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Five-Year Review Report

Second Five-Year Review
for
Groveland Wells Numbers 1 and 2
Groveland, Massachusetts

June 2010

Prepared by:

The United States Environmental Protection Agency
Region 1, New England
Boston, Massachusetts

EPA New England

6/29/10

James T. Owens, III Director
Office of Site Remediation and Restoration
U.S. EPA, New England

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ACRONYMS AND ABBREVIATIONS

1,2-DCE	1,2-Dichloroethylene
ARAR	Applicable or Relevant and Appropriate Requirement
AWQC	Ambient Water Quality Criteria
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act, 42 USC §§ 9601 *et seq.*
CFR	Code of Federal Regulations
COC	Contaminant of Concern
DOT	Department of Transportation
DVE	Dual Vapor Extraction
EPA	Environmental Protection Agency (U.S. EPA - Region 1)
ERH	Electrical Resistance Heating
ESD	Explanation of Significant Differences
EW	Extraction Well
FS	Feasibility Study
gpm	gallons per minute
GRC	Groveland Resources Corporation
GWTF	Groundwater Treatment Facility
IGCL	Interim Groundwater Cleanup Level
ISTT	In-situ Thermal Treatment
MassDEP	Massachusetts Department of Environmental Protection
MCLs	Maximum Contaminant Levels
MOM	Management of Migration
NCP	National Contingency Plan, 40 CFR Part 300
NPL	National Priority List
O&M	Operation and Maintenance
OU1	Operable Unit 1
OU2	Operable Unit 2
PCE	Perchloroethylene (tetrachloroethylene)
ppb	parts per billion
PRP	Potentially Responsible Party
PVC	Polyvinyl Chloride

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ACRONYMS AND ABBREVIATIONS (cont.)

RAC	Response Action Contract
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act, 42 U.S.C. §§ 6901 et seq.
RP	Responsible Party
RPD	Relative Percent Difference
RI	Remedial Investigation
ROD	Record of Decision
RSE	Remedial System Evaluation
SC	Source Control
SDWA	Safe Drinking Water Act
SITE	Superfund Innovative Technology Evaluation
SVE	Soil Vapor Extraction
TCE	Trichloroethylene
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
UV	Ultraviolet
VOCs	Volatile Organic Compounds
µg/L	micrograms per liter

ES EXECUTIVE SUMMARY

This Five-Year Review Report was prepared for the Groveland Wells Nos. 1 and 2 Superfund Site located mostly within the town of Groveland, Essex County, Massachusetts within the watershed of the Merrimack River. The Site consists of two operable units: a Source Control operable unit (Operable Unit 2), which is limited to the original release area and the immediately surrounding property, and a Management of Migration operable unit (Operable Unit 1), which encompasses an approximately 850-acre study area including the aquifer that recharges the Groveland Municipal Well Stations No. 1 and 2, which were impacted by site contaminants. Operable Unit 2 (OU2) is located at 64 Washington Street and is commonly called the "Valley property" or "Valley/GRC property" because the contaminants were released from the former Valley Manufactured Products Company (Valley), located on property owned and formerly operated by the Groveland Resources Corporation (GRC). Valley and GRC both formerly operated metals and plastic parts manufacturing businesses in a building on the property. The building was abandoned when the owner and operator went bankrupt. Both GRC and Valley are Responsible Parties (RPs). Chlorinated solvents and cutting oils were released from the property on numerous occasions over the years, including surface releases, leakage from underground storage tanks, and discharges to subsurface disposal systems located at the Valley facility. Over the years, numerous subsurface studies determined that the releases from Valley caused the contamination of the Town of Groveland's public water supply wells Nos. 1 and 2.

EPA issued a Source Control (SC) Record of Decision (ROD) for OU2 in 1988 and a Management of Migration (MOM) ROD for OU1 in 1991. The SC ROD called for the responsible party (RP) to install a Soil Vapor Extraction (SVE) to treat Source Area soils, and a groundwater recovery, recirculation, and treatment system to treat Source Area groundwater. The MOM ROD called for installation of a groundwater extraction and treatment system to treat the groundwater contaminant plume downgradient of the Source Area, and institutional controls to prohibit use of groundwater in the contaminated area until cleanup levels have been achieved. The selected remedies were intended to primarily address volatile organic contaminants (VOCs) at the site.

The RODs were modified by Explanation of Significant Differences (ESDs) in 1996 (OU1 and OU2) and 2007 (OU2). The 1996 ESD for OU2 (SC) eliminated the requirement for a separate groundwater extraction and treatment system for the Source Area. The 1996 ESD for OU1 (MOM) modified the groundwater extraction system to include extraction wells in the Source Area and eliminate extraction wells north of Main Street, and relocated the treatment plant from a location north of Main Street to the property abutting the Valley property.

The MOM Remedial Action (RA), including extraction of groundwater from both OUs, treatment at a facility located on land abutting the Valley property, and discharge to surface water (Mill Pond) was completed in 2000 and remains in operation.

A pilot-scale SVE system was installed and operated by the RP on the Valley property in late 1987 to early 1988. During the pilot study, 1300 pounds of VOCs were removed from unsaturated soils on the Valley property. In late 1992, the SVE system was modified to constitute the full-scale SVE system required by the SC ROD, and began full-time operation. In 1997, an assessment of the system by EPA concluded that the system was removing only 0.1 pounds of contaminants per month. EPA made several recommendations to the RP for improving system operation, but the recommendations were never incorporated into the system (M&E, 2006). The SVE system was shut down in April 2002 after Valley ceased all manufacturing operations. EPA conducted Source Area re-evaluation investigations in 2004 and 2006 to evaluate the distribution of contaminants remaining in the Source Area and to determine what actions would be needed to address the remaining contamination. These investigations concluded that the SVE system was only partially effective and high concentration of VOCs (particularly TCE) remained in the fine-grained clay layer. Based upon the results of the re-evaluation, EPA issued another ESD in 2007 that modified the SC remedy to include SVE enhanced by in-situ thermal treatment (ISTT) to improve removal of VOCs from Source Area soils and overburden groundwater. Construction of the SC RA began in April, 2009 and is expected to be completed in July, 2010. The system will include ISTT by electrical resistance heating (ERH) and multi-phase extraction of groundwater and vapors to remove contaminants from the subsurface. The ISTT system is scheduled to begin operation in July, 2010 and is expected to achieve cleanup levels by late December, 2010.

This is the second five-year review for the site. The requirement for conducting the five-year reviews is incorporated in Section121 (c) of CERCLA 42 § 9621 (c). Depending on the selected remedial action, the five-year review may be required by statute or conducted as a matter of EPA policy. Five-year reviews are not mandated by statute but are conducted as a matter of EPA policy for remedial actions that, upon completion, will not leave hazardous substances on site above levels that allow for unrestricted use, but that will require five or more years to complete, such as long-term groundwater pump and treat systems (USEPA, 2001). Because contaminants will remain term groundwater pump and treat systems (USEPA, 2001). Because contaminants will remain at the Site above levels that allow for unlimited use and unrestricted exposure until remedial actions are completed, EPA has determined that five-year reviews are appropriate for the Site until cleanup goals are attained.

This five-year review concludes that the OU1 MOM remedy is functioning as intended and is currently protective of human health and the environment. In order for the remedy to remain protective in the long term, the operation of the groundwater extraction and treatment system must continue until groundwater cleanup levels are attained. Institutional controls must also be implemented to prohibit use of groundwater within the vicinity of the plume for household or potable uses. Institutional controls, in the form of a grant of environmental restrictions, are currently being completed by EPA and MassDEP.

This five-year review concludes that the OU2 SC remedy is expected to be protective of human health and the environment upon completion, and in the interim, exposure pathways that could result in unacceptable risks are being controlled. The remedial action for the source control area is currently underway. Construction of a thermally-enhanced SVE system that was called for in the 2007 ESD, began in April 2009.

When cleanup levels are achieved in the Source Area, the Valley property could be developed for unrestricted use in the future and the time needed to achieve cleanup levels in the downgradient portion of the plume would significantly decrease.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name (*from WasteLAN*): Groveland Wells Nos. 1 and 2		
EPA ID (*from WasteLAN*): MAD980732317		
Region: I	**State:** MA	**City/County:** Groveland/Essex
SITE STATUS		
NPL status: ☒ Final ☐ Deleted ☐ Other (specify)		
Remediation status (choose all that apply): ☒ Under Construction ☒ Operating ☐ Complete		
Multiple OUs?* ☒ YES ☐ NO	**Construction completion date:** _8 / _01 / _2000	
Has site been put into reuse? ☐ YES ☒ NO		
REVIEW STATUS		
Lead agency: ☒EPA ☐ State ☐ Tribe ☐ Other Federal Agency		
Author name: Derrick Golden		
Author title: Remedial Project Manager	**Author affiliation:** EPA Region I	
Review period: 6/30/2005 to 6/30/2010		
Date(s) of site inspection: 4/28/10		
Type of review ☒ Post-SARA ☐ NPL-Removal only ☐ Pre-SARA ☐ NPL State/Tribe-lead ☐ Non-NPL Remedial Action Site ☐ Regional Discretion		
Review number: ☐ 1 (first) ☒ 2 (second) ☐ 3 (third) ☐ Other (specify)		
Triggering action: ☐ Actual RA Onsite Construction at OU #___ ☐ Actual RA Start at OU#____ ☒ Construction Completion ☐ Previous Five-Year Review Report ☐ Other (specify)		
Triggering action date *(from WasteLAN)*: 6/30/2005		
Due date *(five years after triggering action date)*: 6/30/2010		

Five-Year Review Summary Form, cont.

Issues:

1) Comprehensive institutional controls for soil and groundwater have not been implemented.
2) The monitoring well network north of Mill Pond needs an additional monitoring well triplet in order to better define the northern extent of the groundwater plume.
3) The Town of Groveland is considering increasing the pumping rate of Well Station No. 1 and possibly developing a new municipal water supply well in the aquifer off Center Street. Additional pumping in the aquifer may impact the groundwater contaminant plume, drawing it into the municipal well(s) or closer to downgradient residences.

Recommendations and Follow-up Actions:

1) Complete the implementation of comprehensive institutional controls.. This activity is currently being completed by the EPA and the MassDEP.
2) Install a new monitoring well triplet North of Mill Pond to replace wells 102, ERT-23, and 101. The replacement of this well cluster is planned in 2010 as part of the MOM remedy long-term O&M.
3) Coordinate with the Town of Groveland regarding the proposed pumping rate changes of Station No. 1. Require evaluation of potential impacts of additional pumping prior to implementing any changes. MassDEP approval will be required for any pumping rate changes.

Protectiveness Statement(s):

OU1- Management of Migration

The OU1 MOM remedy is considered protective in the short term; however in order for the remedy to be protective in the long term, follow-up actions need to be taken. For continued protection, the groundwater treatment plant must remain operable and undisturbed. Groundwater within the Site vicinity should not be used for any purpose, due to its contamination and to the negative impact pumping could have on the effectiveness of the extraction and treatment system. It is important to complete the implementation of comprehensive institutional controls to maintain a complete level of protectiveness for future activities in and around the Site.

OU2 – Source Control

The OU2 SC remedy is considered protective in the short term because exposure pathways that could result in unacceptable risks are being controlled. However in order for the remedy to be protective in the long term, the ERH remedial action needs to be completed.. The new ISTT-enhanced SVE system currently under construction is anticipated to treat soil and overburden groundwater contamination in the Source Area to achieve site interim cleanup standards by the end of 2010.

Comprehensive Protectiveness Statement

The current remedy is considered protective in the short term; however in order for the remedy to be protective in the long term, follow-up actions are underway. Long-term protectiveness will be achieved once the MOM remedy achieves cleanup levels in the groundwater. This should be achieved much sooner than previously anticipated as a result of completion of the OU2 ISTT remedial action. However, institutional controls are needed to prevent exposure to contaminants until groundwater cleanup standards are achieved. In the interim, exposure pathways that could result in unacceptable risks are being controlled.

Other Comments: None

1.0 INTRODUCTION

This Five-Year Review Report is for the remedial actions conducted and on-going at the Groveland Wells Nos. 1 and 2 Superfund Site (the "Site") [Figures 1 and 2]. The purpose of this five-year review is to determine whether the remedies for the Site are protective of human health and the environment. The methods, findings, and conclusions of this review are documented in this Five-Year Review Report. In addition, Five-Year Review Reports identify issues found during the review, if any, and present recommendations to address them.

EPA Region I has conducted this five-year review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Contingency Plan (NCP). Section 121(c) of CERCLA 42 USC § 9621(c) states:

> *If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgement of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.*

The Agency interpreted this requirement further in the NCP; 40 CFR §300.430(f)(4)(ii) states:

> *If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.*

The Groveland Wells Nos. 1 and 2 Superfund Site consists of two operable units: a Source Control (SC) operable unit (Operable Unit 2), which is limited to the original release area and the immediately surrounding property; and a Management of Migration (MOM) operable unit (Operable Unit 1), which encompasses an approximate 850-acres area constituting the aquifer that recharges the Groveland Municipal Well Stations Nos. 1 and 2, which were impacted by Site contaminants. Operable Unit 2 is commonly called the "Valley property" or the "Valley/GRC site" because the contaminants were released from the former Valley Manufactured Products Company, located at 64

Washington Street on property owned by Groveland Resources Corporation (GRC). Valley and GRC are the Responsible Parties (RPs) for the Site.

This is the second five-year review for the Site. Upon completion of remedial actions, it is anticipated that contaminants will no longer remain at the Site above levels that allow for unlimited use and unrestricted exposure. However, for remedial actions that will require five years or more to complete, such as long-term groundwater pump and treat actions, five-year reviews are conducted as a matter of EPA policy until cleanup levels are achieved (USEPA, 2001).

2.0 SITE CHRONOLOGY

The chronology of the Site, including all significant site events and dates is included in Table 1. Additional events and details are provided in Section 3.0, Background.

3.0 BACKGROUND

The physical characteristics of the Site, its land use, history of contamination, initial responses, and the basis for taking action are described in the Section 3.1 through Section 3.4.

3.1 Physical Characteristics and Land and Resource Use

The Groveland Wells Nos. 1 and 2 Superfund Site ("the Site") is located in Groveland, Essex County, Massachusetts within the Johnson Creek drainage basin. Johnson Creek is a tributary to the Merrimack River. The Site contains nearly 850 acres, mostly located in the southwestern part of the Town of Groveland ("the Town") (USEPA, 2004a). The Site Source Area (the Valley property) is located in the southwest portion of the Site (Figure 1).

The Site is bounded to the west by Washington Street and the former Haverhill Municipal Landfill, to the south by Salem Street, to the east by School Street, and to the north by the Merrimack River (Figure 1). The Haverhill Municipal Landfill originally was part of the Groveland Wells Site but it has since been separately listed on the National Priorities List and is no longer part of the Site.

Land uses within the Site boundaries include numerous private residences, some industries and small businesses, and religious and community institutions. Property owned by the Roman Catholic Archdiocese of Boston (Saint Patrick's Church) abuts the Valley property to the south and east.

The Groveland Department of Public Works is in the central area of the Site, along with a sand and gravel operation.

There are several small creeks and brooks flowing through the Site. Johnson Creek originates south of the Site and flows in a northerly direction through Mill Pond, located approximately 450 feet east of the Valley property. Argilla Brook, located to the east of Mill Pond, flows northwest through the Site and discharges to Johnson Creek. Brindle Brook is a small tributary to Johnson Creek that flows northwestward through the southeast corner of the Site area, eventually joining with Johnson Creek near Center Street. There are limited wetland areas at the Site, located mostly next to Mill Pond, Argilla Brook, Johnson Creek, Brindle Brook, and isolated areas east of Johnson Creek. A portion of the Site lies within the 100-year floodplain delineated by the Federal Emergency Management Agency (FEMA).

One of the Town's current municipal water supply wells, Station No. 1, and a former municipal supply well (Station No. 2) are located within the Site boundaries. The Site encompasses the approximate limits of the stratified drift aquifer that serves as the source of water for the current and former municipal supply wells. Groundwater generally flows to the north through the Site toward the Merrimack River. Monitoring well and extraction well locations are shown on Figure 2 and Figure 3.

3.2 History of Contamination

The Valley property, located on Washington Street in the southwestern portion of the Site, was used for metal and plastic parts manufacturing from 1963 until 2001. The original building, in which the Valley Manufactured Products Company was housed, was constructed on the property around 1900 and, prior to 1963, housed agricultural and textile operations (ERT, 1985). In 1963, Groveland Resources Corporation (GRC) leased the property and began on-site manufacturing of screw machine products. GRC reportedly purchased the property in 1966. Valley Manufacturing acquired GRC's on-site operations in August 1979; however, GRC retained property ownership (RFW, 1988).

A 400 square-foot wooden shed, reportedly connected to the south end of the Valley building, was used to store virgin trichloroethene (TCE), "Solvosol" (an unspecified solvent), and cutting oils. Waste cutting oils and solvents were also stored in the wooden shed. The exact location of the shed has not been verified.

On-site processes included machining, degreasing, and finishing of metal parts. The machining process used cutting oils and lubricants. After machining, metal parts were cleaned (degreased) in a hydrocarbon solvent vapor degreaser and then spun dry. TCE was used in the vapor degreasing operation from 1963 to 1979. Methylene chloride was used from 1979 to 1983. Solvosol and other solvents were also used. In 1984, Valley discontinued the use of solvents and replaced them with detergent degreasers (RFW, 1988).

If parts required additional cleaning, they were then immersed in either an alkaline cleaning solution (containing caustic soda) or an acid solution ("Brite Dip" process, containing nitric acid). Once cleaned, the parts were rinsed and excess rinse water was discharged to a Brite Dip subsurface disposal system (RFW, 1988). Several subsurface disposal systems were used on the property. Approximate locations of these subsurface disposal systems are provided on Figure 4.

In 1972 and 1973, GRC reportedly installed six underground storage tanks (USTs) for storage of cutting oils, solvents, and mineral spirits in the southern portion of the Valley property. A concrete slab was constructed over the USTs. The USTs ranged from 700 gallons to 3,000 gallons. The 700-gallon UST reportedly contained TCE. Cutting oils were pumped from the USTs into distribution piping running throughout the machining areas of the facility. Recovered oils were re-circulated through the system. Waste oils were reportedly disposed off-site. From 1972 to 1979, 55-gallon drums of waste cutting oils were stored on the concrete slab. In September 1979, Valley constructed a shed roof over the concrete slab area (Lally, 1985). This area is known as the "material storage area", but has also been referred to as "the shed area". During October 1983, pressure testing of the USTs was conducted. The USTs exhibited some initial pressure loss that was attributed to leakage occurring at the couplings on the tank vent lines.

The major contaminant released at the Valley property was TCE. In 1973, 500 gallons of TCE were reportedly released in the soil underneath the concrete slab from a UST. A total of 3,000 gallons of contaminants is estimated to have been discharged to the environment from several surface and subsurface sources, including the loading dock drainage system, the Brite-Dip disposal system, the USTs, and by routine operations practices (RFW, 1988). These releases migrated to groundwater beneath the Valley property and eventually contaminated the aquifer that supplies the Town of Groveland's drinking water.

3.3 Initial Response

In June and October 1979, two Town drinking water supply wells, Groveland Well Nos. 1 and 2, were determined to be impacted with TCE. The wells were taken off-line and the Town imposed water rationing. Later in 1979 the Town developed another drinking water well, Station No. 3, in a different aquifer. In 1982, EPA determined that the groundwater contamination at the Site constituted a threat to public health and to the environment. EPA placed the Site on the National Priorities List in December, 1982.

In 1983, EPA and the Massachusetts Department of Environmental Protection (MassDEP) conducted inspections and sampling of the subsurface disposal systems on the Valley property and found elevated concentrations of TCE and some metals. MassDEP and Valley entered into a consent agreement in 1983 that was intended to bring plant discharges into compliance with state and federal regulations, and Valley implemented changes to the subsurface disposal system and practices. The solvent vapor degreasing and Brite-Dip systems were eliminated. The rinse water tanks, cleaner holding tanks, and wastewater treatment system were disassembled and removed. Incoming water supply lines to the system were cut and the existing floor drain was plugged. The subsurface disposal system, consisting of the distribution box and leaching field (the Brite Dip disposal system), was removed and properly disposed of by Metcalf & Eddy in 2006.

MassDEP and Valley entered into a second consent agreement in March 1984 for the performance of a Remedial Investigation/Feasibility Study (RI/FS) and remedial action. EPA also issued an administrative order to Valley in March 1984 to conduct an RI. Valley had an RI/FS prepared, but EPA determined that it was inadequate and did not provide sufficient information to serve as the basis for selection of a Source Control or Management of Migration remedy. A supplemental RI was performed by Valley's consultant in 1988, after substantial development and negotiation of a detailed work plan with EPA. EPA contractors oversaw the supplemental RI and also prepared an endangerment assessment (Alliance, 1987) and an endangerment assessment amendment (CDM, 1988). A supplemental FS was also prepared by an EPA contractor (RFW, 1988).

In July 1985, EPA approved an initial remedial measure to rehabilitate Groveland Well Station No. 1 by using granular activated carbon treatment to remove VOCs from the groundwater. In 1987, EPA completed installation of the treatment system. Station No. 1 was used as a supplemental supply to Station No. 3, and Station No. 2 was permanently shut down by the Town.

In December 1986, the Valley property was nominated for a demonstration of the Terra-Vac, Inc. Soil Vapor Extraction (SVE) system under the EPA Superfund Innovative Technology Evaluation (SITE) program. The demonstration was conducted over 56 days in late 1987 and early 1988 and removed an estimated 1300 pounds of VOCs from the unsaturated soil at the Valley property.

On September 30, 1988, EPA issued a Record of Decision (ROD) for the Source Control Operable Unit ("Source Control ROD" or "SC ROD"). The Source Control Operable Unit is also known as Operable Unit 2 (OU2) but is more commonly identified in site documents as the Source Control Operable Unit. The Source Control ROD required cleanup of the organic chemical contamination source located on the Valley property. The Source Control remedy is described in Section 4.0.

Beyond the work required as part of the Source Control Operable Unit, the MassDEP required the RPs to construct and operate a groundwater extraction and air stripping treatment system to intercept and treat the VOC plume at Mill Pond. The system began operation in April 1988 and consisted of two extraction wells, G1 and G2, and an air stripping unit installed at the north end of Mill Pond. Treated water was discharged to Johnson Creek immediately downstream of the pond. The average flow from the system ranged from 31 gallons per minute (gpm) to 75 gpm. The system was operated until 2000 when it was replaced by a groundwater extraction and treatment system constructed by EPA for the Management of Migration (MOM) Operable Unit (OU1, see Section 4.0).

After issuing the Source Control ROD, EPA commissioned the preparation of a Supplemental Management of Migration Remedial Investigation and Feasibility Study (NUS, 1991a and 1991b). EPA completed the supplemental studies for the MOM Operable Unit in 1991. These studies, together with the earlier studies, were aimed at determining the nature and extent of contamination that had migrated off the Valley property and evaluating alternatives for remediating the contamination. The results of the supplemental MOM investigations revealed that an extensive groundwater plume, containing principally TCE and 1,2-dichloroethene ("1,2-DCE"), was migrating toward the Merrimack River, with the highest contaminant concentrations found near the former Valley Manufacturing property and the adjacent property owned by the Archdiocese of Boston (USEPA, 2004a).

EPA issued the Management of Migration (OU1) Record of Decision on September 30, 1991. The MOM ROD required groundwater extraction and treatment of contaminated water extending beyond the Valley property throughout the rest of the Site, with discharge of the treated water to Johnson Creek. The MOM remedial actions were intended to supplement and not replace the remedial actions required by the Source Control ROD. The MOM remedy is described in Section 4.0.

3.4 Basis for Taking Action at the Site

The following summarizes the contaminants detected at the Site, as identified in the Remedial Investigations and during subsequent investigations and summarized in the Records of Decision.

3.4.1 Source Control Operable Unit (OU2, Valley Property)

Soil. Based on information submitted by Valley/GRC in response to an EPA request for information in 1985, it is believed that no less than 3,000 gallons of waste oil and solvent were historically released on the Valley property. Five to seven hundred gallons of TCE reportedly came from a storage tank leak, and the balance from subsurface disposal systems and indiscriminate disposal. (USEPA, 1988) Surface soil at the Valley property was not found to be contaminated, but subsurface soil was found to be contaminated with VOCs, primarily TCE and methylene chloride, with lower concentrations of other chlorinated solvents such as 1,1,1-trichloroethane, tetrachloroethene (PCE), and 1,2-trans-dichloroethene. TCE is the primary contaminant of concern in soil at the Valley property. The highest levels of subsurface soil contamination were found in the southernmost portion of the Valley property within 10 feet of the solvent storage tank. Analysis of subsurface soil gas samples collected from an area under the Valley building detected total VOC concentrations as high as 1,300 parts per million (ppm), indicating that additional subsurface soil contamination was likely to be present under the portion of the building that was constructed in 1974. Additional discussion of the subsurface soil contamination is presented in Section 6.

Groundwater. VOCs (primarily TCE) were detected in groundwater on the Valley property. Concentrations as high as 150,000 micrograms per liter (µg/L) of TCE and 7,900 µg/L of 1,2-DCE were reported in samples collected from wells bordering the Valley property. Similarly high concentrations of TCE and other chlorinated solvents were detected in groundwater under the portion of the Valley property known as the Material Storage Area, which was constructed in 1980. Both spent and unused cutting oils and solvents had been stored in drums and underground tanks in this area. Inorganic analytes were also detected in groundwater under the Material Storage Area slab: arsenic at 230 µg/L, chromium at 70 µg/L, copper at 1,100 µg/L, and lead at 130 µg/L. A free oil phase was also observed in some groundwater samples.

Summary of Risks. An Endangerment Assessment (Alliance, 1987) and an Endangerment Assessment Amendment (CDM, 1988) were performed for Operable Unit 2 to evaluate potential human health risks from exposure to contaminants from the Valley property. Fourteen contaminants of potential concern (COPCs), which included eight VOCs and six inorganics, were selected for evaluation. The receptor populations used for evaluation purposes were the employees at the Valley property exposed to contaminated soil, residents in close proximity to the Valley property using impacted groundwater for household uses, and local residents exposed to surface water and sediment in impacted ponds and streams. The greatest potential risk was attributed to the ingestion of contaminated groundwater, and TCE and arsenic were the two contaminants that contributed most to the carcinogenic risk estimates in the range of $8x10^{-3}$ to $6x10^{-2}$, which exceed the EPA target risk range of 10^{-6} to 10^{-4}. Non-carcinogenic hazard estimates (hazard indices) exceeded the EPA target of one for trans-1,2-dichloroethylene, lead, methylene chloride, and toluene. MCLs were exceeded for a number of contaminants. Risks and hazards associated with current and future potential exposure to contaminated soil at the Valley property and surface water and sediment in ponds and streams did not exceed EPA's risk management criteria for carcinogenic and non-carcinogenic effects. Surface water concentrations in site-related brooks and ponds were also not expected to result in toxic effects to aquatic organisms.

3.4.2 Management of Migration Operable Unit (OU1)

Soil. Contaminated soil requiring remediation was limited to the soils addressed by the Source Control Operable Unit.

Sediment and Surface Water. The remedial investigations determined that sediment and surface water contamination was low level and sporadic. Detections of VOCs in surface water were below Ambient Water Quality Criteria and the low level, sporadic contamination in sediment was determined by EPA to present minimal risk to human health and the environment (USEPA, 1991).

Groundwater. The remedial investigations revealed that a large groundwater contaminant plume of primarily TCE and 1,2-DCE extended from the Valley property approximately 3,900 feet northward, along the path of Johnson Creek, downgradient past Station No. 2. The plume width in 1991 was approximately 350 feet across in the Valley/Mill Pond area and roughly 1,000 feet wide where it encompassed Station No. 2. The contamination resulted in the need to provide Granular

Activated Carbon treatment for water from Groveland Well Station No. 1, and Station No. 2 was completely shut down. Concentrations as high as 50,000 µg/L TCE were reported near the Valley property, while concentrations farther from the Valley property were generally less than 100 µg/L, but above the MCL of 5 µg/L. Several inorganics were also detected in groundwater at concentrations exceeding MCLs, but it was also noted that concentrations of some inorganics in samples from wells upgradient of the Site also exceeded MCLs.

Summary of Risks. A baseline public health and ecological risk assessment was also conducted as part of the supplemental MOM remedial investigation (NUS Corporation, 1991a). Twenty-six contaminants of potential concern (COPCs), which included twelve VOCs and fourteen inorganics were selected for evaluation in the MOM risk assessment (USEPA, 1991). Refer to Table 2 for a summary of COPCs. Receptor populations of interest included residents who may use contaminated groundwater for household uses and recreational site users who may fish, swim, and wade in impacted surface water bodies. Risks and hazards associated with exposure to groundwater were evaluated for four areas of the plume. The greatest potential risks were attributed to the ingestion of contaminated groundwater, which exceeded EPA risk management criteria for all areas of the plume because of the presence of VOCs and inorganics. Reasonable maximum exposure cancer risk estimates ranged from 3.4×10^{-4} to 2×10^{-2}. TCE, arsenic, and beryllium were the contaminants that contributed most to the carcinogenic risk estimates. Non-carcinogenic organ-specific hazard estimates (hazard indices) exceeded the EPA target of one for each of the four areas of the plume. Contaminants contributing to organ-specific hazard indices greater than one included arsenic, chromium, 1,2-dichloroethene, antimony, cadmium, and barium. MCLs were exceeded for a number of contaminants, including TCE, PCE, 1,1-DCE, 1,2-DCE, aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, iron, nickel, and selenium. It was determined that contaminated groundwater represented a possible future threat if Station No.1 were to increase its pumping rate, or if additional drinking water wells were placed into the aquifer. However, risk and hazard estimates for the surface water, sediment, and fish tissue exposure pathways did not exceed EPA risk management criteria. Risks to the ecological community of the Johnson Creek watershed from Site contaminants were also considered minimal.

The above conclusions regarding Site contamination and risks to human health and the environment for each Operable Unit formed the basis of the selected remedies (past and present) as outlined in the RODs. See Section 4.0 for additional details.

4.0 REMEDIAL ACTIONS

The following sections present details of the selection, implementation, and operation and maintenance of Site Remedial Actions.

4.1 Remedy Selection

EPA issued two RODs for the Site, defining two Operable Units and describing selected remedial alternatives. The first ROD, issued in September 1988, was for the Source Control Operable Unit (OU2) and required cleanup of the organic chemical contamination source located on the former Valley Manufacturing property. The second ROD, issued in September 1991, was for the Management of Migration Operable Unit (OU1) and required remediation of the groundwater plume that had migrated off the Valley property and affected Groveland Well Stations No. 1 and No. 2. The following sections summarize the selected remedies for Operable Units 1 and 2.

4.1.1 Operable Unit 1 - Management of Migration

The remedial action objectives for OU1 groundwater were:

- To prevent ingestion of groundwater contamination in excess of relevant and appropriate drinking water standards or, in their absence, an excess cancer risk level of 10^{-6} for each carcinogenic compound. Also, to prevent ingestion of groundwater contaminated in excess of a total excess cancer risk level for all carcinogenic compounds of 10^{-4} to 10^{-6}.

- To prevent ingestion of groundwater contaminated in excess of relevant and appropriate drinking water standards for each non-carcinogenic compound and a total Hazard Index greater than unity for non-carcinogenic compounds having the same target endpoint of toxicity.

- To restore the groundwater aquifer to relevant and appropriate drinking water standards or, in their absence, the more stringent of an excess cancer risk of 10^{-6} for each carcinogenic compound or a hazard quotient of unity for each non-carcinogenic compound. Also, restore the aquifer to the more stringent of (1) a total cumulative excess cancer risk of 10^{-4} to 10^{-6} and/or (2) a total cumulative hazard index not to exceed an acceptable range for non-carcinogenic compounds having the same target endpoint of toxicity.

The selected remedial action for OU1 included the following components:

- Establishment of Interim Groundwater Cleanup Levels (IGCL) for contaminants of concern identified in the risk assessment as posing unacceptable risk to public health or the environment;

- Installation of a groundwater extraction system;

- Construction of treatment units to remove inorganics, and treatment units to destroy organic contaminants via ultraviolet (UV) oxidation technology;

- Extraction and treatment of contaminated groundwater;

- Discharge of treated groundwater to Johnson Creek;

- Establishment of institutional controls to prohibit use of groundwater in the contaminated area until cleanup levels have been achieved; and

- When groundwater ARARs have been attained, performance of a risk assessment to determine whether the remedial action is protective. Remedial actions shall continue until protectiveness concentrations of residual contamination have been achieved or until the remedy is otherwise deemed protective. These protective residual levels shall constitute the final cleanup levels and shall be considered performance standards for remedial action.

Interim Groundwater Cleanup Levels were established at concentrations equivalent to federal Safe Drinking Water Act MCLs for those contaminants for which a federal MCL existed. Massachusetts MCLs (MMCL) were used for contaminants for which an MMCL existed but there was no federal MCL. For vanadium, there is no MCL or MMCL so a hazard-based cleanup level was calculated. For lead, an EPA Superfund policy level of 0.015 mg/L (equivalent to the SDWA action level for lead) was selected. These levels were identified in the ROD as interim groundwater cleanup levels, because the cumulative risk that could be caused by these contaminants at these levels could potentially exceed EPA's goals for remedial action. The last component of the remedial action, to conduct a risk assessment when groundwater ARARs have been attained, was included in the ROD to take this possibility into account and allow for establishment of final cleanup levels.

4.1.2 Operable Unit 2 - Source Control

The remedial objectives for OU2 were:

- Prevent ingestion of groundwater contaminated in excess of relevant and appropriate drinking water standards or, in their absence, an excess cancer risk level of 10^{-6}, for each carcinogenic compound. Also, to prevent ingestion of groundwater contaminated in excess of a total excess cancer risk level for all carcinogenic compounds of 10^{-4} to 10^{-7};

- Prevent ingestion of groundwater contaminated in excess of relevant and appropriate drinking water standards for each non-carcinogenic compound and a total hazard index greater than unity for all non-carcinogenic compounds;

- Prevent migration of contaminants in soils and groundwater that would result in groundwater contamination in excess of relevant and appropriate drinking water standards and surface water contamination in excess of relevant and appropriate Ambient Water Quality Criteria for the protection of aquatic life; and

- Remediate inorganic contamination to the extent that such remediation is incidental to organics remediation and to evaluate attainment of the applicable or relevant and appropriate requirements of federal and state environmental regulations.

The major components of the selected remedy for OU2 included:

- Installation, operation, and maintenance of a Soil Vapor Vacuum Extraction system to clean all areas of subsurface soil contamination;
- Installation, operation, and maintenance of a groundwater recovery/re-circulation system;
- Installation, operation, and maintenance of a groundwater treatment system to treat contaminated groundwater from the recovery/re-circulation system; and
- Sealing or disconnection of all drains and lines to the Brite Dip subsurface disposal system.

4.1.3 Explanations of Significant Differences (1996)

In November 1996, EPA issued two Explanation of Significant Differences (ESD), one for each operable unit. The purpose of the ESDs was to document the rationale for changes in the OU1 and OU2 remedies that EPA determined were necessary and significantly different from the remedies as described in the respective RODs. The changes were precipitated by additional sampling and investigative work performed by EPA and its contractors between 1994 and 1996. During 1994, a pumping well was drilled on the Valley property and an aquifer yield test was performed to support the planned design of a groundwater extraction and treatment system for the Source Control Operable Unit. The test determined that the maximum amount of water likely to be available for extraction from beneath the Valley property in the contaminated zone was 3 to 6 gallons per minute, much lower than the 30 gpm anticipated in the ROD, and too low to justify the construction and operation of a separate groundwater treatment system for the SC Operable Unit. It was decided by EPA that groundwater would still be extracted from this area, but that it would be treated in a combined groundwater treatment plant that would also treat extracted groundwater from the MOM Operable Unit. The requirement for a groundwater treatment plant for the Source Control Operable Unit was eliminated.

In March 1996, EPA conducted sampling of 22 groundwater monitoring wells located throughout the groundwater contaminant plume area. Seven of the 22 wells were located north of Main Street. Six out of these seven wells, which had previously showed exceedances in the MCL for TCE when they were sampled in 1990, were found to have TCE concentrations below the MCL in 1996. Wells closer to Mill Pond and the Valley property were still contaminated above MCLs in 1996. These data led EPA to conclude that the portion of the groundwater contaminant plume north of Main Street was attenuating naturally, but that groundwater extraction and treatment as specified in the MOM ROD was still appropriate for the portions of the plume on the Valley property and near Mill Pond. Hence, an ESD was prepared to modify the extraction system to eliminate wells north of Main Street, and to re-locate the treatment plant from its originally planned location near former Station No. 2, to land abutting the Valley property that is owned by the Archdiocese of Boston. These changes allowed for a smaller groundwater treatment plant, and also avoided the problems that would have been associated with the formerly planned location, namely construction within the 100-year floodplain of Johnson Creek. Also, the revised location was much closer to the extraction wells proposed for the SC Operable Unit, making a combined treatment facility more economical.

The proposed remedy changes were presented to the public in a public information meeting held on August 13, 1996 and were documented in the ESDs for each operable unit, both issued on November 15, 1996.

The SC Operable Unit SVE system began operation in late 1992 and was operated by Valley/GRC until early Spring of 2002, at which time the system was permanently shut down as the result of Valley terminating their business operations. Following the shut-down of the Valley SVE system, EPA performed a comprehensive Source Area re-evaluation. The Source Area re-evaluation consisted of, subsurface soil and groundwater sampling, soil vapor sampling, an in-situ chemical oxidation pilot study, and a remedial alternatives assessment. The investigations concluded that the SVE system had been only minimally effective in reaching cleanup goals and recommended that in-situ thermal treatment (ISTT) be employed along with SVE to remove contaminants from Source Area soil and overburden groundwater.

Based on the results of the Source Area re-evaluation, EPA concluded the SC remedy should be modified to include ISTT along with SVE to address Source Area soil and groundwater. In September 2007, EPA issued an ESD for the SC Operable Unit. The ESD outlined the use of ISTT of subsurface soil and overburden groundwater in conjunction with SVE to increase the effectiveness of the SC remedy and thereby decrease the overall length of cleanup time for the entire Site. The 2007 ESD also included revised soil clean up levels recalculated using site-specific data and new EPA guidance. The purpose of the soil cleanup levels was to ensure that residual soil contamination will not have an adverse effect on groundwater or human health. The recalculated site-specific soil clean up levels are protective of groundwater (MCLs), direct contact exposures (i.e., the incidental ingestion, dermal contact and inhalation of dust released from the soil), and for the subsurface vapor intrusion pathway (i.e., the inhalation of contaminated air).

4.2 Remedy Implementation

This section presents summaries of the remedial actions conducted or being conducted at the Site in accordance with the ROD objectives mentioned in Section 4.1.

4.2.1 OU1 MOM Remedy Implementation

The groundwater remedy at the Site, as described in RODs and subsequently modified by the 1996 ESDs, is ongoing. A combined groundwater treatment facility (GWTF) and extraction/discharge system for groundwater from both operable units were completed in 2000 and remain in operation, with modifications.

The three main components of the groundwater remedy are extraction, on-site treatment, and discharge to surface water.

Groundwater Extraction. The groundwater extraction system consists of a network of 10 extraction wells located as shown in Figure 2. Several changes have been made in operation of the extraction system since system startup in 2000. The changes have been made to improve the efficiency and effectiveness of the system and reduce pumping and treatment costs. In most cases, the changes involved shutting off an extraction well in response to observation of low contaminant concentrations (below MCLs) in the extraction well for at least several months prior to shut down. Some wells have also been brought back on line after shut-down because of a rebound in contaminant levels in the extraction well or changes in the surrounding area. The table below summarizes the changes in pump operation from 2000 to 2010 and presents the design and typical extraction rates for each well.

Well	Design Extraction Rate (gpm)	Typical Observed Extraction Rates (gpm)
Source Area Wells		
EW-S1[5]	2	3
EW-S2[6]	2	0.4
EW-S3[6]	2	0.5
South of Mill Pond		
EW-S4[2]	5	40
EW-S5[7]	2	1
North of Mill Pond		
EW-M1[1]	35	30
EW-M2[2,3]	35	35 / 10
EW-M3[4]	2	0.6
G-1	20	Off since 2002
G-2	20	Off since 2002

Notes:

1. Extraction well rates in EW-M1 are dependent on the amount of iron fouling inside the well screen and surrounding formation. Rates have ranged from about 12 gpm when significant iron fouling was present to approximately 35 gpm after re-development.

2. EM-M2 was shut down in July 2005 due to low contaminant concentration levels (below MCLs); it was restarted in December 2006 to address downgradient contamination; it was shut down again in August 2008 due to low contaminant levels.

3. The extraction rates shown are for operation prior to 2005 (35 gpm) and 2006 to 2008 (10 gpm) (different pumps were used during the two periods).

4. EW-M3 was turned off due to low contaminant concentration levels (below MCLs) in August 2008. The well was turned back on in February 2010 in response to increasing contaminant concentrations.

5. Well EW-S1 was temporarily shut down in April 2010 to facilitate ISTT SC remedy construction. The well was restarted shortly thereafter, operating in manual mode until start-up of ISTT system (anticipated in July 2010).

6. Wells EW-S2 and EW-S3 were shut down in April 2010 in preparation for ISTT SC remedy construction and operation.

7. Well EW-S5 was shut off in March 2010 because of consistently low contaminant concentrations. The pump in EW-S5 was placed into EW-M3 to allow it to be re-started. Contaminant concentrations in EW-S5 had been consistently below MCLs.

Double-walled underground pipelines with leak detection transport the extracted groundwater from the wells to the Groundwater Treatment Facility for treatment.

Groundwater Treatment. The GWTF is located behind the Valley building on property owned by the Archdiocese of Boston. All unit operations are contained in the same building including:

- Pretreatment consisting of equalization, clarification, and filtration to remove suspended solids (grit and precipitated metals, primarily iron)
- Ultraviolet oxidation with hydrogen peroxide as oxidant, to destroy organic contaminants
- Catalytic activated carbon adsorption for destruction of residual hydrogen peroxide, to prevent effluent toxicity
- Suspended solids thickening and storage for later off-site disposal as non-hazardous solid waste
- Vapor phase carbon adsorption for treating off-gases from various tanks.

Monitoring points throughout the system allow for in-line instruments to measure flow and indicator parameters, and allow for the collection of samples for off-site laboratory analyses. An in-line gas chromatograph automatically monitors the plant effluent for TCE and other VOCs of concern every several hours. In the event that the discharge limit is exceeded, the monitoring system automatically shuts the plant down. The GWTF operation is currently staffed 8 hours a day, 5 days per week. Groundwater is treated to meet the discharge limits established by EPA for discharge to Mill Pond.

Groundwater Discharge System. Treated water from the GWTF is discharged through an underground pipeline that emerges at an outfall constructed on the western shore of Mill Pond. The discharge is sampled quarterly with analysis for VOCs, metals, and toxicity, to evaluate compliance with discharge limits (see Section 6).

Institutional Controls. The last component of the MOM remedy is institutional controls (ICs) to prohibit use of groundwater from the contaminated area. The ICs have not yet been implemented. EPA recently received comments from MassDEP on the draft ICs document. EPA is revising the ICs and will then provide them to third parties for review and implementation. Although the ICs are not yet in place, as part of this five-year review, inquiries were made to the Groveland Board of Health and Groveland Water Department to verify that area residences and businesses are all connected to the municipal water supply system and no private wells are situated within or near the contaminant plume area.

4.2.2 OU2 SC Remedy Implementation

The selected remedy for OU2 identified in the 1988 SC ROD included an SVE system for removal of VOCs from unsaturated soils beneath the Valley property and installation of a groundwater extraction and treatment system for the Source Area. Part of the basis for the selection of the SVE as the SC remedy for Site soils was a successful pilot study of the SVE technology conducted at the Site in late 1987 - early 1988, which removed approximately 1,300 pounds of VOCs from unsaturated soils beneath the Valley property. The full-scale SVE system called for in the 1988 ROD would be a modification and expansion of the pilot-scale SVE system that remained on the Site.

Pursuant to the ROD and an Amended Administrative Order issued by EPA on March 11, 1992, contractors for Valley/GRC designed a full scale SVE system and a groundwater extraction, treatment and reinjection system to be installed on the property (Lally, 1992). The design was approved by EPA in August 1992, but in October of that year Valley/GRC informed EPA that they would no longer be able to comply with the Administrative Order. In November EPA issued a Notice of Failure to Comply with the Administrative Order.

During a site visit to the Valley property in December 1992, EPA learned that all of the SVE system wells and vapor probes had been installed in accordance with the approved design and that the system was operating 24 hours a day. In January 1993, EPA issued a Second Notice of Failure to Comply with the Administrative Order for failure to submit monthly progress reports concerning the SVE system's performance to date in terms of sampling, monitoring, and performance data; the amount of contaminants removed; and estimates of contaminants remaining in the soil. In June of 1994, Valley/GRC began routine submission of monthly reports to EPA.

Valley/GRC did not comply with the ROD and Administrative Order requirements to install Source Area and MOM groundwater extraction and treatment systems. Because of Valley/GRC's failure to comply with the Administrative Order regarding remediation of groundwater contamination, EPA decided to undertake the remedial design/remedial action activities for Source Area and MOM groundwater. The remedial designs of separate groundwater extraction and treatment systems for the Source Control Operable Unit and the MOM Operable Unit were begun. During remedial design work for the Source Control Operable Unit, on-site hydrogeological studies were conducted in the spring of 1994 in an effort to evaluate probable maximum groundwater extraction rates in the vicinity of the proposed extraction system. An extraction well was installed on the Valley/GRC property and a step test was carried out. The results indicated that the maximum yields from the aquifer beneath the Valley/GRC property, with and without reinjection, would be on the order of 6 gpm and 3 gpm, respectively. Because of this low estimated yield, it was determined that construction of a separate groundwater treatment facility at the Source Control Operable Unit would not be cost effective, when compared to the alternative of piping this water to the treatment facility to be constructed for remediation of groundwater from the MOM Operable Unit. As a result, EPA decided to pursue a combined remedy for groundwater from both operable units that involved extraction and treatment in a combined facility, utilizing the technology of UV oxidation to destroy the VOCs. EPA issued an Explanation of Significant Differences in 1996 (see Section 4.1.3) to explain the changes in the remedy for groundwater at the Source Control Operable Unit.

Valley/GRC operated the Source Area SVE system from 1992 through 2002. The SVE system ceased operation as a result of the Valley terminating their business operations. In 2004 and 2006

EPA performed a Source Area re-evaluation and assessment of remedial action alternatives that recommended enhancement of the SVE system with ISTT. In September 2007, EPA issued a second ESD for the SC Operable Unit. The ESD was written to address the modifications and enhancements for the SVE system for soil as recommended in the 2006 Source Area re-evaluation report. The ESD outlined the use of ISTT with SVE to treat subsurface soils and overburden groundwater below the Valley property and instituted revised interim clean up levels for soils. See Section 4.1.3 for details of the 2007 ESD.

In conjunction with the Source Area re-evaluation, in 2006 EPA removed the 6 USTs remaining in the southern portion of the Valley property and removed the Brite Dip leach field and disconnected the discharge lines, as called for in the 1988 SC ROD. The USTs were found to have been previously filled with concrete. They were dismantled, decontaminated, and taken off-site for disposal. The Brite Dip leach field removal included removal, decontamination, and off-site disposal of all pipes, collars, and concrete boxes. The discharge line from the vacant building was left in place. The discharge line and other drains inside the Valley building were reported to have been previously plugged (M&E, 2006).

