3.54
IP-19	34	24-34	285.32	2.00
IP-20	39	29-39	284.74	1.33
IP-21	36	26-36	284.27	0.83
IP-22	37	27-37	285.19	1.00
IP-23	41	31-41	284.72	1.50
IP-24	35	25-35	284.25	0.50
IP-25	35	31-41	285.93	2.38
IP-26	34.5	24-34	285.63	2.08

TABLE D-1
Fisherville Mill Injection Point and Monitoring Well Construction Details and Elevation Survey Summary (Continued)

Well Location	Total Boring Depth (feet bgs)	Screen Interval (feet bgs)	Top of PVC Riser Elevation (feet above MSL)	PVC Riser Height (feet ags)
IP-27	37.5	27.5-37.5	285.14	1.63
IP-28	37.5	27-.5-37.5	286.70	3.21
IP-29	35	25-35	283.78	0.42
IP-30	41.5	31.5-41.5	284.79	1.33
IP-31	36	26-36	284.24	0.54
IP-32	38.5	28.5-38.5	285.25	1.50
IP-33	34	22-32	285.54	2.04
IP-34	39.5	29.5-39.5	284.18	0.46
IP-34B	63	53-63	285.59	2.08
IP-35	39.5	29.5-39.5	283.82	0.33
IP-36	47	37-47	291.22	2.42
IP-37	47	37-47	290.31	2.13
IP-38	47.5	37.5-47.5	288.92	1.29
IP-39	42.5	32.5-42.5	287.03	0.79
IP-40	44.4	34.5-44.5	284.93	0.71
IP-41	43	33-43	291.28	2.71
IP-42	42.5	32.5-42.5	290.15	2.13
IP-43	41	31-41	288.76	1.83
IP-44	41	31-41	287.56	1.42
IP-45	40	29.5-39.5	285.07	0.42
IP-46	41	31-41	284.67	0.75
IP-47	41	31-41	290.77	2.38
IP-48	38	28-38	289.29	2.08
IP-49	41	31-41	287.11	1.29
IP-49B	62	52-62	288.89	2.88
IP-50	43.5	33.5-43.5	286.93	2.50
IP-52	40	30-40	284.67	0.46 (3.08)*

TABLE D-1
Fisherville Mill Injection Point and Monitoring Well Construction Details and Elevation Survey Summary (Continued)

Well Location	Total Boring Depth (feet bgs)	Screen Interval (feet bgs)	Top of PVC Riser Elevation (feet above MSL)	PVC Riser Height (feet ags)
IP-52B	54	44-54	287.80	3.67
IP-53	42.5	32.5-42.5	294.80	1.75 (3.00)*
IP-54	46	36-46	294.67	1.92
IP-55	48	38-48	294.98	2.33
IP-57	34	24-34	284.66	0.38 (1.58)*
IP-58	45	35-45	294.16	1.50
IP-59	50	40-50	293.04	0.46
IP-60	46	36-46	294.46	1.79
IP-61	35.5	25.5-35.5	284.89	0.79
IP-62	36	26-36	286.61	3.08
IP-63	33	23-33	286.52	2.92
IP-64	38	28-38	284.04	0.58
IP-65	41	31-41	285.51	2.00
IP-67	30	20-30	285.20	1.33
IP-68	37	27-37	285.16	1.42
IP-69	34	24-34	284.23	0.75
IP-70	36	26-36	286.11	2.63
IP-72	36.5	26.5-36.5	284.69	1.08
IP-73	40.5	30.5-40.5	284.26	0.83
IP-74	39	29-39	284.19	0.92
IP-75	38	28-38	285.09	1.75
IP-77	34	24-34	285.51	1.92
IP-78	38.5	28.5-38.5	284.94	1.46
IP-79	34	24-34	284.89	1.38
IP-80	38.5	28.5-38.5	284.23	083
P-81	36	26-36	294.33	1.75
IP-82	39	29-39	285.00	1.38

TABLE D-1
Fisherville Mill Injection Point and Monitoring Well Construction Details and Elevation Survey Summary (Continued)

Well Location	Total Boring Depth (feet bgs)	Screen Interval (feet bgs)	Top of PVC Riser Elevation (feet above MSL)	PVC Riser Height (feet ags)
IP-82B	53.5	43-53	286.29	2.5
IP-83	39.5	29.5-39.5	284.28	0.54
IP-84	36	24-34	284.03	0.50
IP-85	41	31-41	283.87	0.67
IP-87	45	35-45	289.79	1.42
IP-88	45	35-45	289.96	1.75
IP-89	46.5	36.5-46.5	288.88	1.33
IP-90	42.5	32.5-42.5	286.89	2.38
IP-91	38	28-38	290.89	1.88
IP-92	42	32.42	291.23	2.96
IP-93	45	35-45	289.12	1.67
IP-94	40	30-40	289.09	2.04
IP-95	43	33-43	287.19	1.79
IP-97	42.5	32.5-42.5	289.05	0.67
IP-98	40	30-40	288.76	0.67
IP-99	42.5	32.5-42.5	287.93	1-75
IP-100	41.5	31.5-41.5	287.29	2.21
IP-110	42	32-42	285.10	1.92
IP-111	44	34-44	283.80	0.17
IP-112	37	27-37	289.73	3.29
IP-113	39.5	29.5-39.5	286.79	1.33
IP-114	35	25-35	284.28	0.75
IP-115	40.5	30.5-40.5	284.17	0.5
MW-3T-B	71.5	61.5-71.5	288.38	2.75

TABLE D-1
Fisherville Mill Injection Point and Monitoring Well Construction Details and Elevation Survey Summary (Concluded)

Well Location	Total Boring Depth (feet bgs)	Screen Interval (feet bgs)	Top of PVC Riser Elevation (feet above MSL)	PVC Riser Height (feet ags)
MW-29M	45	35.45	285.98	0.08 (flush mount)
MW-301	34	24-34	286.84	0.48

bgs = Below ground surface.
PVC = Polyvinyl chloride.
MSL = Mean sea level.
ags = Above ground surface.
* = Adjusted PVC riser height to allow injection directly from 55-gallon drums during second permanganate injection round in March 2003.

APPENDIX E

Summary of Data Collected Between July 2002 and March 2004

Table E-1: Summary Table of Data Collected between July 2002 and March 2004

Who	Method	Location(s)	Dates	Notes
START/EPA ERRS	Perimeter air monitoring	South, east, and west of injection grid area	7/8-7/11/02	Asbestos and particulate air sampling
START/EPA ERRS ERT-REAC	Low-flow groundwater sampling and surface water sampling	Selected monitoring wells: MW-1D; PSW-15; PSW-17; MW-29M; MW-30D; MW-31S; MW-31D; MW-31R; MW-100S; MW-100M; MW-100D; MW-101A; MW–102; MW-104; MW-201C; MW-204; MW-206; MW-301 Surface water locations: SW-101; 102; 103	7/22-7/24/02	Analyzed for: - VOCs, TAL metals, and dissolved metals by ERT/REAC; - hexavalent chromium (ERRS subcontractor); - chloride (HACH field kit) Field data collected included water quality parameters: temperature; pH; specific conductivity; dissolved oxygen (DO); oxidation reduction potential (ORP); and turbidity
START/EPA ERT-REAC	Low-flow groundwater sampling and VOC field screening of injection wells and bedrock wells	All installed injection point (IP) wells (IP-1 through IP-115) and five bedrock wells (IP-34B; IP-49B; IP-52B; IP-82B; MW-3T-B)	8/1-8/27/02	Analyzed for: - VOCs by ERT-REAC GC/MS HapSite; - chloride (HACH field kit) Field data collected included water quality parameters: temperature; pH; specific conductivity; dissolved oxygen (DO); oxidation reduction potential (ORP); and turbidity
START/EPA	Bailer groundwater sampling for permanganate concentration	Non-injected well point locations (IP-52 to IP-115) and selected locations during first injection round	8/28-9/6/02	Initial injection was into every other IP location (IP-1 to IP-50); groundwater samples were collected using 0.5-inch diameter disposable polyethylene bailers; permanganate concentrations were analyzed by START using a ThermoSpectronic Model Genesys 20 spectrophotometer
START/EPA	Pressure transducer data loggers	Monitoring wells MW-100D and SG-6	8/15-12/5/02	30-minute data collection interval for water level measurement; downloaded weekly

Table E-1: Summary Table of Data Collected between July 2002 and March 2004 (Continued)

Who	Method	Location(s)	Dates	Notes
START/EPA	Injection point and monitoring well elevation and GPS location survey	IP-1 through IP-115 (including bedrock locations); MW-3T-B; MW-29M, MW-301	9/10/02	Collected elevation and GPS position data for each injection point location.
START/EPA	Weekly bailer groundwater monitoring sampling for permanganate concentration	IP-1 through IP-10 and IP-52 through IP-60; IP-34B; IP-49B; IP-52B; IP-57; IP-82B; IP-44; IP-77; IP-80; IP-90; MW-1D; MW–101A; MW-3TB; MW-301; MW-102; MW-208	9/11; 9/19; 9/26; 10/3; 10/11; 10/16/02	Collected groundwater samples using 0.5-inch diameter disposable polyethylene bailers; permanganate concentrations were analyzed by START using a Thermo-Spectronic Model Genesys 20 spectro-photometer. Locations of interest were upgradient 2 rows and bedrock IP locations.
START/EPA	Weekly low-flow groundwater sampling water quality parameters	MW-1D; MW-301; MW-102; MW-208	9/11; 9/19; 9/26; 10/3; 10/11; 10/16; 10/24; 11/6/02	Collected water quality parameters: temperature; pH; specific conductivity; dissolved oxygen (DO); oxidation reduction potential (ORP); and turbidity. Conducted to monitor changes in ORP
START/EPA	Weekly bailer (b) and pump and peristaltic pump and dedicated tubing (t) groundwater sampling for permanganate concentration	Used tubing (t) for locations: IP-55; IP-60; IP-15; IP-20; IP-75; IP-80; IP-34; IP-90; ; IP-113; IP-53; IP-58; IP-13; IP-18; IP-23; IP-28; IP-33; IP-38; IP-43; IP-48; IP-52B; MW-1D; MW-101A; MW-102; MW-208; MW-301 Used bailer (b) for locations: IP-34B; IP-49; IP-49B; IP-82B;and IP-95.	10/24/02	Collected groundwater samples from IP locations along the estimated groundwater flow gradient. Used tubing and peristaltic pumps where possible to attempt to keep sampling depths consistent.
START/EPA	Comprehensive groundwater sampling for permanganate concentrations	All injected well point locations and IP-34B; IP-49B; IP-52B; IP-82B; MW-301; MW-1D; MW-3T-B; MW-29M (used pump and tubing were possible - see site logbook for bailer locations).	11/4-11/5/02	Collected groundwater samples from all injection grid locations using 0.5-inch diameter disposable polyethylene bailers; and tubing and peristaltic pumps where possible for sodium permanganate concentrations. Samples were analyzed by START using a ThermoSpectronic Model Genesys 20 spectrophotometer.

Table E-1: Summary Table of Data Collected between July 2002 and March 2004 (Continued)

Who	Method	Location(s)	Dates	Notes
START/EPA ERRS ERT-REAC	Low-flow groundwater sampling and surface water sampling	Selected monitoring wells: MW-1D; PSW-15; MW-29M; MW-30D; MW-31S; MW-31D; MW-31R; MW-100S; MW-100M; MW-100D; MW-101A; MW–102; MW-104; MW-201C; MW-204; MW-206; MW-208; MW-301 Surface water locations: SW-101; 102; 103	11/11-11/13/02	Analyzed for: - VOCs, TAL metals, and dissolved metals by ERT/REAC; - hexavalent chromium (ERRS subcontractor); - chloride (HACH field kit) Field data collected included water quality parameters: temperature; pH; specific conductivity; dissolved oxygen (DO); oxidation reduction potential (ORP); and turbidity
START/EPA ERT-REAC	Low-flow groundwater sampling and VOC field screening of injection wells and bedrock wells	Selected injection points (permanganate concentration $\leq$ 1%): IP-53; IP-115; IP-52; IP-62; IP-67; IP-110; IP-12; IP-70; IP-3; IP-34B; IP-49B; IP-5; IP-10; IP-61: IP-82B; IP-114; IP-60; IP-24; IP-45; IP-19; IP-54; IP-6; IP-8; IP-4; IP-13; IP-63; IP-57; IP-59; IP-16; IP-7	11/11-11/13/02	Analyzed for: - VOCs by ERT-REAC GC/MS HapSite; - chloride (START field kit) Water quality parameters not collected due to presence of sodium permanganate. Used pumping rates, time, and volume to sampling data from July/August sampling round.
START/EPA	Weekly bailer (b) and pump and tubing (t) groundwater sampling for permanganate concentration	Used tubing (t) for locations: MW-301; MW-102; MW-208; IP-58; IP-55; IP-60; IP-15; IP-20; IP-75 Used bailer (b) for locations: MW-1D; MW-29M; MW-3T-B; IP-80; IP-34B; IP-34; IP-90; IP-95; IP-49B; IP-49; IP-113; IP-48; IP-43; IP-38; IP-33; IP-28; IP-23; IP-18; IP-13; IP-52B; MW-101A; IP-82B (both methods used for 82B)	12/5-12/6/002	Collected groundwater samples from IP locations along the estimated groundwater flow gradient. Used tubing and peristaltic pumps where possible to attempt to keep sampling depths consistent. Switched back to bailer sampling due to cold temperatures freezing groundwater in tubing.

Table E-1: Summary Table of Data Collected between July 2002 and March 2004 (Continued)

Who	Method	Location(s)	Dates	Notes
START/EPA	Monthly bailer (b) groundwater sampling for permanganate concentration	Bailer samples collected from locations: IP-55; IP-60; IP-53; IP-58; IP-15; IP-20; IP-75; IP-80; IP-34; IP-34B; IP-90; IP-95; IP-49B; IP-49; IP-113; IP-48; IP-43; IP-38; IP-33; IP-28; IP-25; IP-18; IP-13; IP-52B; IP-82B; MW-101A; MW-301; MW-1D; MW-3T-B	2/4/03	Collected groundwater samples from IP locations along the estimated groundwater flow gradient.
START/EPA	Monthly bailer (b) groundwater sampling for permanganate concentration	Bailer samples collected from locations: IP-55; IP-60; IP-53; IP-58; IP-15; IP-20; IP-75; IP-34B; IP-90; IP-95; IP-49B; IP-49; IP-113; IP-48; IP-43; IP-38; IP-33; IP-28; IP-25; IP-18; IP-13; IP-52B; IP-82B; MW-301; MW-1D; MW-3T-B.	3/4/03	Collected groundwater samples from IP locations along the estimated groundwater flow gradient. IP-34, IP80, and MW-101A were inaccessible due to icing condition and no samples were collected.
START/EPA	Pre-Second Injection permanganate field screening and low-flow groundwater sampling for VOC analysis of injection wells and bedrock wells	Selected injection points (permanganate concentration $\leq$ 1%): IP-1; IP-2; IP-3; IP-6; IP-7; IP-12; IP-18; IP-28; IP-34B; IP-48; IP-49B; IP-52; IP-52B; IP-53; IP-57; IP-63; IP-82B; MW-3T-B; and MW-101A. Permanganate screening samples collected prior to groundwater sampling.	3/24-3/25/03	Groundwater samples analyzed for VOCs at ERT/REAC laboratory.
START/EPA ERRS	Limited Second Injection (10 55-gallon drums of 40% sodium permanganate)	Injected 20% solution of sodium permanganate into IP locations: IP-1; IP-6; IP-12; IP-52; IP-57; and IP-63. Injection 40% solution followed by 55-gallons of flush water into IP-2, IP-3, IP-7, and IP-53. Collected surface water samples from intermittent plume of permanganate flowing into canal under Main Street (Route 122A) overpass.	3/26-3/28/03	Drum pump failed after diluting and injecting into six IP locations. No concentrations of permanganate were recorded in the surface water samples.

Table E-1: Summary Table of Data Collected between July 2002 and March 2004 (Continued)

Who	Method	Location(s)	Dates	Notes
START/EPA	Weekly bailer groundwater monitoring sampling for permanganate concentration	Bailer samples collected from locations: IP-55; IP-60; IP-53; IP-58; IP-15; IP-20; IP-75; IP-34B; IP-90; IP-95; IP-49B; IP-49; IP-113; IP-48; IP-43; IP-38; IP-33; IP-28; IP-25; IP-18; IP-13; IP-52B; IP-82B; MW-301; MW-1D; MW-3T-B. Plus second injection IP locations: IP-1; IP-2; IP-3; IP-6; IP-7; IP-12; IP-52; IP-53; IP-57; and IP-63.	4/3; 4/10; 4/17; 4/24/03	Installed passive diffusion bag samplers on 4/10/03.
START/EPA	VOC groundwater sampling using Passive Diffusion Bag (PDB) samplers	PDB samplers installed in monitoring wells: MW-1D at 39 feet and 46 feet below ground surface (bgs); MW-29D at 49 feet and 56 feet bgs; MW-30D at 38 feet bgs; MW-31D at 48 feet and 55 feet bgs; MW-31R at 80 feet and 87 feet bgs; and MW-100D at 37 feet bgs.	5/8/03	PDB samplers installed approximately one month earlier (4/10/03). Samples analyzed at MA DEP contract laboratory. Water levels also collected for all IP well locations.
START/EPA	Comprehensive groundwater sampling for permanganate concentration	All injected well point locations and IP-34B; IP-49B; IP-52B; IP-82B; MW-301; MW-1D; and MW-3T-B.	5/22/03	Water levels also collected for all IP well locations.
START/EPA	Post-Second Injection permanganate field screening and low-flow groundwater sampling for VOC analysis of injection wells and bedrock wells	Selected injection points (permanganate concentration $\leq$ 1%): IP-4; IP-6; IP-7; IP-8; IP-11; IP-12; IP-13; IP-14; IP-17; IP-18; IP-19; IP-24; IP-25; IP-26; IP-29; IP-34B; IP-49B; IP-52B; IP-53; IP-54; IP-55; IP-57; IP-58; IP-59; IP-61; IP-62; IP-63; IP-64; IP-67; IP-68; IP-69; IP-70; IP-73; IP-77; IP-82B; IP-91; and MW-101A. Permanganate screening samples collected prior to groundwater sampling.	5/28-5/29/03	Groundwater samples analyzed for VOCs at ERT/REAC laboratory.

Table E-1: Summary Table of Data Collected between July 2002 and March 2004 (Continued)

Who	Method	Location(s)	Dates	Notes
START/EPA	Monthly bailer (b) groundwater sampling for permanganate concentration	Bailer samples collected from locations: IP-55; IP-60; IP-53; IP-58; IP-15; IP-20; IP-75; IP-34B; IP-90; IP-95; IP-49B; IP-49; IP-113; IP-48; IP-43; IP-38; IP-33; IP-28; IP-25; IP-18; IP-13; IP-52B; IP-82B; MW-301; MW-1D; MW-3T-B. Plus second injection IP locations: IP-1; IP-2; IP-3; IP-6; IP-7; IP-12; IP-52; IP-53; IP-57; and IP-63.	6/25/03	Water levels also collected for all IP well locations and selected monitoring wells.
START/EPA	Monthly bailer (b) groundwater sampling for permanganate concentration	Bailer samples collected from locations: IP-55; IP-60; IP-53; IP-58; IP-15; IP-20; IP-75; IP-34B; IP-90; IP-95; IP-49B; IP-49; IP-113; IP-48; IP-43; IP-38; IP-33; IP-28; IP-25; IP-18; IP-13; IP-52B; IP-82B; MW-301; MW-1D; MW-3T-B. Plus second injection IP locations: IP-1; IP-2; IP-3; IP-6; IP-7; IP-12; IP-52; IP-53; IP-57; and IP-63.	7/22/03	Water levels also collected for all IP well locations and selected monitoring wells.
START/EPA	Monthly bailer (b) groundwater sampling for permanganate concentration	Bailer samples collected from locations: IP-55; IP-60; IP-53; IP-58; IP-15; IP-20; IP-75; IP-34B; IP-90; IP-95; IP-49B; IP-49; IP-113; IP-48; IP-43; IP-38; IP-33; IP-28; IP-25; IP-18; IP-13; IP-52B; IP-82B; MW-301; MW-1D; MW-3T-B. Plus second injection IP locations: IP-1; IP-2; IP-3; IP-6; IP-7; IP-12; IP-52; IP-53; IP-57; and IP-63.	8/18/03	Water levels also collected for all IP well locations and selected monitoring wells.
START/EPA ERRS	Additional investigation activities - groundwater profile sampling	Groundwater profile samples collected approximately every 5 feet in depth to refusal from borings IP-200, IP-201, IP-202, IP-203, IP-204, IP-205, IP-206, IP-207, IP-208, IP-209, IP-210, IP-211. No boring could be advanced at locations IP-202 and IP-203.	9/2 - 9/10/03	Groundwater samples field screened for VOCs by NERL Mobile Laboratory. No additional IP injection wells installed due to low level of VOC concentrations detected.

Table E-1: Summary Table of Data Collected between July 2002 and March 2004 (Continued)

Who	Method	Location(s)	Dates	Notes
START/EPA	Monthly bailer (b) groundwater sampling for permanganate concentration	Bailer samples collected from locations: IP-55; IP-60; IP-53; IP-58; IP-15; IP-20; IP-75; IP-34B; IP-90; IP-95; IP-49B; IP-49; IP-113; IP-48; IP-43; IP-38; IP-33; IP-28; IP-25; IP-18; IP-13; IP-52B; IP-82B; MW-301; MW-1D; MW-3T-B. Plus second injection IP locations: IP-1; IP-2; IP-3; IP-6; IP-7; IP-12; IP-52; IP-53; IP-57; and IP-63.	9/18/03	Water levels also collected for all IP well locations and selected monitoring wells.
START/EPA ERRS	First injection grid groundwater re-circulation	Extraction locations: RW-1, MW-102, MW-104, MW-204, MW-205, and MW-207. Injection locations: IP-1, IP-15, IP-16, IP-20, IP-31, IP-37, IP-40, IP-89, IP-112.	10/6 - 10/15/03	Water levels and permanganate samples collected from selected IP and monitoring well locations and groundwater storage tank during re-circulation.
START/EPA	Comprehensive groundwater sampling for permanganate concentration	All injected well point locations and IP-34B; IP-49B; IP-52B; IP-82B; MW-101A; MW-301; MW-1D; and MW-3T-B.	10/21/03	Water levels also collected for all IP well locations.
START/EPA	Low-flow groundwater sampling for VOC analysis of injection wells and bedrock wells	Selected injection points (permanganate concentration $\leq$ 1%): IP-1; IP-2; IP-3; IP-4; IP-5; IP-6; IP-7; IP-8; IP-12; IP-17; IP-18; IP-52; IP-53; IP-54; IP-55; IP-57; IP-59; IP-60; IP-62; IP-63; IP-67; IP-68; and IP-69; and selected monitoring wells MW-1D; MW-3T; MW-3T-B; MW-29D; MW-30D; MW-31D; MW-31R; MW-32; MW-100M; MW-101A; MW-102; MW-104; MW-205; MW-207; MW-208; and SG-6; and surface water sample SW-4A.	11/17 - 1118//03	Groundwater samples field screened for VOCs by NERL Mobile Laboratory. Confirmation samples sent to NERL for VOC analysis.
START/EPA	Three well volume purge groundwater sampling for VOC analysis of eight MA DEP-installed steel drive point wells	IP-116 through IP-123	12/16/03	Groundwater samples delivered to NERL for VOC analysis.

Table E-1: Summary Table of Data Collected between July 2002 and March 2004 (Concluded)

Who	Method	Location(s)	Dates	Notes
START/EPA/ ERRS	Second injection grid groundwater re-circulation	Extraction locations: MW-104, IP-87, IP-89, and IP-99 Injection locations: IP-7, IP-116, IP-117, IP-118, IP-119, IP-120, IP-122, and IP-123.	12/18 - 12/23/03	Water levels and permanganate samples collected from selected IP and monitoring well locations during re-circulation.
START/EPA	Comprehensive groundwater sampling for permanganate concentration	All injected well point locations and IP-34B; IP-49B; IP-52B; IP-82B; MW-101A; MW-102; MW-104; MW-205; MW-207; MW-301; MW-1D; MW-3T; and MW-3T-B.	2/25/04	Water levels also collected for all IP well locations.
START/EPA	Low-flow groundwater sampling for VOC analysis of injection wells and bedrock wells	Selected injection points (permanganate concentration $\leq$ 1%): IP-1; IP-5; IP-6; IP-7; IP-9; IP-11; IP-12; IP-17; IP-18; IP-22; IP-25; IP-28; IP-29; IP-31; IP-32; IP-35; IP-39; IP-42; IP-44; IP-47; IP-49; IP-50; IP-57; IP-61; IP-63; IP-67; IP-73; IP-80; IP-82; IP-82B; IP-83; IP-84; IP-85; IP-88; IP-90; IP-92; IP-94; IP-95; IP-113; and IP-123; and selected monitoring wells MW-1D; MW-3T; MW-3T-B; MW-30D; MW-31D; MW-31R; MW-100D; MW-101A; MW-102; MW-104; MW-204; MW-205; and MW-207; and surface water samples SW-4A and SW-05.	3/15 - 3/16/04	Groundwater samples field screened for VOCs by NERL Mobile Laboratory. Confirmation samples sent to NERL for VOC analysis.

VOC = Volatile organic compound.
NERL = New England Regional Laboratory.
IP = Injection point.
TAL = Target Analyte List.
ERRS = Emergency Rapid Response Services.
GPS = Global positioning system.

APPENDIX F

Low-Flow Groundwater Sampling Water Quality Parameter Summary

Table F-1: Water Quality Parameters for Baseline Sampling (July to August 2002)

			YSI Readings							VOCs (mg/l)						Metals (mg/L)	
Monitoring Well (MW), Injection Point (IP), and Surface Water (SW) Location	Sample Date	Sample Time	Well Screen Interval (feet bgs)	Temperature (Celcius)	Specific Conductivity (uS)	pH	Oxidation Reduction Potential (ORP) (mV)	Dissolved Oxygen (%)	Turbidity (NTU)	Well Headspace (PID/FID)	Trichloroethylene (TCE)	cis-1,2-Dichloroethene (DCE)	Tetrachloroethene (PCE)	Bromodichloromethane	Vinyl chloride	Hexavalent Chromium	Chloride (mg/L)
MW-1D	7/23/2002	10:35	34.5-49.5	16.23	473	6.06	-32.5	8.8	3	0/>5000	0.014	0.13	ND	ND	0.008	ND	140
MW-3T-B	8/27/2002	11:10	61.5-71.5	16.36	405	6.68	14.3	2	9.53	7.6/465.2	0.43	0.19	ND	ND	0.017	ND	70
MW-29M	7/23/2002	11:30	35-45	15.42	412	5.92	-227.5	37.2	15	0/0	0.16	0.13	0.033	ND	ND	ND	120
MW-30D	8/16/2002	11:50	33-43	14.82	345	6.21	125.9	13.4	2	0/--	0.2	0.082	0.006	ND	0.004	ND	--
MW-31S	7/23/2002	11:03	3.5-13.5	14.74	457	2.15/5 paper	543.1	22.2	0.53	--/--	0.027	0.025	0.005	ND	ND	ND	160
MW-31D	7/23/2002	13:47	44-59	15.58	454	0.99/6 paper	403.3	17.6	0.44	--/--	0.02	0.02	ND	ND	ND	ND	140
MW-31R	7/23/2002	11:05	76-91	16.5	290	4.91	233.3	3.4	1.46	--/--	0.7	0.012	0.014	ND	ND	ND	40
MW-100S	7/23/2002	13:55	5-15	15.23	454	4.73	135.2	66.7	0.28	--/--	ND	ND	ND	ND	ND	ND	180
MW-100M	7/23/2002	14:00	18-28	13.16	430	2.9	247.1	85.7	4.5	--/--	ND	ND	ND	ND	ND	ND	200
MW-100D	7/23/2002	13:25	31.5-41.5	16.78	450	4.86	525.7	99.5	0.5	--/--	ND	ND	ND	ND	ND	ND	200
MW-101A	7/22/2002	12:30	40.5-50.5	26.57	461	10.06	20.2	41.7	0.5	--/64	270	ND	ND	ND	ND	ND	120
MW-102	8/16/2002	11:00	35-45	14.91	599	4.99	509.6	3.1	0.9	4.4/1.8	0.2	0.11	0.005	ND	ND	ND	--
MW-104	7/22/2002	13:42	22-32	13.46	598	4.19	269.1	4.6	0.84	--/--	0.73	0.26	0.027	ND	0.01	ND	140
MW-201C	7/22/2002	11:55	25-35	13.43	630	4.27	134.6	3.5	0.54	--/0	0.11	0.22	0.0028	ND	ND	ND	140
MW-204	7/22/2002	15:30	28-32.5	15.09	669	4.2	-53	4.8	10	--/11.9	2.1	1.4	0.14	ND	0.14	ND	140
MW-206	7/24/2002	10:35	37-42	12.97	487	6.88	130.8	24	1.16	--/--	3.2	0.72	0.11	ND	0.005	ND	120
MW-301	7/22/2002	15:05	24-34	15.13	687	5.84	-253.2	9.8	3.78	--/--	0.039	0.023	0.011	ND	0.002	ND	240
PSW-15	7/22/2002	11:45	40-45	15.14	484	6.4	-192.8	7.9	2.4	--/--	2.5	0.15	0.16	ND	0.011	ND	120
IP-1	8/20/2002	11:30	29-39	14.63	574	6.02	-111.6	3.5	7.6	12.6/0	0.02	0.2	ND	ND	0.03	NA	120
IP-2***	8/7/2002	15:30	36-46	14.44	749	6.08	-327.2	3.6	13.2	0/1.4	ND	0.4	ND	ND	NA	NA	100
IP-3***	8/7/2002	15:05	37-47	14.69	489	6.44	-421	3.1	24	1.1/3.5	ND	0.34	ND	ND	NA	NA	100
IP-4***	8/8/2002	14:33	37-47	15.59	1007	5.84	37.2	42.5	1.14	1.0/22..2	ND	0.24	ND	ND	NA	NA	120
IP-5	8/8/2002	10:57	36-46	14.35	536	5.84	-392	3.3	0.91	0/5.1	0.16	0.11	ND	ND	ND	NA	120
IP-6	8/20/2002	12:35	22-32	14.33	489	6.28	-36.3	60.2	0.68	15.9/72.1	0.25	0.42	ND	ND	0.29	NA	100
IP-7	8/12/2002	12:08	27-37	14.91	1126	3.54	28	23.3	3.64	0/5.2	0.68	0.3	ND	ND	0.08	NA	120
IP-8***	8/9/2002	13:52	34.5-44.5	15.38	579	6.29	-76.5	7.9	36.3	0.7/25.1	ND	0.22	ND	ND	NA	NA	100
IP-9***	8/9/2002	10:53	38-48	14.24	610	5.97	-249.9	4.9	23.3	0/19.4	0.11	0.38	ND	ND	NA	NA	100
IP-10***	8/8/2002	11:01	36.5-46.5	14.41	541	5.8	-48.7	18.1	6.77	1.4/0	0.01	0.11	ND	ND	NA	NA	120
IP-11	8/15/2002	11:20	19.5-29.5	15.54	512	6.58	-431.1	2.1	9.41	0/0	2.5	0.57	0.04	ND	ND	NA	120
IP-12	8/20/2002	14:45	23-33	14.37	742	6.1	-29.4	3.9	0.08	8/7.3	0.15	0.45	0.03	ND	0.11	NA	120
IP-13	8/7/2002	11:30	25-35	15	410	6.08	-499.1	3	11.1	0/5.7	0.26	0.14	ND	ND	ND	NA	120
IP-14	8/7/2002	11:07	25-35	15.06	554	6.1	-416.5	2.5	2.5	0/5.4	0.46	0.15	ND	ND	ND	NA	100
IP-15	8/1/2002	13:50	29-39	16.23	597	4.24	-26.5	2.6	50	0/26.3	2.2	0.20**	ND	ND	ND	NA	100
IP-16*	8/2/2002	15:30	22-32	16.62	576	5.87	21	7.2	24.1	0/0	1.5	0.61**	ND	ND	ND	NA	100
IP-17	8/15/2002	10:57	23.5-33.5	17.76	585	4.63	-38.8	4.6	3.77	0/0	3.1	0.61	0.52	ND	ND	NA	100
IP-18	8/15/2002	10:46	24-35	15.08	479	5.45	-307.3	3.2	3.84	2.1/0	0.21	0.23	ND	ND	ND	NA	120
IP-19	8/15/2002	12:06	24-34	15.97	524	5.4	-193.7	3.6	5	7.0/0	0.3	0.2	ND	ND	ND	NA	120
IP-20	8/1/2002	11:48	29-39	15.16	524	6.01	-255.3	7.9	9.2	0/116.5	1.1	0.22**	ND	ND	ND	NA	120
IP-21	8/20/2002	15:20	26-36	15.79	432	6.3	-218.9	34	5	0.7/0	21	1.3	1.2	ND	ND	NA	120
IP-22	8/14/2002	15:15	27-37	19.19	464	4.51/6 paper	-36601	7.2	5.7	0/19.5	4.3	0.25	0.09	ND	ND	NA	100
IP-23	8/15/2002	13:05	31-41	18.57	488	5.69	-207.1	5	7.01	0/0	0.21	0.09	ND	ND	ND	NA	100
IP-24	8/15/2002	15:20	25-35	17.09	490	5.93	-246.6	3.3	210	0/4.4	0.35	0.09	ND	ND	ND	NA	120
IP-25	8/1/2002	12:54	29.5-39.5	14.7	421	4.69	-180.3	3.4	2.79	0/0	1.4	0.16**	ND	ND	ND	NA	120
IP-26	8/6/2002	11:12	24-34	14.92	676	6.47	-260.1	6	2.22	16.7/35.3	3.1	0.19	ND	ND	ND	NA	120

Monitoring Well (MW), Injection Point (IP), and Surface Water (SW) Location	Sample Date	Sample Time	Well Screen Interval (feet bgs)	Temperature (Celcius)	Specific Conductivity (uS)	pH	Oxidation Reduction Potential (ORP) (mV)	Dissolved Oxygen (%)	Turbidity (NTU)	Well Headspace (PID/FID)	Trichloroethylene (TCE)	cis-1,2-Dichloroethene (DCE)	Tetrachloroethene (PCE)	Bromodichloromethane	Vinyl chloride	Hexavalent Chromium	Chloride (mg/L)
IP-27	8/6/2002	11:50	27.5-37.5	14.82	465	6.78	-244.4	10	3.99	0/0.9	4.7	0.18	0.11	0.15	ND	NA	100
IP-28	8/6/2002	11:40	27.5-37.5	16.93	545	6.63	-220.9	18.5	5.4	0/1.4	0.04	0.08	ND	ND	ND	NA	100
IP-29	8/15/2002	14:30	25-35	16.46	417	5.89	-283.6	6.5	1.82	0/5	1.4	0.17	ND	ND	ND	NA	120
IP-30	8/1/2002	12:45	31.5-41.5	15.37	432	6.32	-362.5	3.3	0.25	0/13.3	9.2	0.24**	ND	ND	ND	NA	100
IP-31	8/1/2002	16:52	26-36	13.88	546	3.87	-158	4.2	0.19	0/0	4.3	0.17**	ND	ND	ND	NA	120
IP-32*	8/2/2002	15:15	28.5-38.5	14.38	487	5.75	-140.2	4.2	15	0/0	3.9	0.23**	ND	ND	ND	NA	120
IP-33	8/5/2002	13:55	22-32	15.68	886	5.78	-225.3	4.3	1.62	1.5/3.8	0.05	0.08**	ND	ND	ND	NA	120
IP-34	8/8/2002	16:26	29.5-39.5	15.58	472	6.95	-541.7	2.3	87	0.6/1.9	3.7	0.17	0.11	ND	ND	NA	120
IP-34B	8/26/2002	14:10	53-63	17.91	407	6.4	110.6	16	10.66	93.2/48	22	0.28	0.33	ND	ND	NA	70
IP-35	8/2/2002	11:35	29.5-39.5	15.99	379	5.73	-326.9	4.2	28	0/3.9	3.5	0.16**	ND	ND	ND	NA	100
IP-36	8/9/2002	12:22	37-47	15.06	423	5.5	-389.7	10	9.81	0/6.2	4.2	0.44	0.1	0.09	ND	NA	120
IP-37	8/12/2002	15:40	37-47	15.13	407	3.28	-353.8	3.6	7.56	9.7/0	3.8	0.2	ND	ND	ND	NA	120
IP-38	8/14/2002	11:30	37.5-47.5	16.8	594	5.31	-322.4	4.4	9.92	0/0	2.1	ND	ND	ND	ND	NA	140
IP-39	8/14/2002	11:35	32.5-42.5	16.34	432	5.59	-344.3	129.3	11.9	0/8.2	1.6	ND	ND	ND	ND	NA	120
IP-40	8/2/2002	12:08	35-45	15.98	424	5.96	-203.7	10.8	13	0/3	4.3	0.17**	ND	ND	ND	NA	100
IP-41	8/12/2002	11:22	33-43	14.95	383	4.85	-290.8	3.2	259	0.6/15	2.8	0.14	ND	ND	ND	NA	120
IP-42	8/13/2002	11:30	32.5-42.5	16.38	511	3.9	-323	4.7	4.24	>2000/>200	6.9	0.23	ND	ND	ND	NA	120
IP-43	8/13/2002	12:23	31-41	14.87	470	3.99	-272.1	3.6	63.7	2.9/7.8	0.28	0.06	ND	ND	ND	NA	120
IP-44	8/14/2002	11:30	31-41	16.34	406	3.6/6 paper	-328.8	10.3	10.23	0/8.4	8.1	ND	ND	ND	ND	NA	120
IP-45	8/2/2002	12:08	28.5-38.5	16.42	403	6.12	-513.4	3	23.5	0/16.7	0.27	0.10**	ND	ND	ND	NA	120
IP-46	8/7/2002	11:55	31-41	14.1	612	6.31	-148.9	6.3	1.96	0/6.1	0.36	0.06	ND	ND	ND	NA	120
IP-47	8/12/2002	15:44	31-41	14.58	348	4.23	-342.1	3.1	9.02	0.4/4.2	1.3	0.11	0.03	ND	ND	NA	120
IP-48	8/13/2002	14:45	28-38	16.31	870	5.16	-276.5	5.8	8.66	0/34.2	0.56	0.08	ND	ND	ND	NA	160
IP-49	8/8/2002	13:51	31-41	13.91	423	6.77	-316.2	6.6	2.92	1.1/0	6	0.2	0.18	ND	ND	NA	120
IP-49B	8/27/2002	11:05	52-62	20.71	412	6.64	102.6	54.2	33	19.4/8.9	9.1	0.12	0.12	ND	ND	NA	70
IP-50	8/14/2002	12:00	33.5-43.5	14.8	453	6.57	-432.2	5	29.3	0.3/8.2	1.8	ND	ND	ND	ND	NA	120
IP-51 (not installed)																	
IP-52	8/20/2002	12:45	30-40	14.86	636	6.19	-118.9	13.6	7.8	0/0	ND	0.16	ND	ND	0.06	NA	120
IP-52B	8/26/2002	11:40	44-54	19.17	539	6.64	92.7	25.6	8.1	0/24.1	0.02	0.19	ND	ND	0.03	NA	75
IP-53***	8/8/2002	11:55	32.5-42.5	15.15	764	6.13	-172.7	22.4	1.63	0.8/3.7	ND	0.5	ND	ND	NA	NA	100
IP-54***	8/9/2002	10:15	36-46	13.98	581	5.41	-19.7	31.2	1.43	0.7/21.5	ND	0.27	ND	ND	NA	NA	80
IP-55***	8/8/2002	11:02	38-48	14.16	488	6.04	-242.9	3.5	4.61	0/5.2	0.02	0.35	ND	ND	NA	NA	100
IP-56 (not installed)																	
IP-57	8/20/2002	12:35	24-34	14.28	780	6.2	-190.7	3	270	357/172.2	3.7	0.32	6	ND	0.17	NA	100
IP-58	8/12/2002	11:39	35-45	14.88	542	4.93	-226.9	2.9	2.35	12.4/27.9	0.1	0.41	ND	ND	0.05	NA	120
IP-59***	8/9/2002	11:42	40-50	14.8	599	5.9	-232.7	3.7	13.2	1.1/7.3	0.04	0.31	ND	ND	NA	NA	100
IP-60***	8/9/2002	11:52	36-46	14.38	817	6.2	-9	8.3	9.61	0/4.5	0.05	0.19	ND	ND	NA	NA	100
IP-61	8/20/2002	14:50	24.5-35.5	14.73	454	6.55	-275.6	2.6	17	0/15.4	9.4	3.4	ND	ND	0.14	NA	120
IP-62	8/15/2002	10:21	26-36	15.04	605	5.09	-2.8	4.5	4.7	11.3/0	0.34	0.47	ND	ND	ND	NA	120
IP-63	8/12/2002	16:17	22.5-32.5	14.92	926	4.16	-131.6	26.8	3.48	4.9/11	21	2.3	4.1	ND	ND	NA	120
IP-64	8/20/2002	14:47	27.5-37.5	14.2	415	6.95	-398.4	65.9	14.6	0.7/0	0.28	0.4	ND	ND	ND	NA	120
IP-65	8/5/2002	12:06	31-41	15.32	611	5.05	13	25.7	2.97	1.3/8.6	0.26	0.24**	ND	ND	ND	NA	120
IP-66 (not installed)																	
IP-67	8/15/2002	11:00	20-30	17.61	617	6.87	-361.6	5	33.8	4.3/-	2	0.45	0.2	ND	ND	NA	120
IP-68	8/15/2002	10:45	27-37	17.47	1208	6.83	-171.7	3.6	2.15	0/0	0.15	0.21	ND	ND	ND	NA	120
IP-69	8/15/2002	11:20	24-34	15.8	532	6.44	-318.1	4.6	1.33	0/0.2	0.34	0.21	ND	ND	ND	NA	100
IP-70	8/5/2002	12:35	25-35	15.96	567	5.54	-201.3	5.2	13	0/6.3	0.43	0.19**	ND	ND	ND	NA	100
IP-71 (not installed)																	
IP-72	8/14/2002	15:10	26-36	17.53	988	4.79	-82.3	6.5	1.91	0/18	2.5	0.27	0.08	ND	ND	NA	120

Monitoring Well (MW), Injection Point (IP), and Surface Water (SW) Location	Sample Date	Sample Time	Well Screen Interval (feet bgs)	Temperature (Celcius)	Specific Conductivity (uS)	pH	Oxidation Reduction Potential (ORP) (mV)	Dissolved Oxygen (%)	Turbidity (NTU)	Well Headspace (PID/FID)	Trichloroethylene (TCE)	cis-1,2-Dichloroethene (DCE)	Tetrachloroethene (PCE)	Bromodichloromethane	Vinyl chloride	Hexavalent Chromium	Chloride (mg/L)
IP-73	8/15/2002	13:20	30.5-40.5	18.25	466	7.25	-424.2	4.1	1.18	0/0	5.7	0.27	0.16	ND	ND	NA	140
IP-74	8/15/2002	15:00	29-39	19.55	996	6.77	-334.8	4.5	9.01	0/0	0.17	0.03	ND	ND	ND	NA	140
IP-75	8/16/2002	10:52	29-39	18.19	453	5.48	-249.6	5.6	27.4	0/--	2.6	0.27	ND	ND	ND	NA	100
IP-76 (not installed)																	
IP-77	8/6/2002	14:07	24-34	16.27	555	6.58	-432	5.6	6.1	0/0	0.84	0.08	ND	ND	ND	NA	120
IP-78	8/6/2002	13:36	28.5-38.5	14.77	505	6.5	-174.8	14.4	4.28	0/3	0.83	0.14	ND	ND	ND	NA	120
IP-79	8/15/2002	15:23	24-34	15.63	418	5.48	-397.6	2.5	7.62	0/11	0.05	0.07	ND	ND	ND	NA	100
IP-80	8/15/2002	14:52	28.5-38.5	14.8	362	6.84	-467.9	1.8	6.08	0/0.1	8.9	0.27	ND	ND	ND	NA	100
IP-81	8/7/2002	11:00	26-36	14.92	580	6.5	-280.9	16.4	4.18	1.5/14.5	0.4	0.11	ND	ND	ND	NA	140
IP-82	8/2/2002	12:38	29-39	14.77	453	6.33	-335	8.1	28.3	1/2.8	10	0.23**	ND	ND	ND	NA	120
IP-82B	8/26/2002	11:06	43.5-53.5	16.74	414	6.19	328.9	34.9	6.92	142/110.2	17	0.33	0.21	ND	ND	NA	90
IP-83	8/2/2002	15:10	29-39	15.39	464	5.56	-512.4	3.7	26.1	0.4/0	3	0.15**	ND	ND	ND	NA	120
IP-84	8/6/2002	11:40	24-34	13.92	632	6.84	-302.8	2.6	4.61	0/0.9	1.1	0.06	ND	ND	ND	NA	100
IP-85	8/16/2002	11:28	31-41	17.46	421	5.09	-175.8	3.8	3.73	4.8/4.8	4.4	0.18	ND	ND	ND	NA	120
IP-86 (not installed)																	
IP-87	8/12/2002	12:07	35-45	15.34	423	4.65	-205.1	3.7	8.07	5.3/18.9	0.68	0.16	ND	ND	ND	NA	120
IP-88	8/13/2002	11:57	35-45	14.76	499	4.58	-379.8	3.2	1.98	1.6/11.4	6.3	0.16	ND	ND	ND	NA	120
IP-89	8/14/2002	11:15	36.5-46.5	15.75	506	5.25	-370.3	3.8	5.9	2.6/10.4	6.7	ND	ND	ND	ND	NA	120
IP-90	8/14/2002	14:33	32.5-42.5	16.27	454	4.55	-310.1	3.3	7.1	0/26.8	2.9	ND	ND	ND	ND	NA	120
IP-91	8/9/2002	15:11	28-38	14.33	916	6	-136.5	6	8.38	0.4/10	0.22	0.07	ND	ND	ND	NA	120
IP-92	8/12/2002	14:37	32-42	15.84	380	4.36	-380.1	2.9	0.36	1.1/18.5	3.2	0.15	ND	ND	ND	NA	120
IP-93	8/13/2002	15:45	35-45	16.77	497	3.09/6 paper	-252	4	3.64	0/35	0.29	0.09	ND	ND	ND	NA	100
IP-94	8/13/2002	14:47	30-40	15.25	484	4.85	-269.1	3.2	6.56	0/18	6.4	0.12	0.1	ND	ND	NA	100
IP-95	8/16/2002	11:20	33.5-43.5	17.15	437	6.55	-307.5	11.5	4.85	0/4.7	8.6	0.21	ND	ND	ND	NA	120
IP-96 (not installed)																	
IP-97	8/9/2002	14:27	32.5-42.5	16.75	411	6.52	-412.9	4.8	26.3	0/0	0.74	0.06	0.02	ND	ND	NA	120
IP-98	8/7/2002	16:15	30-40	14.48	415	5.7	-350.1	3.4	5.89	0/0	0.08	0.04	ND	ND	ND	NA	100
IP-99	8/14/2002	11:53	32.5-42.5	14.37	435	4.82	-333.8	2.5	0.93	2.1/9.1	6.5	0.22	ND	ND	ND	NA	120
IP-100	8/8/2002	16:18	31.5-41.5	16.51	355	6.24	-379.2	4.2	43.4	--/--	4.4	0.11	0.11	0.15	ND	NA	100
IP-110	8/16/2002	12:42	32-42	18.53	411	5.68	-238.3	13.9	12.4	1.2/--	1.6	ND	ND	ND	ND	NA	120
IP-111**	8/16/2002	11:50	34-44	--	264	5.42	-363.6	2.8	3.52	0.5/2.4	1.9	ND	ND	ND	ND	NA	120
IP-112	8/23/2002	11:25	27-37	15.32	483	6.96	-187	14.9	5.09	0/0	0.02	ND	ND	ND	ND	NA	100
IP-113	8/16/2002	10:56	29.5-39.5	14.38	391	6.84	-400.9	3.2	6.19	0/0.9	4.2	ND	ND	ND	ND	NA	120
IP-114	8/21/2002	14:50	25-34	15.79	1284	7	-273.8	5	3.23	0/27.9	0.63	0.12	ND	ND	ND	NA	140
IP-115	8/21/2002	11:05	30.5-40.5	16	584	6.36	-272.1	13.5	9.8	3.4/102.8	0.35	0.27	ND	ND	ND	NA	120
SW-101	7/24/2002	11:30	N/A	20.03	402.6	8.13	--	--	--	--	0.005	0.027	ND	ND	ND	NA	140
SW-102 (rep SW-103)	7/24/2002	11:35	N/A	26.4	435.1	7.66	--	--	--	--	ND	ND	ND	ND	ND	NA	160
SW-103	7/24/2002	11:35	N/A	26.4	435.1	7.66	--	--	--	--	ND	ND	ND	ND	ND	NA	160
* Collected sample due to impending thunderstorm w/lightning																	
** YSI malfunction; 3-well volumes purged																	
*** Sample also contains vinyl chloride but its concentration is not available because it is not a target analyte at the time of analysis.																	
"--" = Data not available or collected																	
ND = Non-detect																	
NA = Not analzyed																	

Table F-2: Water Quality Parameters for Second Baseline Sampling (11-13 November 2002)

			YSI Readings							VOCs (ug/l)					Metals (mg/l)	
Monitoring Well (MW), Injection Point (IP), and Surface Water (SW) Location	Sample Date	Sample Time	Well Screen Interval (feet bgs)	Temperature (Celcius)	Specific Conductivity (uS)	pH	Oxidation Reduction Potential (ORP) (mV)	Dissolved Oxygen (%)	Turbidity (NTU)	Well Headspace (PID/FID)	Trichloroethylene (TCE)	cis-1,2-Dichloroethene (DCE)	Tetrachloroethene (PCE)	Vinyl chloride	Hexavalent Chromium	Chloride (mg/L)
MW-1D	11/11/2002	14:08	34.5-49.5	13.2	738	6.05	-116.8	16.8	1.4	0/0	15	650	ND	120	ND	100
MW-3T-B	11/12/2002	11:50	61.5-71.5	--	--	--	--	--	--	--	ND	680	ND	40	--	80
MW-29M	11/11/2002	13:15	35-45	13.7	409	6.11	179.2	2.9	9.2	0/--	460	150	23	ND	ND	100
MW-30D	11/11/2002	13:35	33-43	13.86	427	6.18	82.3	1.7	1.1	0/0	370	65	5.3	5.1	ND	100
MW-31S	11/11/2002	10:59	3.5-13.5	14.88	514	6.03	64.1	1.4	2.5	0/0	18	22	3.7	ND	ND	140
MW-31D	11/11/2002	11:00	44-59	14.8	429	5.78	90.4	2.9	6.61	0/0	96	74	10	2.1	ND	120
MW-31R	11/11/2002	11:20	76-91	13.3	234	8.06	-20	3.2	1.2	0/--	680	ND	12	ND	ND	80
MW-100S	11/11/2002	11:55	5-15	14.8	380	6.01	-2	7.9	15.8	0/0	3.3	4.5	ND	ND	ND	100
MW-100M	11/11/2002	10:48	18-28	14.18	386	5.52	327.4	46.4	0.84	0/0	2.9	1.6	ND	ND	ND	120
MW-100D	11/11/2002	10:40	31.5-41.5	12.78	347	5.38	339.5	58.5	0	0/0	5.2	3.1	ND	ND	ND	120
MW-101A	11/12/2002	11:25	40.5-50.5	--	--	--	--	--	--	--	76000	ND	ND	ND	ND	--
MW-102	11/11/2002	14:17	35-45	13.31	414	6.24	145.5	5	1.09	0/0	260	110	5.1	ND	ND	120
MW-202	11/12/2002	11:30	10-17	--	--	--	--	--	--	--	110	110	ND	ND	--	80
MW-204	11/12/2002	11:50	28-32.5	--	--	--	--	--	--	--	ND	ND	ND	ND	ND	--
MW-206	11/12/2002	11:30	37-42	--	--	--	--	--	--	--	ND	ND	ND	ND	--	--
MW-208	11/13/2002	13:20	35-45	--	--	--	--	--	--	--	ND	110	ND	18	--	120
MW-301	11/12/2002	9:55	24-34	--	--	--	--	--	--	--	25	7.8	4	ND	ND	100
PSW-15	11/12/2002	11:28	40-45	--	--	--	--	--	--	--	ND	ND	ND	ND	ND	--
IP-1	11/12/2002	9:47	29-39	--	--	--	--	--	--	--	ND	360	ND	130	NA	120
IP-2	11/12/2002	11:07	36-46	--	--	--	--	--	--	--	ND	14	ND	ND	NA	--
IP-3	11/12/2002	14:48	37-47	--	--	--	--	--	--	--	ND	730	ND	360	NA	100
IP-4	11/13/2002	11:58	37-47	--	--	--	--	--	--	--	ND	7.9	ND	13	NA	100
IP-5	11/13/2002	9:59	36-46	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-6	11/13/2002	11:45	22-32	--	--	--	--	--	--	--	ND	400	ND	300	NA	100
IP-7	11/13/2002	13:45	27-37	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-8	11/13/2002	11:48	34.5-44.5	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-10	11/13/2002	10:00	36.5-46.5	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-12	11/12/2002	14:45	23-33	--	--	--	--	--	--	--	ND	1700	ND	280	NA	120
IP-13	11/13/2002	12:00	25-35	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-16	11/13/2002	13:16	22-32	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-19	11/13/2002	11:40	24-34	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-24	11/13/2002	10:30	25-35	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-34B	11/12/2002	14:50	53-63	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-45	11/13/2002	11:07	28.5-38.5	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-49B	11/12/2002	15:04	52-62	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-52	11/12/2002	13:40	30-40	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-53	11/12/2002	13:14	32.5-42.5	--	--	--	--	--	--	--	ND	330	ND	140	NA	100
IP-54	11/13/2002	11:45	36-46	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-57	11/13/2002	13:15	24-34	--	--	--	--	--	--	--	980	2300	ND	530	NA	100
IP-60	11/13/2002	10:25	36-46	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-61	11/13/2002	10:10	24.5-35.5	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-62	11/12/2002	13:40	26-36	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-63	11/13/2002	12:07	22.5-32.5	--	--	--	--	--	--	--	81	650	ND	150	NA	100
IP-67	11/12/2002	14:10	20-30	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--

Monitoring Well (MW), Injection Point (IP), and Surface Water (SW) Location	Sample Date	Sample Time	Well Screen Interval (feet bgs)	Temperature (Celcius)	Specific Conductivity (uS)	pH	Oxidation Reduction Potential (ORP) (mV)	Dissolved Oxygen (%)	Turbidity (NTU)	Well Headspace (PID/FID)	Trichloroethylene (TCE)	cis-1,2-Dichloroethene (DCE)	Tetrachloroethene (PCE)	Vinyl chloride	Hexavalent Chromium	Chloride (mg/L)
IP-70	11/12/2002	14:41	25-35	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-82B	11/13/2002	10:15	43.5-53.5	--	--	--	--	--	--	--	15000	270	160	ND	NA	100
IP-110	11/12/2002	14:17	32-42	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-114	11/13/2002	10:17	25-34	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
IP-115	11/12/2002	13:25	30.5-40.5	--	--	--	--	--	--	--	ND	ND	ND	ND	NA	--
SW-101	11/11/2002	9:50	N/A	14.6	519	6	--	--	--	--	3.1	12	ND	ND	ND	120
SW-102 (rep SW-101)	11/11/2002	9:50	N/A	14.6	519	6	--	--	--	--	3	12	ND	ND	ND	120
SW-103	11/11/2002	10:25	N/A	14.7	535	6.05	--	--	--	--	1.1	1.7	ND	ND	ND	120
ND = Non-detect																
NA = Not analyzed																
-- Data not collected and water quality data not collected due to permanganate in groundwater.																

APPENDIX G

EPA ERT/REAC Baseline VOC Field Screening Results, July 2002 to August 2002
(from September 2002 Report) and Figures G-1 and G-2

TABLE 1
Field Screening Results
Fisherville Mill
South Grafton, Massachusetts
September 2002

Sample ID	Trichloroethene (TCE)	cis-1,2-Dichloroethene (DCE)	Tetrachloroethene (PCE)	Bromodichloro-methane	Vinyl chloride
IP-1	0.02	0.20	ND	ND	0.03
IP-2**	ND	0.40	ND	ND	ND
IP-3**	ND	0.34	ND	ND	ND
IP-4**	ND	0.24	ND	ND	NA
IP-5	0.16	0.11	ND	ND	ND
IP-6	0.25	0.42	ND	ND	0.29
IP-7	0.68	0.30	ND	ND	0.08
IP-8**	ND	0.22	ND	ND	NA
IP-9**	0.11	0.38	ND	ND	NA
IP-10**	0.01	0.11	ND	ND	NA
IP-11	2.5	0.57	0.04	ND	ND
IP-12	0.15	0.45	0.03	ND	0.11
IP-13	0.26	0.14	ND	ND	ND
IP-14	0.46	0.15	ND	ND	ND
IP-15	2.2	0.20*	ND	ND	ND
IP-16	1.5	0.61*	ND	ND	ND
IP-17	3.1	0.61	0.52	ND	ND
IP-18	0.21	0.23	ND	ND	ND
IP-19	0.30	0.20	ND	ND	ND
IP-20	1.1	0.22*	ND	ND	ND
IP-21	21	1.3	1.2	ND	ND
IP-22	4.3	0.25	0.09	ND	ND
IP-23	0.21	0.09	ND	ND	ND
IP-24	0.35	0.09	ND	ND	ND
IP-25	1.4	0.16*	ND	ND	ND
IP-26	3.1	0.19	ND	ND	ND
IP-27	4.7	0.18	0.11	0.15	ND
IP-28	0.04	0.08	ND	ND	ND
IP-29	1.4	0.17	ND	ND	ND
IP-30	9.2	0.24*	ND	ND	ND
IP-30A	7.2	0.27	ND	ND	ND
IP-30B	7.0	0.33	ND	ND	ND
IP-31	4.3	0.17*	ND	ND	ND
IP-32	3.9	0.23*	ND	ND	ND
IP-33	0.05	0.08*	ND	ND	ND
IP-34	3.7	0.17	0.11	ND	ND
IP-35	3.5	0.16*	ND	ND	ND
IP36	4.2	0.44	0.10	0.09	ND
IP-37	3.8	0.20	ND	ND	ND
IP-38	2.1	ND	ND	ND	ND
IP-39	1.6	ND	ND	ND	ND
IP-40	4.3	0.17*	ND	ND	ND
IP-41	2.8	0.14	ND	ND	ND
IP-42	6.9	0.23	ND	ND	ND
IP-43	0.28	0.06	ND	ND	ND
IP-44	8.1	ND	ND	ND	ND
IP-45	0.27	0.10*	ND	ND	ND
IP-46	0.36	0.06	ND	ND	ND
IP-47	1.3	0.11	0.03	ND	ND
IP-48	0.56	0.08	ND	ND	ND
IP-49	6.0	0.20	0.18	ND	ND
IP-50	1.8	ND	ND	ND	ND
IP-52	ND	0.16	ND	ND	0.06

No QC evaluation has been performed. Data validity is unsubstantiated and the data should be used with discretion.
All results given in ppm.

ND Not detected at the instrument detection limit (DL) of 0.01 ppm. Due to dilution used for calculating high concentration TCE, other analytes in the table at low concentrations, if any, could not be reported.

* Estimated concentration

** Sample also contains vinyl chloride but its concentration is not available (NA) because it was not a target analyte at the time of analysis.

TABLE 1 (cont.)
Field Screening Results
Fisherville Mill
South Grafton, Massachusetts
September 2002

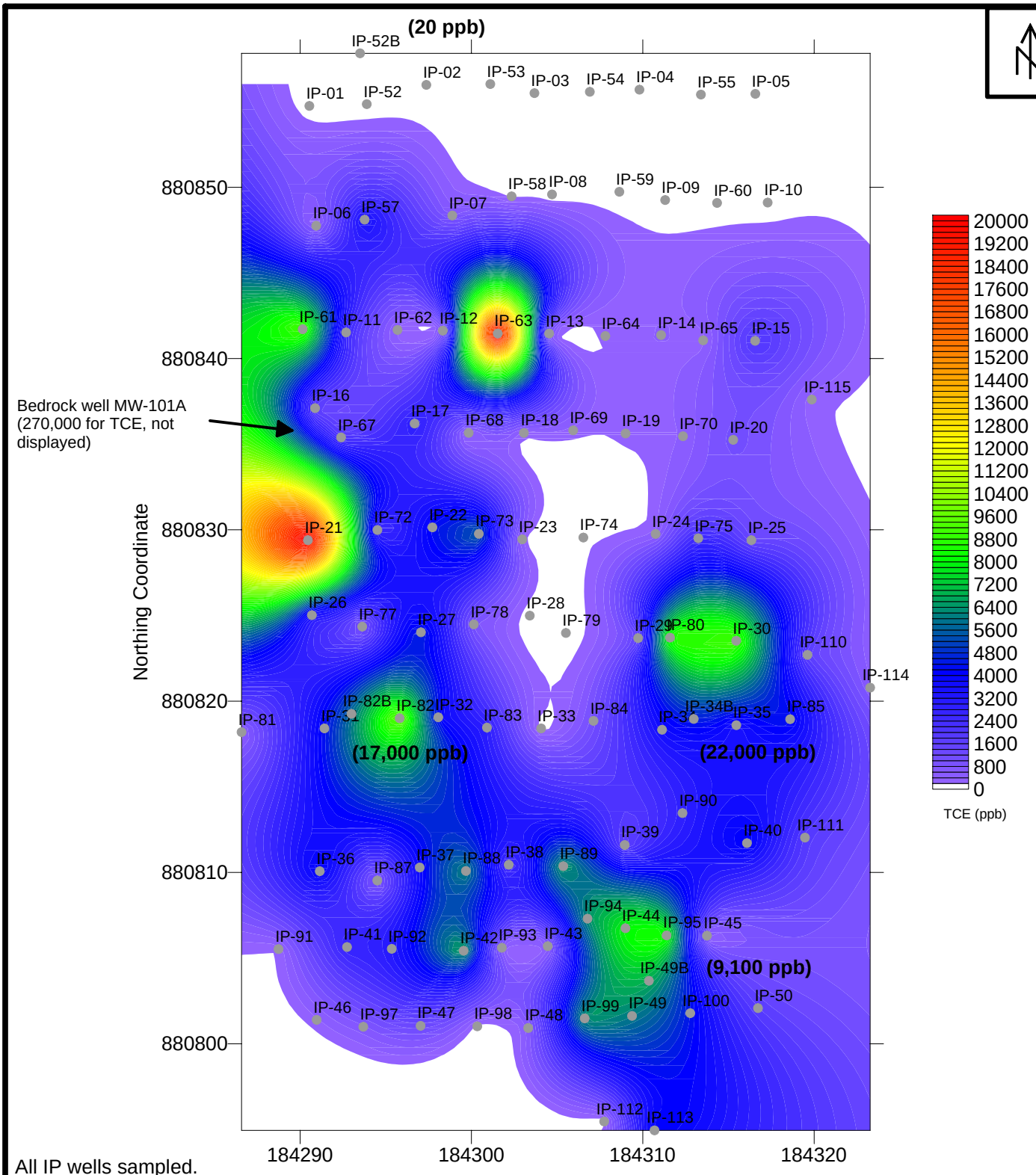
Sample ID	Trichloroethene (TCE)	cis-1,2-Dichloroethene (DCE)	Tetrachloroethene (PCE)	Bromodichloro-methane	Vinyl chloride
IP-52 B	0.02	0.19	ND	ND	0.03
IP-53**	ND	0.50	ND	ND	NA
IP-54**	ND	0.27	ND	ND	NA
IP-55**	0.02	0.35	ND	ND	NA
IP-57	3.7	0.32	6.0	ND	0.17
IP-58	0.10	0.41	ND	ND	0.05
IP-59**	0.04	0.31	ND	ND	NA
IP-60**	0.05	0.19	ND	ND	NA
IP-61	9.4	3.4	ND	ND	0.14
IP-62	0.34	0.47	ND	ND	ND
IP-63	21	2.3	4.1	ND	ND
IP-64	0.28	0.40	ND	ND	ND
IP-65	0.26	0.24*	ND	ND	ND
IP-67	2.0	0.45	0.20	ND	ND
IP-68	0.15	0.21	ND	ND	ND
IP-69	0.34	0.21	ND	ND	ND
IP-70	0.43	0.19*	ND	ND	ND
IP-72	2.5	0.27	0.08	ND	ND
IP-73	5.7	0.27	0.16	ND	ND
IP-74	0.17	0.03	ND	ND	ND
IP-75	2.6	0.27	ND	ND	ND
IP-77	0.84	0.08	ND	ND	ND
IP-78	0.83	0.14	ND	ND	ND
IP-79	0.05	0.07	ND	ND	ND
IP-80	8.9	0.27	ND	ND	ND
IP-81	0.40	0.11	ND	ND	ND
IP-82	10	0.23*	ND	ND	ND
IP-83	3.0	0.15*	ND	ND	ND
IP-84	1.1	0.06	ND	ND	ND
IP-84 DUP	1.0	0.06	ND	ND	ND
IP-85	4.4	0.18	ND	ND	ND
IP-87	0.68	0.16	ND	ND	ND
IP-88	6.3	0.16	ND	ND	ND
IP-89	6.7	ND	ND	ND	ND
IP-90	2.9	ND	ND	ND	ND
IP-91	0.22	0.07	ND	ND	ND
IP-92	3.2	0.15	ND	ND	ND
IP-93	0.29	0.09	ND	ND	ND
IP-94	6.4	0.12	0.10	ND	ND
IP-95	8.6	0.21	ND	ND	ND
IP-97	0.74	0.06	0.02	ND	ND
IP-98	0.08	0.04	ND	ND	ND
IP-99	6.5	0.22	ND	ND	ND
IP-100	4.4	0.11	0.11	0.15	ND
IP-110	1.6	ND	ND	ND	ND
IP-111	1.9	ND	ND	ND	ND
IP-112	0.02	ND	ND	ND	ND
IP-113	4.2	ND	ND	ND	ND
IP-114	0.63	0.12	ND	ND	ND
IP-115	0.35	0.27	ND	ND	ND
MW100D	ND	ND	ND	ND	ND
MW100M	ND	ND	ND	ND	ND
MW100S	ND	ND	ND	ND	ND
MW-31D	0.02	0.02	ND	ND	ND

No QC evaluation has been performed. Data validity is unsubstantiated and the data should be used with discretion.
All results given in ppm.

ND Not detected at the instrument detection limit (DL) of 0.01 ppm. Due to dilution used for calculating high concentration TCE, other analytes in the table at low concentrations, if any, could not be reported.

* Estimated concentration

** Sample also contains vinyl chloride but its concentration is not available (NA) because it was not a target analyte at the time of analysis.



All IP wells sampled.
Bedrock well (IP-xxB) results noted in parentheses.

[MA DEP MCP RCGW-1 Standard for TCE: 5 ppb]

BASELINE INJECTION POINT (IP) TCE CONCENTRATIONS CONTOUR MAP: JULY-AUGUST 2002 FISHERVILLE MILL GRAFTON, MASSACHUSETTS

TCE Concentration (parts per billion)

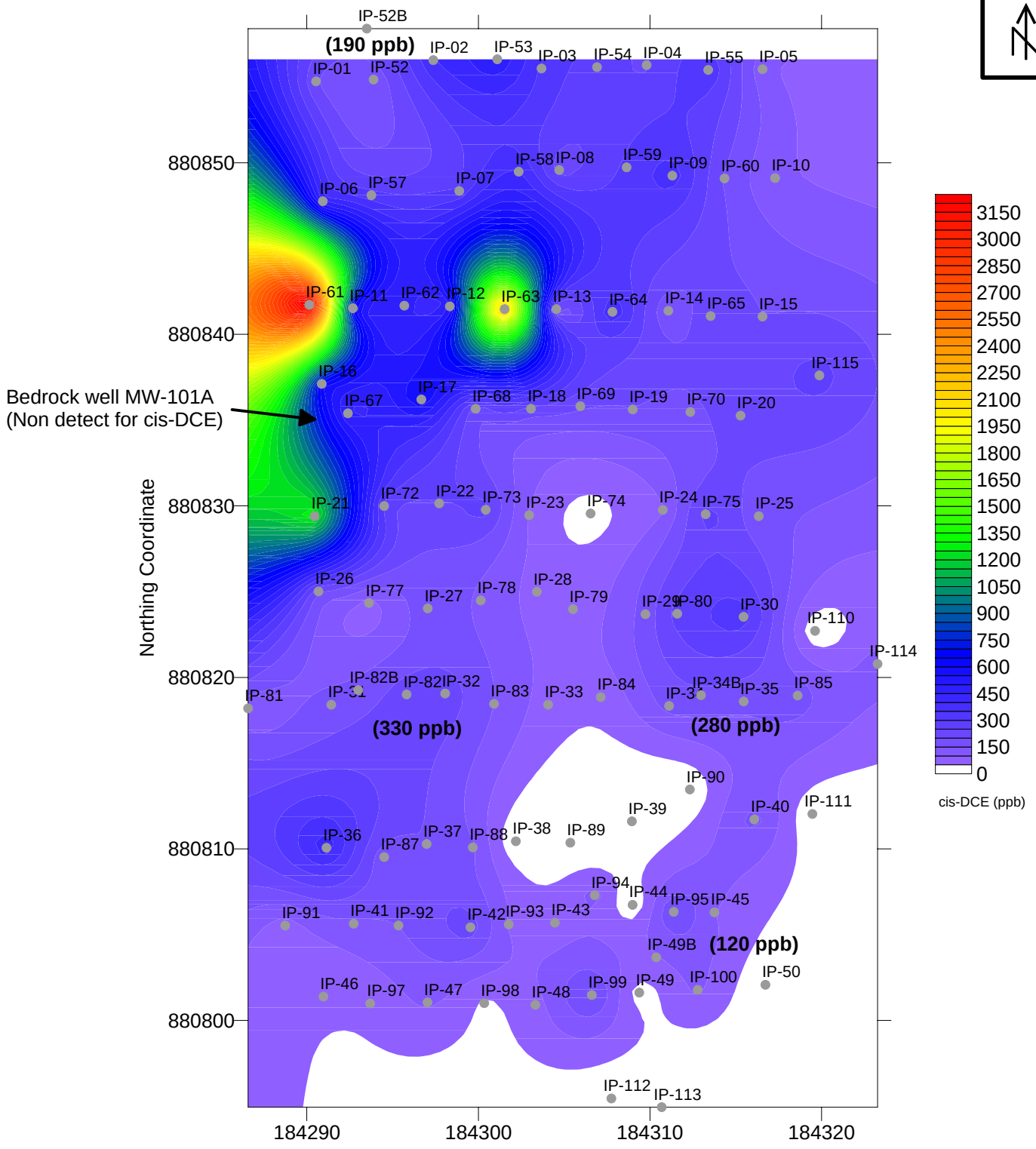
WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	03/05/2004

FILE NAME: R:03050181_FIGURES_SURFERFILES_TCEConc2D_Jul-Aug02

FIGURE G-1



All IP wells sampled.
Bedrock well (IP-xxB) results noted in parentheses.