Construction of the ISTT Source Control remedy began in April 2009, with site clearing and a geophysical survey of the treatment area. In July and August of 2009, site preparation continued with the abandonment of all PVC monitoring wells and replacement of a subset of the original wells with stainless steel monitoring wells that would be used for baseline and confirmation monitoring of groundwater. Baseline sampling of Source Area soil and groundwater was also performed in Summer 2009 to assist in ISTT design and establish baseline conditions. In March 2010, construction of the ISTT system began. The ISTT system is expected to begin operation in July 2010 and operate through December 2010.

4.3 Operation and Maintenance

The following sections describe operation and maintenance activities for the MOM and SC remedial actions.

4.3.1 Operation and Maintenance of the GWTF (OU1)

The majority of O&M activities at the Site include the operations of the GWTF (OU1), conducted by an EPA contractor. O&M activities include the operation and maintenance of the GWTF, including the groundwater extraction wells, and routine monitoring of the groundwater extraction and treatment system and Site groundwater monitoring wells. Operating the GWTF currently requires a full-time staff of one on-site person to operate the facility eight hours per day, five days per week, to conduct routine operation and maintenance, including equipment inspections, minor repairs, and monitoring of the process and data (chemical analyses, flows, vessel levels and pressures). Additional support personnel assist the full-time operator with periodic mechanical and non-routine maintenance, extraction well pipeline cleaning, and groundwater monitoring. Periodic monitoring activities include sample collection from plant monitoring points (e.g. influent, effluent, air emissions), monitoring wells, and extraction wells.

Operating the GWTF includes the addition of treatment chemicals such as hydrogen peroxide, used for ferrous iron oxidation and as an oxidant in the UV system, change out of filter media and activated carbon, operation of the UV oxidation system, collecting samples from the process for laboratory analyses, grounds and building maintenance, and disposal of residuals (sludge).

Typical maintenance items include gear lubrication, seal replacement, pipe cleaning, and repair of extraction pumps and pump and GWTF controls. Other O&M activities include maintaining site security, such as fence repair and change of locks on buildings, and general site maintenance such as mowing and snow removal as needed.

The O&M of the Site is documented in monthly reports. Elements of the monthly report include a summary of overall facility performance; facility operations logs, which include monitoring information for the extraction wells, process control summary information (UV reactor amperage and voltage, flow rates, average pH, turbidity, iron concentrations, and temperature), chemical feed information, treatment process information, in-line analyzer data and operational parameters; maintenance performed; and a summary of analytical data for the process. Measuring and meeting discharge criteria is key in determining the facility's performance.

GWTF influent and effluent are sampled monthly and analyzed for VOCs and metals. Air emissions from the GWTF are also sampled monthly and analyzed for VOCs. The extraction wells are sampled quarterly and analyzed for VOCs and metals. Quarterly monitoring also includes toxicity analysis of plant effluent. Monthly and quarterly monitoring results and GWTF and extraction well maintenance activities are documented in monthly reports. A discussion of the quarterly monitoring results for the MOM remedy are included in Section 6.

Comprehensive site-wide semi-annual groundwater sampling is reported separately in semi-annual data evaluation reports, which also include extraction system performance evaluations (discussed further in Section 6.0).

Problems associated with the O&M of the Site include both non-routine events and typical mechanical and process issues that are addressed as needed. In the past 5 years, the most significant issues have included issues associated with the submersible pneumatic pumps in extraction wells EW-M3 and EW-S5 and corrosion of steel piping inside the treatment facility. Corroded steel piping has been replaced with PVC on an as needed basis. In August 2009, there was a catastrophic failure of the manifold piping on the multimedia filter system. The leak sprayed water on the control panel for the UV oxidation system. The control panel was dried with compressed air and heaters, controls software was obtained from the UV oxidation system manufacturer and reinstalled, and the system returned to normal operation after being out of service for less than 48 hours. The leak was determined to be the result of corrosion inside the manifold piping. Because of the catastrophic nature of this failure and the potential high cost to repair the UV Oxidation System in a similar failure occurred in the future, it was decided that the remaining steel manifolds on the multimedia filter systems would be replaced with PVC piping. This work is expected to be completed in June 2010.

Since startup, several changes have been made in operation of the groundwater extraction and treatment system to improve system efficiency and decrease costs. Several extraction wells have been taken off-line after it was determined that contaminant levels were below MCLs (details are provided in Section 4.2.1). Sludge was initially disposed of as a non-hazardous liquid instead of as dewatered sludge to eliminate the higher costs of operation of the filter press. Later, when the liquid sludge contained higher concentrations of TCE and the sludge was classified as hazardous waste, use of the sludge filter press was re-instituted to decrease the volume and cost of sludge disposal. The number of UV lamps in operation at one time was decreased as the contaminant concentrations in treatment plant influent decreased. One UV lamp is operated at a time and lamp usage is rotated to ensure that the lamps remain in good operating condition. The groundwater monitoring frequency and selection of wells monitored has also been revised over time to reduce costs, while maintaining effective monitoring of remedy progress and protectiveness.

Contaminant removal rates for VOCs have exceeded 99 percent removal throughout operation of the GWTF. GWTF effluent concentrations have consistently been either non-detect, or well below the discharge criteria for VOCs. Through March 2010, approximately 437,000,000 gallons of contaminated groundwater have been treated and approximately 1200 lbs. of contaminants have been removed (approximately 1,155 lbs of TCE and approximately 45 lbs of 1,2-DCE).

Summarized below are the approximate costs for GWTF O&M over the first ten years of operation. The costs shown include all work conducted at the Site plus all monitoring, reporting, management, and oversight costs.

Fiscal Year	Costs of O&M
2000	$365,000*
2001	$590,000
2002	$740,000
2003	$750,000
2004	$649,000
2005	$717,000
2006	$854,000
2007	$828,000
2008	$741,000
2009	$796,000

* Eight months of operation.

Improvements to GWTF operation and maintenance are currently being assessed. Potential changes include replacing all or part of the remaining steel and stainless steel piping in the GWTF with PVC to decrease maintenance and address pipe joint leaks and modifying extraction rates and operation of some of the downgradient extraction wells.

Future changes to the operation and configuration of the groundwater extraction and treatment system will have to be evaluated after the ISTT remedy is complete to determine whether changes are needed in the groundwater extraction system or to the GWTF operation. Potential changes to the extraction system that may be evaluated include elimination of Source Area extraction wells or installation of new Source Area wells to address contamination remaining in the bedrock groundwater. Changes to the GWTF operation may be required because the Source Area extraction wells have been accounting for approximately 95 percent of the VOC mass treated in the GWTF, but only 5 percent of the volume of groundwater treated (see Section 5 for details of the evaluation of extraction well contaminant mass vs. extraction volume). Potential changes to GWTF operation that may be evaluated include batch operation or a change in the technology used to remove VOCs from the groundwater.

4.3.2 Operation of the SVE System (OU2)

The OU2 SVE system began operation in late 1992, and was operated by Valley/GRC, with periodic shutdowns, until early spring of 2002, at which time the system was permanently shut down as the result of Valley terminating their business operations. A Notice of Violation was issued by EPA to the RPs in December 2002, following system shutdown and discontinuance of the monthly reports.

The mechanical portions of the SVE system, located in a southern section of the facility immediately adjacent to the Material Storage Area, operated largely unattended. Routine maintenance, process monitoring, and any mechanical repairs were performed as necessary. In 1993, in response to a Notice of Failure to Comply with the Administrative Order from EPA, Valley/GRC began submitting monthly O&M reports, which included a brief description of system performance and operational issues for the month along with system operational and monitoring data (days online, well-head vapor VOC concentrations and pounds of VOCs removed, and flow rates). System operation, which was unattended but included monthly maintenance and monitoring, generally involved routine maintenance, process monitoring, and any necessary mechanical repairs.

While they were still performing O&M, Valley/GRC made some improvements to the SVE system. In 1995, in accordance with the Administrative Order, Valley/GRC conducted soil sampling to a depth of 12 feet at four locations beneath the building and adjoining Material Storage Area to identify areas where the SVE system was not operating as efficiently as possible. To improve operation, modifications were proposed to lower the water table in the Material Storage Area using a combination of hot air injection and dual-vacuum extraction (DVE). DVE would simultaneously remove soil gas and groundwater, thereby lowering the water table and exposing more soil for remediation. EPA approved the modifications, and the changes were made to the system. After SVE operation ceased, EPA performed a comprehensive Source Area re-evaluation that concluded that the SVE system had been minimally successful in removing VOCs from the Source Area (EPA, 2007).

5.0 PROGRESS SINCE LAST FIVE-YEAR REVIEW

The following recommendations were made in the previous Five-Year Review report (USEPA, 2004).

- Groundwater at the site contains concentrations of VOCs above interim groundwater cleanup levels.

  EPA continues to operate and maintain the groundwater extraction, treatment and discharge system. Since the treatment plant began operation in 2000, the concentrations and aerial extent of the plume have greatly decreased.

- Subsurface soil contamination remains in the Source Area at levels that exceed the OU2 ROD cleanup levels, potentially representing a continuing source of VOC contamination to groundwater, and also posing a potential future direct contact risk.

  EPA is currently overseeing the construction and operation of a thermally enhanced soil vapor extraction system to treat soil and groundwater within the Source Area to protective levels.

- The final implementation of comprehensive institutional controls for soil and groundwater has not been realized.

  EPA is currently revising the ICs and will then provide them to third parties for review and implementation. Although the ICs are not yet in place, as part of this five-year review, inquiries were made to the Groveland Board of Health and Groveland Water Department to verify that area residences and businesses are all connected to the municipal water supply system and that no private wells are in use within or near the contaminant plume area. Also a private well survey was performed to confirm the above.

Since the startup of the GWTF in April 2000, the size of the groundwater contaminant plume and contaminant concentrations in the overburden downgradient of the Source Area have been substantially reduced. Prior to startup of the GWTF the plume extended north, just beyond Main Street. As of fall 2009, the overburden plume has been reduced in width and length, and now extends to slightly North of Mill Pond. As discussed on page ES-5, recommendation number 2, a monitoring well triplet will be installed north of Mill Pond to confirm that the contaminant concentrations in this area have attenuated to acceptable levels.

Figure 5 illustrates the changes in the extent of the contaminant plume over time. The dashed lines on the figure represent the extent of TCE concentrations exceeding the MCL (5 µg/L) in overburden groundwater in April 2000 (just after startup of the GWTF), 2006, and 2009. The change in the extent of the contaminant plume in the bedrock is less certain because the extraction well and monitoring well net work north of Mill Pond is insufficient to fully evaluate capture and contaminant extent in bedrock; however, it is likely that the extent of the plume in bedrock has also decreased.

Several changes were made to the MOM groundwater extraction and treatment system during the period since the last Five-Year Review. These changes include shutting down extraction wells as contaminant concentrations have decreased in order to limit treatment costs, electrical use, and maintenance issues; replacing pneumatic piston pumps in EW-M3 and EW-S5 with pneumatic submersible pumps to greatly decrease operation and maintenance issues with these wells; installing wireless communications in the well field to decrease the problems associated with lightning strikes; and installing a bypass around the clarifier to help eliminated corrosion problems in the clarifier. These changes have decreased the cost and increased the efficiency of operating the MOM remedy.

Various evaluations were performed in 2008 and 2009 to determine whether changes should be considered in the groundwater extraction and treatment system. Evaluation of extraction well data resulted in shut down of wells EW-M2 and EW-M3 in August 2008 and shut down of EW-M1 in November 2008 because VOC concentrations in the wells and surrounding area had been below MCLs for an extended duration. Contaminant concentrations in the wells and the surrounding area were evaluated following shut-down to see if contaminant concentrations would remain below MCLs under static conditions.

After having been shut-down for 17 days, EW-M1 was turned on for sampling to evaluate TCE concentrations in the well. Analysis of the sample using the Site GWTF VOC analyzer detected 440 µg/L of TCE. (This concentration is likely somewhat over estimated because the detected concentration is significantly outside the calibration range [20 µg/L] of the VOC analyzer.) EW-M1 continued to operate and subsequent samples were collected hourly for 4 hours. In the following 4 hours TCE concentrations dropped significantly: 48, 29, 33, and 19 µg/L. The pump continued operating overnight and a sample was collected after the pump had been operating for 24 hours and concentrations had been reduced to 3.5 µg/L (levels consistent with sampling results in October 2008). It was decided to leave EW-M1 in operation until completion of the Source Area Remedial Action. EW-M2 remains off, but EW-M3 was restarted in 2010 in response to steadily increasing contaminant levels (see Section 6.3 for details of contaminant concentrations).

In 2009, an analysis of extraction well pumping rates and typical concentrations was performed to estimate the contaminant mass removal and pumping volume from each well in order to evaluate groundwater extraction system performance. As shown on Table 3, the analysis determined that Source Area extraction wells EW-S1 and EW-S2 provide approximately 95 percent of the TCE contaminant load to the treatment system; however, these wells account for only about 5 percent of the total water volume treated. Contaminant mass removal from the Source Area wells is limited by the low pumping rates caused by a thin saturated zone and low conductivity soils. Conversely, extraction wells EW-S4 and EW-M1 account for approximately 93 percent of the water provided to the treatment system and only about 5 percent of the TCE contaminant load. These findings were evaluated to determine whether changes should be considered in the groundwater extraction and treatment system. It was concluded that significant changes should not be made prior to completion of the ISTT SC remedy, which was initiated in April 2009. However, because the ISTT system is expected to treat Source Area soil and overburden groundwater to achieve interim site Cleanup levels, changes to the MOM remedy should be evaluated following completion of the SC Remedial Action.

OU2 SC Remedy

In 2004 and 2006 EPA's contractor performed a comprehensive re-evaluation of the Source Area. The purpose of Source Area re-evaluation was to determine the current extent and distribution of contamination remaining in subsurface soil and groundwater, and to evaluate potential remedial alternatives to address contaminated soil and groundwater remaining in the Source Area. The work included advancement of soil borings and collection of soil samples, installation of two new bedrock monitoring wells, groundwater sampling and analysis, and in-situ chemical oxidation (ISCO) pilot testing for treatment of groundwater and unsaturated soils. Additionally, 6 USTs that remained on

Site and the Brite Dip leaching field were removed. Based on the results of the investigation and pilot testing, remedial alternatives were identified and evaluated.

The Source Area Re-evaluation Report recommended ISTT of subsurface soil in combination with SVE as the preferred remedial alternative for Source Area soils and overburden groundwater. In 2007, EPA issued an ESD that modified the SC SVE remedy to include ISTT, with the goal of achieving interim cleanup levels in Source Area soil and overburden groundwater. The ESD also established revised interim soil clean up levels (see Section 4.1.3 for additional details of the ESD).

In September 2008, EPA tasked its contractor to procure and oversee the installation of an ISTT system consisting of electrical resistance heating (ERH) in combination with SVE. Construction of the ISTT Source Control remedy began in April 2009, with site clearing and a geophysical survey of the treatment area. In July and August of 2009, site preparation continued with the abandonment of all PVC monitoring wells and replacement of a subset of the original wells with stainless steel monitoring wells that would be used for baseline and confirmation monitoring of groundwater. Baseline sampling of Source Area soil and groundwater was performed in Summer 2009 to assist in ISTT design and establish baseline conditions. In March 2010, construction of the ISTT wellfield began and construction of the system is scheduled for completion in July 2010. The ISTT system is expected to begin operation in July 2010 and operate through December 2010.

6.0 FIVE-YEAR REVIEW PROCESS

This section describes the activities performed during the five-year review process and provides a summary of findings.

6.1 Community Notification and Involvement

Since the last five-year review, notifications to the public have included two fact sheets and a public notice. A fact sheet was issued in 2006 documenting the progress that had been made in decreasing the size of the TCE plume downgradient of the Source Area. The fact sheet also highlighted the Source Area investigation results of 2004 and the plans to perform additional investigation activities in 2006. In January 2010, a fact sheet was distributed to update the public on the status of the Site and the construction of the ISTT system. In January 2010 a public notice was published in two Groveland-area newspapers (The Lawrence Eagle Tribune on January 27, 2010 and the Haverhill Gazette on January 28, 2010) to inform the public of the start of the five-year review. A copy of the public notice is provided in Attachment 4.

6.2 Document Review

This five-year review included of a review of relevant documents for the Site. See Section 12 for a list of documents that were reviewed.

6.3 Data Review

The following sections summarize the evaluation of data collected for treatment plant effluent monitoring, groundwater monitoring, surface water monitoring, and Source Area soil investigations performed since the start of the MOM Remedial Action in 2000.

6.3.1 Treatment Plant Effluent Monitoring

The influent and effluent from the groundwater treatment plant are monitored on a monthly basis to confirm that effluent discharge limits are not exceeded and to observe contaminant removal efficiencies. In addition, effluent samples are analyzed for VOCs onsite by an automatic in-line analyzer every several hours.

During the period of the first five year review (April 2000 through June 2005), the effluent contained no detectable concentrations of VOCs in greater than 90 percent of the monthly sampling events. The highest concentration of TCE, the primary Site contaminant, in the plant effluent was 3.6 µg/l. There were no exceedances of the VOC discharge limits for that time period.

During the same period, there were some minor exceedences of metals discharge limits. Specifically, the effluent discharge limit for arsenic (0.75 µg/L) was exceeded on three occasions in the past five years with the maximum concentration in the effluent of 0.96 µg/l; the effluent discharge limit of for lead (1.3 µg/L) was exceeded three times, with a maximum concentration of 1.8 µg/L; and the effluent discharge limit for mercury (0.273 µg/L) was exceeded once (0.35 µg/L in November 2002). To determine whether the exceedances were significantly different from the discharge limits, the relative percent difference (RPD) was calculated. For aqueous samples, anything within 30 percent RPD is considered to be comparable. In all cases but one, the values were found to be comparable. The one exceedance found to be significantly different from the discharge limit was for lead, estimated at 1.8 μg/L in July 2001. There was no obvious reason for the exceedance. In all cases, whether or not the exceedance was found to be significant, the treatment plant operator reviewed operations to assess possible reasons and remedies for the exceedances.

In addition, due to laboratory limitations, the laboratory detection limit for arsenic samples collected through February 2002 was greater than the site-specific surface water discharge limit. In March 2002, a new method, capable of achieving a detection limit of less than 0.5 μg/L was identified. Effluent data from March 2002 through the most recent data show that plant effluent meets the surface water discharge limit for arsenic.

Since the first five-year review in June 2005, the effluent contained no detectable concentrations of VOCs in greater than 70 percent of the monthly sampling events. The highest concentration of TCE, the primary Site contaminant, in the plant effluent was 1.9 μg/L. There have been no exceedances of the VOC discharge limits.

Since the last five-year review in June 2005, there have been minor exceedences of metals discharge limits. The effluent discharge limit for arsenic (of 0.75 μg/L) was exceeded on two occasions in the past five years, with a maximum concentration of 2.6 μg/L in November 2007. The two exceedances were outside of the 30 percent RPD. In December 2007, January 2008, and February 2008, the laboratory reporting limits for arsenic (1.0 μg/L) exceeded the applicable effluent discharge limit. The effluent discharge limit for lead (1.3 μg/L) was exceeded one time (1.4 μg/L in May 2006). The laboratory reporting limit for lead during the July 2006 sampling event (2.8 μg/L) exceeded the applicable effluent discharge limit. The sample collected in May 2006 is within the 30 percent RPD and can be considered comparable. The noted exceedances were for a single (or duplicate) sample collected during monthly sampling events. However, the discharge limits are monthly averages; because samples are collected only once per month, it is not known whether the average for the month was actually exceeded.

Since the effluent from the GWTF is discharged to surface water, it is tested for acute and chronic toxicity on a quarterly basis. Toxicity testing includes 48-hour whole effluent screening tests with *Ceriodaphnia dubia* and juvenile fathead minnow *(Pimephales promelas)*. The survival of both test species is measured during the test, as well as the growth of the fathead minnow and the reproduction of Ceriodaphnia. One hundred percent survival has been regularly observed for the fathead minnow. However, in October 2008, survival and growth for the fathead minnow was <6.25 percent, which is well below the 41 percent criteria for discharge limits. The toxicity test results show impacts from the effluent on survival in the 6.25, 12.5, 25.0, and 50.0 percent dilutions, and not in the 41.0 and 100 percent effluent dilutions. Because the 100 percent effluent samples showed acceptable survival for both species, it is not entirely clear that the impacts to the test species were caused by exposure to the treatment facility effluent. In response to the October 2008 sampling results, in an effort to better evaluate the impact of the receiving water on the results of the toxicity testing a change was made to the toxicity testing procedure. Synthetic reconstituted water, prepared in accordance with the United States Environmental Protection Agency protocols, is now used as the dilution water instead of the Mill Pond receiving water that was previously used for dilutions. Control samples using the Mill Pond receiving water are also tested. Use of the laboratory water for dilutions allows evaluation of the effluent separately from the receiving water. Since the change in toxicity testing procedure, there have been no exceedences of the survival of either test species. Reproduction of the Ceriodaphnia did not meet the 41 percent criteria for April 2009 or October 2009. Growth for the fathead minnow did not meet the 41 percent criteria for January 2010. However, during these events there were no significant impacts at higher dilutions (50 percent and 100 percent), which would indicate a problem with the receiving water and not the treatment facility effluent. Toxicity results are included in Attachment 1, along with GWTF extraction well, influent and effluent data.

6.3.2 Groundwater Monitoring

Extraction Wells. There are 10 extraction wells at the Site (EW-S1, EW-S2, EW-S3, EW-S4, EW-S5, EW-M1, EW-M2, EW-M3, G-1, and G-2). Currently, nine of the extraction wells are sampled quarterly, as part of the GWTP O&M activities (well G-1 was eliminated from the sampling program in 2002). Extraction wells EW-M3 and EW-M2 were turned off in August 2008 (with EPA's permission) due to low contaminant concentrations. The remaining wells have all been in operation for the period of this five-year review. Extraction well data for TCE and cis-1,2-DCE from January 2005 through April 2010 are summarized below and presented in Table 4. These are the primary contaminants used to evaluate treatment progress.

The average TCE concentrations in 2009 in the three extraction wells located downgradient of the Source Area (EW-S1, EW-S2, and EW-S3) were 2,725 µg/L, 2,500 µg/L, and 43 µg/L, respectively while the average flow rates were 3.2, 0.2, and 0.7, gallons per minute (GPM) respectively. The

TCE concentrations in these three wells exceed MCLs, but have generally trended downward since startup of the groundwater extraction and treatment system in April 2000. However, since July 2005 TCE concentrations in EW-S1 and EW-S2 have showed no meaningful downward trends because the Source Area soil contamination remains. Over this period there have been fluctuations in the TCE concentration in these wells that are likely the result of seasonal variations in groundwater flow and operation of the groundwater extraction system. The concentrations of cis-1,2-DCE are an order of magnitude lower than TCE concentrations, and are less variable.

Concentrations of TCE in extraction wells south of Mill Pond remain close to the MCL. The TCE concentration in EW-S4 continues to remain slightly above the MCL, whereas TCE concentrations in EW-S5 have been below the MCL since October 2008. Concentrations of cis-1,2-DCE in EW-S4 and EW-S5 continue to remain below the MCL.

TCE and Cis-1,2-DCE continue to be present in some of the extraction wells located north of Mill Pond. Concentrations of Cis-1,2-DCE and TCE were not detected above the MCLs in extraction wells EW-G2 and EW-M2 since December 2000 and March 2002, respectively. TCE and Cis-1,2-DCE had been detected slightly above or below MCLs in monitoring well EW-M3 since April 2007. In August 2008, with EPA approval, extraction wells EW-M2 and EW-M3 were turned off. However, TCE was detected above the MCL in extraction well EW-M3 in April, July, and October 2009 (7.7 µg/L, 7.4 µg/L, and 16 µg/L respectively). Cis-1,2-DCE was detected above the MCL in well EW-M3 in October 2009 (82 µg/L). In January 2010 TCE and Cis-1,2 DCE were detected above the MCL at concentrations of 16 µg/L and 260 µg/L, respectively. Due to the increased concentrations observed in EW-M3 during 2009 and January 2010 sampling events, EW-M3 was restarted in February 2010. TCE concentrations in EW-M1 have been slightly above or slightly below the MCL for several sampling rounds and have shown no significant downward trend since October 2004. Concentrations of cis-1,2-DCE in EW-M1 have not been detected above the MCL since December 2000.

Groundwater Monitoring Wells. Groundwater samples are collected twice per year from select MOM monitoring wells. Several rounds of groundwater monitoring well sampling, including metals analysis were conducted prior to construction of the GWTF, but analysis for metals in monitoring well groundwater samples was discontinued when data showed that metals concentrations were below primary drinking water standards. Groundwater monitoring well data for the primary Site contaminants, TCE and 1,2-DCE from April 2005 through October 2009 are described below and presented in Table 5. Analytical results for VOCs detected in the most recent comprehensive sampling round, conducted in October 2009, are presented in Attachment 1. Concentrations that exceed MCLs are presented in bold font.

VOCs. In the two most recent comprehensive monitoring well sampling events conducted as part of the MOM remedial action (April and October 2009), TCE concentrations exceeded the MCL only in wells located within and near the Source Area. The MCL for cis-1,2-DCE was exceeded in only one monitoring well (Source Area well TW-17) in the April 2009 event and none in the October 2009 event (TW-17 and several other Source Area wells were not sampled in the October 2009 event because the wells were abandoned in July and August 2009 during site preparation activities for the Source Control Remedial Action). The most recent exceedances of TCE and cis-1,2-DCE observed in monitoring wells located in the downgradient portions of the plume were detected at well ERT-9 (a bedrock well located north of Mill Pond) in the spring and fall of 2008. Monitoring well locations are shown on Figure 2. Historical data for TCE and cis-1,2-DCE in MOM monitoring wells are presented in Table 4. Complete analytical results for the Fall 2009 monitoring event are included in Attachment 1.

Additional Source Area groundwater sampling conducted during the summer of 2009 as part of the SC Remedial Action to determine the current distribution of contamination in the Source Area, indicated that high levels of groundwater contamination remain beneath and immediately adjacent to the Valley building. The sample results will serve as baseline monitoring data for the OU2 Remedial Action. TCE was detected above the MCL in groundwater samples collected from 16 of 25 monitoring wells sampled. Cis-1,2-DCE was detected above the MCL in 6 of the 25 monitoring wells sampled. The maximum TCE concentration observed during the summer 2009 sampling events was 96,000 µg/L (TW-42). The maximum cis-1,2-DCE concentration observed during the summer 2009 sampling events was 340 µg/L (TW-9). Monitoring wells sampled during the summer 2009 are shown on Figure 3. VOC data for the summer 2009 Source Area groundwater sampling events are included in Attachment 1.

Data Evaluation. Semi-annual data evaluation and annual evaluations of extraction system performance, with regard to contaminated groundwater remediation and containment, have been performed. These evaluations generally involve creating contour maps ("plume maps") of TCE concentrations in the groundwater in the overburden and bedrock. Cross-sections showing contours of TCE along the axis of the plume and perpendicular to the plume are also prepared.

Extraction system operation is evaluated to determine whether adequate plume capture is occurring and whether modifications, such is shutting down a particular well or increasing the flow rate to improve capture, is warranted, as well as the need for well rehabilitation.

A figure depicting the estimated current extent of the TCE plume in overburden groundwater (based on data collected during the Summer and Fall 2009) is included as Figure 6. A figure depicting TCE concentrations in bedrock groundwater (based on data collected during the Summer and Fall 2009) is included as Figure 7.

Some of the significant conclusions of the 2009 groundwater data evaluation are:

- The highest concentrations of TCE in Site groundwater were detected in the Source Area wells sampled in the summer 2009 sampling events. Four of these wells (TW-42, TW-43, RW-03, and RW-05) had TCE concentrations greater than 10,000; and ranging from 11,000 to 96,000 µg/L. The remaining detections ranged from 1 µg/L to 1,200 µg/L.

- The highest TCE concentrations detected in the Spring and Fall 2009 sampling events were 280 µg/L at TW-17 in Spring 2009, and 25 µg/L at TW-24 in Fall. TW-17 was not sampled in the Fall 2009 event because it was abandoned in August 2009 for the OU2 Remedial Action. The Source Area wells sampled for the Spring and Fall 2009 were all situated down gradient of the area where the highest concentrations of TCE were detected in the OU2 Remedial Action, Summer 2009 Sampling events.

- Under suitable conditions, TCE degrades to cis-1,2-DCE, then to vinyl chloride, and ultimately to innocuous breakdown products. Reviews of Site data indicate that degradation of TCE is occurring at the Site. TCE breakdown products, including cis-1,2-DCE and vinyl chloride have been detected in all areas of the groundwater contaminant plume. Within the contaminant Source Area, concentrations of TCE are generally high relative to the concentrations of its breakdown products, whereas in downgradient portions of the plume, the concentrations of breakdown products, particularly cis-1,2-DCE, are often higher than the TCE concentrations. Reviews of past sampling records indicate a general decrease of TCE concentrations through time, with the most obvious trends noted in the portions of the plume downgradient of the Source Area.

- Overburden water level and water quality data from monitoring wells near the Source Area extraction wells indicate that most of the plume is being captured at that point. The relatively low concentrations of TCE in RW-09, an overburden monitoring well south of EW-S2 (southernmost extraction well), indicate that highly contaminated groundwater is not bypassing the Source Area extraction wells on the south side.

- The two extraction wells in the area southwest of Mill Pond are capturing and extracting groundwater from the bedrock that contains relatively low concentrations of TCE: slightly above the MCL in EW-S4 and slightly below the MCL in EW-S5. In October 2009, the TCE concentrations in samples from EW-S4 (deep bedrock) and EW-S5 (shallow bedrock) were 9.9 and 1.1 µg/L, respectively. These wells may be preventing discharge of contaminated groundwater from the bedrock to the overburden, based on the highest measured TCE concentration in overburden in this area being 0.38 µg/L in DEQE-8 (October 2009).

- The capture zone in the overburden created by extraction well EW-M1 in the area north of Mill Pond was estimated to extend downgradient approximately 15 feet north in October 2009. Farther to the north and beyond the capture zone, at well DEQE-6, where the TCE concentration was 490 µg/L in April 2000, the measured concentrations of TCE in the deep overburden were 2.2 and 1.1 µg/L in the Spring and Fall 2009, respectively were below the MCL. This part of the plume that is beyond capture by the extraction system is expected to attenuate naturally as it migrates north.

- The capture zone in the bedrock created by the extraction wells in the area north of Mill Pond is not well defined. Contaminant concentrations in bedrock monitoring wells in this area have declined since the groundwater extraction system began operation. However, these wells are located near the outer edges of the contaminant plume and the contaminant concentrations at these wells may not be representative of the concentration in bedrock groundwater in the central portion of the plume. Therefore in 2010, a monitoring well triplet will be installed north of Mill Pond in order to better define the northern extent of the groundwater plume.

6.3.3 Surface Water Monitoring

Surface water samples were collected from Mill Pond in the spring of 2000, prior to GWTF startup, and again during the spring of 2001, 2002, and 2003. Samples were analyzed for VOCs and metals. The purpose of the sampling was to monitor the impact of the GWTF discharge on Mill Pond. Results showed no significant difference in the level of contaminants or change in water quality in Mill Pond following startup of the GWTF or after three years of operation. A comparison of Site surface water data with relevant surface water standards is presented in Table 6.

Surface water sampling was discontinued in 2004 because the treatment plant discharge had no adverse effects during the first three years of operation.

6.3.4 Source Area Soil Sampling

Soil sampling was performed as part of the 2004 and 2006 Source Area Re-evaluation. Soil samples were collected from a variety of depths within the overburden to better understand the nature and extent of VOC contamination in the Source Area. The soil sample results indicated widely varying concentrations of TCE and cis-1,2-DCE throughout the overburden in the Source Area. The variable nature of the contaminant distribution can likely be attributed to the heterogenic nature of subsurface soils in the Source Area. The highest contaminant concentrations were observed below the former Porch Area. The highest TCE concentration (52,000 µg/kg) was observed in a soil sample collected from SB-10. High TCE concentrations were generally observed below the clay layer, and in soil samples collected from the dense glacial till layer.

Additional soil samples were collected in July and August 2009 as part of preparation for the ISTT Remedial Action in the Source Area. The soil sample results were generally consistent with the results observed in the 2004 and 2006 investigation activities. The highest contaminant concentrations were observed below the former Materials Storage Area. The highest TCE concentration was detected in a soil sample collected from RW-05 from 3 to 4 feet bgs.

6.4 Site Inspection

A site inspection of the groundwater treatment plant was performed on April 28, 2010. The inspection was performed with Mr. Robert Ricard, the Groundwater Treatment Facility Operator. A completed site inspection form is included in Attachment 2. The overall conclusion of the inspection is that the Site and treatment facility is clean and well maintained and in good operational condition. The major issues with the treatment system have been associated with corrosion of pipes inside the treatment facility. The corroded pipes have been changed out on a needed basis. Mr. Ricard is currently in the process of changing out the manifold piping on the multimedia filters due to corrosion. No concerns were identified during the site inspection.

6.5 Interviews

In accordance with the EPA guidance for five-year reviews (EPA, 2001), personnel involved with the operation and maintenance of the Site were interviewed. The interviews took place in April and May 2010 with Mr. Robert Ricard (GWTF Operator), Ms. Janet Waldron (MassDEP), Ms. Deborah Young (abutting home owner), Mr. Thomas Cusick, Jr. (Town of Groveland Water Department Superintendent), and Mr. Edward Gallagher (Town of Groveland Health Agent).

During the interview with Mr. Thomas Cusick, Jr., of the Groveland Water Department, Mr. Cusick indicated that the Town would like to increase the flow rates from municipal water supply well Station No. 1 (located approximately 2,400 feet northeast of Mill Pond) and possibly develop a new municipal supply well in the aquifer, off Center Street. The changes are being considered to keep up with the growing demand in water usage as the Town of Groveland's population continues to grow. It is unclear at this time what impacts increasing the flow rate at Station No. 1 or adding a new well would have on the contaminant plume. Mr. Cusick also noted that Station No. 2 has been permanently abandoned.

Other significant points taken from the interviews included: Mr. Cusick stated that the Town continues to regularly sample the two sentinel wells (109 and #3) upgradient of Well Station No. 1 and there have been no VOC exceedences in the monitoring wells or Station No. 1. Mr. Cusick also confirmed that all residences in the vicinity of the contaminant plume are connected to the municipal water system. Ms. Janet Waldron of the MassDEP stated that if new extraction wells can be installed to better optimize the MOM treatment system following completion of the OU2 RA, then it should be done before MassDEP takes over O&M of the OU1 RA in June of 2011. All those interviewed all had a positive impression of the project and felt that information about the Site was readily available and the community was kept well informed.

The complete interview records are included in Attachment 2.

7.0 TECHNICAL ASSESSMENT

This section discusses the technical assessment of the remedy and provides answers to the three questions posed in the EPA guidance for five-year reviews (USEPA, 2001).

7.1 Question A: Is the Remedy Functioning as Intended by the Decision Documents?

Yes. An evaluation of Site background documents, risk assessments, ARARs, historical O&M reports, long-term process and groundwater monitoring data, interviews of personnel associated with the Site, and the site Inspection report were performed to determine whether the remedy is functioning as intended. The evaluation concluded that the MOM remedy is functioning as intended and the SC remedy is under construction. The evaluation for each operable unit is described below.

OU1 MOM Remedy

The MOM groundwater extraction and treatment system was constructed in accordance with the ROD and ESDs and in compliance with identified ARARs. The MOM remedy remains in operation and is functioning as intended. The contaminant extent and concentrations in the plume downgradient of the Source Area have decreased since operation began; however, contaminants remain at concentrations above interim cleanup levels in groundwater extending from the Source Area to beyond the northernmost extraction wells. Operation of the MOM remedy has had little effect on the concentrations of contaminants in the Source Area. The remedy remains protective because contaminated groundwater is not used for household or potable purposes and does not pose a risk from vapor intrusion/inhalation, as further discussed in Section 7.2.2.

The MOM groundwater treatment system is functioning well, effectively treating the extracted groundwater and achieving required standards for discharge of the effluent to surface water and requirements for air emissions. There have been no exceedences of the VOC surface water discharge limits or air emission requirements since operation began in 2000. There have been minor exceedences of the metals surface water discharge limits in a small fraction of GWTF effluent samples (5 arsenic, 5 lead, and 2 mercury exceedence in 169 samples). Although there were a few exceedences of benchmark values, the toxicity testing showed no adverse effects on the ecological receptors.

The MOM groundwater extraction system appears to be effectively capturing the majority of the Site contamination migrating in groundwater; however, a small fraction of the contaminant plume may be bypassing the extraction system. As further discussed below, in 2010 EPA will be installing a monitoring well triplet north of Mill Pond in order to better define the northern extent of the groundwater plume.

The Source Area extraction wells are effectively capturing nearly all of the contamination migrating from the Source Area in groundwater; however, a small amount of contamination appears to be migrating beyond the Source Area wells, as evidenced by the presence of TCE at concentrations somewhat higher than its MCL (5 µg/L) in monitoring wells north, northeast, and east of the Source Area extraction wells (monitoring wells TW-47, TW-12, TW-24 – shown on Figures 2 and 3). The most recent samples collected from these wells in 2009 had TCE concentrations of 8.3 µg/L, 6.1 µg/L, and 25 µg/L, respectively (additional details regarding these data are provided in Section 6.3.2. Two of these wells (TW-12, TW-24) are screened in the bedrock aquifer, indicating that a portion of the contaminant plume may be migrating from the Source Area in bedrock. A small amount of contaminated groundwater bypassing the Source Area extraction wells does not affect the protectiveness of the remedy because the groundwater in the area is not being used for household or potable purposes and is not adversely affecting environmental receptors.

A fraction of the contaminant plume may also be bypassing some of the downgradient extraction wells, possibly in the bedrock aquifer. Although the concentrations of TCE and cis-1,2-DCE in the extraction wells located south of Mill Pond have consistently remained close to or below the MCL, TCE and cis-1,2-DCE concentrations in downgradient well EW-M3 increased gradually in 2009, with both VOCs exceeding MCLs in October 2009 (TCE 16 µg/L and cis-1,2-DCE 82 µg/L) and January 2010 (TCE 16 µg/L and Cis-1,2 DCE 260 µg/L). Additionally, the continuing presence of low concentrations of TCE in monitoring wells downgradient of the extraction wells north of Mill Pond may result from contaminants bypassing the extraction well network, or from residual contamination in the area. The capture zone in the bedrock created by the extraction wells in the area north of Mill Pond is not well defined. Contaminant concentrations in bedrock monitoring wells in this area have declined since the groundwater extraction system began operation. However, the bedrock wells are located near the outer edges of the contaminant plume and the contaminant concentrations at these wells may not be representative of the concentration in bedrock groundwater in the central portion of the plume.

Due to removal of some of the original downgradient monitoring wells, the existing monitoring well network downgradient of the extraction wells north of Mill Pond is insufficient to fully evaluate the downgradient extent of the groundwater contaminant plume, particularly in the bedrock aquifer. This does not affect the current protectiveness of the remedy because groundwater in the vicinity of the contaminant plume is not being used for household or potable uses and Site groundwater does not pose a vapor intrusion risk. Additional wells will be needed to confirm when cleanup levels are ultimately achieved and whether any contaminants are bypassing the downgradient extraction system. It is recommended that a new monitoring well cluster, consisting of 3 wells (shallow overburden, deep overburden, and bedrock), be installed to replace a well cluster (wells 102, ERT-23, and 101) formerly located between Mill Pond and Main Street, that was destroyed in 1998 during construction of a residence. The last time these wells were sampled (in 1996) TCE concentrations exceeded the interim cleanup level (5 µg/L) in the deep overburden well (20 µg/L in ERT-23) and the bedrock well (100 µg/L in well 101). At the time of the 1996 sampling event, these wells were the farthest downgradient wells containing TCE at concentrations above interim cleanup levels. Because the destroyed wells have not been replaced, it cannot be confirmed whether the contaminants in this area have attenuated to acceptable levels. The replacement of the destroyed well cluster is planned as a component of the long-term operation and maintenance activities for the MOM remedy; the wells are expected to be installed in late 2010.

The institutional controls/grant of environmental restrictions required in the MOM ROD have not yet been implemented. EPA recently received comments from MassDEP on the draft institutional controls document and is currently working to implement institutional controls to prohibit use of groundwater from contaminated portions of the Site. The current protectiveness of the remedy is not compromised by the absence of institutional controls because groundwater from contaminated areas of the Site is not being used for household or potable uses. It was confirmed that the residences, businesses, and municipal operations in the vicinity of the Site are served by the Groveland municipal water supply system.

OU2 SC REMEDY

The initial SC remedy called for in the 1988 ROD and 1996 ESD was constructed and operated by Valley/GRC beginning in 1992. It ceased operations in 2002 as a result of Valley terminating their business operations. The Source Area re-evaluation performed by EPA in 2004 to 2006 concluded that the SVE system was minimally successful in achieving cleanup levels. Source Area soil.

Investigations performed in 2009 confirmed that high concentrations of VOCs remain in Source Area soil and groundwater. Although the SVE system has not operated for approximately 8 years, the protectiveness of the remedy has not been compromised. The MOM remedy Source Area extraction wells effectively capture the vast majority of the contamination migrating in groundwater away from the Source Area, and downgradient extraction wells further contain contaminant migration. The contaminants remaining in the Source Area soil and groundwater do not pose a current risk because there is no pathway for human exposure to the contaminants, which are confined to the subsurface on the vacant site.

Implementation of the revised SC remedy called for in the 2007 ESD (ISTT) began in April 2009. The ISTT remedy, which consists of ERH in conjunction with multi-phase (vapor and groundwater) extraction, was designed and is being constructed in accordance with the 2007 ESD. Construction is expected to be completed in July 2010. The ISTT system is scheduled to begin operation in late July 2010 and is expected to achieve interim cleanup levels in soil and overburden groundwater by the end of 2010.

7.2 Question B: Are the Exposure Assumptions, Toxicity Data, Cleanup Levels, and Remedial Action Objectives (RAOs) used at the Time of Remedy Selection Still Valid?

No, some of the exposure assumptions and toxicity data used at the time of the 1988 and 1991 remedy selections and subsequent ESDs are no longer valid. Toxicity values, exposure assumptions, exposure pathways to be considered, and methods of evaluating risk have changed since the time of the 1988 and 1991 remedy selections; however, these changes do not impact the protectiveness of the remedy. The 1987 Endangerment Assessment (Alliance, 1987), 1988 Endangerment Assessment Amendment (CDM, 1988), and 1991 Supplemental MOM RI (NUS Corp., 1991) concluded that the greatest potential risks were attributed to the ingestion of contaminated groundwater, which exceeded EPA risk management criteria for all areas because of the presence of VOCs and inorganics. Groundwater within the contaminated plume is not currently used as a source of household water and, as indicated in the OU1 ROD, before groundwater is allowed to be used for a source of drinking water and household water, a risk assessment will be performed to determine whether the remedial action is protective when the groundwater cleanup levels have been attained.

The 2005 Five-Year Review evaluated the indoor air pathway for future potential on-site residents and concluded that potential exists for indoor air impacts should an occupied building exist at the Valley property. Further evaluation of the indoor air pathway for potential future on-site residents was conducted as part of the 2006 Source Area Re-Evaluation Report, which concluded that potential on-property risks and hazards are within or below EPA risk management guidelines. Since soil and groundwater VOC concentrations are greater on-site than off-site, it was concluded that the off-property indoor air pathway was also unlikely to present a risk of harm to off-property receptors. Fall and summer 2009 groundwater sampling confirms that the vapor intrusion pathway is currently incomplete for areas beyond the Valley property because downgradient homes are located beyond the extent of the overburden VOC plume. The remedy is currently protective with respect to the vapor intrusion pathway.

The indoor air pathway at the GWTF was quantitatively evaluated for the 2005 Five-Year Review to determine whether the vapor intrusion pathway may become significant, should the Source Area extraction wells be shut down for maintenance or for other reasons. Based on the modeled indoor air concentrations, the risk and hazard associated with worker inhalation exposures did not exceed the EPA risk management criteria.

Interim groundwater cleanup levels were established in the 1991 OU1 ROD as federal MCLs, Massachusetts MCLs (MMCLs), or health-based values. The MCL and MMCL for arsenic in groundwater changed from 50 µg/l to 10 µg/l, effective in January 2006. During the last groundwater monitoring round in which inorganics were analyzed (October 1998 - performed using the low-flow sampling method), arsenic was not detected in samples from any monitoring wells above the reporting limit of 5.4 µg/l. Routine groundwater monitoring for inorganics at Site monitoring wells was discontinued by EPA in 1998. Once groundwater cleanup for VOCs is complete, sampling for inorganics throughout the Site will be performed to confirm that inorganic contaminant levels are below MCLs and applicable health-based criteria.

Soil cleanup levels were developed in the 1988 Source Control ROD to be protective of the potential leaching of organic compounds to groundwater. Those clean-up goals were recalculated in the 2007 ESD and are protective of groundwater, direct contact, and vapor intrusion. See Section 7.2.1.

The Remedial Action Objectives (RAOs) used at the time of the remedy selections are still valid and the 2007 ESD soil clean-up goals remain valid.

7.2.1 ARARs Review

Review of Applicable or Relevant and Appropriate Requirements (ARARs) was performed to check the impact on the remedy from any changes in standards that were identified as ARARs in the RODs, newly promulgated standards for contaminants of concern, and TBCs (to be considered) that may affect the protectiveness of the remedy. The tables in Attachment 3 provide an evaluation of ARARs for each operable unit using the regulations and requirement synopses listed in the RODs as a basis. Note that no location-specific ARARs were identified in the ROD for OU2 (Source Control), but there were location-specific ARARs for OU1 (Management of Migration) related to the proposed location of the treatment facility. The numerical standards applicable or relevant and appropriate to Site groundwater are summarized in Table 1 of Attachment 3 for the contaminants of concern identified in the RODs. The ARARs evaluation also includes a determination of whether each regulation cited in the RODs is currently an ARAR or TBC and whether the requirements have been met. The listed ARARs that remain applicable or relevant and appropriate to the Site have been, are currently, or will be complied with. Changes in numeric standards and ARARs that resulted from remedy changes or changes in regulatory interpretations are summarized below.

Changes in Numeric Standards. The MCL and MMCL for arsenic in groundwater changed from 50 µg/l to 10 µg/l, effective in January 2006. Arsenic was identified as a contaminant of concern in the RODs, but reported detections above MCLs that were observed during the remedial investigations (1991 and earlier) are now considered likely to have been from particulate matter entrained within the groundwater samples because of the sampling method. Groundwater monitoring performed more recently using EPA's low-flow groundwater sampling protocol did not reveal any MCL exceedences for arsenic in samples from monitoring wells. During the October 1998 groundwater monitoring round (performed using the low-flow sampling method), arsenic was not detected in samples from any monitoring wells above the reporting limit of 5.4 µg/l. Routine groundwater monitoring for inorganics throughout the plume was discontinued by EPA after the October 1998 monitoring round. However, the groundwater treatment plant extraction wells, plant influent, and plant effluent are routinely monitored for inorganics. Arsenic has frequently been detected above the 10 µg/l MCL in two extraction wells (EW-G1 and EW-G2), but it is usually not detected at concentrations higher than the MCL in the other extraction wells. The combined influent to the groundwater treatment plant (from all operating extraction wells) has only exceeded the MCL once in the monthly treatment plant samples: during the first month of operation in April 2000. The treatment system is capable of removing arsenic to the surface water discharge limit of 0.75 µg/l (average monthly limit). The discharge limit for arsenic has been exceeded in only 5 of 169 effluent samples collected. Once groundwater cleanup for VOCs is complete, sampling for inorganics throughout the Site will be performed to confirm that inorganic contaminant levels are below MCLs and applicable health-based criteria. A comparison of inorganic concentrations in samples from Site monitoring wells with concentrations in samples from background wells (that is, wells located upgradient of the Site) may also be needed. As indicated in the OU1 ROD, a risk assessment will be performed to determine whether the remedial action is protective when the interim groundwater cleanup levels have been attained. Interim cleanup levels may be revised at that time, based on the results of the risk assessment and the numeric standards in effect at that time.