[MA DEP MCP RCGW-1 Standard for cis-DCE: 70 ppb]

BASELINE INJECTION POINT (IP) cis-DCE CONCENTRATIONS CONTOUR MAP: JULY-AUGUST 2002 FISHERVILLE MILL GRAFTON, MASSACHUSETTS

cis-DCE Concentration (parts per billion)

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	03/05/2004

FILE NAME: R:03050181_FIGURES_SURFERFILES_DCEConc3D_Jul-Aug02

FIGURE G-2

APPENDIX H

NERL SVOC IP Baseline Analytical Results August 2002
(IP-1, IP-6, IP-52, IP-57, and IP-61)

EPA
Region 1, New England

United States Environmental Protection Agency
Office of Environmental Measurement & Evaluation
11 Technology Drive
North Chelmsford, MA 01863-2431

Laboratory Report

September 11, 2002

Mrs Janis Tsang - HBR
U.S. EPA New England
One Congress Street
Boston, MA 02114 -2023

Project Number: 02080041
Project: Fisherville Mill - Grafton, MA
Analysis: Semivolatile Organic Compounds by GC/MS
Analyst: Dan Boudreau DB 9/11/02

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, BNAWCLP1.SOP.

The SOP for this method is based on the US EPA Contract Laboratory Program, Statement of Work for Organic Analysis, Multi-Media, Multi-Concentration, Exhibit B, Analytical Methods for Semivolatiles, Revision OLM04.2, 1999.

The analysis was performed by ESAT contractors working at the EPA New England Laboratory.

Date Samples Received by the Laboratory: 8/20/02

If you have any questions please call me at 617-918-8333.

Sincerely,

WJA for A. Andrade 9/13/02

Dr. William J. Andrade
Advanced Analytical Chemistry Specialist

ualifiers: RL = Reporting limit
ND = Not Detected above Reporting limit
NA = Not Applicable due to high sample dilutions or sample interferences
NC = Not calculated since analyte concentration is ND.
J = Estimated value
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 5 times the concentration in the blank.
R = No recovery was calculated since the analyte concentration is greater than four times the spike level.

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Fisherville Mill - Grafton, MA

Semivolatile Organic Compounds by GC/MS

Client Sample ID:	IP-1	Lab Sample ID:	AA24794
Date of Collection:	8/20/02	Matrix	Water
Date of Extraction:	8/22/02	Volume Extracted:	1000 mL
Date of Analysis:	8/28/02	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	7

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
92-52-4	1,1'-Biphenyl	ND	10	
108-60-1	2,2'-oxybis(1-chloropropane)	ND	10	
95-95-4	2,4,5-Trichorophenol	ND	10	
88-06-2	2,4,6-Trichlorophenol	ND	10	
120-83-2	2,4-Dichlorophenol	ND	10	
51-28-5	2,4-Dinitrophenol	ND	10	
121-14-2	2,4-Dinitrotoluene	ND	10	
105-67-9	2,4-dimethylphenol	ND	10	
606-20-2	2,6-Dinitrotoluene	ND	10	
91-58-7	2-Chloronaphthalene	ND	10	
95-57-8	2-Chlorophenol	ND	10	
91-57-6	2-Methylnaphthalene	ND	10	
95-48-7	2-Methylphenol	ND	10	
88-74-4	2-Nitroaniline	ND	10	
88-75-5	2-Nitrophenol	ND	10	
91-94-1	3,3'-Dichlorobenzidine	ND	10	
99-09-2	3-Nitroaniline	ND	10	
534-52-1	4,6-Dinitro-2-methylphenol	ND	10	
101-55-3	4-Bromophenyl-phenylether	ND	10	
59-50-7	4-Chloro-3-methylphenol	ND	10	
106-47-8	4-Chloroaniline	ND	10	
7005-72-3	4-Chlorophenyl-phenylether	ND	10	
106-44-5	4-Methylphenol	ND	10	
100-01-6	4-Nitroaniline	ND	10	
100-02-7	4-Nitrophenol	ND	10	
83-32-9	Acenaphthene	ND	10	
208-96-8	Acenaphthylene	ND	10	
98-86-2	Acetophenone	ND	10	
120-12-7	Anthracene	ND	10	
1912-24-9	Atrazine	ND	10	
100-52-7	Benzaldehyde	ND	10	
56-55-3	Benzo(a)anthracene	ND	10	
50-32-8	Benzo(a)pyrene	ND	10	
205-99-2	Benzo(b)fluoranthene	ND	10	
191-24-2	Benzo(g,h.i)perylene	ND	10	
207-08-9	Benzo(k)fluoranthene	ND	10	
111-44-4	Bis(2-Chloroethyl)ether	ND	10	
117-81-7	Bis(2-ethylhexyl)phthalate	1.0	10	B,L
85-68-7	Butylbenzylphthalate	0.8	10	B,L
86-74-8	Carbazole	ND	10	
218-01-9	Chrysene	ND	10	
84-74-2	Di-n-buytylphthalate	ND	10	
117-84-0	Di-n-octyl phthalate	ND	10	

53-70-3	Dibenz(a,h)anthracene	ND	10
132-64-9	Dibenzofuran	ND	10
84-66-2	Diethylphthalate	ND	10
131-11-3	Dimethyl phthalate	ND	10
206-44-0	Fluoranthene	ND	10
86-73-7	Fluorene	ND	10
118-74-1	Hexachlorobenzene	ND	10
87-68-3	Hexachlorobutadiene	ND	10
77-47-4	Hexachlorocyclopentadiene	ND	10
67-72-1	Hexachloroethane	ND	10
193-39-5	Indeno(1,2,3-cd)pyrene	ND	10
78-59-1	Isophorone	ND	10
86-30-6	N-Nitrosodiphenylamine	ND	10
621-64-7	N-nitroso-di-n-propylamine	ND	10
91-20-3	Naphthalene	ND	10
98-95-3	Nitrobenzene	ND	10
87-86-5	Pentachlorophenol	ND	10
85-01-8	Phenanthrene	ND	10
108-95-2	Phenol	ND	10
129-00-0	Pyrene	ND	10
111-91-1	bis(-2-Chloroethoxy)methane	ND	10
105-60-2	e-Caprolactam	ND	10

Surrogate Compounds	Recoveries (%)	QC Ranges
2-Fluorophenol	54	21 - 110
Phenol-d5	60	10 - 110
2-Chlorophenol-d4	57	33 - 110
1,2-Dichlorobenzene-d4	43	16 - 110
Nitrobenzene-d5	58	35 - 114
2-Fluorobiphenyl	57	43 - 116
2,4,6-Tribromophenol	70	10 - 123
Terphenyl	54	33 - 141

mments: IP-1

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Fisherville Mill - Grafton, MA

Semivolatile Organic Compounds by GC/MS

Client Sample ID:	IP-57	Lab Sample ID:	AA24795
Date of Collection:	8/20/02	Matrix	Water
Date of Extraction:	8/22/02	Volume Extracted:	1000 mL
Date of Analysis:	8/28/02	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	7

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
92-52-4	1,1'-Biphenyl	**0.5**	10	L
108-60-1	2,2'-oxybis(1-chloropropane)	ND	10	
95-95-4	2,4,5-Trichorophenol	ND	10	
88-06-2	2,4,6-Trichlorophenol	ND	10	
120-83-2	2,4-Dichlorophenol	ND	10	
51-28-5	2,4-Dinitrophenol	ND	10	
121-14-2	2,4-Dinitrotoluene	ND	10	
105-67-9	2,4-dimethylphenol	ND	10	
606-20-2	2,6-Dinitrotoluene	ND	10	
91-58-7	2-Chloronaphthalene	ND	10	
95-57-8	2-Chlorophenol	ND	10	
91-57-6	2-Methylnaphthalene	**2.0**	10	L
95-48-7	2-Methylphenol	ND	10	
88-74-4	2-Nitroaniline	ND	10	
88-75-5	2-Nitrophenol	ND	10	
91-94-1	3,3'-Dichlorobenzidine	ND	10	
99-09-2	3-Nitroaniline	ND	10	
534-52-1	4,6-Dinitro-2-methylphenol	ND	10	
101-55-3	4-Bromophenyl-phenylether	ND	10	
59-50-7	4-Chloro-3-methylphenol	ND	10	
106-47-8	4-Chloroaniline	ND	10	
7005-72-3	4-Chlorophenyl-phenylether	ND	10	
106-44-5	4-Methylphenol	ND	10	
100-01-6	4-Nitroaniline	ND	10	
100-02-7	4-Nitrophenol	ND	10	
83-32-9	Acenaphthene	ND	10	
208-96-8	Acenaphthylene	ND	10	
98-86-2	Acetophenone	ND	10	
120-12-7	Anthracene	ND	10	
1912-24-9	Atrazine	ND	10	
100-52-7	Benzaldehyde	ND	10	
56-55-3	Benzo(a)anthracene	ND	10	
50-32-8	Benzo(a)pyrene	ND	10	
205-99-2	Benzo(b)fluoranthene	ND	10	
191-24-2	Benzo(g,h,i)perylene	ND	10	
207-08-9	Benzo(k)fluoranthene	ND	10	
111-44-4	Bis(2-Chloroethyl)ether	ND	10	
117-81-7	Bis(2-ethylhexyl)phthalate	**27**	10	B
85-68-7	Butylbenzylphthalate	**2.0**	10	B,L
86-74-8	Carbazole	ND	10	
218-01-9	Chrysene	ND	10	
84-74-2	Di-n-buytylphthalate	ND	10	
117-84-0	Di-n-octyl phthalate	ND	10	

53-70-3	Dibenz(a,h)anthracene	ND	10	
132-64-9	Dibenzofuran	ND	10	
84-66-2	Diethylphthalate	0.7	10	L
131-11-3	Dimethyl phthalate	ND	10	
206-44-0	Fluoranthene	ND	10	
86-73-7	Fluorene	ND	10	
118-74-1	Hexachlorobenzene	ND	10	
87-68-3	Hexachlorobutadiene	ND	10	
77-47-4	Hexachlorocyclopentadiene	ND	10	
67-72-1	Hexachloroethane	ND	10	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	10	
78-59-1	Isophorone	ND	10	
86-30-6	N-Nitrosodiphenylamine	ND	10	
621-64-7	N-nitroso-di-n-propylamine	ND	10	
91-20-3	Naphthalene	0.8	10	L
98-95-3	Nitrobenzene	ND	10	
87-86-5	Pentachlorophenol	ND	10	
85-01-8	Phenanthrene	ND	10	
108-95-2	Phenol	ND	10	
129-00-0	Pyrene	ND	10	
111-91-1	bis(-2-Chloroethoxy)methane	ND	10	
105-60-2	e-Caprolactam	ND	10	

Surrogate Compounds	Recoveries (%)	QC Ranges
2-Fluorophenol	61	21 - 110
Phenol-d5	65	10 - 110
2-Chlorophenol-d4	64	33 - 110
1,2-Dichlorobenzene-d4	60	16 - 110
Nitrobenzene-d5	64	35 - 114
2-Fluorobiphenyl	60	43 - 116
2,4,6-Tribromophenol	74	10 - 123
Terphenyl	40	33 - 141

Comments: Tentatively Identified non-Target Compounds

Dichlorobenzene isomer	82 ppb J
1-methyl Naphthalene	2.0 ppb J
Trpphenylphosphine oxide	3.0 ppb J

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Fisherville Mill - Grafton, MA

Semivolatile Organic Compounds by GC/MS

Client Sample ID:	IP-6	Lab Sample ID:	AA24796
Date of Collection:	8/20/02	Matrix	Water
Date of Extraction:	8/22/02	Volume Extracted:	1000 mL
Date of Analysis:	8/28/02	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	7

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
92-52-4	1,1'-Biphenyl	ND	10	
108-60-1	2,2'-oxybis(1-chloropropane)	ND	10	
95-95-4	2,4,5-Trichorophenol	ND	10	
88-06-2	2,4,6-Trichlorophenol	ND	10	
120-83-2	2,4-Dichlorophenol	ND	10	
51-28-5	2,4-Dinitrophenol	ND	10	
121-14-2	2,4-Dinitrotoluene	ND	10	
105-67-9	2,4-dimethylphenol	ND	10	
606-20-2	2,6-Dinitrotoluene	ND	10	
91-58-7	2-Chloronaphthalene	ND	10	
95-57-8	2-Chlorophenol	ND	10	
91-57-6	2-Methylnaphthalene	ND	10	
95-48-7	2-Methylphenol	ND	10	
88-74-4	2-Nitroaniline	ND	10	
88-75-5	2-Nitrophenol	ND	10	
91-94-1	3,3'-Dichlorobenzidine	ND	10	
99-09-2	3-Nitroaniline	ND	10	
534-52-1	4,6-Dinitro-2-methylphenol	ND	10	
101-55-3	4-Bromophenyl-phenylether	ND	10	
59-50-7	4-Chloro-3-methylphenol	ND	10	
106-47-8	4-Chloroaniline	ND	10	
7005-72-3	4-Chlorophenyl-phenylether	ND	10	
106-44-5	4-Methylphenol	ND	10	
100-01-6	4-Nitroaniline	ND	10	
100-02-7	4-Nitrophenol	ND	10	
83-32-9	Acenaphthene	ND	10	
208-96-8	Acenaphthylene	ND	10	
98-86-2	Acetophenone	ND	10	
120-12-7	Anthracene	ND	10	
1912-24-9	Atrazine	ND	10	
100-52-7	Benzaldehyde	ND	10	
56-55-3	Benzo(a)anthracene	ND	10	
50-32-8	Benzo(a)pyrene	ND	10	
205-99-2	Benzo(b)fluoranthene	ND	10	
191-24-2	Benzo(g,h.i)perylene	ND	10	
207-08-9	Benzo(k)fluoranthene	ND	10	
111-44-4	Bis(2-Chloroethyl)ether	ND	10	
117-81-7	Bis(2-ethylhexyl)phthalate	7.0	10	B,L
85-68-7	Butylbenzylphthalate	0.6	10	B,L
86-74-8	Carbazole	ND	10	
218-01-9	Chrysene	ND	10	
84-74-2	Di-n-buytylphthalate	0.3	10	L
117-84-0	Di-n-octyl phthalate	ND	10	

53-70-3	Dibenz(a,h)anthracene	ND	10	
132-64-9	Dibenzofuran	ND	10	
84-66-2	Diethylphthalate	ND	10	
131-11-3	Dimethyl phthalate	ND	10	
206-44-0	Fluoranthene	ND	10	
86-73-7	Fluorene	ND	10	
118-74-1	Hexachlorobenzene	ND	10	
87-68-3	Hexachlorobutadiene	ND	10	
77-47-4	Hexachlorocyclopentadiene	ND	10	
67-72-1	Hexachloroethane	ND	10	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	10	
78-59-1	Isophorone	ND	10	
86-30-6	N-Nitrosodiphenylamine	ND	10	
621-64-7	N-nitroso-di-n-propylamine	ND	10	
91-20-3	Naphthalene	ND	10	
98-95-3	Nitrobenzene	ND	10	
87-86-5	Pentachlorophenol	ND	10	
85-01-8	Phenanthrene	ND	10	
108-95-2	Phenol	ND	10	
129-00-0	Pyrene	ND	10	
111-91-1	bis(-2-Chloroethoxy)methane	ND	10	
105-60-2	e-Caprolactam	0.4	10	L

Surrogate Compounds	Recoveries (%)	QC Ranges
2-Fluorophenol	57	21 - 110
Phenol-d5	61	10 - 110
2-Chlorophenol-d4	60	33 - 110
1,2-Dichlorobenzene-d4	47	16 - 110
Nitrobenzene-d5	60	35 - 114
2-Fluorobiphenyl	61	43 - 116
2,4,6-Tribromophenol	71	10 - 123
Terphenyl	49	33 - 141

mments:

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Fisherville Mill - Grafton, MA

Semivolatile Organic Compounds by GC/MS

Client Sample ID:	IP-52	Lab Sample ID:	AA24797
Date of Collection:	8/20/02	Matrix	Water
Date of Extraction:	8/22/02	Volume Extracted:	910 mL
Date of Analysis:	8/28/02	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	7

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
92-52-4	1,1'-Biphenyl	ND	11	
108-60-1	2,2'-oxybis(1-chloropropane)	ND	11	
95-95-4	2,4,5-Trichorophenol	ND	11	
88-06-2	2,4,6-Trichlorophenol	ND	11	
120-83-2	2,4-Dichlorophenol	ND	11	
51-28-5	2,4-Dinitrophenol	ND	11	
121-14-2	2,4-Dinitrotoluene	ND	11	
105-67-9	2,4-dimethylphenol	ND	11	
606-20-2	2,6-Dinitrotoluene	ND	11	
91-58-7	2-Chloronaphthalene	ND	11	
95-57-8	2-Chlorophenol	ND	11	
91-57-6	2-Methylnaphthalene	ND	11	
95-48-7	2-Methylphenol	ND	11	
88-74-4	2-Nitroaniline	ND	11	
88-75-5	2-Nitrophenol	ND	11	
91-94-1	3,3'-Dichlorobenzidine	ND	11	
99-09-2	3-Nitroaniline	ND	11	
534-52-1	4,6-Dinitro-2-methylphenol	ND	11	
101-55-3	4-Bromophenyl-phenylether	ND	11	
59-50-7	4-Chloro-3-methylphenol	ND	11	
106-47-8	4-Chloroaniline	ND	11	
7005-72-3	4-Chlorophenyl-phenylether	ND	11	
106-44-5	4-Methylphenol	ND	11	
100-01-6	4-Nitroaniline	ND	11	
100-02-7	4-Nitrophenol	ND	11	
83-32-9	Acenaphthene	ND	11	
208-96-8	Acenaphthylene	ND	11	
98-86-2	Acetophenone	ND	11	
120-12-7	Anthracene	ND	11	
1912-24-9	Atrazine	ND	11	
100-52-7	Benzaldehyde	ND	11	
56-55-3	Benzo(a)anthracene	ND	11	
50-32-8	Benzo(a)pyrene	ND	11	
205-99-2	Benzo(b)fluoranthene	ND	11	
191-24-2	Benzo(g,h,i)perylene	ND	11	
207-08-9	Benzo(k)fluoranthene	ND	11	
111-44-4	Bis(2-Chloroethyl)ether	ND	11	
117-81-7	Bis(2-ethylhexyl)phthalate	1.0	11	B,L
85-68-7	Butylbenzylphthalate	1.0	11	B,L
86-74-8	Carbazole	ND	11	
218-01-9	Chrysene	ND	11	
84-74-2	Di-n-buytylphthalate	ND	11	
117-84-0	Di-n-octyl phthalate	ND	11	

53-70-3	Dibenz(a,h)anthracene	ND	11	
132-64-9	Dibenzofuran	ND	11	
84-66-2	Diethylphthalate	3.6	11	L
131-11-3	Dimethyl phthalate	ND	11	
206-44-0	Fluoranthene	ND	11	
86-73-7	Fluorene	ND	11	
118-74-1	Hexachlorobenzene	ND	11	
87-68-3	Hexachlorobutadiene	ND	11	
77-47-4	Hexachlorocyclopentadiene	ND	11	
67-72-1	Hexachloroethane	ND	11	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	11	
78-59-1	Isophorone	ND	11	
86-30-6	N-Nitrosodiphenylamine	ND	11	
621-64-7	N-nitroso-di-n-propylamine	ND	11	
91-20-3	Naphthalene	ND	11	
98-95-3	Nitrobenzene	ND	11	
87-86-5	Pentachlorophenol	ND	11	
85-01-8	Phenanthrene	ND	11	
108-95-2	Phenol	ND	11	
129-00-0	Pyrene	ND	11	
111-91-1	bis(-2-Chloroethoxy)methane	ND	11	
105-60-2	e-Caprolactam	**0.8**	11	L

Surrogate Compounds	**Recoveries (%)**	**QC Ranges**
2-Fluorophenol	55	21 - 110
Phenol-d5	65	10 - 110
2-Chlorophenol-d4	63	33 - 110
1,2-Dichlorobenzene-d4	49	16 - 110
Nitrobenzene-d5	64	35 - 114
2-Fluorobiphenyl	64	43 - 116
2,4,6-Tribromophenol	75	10 - 123
Terphenyl	62	33 - 141

omments: Tentatively Identified non-Target Compounds

Triphenylphosphine oxide 5.0 ppb J

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Fisherville Mill - Grafton, MA

Semivolatile Organic Compounds by GC/MS

Client Sample ID:	IP-61	Lab Sample ID:	AA24798
Date of Collection:	8/20/02	Matrix	Water
Date of Extraction:	8/22/02	Volume Extracted:	1000 mL
Date of Analysis:	8/28/02	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	6

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
92-52-4	1,1'-Biphenyl	ND	10	
108-60-1	2,2'-oxybis(1-chloropropane)	ND	10	
95-95-4	2,4,5-Trichorophenol	ND	10	
88-06-2	2,4,6-Trichlorophenol	ND	10	
120-83-2	2,4-Dichlorophenol	ND	10	
51-28-5	2,4-Dinitrophenol	ND	10	
121-14-2	2,4-Dinitrotoluene	ND	10	
105-67-9	2,4-dimethylphenol	ND	10	
606-20-2	2,6-Dinitrotoluene	ND	10	
91-58-7	2-Chloronaphthalene	ND	10	
95-57-8	2-Chlorophenol	ND	10	
91-57-6	2-Methylnaphthalene	ND	10	
95-48-7	2-Methylphenol	ND	10	
88-74-4	2-Nitroaniline	ND	10	
88-75-5	2-Nitrophenol	ND	10	
91-94-1	3,3'-Dichlorobenzidine	ND	10	
99-09-2	3-Nitroaniline	ND	10	
534-52-1	4,6-Dinitro-2-methylphenol	ND	10	
101-55-3	4-Bromophenyl-phenylether	ND	10	
59-50-7	4-Chloro-3-methylphenol	ND	10	
106-47-8	4-Chloroaniline	ND	10	
7005-72-3	4-Chlorophenyl-phenylether	ND	10	
106-44-5	4-Methylphenol	ND	10	
100-01-6	4-Nitroaniline	ND	10	
100-02-7	4-Nitrophenol	ND	10	
83-32-9	Acenaphthene	ND	10	
208-96-8	Acenaphthylene	ND	10	
98-86-2	Acetophenone	ND	10	
120-12-7	Anthracene	ND	10	
1912-24-9	Atrazine	ND	10	
100-52-7	Benzaldehyde	ND	10	
56-55-3	Benzo(a)anthracene	ND	10	
50-32-8	Benzo(a)pyrene	ND	10	
205-99-2	Benzo(b)fluoranthene	ND	10	
191-24-2	Benzo(g,h,i)perylene	ND	10	
207-08-9	Benzo(k)fluoranthene	ND	10	
111-44-4	Bis(2-Chloroethyl)ether	ND	10	
117-81-7	Bis(2-ethylhexyl)phthalate	0.8	10	L
85-68-7	Butylbenzylphthalate	0.7	10	L
86-74-8	Carbazole	ND	10	
218-01-9	Chrysene	ND	10	
84-74-2	Di-n-buytylphthalate	ND	10	
117-84-0	Di-n-octyl phthalate	ND	10	

53-70-3	Dibenz(a,h)anthracene	ND	10
132-64-9	Dibenzofuran	ND	10
84-66-2	Diethylphthalate	ND	10
131-11-3	Dimethyl phthalate	ND	10
206-44-0	Fluoranthene	ND	10
86-73-7	Fluorene	ND	10
118-74-1	Hexachlorobenzene	ND	10
87-68-3	Hexachlorobutadiene	ND	10
77-47-4	Hexachlorocyclopentadiene	ND	10
67-72-1	Hexachloroethane	ND	10
193-39-5	Indeno(1,2,3-cd)pyrene	ND	10
78-59-1	Isophorone	ND	10
86-30-6	N-Nitrosodiphenylamine	ND	10
621-64-7	N-nitroso-di-n-propylamine	ND	10
91-20-3	Naphthalene	ND	10
98-95-3	Nitrobenzene	ND	10
87-86-5	Pentachlorophenol	ND	10
85-01-8	Phenanthrene	ND	10
108-95-2	Phenol	15	10
129-00-0	Pyrene	ND	10
111-91-1	bis(-2-Chloroethoxy)methane	ND	10
105-60-2	e-Caprolactam	ND	10

Surrogate Compounds	Recoveries (%)	QC Ranges
2-Fluorophenol	62	21 - 110
Phenol-d5	67	10 - 110
2-Chlorophenol-d4	65	33 - 110
1,2-Dichlorobenzene-d4	53	16 - 110
Nitrobenzene-d5	65	35 - 114
2-Fluorobiphenyl	64	43 - 116
2,4,6-Tribromophenol	75	10 - 123
Terphenyl	67	33 - 141

Comments: Method Blank

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

Fisherville Mill - Grafton, MA

Laboratory Blank Results

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix	Water
Date of Extraction:	8/22/02	Volume Extracted:	1000 mL
Date of Analysis:	8/28/02	Percent Solids:	N/A
Dry Weight Extracted:	N/A	Extract Dilution:	1
Wet Weight Extracted:	N/A	pH:	7

CAS Number	Compound	Concentration ug/L	RL ug/L	Qualifier
92-52-4	1,1'-Biphenyl	ND	10	
108-60-1	2,2'-oxybis(1-chloropropane)	ND	10	
95-95-4	2,4,5-Trichorophenol	ND	10	
88-06-2	2,4,6-Trichlorophenol	ND	10	
120-83-2	2,4-Dichlorophenol	ND	10	
51-28-5	2,4-Dinitrophenol	ND	10	
121-14-2	2,4-Dinitrotoluene	ND	10	
105-67-9	2,4-dimethylphenol	ND	10	
606-20-2	2,6-Dinitrotoluene	ND	10	
91-58-7	2-Chloronaphthalene	ND	10	
95-57-8	2-Chlorophenol	ND	10	
91-57-6	2-Methylnaphthalene	ND	10	
95-48-7	2-Methylphenol	ND	10	
88-74-4	2-Nitroaniline	ND	10	
88-75-5	2-Nitrophenol	ND	10	
91-94-1	3,3'-Dichlorobenzidine	ND	10	
99-09-2	3-Nitroaniline	ND	10	
534-52-1	4,6-Dinitro-2-methylphenol	ND	10	
101-55-3	4-Bromophenyl-phenylether	ND	10	
59-50-7	4-Chloro-3-methylphenol	ND	10	
106-47-8	4-Chloroaniline	ND	10	
7005-72-3	4-Chlorophenyl-phenylether	ND	10	
106-44-5	4-Methylphenol	ND	10	
100-01-6	4-Nitroaniline	ND	10	
100-02-7	4-Nitrophenol	ND	10	
83-32-9	Acenaphthene	ND	10	
208-96-8	Acenaphthylene	ND	10	
98-86-2	Acetophenone	ND	10	
120-12-7	Anthracene	ND	10	
1912-24-9	Atrazine	ND	10	
100-52-7	Benzaldehyde	ND	10	
56-55-3	Benzo(a)anthracene	ND	10	
50-32-8	Benzo(a)pyrene	ND	10	
205-99-2	Benzo(b)fluoranthene	ND	10	
191-24-2	Benzo(g,h,i)perylene	ND	10	
207-08-9	Benzo(k)fluoranthene	ND	10	
111-44-4	Bis(2-Chloroethyl)ether	ND	10	
117-81-7	Bis(2-ethylhexyl)phthalate	1.0	10	B,L
85-68-7	Butylbenzylphthalate	0.9	10	B,L
86-74-8	Carbazole	ND	10	
218-01-9	Chrysene	ND	10	
84-74-2	Di-n-buytylphthalate	ND	10	
117-84-0	Di-n-octyl phthalate	ND	10	

53-70-3	Dibenz(a,h)anthracene	ND	10	
132-64-9	Dibenzofuran	ND	10	
84-66-2	Diethylphthalate	1.0	10	L
131-11-3	Dimethyl phthalate	ND	10	
206-44-0	Fluoranthene	ND	10	
86-73-7	Fluorene	ND	10	
118-74-1	Hexachlorobenzene	ND	10	
87-68-3	Hexachlorobutadiene	ND	10	
77-47-4	Hexachlorocyclopentadiene	ND	10	
67-72-1	Hexachloroethane	ND	10	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	10	
78-59-1	Isophorone	ND	10	
86-30-6	N-Nitrosodiphenylamine	ND	10	
621-64-7	N-nitroso-di-n-propylamine	ND	10	
91-20-3	Naphthalene	ND	10	
98-95-3	Nitrobenzene	ND	10	
87-86-5	Pentachlorophenol	ND	10	
85-01-8	Phenanthrene	ND	10	
108-95-2	Phenol	8	10	L
129-00-0	Pyrene	ND	10	
111-91-1	bis(-2-Chloroethoxy)methane	ND	10	
105-60-2	e-Caprolactam	0.6	10	L

Surrogate Compounds	Recoveries (%)	QC Ranges
2-Fluorophenol	51	21 - 110
Phenol-d5	55	10 - 110
2-Chlorophenol-d4	53	33 - 110
1,2-Dichlorobenzene-d4	38	16 - 110
Nitrobenzene-d5	53	35 - 114
2-Fluorobiphenyl	51	43 - 116
2,4,6-Tribromophenol	59	10 - 123
Terphenyl	64	33 - 141

mments: Tentatively Identified non-Target Compounds

2-ethyl-1-Hexanol	4.0 ppb J
2-ethyl-Hexanoic acid	15.0 ppb J
2-(2-butoxyethoxy)-Ethanol	2.0 ppb J
Triphenylphosphine oxide	4.0 ppb J

US ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND LABORATORY

BNA MATRIX SPIKE (MS) / MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Fisherville Mill - Grafton, MA

Sample ID: AA24794

PARAMETER	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC	QC LIMITS (% REC)
2,4-Dinitrotoluene	50.0	ND	32	64	24 - 96
2-Chlorophenol	75.0	ND	44	59	27 - 123
4-Chloro-3-methylphenol	75.0	ND	49	65	23 - 97
4-Nitrophenol	75.0	ND	51	68	10 - 80
Acenaphthene	50.0	ND	31	62	46 - 118
N-nitroso-di-n-propylamine	50.0	ND	34	68	36 - 97
Pentachlorophenol	75.0	ND	59	79	9 - 103
Phenol	75.0	ND	44	59	12 - 110
Pyrene	50.0	ND	38	76	26 - 127

Comments:

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION ug/L	MSD % REC	RPD %	QC LIMITS RPD
2,4-Dinitrotoluene	50.0	33	66	3	25
2-Chlorophenol	75.0	44	59	0	25
4-Chloro-3-methylphenol	75.0	51	68	4	25
4-Nitrophenol	75.0	53	71	4	25
Acenaphthene	50.0	32	64	3	25
N-nitroso-di-n-propylami	50.0	36	72	6	25
Pentachlorophenol	75.0	58	77	2	25
Phenol	75.0	46	61	4	25
Pyrene	50.0	39	78	3	25

Comments:

Samples in Batch: AA24794 AA24795 AA24796 AA24797 AA24798

APPENDIX I

EPA ERT/REAC VOC and TAL Metals Laboratory Analytical Results
for July, August, and November 2002 (from January, February, and March 2003 Reports) and
Figures I-1 and I-2

TABLE 1
INJECTION POINTS SELECTED FOR FIELD SCREENING
FISHERVILLE MILL
SOUTH GRAFTON, MA
JANUARY 2003

INJECTION POINT	RESIDUAL UN-REACTED PERMANGANATE (Percent By Weight in Solution)
IP-1	0.00%
IP-2	0.00%
IP-3	0.00%
IP-4	0.00%
IP-5	0.61%
IP-6	0.00%
IP-7	0.68%
IP-8	0.00%
IP-10	0.01%
IP-12	0.00%
IP-13	0.12%
IP-16	0.00%
IP-19	0.55%
IP-24	0.59%
IP-34B	0.00%
IP-45	0.39%
IP-49B	0.39%
IP-52	0.02%
IP-53	0.00%
IP-54	0.00%
IP-57	0.00%
IP-59	0.26%
IP-60	0.00%
IP-61	0.11%
IP-62	0.03%
IP-63	0.00%
IP-67	0.09%
IP-70	0.02%
IP-82B	0.00%
IP-110	0.13%
IP-114	0.28%
IP-115	0.05%
MW-202	0.00%
MW-208	0.00%
MW-3T-B	0.00%

TABLE 2
FIELD SCREENING RESULTS
FISHERVILLE MILL
SOUTH GRAFTON, MA
JANUARY 2003

Sample ID	Vinyl chloride	cis-1,2-Dichloroethene (DCE)	Trichloroethene (TCE)	Tetrachloroethene (PCE)	1,1-Dichloroethane	1,1,1-Trichloroethane
IP-1*	130	360	ND	ND	ND	ND
IP-2	ND	14	ND	ND	ND	ND
IP-3*	360	730	ND	ND	ND	ND
IP-4*	20	14	ND	ND	ND	ND
IP-600 (IP-4 DUP)*	20	15	ND	ND	ND	ND
IP-5	ND	ND	ND	ND	ND	ND
IP-6*	490	570	ND	ND	ND	ND
IP-7	ND	ND	ND	ND	ND	ND
IP-8	ND	ND	ND	ND	ND	ND
IP-10	ND	ND	ND	ND	ND	ND
IP-12*	280	1,700	ND	ND	ND	ND
IP-13	ND	ND	ND	ND	ND	ND
IP-16	ND	ND	ND	ND	ND	ND
IP-19	ND	ND	ND	ND	ND	ND
IP-24	ND	ND	ND	ND	ND	ND
IP-34B	ND	ND	ND	ND	21	580**
IP-45	ND	ND	ND	ND	ND	ND
IP-45-S	ND	ND	ND	ND	ND	ND
IP-49B	ND	ND	ND	ND	ND	83
IP-52	ND	ND	ND	ND	ND	ND
IP-53*	140	330	ND	ND	ND	ND
IP-54	ND	ND	ND	ND	ND	ND
IP-700 (IP-54 DUP)	ND	ND	ND	ND	ND	ND
IP-57*	530	2,300	980	ND	ND	ND
IP-59	ND	ND	ND	ND	ND	ND
IP-60	ND	ND	ND	ND	ND	ND
IP-61	ND	ND	ND	ND	ND	ND
IP-62	ND	ND	ND	ND	ND	ND
IP-63*	150	650	81	ND	ND	ND
IP-67	ND	ND	ND	ND	ND	ND
IP-70	ND	ND	ND	ND	ND	ND
IP-82B*	ND	270	15,000	160	ND	ND
IP-110	ND	ND	ND	ND	ND	ND
IP-114	ND	ND	ND	ND	ND	ND
IP-114-S	ND	ND	ND	ND	ND	ND
IP-115	ND	ND	ND	ND	ND	ND
MW-202*	ND	110	110	ND	ND	ND
MW-208*	31	150	ND	ND	ND	ND
MW-3T-B*	40	680	ND	ND	ND	ND

All results are given in parts per billion (ppb).
ND: Not detected at the analysis detection limit (DL) of 10 ppb
DUP: Duplicate
* The sample is clear; others are purple
** No dilution run was made to verify the concentration

TABLE 3
COMPARISON OF FIELD SCREENING DATA VERSUS BASELINE SAMPLING EVENT HISTORICAL RESULTS
FISHERVILLE MILL
SOUTH GRAFTON, MA
JANUARY 2003

Sample ID	Lab/ Hapsite	Vinyl Chloride Results August, 2002	Vinyl Chloride Results November, 2002	DCE Results August, 2002	DCE Results November, 2002	TCE Results August, 2002	TCE Results, November, 2002	PCE Results, August, 2002	PCE Results, November, 2002	Sample Color November, 2002
IP-1	Hapsite	30	130	200	360	20	ND	ND	ND	Clear
IP-2	Hapsite	ND	ND	400	14	ND	ND	ND	ND	Purple
IP-3	Hapsite	ND	360	340	730	ND	ND	ND	ND	Clear
IP-4	Hapsite	-	20	240	14	ND	ND	ND	ND	Clear
IP-600 (IP-4 DUP)	Hapsite	-	20	-	15	-	ND	-	ND	Clear
IP-4 (Confirmation)	Lab	-	13	-	7.9	-	ND	-	ND	Clear
IP-5	Hapsite	ND	ND	110	ND	160	ND	ND	ND	Purple
IP-6	Hapsite	290	490	420	570	250	ND	ND	ND	Clear
IP-6 (Confirmation)	Lab	-	300	-	400	-	ND	-	ND	Clear
IP-7	Hapsite	80	ND	300	ND	680	ND	ND	ND	Purple
IP-8	Hapsite	-	ND	220	ND	ND	ND	ND	ND	Purple
IP-10	Hapsite	-	ND	110	ND	10	ND	ND	ND	Purple
IP-12	Hapsite	110	280	450	1,700	150	ND	30	ND	Clear
IP-13	Hapsite	ND	ND	140	ND	260	ND	ND	ND	Purple
IP-16	Hapsite	ND	ND	610	ND	1,500	ND	ND	ND	Purple
IP-19	Hapsite	ND	ND	200	ND	300	ND	ND	ND	Purple
IP-24	Hapsite	ND	ND	90	ND	350	ND	ND	ND	Purple
IP-34B	Hapsite	ND	ND	280	ND	22,000	ND	330	ND	Purple
IP-45	Hapsite	ND	ND	100	ND	270	ND	ND	ND	Purple
IP-45-S	Hapsite	-	ND	-	ND	-	ND	-	ND	Purple
IP-49B	Hapsite	ND	ND	120	ND	9,100	ND	120	ND	Purple
IP-52	Hapsite	60	ND	160	ND	ND	ND	ND	ND	Purple
IP-53	Hapsite	-	140	500	330	ND	ND	ND	ND	Clear
IP-54	Hapsite	-	ND	270	ND	ND	ND	ND	ND	Purple
IP-700 (IP-54 DUP)	Hapsite	-	ND	-	ND	-	ND	-	ND	Purple
IP-57	Hapsite	170	530	320	2,300	3,700	980	6,000	ND	Clear
IP-59	Hapsite	-	ND	310	ND	40	ND	ND	ND	Purple
IP-60	Hapsite	-	ND	190	ND	50	ND	ND	ND	Purple
IP-61	Hapsite	140	ND	3,400	ND	9,400	ND	ND	ND	Purple
IP-62	Hapsite	ND	ND	470	ND	340	ND	ND	ND	Purple
IP-63	Hapsite	ND	150	2,300	650	21,000	81	4,100	ND	Clear
IP-67	Hapsite	ND	ND	450	ND	2,000	ND	200	ND	Purple
IP-70	Hapsite	ND	ND	190	ND	430	ND	ND	ND	Purple
IP-82B	Hapsite	ND	ND	330	270	17,000	15,000	210	160	Clear

"-" No Data ND - Not detected above minimum detection limit. DUP - Duplicate All Values are given in parts per billion (ppb).

November 2002 Lab Data has not been validated. Data should be used with discretion.

TABLE 3 cont.
COMPARISON OF FIELD SCREENING DATA VERSUS BASELINE SAMPLING EVENT IIISTORICAL RESULTS
FISHERVILLE MILL
SOUTH GRAFTON, MA
JANUARY 2003

Sample ID	Lab/ Hapsite	Vinyl Chloride Results August, 2002	Vinyl Chloride Results November, 2002	DCE Results August, 2002	DCE Results November, 2002	TCE Results August, 2002	TCE Results, November, 2002	PCE Results, August, 2002	PCE Results, November, 2002	Sample Color November, 2002
IP-110	Hapsite	ND	ND	ND	ND	1,600	ND	ND	ND	Purple
IP-114	Hapsite	ND	ND	120	ND	630	ND	ND	ND	Purple
IP-114-S	Hapsite	-	ND	-	ND	-	ND	-	ND	Purple
IP-115	Hapsite	ND	ND	270	ND	350	ND	ND	ND	Purple
MW-100D	Lab	-	ND	-	3.1	-	5.2	-	ND	-
MW-100M	Lab	ND	ND	ND	1.6	ND	2.9	ND	ND	-
MW-100S	Lab	ND	ND	1.3	4.5	1.6	3.3	ND	ND	-
MW-101A	Lab	ND	ND	ND	ND	270,000	ND	ND	ND	Purple
MW-101A-S	Lab	-	ND	-	ND	-	76,000	-	ND	Clear
MW-102	Lab	ND	ND	110	110	200	260	5.6	5.1	-
MW-1D	Lab	8.2	120	130	650	14	15	ND	ND	-
MW-202	Hapsite	-	ND	-	110	-	110	-	ND	Clear
MW-204	Lab	140	ND	1,400	ND	2,100	ND	140	ND	Purple
MW-204-S	Lab	-	ND	-	ND	-	ND	-	ND	Clear
MW-206	Lab	5.8	ND	720	ND	3,200	ND	110	ND	Purple
MW-206-S	Lab	-	ND	-	ND	-	ND	-	ND	Clear
MW-208	Hapsite	-	31	-	150	-	ND	-	ND	Clear
MW-208 (Confirmation)	Lab	-	18	-	110	-	ND	-	ND	Clear
MW-29M	Lab	-	ND	-	150	-	460	-	23	-
MW-301	Lab	2.1	ND	23	7.8	39	25	11	4	-
MW-30D	Lab	4	5.1	82	65	200	370	6.3	5.3	-
MW-31D	Lab	1.2	2.1	39	74	26	96	6.4	10	-
MW-400 (MW-31D DUP)	Lab	1.2	2.1	39	73	25	95	6.5	10	-
MW-31R	Lab	ND	ND	12	ND	700	680	14	12	-
MW-31S	Lab	ND	ND	25	22	27	18	5.6	3.7	-
MW-3T-B	Hapsite	17	40	190	680	430	ND	ND	ND	Clear
MW-500-S (DI Water with Thiosulfate)	Lab	-	ND	-	ND	-	ND	-	ND	Clear
PSW-15	Lab	11	ND	150	ND	2,500	ND	160	ND	Purple
PSW-15-S	Lab	-	ND	-	ND	-	ND	-	ND	Clear
SW-101	Lab	ND	ND	27	12	5.6	3.1	ND	ND	-
SW-102	Lab	ND	ND	ND	12	ND	3	ND	ND	-
SW-103	Lab	ND	ND	ND	1.7	ND	1.1	ND	ND	-

"-" No Data ND - Not detected above minimum detection limit. DUP - Duplicate All Values are given in parts per billion (ppb).

November 2002 Lab Data has not been validated. Data should be used with discretion.

TABLE 4
COMPARISON OF FIELD SCREENING DATA VERSUS FINAL CONFIRMATION RESULTS
BASELINE SAMPLING EVENT - AUGUST 2002
FISHERVILLE MILL
SOUTH GRAFTON, MA
JANUARY 2003

Sample ID	TCE		DCE		PCE		Vinyl Chloride	
	Field Screening Result	Lab Confirmation Result	Field Screening Result	Lab Confirmation Result	Field Screening Result	Lab Confirmation Result	Field Screening Result	Lab Confirmation Result
IP-61	9,400	11,000	3,400	4,500	ND	ND	140	140
IP-114	630	730	120	110	ND	14	ND	ND
IP-31	4,300	3,200	170*	200	ND	ND	ND	ND
IP-82	10,000	9,200	230*	200	ND	ND	ND	ND
IP-27	4,700	4,800	180	190	110	ND	ND	ND
IP-55	20	33	350	400	ND	ND	-	31
IP-36	4,200	3,700	440	280	100	ND	ND	ND
IP-42	6,900	5,300	230	210	ND	120	ND	ND
IP-63	21,000	17,000	2,300	2,000	4,100	2,800	ND	ND
IP-89	6,700	6,200	ND	120	ND	110	ND	ND
IP-80	8,900	7,500	270	250	ND	ND	ND	ND
IP-85	4,400	3,500	180	180	ND	ND	ND	ND

* - Estimated Concentration
ND - Not detected above minimum detection limit
"-" - No Data Available
All results given in parts per billion (ppb).

TABLE 5
COMPARISON OF FIELD SCREENING DATA VERSUS PRELIMINARY CONFIRMATION RESULTS
POST INJECTION SAMPLING EVENT - NOVEMBER 2002
FISHERVILLE MILL
SOUTH GRAFTON, MA
JANUARY 2003

Sample ID	TCE		DCE		PCE		Vinyl Chloride	
	Field Screening Result	Lab Confirmation Result	Field Screening Result	Lab Confirmation Result	Field Screening Result	Lab Confirmation Result	Field - Screening Result	Lab Confirmation Result
IP-4	ND	ND	14	7.9	ND	ND	20	13
IP-6	ND	ND	570	400	ND	ND	490	300
MW-208	ND	ND	150	110	ND	ND	31	18

ND - Not detected above minimum detection limit
All results given in ppb.

TABLE 6
NEUTRALIZED VERSUS NON-NEUTRALIZED SAMPLE RESULTS
FISHERVILLE MILL
SOUTH GRAFTON, MA
JANUARY 2003

Sample ID	Lab/ Hapsite	Vinyl Chloride Results November, 2002	DCE Results November, 2002	TCE Results, November, 2002	PCE Results, November, 2002	Sample Color As Analyzed November, 2002
IP-45	Hapsite	ND	ND	ND	ND	Purple
IP-45-S	Hapsite	ND	ND	ND	ND	Clear
IP-114	Hapsite	ND	ND	ND	ND	Purple
IP-114-S	Hapsite	ND	ND	ND	ND	Clear
MW-101A	Lab	ND	ND	ND	ND	Purple
MW-101A-S	Lab	ND	ND	76,000	ND	Clear
MW-204	Lab	ND	ND	ND	ND	Purple
MW-204-S	Lab	ND	ND	ND	ND	Clear
MW-206	Lab	ND	ND	ND	ND	Purple
MW-206-S	Lab	ND	ND	ND	ND	Clear
PSW-15	Lab	ND	ND	ND	ND	Purple
PSW-15-S	Lab	ND	ND	ND	ND	Clear

ND - Not detected above minimum detection limit.

Sample locations ending in "-S" have been neutralized with Sodium Thialsulfate.

November 2002 Lab Data has not been validated. Data should be used with discretion.

All values are given in parts per billion (ppb).

TABLE 7
METALS RESULTS - AUGUST VERSUS NOVEMBER SAMPLING EVENTS
FISHERVILLE MILL
SOUTH GRAFTON, MA
JANUARY 2003

	SW-101				SW-102				SW-103				MW-1D			
	August		November		August		November		August		November		August		November	
Metal	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.
Aluminum	63	U	65	U	940	U	150	U	1,000	U	260	U	NA	NA	110	130
Antimony	U	U	U	U	U	U	U	U	U	U	U	U	NA	NA	U	U
Arsenic	3.1	U	U	U	8.4	3.6	U	2.3	7.9	2.6	3.2	2.5	NA	NA	18	19
Barium	36	22	28	25	79	53	32	28	80	54	70	56	NA	NA	170	160
Beryllium	U	U	U	U	U	U	U	U	U	U	U	U	NA	NA	U	U
Cadmium	U	U	U	U	13	U	U	U	14	U	22	20	NA	NA	U	U
Calcium	24,000	24,000	28,000	28,000	18,000	18,000	29,000	28,000	19,000	18,000	28,000	28,000	NA	NA	120,000	120,000
Chromium	U	U	U	U	43	U	U	U	48	U	12	5.2	NA	NA	5.2	8.8
Cobalt	U	U	U	U	U	U	U	U	U	U	U	U	NA	NA	19	23
Copper	U	U	U	U	150	U	14	U	160	U	62	28	NA	NA	U	U
Iron	2,100	30	1,000	190	8,900	2,100	1,400	310	8,700	200	1,000	130	NA	NA	62,000	62,000
Lead	U	U	U	U	60	U	4.2	U	60	U	8.2	U	NA	NA	U	U
Magnesium	4,100	4,100	5,000	5,000	3,400	3,200	5,100	5,000	3,400	3,100	4,600	4,600	NA	NA	13,000	13,000
Manganese	690	500	870	810	330	230	960	870	310	270	860	650	NA	NA	17,000	16,000
Nickel	U	U	16	13	24	U	19	14	23	16	47	40	NA	NA	U	U
Potassium	3,600	4,100	5,600	5,400	3,900	3,900	5,900	5,800	4,100	4,000	6,000	6,600	NA	NA	3,400	3,700
Selenium	U	U	U	U	U	U	U	U	U	U	U	U	NA	NA	U	U
Silver	U	U	U	U	U	U	U	U	U	U	U	U	NA	NA	U	U
Sodium	54,000	53,000	71,000	71,000	53,000	54,000	72,000	70,000	53,000	53,000	53,000	54,000	NA	NA	27,000	26,000
Thallium	U	U	U	U	U	U	U	U	U	U	U	U	NA	NA	U	U
Vanadium	U	U	U	U	U	U	U	U	U	U	U	U	NA	NA	U	U
Zinc	16	14	130	100	190	U	150	140	200	19	850	710	NA	NA	U	U

All values given in parts per billion (ppb), U - Below method detection limit, Diss. - Dissolved (Filtered Sample), NA - Not Available, * - Detection limit greater than August result.

Metals data from the November sampling event has not been validated and should be used with discretion.

TABLE 7 cont.
METALS RESULTS - AUGUST VERSUS NOVEMBER SAMPLING EVENTS
FISHERVILLE MILL
SOUTH GRAFTON, MA
JANUARY 2003

	PSW-15				MW-17				MW-29M				MW-30D			
	August		November		August		November		August		November		August		November	
Metals	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.
Aluminum	U	U	U	U	U	U	NA	NA	270	U	59	U	60	U	U	U
Antimony	U	U	U	U	U	U	NA	NA	U	U	U	U	U	U	U	U
Arsenic	2.4	U	U*	U	5.4	5.4	NA	NA	3.2	U	U	U	U	U	3.8	3.6
Barium	51	48	720	U*	51	64	NA	NA	19	18	18	17	20	20	19	18
Beryllium	U	U	U	U	U	U	NA	NA	U	U	U	U	U	U	U	U
Cadmium	U	U	U	U	U	U	NA	NA	U	U	U	U	U	U	U	U
Calcium	38,000	39,000	290,000	150,000	34,000	40,000	NA	NA	180,000	18,000	18,000	19,000	32,000	31,000	32,000	32,000
Chromium	U	U	U	U	U	U	NA	NA	U	U	U	U	U	U	U	U
Cobalt	U	U	U	U	U	U	NA	NA	U	U	U	U	U	U	U	U
Copper	U	U	U	U	U	U	NA	NA	U	U	U	U	U	U	U	U
Iron	5,700	5,400	U*	U*	5,700	12,000	NA	NA	620	97	140	U	170	64	320	260
Lead	U	U	U	U	U	U	NA	NA	U	U	U	U	U	U	U	U
Magnesium	7,800	7,900	59,000	3,200	5,700	6,300	NA	NA	2,500	2,500	2,500	2,500	5,700	5,600	5,700	5,600
Manganese	1,600	1,700	3,100,000	1,600,000	2,700	4,200	NA	NA	1,600	1,600	1,100	1,100	760	770	860	860
Nickel	U	U	U	U	U	U	NA	NA	U	U	U	U	U	U	U	U
Potassium	4,300	3,900	U*	U*	5,100	5,000	NA	NA	7,200	6,800	5,800	6,000	4,800	4,700	4,400	5,400
Selenium	U	U	U	U	U	U	NA	NA	U	U	U	U	U	U	U	U
Silver	U	U	U	U	5.5	5.7	NA	NA	5.7	6.2	U	U	U	U	U	U
Sodium	35,000	35,000	940,000	490,000	49,000	49,000	NA	NA	53,000	53,000	52,000	51,000	34,000	34,000	35,000	34,000
Thallium	U	U	U	U	U	U	NA	NA	U	U	U	U	U	U	U	U
Vanadium	U	U	U	U	U	U	NA	NA	U	U	U	U	U	U	U	U
Zinc	U	U	U	U	U	U	NA	NA	14	14	U	U	U	U	U	11

All values given in parts per billion (ppb), U - Below method detection limit, Diss. - Dissolved (Filtered Sample), NA - Not Available, * - Detection limit greater than August result.
Metals data from the November sampling event has not been validated and should be used with discretion.

TABLE 7 cont.
METALS RESULTS - AUGUST VERSUS NOVEMBER SAMPLING EVENTS
FISHERVILLE MILL
SOUTH GRAFTON, MA
JANUARY 2003

	MW-31D				MW-400 (MW-31D dup.)				MW-31S				MW-31R			
	August		November		August		November		August		November		August		November	
Metals	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.
Aluminum	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Antimony	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Arsenic	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Barium	43	43	41	40	43	44	41	40	42	41	38	36	160	160	160	160
Beryllium	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Cadmium	U	U	U	U	U	U	U	U	25	24	8.3	11	U	U	U	U
Calcium	22,000	21,000	22,000	21,000	22,000	22,000	22,000	21,000	23,000	23,000	22,000	22,000	36,000	37,000	39,000	40,000
Chromium	U	U	9.8	11	U	U	12	11	U	U	U	5.9	U	U	U	U
Cobalt	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Copper	U	U	U	U	U	U	U	U	220	220	95	91	U	U	U	U
Iron	U	U	47	43	U	U	65	40	1,400	1,500	1,700	1,800	U	U	U	U
Lead	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Magnesium	3,400	3,300	3,200	3,200	3,300	3,400	3,200	3,200	3,400	3,400	3,300	3,200	4,700	4,700	5,100	5,000
Manganese	2,100	2,000	1,600	1,500	2,100	2,100	1,600	1,500	3,300	3,400	4,700	4,600	21	21	19	19
Nickel	U	U	U	U	U	U	U	U	15	18	15	13	U	U	U	U
Potassium	4,800	4,900	3,700	4,600	4,900	4,700	4,500	4,600	5,200	5,100	4,900	5,500	4,300	4,500	2,700	3,600
Selenium	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Silver	5.1	U	U	U	5.4	6.4	U	U	6.5	5	U	U	5.6	U	U	U
Sodium	56,000	55,000	55,000	52,000	56,000	56,000	54,000	53,000	50,000	50,000	61,000	59,000	12,000	13,000	13,000	12,000
Thallium	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Vanadium	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Zinc	U	U	U	U	U	U	U	U	140	140	130	130	U	U	U	U

All values given in parts per billion (ppb), U - Below method detection limit, Diss. - Dissolved (Filtered Sample), NA - Not Available, * - Detection limit greater than August result.

Metals data from the November sampling event has not been validated and should be used with discretion.

TABLE 7 cont.
METALS RESULTS - AUGUST VERSUS NOVEMBER SAMPLING EVENTS
FISHERVILLE MILL
SOUTH GRAFTON, MA
JANUARY 2003

	MW-100D				MW-100M				MW-100S				MW-101A			
	August		November		August		November		August		November		August		November	
Metals	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.
Aluminum	U	U	U	U	U	U	U	U	U	U	160	U	2,600	1,400	U*	U*
Antimony	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Arsenic	U	U	U	U	U	U	U	U	U	U	10	9.2	U	U	U	U
Barium	54	54	48	47	52	52	51	49	39	39	50	46	79	77	U*	U*
Beryllium	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Cadmium	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Calcium	21,000	21,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	21,000	22,000	22,000	21,000	18,000	360,000	250,000
Chromium	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Cobalt	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Copper	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Iron	U	U	U	U	U	U	U	U	1,600	1,600	17,000	15,000	U	U	U	U
Lead	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Magnesium	3,000	3,000	3,000	3,000	2,800	2,800	2,900	2,900	2,900	2,900	3,100	3,100	U	870	33,000	25,000
Manganese	86	87	300	290	38	37	32	32	850	830	1,800	1,800	U	U	580,000	220,000
Nickel	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Potassium	4,700	4,600	4,000	3,700	4,200	4,100	3,800	4,000	5,100	5,300	3,800	3,800	15,000	17,000	30,000	19,000
Selenium	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Silver	5.8	U	U	U	5.5	6	U	U	6.9	6.6	U	U	U	U	U	U
Sodium	56,000	56,000	52,000	51,000	55,000	55,000	52,000	50,000	55,000	56,000	41,000	41,000	39,000	52,000	360,000	210,000
Thallium	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Vanadium	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Zinc	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U

All values given in parts per billion (ppb), U - Below method detection limit, Diss. - Dissolved (Filtered Sample), NA - Not Available, * - Detection limit greater than August result.

Metals data from the November sampling event has not been validated and should be used with discretion.

TABLE 7 cont.
METALS RESULTS - AUGUST VERSUS NOVEMBER SAMPLING EVENTS
FISHERVILLE MILL
SOUTH GRAFTON, MA
JANUARY 2003

	MW-102				MW-104				MW-201C				MW-204			
	August		November		August		November		August		November		August		November	
Metals	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.
Aluminum	64	U	U	U	U	U	NA	NA	U	U	NA	NA	380	U	U*	U
Antimony	U	U	U	U	U	U	NA	NA	U	U	NA	NA	U	U	U	U
Arsenic	U	U	U	U	29	27	NA	NA	6.7	6.3	NA	NA	14	13	U*	U*
Barium	25	25	24	23	68	68	NA	NA	64	64	NA	NA	89	87	U*	U*
Beryllium	U	U	U	U	U	U	NA	NA	U	U	NA	NA	U	U	U	U
Cadmium	U	U	U	U	U	U	NA	NA	U	U	NA	NA	U	U	U	U
Calcium	25,000	25,000	25,000	25,000	36,000	36,000	NA	NA	40,000	40,000	NA	NA	47,000	47,000	82,000	73,000
Chromium	U	U	U	U	U	U	NA	NA	U	U	NA	NA	U	U	U	U
Cobalt	U	U	U	U	U	U	NA	NA	U	U	NA	NA	U	U	U	U
Copper	U	U	U	U	U	U	NA	NA	U	U	NA	NA	U	U	U	U
Iron	31	U	U	U	5,500	5,400	NA	NA	3,800	3,800	NA	NA	5,400	5,100	U*	U*
Lead	U	U	U	U	2.7	U	NA	NA	U	U	NA	NA	U	U	U	U
Magnesium	3,800	3,800	3,800	3,800	5,600	5,600	NA	NA	6,500	6,600	NA	NA	6,500	6,500	25,000	22,000
Manganese	2,800	2,800	2,800	2,800	1,900	1,900	NA	NA	1,000	1,000	NA	NA	5,100	5,200	2,900,000	2,900,000
Nickel	U	U	U	U	U	U	NA	NA	U	U	NA	NA	U	U	U	U
Potassium	6,700	7,000	5,900	6,300	6,600	7,000	NA	NA	6,800	6,800	NA	NA	7,400	7,200	52,000	45,000
Selenium	U	U	U	U	U	U	NA	NA	U	U	NA	NA	U	U	U	U
Silver	U	U	U	U	U	U	NA	NA	U	U	NA	NA	U	U	U	U
Sodium	49,000	49,000	51,000	51,000	55,000	55,000	NA	NA	63,000	63,000	NA	NA	57,000	57,000	1,500,000	1,600,000
Thallium	U	U	U	U	U	U	NA	NA	U	U	NA	NA	U	U	U	U
Vanadium	U	U	U	U	U	U	NA	NA	U	U	NA	NA	U	U	U	U
Zinc	U	11	U	U	U	U	NA	NA	U	U	NA	NA	U	U	U	U

All values given in parts per billion (ppb), U - Below method detection limit, Diss. - Dissolved (Filtered Sample), NA - Not Available, * - Detection limit greater than August result.

Metals data from the November sampling event has not been validated and should be used with discretion.

TABLE 7 cont.
METALS RESULTS - AUGUST VERSUS NOVEMBER SAMPLING EVENTS
FISHERVILLE MILL
SOUTH GRAFTON, MA
JANUARY 2003

	MW-206				MW-301			
	August		November		August		November	
Metals	Total	Diss.	Total	Diss.	Total	Diss.	Total	Diss.
Aluminum	U	U	U	U	U	U	U	U
Antimony	U	U	U	U	U	U	U	U
Arsenic	U	U	U	U	U	U	U	U
Barium	39	39	2,100	2,300	41	40	36	35
Beryllium	U	U	U	U	U	U	U	U
Cadmium	U	U	U	U	U	U	U	U
Calcium	41,000	41,000	980,000	1,100,000	35,000	36,000	29,000	28,000
Chromium	U	U	U	U	U	U	U	U
Cobalt	U	U	U	U	U	U	U	U
Copper	U	U	U	12,000	U	U	U	U
Iron	48	U	U*	U	94	U	U	U
Lead	U	U	U	U	U	U	U	U
Magnesium	6,700	6,700	150,000	180,000	5,900	6,000	4,400	4,300
Manganese	1,100	1,100	8,900,000	10,000,000	980	970	460	440
Nickel	U	U	U	U	U	U	U	U
Potassium	3,900	4,100	U*	U*	7,100	7,500	6,600	6,400
Selenium	U	U	U	U	U	U	U	U
Silver	U	U	U	U	U	U	U	U
Sodium	42,000	42,000	2,700,000	2,900,000	79,000	79,000	64,000	64,000
Thallium	U	U	U	U	U	U	U	U
Vanadium	U	U	U	U	U	U	U	U
Zinc	U	U	43,000	U	U	U	U	U

All values given in parts per billion (ppb), U - Below method detection limit, Diss. - Dissolved (Filtered Sample), NA - Not Available, * - Detection limit greater than August result.
Metals data from the November sampling event has not been validated and should be used with discretion.