No other numerical standards for the contaminants of concern listed in Table 23 of the 1991 ROD have changed since the last five-year review in 2005.

Soil cleanup levels were developed in the Source Control ROD to be protective of the potential leaching of organic compounds to groundwater based on 1988 default soil/water equilibrium partitioning assumptions. The 2005 Five-Year Review determined that the ROD soil cleanup levels were overly protective of both direct contact and leaching to groundwater using a comparison to Region 9 residential PRGs (USEPA, 2004b) and to generic Soil Screening Levels (USEPA, 2002b) protective of contaminant migration to groundwater (using the EPA recommended dilution attenuation factor of 20). Therefore, a re-evaluation of the soil cleanup levels was recommended. The 2007 ESD established new soil clean-up goals based on recalculation using site-specific soil characteristics. The new levels were also developed based on the following guidance: *Soil Screening Guidance: User's Guide*, April 1996, OSWER Directive 9355.4-23 and the *Supplemental Guidance for Developing Soil Screening Levels for Superfund sites*, August 2001, OSWER Directive 9355.4-24. These recalculated site-specific soil clean up levels are protective of groundwater (MCLs), direct contact exposures (i.e., the incidental ingestion, dermal contact and inhalation of dust released from the soil), and for the subsurface vapor intrusion pathway (i.e., the inhalation of contaminated air).

Compound	2007 ESD Cleanup Level for Soil[(1)] (µg/kg)
Trichloroethene	77
Vinyl Chloride	11
Methylene Chloride	22
Tetrachloroethene	56
1,1-Dichloroethene	45
Trans-1,2-Dichloroethene	626
Toluene	22,753
1,1,1-Trichloroethane	1,388
Cis-1,2-Dichloroethene	418

(1) Recalculated Soil Clean-up Levels (USEPA, 2007, Table 2 and Attachment A).

Changes in ARARs, Source Control Operable Unit. Certain regulations that were identified as applicable or relevant and appropriate in the 1988 ROD are no longer considered ARARs because of changes in the remedy that occurred post-ROD. For example, the Massachusetts Groundwater Discharge Permit requirements that regulate discharges to groundwater are not an ARAR for the MOM remedy because discharge is to surface water rather than groundwater, as was originally contemplated in the ROD. However, because the amended SC remedy includes recirculation of treated groundwater, these ARARs remain applicable to the SC remedy. The SC remedy will comply with these ARARs by recirculating treated water from the GWTF, which meets lower standards than required by the groundwater discharge regulations. Massachusetts Groundwater Quality Standards are no longer an ARAR because they were rescinded in 2009 when revisions to the Groundwater Discharge Permit Program eliminated the need for the separate standards. Regulations and guidance related to worker protection (e.g., OSHA, Threshold Limit Values) are no longer considered ARARs for CERCLA response actions but these regulations and guidance were complied with during construction and are complied with at the GWTF. Proposed regulations for UST removals that were cited in the 1988 ROD are now promulgated regulations that were applicable to the 2006 removal of USTs from the Valley property and any others that may be identified in the future.

Changes in ARARs, MOM Operable Unit. Certain regulations that were identified as applicable or relevant and appropriate in the 1991 ROD are no longer considered ARARs because of changes in the remedy that occurred post-ROD. Massachusetts Groundwater Quality Standards applicable to discharges to groundwater are no longer considered ARARs because the remedy does not include discharges to groundwater (the GWTF discharge is to surface water); additionally, they were rescinded in 2009 when revisions to the Groundwater Discharge Permit Program eliminated the need for the separate standards. Regulations regarding wetlands and floodplains are no longer ARARs because the re-location of the GWTF from alongside Johnson Creek, to the Archdiocese property, avoided the need to construct near wetlands and in the 100-year floodplain of Johnson Creek.

Changes in ARARs, 2007 ESD. The 2007 ESD addressed modifications and enhancements planned for the existing soil vapor extraction (SVE) system for soil and the recalculation of the soil clean up levels that were originally specified in the 1988 Source Area Record of Decision (ROD), as noted above. In-situ thermal technology was added as an enhancement and modification to SVE, the technology originally selected in the 1988 ROD. There were no new or additional ARARs based on this remedy enhancement. However, because the ISTT approach being implemented requires recirculation of treated effluent back into the treatment area, ARARs regulating discharges to groundwater are considered to be applicable.

7.2.2 Review of Human Health Risk Assessments and Toxicity Factors Serving as the Basis for the Remedy

In this Five-Year Review Report, the impact of changes in toxicity values on remedy protectiveness has been evaluated. Any changes in current or potential future exposure pathways or exposure assumptions that may impact remedy protectiveness are also noted. In addition, environmental data have been qualitatively evaluated to determine whether exposure levels existing at the Site present a risk or hazard to current human receptors.

Changes in exposure pathways, toxicity values, and risk assessment methods that served as the basis for the cleanup levels, as contained in the RODs, have been re-evaluated to determine whether any of the noted changes impact the protectiveness of the remedy. In addition, environmental data have been qualitatively evaluated to determine whether exposure levels existing at the Site present a risk to current human receptors.

An Endangerment Assessment (Alliance, 1987) and an Endangerment Assessment Amendment (CDM, 1988) were performed for the SC Operable Unit (OU2) to evaluate potential human health risks from exposure to contaminants from the Valley property. The receptor populations used for evaluation purposes were the employees at the Valley property exposed to contaminated soil, residents in close proximity to the Valley property using impacted groundwater for household uses, and local residents exposed to surface water and sediment in impacted ponds and streams.

A baseline public health and ecological risk assessment was also conducted as part of the supplemental MOM remedial investigation (NUS Corporation, 1991). Receptor populations of interest included residents who may use contaminated groundwater for household uses and recreational site users who may fish, swim, and wade in impacted surface water bodies. Risks and hazards associated with exposure to groundwater were evaluated for four areas of the plume.

The risk assessments concluded that greatest potential risks were attributed to the ingestion of contaminated groundwater, which exceeded EPA risk management criteria in all areas because of the presence of VOCs and inorganics. TCE, arsenic, and beryllium were the contaminants that contributed most to the carcinogenic risk estimates. Non-carcinogenic organ-specific hazard estimates (hazard indices) exceeded the EPA target of one for each of the four areas of the plume. Contaminants contributing to organ-specific hazard indices greater than one included VOCs and inorganics. MCLs were exceeded for a number of contaminants, including TCE, PCE, 1,1-DCE, 1,2-DCE, aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, iron, nickel, and selenium. It was determined that contaminated groundwater represented a possible future threat if Municipal Water Supply Station No.1 were to increase its pumping rate, or if additional drinking water wells were placed into the aquifer.

Interim groundwater cleanup levels were established in the 1991 OU1 MOM ROD as federal MCLs, Massachusetts MCLs, or health-based values. Cumulative risk and hazard associated with the interim groundwater cleanup levels exceed EPA risk management criteria. Therefore, when the groundwater cleanup levels have been attained, the 1991 MOM ROD indicates that a risk assessment will be performed to determine whether the remedial action is protective.

Based on conclusions of the 1987, 1988, and 1991 risk assessments, risks and hazards associated with current and future potential exposure to contaminated soil at the Valley property and surface water, sediment, and fish tissue did not exceed EPA's risk management criteria for carcinogenic and non-carcinogenic effects. Sampling data indicated that the surface soils were relatively unimpacted and were not evaluated quantitatively. Subsurface soil data were quantitatively evaluated. The soil evaluation indicated that risks and hazards did not exceed risk management criteria. Limited accessibility of soil contaminants was noted because of their presence beneath structures, pavement, or at depths at which incidental human contact would not be expected (e.g., greater than four feet bgs). Even though direct contact soil risks and hazards were not estimated in the 1988 ROD, soil cleanup goals that are protective were established in the OU2 SC ROD for VOCs leaching to groundwater and contributing to groundwater contamination above cleanup goals. A soil/water equilibrium calculation served as the basis for the soil cleanup goals. Surface water concentrations in site-related brooks and ponds were also not expected to result in toxic effects to aquatic organisms. Risks to the ecological community of the Johnson Creek watershed from Site contaminants were considered minimal.

Changes in Exposure Pathways/Assumptions

The risk assessments performed for OU1 and OU2 comprehensively evaluated the groundwater, soil, sediment, and surface water pathways and receptors of interest at the Site, except for the recreational sediment ingestion pathway and the non-ingestion household groundwater use pathways (e.g., inhalation and dermal contact while showering). Because only trace levels of Site-related VOCs were detected in sediments associated with the Site and concentrations of naturally-occurring and anthropogenic compounds (inorganics and polycyclic aromatic hydrocarbons) were present at levels consistent with background conditions, the lack of quantitative evaluation of the sediment ingestion pathway does not impact the protectiveness of the remedy. The lack of quantitative evaluation of the non-ingestion household groundwater use pathways also does not impact remedy protectiveness because groundwater is not currently used as a source of household water and, as indicated in the OU1 ROD, a risk assessment will be performed to determine whether the remedial action is protective when the groundwater cleanup levels have been attained before groundwater is allowed to be used for a source of drinking water and household water.

The risk assessment also did not evaluate direct contact with groundwater by utility or construction workers if they were to excavate into the water table. However, the average depth to groundwater at the Site (i.e., 25 to 30 feet below ground surface) is greater than the depth of typical excavation activities. Therefore, this exposure pathway is considered incomplete at the Site because utility and/or construction workers would not be exposed to contaminated groundwater.

The original risk assessments performed for OU1 and OU2 in 1987, 1988 and 1991 did not evaluate the vapor intrusion pathway. This pathway may be of concern at sites where shallow soil and groundwater contaminated with VOCs exists in close proximity to occupied buildings. The 2005 Five-Year Review evaluated the indoor air pathway for future potential on-site residents. Because October 2004 groundwater data at the Valley property indicated exceedences of the TCE generic screening values for the indoor air pathway (5 µg/L; USEPA, 2002) and soil VOCs were also present, the 2005 five-year review concluded that potential exists for indoor air impacts should an occupied building exist at the Valley property. Further evaluation of the indoor air pathway for potential future on-site residents was conducted as part of the 2006 Source Area Re-Evaluation Report. This evaluation was performed in accordance with the draft OSWER guidance entitled: *OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)*, November 2002, EPA530-D-02-004.

The 2006 evaluation utilized sub-slab soil vapor samples collected from beneath the Valley facility to estimate indoor air concentrations using the Johnson and Ettinger model. Modeled indoor air concentrations were used to estimate potential risks to future on-site residents. The 2006 report concluded that potential on-property risks and hazards are within or below EPA risk management guidelines.

Since soil and groundwater VOC concentrations are greater on-site than off-site, it was concluded that the off-property indoor air pathway was unlikely to present a risk of harm to off-property receptors. Based on summer and fall 2009 groundwater and March 2010 soil data, shallow soil and groundwater VOCs continue to exist at concentrations above cleanup levels at the Valley property, but at concentrations less than those detected in 2006. Therefore, the remedy is currently protective with respect to the vapor intrusion pathway at the Valley property because the measured levels were within EPA's acceptable risk range.

Operation of the three groundwater extraction wells (EW-S-1 through EW-S-3) effectively captures all or nearly all of the groundwater contaminant plume migrating from the Site Source Area and prevents significant current indoor air impacts for employees at the GWTF. However, the indoor air pathway at the GWTF was quantitatively evaluated for the 2005 five-year review to determine whether the vapor intrusion pathway may become significant, should the Source Area extraction wells (EW-S-1 through EW-S-3) be shut down for maintenance or for other reasons and the groundwater contaminant plume was allowed to migrate beneath the downgradient GWTF. The maximum concentrations of TCE, 1,2-dichloroethene, and 1,1,1-trichloroethane detected in the three groundwater extraction wells sampled in 2005 were used to estimate indoor air concentrations, using assumptions specific to the GWTF building (building dimensions, ventilation rate, depth to groundwater, and building construction details). Based on the modeled indoor air concentrations, the risk and hazard associated with worker inhalation exposures did not exceed the EPA risk management criteria. The maximum concentrations of TCE and 1,2-dichloroethene detected in 2010 in the same three groundwater extraction wells were less than the concentrations detected in 2005. 1,1,1-trichloroethane was not detected in these wells in 2010. Therefore, the remedy is currently protective with respect to the vapor intrusion pathway at the GWTF.

The vapor intrusion pathway was considered incomplete for areas downgradient of the GWTF. The nearest homes downgradient of the GWTF are located beyond the downgradient extent of the overburden VOC plume, as determined based on fall and summer 2009 sampling. Because there are currently no occupied buildings located above the groundwater VOC plume the remedy is currently protective for these downgradient homes with respect to the vapor intrusion pathway.

Changes in Toxicity

Toxicity values for TCE are undergoing review and are not currently available in the Integrated Risk Information System (IRIS), the primary EPA source for toxicity values. For this reason, second and third tier sources must be used to obtain toxicity values to characterize risks from TCE. Currently EPA recommends using the inhalation unit risk factor of 0.000002 $(\mu g/m^3)^{-1}$ and oral cancer slope factor of 0.0059 $(mg/kg\text{-}day)^{-1}$ available from California EPA and a Reference Concentration (RfC) of 10 $\mu g/m^3$ from New York Department of Health (NYDOH).

Changes to TCE toxicity values may impact the 2005 Five-Year Review evaluation of risks to workers potentially exposed (via the vapor intrusion pathway) at the GWTF if the plume migrated below the GWTF, or the 2006 Source Area Re-evaluation Report evaluation of risks to future residents on-site. The California EPA inhalation unit risk factor is less than the inhalation unit risk factor of 0.00011 $(\mu g/m^3)^{-1}$ used in the 2005 Five-Year Review and 2006 Source Area Re-evaluation Report for the evaluation of cancer risks. Use of the current toxicity value would decrease those estimated cancer risks. The NYDOH RfC is less than the RfC used in the 2005 Five-Year Review and 2006 Source Area Re-evaluation Report for the evaluation of non-cancer hazards. Lower RfCs result in higher hazard quotients. However, because concentrations of TCE in the extraction wells have declined since 2005, non-cancer hazards for workers would not now exceed risk management criteria, despite the lower RfC. Non-cancer hazards for residents estimated in the 2006 Source

Area Re-evaluation Report were low enough that the decreased RfC would not result in non-cancer hazards exceeding risk management criteria. Thus vapor intrusion does not pose an unacceptable risk using therevised toxicity factors.

Cleanup of soil was indicated based on the potential leaching of soil contaminants to groundwater rather than on direct contact risk and hazard; however, direct contact exposures were considered in the development of the 2007 ESD revised clean-up goals through comparison to EPA Region 9 Preliminary Remediation Goals (PRGs). EPA has discontinued the use of Region 9 PRGs and replaced them with Regional Screening Levels (RSLs). The primary soil COPC is TCE. The current RSL for TCE is based on an oral slope factor of 0.0059 $(mg/kg\text{-}day)^{-1}$ available from California EPA. The TCE cancer slope factor used historically to develop Region 9 PRGs for direct contact with soil was 0.011 $(mg/kg\text{-}day)^{-1}$. Therefore, the historic PRG for TCE in soil was overly protective by today's standards. Risk-based RSLs associated with a 10^{-6} cancer risk level for residential and commercial use (USEPA, 2010) are 2,800 ppb and 14,000 ppb, respectively. Soil data collected at the Valley property in 2009 indicate detected concentrations of TCE ranging from 4.3 ppb to 11,000 ppb in soils less than four feet bgs and between 0.26 ppb and 8,700 ppb in deeper soils. Comparison of 2009 data to current RSLs indicates that current soil concentrations of TCE would not be associated with direct contact risk above regulatory guidelines ($1x10^{-4}$ cancer risk) for either future residential or commercial site use. The new TCE soil clean-up levels established in the 2007 ESD are protective of groundwater, direct contact and vapor intrusion. Therefore, the remedy remains protective. The Valley property is not currently occupied and contamination is at depth or located below structures or pavement. Because of the on-going review of the TCE toxicity factors, should the Site be developed for active use in the future and toxicity values for TCE be changed, the soil contaminants remaining at depth should be re-evaluated. Institutional controls are not currently in place at the Valley property to control Site soil exposures, but are needed until cleanup is completed.

For groundwater, changes in toxicity values would not affect the long-term protectiveness of the groundwater remedy because, as indicated in the 1991 OU1 ROD, a risk assessment will be performed to determine whether the remedial action is protective when the groundwater cleanup levels have been attained.

As noted above, soil clean-up goals were recalculated in the 2007 ESD were also based on source area contamination leaching to groundwater. Since the clean-up goals utilized MCLs as the basis, changes in toxicity values do not impact the leaching-based soil clean-up goals.

Changes in Risk Assessment Methods

Since the human health risk assessments to support the 1988 and 1991 RODs were performed, changes have occurred in the methods used to calculate risks from exposures to soil, surface water, sediment, groundwater, and ambient air. Methods for evaluating the vapor intrusion pathway have been introduced (EPA, 2002). Recommendations for dermal permeability factors and revised guidance on dermal exposure evaluations have changed (EPA RAGS E, 2004). Guidance recommending the use of inhalation unit risk factors and reference concentrations in conjunction with average daily concentration estimates rather than average daily dose estimates for evaluating inhalation exposures has been published (EPA RAGS F, 2009). Because each of the pathways evaluated in the original risk assessments are no longer complete or currently incomplete and the inhalation evaluations in the 2005 Five-Year Review are consistent with current inhalation risk guidance and vapor intrusion guidance, changes in risk assessment methods do not impact the selected remedies. As indicated in the OU1 ROD, a risk assessment will be performed to determine whether the remedial action is protective when the interim groundwater cleanup levels have been attained. It is expected that this risk assessment will incorporate any changes in risk assessment methods.

New Contaminants and/or Contaminant Sources

No new contaminants or contaminant sources have been identified since startup of the remedy.

Expected Progress toward Meeting RAOs

The downgradient plume continues to recede as shown in Figure 5. COCs in select monitoring wells continue to exceed interim groundwater cleanup levels (MCLs and MMCLs). Continued exceedences of interim cleanup levels indicate that completion of the drinking water ingestion pathway would present a risk to residents using groundwater as a source of household water. Since untreated groundwater from the Site is not currently used by area residents as a source of potable water, the drinking water exposure pathway is incomplete. Homes are located downgradient of the known extent of the overburden plume. The town is considering increasing the pumping rate of Municipal Well Station No. 1, or installing a new municipal well within the aquifer. Before MassDEP would consider an increase in pumping rate from the aquifer, both the Town and EPA will need to perform additional evaluations per MassDEP requirements. Until groundwater concentrations meet interim cleanup levels (MCLs), institutional controls should be implemented at the Site to ensure that no private wells are installed at or near the Site. Institutional controls have not yet been put in place. Once groundwater VOC concentrations are below MCLs/MMCLs, sampling for inorganics will be performed to confirm that inorganic contaminant levels continue to be below MCLs and applicable health-based criteria. As indicated in the OU1 ROD, a risk assessment will be performed to determine whether the remedial action is protective when the interim groundwater cleanup levels have been attained.

Concentrations of COCs in groundwater and soil within the Source Area continue to far exceed clean-up goals; however, the Source Control Remedial Action currently being constructed is designed to result in soil and groundwater in the Source Area achieving clean-up goals by the end of 2010.

Should the Site be developed for active use in the future, the soils currently at depth should be evaluated and managed properly to prevent future direct contact exposures until soil remediation is completed. Should soil and groundwater VOC contamination continue to exist coincident with future site development involving building construction, the indoor air pathway should be further evaluated to determine the potential risk to potential receptors at the Valley property. Comprehensive institutional controls are in the process of being finalized for the Site to ensure long-term remedy protectiveness for all Site remedies.

7.2.3 Review of Ecological Risk Assessments and Toxicity Factors Serving as the Basis for the Remedy

Ecological risk assessments were conducted as part of both the 1987 Endangerment Assessment and the 1991 Supplemental MOM remedial investigation report. The risk evaluations focused on the presence of contamination in surface water and the resulting effects on aquatic organisms. Surface water sampling results demonstrated concentrations of organic and inorganic contaminants above natural background levels. Therefore, resident aquatic organisms in the stream system and those using the streams for spawning were evaluated. The evaluation concluded that risks to the ecological community of the Johnson Creek watershed from Site contaminants were minimal.

Treated water from the GWTF is discharged from the plant through an underground pipeline that emerges at an outfall constructed on the western shore of Mill Pond. The discharge is sampled quarterly with analysis for VOCs, metals, and toxicity, to evaluate compliance with discharge limits, established for the protection of aquatic life.

Since startup of the facility in 2000, there have been some minor exceedences of metals surface water discharge limits. Specifically, the effluent discharge limit of 0.75 μg/l for arsenic was exceeded on five occasions in the past ten years (0.79 μg/l in September 2002, 0.79 μg/l in June 2003, 0.96 μg/l in August 2003, 2.6 μg/L in November 2007 (duplicate average), and 2.3 μg/L in June 2008); the effluent discharge limit of 1.3 μg/l for lead was exceeded four times (1.8J μg/l in July 2001, 1.5 μg/l in January 2003, 1.6 μg/l in March 2004, and 1.4 μg/L in May 2006); and the effluent discharge limit of 0.273 μg/l for mercury was exceeded twice (0.35 μg/l in November 2002 and 1.9 in December 2007). The slight exceedences of the discharge limits for arsenic would not result in a significant impact to aquatic organisms in Mill Pond because the discharge limits are set below the ambient water quality criteria (AWQC). The freshwater AWQC for arsenic (150 μg/L) was not exceeded (USEPA, 2005). One of the mercury exceedences and all of the lead discharge limit exceedences also exceed the freshwater AWQC for mercury (0.77 μg/L) and lead (1.1 μg/L adjusted for site-specific hardness). However, a comparison of measured surface water concentrations to AWQC demonstrates that there are no exceedences of AWQC in Mill Pond, which receives the treated discharge water. Chemicals currently tested in brook and pond surface waters were either non-detect or detected at low levels below AWQC.

In addition, impacts to surface water could not be confirmed in chronic whole effluent toxicity tests performed over the years with Pimphales (fathead minnow) and Ceriodaphnia (water flea). Test methods measured survival, growth and reproduction (water flea only). Effects were observed less than 10 percent of the time and when they were recorded, those results were incongruous with concentrations of the chemicals in whole effluent (Table 1-2 in Attachment 1). The few times effects were observed they were inversely related to the dilution series of the whole effluent. Therefore, the testing does not point to toxicity cause and effect (i.e., no dose response was observed) and surface water in the site-related brooks and ponds, and effluent to Mill Pond, do not appear to pose a risk or impairment to aquatic life. Moreover, sediment contamination is low in site-related brooks and ponds and does not pose a risk to aquatic life. Therefore, the remedy remains protective with respect to the environment.

7.3 Question C: Has any other Information Come to Light that Could Call into Question the Protectiveness of the Remedy?

The SVE system mandated by the 1988 SC ROD ceased operation in 2002. The 2004 & 2006 investigations conducted by EPA concluded that subsurface soil contamination remains in the Source Area at levels well above Site interim cleanup levels because the SVE system was minimally effective in reducing the source area contamination. This remaining contamination represents a continuing source of VOC contamination to groundwater. Shutdown of the SVE system did not pose additional short-term risks because contaminated groundwater from the Source Area continued to be captured by the operating Source Area groundwater extraction wells and treated in the GWTF and there are no complete routes of exposure to Source Area contaminants.

Construction of the revised SC remedy mandated by the 2007 ESD began in April 2009. In April 2010, two of the Source Area extraction wells (EW-S2 and EW-S3), which pumped at a combined rate of less than 1.5 gpm, were taken off line to facilitate construction of the ISTT system. The remaining well (EW-S1) will remain in operation, in manual control mode, until start-up of the ISTT system in July 2010, at which time the ISTT system will establish and maintain hydraulic control of the Source Area. Although two of the three Source Area wells will be off line for approximately three months, the amount of contaminated groundwater bypassing the extraction system will be limited, as the pumping rate of the remaining well increased by approximately 1.5 gpm (from about 3.5 gpm to 5 gpm) to compensate for the decrease caused by shut down of the other two wells. Once the ISTT system is operational, groundwater extraction from approximately 15 multi-phase extraction wells within the Source Area will provide hydraulic containment, ensuring that the remedy remains protective throughout treatment.

During the interviews conducted for the Five-Year Review, the Town of Groveland Water Department Superintendent stated that the Town is considering increasing the pumping rate of Well Station No. 1 and possibly developing a new municipal water supply well in the Site aquifer, off Center Street. Additional pumping in the aquifer may impact the groundwater contaminant plume, drawing it into the municipal well(s) or closer to downgradient residences. A complete evaluation of the proposed changes and the effects on the groundwater contaminant plume is needed to ensure that the remedy remains protective in the future. MassDEP will need to review and approve any increase to Town well No.1 and/or any new proposed Town well located in the same aquifer.

There is no other information that calls into question the protectiveness of the remedy.

7.4 Technical Assessment Summary

A summary of the technical assessment of the MOM and SC Remedies is provided below.

<u>OU1 MOM Remedy</u>

The MOM groundwater extraction and treatment system was constructed in accordance with the ROD, ESDs, and identified ARARs and began operation in April 2000. The remedy remains in operation and is functioning as intended, in compliance with ARARs. The contaminant extent and concentrations in the plume downgradient of the Source Area have decreased since operation began; however, contaminants remain at concentrations above interim cleanup levels in groundwater extending from the Source Area to the area north of Mill Pond, beyond the northernmost extraction wells. Operation of the MOM remedy has had little effect on contaminant concentrations in the Source Area.

The MOM groundwater treatment system is functioning well, effectively treating the extracted groundwater and achieving required standards for air emissions and for discharge of the effluent to surface water. The MOM groundwater extraction system appears to be effectively capturing the majority of the Site contamination migrating in groundwater. A small fraction of the contaminant plume may be bypassing the extraction system; however, the contaminant concentrations in the downgradient portion of the plume, north of Mill Pond, are low (generally below MCLs) and appear to be attenuating naturally.

Because some of the original downgradient monitoring wells have been destroyed, the existing monitoring well network downgradient of the extraction wells north of Mill Pond is insufficient to fully evaluate the downgradient extent of the groundwater contaminant plume in the bedrock aquifer. Because the destroyed wells have not been replaced, it cannot be confirmed when or whether the contaminants in the bedrock aquifer in this area have attenuated to acceptable levels. The replacement of the destroyed well cluster is planned as a component of the MOM long-term operation and maintenance activities; the wells are expected to be installed in late 2010.

The institutional controls called for in the MOM ROD have not yet been implemented. EPA is currently working to implement institutional controls to prohibit use of groundwater from contaminated portions of the Site. The current protectiveness of the remedy is not compromised by the absence of institutional controls because groundwater from contaminated areas of the Site is not being used for household or potable uses. The residences, businesses, and municipal operations in the area on and surrounding the Site are served by the Groveland municipal water supply system.

OU2 SC REMEDY

The initial OU2 SC remedy called for in the 1988 ROD and 1996 ESD was constructed and operated by Valley/GRC beginning in 1992. It ceased operations in 2002 as a result of Valley terminating their business operations. Subsequent evaluations concluded that the SVE system was minimally successful in achieving the soil cleanup levels. Investigations performed in 2009 confirmed that high concentrations of VOCs remain in Source Area soil and groundwater.

Implementation of the revised OU2 SC remedy called for in the 2007 ESD (ISTT) began in April, 2009. Construction is expected to be completed in mid July, 2010. The ISTT system is scheduled to begin operation in late July, 2010 and to achieve interim cleanup levels by the end of 2010.

Successful completion of the OU2 ISTT SC RA will significantly decrease the time needed to achieve interim cleanup levels throughout the plume. It is anticipated that successful treatment of the contaminant source will result in the need to modify the OU1 MOM Source Area groundwater extraction system and may also result in the need for changes in operation of the groundwater treatment system. It is recommended that an evaluation be performed, following completion of the OU2 ISTT RA and confirmation sampling, to evaluate the need for and recommend potential changes to the OU1 MOM extraction and treatment system.

OVERALL REMEDY PROTECTIVENESS

The human health risk evaluation for this 2010 Five Year Review concluded that despite changes in toxicity values, exposure assumptions, exposure pathways to be considered, and risk evaluation methods since the time of the 1988 and 1991 RODs, the remedy is currently protective with respect to all pathways considered in the RODs, as well as the vapor intrusion pathway. (The vapor intrusion pathway was not considered in the 1988 or 1991 RODs, but in response to EPA guidelines enacted after the RODs, it was evaluated during the first Five-Year Review and found to not pose unacceptable risks.) The 2007 ESD recalculated the site-specific soil clean up levels to be protective of groundwater (MCLs), direct contact exposures (i.e., the incidental ingestion, dermal contact and inhalation of dust released from the soil), and for the subsurface vapor intrusion pathway (i.e., the inhalation of contaminated air). The recalculated soil cleanup levels are still valid.

The ecological risk evaluation also concluded that the remedy remains protective of the environment.

8.0 ISSUES

Based on the activities conducted during this five-year review, several issues have been identified that may affect the protectiveness of the remedy. The issues and conclusions regarding whether and how each issue may affect the protectiveness of the remedies are described in the table below.

Issues	Affects Current Protectiveness (Y/N)	Affects Future Protectiveness (Y/N)
Comprehensive institutional controls for soil and groundwater have not been completed.	N	Y[1]
The monitoring well network north of Mill Pond needs an additional monitoring well triplet in order to better define the northern extent of the groundwater plume.	N	Y[2]
The Town of Groveland is considering increasing the pumping rate of Well Station No. 1 and possibly developing a new municipal water supply well in the aquifer off Center Street. Additional pumping in the aquifer may impact the groundwater contaminant plume, drawing it into the municipal well(s) or closer to downgradient residences.	N	Y[3]

Notes:

1 Institutional controls are needed to prohibit use of contaminated groundwater until groundwater cleanup levels are attained, at which point the controls could be removed.

2 Because the downgradient extent of the contaminant plume cannot be confirmed, long-term protectiveness could be affected if institutional controls are not implemented. However a monitoring well triplet North of Mill Pond will be installed in 2010, North of Mill Pond to better define the downgradient edge of the groundwater plume.

3 If additional pumping draws groundwater contaminants into the municipal well(s) or closer to downgradient residences, future protectiveness could be affected.

9.0 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Recommendations and follow-up actions to address the issues identified above in Section 8 are provided in the table below. The party responsible for follow-up, the oversight agency, and the expected completion date are also provided.

Issue	Recommendations and Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness	
					Current	Future
Comprehensive institutional controls for soil and groundwater have not been completed.	Complete the review and implementation of comprehensive institutional controls. This activity is currently being completed by the EPA and MassDEP.	EPA	MassDEP	December 2011	N	Y[1]
The monitoring well network north of Mill Pond needs an additional monitoring well triplet in order to better define the northern extent of the groundwater plume.	Install a new monitoring well cluster, consisting of 3 wells (shallow overburden, deep overburden, and bedrock), to replace wells 102, ERT-23, and 101. The replacement of this well cluster is currently planned as part of the MOM remedy long-term O&M activities.	EPA	MassDEP	2010	N	Y[2]

Issue	Recommendations and Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness	
					Current	Future
The Town of Groveland is considering increasing the pumping rate of Well Station No. 1 and possibly developing a new municipal water supply well in the aquifer off Center Street. Additional pumping in the aquifer may impact the groundwater contaminant plume, drawing it into the municipal well(s) or closer to downgradient residences.	Coordinate with the Town of Groveland regarding the proposed changes. Require evaluation of potential impacts of additional pumping prior to implementing any changes.[9]	EPA and Town of Groveland	MassDEP	2014	N	Y[3,4]

Notes:

1 Institutional controls are needed to prohibit use of contaminated groundwater until groundwater cleanup levels are attained, at which point the controls could be removed.

2 Because the downgradient extent of the contaminant plume cannot be confirmed, long-term protectiveness could be affected if institutional controls are not implemented.

3 If additional pumping draws groundwater contaminants into the municipal well(s) or closer to downgradient residences, future protectiveness could be affected.

4 MassDEP approval would be required to increase the pumping rate of Station No. 1 or to develop a new source. Approval for a pumping rate increase would require a Water Management Act permit amendment and prolonged pumping test and would be provided only if it is demonstrated that remediation of the aquifer has progressed to the point that the increased rate would not result in recontamination of Well Station No. 1. (MassDEP, 2008)

10.0 PROTECTIVENESS STATEMENTS

This section summarizes the conclusions of the Five-Year Review regarding the short-term and long-term protectiveness of the remedies for each of the Operable Units.

OU1- Management of Migration

The OU1 MOM remedy is considered protective in the short term; however, in order for the remedy to be protective in the long term, follow-up actions need to be taken. For continued protection, the groundwater treatment plant must continue operation. Groundwater within the Site vicinity should not be used for any purpose, due to its contamination and to the negative impact pumping could have on the effectiveness of the extraction and treatment system. It is important to complete the implementation of comprehensive institutional controls to maintain a complete level of protectiveness for future activities in and around the Site. A new monitoring well triplet will be installed north of Mill Pond to more accurately define the downgradient plume. Also both MassDEP and EPA will review any proposed increase of pumping from the Towns drinking water supply in this aquifer.

OU2 – Source Control

The OU2 SC remedy is considered protective in the short term; however in order for the remedy to be protective in the long term, additional actions are underway. The new ISTT-enhanced SVE system currently under construction is anticipated to treat soil and overburden groundwater contamination in the Source Area to achieve Site interim soil and groundwater cleanup standards by the end of 2010.

Comprehensive Protectiveness Statement

The current remedy is considered protective in the short term; however in order for the remedy to be protective in the long term, follow-up actions are underway. Long-term protectiveness will be achieved once the MOM remedy achieves cleanup levels in the groundwater. However, institutional controls are needed to prevent exposure to contaminants until groundwater cleanup standards are achieved. In the interim, exposure pathways that could result in unacceptable risks are being controlled.

11.0 NEXT REVIEW

Five-year reviews are performed every five years at sites where contaminant levels remain at concentrations that prevent unlimited, unrestricted use of a site. It is anticipated that contaminant concentrations in soil and overburden groundwater in the Source Area will be treated to levels that will allow unrestricted use in less than Five Years. However, it is not known whether downgradient or Source Area bedrock groundwater will have achieved protective levels within the next Five Years. If contaminant levels remain at concentrations that prevent unlimited, unrestricted use of the

Site, a third five-year review will be required for the Groveland Wells Site. The five-year review would cover all operable units, whether or not remediation at a unit is complete (USEPA, 2001). If it is needed, the next five-year review for the Groveland Wells Nos. 1 and 2 Site should be conducted in 2015.

12.0 REFERENCES AND DOCUMENTS REVIEWED

Alliance Technologies Corporation, 1987. Valley Manufactured Products Company - Endangerment Assessment. Prepared for USEPA. September 1987.

Camp, Dresser and McKee, Inc. (CDM). 1988. Final - Amendment to the Valley Manufactured Products Company Endangerment Assessment. Prepared for USEPA. September 23, 1988.

Environmental Research and Technology, Inc. (ERT) 1985. Remedial Investigation for the Groveland Wells Site, Groveland, Massachusetts, Volume I (Prepared for NUS Corporation). June 1985.

M. Anthony Lally, Associates (Lally). 1985. Final Remedial Investigation Report, Docket No. 84-1027, Valley Manufacturing Products, Co., Inc. March 1985.

M. Anthony Lally, Associates (Lally). 1992. Final (100 percent) Remedial Design Submittal, Groveland Wells Nos. 1 and 2 Site, Docket No. I-91-1028 Administrative Order, Valley Manufactured Products Co., Inc. and Groveland Resources Corporation, Respondents.

Massachusetts Department of Environmental Protection (MassDEP). 2008. Letter to Thomas Cusick, Jr. of the Groveland Water Department from James Persky of MassDEP dated April 24, 2008, RE: Groveland Municipal Water Department Well No. 1 – Disposition of GAC Treatment and Pumping Rate.

Metcalf & Eddy, Inc. (M&E). 2006. Draft Final Source Area Re-Evaluation Report, Groveland Wells Nos. 1 and 2 Superfund Site, Groveland, Massachusetts. September 2006.

Nobis Engineering, Inc. (Nobis). 2010. Draft Data Evaluation Report, Remedial Action Spring 2009 and Fall 2009 Monitoring Rounds. May 2010.

NUS Corporation (NUS). 1991a. Supplemental Management of Migration Remedial Investigation Report, Groveland Wells Site. February 1991.

NUS Corporation (NUS). 1991b. Supplemental Management of Migration Feasibility Study Report, Groveland Wells Site. July 1991.

Pruitt, Julie F. 1994. Letter to Robert J. Leger, U.S. EPA, dated August 8, 1994 RE: Vacuum Extraction Operations Report and Summary, July 1994. Valley Manufactured Products, Groveland, MA.

Roy F. Weston, Inc. (RFW). 1988. Draft Feasibility Study for the Cleanup of Volatile Organic Compounds Groveland Valley property, Prepared for CDM Federal Programs Corporation as part of the Performance of Remedial Response Activities at Uncontrolled Hazardous Waste Sites, Contract No. 68-01-06939. 1988.

United States Environmental Protection Agency (USEPA). 1988. Record of Decision, Groveland Wells, EPA ID: MAD980732317, OU2, Groveland, Massachusetts. September 30, 1988.

United States Environmental Protection Agency (USEPA). 1991. Record of Decision, Groveland Wells, EPA ID: MAD980732317, OU1, Groveland, Massachusetts. September 30, 1991.

United States Environmental Protection Agency (USEPA). 1996a. Explanation of Significant Differences, Groveland Wells, EPA ID: MAD980732317, OU1, Groveland, Massachusetts. November 15, 1996.

United States Environmental Protection Agency (USEPA). 1996b. Explanation of Significant Differences, Groveland Wells, EPA ID: MAD980732317, OU2, Groveland, Massachusetts. November 15, 1996.

United States Environmental Protection Agency (USEPA). 2001. Comprehensive Five-Year Review Guidance. EPA 540-R-01-007. June 2001.

United States Environmental Protection Agency (USEPA). 2002a. Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion GUIDANCES). EPA530-F-02-052. November 2002.

United States Environmental Protection Agency (USEPA). 2002b. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24. December 2002.

United States Environmental Protection Agency (USEPA). 2004a. Statement of Work, Groveland Wells Superfund Site, Source Area Re-Evaluation (Remedial Design). March 2004.

United States Environmental Protection Agency (USEPA). 2004b. Preliminary Remediation Goals Table. Region 9 Technical Support Team. Office of Superfund Program. Region IX. October 2004.

United States Environmental Protection Agency (USEPA). 2005. National Recommended Water Quality Criteria. Http://oaspub.epa.gov/pls/wqs/wqsi_epa_criteria.report. March 2005.

United States Environmental Protections Agency (USEPA). 2005b. Five-Year Review Report, Groveland Wells Nos. 1 and 2 Superfund Site, Groveland, Massachusetts. June 2005.

United States Environmental Protection Agency (USEPA). 2007. Explanation of Significant Differences. Groveland Wells Nos. 1 and 2 Superfund Site, Source Control/Operable Unit 2, Groveland Massachusetts. September 2007.

TABLES

Table 1
Chronology of Site Events
Groveland Wells Numbers 1 and 2
Groveland, Massachusetts

DATE	EVENT
May 1963	GRC leases property at 64 Washington Street in Groveland to house a metal products manufacturing plant
May 1963	GRC begins operation of metal products manufacturing
1965	Groveland municipal well Station No. 1 is put into operation
November 1966	GRC purchases property at 64 Washington Street in Groveland
1973	Groveland municipal well Station No. 2 is put into operation
May 1979	Trichloroethylene detected in Station No. 1; well is shut down
August 1979	Valley Manufactured Products acquires GRC's manufacturing operations
September 1979	Trichloroethylene detected in Station No. 2 Groveland municipal well Station No. 3 is put into operation
October 1979	Station No. 2 permanently shut down
December 1982	Groveland Wells Site placed on the National Priorities List
1985	MOM Remedial Investigation for the Groveland Wells Site completed
August 1986	MOM Feasibility Study for the Groveland Wells Site completed
1986	MADEP amendment to 1984 consent order requiring Valley/GRC to construct a groundwater interceptor treatment unit north of Mill Pond
1987	Installation of activated carbon treatment system and reactivation of Station No. 1
September 1987	EPA issues consent order to Valley and GRC to conduct a Supplemental RI
Late 1987- Early 1988	Pilot study of soil vapor vacuum extraction system at Valley site
April 1988	Installation of Mill Pond Groundwater Extraction/Treatment System by Valley/GRC
July 1988	Final Phase I Supplemental Remedial Investigation Report completed by Valley/GRC subcontractor
August 1988	Supplemental Feasibility Study for the Valley Site completed by EPA subcontractors
September 1988	Source Control (OU2) Record of Decision for the Valley site signed
February 1991	Supplemental MOM Remedial Investigation Report completed by EPA subcontractor
July 1991	Supplemental MOM Feasibility Study completed by EPA subcontractor
September 1991	Management of Migration (OU1) Record of Decision is signed
March 1992	EPA issues Administrative Order to Valley/GRC to remediate soil and groundwater at the Valley Site (i.e., the Source Control Operable Unit, OU2)
May 1992	EPA issues Administrative Order to Valley/GRC to remediate groundwater contamination that had migrated beyond the Valley Site (i.e., the part of the plume defined as the MOM Operable Unit, OU1)
June 1992	Valley/GRC informs EPA that they cannot comply with the Administrative Order to remediate the MOM Operable Unit
August 1992	EPA issues a Notice of Failure to Comply to Valley/GRC, for failure to initiate work to remediate the MOM Operable Unit
August 1992	EPA approves the SVE and groundwater treatment system design for the Valley Site

Table 1
Chronology of Site Events
Groveland Wells Numbers 1 and 2
Groveland, Massachusetts

DATE	EVENT
October 1992	Valley/GRC informs EPA that they cannot continue to comply with the Administrative Order for remediation of the SC Operable Unit.
November 1992	EPA issues a Notice of Failure to Comply to Valley/GRC for failure to continue remedial work at the SC Operable Unit.
December 1992	EPA visits Valley Site and learns that the SVE system had in fact been constructed and was in operation.
January 1993	EPA issues a Second Notice of Failure to Comply to Valley/GRC for failure to submit monthly progress reports on the SVE system.
May 1994	Activated carbon treatment system at Station No. 1 is taken off line by the town, with approval from MADEP, because TCE contamination had not been detected in the influent water since 1989.
June 1994	Valley/GRC begins routine submission of monthly progress reports to EPA.
Spring 1994	EPA subcontractor installs an extraction well and conducts hydrogeological tests at the Valley Site for EPA.
January 1995	EPA approves the 100% design for the MOM Operable Unit groundwater extraction and treatment system.
Spring 1995	Budget constraints cause EPA to put construction of the MOM facility on hold.
March 1996	EPA conducts sampling of 22 monitoring wells and determines that the plume has decreased in extent.
August 1996	EPA issues Explanations of Significant Differences for both the Source Control and MOM Operable Units, modifying the remedies to treat groundwater from both operable units in a combined facility.
September 1996	EPA subcontractor submits a 100% design for the combined facility.
April 1997	EPA approves final design.
December 1997	EPA receives funding for remedial action.
May 1998	EPA, sends bid documents to qualified bidders.
October 1998	Remedial action subcontract awarded.
April 1999	Mobilization and site clearing begin.
April 2000	Groundwater Extraction and Treatment System is determined to be substantially complete. New system starts up and Mill Pond system is shut down.
May 2000	Routine operation and maintenance of groundwater extraction and treatment system begins.
July/August 2000	All construction punchlist items are completed and final inspection is conducted.
September 2000	Operational and Functional Completion Report and certification are submitted to EPA by the remedial action subcontractor.
March 2001	Operational and Functional Completion Report and certification are submitted to EPA, revised to address MADEP comments.
April 2002	SVE system is shut down and abandoned by PRPs.
September 2002	A Remedial System Evaluation (RSE) report is completed for the GWTF.
April 2004	EPA initiates source area re-evaluation.

Table 1
Chronology of Site Events
Groveland Wells Numbers 1 and 2
Groveland, Massachusetts

DATE	EVENT
June 2005	First five-year review is completed.
2006	EPA performs chemical oxidation pilot study as part of the Source Area Re-Evaluation.
August 2006	EPA removes 6 USTs and the Brite Dip system leaching field from Valley property.
September 2006	EPA Source Area Re-Evaluation is completed. The report recommends using thermal treatment technologies in to treat residual contamination in the source area.
September 2007	EPA issues an ESD outlining the enhancement of the existing SVE system with a thermal treatment system. The ESD was also written to address the recalculation of the soil clean up levels that were originally specified in the 1988 Source Area Record of Decision (ROD).
January 2008	EPA and Valley/GRC enter into a consent decree stating Valley/GRC will pay the government 100% of the net sale or net lease proceeds from the property.
April 2009	Construction of the enhanced OU2 Source Control Remedial Action begins with Site clearing and surveying.
October 2009	The subcontract for the OU2 SC Remedial Action In-situ Thermal Treatment (ISTT) system is awarded.
March 2010	Construction of the ISTT system begins.
July 2010	Projected completion of ISTT construction and start-up of ISTT system in Source Area.
December 2010	Projected completion of ISTT remediation of Source Area soil and overburden groundwater.
June 2011	Projected completion of OU2 SC RA confirmation sampling.

Table 2
Contaminants of Potential Concern
Groveland Wells Numbers 1 and 2
Groveland, Massachusetts

Organic COPCs	Inorganic COPCs
Trichloroethylene	Antimony
1, 2-Dichloroethylene	Arsenic
Tetrachloroethylene (perchloroethylene)	Barium
Toluene	Beryllium
Methylene Chloride	Cadmium
1,1-Dichloroethane	Chromium
1,1,1-Trichloroethane	Lead
Benzene	Manganese
Acetone	Mercury
1,1-Dichloroethene	Nickel
Chlorobenzene	Selenium
Vinyl Chloride	Silver
	Vanadium
	Zinc

Table 3
Extraction Well Efficiency Summary
Groveland Wells Site
Groveland, Massachusetts

Extraction Well	Average Pumping Rate (gpm)[1]	Average Pumping Rate (Lpm)[1,2]	TCE Concentration (µg/L)[3]	TCE Mass (ug/minute)	% of TCE Load	% of Treatment Volume
EW-S1	3.3	12.5	2,800	34,977	82	4
EW-S2	0.9	3.4	1,600	5,451	13	1.2
EW-S3	0.5	1.9	55	104	0	0.7
EW-S4	40	151.4	9.9	1,499	4	53
EW-S5	0.5	1.9	3	6	0	0.7
G1	*off line*	0.0	*not tested*	0	0	--
G2	*off line*	0.0	5.0 U	0	0	--
EW-M1	30	113.6	5.6	636	1	40
EW-M2	*off line*	0.0	5.0 U	0	0	--
EW-M3	*off line*	0.0	16	0	0	--
TOTAL ALL WELLS:	**75.2**	**284.7**		**42,672.9**	**100.0**	**100.0**

Notes:
1. The average pumping rate in October 2009.
2. Conversion L/gal: 3.785412
3. TCE concentrations are based sampling performed on October 9, 2009.

Table 4
Trichloroethene and cis-1,2-Dichloroethene Concentrations
Detected in Groundwater Using Passive Diffusion Bags (ug/L)
Spring 2005 through Spring 2009
Groveland Wells Numbers 1 and 2
Groveland, Massachusetts

Analyte		Trichloroethene										cis-1,2-Dichloroethene									
Date		04/05	10/05	04/06	09/06	05/07	9/07	4/08	10/08	05/09	10/09	04/05	10/05	04/06	09/06	05/07	09/07	4/08	10/08	05/09	10/09
Maximum Contaminant Level		5										70									
Monitoring Well Location/ID	Screen Zone																				
North of Main St.																					
103	BR	NS	2.6	NS	2.4	NS	1.8	1.9	1.8	0.94	0.93	NS	17	NS	13	NS	9.8	13	13	7.3	8.4
104	OB	NS	0.90 J	NS	1.1	NS	0.94	NS	0.38 J	NS	0.28 J	NS	25	NS	22 D	NS	38 D	NS	8.6	NS	4.1
South of Main St.																					
109	BR	NS	NS	0.5 U	NS	0.5 U	NS	NS	0.5 U	NS	0.5 U	NS	NS	0.50 U	NS	0.50U	NS	NS	0.50 U	NS	0.5 U
114	BR	NS	NS	0.5 U	NS	0.5 U	NS	0.16 J	0.5 U	0.5 U	0.5 U	NS	NS	2.0	NS	3.4J	NS	1.9	1.2	0.45 J	0.31 J
NO. 3	BR	NS	NS	0.5 U	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.50 U	NS	NS	NS	NS	NS	NS	NS
NUS-4A	BR	NS	NS	0.5 U	NS	0.24J	NS	0.18 J	0.5 U	0.5 U	0.5 U	NS	NS	0.50 U	NS	0.50U	NS	0.12 J	0.50 U	0.5 U	0.5 U
108	BR	NS	3 8	3.2	4.4	4.5	0.50 U	2.8	3.2	1.3	1.3	NS	1.8	1.3	1.9	2 2J	0.50 U	1.4 J	1.3	0.59	0.65
DEQE-6	OB	NS	2.4	**7.4**	**5.6**	2.9	1.5	0.58	0.7	2.2	1.1	NS	0.16 J	1.9	2.0	0 78J	0.19 J	0.50 U	0.50 U	0.71	0.5 U
ERT-9	BR	**18**	**21**	**17 J**	**15**	**25 [1]**	**7.2[1]**	**9.4[1]**	**6.5**	3.3 D[1]	2.81	**210 D**	**120 D**	**140**	**100 D**	**155 J[1]**	**91 D[1]**	**130 D[1]**	**84 D**	47	40.5 D
ERT-11	OB	NS	0.50 U	NS	1.3	NS	0 28 J	NS	0.29 J	NS	0.24	NS	0.50 U	NS	0.58	NS	0.50 U	NS	0.50 U	NS	0.5 U
ERT-13	OB	3.0	2.0	2.0 [1]	2.8 [1]	2.2J	1.4	1.5	1.25	0.77	0.65	0.95 U	0.63	0.80 [1]	1.1 [1]	0.48J	0.46 J	0.47 J	0.37 J[1]	0.34 J	0.27 J
ERT-16	OB	NS	NS	0.61	NS	1.4	0.63	0.37 J	0.31 J	0.5 U	0.5 U	NS	NS	0.50 U	NS	0.41J	0.24 J	0.50 U	0.50 U	0.5 U	0.5 U
Groveland Highway Dept.																					
DEQE-4-2	OB	4.3	2.6	2 4	2.4	3.5	2.3	2.1	2.3	1.1	0.76	2.2	1.8	0.93	0.97	1.9J	2 2	1.2	0.83	0.6	0.39 J
DEQE-13D	BR	NS	0.28 J	NS	0.50 U	NS	NS	NS	0.26 J	0.5 U	0.5 U	NS	0.50 U	NS	0.50 U	NS	NS	NS	0.50 U	0.5 U	0.5 U
ME-10D	OB	NS	0.21 J	NS	0.50 U	NS	1	NS	0.39 J	NS	0.28 J	NS	0.11 J	NS	0.50 U	NS	0.15 J	NS	0.3 J	NS	0.5 U
ME-20D	OB	NS	0.50 U	NS	0.50 U	NS	NS	NS	0.50 U	NS	0.68	NS	0.50 U	NS	0.50 U	NS	NS	NS	0.50 U	NS	0.34
South of Mill Pond																					
DEQE-7	OB	NS	0.20 J	NS	0.50 U	NS	0.50 U	NS	0.50 U	NS	0.5 U	NS	0.50 U	NS	0.50 U	NS	0.50 U	NS	0.50 U	NS	0.5 U
DEQE-8	OB	NS	0.20 J	0.39 J	0.46 J	NS	0.34 J	**16**	0.50 U	0.5 U	0.38 J	NS	0.50 U	0 50 U	0.49 J	NS	1.1	1.1	0.50 U	0.50 U	0.76
Source Area / Valley Mfg																					
TW-3	OB	NS	**120**	NS	**74 [1]**	NS	**14**	NS	**22**	NS	–	NS	97	**560 J[1]**	52 [1]	NS	6.6	NS	8.5	NS	--
TW-12	BR	**19**	**41**	**41**	**41**	**9.9**	NS	**19**	**15**	**16**	**6.1**	10 U	10 U	3 J	3.4 J	5.0 U	NS	1.1 J	5.0 U	1.4 J	5 U
TW-17	OB	**24,000 D**	**73,000 D**	**12,000 [1]**	**2,800 D**	**360 [1]**	**1,500 D[1]**	**1,600 D**	**1,350 D**	**340**	–	**1,100 DJ**	**170**	**560**	**250 D**	**230 [1]**	**72[1]**	**240 D**	**515 D[1]**	**280**	--
TW-24	BR	**32**	**62**	**43 J**	**100**	**51**	**78**	**30.5[1]**	**85**	**26.5 D[1]**	**25 D[1]**	10 U	10 U	10 U	20	5.6	3.8 J	1.4 J[1]	2.3 J	5.0 U	0.56
TW-26	BR	NS	**31**	NS	**31**	NS	**600 D**	NS	**48**	NS	--	NS	7 J	NS	7.9	NS	24	NS	9.5	5.0 U	--
TW-26A	OB	NS	**47**	NS	**1,300 D**	**420**	**180**	**110**	**53**	**62**	–	NS	30	NS	**160**	**880**	**95**	**170**	65	59	--
TW-30	BR	10 U	0.20 J	NS	0.52	NS	0 16 J	NS	0 50 U	NS	–	10 U	0.50 U	NS	0.50 U	NS	0.50 U	NS	0.50 U	NS	--
TW-31	BR	**15**	**21**	NS	**22**	NS	**13**	NS	**6.1**	NS	**5 J**	10 U	10 U	NS	5.0 U	NS	5.0 U	NS	5.0 U	NS	5 U

1 A field duplicate was collected at this location and the value reported is the average of the two detections
– Monitoring well was abandoned in July 2009 in preparation for the OU2 RA
BOLD/SHADE Detected concentration exceeds the applicable Interim Groundwater Cleanup Level.
Italics Sample specific detection limit is above the Interim Groundwater Cleanup Level.

BR - Bedrock
OB - Overburden
NS - Not Sampled

D - Concentration is reported from a dilution of the sample.
J - For Tier I validated data: Quantitation is estimated as it is below the sample-specific detection limits (SSDL).
J - For Tier II validated data: Quantitation is approximate due to limitations identified in the data validation review.
U - Not detected above the SSDL. SSDLs are reported from the analysis for which all detected compounds were within calibration range.

Table 5
Trichloroethene and cis-1,2-Dichloroethene in Extraction Wells
Groundwater Extraction and Treatment System
Groveland Wells Numbers 1 and 2
Groveland, Massachusetts

	EW-S1		EW-S2		EW-S3		EW-S4	
Date	TCE	cis-1,2-DCE	TCE	cis-1,2-DCE	TCE	cis-1,2-DCE	TCE	cis-1,2-DCE
10-Apr-00	14,000	140	40,000	160	510	130	3,100	66
7-Jun-00	20,000	150	12,000	130	2,500	140	1,900	59
11-Sep-00	14,000	83	14,000	44	NS	NS	2,000	28
5-Dec-00	18,000	46	8,100	14	260	27	1,000	14
10-Apr-01	18,000	56	5,500	25	760	91	570	12
12-Jun-01	15,000	77	11,000	54	100	110	490	14
19-Sep-01	12,000	48	8,800	11	120	33	300	13
27-Mar-02	6,400	41	6,500	10 U	94 J	42	120	7.0 U
29-May-02	5,800	37	12,000	28	95	48	110	8.5
11-Jul-02	9,300	50	35,000	49	110	45	94	5.0
17-Sep-02	12,000	100 U	16,000	21	120	33	75	4.8
14-Jan-03	NS	NS	9,800 D	50 U	110	40	56	3.0
23-Apr-03	11,000	291 D	9,700 D	180	110	75	56	3.1
10-Jul-03	2,200	170	11,000 D	200	120	40	42	1.0 U
2-Oct-03	7,100	100	18,000 D	54	100	28	35	3.5
19-Jan-04	9,100	160	29,000 D	170	94	34	35	1.0 U
16-Mar-04	10,000	210	18,000 D	98	89	36	23 J	1.0 U
15-Jul-04	4,500	290 D	8,100 D	150	84	75	43	3.5
14-Oct-04	5,600	120	1,300 D	83	41	12 J	31 J	1.0 U
20-Jan-05	5,200	130	33,000 D	130	50	16	21	1.0 U
14-Apr-05	5,800	320	6,600 D	140	50	25	42	2.3
28-Jul-05	2,100	87	7,100	150 U	30	15 U	26	2.40 U
19-Oct-05	6,800	58 D	7,000 D	150 U	4500 D	56	15	1.20
26-Jan-06	2,700	110 D	12,000 D	160 D	56	34	30	1.90
8-Mar-06	4,600	75 D	NS	NS	NS	NS	NS	NS
27-Apr-06	NS	NS	10,000	630 U	47	13	28	1.8
19-Jul-06	3,400	120	1,900	150	100 D	46	34	7.5
26-Oct-06	4,800	125 U	620	10 U	110	33	21	1.5
10-Jan-07	3,100	72	28,000	140	120	27	20	2.4
4-Apr-07	4,000	86	17,000	67 J	80	20	23	2.4
26-Jul-07	2,400	61	2,200	58	55	15	17	2.0
24-Oct-07	6,500	37	1,000	11	180	16	14	1.5 J
15-Jan-08	8,300	52	2,600	28	160	20	12	1.4 J
8-Apr-08	2,200	120	5,900	170	65	20	13	5.0 U
22-Jul-08	2,200	55	1,900	21	87	6.3	7.0	0.74 J
23-Oct-08	1,000	36	6,000	77	48	7.2	7.2	0.77 J
8-Jan-09	3,700	100	4,000 D	69	54	8.3	6.5	0.50 J
7-Apr-09	2,900	100	2,700	69 J	36	12	8.0	5.0 U
7-Jul-09	1,500 D	42	1,700 D	36	28	6.6	7.7	0.93 J
6-Oct-09	2,800 D	51	1,600 D	47	55	8.1	9.9	1.1 J
5-Jan-10	1,600 D	47	5,000 D	100 U	99	9.2	5.3	5.0 U
6-Apr-10	820 D	120	8,500 D	160	180	31	14	2.5 J

Notes:
TCE = Trichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
NS= No sample collected
U = Analyte not detected. Lower sample reporting limit is shown.
D = Sample diluted to bring analyte concentration to within instrument calibration range.
J = Estimated value less than lower sample reporting limit.

Table 5
Trichloroethene and cis-1,2-Dichloroethene in Extraction Wells
Groundwater Extraction and Treatment System
Groveland Wells Numbers 1 and 2
Groveland, Massachusetts

Date	EW-S5		EW-M1		EW-M2		EW-M3	
	TCE	cis-1,2-DCE	TCE	cis-1,2-DCE	TCE	cis-1,2-DCE	TCE	cis-1,2-DCE
10-Apr-00	6,600	32	970	190	130	53	700	34
7-Jun-00	4,200	36	520	140	79	20	530	23
11-Sep-00	1,800	16	330	100	64	36	300	10
5-Dec-00	660	7	230	70	33	10	140	20
10-Apr-01	410	6	140	64	14	26	18	27
12-Jun-01	440	11	110	53	8.0	14	39	11
19-Sep-01	210	5	65	29	4.0	10	9.0	9.0
27-Mar-02	17	1.0 U	39	12	5.5	2.0 U	6.4	5.0
29-May-02	56	1.0 U	30	11	2.9	1.0	9.9	20
11-Jul-02	45	1.2	31	7.3	2.2	1.4 U	2.2	1.0 U
17-Sep-02	3.8	1.0 U	13	4.6	2.1	1.0 U	1.0 U	1.0 U
14-Jan-03	16	1.0 U	19	3.8	2.3	1.0 U	17	28
23-Apr-03	51	3.0	13	3.4	2.2	1.0	3.0	1.0 U
10-Jul-03	18	1.0 U	13	1.0 U	2.1	4.7 U	4.1	1.0 U
2-Oct-03	24	1.0 U	8.2	1.0 U	2 U	1.0 U	2.0 U	1.0 U
19-Jan-04	26	1.0 U	6.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
16-Mar-04	29	1.0 U	12	1.0 U	1.0 U	1.0 U	20	21
15-Jul-04	17	1.0 U	11	1.0 U	1.0 U	1.0	15	14
14-Oct-04	15	1.0 U	6.5	1.0 U	NS	NS	1.0 U	1.0 U
20-Jan-05	9.9	1.0 U	4.4	1.0 U	1.0 U	1.0 U	10	52
14-Apr-05	23	1.5	8.3	2.7	1.0 U	1.0 U	12	19
28-Jul-05	11	0.45 J	5.4	1.1	0.95	0.75 U	14	3.0 U
19-Oct-05	9.5	0.50	3.9	0.70	1.9	0.75	8.5	8.4
26-Jan-06	29	1.6	3.6	0.91	2.5	0.66	7.5	26
8-Mar-06	NS	NS	NS	NS	NS	NS	NS	NS
27-Apr-06	30	1.8	2.8	0.79	NS	NS	9.0	4.6
19-Jul-06	38	10	5.1	1.3	NS	NS	11	59
26-Oct-06	9.5	0.5 U	1.9	0.5 U	0.82	0.5 J	36	330
10-Jan-07	20	2.3	4	1.2	0.75	0.46 J	39	300
4-Apr-07	27	0.56	4.6	1.5	0.75	0.46 U[1]	0.82	0.52 J
26-Jul-07	17	1.9	5.8	1.8	0.58	0.5 U	8.3	15
24-Oct-07	1.1 J	5.0 U	4.7	1.5 J	5.0 U	5.0 U	6.0	6.2
15-Jan-08	1.7	5.0 U	6	1.6 J	0.9 J	5.0 U	5.4	6.9
8-Apr-08	7.0	5.0 U	5.4	5 U	5.0 U	5.0 U	4.5	5.3
22-Jul-08	7.3	0.73 J	4.8 J	1.3 J	0.44 J	5.0 J	3.4 J	2.9 J
23-Oct-08	4.5 J	5.0 U	3.6 J	0.9 J	0.85 J	0.62 J	3.2 J	1.1 J
8-Jan-09	4.0 J	5.0 U	4.1 J	0.82 J	1.6 J	0.74	3.2 J	1.7 J
7-Apr-09	3.4 J	5.0 U	4.2 J	5 U	0.72 J	5.00 U	7.7	13
7-Jul-09	2.6 J	5.0 U	4.6 J	1.7 J	5.0 U	5.0 U	7.4	36
6-Oct-09	3 J	5.0 U	5.6	2	5.0 U	5.0 U	16	82
5-Jan-10	5.0 U	5.0 U	3.0 J	5.0 U	5.0 U	5.0 U	16	260 D
6-Apr-10	0.52 J	5.0 U	4.2 J	1.2 J	5.0 U	5.0 U	4.4 J	9.5

Notes:
TCE = Trichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
NS= No sample collected
U = Analyte not detected. Lower sample reporting limit is shown.
D = Sample diluted to bring analyte concentration to within instrument calibration range.
J = Estimated value less than lower sample reporting limit.

Table 5
Trichloroethene and cis-1,2-Dichloroethene in Extraction Wells
Groundwater Extraction and Treatment System
Groveland Wells Numbers 1 and 2
Groveland, Massachusetts

Date	G1		G2	
	TCE	cis-1,2-DCE	TCE	cis-1,2-DCE
10-Apr-00	23	110	170	38
7-Jun-00	40	33	10	11
11-Sep-00	1.0	9.0	17	8.0
5-Dec-00	1.0	4.0	8.0	4.0
10-Apr-01	16	39	4.0	1.0
12-Jun-01	0.20 U	11	4.0	1.0
19-Sep-01	0.20 U	8	0.20 U	0.2 U
27-Mar-02	1.0 U	1.0 U	1.0 U	1.0 U
29-May-02	NS	NS	1.0 U	1.0 U
11-Jul-02	NS	NS	1.0 U	1.0 U
17-Sep-02	NS	NS	NS	NS
14-Jan-03	NS	NS	1.0 U	1.0 U
23-Apr-03	NS	NS	2.0 U	1.0 U
10-Jul-03	NS	NS	1.0 U	1.0 U
2-Oct-03	NS	NS	2.0 U	1.0 U
19-Jan-04	NS	NS	1.0 U	1.0 U
16-Mar-04	NS	NS	1.0 U	1.0 U
15-Jul-04	NS	NS	1.0 U	1.0 U
14-Oct-04	NS	NS	1.0 U	1.0 U
20-Jan-05	NS	NS	1.0 U	1.0 U
14-Apr-05	NS	NS	1.0 U	1.0 U
28-Jul-05	NS	NS	0.50 U	0.75 U
19-Oct-05	NS	NS	0.50 U	0.75 U
26-Jan-06	NS	NS	0.50 U	0.5 U
8-Mar-06	NS	NS	NS	NS
27-Apr-06	NS	NS	0.50 U	1.25 U
19-Jul-06	NS	NS	0.5 U	1.25 U
26-Oct-06	NS	NS	0.15 J	0.5 U
10-Jan-07	NS	NS	0.50 U	0.5 U
4-Apr-07	NS	NS	0.50 U	0.5 U
26-Jul-07	NS	NS	0.50 U	0.50 U
24-Oct-07	NS	NS	5.0 U	5.0 U
15-Jan-08	NS	NS	5.0 U	5.0 U
8-Apr-08	NS	NS	5.0 U	5.0 U
22-Jul-08	NS	NS	5.0 U	5.0 U
23-Oct-08	NS	NS	0.30 J	5.0 U
8-Jan-09	NS	NS	0.30 J	5.0 U
7-Apr-09	NS	NS	5.0 U	5.0 U
7-Jul-09	NS	NS	5.0 U	5.0 U
6-Oct-09	NS	NS	5.0 U	5.0 U
5-Jan-10	NS	NS	5.0 U	5.0 U
6-Apr-10	NS	NS	5 U	5 U

Notes:
TCE = Trichloroethene
cis-1,2-DCE = cis-1,2-dichloroethene
NS= No sample collected
U = Analyte not detected. Lower sample reporting limit is shown.
D = Sample diluted to bring analyte concentration to within instrument calibration range.
J = Estimated value less than lower sample reporting limit.

Table 6
Surface Water Data - Comparison of Post-Startup Data,
Ambient Water Quality Criteria, and Region 9 PRGs
Groveland Wells Numbers 1 and 2
Groveland, Massachusetts

ANALYTE (micrograms/liter)	Post-Startup Mill Pond Outlet	Post-Startup Mill Pond Outlet	Post-Startup Mill Pond Outlet	Ambient Water Quality Criteria[1,2]			Risk-Based PRG[4]
				CMC	CCC	Organism Only	
	Spring-01	Spring-02	Spring-03				
Volatile Organic Compounds							
Chloromethane	1 U	0.50 U	0.50 U	--	--	--	640
Bromomethane	1 U	0.50 U	0.50 U	--	--	4,000	34.8
Vinyl chloride	1 U	0.50 U	0.50 U	--	--	2.4	0.8
Chloroethane	1 U	0.50 U	0.50 U	--	--	--	184
Methylene chloride	2 UJ	0.10 !	0.21 BJ	--	--	1,600	172
Acetone	5 UJ	4.0 !	1.1 BJ	--	--	--	22,000
Carbon disulfide	1 U	0.50 U	0.50 U	--	--	--	4,000
1,1-Dichloroethene	1 U	0.50 U	0.50 U	--	--	7,100	1,360
1,1-Dichloroethane	1 U	0.50 U	0.50 U	--	--	--	3,240
cis-1,2-Dichloroethene	1 U	0.50 U	0.50 U	--	--	--	244
trans-1,2-Dichloroethene	1 U	0.50 U	0.50 U	--	--	10,000	480
Chloroform	1 U	0.50 U	0.50 U	--	--	470	6.8
1,2-Dichloroethane	1 UJ	0.50 U	0.50 U	--	--	99	4.8
2-Butanone	5 UJ	5.0 U	5.0 U	--	--	--	28,000
Bromochloromethane	1 U	0.50 U	0.50 U	--	--	--	7.2
1,1,1-Trichloroethane	1 U	0.50 U	0.50 U	--	--	--	12,800
Carbon tetrachloride	1 U	0.50 U	0.50 U	--	--	4.4	6.8
Bromodichloromethane	1 U	0.50 U	0.50 U	--	--	46	7.2
1,2-Dichloropropane	1 U	0.50 U	0.50 U	--	--	39	6.4
cis-1,3-Dichloropropene	1 U	0.50 U	0.50 U	--	--	21	16
Trichloroethene	1 U	0.50 U	0.50 U	--	--	81	1.12
Dibromochloromethane	1 U	0.50 U	0.50 U	--	--	34	5.2
1,1,2-Trichloroethane	1 U	0.50 U	0.50 U	--	--	42	8
Benzene	1 U	0.50 U	0.50 U	--	--	71	14
trans-1,3-Dichloropropene	1 U	0.50 U	0.50 U	--	--	21	16
Bromoform	1 U	0.1 !	0.24 BJ	--	--	360	340
4-Methyl-2-pentanone	5 UJ	5.0 U	5.0 U	--	--	--	8,000
2-Hexanone	5 UJ	5.0 U	5.0 U	--	--	--	--
Tetrachloroethene	1 U	0.50 U	0.50 U	--	--	8.85	4
1,1,2,2-Tetrachloroethane	1 UJ	0.50 U	0.50 U	--	--	11	2.2
1,2-Dibromoethane	1 U	0.50 U	0.50 U	--	--	--	2.24
Toluene	1 U	0.50 U	0.50 U	--	--	15,000	2,880
Chlorobenzene	1 U	0.50 U	0.50 U	--	--	1600	440
Ethylbenzene	1 U	0.50 U	0.50 U	--	--	2,100	5,200
Styrene	1 U	0.50 U	0.50 U	--	--	--	6,400
Xylenes (total)	1 U	0.50 U	0.50 U	--	--	--	840
1,3-Dichlorobenzene	1 U	0.50 U	0.50 U	--	--	2,600	720
1,4-Dichlorobenzene	1 U	0.50 U	0.50 U	--	--	190	20
1,2-Dichlorobenzene	1 U	0.50 U	0.50 U	--	--	1,300	1,480
1,2-Dibromo-3-chloropropane	1 UJ	0.50 U	0.50 U	--	--	--	1.92
1,2,4-Trichlorobenzene	1 U	0.50 U	0.50 U	--	--	70	28.8

Table 6
Surface Water Data - Comparison of Post-Startup Data,
Ambient Water Quality Criteria, and Region 9 PRGs
Groveland Wells Numbers 1 and 2
Groveland, Massachusetts

ANALYTE (micrograms/liter)	Post-Startup Mill Pond Outlet	Post-Startup Mill Pond Outlet	Post-Startup Mill Pond Outlet	Ambient Water Quality Criteria[1,2] CMC	CCC	Organism Only	Risk-Based PRG[4]
	Spring-01	Spring-02	Spring-03				
Inorganics							
Aluminum	58.7 B!	77.7 U	47.0	--	--	--	144,000
Antimony	1.6 U	23.4 U	0.25 U	--	--	4,300	60
Arsenic	2.1 U	1.6 U	0.65	340	150	0.14	1.8
Barium	8.7 BE	7.2 B	8.8 !	--	--	--	1,040
Beryllium	0.40 U	0.89 U	0.10 U	--	--	--	292
Cadmium	0.30 U	0.22 U	0.05 U	0.93	0.14	--	72
Calcium	10,300	14,200	13,000	--	--	--	--
Chromium [3]	2.6 B!	2.4 U	2.5 U	16	11	--	440
Cobalt	0.60 B!	3.7 U	1.0 B	--	--	--	2,920
Copper	2.0 B	3.1 U	3.2	6.4	4.6	--	6,000
Iron	234	122	191	--	--	--	44,000
Lead	0.90 U	1.8 U	0.51	27	1.1	--	15
Magnesium	2,030 B	3,250 B	2,790	--	--	--	--
Manganese	29.3	70.9 U	57.8	--	--	--	3,520
Mercury	0.10 U	0.10 U	0.10 U	1.4	0.77	0.051	44
Nickel	3.2 B!	7.0 U	2.5 U	240	27	4,600	2,920
Potassium	1,250 B	1,420 B	1,690	--	--	--	--
Selenium	2.3 U	1.9 B	0.75 U	--	5.0	11,000	720
Silver	0.70 U	2.7 U	0.15 U	0.83	--	--	720
Sodium	11,600 E	17,500	16,400	--	--	--	--
Thallium	3.5 U	3.4 U	0.10 U	--	--	0.47	9.6
Vanadium	0.60 B!	3.2 U	2.5 U	--	--	--	144
Zinc	5.3 B!	6.2 B	6.9 B	60	60	69,000	44,000

FIGURES

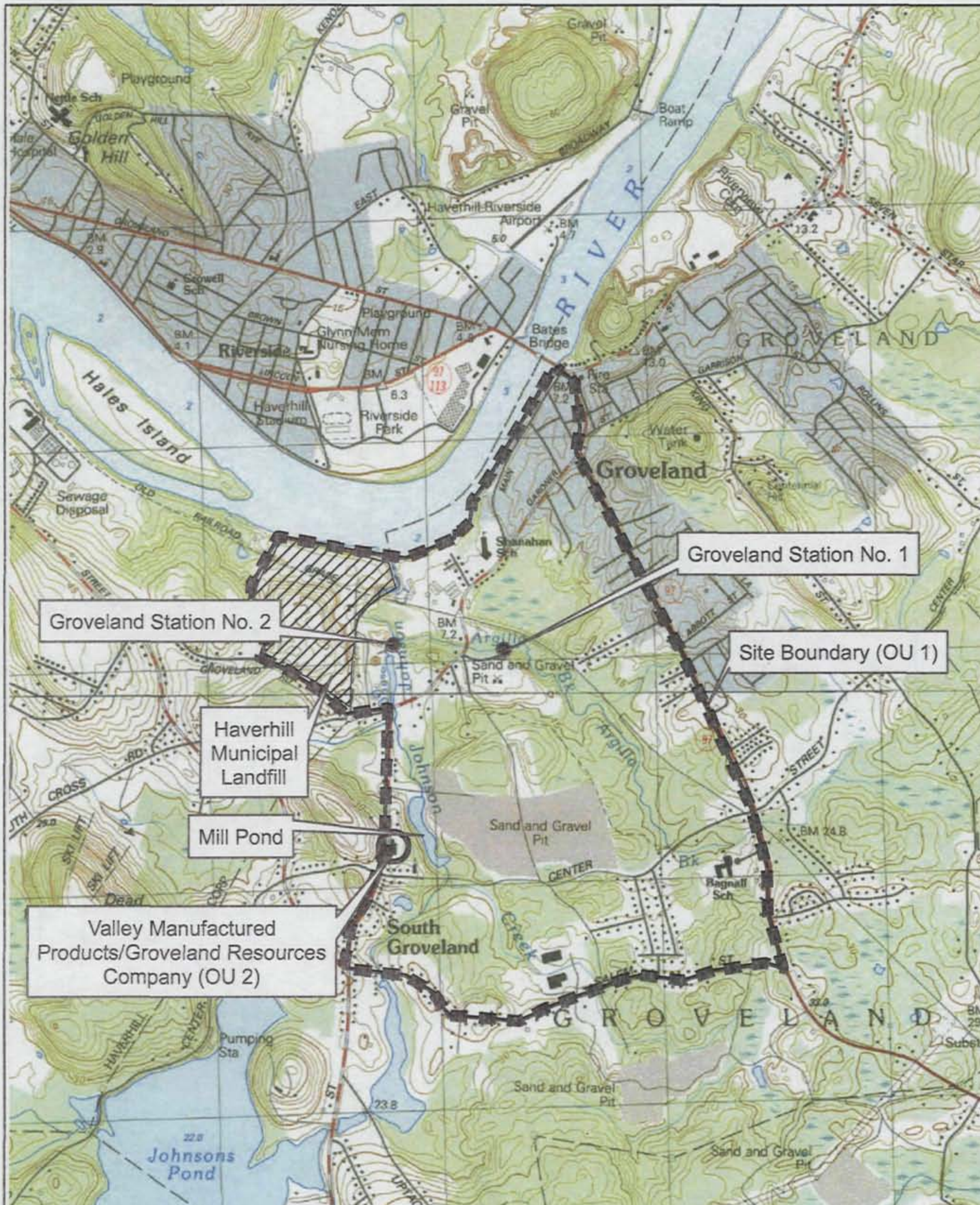
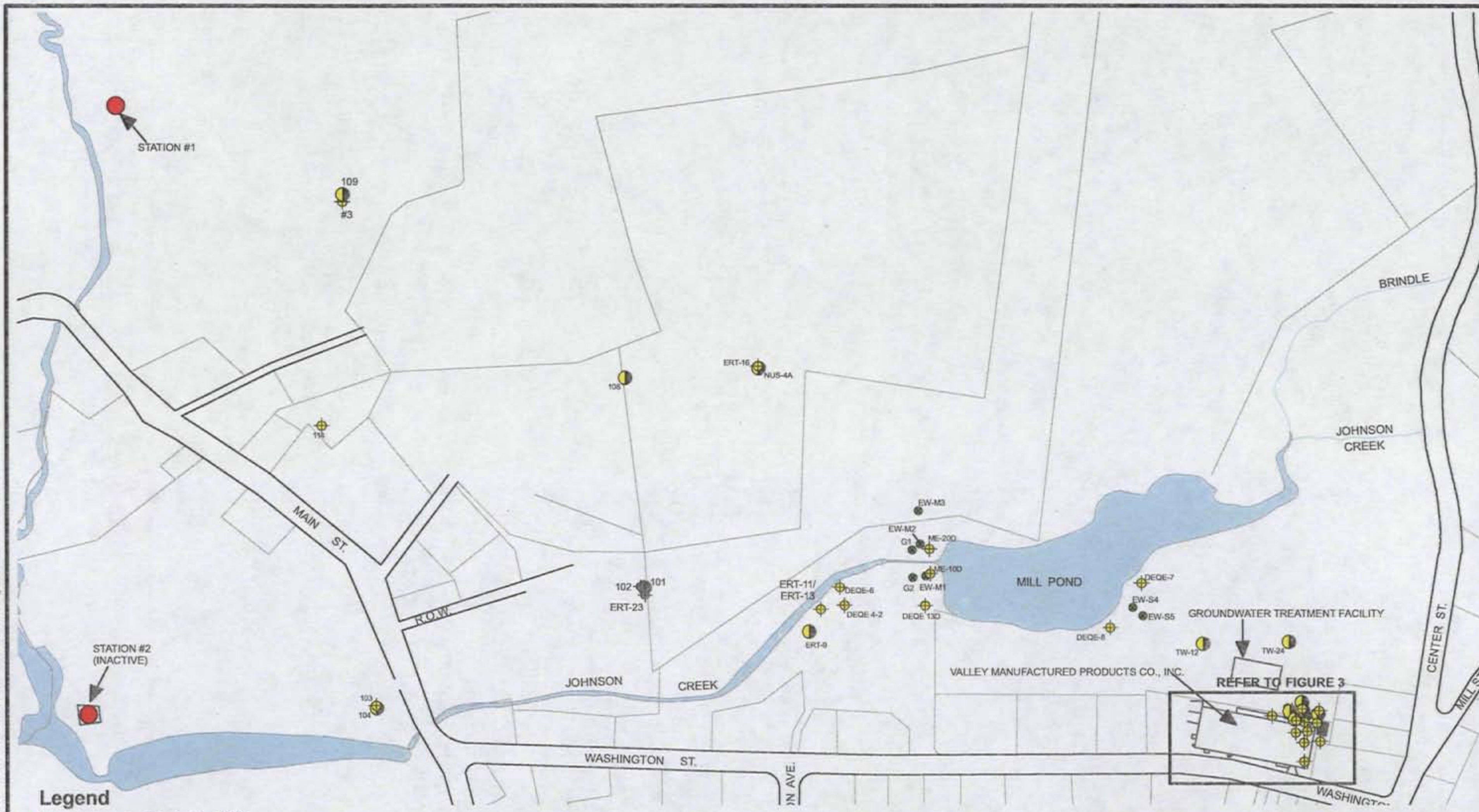


FIGURE 1	GROVELAND WELLS SITE GROVELAND, MA SITE LOCUS PLAN	Nobis Nobis Engineering, Inc. 585 Middlesex Street Lowell, MA 01851 (978) 683-0891 www.nobisengineering.com	DATE: 5/4/10 PROJECT NO. 80053 FILE NAME: Site Locus Plan.mxd PREPARED BY: AR CHECKED BY: DB Approximate Scale 1"=1,500'	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY	N



Legend

- Overburden Monitoring Well
- Destroyed Overburden Monitoring Well
- Bedrock Monitoring Well
- Destroyed Bedrock Monitoring Well
- Existing Extraction Well
- Public Water Supply Well

Notes

1. The current limits of Mill Pond are typically smaller than depicted, and are subject to seasonal fluctuations.

2. Parcels, water features, monitoring well locations, and structures were obtained from M&E documentation.

N

APPROXIMATE SCALE

0 137.5 275 550 Feet

Nobis

Nobis Engineering, Inc.
585 Middlesex Street
Lowell, MA
(978) 683-0891
www.nobisengineering.com

FIGURE 2

SITE PLAN-OU1
GROVELAND WELLS
GROVELAND, MASSACHUSETTS

PREPARED BY: AR	CHECKED BY: DB
PROJECT NO. 80053	DATE: MAY 2010

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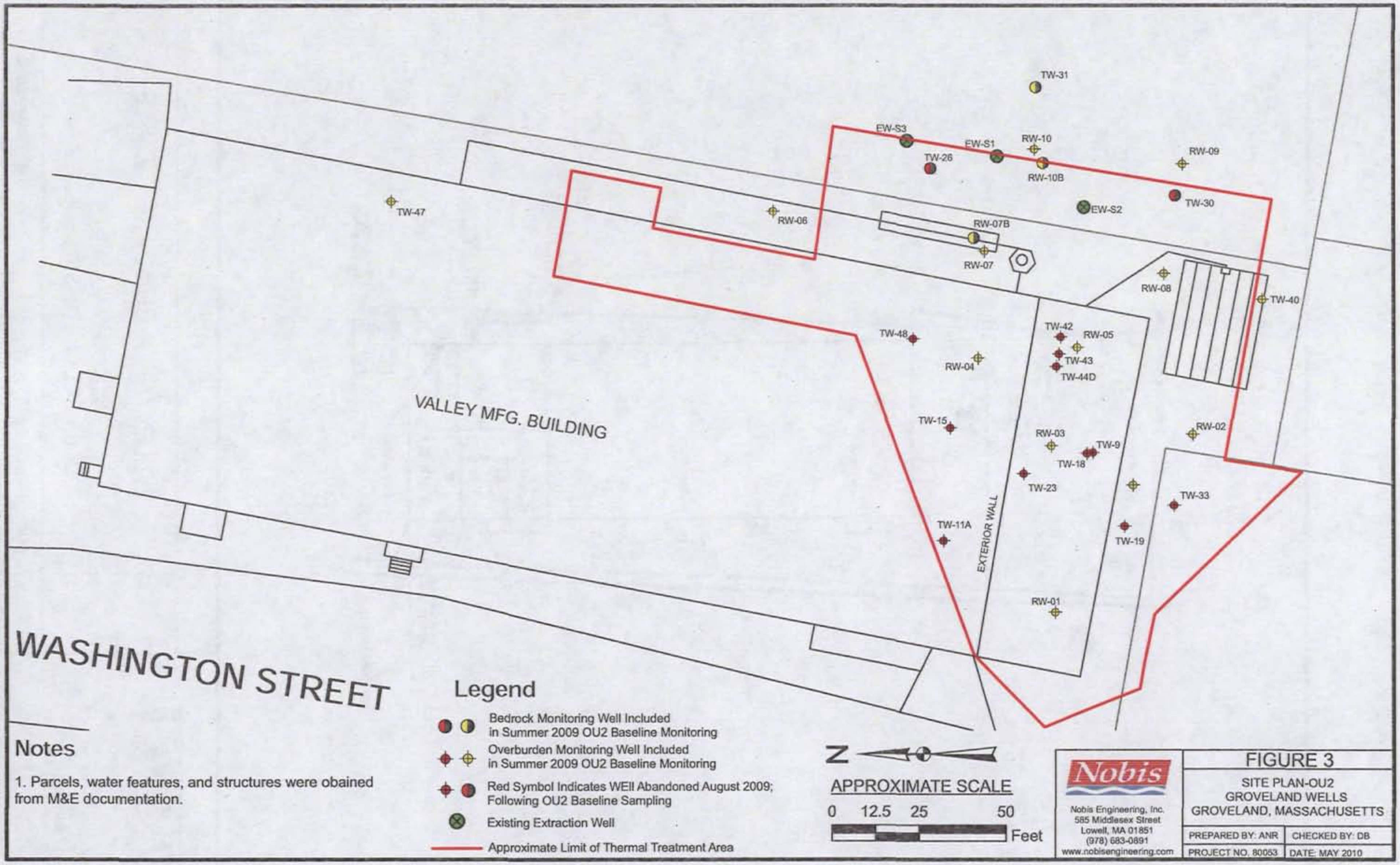


Notes

1. Parcels, water features, and structures were obained from M&E documentation.

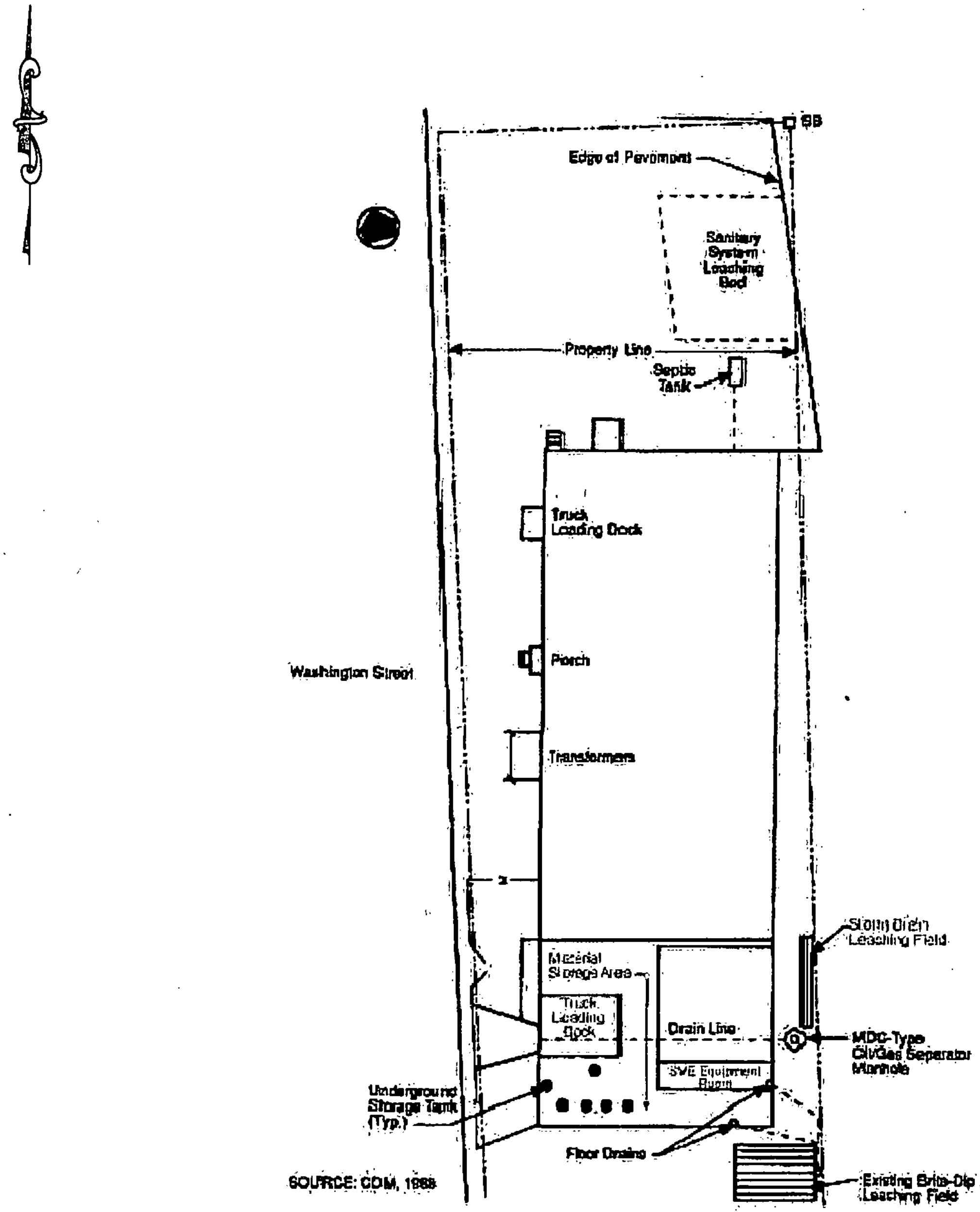
Nobis Engineering, Inc.
585 Middlesex Street
Lowell, MA 01851
(978) 683-0891
www.nobisengineering.com

FIGURE 3

SITE PLAN-OU2
GROVELAND WELLS
GROVELAND, MASSACHUSETTS

PREPARED BY: ANR	CHECKED BY: DB
PROJECT NO. 80053	DATE: MAY 2010

R:\80000 Task Orders\80053 Groveland Wells FYR\Technical Data\GIS Data\Figures\Site Plan OU2.mxd



R:\80000 Task Orders\80053 Groveland Wells FYR\Technical Data\CAD\FIGURE 4 VALLEY BLDG DETAILS.dwg

Nobis

Nobis Engineering, Inc.
585 Middlesex Street
Lowell, MA 01851
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FIGURE 4

VALLEY/GRC BUILDING DETAILS

GROVELAND WELLS
GROVELAND, MASSACHUSETTS

PROJECT NO. 80053

DATE: MAY 2010

Notes

1. Arerial photo provided by MassGIS.
2. Monitoring and extraction well data are provided in Table 4.

Legend

DEQE-8	⊕	Overburden Monitoring Well
EW-M1	⊗	Extraction Well
	(yellow dashed)	Extent of TCE Plume > 5µg/L Prior to System Startup in 2000
	(green dashed)	Extent of TCE Plume > 5µg/L in 2006
	(red dashed)	Extent of TCE Plume > 5µg/L in 2009

N

APPROXIMATE SCALE

175 87.5 0 175 Feet

INSET SCALE

50 25 0 50 Feet

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FIGURE 5

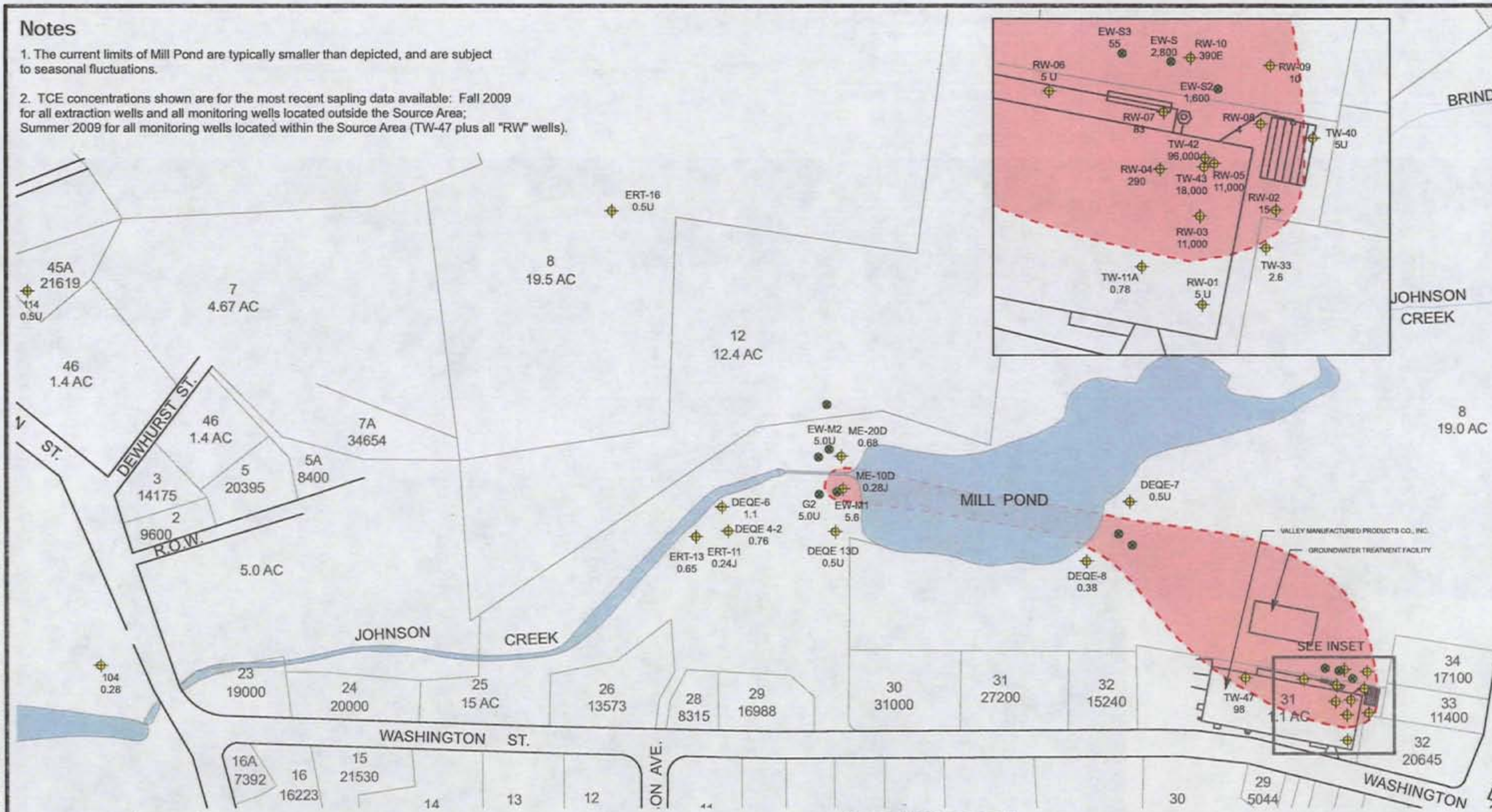
OVERBURDEN TCE PLUME
2000, 2006, AND 2009
GROVELAND WELLS
GROVELAND, MASSACHUSETTS

PREPARED BY: AR	CHECKED BY: DB
PROJECT NO. 80053	DATE: MAY 2010

Notes

1. The current limits of Mill Pond are typically smaller than depicted, and are subject to seasonal fluctuations.

2. TCE concentrations shown are for the most recent sapling data available: Fall 2009 for all extraction wells and all monitoring wells located outside the Source Area; Summer 2009 for all monitoring wells located within the Source Area (TW-47 plus all "RW" wells).