Table 1.1 Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank	58317	97360	97364	97372
Location :	072302	TB-01	MW-101 A	MW-104	MW-201 C
File :	AV4894.D	AV4895.D	AV4896.D	AV4898.D	AV4899.D
Dil. Fact. :	1	1	2500	1	1

Analyte	Conc. ug/l	MDL ug/l	Conc. ug/l		MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Chloromethane	U	2.0	U		2.0	U	5000	U	2.0	U	2.0
Vinyl Chloride	U	1.0	U		1.0	U	2500	10	1.0	U	1.0
Bromomethane	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Chloroethane	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Trichlorofluoromethane	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Acetone	U	8.0	4.3	J	8.0	U	20000	U	8.0	U	8.0
1,1-Dichloroethene	U	1.0	U		1.0	U	2500	1.6	1.0	U	1.0
Methylene Chloride	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Carbon Disulfide	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Methyl-t-butyl Ether	U	1.0	U		1.0	U	2500	1.9	1.0	1.6	1.0
trans-1,2-Dichloroethene	U	1.0	U		1.0	U	2500	1.5	1.0	1.3	1.0
1,1-Dichloroethane	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
2-Butanone	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
2,2-Dichloropropane	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
cis-1,2-Dichloroethene	U	1.0	U		1.0	U	2500	260	1.0	220	1.0
Chloroform	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
1,1-Dichloropropene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
1,2-Dichloroethane	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
1,1,1-Trichloroethane	U	1.0	U		1.0	U	2500	2.1	1.0	U	1.0
Carbon Tetrachloride	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Benzene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Trichloroethene	U	1.0	U		1.0	270000	2500	730	1.0	110	1.0
1,2-Dichloropropane	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Bromodichloromethane	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Dibromomethane	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
cis-1,3-Dichloropropene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
trans-1,3-Dichloropropene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
1,1,2-Trichloroethane	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
1,3-Dichloropropane	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Dibromochloromethane	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
1,2-Dibromoethane	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Bromoform	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
4-Methyl-2-Pentanone	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Toluene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
2-Hexanone	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Tetrachloroethene	U	1.0	U		1.0	U	2500	27	1.0	2.8	1.0
Chlorobenzene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
1,1,1,2-Tetrachloroethane	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Ethylbenzene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
p&m-Xylene	U	2.0	U		2.0	U	5000	U	2.0	U	2.0
o-Xylene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Styrene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Isopropylbenzene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
1,1,2,2-Tetrachloroethane	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
1,2,3-Trichloropropane	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
n-Propylbenzene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Bromobenzene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
1,3,5-Trimethylbenzene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
2-Chlorotoluene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
4-Chlorotoluene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
tert-Butylbenzene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
1,2,4-Trimethylbenzene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
sec-Butylbenzene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
p-Isopropyltoluene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
1,3-Dichlorobenzene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
1,4-Dichlorobenzene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
n-Butylbenzene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
1,2-Dichlorobenzene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
1,2-Dibromo-3-chloropropane	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
1,2,4-Trichlorobenzene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Hexachlorobutadiene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
Naphthalene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0
1,2,3-Trichlorobenzene	U	1.0	U		1.0	U	2500	U	1.0	U	1.0

Table 1.1 (cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank		97380		97368	
Location :	072302		PSW-15		MW-204	
File :	AV4894.D		AV4900.D		AV4902.D	
Dil. Fact. :	1		1		20	
Analyte	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U	1.0	U	1.0	U	20
Chloromethane	U	2.0	U	2.0	U	40
Vinyl Chloride	U	1.0	11	1.0	140	20
Bromomethane	U	1.0	U	1.0	U	20
Chloroethane	U	1.0	U	1.0	U	20
Trichlorofluoromethane	U	1.0	U	1.0	U	20
Acetone	U	8.0	U	8.0	U	160
1,1-Dichloroethene	U	1.0	14	1.0	U	20
Methylene Chloride	U	1.0	U	1.0	U	20
Carbon Disulfide	U	1.0	U	1.0	U	20
Methyl-t-butyl Ether	U	1.0	1.8	1.0	U	20
trans-1,2-Dichloroethene	U	1.0	2.5	1.0	U	20
1,1-Dichloroethane	U	1.0	7.4	1.0	U	20
2-Butanone	U	1.0	U	1.0	U	20
2,2-Dichloropropane	U	1.0	U	1.0	U	20
cis-1,2-Dichloroethene	U	1.0	150	1.0	1400	20
Chloroform	U	1.0	U	1.0	U	20
1,1-Dichloropropene	U	1.0	U	1.0	U	20
1,2-Dichloroethane	U	1.0	U	1.0	U	20
1,1,1-Trichloroethane	U	1.0	85	1.0	U	20
Carbon Tetrachloride	U	1.0	U	1.0	U	20
Benzene	U	1.0	U	1.0	U	20
Trichloroethene	U	1.0	2500	1.0	2100	20
1,2-Dichloropropane	U	1.0	U	1.0	U	20
Bromodichloromethane	U	1.0	U	1.0	U	20
Dibromomethane	U	1.0	U	1.0	U	20
cis-1,3-Dichloropropene	U	1.0	U	1.0	U	20
trans-1,3-Dichloropropene	U	1.0	U	1.0	U	20
1,1,2-Trichloroethane	U	1.0	2.6	1.0	U	20
1,3-Dichloropropane	U	1.0	U	1.0	U	20
Dibromochloromethane	U	1.0	U	1.0	U	20
1,2-Dibromoethane	U	1.0	U	1.0	U	20
Bromoform	U	1.0	U	1.0	U	20
4-Methyl-2-Pentanone	U	1.0	U	1.0	U	20
Toluene	U	1.0	U	1.0	U	20
2-Hexanone	U	1.0	U	1.0	U	20
Tetrachloroethene	U	1.0	160	1.0	140	20
Chlorobenzene	U	1.0	U	1.0	U	20
1,1,1,2-Tetrachloroethane	U	1.0	U	1.0	U	20
Ethylbenzene	U	1.0	U	1.0	U	20
p&m-Xylene	U	2.0	U	2.0	U	40
o-Xylene	U	1.0	U	1.0	U	20
Styrene	U	1.0	U	1.0	U	20
Isopropylbenzene	U	1.0	U	1.0	U	20
1,1,2,2-Tetrachloroethane	U	1.0	U	1.0	U	20
1,2,3-Trichloropropane	U	1.0	U	1.0	U	20
n-Propylbenzene	U	1.0	U	1.0	U	20
Bromobenzene	U	1.0	U	1.0	U	20
1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	20
2-Chlorotoluene	U	1.0	U	1.0	U	20
4-Chlorotoluene	U	1.0	U	1.0	U	20
tert-Butylbenzene	U	1.0	U	1.0	U	20
1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	20
sec-Butylbenzene	U	1.0	U	1.0	U	20
p-Isopropyltoluene	U	1.0	U	1.0	U	20
1,3-Dichlorobenzene	U	1.0	U	1.0	U	20
1,4-Dichlorobenzene	U	1.0	U	1.0	U	20
n-Butylbenzene	U	1.0	U	1.0	U	20
1,2-Dichlorobenzene	U	1.0	U	1.0	U	20
1,2-Dibromo-3-chloropropane	U	1.0	U	1.0	U	20
1,2,4-Trichlorobenzene	U	1.0	U	1.0	U	20
Hexachlorobutadiene	U	1.0	U	1.0	U	20
Naphthalene	U	1.0	U	1.0	U	20
1,2,3-Trichlorobenzene	U	1.0	U	1.0	U	20

Table 1.1 (cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank	58347	58396	58388	97384
Location :	072402	TB-02	MW-301	MW-100 R	MW-1 D
File :	AV4910.D	AV4911.D	AV4912.D	AV4914.D	AV4915.D
Dil. Fact. :	1	1	1	1	1

Analyte	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Chloromethane	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
Vinyl Chloride	U	1.0	U	1.0	2.1	1.0	U	1.0	8.2	1.0
Bromomethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Chloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Trichlorofluoromethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Acetone	U	8.0	U	8.0	U	8.0	U	8.0	U	8.0
1,1-Dichloroethene	U	1.0	U	1.0	U	1.0	U	1.0	1.0	1.0
Methylene Chloride	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Carbon Disulfide	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Methyl-t-butyl Ether	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
trans-1,2-Dichloroethene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1-Dichloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
2-Butanone	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
2,2-Dichloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
cis-1,2-Dichloroethene	U	1.0	U	1.0	23	1.0	U	1.0	130	1.0
Chloroform	U	1.0	U	1.0	2.5	1.0	U	1.0	U	1.0
1,1-Dichloropropene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dichloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1,1-Trichloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Carbon Tetrachloride	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Benzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Trichloroethene	U	1.0	U	1.0	39	1.0	U	1.0	14	1.0
1,2-Dichloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Bromodichloromethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Dibromomethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
cis-1,3-Dichloropropene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
trans-1,3-Dichloropropene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1,2-Trichloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,3-Dichloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Dibromochloromethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dibromoethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Bromoform	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
4-Methyl-2-Pentanone	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Toluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
2-Hexanone	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Tetrachloroethene	U	1.0	U	1.0	11	1.0	U	1.0	U	1.0
Chlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1,1,2-Tetrachloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Ethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
p&m-Xylene	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
o-Xylene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Styrene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Isopropylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1,2,2-Tetrachloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2,3-Trichloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
n-Propylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Bromobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
2-Chlorotoluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
4-Chlorotoluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
tert-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
sec-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
p-Isopropyltoluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,3-Dichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,4-Dichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
n-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dibromo-3-chloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2,4-Trichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Hexachlorobutadiene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Naphthalene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2,3-Trichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0

Table 1.1 (cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank 072402		97388		58376		97392		97396	
Location :			MW-31 S		MW-31 R		MW-31 D		MW-400	
File :	AV4910.D		AV4916.D		AV4917.D		AV4918.D		AV4919.D	
Dil. Fact. :	1		1		1		1		1	

Analyte	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Chloromethane	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
Vinyl Chloride	U	1.0	U	1.0	U	1.0	1.2	1.0	1.2	1.0
Bromomethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Chloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Trichlorofluoromethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Acetone	U	8.0	U	8.0	U	8.0	U	8.0	U	8.0
1,1-Dichloroethene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Methylene Chloride	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Carbon Disulfide	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Methyl-t-butyl Ether	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
trans-1,2-Dichloroethene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1-Dichloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
2-Butanone	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
2,2-Dichloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
cis-1,2-Dichloroethene	U	1.0	25	1.0	12	1.0	39	1.0	39	1.0
Chloroform	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1-Dichloropropene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dichloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1,1-Trichloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Carbon Tetrachloride	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Benzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Trichloroethene	U	1.0	27	1.0	700	1.0	26	1.0	25	1.0
1,2-Dichloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Bromodichloromethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Dibromomethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
cis-1,3-Dichloropropene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
trans-1,3-Dichloropropene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1,2-Trichloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,3-Dichloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Dibromochloromethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dibromoethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Bromoform	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
4-Methyl-2-Pentanone	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Toluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
2-Hexanone	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Tetrachloroethene	U	1.0	5.6	1.0	14	1.0	6.4	1.0	6.5	1.0
Chlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1,1,2-Tetrachloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Ethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
p&m-Xylene	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
o-Xylene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Styrene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Isopropylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1,2,2-Tetrachloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2,3-Trichloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
n-Propylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Bromobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
2-Chlorotoluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
4-Chlorotoluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
tert-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
sec-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
p-Isopropyltoluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,3-Dichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,4-Dichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
n-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dibromo-3-chloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2,4-Trichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Hexachlorobutadiene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Naphthalene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2,3-Trichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0

Table 1.1 (cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank	58380	58384	58392
Location :	072402	MW-100 S	MW-100 M	MW-29 M
File :	AV4910.D	AV4920.D	AV4921.D	AV4922.D
Dil. Fact. :	1	1	1	1

Analyte	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U	1.0	U	1.0	U	1.0	U	1.0
Chloromethane	U	2.0	U	2.0	U	2.0	U	2.0
Vinyl Chloride	U	1.0	U	1.0	U	1.0	U	1.0
Bromomethane	U	1.0	U	1.0	U	1.0	U	1.0
Chloroethane	U	1.0	U	1.0	U	1.0	U	1.0
Trichlorofluoromethane	U	1.0	U	1.0	U	1.0	U	1.0
Acetone	U	8.0	U	8.0	U	8.0	U	8.0
1,1-Dichloroethene	U	1.0	U	1.0	U	1.0	U	1.0
Methylene Chloride	U	1.0	U	1.0	U	1.0	U	1.0
Carbon Disulfide	U	1.0	U	1.0	U	1.0	U	1.0
Methyl-t-butyl Ether	U	1.0	U	1.0	U	1.0	U	1.0
trans-1,2-Dichloroethene	U	1.0	U	1.0	U	1.0	1.2	1.0
1,1-Dichloroethane	U	1.0	U	1.0	U	1.0	U	1.0
2-Butanone	U	1.0	U	1.0	U	1.0	U	1.0
2,2-Dichloropropane	U	1.0	U	1.0	U	1.0	U	1.0
cis-1,2-Dichloroethene	U	1.0	1.3	1.0	U	1.0	130	1.0
Chloroform	U	1.0	U	1.0	U	1.0	U	1.0
1,1-Dichloropropene	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dichloroethane	U	1.0	U	1.0	U	1.0	U	1.0
1,1,1-Trichloroethane	U	1.0	U	1.0	U	1.0	U	1.0
Carbon Tetrachloride	U	1.0	U	1.0	U	1.0	U	1.0
Benzene	U	1.0	U	1.0	U	1.0	U	1.0
Trichloroethene	U	1.0	1.6	1.0	U	1.0	160	1.0
1,2-Dichloropropane	U	1.0	U	1.0	U	1.0	U	1.0
Bromodichloromethane	U	1.0	U	1.0	U	1.0	U	1.0
Dibromomethane	U	1.0	U	1.0	U	1.0	U	1.0
cis-1,3-Dichloropropene	U	1.0	U	1.0	U	1.0	U	1.0
trans-1,3-Dichloropropene	U	1.0	U	1.0	U	1.0	U	1.0
1,1,2-Trichloroethane	U	1.0	U	1.0	U	1.0	U	1.0
1,3-Dichloropropane	U	1.0	U	1.0	U	1.0	U	1.0
Dibromochloromethane	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dibromoethane	U	1.0	U	1.0	U	1.0	U	1.0
Bromoform	U	1.0	U	1.0	U	1.0	U	1.0
4-Methyl-2-Pentanone	U	1.0	U	1.0	U	1.0	U	1.0
Toluene	U	1.0	U	1.0	U	1.0	U	1.0
2-Hexanone	U	1.0	U	1.0	U	1.0	U	1.0
Tetrachloroethene	U	1.0	U	1.0	U	1.0	33	1.0
Chlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0
1,1,1,2-Tetrachloroethane	U	1.0	U	1.0	U	1.0	U	1.0
Ethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0
p&m-Xylene	U	2.0	U	2.0	U	2.0	U	2.0
o-Xylene	U	1.0	U	1.0	U	1.0	U	1.0
Styrene	U	1.0	U	1.0	U	1.0	U	1.0
Isopropylbenzene	U	1.0	U	1.0	U	1.0	U	1.0
1,1,2,2-Tetrachloroethane	U	1.0	U	1.0	U	1.0	U	1.0
1,2,3-Trichloropropane	U	1.0	U	1.0	U	1.0	U	1.0
n-Propylbenzene	U	1.0	U	1.0	U	1.0	U	1.0
Bromobenzene	U	1.0	U	1.0	U	1.0	U	1.0
1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0
2-Chlorotoluene	U	1.0	U	1.0	U	1.0	U	1.0
4-Chlorotoluene	U	1.0	U	1.0	U	1.0	U	1.0
tert-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0
1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0
sec-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0
p-Isopropyltoluene	U	1.0	U	1.0	U	1.0	U	1.0
1,3-Dichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0
1,4-Dichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0
n-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dibromo-3-chloropropane	U	1.0	U	1.0	U	1.0	U	1.0
1,2,4-Trichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0
Hexachlorobutadiene	U	1.0	U	1.0	U	1.0	U	1.0
Naphthalene	U	1.0	U	1.0	U	1.0	U	1.0
1,2,3-Trichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0

Table 1.1 (cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank		58348		97376		58400		58404	
Location :	072502		TB-03		MW-206		SW-101		SW-102	
File :	AV4938.D		AV4939.D		AV4941.D		AV4942.D		AV4945.D	
Dil. Fact. :	1		1		1		1		1	
Analyte	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Chloromethane	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
Vinyl Chloride	U	1.0	U	1.0	5.8	1.0	U	1.0	U	1.0
Bromomethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Chloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Trichlorofluoromethane	U	1.0	U	1.0	1.2	1.0	U	1.0	U	1.0
Acetone	U	8.0	U	8.0	U	8.0	U	8.0	20	8.0
1,1-Dichloroethene	U	1.0	U	1.0	2.7	1.0	U	1.0	U	1.0
Methylene Chloride	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Carbon Disulfide	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Methyl-t-butyl Ether	U	1.0	U	1.0	1.7	1.0	U	1.0	U	1.0
trans-1,2-Dichloroethene	U	1.0	U	1.0	3.1	1.0	U	1.0	U	1.0
1,1-Dichloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
2-Butanone	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
2,2-Dichloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
cis-1,2-Dichloroethene	U	1.0	U	1.0	720	1.0	27	1.0	U	1.0
Chloroform	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1-Dichloropropene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dichloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1,1-Trichloroethane	U	1.0	U	1.0	3.8	1.0	U	1.0	U	1.0
Carbon Tetrachloride	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Benzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Trichloroethene	U	1.0	U	1.0	3200	1.0	5.6	1.0	U	1.0
1,2-Dichloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Bromodichloromethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Dibromomethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
cis-1,3-Dichloropropene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
trans-1,3-Dichloropropene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1,2-Trichloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,3-Dichloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Dibromochloromethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dibromoethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Bromoform	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
4-Methyl-2-Pentanone	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Toluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
2-Hexanone	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Tetrachloroethene	U	1.0	U	1.0	110	1.0	U	1.0	U	1.0
Chlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1,1,2-Tetrachloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Ethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
p&m-Xylene	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
o-Xylene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Styrene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Isopropylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1,2,2-Tetrachloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2,3-Trichloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
n-Propylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Bromobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
2-Chlorotoluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
4-Chlorotoluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
tert-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
sec-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
p-Isopropyltoluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,3-Dichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,4-Dichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
n-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dichlorobenzene	U	1.0	U	1.0	1.6	1.0	U	1.0	U	1.0
1,2-Dibromo-3-chloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2,4-Trichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Hexachlorobutadiene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Naphthalene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2,3-Trichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0

Table 1.1 (cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank		58408	
Location :	072502		SW-103	
File :	AV4938.D		AV4946.D	
Dil. Fact. :	1		1	

Analyte	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U	1.0	U	1.0
Chloromethane	U	2.0	U	2.0
Vinyl Chloride	U	1.0	U	1.0
Bromomethane	U	1.0	U	1.0
Chloroethane	U	1.0	U	1.0
Trichlorofluoromethane	U	1.0	U	1.0
Acetone	U	8.0	21	8.0
1,1-Dichloroethene	U	1.0	U	1.0
Methylene Chloride	U	1.0	U	1.0
Carbon Disulfide	U	1.0	U	1.0
Methyl-t-butyl Ether	U	1.0	U	1.0
trans-1,2-Dichloroethene	U	1.0	U	1.0
1,1-Dichloroethane	U	1.0	U	1.0
2-Butanone	U	1.0	U	1.0
2,2-Dichloropropane	U	1.0	U	1.0
cis-1,2-Dichloroethene	U	1.0	U	1.0
Chloroform	U	1.0	U	1.0
1,1-Dichloropropene	U	1.0	U	1.0
1,2-Dichloroethane	U	1.0	U	1.0
1,1,1-Trichloroethane	U	1.0	U	1.0
Carbon Tetrachloride	U	1.0	U	1.0
Benzene	U	1.0	U	1.0
Trichloroethene	U	1.0	U	1.0
1,2-Dichloropropane	U	1.0	U	1.0
Bromodichloromethane	U	1.0	U	1.0
Dibromomethane	U	1.0	U	1.0
cis-1,3-Dichloropropene	U	1.0	U	1.0
trans-1,3-Dichloropropene	U	1.0	U	1.0
1,1,2-Trichloroethane	U	1.0	U	1.0
1,3-Dichloropropane	U	1.0	U	1.0
Dibromochloromethane	U	1.0	U	1.0
1,2-Dibromoethane	U	1.0	U	1.0
Bromoform	U	1.0	U	1.0
4-Methyl-2-Pentanone	U	1.0	U	1.0
Toluene	U	1.0	U	1.0
2-Hexanone	U	1.0	U	1.0
Tetrachloroethene	U	1.0	U	1.0
Chlorobenzene	U	1.0	U	1.0
1,1,1,2-Tetrachloroethane	U	1.0	U	1.0
Ethylbenzene	U	1.0	U	1.0
p&m-Xylene	U	2.0	U	2.0
o-Xylene	U	1.0	U	1.0
Styrene	U	1.0	U	1.0
Isopropylbenzene	U	1.0	U	1.0
1,1,2,2-Tetrachloroethane	U	1.0	U	1.0
1,2,3-Trichloropropane	U	1.0	U	1.0
n-Propylbenzene	U	1.0	U	1.0
Bromobenzene	U	1.0	U	1.0
1,3,5-Trimethylbenzene	U	1.0	U	1.0
2-Chlorotoluene	U	1.0	U	1.0
4-Chlorotoluene	U	1.0	U	1.0
tert-Butylbenzene	U	1.0	U	1.0
1,2,4-Trimethylbenzene	U	1.0	U	1.0
sec-Butylbenzene	U	1.0	U	1.0
p-Isopropyltoluene	U	1.0	U	1.0
1,3-Dichlorobenzene	U	1.0	U	1.0
1,4-Dichlorobenzene	U	1.0	U	1.0
n-Butylbenzene	U	1.0	U	1.0
1,2-Dichlorobenzene	U	1.0	U	1.0
1,2-Dibromo-3-chloropropane	U	1.0	U	1.0
1,2,4-Trichlorobenzene	U	1.0	U	1.0
Hexachlorobutadiene	U	1.0	U	1.0
Naphthalene	U	1.0	U	1.0
1,2,3-Trichlorobenzene	U	1.0	U	1.0

Table 1.1 (cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank	10362	10363	10364
Location :	080502-2	TB-01	IP-31	IP-82
File :	BV5827.D	BV5828.D	BV5831.D	BV5832.D
Dil. Fact. :	1	1	50	100

Analyte	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U	1.0	U	1.0	U	50	U	100
Chloromethane	U	2.0	U	2.0	U	100	U	200
Vinyl Chloride	U	1.0	U	1.0	U	50	U	100
Bromomethane	U	1.0	U	1.0	U	50	U	100
Chloroethane	U	1.0	U	1.0	U	50	U	100
Trichlorofluoromethane	U	1.0	U	1.0	U	50	U	100
Acetone	U	8.0	U	8.0	U	400	U	800
1,1-Dichloroethene	U	1.0	U	1.0	U	50	U	100
Methylene Chloride	U	1.0	U	1.0	U	50	U	100
Carbon Disulfide	U	1.0	U	1.0	U	50	U	100
Methyl-t-butyl Ether	U	1.0	U	1.0	U	50	U	100
trans-1,2-Dichloroethene	U	1.0	U	1.0	U	50	U	100
1,1-Dichloroethane	U	1.0	U	1.0	U	50	U	100
2-Butanone	U	1.0	U	1.0	U	50	U	100
2,2-Dichloropropane	U	1.0	U	1.0	U	50	U	100
cis-1,2-Dichloroethene	U	1.0	U	1.0	200	50	200	100
Chloroform	U	1.0	U	1.0	U	50	U	100
1,1-Dichloropropene	U	1.0	U	1.0	U	50	U	100
1,2-Dichloroethane	U	1.0	U	1.0	U	50	U	100
1,1,1-Trichloroethane	U	1.0	U	1.0	U	50	U	100
Carbon Tetrachloride	U	1.0	U	1.0	U	50	U	100
Benzene	U	1.0	U	1.0	U	50	U	100
Trichloroethene	U	1.0	U	1.0	3200	50	9200	100
1,2-Dichloropropane	U	1.0	U	1.0	U	50	U	100
Bromodichloromethane	U	1.0	U	1.0	U	50	U	100
Dibromomethane	U	1.0	U	1.0	U	50	U	100
cis-1,3-Dichloropropene	U	1.0	U	1.0	U	50	U	100
trans-1,3-Dichloropropene	U	1.0	U	1.0	U	50	U	100
1,1,2-Trichloroethane	U	1.0	U	1.0	U	50	U	100
1,3-Dichloropropane	U	1.0	U	1.0	U	50	U	100
Dibromochloromethane	U	1.0	U	1.0	U	50	U	100
1,2-Dibromoethane	U	1.0	U	1.0	U	50	U	100
Bromoform	U	1.0	U	1.0	U	50	U	100
4-Methyl-2-Pentanone	U	1.0	U	1.0	U	50	U	100
Toluene	U	1.0	U	1.0	U	50	U	100
2-Hexanone	U	1.0	U	1.0	U	50	U	100
Tetrachloroethene	U	1.0	U	1.0	U	50	U	100
Chlorobenzene	U	1.0	U	1.0	U	50	U	100
1,1,1,2-Tetrachloroethane	U	1.0	U	1.0	U	50	U	100
Ethylbenzene	U	1.0	U	1.0	U	50	U	100
p&m-Xylene	U	2.0	U	2.0	U	100	U	200
o-Xylene	U	1.0	U	1.0	U	50	U	100
Styrene	U	1.0	U	1.0	U	50	U	100
Isopropylbenzene	U	1.0	U	1.0	U	50	U	100
1,1,2,2-Tetrachloroethane	U	1.0	U	1.0	U	50	U	100
1,2,3-Trichloropropane	U	1.0	U	1.0	U	50	U	100
n-Propylbenzene	U	1.0	U	1.0	U	50	U	100
Bromobenzene	U	1.0	U	1.0	U	50	U	100
1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	50	U	100
2-Chlorotoluene	U	1.0	U	1.0	U	50	U	100
4-Chlorotoluene	U	1.0	U	1.0	U	50	U	100
tert-Butylbenzene	U	1.0	U	1.0	U	50	U	100
1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	50	U	100
sec-Butylbenzene	U	1.0	U	1.0	U	50	U	100
p-Isopropyltoluene	U	1.0	U	1.0	U	50	U	100
1,3-Dichlorobenzene	U	1.0	U	1.0	U	50	U	100
1,4-Dichlorobenzene	U	1.0	U	1.0	U	50	U	100
n-Butylbenzene	U	1.0	U	1.0	U	50	U	100
1,2-Dichlorobenzene	U	1.0	U	1.0	U	50	U	100
1,2-Dibromo-3-chloropropane	U	1.0	U	1.0	U	50	U	100
1,2,4-Trichlorobenzene	U	1.0	U	1.0	U	50	U	100
Hexachlorobutadiene	U	1.0	U	1.0	U	50	U	100
Naphthalene	U	1.0	U	1.0	U	50	U	100
1,2,3-Trichlorobenzene	U	1.0	U	1.0	U	50	U	100

Table 1.1 (cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank	10361	10318
Location :	080802-2	TB-02	IP-27
File :	BV5847.D	BV5848.D	BV5849.D
Dil. Fact. :	1	1	100

Analyte	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U	1.0	U	1.0	U	100
Chloromethane	U	2.0	U	2.0	U	200
Vinyl Chloride	U	1.0	U	1.0	U	100
Bromomethane	U	1.0	U	1.0	U	100
Chloroethane	U	1.0	U	1.0	U	100
Trichlorofluoromethane	U	1.0	U	1.0	U	100
Acetone	U	8.0	U	8.0	U	800
1,1-Dichloroethene	U	1.0	U	1.0	U	100
Methylene Chloride	U	1.0	U	1.0	U	100
Carbon Disulfide	U	1.0	U	1.0	U	100
Methyl-t-butyl Ether	U	1.0	U	1.0	U	100
trans-1,2-Dichloroethene	U	1.0	U	1.0	U	100
1,1-Dichloroethane	U	1.0	U	1.0	U	100
2-Butanone	U	1.0	U	1.0	U	100
2,2-Dichloropropane	U	1.0	U	1.0	U	100
cis-1,2-Dichloroethene	U	1.0	U	1.0	190	100
Chloroform	U	1.0	U	1.0	U	100
1,1-Dichloropropene	U	1.0	U	1.0	U	100
1,2-Dichloroethane	U	1.0	U	1.0	U	100
1,1,1-Trichloroethane	U	1.0	U	1.0	U	100
Carbon Tetrachloride	U	1.0	U	1.0	U	100
Benzene	U	1.0	U	1.0	U	100
Trichloroethene	U	1.0	U	1.0	4800	100
1,2-Dichloropropane	U	1.0	U	1.0	U	100
Bromodichloromethane	U	1.0	U	1.0	U	100
Dibromomethane	U	1.0	U	1.0	U	100
cis-1,3-Dichloropropene	U	1.0	U	1.0	U	100
trans-1,3-Dichloropropene	U	1.0	U	1.0	U	100
1,1,2-Trichloroethane	U	1.0	U	1.0	U	100
1,3-Dichloropropane	U	1.0	U	1.0	U	100
Dibromochloromethane	U	1.0	U	1.0	U	100
1,2-Dibromoethane	U	1.0	U	1.0	U	100
Bromoform	U	1.0	U	1.0	U	100
4-Methyl-2-Pentanone	U	1.0	U	1.0	U	100
Toluene	U	1.0	U	1.0	U	100
2-Hexanone	U	1.0	U	1.0	U	100
Tetrachloroethene	U	1.0	U	1.0	U	100
Chlorobenzene	U	1.0	U	1.0	U	100
1,1,1,2-Tetrachloroethane	U	1.0	U	1.0	U	100
Ethylbenzene	U	1.0	U	1.0	U	100
p&m-Xylene	U	2.0	U	2.0	U	200
o-Xylene	U	1.0	U	1.0	U	100
Styrene	U	1.0	U	1.0	U	100
Isopropylbenzene	U	1.0	U	1.0	U	100
1,1,2,2-Tetrachloroethane	U	1.0	U	1.0	U	100
1,2,3-Trichloropropane	U	1.0	U	1.0	U	100
n-Propylbenzene	U	1.0	U	1.0	U	100
Bromobenzene	U	1.0	U	1.0	U	100
1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	100
2-Chlorotoluene	U	1.0	U	1.0	U	100
4-Chlorotoluene	U	1.0	U	1.0	U	100
tert-Butylbenzene	U	1.0	U	1.0	U	100
1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	100
sec-Butylbenzene	U	1.0	U	1.0	U	100
p-Isopropyltoluene	U	1.0	U	1.0	U	100
1,3-Dichlorobenzene	U	1.0	U	1.0	U	100
1,4-Dichlorobenzene	U	1.0	U	1.0	U	100
n-Butylbenzene	U	1.0	U	1.0	U	100
1,2-Dichlorobenzene	U	1.0	U	1.0	U	100
1,2-Dibromo-3-chloropropane	U	1.0	U	1.0	U	100
1,2,4-Trichlorobenzene	U	1.0	U	1.0	U	100
Hexachlorobutadiene	U	1.0	U	1.0	U	100
Naphthalene	U	1.0	U	1.0	U	100
1,2,3-Trichlorobenzene	U	1.0	U	1.0	U	100

Table 1.1 (cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank		10319		10321		10320	
Location :	081202-2		TB-03		IP-36		IP-55	
File :	BV5857.D		BV5858.D		BV5859.D		BV5860.D	
Dil. Fact. :	1		1		100		2	
Analyte	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U	1.0	U	1.0	U	100	U	2.0
Chloromethane	U	2.0	U	2.0	U	200	U	4.0
Vinyl Chloride	U	1.0	U	1.0	U	100	31	2.0
Bromomethane	U	1.0	U	1.0	U	100	U	2.0
Chloroethane	U	1.0	U	1.0	U	100	U	2.0
Trichlorofluoromethane	U	1.0	U	1.0	U	100	U	2.0
Acetone	U	8.0	U	8.0	U	800	U	16
1,1-Dichloroethene	U	1.0	U	1.0	U	100	U	2.0
Methylene Chloride	U	1.0	U	1.0	U	100	U	2.0
Carbon Disulfide	U	1.0	U	1.0	U	100	U	2.0
Methyl-t-butyl Ether	U	1.0	U	1.0	U	100	U	2.0
trans-1,2-Dichloroethene	U	1.0	U	1.0	U	100	U	2.0
1,1-Dichloroethane	U	1.0	U	1.0	U	100	U	2.0
2-Butanone	U	1.0	U	1.0	U	100	U	2.0
2,2-Dichloropropane	U	1.0	U	1.0	U	100	U	2.0
cis-1,2-Dichloroethene	U	1.0	U	1.0	280	100	400	2.0
Chloroform	U	1.0	U	1.0	U	100	U	2.0
1,1-Dichloropropene	U	1.0	U	1.0	U	100	U	2.0
1,2-Dichloroethane	U	1.0	U	1.0	U	100	U	2.0
1,1,1-Trichloroethane	U	1.0	U	1.0	U	100	U	2.0
Carbon Tetrachloride	U	1.0	U	1.0	U	100	U	2.0
Benzene	U	1.0	U	1.0	U	100	U	2.0
Trichloroethene	U	1.0	U	1.0	3700	100	33	2.0
1,2-Dichloropropane	U	1.0	U	1.0	U	100	U	2.0
Bromodichloromethane	U	1.0	U	1.0	U	100	U	2.0
Dibromomethane	U	1.0	U	1.0	U	100	U	2.0
cis-1,3-Dichloropropene	U	1.0	U	1.0	U	100	U	2.0
trans-1,3-Dichloropropene	U	1.0	U	1.0	U	100	U	2.0
1,1,2-Trichloroethane	U	1.0	U	1.0	U	100	U	2.0
1,3-Dichloropropane	U	1.0	U	1.0	U	100	U	2.0
Dibromochloromethane	U	1.0	U	1.0	U	100	U	2.0
1,2-Dibromoethane	U	1.0	U	1.0	U	100	U	2.0
Bromoform	U	1.0	U	1.0	U	100	U	2.0
4-Methyl-2-Pentanone	U	1.0	U	1.0	U	100	U	2.0
Toluene	U	1.0	U	1.0	U	100	U	2.0
2-Hexanone	U	1.0	U	1.0	U	100	U	2.0
Tetrachloroethene	U	1.0	U	1.0	U	100	U	2.0
Chlorobenzene	U	1.0	U	1.0	U	100	U	2.0
1,1,1,2-Tetrachloroethane	U	1.0	U	1.0	U	100	U	2.0
Ethylbenzene	U	1.0	U	1.0	U	100	U	2.0
p&m-Xylene	U	2.0	U	2.0	U	200	U	4.0
o-Xylene	U	1.0	U	1.0	U	100	U	2.0
Styrene	U	1.0	U	1.0	U	100	U	2.0
Isopropylbenzene	U	1.0	U	1.0	U	100	U	2.0
1,1,2,2-Tetrachloroethane	U	1.0	U	1.0	U	100	U	2.0
1,2,3-Trichloropropane	U	1.0	U	1.0	U	100	U	2.0
n-Propylbenzene	U	1.0	U	1.0	U	100	U	2.0
Bromobenzene	U	1.0	U	1.0	U	100	U	2.0
1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	100	U	2.0
2-Chlorotoluene	U	1.0	U	1.0	U	100	U	2.0
4-Chlorotoluene	U	1.0	U	1.0	U	100	U	2.0
tert-Butylbenzene	U	1.0	U	1.0	U	100	U	2.0
1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	100	U	2.0
sec-Butylbenzene	U	1.0	U	1.0	U	100	U	2.0
p-Isopropyltoluene	U	1.0	U	1.0	U	100	U	2.0
1,3-Dichlorobenzene	U	1.0	U	1.0	U	100	U	2.0
1,4-Dichlorobenzene	U	1.0	U	1.0	U	100	U	2.0
n-Butylbenzene	U	1.0	U	1.0	U	100	U	2.0
1,2-Dichlorobenzene	U	1.0	U	1.0	U	100	U	2.0
1,2-Dibromo-3-chloropropane	U	1.0	U	1.0	U	100	U	2.0
1,2,4-Trichlorobenzene	U	1.0	U	1.0	U	100	U	2.0
Hexachlorobutadiene	U	1.0	U	1.0	U	100	U	2.0
Naphthalene	U	1.0	U	1.0	U	100	U	2.0
1,2,3-Trichlorobenzene	U	1.0	U	1.0	U	100	U	2.0

Table 1.1 (cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank	10322	10324	10323
Location :	081402-2	TB-04	IP-63	IP-42
File :	BV5876.D	BV5877.D	BV5878.D	BV5879.D
Dil. Fact. :	1	1	200	100

Analyte	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U	1.0	U	1.0	U	200	U	100
Chloromethane	U	2.0	U	2.0	U	400	U	200
Vinyl Chloride	U	1.0	U	1.0	U	200	U	100
Bromomethane	U	1.0	U	1.0	U	200	U	100
Chloroethane	U	1.0	U	1.0	U	200	U	100
Trichlorofluoromethane	U	1.0	U	1.0	U	200	U	100
Acetone	U	8.0	U	8.0	U	1600	U	800
1,1-Dichloroethene	U	1.0	U	1.0	U	200	U	100
Methylene Chloride	U	1.0	U	1.0	U	200	U	100
Carbon Disulfide	U	1.0	U	1.0	U	200	U	100
Methyl-t-butyl Ether	U	1.0	U	1.0	U	200	U	100
trans-1,2-Dichloroethene	U	1.0	U	1.0	U	200	U	100
1,1-Dichloroethane	U	1.0	U	1.0	U	200	U	100
2-Butanone	U	1.0	U	1.0	U	200	U	100
2,2-Dichloropropane	U	1.0	U	1.0	U	200	U	100
cis-1,2-Dichloroethene	U	1.0	U	1.0	2000	200	210	100
Chloroform	U	1.0	U	1.0	U	200	U	100
1,1-Dichloropropene	U	1.0	U	1.0	U	200	U	100
1,2-Dichloroethane	U	1.0	U	1.0	U	200	U	100
1,1,1-Trichloroethane	U	1.0	U	1.0	U	200	U	100
Carbon Tetrachloride	U	1.0	U	1.0	U	200	U	100
Benzene	U	1.0	U	1.0	U	200	U	100
Trichloroethene	U	1.0	U	1.0	17000	200	5300	100
1,2-Dichloropropane	U	1.0	U	1.0	U	200	U	100
Bromodichloromethane	U	1.0	U	1.0	U	200	U	100
Dibromomethane	U	1.0	U	1.0	U	200	U	100
cis-1,3-Dichloropropene	U	1.0	U	1.0	U	200	U	100
trans-1,3-Dichloropropene	U	1.0	U	1.0	U	200	U	100
1,1,2-Trichloroethane	U	1.0	U	1.0	U	200	U	100
1,3-Dichloropropane	U	1.0	U	1.0	U	200	U	100
Dibromochloromethane	U	1.0	U	1.0	U	200	U	100
1,2-Dibromoethane	U	1.0	U	1.0	U	200	U	100
Bromoform	U	1.0	U	1.0	U	200	U	100
4-Methyl-2-Pentanone	U	1.0	U	1.0	U	200	U	100
Toluene	U	1.0	U	1.0	U	200	U	100
2-Hexanone	U	1.0	U	1.0	U	200	U	100
Tetrachloroethene	U	1.0	U	1.0	2800	200	120	100
Chlorobenzene	U	1.0	U	1.0	U	200	U	100
1,1,1,2-Tetrachloroethane	U	1.0	U	1.0	U	200	U	100
Ethylbenzene	U	1.0	U	1.0	U	200	U	100
p&m-Xylene	U	2.0	U	2.0	U	400	U	200
o-Xylene	U	1.0	U	1.0	U	200	U	100
Styrene	U	1.0	U	1.0	U	200	U	100
Isopropylbenzene	U	1.0	U	1.0	U	200	U	100
1,1,2,2-Tetrachloroethane	U	1.0	U	1.0	U	200	U	100
1,2,3-Trichloropropane	U	1.0	U	1.0	U	200	U	100
n-Propylbenzene	U	1.0	U	1.0	U	200	U	100
Bromobenzene	U	1.0	U	1.0	U	200	U	100
1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	200	U	100
2-Chlorotoluene	U	1.0	U	1.0	U	200	U	100
4-Chlorotoluene	U	1.0	U	1.0	U	200	U	100
tert-Butylbenzene	U	1.0	U	1.0	U	200	U	100
1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	200	U	100
sec-Butylbenzene	U	1.0	U	1.0	U	200	U	100
p-Isopropyltoluene	U	1.0	U	1.0	U	200	U	100
1,3-Dichlorobenzene	U	1.0	U	1.0	U	200	U	100
1,4-Dichlorobenzene	U	1.0	U	1.0	U	200	U	100
n-Butylbenzene	U	1.0	U	1.0	U	200	U	100
1,2-Dichlorobenzene	U	1.0	U	1.0	U	200	U	100
1,2-Dibromo-3-chloropropane	U	1.0	U	1.0	U	200	U	100
1,2,4-Trichlorobenzene	U	1.0	U	1.0	U	200	U	100
Hexachlorobutadiene	U	1.0	U	1.0	U	200	U	100
Naphthalene	U	1.0	U	1.0	U	200	U	100
1,2,3-Trichlorobenzene	U	1.0	U	1.0	U	200	U	100

Table 1.1 (cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank	10325	10326	10327	10328
Location :	081902-2	TB-05	IP-89	IP-80	IP-85
File :	BV5888.D	BV5889.D	BV5891.D	BV5892.D	BV5893.D
Dil. Fact. :	1	1	100	100	100

Analyte	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U	1.0	U	1.0	U	100	U	100	U	100
Chloromethane	U	2.0	U	2.0	U	200	U	200	U	200
Vinyl Chloride	U	1.0	U	1.0	U	100	U	100	U	100
Bromomethane	U	1.0	U	1.0	U	100	U	100	U	100
Chloroethane	U	1.0	U	1.0	U	100	U	100	U	100
Trichlorofluoromethane	U	1.0	U	1.0	U	100	U	100	U	100
Acetone	U	8.0	U	8.0	U	800	U	800	U	800
1,1-Dichloroethene	U	1.0	U	1.0	U	100	U	100	U	100
Methylene Chloride	U	1.0	U	1.0	U	100	U	100	U	100
Carbon Disulfide	U	1.0	U	1.0	U	100	U	100	U	100
Methyl-t-butyl Ether	U	1.0	U	1.0	U	100	U	100	U	100
trans-1,2-Dichloroethene	U	1.0	U	1.0	U	100	U	100	U	100
1,1-Dichloroethane	U	1.0	U	1.0	U	100	U	100	U	100
2-Butanone	U	1.0	U	1.0	U	100	U	100	U	100
2,2-Dichloropropane	U	1.0	U	1.0	U	100	U	100	U	100
cis-1,2-Dichloroethene	U	1.0	U	1.0	120	100	250	100	180	100
Chloroform	U	1.0	U	1.0	U	100	U	100	U	100
1,1-Dichloropropene	U	1.0	U	1.0	U	100	U	100	U	100
1,2-Dichloroethane	U	1.0	U	1.0	U	100	U	100	U	100
1,1,1-Trichloroethane	U	1.0	U	1.0	U	100	U	100	U	100
Carbon Tetrachloride	U	1.0	U	1.0	U	100	U	100	U	100
Benzene	U	1.0	U	1.0	U	100	U	100	U	100
Trichloroethene	U	1.0	U	1.0	6200	100	7500	100	3500	100
1,2-Dichloropropane	U	1.0	U	1.0	U	100	U	100	U	100
Bromodichloromethane	U	1.0	U	1.0	U	100	U	100	U	100
Dibromomethane	U	1.0	U	1.0	U	100	U	100	U	100
cis-1,3-Dichloropropene	U	1.0	U	1.0	U	100	U	100	U	100
trans-1,3-Dichloropropene	U	1.0	U	1.0	U	100	U	100	U	100
1,1,2-Trichloroethane	U	1.0	U	1.0	U	100	U	100	U	100
1,3-Dichloropropane	U	1.0	U	1.0	U	100	U	100	U	100
Dibromochloromethane	U	1.0	U	1.0	U	100	U	100	U	100
1,2-Dibromoethane	U	1.0	U	1.0	U	100	U	100	U	100
Bromoform	U	1.0	U	1.0	U	100	U	100	U	100
4-Methyl-2-Pentanone	U	1.0	U	1.0	U	100	U	100	U	100
Toluene	U	1.0	U	1.0	U	100	U	100	U	100
2-Hexanone	U	1.0	U	1.0	U	100	U	100	U	100
Tetrachloroethene	U	1.0	U	1.0	110	100	U	100	U	100
Chlorobenzene	U	1.0	U	1.0	U	100	U	100	U	100
1,1,1,2-Tetrachloroethane	U	1.0	U	1.0	U	100	U	100	U	100
Ethylbenzene	U	1.0	U	1.0	U	100	U	100	U	100
p&m-Xylene	U	2.0	U	2.0	U	200	U	200	U	200
o-Xylene	U	1.0	U	1.0	U	100	U	100	U	100
Styrene	U	1.0	U	1.0	U	100	U	100	U	100
Isopropylbenzene	U	1.0	U	1.0	U	100	U	100	U	100
1,1,2,2-Tetrachloroethane	U	1.0	U	1.0	U	100	U	100	U	100
1,2,3-Trichloropropane	U	1.0	U	1.0	U	100	U	100	U	100
n-Propylbenzene	U	1.0	U	1.0	U	100	U	100	U	100
Bromobenzene	U	1.0	U	1.0	U	100	U	100	U	100
1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	100	U	100	U	100
2-Chlorotoluene	U	1.0	U	1.0	U	100	U	100	U	100
4-Chlorotoluene	U	1.0	U	1.0	U	100	U	100	U	100
tert-Butylbenzene	U	1.0	U	1.0	U	100	U	100	U	100
1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	100	U	100	U	100
sec-Butylbenzene	U	1.0	U	1.0	U	100	U	100	U	100
p-Isopropyltoluene	U	1.0	U	1.0	U	100	U	100	U	100
1,3-Dichlorobenzene	U	1.0	U	1.0	U	100	U	100	U	100
1,4-Dichlorobenzene	U	1.0	U	1.0	U	100	U	100	U	100
n-Butylbenzene	U	1.0	U	1.0	U	100	U	100	U	100
1,2-Dichlorobenzene	U	1.0	U	1.0	U	100	U	100	U	100
1,2-Dibromo-3-chloropropane	U	1.0	U	1.0	U	100	U	100	U	100
1,2,4-Trichlorobenzene	U	1.0	U	1.0	U	100	U	100	U	100
Hexachlorobutadiene	U	1.0	U	1.0	U	100	U	100	U	100
Naphthalene	U	1.0	U	1.0	U	100	U	100	U	100
1,2,3-Trichlorobenzene	U	1.0	U	1.0	U	100	U	100	U	100

Table 1.1 (cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank		TB-01		MW-102	
Location :	081902-2		TB-01		MW-102	
File :	BV5888.D		BV5890.D		BV5894.D	
Dil. Fact. :	1		1		2	
Analyte	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U	1.0	U	1.0	U	2.0
Chloromethane	U	2.0	U	2.0	U	4.0
Vinyl Chloride	U	1.0	U	1.0	U	2.0
Bromomethane	U	1.0	U	1.0	U	2.0
Chloroethane	U	1.0	U	1.0	U	2.0
Trichlorofluoromethane	U	1.0	U	1.0	U	2.0
Acetone	U	8.0	3.2 J	8.0	U	16
1,1-Dichloroethene	U	1.0	U	1.0	U	2.0
Methylene Chloride	U	1.0	U	1.0	U	2.0
Carbon Disulfide	U	1.0	U	1.0	U	2.0
Methyl-t-butyl Ether	U	1.0	U	1.0	U	2.0
trans-1,2-Dichloroethene	U	1.0	U	1.0	U	2.0
1,1-Dichloroethane	U	1.0	U	1.0	U	2.0
2-Butanone	U	1.0	U	1.0	U	2.0
2,2-Dichloropropane	U	1.0	U	1.0	U	2.0
cis-1,2-Dichloroethene	U	1.0	U	1.0	110	2.0
Chloroform	U	1.0	U	1.0	U	2.0
1,1-Dichloropropene	U	1.0	U	1.0	U	2.0
1,2-Dichloroethane	U	1.0	U	1.0	U	2.0
1,1,1-Trichloroethane	U	1.0	U	1.0	U	2.0
Carbon Tetrachloride	U	1.0	U	1.0	U	2.0
Benzene	U	1.0	U	1.0	U	2.0
Trichloroethene	U	1.0	U	1.0	200	2.0
1,2-Dichloropropane	U	1.0	U	1.0	U	2.0
Bromodichloromethane	U	1.0	U	1.0	U	2.0
Dibromomethane	U	1.0	U	1.0	U	2.0
cis-1,3-Dichloropropene	U	1.0	U	1.0	U	2.0
trans-1,3-Dichloropropene	U	1.0	U	1.0	U	2.0
1,1,2-Trichloroethane	U	1.0	U	1.0	U	2.0
1,3-Dichloropropane	U	1.0	U	1.0	U	2.0
Dibromochloromethane	U	1.0	U	1.0	U	2.0
1,2-Dibromoethane	U	1.0	U	1.0	U	2.0
Bromoform	U	1.0	U	1.0	U	2.0
4-Methyl-2-Pentanone	U	1.0	U	1.0	U	2.0
Toluene	U	1.0	U	1.0	U	2.0
2-Hexanone	U	1.0	U	1.0	U	2.0
Tetrachloroethene	U	1.0	U	1.0	5.6	2.0
Chlorobenzene	U	1.0	U	1.0	U	2.0
1,1,1,2-Tetrachloroethane	U	1.0	U	1.0	U	2.0
Ethylbenzene	U	1.0	U	1.0	U	2.0
p&m-Xylene	U	2.0	U	2.0	U	4.0
o-Xylene	U	1.0	U	1.0	U	2.0
Styrene	U	1.0	U	1.0	U	2.0
Isopropylbenzene	U	1.0	U	1.0	U	2.0
1,1,2,2-Tetrachloroethane	U	1.0	U	1.0	U	2.0
1,2,3-Trichloropropane	U	1.0	U	1.0	U	2.0
n-Propylbenzene	U	1.0	U	1.0	U	2.0
Bromobenzene	U	1.0	U	1.0	U	2.0
1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	2.0
2-Chlorotoluene	U	1.0	U	1.0	U	2.0
4-Chlorotoluene	U	1.0	U	1.0	U	2.0
tert-Butylbenzene	U	1.0	U	1.0	U	2.0
1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	2.0
sec-Butylbenzene	U	1.0	U	1.0	U	2.0
p-Isopropyltoluene	U	1.0	U	1.0	U	2.0
1,3-Dichlorobenzene	U	1.0	U	1.0	U	2.0
1,4-Dichlorobenzene	U	1.0	U	1.0	U	2.0
n-Butylbenzene	U	1.0	U	1.0	U	2.0
1,2-Dichlorobenzene	U	1.0	U	1.0	U	2.0
1,2-Dibromo-3-chloropropane	U	1.0	U	1.0	U	2.0
1,2,4-Trichlorobenzene	U	1.0	U	1.0	U	2.0
Hexachlorobutadiene	U	1.0	U	1.0	U	2.0
Naphthalene	U	1.0	U	1.0	U	2.0
1,2,3-Trichlorobenzene	U	1.0	U	1.0	U	2.0

Table 1.1 (cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank	PE-PV173	MW-30D
Location :	082002	PE-PV173	MW-30D
File :	BV5906.D	BV5907.D	BV5909.D
Dil. Fact. :	1	1	1

Analyte	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U	1.0	U	1.0	U	1.0
Chloromethane	U	2.0	U	2.0	U	2.0
Vinyl Chloride	U	1.0	U	1.0	4.0	1.0
Bromomethane	U	1.0	9.7	1.0	U	1.0
Chloroethane	U	1.0	U	1.0	U	1.0
Trichlorofluoromethane	U	1.0	U	1.0	U	1.0
Acetone	U	8.0	13	8.0	U	8.0
1,1-Dichloroethene	U	1.0	U	1.0	1.1	1.0
Methylene Chloride	U	1.0	U	1.0	U	1.0
Carbon Disulfide	U	1.0	U	1.0	U	1.0
Methyl-t-butyl Ether	U	1.0	U	1.0	1.8	1.0
trans-1,2-Dichloroethene	U	1.0	U	1.0	U	1.0
1,1-Dichloroethane	U	1.0	U	1.0	U	1.0
2-Butanone	U	1.0	U	1.0	U	1.0
2,2-Dichloropropane	U	1.0	U	1.0	U	1.0
cis-1,2-Dichloroethene	U	1.0	U	1.0	82	1.0
Chloroform	U	1.0	U	1.0	U	1.0
1,1-Dichloropropene	U	1.0	U	1.0	U	1.0
1,2-Dichloroethane	U	1.0	U	1.0	U	1.0
1,1,1-Trichloroethane	U	1.0	U	1.0	U	1.0
Carbon Tetrachloride	U	1.0	U	1.0	U	1.0
Benzene	U	1.0	U	1.0	U	1.0
Trichloroethene	U	1.0	U	1.0	200	1.0
1,2-Dichloropropane	U	1.0	U	1.0	U	1.0
Bromodichloromethane	U	1.0	U	1.0	U	1.0
Dibromomethane	U	1.0	U	1.0	U	1.0
cis-1,3-Dichloropropene	U	1.0	U	1.0	U	1.0
trans-1,3-Dichloropropene	U	1.0	2.3	1.0	U	1.0
1,1,2-Trichloroethane	U	1.0	U	1.0	U	1.0
1,3-Dichloropropane	U	1.0	U	1.0	U	1.0
Dibromochloromethane	U	1.0	U	1.0	U	1.0
1,2-Dibromoethane	U	1.0	U	1.0	U	1.0
Bromoform	U	1.0	U	1.0	U	1.0
4-Methyl-2-Pentanone	U	1.0	U	1.0	U	1.0
Toluene	U	1.0	U	1.0	U	1.0
2-Hexanone	U	1.0	14	1.0	U	1.0
Tetrachloroethene	U	1.0	U	1.0	6.3	1.0
Chlorobenzene	U	1.0	U	1.0	U	1.0
1,1,1,2-Tetrachloroethane	U	1.0	U	1.0	U	1.0
Ethylbenzene	U	1.0	U	1.0	U	1.0
p&m-Xylene	U	2.0	U	2.0	U	2.0
o-Xylene	U	1.0	U	1.0	U	1.0
Styrene	U	1.0	12	1.0	U	1.0
Isopropylbenzene	U	1.0	U	1.0	U	1.0
1,1,2,2-Tetrachloroethane	U	1.0	9.3	1.0	U	1.0
1,2,3-Trichloropropane	U	1.0	U	1.0	U	1.0
n-Propylbenzene	U	1.0	U	1.0	U	1.0
Bromobenzene	U	1.0	U	1.0	U	1.0
1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	1.0
2-Chlorotoluene	U	1.0	U	1.0	U	1.0
4-Chlorotoluene	U	1.0	U	1.0	U	1.0
tert-Butylbenzene	U	1.0	U	1.0	U	1.0
1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	1.0
sec-Butylbenzene	U	1.0	U	1.0	U	1.0
p-Isopropyltoluene	U	1.0	U	1.0	U	1.0
1,3-Dichlorobenzene	U	1.0	13	1.0	U	1.0
1,4-Dichlorobenzene	U	1.0	4.6	1.0	U	1.0
n-Butylbenzene	U	1.0	U	1.0	U	1.0
1,2-Dichlorobenzene	U	1.0	2.3	1.0	U	1.0
1,2-Dibromo-3-chloropropane	U	1.0	6.9	1.0	U	1.0
1,2,4-Trichlorobenzene	U	1.0	U	1.0	U	1.0
Hexachlorobutadiene	U	1.0	U	1.0	U	1.0
Naphthalene	U	1.0	U	1.0	U	1.0
1,2,3-Trichlorobenzene	U	1.0	U	1.0	U	1.0

Table 1.1 (cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank	10329	10330	10331
Location :	082202-2	TB-06	IP-61	IP-114
File :	BV5943.D	BV5944.D	BV5945.D	BV5946.D
Dil. Fact. :	1	1	100	10

Analyte	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U	1.0	U	1.0	U	100	U	10
Chloromethane	U	2.0	U	2.0	U	200	U	20
Vinyl Chloride	U	1.0	U	1.0	140	100	U	10
Bromomethane	U	1.0	U	1.0	U	100	U	10
Chloroethane	U	1.0	U	1.0	U	100	U	10
Trichlorofluoromethane	U	1.0	U	1.0	U	100	U	10
Acetone	U	8.0	U	8.0	U	800	U	80
1,1-Dichloroethene	U	1.0	U	1.0	U	100	U	10
Methylene Chloride	U	1.0	U	1.0	U	100	U	10
Carbon Disulfide	U	1.0	U	1.0	U	100	U	10
Methyl-t-butyl Ether	U	1.0	U	1.0	U	100	U	10
trans-1,2-Dichloroethene	U	1.0	U	1.0	U	100	U	10
1,1-Dichloroethane	U	1.0	U	1.0	U	100	U	10
2-Butanone	U	1.0	U	1.0	U	100	U	10
2,2-Dichloropropane	U	1.0	U	1.0	U	100	U	10
cis-1,2-Dichloroethene	U	1.0	U	1.0	4500	100	110	10
Chloroform	U	1.0	U	1.0	U	100	U	10
1,1-Dichloropropene	U	1.0	U	1.0	U	100	U	10
1,2-Dichloroethane	U	1.0	U	1.0	U	100	U	10
1,1,1-Trichloroethane	U	1.0	U	1.0	U	100	U	10
Carbon Tetrachloride	U	1.0	U	1.0	U	100	U	10
Benzene	U	1.0	U	1.0	U	100	U	10
Trichloroethene	U	1.0	U	1.0	11000	100	730	10
1,2-Dichloropropane	U	1.0	U	1.0	U	100	U	10
Bromodichloromethane	U	1.0	U	1.0	U	100	U	10
Dibromomethane	U	1.0	U	1.0	U	100	U	10
cis-1,3-Dichloropropene	U	1.0	U	1.0	U	100	U	10
trans-1,3-Dichloropropene	U	1.0	U	1.0	U	100	U	10
1,1,2-Trichloroethane	U	1.0	U	1.0	U	100	U	10
1,3-Dichloropropane	U	1.0	U	1.0	U	100	U	10
Dibromochloromethane	U	1.0	U	1.0	U	100	U	10
1,2-Dibromoethane	U	1.0	U	1.0	U	100	U	10
Bromoform	U	1.0	U	1.0	U	100	U	10
4-Methyl-2-Pentanone	U	1.0	U	1.0	U	100	U	10
Toluene	U	1.0	U	1.0	U	100	U	10
2-Hexanone	U	1.0	U	1.0	U	100	U	10
Tetrachloroethene	U	1.0	U	1.0	U	100	14	10
Chlorobenzene	U	1.0	U	1.0	U	100	U	10
1,1,1,2-Tetrachloroethane	U	1.0	U	1.0	U	100	U	10
Ethylbenzene	U	1.0	U	1.0	U	100	U	10
p&m-Xylene	U	2.0	U	2.0	U	200	U	20
o-Xylene	U	1.0	U	1.0	U	100	U	10
Styrene	U	1.0	U	1.0	U	100	U	10
Isopropylbenzene	U	1.0	U	1.0	U	100	U	10
1,1,2,2-Tetrachloroethane	U	1.0	U	1.0	U	100	U	10
1,2,3-Trichloropropane	U	1.0	U	1.0	U	100	U	10
n-Propylbenzene	U	1.0	U	1.0	U	100	U	10
Bromobenzene	U	1.0	U	1.0	U	100	U	10
1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	100	U	10
2-Chlorotoluene	U	1.0	U	1.0	U	100	U	10
4-Chlorotoluene	U	1.0	U	1.0	U	100	U	10
tert-Butylbenzene	U	1.0	U	1.0	U	100	U	10
1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	100	U	10
sec-Butylbenzene	U	1.0	U	1.0	U	100	U	10
p-Isopropyltoluene	U	1.0	U	1.0	U	100	U	10
1,3-Dichlorobenzene	U	1.0	U	1.0	U	100	U	10
1,4-Dichlorobenzene	U	1.0	U	1.0	U	100	U	10
n-Butylbenzene	U	1.0	U	1.0	U	100	U	10
1,2-Dichlorobenzene	U	1.0	U	1.0	U	100	U	10
1,2-Dibromo-3-chloropropane	U	1.0	U	1.0	U	100	U	10
1,2,4-Trichlorobenzene	U	1.0	U	1.0	U	100	U	10
Hexachlorobutadiene	U	1.0	U	1.0	U	100	U	10
Naphthalene	U	1.0	U	1.0	U	100	U	10
1,2,3-Trichlorobenzene	U	1.0	U	1.0	U	100	U	10

Table 1.1 (cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank	IP-82B	IP-52B	IP-34B	TB-02
Location :	082702	IP-82B	IP-52B	IP-34B	TB-02
File :	AV5177.D	AV5180.D	AV5181.D	AV5182.D	AV5183.D
Dil. Fact. :	1	100	2	50	1

Analyte	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U	1.0	U	100	U	2.0	U	50	U	1.0
Chloromethane	U	2.0	U	200	U	4.0	U	100	U	2.0
Vinyl Chloride	U	1.0	U	100	19	2.0	U	50	U	1.0
Bromomethane	U	1.0	U	100	U	2.0	U	50	U	1.0
Chloroethane	U	1.0	U	100	U	2.0	U	50	U	1.0
Trichlorofluoromethane	U	1.0	U	100	U	2.0	U	50	U	1.0
Acetone	U	8.0	U	800	U	16	U	400	U	8.0
1,1-Dichloroethene	U	1.0	U	100	U	2.0	U	50	U	1.0
Methylene Chloride	U	1.0	U	100	U	2.0	U	50	U	1.0
Carbon Disulfide	U	1.0	U	100	U	2.0	U	50	U	1.0
Methyl-t-butyl Ether	U	1.0	U	100	U	2.0	U	50	U	1.0
trans-1,2-Dichloroethene	U	1.0	U	100	U	2.0	U	50	U	1.0
1,1-Dichloroethane	U	1.0	U	100	U	2.0	U	50	U	1.0
2-Butanone	U	1.0	U	100	U	2.0	U	50	U	1.0
2,2-Dichloropropane	U	1.0	U	100	U	2.0	U	50	U	1.0
cis-1,2-Dichloroethene	U	1.0	330	100	230	2.0	280	50	U	1.0
Chloroform	U	1.0	U	100	U	2.0	U	50	U	1.0
1,1-Dichloropropene	U	1.0	U	100	U	2.0	U	50	U	1.0
1,2-Dichloroethane	U	1.0	U	100	U	2.0	U	50	U	1.0
1,1,1-Trichloroethane	U	1.0	U	100	U	2.0	300	50	U	1.0
Carbon Tetrachloride	U	1.0	U	100	U	2.0	U	50	U	1.0
Benzene	U	1.0	U	100	U	2.0	U	50	U	1.0
Trichloroethene	1.1	1.0	17000 B	100	470 B	2.0	22000 B	50	U	1.0
1,2-Dichloropropane	U	1.0	U	100	U	2.0	U	50	U	1.0
Bromodichloromethane	U	1.0	U	100	U	2.0	U	50	U	1.0
Dibromomethane	U	1.0	U	100	U	2.0	U	50	U	1.0
cis-1,3-Dichloropropene	U	1.0	U	100	U	2.0	U	50	U	1.0
trans-1,3-Dichloropropene	U	1.0	U	100	U	2.0	U	50	U	1.0
1,1,2-Trichloroethane	U	1.0	U	100	U	2.0	U	50	U	1.0
1,3-Dichloropropane	U	1.0	U	100	U	2.0	U	50	U	1.0
Dibromochloromethane	U	1.0	U	100	U	2.0	U	50	U	1.0
1,2-Dibromoethane	U	1.0	U	100	U	2.0	U	50	U	1.0
Bromoform	U	1.0	U	100	U	2.0	U	50	U	1.0
4-Methyl-2-Pentanone	U	1.0	U	100	U	2.0	U	50	U	1.0
Toluene	U	1.0	U	100	U	2.0	U	50	U	1.0
2-Hexanone	U	1.0	U	100	U	2.0	U	50	U	1.0
Tetrachloroethene	U	1.0	210	100	U	2.0	330	50	U	1.0
Chlorobenzene	U	1.0	U	100	U	2.0	U	50	U	1.0
1,1,1,2-Tetrachloroethane	U	1.0	U	100	U	2.0	U	50	U	1.0
Ethylbenzene	U	1.0	U	100	U	2.0	U	50	U	1.0
p&m-Xylene	U	2.0	U	200	U	4.0	U	100	U	2.0
o-Xylene	U	1.0	U	100	U	2.0	U	50	U	1.0
Styrene	U	1.0	U	100	U	2.0	U	50	U	1.0
Isopropylbenzene	U	1.0	U	100	U	2.0	U	50	U	1.0
1,1,2,2-Tetrachloroethane	U	1.0	U	100	U	2.0	U	50	U	1.0
1,2,3-Trichloropropane	U	1.0	U	100	U	2.0	U	50	U	1.0
n-Propylbenzene	U	1.0	U	100	U	2.0	U	50	U	1.0
Bromobenzene	U	1.0	U	100	U	2.0	U	50	U	1.0
1,3,5-Trimethylbenzene	U	1.0	U	100	U	2.0	U	50	U	1.0
2-Chlorotoluene	U	1.0	U	100	U	2.0	U	50	U	1.0
4-Chlorotoluene	U	1.0	U	100	U	2.0	U	50	U	1.0
tert-Butylbenzene	U	1.0	U	100	U	2.0	U	50	U	1.0
1,2,4-Trimethylbenzene	U	1.0	U	100	U	2.0	U	50	U	1.0
sec-Butylbenzene	U	1.0	U	100	U	2.0	U	50	U	1.0
p-isopropyltoluene	U	1.0	U	100	U	2.0	U	50	U	1.0
1,3-Dichlorobenzene	U	1.0	U	100	U	2.0	U	50	U	1.0
1,4-Dichlorobenzene	U	1.0	U	100	U	2.0	U	50	U	1.0
n-Butylbenzene	U	1.0	U	100	U	2.0	U	50	U	1.0
1,2-Dichlorobenzene	U	1.0	U	100	U	2.0	U	50	U	1.0
1,2-Dibromo-3-chloropropane	U	1.0	U	100	U	2.0	U	50	U	1.0
1,2,4-Trichlorobenzene	U	1.0	U	100	U	2.0	U	50	U	1.0
Hexachlorobutadiene	U	1.0	U	100	U	2.0	U	50	U	1.0
Naphthalene	U	1.0	U	100	U	2.0	U	50	U	1.0
1,2,3-Trichlorobenzene	U	1.0	U	100	U	2.0	U	50	U	1.0

Table 1.1 (cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank	TB-03	IP-49B	MW-3T-B
Location :	082802	TB-03	IP-49B	MW-3T-B
File :	AV5193.D	AV5197.D	AV5199.D	AV5202.D
Dil. Fact. :	1	1	100	10

Analyte	Conc. ug/l	MDL ug/l	Conc. ug/l		MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U	1.0	U		1.0	U	100	U	10
Chloromethane	U	2.0	U		2.0	U	200	U	20
Vinyl Chloride	U	1.0	U		1.0	U	100	17	10
Bromomethane	U	1.0	U		1.0	U	100	U	10
Chloroethane	U	1.0	U		1.0	U	100	U	10
Trichlorofluoromethane	U	1.0	U		1.0	U	100	U	10
Acetone	U	8.0	2.7	J	8.0	U	800	U	80
1,1-Dichloroethene	U	1.0	U		1.0	U	100	U	10
Methylene Chloride	U	1.0	U		1.0	U	100	U	10
Carbon Disulfide	U	1.0	U		1.0	U	100	U	10
Methyl-t-butyl Ether	U	1.0	U		1.0	U	100	U	10
trans-1,2-Dichloroethene	U	1.0	U		1.0	U	100	U	10
1,1-Dichloroethane	U	1.0	U		1.0	U	100	U	10
2-Butanone	U	1.0	U		1.0	U	100	U	10
2,2-Dichloropropane	U	1.0	U		1.0	U	100	U	10
cis-1,2-Dichloroethene	U	1.0	U		1.0	120	100	190	10
Chloroform	U	1.0	U		1.0	U	100	U	10
1,1-Dichloropropene	U	1.0	U		1.0	U	100	U	10
1,2-Dichloroethane	U	1.0	U		1.0	U	100	U	10
1,1,1-Trichloroethane	U	1.0	U		1.0	U	100	U	10
Carbon Tetrachloride	U	1.0	U		1.0	U	100	U	10
Benzene	U	1.0	U		1.0	U	100	U	10
Trichloroethene	U	1.0	U		1.0	9100	100	430	10
1,2-Dichloropropane	U	1.0	U		1.0	U	100	U	10
Bromodichloromethane	U	1.0	U		1.0	U	100	U	10
Dibromomethane	U	1.0	U		1.0	U	100	U	10
cis-1,3-Dichloropropene	U	1.0	U		1.0	U	100	U	10
trans-1,3-Dichloropropene	U	1.0	U		1.0	U	100	U	10
1,1,2-Trichloroethane	U	1.0	U		1.0	U	100	U	10
1,3-Dichloropropane	U	1.0	U		1.0	U	100	U	10
Dibromochloromethane	U	1.0	U		1.0	U	100	U	10
1,2-Dibromoethane	U	1.0	U		1.0	U	100	U	10
Bromoform	U	1.0	U		1.0	U	100	U	10
4-Methyl-2-Pentanone	U	1.0	U		1.0	U	100	U	10
Toluene	U	1.0	U		1.0	U	100	U	10
2-Hexanone	U	1.0	U		1.0	U	100	U	10
Tetrachloroethene	U	1.0	U		1.0	120	100	U	10
Chlorobenzene	U	1.0	U		1.0	U	100	U	10
1,1,1,2-Tetrachloroethane	U	1.0	U		1.0	U	100	U	10
Ethylbenzene	U	1.0	U		1.0	U	100	U	10
p&m-Xylene	U	2.0	U		2.0	U	200	U	20
o-Xylene	U	1.0	U		1.0	U	100	U	10
Styrene	U	1.0	U		1.0	U	100	U	10
Isopropylbenzene	U	1.0	U		1.0	U	100	U	10
1,1,2,2-Tetrachloroethane	U	1.0	U		1.0	U	100	U	10
1,2,3-Trichloropropane	U	1.0	U		1.0	U	100	U	10
n-Propylbenzene	U	1.0	U		1.0	U	100	U	10
Bromobenzene	U	1.0	U		1.0	U	100	U	10
1,3,5-Trimethylbenzene	U	1.0	U		1.0	U	100	U	10
2-Chlorotoluene	U	1.0	U		1.0	U	100	U	10
4-Chlorotoluene	U	1.0	U		1.0	U	100	U	10
tert-Butylbenzene	U	1.0	U		1.0	U	100	U	10
1,2,4-Trimethylbenzene	U	1.0	U		1.0	U	100	U	10
sec-Butylbenzene	U	1.0	U		1.0	U	100	U	10
p-Isopropyltoluene	U	1.0	U		1.0	U	100	U	10
1,3-Dichlorobenzene	U	1.0	U		1.0	U	100	U	10
1,4-Dichlorobenzene	U	1.0	U		1.0	U	100	U	10
n-Butylbenzene	U	1.0	U		1.0	U	100	U	10
1,2-Dichlorobenzene	U	1.0	U		1.0	U	100	U	10
1,2-Dibromo-3-chloropropane	U	1.0	U		1.0	U	100	U	10
1,2,4-Trichlorobenzene	U	1.0	U		1.0	U	100	U	10
Hexachlorobutadiene	U	1.0	U		1.0	U	100	U	10
Naphthalene	U	1.0	U		1.0	U	100	U	10
1,2,3-Trichlorobenzene	U	1.0	U		1.0	U	100	U	10

Table 1. 2 Results of TIC for VOC in Water.
WA # 0-262 Fisherville Mill

Sample ID	Compound
Water blank 072302	No TICs Found
58317	No TICs Found
97360/2500x	No TICs Found
97364	No TICs Found
97372	No TICs Found
97380	No TICs Found
97368/20x	No TICs Found
Water blank 072402	No TICs Found
58347	No TICs Found
58396	No TICs Found
58388	No TICs Found
97384	No TICs Found
97388	No TICs Found
58376	No TICs Found
97392	No TICs Found
97396	No TICs Found
58380	No TICs Found
58384	No TICs Found
Water blank 072502	No TICs Found
58348	No TICs Found
97376	No TICs Found
58400	No TICs Found
58404	No TICs Found
58408	No TICs Found
Water blank 072602	No TICs Found

Table 1. 2 (cont.) Results of TIC for VOC in Water
WA # 0-262 Fisherville Mill

Sample ID	Compound
Water blank 080502-2	No TICs Found
10362	No TICs Found
10363/50x	No TICs Found
10364/100x	No TICs Found
Water blank 080802-2	No TICs Found
10361	No TICs Found
10318/100x	No TICs Found
Water blank 081202-2	No TICs Found
10319	No TICs Found
10321/100x	No TICs Found
10320/2x	No TICs Found
Water blank 081402-2	No TICs Found
10322	No TICs Found
10324/200x	No TICs Found
10323/100x	No TICs Found
Water blank 081902-2	No TICs Found
10325	No TICs Found
TB-01	No TICs Found
10326/100x	No TICs Found
10327/100x	No TICs Found
10328/100x	No TICs Found
MW-102/2x	No TICs Found
Water blank 082002	No TICs Found
MW-30D	No TICs Found
Water blank 082202-2	No TICs Found
10329	No TICs Found
10330/100x	No TICs Found
Water blank 082702	No TICs Found
IP-82B/100x	No TICs Found
IP-52B/2x	No TICs Found
IP-34B/50x	No TICs Found
TB-02	No TICs Found
Water blank 082802	No TICs Found
TB-03	No TICs Found
IP-49B/100x	No TICs Found
MW-3T-B/10x	No TICs Found

Table 1. 2 (cont.) Results of TIC for VOC in Water
WA # 0-262 Fisherville Mill

Sample #58392 Unit µg/L
LabFile #AV4922 Con. Factor 1.00

	CAS#	Compound	Q	RT	Conc*
1		Trimethylpentene isomer		11.70	6
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

*Estimated Concentration (Response Factor = 1.0)

Table 1.3 (cont.) Results of the Analysis for Metals in Water
WA # 0-262 Fisherville Mill

Client ID		58398		97377		97378		58401		58402		58405	
Location		MW-301 (Dissolved)		MW-206 (Total)		MW-206 (Dissolved)		SW-101 (Total)		SW-101 (Dissolved)		SW-102 (Total)	
Parameter	Analysis Method	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L
Aluminum	ICAP	U	50	U	50	U	50	63	50	U	50	940	50
Antimony	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Arsenic	AA-Fur	U	2.2	U	2.2	U	2.2	3.1	2.2	U	2.2	8.4	2.2
Barium	ICAP	40	5.0	39	5.0	39	5.0	36	5.0	22	5.0	79	5.0
Beryllium	ICAP	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
Cadmium	ICAP	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	13	5.0
Calcium	ICAP	36000	100	41000	100	41000	100	24000	100	24000	100	18000	100
Chromium	ICAP	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	43	5.0
Cobalt	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Copper	ICAP	U	10	U	10	U	10	U	10	U	10	150	10
Iron	ICAP	U	25	48	25	U	25	2100	25	30	25	8900	25
Lead	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	60	2.2
Magnesium	ICAP	6000	500	6700	500	6700	500	4100	500	4100	500	3400	500
Manganese	ICAP	970	5.0	1100	5.0	1100	5.0	690	5.0	500	5.0	330	5.0
Nickel	ICAP	U	10	U	10	U	10	U	10	U	10	24	10
Potassium	ICAP	7500	2000	3900	2000	4100	2000	3600	2000	4100	2000	3900	2000
Selenium	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Silver	ICAP	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
Sodium	ICAP	79000	500	42000	500	42000	500	54000	500	53000	500	53000	500
Thallium	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Vanadium	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Zinc	ICAP	U	10	U	10	U	10	16	10	14	10	190	10

Table 1.3 (cont.) Results of the Analysis for Metals in Water
WA # 0-262 Fisherville Mill

Client ID		58406		58409		58410	
Location		SW-102 (Dissolved)		SW-103 (Total)		SW-103 (Dissolved)	
Parameter	Analysis Method	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L
Aluminum	ICAP	U	50	1000	50	U	50
Antimony	AA-Fur	U	2.2	U	2.2	U	2.2
Arsenic	AA-Fur	3.6	2.2	7.9	2.2	2.6	2.2
Barium	ICAP	53	5.0	80	5.0	54	5.0
Beryllium	ICAP	U	2.0	U	2.0	U	2.0
Cadmium	ICAP	U	5.0	14	5.0	U	5.0
Calcium	ICAP	18000	100	19000	100	18000	100
Chromium	ICAP	U	5.0	48	5.0	U	5.0
Cobalt	ICAP	U	10	U	10	U	10
Copper	ICAP	U	10	160	10	U	10
Iron	ICAP	2100	25	8700	25	200	25
Lead	AA-Fur	U	2.2	60	2.2	U	2.2
Magnesium	ICAP	3200	500	3400	500	3100	500
Manganese	ICAP	230	5.0	310	5.0	270	5.0
Nickel	ICAP	U	10	23	10	16	10
Potassium	ICAP	3900	2000	4100	2000	4000	2000
Selenium	AA-Fur	U	2.2	U	2.2	U	2.2
Silver	ICAP	U	5.0	U	5.0	U	5.0
Sodium	ICAP	54000	500	53000	500	53000	500
Thallium	AA-Fur	U	2.2	U	2.2	U	2.2
Vanadium	ICAP	U	10	U	10	U	10
Zinc	ICAP	U	10	200	10	19	10

Table 1.3 (cont.) Results of the Analysis for Metals in Water
WA # 0-262 Fisherville Mill

Client ID		Method Blank		MW-102		MW-102		MW-30D		MW-30D			
Location		Lab		(Total)		(Filtered)		(Total)		(Filtered)		PE-0013381	
Parameter	Analysis Method	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L
Aluminum	ICAP	U	50	64	50	U	50	60	50	U	50	U	50
Antimony	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Arsenic	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Barium	ICAP	U	5.0	25	5.0	25	5.0	20	5.0	20	5.0	210	5.0
Beryllium	ICAP	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	9.5	2.0
Cadmium	ICAP	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
Calcium	ICAP	U	100	25000	100	25000	100	32000	100	31000	100	U	100
Chromium	ICAP	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
Cobalt	ICAP	U	10	U	10	U	10	U	10	U	10	550	10
Copper	ICAP	U	10	U	10	U	10	U	10	U	10	260	10
Iron	ICAP	U	25	31	25	U	25	170	25	64	25	1100	25
Lead	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	9.8	2.2
Magnesium	ICAP	U	500	3800	500	3800	500	5700	500	5600	500	U	500
Manganese	ICAP	U	5.0	2800	5.0	2800	5.0	760	5.0	770	5.0	U	5.0
Mercury	Cold Vap	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20	U	0.20
Nickel	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Potassium	ICAP	U	2000	6700	2000	7000	2000	4800	2000	4700	2000	U	2000
Selenium	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Silver	ICAP	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
Sodium	ICAP	U	500	49000	500	49000	500	34000	500	34000	500	U	500
Thallium	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Vanadium	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Zinc	ICAP	U	10	U	10	11	10	U	10	U	10	21	10

Table 1.3 (cont.) Results of the Analysis for Metals in Water
WA # 0-262 Fisherville Mill

Client ID Location		Method Blank Lab		97385 MW-17 (Total)		97386 MW-17 (Dissolved)		97389 MW-31S (Total)		97390 MW-31S (Dissolved)		58377 MW31R (Total)	
Parameter	Analysis Method	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L
Aluminum	ICAP	U	50	U	50	U	50	U	50	U	50	U	50
Antimony	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Arsenic	AA-Fur	U	2.2	5.4	2.2	5.4	2.2	U	2.2	U	2.2	U	2.2
Barium	ICAP	U	5.0	51	5.0	64	5.0	42	5.0	41	5.0	160	5.0
Beryllium	ICAP	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
Cadmium	ICAP	U	5.0	U	5.0	U	5.0	25	5.0	24	5.0	U	5.0
Calcium	ICAP	U	100	34000	100	40000	100	23000	100	23000	100	36000	100
Chromium	ICAP	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
Cobalt	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Copper	ICAP	U	10	U	10	U	10	220	10	220	10	U	10
Iron	ICAP	U	25	5700	25	12000	25	1400	25	1500	25	U	25
Lead	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Magnesium	ICAP	U	500	5700	500	6300	500	3400	500	3400	500	4700	500
Manganese	ICAP	U	5.0	2700	5.0	4200	5.0	3300	5.0	3400	5.0	21	5.0
Nickel	ICAP	U	10	U	10	U	10	15	10	18	10	U	10
Potassium	ICAP	U	2000	5100	2000	5000	2000	5200	2000	5100	2000	4300	2000
Selenium	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Silver	ICAP	U	5.0	5.5	5.0	5.7	5.0	6.5	5.0	5.0	5.0	5.6	5.0
Sodium	ICAP	U	500	49000	500	49000	500	50000	500	50000	500	12000	500
Thallium	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Vanadium	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Zinc	ICAP	U	10	U	10	U	10	140	10	140	10	U	10

Table 1.3 (cont.) Results of the Analysis for Metals in Water
WA # 0-262 Fisherville Mill

Client ID		58378		97393		97394		97397		97398		58381	
Location		MW31R (Dissolved)		MW-31D (Total)		MW-31D (Dissolved)		MW-400 (Total)		MW-400 (Dissolved)		MW-100S (Total)	
Parameter	Analysis Method	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L
Aluminum	ICAP	U	50	U	50	U	50	U	50	U	50	U	50
Antimony	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Arsenic	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Barium	ICAP	160	5.0	43	5.0	43	5.0	43	5.0	44	5.0	39	5.0
Beryllium	ICAP	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
Cadmium	ICAP	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
Calcium	ICAP	37000	100	22000	100	21000	100	22000	100	22000	100	20000	100
Chromium	ICAP	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
Cobalt	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Copper	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Iron	ICAP	U	25	U	25	U	25	U	25	U	25	1600	25
Lead	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Magnesium	ICAP	4700	500	3400	500	3300	500	3300	500	3400	500	2900	500
Manganese	ICAP	21	5.0	2100	5.0	2000	5.0	2100	5.0	2100	5.0	850	5.0
Nickel	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Potassium	ICAP	4500	2000	4800	2000	4900	2000	4900	2000	4700	2000	5100	2000
Selenium	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Silver	ICAP	U	5.0	5.1	5.0	U	5.0	5.4	5.0	6.4	5.0	6.9	5.0
Sodium	ICAP	13000	500	56000	500	55000	500	56000	500	56000	500	55000	500
Thallium	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Vanadium	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Zinc	ICAP	U	10	U	10	U	10	U	10	U	10	U	10

Table 1.3 (cont.) Results of the Analysis for Metals in Water
WA # 0-262 Fisherville Mill

Client ID		58382		58385		58386		58389		58390		58393	
Location		MW-100S (Dissolved)		MW-100M (Total)		MW-100M (Dissolved)		MW-100D (Total)		MW-100D (Dissolved)		MW-29M (Total)	
Parameter	Analysis Method	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L
Aluminum	ICAP	U	50	U	50	U	50	U	50	U	50	270	50
Antimony	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Arsenic	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	3.2	2.2
Barium	ICAP	39	5.0	52	5.0	52	5.0	54	5.0	54	5.0	19	5.0
Beryllium	ICAP	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
Cadmium	ICAP	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
Calcium	ICAP	21000	100	20000	100	20000	100	21000	100	21000	100	18000	100
Chromium	ICAP	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
Cobalt	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Copper	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Iron	ICAP	1600	25	U	25	U	25	U	25	U	25	620	25
Lead	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Magnesium	ICAP	2900	500	2800	500	2800	500	3000	500	3000	500	2500	500
Manganese	ICAP	830	5.0	38	5.0	37	5.0	86	5.0	87	5.0	1600	5.0
Nickel	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Potassium	ICAP	5300	2000	4200	2000	4100	2000	4700	2000	4600	2000	7200	2000
Selenium	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Silver	ICAP	6.6	5.0	5.5	5.0	6.0	5.0	5.8	5.0	U	5.0	5.7	5.0
Sodium	ICAP	56000	500	55000	500	55000	500	56000	500	56000	500	53000	500
Thallium	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Vanadium	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Zinc	ICAP	U	10	U	10	U	10	U	10	U	10	14	10

Table 1.3 (cont.) Results of the Analysis for Metals in Water
WA # 0-262 Fisherville Mill

Client ID		58394	
Location		MW-29M (Dissolved)	
Parameter	Analysis Method	Conc µg/L	MDL µg/L
Aluminum	ICAP	U	50
Antimony	AA-Fur	U	2.2
Arsenic	AA-Fur	U	2.2
Barium	ICAP	18	5.0
Beryllium	ICAP	U	2.0
Cadmium	ICAP	U	5.0
Calcium	ICAP	18000	100
Chromium	ICAP	U	5.0
Cobalt	ICAP	U	10
Copper	ICAP	U	10
Iron	ICAP	97	25
Lead	AA-Fur	U	2.2
Magnesium	ICAP	2500	500
Manganese	ICAP	1600	5.0
Nickel	ICAP	U	10
Potassium	ICAP	6800	2000
Selenium	AA-Fur	U	2.2
Silver	ICAP	6.2	5.0
Sodium	ICAP	53000	500
Thallium	AA-Fur	U	2.2
Vanadium	ICAP	U	10
Zinc	ICAP	14	10

Analytical Procedure for Metals in Permanganate Treated Water

The subcontract laboratory used EPA method SW-846-6010 for all metals. The results of these analyses are listed in Table 1.1.