Legend

DEQE-8 0.38 — Overburden Monitoring Well with TCE Concentration µg/L

EW-M1 5.6 — Extraction Well with TCE Concentration µg/L

Estimated Extent of TCE Concentrations Exeeding MCL (5 µg/L)

N

APPROXIMATE SCALE

175 87.5 0 175 Feet

INSET SCALE

50 25 0 50 Feet

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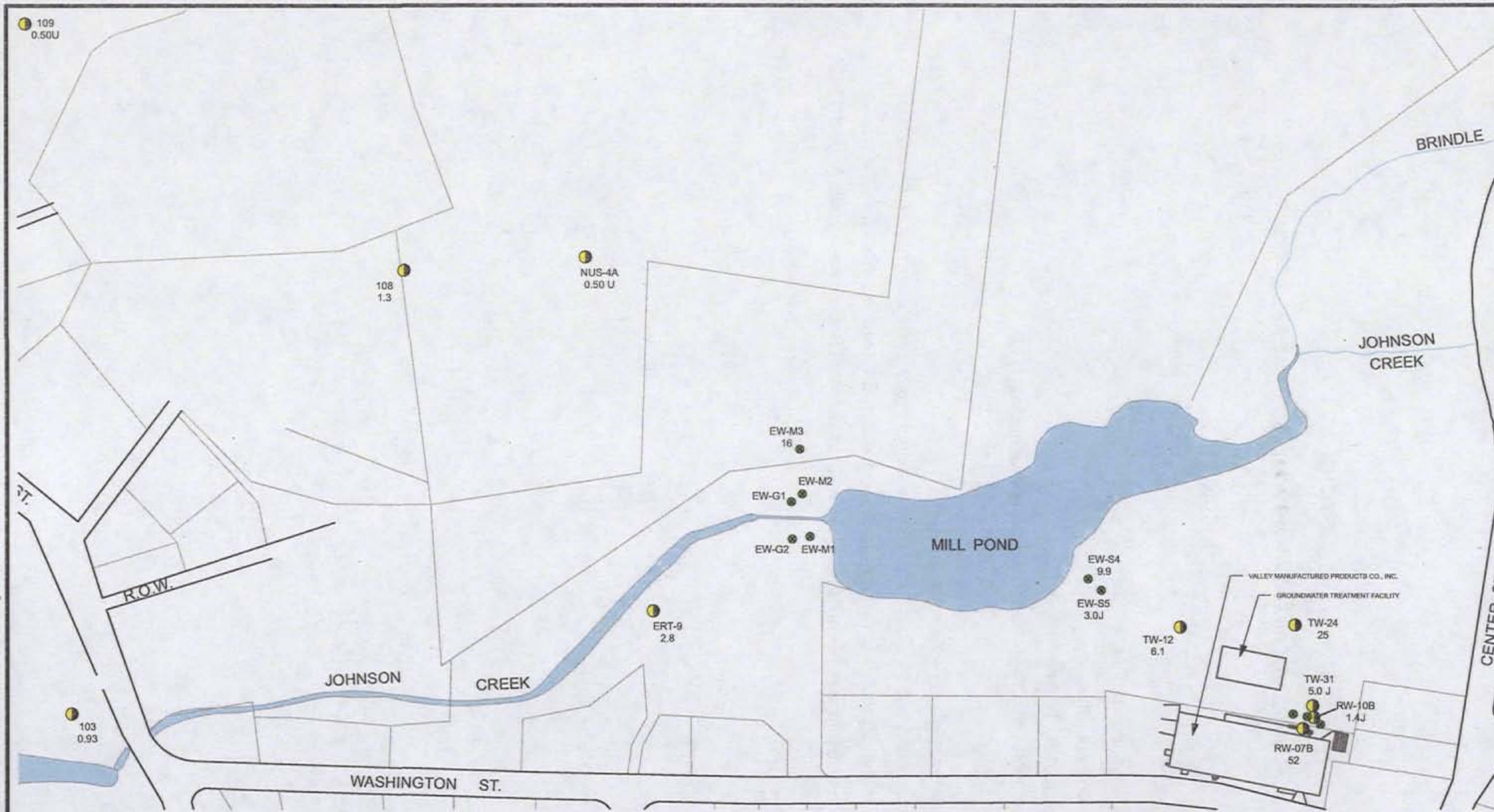
FIGURE 6

OVERBURDEN TCE PLUME
SUMMER/FALL 2009
GROVELAND WELLS
GROVELAND, MASSACHUSETTS

PREPARED BY: AR	CHECKED BY: DL
PROJECT NO. 80053	DATE: MAY 2010



Notes

1. The current limits of Mill Pond are typically smaller than depicted, and are subject to seasonal fluctuations.

2. TCE concentrations shown are for the most recent sapling data available: Fall 2009 for all extraction wells and all monitoring wells located outside the Source Area; Summer 2009 for all monitoring wells located within the Source Area ("RW" wells).

Legend

ERT-9 2.8 — Existing Bedrock Monitoring Well Used in 2009 Monitoring with TCE Concentration (µg/L)

EW-M3 16 — Existing Extraction Well with TCE conentration (µg/L)

N

APPROXIMATE SCALE

175 87.5 0 175 Feet

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FIGURE 7

BEDROCK GROUNDWATER
TCE CONCENTRATIONS - FALL 2009
GROVELAND WELLS
GROVELAND, MASSACHUSETTS

PREPARED BY: AR	CHECKED BY: DL
PROJECT NO. 80053	DATE: MAY 2010

R:\80000 Task Orders\80053 Groveland Wells FYR\Technical Data\GIS Data\Figures\BR TCE Concentrations.mxd

ATTACHMENT 1

ANALYTICAL DATA – MOM AND SC REMEDIAL ACTIONS

CONTENTS

Table 1-1
Treatment System Influent and Effluent Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

	Vinyl Chloride		1,1-Dichloroethene		Acetone		2-Butanone		Methylene Chloride		1,2-Dichloroethene (total)	
	Plant Influent	Plant Effluent	Plant Influent	Plant Effluent	Plant Influent	Plant Effluent	Plant Influent	Plant Effluent	Plant Influent	Plant Effluent	Plant Influent	Plant Effluent
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Daily Maximum Discharge Limit>>		None		None		None		None		None		None
Average Monthly Discharge Limit>>		2,816		17		None		None		8,600		172
Sample Date												
3-Apr-00	0.5 U	0.50 U	0.50 U	0.50 U	2.0	2.0 U	NA	NA	0.5 U	0.50 U	59	0.5 U
10-Apr-00	2.0	0.50 U	0.50 U	0.50 U	5.0	4.0	NA	NA	0.5 U	0.50 U	68	0.5 U
10-Apr-00 DUP.	NS	0.50 U	NS	0.50 U	NS	4.0	NA	NA	NS	0.50 U	NS	0.5 U
17-Apr-00	2.0	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	NA	NA	0.5 U	0.50 U	80	0.5 U
24-Apr-00	2.0	0.50 U	0.50 U	0.50 U	2.0 U	2.0	NA	NA	0.5 U	0.50 U	79	0.5 U
1-May-00	1.0	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	NA	NA	0.5 U	0.50 U	42	0.5 U
25-May-00	1.0	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	NA	NA	0.5 U	0.50 U	42	0.5 U
7-Jun-00	1.0	0.50 U	0.50 U	0.50 U	2.0 U	4.0 U	NA	NA	0.5 U	0.50 U	62	0.5 U
6-Jul-00	1.0	0.50 U	2.0 U	0.50 U	10 U	4.0 U	NA	NA	2.0 U	0.50 U	67	0.5 U
14-Aug-00	0.4 J	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	NA	NA	0.5 U	0.50 U	35	0.5 U
14-Aug-00 DUP.	0.5	NS	0.50 U	NS	2.0 U	NS	NA	NA	0.5 U	NS	37	NS
11-Sep-00	0.5 U	0.50 U	0.50 U	0.50 U	2.0 U	3.0	NA	NA	0.5 U	0.50	49	0.5 U
11-Sep-00 DUP.	0.5 U	NS	0.50 U	NS	2.0 U	NS	NA	NS	0.5 U	NS	53	NS
9-Oct-00	0.5 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	NA	NA	0.5 U	0.50 U	41	0.5 U
9-Nov-00	0.5 U	0.50 U	0.50 U	0.50 U	2.0 U	3.0 U	NA	NA	0.5 U	0.50 U	34	0.5 U
5-Dec-00	0.5 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	NA	NA	0.5 U	0.50 U	24	0.5 U
5-Dec-00 DUP.	0.5 U	NS	0.50 U	NS	2.0 U	NS	NA	NS	0.5 U	NS	23	NS
4-Jan-01	0.5 U	0.50 U	0.50 U	0.50 U	6.0	3.0	NA	NA	0.5 U	0.50 U	27	0.5 U
8-Feb-01	0.5 U	0.50 U	0.50 U	0.50 U	2.0 U	0.50 U	NA	NA	0.5 U	0.50 U	29	0.6 U
12-Mar-01	0.5 U	0.50 U	0.50 U	0.50 U	2.0 U	2.0 U	NA	NA	0.5 U	0.50 U	38	0.6 U
12-Mar-01 DUP.	NS	0.50 U	NS	0.50 U	NS	2.0 U	NS	NA	NS	0.50 U	NS	0.6 U
10-Apr-01	0.5	0.30 U	0.30 U	0.30 U	2.0 U	3.0	NA	NA	0.3 U	0.30 U	34	0.6 U
10-Apr-01 DUP.	0.3 U	NS	0.30 U	NS	2.0 U	NS	NA	NS	0.3 U	NS	32	NS
9-May-01	0.5 J	0.30 U	0.30 U	0.30 U	2.0 U	4.0 U	NA	NA	0.3 U	0.30 U	32	0.6 U
9-May-01 DUP.	NS	0.30 U	NS	0.30 U	NS	2.0 U	NS	NA	NS	0.30 U	NS	0.6 U
12-Jun-01	0.2 U	0.20 U	0.20 U	0.20 U	2.0 U	2.0	NA	NA	0.2 U	0.20 U	23	0.4 U
11-Jul-01	0..2 U	0.20 U	0.20 U	0.20 U	2.0 U	2.0 U	NA	NA	0.2 U	0.20 U	20	0.4 U
6-Aug-01	0.2 U	0.20 U	0.20 U	0.20 U	2.0 U	2.0 U	NA	NA	0.2 U	0.20 U	18	0.4 U
6-Aug-01 DUP.	0.2 U	NS	0.20 U	NS	2.0 U	NS	NA	NS	0.2 U	NS	18	NS
19-Sep-01	0.9 U	0.20 U	1.0 U	0.20 U	8.0 U	3.0	NA	NA	1.0 U	0.20 U	13	0.4 U
19-Sep-01 DUP.	0.9 U	NS	1.0 U	NS	8.0 U	NS	NA	NS	1.0 U	NS	13	NS
23-Oct-01	0.2 U	0.20 U	0.20 U	0.20 U	2.0 U	2.0 U	NA	NA	0.20 U	0.20 U	11	0.4 U
6-Nov-01	0.2 U	0.20 U	0.20 U	0.20 U	2.0 U	2.0 U	NA	NA	0.20 U	0.20 U	10	0.4 U
19-Dec-01	0.2 U	0.20 U	0.20 U	0.20 U	2.0 U	2.0 U	NA	NA	0.20 U	0.20 U	8.0	0.4 U
21-Jan-02	0.2 U	0.20 U	0.20 U	0.20 U	2.0 U	2.0 U	2.0	2.0 U	0.20 U	0.20 U	7.0	0.4 U
21-Jan-02 DUP.	0.2 U	NS	0.20 U	NS	2.0 U	NS	2.0 U	NS	0.20 U	NS	6.0	NS

Table 1-1
Treatment System Influent and Effluent Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

	Vinyl Chloride		1,1-Dichloroethene		Acetone		2-Butanone		Methylene Chloride		1,2-Dichloroethene (total)	
	Plant Influent (μg/L)	Plant Effluent (μg/L)	Plant Influent (μg/L)	Plant Effluent (μg/L)	Plant Influent (μg/L)	Plant Effluent (μg/L)	Plant Influent (μg/L)	Plant Effluent (μg/L)	Plant Influent (μg/L)	Plant Effluent (μg/L)	Plant Influent (μg/L)	Plant Effluent (μg/L)
Daily Maximum Discharge Limit>>		None		None		None		None		None		None
Average Monthly Discharge Limit>>		2,816		17		None		None		8,600		172
25-Feb-02	0.18 U	0.18 U	0.19 U	0.19 U	1.5 U	1.5 U	1.7 U	1.7 U	0.19 U	0.19 U	5.7	0.42 U
27-Mar-02	2.0 U	1.0 U	2.0 U	1.0 U	10 U	5.0 U	6.0 U	3.0 U	2.0 U	1.0 U	4.0	1.0 U
29-Apr-02	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	4.1	1.0 U
29-May-02	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	5.3	1.0 U
12-Jun-02	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	3.0 U	3.0 U	1.0 U	1.0 U	4.8	1.0 U
11-Jul-02	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	1.0 U	1.0 U
21-Aug-02	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	3.7	1.0 U
17-Sep-02	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	1.0 U	1.0 U
14-Oct-02	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	2.5 U	1.0 U
14-Nov-02	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	3.0 U	3.0 U	1.0 U	1.0 U	2.9	1.0 U
9-Dec-02	2.0 U	1.0 U	2.0 U	1.0 U	10 U	5.0 U	6.0 U	3.0 U	2.0 U	1.0 U	2.8	1.0 U
14-Jan-03	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	4.2	1.0 U
20-Feb-03	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	3.0 U	3.0 U	1.0 U	1.0 U	4.7	1.0 U
20-Feb-03 DUP.	1.0 U	NS	1.0 U	NS	5.0 U	NS	3.0 U	NS	1.0 U	NS	4.6	NS
17-Mar-03	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	4.7	1.0 U
23-Apr-03	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	15	1.0 U
6-May-03	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	17	1.0 U
17-Jun-03	1.0 U	1.0 U	1.0 U	1.0 U	25 U	25 U	5.0 U	5.0 U	3.0 U	3.0 U	6.8	1.0 U
10-Jul-03	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	4.9	1.0 U
5-Aug-03	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	3.6	1.0 U
2-Sep-03	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	3.5	1.0 U
2-Oct-03	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	3.7	1.0 U
18-Nov-03	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	3.0 U	3.0 U	1.0 U	1.0 U	2.7	1.0 U
8-Dec-03	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	3.3	1.0 U
19-Jan-04	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	5.5	1.0 U
2-Feb-04	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	5.5	1.0 U
2-Feb-04 DUP.	1.0 U	NS	1.0 U	NS	5.0 U	NS	5.0 U	NS	3.0 U	NS	5.9	NS
16-Mar-04	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	1.0 U	1.0 U
23-Apr-04	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	11	1.0 U
19-May-04	1.0 UJ[17]	1.0 U	1.0 UJ	1.0 U	5.0 UJ	5.0 U	5.0 UJ	5.0 U	3.0 UJ	3.0 U	3.9 J	1.0 U
1-Jun-04	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	10	1.0 U
15-Jul-04	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	7.4	1.0 U
5-Aug-04	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	5.3	1.0 U
8-Sep-04	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	4.0	1.0 U
14-Oct-04	1.0 U	1.0 U	1.0 U	1.0 U	5.0 UJ	5.0 UJ	5.0 U	5.0 U	3.0 U	3.0 U	3.6 J	1.0 UJ
14-Oct-04 DUP.	NS	1.0 U	NS	1.0 U	NS	5.0 U	NS	5.0 U	NS	3.0 U	NS	1.0 UJ
17-Nov-04	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	3.3	1.0 U

Table 1-1
Treatment System Influent and Effluent Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

	Vinyl Chloride		1,1-Dichloroethene		Acetone		2-Butanone		Methylene Chloride		1,2-Dichloroethene (total)	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		None		None		None		None		None
Average Monthly Discharge Limit>>		2,816		17		None		None		8,600		172
13-Dec-04	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	5.5	1.0 U
13-Dec-04 DUP.	1.0 U	NS	1.0 U	NS	5.0 U	NS	5.0 U	NS	3.0 U	NS	5.7	NS
20-Jan-05	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	1.0 U	1.0 U
10-Feb-05	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	1.0 U	1.0 U
15-Mar-05	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	5.5	1.0 U
14-Apr-05	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	2.0 U	3.0 U	3.0 U	18	1.0 U
14-Apr-05 DUP.	1.0 U	NS	1.6	NS	5.0 U	NS	5.0 U	NS	3.0 U	NS	17 D	NS
5-May-05	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.0 U	3.0 U	9.7	1.0 U
29-Jun-05	4.0 U	1.0 U	2.0 U	0.50 U	20 U	5.0 U	20 U	5.0 U	20 U	5.0 U	7.8	0.75 U
28-Jul-05	5.0 U	1.0 U	2.5 U	0.50 U	25 U	5.0 U	25 U	5.0 U	25 U	5.0 U	5.7	0.5 U
29-Aug-05	5.0 U	1.0 U	2.5 U	0.50 U	25 U	5.0 U	25 U	5.0 U	25 U	5.0 U	4.4	0.75 U
29-Aug-05 DUP.	5.0 U	NS	2.5 U	NS	25 U	NS	25 U	NS	25 U	NS	4.2	NS
28-Sep-05	5.0 U	1.0 U	2.5 U	0.50 U	25 U	5.0 U	25 U	5.0 U	25 U	5.0 U	3.8	0.75 U
19-Oct-05	5.0 U	1.0 U	2.5 U	0.50 U	25 U	5.0 U	25 U	5.0 U	25 U	5.0 U	3.0	0.75 U
10-Nov-05	1.0 U	1.0 U	0.50 U	0.50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	6.9	0.75 U
12-Dec-05	10 U	1.0 U	5.0 U	0.50 U	50 U	6.5	50 U	5.0 U	50 U	5.0 U	8.2	0.75 U
26-Jan-06	10.0 U	1.0 U	5.0 U	0.50 U	50 U	5.0 U	50 U	5.0 U	50 U	5.0 U	8.0 D	0.50 U
23-Feb-06	5.0 U	1.0 U	2.5 U	0.50 U	25 U	5.0 U	25 U	5.0 U	25 U	5.0 U	9.2	1.3 U
8-Mar-06	5.0 U	1.0 U	2.5 U	0.50 U	25 U	5.0 U	25 U	5.0 U	25 U	5.0 U	8.3	1.3 U
27-Apr-06	5.0 U	1.0 U	2.5 U	0.50 U	25 U	5.0 U	25 U	5.0 U	25 U	5.0 U	3.8	1.3 U
15-May-06	5.0 U	1.0 U	2.5 U	0.50 U	25 U	5.0 U	25 U	5.0 U	25 U	5.0 U	2.7	1.3 U
15-Jun-06	5.0 U	1.0 U	2.5 U	0.50 U	25 U	5.0 U	25 U	5.0 U	3.0 J	5.0 U	12	1.3 U
19-Jul-06	5.0 U	1.0 U	2.5 U	0.50 U	25 U	5.0 U	25 U	5.0 U	25 U	5.0 U	12	1.3 U
14-Sep-06	1.0 U	1.0 U	0.50 U	0.50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	4.0	1.3 U
26-Oct-06	5.0 U	1.0 U	2.5 U	0.50 U	25 U	5.0 U	25 U	5.0 U	25 U	5.0 U	6.3 U	1.3 U
9-Nov-06	4.0 U	1.0 U	2.0 U	0.50 U	20 U	5.0 U	20 U	5.0 U	20 U	5.0 U	5.0 U	1.3 U
11-Dec-06	4.0 U	1.0 U	2.0 U	0.50 U	20 U	5.0 U	20 U	5.0 U	20 U	5.0 U	4.3	1.30 U
10-Jan-07	4.0 U	1.0 U	2.0 U	0.50 U	20 U	1.8 J	20 U	5.0 U	20 U	5.0 U	3.4	1.3 U
27-Feb-07	4.0 U	1.0 U	2.0 U	0.50 U	20 U	5.0 U	20 U	5.0 U	20 U	5.0 U	4.7	1.3 U
19-Mar-07	4.0 U	1.0 U	2.0 U	0.50 U	20 U	5.0 U	20 U	5.0 U	20 U	5.0 U	2.9	1.30 U
4-Apr-07	4.0 U	1.0 U	2.0 U	0.50 U	20 U	5.0 U	20 U	5.0 U	20 U	5.0 U	3.3	1.3 U
2-May-07	4.0 U	1.0 U	2.0 U	0.50 U	20 U	5.0 U	20 U	5.0 U	20 U	5.0 U	9.5	1.3 U
15-Jun-07	4.0 U	1.0 U	2.0 U	0.50 U	20 U	2.3 J	20 U	5.0 U	20 U	5.0 U	7.4	1.3 U
26-Jul-07	2.5 U	1.0 U	1.2 U	0.50 U	12 U	5.0 U	12 U	5.0 U	12 U	5.0 U	3.3	0.50 U
17-Aug-07	2.5 U	1.0 U	1.2 U	0.50 U	12 U	5.0 U	12 U	5.0 U	12 U	5.0 U	2.6	0.75 U
17-Sep-07	1.0 U	1.0 U	0.75 U	0.75 U	2.4 J	3.6 J	5.0 U	5.0 U	5.0 U	5.0 U	1.6	0.50 U

Table 1-1
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	Vinyl Chloride		1,1-Dichloroethene		Acetone		2-Butanone		Methylene Chloride		1,2-Dichloroethene (total)	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		None		None		None		None		None
Average Monthly Discharge Limit>>		2,816		17		None		None		8,600		172
24-Oct-07	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	0.66 JB	0.16 JB	2.2 J	0.50 U
24-Oct-07 DUP.	5.0 U	NS	5.0 U	NS	10 U	NS	10 U	NS	0.77 JB	NS	2.1 J	NS
19-Nov-07	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.50 U	5.0 U	0.50 U
19-Nov-07 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.50 U	5.0 U	0.50 U
18-Dec-07	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	3.0 JB	0.50 U	5.0 U	0.50 U
18-Dec-07 DUP.	NS	0.50 U	NS	0.50 U	NS	5.0 U	NS	5.0 U	NS	0.50 U	NS	0.50 U
15-Jan-08	5.0 U	0.50 U	5.0 U	0.50 U	10 U	1.3 JB	10 U	5.0 U	5.0 U	0.50 U	2.5 J	0.50 U
15-Jan-08 DUP.	5.0 U	NA	5.0 U	NA	10 U	NA	10 U	NA	5.0 U	NA	2.5 J	NA
14-Feb-08	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	2.4 JB	0.50 U	2.1 J	0.50 U
14-Feb-08 DUP.	5.0 U	NS	5.0 U	NS	10 U	NS	10 U	NS	2.8 JB	NS	5.0 U	NS
11-Mar-08	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.50 U	9.4	0.50 U
11-Mar-08 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.50 U	9.5	0.50 U
8-Apr-08	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.50 U	8.4	0.50 U
8-Apr-08 DUP.	5.0 U	NA	5.0 U	NA	10 U	NA	10 U	NA	5.0 U	NA	8.1	NA
8-May-08	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.50 U	11	0.50 U
8-May-08 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.2 J	5.0 U	10 U	5.0 U	5.0 U	0.50 U	10	0.50 U
5-Jun-08	5.0 U	0.50 U	5.0 U	0.50 U	10 U	3.5 J	10 U	5.0 U	5.0 U	0.4 JB	4.1 J	0.50 U
5-Jun-08 DUP.	5.0 U	NS	5.0 U	NS	10 U	NS	10 U	NS	5.0 U	NS	3.9 J	NS
22-Jul-08	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	1.2 JB	0.50 U	2.1 J	0.50 U
22-Jul-08 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	1.0 JB	0.11 J	2.0 J	0.50 U
19-Aug-08	5.0 U	0.50 U	5.0 U	0.50 U	10 U	2.2 J	10 U	1.6 J	0.36 J	0.12 JB	3.2 J	0.50 U
19-Aug-08 DUP.	5.0 U	NS	5.0 U	NS	10 U	NS	10 U	NS	5.0 U	NS	3.0 J	NS
10-Sep-08	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.2 JB	3.4 J	0.50 U
10-Sep-08 DUP.	5.0 U	NS	5.0 U	NS	10 U	NS	10 U	NS	5.0 U	NS	3.2 J	NS
23-Oct-08	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.50 U	3.2 J	0.50 U
23-Oct-08 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.50 U	3.0 J	0.50 U
10-Nov-08	5.0 U	0.50 U	5.0 U	0.50 U	10 U	4.0 J	10 U	5.0 U	1.0 JB	0.50 U	2.8 J	0.50 U
10-Nov-08 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	10 U	4.4 J	10 U	5.0 U	1.0 JB	0.50 U	2.8 J	0.50 U
11-Dec-08	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.50 U	2.6 J	0.50 U
11-Dec-08 DUP.	5.0 U	NS	5.0 U	NS	10 U	NS	10 U	NS	5.0 U	NS	2.7 J	NS
8-Jan-09	0.50 U	0.50 U	0.50 U	0.50 U	2.7 J	5.0 U	5.0 U	5.0 U	0.50 U	0.50 U	5.5	0.50 U
8-Jan-09 DUP.	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	2.5 J	5.0 U	5.0 U	0.50 U	0.50 U	5.4	0.50 U
4-Feb-09	5.0 U	0.50 U	0.71 J	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.50 U	5.6	0.50 U
4-Feb-09 DUP.	5.0 U	NS	5.0 U	NS	10 U	NS	10 U	NS	0.38 JB	NS	5.6	NS
5-Mar-09	5.0 U	0.50 U	5.0 U	0.50 U	6.1 JB	5.0 U	10 U	5.0 U	4.0 JB	0.50 U	2.9 J	0.50 U
5-Mar-09 DUP.	5.0 U	NS	5.0 U	NS	7.2 JB	NS	10 U	NS	3.9 JB	NS	2.9 J	NS
7-Apr-09	10 U	0.50 U	10 U	0.50 U	20 U	5.0 U	20 U	5.0 U	10 U	0.50 U	6.9 J	0.50 U
7-Apr-09 DUP.	10 U	0.50 U	10 U	0.50 U	20 U	5.0 U	20 U	5.0 U	10 U	0.50 U	6.6 J	0.50 U

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	Vinyl Chloride		1,1-Dichloroethene		Acetone		2-Butanone		Methylene Chloride		1,2-Dichloroethene (total)	
	Plant Influent (μg/L)	Plant Effluent (μg/L)	Plant Influent (μg/L)	Plant Effluent (μg/L)	Plant Influent (μg/L)	Plant Effluent (μg/L)	Plant Influent (μg/L)	Plant Effluent (μg/L)	Plant Influent (μg/L)	Plant Effluent (μg/L)	Plant Influent (μg/L)	Plant Effluent (μg/L)
Daily Maximum Discharge Limit>>		None		None		None		None		None		None
Average Monthly Discharge Limit>>		2,816		17		None		None		8,600		172
5-May-09	5.0 U	0.50 U	5.0 U	0.50 U	10 U	2.3 JB	10 U	5.0 U	5.0 U	0.50 U	4.7 J	0.50 U
5-May-09 DUP.	0.50 U	NS	0.50 U	NS	1.6 J	NS	5.0 U	NS	1.1 JDB	NS	5.1 JD	NS
2-Jun-09	5.0 U	0.50 U	5.0 U	0.50 U	7.9 JB	5.0 U	10 U	5.0 U	10 B	0.50 U	2.1 J	0.50 U
2-Jun-09 DUP.	5.0 U	NS	5.0 U	NS	6.1 JB	NS	10 U	NS	11 B	NS	3.1 J	NS
7-Jul-09	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.50 U	3.1 J	0.50 U
7-Jul-09 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.50 U	3.0 J	0.50 U
5-Aug-09	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.50 U	3.6 J	0.50 U
5-Aug-09 DUP.	5.0 U	NS	5.0 U	NS	10 U	NS	10 U	NS	5.0 U	NS	3.6 J	NS
8-Sep-09	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.50 U	2.9 J	0.50 U
8-Sep-09 DUP.	5.0 U	NS	5.0 U	NS	10 U	NS	10 U	NS	1.2 J	NS	2.6 J	NS
6-Oct-09	5.0 U	0.50 U	5.0 U	0.50 U	10 U	1.3 JB	10 U	5.0 U	5.0 U	0.50 U	3.2 J	0.50 U
6-Oct-09 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	10 U	1.5 JB	10 U	5.0 U	5.0 U	0.50 U	3.2 J	0.50 U
4-Nov-09	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.50 U	2.4 J	0.50 U
4-Nov-09 DUP.	5.0 U	NS	5.0 U	NS	10 U	NS	10 U	NS	1.2 J	NS	2.3 J	NS
1-Dec-09	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.50 U	2.8 J	0.50 U
1-Dec-09 DUP.	5.0 U	NS	5.0 U	NS	10 U	NS	10 U	NS	5.0 U	NS	2.8 J	NS
5-Jan-10	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	5.4 B	0.50 U	3.2 J	0.50 U
5-Jan-10 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	9.9 B	0.50 U	3.5 J	0.50 U
2-Feb-10	5.0 U	0.50 U	0.72 JB	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.16 JB	4.5 J	0.50 U
2-Feb-10 DUP.	5.0 U	NS	0.62 JB	NS	10 U	NS	10 U	NS	5.0 U	NS	4.5 J	NS
4-Mar-10	5.0 U	0.50 U	5.0 U	0.50 U	10 U	5.0 U	10 U	5.0 U	5.0 U	0.50 U	4.9 J	0.50 U
4-Mar-10 DUP.	5.0 U	NS	5.0 U	NS	10 U	NS	10 U	NS	5.0 U	NS	4.7 J	NS

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	1,1-Dichloroethane		1,1,1-Trichloroethane		Benzene		Trichloroethene		Toluene		Carbon Tetrachloride	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		None		None		None		None		None
Average Monthly Discharge Limit>>		None		500		381		434		2,500		None
Sample Date												
3-Apr-00	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	670	0.50 U	0.50 U	0.50 U	NA	NA
10-Apr-00	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	920	0.50 U	0.50 U	0.50 U	NA	NA
10-Apr-00 DUP.	NS	0.50 U	NS	0.50 U	NS	0.50 U	NS	0.50 U	NS	0.50 U	NA	NA
17-Apr-00	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1,300	0.50 U	0.50 U	0.50 U	NA	NA
24-Apr-00	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1,100	0.50 U	0.50 U	0.50 U	NA	NA
1-May-00	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	890	0.50 U	0.50 U	0.50 U	NA	NA
25-May-00	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	900	0.50 U	0.50 U	0.50 U	NA	NA
7-Jun-00	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	940	0.50 U	0.50 U	0.50 U	NA	NA
6-Jul-00	2.0 U	0.50 U	2.0 U	0.50 U	2.0 U	0.50 U	1,000	0.50 U	2 U	0.50 U	NA	NA
14-Aug-00	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	420	0.50 U	0.50 U	0.50 U	NA	NA
14-Aug-00 DUP.	0.5 U	NS	0.50 U	NS	0.50 U	NS	450	NS	0.50 U	NS	NA	NS
11-Sep-00	0.5 U	0.50 U	0.50 U	0.50 U	0.90	0.50 U	480	0.50 U	0.50 U	0.50 U	NA	NA
11-Sep-00 DUP.	0.5 U	NS	0.50 U	NS	0.50 U	NS	470	NS	0.50 U	NS	NA	NS
9-Oct-00	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	340	0.50 U	0.50 U	0.50 U	NA	NA
9-Nov-00	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	340	0.50 U	0.50 U	0.50 U	NA	NA
5-Dec-00	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	490	0.50 U	0.50 U	0.50 U	NA	NA
5-Dec-00 DUP.	0.5 U	NS	0.50 U	NS	0.50 U	NS	500	NS	0.50 U	NS	NA	NS
4-Jan-01	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	440	0.50 J	0.50 U	0.50 U	NA	NA
8-Feb-01	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	400	0.50 J	0.50 U	0.50 U	NA	NA
12-Mar-01	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	480	2.0	0.50 U	0.50 U	NA	NA
12-Mar-01 DUP.	NS	0.50 U	NS	0.50 U	NS	0.50 U	NS	0.50 U	NS	0.50 U	NS	NA
10-Apr-01	0.3 U	0.30 U	0.30 U	0.30 U	0.20 U	0.20 U	460	0.30 U	0.20 U	0.20 U	NA	NA
10-Apr-01 DUP.	0.3 U	NS	0.30 U	NS	0.20 U	NS	470	NS	0.20 U	NS	NA	NS
9-May-01	0.3 U	0.30 U	0.30 U	0.30 U	0.20 U	0.20 U	560	0.30 U	0.20 U	0.20 U	NA	NA
9-May-01 DUP.	NS	0.30 U	NS	0.30 U	NS	0.20 U	NS	0.30 U	NS	0.20 U	NS	NA
12-Jun-01	0.2 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	300	0.20 U	0.20 U	0.20 U	NA	NA
11-Jul-01	0.2 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	250	0.20 U	0.20 U	0.20 U	NA	NA
6-Aug-01	0.2 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	250	0.20 U	0.20 U	0.20 U	NA	NA
6-Aug-01 DUP.	0.2 U	NS	0.20 U	NS	0.20 U	NS	260	NS	0.20 U	NS	NA	NS
19-Sep-01	1.0 U	0.20 U	1.0 U	0.20 U	1.0 U	0.20 U	280	0.20 U	1.0 U	0.20 U	0.20 UJ	0.20 UJ
19-Sep-01 DUP.	1.0 U	NS	1.0 U	NS	1.0 U	NS	250	NS	1.0 U	NS	0.20 UJ	NS
23-Oct-01	0.2 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	390	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
6-Nov-01	0.2 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	330	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
19-Dec-01	0.2 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	330	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
21-Jan-02	0.2 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	260	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
21-Jan-02 DUP.	0.2 U	NS	0.20 U	NS	0.20 U	NS	270	NS	0.20 U	NS	0.20 U	NS

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	1,1-Dichloroethane		1,1,1-Trichloroethane		Benzene		Trichloroethene		Toluene		Carbon Tetrachloride	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		None		None		None		None		None
Average Monthly Discharge Limit>>		None		500		381		434		2,500		None
25-Feb-02	0.20 U	0.20 U	0.22 U	0.22 U	0.20 U	0.20 U	320	0.21 U	0.21 U	0.21 U	0.24 U	0.24 U
27-Mar-02	2.0 U	1.0 U	0.50 U	0.30 U	2.0 U	1.0 U	210	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U
29-Apr-02	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	380	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
29-May-02	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	320	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
12-Jun-02	1.0 U	1.0 U	0.30 U	0.30 U	1.0 U	1.0 U	540	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
11-Jul-02	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	430	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
21-Aug-02	1.0 U	1.0 U	1.0 U	1.0 U	9.8	8.7	320	1.6	1.0 U	8.9	1.0 U	1.0 U
17-Sep-02	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	230	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
14-Oct-02	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	280	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
14-Nov-02	1.0 U	1.0 U	0.30 U	0.30 U	1.0 U	1.0 U	250	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
9-Dec-02	2.0 U	1.0 U	0.50 U	0.30 U	2.0 U	1.0 U	240	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U
14-Jan-03	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	2.0 U	330 D	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
20-Feb-03	1.0 U	1.0 U	0.30 U	0.30 U	1.0 U	1.0 U	230 D	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
20-Feb-03 DUP.	1.0 U	NS	0.30 U	NS	1.0 U	NS	240 D	NS	1.0 U	NS	1.0 U	NS
17-Mar-03	1.0 U	1.0 U	0.30 U	0.30 U	1.0 U	1.0 U	290 D	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U
23-Apr-03	1.0 U	1.0 U	0.30 U	0.30 U	1.0 U	1.0 U	280 D	3.6	1.0 U	1.0 U	1.0 U	1.0 U
6-May-03	1.0 U	1.0 U	0.30 U	0.30 U	1.0 U	1.0 U	370 D	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
17-Jun-03	1.0 U	1.0 U	0.30 U	0.30 U	1.0 U	1.0 U	150	3.0 U	1.0 U	1.0 U	1.0 U	1.0 U
10-Jul-03	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	160	2.0	1.0 U	1.0 U	1.0 U	1.0 U
5-Aug-03	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	170	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Sep-03	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	220	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Oct-03	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	250 D	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U
18-Nov-03	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	250 D	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
8-Dec-03	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	250 D	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
19-Jan-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	350	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Feb-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	12 U	380 D	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Feb-04 DUP.	1.0 U	NS	1.0 U	NS	1.0 U	NS	340 D	NS	1.0 U	NS	1.0 U	NS
16-Mar-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	250 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
23-Apr-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	480 D	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
19-May-04	1.0 UJ	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U	20 J	1.0 U	1.0 UJ	1.0 U	1.0 UJ	1.0 U
1-Jun-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	230 D	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
15-Jul-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	160	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
5-Aug-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
8-Sep-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	180	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
14-Oct-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	230 DJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
14-Oct-04 DUP.	NS	1.0 U	NS	1.0 U	NS	1.0 U	NS	1.0 U	NS	1.0 U	NS	1.0 U
17-Nov-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	180	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Table 1-1
Treatment System Influent and Effluent Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

	1,1-Dichloroethane		1,1,1-Trichloroethane		Benzene		Trichloroethene		Toluene		Carbon Tetrachloride	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		None		None		None		None		None
Average Monthly Discharge Limit>>		None		500		381		434		2,500		None
13-Dec-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	270 D	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
13-Dec-04 DUP.	1.0 U	NS	1.0 U	NS	1.0 U	NS	260 D	NS	1.0 U	NS	1.0 U	NS
20-Jan-05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	220 D	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
10-Feb-05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	260 D	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
15-Mar-05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	200 D	1.9	1.0 U	1.0 U	1.0 U	1.0 U
14-Apr-05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	280 D	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
14-Apr-05 DUP.	1.0 U	NS	1.0 U	NS	1.0 U	NS	320 D	NS	1.0 U	NS	1.0 U	NS
5-May-05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	250 D	1.9	1.0 U	1.0 U	1.0 U	1.0 U
29-Jun-05	3.0 U	0.75 U	2.0 U	0.50 U	2.0 U	0.50 U	150	1.4	3.0 U	0.75 U	2.0 U	0.50 U
28-Jul-05	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	210	1.0	3.8	0.75 U	2.5 U	0.50 U
29-Aug-05	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	220	0.80 U	3.8 U	0.75 U	2.5 U	0.50 U
29-Aug-05 DUP.	3.8 U	NS	2.5 U	NS	2.5 U	NS	220	NS	3.8 U	NS	2.5 U	NS
28-Sep-05	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	300 D	0.87	3.8 U	0.75 U	2.5 U	0.50 U
19-Oct-05	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	290 D	1.2	3.8 U	0.75 U	2.5 U	0.50 U
10-Nov-05	0.75 U	0.75 U	0.50 U	0.50 U	0.50 U	0.50 U	660 D	0.57	0.75 U	0.75 U	0.50 U	0.50 U
12-Dec-05	7.5 U	0.75 U	5.0 U	0.50 U	5.0 U	0.50 U	450 D	0.50 U	7.5 U	0.75 U	5.0 U	0.50 U
26-Jan-06	7.5 U	0.75 U	5.0 U	0.50 U	5.0 U	0.50 U	280 D	0.50 U	7.5 U	0.75 U	5.0 U	0.50 U
23-Feb-06	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	310	0.50 U	3.8 U	0.75 U	2.5 U	0.50 U
8-Mar-06	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	320	0.50 U	3.8 U	0.75 U	2.5 U	0.50 U
27-Apr-06	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	200	0.50 U	3.8 U	0.75 U	2.5 U	0.50 U
15-May-06	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	200 J	0.50 U	3.8 U	0.75 U	2.5 U	0.50 U
15-Jun-06	3.8 U	0.75 U	2.5 U	0.5 U	2.5 U	0.50 U	380	0.50 U	3.8 U	0.75 U	2.5 U	0.50 U
19-Jul-06	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	220	0.50 U	3.8 U	0.75 U	2.5 U	0.50 U
14-Sep-06	0.75 U	0.75 U	0.50 U	0.50 U	0.50 U	0.50 U	47	0.50 U	0.75 U	0.75 U	0.50 U	0.50 U
26-Oct-06	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	130	0.14 J	3.8 U	0.75 U	2.5 U	0.50 U
9-Nov-06	3.0 U	0.75 U	2.0 U	0.50 U	2.0 U	0.50 U	160	0.50 U	3.0 U	0.75 U	2.0 U	0.50 U
11-Dec-06	3.0 U	0.75 U	2.0 U	0.50 U	2.0 U	0.50 U	220	0.50 U	3.0 U	0.75 U	2.0 U	0.50 U
10-Jan-07	3.0 U	0.75 U	2.0 U	0.50 U	2.0 U	0.50 U	250	0.50 J	3.0 U	0.75 U	2.0 U	0.50 U
27-Feb-07	3.0 U	0.75 U	2.0 U	0.50 U	2.0 U	0.50 U	230	0.50 U	3.0 U	0.75 U	2.0 U	0.50 U
19-Mar-07	3.0 U	0.75 U	2.0 U	0.50 U	2.0 U	0.50 U	130	0.21 J	3.0 U	0.75 U	2.0 U	0.50 U
4-Apr-07	3.0 U	0.75 U	2.0 U	0.50 U	2.0 U	0.50 U	190	0.24 J	3.0 U	0.75 U	2.0 U	0.50 U
2-May-07	3.0 U	0.75 U	2.0 U	0.50 U	2.0 U	0.50 U	280	0.98 U	3.0 U	0.75 U	2.0 U	0.50 U
15-Jun-07	3.0 U	0.75 U	2.0 U	0.50 U	2.0 U	0.50 U	170	0.94	3.0 U	0.75 U	2.0 U	0.50 U
26-Jul-07	1.9 U	0.75 U	1.2 U	0.50 U	1.2 U	0.50 U	89	0.75	1.9 U	0.75 U	1.2 U	0.50 U
17-Aug-07	1.9 U	0.75 U	1.2 U	0.50 U	1.2 U	0.50 U	90	0.68	1.9 U	0.75 U	1.2 U	0.50 U
17-Sep-07	0.75 U	0.75 U	0.50 U	0.50 U	0.50 U	0.50 U	190	0.50 U	0.75 U	0.75 U	0.50 U	0.50 U

Table 1-1
Treatment System Influent and Effluent Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

	1,1-Dichloroethane		1,1,1-Trichloroethane		Benzene		Trichloroethene		Toluene		Carbon Tetrachloride	
	Plant Influent (μg/L)	Plant Effluent (μg/L)	Plant Influent (μg/L)	Plant Effluent (μg/L)	Plant Influent (μg/L)	Plant Effluent (μg/L)	Plant Influent (μg/L)	Plant Effluent (μg/L)	Plant Influent (μg/L)	Plant Effluent (μg/L)	Plant Influent (μg/L)	Plant Effluent (μg/L)
Daily Maximum Discharge Limit>>		None		None		None		None		None		None
Average Monthly Discharge Limit>>		None		500		381		434		2,500		None
24-Oct-07	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	160	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
24-Oct-07 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	160	NS	5.0 U	NS	5.0 U	NS
19-Nov-07	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	160	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
19-Nov-07 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	160	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
18-Dec-07	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	160	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
18-Dec-07 DUP.	NS	0.50 U	NS	0.50 U	NS	0.50 U	NS	0.50 U	NS	0.50 U	NS	0.50 U
15-Jan-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	170 D	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
15-Jan-08 DUP.	5.0 U	NA	5.0 U	NA	5.0 U	NA	170 D	NA	5.0 U	NA	5.0 U	NA
14-Feb-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	190	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
14-Feb-08 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	160	NS	5.0 U	NS	5.0 U	NS
11-Mar-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	540 D	0.18 J	5.0 U	0.50 U	5.0 U	0.50 U
11-Mar-08 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	560 D	0.18 J	5.0 U	0.50 U	5.0 U	0.50 U
8-Apr-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	180	0.56	5.0 U	0.50 U	5.0 U	0.50 U
8-Apr-08 DUP.	5.0 U	NA	5.0 U	NA	5.0 U	NA	180	NA	5.0 U	NA	5.0 U	NA
8-May-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	190	0.55 B	5.0 U	0.50 U	5.0 U	0.50 U
8-May-08 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	190	0.40 JB	5.0 U	0.50 U	5.0 U	0.50 U
5-Jun-08	5.0 U	0.50 U	5.0 U	0.11 J	5.0 U	0.50 U	88	0.51	5.0 U	0.50 U	5.0 U	0.50 U
5-Jun-08 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	95	NS	5.0 U	NS	5.0 U	NS
22-Jul-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	150	0.33 J	5.0 U	0.50 U	5.0 U	0.50 U
22-Jul-08 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	150	0.34 J	5.0 U	0.50 U	5.0 U	0.50 U
19-Aug-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	240 D	0.36 J	5.0 U	0.50 U	5.0 U	0.50 U
19-Aug-08 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	240 D	NS	5.0 U	NS	5.0 U	NS
10-Sep-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	220 D	0.52	0.26 JB	0.50 U	5.0 U	0.50 U
10-Sep-08 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	210 D	NS	5.0 U	NS	5.0 U	NS
23-Oct-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	140	0.26 J	0.13 JB	0.50 U	5.0 U	0.50 U
23-Oct-08 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	130	0.28 J	0.12 JB	0.50 U	5.0 U	0.50 U
10-Nov-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	140	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
10-Nov-08 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	140	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
11-Dec-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	170	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
11-Dec-08 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	170	NS	5.0 U	NS	5.0 U	NS
8-Jan-09	0.50 U	0.50 U	0.13 J	0.50 U	0.50 U	0.50 U	240 D	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
8-Jan-09 DUP.	0.50 U	0.50 U	0.13 J	0.50 U	0.50 U	0.50 U	250 D	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
4-Feb-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	200	0.50 U	5.0 U	0.50 U	0.24 J	0.50 U
4-Feb-09 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	170 D	NS	5.0 U	NS	5.0 U	NS
5-Mar-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	140	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
5-Mar-09 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	140	NS	5.0 U	NS	5.0 U	NS
7-Apr-09	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	190	0.50 U	10 U	0.50 U	10 U	0.50 U
7-Apr-09 DUP.	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	190	0.50 U	10 U	0.50 U	10 U	0.50 U

Table 1-1
Treatment System Influent and Effluent Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

	1,1-Dichloroethane		1,1,1-Trichloroethane		Benzene		Trichloroethene		Toluene		Carbon Tetrachloride	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		None		None		None		None		None
Average Monthly Discharge Limit>>		None		500		381		434		2,500		None
5-May-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	130	1.9	5.0 U	0.11 J	5.0 U	0.50 U
5-May-09 DUP.	0.50 U	NS	0.10 J	NS	0.50 U	NS	110 D	NS	0.50 U	NS	0.50 U	NS
2-Jun-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	74	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
2-Jun-09 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	94	NS	5.0 U	NS	5.0 U	NS
7-Jul-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	94	0.43 J	5.0 U	0.50 U	5.0 U	0.50 U
7-Jul-09 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	95	0.45 J	5.0 U	0.50 U	5.0 U	0.50 U
5-Aug-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	120	0.57	5.0 U	0.50 U	5.0 U	0.50 U
5-Aug-09 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	120	NS	5.0 U	NS	5.0 U	NS
8-Sep-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	89	0.59	5.0 U	0.50 U	5.0 U	0.50 U
8-Sep-09 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	78	NS	5.0 U	NS	5.0 U	NS
6-Oct-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	110	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
6-Oct-09 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	110	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
4-Nov-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	100	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
4-Nov-09 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	96	NS	5.0 U	NS	5.0 U	NS
1-Dec-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	140	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
1-Dec-09 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	140	NS	5.0 U	NS	5.0 U	NS
5-Jan-10	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	130	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
5-Jan-10 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	130	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
2-Feb-10	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	130	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
2-Feb-10 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	130	NS	5.0 U	NS	5.0 U	NS
4-Mar-10	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	180	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U
4-Mar-10 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	180	NS	5.0 U	NS	5.0 U	NS

Table 1-1
Treatment System Influent and Effluent Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