Table 1.1 Results of Metal Analysis in Permanganate Treated Water
WA# 0-262 Fisherville Mill

Sample ID	Method Blank		MW-301		MW-206		MW-204		MW-101A		PSW-15	
Units	Conc. ug/L	MDL ug/L	Conc ug/L	MDL ug/L	Conc ug/L	MDL ug/L	Conc ug/L	MDL ug/L	Conc ug/L	MDL ug/L	Conc ug/L	MDL ug/L
Analyte												
Silver	U	0.74	U	0.74	1200	740	U	220	U	37	U	220
Aluminum	32	19	U	19	36000	19000	19000	5700	2290	950	9300	5700
Arsenic	U	2.6	U	2.6	U	2600	U	780	U	130	U	780
Barium	U	0.53	36	0.53	2100	530	U	160	44	26	740	160
Beryllium	0.57	0.22	U	0.21	U	210	U	63	U	10	U	63
Calcium	U	17	29000	17	980000	17000	83000	5100	360000	850	300000	5100
Cadmium	U	0.32	U	0.32	U	320	120	96	22	16	U	96
Cobalt	U	0.77	1.8	0.77	U	770	U	230	U	38	250	230
Chromium	U	1.7	U	1.7	U	1700	740	510	110	85	U	570
Copper	0.82	0.53	U	0.53	U	530	U	160	73	26	537	160
Iron	U	17	31	17	30000	17000	U	5100	U	850	6200	5100
Potassium	U	28	6600	28	79000	28000	52000	8400	30000	1400	30000	8400
Magnesium	U	9.3	4400	9.3	150000	9300	25000	2800	33000	470	60000	2800
Manganese	U	0.28	460	0.28	8900000	280	3000000	84	580000	28	3200000	420
Sodium	U	120	64000	120	2700000	1200000	1600000	36000	360000	6000	960000	36000
Nickel	U	4.2	U	4.2	U	4200	U	1300	U	210	U	1300
Lead	U	1.9	U	1.9	U	1900	U	570	U	95	U	570
Antimony	U	5.2	U	5.2	U	5200	U	1600	U	260	U	1600
Selenium	U	3.2	U	3.2	U	3200	U	960	U	160	U	960
Thallium	U	5.6	6.9	5.6	U	5600	2000	1700	U	280	U	1700
Vanadium	U	0.77	0.84	0.77	U	770	U	230	U	38	U	230
Zinc	U	2.1	2.5	2.1	43000	2100	1900	630	U	110	970	630

Table 1.1 (cont.) Results of Metal Analysis in Permanganate Treated Water
WA# 0-262 Fisherville Mill

Sample ID	Method Blank		MW-301		MW-206		MW-204		MW-101A		PSW-15	
Units Analyte	Conc. ug/L	MBL ug/L	Conc ug/L	MDL ug/L	Conc ug/L	MDL ug/L	Conc ug/L	MDL ug/L	Conc ug/L	MDL ug/L	Conc ug/L	MDL ug/L
Silver - Dissolved	U	0.74	U	0.74	U	740	U	220	U	15	U	220
Aluminum - Dissolved	30	7.7	U	7.7	46000	7700	13000	2300	690	150	U	2300
Arsenic - Dissolved	U	3.7	U	3.7	U	3700	U	1100	U	74	U	1100
Barium - Dissolved	U	0.17	35	0.17	2300	170	U	51	U	3.4	260	51
Beryllium - Dissolved	0.29	0.22	U	0.22	430 J	220	120 J	66	8.7 J	4.4	79 J	65
Calcium - Dissolved	U	23	28000	23	1100000	23000	74000	6900	250000	460	150000	6900
Cadmium - Dissolved	U	0.39	0.43	0.39	570 J	390	140 J	120	11 J	7.8	U	120
Cobalt - Dissolved	0.70	0.65	U	0.65	850	650	U	190	U	13	U	190
Chromium - Dissolved	U	0.52	U	0.52	1100	520	740	160	55	10	U	160
Copper - Dissolved	0.94	0.82	U	0.82	12000	820	U J	250	48 J	16	400	250
Iron - Dissolved	U	13	15	13	U	13000	U	3900	U	260	U	3900
Potassium - Dissolved	16	15	6400	15	69000	15000	45000	4500	19000	300	15000	4500
Magnesium - Dissolved	U	6.3	4300	6.3	180000	6300	23000	1900	25000	130	32000	1900
Manganese - Dissolved	1.1	0.21	440	0.21	10000000	420	3000000	63	220000	8.4	1600000	63
Sodium - Dissolved	U	120	64000	120	2900000	120000	1600000	36000	210000	2400	500000	36000
Nickel - Dissolved	U	2.5	U	2.5	U	2500	U	750	U	50	U	750
Lead - Dissolved	U	2.2	U	2.2	U	2200	U	660	U	44	U	660
Antimony - Dissolved	U	5.2	U	5.2	U	5200	U	1600	U	100	U	1600
Selenium - Dissolved	U	2.9	U	2.9	3100 J	2900	U	870	U	58	U	870
Thallium - Dissolved	U	2.9	U	2.9	U	2900	U	870	U	58	U	870
Vanadium - Dissolved	U	0.63	U	0.63	U	630	U	190	U	13	U	190
Zinc - Dissolved	U	0.80	12 J	0.80	7000 J	800	540 J	240	64 J	16	310 J	240

Table 1.1 Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank 111202-2	TB-01	SW-101	SW-102	SW-103
Location :		TB-01	SW-101	SW-102	SW-103
Collected :		11/11/02	11/11/02	11/11/02	11/11/02
Analyzed :	11/12/02	11/12/02	11/12/02	11/12/02	11/12/02
Injected :	6:27 pm	7:05 pm	7:43 pm	8:21 pm	8:59 pm
File :	AV5499.D	AV5500.D	AV5501.D	AV5502.D	AV5503.D
Dil. Fact. :	1	1	1	1	1
Unit :	µg/L	µg/L	µg/L	µg/L	µg/L

Compound	Conc.	MDL	Conc.	MDL	Conc.	MDL	Conc.	MDL	Conc.	MDL
Dichlorodifluoromethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Chloromethane	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
Vinyl Chloride	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Bromomethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Chloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Trichlorofluoromethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Acetone	U	8.0	U	8.0	U	8.0	U	8.0	3.1 J	8.0
1,1-Dichloroethene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Methylene Chloride	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Carbon Disulfide	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Methyl-t-butyl Ether	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
trans-1,2-Dichloroethene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1-Dichloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
2-Butanone	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
2,2-Dichloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
cis-1,2-Dichloroethene	U	1.0	U	1.0	12	1.0	12	1.0	1.7	1.0
Chloroform	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1-Dichloropropene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dichloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1,1-Trichloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Carbon Tetrachloride	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Benzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Trichloroethene	U	1.0	U	1.0	3.1	1.0	3.0	1.0	1.1	1.0
1,2-Dichloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Bromodichloromethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Dibromomethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
cis-1,3-Dichloropropene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
trans-1,3-Dichloropropene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1,2-Trichloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,3-Dichloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Dibromochloromethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dibromoethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Bromoform	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
4-Methyl-2-Pentanone	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Toluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
2-Hexanone	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Tetrachloroethene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Chlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1,1,2-Tetrachloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Ethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
p&m-Xylene	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
o-Xylene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Styrene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Isopropylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,1,2,2-Tetrachloroethane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2,3-Trichloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
n-Propylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Bromobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
2-Chlorotoluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
4-Chlorotoluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
tert-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
sec-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
p-Isopropyltoluene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,3-Dichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,4-Dichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
n-Butylbenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2-Dibromo-3-chloropropane	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2,4-Trichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Hexachlorobutadiene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
Naphthalene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0
1,2,3-Trichlorobenzene	U	1.0	U	1.0	U	1.0	U	1.0	U	1.0

Table 1.1(Cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank 111202-2	MW-100 D	MW-100 M
Location :		MW-100 D	MW-100 M
Collected :		11/11/02	11/11/02
Analyzed :	11/12/02	11/12/02	11/12/02
Injected :	6:27 pm	9:38 pm	10:16 PM
File :	AV5499.D	AV5504.D	AV5505.D
Dil. Fact. :	1	1	1
Unit :	µg/L	µg/L	µg/L

Compound	Conc.	MDL	Conc.	MDL	Conc.	MDL
Dichlorodifluoromethane	U	1.0	U	1.0	U	1.0
Chloromethane	U	2.0	U	2.0	U	2.0
Vinyl Chloride	U	1.0	U	1.0	U	1.0
Bromomethane	U	1.0	U	1.0	U	1.0
Chloroethane	U	1.0	U	1.0	U	1.0
Trichlorofluoromethane	U	1.0	U	1.0	U	1.0
Acetone	U	8.0	U	8.0	U	8.0
1,1-Dichloroethene	U	1.0	U	1.0	U	1.0
Methylene Chloride	U	1.0	U	1.0	U	1.0
Carbon Disulfide	U	1.0	U	1.0	U	1.0
Methyl-t-butyl Ether	U	1.0	U	1.0	U	1.0
trans-1,2-Dichloroethene	U	1.0	U	1.0	U	1.0
1,1-Dichloroethane	U	1.0	U	1.0	U	1.0
2-Butanone	U	1.0	U	1.0	U	1.0
2,2-Dichloropropane	U	1.0	U	1.0	U	1.0
cis-1,2-Dichloroethene	U	1.0	3.1	1.0	1.6	1.0
Chloroform	U	1.0	U	1.0	U	1.0
1,1-Dichloropropene	U	1.0	U	1.0	U	1.0
1,2-Dichloroethane	U	1.0	U	1.0	U	1.0
1,1,1-Trichloroethane	U	1.0	U	1.0	U	1.0
Carbon Tetrachloride	U	1.0	U	1.0	U	1.0
Benzene	U	1.0	U	1.0	U	1.0
Trichloroethene	U	1.0	5.2	1.0	2.9	1.0
1,2-Dichloropropane	U	1.0	U	1.0	U	1.0
Bromodichloromethane	U	1.0	U	1.0	U	1.0
Dibromomethane	U	1.0	U	1.0	U	1.0
cis-1,3-Dichloropropene	U	1.0	U	1.0	U	1.0
trans-1,3-Dichloropropene	U	1.0	U	1.0	U	1.0
1,1,2-Trichloroethane	U	1.0	U	1.0	U	1.0
1,3-Dichloropropane	U	1.0	U	1.0	U	1.0
Dibromochloromethane	U	1.0	U	1.0	U	1.0
1,2-Dibromoethane	U	1.0	U	1.0	U	1.0
Bromoform	U	1.0	U	1.0	U	1.0
4-Methyl-2-Pentanone	U	1.0	U	1.0	U	1.0
Toluene	U	1.0	U	1.0	U	1.0
2-Hexanone	U	1.0	U	1.0	U	1.0
Tetrachloroethene	U	1.0	U	1.0	U	1.0
Chlorobenzene	U	1.0	U	1.0	U	1.0
1,1,1,2-Tetrachloroethane	U	1.0	U	1.0	U	1.0
Ethylbenzene	U	1.0	U	1.0	U	1.0
p&m-Xylene	U	2.0	U	2.0	U	2.0
o-Xylene	U	1.0	U	1.0	U	1.0
Styrene	U	1.0	U	1.0	U	1.0
Isopropylbenzene	U	1.0	U	1.0	U	1.0
1,1,2,2-Tetrachloroethane	U	1.0	U	1.0	U	1.0
1,2,3-Trichloropropane	U	1.0	U	1.0	U	1.0
n-Propylbenzene	U	1.0	U	1.0	U	1.0
Bromobenzene	U	1.0	U	1.0	U	1.0
1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	1.0
2-Chlorotoluene	U	1.0	U	1.0	U	1.0
4-Chlorotoluene	U	1.0	U	1.0	U	1.0
tert-Butylbenzene	U	1.0	U	1.0	U	1.0
1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	1.0
sec-Butylbenzene	U	1.0	U	1.0	U	1.0
p-Isopropyltoluene	U	1.0	U	1.0	U	1.0
1,3-Dichlorobenzene	U	1.0	U	1.0	U	1.0
1,4-Dichlorobenzene	U	1.0	U	1.0	U	1.0
n-Butylbenzene	U	1.0	U	1.0	U	1.0
1,2-Dichlorobenzene	U	1.0	U	1.0	U	1.0
1,2-Dibromo-3-chloropropane	U	1.0	U	1.0	U	1.0
1,2,4-Trichlorobenzene	U	1.0	U	1.0	U	1.0
Hexachlorobutadiene	U	1.0	U	1.0	U	1.0
Naphthalene	U	1.0	U	1.0	U	1.0
1,2,3-Trichlorobenzene	U	1.0	U	1.0	U	1.0

Table 1.1(Cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank 111302	MW-30 D	MW-1 D	MW-29 M	MW-31 R
Location :		MW-30 D	MW-1 D	MW-29 M	MW-31 R
Collected :		11/11/02	11/11/02	11/11/02	11/11/02
Analyzed :	11/13/02	11/13/02	11/13/02	11/13/02	11/13/02
Injected :	12:17 PM	12:54 PM	1:32 pm	2:10 pm	2:47 pm
File :	AV5520.D	AV5521.D	AV5522.D	AV5523.D	AV5524.D
Dil. Fact :	1	5	10	10	10
Unit :	µg/L	µg/L	µg/L	µg/L	µg/L

Compound	Conc.	MDL	Conc.	MDL	Conc.		MDL	Conc.	MDL	Conc.	MDL
Dichlorodifluoromethane	U	1.0	U	5.0	U		10	U	10	U	10
Chloromethane	U	2.0	U	10	U		20	U	20	U	20
Vinyl Chloride	U	1.0	5.1	5.0	120		10	U	10	U	10
Bromomethane	U	1.0	U	5.0	U		10	U	10	U	10
Chloroethane	U	1.0	U	5.0	U		10	U	10	U	10
Trichlorofluoromethane	U	1.0	U	5.0	U		10	U	10	U	10
Acetone	U	8.0	U	40	46	J	80	U	80	U	80
1,1-Dichloroethene	U	1.0	U	5.0	U		10	U	10	U	10
Methylene Chloride	U	1.0	U	5.0	U		10	U	10	U	10
Carbon Disulfide	U	1.0	U	5.0	U		10	U	10	U	10
Methyl-t-butyl Ether	U	1.0	U	5.0	U		10	U	10	U	10
trans-1,2-Dichloroethene	U	1.0	U	5.0	U		10	U	10	U	10
1,1-Dichloroethane	U	1.0	U	5.0	U		10	U	10	U	10
2-Butanone	U	1.0	U	5.0	41		10	U	10	U	10
2,2-Dichloropropane	U	1.0	U	5.0	U		10	U	10	U	10
cis-1,2-Dichloroethene	U	1.0	65	5.0	650		10	150	10	U	10
Chloroform	U	1.0	U	5.0	U		10	U	10	U	10
1,1-Dichloropropene	U	1.0	U	5.0	U		10	U	10	U	10
1,2-Dichloroethane	U	1.0	U	5.0	U		10	U	10	U	10
1,1,1-Trichloroethane	U	1.0	U	5.0	U		10	U	10	U	10
Carbon Tetrachloride	U	1.0	U	5.0	U		10	U	10	U	10
Benzene	U	1.0	U	5.0	U		10	U	10	U	10
Trichloroethene	U	1.0	370	5.0	15		10	460	10	680	10
1,2-Dichloropropane	U	1.0	U	5.0	U		10	U	10	U	10
Bromodichloromethane	U	1.0	U	5.0	U		10	U	10	U	10
Dibromomethane	U	1.0	U	5.0	U		10	U	10	U	10
cis-1,3-Dichloropropene	U	1.0	U	5.0	U		10	U	10	U	10
trans-1,3-Dichloropropene	U	1.0	U	5.0	U		10	U	10	U	10
1,1,2-Trichloroethane	U	1.0	U	5.0	U		10	U	10	U	10
1,3-Dichloropropane	U	1.0	U	5.0	U		10	U	10	U	10
Dibromochloromethane	U	1.0	U	5.0	U		10	U	10	U	10
1,2-Dibromoethane	U	1.0	U	5.0	U		10	U	10	U	10
Bromoform	U	1.0	U	5.0	U		10	U	10	U	10
4-Methyl-2-Pentanone	U	1.0	U	5.0	U		10	U	10	U	10
Toluene	U	1.0	U	5.0	U		10	U	10	U	10
2-Hexanone	U	1.0	U	5.0	U		10	U	10	U	10
Tetrachloroethene	U	1.0	5.3	5.0	U		10	23	10	12	10
Chlorobenzene	U	1.0	U	5.0	U		10	U	10	U	10
1,1,1,2-Tetrachloroethane	U	1.0	U	5.0	U		10	U	10	U	10
Ethylbenzene	U	1.0	U	5.0	U		10	U	10	U	10
p&m-Xylene	U	2.0	U	10	U		20	U	20	U	20
o-Xylene	U	1.0	U	5.0	U		10	U	10	U	10
Styrene	U	1.0	U	5.0	U		10	U	10	U	10
Isopropylbenzene	U	1.0	U	5.0	U		10	U	10	U	10
1,1,2,2-Tetrachloroethane	U	1.0	U	5.0	U		10	U	10	U	10
1,2,3-Trichloropropane	U	1.0	U	5.0	U		10	U	10	U	10
n-Propylbenzene	U	1.0	U	5.0	U		10	U	10	U	10
Bromobenzene	U	1.0	U	5.0	U		10	U	10	U	10
1,3,5-Trimethylbenzene	U	1.0	U	5.0	U		10	U	10	U	10
2-Chlorotoluene	U	1.0	U	5.0	U		10	U	10	U	10
4-Chlorotoluene	U	1.0	U	5.0	U		10	U	10	U	10
tert-Butylbenzene	U	1.0	U	5.0	U		10	U	10	U	10
1,2,4-Trimethylbenzene	U	1.0	U	5.0	U		10	U	10	U	10
sec-Butylbenzene	U	1.0	U	5.0	U		10	U	10	U	10
p-Isopropyltoluene	U	1.0	U	5.0	U		10	U	10	U	10
1,3-Dichlorobenzene	U	1.0	U	5.0	U		10	U	10	U	10
1,4-Dichlorobenzene	U	1.0	U	5.0	U		10	U	10	U	10
n-Butylbenzene	U	1.0	U	5.0	U		10	U	10	U	10
1,2-Dichlorobenzene	U	1.0	U	5.0	U		10	U	10	U	10
1,2-Dibromo-3-chloropropane	U	1.0	U	5.0	U		10	U	10	U	10
1,2,4-Trichlorobenzene	U	1.0	U	5.0	U		10	U	10	U	10
Hexachlorobutadiene	U	1.0	U	5.0	U		10	U	10	U	10
Naphthalene	U	1.0	U	5.0	U		10	U	10	U	10
1,2,3-Trichlorobenzene	U	1.0	U	5.0	U		10	U	10	U	10

Table 1.1(Cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank 111302	MW-102	MW-31 S	MW-31 D	MW-400
Location :		MW-102	MW-31 S	MW-31 D	MW-400
Collected :		11/11/02	11/11/02	11/11/02	11/11/02
Analyzed :	11/13/02	11/13/02	11/13/02	11/13/02	11/13/02
Injected :	12:17 PM	3:25 pm	4:03 pm	4:40 pm	5:18 pm
File :	AV5520.D	AV5525.D	AV5526.D	AV5527.D	AV5528.D
Dil. Fact. :	1	2	1	1	1
Unit :	µg/L	µg/L	µg/L	µg/L	µg/L

Compound	Conc.	MDL	Conc.	MDL	Conc.	MDL	Conc.	MDL	Conc.	MDL
Dichlorodifluoromethane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Chloromethane	U	2.0	U	4.0	U	2.0	U	2.0	U	2.0
Vinyl Chloride	U	1.0	U	2.0	U	1.0	2.1	1.0	2.1	1.0
Bromomethane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Chloroethane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Trichlorofluoromethane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Acetone	U	8.0	U	16	U	8.0	U	8.0	U	8.0
1,1-Dichloroethene	U	1.0	2.1	2.0	U	1.0	U	1.0	U	1.0
Methylene Chloride	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Carbon Disulfide	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Methyl-t-butyl Ether	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
trans-1,2-Dichloroethene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
1,1-Dichloroethane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
2-Butanone	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
2,2-Dichloropropane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
cis-1,2-Dichloroethene	U	1.0	110	2.0	22	1.0	74	1.0	73	1.0
Chloroform	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
1,1-Dichloropropene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
1,2-Dichloroethane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
1,1,1-Trichloroethane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Carbon Tetrachloride	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Benzene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Trichloroethene	U	1.0	260	2.0	18	1.0	96	1.0	95	1.0
1,2-Dichloropropane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Bromodichloromethane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Dibromomethane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
cis-1,3-Dichloropropene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
trans-1,3-Dichloropropene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
1,1,2-Trichloroethane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
1,3-Dichloropropane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Dibromochloromethane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
1,2-Dibromoethane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Bromoform	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
4-Methyl-2-Pentanone	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Toluene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
2-Hexanone	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Tetrachloroethene	U	1.0	5.1	2.0	3.7	1.0	10	1.0	10	1.0
Chlorobenzene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
1,1,1,2-Tetrachloroethane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Ethylbenzene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
p&m-Xylene	U	2.0	U	4.0	U	2.0	U	2.0	U	2.0
o-Xylene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Styrene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Isopropylbenzene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
1,1,2,2-Tetrachloroethane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
1,2,3-Trichloropropane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
n-Propylbenzene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Bromobenzene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
1,3,5-Trimethylbenzene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
2-Chlorotoluene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
4-Chlorotoluene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
tert-Butylbenzene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
1,2,4-Trimethylbenzene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
sec-Butylbenzene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
p-Isopropyltoluene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
1,3-Dichlorobenzene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
1,4-Dichlorobenzene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
n-Butylbenzene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
1,2-Dichlorobenzene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
1,2-Dibromo-3-chloropropane	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
1,2,4-Trichlorobenzene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Hexachlorobutadiene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
Naphthalene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0
1,2,3-Trichlorobenzene	U	1.0	U	2.0	U	1.0	U	1.0	U	1.0

Table 1.1(Cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank 111302	MW-301
Location :		MW-301
Collected :		11/12/02
Analyzed :	11/13/02	11/13/02
Injected :	12:17 PM	5:56 pm
File :	AV5520.D	AV5529.D
Dil. Fact. :	1	1
Unit :	µg/L	µg/L

Compound	Conc.	MDL	Conc.	MDL
Dichlorodifluoromethane	U	1.0	U	1.0
Chloromethane	U	2.0	U	2.0
Vinyl Chloride	U	1.0	U	1.0
Bromomethane	U	1.0	U	1.0
Chloroethane	U	1.0	U	1.0
Trichlorofluoromethane	U	1.0	U	1.0
Acetone	U	8.0	U	8.0
1,1-Dichloroethene	U	1.0	U	1.0
Methylene Chloride	U	1.0	U	1.0
Carbon Disulfide	U	1.0	U	1.0
Methyl-t-butyl Ether	U	1.0	U	1.0
trans-1,2-Dichloroethene	U	1.0	U	1.0
1,1-Dichloroethane	U	1.0	U	1.0
2-Butanone	U	1.0	U	1.0
2,2-Dichloropropane	U	1.0	U	1.0
cis-1,2-Dichloroethene	U	1.0	7.8	1.0
Chloroform	U	1.0	U	1.0
1,1-Dichloropropene	U	1.0	U	1.0
1,2-Dichloroethane	U	1.0	U	1.0
1,1,1-Trichloroethane	U	1.0	U	1.0
Carbon Tetrachloride	U	1.0	U	1.0
Benzene	U	1.0	U	1.0
Trichloroethene	U	1.0	25	1.0
1,2-Dichloropropane	U	1.0	U	1.0
Bromodichloromethane	U	1.0	U	1.0
Dibromomethane	U	1.0	U	1.0
cis-1,3-Dichloropropene	U	1.0	U	1.0
trans-1,3-Dichloropropene	U	1.0	U	1.0
1,1,2-Trichloroethane	U	1.0	U	1.0
1,3-Dichloropropane	U	1.0	U	1.0
Dibromochloromethane	U	1.0	U	1.0
1,2-Dibromoethane	U	1.0	U	1.0
Bromoform	U	1.0	U	1.0
4-Methyl-2-Pentanone	U	1.0	U	1.0
Toluene	U	1.0	U	1.0
2-Hexanone	U	1.0	U	1.0
Tetrachloroethene	U	1.0	4.0	1.0
Chlorobenzene	U	1.0	U	1.0
1,1,1,2-Tetrachloroethane	U	1.0	U	1.0
Ethylbenzene	U	1.0	U	1.0
p&m-Xylene	U	2.0	U	2.0
o-Xylene	U	1.0	U	1.0
Styrene	U	1.0	U	1.0
Isopropylbenzene	U	1.0	U	1.0
1,1,2,2-Tetrachloroethane	U	1.0	U	1.0
1,2,3-Trichloropropane	U	1.0	U	1.0
n-Propylbenzene	U	1.0	U	1.0
Bromobenzene	U	1.0	U	1.0
1,3,5-Trimethylbenzene	U	1.0	U	1.0
2-Chlorotoluene	U	1.0	U	1.0
4-Chlorotoluene	U	1.0	U	1.0
tert-Butylbenzene	U	1.0	U	1.0
1,2,4-Trimethylbenzene	U	1.0	U	1.0
sec-Butylbenzene	U	1.0	U	1.0
p-Isopropyltoluene	U	1.0	U	1.0
1,3-Dichlorobenzene	U	1.0	U	1.0
1,4-Dichlorobenzene	U	1.0	U	1.0
n-Butylbenzene	U	1.0	U	1.0
1,2-Dichlorobenzene	U	1.0	U	1.0
1,2-Dibromo-3-chloropropane	U	1.0	U	1.0
1,2,4-Trichlorobenzene	U	1.0	U	1.0
Hexachlorobutadiene	U	1.0	U	1.0
Naphthalene	U	1.0	U	1.0
1,2,3-Trichlorobenzene	U	1.0	U	1.0

Table 1.1(Cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank 111402	10001	10003	10004	10002
Location :		TB-10	IP-6	MW-208	IP-4
Collected :		11/13/02	11/13/02	11/13/02	11/13/02
Analyzed :	11/14/02	11/14/02	11/14/02	11/14/02	11/14/02
Injected :	11:18 AM	12:11 PM	12:49 PM	1:28 pm	2:06 pm
File :	AV5539.D	AV5540.D	AV5541.D	AV5542.D	AV5543.D
Dil. Fact. :	1	1	10	2	1
Unit :	µg/L	µg/L	µg/L	µg/L	µg/L

Compound	Conc.	MDL	Conc.	MDL	Conc.	MDL	Conc.	MDL	Conc.	MDL
Dichlorodifluoromethane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Chloromethane	U	2.0	U	2.0	U	20	U	4.0	U	2.0
Vinyl Chloride	U	1.0	U	1.0	300	10	18	2.0	13	1.0
Bromomethane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Chloroethane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Trichlorofluoromethane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Acetone	U	8.0	U	8.0	U	80	U	16	U	8.0
1,1-Dichloroethene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Methylene Chloride	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Carbon Disulfide	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Methyl-t-butyl Ether	U	1.0	U	1.0	U	10	U	2.0	U	1.0
trans-1,2-Dichloroethene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,1-Dichloroethane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
2-Butanone	U	1.0	U	1.0	U	10	U	2.0	U	1.0
2,2-Dichloropropane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
cis-1,2-Dichloroethene	U	1.0	U	1.0	400	10	110	2.0	7.9	1.0
Chloroform	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,1-Dichloropropene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,2-Dichloroethane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,1,1-Trichloroethane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Carbon Tetrachloride	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Benzene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Trichloroethene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,2-Dichloropropane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Bromodichloromethane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Dibromomethane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
cis-1,3-Dichloropropene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
trans-1,3-Dichloropropene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,1,2-Trichloroethane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,3-Dichloropropane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Dibromochloromethane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,2-Dibromoethane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Bromoform	U	1.0	U	1.0	U	10	U	2.0	U	1.0
4-Methyl-2-Pentanone	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Toluene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
2-Hexanone	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Tetrachloroethene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Chlorobenzene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,1,1,2-Tetrachloroethane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Ethylbenzene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
p&m-Xylene	U	2.0	U	2.0	U	20	U	4.0	U	2.0
o-Xylene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Styrene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Isopropylbenzene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,1,2,2-Tetrachloroethane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,2,3-Trichloropropane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
n-Propylbenzene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Bromobenzene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,3,5-Trimethylbenzene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
2-Chlorotoluene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
4-Chlorotoluene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
tert-Butylbenzene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,2,4-Trimethylbenzene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
sec-Butylbenzene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
p-Isopropyltoluene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,3-Dichlorobenzene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,4-Dichlorobenzene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
n-Butylbenzene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,2-Dichlorobenzene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,2-Dibromo-3-chloropropane	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,2,4-Trichlorobenzene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Hexachlorobutadiene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
Naphthalene	U	1.0	U	1.0	U	10	U	2.0	U	1.0
1,2,3-Trichlorobenzene	U	1.0	U	1.0	U	10	U	2.0	U	1.0

Table 1.1(Cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water Blank 111302	TB-02	MW-100 S	MW-500S	MW-206S
Location :		TB-02	MW-100 S	MW-500	MW-206
Collected :		11/12/02	11/11/02	11/12/02	11/12/02
Analyzed :	11/13/02	11/13/02	11/13/02	11/13/02	11/13/02
Injected :	1:36 pm	2:20 pm	2:58 pm	4:34 pm	5:14 pm
File :	BV6514.D	BV6515.D	BV6516.D	BV6518.D	BV6519.D
Dil. Fact. :	1	1	1	1	2
Unit :	µg/L	µg/L	µg/L	µg/L	µg/L

Compound	Conc.	MDL	Conc.		MDL	Conc.	MDL	Conc.		MDL	Conc.		MDL
Dichlorodifluoromethane	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Chloromethane	U	2.0	U		2.0	U	2.0	U		2.0	U		4.0
Vinyl Chloride	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Bromomethane	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Chloroethane	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Trichlorofluoromethane	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Acetone	U	8.0	1.8	J	8.0	U	8.0	5.0	J	8.0	1000	E	16
1,1-Dichloroethene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Methylene Chloride	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Carbon Disulfide	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Methyl-t-butyl Ether	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
trans-1,2-Dichloroethene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
1,1-Dichloroethane	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
2-Butanone	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
2,2-Dichloropropane	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
cis-1,2-Dichloroethene	U	1.0	U		1.0	4.5	1.0	U		1.0	U		2.0
Chloroform	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
1,1-Dichloropropene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
1,2-Dichloroethane	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
1,1,1-Trichloroethane	U	1.0	U		1.0	U	1.0	U		1.0	2.7		2.0
Carbon Tetrachloride	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Benzene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Trichloroethene	U	1.0	U		1.0	3.3	1.0	U		1.0	U		2.0
1,2-Dichloropropane	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Bromodichloromethane	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Dibromomethane	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
cis-1,3-Dichloropropene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
trans-1,3-Dichloropropene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
1,1,2-Trichloroethane	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
1,3-Dichloropropane	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Dibromochloromethane	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
1,2-Dibromoethane	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Bromoform	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
4-Methyl-2-Pentanone	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Toluene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
2-Hexanone	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Tetrachloroethene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Chlorobenzene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
1,1,1,2-Tetrachloroethane	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Ethylbenzene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
p&m-Xylene	U	2.0	U		2.0	U	2.0	U		2.0	U		4.0
o-Xylene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Styrene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Isopropylbenzene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
1,1,2,2-Tetrachloroethane	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
1,2,3-Trichloropropane	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
n-Propylbenzene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Bromobenzene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
1,3,5-Trimethylbenzene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
2-Chlorotoluene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
4-Chlorotoluene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
tert-Butylbenzene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
1,2,4-Trimethylbenzene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
sec-Butylbenzene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
p-Isopropyltoluene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
1,3-Dichlorobenzene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
1,4-Dichlorobenzene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
n-Butylbenzene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
1,2-Dichlorobenzene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
1,2-Dibromo-3-chloropropane	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
1,2,4-Trichlorobenzene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Hexachlorobutadiene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
Naphthalene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0
1,2,3-Trichlorobenzene	U	1.0	U		1.0	U	1.0	U		1.0	U		2.0

Table 1.1(Cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water Blank 111302	MW-204Permang	MW-204S	PSW-15Permang.	PSW-15S
Location :		MW-204	MW-204	PSW-15	PSW-15
Collected :		11/12/02	11/12/02	11/12/02	11/12/02
Analyzed :	11/13/02	11/13/02	11/13/02	11/13/02	11/13/02
Injected :	1:36 pm	5:52 pm	6:30 pm	7:08 pm	7:47 pm
File :	BV6514.D	BV6520.D	BV6521.D	BV6522.D	BV6523.D
Dil. Fact. :	1	1	2	1	2
Unit :	µg/L	µg/L	µg/L	µg/L	µg/L

Compound	Conc.	MDL	Conc.		MDL	Conc.		MDL	Conc.	MDL	Conc.	MDL
Dichlorodifluoromethane	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Chloromethane	U	2.0	U		2.0	U		4.0	U	2.0	U	4.0
Vinyl Chloride	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Bromomethane	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Chloroethane	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Trichlorofluoromethane	U	1.0	1.2		1.0	U		2.0	U	1.0	U	2.0
Acetone	U	8.0	680	E	8.0	610	E	16	190	8.0	180	16
1,1-Dichloroethone	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Methylene Chloride	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Carbon Disulfide	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Methyl-t-butyl Ether	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
trans-1,2-Dichloroethene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
1,1-Dichloroethane	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
2-Butanone	U	1.0	6.9		1.0	6.7		2.0	5.0	1.0	4.3	2.0
2,2-Dichloropropane	U	1.0	U		1.0	U		2.0	3.2	1.0	U	2.0
cis-1,2-Dichloroethene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Chloroform	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
1,1-Dichloropropene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
1,2-Dichloroethane	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
1,1,1-Trichloroethane	U	1.0	2.1		1.0	U		2.0	U	1.0	U	2.0
Carbon Tetrachloride	U	1.0	U		1.0	U		2.0	25	1.0	18	2.0
Benzene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Trichloroethene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
1,2-Dichloropropane	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Bromodichloromethane	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Dibromomethane	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
cis-1,3-Dichloropropene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
trans-1,3-Dichloropropene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
1,1,2-Trichloroethane	U	1.0	U		1.0	U		2.0	1.5	1.0	U	2.0
1,3-Dichloropropane	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Dibromochloromethane	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
1,2-Dibromoethane	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Bromoform	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
4-Methyl-2-Pentanone	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Toluene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
2-Hexanone	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Tetrachloroethene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Chlorobenzene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
1,1,1,2-Tetrachloroethane	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Ethylbenzene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
p&m-Xylene	U	2.0	U		2.0	U		4.0	U	2.0	U	4.0
o-Xylene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Styrene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Isopropylbenzene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
1,1,2,2-Tetrachloroethane	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
1,2,3-Trichloropropane	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
n-Propylbenzene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Bromobenzene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
1,3,5-Trimethylbenzene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
2-Chlorotoluene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
4-Chlorotoluene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
tert-Butylbenzene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
1,2,4-Trimethylbenzene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
sec-Butylbenzene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
p-Isopropyltoluene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
1,3-Dichlorobenzene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
1,4-Dichlorobenzene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
n-Butylbenzene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
1,2-Dichlorobenzene	U	1.0	3.5		1.0	2.6		2.0	U	1.0	U	2.0
1,2-Dibromo-3-chloropropane	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
1,2,4-Trichlorobenzene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Hexachlorobutadiene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
Naphthalene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0
1,2,3-Trichlorobenzene	U	1.0	U		1.0	U		2.0	U	1.0	U	2.0

Table 1.1(Cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water Blank 111302	MW-101A Permang.
Location :		MW-101A
Collected :		11/12/02
Analyzed :	11/13/02	11/13/02
Injected :	1:36 pm	8:25 pm
File :	BV6514.D	BV6524.D
Dil. Fact. :	1	10
Unit :	µg/L	µg/L

Compound	Conc.	MDL	Conc.		MDL
Dichlorodifluoromethane	U	1.0	U		10
Chloromethane	U	2.0	U		20
Vinyl Chloride	U	1.0	U		10
Bromomethane	U	1.0	U		10
Chloroethane	U	1.0	U		10
Trichlorofluoromethane	U	1.0	34		10
Acetone	U	8.0	77	J	80
1,1-Dichloroethene	U	1.0	U		10
Methylene Chloride	U	1.0	U		10
Carbon Disulfide	U	1.0	U		10
Methyl-t-butyl Ether	U	1.0	U		10
trans-1,2-Dichloroethene	U	1.0	U		10
1,1-Dichloroethane	U	1.0	24		10
2-Butanone	U	1.0	U		10
2,2-Dichloropropane	U	1.0	U		10
cis-1,2-Dichloroethene	U	1.0	U		10
Chloroform	U	1.0	18		10
1,1-Dichloropropene	U	1.0	U		10
1,2-Dichloroethane	U	1.0	U		10
1,1,1-Trichloroethane	U	1.0	240		10
Carbon Tetrachloride	U	1.0	U		10
Benzene	U	1.0	U		10
Trichloroethene	U	1.0	U		10
1,2-Dichloropropane	U	1.0	U		10
Bromodichloromethane	U	1.0	U		10
Dibromomethane	U	1.0	U		10
cis-1,3-Dichloropropene	U	1.0	U		10
trans-1,3-Dichloropropene	U	1.0	U		10
1,1,2-Trichloroethane	U	1.0	130		10
1,3-Dichloropropane	U	1.0	U		10
Dibromochloromethane	U	1.0	U		10
1,2-Dibromoethane	U	1.0	U		10
Bromoform	U	1.0	U		10
4-Methyl-2-Pentanone	U	1.0	U		10
Toluene	U	1.0	U		10
2-Hexanone	U	1.0	U		10
Tetrachloroethene	U	1.0	U		10
Chlorobenzene	U	1.0	U		10
1,1,1,2-Tetrachloroethane	U	1.0	U		10
Ethylbenzene	U	1.0	U		10
p&m-Xylene	U	2.0	U		20
o-Xylene	U	1.0	U		10
Styrene	U	1.0	U		10
Isopropylbenzene	U	1.0	U		10
1,1,2,2-Tetrachloroethane	U	1.0	U		10
1,2,3-Trichloropropane	U	1.0	U		10
n-Propylbenzene	U	1.0	U		10
Bromobenzene	U	1.0	U		10
1,3,5-Trimethylbenzene	U	1.0	U		10
2-Chlorotoluene	U	1.0	U		10
4-Chlorotoluene	U	1.0	U		10
tert-Butylbenzene	U	1.0	U		10
1,2,4-Trimethylbenzene	U	1.0	U		10
sec-Butylbenzene	U	1.0	U		10
p-Isopropyltoluene	U	1.0	U		10
1,3-Dichlorobenzene	U	1.0	U		10
1,4-Dichlorobenzene	U	1.0	U		10
n-Butylbenzene	U	1.0	U		10
1,2-Dichlorobenzene	U	1.0	U		10
1,2-Dibromo-3-chloropropane	U	1.0	U		10
1,2,4-Trichlorobenzene	U	1.0	U		10
Hexachlorobutadiene	U	1.0	U		10
Naphthalene	U	1.0	U		10
1,2,3-Trichlorobenzene	U	1.0	U		10

Table 1.1(Cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank 111402	MW-101AS	MW-206 Permang.
Location :		MW-101A	MW-206
Collected :		11/12/02	11/12/02
Analyzed :	11/14/02	11/14/02	11/14/02
Injected :	1:41 pm	2:28 pm	4:31 pm
File :	BV6529.D	BV6530.D	BV6533.D
Dil. Fact. :	1	500	1
Unit :	µg/L	µg/L	µg/L

Compound	Conc.	MDL	Conc.	MDL	Conc.		MDL
Dichlorodifluoromethane	U	1.0	U	500	U		1.0
Chloromethane	U	2.0	U	1000	U		2.0
Vinyl Chloride	U	1.0	U	500	U		1.0
Bromomethane	U	1.0	U	500	U		1.0
Chloroethane	U	1.0	U	500	U		1.0
Trichlorofluoromethane	U	1.0	U	500	U		1.0
Acetone	U	8.0	U	4000	1000	E	8.0
1,1-Dichloroethene	U	1.0	U	500	U		1.0
Methylene Chloride	U	1.0	U	500	U		1.0
Carbon Disulfide	U	1.0	U	500	U		1.0
Methyl-t-butyl Ether	U	1.0	U	500	U		1.0
trans-1,2-Dichloroethene	U	1.0	U	500	U		1.0
1,1-Dichloroethane	U	1.0	U	500	U		1.0
2-Butanone	U	1.0	U	500	U		1.0
2,2-Dichloropropane	U	1.0	U	500	U		1.0
cis-1,2-Dichloroethene	U	1.0	U	500	U		1.0
Chloroform	U	1.0	U	500	U		1.0
1,1-Dichloropropene	U	1.0	U	500	U		1.0
1,2-Dichloroethane	U	1.0	U	500	U		1.0
1,1,1-Trichloroethane	U	1.0	U	500	4.1		1.0
Carbon Tetrachloride	U	1.0	U	500	U		1.0
Benzene	U	1.0	U	500	U		1.0
Trichloroethene	U	1.0	76000	500	U		1.0
1,2-Dichloropropane	U	1.0	U	500	U		1.0
Bromodichloromethane	U	1.0	U	500	U		1.0
Dibromomethane	U	1.0	U	500	U		1.0
cis-1,3-Dichloropropene	U	1.0	U	500	U		1.0
trans-1,3-Dichloropropene	U	1.0	U	500	U		1.0
1,1,2-Trichloroethane	U	1.0	U	500	U		1.0
1,3-Dichloropropane	U	1.0	U	500	U		1.0
Dibromochloromethane	U	1.0	U	500	U		1.0
1,2-Dibromoethane	U	1.0	U	500	U		1.0
Bromoform	U	1.0	U	500	U		1.0
4-Methyl-2-Pentanone	U	1.0	U	500	U		1.0
Toluene	U	1.0	U	500	U		1.0
2-Hexanone	U	1.0	U	500	U		1.0
Tetrachloroethene	U	1.0	U	500	U		1.0
Chlorobenzene	U	1.0	U	500	U		1.0
1,1,1,2-Tetrachloroethane	U	1.0	U	500	U		1.0
Ethylbenzene	U	1.0	U	500	U		1.0
p&m-Xylene	U	2.0	U	1000	U		2.0
o-Xylene	U	1.0	U	500	U		1.0
Styrene	U	1.0	U	500	U		1.0
Isopropylbenzene	U	1.0	U	500	U		1.0
1,1,2,2-Tetrachloroethane	U	1.0	U	500	U		1.0
1,2,3-Trichloropropane	U	1.0	U	500	U		1.0
n-Propylbenzene	U	1.0	U	500	U		1.0
Bromobenzene	U	1.0	U	500	U		1.0
1,3,5-Trimethylbenzene	U	1.0	U	500	U		1.0
2-Chlorotoluene	U	1.0	U	500	U		1.0
4-Chlorotoluene	U	1.0	U	500	U		1.0
tert-Butylbenzene	U	1.0	U	500	U		1.0
1,2,4-Trimethylbenzene	U	1.0	U	500	U		1.0
sec-Butylbenzene	U	1.0	U	500	U		1.0
p-Isopropyltoluene	U	1.0	U	500	U		1.0
1,3-Dichlorobenzene	U	1.0	U	500	U		1.0
1,4-Dichlorobenzene	U	1.0	U	500	U		1.0
n-Butylbenzene	U	1.0	U	500	U		1.0
1,2-Dichlorobenzene	U	1.0	U	500	U		1.0
1,2-Dibromo-3-chloropropane	U	1.0	U	500	U		1.0
1,2,4-Trichlorobenzene	U	1.0	U	500	U		1.0
Hexachlorobutadiene	U	1.0	U	500	U		1.0
Naphthalene	U	1.0	U	500	U		1.0
1,2,3-Trichlorobenzene	U	1.0	U	500	U		1.0

Table 1.3 Results of the Analysis for Total Metals in Water
WA # 0-262 Fisherville Mill Site

Client ID Location		Method Blank Lab		SW-101 (Total Metals)		SW-102 (Total Metals)		SW-103 (Total Metals)		MW-100D (Total Metals)		MW-100M (Total Metals)	
Parameter	Analysis Method	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L
Aluminum	ICAP	U	50	65	50	150	50	260	50	U	50	U	50
Antimony	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Arsenic	AA-Fur	U	2.2	U	2.2	U	2.2	3.2	2.2	U	2.2	U	2.2
Barium	ICAP	U	5.0	28	5.0	32	5.0	70	5.0	48	5.0	51	5.0
Beryllium	ICAP	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
Cadmium	ICAP	U	5.0	U	5.0	U	5.0	22	5.0	U	5.0	U	5.0
Calcium	ICAP	U	100	28000	100	29000	100	28000	100	20000	100	20000	100
Chromium	ICAP	U	5.0	U	5.0	U	5.0	12	5.0	U	5.0	U	5.0
Cobalt	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Copper	ICAP	U	10	U	10	14	10	62	10	U	10	U	10
Iron	ICAP	U	25	1000	25	1400	25	1000	25	U	25	U	25
Lead	AA-Fur	U	2.2	U	2.2	4.2	2.2	8.2	2.2	U	2.2	U	2.2
Magnesium	ICAP	U	500	5000	500	5100	500	4600	500	3000	500	2900	500
Manganese	ICAP	U	5.0	870	5.0	960	5.0	860	5.0	300	5.0	32	5.0
Nickel	ICAP	U	10	16	10	19	10	47	10	U	10	U	10
Potassium	ICAP	U	2000	5600	2000	5900	2000	6000	2000	4000	2000	3800	2000
Selenium	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Silver	ICAP	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
Sodium	ICAP	U	500	71000	500	72000	500	53000	500	52000	500	52000	500
Thallium	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Vanadium	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Zinc	ICAP	U	10	130	10	150	10	850	10	U	10	U	10

MDL denotes Method Detection Limit
U denotes Not Detected
NA - Not Available

Table 1.3(cont.) Results of the Analysis for Total Metals in Water
WA # 0-262 Fisherville Mill Site

Client ID Location		MW-31S (Total Metals)		MW-31D (Total Metals)		MW-400 (Total Metals)		MW-31R (Total Metals)		MW-100S (Total Metals)		MW-30D (Total Metals)	
Parameter	Analysis Method	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L
Aluminum	ICAP	U	50	U	50	U	50	U	50	160	50	U	50
Antimony	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Arsenic	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	10	2.2	3.8	2.2
Barium	ICAP	38	5.0	41	5.0	41	5.0	160	5.0	50	5.0	19	5.0
Beryllium	ICAP	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
Cadmium	ICAP	8.3	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
Calcium	ICAP	22000	100	22000	100	22000	100	39000	100	22000	100	32000	100
Chromium	ICAP	U	5.0	9.8	5.0	12	5.0	U	5.0	U	5.0	U	5.0
Cobalt	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Copper	ICAP	95	10	U	10	U	10	U	10	U	10	U	10
Iron	ICAP	1700	25	47	25	65	25	U	25	17000	25	320	25
Lead	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Magnesium	ICAP	3300	500	3200	500	3200	500	5100	500	3100	500	5700	500
Manganese	ICAP	4700	5.0	1600	5.0	1600	5.0	19	5.0	1800	5.0	860	5.0
Nickel	ICAP	15	10	U	10	U	10	U	10	U	10	U	10
Potassium	ICAP	4900	2000	3700	2000	4500	2000	2700	2000	3800	2000	4400	2000
Selenium	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Silver	ICAP	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
Sodium	ICAP	61000	500	55000	500	54000	500	13000	500	41000	500	35000	500
Thallium	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Vanadium	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Zinc	ICAP	130	10	U	10	U	10	U	10	U	10	U	10

MDL denotes Method Detection Limit
U denotes Not Detected
NA - Not Available

Table 1.3(cont.) Results of the Analysis for Total Metals in Water
WA # 0-262 Fisherville Mill Site

Client ID Location		MW-1D (Total Metals)		MW-29M (Total Metals)		MW-102 (Total Metals)	
Parameter	Analysis Method	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L
Aluminum	ICAP	110	50	59	50	U	50
Antimony	AA-Fur	U	2.2	U	2.2	U	2.2
Arsenic	AA-Fur	18	2.2	U	2.2	U	2.2
Barium	ICAP	170	5.0	18	5.0	24	5.0
Beryllium	ICAP	U	2.0	U	2.0	U	2.0
Cadmium	ICAP	U	5.0	U	5.0	U	5.0
Calcium	ICAP	120000	100	18000	100	25000	100
Chromium	ICAP	5.2	5.0	U	5.0	U	5.0
Cobalt	ICAP	19	10	U	10	U	10
Copper	ICAP	U	10	U	10	U	10
Iron	ICAP	62000	25	140	25	U	25
Lead	AA-Fur	U	2.2	U	2.2	U	2.2
Magnesium	ICAP	13000	500	2500	500	3800	500
Manganese	ICAP	17000	5.0	1100	5.0	2800	5.0
Nickel	ICAP	U	10	U	10	U	10
Potassium	ICAP	3400	2000	5800	2000	5900	2000
Selenium	AA-Fur	U	2.2	U	2.2	U	2.2
Silver	ICAP	U	5.0	U	5.0	U	5.0
Sodium	ICAP	27000	500	52000	500	51000	500
Thallium	AA-Fur	U	2.2	U	2.2	U	2.2
Vanadium	ICAP	U	10	U	10	U	10
Zinc	ICAP	U	10	U	10	U	10

MDL denotes Method Detection Limit
U denotes Not Detected
NA - Not Available

Table 1.4 Results of the Analysis for Dissolved Metals in Water
WA # 0-262 Fisherville Mill Site

Client ID / Location		Method Blank Lab		SW-101 Dissolved-Metals		SW-102 Dissolved-Metals		SW-103 Dissolved-Metals		MW-100D Dissolved-Metals		MW-100M Dissolved-Metals	
Parameter	Analysis Method	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L
Aluminum	ICAP	U	50	U	50	U	50	U	50	U	50	U	50
Antimony	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Arsenic	AA-Fur	U	2.2	U	2.2	2.3	2.2	2.5	2.2	U	2.2	U	2.2
Barium	ICAP	U	5.0	25	5.0	28	5.0	56	5.0	47	5.0	49	5.0
Beryllium	ICAP	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
Cadmium	ICAP	U	5.0	U	5.0	U	5.0	20	5.0	U	5.0	U	5.0
Calcium	ICAP	U	100	28000	100	28000	100	28000	100	20000	100	20000	100
Chromium	ICAP	U	5.0	U	5.0	U	5.0	5.2	5.0	U	5.0	U	5.0
Cobalt	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Copper	ICAP	U	10	U	10	U	10	28	10	U	10	U	10
Iron	ICAP	U	25	190	25	310	25	130	25	U	25	U	25
Lead	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Magnesium	ICAP	U	500	5000	500	5000	500	4600	500	3000	500	2900	500
Manganese	ICAP	U	5.0	810	5.0	870	5.0	650	5.0	290	5.0	32	5.0
Nickel	ICAP	U	10	13	10	14	10	40	10	U	10	U	10
Potassium	ICAP	U	2000	5400	2000	5800	2000	6600	2000	3700	2000	4000	2000
Selenium	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Silver	ICAP	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
Sodium	ICAP	U	500	71000	500	70000	500	54000	500	51000	500	50000	500
Thallium	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Vanadium	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Zinc	ICAP	U	10	100	10	140	10	710	10	U	10	U	10

MDL denotes Method Detection Limit
U denotes Not Detected
NA denotes Not Available

Table 1.4(cont.) Results of the Analysis for Dissolved Metals in Water
WA # 0-262 Fisherville Mill Site

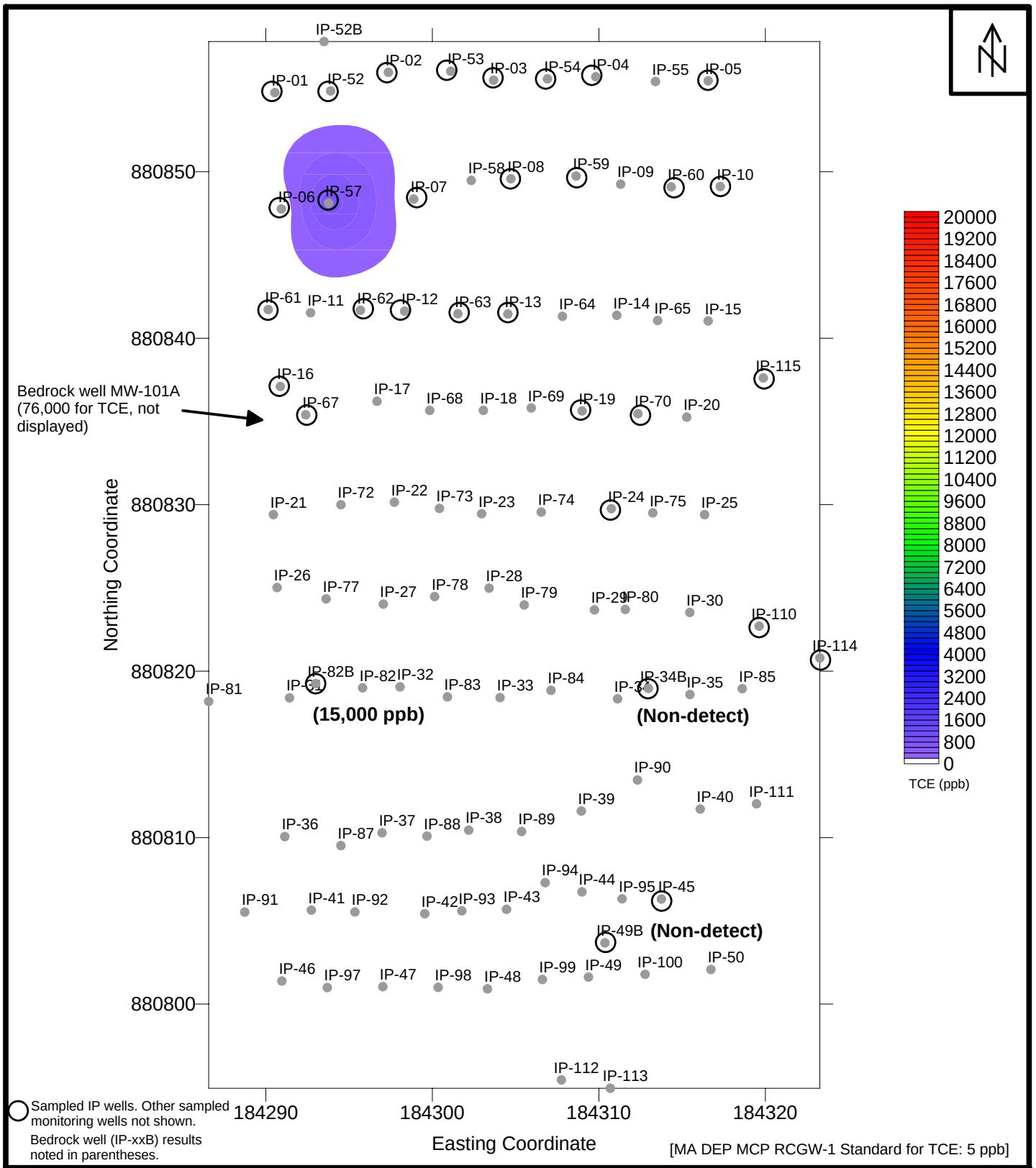
Client ID / Location		MW-31S Dissolved-Metals		MW-31D Dissolved-Metals		MW-400 Dissolved-Metals		MW-31R Dissolved-Metals		MW-100S Dissolved-Metals		MW-30D Dissolved-Metals	
Parameter	Analysis Method	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L
Aluminum	ICAP	U	50	U	50	U	50	U	50	U	50	U	50
Antimony	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Arsenic	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	9.2	2.2	3.6	2.2
Barium	ICAP	36	5.0	40	5.0	40	5.0	160	5.0	46	5.0	18	5.0
Beryllium	ICAP	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	2.0
Cadmium	ICAP	11	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
Calcium	ICAP	22000	100	21000	100	21000	100	40000	100	22000	100	32000	100
Chromium	ICAP	5.9	5.0	11	5.0	11	5.0	U	5.0	U	5.0	U	5.0
Cobalt	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Copper	ICAP	91	10	U	10	U	10	U	10	U	10	U	10
Iron	ICAP	1800	25	43	25	40	25	U	25	15000	25	260	25
Lead	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Magnesium	ICAP	3200	500	3200	500	3200	500	5000	500	3100	500	5600	500
Manganese	ICAP	4600	5.0	1500	5.0	1500	5.0	19	5.0	1800	5.0	860	5.0
Nickel	ICAP	13	10	U	10	U	10	U	10	U	10	U	10
Potassium	ICAP	5500	2000	4600	2000	4600	2000	3600	2000	3800	2000	5400	2000
Selenium	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Silver	ICAP	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	5.0
Sodium	ICAP	59000	500	52000	500	53000	500	12000	500	41000	500	34000	500
Thallium	AA-Fur	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2	U	2.2
Vanadium	ICAP	U	10	U	10	U	10	U	10	U	10	U	10
Zinc	ICAP	130	10	U	10	U	10	U	10	U	10	11	10

MDL denotes Method Detection Limit
U denotes Not Detected
NA denotes Not Available

Table 1.4(cont.) Results of the Analysis for Dissolved Metals in Water
WA # 0-262 Fisherville Mill Site

Client ID Location		MW-1D Dissolved-Metals		MW-29M Dissolved-Metals		MW-102 Dissolved-Metals	
Parameter	Analysis Method	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L	Conc µg/L	MDL µg/L
Aluminum	ICAP	130	50	U	50	U	50
Antimony	AA-Fur	U	2.2	U	2.2	U	2.2
Arsenic	AA-Fur	19	2.2	U	2.2	U	2.2
Barium	ICAP	160	5.0	17	5.0	23	5.0
Beryllium	ICAP	U	2.0	U	2.0	U	2.0
Cadmium	ICAP	U	5.0	U	5.0	U	5.0
Calcium	ICAP	120000	100	19000	100	25000	100
Chromium	ICAP	8.8	5.0	U	5.0	U	5.0
Cobalt	ICAP	23	10	U	10	U	10
Copper	ICAP	U	10	U	10	U	10
Iron	ICAP	62000	25	U	25	U	25
Lead	AA-Fur	U	2.2	U	2.2	U	2.2
Magnesium	ICAP	13000	500	2500	500	3800	500
Manganese	ICAP	16000	5.0	1100	5.0	2800	5.0
Nickel	ICAP	U	10	U	10	U	10
Potassium	ICAP	3700	2000	6000	2000	6300	2000
Selenium	AA-Fur	U	2.2	U	2.2	U	2.2
Silver	ICAP	U	5.0	U	5.0	U	5.0
Sodium	ICAP	26000	500	51000	500	51000	500
Thallium	AA-Fur	U	2.2	U	2.2	U	2.2
Vanadium	ICAP	U	10	U	10	U	10
Zinc	ICAP	U	10	U	10	U	10

MDL denotes Method Detection Limit
U denotes Not Detected
NA denotes Not Available



INJECTION POINT (IP) TCE CONCENTRATIONS CONTOUR MAP: NOVEMBER 2002 FISHERVILLE MILL GRAFTON, MASSACHUSETTS

TCE Concentration (parts per billion)

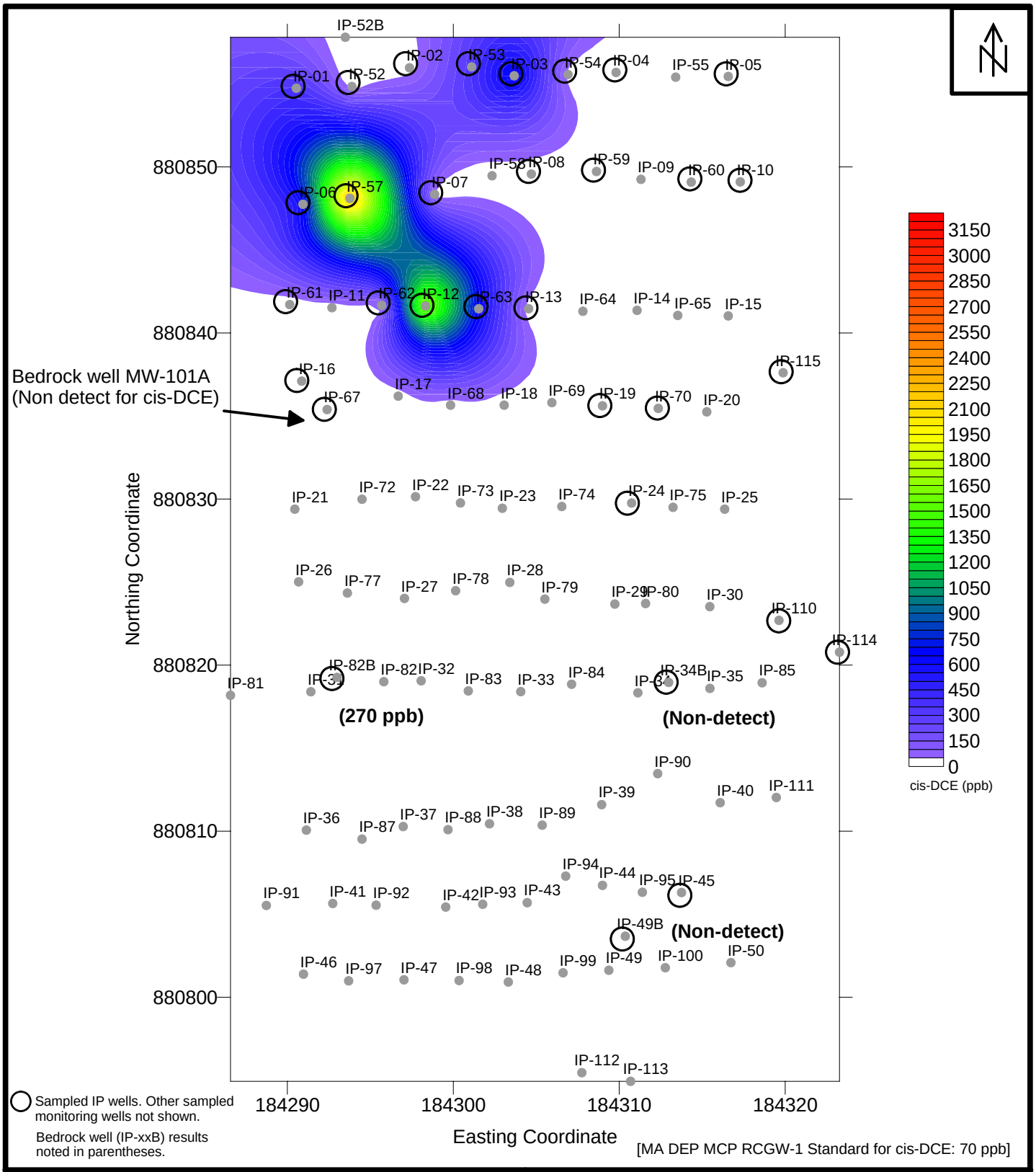
WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	03/05/2004

FILE NAME: R:03050181_FIGURES_SURFERFILES_TCEConc2D_Jul-Aug02

FIGURE I-1



INJECTION POINT (IP)
cis-DCE CONCENTRATIONS
CONTOUR MAP: NOVEMBER 2002
FISHERVILLE MILL
GRAFTON, MASSACHUSETTS

cis-DCE Concentration (parts per billion)

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	03/05/2004

FILE NAME: R:03050181_FIGURES_SURFERFILES_DCEConc3D_Jul-Aug02

FIGURE I-2

APPENDIX J

EPA ERT/REAC March 2003 VOC Field Screening Results
(from May 2003 Report) and Figures J-1 and J-2

Table 1.1 Results of the Analysis for VOC in Water
WA# 0-262 Fisherville Mill Site

Sample # :	Water Blank 032503-2		–		–		–			
Location :			TB-01		IP-7		IP-52			
Collected :			03/24/03		03/24/03		03/24/03			
Analyzed :	03/25/03		03/25/03		03/25/03		03/25/03			
Dil. Fact. :	1		1		25		10			
Unit :	µg/L		µg/L		µg/L		µg/L			

Compound	Conc.		MDL	Conc.	MDL	Conc.		MDL	Conc.		MDL
Dichlorodifluoromethane	U		1.0	U	1.0	U		25	U		10
Chloromethane	U		2.0	U	2.0	U		50	U		20
Vinyl Chloride	U		1.0	U	1.0	41		25	U		10
Bromomethane	U		1.0	U	1.0	U		25	U		10
Chloroethane	U		1.0	U	1.0	U		25	U		10
Trichlorofluoromethane	U		1.0	U	1.0	U		25	U		10
Acetone	3.3	J	8.0	U	8.0	100	JB	200	62	JB	80
1,1-Dichloroethene	U		1.0	U	1.0	U		25	U		10
Methylene Chloride	U		1.0	U	1.0	U		25	U		10
Carbon Disulfide	U		1.0	U	1.0	U		25	U		10
Methyl-t-butyl Ether	U		1.0	U	1.0	U		25	U		10
trans-1,2-Dichloroethene	U		1.0	U	1.0	U		25	U		10
1,1-Dichloroethane	U		1.0	U	1.0	U		25	U		10
2-Butanone	U		1.0	U	1.0	U		25	U		10
2,2-Dichloropropane	U		1.0	U	1.0	U		25	U		10
cis-1,2-Dichloroethene	U		1.0	U	1.0	1300		25	78		10
Chloroform	U		1.0	U	1.0	U		25	U		10
1,1-Dichloropropene	U		1.0	U	1.0	U		25	U		10
1,2-Dichloroethane	U		1.0	U	1.0	U		25	U		10
1,1,1-Trichloroethane	U		1.0	U	1.0	U		25	U		10
Carbon Tetrachloride	U		1.0	U	1.0	U		25	U		10
Benzene	U		1.0	U	1.0	U		25	U		10
Trichloroethene	U		1.0	U	1.0	5300		25	290		10
1,2-Dichloropropane	U		1.0	U	1.0	U		25	U		10
Bromodichloromethane	U		1.0	U	1.0	U		25	U		10
Dibromomethane	U		1.0	U	1.0	U		25	U		10
cis-1,3-Dichloropropene	U		1.0	U	1.0	U		25	U		10
trans-1,3-Dichloropropene	U		1.0	U	1.0	U		25	U		10
1,1,2-Trichloroethane	U		1.0	U	1.0	U		25	U		10
1,3-Dichloropropane	U		1.0	U	1.0	U		25	U		10
Dibromochloromethane	U		1.0	U	1.0	U		25	U		10
1,2-Dibromoethane	U		1.0	U	1.0	U		25	U		10
Bromoform	U		1.0	U	1.0	U		25	U		10
4-Methyl-2-Pentanone	U		1.0	U	1.0	U		25	U		10
Toluene	U		1.0	U	1.0	U		25	U		10
2-Hexanone	U		1.0	U	1.0	U		25	U		10
Tetrachloroethene	U		1.0	U	1.0	28		25	U		10
Chlorobenzene	U		1.0	U	1.0	U		25	U		10
1,1,1,2-Tetrachloroethane	U		1.0	U	1.0	U		25	U		10
Ethylbenzene	U		1.0	U	1.0	U		25	U		10
p&m-Xylene	U		2.0	U	2.0	U		50	U		20
o-Xylene	U		1.0	U	1.0	U		25	U		10
Styrene	U		1.0	U	1.0	U		25	U		10
Isopropylbenzene	U		1.0	U	1.0	U		25	U		10
1,1,2,2-Tetrachloroethane	U		1.0	U	1.0	U		25	U		10
1,2,3-Trichloropropane	U		1.0	U	1.0	U		25	U		10
n-Propylbenzene	U		1.0	U	1.0	U		25	U		10
Bromobenzene	U		1.0	U	1.0	U		25	U		10
1,3,5-Trimethylbenzene	U		1.0	U	1.0	U		25	U		10
2-Chlorotoluene	U		1.0	U	1.0	U		25	U		10
4-Chlorotoluene	U		1.0	U	1.0	U		25	U		10
tert-Butylbenzene	U		1.0	U	1.0	U		25	U		10
1,2,4-Trimethylbenzene	U		1.0	U	1.0	U		25	U		10
sec-Butylbenzene	U		1.0	U	1.0	U		25	U		10
p-Isopropyltoluene	U		1.0	U	1.0	U		25	U		10
1,3-Dichlorobenzene	U		1.0	U	1.0	U		25	U		10
1,4-Dichlorobenzene	U		1.0	U	1.0	U		25	U		10
n-Butylbenzene	U		1.0	U	1.0	U		25	U		10
1,2-Dichlorobenzene	U		1.0	U	1.0	U		25	U		10
1,2-Dibromo-3-chloropropane	U		1.0	U	1.0	U		25	U		10
1,2,4-Trichlorobenzene	U		1.0	U	1.0	U		25	U		10
Hexachlorobutadiene	U		1.0	U	1.0	U		25	U		10
Naphthalene	U		1.0	U	1.0	U		25	U		10
1,2,3-Trichlorobenzene	U		1.0	U	1.0	U		25	U		10

Table 1.1 (Cont.) Results of the Analysis for VOC in Water
WA# 0-262 Fisherville Mill Site

Sample # :	Water blank 032503-4	--	--	--	--
Location :		IP-57	IP-52 B	IP-12	IP-200
Collected :		03/24/03	03/24/03	03/24/03	03/24/03
Analyzed :	03/26/03	03/26/03	03/26/03	03/26/03	03/26/03
Dil. Fact. :	1	20	10	10	20
Unit :	µg/L	µg/L	µg/L	µg/L	µg/L

Compound	Conc.		MDL	Conc.		MDL	Conc.		MDL	Conc.		MDL	Conc.		MDL
Dichlorodifluoromethane	U		1.0	U		20	U		10	U		10	U		20
Chloromethane	U		2.0	U		40	U		20	U		20	U		40
Vinyl Chloride	U		1.0	60		20	U		10	100		10	51		20
Bromomethane	U		1.0	U		20	U		10	U		10	U		20
Chloroethane	U		1.0	U		20	U		10	U		10	U		20
Trichlorofluoromethane	U		1.0	U		20	U		10	U		10	U		20
Acetone	6.1	J	8.0	120	JB	160	160	B	80	34	JB	80	70	JB	160
1,1-Dichloroethene	U		1.0	U		20	U		10	U		10	U		20
Methylene Chloride	U		1.0	U		20	U		10	U		10	U		20
Carbon Disulfide	U		1.0	U		20	U		10	U		10	U		20
Methyl-t-butyl Ether	U		1.0	U		20	U		10	U		10	U		20
trans-1,2-Dichloroethene	U		1.0	U		20	U		10	18		10	U		20
1,1-Dichloroethane	U		1.0	U		20	U		10	U		10	U		20
2-Butanone	U		1.0	U		20	U		10	U		10	U		20
2,2-Dichloropropane	U		1.0	U		20	U		10	U		10	U		20
cis-1,2-Dichloroethene	U		1.0	1900		20	U		10	2100		10	3700		20
Chloroform	U		1.0	U		20	U		10	U		10	U		20
1,1-Dichloropropene	U		1.0	U		20	U		10	U		10	U		20
1,2-Dichloroethane	U		1.0	U		20	U		10	U		10	U		20
1,1,1-Trichloroethane	U		1.0	U		20	U		10	U		10	U		20
Carbon Tetrachloride	U		1.0	U		20	U		10	U		10	U		20
Benzene	U		1.0	U		20	U		10	U		10	U		20
Trichloroethene	U		1.0	530		20	190		10	860		10	720		20
1,2-Dichloropropane	U		1.0	U		20	U		10	U		10	U		20
Bromodichloromethane	U		1.0	U		20	U		10	U		10	U		20
Dibromomethane	U		1.0	U		20	U		10	U		10	U		20
cis-1,3-Dichloropropene	U		1.0	U		20	U		10	U		10	U		20
trans-1,3-Dichloropropene	U		1.0	U		20	U		10	U		10	U		20
1,1,2-Trichloroethane	U		1.0	U		20	U		10	U		10	U		20
1,3-Dichloropropane	U		1.0	U		20	U		10	U		10	U		20
Dibromochloromethane	U		1.0	U		20	U		10	U		10	U		20
1,2-Dibromoethane	U		1.0	U		20	U		10	U		10	U		20
Bromoform	U		1.0	U		20	U		10	U		10	U		20
4-Methyl-2-Pentanone	U		1.0	U		20	U		10	U		10	U		20
Toluene	U		1.0	U		20	U		10	U		10	U		20
2-Hexanone	U		1.0	U		20	U		10	U		10	U		20
Tetrachloroethene	U		1.0	U		20	16		10	U		10	U		20
Chlorobenzene	U		1.0	U		20	U		10	U		10	U		20
1,1,1,2-Tetrachloroethane	U		1.0	U		20	U		10	U		10	U		20
Ethylbenzene	U		1.0	U		20	U		10	U		10	U		20
p&m-Xylene	U		2.0	U		40	U		20	U		20	U		40
o-Xylene	U		1.0	U		20	U		10	U		10	U		20
Styrene	U		1.0	U		20	U		10	U		10	U		20
Isopropylbenzene	U		1.0	U		20	U		10	U		10	U		20
1,1,2,2-Tetrachloroethane	U		1.0	U		20	U		10	U		10	U		20
1,2,3-Trichloropropane	U		1.0	U		20	U		10	U		10	U		20
n-Propylbenzene	U		1.0	U		20	U		10	U		10	U		20
Bromobenzene	U		1.0	U		20	U		10	U		10	U		20
1,3,5-Trimethylbenzene	U		1.0	U		20	U		10	U		10	U		20
2-Chlorotoluene	U		1.0	U		20	U		10	U		10	U		20
4-Chlorotoluene	U		1.0	U		20	U		10	U		10	U		20
tert-Butylbenzene	U		1.0	U		20	U		10	U		10	U		20
1,2,4-Trimethylbenzene	U		1.0	U		20	U		10	U		10	U		20
sec-Butylbenzene	U		1.0	U		20	U		10	U		10	U		20
p-Isopropyltoluene	U		1.0	U		20	U		10	U		10	U		20
1,3-Dichlorobenzene	U		1.0	U		20	U		10	U		10	U		20
1,4-Dichlorobenzene	U		1.0	U		20	U		10	U		10	U		20
n-Butylbenzene	U		1.0	U		20	U		10	U		10	U		20
1,2-Dichlorobenzene	U		1.0	U		20	U		10	U		10	U		20
1,2-Dibromo-3-chloropropane	U		1.0	U		20	U		10	U		10	U		20
1,2,4-Trichlorobenzene	U		1.0	U		20	U		10	U		10	U		20
Hexachlorobutadiene	U		1.0	U		20	U		10	U		10	U		20
Naphthalene	U		1.0	U		20	U		10	U		10	U		20
1,2,3-Trichlorobenzene	U		1.0	U		20	U		10	U		10	U		20

Table 1.1 (Cont.) Results of the Analysis for VOC in Water
WA# 0-262 Fisherville Mill Site

Sample # :	Water blank 032503-4	-	-	-	
Location :		IP-18	IP-63	IP-1	
Collected :		03/24/03	03/24/03	03/24/03	
Analyzed :	03/26/03	03/26/03	03/26/03	03/26/03	
Dil. Fact. :	1	10	20	40	
Unit :	µg/L	µg/L	µg/L	µg/L	

Compound	Conc.		MDL	Conc.		MDL	Conc.		MDL	Conc.		MDL
Dichlorodifluoromethane	U		1.0	U		10	U		20	U		40
Chloromethane	U		2.0	U		20	U		40	U		80
Vinyl Chloride	U		1.0	53		10	U		20	U		40
Bromomethane	U		1.0	U		10	U		20	U		40
Chloroethane	U		1.0	U		10	U		20	U		40
Trichlorofluoromethane	U		1.0	U		10	U		20	U		40
Acetone	8.1	J	8.0	55	JB	80	130	JB	160	230	JB	320
1,1-Dichloroethene	U		1.0	U		10	U		20	U		40
Methylene Chloride	U		1.0	U		10	U		20	U		40
Carbon Disulfide	U		1.0	U		10	U		20	U		40
Methyl-t-butyl Ether	U		1.0	U		10	U		20	U		40
trans-1,2-Dichloroethene	U		1.0	13		10	U		20	U		40
1,1-Dichloroethane	U		1.0	U		10	U		20	U		40
2-Butanone	U		1.0	U		10	U		20	U		40
2,2-Dichloropropane	U		1.0	U		10	U		20	U		40
cis-1,2-Dichloroethene	U		1.0	2000		10	700		20	300		40
Chloroform	U		1.0	U		10	U		20	U		40
1,1-Dichloropropene	U		1.0	U		10	U		20	U		40
1,2-Dichloroethane	U		1.0	U		10	U		20	U		40
1,1,1-Trichloroethane	U		1.0	U		10	U		20	U		40
Carbon Tetrachloride	U		1.0	U		10	U		20	U		40
Benzene	U		1.0	U		10	U		20	U		40
Trichloroethene	U		1.0	860		10	190		20	4400		40
1,2-Dichloropropane	U		1.0	U		10	U		20	U		40
Bromodichloromethane	U		1.0	U		10	U		20	U		40
Dibromomethane	U		1.0	U		10	U		20	U		40
cis-1,3-Dichloropropene	U		1.0	U		10	U		20	U		40
trans-1,3-Dichloropropene	U		1.0	U		10	U		20	U		40
1,1,2-Trichloroethane	U		1.0	U		10	U		20	U		40
1,3-Dichloropropane	U		1.0	U		10	U		20	U		40
Dibromochloromethane	U		1.0	U		10	U		20	U		40
1,2-Dibromoethane	U		1.0	U		10	U		20	U		40
Bromoform	U		1.0	U		10	U		20	U		40
4-Methyl-2-Pentanone	U		1.0	U		10	U		20	U		40
Toluene	U		1.0	U		10	U		20	U		40
2-Hexanone	U		1.0	U		10	U		20	U		40
Tetrachloroethene	U		1.0	U		10	U		20	U		40
Chlorobenzene	U		1.0	U		10	U		20	U		40
1,1,1,2-Tetrachloroethane	U		1.0	U		10	U		20	U		40
Ethylbenzene	U		1.0	U		10	U		20	U		40
p&m-Xylene	U		2.0	U		20	U		40	U		80
o-Xylene	U		1.0	U		10	U		20	U		40
Styrene	U		1.0	U		10	U		20	U		40
Isopropylbenzene	U		1.0	U		10	U		20	U		40
1,1,2,2-Tetrachloroethane	U		1.0	U		10	U		20	U		40
1,2,3-Trichloropropane	U		1.0	U		10	U		20	U		40
n-Propylbenzene	U		1.0	U		10	U		20	U		40
Bromobenzene	U		1.0	U		10	U		20	U		40
1,3,5-Trimethylbenzene	U		1.0	U		10	U		20	U		40
2-Chlorotoluene	U		1.0	U		10	U		20	U		40
4-Chlorotoluene	U		1.0	U		10	U		20	U		40
tert-Butylbenzene	U		1.0	U		10	U		20	U		40
1,2,4-Trimethylbenzene	U		1.0	U		10	U		20	U		40
sec-Butylbenzene	U		1.0	U		10	U		20	U		40
p-Isopropyltoluene	U		1.0	U		10	U		20	U		40
1,3-Dichlorobenzene	U		1.0	U		10	U		20	U		40
1,4-Dichlorobenzene	U		1.0	U		10	U		20	U		40
n-Butylbenzene	U		1.0	U		10	U		20	U		40
1,2-Dichlorobenzene	U		1.0	U		10	U		20	U		40
1,2-Dibromo-3-chloropropane	U		1.0	U		10	U		20	U		40
1,2,4-Trichlorobenzene	U		1.0	U		10	U		20	U		40
Hexachlorobutadiene	U		1.0	U		10	U		20	U		40
Naphthalene	U		1.0	U		10	U		20	U		40
1,2,3-Trichlorobenzene	U		1.0	U		10	U		20	U		40

Table 1.1 (Cont.) Results of the Analysis for VOC in Water
WA# 0-262 Fisherville Mill Site

Sample # :	Water blank 032603-2		--		--		--		--		
Location :			IP-6		IP-2		IP-3		IP-53		
Collected :			03/24/03		03/24/03		03/24/03		03/24/03		
Analyzed :	03/26/03		03/26/03		03/26/03		03/26/03		03/26/03		
Dil. Fact. :	1		25		1		1		1		
Unit :	µg/L		µg/L		µg/L		µg/L		µg/L		

Compound	Conc.		MDL	Conc.		MDL	Conc.	MDL	Conc.	MDL	Conc.	MDL
Dichlorodifluoromethane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Chloromethane	U		2.0	U		50	U	2.0	U	2.0	U	2.0
Vinyl Chloride	U		1.0	70		25	36	1.0	44	1.0	25	1.0
Bromomethane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Chloroethane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Trichlorofluoromethane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Acetone	6.0	J	6.0	99	JB	200	U	6.0	U	6.0	U	6.0
1,1-Dichloroethene	U		1.0	U		25	1.4	1.0	U	1.0	U	1.0
Methylene Chloride	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Carbon Disulfide	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Methyl-t-butyl Ether	U		1.0	U		25	U	1.0	U	1.0	U	1.0
trans-1,2-Dichloroethene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
1,1-Dichloroethane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
2-Butanone	U		1.0	U		25	U	1.0	U	1.0	U	1.0
2,2-Dichloropropane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
cis-1,2-Dichloroethene	U		1.0	2300		25	150	1.0	100	1.0	74	1.0
Chloroform	U		1.0	U		25	U	1.0	U	1.0	U	1.0
1,1-Dichloropropene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
1,2-Dichloroethane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
1,1,1-Trichloroethane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Carbon Tetrachloride	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Benzene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Trichloroethene	U		1.0	430		25	17	1.0	U	1.0	U	1.0
1,2-Dichloropropane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Bromodichloromethane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Dibromomethane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
cis-1,3-Dichloropropene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
trans-1,3-Dichloropropene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
1,1,2-Trichloroethane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
1,3-Dichloropropane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Dibromochloromethane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
1,2-Dibromoethane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Bromoform	U		1.0	U		25	U	1.0	U	1.0	U	1.0
4-Methyl-2-Pentanone	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Toluene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
2-Hexanone	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Tetrachloroethene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Chlorobenzene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
1,1,1,2-Tetrachloroethane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Ethylbenzene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
p&m-Xylene	U		2.0	U		50	U	2.0	U	2.0	U	2.0
o-Xylene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Styrene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Isopropylbenzene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
1,1,2,2-Tetrachloroethane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
1,2,3-Trichloropropane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
n-Propylbenzene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Bromobenzene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
1,3,5-Trimethylbenzene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
2-Chlorotoluene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
4-Chlorotoluene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
tert-Butylbenzene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
1,2,4-Trimethylbenzene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
sec-Butylbenzene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
p-Isopropyltoluene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
1,3-Dichlorobenzene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
1,4-Dichlorobenzene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
n-Butylbenzene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
1,2-Dichlorobenzene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
1,2-Dibromo-3-chloropropane	U		1.0	U		25	U	1.0	U	1.0	U	1.0
1,2,4-Trichlorobenzene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Hexachlorobutadiene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
Naphthalene	U		1.0	U		25	U	1.0	U	1.0	U	1.0
1,2,3-Trichlorobenzene	U		1.0	U		25	U	1.0	U	1.0	U	1.0

Table 1.1 (Cont.) Results of the Analysis for VOC in Water
WA# 0-262 Fisherville Mill Site

Sample # :	Water blank 032603-2		–		–		–		
Location :			IP-28		MW101A		TB-02		
Collected :			03/25/03		03/25/03		03/25/03		
Analyzed :	03/26/03		03/26/03		03/26/03		03/26/03		
Dil. Fact. :	1		1		250		1		
Unit :	µg/L		µg/L		µg/L		µg/L		

Compound	Conc.		MDL	Conc.		MDL	Conc.		MDL	Conc.	MDL
Dichlorodifluoromethane	U		1.0	U		1.0	U		250	U	1.0
Chloromethane	U		2.0	U		2.0	U		500	U	2.0
Vinyl Chloride	U		1.0	3.5		1.0	U		250	U	1.0
Bromomethane	U		1.0	U		1.0	U		250	U	1.0
Chloroethane	U		1.0	U		1.0	U		250	U	1.0
Trichlorofluoromethane	U		1.0	U		1.0	U		250	U	1.0
Acetone	6.0	J	8.0	2.1	JB	8.0	1400	JB	2000	U	8.0
1,1-Dichloroethene	U		1.0	U		1.0	U		250	U	1.0
Methylene Chloride	U		1.0	U		1.0	U		250	U	1.0
Carbon Disulfide	U		1.0	U		1.0	U		250	U	1.0
Methyl-t-butyl Ether	U		1.0	U		1.0	U		250	U	1.0
trans-1,2-Dichloroethene	U		1.0	54		1.0	U		250	U	1.0
1,1-Dichloroethane	U		1.0	U		1.0	U		250	U	1.0
2-Butanone	U		1.0	U		1.0	U		250	U	1.0
2,2-Dichloropropane	U		1.0	U		1.0	U		250	U	1.0
cis-1,2-Dichloroethene	U		1.0	2800		1.0	U		250	U	1.0
Chloroform	U		1.0	U		1.0	U		250	U	1.0
1,1-Dichloropropene	U		1.0	U		1.0	U		250	U	1.0
1,2-Dichloroethane	U		1.0	U		1.0	U		250	U	1.0
1,1,1-Trichloroethane	U		1.0	U		1.0	U		250	U	1.0
Carbon Tetrachloride	U		1.0	U		1.0	U		250	U	1.0
Benzene	U		1.0	U		1.0	U		250	U	1.0
Trichloroethene	U		1.0	150		1.0	35000		250	U	1.0
1,2-Dichloropropane	U		1.0	U		1.0	U		250	U	1.0
Bromodichloromethane	U		1.0	U		1.0	U		250	U	1.0
Dibromomethane	U		1.0	U		1.0	U		250	U	1.0
cis-1,3-Dichloropropene	U		1.0	U		1.0	U		250	U	1.0
trans-1,3-Dichloropropene	U		1.0	U		1.0	U		250	U	1.0
1,1,2-Trichloroethane	U		1.0	U		1.0	U		250	U	1.0
1,3-Dichloropropane	U		1.0	U		1.0	U		250	U	1.0
Dibromochloromethane	U		1.0	U		1.0	U		250	U	1.0
1,2-Dibromoethane	U		1.0	U		1.0	U		250	U	1.0
Bromoform	U		1.0	U		1.0	U		250	U	1.0
4-Methyl-2-Pentanone	U		1.0	U		1.0	U		250	U	1.0
Toluene	U		1.0	U		1.0	U		250	U	1.0
2-Hexanone	U		1.0	U		1.0	U		250	U	1.0
Tetrachloroethene	U		1.0	1.1		1.0	U		250	U	1.0
Chlorobenzene	U		1.0	U		1.0	U		250	U	1.0
1,1,1,2-Tetrachloroethane	U		1.0	U		1.0	U		250	U	1.0
Ethylbenzene	U		1.0	U		1.0	U		250	U	1.0
p&m-Xylene	U		2.0	U		2.0	U		500	U	2.0
o-Xylene	U		1.0	U		1.0	U		250	U	1.0
Styrene	U		1.0	U		1.0	U		250	U	1.0
Isopropylbenzene	U		1.0	U		1.0	U		250	U	1.0
1,1,2,2-Tetrachloroethane	U		1.0	U		1.0	U		250	U	1.0
1,2,3-Trichloropropane	U		1.0	U		1.0	U		250	U	1.0
n-Propylbenzene	U		1.0	U		1.0	U		250	U	1.0
Bromobenzene	U		1.0	U		1.0	U		250	U	1.0
1,3,5-Trimethylbenzene	U		1.0	U		1.0	U		250	U	1.0
2-Chlorotoluene	U		1.0	U		1.0	U		250	U	1.0
4-Chlorotoluene	U		1.0	U		1.0	U		250	U	1.0
tert-Butylbenzene	U		1.0	U		1.0	U		250	U	1.0
1,2,4-Trimethylbenzene	U		1.0	U		1.0	U		250	U	1.0
sec-Butylbenzene	U		1.0	U		1.0	U		250	U	1.0
p-Isopropyltoluene	U		1.0	U		1.0	U		250	U	1.0
1,3-Dichlorobenzene	U		1.0	U		1.0	U		250	U	1.0
1,4-Dichlorobenzene	U		1.0	U		1.0	U		250	U	1.0
n-Butylbenzene	U		1.0	U		1.0	U		250	U	1.0
1,2-Dichlorobenzene	U		1.0	U		1.0	U		250	U	1.0
1,2-Dibromo-3-chloropropane	U		1.0	U		1.0	U		250	U	1.0
1,2,4-Trichlorobenzene	U		1.0	U		1.0	U		250	U	1.0
Hexachlorobutadiene	U		1.0	U		1.0	U		250	U	1.0
Naphthalene	U		1.0	U		1.0	U		250	U	1.0
1,2,3-Trichlorobenzene	U		1.0	U		1.0	U		250	U	1.0

Table 1.1 (Cont.) Results of the Analysis for VOC in Water
WA# 0-262 Fisherville Mill Site

Sample # :	Water blank 032703	-	-
Location :		IP-49 B	IP-62 B
Collected :		03/25/03	03/25/03
Analyzed :	03/27/03	03/27/03	03/27/03
Dil. Fact. :	1	1	1
Unit :	µg/L	µg/L	µg/L

Compound	Conc.		MDL	Conc.		MDL	Conc.		MDL
Dichlorodifluoromethane	U		1.0	U		1.0	U		1.0
Chloromethane	U		2.0	U		2.0	U		2.0
Vinyl Chloride	U		1.0	U		1.0	U		1.0
Bromomethane	U		1.0	U		1.0	U		1.0
Chloroethane	U		1.0	U		1.0	U		1.0
Trichlorofluoromethane	U		1.0	U		1.0	2.4		1.0
Acetone	7.3	J	8.0	740	B	8.0	40	B	8.0
1,1-Dichloroethene	U		1.0	U		1.0	U		1.0
Methylene Chloride	U		1.0	U		1.0	U		1.0
Carbon Disulfide	U		1.0	U		1.0	U		1.0
Methyl-t-butyl Ether	U		1.0	U		1.0	U		1.0
trans-1,2-Dichloroethene	U		1.0	U		1.0	U		1.0
1,1-Dichloroethane	U		1.0	3.3		1.0	1.8		1.0
2-Butanone	U		1.0	U		1.0	U		1.0
2,2-Dichloropropane	U		1.0	U		1.0	U		1.0
cis-1,2-Dichloroethene	U		1.0	U		1.0	U		1.0
Chloroform	U		1.0	U		1.0	U		1.0
1,1-Dichloropropene	U		1.0	U		1.0	U		1.0
1,2-Dichloroethane	U		1.0	U		1.0	U		1.0
1,1,1-Trichloroethane	U		1.0	43		1.0	24		1.0
Carbon Tetrachloride	U		1.0	U		1.0	U		1.0
Benzene	U		1.0	U		1.0	5.9		1.0
Trichloroethene	U		1.0	U		1.0	1.8		1.0
1,2-Dichloropropane	U		1.0	U		1.0	U		1.0
Bromodichloromethane	U		1.0	U		1.0	U		1.0
Dibromomethane	U		1.0	U		1.0	U		1.0
cis-1,3-Dichloropropene	U		1.0	U		1.0	U		1.0
trans-1,3-Dichloropropene	U		1.0	U		1.0	U		1.0
1,1,2-Trichloroethane	U		1.0	2.6		1.0	5.9		1.0
1,3-Dichloropropane	U		1.0	U		1.0	U		1.0
Dibromochloromethane	U		1.0	U		1.0	U		1.0
1,2-Dibromoethane	U		1.0	U		1.0	U		1.0
Bromoform	U		1.0	U		1.0	U		1.0
4-Methyl-2-Pentanone	U		1.0	U		1.0	U		1.0
Toluene	U		1.0	U		1.0	U		1.0
2-Hexanone	U		1.0	U		1.0	U		1.0
Tetrachloroethene	U		1.0	U		1.0	U		1.0
Chlorobenzene	U		1.0	U		1.0	U		1.0
1,1,1,2-Tetrachloroethane	U		1.0	U		1.0	U		1.0
Ethylbenzene	U		1.0	U		1.0	U		1.0
p&m-Xylene	U		2.0	U		2.0	U		2.0
o-Xylene	U		1.0	U		1.0	U		1.0
Styrene	U		1.0	U		1.0	U		1.0
Isopropylbenzene	U		1.0	U		1.0	U		1.0
1,1,2,2-Tetrachloroethane	U		1.0	U		1.0	U		1.0
1,2,3-Trichloropropane	U		1.0	U		1.0	U		1.0
n-Propylbenzene	U		1.0	U		1.0	U		1.0
Bromobenzene	U		1.0	U		1.0	U		1.0
1,3,5-Trimethylbenzene	U		1.0	U		1.0	U		1.0
2-Chlorotoluene	U		1.0	U		1.0	U		1.0
4-Chlorotoluene	U		1.0	U		1.0	U		1.0
tert-Butylbenzene	U		1.0	U		1.0	U		1.0
1,2,4-Trimethylbenzene	U		1.0	U		1.0	U		1.0
sec-Butylbenzene	U		1.0	U		1.0	U		1.0
p-Isopropyltoluene	U		1.0	U		1.0	U		1.0
1,3-Dichlorobenzene	U		1.0	U		1.0	U		1.0
1,4-Dichlorobenzene	U		1.0	U		1.0	U		1.0
n-Butylbenzene	U		1.0	U		1.0	U		1.0
1,2-Dichlorobenzene	U		1.0	U		1.0	U		1.0
1,2-Dibromo-3-chloropropane	U		1.0	U		1.0	U		1.0
1,2,4-Trichlorobenzene	U		1.0	U		1.0	U		1.0
Hexachlorobutadiene	U		1.0	U		1.0	U		1.0
Naphthalene	U		1.0	U		1.0	U		1.0
1,2,3-Trichlorobenzene	U		1.0	U		1.0	U		1.0

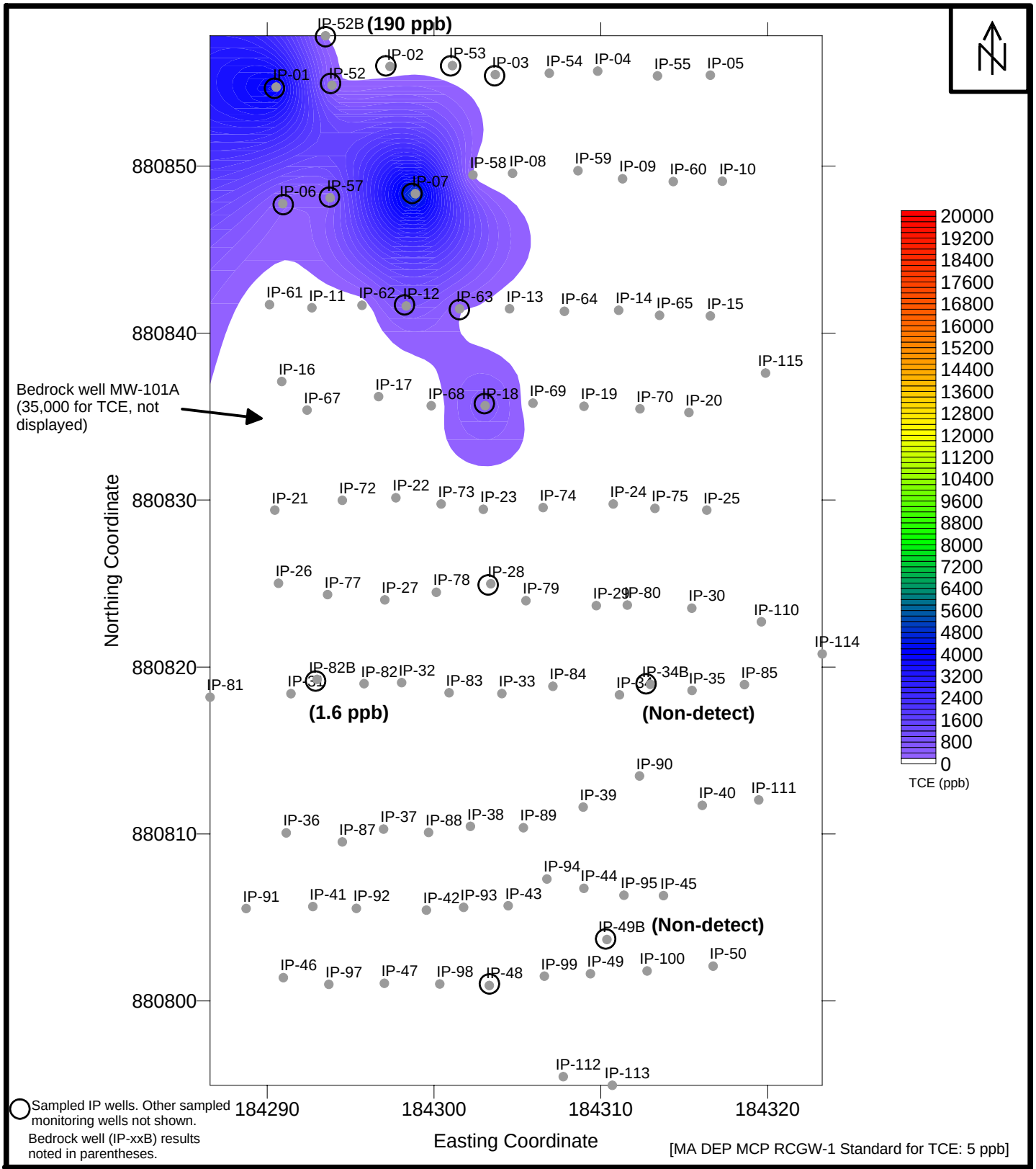
Table 1.1 (Cont.) Results of the Analysis for VOC in Water
WA# 0-262 Fisherville Mill Site

Sample # :	Water blank 032503-2		--		--		--	
Location :			IP-34 B		MW-3T-B		IP-46	
Collected :			03/25/03		03/25/03		03/25/03	
Analyzed :	03/28/03		03/28/03		03/28/03		03/28/03	
Dil. Fact. :	1		5		2		1	
Unit :	µg/L		µg/L		µg/L		µg/L	

Compound	Conc.	MDL	Conc.		MDL	Conc.		MDL	Conc.		MDL
Dichlorodifluoromethane	U	1.0	U		5.0	U		2.0	U		1.0
Chloromethane	U	2.0	U		10	U		4.0	U		2.0
Vinyl Chloride	U	1.0	U		5.0	37		2.0	U		1.0
Bromomethane	U	1.0	U		5.0	U		2.0	U		1.0
Chloroethane	U	1.0	U		5.0	U		2.0	U		1.0
Trichlorofluoromethane	U	1.0	U		5.0	U		2.0	U		1.0
Acetone	9.6	8.0	170	B	40	50	B	16	77	B	8.0
1,1-Dichloroethene	U	1.0	U		5.0	U		2.0	U		1.0
Methylene Chloride	U	1.0	U		5.0	U		2.0	U		1.0
Carbon Disulfide	U	1.0	U		5.0	4.3		2.0	U		1.0
Methyl-t-butyl Ether	U	1.0	U		5.0	U		2.0	U		1.0
trans-1,2-Dichloroethene	U	1.0	U		5.0	U		2.0	U		1.0
1,1-Dichloroethane	U	1.0	21		5.0	U		2.0	U		1.0
2-Butanone	U	1.0	U		5.0	U		2.0	U		1.0
2,2-Dichloropropane	U	1.0	U		5.0	U		2.0	U		1.0
cis-1,2-Dichloroethene	U	1.0	U		5.0	210		2.0	U		1.0
Chloroform	U	1.0	U		5.0	U		2.0	U		1.0
1,1-Dichloropropene	U	1.0	U		5.0	U		2.0	U		1.0
1,2-Dichloroethane	U	1.0	U		5.0	U		2.0	U		1.0
1,1,1-Trichloroethane	U	1.0	500		5.0	U		2.0	7.8		1.0
Carbon Tetrachloride	U	1.0	U		5.0	U		2.0	U		1.0
Benzene	U	1.0	U		5.0	13		2.0	U		1.0
Trichloroethene	U	1.0	U		5.0	2.4		2.0	U		1.0
1,2-Dichloropropane	U	1.0	U		5.0	U		2.0	U		1.0
Bromodichloromethane	U	1.0	U		5.0	U		2.0	U		1.0
Dibromomethane	U	1.0	U		5.0	U		2.0	U		1.0
cis-1,3-Dichloropropene	U	1.0	U		5.0	U		2.0	U		1.0
trans-1,3-Dichloropropene	U	1.0	U		5.0	U		2.0	U		1.0
1,1,2-Trichloroethane	U	1.0	13		5.0	U		2.0	U		1.0
1,3-Dichloropropane	U	1.0	U		5.0	U		2.0	U		1.0
Dibromochloromethane	U	1.0	U		5.0	U		2.0	U		1.0
1,2-Dibromoethane	U	1.0	U		5.0	U		2.0	U		1.0
Bromoform	U	1.0	U		5.0	U		2.0	U		1.0
4-Methyl-2-Pentanone	U	1.0	U		5.0	U		2.0	U		1.0
Toluene	U	1.0	U		5.0	U		2.0	U		1.0
2-Hexanone	U	1.0	U		5.0	U		2.0	U		1.0
Tetrachloroethene	U	1.0	6.4		5.0	U		2.0	U		1.0
Chlorobenzene	U	1.0	U		5.0	U		2.0	U		1.0
1,1,1,2-Tetrachloroethane	U	1.0	U		5.0	U		2.0	U		1.0
Ethylbenzene	U	1.0	U		5.0	U		2.0	U		1.0
p&m-Xylene	U	2.0	U		10	U		4.0	U		2.0
o-Xylene	U	1.0	U		5.0	U		2.0	U		1.0
Styrene	U	1.0	U		5.0	U		2.0	U		1.0
Isopropylbenzene	U	1.0	U		5.0	U		2.0	U		1.0
1,1,2,2-Tetrachloroethane	U	1.0	U		5.0	U		2.0	U		1.0
1,2,3-Trichloropropane	U	1.0	U		5.0	U		2.0	U		1.0
n-Propylbenzene	U	1.0	U		5.0	U		2.0	U		1.0
Bromobenzene	U	1.0	U		5.0	U		2.0	U		1.0
1,3,5-Trimethylbenzene	U	1.0	U		5.0	U		2.0	U		1.0
2-Chlorotoluene	U	1.0	U		5.0	U		2.0	U		1.0
4-Chlorotoluene	U	1.0	U		5.0	U		2.0	U		1.0
tert-Butylbenzene	U	1.0	U		5.0	U		2.0	U		1.0
1,2,4-Trimethylbenzene	U	1.0	U		5.0	U		2.0	U		1.0
sec-Butylbenzene	U	1.0	U		5.0	U		2.0	U		1.0
p-Isopropyltoluene	U	1.0	U		5.0	U		2.0	U		1.0
1,3-Dichlorobenzene	U	1.0	U		5.0	U		2.0	U		1.0
1,4-Dichlorobenzene	U	1.0	U		5.0	U		2.0	U		1.0
n-Butylbenzene	U	1.0	U		5.0	U		2.0	U		1.0
1,2-Dichlorobenzene	U	1.0	U		5.0	U		2.0	U		1.0
1,2-Dibromo-3-chloropropane	U	1.0	U		5.0	U		2.0	U		1.0
1,2,4-Trichlorobenzene	U	1.0	U		5.0	U		2.0	U		1.0
Hexachlorobutadiene	U	1.0	U		5.0	U		2.0	U		1.0
Naphthalene	U	1.0	U		5.0	U		2.0	U		1.0
1,2,3-Trichlorobenzene	U	1.0	U		5.0	U		2.0	U		1.0

Table 1.2 Results of TIC for VOC in Water
WA# 0-262 Fisherville Mill Site

Sample #	Compound
Water blank 032503-2	*No TICs Found*
TB-01	*No TICs Found*
IP-7/25x	*No TICs Found*
IP-52/10x	*No TICs Found*
Water blank 032503-4	*No TICs Found*
IP-57/20x	*No TICs Found*
IP-52 B/10x	*No TICs Found*
IP-12/10x	*No TICs Found*
IP-200/20x	*No TICs Found*
IP-18/10x	*No TICs Found*
IP-63/20x	*No TICs Found*
IP-1/40x	*No TICs Found*
Water blank 032603-2	*No TICs Found*
IP-6/25x	*No TICs Found*
IP-2	*No TICs Found*
IP-3	*No TICs Found*
IP-53	*No TICs Found*
IP-28	*No TICs Found*
MW-101 A/250x	*No TICs Found*
TB-02	*No TICs Found*
Water blank 032703	*No TICs Found*
IP-49 B	*No TICs Found*
IP-82 B	*No TICs Found*
Water blank 032803-2	*No TICs Found*
IP-34 B/5x	*No TICs Found*
MW-3T-B/2x	*No TICs Found*
IP-48	*No TICs Found*



INJECTION POINT (IP) TCE CONCENTRATIONS CONTOUR MAP: 24-25 MARCH 2003 FISHERVILLE MILL GRAFTON, MASSACHUSETTS

TCE Concentration (parts per billion)

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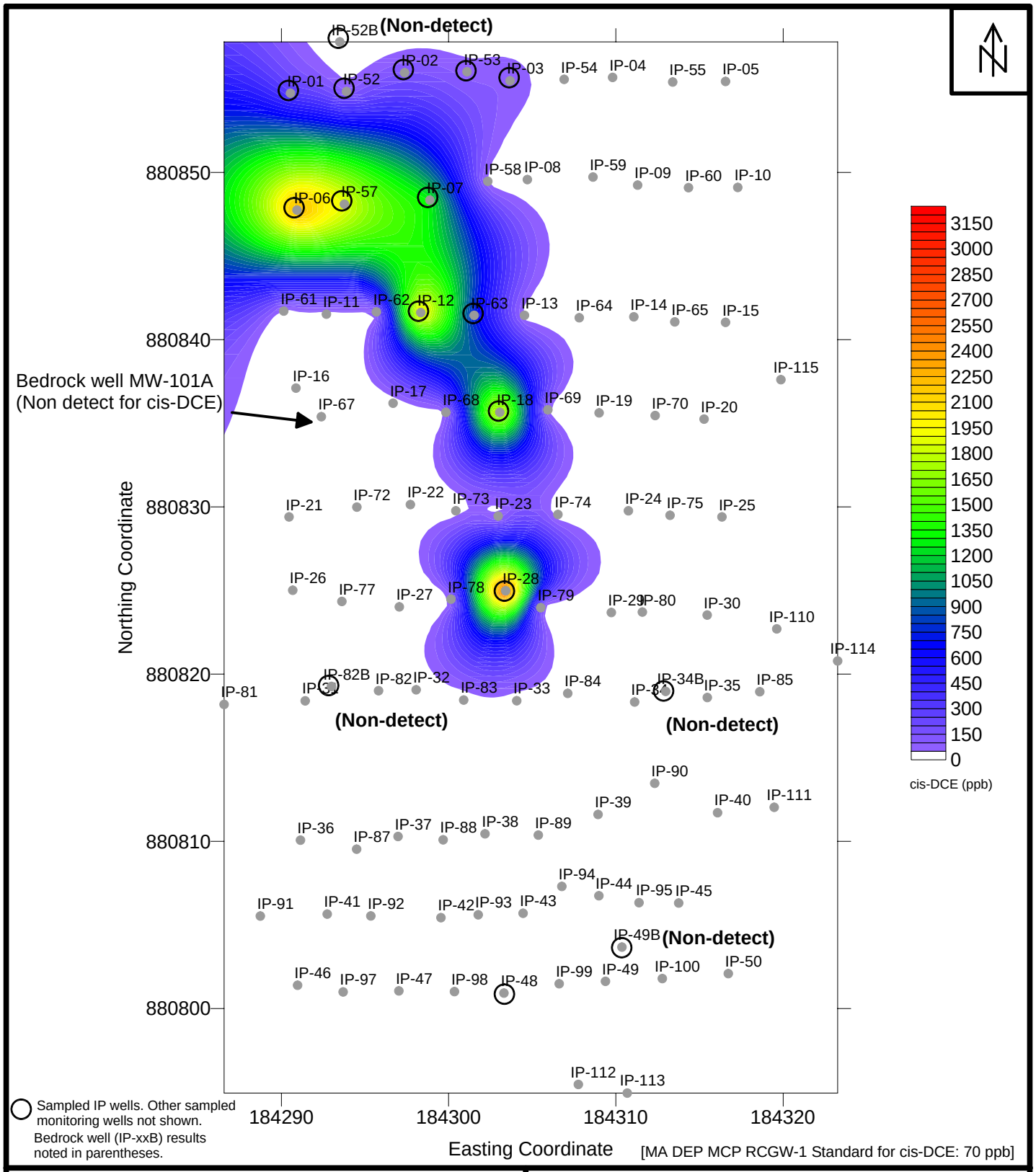
FILE NAME: R:03050181_FIGURES_SURFERFILES_TCEConc2D_Jul-Aug02

FIGURE J-1



INJECTION POINT (IP) cis-DCE CONCENTRATIONS CONTOUR MAP: 24-25 MARCH 2003 FISHERVILLE MILL GRAFTON, MASSACHUSETTS

cis-DCE Concentration (parts per billion)

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

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FILE NAME: R:03050181_FIGURES_SURFERFILES_DCEConc2D_March04

FIGURE J-2

APPENDIX K

EPA ERT/REAC May 2003 VOC Field Screening and Confirmation Analytical Results
(from June 2003 Report) and Figures K-1 and K-2

Preliminary Results (ppb) of Samples on 6/2003
Fisherville Mill Site (R1A00262)

Sample ID	Detection limits[1]	Vinyl chloride	cis-1,2-Dichloroethene (DCE)	Trichloroethene (TCE)	Tetrachloroethene (PCE)	1,1-Dichloroethane	1,1,1-Trichloroethane
IP-11	40	ND	**350**	ND	ND	ND	ND
IP-12	200	**450**	**1000**	ND	ND	ND	ND
IP-13	10	ND	**18**	ND	ND	ND	ND
IP-14	10	ND	ND	ND	ND	ND	ND
IP-17	200	**330**	**2000**	ND	ND	ND	ND
IP-18	200	ND	**3200**	ND	ND	ND	ND
IP-19	20	ND	**210**	ND	ND	ND	ND
IP-24	20	ND	ND	ND	ND	ND	ND
IP-25	10	ND	ND	ND	ND	ND	ND
IP-26	200	**270**	**1700**	**3500**	ND	ND	ND
IP-29	20	ND	ND	ND	ND	ND	ND
IP-34B	20	ND	ND	ND	ND	**21**	**320**
IP-4	50	**240**	**450**	ND	ND	ND	ND
IP-49B	20	ND	ND	ND	ND	ND	23
IP-52B	10	ND	ND	ND	ND	ND	ND
IP-6	200	ND	**2000**	ND	ND	ND	ND
IP-7	200	**220**	**760**	**3300**	ND	ND	ND
IP-8	40	**200**	**280**	ND	ND	ND	ND
IP-800	200	ND	**2300**	ND	ND	ND	ND
TB-01	10	ND	ND	ND	ND	ND	ND
IP-53	20	**54**	**46**	ND	ND	ND	ND
IP-54	20	**210**	**150**	ND	ND	ND	ND
IP-55	20	**35**	**93**	ND	ND	ND	ND
IP-57	200	**310**	**1500**	ND	ND	ND	ND
IP-58	20	ND	**230**	ND	ND	ND	ND
IP-59	20	ND	**90**	**23**	ND	ND	ND
IP-61	20	ND	**410**	ND	**44**	ND	ND
IP-62	20	ND	**260**	**51**	ND	ND	ND
IP-63	10	ND	**39**	ND	ND	ND	ND
IP-64	20	ND	**250**	ND	ND	ND	ND
IP-67	200	**750**	**930**	ND	ND	ND	ND
IP-68	200	**500**	**2700**	ND	ND	ND	ND
IP-69	40	ND	**300**	ND	ND	ND	ND
IP-70	20	ND	**110**	ND	ND	ND	ND
IP-73	20	ND	ND	ND	ND	ND	ND
IP-77	20	ND	**450**	**390**	ND	ND	ND
IP-82B	20	ND	ND	ND	ND	ND	ND
IP-91	20	ND	ND	ND	ND	ND	ND
IP-900	200	**230**	**1400**	ND	ND	ND	ND
MW-101A	10	ND	ND	**55000**	ND	ND	ND
TB-02	10	ND	ND	ND	ND	ND	ND

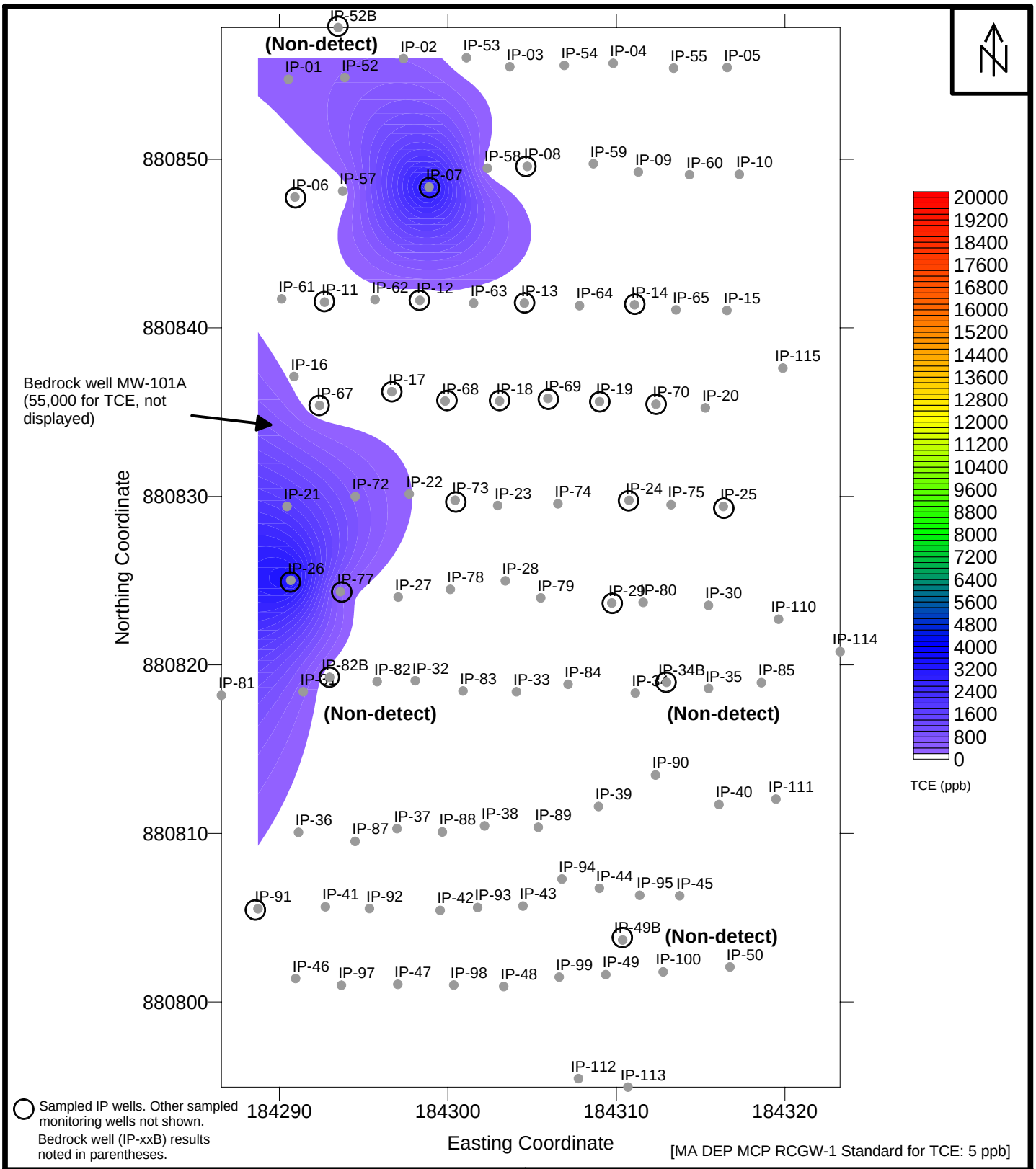
1. The DL are based on the volume of sample injected.

Table 1.1 Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank		IP-7		IP-18	
Location :	060403-1		IP-7		IP-18	
File :	BV7455.D		BV7456.D		BV7457.D	
Dil. Fact. :	1		20		20	
Analyte	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U	1.0	U	20	U	20
Chloromethane	U	2.0	U	40	U	40
Vinyl Chloride	U	1.0	70	20	50	20
Bromomethane	U	1.0	U	20	U	20
Chloroethane	U	1.0	U	20	U	20
Trichlorofluoromethane	U	1.0	U	20	U	20
Acetone	U	8.0	U	160	U	160
1,1-Dichloroethene	U	1.0	U	20	U	20
Methylene Chloride	U	1.0	U	20	U	20
Carbon Disulfide	U	1.0	U	20	U	20
Methyl-t-butyl Ether	U	1.0	U	20	U	20
trans-1,2-Dichloroethene	U	1.0	U	20	U	20
1,1-Dichloroethane	U	1.0	U	20	U	20
2-Butanone	U	1.0	U	20	U	20
2,2-Dichloropropane	U	1.0	U	20	U	20
cis-1,2-Dichloroethene	U	1.0	670	20	2400	20
Chloroform	U	1.0	U	20	U	20
1,1-Dichloropropene	U	1.0	U	20	U	20
1,2-Dichloroethane	U	1.0	U	20	U	20
1,1,1-Trichloroethane	U	1.0	U	20	U	20
Carbon Tetrachloride	U	1.0	U	20	U	20
Benzene	U	1.0	U	20	U	20
Trichloroethene	U	1.0	3200	20	25	20
1,2-Dichloropropane	U	1.0	U	20	U	20
Bromodichloromethane	U	1.0	U	20	U	20
Dibromomethane	U	1.0	U	20	U	20
cis-1,3-Dichloropropene	U	1.0	U	20	U	20
trans-1,3-Dichloropropene	U	1.0	U	20	U	20
1,1,2-Trichloroethane	U	1.0	U	20	U	20
1,3-Dichloropropane	U	1.0	U	20	U	20
Dibromochloromethane	U	1.0	U	20	U	20
1,2-Dibromoethane	U	1.0	U	20	U	20
Bromoform	U	1.0	U	20	U	20
4-Methyl-2-Pentanone	U	1.0	U	20	U	20
Toluene	U	1.0	U	20	U	20
2-Hexanone	U	1.0	U	20	U	20
Tetrachloroethene	U	1.0	U	20	U	20
Chlorobenzene	U	1.0	U	20	U	20
1,1,1,2-Tetrachloroethane	U	1.0	U	20	U	20
Ethylbenzene	U	1.0	U	20	U	20
p&m-Xylene	U	2.0	U	40	U	40
o-Xylene	U	1.0	U	20	U	20
Styrene	U	1.0	U	20	U	20
Isopropylbenzene	U	1.0	U	20	U	20
1,1,2,2-Tetrachloroethane	U	1.0	U	20	U	20
1,2,3-Trichloropropane	U	1.0	U	20	U	20
n-Propylbenzene	U	1.0	U	20	U	20
Bromobenzene	U	1.0	U	20	U	20
1,3,5-Trimethylbenzene	U	1.0	U	20	U	20
2-Chlorotoluene	U	1.0	U	20	U	20
4-Chlorotoluene	U	1.0	U	20	U	20
tert-Butylbenzene	U	1.0	U	20	U	20
1,2,4-Trimethylbenzene	U	1.0	U	20	U	20
sec-Butylbenzene	U	1.0	U	20	U	20
p-Isopropyltoluene	U	1.0	U	20	U	20
1,3-Dichlorobenzene	U	1.0	U	20	U	20
1,4-Dichlorobenzene	U	1.0	U	20	U	20
n-Butylbenzene	U	1.0	U	20	U	20
1,2-Dichlorobenzene	U	1.0	U	20	U	20
1,2-Dibromo-3-chloropropane	U	1.0	U	20	U	20
1,2,4-Trichlorobenzene	U	1.0	U	20	U	20
Hexachlorobutadiene	U	1.0	U	20	U	20
Napnthalene	U	1.0	U	20	U	20
1,2,3-Trichlorobenzene	U	1.0	U	20	U	20

Table 1.1 (cont.) Results of the Analysis for VOC in Water
WA # 0-262 Fisherville Mill

Sample # :	Water blank			MW-101A			IP-68	
Location :	060503-2			MW-101A			IP-68	
File :	BV7473.D			BV7474.D			BV7475.D	
Dil. Fact. :	1			1000			20	
Analyte	Conc. ug/l		MDL ug/l	Conc. ug/l		MDL ug/l	Conc. ug/l	MDL ug/l
Dichlorodifluoromethane	U		1.0	U		1000	U	20
Chloromethane	U		2.0	U		2000	U	40
Vinyl Chloride	U		1.0	U		1000	97	20
Bromomethane	U		1.0	U		1000	U	20
Chloroethane	U		1.0	U		1000	U	20
Trichlorofluoromethane	U		1.0	U		1000	U	20
Acetone	3.6	J	8.0	3800	JB	8000	67 JB	160
1,1-Dichloroethene	U		1.0	U		1000	U	20
Methylene Chloride	U		1.0	U		1000	U	20
Carbon Disulfide	U		1.0	U		1000	U	20
Methyl-t-butyl Ether	U		1.0	U		1000	U	20
trans-1,2-Dichloroethene	U		1.0	U		1000	U	20
1,1-Dichloroethane	U		1.0	U		1000	U	20
2-Butanone	U		1.0	U		1000	U	20
2,2-Dichloropropane	U		1.0	U		1000	U	20
cis-1,2-Dichloroethene	U		1.0	U		1000	2400	20
Chloroform	U		1.0	U		1000	U	20
1,1-Dichloropropene	U		1.0	U		1000	U	20
1,2-Dichloroethane	U		1.0	U		1000	U	20
1,1,1-Trichloroethane	U		1.0	U		1000	U	20
Carbon Tetrachloride	U		1.0	U		1000	U	20
Benzene	U		1.0	U		1000	U	20
Trichloroethene	U		1.0	56000		1000	20	20
1,2-Dichloropropane	U		1.0	U		1000	U	20
Bromodichloromethane	U		1.0	U		1000	U	20
Dibromomethane	U		1.0	U		1000	U	20
cis-1,3-Dichloropropene	U		1.0	U		1000	U	20
trans-1,3-Dichloropropene	U		1.0	U		1000	U	20
1,1,2-Trichloroethane	U		1.0	U		1000	U	20
1,3-Dichloropropane	U		1.0	U		1000	U	20
Dibromochloromethane	U		1.0	U		1000	U	20
1,2-Dibromoethane	U		1.0	U		1000	U	20
Bromoform	U		1.0	U		1000	U	20
4-Methyl-2-Pentanone	U		1.0	U		1000	U	20
Toluene	U		1.0	U		1000	U	20
2-Hexanone	U		1.0	U		1000	U	20
Tetrachloroethene	U		1.0	U		1000	U	20
Chlorobenzene	U		1.0	U		1000	U	20
1,1,1,2-Tetrachloroethane	U		1.0	U		1000	U	20
Ethylbenzene	U		1.0	U		1000	U	20
p&m-Xylene	U		2.0	U		2000	U	40
o-Xylene	U		1.0	U		1000	U	20
Styrene	U		1.0	U		1000	U	20
Isopropylbenzene	U		1.0	U		1000	U	20
1,1,2,2-Tetrachloroethane	U		1.0	U		1000	U	20
1,2,3-Trichloropropane	U		1.0	U		1000	U	20
n-Propylbenzene	U		1.0	U		1000	U	20
Bromobenzene	U		1.0	U		1000	U	20
1,3,5-Trimethylbenzene	U		1.0	U		1000	U	20
2-Chlorotoluene	U		1.0	U		1000	U	20
4-Chlorotoluene	U		1.0	U		1000	U	20
tert-Butylbenzene	U		1.0	U		1000	U	20
1,2,4-Trimethylbenzene	U		1.0	U		1000	U	20
sec-Butylbenzene	U		1.0	U		1000	U	20
p-Isopropyltoluene	U		1.0	U		1000	U	20
1,3-Dichlorobenzene	U		1.0	U		1000	U	20
1,4-Dichlorobenzene	U		1.0	U		1000	U	20
n-Butylbenzene	U		1.0	U		1000	U	20
1,2-Dichlorobenzene	U		1.0	U		1000	U	20
1,2-Dibromo-3-chloropropane	U		1.0	U		1000	U	20
1,2,4-Trichlorobenzene	U		1.0	U		1000	U	20
Hexachlorobutadiene	U		1.0	U		1000	U	20
Naphthalene	U		1.0	U		1000	U	20
1,2,3-Trichlorobenzene	U		1.0	U		1000	U	20



INJECTION POINT (IP) TCE CONCENTRATIONS CONTOUR MAP: 28-29 MAY 2003 FISHERVILLE MILL GRAFTON, MASSACHUSETTS

TCE Concentration (parts per billion)

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REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

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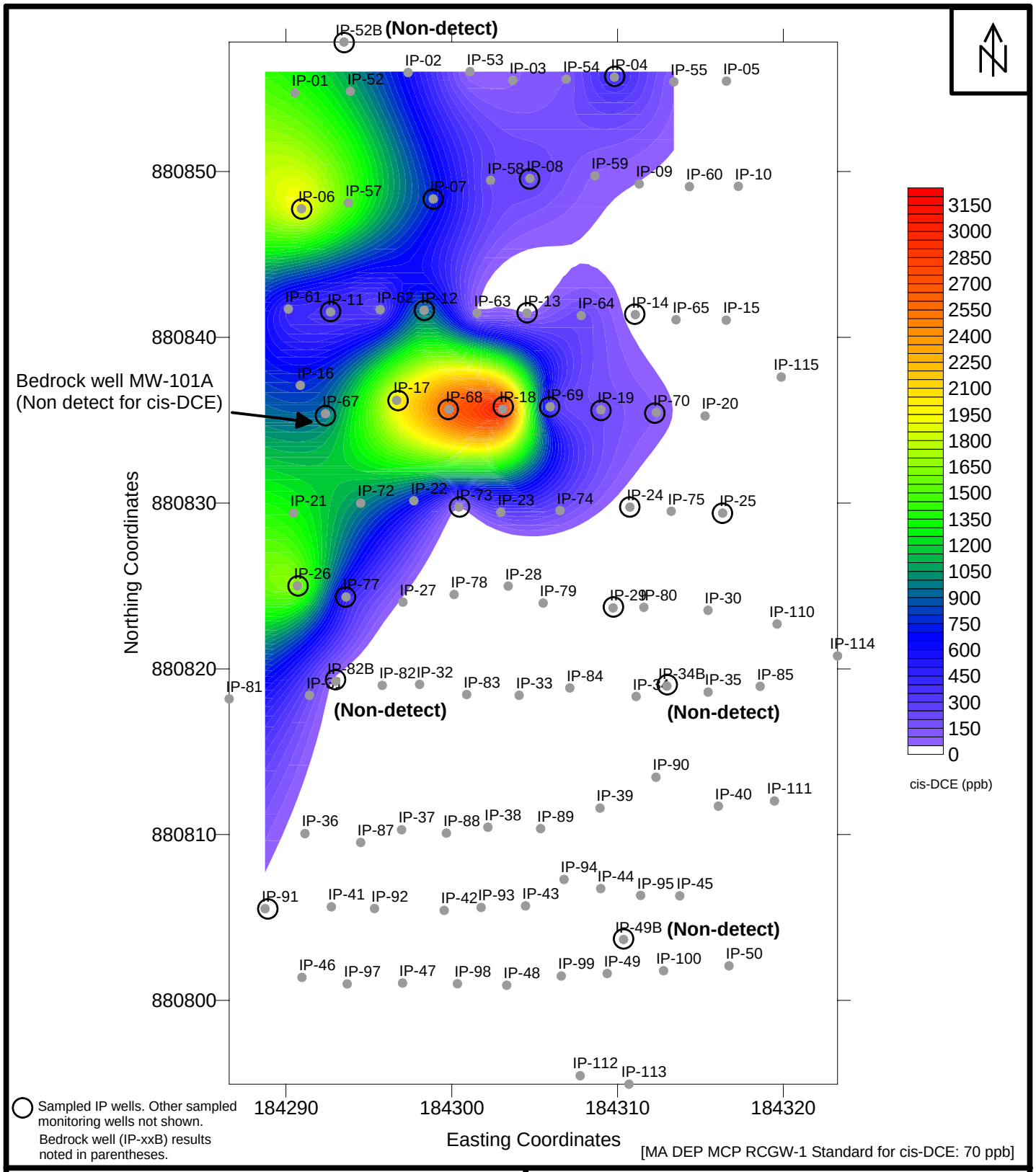
04-05-0009	D. BRAMMER	03/05/2004

FILE NAME: R:03050181_FIGURES_SURFERFILES_TCEConc2D_May03

FIGURE K-1



Sampled IP wells. Other sampled monitoring wells not shown.
Bedrock well (IP-xxB) results noted in parentheses.

[MA DEP MCP RCGW-1 Standard for cis-DCE: 70 ppb]

INJECTION POINT (IP) cis-DCE CONCENTRATIONS CONTOUR MAP: 28-29 MAY 2003 FISHERVILLE MILL GRAFTON, MASSACHUSETTS

cis-DCE Concentration (parts per billion)

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	03/05/2004

FILE NAME: R:03050181_FIGURES_SURFERFILES_DCEConc2D_March04

FIGURE K-2

APPENDIX L

EPA NERL Mobile Laboratory VOC Field Screening Results
for 17-18 November 2003 and Figures L-1 and L-2

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 1
OFFICE OF ENVIRONMENTAL MEASUREMENT & EVALUATION
NORTH CHELMSFORD, MASSACHUSETTS 01863-2431

MEMORANDUM

DATE: 11/21/2003

SUBJECT: **Fisherville Mill, Grafton, MA - Volatile Organics Analysis of Aqueous Samples**

FROM: Scott Clifford, Chemist SC 11/24/03

TO: Janis Tsang, HBR

THRU: WJA 12/09/03
Dr. William J. Andrade, Advanced Analytical Chemistry Expert

PROJECT NUMBER: 03110020

DATE OF ANALYSIS: 11/17/03 - 11/18//03

ANALYTICAL PROCEDURE:

Aqueous samples were analyzed using Region I's Standard Operating Procedure for Head Space Screening for Volatile Organic Compounds in Aqueous and Soil Samples (EIA-FLDVOA2.SOP). Aqueous samples were collected in 40 ml vials and were analyzed using a Shimadzu GC 14A gas chromatograph (GC) equipped with a a 30 meter, 0.53 mm DBPS-624 column, and electron capture detector, and a Photovac 10A10 GC equipped with a 4' 1/8" SE-30 column and photoionization detector. Concentrations of volatile organics were calculated using the external standard technique.

File: K:\CHEMISTRY\REPORTS\FIELD\03110020wfdvoa.xls

Target Compounds and Approximate Reporting Limits

Fisherville Mill, Grafton, MA - Aqueous Volatile Organic Target Compounds & Reporting Limits	
Compound	**Reporting Limit (ug/l)**
Trichloroethylene (TCE)	0.25
Tetrachloroethylene (C_2Cl_4)	0.15
cis 1,2-Dichloroethylene (cis 12 DCEE)	1.5
1,1,1-Trichloroethane (111 TCA)	0.25

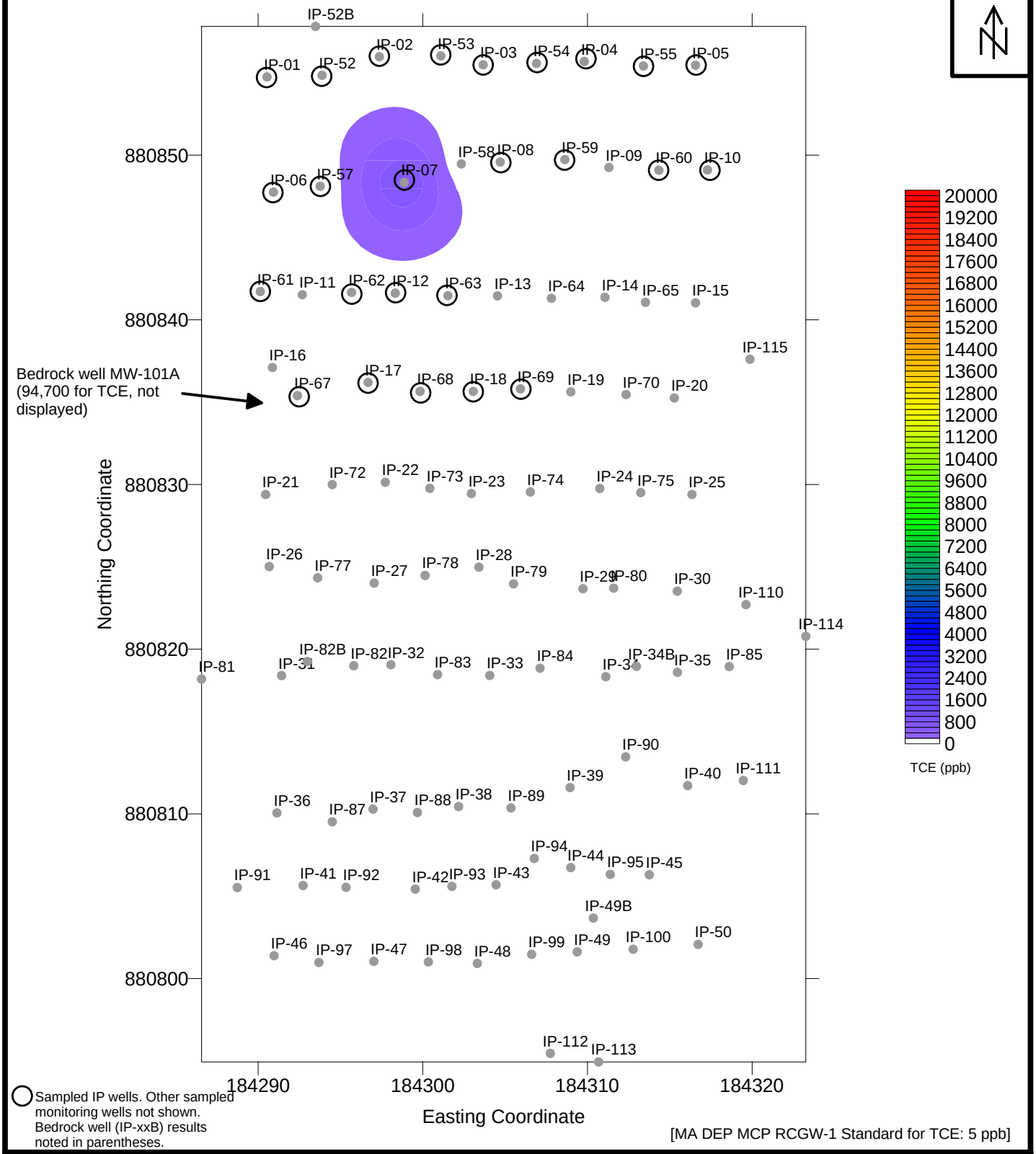
Results: The results in tables are Tentatively Identified Compounds and Approximate Concentrations

ND ( ) = Nothing detected above reporting limit. Reporting limit in parenthesis.