	1,1,2-Trichloroethane		Tetrachloroethene		Chlorobenzene		Silver		Arsenic		Barium	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		None		None		0.9		None		None
Average Monthly Discharge Limit>>		None		48		112,600		None		0.75		5,400
Sample Date												
3-Apr-00	NA	NA	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	5.0 U	12.5	2.0 U	17.0	27.1
10-Apr-00	NA	NA	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	5.0 U	4.6	2.0 U	13	12
10-Apr-00 DUP.	NA	NA	NS	0.50 U	NS	0.50 U	NS	5.0 U	NS	2.0 U	NS	12
17-Apr-00	NA	NA	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	5.0 U	2.6	2.0 U	11.0	11.0
24-Apr-00	NA	NA	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	5.0 U	5.1	2.0 U	12.0	11.0
1-May-00	NA	NA	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	5.0 U	5.4	2.0 U	13	11
25-May-00	NA	NA	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	5.0 U	2.8	2.0 U	10 U	10 U
7-Jun-00	NA	NA	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	5.0 U	4.4	2.0 U	11.0	10
6-Jul-00	NA	NA	2.0 U	0.50 U	2.0 U	0.50 U	0.6 U	0.6 U	6.0 UJ	1.3 UJ	11.6	10.2
14-Aug-00	NA	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.60 U	0.60 U	8.4	1.3 U	11.5	9.7
14-Aug-00 DUP.	NA	NS	0.50 U	NS	0.50 U	NS	0.60 U	NS	8.3	NS	11.7	NS
11-Sep-00	NA	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.60 U	0.60 U	5.1	1.5 U	11.8	11.1
11-Sep-00 DUP.	NA	NS	0.50 U	NS	0.50 U	NS	0.60 U[16]	NS	4.7	NS	11.3	NS
9-Oct-00	NA	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.60 U	0.60 U	7.0	1.5 U	13	10 U
9-Nov-00	NA	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.60 U	0.60 U	4.7	1.6 U	11.7	9.4
5-Dec-00	NA	NA	0.50 U	0.50 U	0.50 U	0.50 U	1.7 U	1.7 U	1.8	1.6 U	11.3	8.8
5-Dec-00 DUP.	NA	NS	0.50 U	NS	0.50 U	NS	1.7 U	NS	6.4	NS	12	NS
4-Jan-01	NA	NA	0.50 U	0.50 U	0.50 U	0.50 U	1.2 U	1.2 U	3.3	0.26	11.7	11.9
8-Feb-01	NA	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.5 U	0.5 U	4.1	0.90 U	11.2	9.8
12-Mar-01	NA	NA	0.50 U	0.50 U	0.50 U	0.50 U	0.5 U	0.5 U	4	0.90 U	12.4	11.0
12-Mar-01 DUP.	NS	NA	NS	0.50 U	NS	0.50 U	NS	0.8 U	NS	0.90 U	NS	11.0
10-Apr-01	NA	NA	0.30 U	0.30 U	0.20 U	0.20 U	0.50 U	0.50 U	5.6	0.90 U	12.9	11.3
10-Apr-01 DUP.	NA	NS	0.30 U	NS	0.20 U	NS	0.50 U	NS	6.7	NS	12.9	NS
9-May-01	NA	NA	0.30 U	0.30 U	0.20 U	0.20 U	0.50 U	0.50 U	3.6	0.90 U	13.7	10.1
9-May-01 DUP.	NS	NA	NS	0.30 U	NS	0.20 U	NS	0.50 U	NS	0.90 U	NS	10.2
12-Jun-01	NA	NA	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	7.4	0.90 U	13.7	11.1
11-Jul-01	NA	NA	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	4.1	0.90 U	14.3 U	10.5 U
6-Aug-01	NA	NA	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	NA	4.6	0.90 U	14.0	9.7 B
6-Aug-01 DUP.	NA	NS	0.20 U	NS	0.20 U	NS	0.50 U	NS	4.8	NS	13.4	NS
19-Sep-01	0.30 U	0.30 U	1.0 U	0.20 U	1.0 U	0.20 U	0.50 U	0.50 U	5.1	0.90 U	15.2	13.4
19-Sep-01 DUP.	0.30 U	NS	1.0 U	NS	1.0 U	NS	0.50 U	NS	5	NS	14.5	NS
23-Oct-01	0.30 U	0.30 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	6.8	0.90 U	15.5	11.8
6-Nov-01	0.30 U	0.30 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	7.8	0.90 U	16.6 U	13.2 U
19-Dec-01	0.30 U	0.30 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	5.4	0.90 U	15.8	12.4
21-Jan-02	0.30 U	0.30 U	0.20 U	0.20 U	0.20 U	0.20 U	0.50 U	0.50 U	4.9	0.90 U	17.1	13.8
21-Jan-02 DUP.	0.30 U	NS	0.20 U	NS	0.20 U	NS	0.50 U	NS	5.8	NS	17.1	NS

Table 1-1
Treatment System Influent and Effluent Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

	1,1,2-Trichloroethane		Tetrachloroethene		Chlorobenzene		Silver		Arsenic		Barium	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		None		None		0.9		None		None
Average Monthly Discharge Limit>>		None		48		112,600		None		0.75		5,400
25-Feb-02	0.33 U	0.33 U	0.20 U	0.20 U	0.22 U	0.22 U	0.50 U	0.50 U	1.9	0.90 U	17.7	16.6
27-Mar-02	2.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	0.50 U	0.50 U	6.1	0.37	15	12
29-Apr-02	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	8.7	0.62	15	12 U
29-May-02	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.2	0.56 U	15	12
12-Jun-02	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.1	0.56 U	15	11
11-Jul-02	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.2	0.56 U	14	12
21-Aug-02	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	6.3	0.49	15	12
17-Sep-02	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.7	0.79	15	17
14-Oct-02	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.9	0.56 U	14	11
14-Nov-02	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	5.6	0.57	16	13
9-Dec-02	2.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	0.50 U	0.50 U	6.3	0.56 U	14	11
14-Jan-03	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.80	0.56 U	16	11
20-Feb-03	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	5.6	0.66	15	10
20-Feb-03 DUP.	1.0 U	NS	5.8 D	NS	1.0 U	NS	0.50 U	NS	5	NS	15	NS
17-Mar-03	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.3	0.40	15	9
23-Apr-03	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	3.2	0.56 U	14	9
6-May-03	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	3.6	0.50 U	14	8
17-Jun-03	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.6	0.79	15	10
10-Jul-03	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.9	0.50 U	17	9
5-Aug-03	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.9	0.96	15	9
2-Sep-03	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	5.5	0.40	15	9.00
2-Oct-03	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	5.7	0.37	15	8
18-Nov-03	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	5.00 U	5.6	0.63	15	13
8-Dec-03	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	5.2	0.44	14	11
19-Jan-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.2	0.45	13	10
2-Feb-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	3.3	0.36	12	7
2-Feb-04 DUP.	1.0 U	NS	1.0 U	NS	1.0 U	NS	0.50 U	NS	3.3	NS	12	NS
16-Mar-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.6	0.62	14	9
23-Apr-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.0	0.36	14	8
19-May-04	1.0 UJ	1.0 U	1.0 UJ[17]	1.0 U	1.0 UJ[17]	1.0 U	0.50 UJ[18]	0.50 UJ[18]	3.8	0.28	14	9
1-Jun-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	3.50	0.22	15	10
15-Jul-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	3.80	0.23	16	10
5-Aug-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.30	0.27	17	11
8-Sep-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.50	0.50 U	18	12
14-Oct-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.30 U	0.50 U	18	13
14-Oct-04 DUP.	NS	1.0 U	NS	1.0 U	NS	1.0 U	NS	0.50 U	NS	0.50 U	NS	13
17-Nov-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	3.5	0.50 U	19	11

Table 1-1
Treatment System Influent and Effluent Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

	1,1,2-Trichloroethane		Tetrachloroethene		Chlorobenzene		Silver		Arsenic		Barium	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		None		None		0.9		None		None
Average Monthly Discharge Limit>>		None		48		112,600		None		0.75		5,400
13-Dec-04	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	5.1	0.46	18	12
13-Dec-04 DUP.	1.0 U	NS	1.0 U	NS	1.0 U	NS	0.50 U	NS	4.9	NS	18	NS
20-Jan-05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	5.8	0.40	19	12
10-Feb-05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	5.50	0.44	18	10
15-Mar-05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.90	0.47	17	12
14-Apr-05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.7	0.71	15	10
14-Apr-05 DUP.	1.0 U	NS	1.0 U	NS	1.0 U	NS	0.50 U	NS	4.2	NS	15	NS
5-May-05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	4.2	0.50 U	14	8
29-Jun-05	3.0 U	0.75 U	2.0 U	0.50 U	2.0 U	0.50 U	0.50 U	0.05 U[3]	3.8	0.22 U	16.5	10.9
28-Jul-05	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	0.50 U		3.2	0.09 J	18.0	10.4
29-Aug-05	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	0.50 U	0.50 U	3.5	0.16 J	19.8	11.5
29-Aug-05 DUP.	3.8 U	NS	2.5 U	NS	2.5 U	NS	0.50 U	NS	3.5	NS	19.7	NS
28-Sep-05	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	0.50 U	0.50 U	3.3	0.50 U	20.3	15.7
19-Oct-05	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	0.50 U	0.50 U	3.2	0.50 U	19.0	10.6
10-Nov-05	0.75 U	0.75 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.8	0.50 U	18.4	10.5
12-Dec-05	7.5 U	0.75 U	5.0 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	3.9	0.50 U	17.4	11.6
26-Jan-06	7.5 U	0.75 U	5.0 U	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U	4.3	0.18 J	15.5	9.3
23-Feb-06	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	0.50 U	0.50 U	3.8	0.50 U	16.7	8.4
8-Mar-06	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	0.50 U	0.50 U	3.1	0.18 J	15.3	8.6
27-Apr-06	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	0.50 U	0.50 U	2.3	0.50 U	15.6	12.9
15-May-06	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	0.50 U	0.50 U	3.1	0.50 U	12	7.8
15-Jun-06	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	0.16 J	0.06 J	3.1	0.16 J	14.3	8.9
19-Jul-06	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	0.50 U	0.50 U	3.1	0.50 U	15.9	9.3
14-Sep-06	0.75 U	0.75 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	5.3	0.50 U	13.6	7.8
26-Oct-06	3.8 U	0.75 U	2.5 U	0.50 U	2.5 U	0.50 U	0.03 J	0.50 U	7.9	0.17 J	14.8	8.1
9-Nov-06	3.0 U	0.75 U	2.0 U	0.50 U	2.0 U	0.50 U	0.030 J	0.50 U	8.3	0.21 J	15	11
11-Dec-06	3.0 U	0.75 U	2.0 U	0.50 U	2.0 U	0.50 U	0.50 U	0.50 U	4.2	0.15 J	13	9.5
10-Jan-07	3.0 U	0.75 U	2.0 U	0.50 U	2.0 U	0.50 U	0.50 U	0.50 U	5.7	0.25 J	15	10.6
27-Feb-07	3.0 U	0.75 U	2.0 U	0.50 U	2.0 U	0.50 U	0.50 U	0.50 U	4.6	0.20 J	13	6.3
19-Mar-07	3.0 U	0.75 U	2.0 U	0.50 U	2.0 U	0.50 U	0.50 U	0.50 U	3.6	0.13 J	15	8.4
4-Apr-07	3.0 U	0.75 U	2.0 U	0.50 U	2.0 U	0.50 U	0.50 U	0.50 U	3.3	0.090 J	15	9.0
2-May-07	3.0 U	0.75 U	2.0 U	0.50 U	2.0 U	0.50 U	0.50 U	0.50 U	3.0 U	0.16 J	15	9.8
15-Jun-07	3.0 U	0.75 U	2.0 U	0.50 U	2.0 U	0.50 U	0.50 U	0.50 U	1.9	0.13 J	15	8.7
26-Jul-07	1.9 U	0.75 U	1.2 U	0.50 U	1.2 U	0.50 U	0.50 U	0.50 U	2.2	0.11 J	15.6	9.9
17-Aug-07	1.9 U	0.75 U	1.2 U	0.50 U	1.2 U	0.50 U	0.50 U	NA	5.2	0.13 J	17	10.9
17-Sep-07	0.75 U	0.75 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.3	0.12 J	15	10.0 J

Table 1-1
Treatment System Influent and Effluent Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

	1,1,2-Trichloroethane		Tetrachloroethene		Chlorobenzene		Silver		Arsenic		Barium	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		None		None		0.9		None		None
Average Monthly Discharge Limit>>		None		48		112,600		None		0.75		5,400
24-Oct-07	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	11 U	1.0 U	1.7 J	0.11 J	19 J	10.8
24-Oct-07 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	11 U	1.0 U	11 U	0.15 J	19 J	9.7 J
19-Nov-07	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	NA	6.0 J	2.2	19 J	12
19-Nov-07 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	NA	5.2 J	2.8	19 J	13
18-Dec-07	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	1.0 U	5.8 J	1.0 U	17 J	14
18-Dec-07 DUP.	NS	0.50 U	NS	0.50 U	NS	0.50 U	NS	1.0 U	NS	1.0 U	NS	14
15-Jan-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	1.0 U	10 U	0.16 J	18 J	13
15-Jan-08 DUP.	5.0 U	NA	5.0 U	NA	5.0 U	NA	10 U	1.0 U	10 U	1.0 U	18 J	13
14-Feb-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	1.0 U	10 U	1.0 U	17.4 J	11.7
14-Feb-08 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	10 U	NS	10 U	NS	17.4 J	NS
11-Mar-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	1.0 U	10 U	0.19 J	18.2 J	13.7
11-Mar-08 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	1.0 U	10 U	0.11 J	17.9 J	13.8
8-Apr-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	1.0 U	10 U	0.14 J	20 J	14.1
8-Apr-08 DUP.	5.0 U	NA	5.0 U	NA	5.0 U	NA	10 U	1.0 U	10 U	0.16 J	20.2 J	14.1
8-May-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.80 U	10 U	0.20 J	18.5 J	12.0
8-May-08 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.80 U	10 U	0.20 J	18.7 J	11.8
5-Jun-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.03 J	10 U	2.3	10.6 J	19.7
5-Jun-08 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	10 U	0.80 U	10 U	0.11 J	17.6 J	11.8
22-Jul-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.70 U	10 U	0.15 J	18.5 J	12.0
22-Jul-08 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.70 U	10 U	0.11 J	18.6 J	11.7
19-Aug-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	1.1 J	0.80 U	10 U	0.13 J	21.4 J	13.8
19-Aug-08 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	1.1 J	0.80 U	10 U	0.14 J	21.4 J	13.9
10-Sep-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.80 U	10 U	0.70 U	20.2 J	13.1
10-Sep-08 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	10 U	0.80 U	10 U	0.70 U	21.3 J	13.7
23-Oct-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.80 U	10 U	0.16 J	22.3 J	13.1
23-Oct-08 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.80 U	10 U	0.12 J	22.1 J	13.3
10-Nov-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.80 U	10 U	0.15 J	22.4 J	19.2
10-Nov-08 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.80 U	10 U	0.20 J	22.8 J	19.3
11-Dec-08	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	2.8 J	0.06 J	2.7 J	0.38 J	20.0 J	15.0
11-Dec-08 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	10 U	0.80 U	2.9 J	0.41 J	20.2 J	15.0
8-Jan-09	0.50 U	0.50 U	0.11 J	0.50 U	0.50 U	0.50 U	10 U	0.015 J	10 U	0.11 J	21 J	16.3
8-Jan-09 DUP.	0.50 U	0.50 U	0.11 J	0.50 U	0.50 U	0.50 U	10 U	0.010 J	10 U	0.11 J	20 J	15.8
4-Feb-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.015 J	10 U	0.16 J	20.9 J	16.2
4-Feb-09 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	10 U	0.80 U	10 U	0.10 J	21 J	16.6
5-Mar-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.800 U	2 J	0.12 J	14 J	13.2
5-Mar-09 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	10 U	0.80 U	10 U	0.14 J	12 J	12.6
7-Apr-09	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	10 U	0.80 U	10 U	0.26 J	15 J	14.1
7-Apr-09 DUP.	10 U	0.50 U	10 U	0.50 U	10 U	0.50 U	10 U	0.80 U	10 U	0.29 J	14 J	13.4

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	1,1,2-Trichloroethane		Tetrachloroethene		Chlorobenzene		Silver		Arsenic		Barium *	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		None		None		0.9		None		None
Average Monthly Discharge Limit>>		None		48		112,600		None		0.75		5,400
5-May-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.80 U	2.5 J	0.19 J	19.4 J	18.9
5-May-09 DUP.	0.50 U	NS	0.14 J	NS	0.50 U	NS	10 U	0.80 U	2.5 J	0.20 J	19.3 J	18.5
2-Jun-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.80 U	10 U	0.21 J	17.7 J	14.5
2-Jun-09 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	10 U	0.80 U	3.6 J	0.21 J	17.6 J	14.6
7-Jul-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.80 U	2.3 J	0.18 J	19.1 J	13.3
7-Jul-09 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.80 U	2.4 J	0.22 J	18.6 J	12.9
5-Aug-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.80 U	10 U	0.23 J	16.6 J	13.9
5-Aug-09 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	10 U	0.80 U	10 U	0.14 J	16.6 J	13.7
8-Sep-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.012 J	10 U	0.17 J	19.3 J	13.6
8-Sep-09 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	10 U	0.80 U	10 U	0.17 J	18.2 J	13.6
6-Oct-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.012 J	3.4 J	0.18 J	20.7 J	14.4
6-Oct-09 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.018 J	2.6 J	0.21 J	19.8 J	15.1
4-Nov-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	1.0 U	4.8 J	0.15 J	17.8 J	13.6
4-Nov-09 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	10 U	1.0 U	3.1 J	0.16 J	17.8 J	13.3
1-Dec-09	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.011 J	10 U	0.15 J	18.7 J	14.4
1-Dec-09 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	10 U	0.013 J	10 U	0.16 J	18.9 J	14.5
5-Jan-10	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.0071 J	10 U	0.13 J	18.3 J	14.4
5-Jan-10 DUP.	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.011 J	10 U	0.10 J	19.2 J	14.5
2-Feb-10	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	1.0 U	3.7 J	0.20 J	18.9 J	14.9
2-Feb-10 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	10 U	1.0 U	10 U	0.14 J	18.9 J	15.0
4-Mar-10	5.0 U	0.50 U	5.0 U	0.50 U	5.0 U	0.50 U	10 U	0.80 U	10 U	0.16 J	18.5 J	14.8
4-Mar-10 DUP.	5.0 U	NS	5.0 U	NS	5.0 U	NS	10 U	0.80 U	10 U	0.26 J	19.1 J	14.8

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	Beryllium		Cadmium		Chromium (total)		Iron		Mercury	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		2.3		41		None		None
Average Monthly Discharge Limit>>		10		2.0		27		None		0.273
Sample Date										
3-Apr-00	4.0	4.0 U	0.50 U	0.50 U	10 U	10 U	2,830	303	0.2 U	0.20 U
10-Apr-00	4 U	4.0 U	0.50 U	0.50 U	10 U	10 U	1,100	50 U	0.2 U	0.20 U
10-Apr-00 DUP.	NS	4.0 U	NS	0.50 U	NS	10 U	NS	50 U	NS	0.20 U
17-Apr-00	4.0 U	4.0 U	0.50 U	0.50 U	10 U	10 U	790	50 U	0.2 U	0.20 U
24-Apr-00	4.0 U	4.0 U	0.50 U	0.50 U	10 U	10 U	1,400	50 U	0.2 U	0.20 U
1-May-00	4.0 U	4.0 U	0.50 U	0.50 U	10 U	10 U	2,000	50 U	0.2 U	0.20 U
25-May-00	4.0 U	4.0 U	0.50 U	0.50 U	10 U	10 U	1,100	50 U	0.2 U	0.20 U
7-Jun-00	4.0 U	4.0 U	0.50 U	0.50 U	10 U	10 U	1,600 U	86 U	0.2 U	0.20 U
6-Jul-00	0.5 U	0.50 U	0.20 U	0.20 U	0.7 U	0.70 U	1,960	23.3 UJ	0.1 U	0.10 U
14-Aug-00	0.50 U	0.60	0.20 U	0.20 U	0.70 U	0.70 U	2,170	23.3 U	0.10 U	0.10 U
14-Aug-00 DUP.	0.60	NS	0.20 U	NS	0.70 U	NS	2,490	NS	0.10 U	NS
11-Sep-00	0.50 U	0.50 U	0.20 U	0.20 U	0.70 UJ	0.80 UJ	1,860 J	23.3 UJ	0.10 U	0.10 U
11-Sep-00 DUP.	0.50 U	NS	0.20 U	NS	0.90 UJ	NS	1,660 J	NS	0.10 U	NS
9-Oct-00	0.50 U	0.50 U	0.20 U	0.20 U	2.2 J	0.70 UJ	2,120 J	41.4 J	0.10 U	0.10 U
9-Nov-00	0.60 U	0.60 U	0.20 U	0.20 U	0.7 U	0.70 U	1,520	35.1 U	0.10 U	0.10 U
5-Dec-00	0.30 U	0.30 U	0.20 U	0.20 U	1.2 J	1.7 J	2,130 J	51.5 J	0.10 U	0.10 U
5-Dec-00 DUP.	0.30 U	NS	0.20 U	NS	1.9 J	NS	2,180 J	NS	0.10 U	NS
4-Jan-01	0.60 U	0.60 U	0.20 U	0.20 U	0.7 U	1.0 J	1,480	67.1	0.10 U	0.10 U
8-Feb-01	0.60 U	0.60 U	0.10 U	0.10 U	3.2 U	3.2 U	2,060	19.8 U	0.15 U	0.15 U
12-Mar-01	0.60 U	0.60 U	0.21 J	0.90 J	3.2 J	10.5 J	2,040	98.4 U	0.15 U	0.15 U
12-Mar-01 DUP.	NS	0.60 U	NS	0.10 J	NS	3.2 J	NS	19.8 J	NS	0.15 U
10-Apr-01	0.29 U	0.29 U	0.095 U	0.095 U	3.0 U	3.0 U	2,490	43.7 UJ	0.065 U	0.065 U
10-Apr-01 DUP.	0.29 U	NS	0.095 U	NS	3.0 U	NS	2,570	NS	0.065 U	NS
9-May-01	0.29 U	0.29 U	0.095 U	0.095 U	7.4 J	3.0 U	2,000	44 U	0.065 U	0.065 U
9-May-01 DUP.	NS	0.29 U	NS	0.095 U	NS	3.0 U	NS	47.8 J	NS	0.065 U
12-Jun-01	0.29 U	0.29 U	0.095 U	0.095 U	3.0 U	3.0 U	3,440 J	55.3 J	0.065 U	0.065 U
11-Jul-01	0.29 U	0.29 U	0.095 U	0.095 U	3.0 U	3.0 U	2,500	43.7 U	0.065 U	0.065 U
6-Aug-01	3.0 U	0.29 U	0.095 J	0.095 J	3.0 U	3.0 U	2,010	43.7 U	0.065 U	0.065 U
6-Aug-01 DUP.	0.29 U	NS	0.095 J	NS	3.0 U	NS	2,030	NS	0.065 U	NS
19-Sep-01	0.29 U	0.29 U	0.095 UJ	0.095 UJ	3.0 U	3.0 U	2,180	43.7 U	0.065 U	0.065 U
19-Sep-01 DUP.	0.29 U	NS	0.095 UJ	NS	3.0 U	NS	2,420	NS	0.065 U	NS
23-Oct-01	0.29 U	0.29 U	0.095 U	0.095 U	3.0 U	3.0 U	2,400	43.7 U	0.065 U	0.065 U
6-Nov-01	0.29 U	0.29 U	0.095 U	0.095 U	3.0 U	9.4 J	2,480	43.7 U	0.065 U	0.065 U
19-Dec-01	0.29 U	0.29 U	0.095 U	0.095 U	3.0 U	3.0 U	2,100	43.7 U	0.065 U	0.065 U
21-Jan-02	0.29 U	0.29 U	0.095 U	0.095 U	3.0 U	3.0 U	1,920	43.7 U	0.065 U	0.065 U
21-Jan-02 DUP.	0.29 U	NS	0.096 J	NS	3.0 U	NS	1,940	NS	0.065 U	NS

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	Beryllium		Cadmium		Chromium (total)		Iron		Mercury	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		2.3		41		None		None
Average Monthly Discharge Limit>>		10		2.0		27		None		0.273
25-Feb-02	0.29 U	0.29 U	0.095 J	0.095 J	3.0 U	3.0 U	2,140	43.7	0.065 U	0.065 U
27-Mar-02	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	2,060 J	5.0 U	0.2 U	0.20 U
29-Apr-02	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	2,650	50 U	0.2 U	0.20 U
29-May-02	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,820	98	0.2 U	0.20 U
12-Jun-02	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,870	50 U	0.2 U	0.20 U
11-Jul-02	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,590	66	0.2 U	0.20 U
21-Aug-02	5 U	5.0 U	0.50 U	0.50 U	5.0 UJ	5.0 UJ	2,170	50 U	0.2 U	0.20 U
17-Sep-02	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,730	160	0.2 U	0.20 U
14-Oct-02	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,800	88	0.2 U	0.20 U
14-Nov-02	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	2,180	50 U	0.2	**0.35**
9-Dec-02	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,770	63	0.2 U	0.20 U
14-Jan-03	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,840	153	0.2 U	0.20 U
20-Feb-03	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,950	50 U	0.2 U	0.20 U
20-Feb-03 DUP.	5 U	NS	0.60	NS	5.0 U	NS	2,170	NS	0.2 U	NS
17-Mar-03	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,760	50 U	0.2 U	0.20 U
23-Apr-03	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,530	72	0.2 U	0.20 U
6-May-03	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,850	50 U	0.2 U	0.20 U
17-Jun-03	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,710	84	0.2 U	0.20 U
10-Jul-03	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	2,070	50	0.2 U	0.20 U
5-Aug-03	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,880	60	0.2 U	0.20 U
2-Sep-03	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,820	50 U	0.2 U	0.20 U
2-Oct-03	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,770	75	0.2 U	0.20 U
18-Nov-03	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,630	306	0.2 U	0.20 U
8-Dec-03	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,570	93	0.2 U	0.20 U
19-Jan-04	5 U	5.0 U	0.52	0.50 U	5.0 U	5.0 U	1,350	59	0.2 U	0.20 U
2-Feb-04	5 U	5.0 U	2.68	0.50 U	6.0	5.0 U	1,410 J	524 J	0.2 U	0.20 U
2-Feb-04 DUP.	5 U	NS	0.50 U	NS	5.0 U	NS	1,120 J	NS	0.2 U	NS
16-Mar-04	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,810	110	0.2 U	0.20 U
23-Apr-04	5 U	5.0 U	0.50 U	1.3	5.0 U	5.0 U	2,300	78	0.2 U	0.20 U
19-May-04	5 U	5.0 U	0.50 U	0.70	5.0 U	5.0 U	1,700	50 U	0.2 U	0.20 U
1-Jun-04	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,370	52	0.2 U	0.20 U
15-Jul-04	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,590	90	0.2 U	0.20 U
5-Aug-04	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,950	82	0.2 U	0.20 U
8-Sep-04	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,620	50 U	0.2 U	0.20 U
14-Oct-04	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,910	50 U	0.2 U	0.20 U
14-Oct-04 DUP.	NS	5.0 U	NS	0.50 U	NS	5.0 U	NS	52	NS	0.20 U
17-Nov-04	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	2,750 U	50 U	0.2 U	0.20 U

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	Beryllium		Cadmium		Chromium (total)		Iron		Mercury	
	Plant Influent	Plant Effluent	Plant Influent	Plant Effluent	Plant Influent	Plant Effluent	Plant Influent	Plant Effluent	Plant Influent	Plant Effluent
	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)
Daily Maximum Discharge Limit>>		None		2.3		41		None		None
Average Monthly Discharge Limit>>		10		2.0		27		None		0.273
13-Dec-04	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	2,410	410	0.2 U	0.20 U
13-Dec-04 DUP.	5 U	NS	0.50 U	NS	5.0 U	NS	1,870	NS	0.2 U	NS
20-Jan-05	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	2,220	279	0.20 U	0.20 U
10-Feb-05	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,770	134	0.20 U	0.20 U
15-Mar-05	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,860	50 U	0.20 U	0.20 U
14-Apr-05	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,750	50 U	0.20 U	0.20 U
14-Apr-05 DUP.	5 U	NS	0.50 U	NS	5.0 U	NS	1,760	NS	0.2 U	NS
5-May-05	5 U	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	1,530	54	0.2 U	0.20 U
29-Jun-05	0.5 U	0.5 U	0.50 U	0.50 U	0.26 J	0.18 J	1,680	89	0.2 U	0.20 U
28-Jul-05	0.5 U	0.5 U	0.50 U	0.50 U	0.10 J	0.50 U	1,370 J	84 J	0.2 U	0.20 U
29-Aug-05	0.5 U	0.5 U	0.50 U	0.50 U	0.49 J	0.22 J	1,260	64	0.2 U	0.20 U
29-Aug-05 DUP.	0.5 U	NS	0.11 J	NS	0.50 U	NS	1,280	NS	0.2 U	NS
28-Sep-05	0.5 U	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	1,190	54	0.2 U	0.20 U
19-Oct-05	0.5 U	0.5 U	0.50 U	0.50 U	5.3	0.50 U	1,580	88	0.2 U	0.20 U
10-Nov-05	0.5 U	0.5 U	0.50 U	0.50 U	4.3	0.50 U	1,420	124	0.2 U	0.20 U
12-Dec-05	0.5 U	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	1,760	174	0.2 U	0.20 U
26-Jan-06	0.5 U	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	1,760	113	0.2 U	0.20 U
23-Feb-06	0.5 U	0.5 U	0.50 U	0.50 U	2.9	0.50 U	1,600	102	0.2 U	0.20 U
8-Mar-06	0.5 U	0.5 U	0.50 U	0.50 U	0.16 J	0.06 J	1,150 J	140 J	0.2 U	0.20 U
27-Apr-06	0.5 U	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	1,400	106	0.2 U	0.20 U
15-May-06	0.5 U	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	1,860	154	1.3	0.50 U
15-Jun-06	0.5 U	0.5 U	0.06 J	0.50 U	0.22 J	0.16 J	1,340	126	3.5	0.09 J
19-Jul-06	0.5 U	0.5 U	0.50 U	0.50 U	0.50 U	0.50 U	1,370	146	0.5 U	0.50 U
14-Sep-06	0.5 U	0.5 U	0.50 U	0.50 U	0.8	0.50 U	1,640	155	0.2 U	0.20 U
26-Oct-06	0.5 U	0.5 U	0.50 U	0.50 U	1.0 U	1.3 J	2,580	129	0.2 U	0.20 U
9-Nov-06	0.50 U	0.50 U	0.050 J	0.50 U	0.80	0.21 J	2,200	130	0.2 U	0.20 U
11-Dec-06	0.50 U	0.50 U	0.09 J	0.030 J	0.50	0.39 J	1,200	75	0.20 U	0.20 U
10-Jan-07	0.50 U	0.50 U	0.11 J	0.050 J	0.70	0.50	2,200	100	0.20 U	0.20 U
27-Feb-07	0.50 U	0.50 U	0.060	0.50 U	0.60	0.38 J	1,700	100	0.20 U	0.20 U
19-Mar-07	0.50 U	0.50 U	0.50 U	0.50 U	0.34 J	0.29 J	1,500	170	0.20 U	0.20 U
4-Apr-07	0.50 U	0.50 U	0.020 J	0.50 U	0.35 J	0.30 J	1,500	200	0.20 U	0.20 U
2-May-07	0.50 U	0.50 U	0.10 J	0.050 J	0.39 J	0.26 J	1,200	180	0.20 U	0.20 U
15-Jun-07	0.50 U	0.50 U	0.06 J	0.060 J	0.37 J	0.27 J	724	145	0.20 U	0.20 U
26-Jul-07	0.50 U	0.50 U	0.50 U	0.50 U	0.40 J	0.33 J	886	170	0.20 U	0.20 U
17-Aug-07	0.50 U	0.50 U	0.06 J	0.02 J	0.50 U	0.50 U	2,830	18.4	0.20 U	0.20 U
17-Sep-07	0.50 U	0.50 U	0.50 U	0.50 U	0.22 J	0.13 J	1,130	150	0.2 U	0.20 U

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	Beryllium		Cadmium		Chromium (total)		Iron		Mercury	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		2.3		41		None		None
Average Monthly Discharge Limit>>		10		2.0		27		None		0.273
24-Oct-07	5.6 U	1.0 U	5.6 U	1.0 U	11 U	0.63 J	NA	NA	0.039 J	0.028 J
24-Oct-07 DUP.	5.6 U	1.0 U	5.6 U	1.0 U	11 U	0.71 J	NA	NA	0.20 U	0.20 U
19-Nov-07	5.0 U	1.0 U	0.3 J	1.0 U	10 U	0.5 J	NA	NA	0.20 U	0.20 U
19-Nov-07 DUP.	5.0 U	1.0 U	0.2 J	1.0 U	10 U	0.7 J	NA	NA	0.20 U	0.20 U
18-Dec-07	5.0 U	1.0 U	5.0 U	1.0 U	10 U	2.0 U	1,540	NA	0.2 U	1.9
18-Dec-07 DUP.	NS	1.0 U	NS	1.0 U	NS	2.0 U	NS	NA	NS	NA
15-Jan-08	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.06 J	1,580	NA	0.2 U	0.20 U
15-Jan-08 DUP.	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.06 J	1,580	NA	0.2 U	0.20 U
14-Feb-08	0.1 J	1.0 U	5.0 U	1.0 U	10 U	2.0 U	1,440	100 U	0.2 U	0.20 U
14-Feb-08 DUP.	0.22 J	NS	5.0 U	NS	10 U	NS	1,400	NS	0.2 U	NS
11-Mar-08	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.19 J	1,230	13.3 J	0.2 U	0.20 U
11-Mar-08 DUP.	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.17 J	1,220	12.0 J	0.2 U	0.20 U
8-Apr-08	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.18 J	963	14.6 J	0.20 U	0.20 U
8-Apr-08 DUP.	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.24 J	930	13.4 J	0.20 U	0.20 U
8-May-08	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.19 J	2,800	19.2 J	0.2 U	0.20 U
8-May-08 DUP.	5.0 U	1.0 U	5.0 U	1.0 U	0.6 J	0.17 J	2,820	14.1 J	NA	0.20 U
5-Jun-08	5.0 U	1.0 U	5.0 U	0.1 J	10 U	0.33 J	27 J	1170	0.2 U	0.20 U
5-Jun-08 DUP.	5.0 U	1.0 U	5.0 U	0.08 J	1.2 J	0.18 J	1,120	32.1 J	NA	0.20 U
22-Jul-08	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.22 J	2,240	2.7 J	0.20 U	0.20 U
22-Jul-08 DUP.	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.21 J	2,260	4.7 J	NA	0.20 U
19-Aug-08	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.26 J	894	14.6 J	0.039 J	0.063 J
19-Aug-08 DUP.	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.33 J	812	NA	NA	0.064 J
10-Sep-08	5.0 U	1.0 U	5.0 U	0.061 J	0.61 J	2.0 U	503	18.5 J	0.047 J	0.20 U
10-Sep-08 DUP.	5.0 U	1.0 U	5.0 U	0.031 J	0.84 J	2.0 U	544	NA	NA	0.20 U
23-Oct-08	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.18 J	933	100 U	0.20 U	0.20 U
23-Oct-08 DUP.	5.0 U	1.0 U	5.0 U	1.0 U	2.4 J	0.30 J	1,090	100 U	NA	0.20 U
10-Nov-08	5.0 U	1.0 U	0.092 J	1.0 U	10 U	0.078 J	795	100 U	0.20 U	0.20 U
10-Nov-08 DUP.	5.0 U	1.0 U	0.090 J	1.0 U	10 U	0.088 J	750	100 U	NA	0.11 J
11-Dec-08	0.2 J	1.0 U	0.13 J	0.04 J	10 U	0.32 J	585	16 J	0.20 U	0.20 U
11-Dec-08 DUP.	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.33 J	582	17 J	NA	0.20 U
8-Jan-09	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.14 J	428	93 J	0.20 U	0.078 J
8-Jan-09 DUP.	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.11 J	423	51 J	NA	NA
4-Feb-09	5.0 U	1.0 U	5.0 U	1.0 U	2.7 J	0.33 J	234	100 U	0.20 U	0.20 U
4-Feb-09 DUP.	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.25 J	231	NA	NA	0.20 U
5-Mar-09	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.23 J	116	19 J	0.20 U	0.20 U
5-Mar-09 DUP.	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.23 J	113	19 J	NA	0.20 U
7-Apr-09	5.0 U	1.0 U	5.0 U	1.0 U	4.3 J	0.31 J	138	11 J	0.20	0.069 J
7-Apr-09 DUP.	5.0 U	1.0 U	5.0 U	1.0 U	4.3 J	0.38 J	136	10 J	NA	0.074 J

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	Beryllium		Cadmium		Chromium (total)		Iron		Mercury	
	Plant Influent	Plant Effluent	Plant Influent	Plant Effluent	Plant Influent	Plant Effluent	Plant Influent	Plant Effluent	Plant Influent	Plant Effluent
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Daily Maximum Discharge Limit>>		None		2.3		41		None		None
Average Monthly Discharge Limit>>		10		2.0		27		None		0.273
5-May-09	5.0 U	1.0 U	5.0 U	0.12 J	10 U	0.55 J	1,270	65.8 J	0.2 U	0.20 U
5-May-09 DUP.	5.0 U	1.0 U	5.0 U	0.11 J	10 U	0.50 J	1,270	NA	NA	0.20 U
2-Jun-09	5.0 U	1.0 U	5.0 U	0.021 J	10 U	0.29 J	1,160	12.9 J	0.2 U	0.20 U
2-Jun-09 DUP.	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.31 J	1,150	17.6 J	NA	0.20 U
7-Jul-09	0.58 J	1.0 U	5.0 U	1.0 U	10 U	0.29 J	1,110	11.1 J	0.20 U	0.20 U
7-Jul-09 DUP.	0.32 J	1.0 U	5.0 U	1.0 U	10 U	0.27 J	1,110	100 U	NA	0.20 U
5-Aug-09	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.25 J	1,070	100 U	0.20 U	0.20 U
5-Aug-09 DUP.	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.25 J	1,080	100 U	NA	0.20 U
8-Sep-09	5.0 U	1.0 U	5.0 U	0.22 J	10 U	0.36 J	1,020	32.0 J	0.098 J	0.11 J
8-Sep-09 DUP.	5.0 U	1.0 U	5.0 U	0.088 J	10 U	0.25 J	NA	31.7 J	NA	0.20 U
6-Oct-09	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.095 J	1,130	100 U	0.20 U	0.20 U
6-Oct-09 DUP.	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.10 J	1,120	100 U	NA	NA
4-Nov-09	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.11 J	1,980	100 U	0.20 U	0.20 U
4-Nov-09 DUP.	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.11 J	1,970	100 U	NA	0.20 U
1-Dec-09	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.16 J	1,248	100 U	0.20 U	0.20 U
1-Dec-09 DUP.	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.13 J	1,245	100 U	NA	0.20 U
5-Jan-10	5.0 U	1.0 U	5.0 U	0.016 J	10 U	0.18 J	1,340	100 U	0.20 U	0.20 U
5-Jan-10 DUP.	5.0 U	1.0 U	5.0 U	0.0079 J	10 U	0.11 J	1,410	100 U	NA	0.20 U
2-Feb-10	5.0 U	1.0 U	5.0 U	0.013 J	10 U	0.15 J	1,710	100 U	0.20 U	0.063 J
2-Feb-10 DUP.	5.0 U	1.0 U	5.0 U	1.0 U	10 U	0.11 J	1,480	100 U	NA	0.20 U
4-Mar-10	5.0 U	1.0 U	5.0 U	0.024 J	10 U	0.17 J	1,202	100 U	0.20 U	0.20 U
4-Mar-10 DUP.	5.0 U	1.0 U	5.0 U	0.031 J	10 U	0.17 J	1,240	100 U	NA	0.20 U

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	Manganese		Nickel		Lead		Antimony		Selenium		Vanadium		Zinc	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		355		34		None		None		None		None
Average Monthly Discharge Limit>>		None		39		1.3		23,000		12		None		None
Sample Date														
3-Apr-00	807	69.8	10 U	10 U	3.5	9.6	20 U	20 U	5.0 U	5.0 U	5.0 U	5.0 U	810	54.1
10-Apr-00	840	830	10 U	10 U	2.0 U	2.0 U	20 U	20 U	5.0 U	5.0 U	5.0 U	5 U	170	170
10-Apr-00 DUP.	NS	820	NS	10 U	NS	2.0 U	NS	20 U	NS	5.0 U	NS	5 U	NS	160
17-Apr-00	800	790	10 U	10 U	2.0 U	2.0 U	20 U	20 U	5.0 U	5.0 U	5.0 U	5.0 U	140	140
24-Apr-00	790	790	10 U	10 U	2.0 U	2.0 U	20 U	20 U	5.0 U	5.0 U	5.0 U	5.0 U	140	16
1-May-00	790	850	10 U	10 U	2.0 U	2.0 U	20 U	20 U	5.0 U	5.0 U	5.0 U	5.0 U	160	210
25-May-00	710	720	10 U	10 U	2.0 UJ	2.0 UJ	20 U	20 U	5.0 U	5.0 U	5.0 U	5.0 U	120	140
7-Jun-00	780	740	10 U	10 U	10 UJ	2.0 UJ	20 U	20 U	5.0 U	7.0	5.0 U	5.0 U	110	130
6-Jul-00	793	631	4.0 UJ	1.6 U	2.2 J	1.2 UJ	6.0	5.5 U	4.1 U	4.1 U	1.5 U	1.5 U	132	174
14-Aug-00	972	788	4.4 U[11]	1.6 U	1.2 U	1.2 U	5.5 U	5.5 U	4.1 U	4.1 U	1.5 U	1.5 U	61.0	87.8
14-Aug-00 DUP.	985	NS	4.5 U	NS	1.2 U	NS	5.5 U	NS	4.1 U	NS	1.5 U	NS	62.3	NS
11-Sep-00	1,100	906	7.6	4.1	1.5 UJ	1.5 UJ	5.5 U	5.5 U	4.1 U	4.1 U	1.5 U	1.5 U	54.8	79.7
11-Sep-00 DUP.	1,090	NS	6.3	NS	1.5 UJ	NS	5.5 U	NS	4.1 U	NS	1.5 U	NS	64.0	NS
9-Oct-00	1,100	580	10 U	10 U	1.5 U	1.5 U	5.5 U	5.5 U	4.1 U	4.1 U	1.5 U	1.5 U	45	6.6
9-Nov-00	1,050	711	8.5 U	2.9 U	1.0 U	1.0 U	5.7 U	5.7 U	3.8 U	3.8 U	1.1 U	1.1 U	39.6	57.3
5-Dec-00	940	517	7.0	4.1	1.3 U	1.3 U	2.9 U	2.9 U	3.8 U	3.8 U	1.1 U	1.1 U	62.4 J	47.7 J
5-Dec-00 DUP.	974	NS	7.6	NS	1.3 U	NS	2.9 U	NS	3.8 U	NS	1.1 U	NS	71.3 J	NS
4-Jan-01	947	894	7.5 U	4.2 U	1.0 U	1.0 U	5.7 U	5.7 U	3.8 U	3.8 U	1.1 U	1.1 U	30.9	68.6
8-Feb-01	992	844	7.0 U	2.0 U	0.8 UJ	0.80 UJ	6.6 U	6.6 U	2.9 U	2.9 U	1.0 U	0.92 U	44	36.2
12-Mar-01	1030	895	12.3 U	5.6 U	0.8 UJ	0.80 UJ	6.6 U	6.6 U	2.9 U	2.9 U	4.1 U	4.1 U	28.6	36
12-Mar-01 DUP.	NS	907	NS	7.0 U	NS	0.80 UJ	NS	6.6 U	NS	2.9 U	NS	4.1 U	NS	32.9
10-Apr-01	981	745	7.9 J	4.9 J	1.0 U	1.0 U	11.1 U	11.1 U	4.9 U	4.9 U	2.3 U	2.3 U	31.4	36.9 J
10-Apr-01 DUP.	971	NS	7.9 J	NS	1.0 U	NS	11.1 U	NS	4.9 U	NS	2.3 U	NS	37.4	NS
9-May-01	952	629	9.4 J	4.0 J	1.0 U	1.0 U	11.1 U	11.1 U	4.9 U	4.9 U	2.3 U	2.3 U	57.5	35.9
9-May-01 DUP.	NS	629	NS	6.5 J	NS	1.0 U	NS	11.1 U	NS	4.9 U	NS	2.3 U	NS	38
12-Jun-01	960	658	11.6 U	11.6 U	1.0 UJ	1.0 UJ	11.1 U	11.1 U	4.9 U	4.9 U	2.3 U	2.3 U	73.4	30.5 U
11-Jul-01	906	611	6.0 B	2.6 U	1.0 J	1.8 J	11.1 U	11.1 U	4.9 U	4.9 U	2.3 U	2.3 U	0.0146	0.0385
6-Aug-01	895	523	8.4 B	4.1 B	1.0 U	1.0 U	11.1 U	11.1 U	4.9 U	4.9 U	2.3 U	2.3 U	27.6 J	34.5 J
6-Aug-01 DUP.	889	NS	8.6 B	NS	1.0 U	NS	11.1 U	NS	4.9 U	NS	2.3 U	NS	21.2 J	NS
19-Sep-01	972	826	2.6 U	2.6 U	1.0 U	1.0 U	11.1 U	13.4 J	4.9 U	4.9 U	2.3 U	2.3 U	29.8 U	28.8 U
19-Sep-01 DUP.	972	NS	2.7 B	NS	1.0 U	NS	11.1 U	NS	4.9 U	NS	2.4 B	NS	28 U	NS
23-Oct-01	955	620	9.7 J	3.8 J	1.0 U	1.0 U	13.4 J	14.1 J	4.9 U	4.9 U	2.3 U	2.3 U	25.3 U	39.2
6-Nov-01	1020	792	5.4 J	9.9 J	1.0 U	1.0 U	11.1 U	11.1 U	4.9 U	4.9 U	2.3 U	2.3 U	27.2 UJ	70 J
19-Dec-01	1060	798	10 U	10 U	1.0 U	1.0 U	11.1 U	11.1 U	4.9 U	4.9 U	2.3 U	2.3 U	14.2 U	31.8
21-Jan-02	1200	824	7.0 J	4.4 J	1.0 U	1.0 U	11.1 U	11.1 U	4.9 U	6.5	2.3 U	2.3 U	30.4 U	36.9 U
21-Jan-02 DUP.	1180	NS	8.8 J	NS	1.0 U	NS	11.1 U	NS	5.1	NS	2.3 U	NS	28.9 U	NS