Note: Results are in ug/l (ppb)

Fisherville Mill, Grafton, MA - Aqueous VOA Results ug/l (ppb)					
	11/17/03 - 11/18/03				
Sample #	TCE	cis 12DCEE	111 TCA	C_2Cl_4	Comments
IP-10	ND(0.10)	139	ND(0.25)	ND(0.15)	
IP-17	0.56	408	0.27	0.15	
IP-8	0.3	186	ND(0.25)	ND(0.15)	
IP-5	2.5	80	ND(0.25)	ND(0.15)	
IP-18	0.46	23	ND(0.25)	ND(0.15)	
IP-2	0.26	80	ND(0.25)	ND(0.15)	
IP-400	28	93	0.37	0.42	
IP-7	881	385	ND(7.5)	5.8	
IP-4	ND(0.10)	117	ND(0.25)	ND(0.15)	
IP-1	28	90	0.33	0.35	
IP-12	49	1210	0.64	0.29	
MW 100D	3.8	2.7	ND(0.25)	1.0	
IP-3	ND(0.10)	347	ND(0.25)	ND(0.15)	
IP-6	0.22	42	0.5	ND(0.15)	
MW 31D	64	55	ND(0.25)	22	
IP-61	5.2	138	0.40	0.97	light purple color
MW 31R	906	35	ND(5.3)	22	
IP-62	12	110	0.55	0.30	
IP-68	0.5	175	ND(0.25)	ND(0.15)	
MW 30D	632	164	ND(2.0)	13	
IP-69	0.43	23	ND(0.25)	ND(0.15)	
MW 29D	92	38	ND(2.0)	31	
IP-67	14	246	0.31	0.13	
IP-63	0.31	53	ND(0.25)	ND(0.15)	
IP-54	ND(0.25)	268	ND(0.25)	ND(0.15)	
IP-60	3.6	161	ND(0.25)	ND(0.15)	
IP-52	1.0	23	0.40	0.10	
IP-59	1.8	160	ND(0.25)	ND(0.15)	pink color
IP-53	ND(0.25)	84	ND(0.25)	ND(0.15)	
IP-55	7.0	102	ND(0.25)	ND(0.15)	
IP-57	1.8	128	0.28	ND(0.15)	
IP-500	1.9	128	0.23	ND(0.15)	
MW-104	ND(0.25)	ND(1.5)	1.1	0.14	pink color
SG-6	ND(0.25)	1.3	ND(0.25)	ND(0.15)	
MW-208	ND(0.25)	106	ND(0.25)	ND(0.15)	
MW-207	29	343	0.54	0.73	
MW-32	ND(0.25)	ND(1.5)	ND(0.25)	ND(0.15)	
MW-100M	0.54	ND(1.5)	ND(0.25)	0.11	
MW-101A	94,700	ND(6,500)	128	308	
SW-4A	14	34	ND(0.25)	0.17	
MW-205	67	375	ND(0.25)	0.53	
MW-102	302	47	2.5	4.9	

Fisherville Mill, Grafton, MA - Aqueous VOA Results ug/l (ppb)					
	11/17/03 - 11/18/03				
		cis			
Sample #	TCE	12DCEE	111 TCA	C_2Cl_4	Comments
MW-301	73	56	ND(0.25)	2.3	
MW-1D	5.4	54	0.48	ND(0.15)	
MW-3T	182	460	4.6	5	
MW-3T-B	293	254	ND(3.0)	ND(3.0)	



Sampled IP wells. Other sampled monitoring wells not shown. Bedrock well (IP-xxB) results noted in parentheses.

[MA DEP MCP RCGW-1 Standard for TCE: 5 ppb]

INJECTION POINT (IP) TCE CONCENTRATIONS CONTOUR MAP: 17-18 NOVEMBER 2003 FISHERVILLE MILL GRAFTON, MASSACHUSETTS

TCE Concentration (parts per billion)

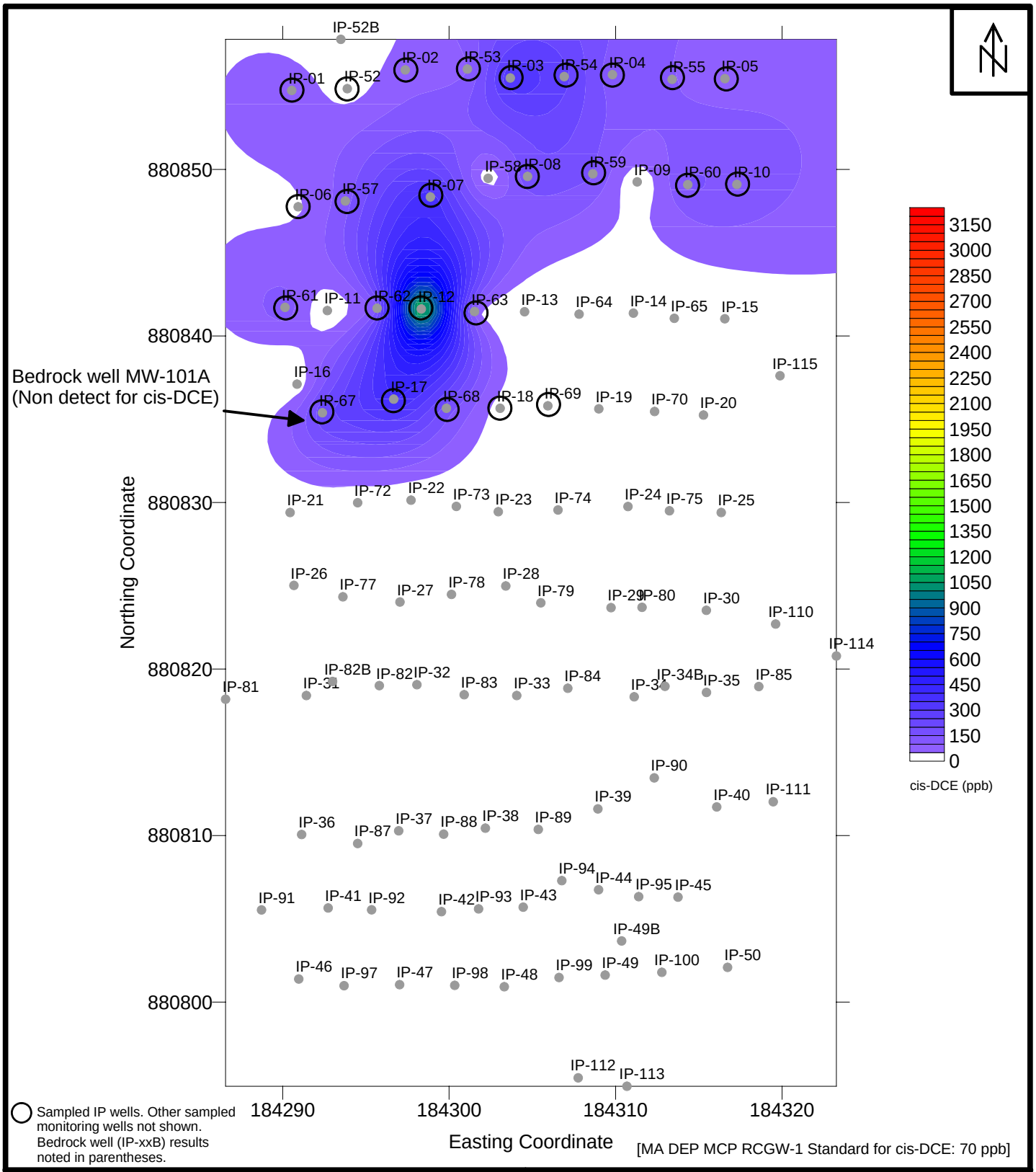
WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	03/05/2004

FILE NAME: R:03050181_FIGURES_SURFERFILES_TCEConc2D_Jul-Aug02

FIGURE L-1



INJECTION POINT (IP)
cis-DCE CONCENTRATIONS
CONTOUR MAP: 17-18 NOVEMBER 2003
FISHERVILLE MILL
GRAFTON, MASSACHUSETTS

cis-DCE Concentration (parts per billion)

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	03/05/2004

FILE NAME: R:03050181_FIGURES_SURFERFILES_DCEConc3D_Jul-Aug02

FIGURE L-2

APPENDIX M

EPA NERL Mobile Laboratory VOC Field Screening Results
for 15-16 March 2004 and Figures M-1 and M-2

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 1
OFFICE OF ENVIRONMENTAL MEASUREMENT & EVALUATION
NORTH CHELMSFORD, MASSACHUSETTS 01863-2431

EMORANDUM

ATE: 03/22/2004

JBJECT: **Fisherville Mill, Grafton, MA - Volatile Organics Analysis of Aqueous Samples**

:OM: Scott Clifford, Chemist SC 3/25/04

: Janis Tsang, HBR

RU: Dr. William J. Andrade, Advanced Analytical Chemistry Expert WJA 03/24/04

PROJECT NUMBER: 04030037

DATE OF ANALYSIS: 03/15/04 - 03/17/04

ANALYTICAL PROCEDURE:

Aqueous samples were analyzed using Region I's Standard Operating Procedure for Head Space Screening for Volatile Organic Compounds in Aqueous and Soil Samples (EIA-FLDVOA2.SOP). Aqueous samples were collected in 40 ml vials and were analyzed using a Shimadzu GC 14A gas chromatograph (GC) equipped with a a 30 meter, 0.53 mm DBPS-624 column, and electron capture detector, and a Photovac 10A10 GC equipped with a 4' 1/8" SE-30 column and photoionization detector. Concentrations of volatile organics were calculated using the external standard technique.

File: K:\CHEMISTRY\REPORTS\FIELD\04030037wfdvoa.xls

Target Compounds and Approximate Reporting Limits

Fisherville Mill, Grafton, MA - Aqueous Volatile Organic Target Compounds & Reporting Limits	
Compound	**Reporting Limit (ug/l)**
Trichloroethylene (TCE)	0.2
Tetrachloroethylene (C_2Cl_4)	0.2
cis 1,2-Dichloroethylene (cis 12 DCEE)	1.0
1,1,1-Trichloroethane (111 TCA)	0.5

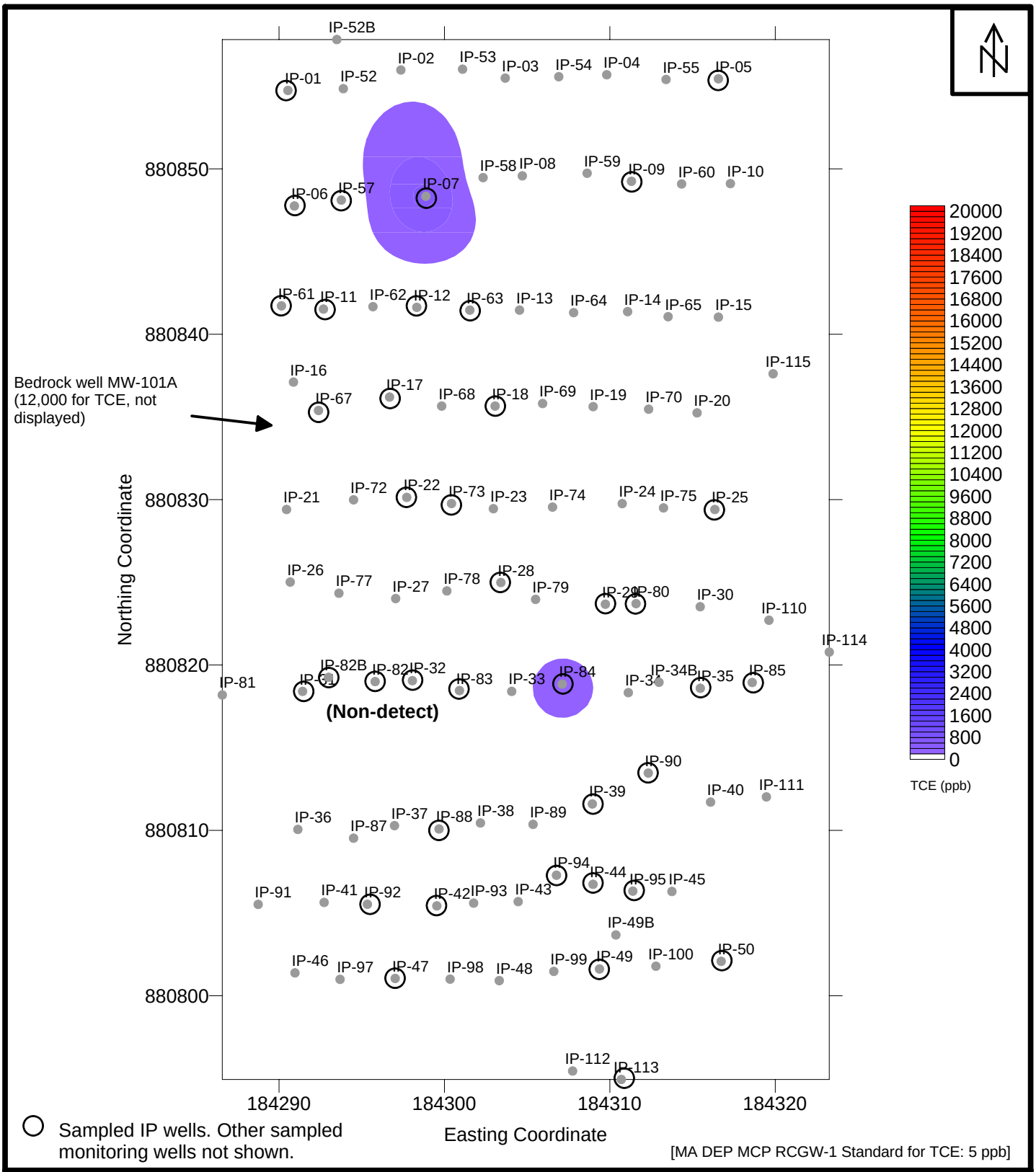
Results: The results in tables are Tentatively Identified Compounds and Approximate Concentrations

ND ( ) = Nothing detected above reporting limit. Reporting limit in parenthesis.

Note: Results are in ug/l (ppb)

Fishervilie Mill, Grafton, MA - Aqueous VOA Results ug/l (ppb)					
	03/15/04 - 03/17/04				
Sample #	TCE	cis 12DCEE	111 TCA	C_2Cl_4	Comments
IP-12	1.9	110	ND(0.5)	ND(0.3)	
IP-67	1.1	303	ND(0.5)	0.3	
IP-18	ND(0.2)	327	ND(0.5)	ND(0.3)	
IP-1	14	84	ND(0.5)	ND(0.3)	
IP-7	725	338	ND(27)	ND(17)	
IP-500	552	329	ND(15)	ND(6)	
IP-44	2.2	13	ND(0.5)	0.2	
MW-205	54	70	ND(0.5)	0.9	
MW-101A	9420	ND(1600)	ND(1900)	ND(790)	
IP-82 B	ND(0.2)	ND(1.0)	7.9	ND(0.3)	
IP-9	11	362	ND(0.5)	ND(0.3)	
IP-11	1.3	22	1.6	0.4	
IP-5	28	224	ND(0.5)	ND(0.3)	
IP-17	1.6	348	ND(0.5)	0.4	
IP-25	6.9	5.2	1.8	0.9	
IP-22	ND(0.2)	ND(1.0)	7.2	ND(0.3)	
IP-35	ND(0.2)	ND(1.0)	2.0	ND(0.3)	
IP-28	5.7	483	ND(6.5)	ND(0.3)	
IP-29	7.6	216	0.9	ND(0.3)	
IP-6	ND(0.2)	47	ND(0.5)	ND(0.3)	
MW 3T B	7.5	235	ND(0.5)	ND(0.3)	
MW 3T	70	102	2.5	1.1	
IP 57	ND(0.3)	120	ND(0.5)	ND(0.3)	
ID	8.5	45	ND(0.5)	ND(0.3)	
SW-4A	6.5	11	ND(0.5)	ND(0.3)	
IP-42	0.6	1.1	7.2	ND(0.3)	
IP-73	ND(0.2)	1.1	3.1	ND(0.3)	
IP-31	ND(0.2)	ND(1.0)	6.6	ND(0.3)	
IP-47	ND(0.2)	ND(1.0)	3.0	ND(0.3)	
IP-82	ND(0.2)	ND(1.0)	3.2	ND(0.3)	
IP-49	4.0	9.2	12	0.4	
IP-63	0.8	331	ND(0.5)	ND(0.3)	
MW-207	55	570	ND(0.5)	2.0	
MW-100D	ND(0.2)	ND(1.0)	ND(0.5)	ND(0.3)	
IP-83	5.5	11	3.4	ND(0.3)	
IP-61	19	580	ND(0.5)	17	
MW-31D	4.3	2.1	ND(0.5)	0.9	
MW-31R	740	ND(20)	ND(20)	17	
MW-30D	126	65	ND(16)	55	
IP-90	ND(0.2)	ND(1.0)	6.1	0.2	
IP-123	15	56	3.0	ND(0.2)	

Fisherville Mill, Grafton, MA - Aqueous VOA Results ug/l (ppb)					
	03/15/04 - 03/17/04				
Sample #	TCE	cis 12DCEE	111 TCA	C_2Cl_4	Comments
MW-204	ND(0.2)	ND(1.0)	1.5	ND(0.2)	
MW-102	247	57	ND(5.0)	3.9	
MW-104	0.5	27	0.9	ND(0.2)	
IP-80	3.8	3.2	11	ND(0.2)	
IP-50	ND(0.2)	ND(1.0)	2.8	ND(0.2)	
IP-88	ND(0.2)	ND(1.0)	3.2	ND(0.2)	
IP-113	1.7	4.8	2.7	0.2	
IP-94	16	49	1	ND(0.2)	
IP-95	ND(0.2)	ND(1.0)	16	ND(0.2)	
SW-05	8.4	12	ND(0.5)	ND(0.2)	
IP-39	2.4	15	7.9	ND(0.2)	
IP-92	ND(0.2)	ND(1.0)	2.6	ND(0.2)	
IP-85	0.5	8.0	1.6	ND(0.2)	
IP-32	ND(0.2)	ND(1.0)	4.4	ND(0.2)	
IP-84	306	410	ND(10)	ND(10)	



INJECTION POINT (IP) TCE CONCENTRATIONS CONTOUR MAP: 15-16 MARCH 2004 FISHERVILLE MILL GRAFTON, MASSACHUSETTS

TCE Concentration (parts per billion)

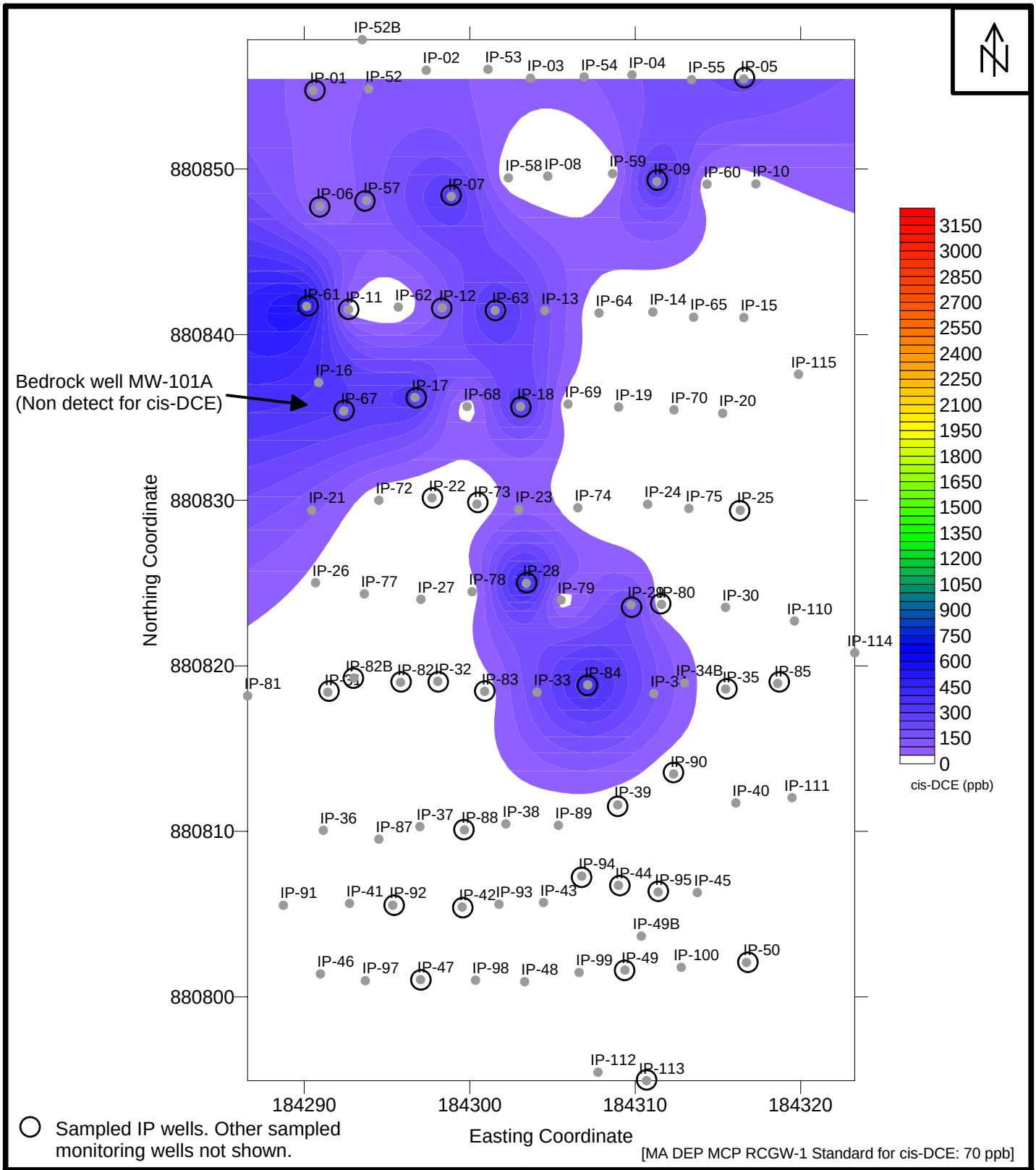
WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	03/05/2004

FILE NAME: R:03050181_FIGURES_SURFERFILES_TCEConc2D_March04

FIGURE M-1



INJECTION POINT (IP) cis-DCE CONCENTRATIONS CONTOUR MAP: 15-16 MARCH 2004 FISHERVILLE MILL GRAFTON, MASSACHUSETTS

cis-DCE Concentration (parts per billion)

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	03/05/2004

FILE NAME: R:\03050181_FIGURES_SURFERFILES_DCEConc2D_March04

FIGURE M-2

APPENDIX N

Permanganate Concentration Sample Summary Table
(August 2002 to March 2004) and Figures N-1 through N-4

Table N-1
Weston Solutions, Inc.
Permanganate Concentrations
(all results in ppm)

Date Sampled	Location																				
	IP-1	IP-2	IP-3	IP-4	IP-5	IP-6	IP-7	IP-8	IP-9	IP-10	IP-11	IP-12	IP-13	IP-14	IP-15	IP-16	IP-17	IP-18	IP-19	IP-20	IP-21
8/28/2002																					
8/29/2002												700									
8/30/2002																					
9/4/2002																					
9/5/2002																					
9/6/2002																					
9/11/2002	49,818	34,778	140,996	23	77,078																
9/19/2002	8,436	3,708	1,382	59	16,595																
9/26/2002	13,160	3,854	42	36	2,937																
10/3/2002	125	16,544	1	10	23,876																
10/10/2002	114	268	2	1	907																
10/16/2002	5	9,494	4	2	25,191																
10/24/2002													20,679		629			18,893		1,127	
11/4 -11/5/2002	2	6	7	6	6,110	3	6,815	6	13,630	53	24,909	49	1,245	14,100	95,172	17	26,789	23,969	5,546	41,359	49,348
12/5 -12/6/2002													29,199		371,288			56,398		65,797	
2/4/2003													254		85,725			634		54,048	
3/4/2003													75		31,019			23		55,928	
3/24-3/25/2003	0	6	4			4	413					11	83		19,504			1		27,353	
4/3/2003	6,579	333,689	16,449			728	291					159	10		35,248			70		42,298	
4/10/2003	916	1,644	587			634	60					82	375		14,099			43		30,549	
4/17/2003	267	68	68			227	23					11	59		36,423			21		53,813	
4/24/2003	563	62,508	132			118	169					129	10		47,468			469		18,094	
5/22/2003	31	2,467	40	79	892	5	1	6	156	43	18	4	1	1	2,091	PVC Bent	1	2	1	4,229	752
5/28/2003				1		1	1	7			2,867	1	482	1,057			69	6	2,890		
5/29/2003																					
6/25/2003	1	10	5			1	49					163	200		40,418			87		29,139	
7/22/2003	3	53	15			96	3					5	8,483		26,437			216		5,146	
8/18/2003	10	45	78			136	3					169	71		32,193			3		5,028	
9/18/2003	120	33	5			2	1					373	2,443		2,138			8,460		2,397	
10/21/2003	13	106	3	8	29	98	14	223	2,350	46	1,739	60	3,948	4,183	846	PVC Bent	48	32	7,990	88	7,896
2/25/2004	8	54	67	10	39	136	38	505	45	3	23	65	8,835	11,608	28,904	PVC Bent	258	17	118	3,900	68,852

Table N-1 (Continued)
Weston Solutions, Inc.
Permanganate Concentrations
(all results in ppm)

Date Sampled	IP-22	IP-23	IP-24	IP-25	IP-26	IP-27	IP-28	IP-29	IP-30	IP-31	IP-32	IP-33	IP-34	**IP-34B**	IP-35	IP-36	IP-37	IP-38	IP-39	IP-40	IP-41
8/28/2002																					
8/29/2002																					
8/30/2002																					
9/4/2002														2							
9/5/2002																					
9/6/2002																					
9/11/2002														2							
9/19/2002														2							
9/26/2002														4							
10/3/2002														8							
10/10/2002														637							
10/16/2002														181							
10/24/2002		43,943					10,809					589	32,428	129				34,308			
11/4 -11/5/2002	79,897	63,448	5,875	54,048	17,859	38,539	42,769	41,829	116,321	12,220	23,499	51,698	41,829	113	20,209	54,048	102,222	152,745	49,348	176,244	61,568
12/5 -12/6/2002		38,773					29,609					19,034	28,199	775				211,493			
2/4/2003		77,548					15,275					12,690	29,609	2,185				218,543			
3/4/2003		39,008					465					29,961		164				141,935			
3/24-3/25/2003		8,412					150					9,047	12,689	4,417				73,317			
4/3/2003		93,997					2,091					25,849	48,173	4,746				17,624			
4/10/2003		57,573					469					3,336	77,547	1,691				183,294			
4/17/2003		122,196					119					4,887	23,499	1,433				112,796			
4/24/2003		87,652					4,206					27,259	4,535	7,002				20,679			
5/22/2003	319	11,044	9	9	9	46	132	8	2,020	64,622	27,259	15,039	15,227	776	54,048	46,998	32,663	110,446	25,849	126,895	5,451
5/28/2003			4,676	17,624	26			4,417						1,198							
5/29/2003																					
6/25/2003		69,369					156					225	4,676	1,701				84,973			
7/22/2003		105,277					109					104	1,903	10,387				143,345			
8/18/2003		7,825					131					140	20,914	33,838				21,619			
9/18/2003		6,110					5,875					117	26,789	19,504				72,612			
10/21/2003	76	8,883	7,614	3,948	18,564	2,914	5,264	2,820	75,198	282	74,023	5,545	2,890	20,209	83,422	9,164	190	195,043	26,554	50	55,458
2/25/2004	400	878	260	53	9,352	12,595	31	904	60,628	2,866	2,185	57	9,117	22,277	1,081	11,561	30,361	6,861	669	10,198	12,501

Table N-1 (Continued)
Weston Solutions, Inc.
Permanganate Concentrations
(all results in ppm)

Date Sampled	IP-42	IP-43	IP-44	IP-45	IP-46	IP-47	IP-48	IP-49	**IP-49B**	IP-50	IP-52	**IP-52B**	IP-53	IP-54	IP-55	IP-57	IP-58	IP-59	IP-60	IP-61
8/28/2002											387,737									
8/29/2002											197,394	9	23	6	125,956	5,217	193	10,340	31	150
8/30/2002													116,556						13,207	
9/4/2002											64,858			173		5	8	103,397	25,850	2,632
9/5/2002																				
9/6/2002									494											
9/11/2002									4,042		78,958		6,580	15	234,992	10,809				
9/19/2002			59,500						7,590		1,739	53	1,029	38	38	7,595				
9/26/2002			51,698						38,069		1,861	5,875	1,833	42	43,238	20				
10/3/2002			36,659						38,539		9,494	88	17	31	137,236	44				
10/10/2002			30,455						24,674		437	13,629	73	4	4,183	3				
10/16/2002			39,854						49,254		7,097	19,739	9	0	14,945	46				
10/24/2002		8,412					6,039		28,669			133	15		27,964		21,384		1,017	
11/4 -11/5/2002	38,539	77,548	46,999	3,901	41,829	21,149	150,395	26,319	3,924	53,108	160	20,209	2	7	47,468	8	72,848	2,632	13,630	1,128
12/5 -12/6/2002		17,859					62,273	29,139	17,154			3,665	1		15,392		28,199		399	
2/4/2003		10,105					39,714	21,149	112,796			2,256	60		4,559		6,204		2,702	
3/4/2003		49,935					1,433	38,538	81,307			4,582	10		126		141		5,451	
3/24-3/25/2003		5,827					11,514	13,864	81,072		4	18,893			30	20	170		5,592	
4/3/2003		30,549					84,597	42,298	64,622		123,371	2,655	1,104		4,934	145	2,349		164	
4/10/2003		6,415					58,748	23,499	5,498		869	89	72		547	324	20		72	
4/17/2003		24,909					55,458	41,123	11,044		157	986	5		195	86	324		500	
4/24/2003		50,758					34,308	42,063	14,804		681	1,386	177		252	47	4,088		62	
5/22/2003	10,339	2,161	16,919	2,608	4,934	4,511	13,864	17,201		7,331	129	2,678	3	16	3	1	13	5	23	2
5/28/2003									35,249			841								
5/29/2003													1	2	10	3	2,937	610		1,527
6/25/2003		16,731					16,261	36,658	28,199		82	751	1		1	3	6,485		149	
7/22/2003		1,504					2,444	14,805	37,834		72	8,366	2		7	211	752		136	
8/18/2003		939					5,381	28,199	50,993		78	5,757	33		3	37	345		171	
9/18/2003		7,520					10,575	20,444	13,865		1	15,275	2		3	2	2,303		5	
10/21/2003	1,081	10,245	18,329	9,681	33,134	190	11,514	2,490	4,418	244,392	178	13,864	25	599	564	39	561	24	0	45
2/25/2004	860	115	258	PVC Iced Sh	1,041	991	1,019	361	21,619	183	28	12,971	1	20	209	88	502	29	16	110

Table N-1 (Continued)
Weston Solutions, Inc.
Permanganate Concentrations
(all results in ppm)

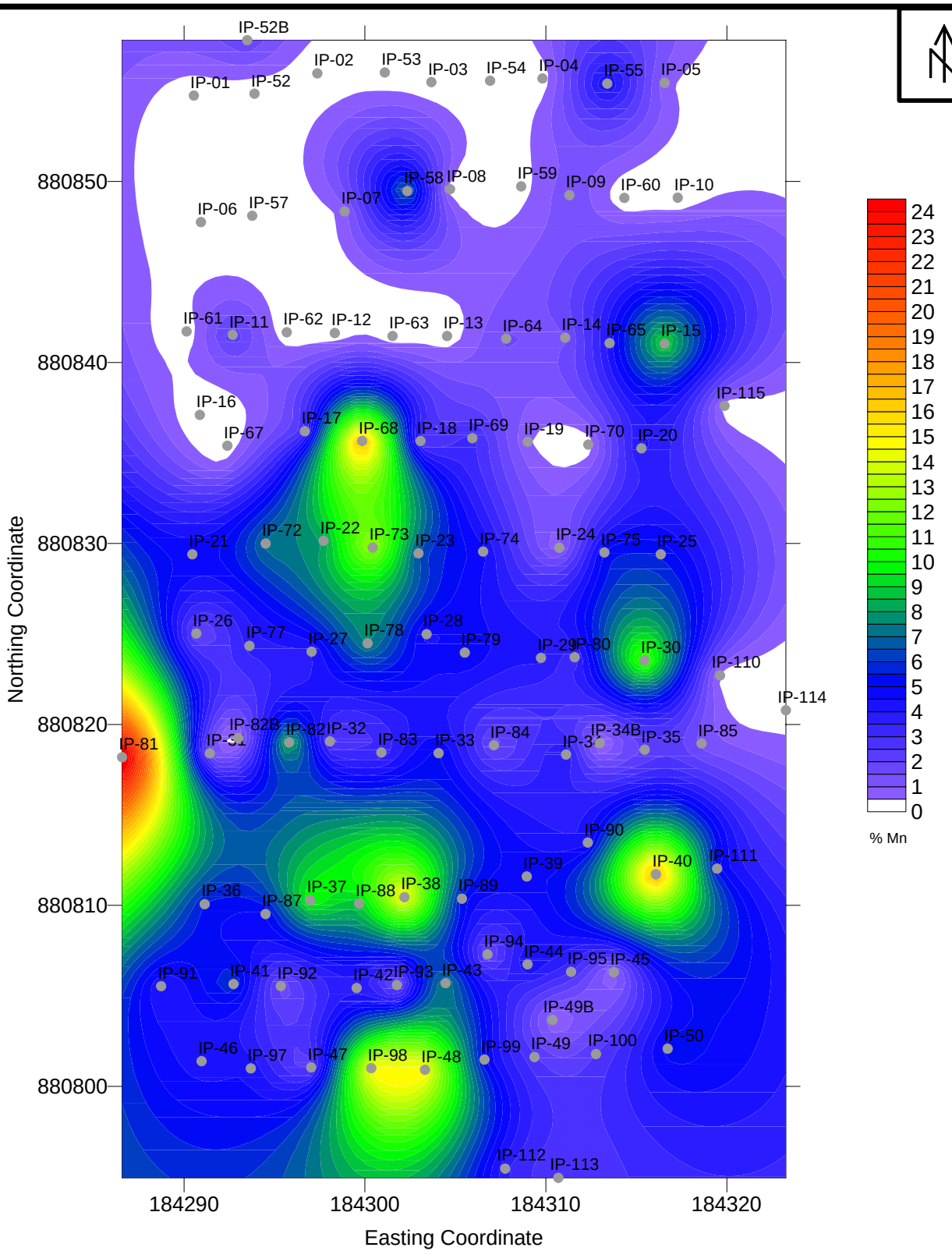
Date Sampled	IP-62	IP-63	IP-64	IP-65	IP-67	IP-68	IP-69	IP-70	IP-72	IP-73	IP-74	IP-75	IP-77	IP-78	IP-79	IP-80	IP-81	IP-82	**IP-82B**	IP-83
8/28/2002																				
8/29/2002	29	672	62																	
8/30/2002				9,258		178,594														
9/4/2002	3,572	1,927	21,619	893	30,079		4,042	2,256	163,555	12,784	197	1,833		11,092	16,919	26,319	6	9,682	7	43
9/5/2002																				
9/6/2002																				
9/11/2002																			2	
9/19/2002													126,050						7	
9/26/2002													46,058						3	
10/3/2002													32,523						2	
10/10/2002													35,531						2	
10/16/2002																				
10/24/2002												70,967				31,723			7	
11/4 -11/5/2002	329	3	16,449	41,829	912	176,244	32,899	169	72,848	129,246	46,999	52,168	37,599	77,548	50,758	31,489	267,892	89,297	2	30,549
12/5 -12/6/2002												183,294				89,297			8,271	
2/4/2003												35,249				841,274			1,151	
3/4/2003												24,439							3,571	
3/24-3/25/2003		13										747				74,022			2,960	
4/3/2003		392,437										1,480				59,923			2,537	
4/10/2003		14,099										9,399				56,398			11,749	
4/17/2003		26										3,172				48,643			2,044	
4/24/2003		122,196										25,379				65,562			2,537	
5/22/2003	1	8	1	9,023	1	9	6	1	55	3	101	96	5	599	9,517	4,464	157,445	52,168	4,887	96,346
5/28/2003																				
5/29/2003	317	28	681		1	5	6	180		33,603			4,112						4,817	
6/25/2003		8,224										70				33,838			2,584	
7/22/2003		11										21,972				8,460			2,585	
8/18/2003		20,914										6,767				23,969			192	
9/18/2003		317										587				1,856			548	
10/21/2003	30	1	2,726	9,917	106	29	46	2,632	68	55,458	24,204	317	19,974	1,621	9,165	23,734	138,645	52,638	23,969	21,854
2/25/2004	394	17,483	397	90	6	108	4	50	17,154	714	8	3,712	183	810	1,222	568	11,279	1,973	90	2,326

Table N-1 (Continued)
Weston Solutions, Inc.
Permanganate Concentrations
(all results in ppm)

Date Sampled	IP-84	IP-85	IP-87	IP-88	IP-89	IP-90	IP-91	IP-92	IP-93	IP-94	IP-95	IP-97	IP-98	IP-99	IP-100	IP-110	IP-111	IP-112	IP-113
8/28/2002																			
8/29/2002																			
8/30/2002																			
9/4/2002	14	4,324	148,515	2,867		7	2												
9/5/2002								4,794	3,807	99,637	388		248,153	1,222					
9/6/2002												2,350							
9/11/2002																			
9/19/2002						63,871													
9/26/2002						42,769													
10/3/2002						53,579													
10/10/2002						4,229													
10/16/2002																			
10/24/2002						39,008					42,298								42,533
11/4 -11/5/2002	16,919	12,690	48,878	86,947	52,168	42,299	38,539	15,510	12,220	16,684	31,489	44,649	150,395	49,348	25,614	1,269	50,288	35,719	25,614
12/5 -12/6/2002						71,672					49,348								13,159
2/4/2003						23,969					47,938								17,154
3/4/2003						17,859					18								19,974
3/24-3/25/2003						4,605					14,687								50,523
4/3/2003						34,073					15,274								46,998
4/10/2003						30,549					25,849								56,398
4/17/2003						6,227					26,319								42,768
4/24/2003						23,969					28,669								46,058
5/22/2003	8,694	32,663	57,338	45,118	23,499	15,039	1	2,114	1,950	5,827	12,877	3,571	17,671	15,791	1,738	150	37,363	89	1,785
5/28/2003																			
5/29/2003							2,396												
6/25/2003						1,226					20,303								25,003
7/22/2003						6,580					5,640								15,745
8/18/2003						2,020					38,773								352
9/18/2003						5,404					16,919								32,898
10/21/2003	6,815	8,930	48,408	5,545	16,684	10,245	14,570	19,081	72,848	19,739	18,799	16,449	4,324	265,541	110,446	25,849	29,139	6,626	19,363
2/25/2004	470	695	4,488	2,267	8,318	916	611	2,420	1,198	521	321	42,298	149	3,336	4,981	2,866	14,334	114	893

Table N-1 (Concluded)
Weston Solutions, Inc.
Permanganate Concentrations
(all results in ppm)

Date Sampled	IP-114	IP-115	IP-116	IP-117	IP-118	IP-119	IP-120	IP-121	IP-122	IP-123	MW-3T	**MW-3T-B**	**MW-101A**	MW-102	MW-104	MW-204	MW-205	MW-207	MW-208	MW-301	MW-1D	MW-29M
8/28/2002																						
8/29/2002																						
8/30/2002																						
9/4/2002																35,719						
9/5/2002																						
9/6/2002																						
9/11/2002													11									
9/19/2002												75	2	5					4	5		
9/26/2002												35	5	2					15	2		
10/3/2002												5	8	1					4	2		
10/10/2002												8	5	1					9	7		
10/16/2002												7	2	1					4	43	13	
10/24/2002												4	2,434	2					5	4	16	
11/4 -11/5/2002	2,773	463										12	4,606	0		1,316			9	0	10	
12/5 -12/6/2002												18	704	1					1	1	5	13
2/4/2003												14	681	1					1	1	5	13
3/4/2003												25										
3/24-3/25/2003												4	1,142									
4/3/2003												12	171									
4/10/2003												14	215									
4/17/2003												11	73									
4/24/2003												16	5									
5/22/2003	1,621	334										8	2									
5/28/2003																						
5/29/2003													2									
6/25/2003												42	49							1	7	
7/22/2003												28	171							4	10	
8/18/2003												18	43							54	11	
9/18/2003												8	174							84	12	
10/21/2003	11,608	12,125										126	97	1						133	61	
2/25/2004	108	17,765	51	72	63	40	50	Riser Bent	24	59	1	3	121	2	371		7	20		Destroyed	61	



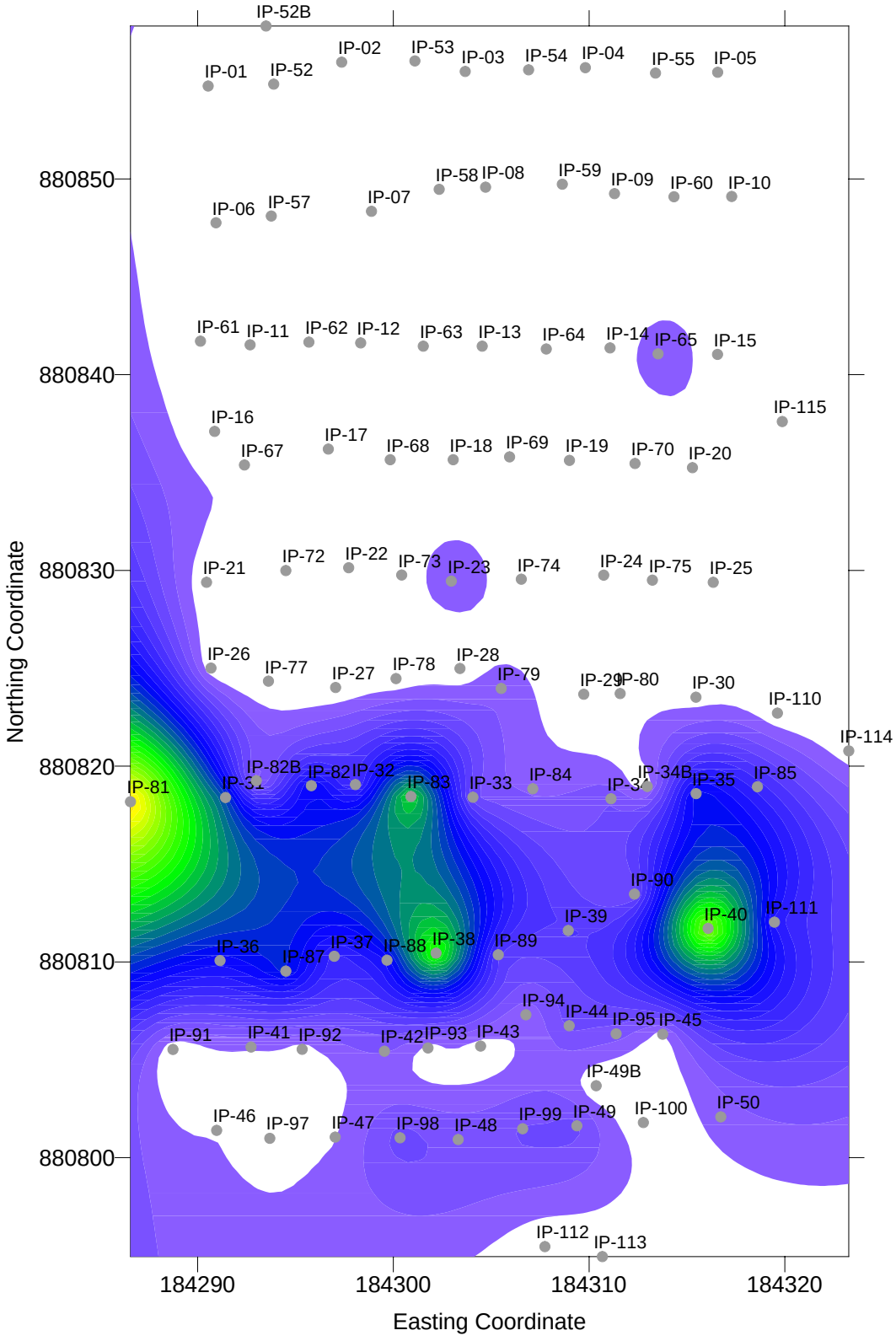
PERMANGANATE CONCENTRATIONS CONTOUR MAP: 4-6 NOV 2002 FISHERVILLE MILL GRAFTON, MASSACHUSETTS

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	03/05/2004

FILE NAME:	
R:03050181_FIGURES_SURFERFILES_MnConc2D_4-6Nov02	FIGURE N-1



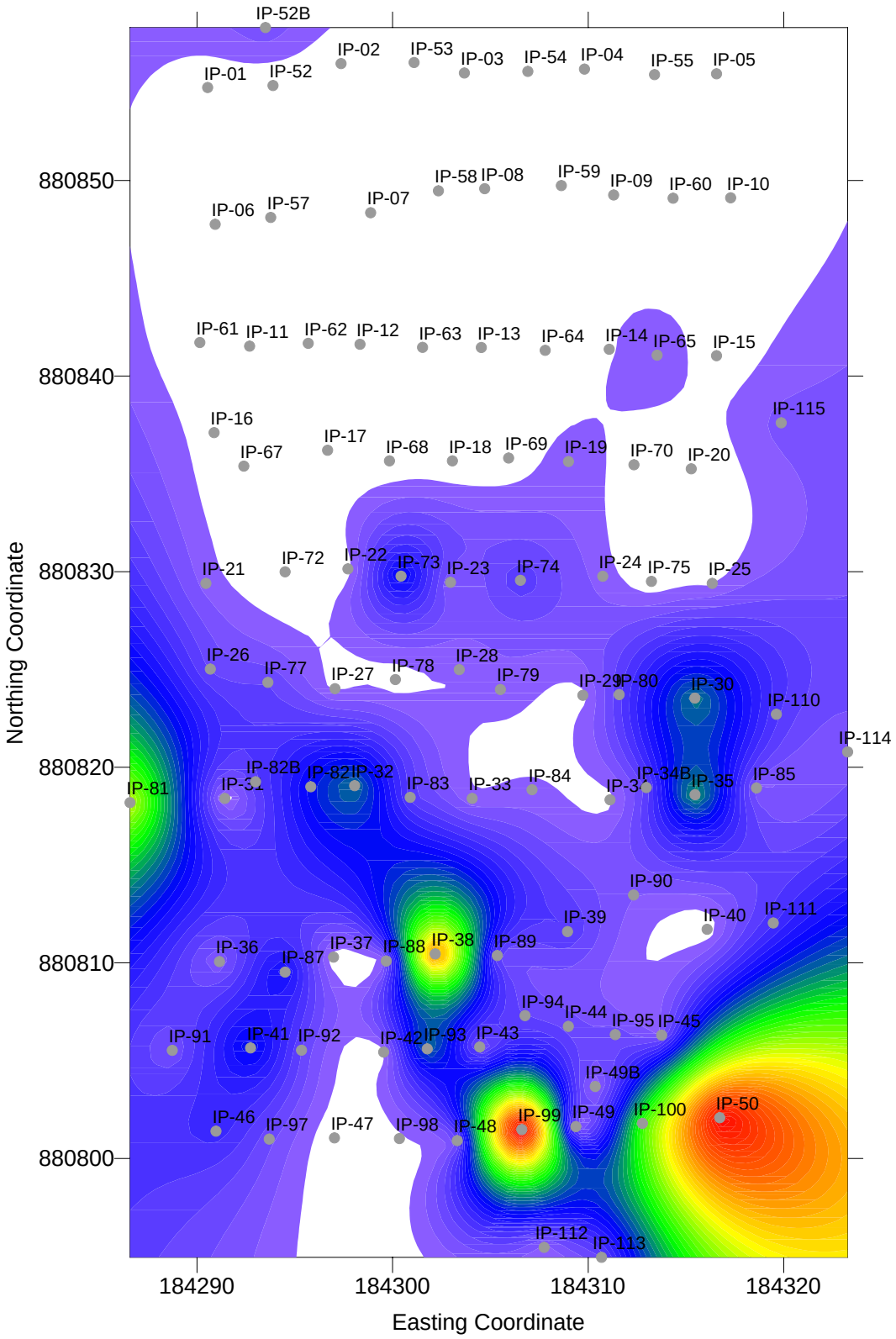
PERMANGANATE CONCENTRATIONS CONTOUR MAP: 22 MAY 2003 FISHERVILLE MILL GRAFTON, MASSACHUSETTS

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	03/05/2004

FILE NAME:	
R:03050181_FIGURES_SURFERFILES_MnConc2D_22May03	FIGURE N-2



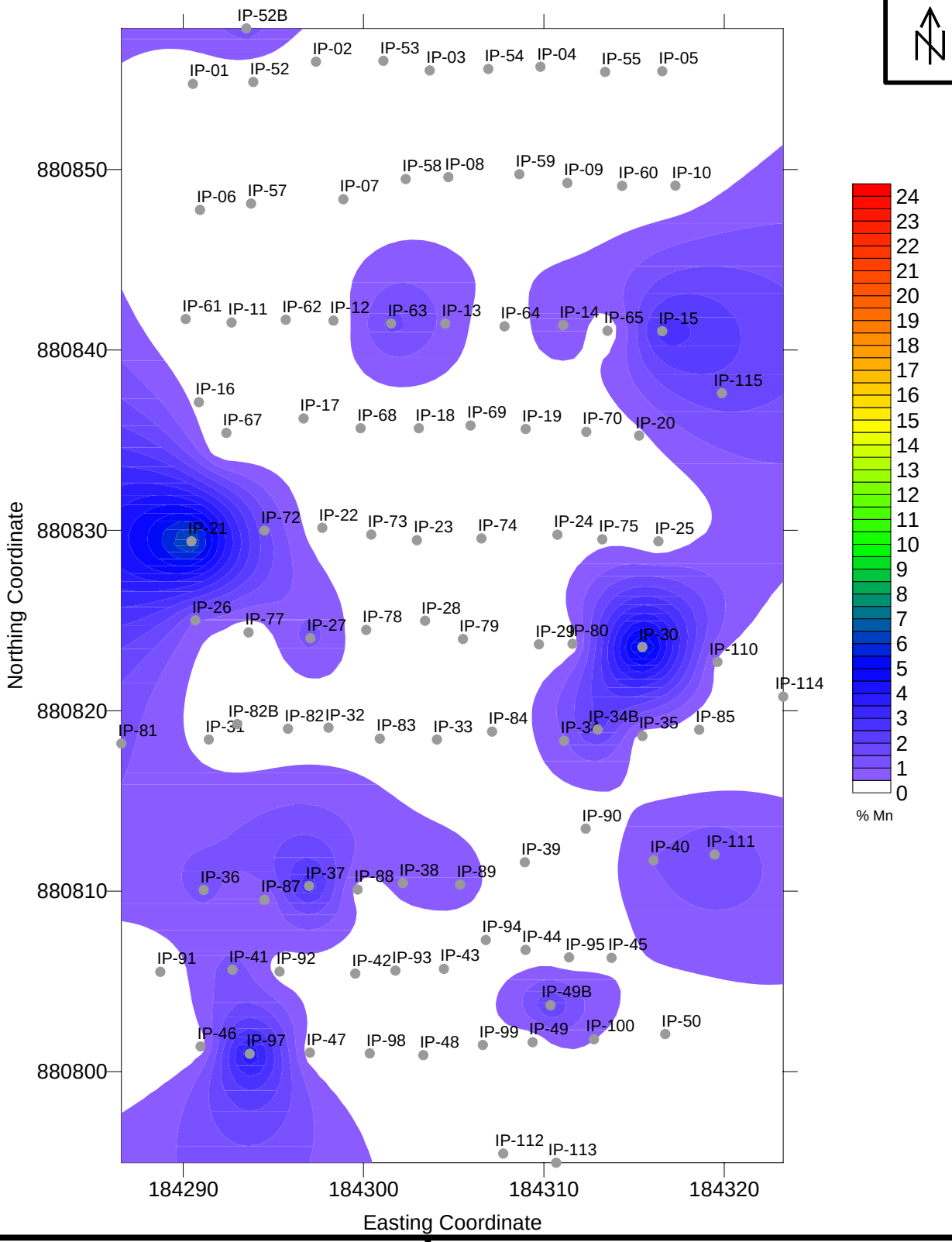
PERMANGANATE CONCENTRATIONS CONTOUR MAP: 21 OCTOBER 2003 FISHERVILLE MILL GRAFTON, MASSACHUSETTS

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	03/05/2004

FILE NAME:	
R:03050181_FIGURES_SURFERFILES_MnConc2D_21Oct03	FIGURE N-3



PERMANGANATE CONCENTRATIONS CONTOUR MAP: 25 FEBRUARY 2004 FISHERVILLE MILL GRAFTON, MASSACHUSETTS

WESTON SOLUTIONS
Restoring Resource Efficiency

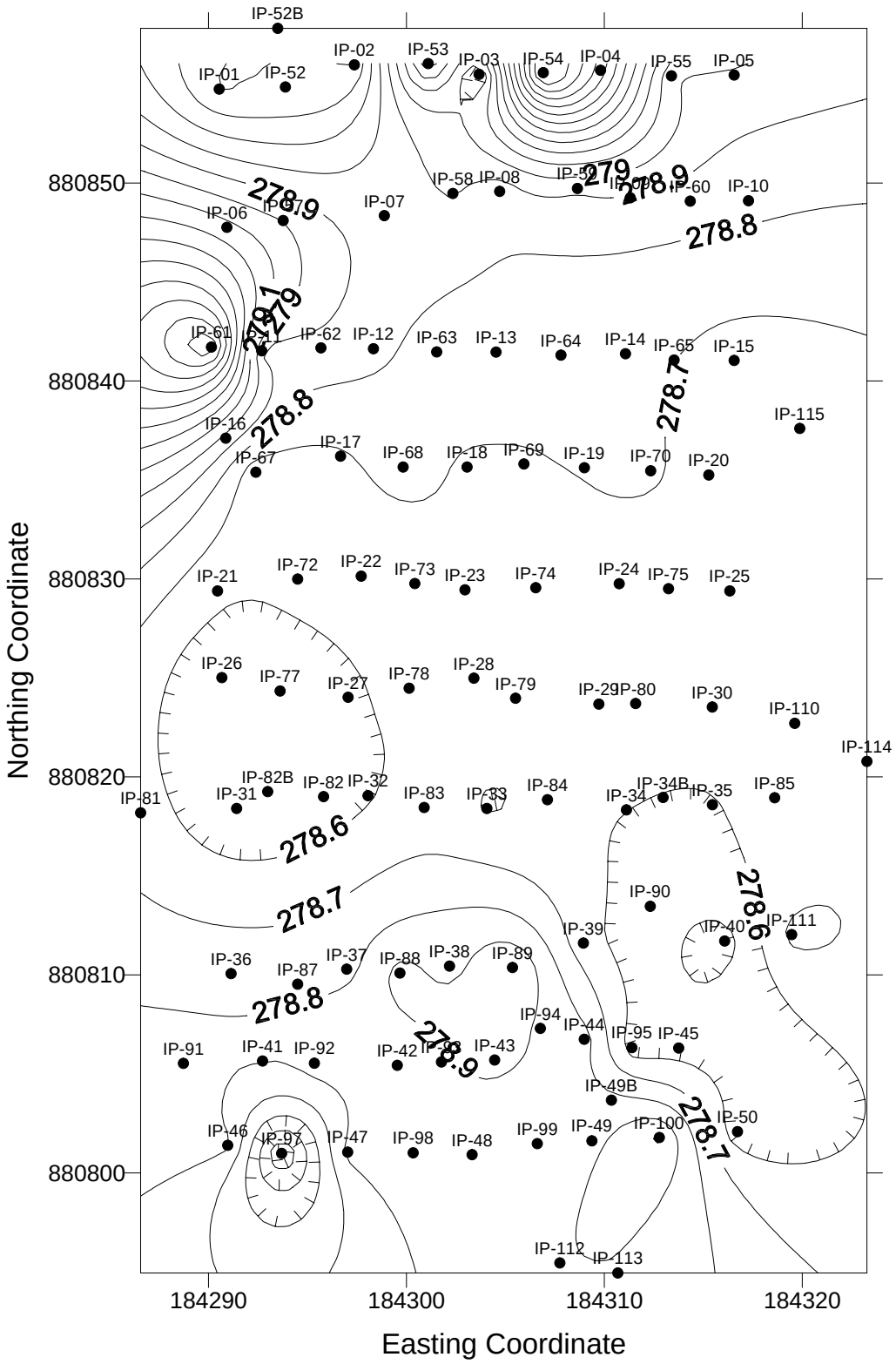
REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	03/05/2004

FILE NAME:	
R:03050181_FIGURES_SURFERFILES_MnConc2D_25Feb04	FIGURE N-4

APPENDIX O

Groundwater Contour Plots
Figures O-1 through O-9



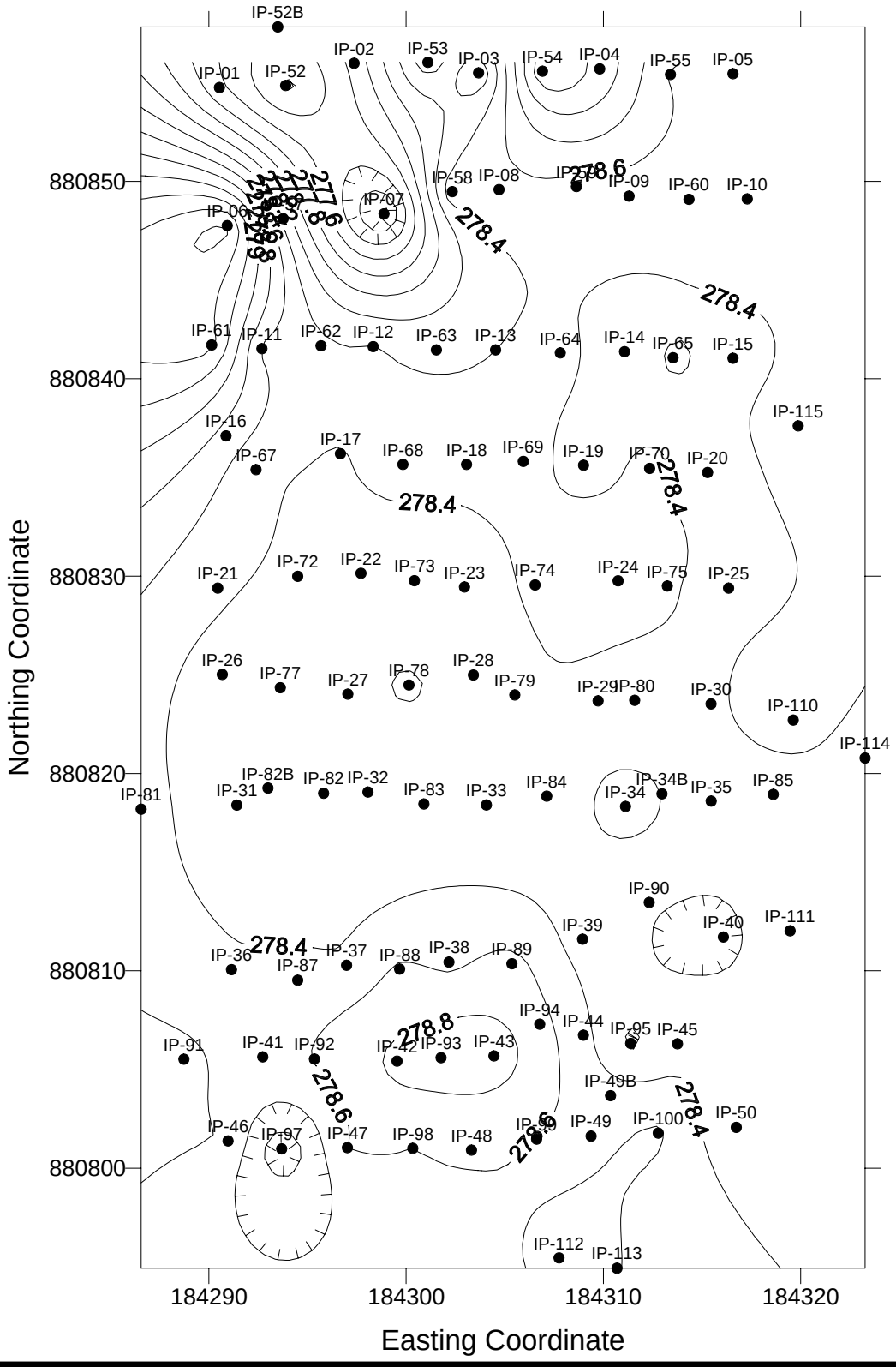
GROUNDWATER CONTOUR MAP
8 MAY 2003
FISHERVILLE MILL
GRAFTON, MASSACHUSETTS

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	04/152004

FILE NAME:	
R:03050181_FIGURES_SURFERFILES_IPWTElev_8May03	FIGURE O-1



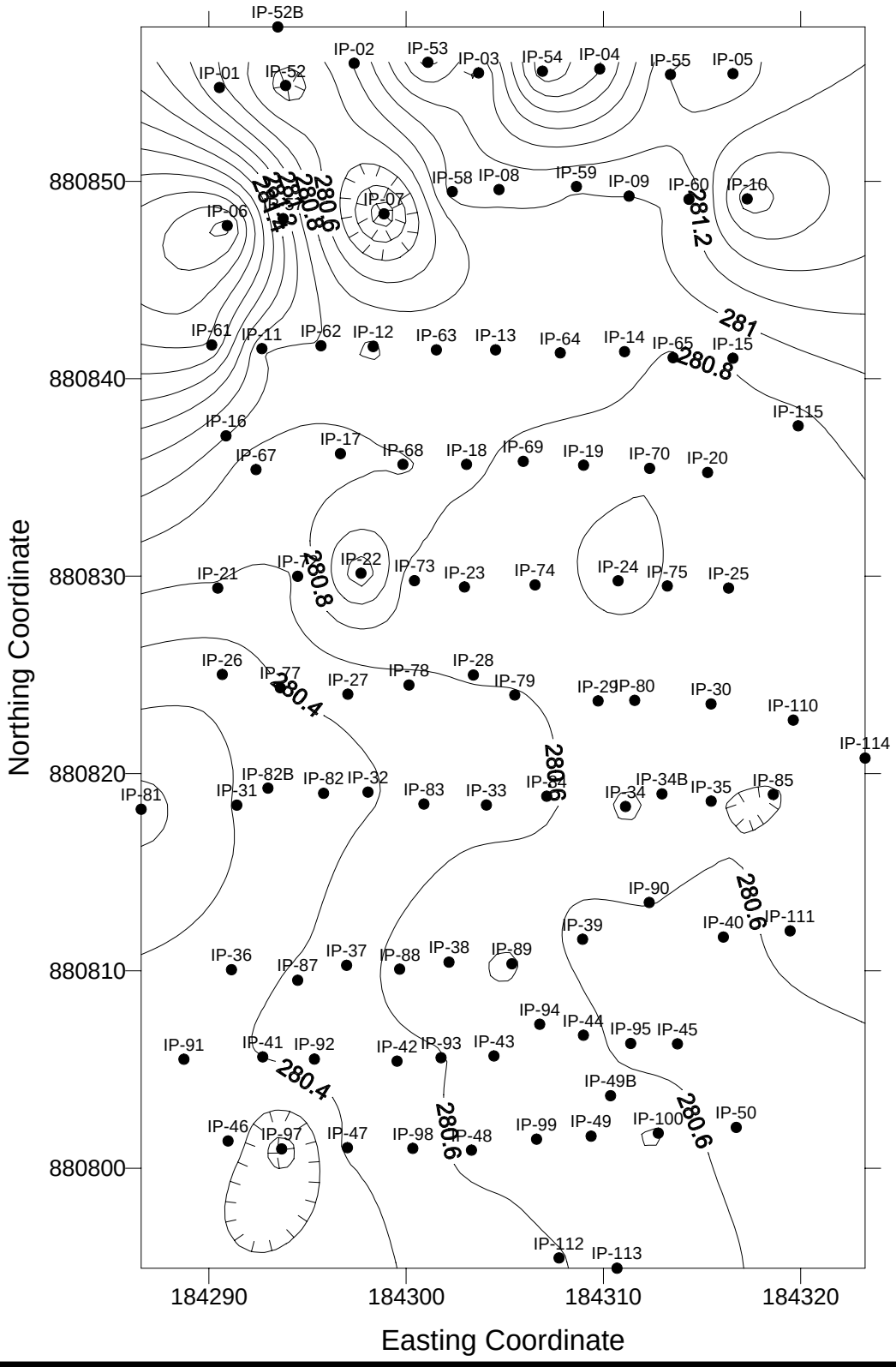
GROUNDWATER CONTOUR MAP
22 MAY 2003
FISHERVILLE MILL
GRAFTON, MASSACHUSETTS

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	04/152004

FILE NAME:	
R:03050181_FIGURES_SURFERFILES_IPWTElev_8May03	FIGURE O-2



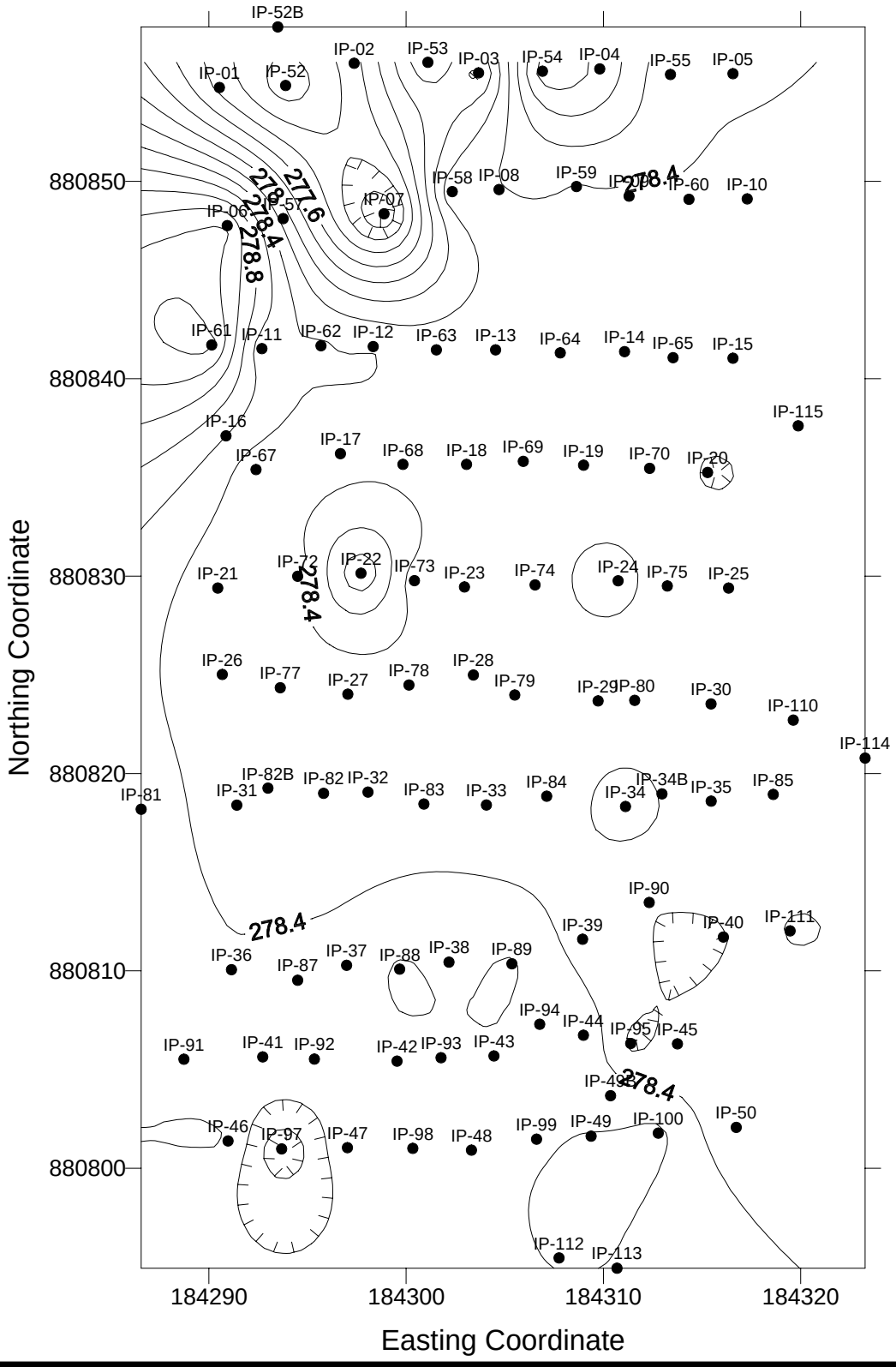
GROUNDWATER CONTOUR MAP
25 JUNE 2003
FISHERVILLE MILL
GRAFTON, MASSACHUSETTS

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	04/152004

FILE NAME:	
R:03050181_FIGURES_SURFERFILES_IPWTElev_8May03	FIGURE O-3



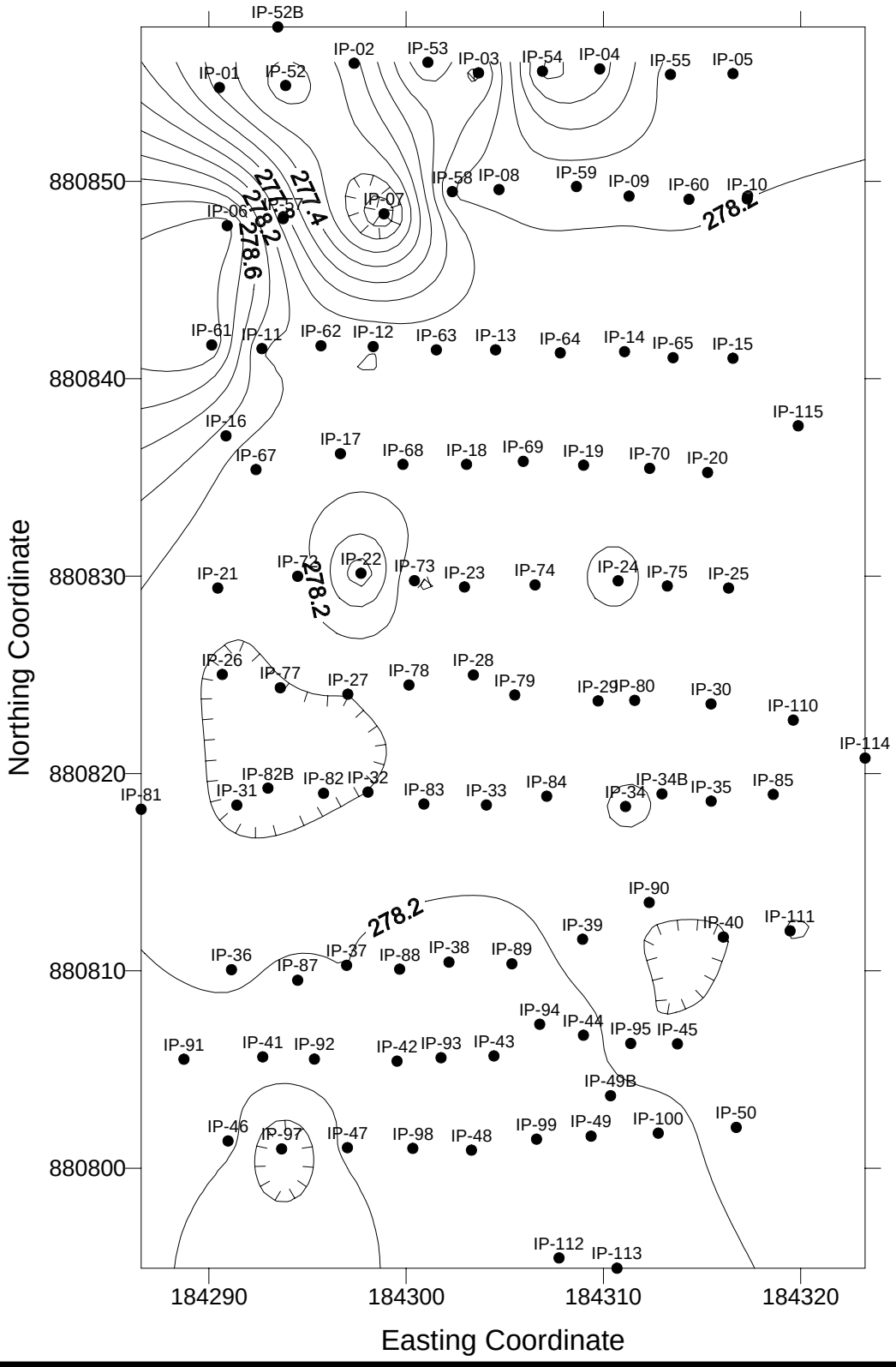
GROUNDWATER CONTOUR MAP
22 JULY 2003
FISHERVILLE MILL
GRAFTON, MASSACHUSETTS

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	04/152004

FILE NAME:	
R:03050181_FIGURES_SURFERFILES_IPWTElev_22Jul03	FIGURE O-4



GROUNDWATER CONTOUR MAP
18 AUGUST 2003
FISHERVILLE MILL
GRAFTON, MASSACHUSETTS

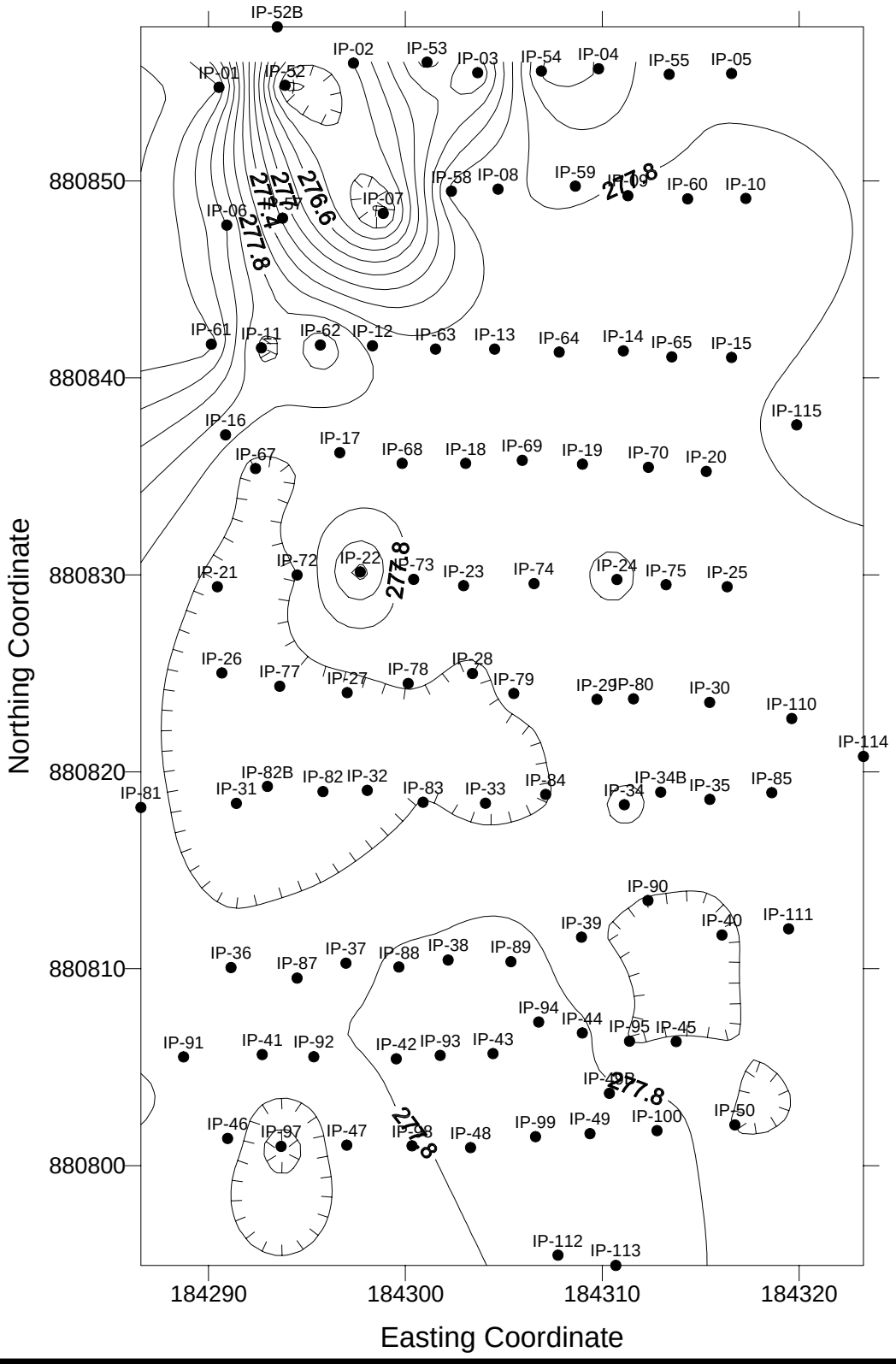
WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	04/152004