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	Manganese		Nickel		Lead		Antimony		Selenium		Vanadium		Zinc	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		355		34		None		None		None		None
Average Monthly Discharge Limit>>		None		39		1.3		23,000		12		None		None
25-Feb-02	1110	912	10.1	7.2 J	1.0 U	1.0 U	11.1 U	11.1 U	4.9 U	4.9 U	2.3 U	2.3 U	37.4	50.2
27-Mar-02	1000	843	7.0	5.0	0.44	0.72	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	30	20 U
29-Apr-02	1010	692	10	5.0	1.3	0.13	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20	40
29-May-02	847	607	7.6	6.0	0.28	0.50	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	28
12-Jun-02	836	627	8.0	5.0 U	0.49	0.11 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	20 U
11-Jul-02	730	531	8.6	5.0 U	0.28	0.62	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	20 U
21-Aug-02	768	525	8.2 J[7]	5.0 UJ	0.4	0.32	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	22
17-Sep-02	856	957	9.2	8.3	0.66	0.38	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	27	23
14-Oct-02	796	518	15	5.0 U	0.96	0.11 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	25
14-Nov-02	877	462	9.5	5.0 U	0.45	0.11	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	39 J
9-Dec-02	769	412	8.6	5.0 U	2.4	0.18	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	20 U
14-Jan-03	834	273	11	5.0 U	1.20	1.5	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	24	23
20-Feb-03	735	181	6.0	5.0 U	0.67 J	0.11 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	29
20-Feb-03 DUP.	767	NS	6.0	NS	0.46 J	NS	5.0 U	NS	5.0 U	NS	5.0 U	NS	20 U	NS
17-Mar-03	729	51	8.0	5.0 U	0.30	0.22 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	21
23-Apr-03	662	77	11	15	0.56 U	0.76	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	29	20 U
6-May-03	639	27	12	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	39	27
17-Jun-03	701	31	11	7.0	0.88	0.50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	20
10-Jul-03	686	48	10	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20	20 U
5-Aug-03	675	44	10	5.0 U	0.72	0.50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	27
2-Sep-03	685	15	11	5.0 U	0.50	0.10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	32
2-Oct-03	667	10	11	5.0 U	1.5	0.28	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20	20 U
18-Nov-03	654	488	13	7.0	1.4 J	0.10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	22	26
8-Dec-03	552	165	18	5.0	0.74	0.11	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	29	29
19-Jan-04	526	91	9.0	5.0 U	0.51	0.10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	64	32
2-Feb-04	464	32	10	5.0 U	0.43	0.20	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	85	25
2-Feb-04 DUP.	478	NS	9.0	NS	0.39	NS	5.0 U	NS	5.0 U	NS	5.0 U	NS	100	NS
16-Mar-04	575	63	5.0	10	0.34	1.6	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	45	20 U
23-Apr-04	586	8.0	25	5.0 U	1.0	0.14	5.0 U	5.0 U	7740	5.0 U	5.0 U	5.0 U	362	22
19-May-04	578	6.0	12	5.0 U	2.9	0.11	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	85	20 U
1-Jun-04	561	5.0 U	6.0	5.0 U	0.32	0.20 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	46	29
15-Jul-04	602	8.0	5.0	5.0 U	0.75	0.24	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	52	177
5-Aug-04	648	7.0	9.0	22	0.56	0.90	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	121	20 U
8-Sep-04	685	7.0	6.0	5.0 U	0.33	0.10	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	71	20 U
14-Oct-04	658	6.0	5.0	5.0 U	0.41	0.10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	63	22 J
14-Oct-04 DUP.	NS	6.0 U	NS	6.0	NS	0.10 U	NS	5.0 U	NS	5.0 U	NS	5.0 U	NS	63 J
17-Nov-04	671	17	9.0	5.0 U	1.1 U	0.50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	61	20 U

Table 1-1
Treatment System Influent and Effluent Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

	Manganese		Nickel		Lead		Antimony		Selenium		Vanadium		Zinc	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		355		34		None		None		None		None
Average Monthly Discharge Limit>>		None		39		1.3		23,000		12		None		None
13-Dec-04	657	6.0	21	5.0 U	0.67	0.20 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	144	43
13-Dec-04 DUP.	641	NS	16	NS	0.53	NS	5.0 U	NS	5.0 U	NS	5.0 U	NS	109	NS
20-Jan-05	751	8.0	12	5.0 U	1.3	0.50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	71	34
10-Feb-05	725	21	8.0	5.0 U	0.84	0.50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	57	31
15-Mar-05	660	9.0	9.0	5.0 U	0.87	0.18	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	21	20 U
14-Apr-05	575	5.0 U	8.0	5.0 U	0.50 U	0.50 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	20 U
14-Apr-05 DUP.	585	NS	7.0	NS	0.5 U	NS	5.0 U	NS	5.0 U	NS	5.0 U	NS	20 U	NS
5-May-05	555	5.0 U	13	5.0 U	2.0	0.20 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	45	31
29-Jun-05	567.7	1.9	6.9	1.8	0.7	0.05 J	0.50 U	0.50 U	0.30 J	1.0 U	0.50 U	0.06 J	42.5	16.0
28-Jul-05	541	12.5	10.4	4.3	0.43 J	0.11 J	0.08 J	0.5 U	1.0 U	1.0 U	0.05 J	0.08 J	171.2	40.6
29-Aug-05	523.6	154.7	5.4	3.7	0.9 U	0.50 U	0.50 U	0.50 U	0.40 J	1.0 U	0.09 J	0.08 J	33.5	6.5 U
29-Aug-05 DUP.	508.6	NS	5.3	NS	1.0	NS	0.50 U	NS	1.0 U	NS	0.06 J	NS	41.0	NS
28-Sep-05	546.8	85.3	6.4	4.6	1.0	0.50 U	0.50 U	0.5 U	1.0 U	1.0 U	0.5 U	0.50 U	131.6	34.3
19-Oct-05	586.2	141.7	9.90	5.0	0.5 U	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.5 U	0.50 U	86.5	20
10-Nov-05	531.6	165.7	8.4	4.5	2.0	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.5 U	0.50 U	184.7	30.6
12-Dec-05	418.1	1023	5.2	16.7	3.2	0.50 U	0.50 U	0.50 U	1.0 U	1.0 U	0.5 U	0.50 U	20.6	24.8
26-Jan-06	417.2	64.3	5.4	3.7	2.2	0.11 U	0.13 J	0.07 J	1.0 U	1.0 U	0.16 J	0.29 J	33.6	41.7
23-Feb-06	483	1.3	5.6	2.2	6.3	0.50 U	0.5 U	0.5 U	1.0 U	1.0 U	0.5 U	0.50 U	24.5	11.6
8-Mar-06	393	1.3	4.4	1.5	0.9	0.10 J	0.14 J	0.06 J	0.4 J	1.0 U	0.12 J	0.26 J	20.6	27.1
27-Apr-06	489	3.7	4.8	1.8	1.6	0.50 U	0.5 U	0.5 U	1.0 U	1.0 U	0.5 U	0.50 U	25	38.5
15-May-06	450	1.4	0.20 U	0.20 U	4.1	1.4	1.0 U	1.0 U	0.5 U	0.5 U	0.5 U	0.50 U	26.8	35.9
15-Jun-06	390	1.1	0.20 U	0.20 U	4.9	1.2	1.0 U	1.0 U	0.03 UJ	0.5 U	0.09 J	0.16 J	21.8 U	18.4 U
19-Jul-06	380	0.8	0.20 U	0.20 U	4.0	2.8 U	1.0 U	1.0 U	0.5 U	0.5 U	0.5 U	0.50 U	11.5	31.4
14-Sep-06	540	1.1	3.8	0.9	0.5 U	0.50 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.50 U	16	5.8
26-Oct-06	570	4.2	5.7	1.9	1.4	0.10 J	1.8 J	0.07 J	1.0 U	1.0 U	0.1 J	0.21 J	16.1	32.0
9-Nov-06	0.59	3.8	4.5	2.0	2.4	0.11 J	0.22 J	0.10 J	1.0 U	1.0 U	0.11 J	0.24 J	30	28
11-Dec-06	540	1.4	4.9	1.0	0.80	0.10 J	0.05 J	0.040 J	0.30 J	1.0 U	0.06 J	0.23 J	15	19
10-Jan-07	570	14	5.4	1.7	1.3	0.24 J	0.080 J	0.10 J	1.0 U	1.0 U	0.11 J	0.43 J	42	100
27-Feb-07	580	1.5	8.4	2.6	4.8	0.10 J	0.13 J	0.050	1.0 U	0.41 J	0.070	0.17 J	93	36
19-Mar-07	450	1.9	5.4	5.0	2.1	0.12 J	0.11 J	0.050 J	1.0 U	1.0 U	0.08 J	0.11 J	32	48
4-Apr-07	480	1.4	5.4	2.0	2.1	0.070 J	0.140 J	0.040 J	0.40 J	0.50 J	0.070 J	0.11 J	14	21
2-May-07	430	1.2	5.0	2.8	2.5	0.10 J	0.14 J	0.040 J	1.0 U	1.0 U	0.50 J	0.07 J	19	33
15-Jun-07	373	6.4	4.5	2.6	1.3	0.09 J	0.06 J	0.050 J	1.0 U	1.0 U	0.50 J	0.09 J	18	34
26-Jul-07	391	1.2	5.2	2.3	0.70	0.10 J	0.19 J	0.10 J	0.36 J	0.35 J	0.10 J	0.12 J	19.2	25.7
17-Aug-07	415	1.8	5.3	1.3	0.9	0.05 J	0.13 J	0.50 U[7]	0.47 J	0.44 J	0.12 J	0.11 J	34	9.4
17-Sep-07	420	3.0	4.6	2.3	2.8	0.05 J	0.05 J	0.05 J	1.0 U	0.3 J	0.07 J	0.37 J	19	13

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	Manganese		Nickel		Lead		Antimony		Selenium		Vanadium		Zinc	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		355		34		None		None		None		None
Average Monthly Discharge Limit>>		None		39		1.3		23,000		12		None		None
24-Oct-07	NA	NA	44 U	1.7	1.8 J	0.046 J	67 U	0.14 J	39 U	5.0 U	56 U	0.74 J	NA	NA
24-Oct-07 DUP.	NA	NA	44 U	13	11 U	0.016 J	67 U	0.082 J	39 U	5.0 U	56 U	0.39 J	NA	NA
19-Nov-07	537	0.77 J	6.1 J	1.2	2.4 J	0.14 J	60 U	0.25 J	35 U	5.0 U	50 U	5.0 U	37 J	39
19-Nov-07 DUP.	542	1.1	6.6 J	1.3	2.9 J	0.09 J	60 U	0.32 J	35 U	5.0 U	50 U	5.0 U	35 J	49
18-Dec-07	533	0.76 J	9.6 J	0.97 J	4.6 J	0.10 J	60 U	2.0 U	2.6 J	0.25 J	50 U	5.0 U	46 J	7.2
18-Dec-07 DUP.	NS	0.81 J	NS	1.0 J	NS	0.03 J	NS	2.0 U	NS	5.0 U	NS	5.0 U	NS	7.7
15-Jan-08	496	1.2	5.8 J	1.3	10 U	0.03 J	60 U	0.33 J	35 U	5.0 U	50 U	5.0 U	17 J	5.4
15-Jan-08 DUP.	494	1.3	4.8 J	1.4	10 U	1.0 U	60 U	0.19 U	35 U	5.0 U	50 U	5.0 U	13 J	5.7
14-Feb-08	517	12.6	4.2 J	0.92 J	10 U	1.0 U	60 U	2.0 U	35 U	0.55 J	50 U	4.1 J	11.2 J	8.5
14-Feb-08 DUP.	506	NS	3.7 J	NS	10 U	NS	60 U	NS	35 U	NS	50 U	NS	11.1 J	NS
11-Mar-08	484	6.2	3.9 J	1.6	4.9 J	0.05 J	60 U	2.0 U	35 U	0.41 J	50 U	5.0 U	13.5 J	6.1
11-Mar-08 DUP.	486	3.9	5.3 J	1.4	4.8 J	1.0 U	60 U	2.0 U	35 U	5.0 U	50 U	5.0 U	10.0 J	6.1
8-Apr-08	541	2.8	5.5 J	2.1	10 U	0.06 J	60 U	0.29 J	35 U	5.0 U	50 U	5.0 U	16.2 J	21.5
8-Apr-08 DUP.	531	3.1	6.3 J	2.2	10 U	0.09 J	60 U	0.20 U	35 U	5.0 U	50 U	0.16 J	19.5 J	22.3
8-May-08	858	2.0	7.1 J	3.8	10 U	0.08 J	60 U	2.0 U	35 U	5.0 U	50 U	5.0 U	47.3 J	9.3
8-May-08 DUP.	877	2.3	6.5 J	1.9	10 U	0.05 J	60 U	2.0 U	35 U	5.0 U	50 U	5.0 U	16.7 J	7.6
5-Jun-08	256	421	8.4 J	4.7	10 U	1.1	60 U	0.26 J	35 U	5.0 U	50 U	5.0 U	12.1 J	58.3
5-Jun-08 DUP.	420	246	4.3 J	8.9	10 U	0.07 J	60 U	0.16 J	35 U	5.0 U	50 U	5.0 U	31.5 J	17.9
22-Jul-08	403	1.7	5.5 J	1.9	10 U	0.06 J	60 U	0.14 J	35 U	5.0 U	50 U	0.16 J	23 J	18
22-Jul-08 DUP.	409	1.7	5.9 J	1.7	10 U	0.05 J	60 U	0.16 J	35 U	5.0 U	50 U	0.21 J	33 J	16
19-Aug-08	393	1.4	4.7 J	1.6	10 U	0.060 J	2.0 J	0.15 J	35 U	5.0 U	50 U	0.15 J	32 J	22
19-Aug-08 DUP.	386	1.6	7.4 J	1.5	10 U	0.090 J	60 U	2.0 U	35 U	5.0 U	50 U	5.0 U	27 J	18
10-Sep-08	372	4.6	4.7 J	1.4	10 U	0.21 J	60 U	0.19 J	35 U	5.0 U	50 U	5.0 U	41.4 J	18.9
10-Sep-08 DUP.	386	5.0	7.4 J	1.5	10 U	0.11 J	60 U	0.14 J	35 U	5.0 U	50 U	5.0 U	49.2 J	22.9
23-Oct-08	296	4.3	4.7 J	0.91 J	10 U	0.032 J	60 U	0.37 J	35 U	5.0 U	50 U	5.0 U	26.3 J	6.5
23-Oct-08 DUP.	299	5.0	4.8 J	0.97 J	10 U	1.0 U	60 U	0.20 J	35 U	5.0 U	50 U	5.0 U	36.7 J	6.6
10-Nov-08	257	1.0	4.6 J	1.6	2.1 J	1.0 U	60 U	0.24 J	35 U	5.0 U	50 U	0.53 J	23.2 J	5.5
10-Nov-08 DUP.	259	1.0	4.4 J	1.6	10 U	1.0 U	60 U	0.21 J	35 U	5.0 U	50 U	0.53 J	17.6 J	4.6
11-Dec-08	232	1.3	3.8 J	1.3	10 U	0.18 J	60 U	0.39 J	35 U	5.0 U	50 U	0.88 J	19.3 J	26.1
11-Dec-08 DUP.	233	1.5	3.9 J	1.7	10 U	0.10 J	60 U	0.25 J	35 U	5.0 U	50 U	0.82 J	16.1 J	30.7
8-Jan-09	172	5.0	3.6 J	1.8	10 U	0.073 J	60 U	0.37 J	35 U	5.0 U	50 U	0.96 J	22 J	17
8-Jan-09 DUP.	168	7.8	3.5 J	1.7	1.2 J	0.077 J	60 U	0.32 J	35 U	5.0 U	50 U	0.78 J	13 J	16
4-Feb-09	134	1.9	3.6 J	1.2	1.3 J	0.051 J	60 U	0.24 J	35 U	0.22 J	50 U	0.45 J	9.9 J	5.6
4-Feb-09 DUP.	134	1.9	3.3 J	1.1	10 U	0.035 J	60 U	0.20 J	35 U	0.31 J	50 U	5.0 U	8.7 J	4.8
5-Mar-09	150	0.40 J	3.4 J	1.0	10 U	0.046 J	2.0 J	0.80 J	35 U	5.0 U	50 U	5.0 U	31 J	8.8
5-Mar-09 DUP.	138	0.38 J	2.8 J	1.5	10 U	0.052 J	60 U	0.23 J	35 U	5.0 U	50 U	0.43 J	22 J	9.0
7-Apr-09	129	0.61 J	2.9 J	1.0 J	10 U	0.092 J	60 U	0.26 J	35 U	5.0 U	50 U	1.6 J	33 J	6.8
7-Apr-09 DUP.	129	0.77 J	3.0 J	0.91 J	1.9 J	0.071 J	60 U	0.15 J	35 U	5.0 U	50 U	1.3 J	35 J	7.4

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	Manganese		Nickel		Lead		Antimony		Selenium		Vanadium		Zinc	
	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)	Plant Influent (µg/L)	Plant Effluent (µg/L)
Daily Maximum Discharge Limit>>		None		355		34		None		None		None		None
Average Monthly Discharge Limit>>		None		39		1.3		23,000		12		None		None
5-May-09	517	326	6.3 J	12.1	10 U	0.066 J	60 U	0.14 J	35 U	5.0 U	50 U	0.57 J	15 J	39.2
5-May-09 DUP.	534	328	5.9 J	11.6	10 U	0.067 J	60 U	2.0 U	35 U	5.0 U	50 U	1.2 J	12.3 J	28.5
2-Jun-09	431	8.7	3.3 J	3.2	5.3 J	0.058 J	60 U	0.31 J	35 U	5.0 U	50 U	0.58 J	19.7 J	23
2-Jun-09 DUP.	419	10.5	4.3 J	3.4	10 U	0.079 J	60 U	0.29 J	35 U	5.0 U	50 U	0.91 J	22.2 J	32.5
7-Jul-09	408	4.30	3.9 J	1.5	2.1 J	0.033 J	60 U	0.31 J	35 U	5.0 U	50 U	1.0 J	18 J	4.8
7-Jul-09 DUP.	401	4.20	4.0 J	1.4	2.1 J	0.027 J	60 U	0.21 J	35 U	5.0 U	50 U	1.2 J	16 J	4.8
5-Aug-09	386	1.4	3.9 J	1.6	10 U	0.12 J	60 U	0.16 J	35 U	5.0 U	50 U	0.53 J	26.1 J	15.6
5-Aug-09 DUP.	382	1.4	4.0 J	1.6	6.1 J	0.12 J	60 U	2.0 U	35 U	5.0 U	50 U	5.0 U	86.8	16.6
8-Sep-09	377	11.8	4.3 J	4.2	3.2 J	0.80 J	60 U	0.31 J	35 U	5.0 U	50 U	0.73 J	50.8 J	21.3
8-Sep-09 DUP.	372	11.6	4.3 J	4.4	10.1	0.28 J	60 U	0.22 J	3.6 J	5.0 U	50 U	0.83 J	181	18.1
6-Oct-09	368	1.5	4.9 J	1.8	10 U	0.07 J	60 U	0.22 J	35 U	5.0 U	6.3 J	0.88 J	17 J	6.2
6-Oct-09 DUP.	350	1.9	6.1 J	3.6	20.2	0.096 J	60 U	0.18 J	35 U	5.0 U	50 U	1.1 J	499	8.2
4-Nov-09	402	1.7	3.6 J	2.5	2.8 J	0.069 J	60 U	0.23 J	35 U	5.0 U	50 U	1.4 J	36.7 J	5.0
4-Nov-09 DUP.	399	2.0	4.0 J	1.8	3.3 J	0.14 J	60 U	0.20 J	35 U	5.0 U	50 U	1.4 J	65	4.9
1-Dec-09	380	3.2	2.9 J	2.0	10 U	0.070 J	60 U	0.21 J	35 U	5.0 U	50 U	0.50 J	12.5 J	10.4
1-Dec-09 DUP.	385	3.3	2.9 J	2.3	10 U	0.097 J	60 U	0.16 J	35 U	0.53 J	50 U	0.60 J	9.5 J	11.5
5-Jan-10	357	1.8	2.9 J	1.4	10 U	0.066 J	60 U	2.0 U	35 U	5.0 U	50 U	1.1 J	11.5 J	11.2
5-Jan-10 DUP.	364	1.7	3.0 J	1.2	10 U	0.055 J	60 U	2.0 U	35 U	5.0 U	50 U	1.1 J	20 J	11.8
2-Feb-10	350	34.8	3.7 J	2.1	10 U	0.032 J	60 U	0.30 J	35 U	5.0 U	50 U	0.70 J	56 J	7.8
2-Feb-10 DUP.	357	34.3	3.4 J	2.0	10 U	0.028 J	60 U	2.0 U	35 U	5.0 U	50 U	0.67 J	35 J	7.1
4-Mar-10	341	86.5	3.9 J	3.0	10 U	0.050 J	60 U	2.0 U	35 U	0.32 J	50 U	1.6 J	12.2 J	17.0
4-Mar-10 DUP.	352	85.8	3.9 J	3.2	10 U	0.052 J	60 U	2.0 U	35 U	5.0 U	50 U	1.6 J	17.9 J	25.1

Notes:

U = Analyte not detected. Reporting limit shown.
J = Estimated concentration below sample reporting limit.
NS = Not Sampled
NA = Not Analyzed
NS = Not Sampled
µg/L = micrograms per liter
D = Sample diluted to determine concentration.
B = Compound found in both blank and sample.
UJ = Estimated reporting limit because surrogates did not meet QC requirements.

Yellow shading = Value in sample exceeds average monthly discharge limit
Grey Shading = Quantitation limit of non-detect sample exceeds average monthly discharge limit; possible exceedance of discharge limit.

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	10-Apr-00	10-Apr-00	10-Apr-00	10-Apr-00	10-Apr-00	10-Apr-00	10-Apr-00	10-Apr-00	10-Apr-00	10-Apr-00
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3	G1	G2
Sample ID:	EWS1-041000	EWS2-041000	EWS3-041000	EWS4-041000	EWS5-041000	EWM1-041000	EWM2-041000	EWM3-041000	G2-041000	G2-041000
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds										
Vinyl Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	6	0.5 U	0.5 U	2	3
1,1-Dichloroethene	0.6	1	0.5 U	0.5 U	0.4 J	0.6	0.5 U	0.5 U	0.5 U	0.5 U
Acetone	11	4.0	2.0 U	3.0	4.0	2.0	5.0	28	2 U	2 U
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene (total)	140	160	130	66	32	190	53	34	110	38
1,1-Dichloroethane	0.5 U	0.4 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.05 U
1,1,1-Trichloroethane	0.5 U	11	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	14,000	40,000	510	3,100	6,600	970	130	700	23	170
Toluene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.05 U
Carbon Tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1 U	2	0.4 J	0.7	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.05 U
Metals										
Silver	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Arsenic	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	14 J	11 J
Barium	20	40	11	15	140	13	10 U	18		16
Beryllium	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Cadmium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chromium (total)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Iron	50 U	210	340	360	840	360	670	50 U	7000	4200
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	55	360	16	110	38	760	1300	5.8	900	520
Nickel	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Lead	14	19	20	4.4	17	48	13	15	22	69
Antimony	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Selenium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Vanadium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Zinc	94	1,200	460	270	110	120	120	150	130	110

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	7-Jun-00	7-Jun-00	7-Jun-00	7-Jun-00	7-Jun-00	7-Jun-00	7-Jun-00	7-Jun-00	7-Jun-00	7-Jun-00
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3	G1	G2
Sample ID:	EWS1-060700	EWS2-060700	EWS3-060700	EWS4-060700	EWS5-060700	EWM1-060700	EWM2-060700	EWM3-060700	G1-060700	G2-060700
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds										
Vinyl Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4	0.5 U	0.5 U	0.5 U	1
1,1-Dichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Acetone	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene (total)	150	130	140	59	36	140	20	23	33	11
1,1-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	7	3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	20,000	12,000	2,500	1,900	4,200	520	79	530	40	10
Toluene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	2	0.5 U	0.7	0.5 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Metals										
Silver	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Arsenic	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	15	12
Barium	24	49	10 U	10 U	10 U	11	10 U	16	10 U	14
Beryllium	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
Cadmium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chromium (total)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Iron	630 U	59 U	2,100 U	54 U	630 U	1,200 U	800 U	50 U	5,700 U	5,800 U
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	100	180	11	5.0 U	5 U	760	1,200	5 U	710	460
Nickel	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Lead	2 UJ	5.6 J	2 UJ	2.5 J	2 UJ	2 UJ	22 J	13 J	18 J	12 J
Antimony	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Selenium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Vanadium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Zinc	140	430	340	310	110	64	130	56	1300	300

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	11-Sep-00	11-Sep-00	11-Sep-00	11-Sep-00	11-Sep-00	11-Sep-00	11-Sep-00	11-Sep-00	11-Sep-00	11-Sep-00
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3	G1	G2
Sample ID:	EWS1-091100	EWS2-091100	EWS3-091100	EWS4-091100	EWS5-091100	EWM1-091100	EWM2-091100	EWM3-091100	G1-091100	G2-091100
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds										
Vinyl Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2	0.5 U	0.5 U	0.5 U	0.6
1,1-Dichloroethene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Acetone	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene (total)	83	44	41	28	16	100	36	10	9	8
1,1-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	14,000	14,000	530	2,000	1,800	330	64	300	1	17
Toluene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1	0.9	0.5	0.7	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Metals										
Silver	0.60 U	0.90 U	0.90 U	0.60 U	0.60 U	0.70 U	0.60 U	1.1 U	0.60 U	0.60 U
Arsenic	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	2.2	6.9	1.5 U	18.2	13.6
Barium	9.9 B	42.4	6.9 B	8.6 B	8.8 B	13.7	9.9 B	16.9	8.4 B	12.3
Beryllium	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Cadmium	0.20 U	0.35 B	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Chromium (total)	1.5 UJ	1.7 UJ	1.5 UJ	0.70 U	1.0 UJ	0.70 UJ	1.0 UJ	1.2 UJ	0.70 U	0.80 UJ
Iron	74.8 J	61.5 J	138 J	716 J	98.7 J	1,630 J	1,410 J	49.8 J	3,390 J	4,490 J
Mercury	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.1 U	0.10 U	0.10 U
Manganese	19.5	88.3	4.8 B	6.9 B	1.4 U	1,030	1,600	4 B	527	532
Nickel	1.7 B	4 B	2.2 B	1.6 U	1.6 U	4.9 B	8.1 B	1.6 U	1.9 B	2.5 B
Lead	1.5 UJ	5.1 UJ	5.3 UJ	2.6 UJ	7.8 UJ	1.5 UJ	1.5 UJ	1.5 UJ	2.3 UJ	1.5 UJ
Antimony	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
Selenium	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U	4.1 U
Vanadium	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U
Zinc	223	663	524	76.4	67.4	45.2	39.0	104	116	73.0

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	5-Dec-00	5-Dec-00	5-Dec-00	5-Dec-00	5-Dec-00	5-Dec-00	5-Dec-00	5-Dec-00	5-Dec-00	5-Dec-00
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3	G1	G2
Sample ID:	EWS1-120500	EWS2-120500	EWS3-120500	EWS4-120500	EWS5-120500	EWM1-120500	EWM2-120500	EWM3-120500	EWG1-120500	EWG2-120500
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds										
Vinyl Chloride	0.5 U	0.5 U	0.5 U	0.5 U	5 U	1	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	0.5 J	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Acetone	2 U	2 U	2 U	2 U	20 U	2 U	2 U	2 U	2 U	2 U
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene (total)	46	14	27	14	7	70	10	20	4	4
1,1-Dichloroethane	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,1-Trichloroethane	5	2	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	18,000	8,100	260	1,000	660	230	33	140	1	8
Toluene	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1	0.5 U	0.3 J	0.4 J	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	0.5 U	0.5 U	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Metals										
Silver	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Arsenic	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	3.0	5.4	1.6 U	17.5	12.4
Barium	9.8	47.9	8.3	10.2	12.1	12.4	10.5	15.9	10.2	12.4
Beryllium	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U	0.30 U
Cadmium	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Chromium (total)	1.1 U	1.9 J	1.6 J	1.1 U	2.1 J	1.1 U	1.1 J	1.4 J	1.1 U	1.1 U
Iron	662 J	421 J	924 J	179 J	201 J	2,170 J	1,450 J	2,370 J	4,540 J	5,030 J
Mercury	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Manganese	17.5	141	5.5	3.8	1.1	996	1,420	58.2	493	616
Nickel	1.9	2.7 U	3.5	2.8	1.5	4.2	10	3.5	4.7	4.8
Lead	1.7 J	7.7	4.7	2.4	1.3 U	3.8	1.5	16.6	2.1	5.6
Antimony	2.9 U	4.9	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U	2.9 U
Selenium	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U
Vanadium	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U	1.1 U
Zinc	118 J	1,250 J	484 J	20.6 J	18.2 J	34.9 J	31.5 J	243 J	206 J	97.5 J

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	10-Apr-01	10-Apr-01	10-Apr-01	10-Apr-01	10-Apr-01	10-Apr-01	10-Apr-01	10-Apr-01	10-Apr-01	10-Apr-01
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3	G1	G2
Sample ID:	EWS1-041001	EWS2-041001	EWS3-041001	EWS4-041001	EWS5-041001	EWM1-041001	EWM2-041001	EWM3-041001	EWG1-041001	EWG2-041001
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds										
Vinyl Chloride	0.3 UJ	0.3 UJ	0.3 U	0.3 U	0.3 U	2	0.3 U	0.3 U	0.3 U	0.3 U
1,1-Dichloroethene	0.3 UJ	0.3 UJ	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Acetone	2 J	3 J	3	2	2	2 U	2 U	4	2 U	2 U
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	0.3 UJ	0.3 UJ	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,2-Dichloroethene (total)	56	25 J	91	12	6	64	26	27	39	1
1,1-Dichloroethane	0.3 UJ	0.3 UJ	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
1,1,1-Trichloroethane	0.3 UJ	0.3 UJ	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzene	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	18,000	5,500	760	570	410	140	14	18 J	16	4
Toluene	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Carbon Tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1 J	0.9 J	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Chlorobenzene	0.2 UJ	0.2 UJ	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Metals										
Silver	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Arsenic	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	4.0	7.1	0.94 J	19.3	18.1
Barium	28.2	53.0	10.2	10.2	10.4	14.2	12.0	12.2	9.2 J	12.7
Beryllium	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U
Cadmium	0.095 U	0.31	0.095 U	0.095 U	0.095 U	0.12 J	0.12 J	0.095 U	0.095 U	0.095 U
Chromium (total)	3.0 U	3.4 J	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	6.5 J	3.0 U
Iron	109	827	11,700	703	369	2,820	1,880	1,350	7,390	5,000
Mercury	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U
Manganese	131	224	10.7	4.8 J	1.6 U	1,110	1,280	1,220	510	671
Nickel	2.8 J	6.6 J	2.6 U	2.6 U	2.6 U	5.8 J	8.5 J	9.0 J	5.2 J	4.0 J
Lead	5.4	8.7	5.0 U	2.7	2.2	5.0 U	1.9	7.6	8.5	1.5
Antimony	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U
Selenium	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U
Vanadium	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Zinc	68.3	637	239	81.2	110	90.0	47.2	2,140	459	61.4

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	12-Jun-01	12-Jun-01	12-Jun-01	12-Jun-01	12-Jun-01	12-Jun-01	12-Jun-01	12-Jun-01	12-Jun-01	12-Jun-01
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3	G1	G2
Sample ID:	EWS1-061201	EWS2-061201	EWS3-061201	EWS4-061201	EWS5-061201	EWM1-061201	EWM2-061201	EWM3-061201	EWG1-061201	EWG2-061201
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds										
Vinyl Chloride	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	1	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Acetone	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethene (total)	77	54	110	14	11	53	14	11	11	1
1,1-Dichloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	2 U	0.2 U	0.2 U	0.2 U
1,1,1-Trichloroethane	6	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Benzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	15,000	11,000	100	490	440	110	8	39	0.2 U	4
Toluene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Carbon Tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1	1	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Chlorobenzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Metals										
Silver	0.50 U	0.50 U	5.90	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Arsenic	0.90 U	0.90 U	0.90 U	1.00	0.90 U	4.3	2.9	0.9 U	16.3	17.5
Barium	37.5	66.4	19.9	10.1	8.6 J	14.4	11.3	18.1	8.6 J	11.6
Beryllium	0.29 U	0.31 J	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U
Cadmium	0.110 J	0.23 J	0.170 J	0.095 U	0.095 U	0.10 U	0.10 J	0.440	0.095 U	0.580
Chromium (total)	3.0 U	3 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	5.7 J	3 U	3.0 U
Iron	448 J	340 J	15,600 J	3170 J	52.9 J	3,170 J	1,920 J	7,500 J	4,170 J	6,350 J
Mercury	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.076 J	0.065 U
Manganese	107	136	91.5	20.3	1.6 U	1,190	1,060	33	378	713
Nickel	11.6 U	11.6 U	11.6 U	12.3 J	11.6 U	11.6 U	12.8 J	24.7	11.6 U	11.6 U
Lead	5.8 J	1 UJ	1.1 J	6.1 J	52 J	1.1 J	1 UJ	36.1 J	2.2 J	13.1 J
Antimony	11.1 U	11.1 U	11.1 U	11.1 U	12.9 J	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U
Selenium	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U
Vanadium	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U	2.3 U
Zinc	96.5	258	791	63.4	33.4 U	101.0	34 U	1,510	73.1	56.2

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	19-Sep-01	19-Sep-01	19-Sep-01	19-Sep-01	19-Sep-01	19-Sep-01	19-Sep-01	19-Sep-01	19-Sep-01	19-Sep-01
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3	G1	G2
Sample ID:	EWS1-091901	EWS2-091901	EWS3-091901	EWS4-091901	EWS5-091901	EWM1-091901	EWM2-091901	EWM3-091901	G1-091901	G2-091901
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds										
Vinyl Chloride	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.5 J	0.2 U	0.2 U	0.2 U	0.2 U
1,1-Dichloroethene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Acetone	2 U	3	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,2-Dichloroethene (total)	48	11	33	13	5	29	10	9	8	1
1,1-Dichloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
1,1,1-Trichloroethane	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Benzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Trichloroethene	12000	8800	120	300	210	65	4	9	0.2 U	2
Toluene	0.2 U	1,300	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Carbon Tetrachloride	0.8 J	0.5 J	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ
1,1,2-Trichloroethane	1	0.6	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Tetrachloroethene	1	0.5	0.2 U	0.2 U	0.2 U	0.5 J	0.2 U	0.2 U	0.6	0.2 U
Chlorobenzene	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Metals										
Silver	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Arsenic	0.90 U	0.90 U	0.90 U	0.90 U	0.90 U	13.7	4.9	8.9	11.3	15.8
Barium	13.0	42.3	10.2	14.2	15.6	17.3	12.6	16.3	12.0	11.7
Beryllium	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U
Cadmium	0.095 UJ	0.095 UJ	0.095 UJ	0.095 UJ	0.095 UJ	0.095 UJ	0.095 UJ	0.36 J	0.095 UJ	0.095 UJ
Chromium (total)	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
Iron	43.7 U	95.8	647	92.0	87.9	13900	2210	15800	3290	5890
Mercury	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U
Manganese	25.8	103	4.7 B	3.1 B	1.6 U	1340	883	1000	372	708
Nickel	2.6 U	2.6 U	2.6 U	2.6 U	2.6 U	7.0 B	2.6 U	4.9 B	2.6 U	2.6 U
Lead	5.9	3.1	6.1	2.1	4.3	1.5	1.0	57.0	1.0 U	1.0
Antimony	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U	11.1 U
Selenium	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U	4.9 U
Vanadium	2.3 U	2.3 U	2.3 U	2.3 U	2.7 B	2.3 U	3.1 B	2.3 U	2.3 U	2.7 B
Zinc	25.5 U	52.4	42.8	53.4	16.9 U	483	38.7	2710	54.2	32.5 U

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	27-Mar-02	27-Mar-02	27-Mar-02	27-Mar-02	27-Mar-02	27-Mar-02	27-Mar-02	27-Mar-02	27-Mar-02	27-Mar-02	27-Mar-02
Station Location:	EW-S1	EW-S2	EW-S3	EW-S3 Duplicate	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3	G1	G2
Sample ID:	EWS1-032702	EWS2-032702	EWS3-032702-01	EWS3-032702-21	EWS4-032702	EWS5-032702	EWM1-032702	EWM2-032702	EWM3-032702	G1-032702	G2-032702
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds											
Vinyl Chloride	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	5.0 U	50 U	5.0 U	5.0 U	5.0 U	68	5.0 U	5.0 U	26	5.0 U	5.0 U
2-Butanone	3.0 U	30 U	3.0 U	3.0 U	3.0 U	13	3.0 U	3.0 U	22	3.0 U	3.0 U
Methylene Chloride	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethene (total)	48 J	10 U	42	33	7.0 U	1.0 U	12	2.0	5.0	1.0 U	1.0 U
1,1-Dichloroethane	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	4.3 J	2.5 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzene	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	6400	6500	94 J	54 J	120	17	39	5.5	6.4	1.0 U	1.0 U
Toluene	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Metals											
Silver	0.5 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Arsenic	0.51	0.98	2.8 J	0.59 J	0.64	0.58	8.2	3.3	5.9	37	17
Barium	14	29	8	8	13	13	16	15	15	9	13
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chromium (total)	5 U	5 U	5 U	5 U	5 U	5	5 U	5 U	5 U	5 U	5 U
Iron	50 U	100 J	410 J	840 J	300 J	1900 J	4670 J	1440 J	6260 J	1410 J	6010 J
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	13	35	13	14	5	35	1440	840	857	281	830
Nickel	5	5 U	5 U	5 U	5 U	5 U	8	9	10	5 U	6
Lead	0.74	2.4	27 J	6.9 J	1.8	16	0.66	1.0	2.8	0.62	0.47
Antimony	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Selenium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	30	30	20	20	42	100	82	30	200	30	20 U

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	29-May-02	29-May-02	29-May-02	29-May-02	29-May-02	29-May-02	29-May-02	29-May-02	29-May-02
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3	G2
Sample ID:	EWS1-052902	EWS2-052902	EWS3-052902	EWS4-052902	EWS5-052902	EWM1-052902	EWM2-052902	EWM3-052902	EWG2-052902
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Butanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichloroethene (total)	41	28.0 J	48	8.5	1.0 U	11	1.0 U	20	1.0 U
1,1-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	4.1	9.3 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5800	12000	95	110	56	30	2.9	9.9	1.0 U
Toluene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0	1.0 U
Tetrachloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Metals									
Silver	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Arsenic	1.6	0.59	0.56 U	0.78	0.56 U	7.1	2.7	2	17
Barium	13	24	8	13	14	17	14	12	12
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chromium (total)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Iron	53	150	957	150	773	3890	1260	2390	6510
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	12	17	13	10	5.6	1330	773	439	731
Nickel	5 U	5 U	5 U	5 U	5 U	6	7.5	8.1	5 U
Lead	10	0.99	13	2.4	6.7	1.1	0.7	3.2	0.38
Antimony	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Selenium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	20 U	40	20 U	20 U	20 U	39	20 U	56	20 U

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	11-Jul-02	11-Jul-02	11-Jul-02	11-Jul-02	11-Jul-02	11-Jul-02	11-Jul-02	11-Jul-02	11-Jul-02
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3	G2
Sample ID:	EWS1-071102	EWS2-071102	EWS3-071102	EWS4-071102	EWS5-071102	EWM1-071102	EWM2-071102	EWM3-071102	EWG2-071102
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Butanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichloroethene (total)	37	49 J	45	5.0	1.2	7.3	1.4	1.0 U	1.0 U
1,1-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	1.0 U	14	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	9300	35000	110	94	45	31	2.2	2.2	1.0 U
Toluene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.0 U	2.3 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Metals									
Silver	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Arsenic	0.75	0.67 U	0.56 U	0.62	0.61	7.4	3.3	3.6	17
Barium	13	26	13	12	12	18	13	12	12
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chromium (total)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Iron	51	85	497	51	377	3490	1850	2280	7090
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	7.8	49	12	9.6	5 U	1,290	703	630	727
Nickel	5 U	5 U	5 U	5 U	5 U	7.5	9.9	6	5.7
Lead	8.9	1.2	8	2	0.55	2.5	0.67	2.1	0.31
Antimony	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Selenium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	37	28	20 U	20 U	20 U	20 U	37	25	20 U

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	17-Sep-02	17-Sep-02	17-Sep-02	17-Sep-02	17-Sep-02	17-Sep-02	17-Sep-02	17-Sep-02
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3
Sample ID:	EWS1-091702	EWS2-091702	EWS3-091702	EWS4-091702	EWS5-091702	EWM1-091702	EWM2-091702	EWM3-091702
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds								
Vinyl Chloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Butanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichloroethene (total)	50 J	21 J	33	4.8	1.0 U	4.6	1.0 U	1.0 U
1,1-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	6.2 J	6.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	12000	16000	120	75	3.8	13	2.1	1.0 U
Toluene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.5 J	2.3 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Metals								
Silver	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Arsenic	0.56 U	0.61	0.56 U	0.62	0.56 U	11	3	25
Barium	13	25	8.1	11	9.8	17	13	15
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	0.5 U	0.5 U	0.89	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chromium (total)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Iron	74	121	291	50 U	2160	4510	1030	36,600
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	7.9	12	15	5 U	26 U	1360	656	360
Nickel	5 U	5 U	5 U	5 U	5 U	6.8	7.5	7.5
Lead	2.5	1.2	4.6	2.7	2	0.56	0.54	2.1
Antimony	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Selenium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	30	20 U	32	26	38	80	20 U	114

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	14-Jan-03	14-Jan-03	14-Jan-03	14-Jan-03	14-Jan-03	14-Jan-03	14-Jan-03	14-Jan-03	14-Jan-03
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3	EW-G2
Sample ID:	EWS1-011403	EWS2-011403	EWS3-011403	EWS4-011403	EWS5-011403	EWM1-011403	EWM2-011403	EWM3-011403	EWG2-011403
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	100 U	50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	100 U	50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	500 U	250 U	5.0 U	5.0 U	12	5.0 U	5.0 U	5.0 U	5.0 U
2-Butanone	500 U	250 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride	300 U	150 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichloroethene (total)	100 U	50 U	40	3.0	1.0 U	3.8	1.0 U	28	1.0 U
1,1-Dichloroethane	100 U	50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	100 U	50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	200 U	100 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Trichloroethene	9800 D	9800 D	110	56	16	19	2.3	17	1.0 U
Toluene	100 U	50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	100 U	50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	100 U	50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	100 U	50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	100 U	50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Metals									
Silver	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Arsenic	0.56 U	1.00	0.56 U	0.71	0.71	10	3.20	15	21
Barium	10	23	7	12	12	19	13	9	12
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chromium (total)	5 U	5 U	5 U	5 U	10	5 U	5 U	5 U	5 U
Iron	50	754	185	51	6060	4100	1380	38300	7260
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	6	12	11	5 U	12	1460	656	131	1340
Nickel	5 U	5 U	5 U	6	11	10	7	5 U	8
Lead	4.00	2.30	3.30	1.70	4.40	0.56 U	0.65	5.40	0.56 U
Antimony	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.15	5 U
Selenium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	20 U	32	20 U	47	85	23	23	123	20 U

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	23-Apr-03	23-Apr-03	23-Apr-03	23-Apr-03	23-Apr-03	23-Apr-03	23-Apr-03	23-Apr-03	23-Apr-03
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3	EW-G2
Sample ID:	EWS1-042303	EWS2-042303	EWS3-042303	EWS4-042303	EWS5-042303	EWM1-042303	EWM2-042303	EWM3-042303	EWG2-042303
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Butanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichloroethene (total)	291.2 D	180	75	3.1	3.0	3.4	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	4.9	4.1	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
Benzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	11,000 D	9700 D	110	56	51	13	2.2	3.0	2.0 U
Toluene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.7 J	2.0 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Metals									
Silver	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Arsenic	0.56 U	0.56 U	0.56 U	0.56 U	0.56 U	8.6	2.3	42	20
Barium	14	56	8	12	12	18	10	12	17
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	0.5 U	0.53	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chromium (total)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Iron	238	966	915	50 U	1420	4720	1570	48100	8230
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	35	167	12	5 U	7	1370	545	419	1530
Nickel	5 U	5	5 U	5 U	5 U	12	6	6	6
Lead	7.3	10	3.3	1.3	2.1	1.1	1.3	8.7	0.74
Antimony	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Selenium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	6	5 U
Zinc	20	105	20 U	27	35	30	20 U	29	29

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	10-Jul-03	10-Jul-03	10-Jul-03	10-Jul-03	10-Jul-03	10-Jul-03	10-Jul-03	10-Jul-03	10-Jul-03
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3	EW-G2
Sample ID:	EWS1-071003	EWS2-071003	EWS3-071003	EWS4-071003	EWS5-042303	EWM1-071003	EWM2-071003	EWM3-071003	EWG2-071003
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Butanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichloroethene (total)	170	200	40	1.0 U	1.0 U	1.0 U	4.7	1.0 U	1.0 U
1,1-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	2.0	4.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	2200 D	11000 D	120	42	18	13	2.1	4.1	1.0 U
Toluene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Metals									
Silver	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Arsenic	0.5 U	0.64	0.5 U	0.5 U	0.5 U	12	2.3	7.2	24
Barium	13	42	11	13	11	18	11	9	11
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chromium (total)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Iron	497	173	139	50 U	558	5030	1220	6070	7350
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	9	41	12	4	28	1160	473	219	824
Nickel	13	5 U	5 U	8	7	7	6	11	9
Lead	5 U	5 U	5.8	21	5 U	5 U	5 U	5 U	5 U
Antimony	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Selenium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	45	31	20	21	20 U	20 U	20 U	120	25

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	2-Oct-03	2-Oct-03	2-Oct-03	2-Oct-03	2-Oct-03	2-Oct-03	2-Oct-03	2-Oct-03	2-Oct-03	2-Oct-03
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M1 Duplicate	EW-M2	EW-M3	G2
Sample ID:	EWS1-100203-01	EWS2-100203-01	EWS3-100203-01	EWS4-100203-01	EWS5-100203-01	EWM1-100203-01	EWM1-100203-21	EWM2-100203-01	EWM3-100203-01	EWG2-100203-01
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds										
Vinyl Chloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Butanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichloroethene (total)	100	54	28	3.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	3.4	6.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	7100 D	18000 D	100	35	24	8.2	8.2	2.0 U	2.0 U	2.0 U
Toluene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Metals										
Silver	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Arsenic	0.48	1.2	0.46	0.57	0.53	12	12	5.5	3.3	24
Barium	14	47	9	12	16	21	19	12	12	23
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chromium (total)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Iron	192	3450	461	50 U	669	4170	4250	1160	1900	11300
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	11	63	17	39	5 U	1210	1180	549	524	1590
Nickel	5 U	5 U	5 U	5	6	10	10	7	7	7
Lead	18	1	6.2	7.2	4.3	1.4	0.34	0.49	0.56	0.65
Antimony	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Selenium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	20	31	20 U	20 U	32	20 U	20 U	20 U	194	20

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	19-Jan-04	19-Jan-04	19-Jan-04	19-Jan-04	19-Jan-04	19-Jan-04	19-Jan-04	19-Jan-04	19-Jan-04
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3	G2
Sample ID:	EWS1-011904	EWS2-011904	EWS3-011904	EWS4-011904	EWS5-011904	EWM1-011904	EWM2-011904	EWM3-011904	G2-011904
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Butanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichloroethene (total)	160	170 J	34	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	4.5	13 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	9100 D	29000 D	94	35	26	6.2	1.0 U	1.0 U	1.0 U
Toluene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	1.0 U	4.0 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.9	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Metals									
Silver	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Arsenic	0.43	0.78	0.54	0.53	0.61	12	6	3.6	24
Barium	12	35	11	13	18	19	9	10	22
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chromium (total)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Iron	335	157	1490	50 U	295	9020	1870	1410	12400
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	9	13	16	8	5 U	1170	481	444	1180
Nickel	5 U	5 U	5 U	8	5	11	6	5	8
Lead	4.8	1.4	4.4	13	11	0.22	0.85	0.65	3.8
Antimony	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Selenium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	25	20 U	20 U	20 U	20 U	20 U	20 U	28	25