FILE NAME: R:03050181_FIGURES_SURFERFILES_IPWTElev_18Aug03

FIGURE O-5



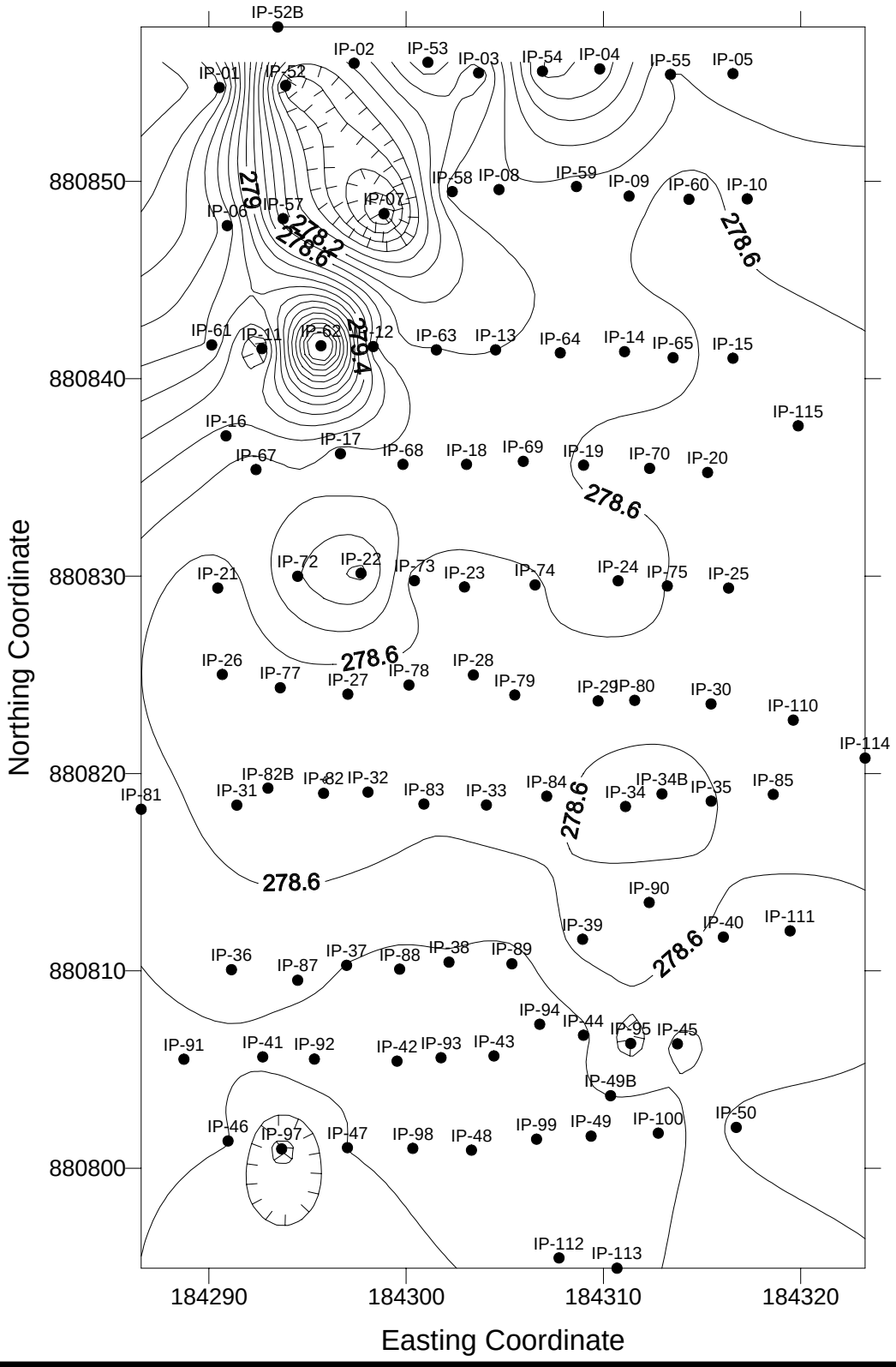
GROUNDWATER CONTOUR MAP
18 SEPTEMBER 2003
FISHERVILLE MILL
GRAFTON, MASSACHUSETTS

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	04/152004

FILE NAME:	
R:03050181_FIGURES_SURFERFILES_IPWTElev_18Aug03	FIGURE O-6



GROUNDWATER CONTOUR MAP
21 NOVEMBER 2003
FISHERVILLE MILL
GRAFTON, MASSACHUSETTS

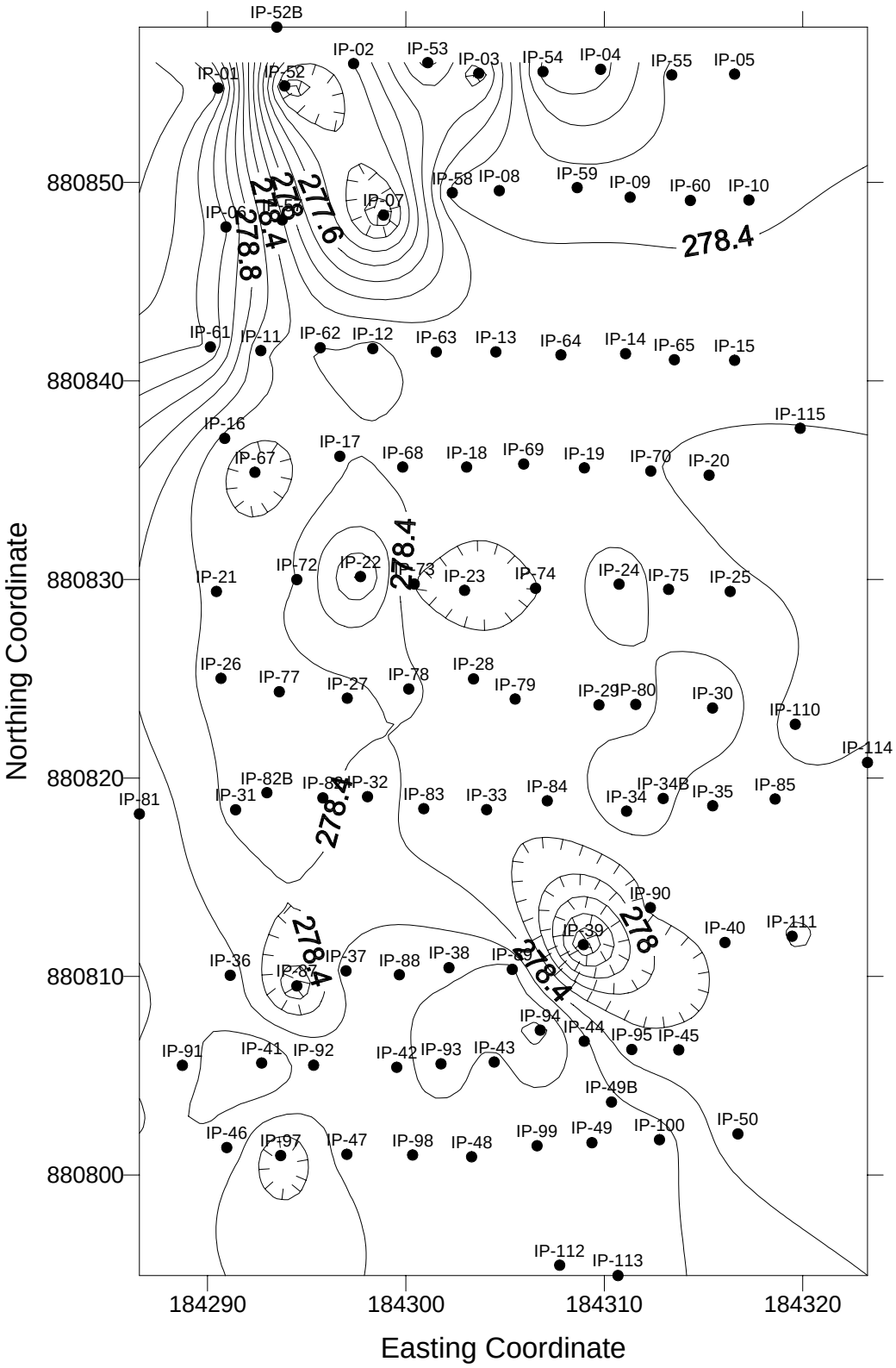
WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	04/152004

FILE NAME: R:03050181_FIGURES_SURFERFILES_IPWTElev_18Aug03

FIGURE O-7



GROUNDWATER CONTOUR MAP
25 FEBRUARY 2004
FISHERVILLE MILL
GRAFTON, MASSACHUSETTS

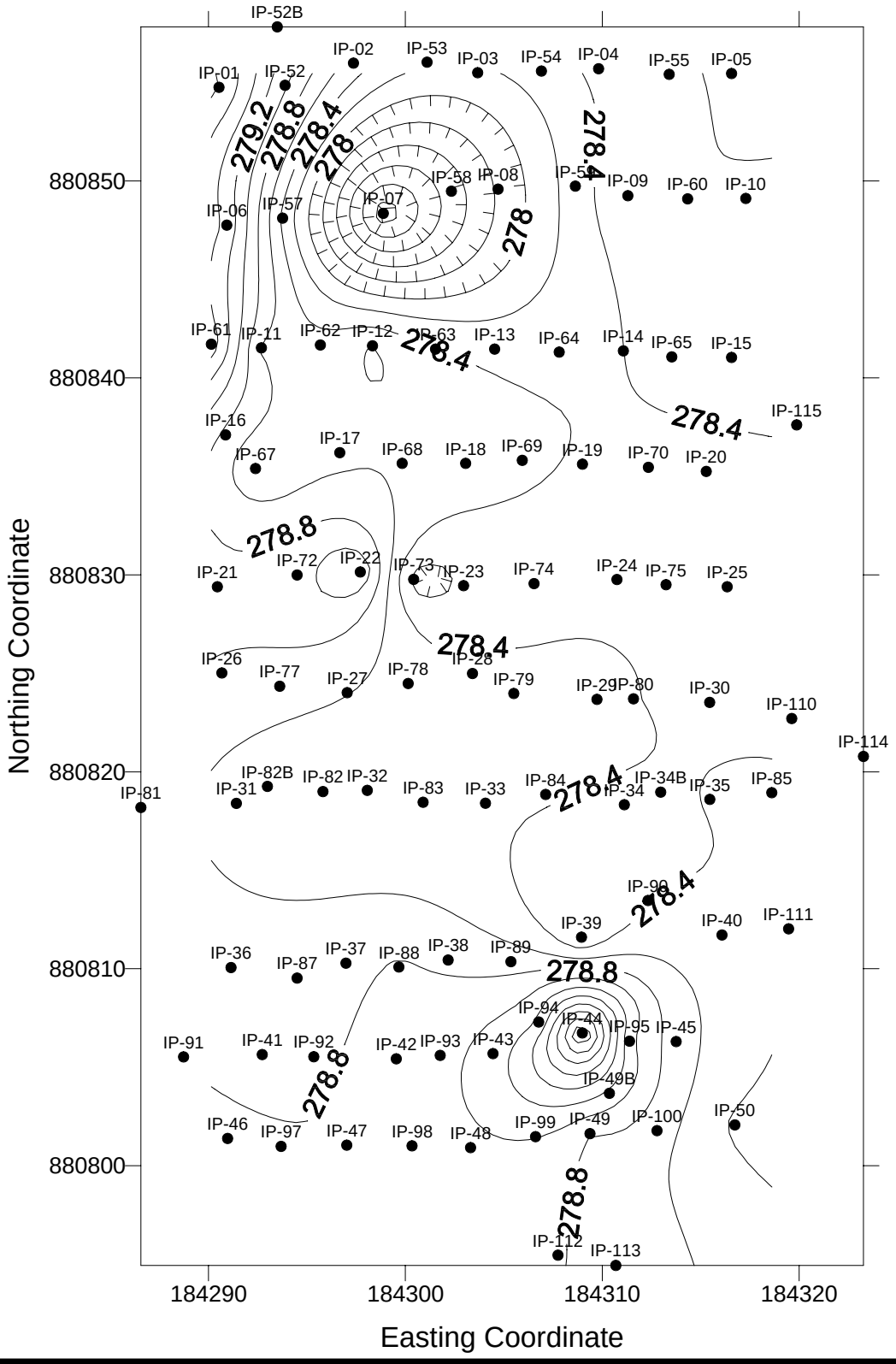
WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	04/152004

FILE NAME: R:03050181_FIGURES_SURFERFILES_IPWTElev_25Feb04

FIGURE O-8



GROUNDWATER CONTOUR MAP
15-16 MARCH 2004
FISHERVILLE MILL
GRAFTON, MASSACHUSETTS

WESTON SOLUTIONS
Restoring Resource Efficiency

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD NO.	DRAWN BY:	DATE:
04-05-0009	D. BRAMMER	04/152004

FILE NAME: R:03050181_FIGURES_SURFERFILES_IPWTElev_Mar04

FIGURE O-9

APPENDIX P

YSI Data Summary Plots for 19 September 2002 to 24 October 2002 and
Figures P-1 through P-13

Figure P-1
YSI ORP Readings 19 September 2002
(9 days after completion of first injection)

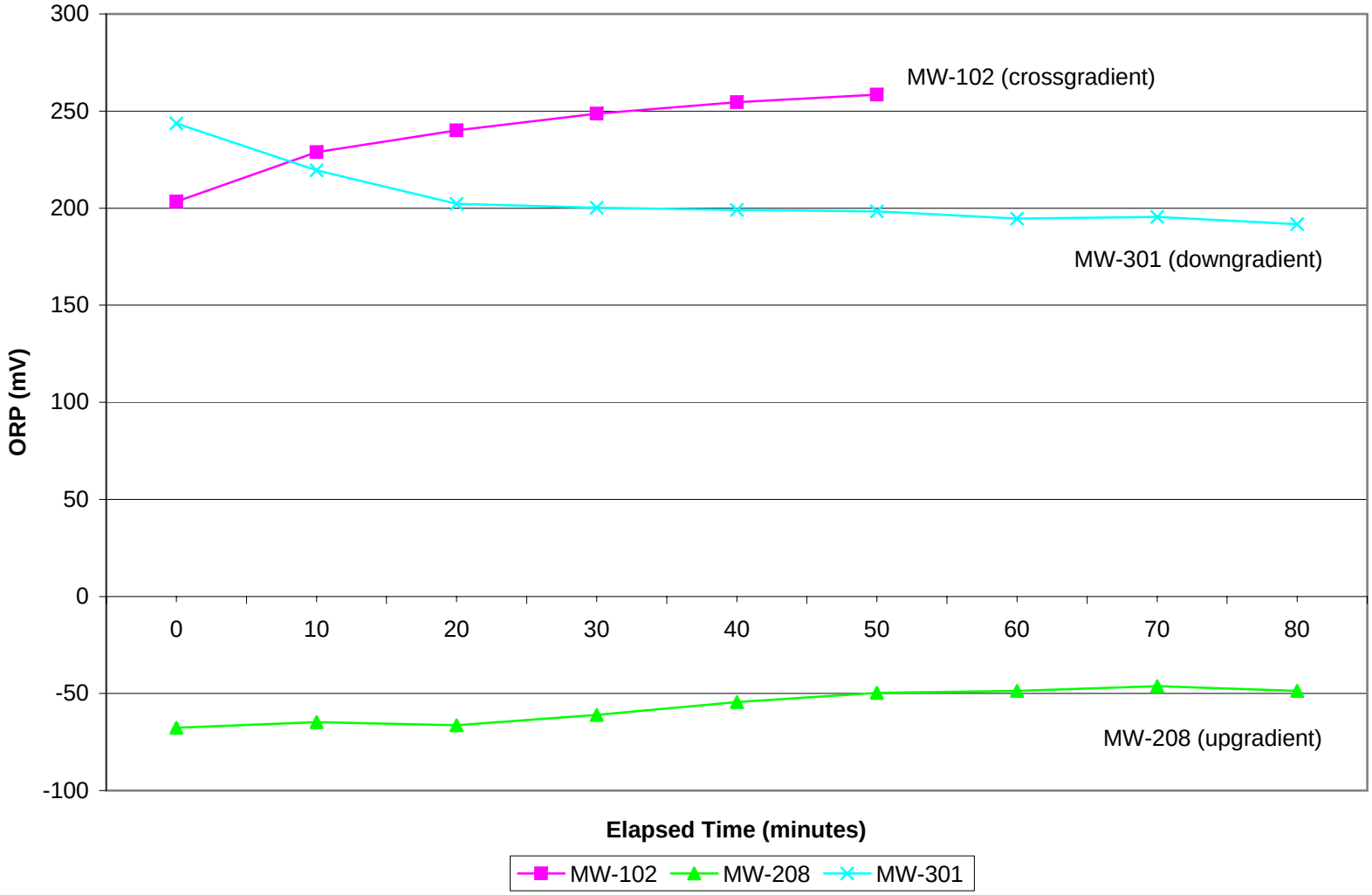


Figure P-2
YSI ORP Readings 26 September 2002
(16 days after comnpletion of first injection)

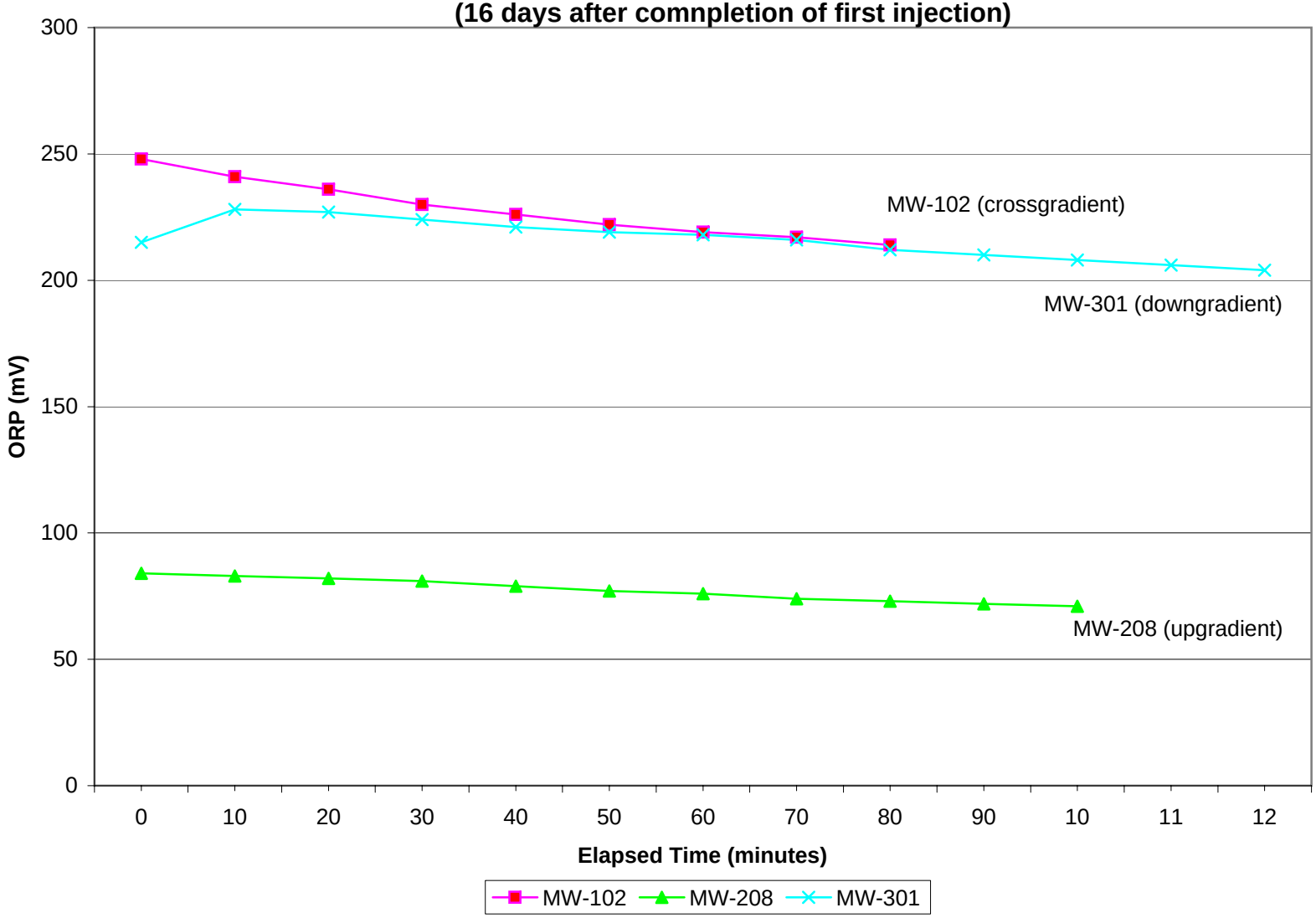


Figure P-3
YSI ORP Readings For 3 October 2002
(23 days after completion of first injection)

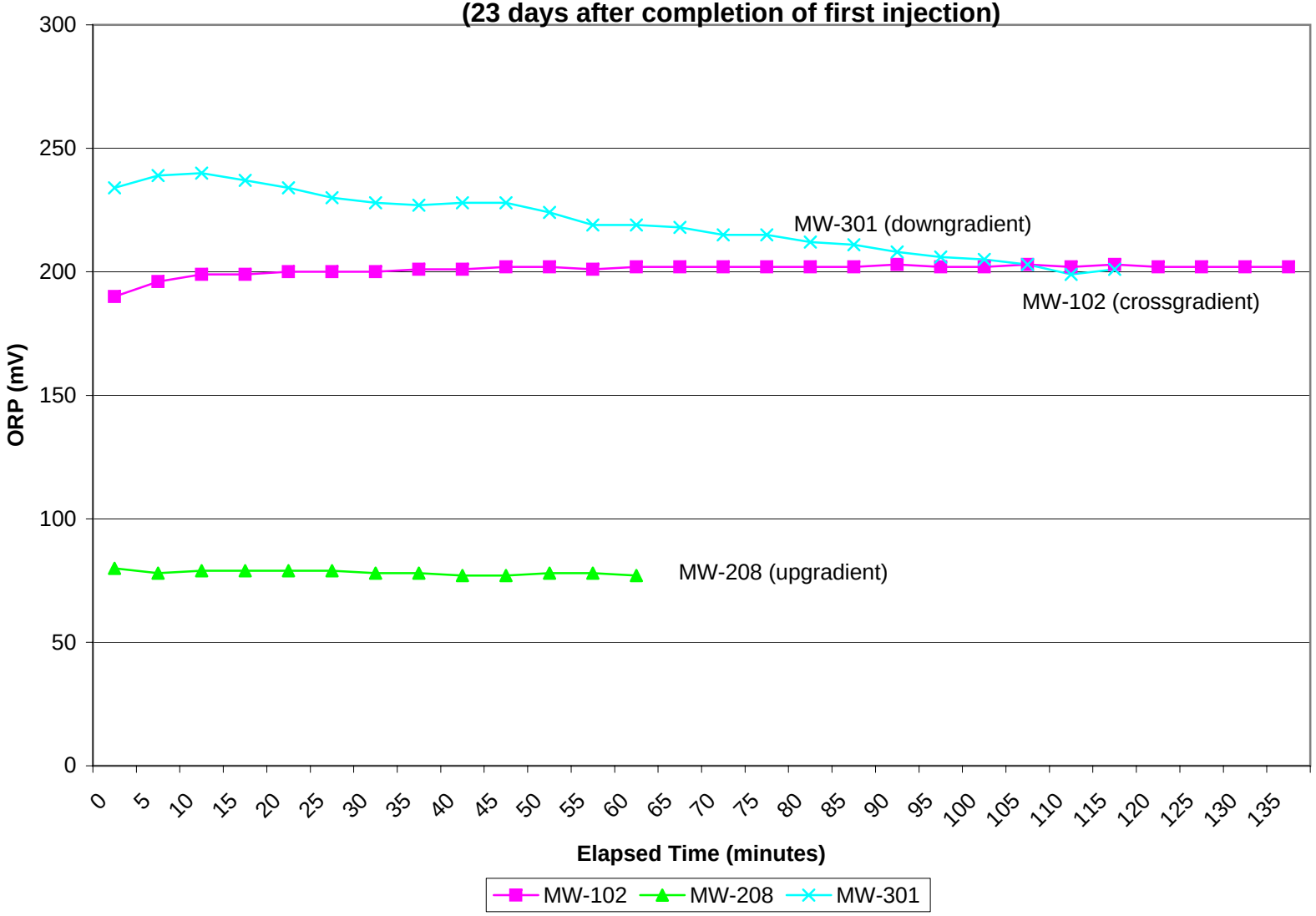


Figure P-4
YSI ORP Readings For 10 October 2002
(30 days after completion of first injection)

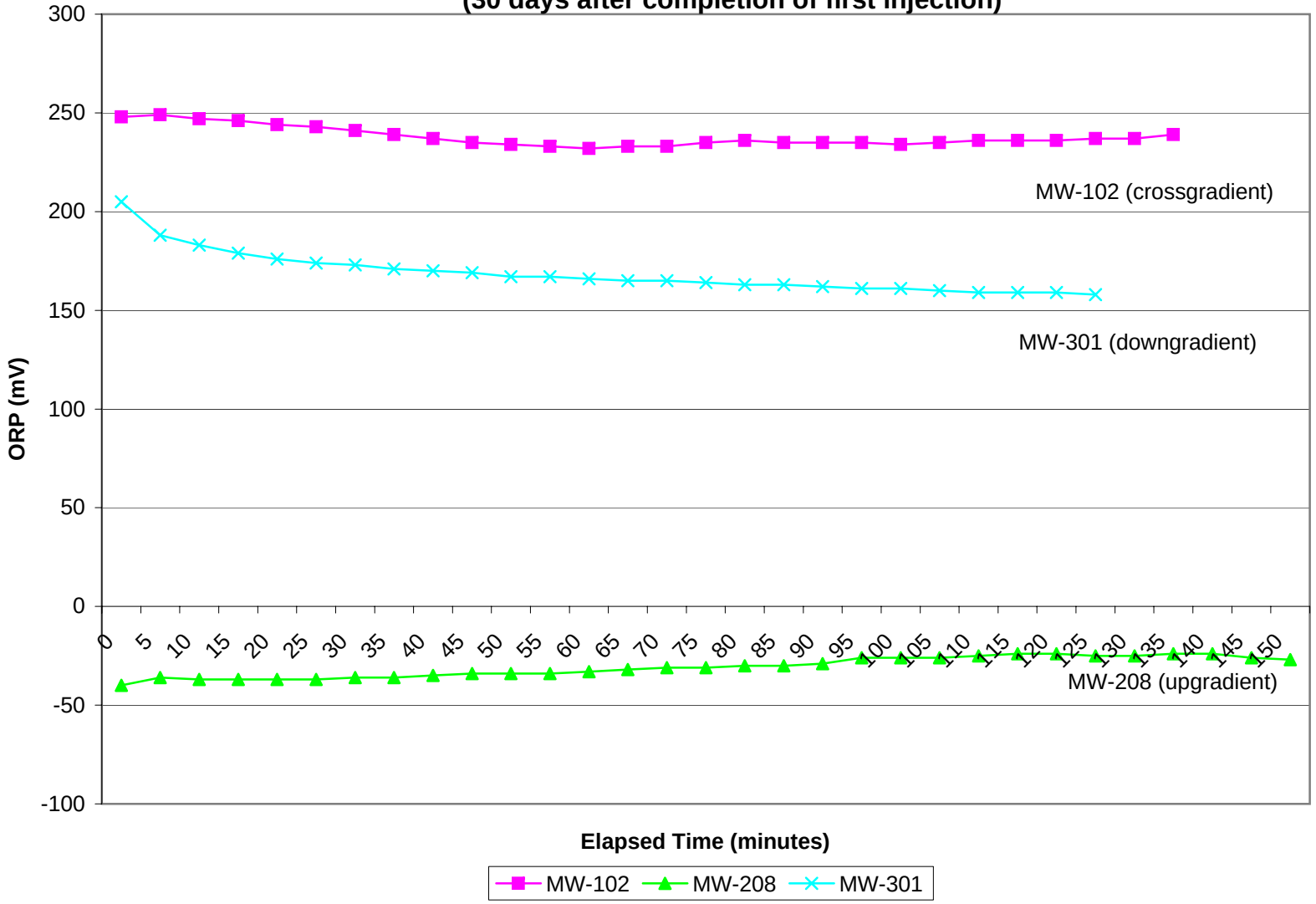


Figure P-5
YSI ORP Readings 16 October 2002
(36 days after completion of first injection)

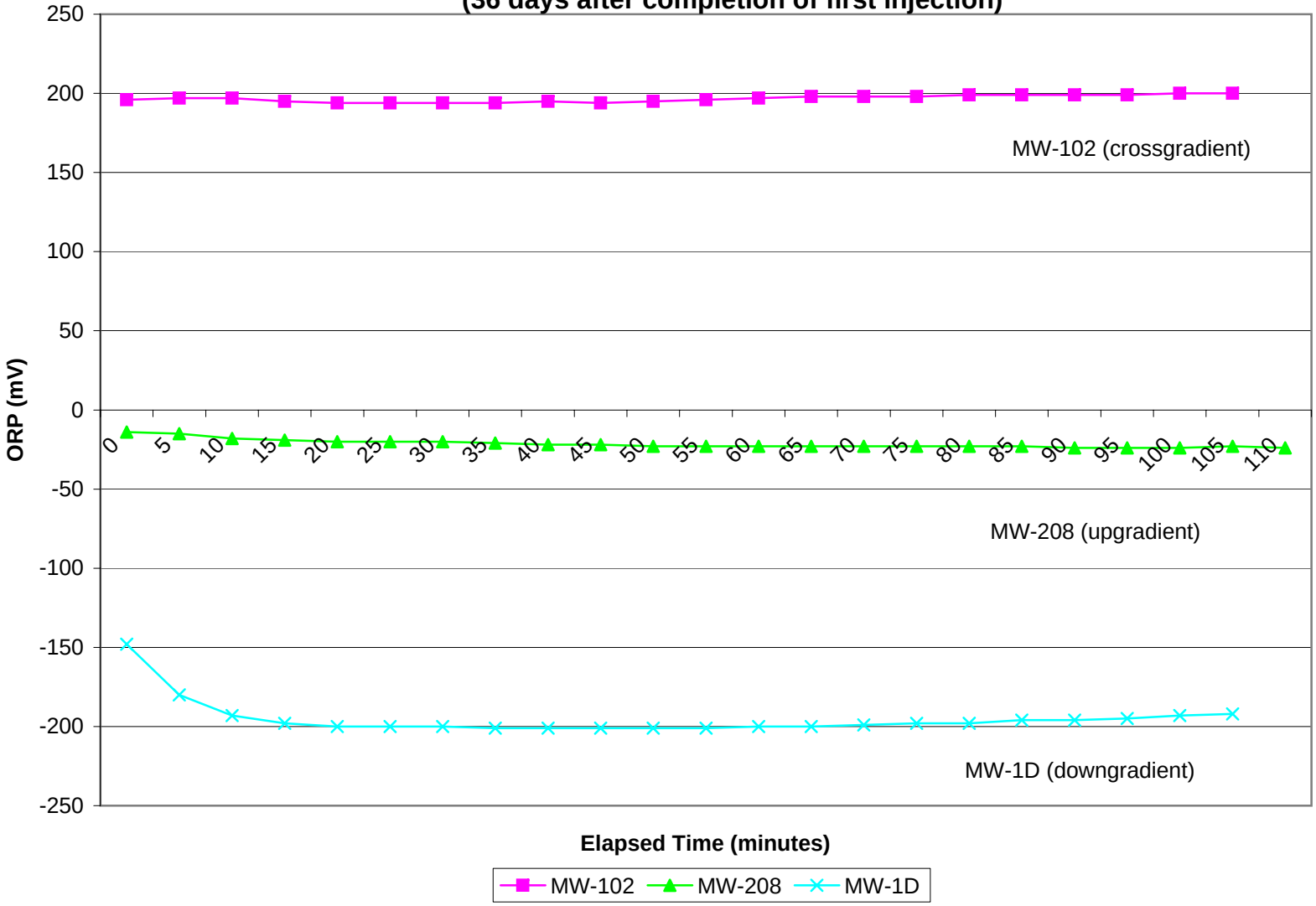


Figure P-6
YSI ORP Readings 24 October 2002
(44 days after completion of first injection)

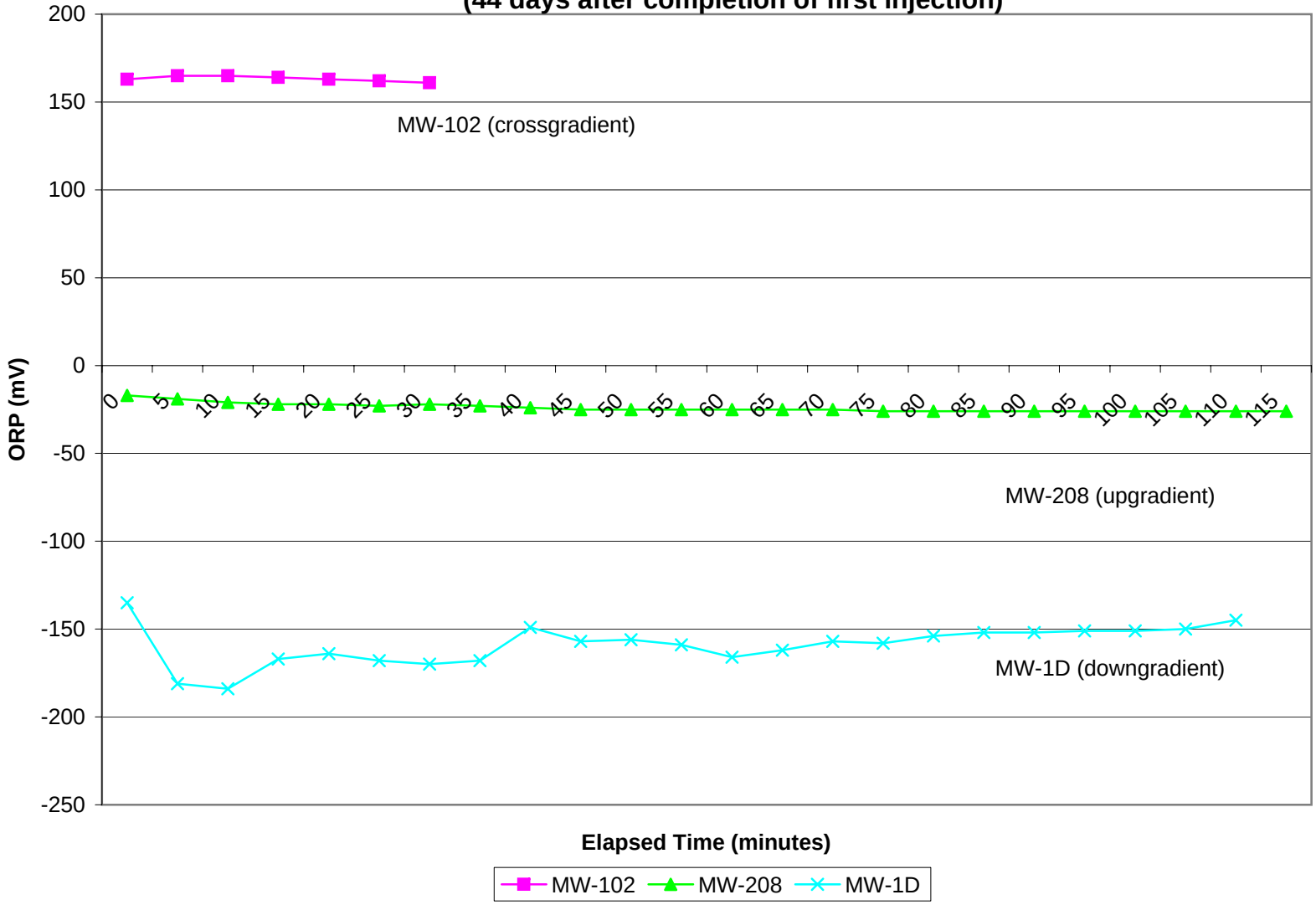


Figure P-7
YSI Readings for 6 November 2002
(57 days after completion of first injection)

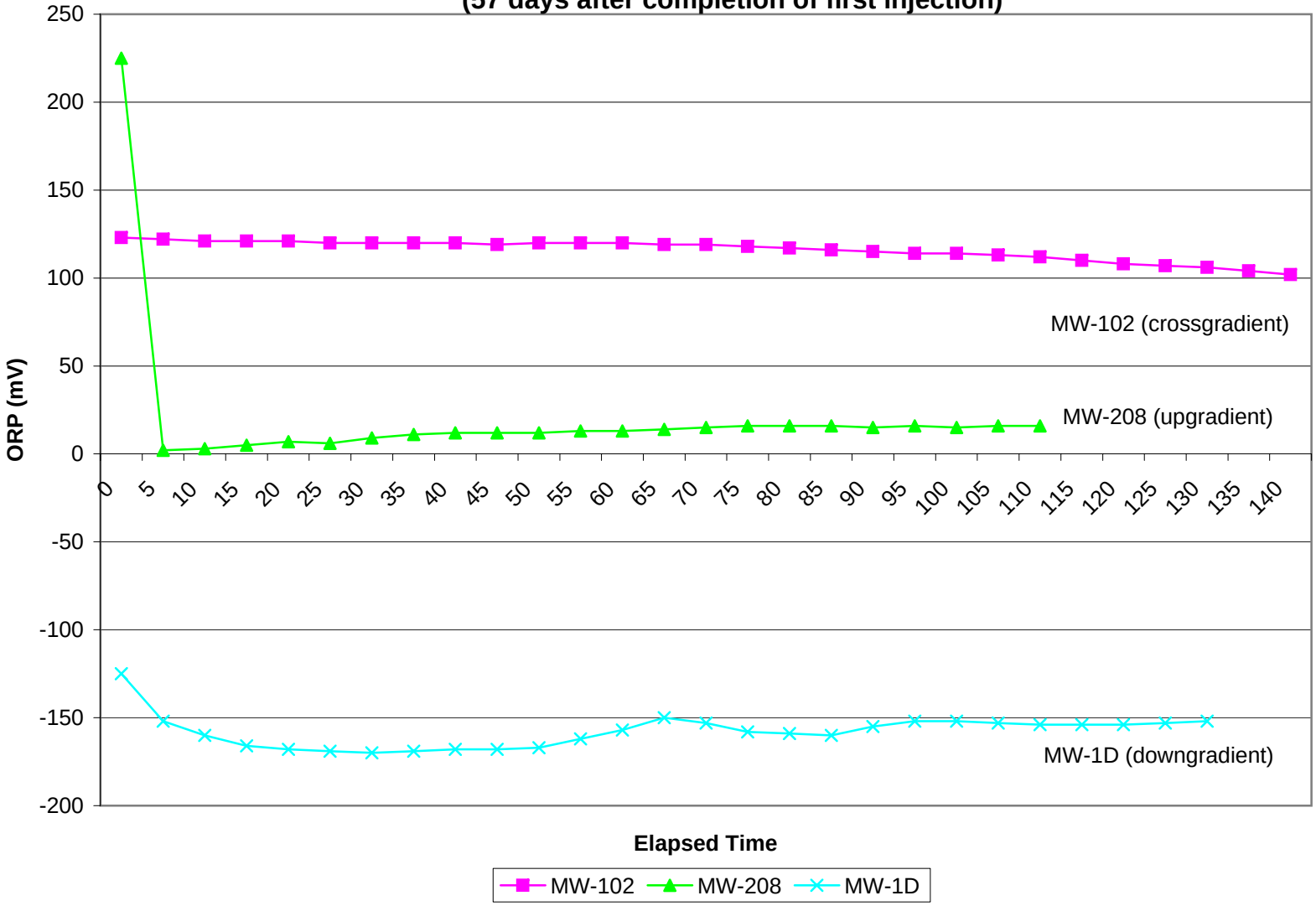


Figure P-8
YSI Readings for 5 Dec 2002
(86 days after completion of first injection)

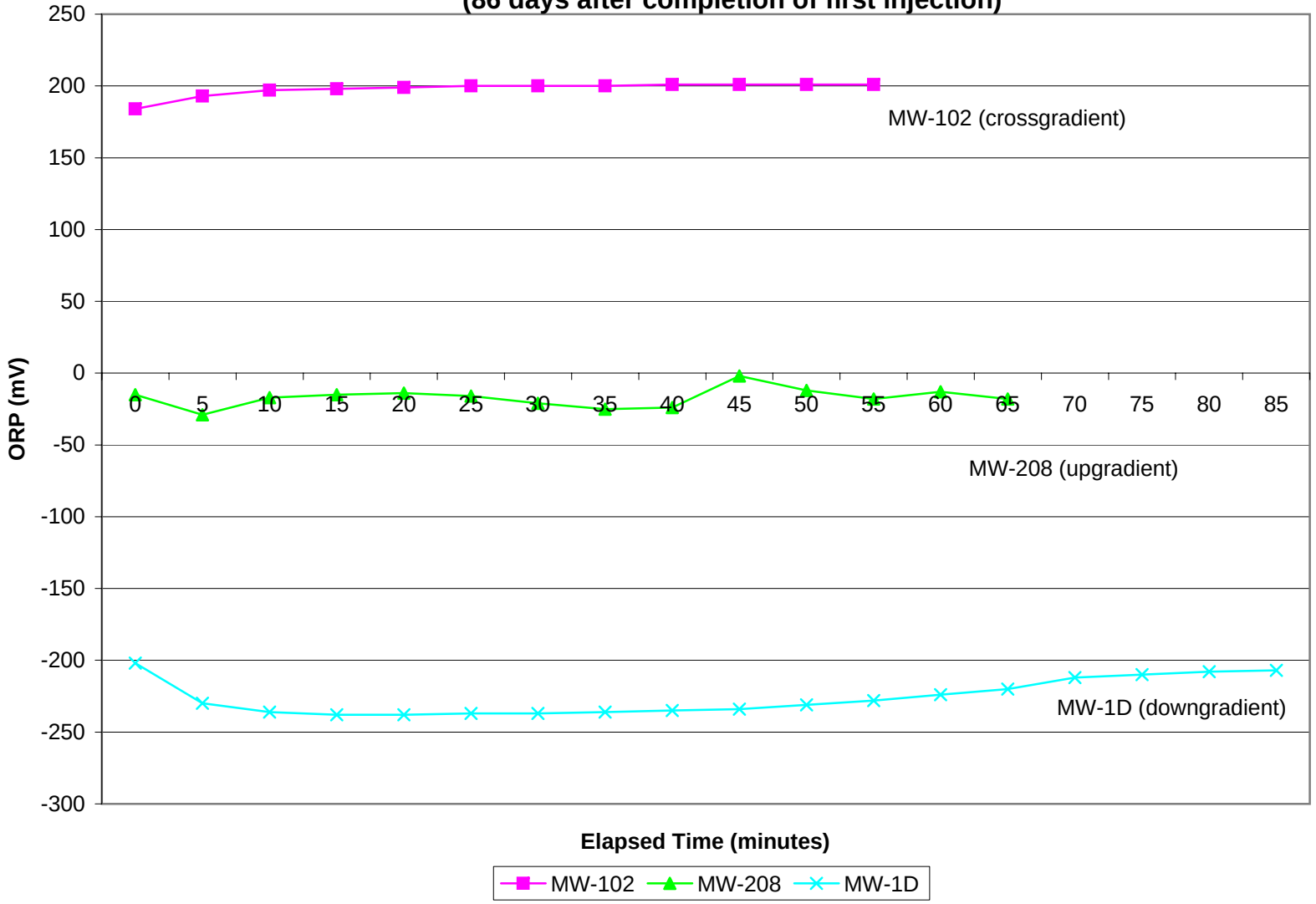


Figure P-9
Summary of MW-102 (crossgradient) ORP Readings
19 September to 6 November 2002

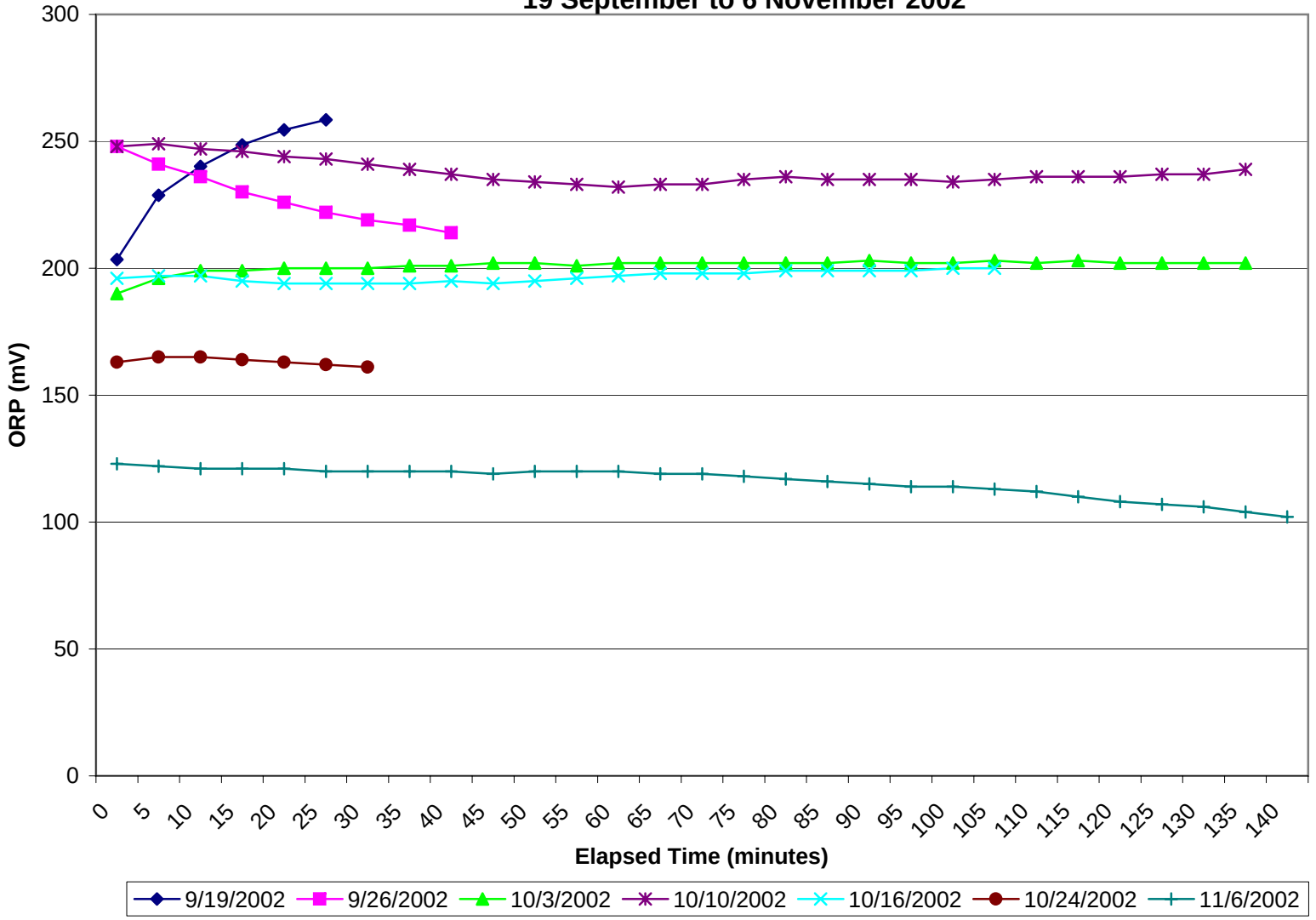


Figure P-10
Summary of MW-208 (upgradient) ORP Readings
19 September to 6 November 2002

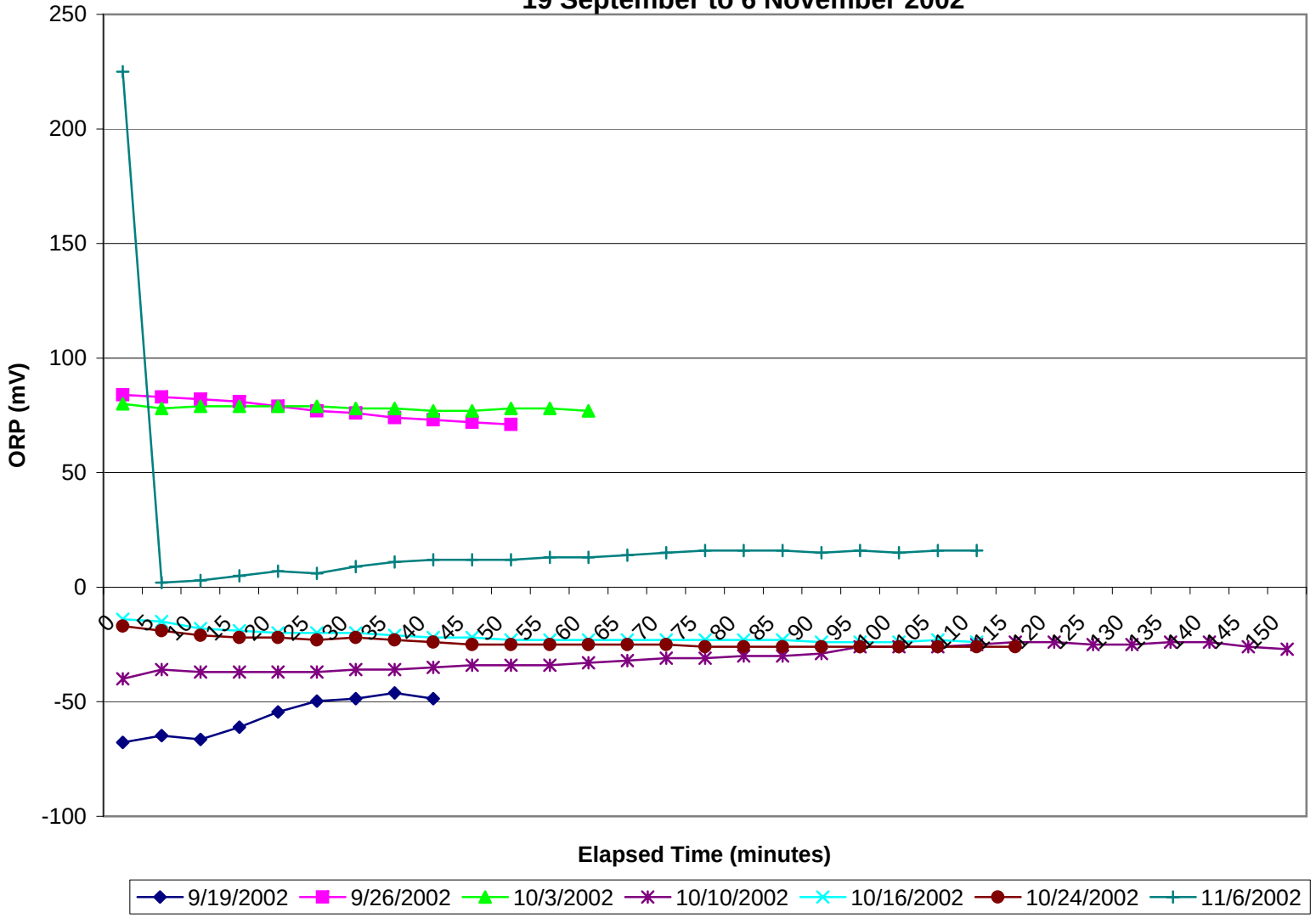


Figure P-11
Summary of MW-301 (downgradient) ORP Readings
19 September to 10 October 2002

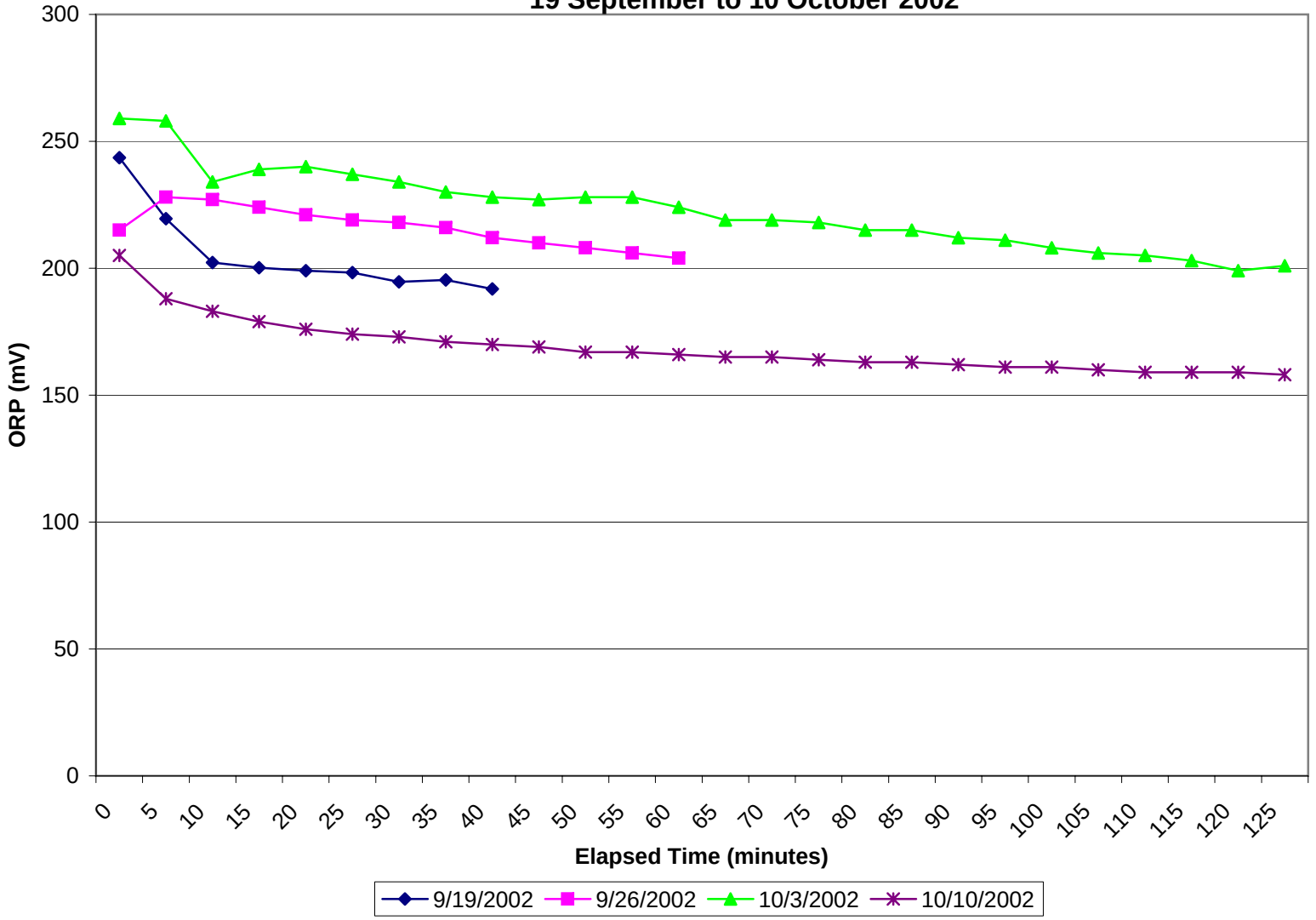


Figure P-12
Summary of MW-1D YSI ORP Readings
(16 October to 6 November 2002)

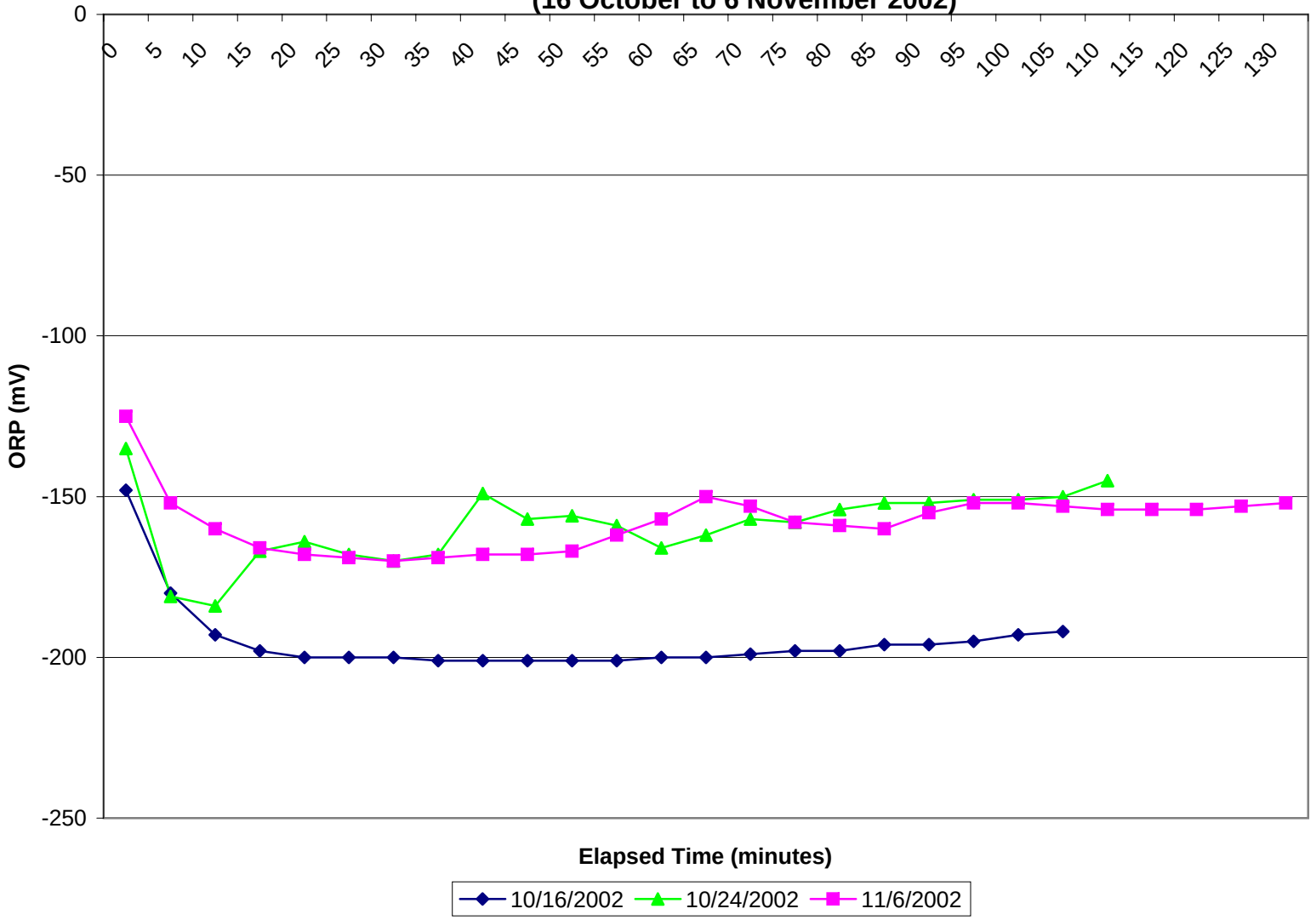
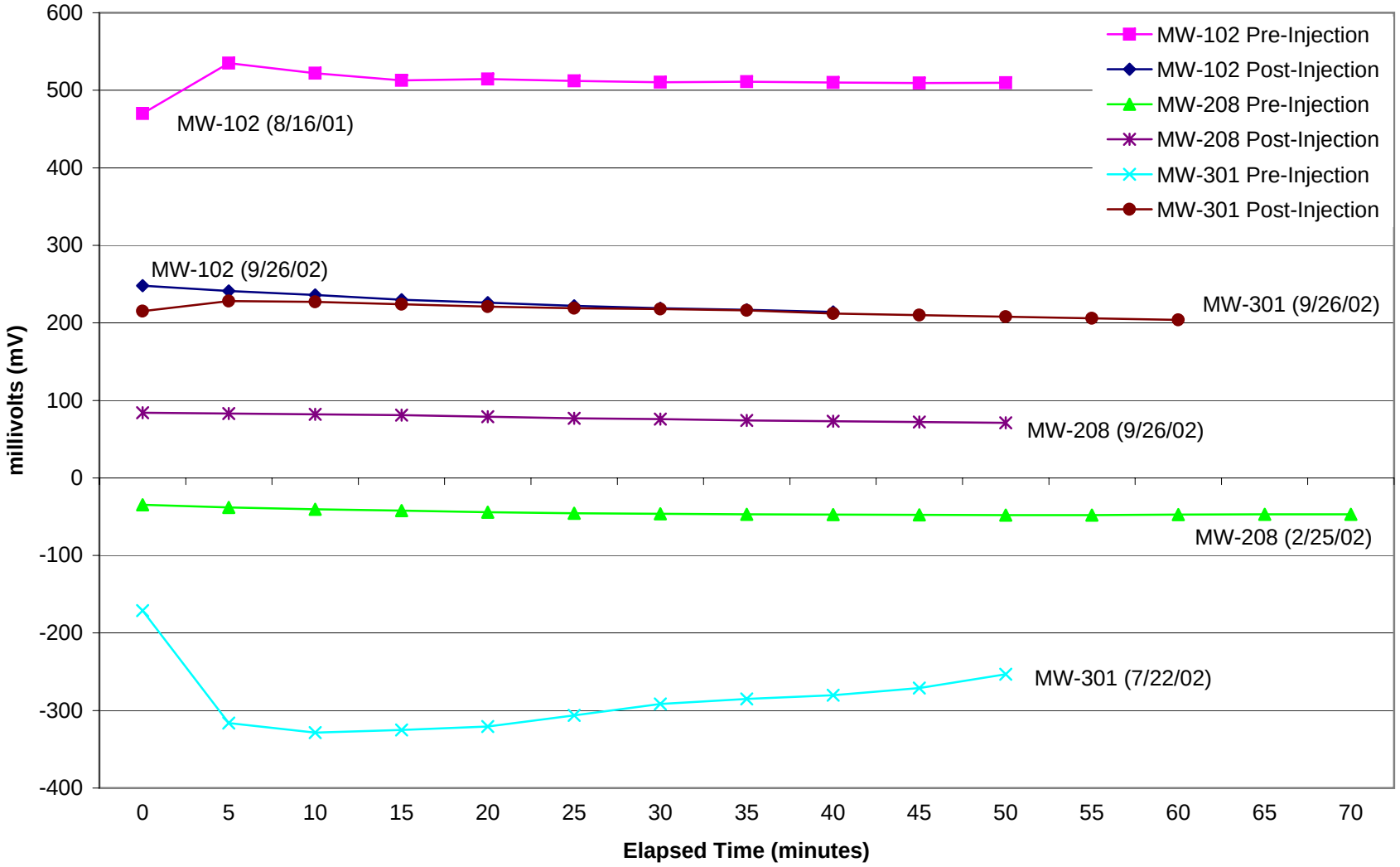


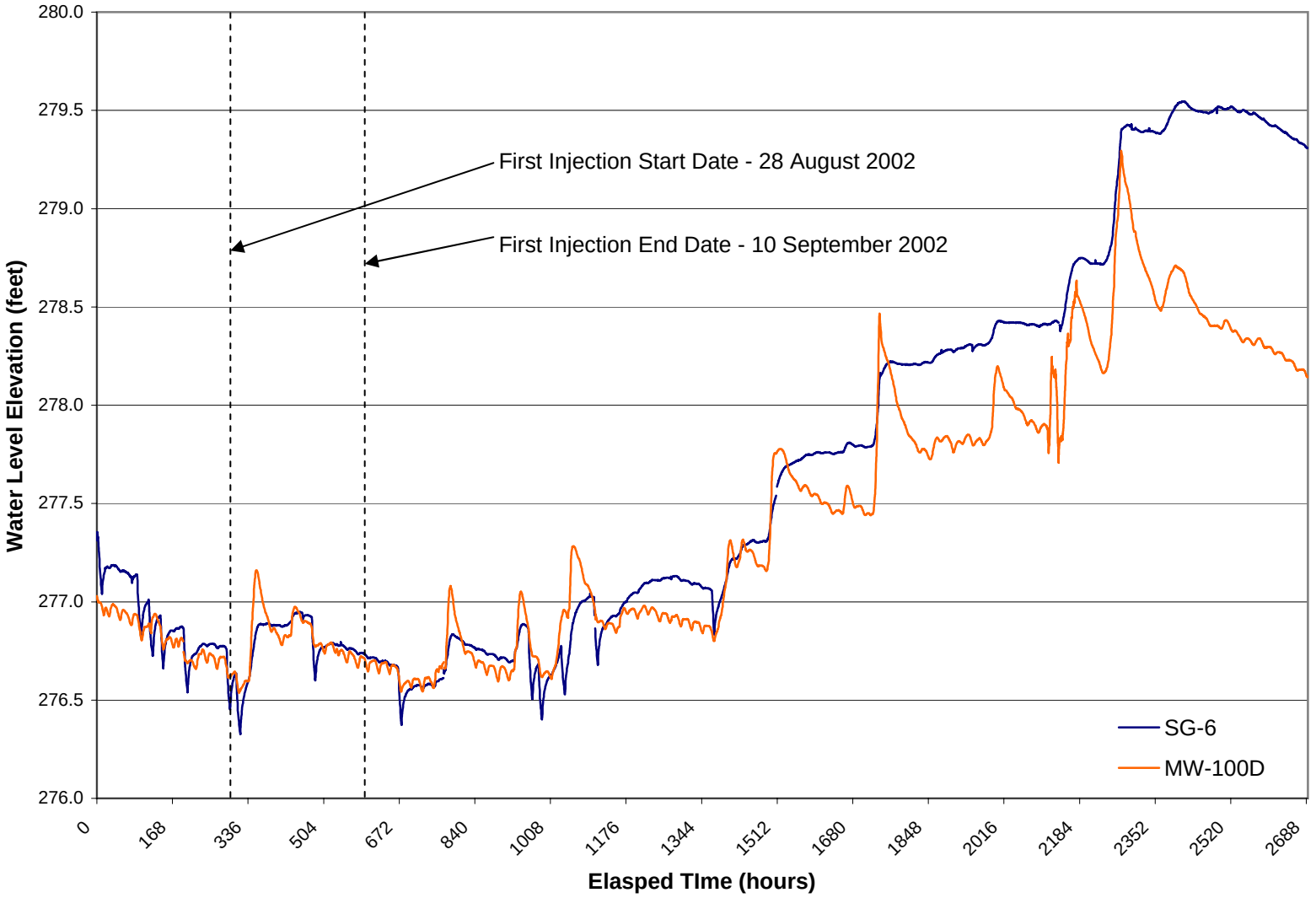
Figure P-13
YSI ORP Pre- and Post-Injection Comparison
MW-102 (8/02); MW-208 (2/02); MW-301 (7/02) (sampling dates in parentheses)



APPENDIX Q

Figure Q-1, Data Logger Water Levels
MW-100D and SG-6
15 August 2002 to 5 December 2002

Figure Q-1: Data Logger Water Levels: MW-100D and SG-6
15 Aug - 5 Dec 2002



APPENDIX R

Passive Diffusion Bag Sampler VOC Analytical Results for
8 May 2003 (from MA DEP)

Table R-1
Passive Diffusion Sampler Summary of Analytical Results
Samples Collected 8 May 2003

Sample Location	TCE	PCE	Is-DCE	Trans-DCE	TCA	1,1-DCE	1,1-DCA	VC
MW-1D*	33	<2.5	140	2.7	<2.5	<2.5	4.4	25
MW-1D (39 feet)	8.4	<5	100	<5	<5	<5	<5	48
MW-1D (46 feet)	<5	<5	90	<5	<5	<5	<5	30
MW-29D*	160	33	49	<1	<1	1.1	<1	3
MW-29D (49 feet)	170	9.8	29	<5	<5	<5	<5	<5
MW-29D (56 feet)	250	6.6	25	<5	<5	<5	<5	<5
MW-30D*	510	22	160	<5	<5	<5	<5	<5
MW-30D* (Replicate)	420	19	130	<1	<1	<1	<1	<1
MW-30D (38 feet)	41	<5	210	<5	<5	<5	<5	42
MW-30D (38 feet - Replicate)	38	<5	240	<5	<5	<5	<5	49
MW-31D*	13	2.7	18	<1	<1	<1	<1	1.2
MW-31D (48 feet)	20	3	22	<1	<1	<1	<1	1.3
MW-31D (55 feet)	19	2.7	21	<1	<1	<1	<1	1.2
MW-31R*	610	14	<10	<10	<10	<10	<10	<10
MW-31R (80 feet)	540	7.8	50	<5	<5	<5	<5	<5
MW-31R (87 feet)	36	<5	180	<5	<5	<5	<5	<5

Table R-1
Passive Diffusion Sampler Summary of Analytical Results
Samples Collected 8 May 2003 (Concluded)

Sample Location	TCE	PCE	Is-DCE	Trans-DCE	TCA	1,1-DCE	1,1-DCA	VC
MW-100D*	<1	<1	<1	<1	<1	<1	<1	<1
MW-100D (37 feet)	<1	<1	<1	<1	<1	<1	<1	<1

Note: All results reported in parts per billion (ppb). Sample results reported by Massachusetts Department of Environmental Protection (MA DEP).

*	=	Three well volume purge sample collected by MA DEP after collection of passive diffusion bag sampler VOC samples.
TCE	=	Trichloroethylene.
PCE	=	Tetrachloroehtylene.
Is-DCE	=	Is-Dichloroethylene.
Trans-DCE	=	Trans-Dichloroethylene.
TCA	=	Trichloroacetic acid.
1,1-DCE	=	1,1-Dichloroethylene.
1,1-DCA	=	1,1-Dichloroehtyne.
VC	=	Vinyl chloride.

APPENDIX S

EPA NERL Groundwater Profile Sampling VOC Analytical Results
for 2-10 September 2003

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 1
OFFICE OF ENVIRONMENTAL MEASUREMENT & EVALUATION
NORTH CHELMSFORD, MASSACHUSETTS 01863-2431

MEMORANDUM

DATE: September 15, 2003

SUBJECT: Fisherville Mill, Grafton, MA - Volatile Organics Analysis of Aqueous Samples

FROM: Scott Clifford, Chemist

TO: Janis Tsang, HBR

THRU: Dr. William J. Andrade, Advanced Analytical Chemistry Expert

PROJECT NUMBER:: 03090015

DATE OF ANALYSIS: 09/03/03 - 09/10/03

ANALYTICAL PROCEDURE:

Aqueous samples were analyzed using Region I's Standard Operating Procedure for Head Space Screening for Volatile Organic Compounds in Aqueous and Soil Samples (EIA-FLDVOA2.SOP). Aqueous samples were collected in 40 ml vials and were analyzed using a Photovac 10A10 gas chromatograph (GC) equipped with a 4' x 1/8" SE-30 column and photoionization detector, and a Shimadzu GC 14A gas chromatograph equipped with a 30 meter, 0.53 mm, DBPS-624 column, photoionization , and electron capture detectors. Concentrations of volatile organics were calculated using the external standard technique.

File: K:\CHEMISTRY\REPORTS\FIELD\03090015.XLS

Target Compounds and Approximate Reporting Limits

Fisherville Mill Grafton, MA - Aqueous Volatile Organic Target Compounds & Approximate Reporting Limits	
Compound	**Reporting Limit (ug/l)**
cis-1.2 Dichloroethylene (cis 12 DCEE)	1.0
Trichloroethylene (TCE)	0.3
Tetrachloroethylene (C_2Cl_4)	0.2
Toluene	1.5

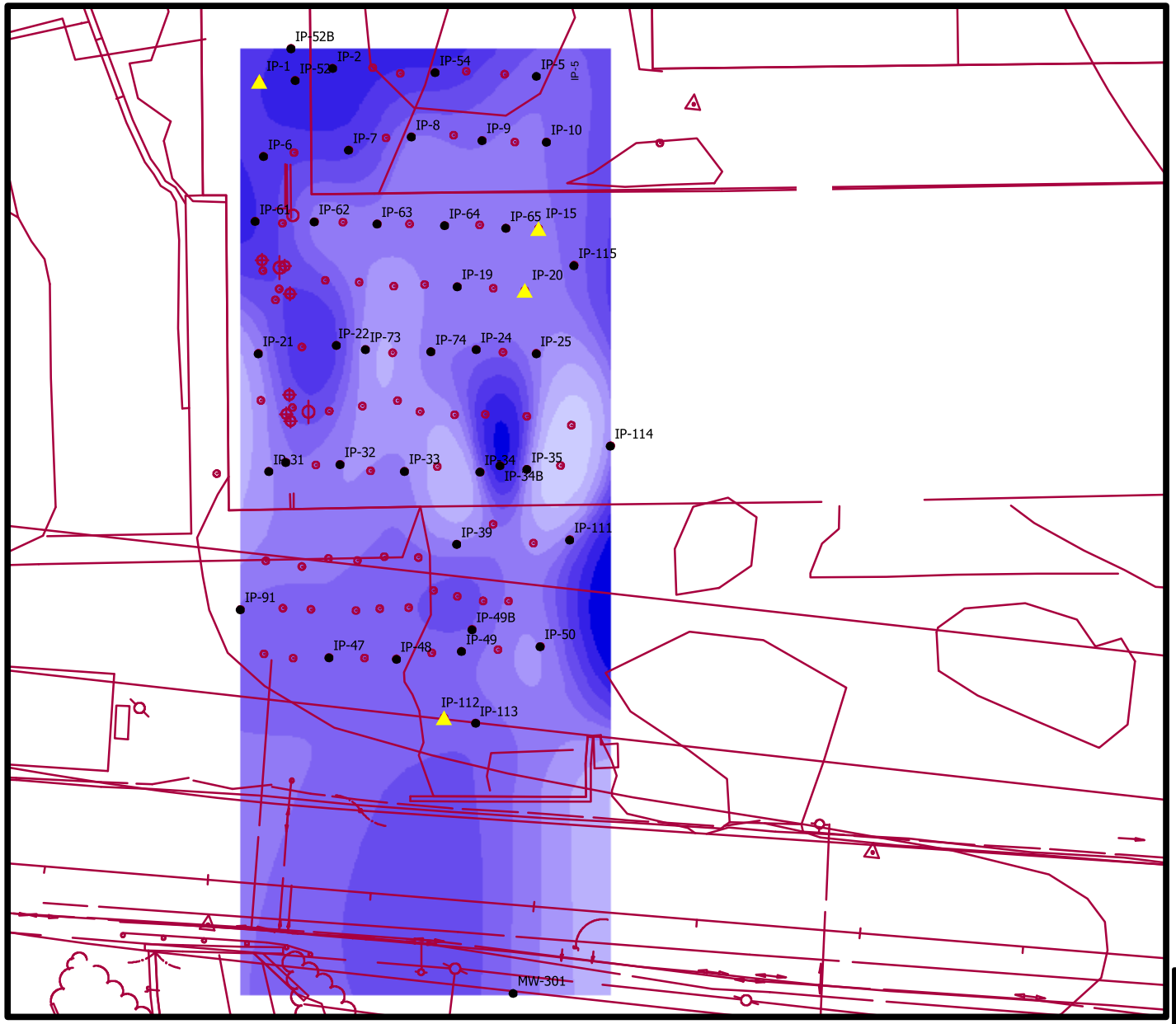
Results: The results in tables are Tentatively Identified Compounds and Approximate Concentrations

ND ( ) = Nothing detected above reporting limit. Reporting limit in parenthesis.

Fisherville Mill Grafton, MA - Volatile Organic Aqueous Results (ug/l)				
09/03/03 - 09/10/03				
Sample #	**TCE**	**cis 12 DCEE**	**Toluene**	**C_2Cl_4**
IP201A	0.4	ND(2.0)	1.3	ND(0.2)
IP201C	ND(0.3)	ND(2.0)	ND(1.0)	ND(0.2)
IP201D	ND(0.3)	ND(2.0)	ND(1.0)	ND(0.2)
IP201E	ND(0.3)	ND(2.0)	ND(1.0)	ND(0.2)
IP200B	154	582	ND(30)	0.6
IP200C	21	27	ND(30)	ND(0.6)
IP200D	7.0	6.0	ND(1.0)	0.12
IP200E	4.1	3.6	ND(2.0)	0.12
IP200F	4.6	34	ND(2.0)	0.05
IP204C	ND(0.2)	ND(0.5)	ND(2.0)	ND(0.2)
IP204D	ND(0.2)	ND(0.5)	ND(2.0)	ND(0.2)
IP204E	ND(0.2)	2.2	ND(2.0)	ND(0.2)
IP204F	ND(0.2)	ND(0.5)	ND(2.0)	ND(0.2)
IP206E	ND(0.2)	3.4	ND(2.0)	ND(0.2)
IP206F	ND(0.2)	ND(0.6)	ND(2.0)	ND(0.2)
IP206G	ND(0.2)	ND(0.6)	ND(2.0)	ND(0.2)
IP205D	ND(0.2)	4.4	2.1	ND(0.2)
IP205E	ND(0.2)	0.8	2.0	ND(0.2)
IP205F	ND(0.2)	0.5	1.2	ND(0.2)
IP205G	ND(0.2)	ND(0.5)	1.0	ND(0.2)
IP207E	0.10	1.1	ND(1.0)	ND(0.2)
IP207F	0.14	1.6	ND(1.0)	ND(0.2)
IP207G	ND(0.2)	ND(0.5)	ND(1.0)	ND(0.2)
IP207H	ND(0.2)	ND(0.5)	ND(1.0)	ND(0.2)
IP208E	0.14	1.7	0.8	ND(0.2)
IP208F	ND(0.2)	2.1	1.2	ND(0.2)
IP208G	ND(0.2)	0.4	1.4	ND(0.2)
IP209E	ND(0.2)	ND(0.5)	1.1	ND(0.2)
IP209F	0.1	0.8	1.2	ND(0.2)
IP209G	ND(0.2)	ND(0.5)	0.7	ND(0.2)
IP211C	ND(0.2)	ND(0.5)	ND(1.5)	ND(0.2)
IP211D	ND(0.2)	ND(0.5)	ND(1.0)	ND(0.2)
IP210C	ND(0.2)	ND(0.5)	ND(1.5)	ND(0.2)
IP210D	ND(0.2)	ND(0.5)	ND(1.5)	ND(0.2)
IP210E	ND(0.2)	ND(0.5)	ND(1.5)	ND(0.2)
IP210F	ND(0.2)	ND(0.5)	ND(1.5)	ND(0.2)
SG-6 (9/5/03)	0.10	ND(0.5)	ND(2.0)	ND(0.2)
SG-6 (910/03)	0.12	ND(0.5)	ND(2.0)	ND(0.2)
SW-2A	5.5	7.2	ND(2.0)	0.07
DP-4A	ND(0.1)	ND(0.5)	ND(2.0)	ND(0.2)
MW-31D	14.5	3.1	ND(2.0)	2.0
MW-100D	0.48	ND(0.5)	ND(2.0)	0.02

APPENDIX T

EPA ERT/REAC October 2003 Groundwater Re-Circulation Plots
and Figures 1 through 11



LEGEND

Ground Water Elevation Contours Feet Above Mean Sea Level

- 276.139 - 276.704
- 276.705 - 277.166
- 277.167 - 277.493
- 277.494 - 277.746
- 277.747 - 277.969
- 277.970 - 278.266
- 278.267 - 278.624
- 278.625 - 279.085
- 279.086 - 279.948

Ground Water Elevation data contoured using Spline algorithm.

Not To Scale

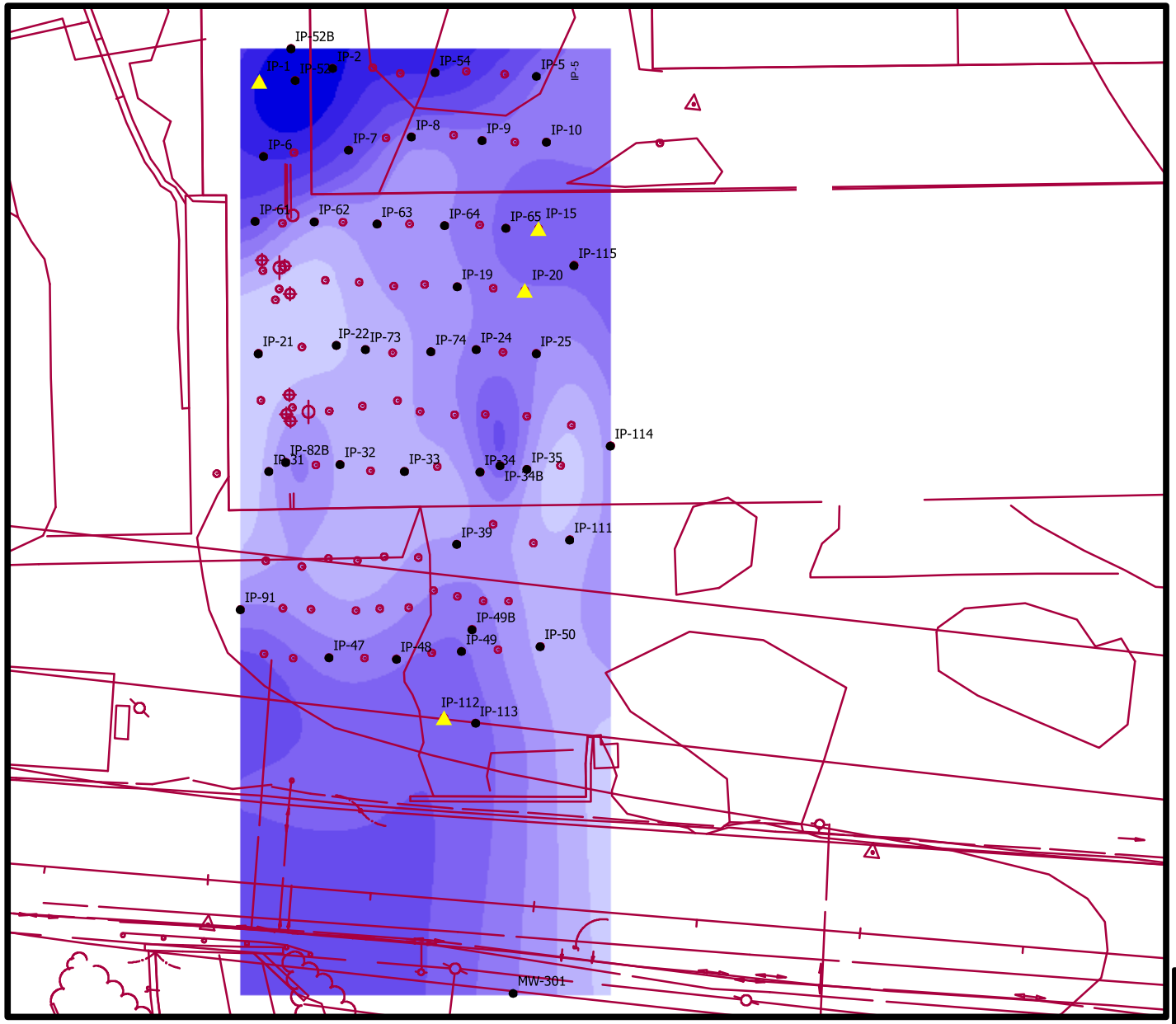
N W E S

Legend

- Injection Points
- Available Data

U. S. EPA Environmental Response Team Center
Response Engineering and Analytical Contract
68-C99-223
W.A. #R1A00262

FIGURE 1
Static Ground Water Elevations
October 6, 2003
Fisherville Mill
South Grafton, MA
October 2003



LEGEND

Ground Water Elevation Contours Feet Above Mean Sea Level

- 276.349 - 277.087
- 277.088 - 277.415
- 277.416 - 277.711
- 277.712 - 277.990
- 277.991 - 278.219
- 278.220 - 278.646
- 278.647 - 279.270
- 279.271 - 279.893
- 279.894 - 280.549

Ground Water Elevation data contoured using Spline algorithm.

Not To Scale

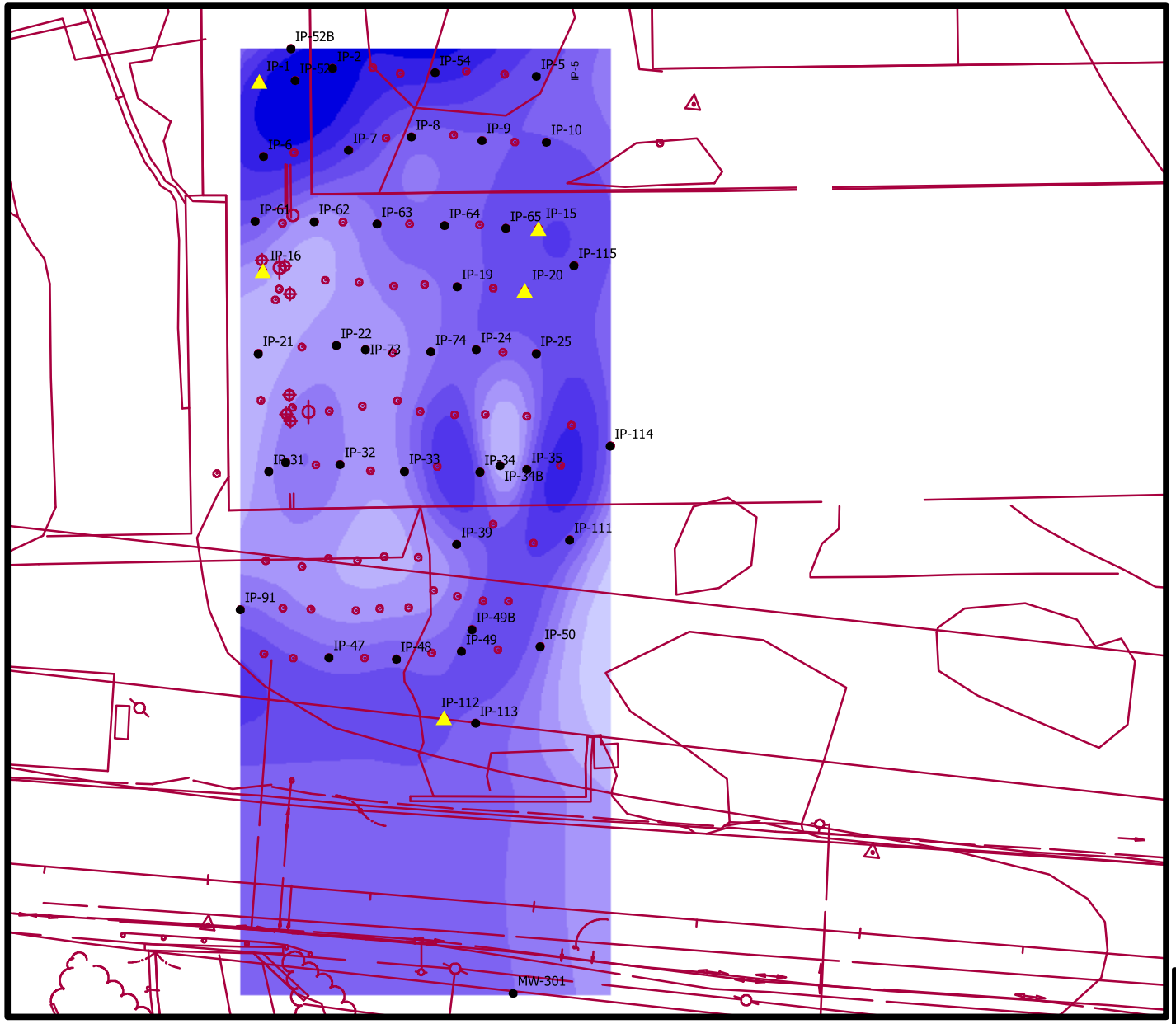
N W E S

Legend

- Injection Points
- Available Data

U. S. EPA Environmental Response Team Center
Response Engineering and Analytical Contract
68-C99-223
W.A. #R1A00262

FIGURE 2
Dynamic Ground Water Elevations
October 6, 2003
Fisherville Mill
South Grafton, MA
October 2003



LEGEND

Ground Water Elevation Contours Feet Above Mean Sea Level

- 275.509 - 276.562
- 276.563 - 277.114
- 277.115 - 277.425
- 277.426 - 277.701
- 277.702 - 277.960
- 277.961 - 278.288
- 278.289 - 278.720
- 278.721 - 279.238
- 279.239 - 279.928

Ground Water Elevation data contoured using Spline algorithm.

Not To Scale

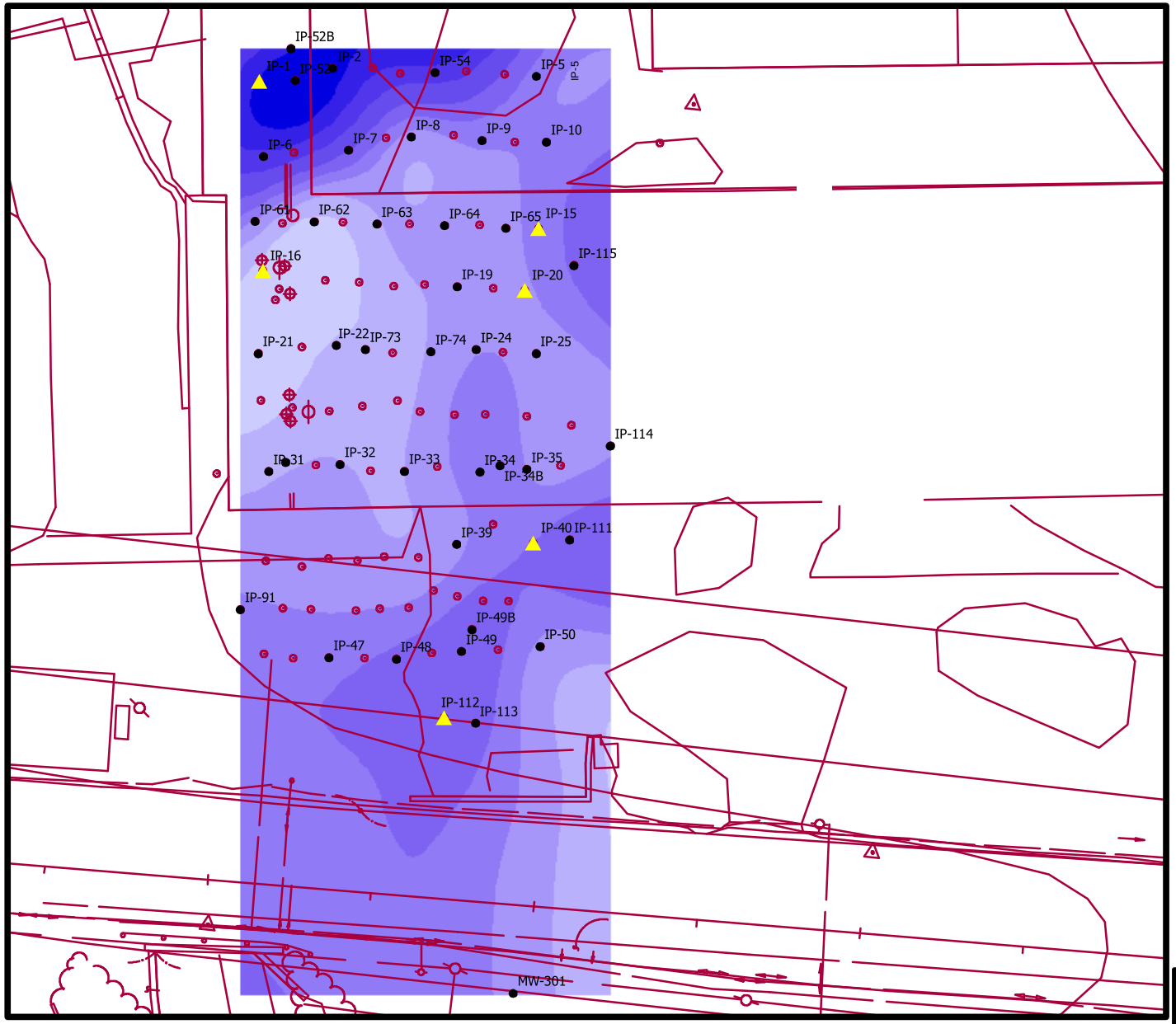
N W E S

Legend

- Injection Points
- Available Data

U. S. EPA Environmental Response Team Center
Response Engineering and Analytical Contract
68-C99-223
W.A. #R1A00262

FIGURE 3
Dynamic Ground Water Elevations
October 7, 2003
Fisherville Mill
South Grafton, MA
October 2003



LEGEND

Ground Water Elevation Contours Feet Above Mean Sea Level

- 276.800 - 277.206
- 277.207 - 277.540
- 277.541 - 277.815
- 277.816 - 278.030
- 278.031 - 278.305
- 278.306 - 278.711
- 278.712 - 279.105
- 279.106 - 279.475
- 279.476 - 279.857

Ground Water Elevation data contoured using Spline algorithm.

Not To Scale

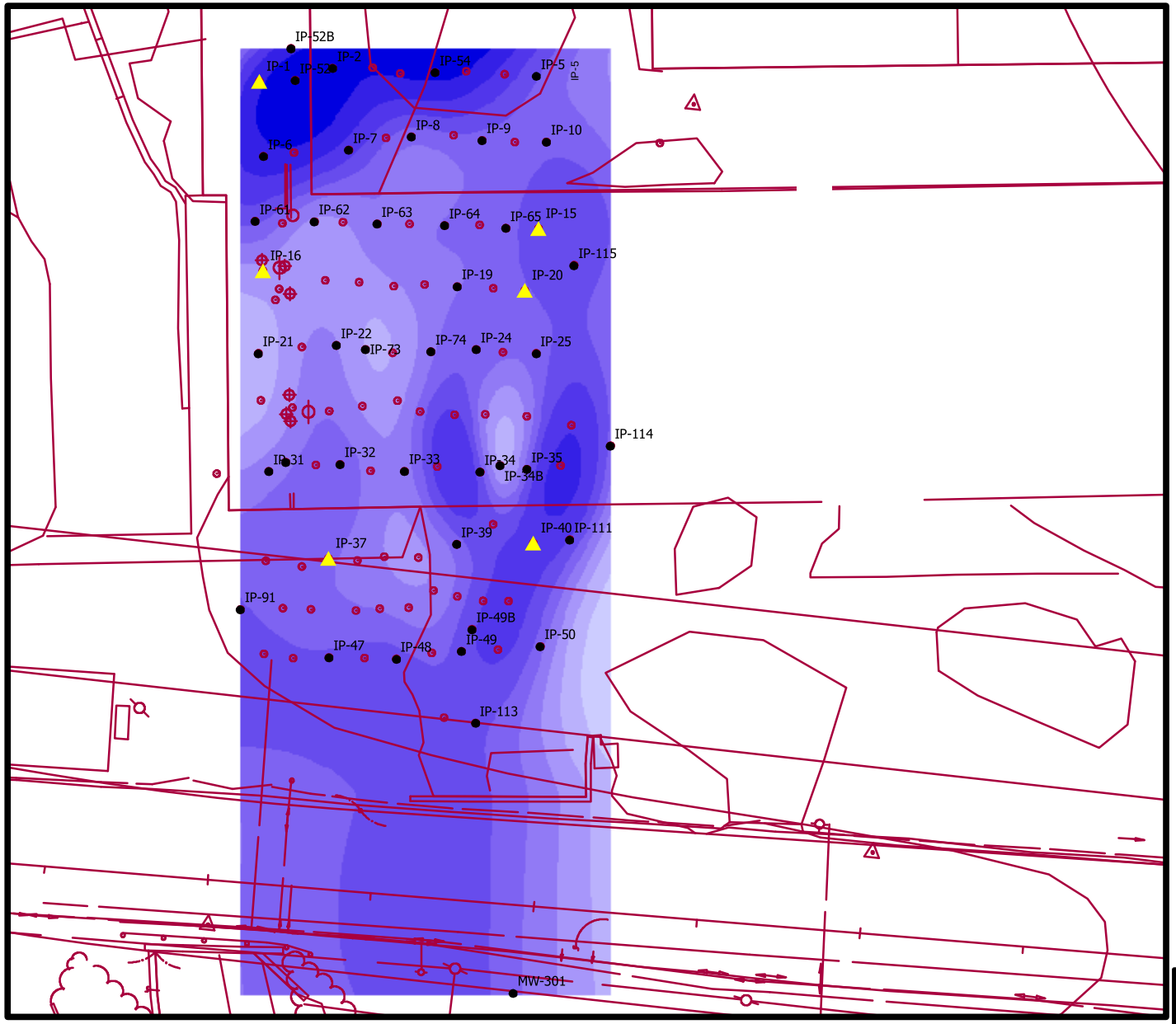
N W E S

Legend

- Injection Points
- Available Data

U. S. EPA Environmental Response Team Center
Response Engineering and Analytical Contract
68-C99-223
W.A. #R1A00262

FIGURE 4
Dynamic Ground Water Elevations
October 8, 2003
Fisherville Mill
South Grafton, MA
October 2003



LEGEND

Ground Water Elevation Contours Feet Above Mean Sea Level

- 275.407 - 276.403
- 276.404 - 276.959
- 276.960 - 277.323
- 277.324 - 277.629
- 277.630 - 277.897
- 277.898 - 278.204
- 278.205 - 278.644
- 278.645 - 279.257
- 279.258 - 280.311

Ground Water Elevation data contoured using Spline algorithm.

Not To Scale

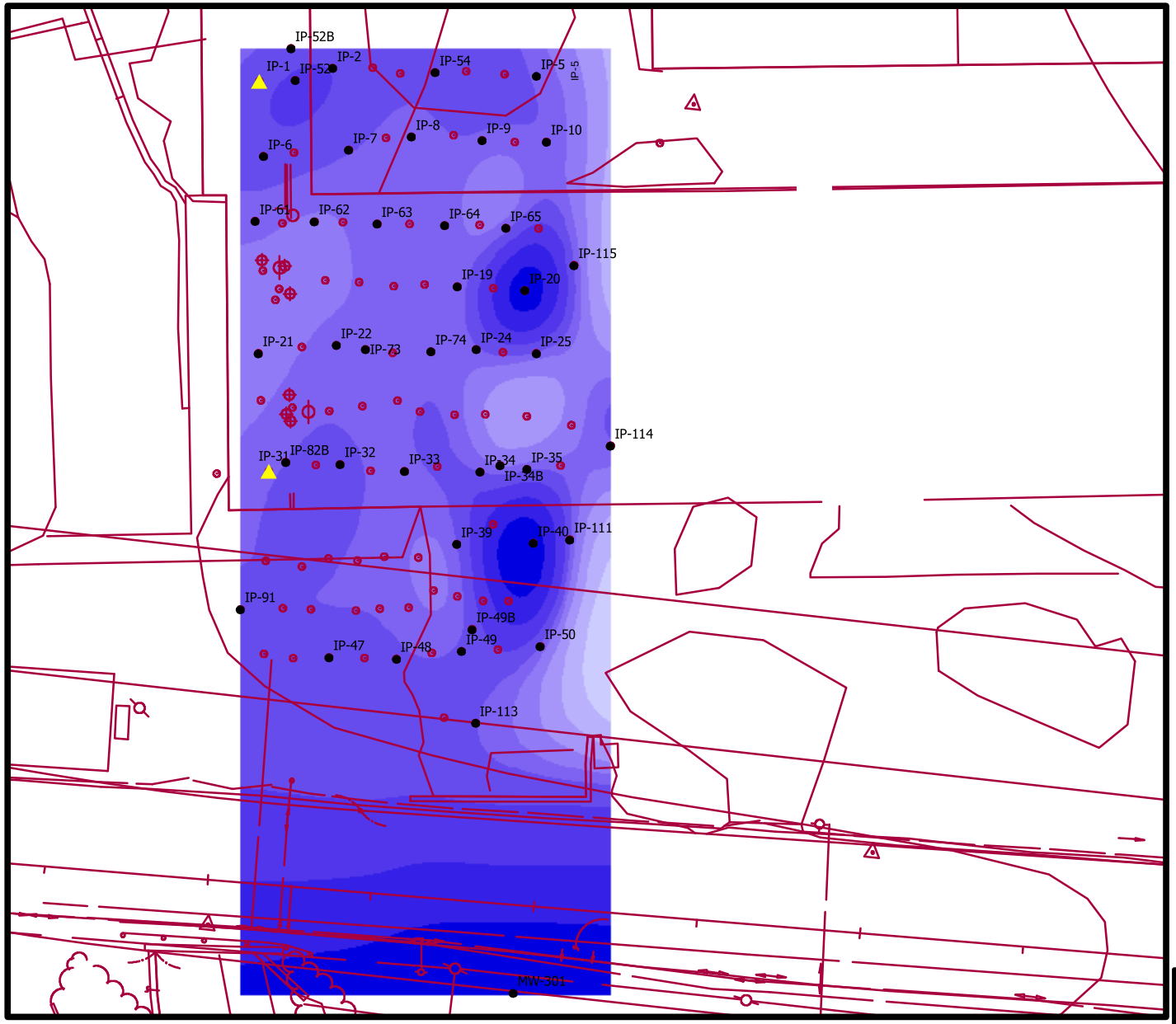
N W E S

Legend

- Injection Points
- Available Data

U. S. EPA Environmental Response Team Center
Response Engineering and Analytical Contract
68-C99-223
W.A. #R1A00262

FIGURE 5
Dynamic Ground Water Elevations
October 9, 2003
Fisherville Mill
South Grafton, MA
October 2003



LEGEND

Ground Water Elevation Contours Feet Above Mean Sea Level

- 264.908 - 270.049
- 270.050 - 273.220
- 273.221 - 275.362
- 275.363 - 276.904
- 276.905 - 277.933
- 277.934 - 279.304
- 279.305 - 281.275
- 281.276 - 283.588
- 283.589 - 286.844

Ground Water Elevation data contoured using Spline algorithm.

Not To Scale

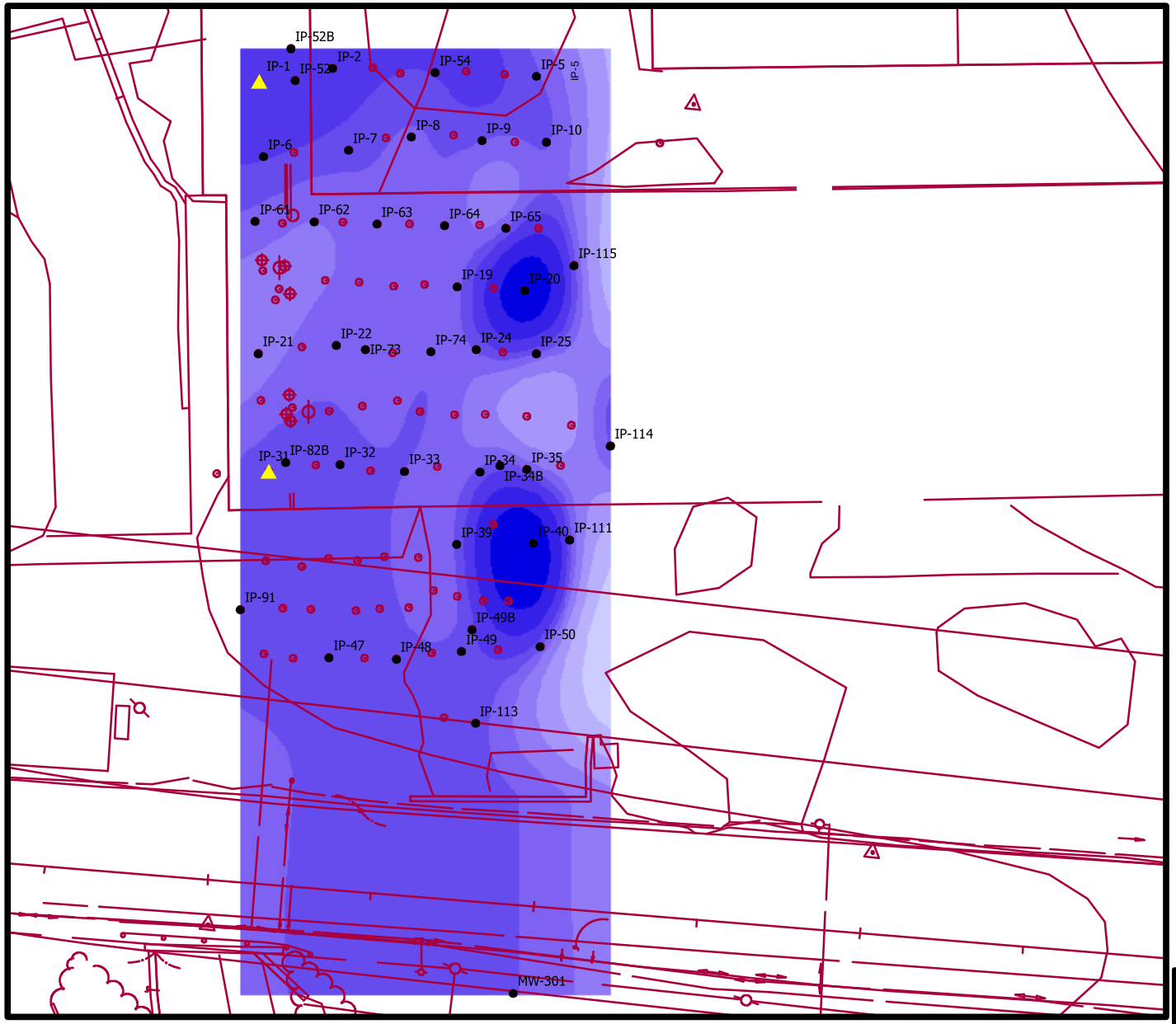
N W E S

Legend

- Injection Points
- Available Data

U. S. EPA Environmental Response Team Center
Response Engineering and Analytical Contract
68-C99-223
W.A. #R1A00262

FIGURE 6
Dynamic Ground Water Elevations
October 10, 2003
Fisherville Mill
South Grafton, MA
October 2003



LEGEND

Ground Water Elevation Contours Feet Above Mean Sea Level

- 266.306 - 270.549
- 270.550 - 273.352
- 273.353 - 275.321
- 275.322 - 276.685
- 276.686 - 277.594
- 277.595 - 278.503
- 278.504 - 280.094
- 280.095 - 282.519
- 282.520 - 285.701

Ground Water Elevation data contoured using Spline algorithm.

Not To Scale

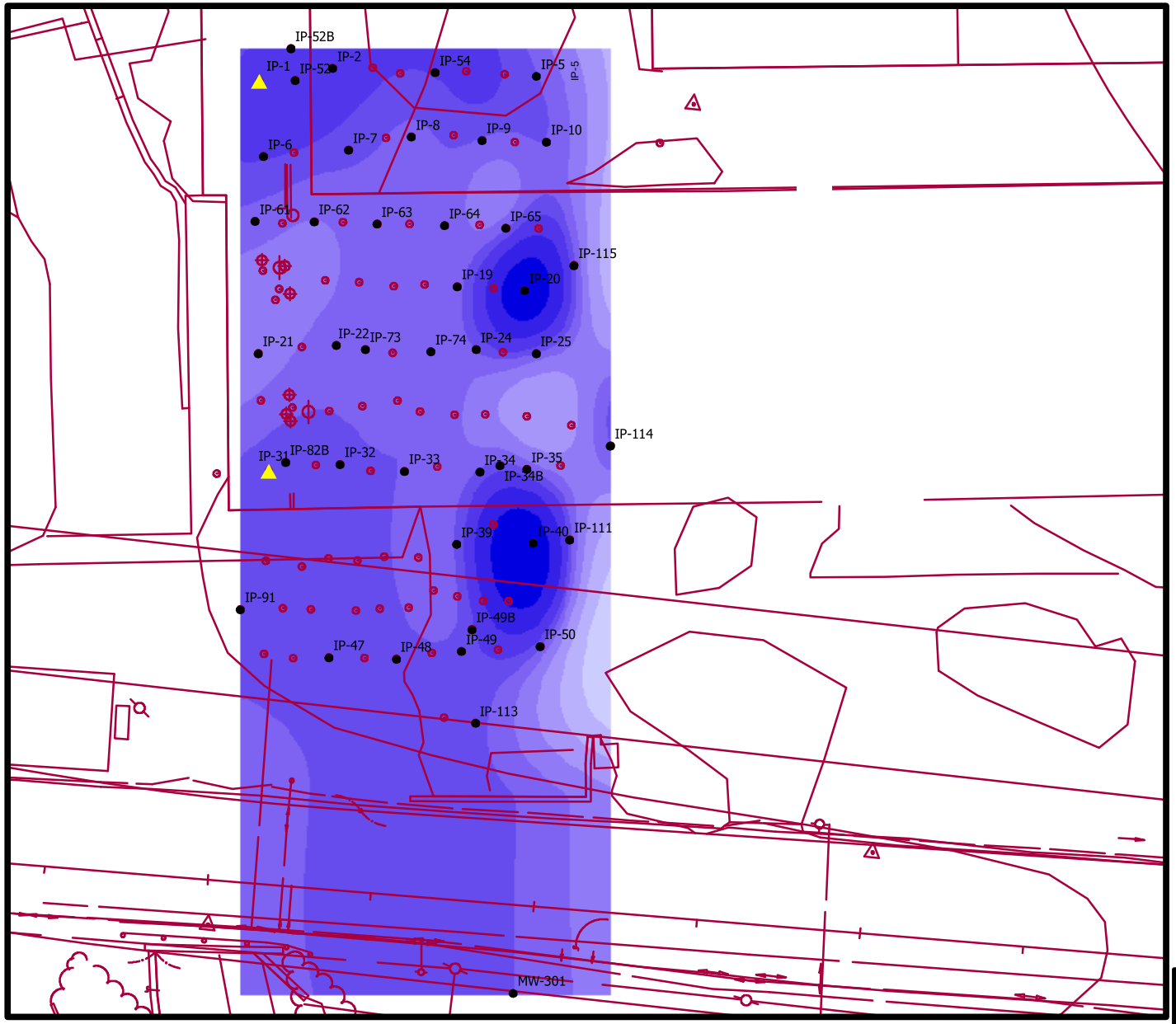
N W E S

Legend

- Injection Points
- Available Data

U. S. EPA Environmental Response Team Center
Response Engineering and Analytical Contract
68-C99-223
W.A. #R1A00262

FIGURE 7
Dynamic Ground Water Elevations
October 11, 2003
Fisherville Mill
South Grafton, MA
October 2003



LEGEND

Ground Water Elevation Contours Feet Above Mean Sea Level

- 266.587 - 270.765
- 270.766 - 273.450
- 273.451 - 275.390
- 275.391 - 276.733
- 276.734 - 277.703
- 277.704 - 278.598
- 278.599 - 280.239
- 280.240 - 282.627
- 282.628 - 285.686

Ground Water Elevation data contoured using Spline algorithm.

Not To Scale

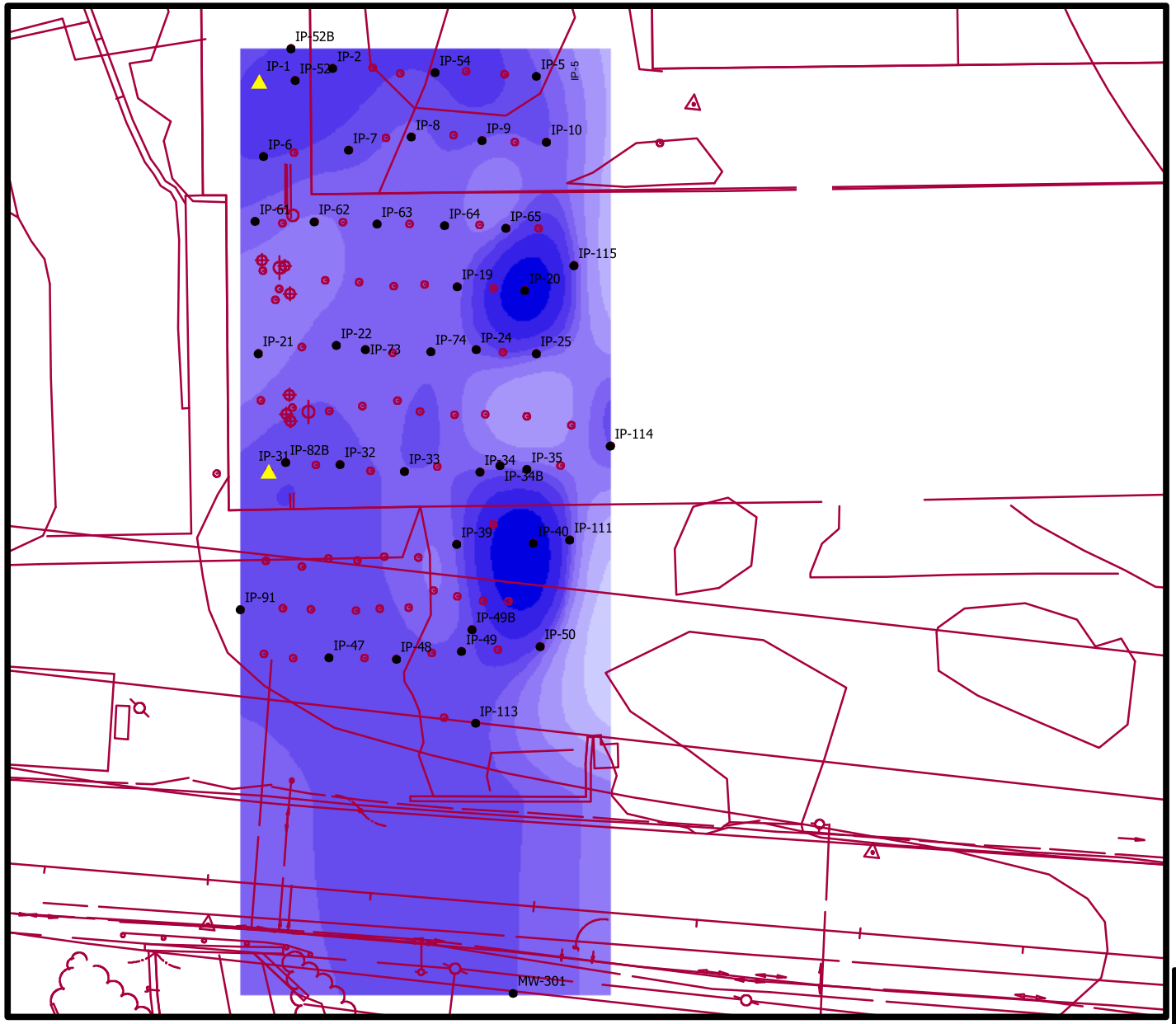
N W E S

Legend

- Injection Points
- Available Data

U. S. EPA Environmental Response Team Center
Response Engineering and Analytical Contract
68-C99-223
W.A. #R1A00262

FIGURE 8
Dynamic Ground Water Elevations
October 12, 2003
Fisherville Mill
South Grafton, MA
October 2003



LEGEND

Ground Water Elevation Contours Feet Above Mean Sea Level

- 266.241 - 270.781
- 270.782 - 273.656
- 273.657 - 275.623
- 275.624 - 276.910
- 276.911 - 277.742
- 277.743 - 278.574
- 278.575 - 280.163
- 280.164 - 282.584
- 282.585 - 285.611

Ground Water Elevation data contoured using Spline algorithm.

Not To Scale

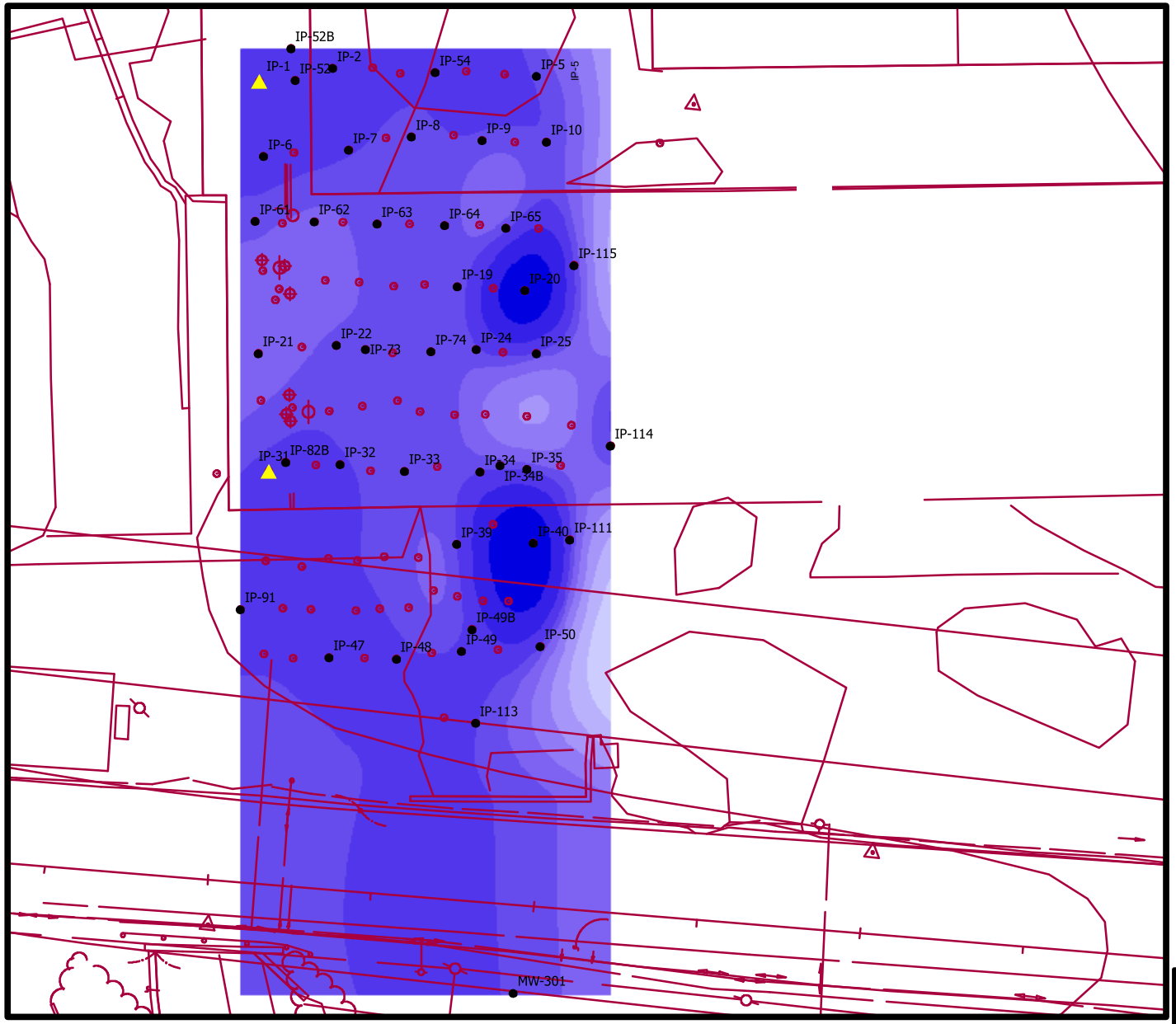
N W E S

Legend

- Injection Points
- Available Data

U. S. EPA Environmental Response Team Center
Response Engineering and Analytical Contract
68-C99-223
W.A. #R1A00262

FIGURE 9
Dynamic Ground Water Elevations
October 13, 2003
Fisherville Mill
South Grafton, MA
October 2003



LEGEND

Ground Water Elevation Contours Feet Above Mean Sea Level

- 265.965 - 269.648
- 269.649 - 272.256
- 272.257 - 274.251
- 274.252 - 275.786
- 275.787 - 277.014
- 277.015 - 277.934
- 277.935 - 279.622
- 279.623 - 282.308
- 282.309 - 285.607

Ground Water Elevation data contoured using Spline algorithm.

Not To Scale

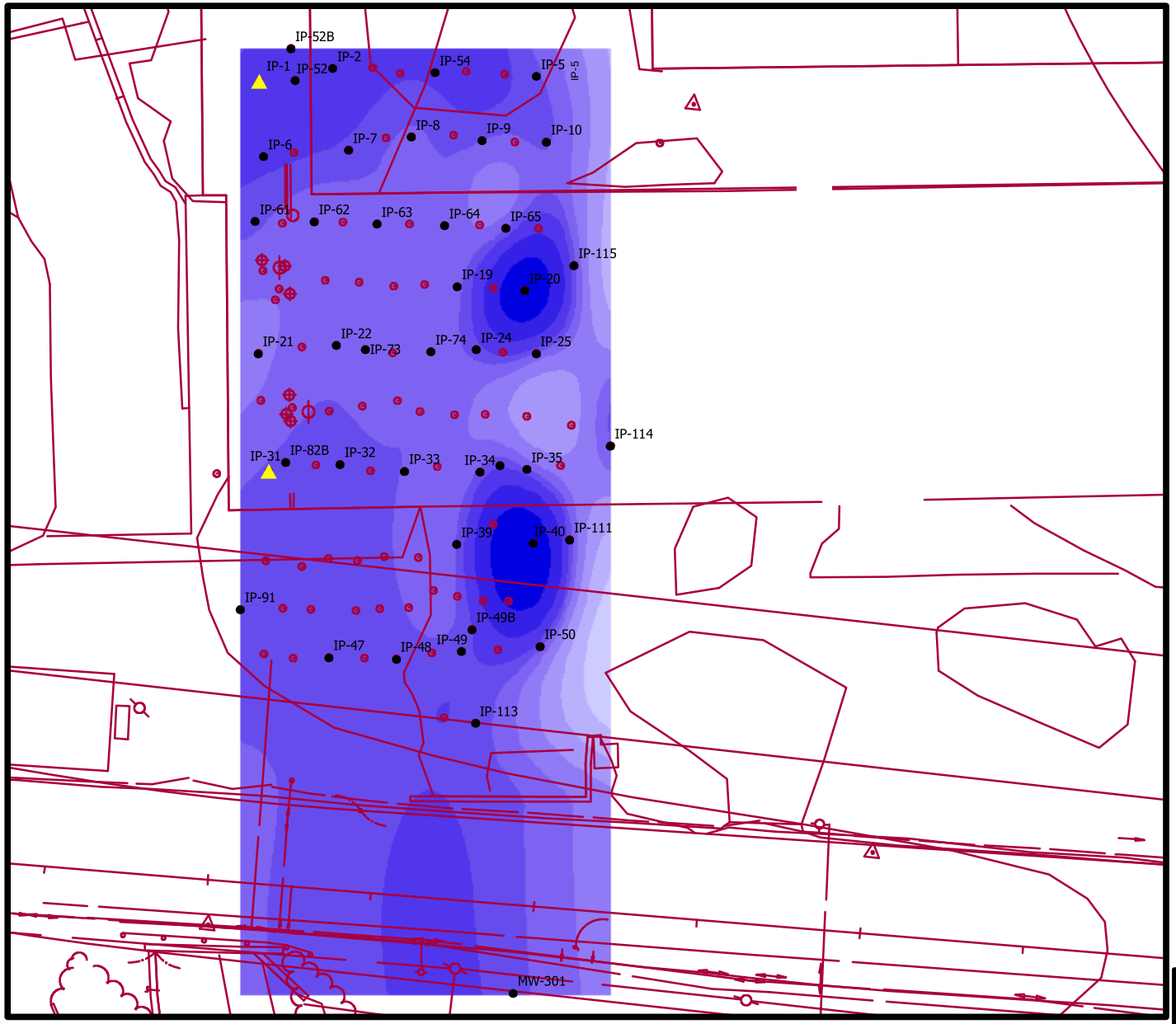
N W E S

Legend

- Injection Points
- Available Data

U. S. EPA Environmental Response Team Center
Response Engineering and Analytical Contract
68-C99-223
W.A. #R1A00262

FIGURE 10
Dynamic Ground Water Elevations
October 14, 2003
Fisherville Mill
South Grafton, MA
October 2003



LEGEND

Ground Water Elevation Contours Feet Above Mean Sea Level

- 268.238 - 271.842
- 271.843 - 274.289
- 274.290 - 276.057
- 276.058 - 277.349
- 277.350 - 278.233
- 278.234 - 278.980
- 278.981 - 280.476
- 280.477 - 282.720
- 282.721 - 285.643

Ground Water Elevation data contoured using Spline algorithm.

Not To Scale

N W E S

Legend

- Injection Points
- Available Data

U. S. EPA Environmental Response Team Center
Response Engineering and Analytical Contract
68-C99-223
W.A. #R1A00262

FIGURE 11
Dynamic Ground Water Elevations
October 15, 2003
Fisherville Mill
South Grafton, MA
October 2003

APPENDIX U

EPA NERL VOC Analytical Results for Drive-Point IP Well Locations
IP-116 through IP-123 for 16 December 2003

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 1
OFFICE OF ENVIRONMENTAL MEASUREMENT & EVALUATION
NORTH CHELMSFORD, MASSACHUSETTS 01863-2431

IEMORANDUM

ATE: December 18, 2003

UBJECT: **Fisherville Mill - Grafton, MA - Volatile Organics Analysis of Aqueous Samples**

ROM: Dan Boudreau, Chemist DB 12/18/03

D: Janis Tsang

IRU: Dr. William J. Andrade, Advanced Analytical Chemistry Expert

PROJECT NUMBER: 03120012

DATE OF ANALYSIS: 12/17/2003

ANALYTICAL PROCEDURE:

Aqueous samples were analyzed using Region I's Standard Operating Procedure for Head Space Screening for Volatile Organic Compounds in Aqueous and Soil Samples (EIA-FLDVOA2.SOP). Aqueous samples were collected in 40 ml vials and were analyzed using a Shimadzu GC14B gas chromatograph equipped with a a 30 meter, 0.53 mm Rtx-624 column, photoionization, and electron capture detectors. Concentrations of volatile organics were calculated using the external standard technique.

Target Compounds and Approximate Reporting Limits

Fisherville Mill - Grafton, MA - Aqueous Volatile Organic Target Compounds & Reporting Limits	
Compound	Reporting Limit (ug/l)
1,1-Dichloroethylene (DCE)	1.0
trans-1,2-Dichloroethylene (t-1,2-DCE)	1.0
cis-1,2-Dichloroethylene (c-1,2-DCE)	1.0
Benzene (BEN)	1.0
1,1,1-Trichloroethane (TCA)	1.0
Trichloroethylene (TCE)	1.0
Toluene (TOL)	1.0
Tetrachloroethylene (C_2Cl_4)	1.0
Chlorobenzene (CLBEN)	1.0
Ethylbenzene (ETBEN)	1.0
m-Xylene (mX)	1.0
o-Xylene (oX)	1.0

Results: The results in tables are Tentatively Identified Compounds and Approximate Concentrations

ND ( ) = Nothing detected above reporting limit. Reporting limit in parenthesis.

Note: Results are in ug/l (ppb)

Fisherville Mill- - Grafton, MA - Aqueous VOA Results (ug/l)												
	12/17/2003											
Sample #	DCE	t-1,2-DCE	c-1,2-DCE	BEN	TCA	TCE	TOL	C_2CL_4	CLBEN	ETBEN	mX	oX
Method Blank-1	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
TB-01	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
IP-119	**1.4**	ND (1.0)	**200**	ND (1.0)	ND (1.0)	**2.3**	ND (1.0)	**1.5**	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
IP-120	ND (1.0)	**10**	**120**	ND (1.0)	ND (1.0)	**41**	ND (1.0)	**1.5**	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
IP-1000	**1.0**	ND (1.0)	**53**	ND (1.0)	ND (1.0)	**84**	ND (1.0)	**1.8**	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
IP-116	ND (1.0)	ND (1.0)	**140**	ND (1.0)	ND (1.0)	**2.2**	ND (1.0)	**1.1**	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
Method Blk -2	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
IP-117	ND (1.0)	ND (1.0)	**39**	ND (1.0)	ND (1.0)	**39**	ND (1.0)	**1.0**	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
IP-118	ND (1.0)	ND (1.0)	**25**	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	**1.4**	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
IP-121	ND (1.0)	ND (1.0)	**16**	**2.3**	ND (1.0)	**16**	**1.9**	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
IP-122	ND (1.0)	ND (1.0)	**21**	ND (1.0)	ND (1.0)	**11**	ND (1.0)	**1.6**	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
IP-123	**1.0**	ND (1.0)	**51**	ND (1.0)	ND (1.0)	**84**	ND (1.0)	**1.9**	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
IP-1000 dup	**1.4**	ND (1.0)	**55**	ND (1.0)	ND (1.0)	**90**	ND (1.0)	**1.5**	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)

APPENDIX V

Pre- and Post-Treatment VOC Analytical Results Comparison
for Selected IP Well Locations

TABLE V-1
Pre-First and Post-Third Permanganate Treatment VOC Analytical Results Comparison for Selected IP Well Locations

Sample Location	Pre-Treatment TCE (ppb) July-August 2002	Post-Treatment TCE (ppb) & sample color March 2004	Percent TCE Change	Pre-Treatment cis-1,2-DCE (ppb) July-August 2002	Post-Treatment cis-1,2- DCE (ppb) March 2004	Percent cis-1,2-DCE Change
IP-1	20	14 (clear)	30% decrease	200	84	58% decrease
IP-5	160	28 (clear)	82.5% decrease	**110**	**224**	**103.6% increase**
IP-6	250	ND (clear)	100% decrease	420	47	88.8% decrease
IP-7	**680**	**725 (clear)**	**6.6% increase**	**300**	**338**	**12.7% increase**
IP-9	110	11 (pink/brown)	90% decrease	380	362	4.7% decrease
IP-11	2,500	1.3 (clear)	99.9% decrease	570	22	96.1% decrease
IP-12	150	1.9 (clear)	98.7% decrease	450	110	75.6% decrease
IP-17	3,100	1.6 (clear)	99.9% decrease	610	348	42.9% decrease
IP-18	210	ND (clear)	100% decrease	**230**	**327**	**42.2% increase**
IP-22	4,300	ND (purple)	100% decrease	250	ND	100% decrease
IP-25	1,400	6.9 (clear)	99.5% decrease	160	5.2	96.8% decrease
IP-28	40	5.7 (purple)	85.8% decrease	**80**	**483**	**503.8% increase**
IP-29	1,400	7.6 (purple)	99.5% decrease	170	216	**27.1% increase**
IP-31	4,300	ND (purple)	100% decrease	170	ND	100% decrease
IP-32	3,900	ND (purple)	100% decrease	230	ND	100% decrease
IP-35	3,500	ND (purple)	100% decrease	160	ND	100% decrease
IP-39	1,600	2.4 (purple)	99.8% decrease	**ND (10 ppb DL)**	**15**	**Est. 50% increase**

TABLE V-1
Pre-First and Post-Third Permanganate Treatment VOC Analytical Results Comparison for Selected IP Well Locations (Continued)

Sample Location	Pre-Treatment TCE (ppb) July-August 2002	Post-Treatment TCE (ppb) & sample color March 2004	Percent TCE Change	Pre-Treatment cis-1,2-DCE (ppb) July-August 2002	Post-Treatment cis-1,2- DCE (ppb) March 2004	Percent cis-1,2-DCE Change
IP-42	6,900	0.6 (purple)	99.9% decrease	230	1.1	99.5% decrease
IP-44	8,100	2.2 (purple)	99.9% decrease	**ND (10 ppb DL)**	**13**	**Est. 30% increase**
IP-47	1,300	ND (purple)	100% decrease	110	ND	100% decrease
IP-49	6,000	4.0 (purple)	94.5% decrease	200	9.2	95.4% decrease
IP-50	1,800	ND (purple)	100% decrease	ND	ND	No change
IP-57	3,700	ND (clear)	100% decrease	320	120	62.5% decrease
IP-61	9,400	19 (purple)	99.8% decrease	3,400	580	82.9% decrease
IP-63	21,000	0.8 (clear/brown)	99.9% decrease	2,300	331	85.6% decrease
IP-67	2,000	1.1 (clear)	99.9% decrease	450	303	32.7% decrease
IP-73	5,700	ND (purple)	100% decrease	270	1.1	99.6% decrease
IP-80	8,900	3.8 (purple)	99.9% decrease	270	3.2	98.8% decrease
IP-82	10,000	ND (purple)	100% decrease	230	ND	100% decrease
IP-82B	17,000	ND (purple)	100% decrease	330	ND	100% decrease
IP-83	3,000	5.5 (purple)	99.8% decrease	150	11	92.7% decrease
IP-84	1,100	306 (purple then clear)	72.2% decrease	**60**	**410**	**583.3% increase**
IP-85	4,400	0.5 (purple)	99.9% decrease	180	8.0	95.6% decrease

TABLE V-1
Pre-First and Post-Third Permanganate Treatment VOC Analytical Results Comparison for Selected IP Well Locations (Concluded)

Sample Location	Pre-Treatment TCE (ppb) July-August 2002	Post-Treatment TCE (ppb) & sample color March 2004	Percent TCE Change	Pre-Treatment cis-1,2-DCE (ppb) July-August 2002	Post-Treatment cis-1,2- DCE (ppb) March 2004	Percent cis-1,2-DCE Change
IP-88	6,300	ND (purple)	100% decrease	160	ND	100% decrease
IP-90	2,900	ND (purple)	100% decrease	ND	ND	No change
IP-92	3,200	ND (purple)	100% decrease	150	ND	100% decrease
IP-94	6,400	16 (purple)	99.7% decrease	120	49	59.2% decrease
IP-95	8,600	ND (purple)	100% decrease	210	ND	100% decrease
IP-113	4,200	1.7 (purple)	99.9% decrease	ND (10 ppb DL)	4.8	Est. minimal change
IP-123	84 (December 2003)	15 (clear)	82.1% decrease	**51 (December 2003)**	**56**	**9.8% increase**
MW-1D	14	8.5 (clear)	39.3% decrease	130	45	65.4% decrease
MW-3T-B	430	7.5 (clear)	98.3% decrease	**190**	**235**	**23.7% increase**
MW-30D	200	126 (clear)	37% decrease	82	65	20.7% decrease
MW-31D	26	4.3 (clear)	83.5% decrease	39	2.1	94.6% decrease
MW-31R	**700**	**740 (clear)**	**5.7% increase**	12	ND	100% decrease
MW-100D	ND	ND (clear)	No change	ND	ND	No change
MW-101A	270,000	12,000 (pink)	95.6% decrease	ND	ND	No change
MW-102	**200**	**247 (clear)**	**23.5% increase**	110	57	48.2% decrease
MW-104	180 (August 2001)	0.5 (purple)	99.9% decrease	240 (August 2001)	27	88.8% decrease

TABLE V-1
Pre-First and Post-Third Permanganate Treatment VOC Analytical Results Comparison for Selected IP Well Locations
(Concluded)

Sample Location	Pre-Treatment TCE (ppb) July-August 2002	Post-Treatment TCE (ppb) & sample color March 2004	Percent TCE Change	Pre-Treatment cis-1,2-DCE (ppb) July-August 2002	Post-Treatment cis-1,2- DCE (ppb) March 2004	Percent cis-1,2-DCE Change
MW-204	2,100	ND (purple)	100% decrease	1,400	ND	100% decrease
MW-205	260 (February 2002)	54 (clear)	79.2% decrease	610 (February 2002)	70	88.5% decrease
MW-207	**27 (February 2002)**	**55 (pink)**	**103.7% increase**	**430 (February 2002)**	**570**	**32.6% increase**
SW-4A	**6.3 (September 2002)***	**6.5 (clear)**	**3.2% increase**	230 (September 2002)*	11	95.2% decrease

Notes:
DL = Detection Limit.
* = Results reported by MA DEP.