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	16-Mar-04	16-Mar-04	16-Mar-04	16-Mar-04	16-Mar-04	16-Mar-04	16-Mar-04	16-Mar-04	16-Mar-04	16-Mar-04
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M1 Duplicate	EW-M2	EW-M3	G2
Sample ID:	EWS1-031604	EWS2-031604	EWS3-031604	EWS4-031604	EWS5-031604	EWM1-031604-01	EWM1-031604-21	EWM2-031604	EWM3-031604	EWG2-031604
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds										
Vinyl Chloride	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Butanone	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride	3.0 U	3.0 UJ	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichloroethene (total)	210 E	98 J	36	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	21	1.0 U
1,1-Dichloroethane	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	4.2 J	5.0 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	10000 J	18000 J	89 J	23 J	29 J	12.0 J	7.5 J	1.0 U	20 J	1.0 U
Toluene	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Metals										
Silver	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Arsenic	0.66	1.3	0.95	0.73	0.68	13	13	4.1	2.1	24
Barium	12	34	11	19	11	19	19	18	11	21
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chromium (total)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Iron	306	209	2470	917	50 U	5430	5910	967	1990	11300
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	5 U	7	19	5 U	5 U	1150	1140	74	505	1020
Nickel	5 U	5 U	5 U	5 U	5 U	7	6	5 U	6	5
Lead	2.2	0.96	5.4	4.9	11	0.4	0.6	0.52	0.27	1.8
Antimony	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Selenium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	20 U	20 U	20 U	20 U	20 U	20 U	20 U	35	20 U	20 U

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	15-Jul-04	15-Jul-04	15-Jul-04	15-Jul-04	15-Jul-04	15-Jul-04	15-Jul-04	15-Jul-04	15-Jul-04	15-Jul-04
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3	EW-M3 Duplicate	G2
Sample ID:	EWS1-071504	EWS2-071504	EWS3-071504	EWS4-071504	EWS5-071504	EWM1-071504	EWM2-071504	EWM3-071504	EWM3-071504-21	G2-071504
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds										
Vinyl Chloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Butanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichloroethene (total)	290 D	150	75	3.5	1.0 U	1.0 U	1.0 U	12	14	1.0 U
1,1-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	3.7	3.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	4500 D	8100 D	84	43	17	11	1.0 U	14	15	1.0 U
Toluene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.9	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Metals										
Silver	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Arsenic	0.26	0.48	0.31	0.41	0.45	9.90	2.60	0.39	0.39	20
Barium	14	43	14	18	18	19	11	19	18	17
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	0.66	2.89	0.5 U	0.5 U	0.5 U	0.5	0.5 U	0.5 U	0.5 U	0.5 U
Chromium (total)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Iron	330	381	516	72	203	5000	1200	89 J	147 J	7780
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	6	23	11	7	5 U	1180	479	51	48	878
Nickel	5 U	5 U	5 U	5 U	5	5	16	5 U	5 U	6
Lead	17	1	6.40	19	7.60	0.25	2	0.20	0.21	2.90
Antimony	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Selenium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	24	28	20 U	63	40	20 U	31	34	45	29

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	14-Oct-04	14-Oct-04	14-Oct-04	14-Oct-04	14-Oct-04	14-Oct-04	14-Oct-04	14-Oct-04	14-Oct-04
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3	G2
Sample ID:	EWS1-101404	EWS2-101404	EWS3-101404	EWS4-101404	EWS5-101404	EWM1-101404	EWM2-101404	EWM3-101404	G2-101404
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ
2-Butanone	5.0 U	5.0 UJ	5.0 UJ	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride	3.0 U	3.0 UJ	3.0 UJ	3.0 UJ	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichloroethene (total)	120 J	83 J	12 J	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
1,1-Dichloroethane	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	3.0	4.7 J	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5,600 DJ	1,300 DJ	41 J	31 J	15	6.5	1.0 U	1.0 U	1.0 U
Toluene	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Metals									
Silver	0.50 U	0.50 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Arsenic	0.50 U	0.78	1.80	0.50 U	0.50 U	9.90	5.20	0.73	21
Barium	15	51	11	20	19	20	17	17	18
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	0.50 U	0.50 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chromium (total)	5 U	5 U	14	5 U	6	5 U	5 U	5 U	5 U
Iron	694	232	1780	76	1090	5100	2090	1390	10400
Mercury	0.20 U	0.20 U	0.20 U	0.2 U	0.20 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	12	25	18	65	10	1200	601	551	993
Nickel	5 U	5 U	5 U	13	12	6	11	16	9
Lead	2.40 U	1.20	130	16	6	0.17	0.89	1.60	0.89
Antimony	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Selenium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	28	42	20 U	272	77	20 U	24	20 U	23

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	20-Jan-05	20-Jan-05	20-Jan-05	20-Jan-05	20-Jan-05	20-Jan-05	20-Jan-05	20-Jan-05	20-Jan-05
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3	G2
Sample ID:	EWS1-012005	EWS2-012005	EWS3-012005	EWS4-012005	EWS5-012005	EWM1-012005	EWM2-012005	EWM3-012005	G2-012005
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	30	5.0 U
2-Butanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	74	5.0 U
Methylene Chloride	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichloroethene (total)	130	130 J	16	1.0 U	1.0 U	1.0 U	1.0 U	52	1.0 U
1,1-Dichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	1.0 U	9.9 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5,200 D	33,000 D	50	21	9.9	4.4	1.0 U	10	1.0 U
Toluene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Metals									
Silver	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Arsenic	0.45	0.75	0.48	0.61	1.2	1.3	4.4	7.3	25
Barium	14	43	13	17	22	15	22	18	20
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chromium (total)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	34	5 U
Iron	629	1,560	68	133	828	2,120	10,700	45,900	10,500
Mercury	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Manganese	10	20	11	5 U	5 U	739	1290	458	1110
Nickel	5 U	5 U	5 U	5	7	15	17	17	5
Lead	2	0.92	2	17	5.6	0.62	0.79	66	1.2
Antimony	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Selenium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	32	62	31	20 U	20 U	24	20 U	281	21

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	14-Apr-05	14-Apr-05	14-Apr-05	14-Apr-05	14-Apr-05	14-Apr-05	14-Apr-05	14-Apr-05	14-Apr-05
Station Location:	EW-S1	EW-S2	EW-S3	EW-S4	EW-S5	EW-M1	EW-M2	EW-M3	G2
Sample ID:	EWS1-041405	EWS2-041405	EWS3-041405	EWS4-041405	EWS5-041405	EWM1-041405	EWM2-041405	EWM3-041405	G2-041405
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Butanone	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5.0 U
Methylene Chloride	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U
1,2-Dichloroethene (total)	320	140	25	2.3	1.5	2.7	1.0 U	19	1.0 U
1,1-Dichloroethane	1.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	4.8	4.4	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5800 D	6,600 D	50	42	23	8.3	1.0 U	12	1.0 U
Toluene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	1.1	1.7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Metals									
Silver	0.50 U	0.50	0.50 U	0.50	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Arsenic	0.69 U	0.99	0.78	1.1	1.1	10	3.6	3.8	24
Barium	16	41	13	15	17	20	11	22	21
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	0.50 U	5.00 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chromium (total)	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Iron	939	1,570	50 U	78	449	5,040	1,530	1,380	10,200
Mercury	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.79	0.20 U	0.20 U
Manganese	31	117	7	8	8	1,090	561	331	908
Nickel	5	7	5	9	5	9	9	5	8
Lead	1.5	1.6	1.3	29	0.50 U	0.50	0.55	0.63	0.54
Antimony	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Selenium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	21	72	27	20 U	20 U	29	20 U	28	20 U

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	28-Jul-05	28-Jul-05	28-Jul-05	28-Jul-05	28-Jul-05	28-Jul-05	28-Jul-05	28-Jul-05	28-Jul-05
Station Location:	EWS1	EWS2	EWS3	EWS4	EWS5	EWM1	EWM2	EWM3	EWG2
Sample ID:	EWS1-072805	EWS2-072805	EWS3-072805	EWS4-072805	EWS5-072805	EWM1-072805	EWM2-072805	EWM3-072805	EWG2-072805
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	50 U	200 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.0 U	1.0 U
1,1-Dichloroethene	25 U	100 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	0.50 U
Acetone	250 U	1,000 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	55	5.0 U
2-Butanone	250 U	1,000 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	5.0 U
Methylene Chloride	250 U	1,000 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	20 U	0.37 J
1,2-Dichloroethene (total)	87	150 U	15 U	2.4 U	.45 J	1.1	0.75 U	3.0 U	0.75 U
1,1-Dichloroethane	38 U	150 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.0 U	0.75 U
1,1,1-Trichloroethane	25 U	100 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	0.50 U
Benzene	25 U	100 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	0.50 U
Trichloroethene	2,100	7,100	30	26	11	5.4	0.95	14	0.50 U
Toluene	38 U	150 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.0 U	0.75 U
Carbon Tetrachloride	25 U	100 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	0.50 U
1,1,2-Trichloroethane	38 U	150 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	3.0 U	0.75 U
Tetrachloroethene	25 U	100 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	0.50 U
Chlorobenzene	25 U	100 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.0 U	0.50 U
Metals									
Silver	0.03 J	0.5 U	0.04 J	0.5 U	0.19 J	0.5 U	0.5 U	0.41 J	0.05 U
Arsenic	0.12 J	0.5 U	0.2 J	0.31 J	4.4	10.8	5.0 U	4.1	27.2
Barium	16.3	59.5	21.3	15.7	56.3	17.6	9.1	43.2	26.2
Beryllium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cadmium	0.5 U	0.26 J	0.5 U	0.5 U	0.21 J	0.5 U	0.5 U	0.5 U	0.5 U
Chromium (total)	0.11 J	0.5 U	7.3	0.5 U	20.1	0.5 U	0.5 U	67.5	0.5 U
Iron	288 J	18900 J	474 J	166 J	8890 J	6880 J	1730 J	4690 J	18400 J
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	7.1	141.2	7.0	14.7	43.8	965.6	404.3	5,206	1,175
Nickel	5.8	7.90	10.2	5.1	12.9	8	23.3	58.8	7.9
Lead	9.5	1	7.6	2.7	2.6	0.14 J	1.9	4.0	2.0
Antimony	0.1 J	0.5 U	0.5 U	0.5 U	0.16 J	0.5 U	0.06 J	0.49 J	0.5 U
Selenium	0.3 J	1 U	1 U	1 U	0.3 J	1 U	1 U	1 U	1 U
Vanadium	0.07 J	0.5 U	0.5 U	0.05 J	0.4 J	0.08 J	0.07 J	0.09 J	0.08 J
Zinc	167.3	273.5	105.7	14.0	58.0	10.8 U	17.6	694.6	28.5

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	19-Oct-05	19-Oct-05	19-Oct-05	19-Oct-05	19-Oct-05	19-Oct-05	19-Oct-05	19-Oct-05	19-Oct-05
Station Location:	EWS1	EWS2	EWS3	EWS4	EWS5	EWM1	EWM2	EWM3	EWG2
Sample ID:	EWS1-101905	EWS2-101905	EWS3-101905	EWS4-101905	EWS5-101905	EWM1-101905	EWM2-101905	EWM3-101905	EWG2-101905
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	50 U	200 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	25 U	100 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Acetone	250 U	1,000 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0	5.0 U
2-Butanone	250 U	1,000 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride	250 U	1,000 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloroethene (total)	58 D	150 U	56	1.2	0.50	0.70	0.75 U	8.4	0.75 U
1,1-Dichloroethane	38 U	150 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,1-Trichloroethane	25 U	100 U	2.2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Benzene	25 U	100 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	6,800 D	7000 D	4500 D	15	9.5	3.9	1.9	8.5	0.50 U
Toluene	38 U	150 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Carbon Tetrachloride	25 U	100 U	0.50	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	38 U	150 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Tetrachloroethene	25 U	100 U	0.52	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	25 U	100 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Metals									
Silver	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Arsenic	0.5 U	0.5 U	0.5 U	0.5 U	2.4	9.8	5.7	5.4	25.7
Barium	17.8	57.4	16.4	16.1	62.8	21.2	14.1	34.5	28.8
Beryllium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cadmium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chromium (total)	0.5 U	0.5 U	4.2	0.5 U	13.3	0.5 U	0.5 U	3.1	0.5 U
Iron	220	14500	1770	160	6450	4770	1810	3600	15300
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	7.3	118.5	170.9	10.3	22.7	1211	1043	446.9	1312
Nickel	5.8	7.6	28.2	7.4	7.2	11.7	25.3	7.5	11.1
Lead	2.5	4.3	27.3	12.9	4.6	0.5 U	1.1	5.9	1.0
Antimony	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Selenium	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vanadium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0	0.5 U
Zinc	27.4	216.2	4083	25.1	28.0	8.5	14.0	182.3	16.0

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	26-Jan-06	26-Jan-06	26-Jan-06	26-Jan-06	26-Jan-06	26-Jan-06	26-Jan-06	26-Jan-06	26-Jan-06
Station Location:	EWS1	EWS2	EWS3	EWS4	EWS5	EWM1	EWM2	EWM3	EWG2
Sample ID:	EWS1-012606	EWS2-012606	EWS3-012606	EWS4-012606	EWS5-012606	EWM1-012606	EWM2-012606	EWM3-012606	EWG2-012606
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	50 U	200 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	25 U	100 U	0.50 U	0.50 U	0.50 U	0.50 U	0.75 U	0.50 U	0.5 U
Acetone	250 U	1,000 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	21	5.0 U
2-Butanone	250 U	1,000 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	9.4 U	5.0 U
Methylene Chloride	250 U	1,000 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloroethene (total)	110 D	160 D	34	1.9	1.6	0.91	0.66	26	0.5 U
1,1-Dichloroethane	38 U	150 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,1-Trichloroethane	25 U	100 U	0.31 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Benzene	25 U	100 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	2,700 D	12,000 D	56	30	29	3.6	2.5	7.5	0.50 U
Toluene	38 U	150 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Carbon Tetrachloride	25 U	100 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	38 U	150 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Tetrachloroethene	25 U	100 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	25 U	100 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.5 U
Metals									
Silver	0.5 U	0.03 J	0.5 U	0.5 U	0.09 J	0.07 J	0.5 U	0.32 J	0.5 U
Arsenic	0.2 J	0.23 J	0.18 J	0.39 J	0.8	13.8	3.1	12.3	25.6
Barium	15.2	36.0	5.2	15.4	17.7	15.5	7.3	28.2	27.1
Beryllium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cadmium	0.5 U	0.14 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.11 J	0.5 U
Chromium (total)	0.5 U	0.5 U	6.5	0.5 U	2.8	0.5 U	0.50 U	25.0	0.50 U
Iron	307	44.4	153	253	21,800	4,970	1,480	29,100	15,100
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	7.5	72.4	4.9	4.2	420.2	803.9	753.1	837	1267
Nickel	5.0	5.2	13.9	17.1	52.6	6.5	16.9	24.1	6.3
Lead	4.5	1.1	2.8	4.5	27.3	0.16 U	1.4	51.7	0.8
Antimony	0.5 U	0.5	0.06 J	0.06 J	0.18 J	0.5 U	0.5 U	0.9	0.5 U
Selenium	0.3 J	0.3 J	1 U	0.2 J	0.3 J	1	1 U	0.5 J	1 U
Vanadium	0.09 J	0.13 J	0.23 J	0.15 J	0.25 J	0.15 J	0.15 J	1.3	0.2 J
Zinc	34.6	53.7	52.0	25.9	97.3	6.1	33.6	2,429	13.5

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	27-Apr-06	27-Apr-06	27-Apr-06	27-Apr-06	27-Apr-06	27-Apr-06	27-Apr-06	27-Apr-06	27-Apr-06
Station Location:	EWS1	EWS2	EWS3	EWS4	EWS5	EWM1	EWM2	EWM3	G2
Sample ID:	EWS1-042706	EWS2-042706	EWS3-042706	EWS4-042706	EWS5-042706	EWM1-042706	EWM2-042706	EWM3-042706	EWG2-042706
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	100 U	500 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	50 U	250 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.5 U
Acetone	500 U	2,500 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Butanone	500 U	2,500 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride	500 U	2,500 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloroethene (total)	75 D	630 U	13	1.8	1.8	0.79	1.25 U	4.6	1.25 U
1,1-Dichloroethane	75 U	380 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,1-Trichloroethane	50 U	250 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Benzene	50 U	250 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	4,600	10,000	47	28	30	2.8	1.5	9.0	0.50 U
Toluene	75 U	380 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Carbon Tetrachloride	50 U	250 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	75 U	380 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Tetrachloroethene	50 U	250 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	50 U	250 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.5 U
Metals									
Silver	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Arsenic	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4.7	1.4	0.6	23.5
Barium	17.1	47.4	23.4	18.4	19.1	13.5	6.8	29.4	25.4
Beryllium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cadmium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chromium (total)	0.5 U	0.5 U	16.0	0.5 U	0.5 U	0.5 U	0.5 U	0.9	0.5 U
Iron	434	281	677	3,020	344	3,910	1,130	710	14,300
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	6.8	16.3	15.2	15.7	5.3	783	814	87.5	1099
Nickel	5.2	4.5	13.7	10.0	12.6	16.4	15	4.5	4.9
Lead	1.1	1.0	9.2	6.8	7.7	0.5 U	1.2	0.6	1.0
Antimony	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Selenium	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Vanadium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Zinc	20.1	47.3	64.8	29.6	15.2	14.5	14.8	91.0	18.4

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	19-Jul-06	19-Jul-06	19-Jul-06	19-Jul-06	19-Jul-06	19-Jul-06	19-Jul-06	19-Jul-06	19-Jul-06
Station Location:	EWS1	EWS2	EWS3	EWS4	EWS5	EWM1	EWM2	EWM3	EWG2
Sample ID:	EWS1-071906	EWS2-071906	EWS3-071906	EWS4-071906	EWS5-071906	EWM1-071906	EWM2-071906	EWM3-071906	EWG2-071906
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	100 U	50 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	50 U	25 U	0.50 U	0.50 U	0.50 U	0.5 U	0.50 U	0.5 U	0.5 U
Acetone	500 U	250 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Butanone	500 U	250 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride	500 U	250 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloroethene (total)	120	150	46	7.5	10	1.3	1.25 U	59	1.25 U
1,1-Dichloroethane	75 U	38 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,1-Trichloroethane	50 U	25 U	0.50 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	50 U	25 U	0.50 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	3,400	1,900	100 D	34	38	5.1	0.84	11	0.5 U
Toluene	75 U	38 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Carbon Tetrachloride	50 U	25 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	75 U	38 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Tetrachloroethene	50 U	25 U	0.50 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.5 U
Chlorobenzene	50 U	25 U	0.50 U	0.50 U	0.50 U	0.5 U	0.5 U	0.5 U	0.5 U
Metals									
Silver	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.7	0.5 U
Arsenic	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	7.4	1.2	10.8	16.6
Barium	31.4	90.7	33.0	14.3	13.7	12.2	6.7	22.3	21.2
Beryllium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cadmium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chromium (total)	0.5 U	0.5	14.4	0.5 U	1.1	0.5 U	0.5 U	36.6	0.5 U
Iron	505	838	799	703	437	3,650	1,080	10,100	12,200
Mercury	4.2	1.0	7.2	2.0	19.7	0.5 U	1.0	58.7 U	1.0
Manganese	44	190	9.4	4.8	2.7	668	822	448	929
Nickel	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Lead	7.0	9.6	7.4	3.9	87.9	6.0	10.8	23.6	4.6
Antimony	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Selenium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.8	0.5 U
Vanadium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.5	0.5 U
Zinc	46.3	64.3	42.2	20.8	45.8	9.2	21.0	1,280	17.6

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	26-Oct-06	26-Oct-06	26-Oct-06	26-Oct-06	26-Oct-06	26-Oct-06	26-Oct-06	26-Oct-06	26-Oct-06
Station Location:	EWS1	EWS2	EWS3	EWS4	EWS5	EWM1	EWM2	EWM3	EWG2
Sample ID:	EWS1-102606	EWS2-102606	EWS3-102606	EWS4-102606	EWS5-102606	EWM-1102606	EWM2-102606	EWM3-102606	EWG2-102606
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	100 U	20 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U
1,1-Dichloroethene	50 U	10 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.5 U
Acetone	500 U	100 U	10 U	3.1 J	2.7 J	5.0 U	2.7 J	50 U	2.5 J
2-Butanone	500 U	100 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	50 U	5.0 U
Methylene Chloride	500 U	100 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	50 U	5.0 U
1,2-Dichloroethene (total)	125 U	10 U	33	1.5	0.5 U	0.5 U	0.5 U	330	0.5 U
1,1-Dichloroethane	75 U	15 U	1.5 U	0.75 U	0.75 U	0.75 U	0.75 U	7.5 U	0.75 U
1,1,1-Trichloroethane	50 U	10 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.5 U
Benzene	50 U	10 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.5 U
Trichloroethene	4,800	620	110	21	9.5	1.9	0.82	36	0.15 J
Toluene	75 U	15 U	1.5 U	0.75 U	0.75 U	0.75 U	0.75 U	7.5 U	0.75 U
Carbon Tetrachloride	50 U	10 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.5 U
1,1,2-Trichloroethane	75 U	15 U	1.5 U	0.75 U	0.75 U	0.75 U	0.75 U	7.5 U	0.75 U
Tetrachloroethene	50 U	10 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.5 U
Chlorobenzene	50 U	10 U	1.0 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	0.5 U
Metals									
Silver	0.04 J	0.12 J	0.08 J	0.5 U	0.6	0.5 U	0.5 U	0.05 J	0.5 U
Arsenic	0.18 J	0.38 J	0.6	0.34 J	3.5	11.8	3.8	18.7	21.7
Barium	20.1	77.1	22.5	14.2	21.8	14.1	8.8	39.2	2.4
Beryllium	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Cadmium	0.5 U	0.4 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.04 J	0.5 U
Chromium (total)	8.2	11.1	14.5	0.21 J	13.8	0.15 J	0.11 J	7.6	0.19 J
Iron	444	922	1,020	457	6,660	3,540	1,310	10,100	13,300
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	52	562	18	24	39	807	777	2,150	971
Nickel	5.6	8.2	8.5	49.6	6.5	9.5	17.5	16.1	14.4
Lead	0.9	1.6	19.9	6.7	2.7	0.2 J	1.7	3.6	1.1
Antimony	0.03 J	0.06 J	0.07 J	0.06 J	0.05 J	0.04 J	0.04 J	0.25 J	0.5 U
Selenium	0.7 J	1.0	0.5 J	1.0 U	1.0 U	1.0 U	1.0 U	0.3 J	1.0 U
Vanadium	0.5 U	0.5 U	0.11 J	0.5 U	0.35 J	0.06 J	0.5 U	0.45 J	0.08 J
Zinc	34	192	60.9	33.2	34.6	9.7	71.7	885	29

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	10-Jan-07	10-Jan-07	10-Jan-07	10-Jan-07	10-Jan-07	10-Jan-07	10-Jan-07	10-Jan-07	10-Jan-07	10-Jan-07
Station Location:		EWS1	EWS2	EWS3	EWS4	EWS5	EWM1	EWM2	EWM3	EWG2
Sample ID:	EWTI-011007	EWS1-011007	EWS2-011007	EWS3-011007	EWS4-011007	EWS5-011007	EWM1-011007	EWM2-011007	EWM3-011007	EWG2-011007
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds										
Vinyl Chloride	1.0 U	100 U	20 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U
1,1-Dichloroethene	0.50 U	50 U	10 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	0.5 U
Acetone	7.4	500 U	100 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	50 U	5.0 U
2-Butanone	6.4	500 U	100 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	50 U	5.0 U
Methylene Chloride	5.0 U	500 U	100 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	50 U	5.0 U
1,2-Dichloroethene (total)	1.3 U	72	140	27	2.4	2.3	1.2	0.46 J	300	0.5 U
1,1-Dichloroethane	0.75 U	75 U	15 U	1.5 U	0.75 U	0.75 U	0.75 U	0.75 U	7.5 U	0.75 U
1,1,1-Trichloroethane	0.50 U	50 U	9.0 J	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	0.5 U
Benzene	0.50 U	50 U	10 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	0.5 U
Trichloroethene	0.50 U	3,100	28,000	120	20	20	4	0.75	39	0.50 U
Toluene	0.14 J	75 U	15 U	1.5 U	0.75 U	0.75 U	0.75 U	0.75 U	7.5 U	0.75 U
Carbon Tetrachloride	0.50 U	50 U	10 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	0.5 U
1,1,2-Trichloroethane	0.75 U	75 U	15 U	1.5 U	0.75 U	0.75 U	0.75 U	0.75 U	7.5 U	0.75 U
Tetrachloroethene	0.50 U	50 U	4.7 J	0.29 J	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	0.5 U
Chlorobenzene	0.50 U	50 U	10 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	0.5 U
Metals										
Silver		0.50 U	0.50 U	0.50 U	0.50 U	0.55 U	0.50 U	0.5 U	0.50 U	0.50 U
Arsenic		0.21 J	0.26 J	0.29 J	0.47 J	0.39 J	10	2.6	6.1	24
Barium		20	56	21	16	17	16	9.6	14	25
Beryllium		0.50 U	0.050 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Cadmium		0.080 J	0.21 J	0.090 J	0.14 J	0.070 J	0.070 J	0.11 J	0.070 J	0.060 J
Chromium (total)		6.7	13.0	3.4	0.17 J	0.20 J	0.17 J	0.19 J	1.5	0.19 J
Iron		200	190	180	650	200	4,100	960	3,500	14,000
Mercury		0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Manganese		9.2	31	5.8	9.6	7.7	880	750	600	940
Nickel		5.8	5.4	5.8	19	3.9	18	20	16	7.4
Lead		4.1	1.7	1.4	6.3	0.27 J	0.2 J	4.0	1.1	1.5
Antimony		0.030 J	0.060 J	0.040 J	0.040 J	0.04 J	0.040 J	0.040 J	0.14 J	0.020 J
Selenium		0.40 J	1.0 U	0.050 J	1.0 U	1.0 U	1.0 U	1.0 U	0.50 J	0.40 J
Vanadium		0.50 U	0.50 U	0.060 J	0.50 U	0.50 J	0.070 J	0.060 J	0.11 J	0.080 J
Zinc		34	83	26	36	10	26	32	360	25

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	4-Apr-07	4-Apr-07	4-Apr-07	4-Apr-07	4-Apr-07	4-Apr-07	4-Apr-07	4-Apr-07	4-Apr-07
Station Location:	EWS1	EWS2	EWS3	EWS4	EWS5	EWM1	EWM2	EWM3	EWG2
Sample ID:	EWS1-040407	EWS2-040407	EWS3-040407	EWS4-040407	EWS5-040407	EWM1-040407	EWM2-040407	EWM3-040407	EWG2-040407
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	100 U	20 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U	1.0 U
1,1-Dichloroethene	50 U	10 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	0.5 U
Acetone	500 U	100 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	50 U	5.0 U
2-Butanone	500 U	100 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	50 U	5.0 U
Methylene Chloride	500 U	100 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	50 U	5.0 U
1,2-Dichloroethene (total)	86	67 J	20	2.4	0.56	1.5	0.46 J	0.52 J	0.5 U
1,1-Dichloroethane	75 U	15 U	1.5 U	0.75 U	0.75 U	0.75 U	0.75 U	7.5 U	0.75 U
1,1,1-Trichloroethane	50 U	9.0 J	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	0.5 U
Benzene	50 U	10 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	0.5 U
Trichloroethene	4,000	17,000	80	23	27	4.6	0.75	0.82	0.50 U
Toluene	75 U	15 U	1.5 U	0.75 U	0.75 U	0.75 U	0.75 U	7.5 U	0.75 U
Carbon Tetrachloride	50 U	10 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	0.5 U
1,1,2-Trichloroethane	75 U	15 U	1.5 U	0.75 U	0.75 U	0.75 U	0.75 U	7.5 U	0.75 U
Tetrachloroethene	50 U	4.7 J	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	0.5 U
Chlorobenzene	50 U	10 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	5.0 U	0.5 U
Metals									
Silver	0.50 U	0.080 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Arsenic	0.27 J	0.20 J	0.90	0.80	7.4	6.9	4.0	4.4	26
Barium	19	39	20	17	24	15	11	11	23
Beryllium	0.50 U	0.030 J	0.50 U	0.50 U	0.060 J	0.50 U	0.50 U	0.50 U	0.50 U
Cadmium	0.060 J	0.12 J	0.080 J	0.050 J	0.11 J	0.050 J	0.07 J	0.080 J	0.50 U
Chromium (total)	5.9	8.8	38	1.0	43	0.15 J	0.13 J	0.11 J	0.21 J
Iron	1,200	3,000	1,800	1,300	7,300	3,100	2,700	2,700	15,000
Mercury	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Manganese	59	29	14	15	220	850	690	670	940
Nickel	6.0	3.5	5.7	3.7	13	12	20	10	5.1
Lead	1.5	3.5	6.6	0.16 J	6.2	0.16 J	5.5	0.43 J	2.2
Antimony	0.030 J	0.040 J	0.070 J	0.060 J	0.18 J	0.050 J	0.050 J	0.020 J	0.020 J
Selenium	0.80 J	1.0	0.60 J	0.70 J	0.50 J	0.50 J	0.50 J	1.0 U	0.030 J
Vanadium	0.50 U	0.50 U	0.17 J	0.10 J	1.5	0.50 U	0.090 J	0.060 J	0.090 J
Zinc	33	74	94	9.4	42	11	42	4.9 J	21

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	26-Jul-07	26-Jul-07	26-Jul-07	26-Jul-07	26-Jul-07	26-Jul-07	26-Jul-07	26-Jul-07	26-Jul-07
Station Location:	EWS1	EWS2	EWS3	EWS4	EWS5	EWM1	EWM2	EWM3	EWG2
Sample ID:	EWS1-072607	EWS2-072607	EWS3-0472607	EWS4-072607	EWS5-072607	EWM1-072607	EWM2-072607	EWM3-072607	EWG2-072607
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	100 U	50 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	50 U	25 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Acetone	500 U	250 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Butanone	500 U	250 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methylene Chloride	500 U	250 U	10 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloroethene (total)	61	58	15	2.0	1.9	1.8	0.5 U	15	0.50 U
1,1-Dichloroethane	75 U	38 U	1.5 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
1,1,1-Trichloroethane	50 U	25 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Benzene	50 U	25 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	2,400	2,200	55	17	17	5.8	0.58	8.3	0.50 U
Toluene	75 U	38 U	1.5 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Carbon Tetrachloride	50 U	25 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	75 U	38 U	1.5 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Tetrachloroethene	50 U	25 U	0.42 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	50 U	23 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Metals									
Silver	0.40 J	0.13 J	1.1	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Arsenic	0.16 J	0.60	3.7	0.32 J	0.29 J	6.3	3.5	0.3 J	23.2
Barium	19.5	51.3	34.7	16.6	16.1	15.2	9.9	23.8	17.9
Beryllium	0.50 U	0.05 J	0.03 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Cadmium	0.50 U	0.09 J	0.15 J	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chromium (total)	2.7	12.2	164	2.6	0.27 J	0.14 J	0.26 J	1.0	0.24 J
Iron	226	24,800	37,200	1,960	350	3,250	2,620	259	12,400
Mercury	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Manganese	10.8	119	28.3	32.1	20.9	854	538	106	685
Nickel	6.3	5.7	9.8	4.2	4.7	19.6	20.4	4.9	6.5
Lead	4.5	3.0	132	0.20 J	5.4	0.3 J	5.4	0.13 J	3.0
Antimony	0.40 J	0.06 J	0.34 J	0.08 J	0.07 J	0.03 J	0.06 J	0.07 J	0.02 J
Selenium	0.50 J	0.96 J	0.75 J	0.37 J	0.30 J	1.0 U	1.0 U	0.44 J	1.0 U
Vanadium	0.10 J	0.20 J	0.50 U	0.10 J	0.07 J	0.50 U	0.12 J	0.07 J	0.08 J
Zinc	42.9	68.0	998	14.1	13.6	11.6	32.0	59.7	15.4

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	24-Oct-07	24-Oct-07	24-Oct-07	24-Oct-07
Station Location:	EWM1	EWM2	EWM3	EWG2
Sample ID:	EWM1-10242007	EWM2-10242007	EWM3-10242007	EWG2-10242007
	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds				
Vinyl Chloride	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	10 U	10 U	10 U	10 U
2-Butanone	10 U	10 U	10 U	10 U
Methylene Chloride	0.65 JB	0.67 JB	0.67 JB	0.65 JB
1,2-Dichloroethene (total)	1.5 J	5.0 U	6.2	5.0 U
1,1-Dichloroethane	5.0 U	5.0 U	5.0 U	5.0 U
1,1,1-Trichloroethane	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5.0 U	5.0 U	5.0 U	5.0 U
Trichloroethene	4.7 J	5.0 U	6.0	5.0 U
Toluene	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Tetrachloride	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2-Trichloroethane	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	5.0 U	5.0 U	5.0 U	5.0 U
Chlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U
Metals				
Silver	11 U	11 U	11 U	11 U
Arsenic	6.7 J	11 U	11 U	21
Barium	20 J	15 J	24.6 J	13.6 J
Beryllium	5.6 U	5.6 U	5.6 U	5.6 U
Cadmium	5.6 U	5.6 U	5.6 U	5.6 U
Chromium (total)	11 U	11 U	1.6 J	11 U
Iron	NA	NA	NA	NA
Mercury	0.20 U	0.20 U	0.20 U	0.20 U
Manganese	NA	NA	NA	NA
Nickel	25 J	10 J	44 U	44 U
Lead	11 U	11 U	11 U	11 U
Antimony	67 U	67 U	67 U	67 U
Selenium	39 U	4.1 J	39 U	39 U
Vanadium	56 U	56 U	56 U	56 U
Zinc	NA	NA	NA	NA

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	15-Jan-08	15-Jan-08	15-Jan-08	15-Jan-08	15-Jan-08	15-Jan-08	15-Jan-08	15-Jan-08	15-Jan-08
Station Location:	EWS1	EWS2	EWS3	EWS4	EWS5	EWM1	EWM2	EWM3	EWG2
Sample ID:	EWS1-01152008	EWS2-01152008	EWS3-01152008	EWS4-01153008	EWS5-01152008	EWM1-01152008	EWM2-01152008	EWM3-01152008	EWG2-01152008
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	28 U	11 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	28 U	11 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	55 U	22 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	55 U	22 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	28 U	11 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloroethene (total)	52	28	20	1.4 J	5.0 U	1.6 J	5.0 U	6.9	5.0 U
1,1-Dichloroethane	28 U	11 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,1-Trichloroethane	28 U	11 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	28 U	11 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichloroethene	8,300 D*	2,600 D*	160	12	1.7 J	6.0	0.9 J	5.4	5.0 U
Toluene	28 U	11 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Tetrachloride	28 U	11 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2-Trichloroethane	28 U	11 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	28 U	11 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chlorobenzene	28 U	11 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Metals									
Silver	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Arsenic	10 U	10 U	10 U	10 U	10 U	6.5 J	10 U	10 U	21
Barium	19 J	40 J	27 J	16 J	11 J	22 J	17 J	20 J	18 J
Beryllium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cadmium	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chromium (total)	1.5 J	2.6 J	2 J	10 U	19	10 U	10 U	10 U	10 U
Iron	40 J	127	139	148	3310	5190	2970	27 J	12900
Mercury	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Manganese	3.1 J	11 J	11 J	6.5 J	24	1350	808	3 J	879
Nickel	7.3 J	4.5 J	7.9 J	5.1 J	5.1 J	29 J	11 J	3.7 J	5.6 J
Lead	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Antimony	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Selenium	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U
Vanadium	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Zinc	17 J	28 J	19 J	9.3 J	28 J	14 J	13 J	3.3 J	15 J

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	8-Apr-08	8-Apr-08	8-Apr-08	8-Apr-08	8-Apr-08	8-Apr-08	8-Apr-08	8-Apr-08	8-Apr-08
Station Location:	EWS1	EWS2	EWS3	EWS4	EWS5	EWM1	EWM2	EWM3	EWG2
Sample ID:	EWS1-04082008	EWS2-04082008	EWS3-04082008	EWS4-04082008	EWS5-04082008	EWM1-04082008	EWM2-04082008	EWM3-04082008	EWG2-04082008
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloroethene (total)	120	170	20	5.0 U	5.0 U	5.0 U	5.0 U	5.3	5.0 U
1,1-Dichloroethane	5.0 U	2.5 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,1-Trichloroethane	5.0 U	3.0 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichloroethene	2,200 D	5,900 D	65	13	7.0	5.4	5.0 U	4.5 J	5.0 U
Toluene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Tetrachloride	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2-Trichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	5.0 U	3.4 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Metals									
Silver	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Arsenic	10 U	10 U	10 U	10 U	10 U	7.9 J	10 U	10 U	21
Barium	27.3 J	79.3 J	82.9 J	17.7 J	12.5 J	23.5 J	14 J	18.9 J	25.5 J
Beryllium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Cadmium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chromium (total)	0.89 J	2.0 J	3 J	10 U	68	10 U	10 U	10 U	10 U
Iron	48 J	128	826	75 J	7,020	5,300	1,600	70 J	14,700
Mercury	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Manganese	11 J	61	15	5.5 J	48	1,340	913	4.9 J	978
Nickel	6.5 J	6.2 J	15.7 J	3.6 J	31.7 J	12.1 J	10.6 J	3.4 J	5.4 J
Lead	10 U	10 U	10 U	10 U	6.3 J	10 U	10 U	10 U	10 U
Antimony	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Selenium	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U
Vanadium	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Zinc	28.1 J	75.6	72.2	9.1 J	59.1 J	12.4 J	11.3 J	2.9 J	11.3 J

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	22-Jul-08	22-Jul-08	22-Jul-08	22-Jul-08	22-Jul-08	22-Jul-08	22-Jul-08	22-Jul-08	22-Jul-08
Station Location:	EWS1	EWS2	EWS3	EWS4	EWS5	EWM1	EWM2	EWM3	EWG2
Sample ID:	EWS1-07222008	EWS2-07222008	EWS3-07222008	EWS4-07222008	EWS5-07222008	EWM1-07222008	EWM2-07222008	EWM3-07222008	EWG2-07222008
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	5.3 B	0.92 JB	0.47 JB	1.0 JB	1.4 JB	1.0 JB	1.6 JB	1.4 JB	1.9 JB
1,2-Dichloroethene (total)	55	21	6.3	0.74 J	0.73 J	1.3 J	5.0 U	2.9 J	5.0 U
1,1-Dichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,1-Trichloroethane	1.5 J	1.1 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichloroethene	2,200 D	1,900 D	87	7.0	7.3	4.8 J	0.44 J	3.4 J	5.0 U
Toluene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Tetrachloride	0.4 J	0.25 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2-Trichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	1.0 J	0.9 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Metals									
Silver	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Arsenic	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	22
Barium	24.9 J	52.9 J	62.9 J	17.1 J	17.4 J	24.1 J	11.7 J	18.8 J	24.5 J
Beryllium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Cadmium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chromium (total)	1.80 J	2.1 J	13	10 U	10 U	10 U	10 U	10 U	10 U
Iron	59 J	647	4,340	10 J	112	4,160	3,290	20 J	15,200
Mercury	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Manganese	5.3 J	19	28	3.8 J	8.9 J	1,300	677	4.5 J	874
Nickel	7.5 J	5.7 J	16 J	11 J	5.6 J	18 J	11 J	2.5 J	4.2 J
Lead	10 U	10 U	10 U	10 U	10.0 U	10 U	10 U	10 U	10 U
Antimony	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Selenium	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U
Vanadium	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Zinc	17 J	59 J	100	16 J	9.7 J	6.7 J	43 J	5.2 J	11 J

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	23-Oct-08	23-Oct-08	23-Oct-08	23-Oct-08	23-Oct-08	23-Oct-08	23-Oct-08	23-Oct-08	23-Oct-08
Station Location:	EWS1	EWS2	EWS3	EWS4	EWS5	EWM1	EWM2	EWM3	EWG2
Sample ID:	EWS1-10232008	EWS2-10232008	EWS3-10232008	EWS4-10232008	EWS5-10232008	EWM1-10232008	EWM2-10232008	EWM3-10232008	EWG2-10232008
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	5.0 U	25 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	5.0 U	25 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	10 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 U	50 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	5.0 U	25 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloroethene (total)	36	77	7.2	0.77 J	5.0 U	0.90 J	0.62 J	1.1 J	5.0 U
1,1-Dichloroethane	5.0 U	25 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,1-Trichloroethane	0.92 J	3.4 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5.0 U	25 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichloroethene	1,000 D	6,000 D	48	7.2	4.5 J	3.6 J	0.85 J	3.2 J	0.30 J
Toluene	0.48 JB	1.3 JB	0.11 JB	0.11 JB	0.56 JB	0.12 JB	0.12 JB	0.12 JB	0.13 JB
Carbon Tetrachloride	5.0 U	25 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2-Trichloroethane	5.0 U	25 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	0.62 J	2.3 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chlorobenzene	5.0 U	25 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Metals									
Silver	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Arsenic	10 U	10 U	10 U	10 U	10 U	8.9 J	10 U	29.6	21.1
Barium	22.2 J	55.1 J	42.1 J	18.9 J	18.6 J	26.6 J	12.3 J	105 J	32.6 J
Beryllium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Cadmium	5.0 U	0.13 J	5.0 U	5.0 U	5.0 U	0.089 J	5.0 U	0.31 J	0.11 J
Chromium (total)	3.7 J	10 U	4.7 J	10 U	10 U	10 U	10 U	12	10 U
Iron	205	1,550	2,770	100 U	100 U	5,900	2,050	15,100	17,700
Mercury	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.031 J	0.083 J	0.20 U	0.031 J
Manganese	5.8 J	25	24	2.8 J	1.5 J	1,420	940	4,420	1,020
Nickel	6.9 J	4.8 J	10.3 J	3.4 J	3.4 J	18.7 J	41.7	30.9 J	6.4 J
Lead	1.6 J	3.2 J	10 U	10 U	10 U	10 U	8.9 J	3.7 J	2.0 J
Antimony	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Selenium	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U
Vanadium	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Zinc	15 J	36 J	37 J	10 J	19.2 J	6.9 J	20.6 J	1,130	11.4 J

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	8-Jan-09	8-Jan-09	8-Jan-09	8-Jan-09	8-Jan-09	8-Jan-09	8-Jan-09	8-Jan-09	8-Jan-09
Station Location:	EWS1	EWS2	EWS3	EWS4	EWS5	EWM1	EWM2	EWM3	EWG2
Sample ID:	EWS1-01082009	EWS2-01082009	EWS3-01082009	EWS4-01082009	EWS5-01082009	EWM1-01082009	EWM2-01082009	EWM3-01082009	EWG2-01082009
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	0.38 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloroethene (total)	100	69	8.3	0.50 J	5.0 U	0.82 J	0.74 J	1.7 J	5.0 U
1,1-Dichloroethane	0.5 J	0.55 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,1-Trichloroethane	1.8 J	2.10 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichloroethene	3,700 D	4,000 D	54	6.5	4.0 J	4.1 J	1.6 J	3.2 J	0.30 J
Toluene	5.0 U	0.48 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Tetrachloride	0.47 J	0.93 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2-Trichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	1.4 J	3.50 J	0.32 J	5.0 U	5.0 U	0.3 J	0.4 J	5.0 U	5.0 U
Chlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Metals									
Silver	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Arsenic	10 U	10 U	10 U	10 U	10 U	5.1 J	4.1 J	3.3 J	20
Barium	21 J	49 J	36 J	20 J	15 J	22 J	10 J	43 J	29 J
Beryllium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Cadmium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chromium (total)	10 U	4.3 J	10 U	10 U	10 U	10 U	10 U	10.0 U	10 U
Iron	72 J	4,890	1,110	27 J	29 J	4,170	3,730	4,630	18,700
Mercury	0.20 U	0.20 U	0.20 U	0.20 U	0.084 J	0.20 U	0.12 J	0.20 J	0.20 U
Manganese	5.7 J	46	15 J	3.5 J	0.87 J	1,100	826	3,820	951
Nickel	5.6 J	4.0 J	7.5 J	7.9 J	1.9 J	11 J	13 J	35 J	14 J
Lead	10 U	2.8 J	10 U	12	10.0 U	10 U	2.9 J	1.6 J	2.0 J
Antimony	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Selenium	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U
Vanadium	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Zinc	22 J	34 J	27 J	15 J	8.1 J	8.9 J	25 J	789	16 J

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	7-Apr-09	7-Apr-09	7-Apr-09	7-Apr-09	7-Apr-09	7-Apr-09	7-Apr-09	7-Apr-09	7-Apr-09
Station Location:	EWS1	EWS2	EWS3	EWS4	EWS5	EWM1	EWM2	EWM3	EWG2
Sample ID:	EWS1-04072009	EWS2-04072009	EWS3-04072009	EWS4-04072009	EWS5-04072009	EWM1-04072009	EWM2-04072009	EWM3-04072009	EWG2-04072009
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	100 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	100 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	200 U	200 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	200 U	200 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	100 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloroethene (total)	100	69 J	12	5.0 U	5.0 U	5.0 U	5.0 U	13	5.0 U
1,1-Dichloroethane	100 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,1-Trichloroethane	100 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	100 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichloroethene	2,900	2,700	36	8.0	3.4 J	4.2 J	0.72 J	7.7	5.0 U
Toluene	100 U	100 U	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Tetrachloride	100 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2-Trichloroethane	100 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	100 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chlorobenzene	100 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Metals									
Silver	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Arsenic	10 U	10 U	10 U	10 U	10 U	194	2.9 J	21	22
Barium	20 J	60 J	33 J	15 J	10 J	35 J	8.0 J	55 J	31 J
Beryllium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Cadmium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chromium (total)	4 J	3.5 J	24	10 U	10 U	3 J	6 J	7.8 J	10 U
Iron	98 J	93 J	6,660	53 J	15 J	84,200	1,280	9,550	17,800
Mercury	0.20 U	0.060 J	0.069 J	0.20 U	0.200 U	0.20 U	0.061 J	0.066 J	0.070 J
Manganese	7.1 J	40	13 J	21	1.2 J	2,650	597	3,540	761
Nickel	5.4 J	4.2 J	6.7 J	9.8 J	40 U	20 J	11 J	36 J	4 J
Lead	2 J	3.0 J	6 J	27	1.7 J	3 J	3.4 J	3.8 J	2.0 J
Antimony	60 U	60 U	60 U	60 U	60 U	60 U	2 J	60 U	60 U
Selenium	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U
Vanadium	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Zinc	31 J	47 J	40 J	17 J	6.8 J	17 J	15 J	765	10 J

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	7-Jul-09	7-Jul-09	7-Jul-09	7-Jul-09	7-Jul-09	7-Jul-09	7-Jul-09	7-Jul-09	7-Jul-09
Station Location:	EWS1	EWS2	EWS3	EWS4	EWS5	EWM1	EWM2	EWM3	EWG2
Sample ID:	EWS1-07072009	EWS2-07072009	EWS3-07072009	EWS4-07072009	EWS5-07072009	EWM1-07072009	EWM2-07072009	EWM3-07072009	EWG2-07072009
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	16 U	13 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	16 U	13 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	31 U	26 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	31 U	26 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	16 U	13 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloroethene (total)	42	36	6.6	0.93 J	5.0 U	1.7 J	5.0 U	36	5.0 U
1,1-Dichloroethane	16 U	13 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5 U	5.0 U
1,1,1-Trichloroethane	16 U	13 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	16 U	13 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichloroethene	1,500 D	1,700 D	28	7.7	2.6 J	4.6 J	5.0 U	7.4	5.0 U
Toluene	16 U	13 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Tetrachloride	16 U	13 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2-Trichloroethane	16 U	13 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	16 U	13 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chlorobenzene	16 U	13 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Metals									
Silver	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Arsenic	10 U	10 U	10 U	10 U	10 U	11	10.0 U	6.8 J	20
Barium	20.2 J	89.5 J	35.6 J	17.9 J	12.7 J	18.4 J	13.3 J	55.0 J	22.9 J
Beryllium	0.42 J	0.40 J	0.30 J	5.0 U	5.0 U	5.0 U	5.0 U	0.38 J	0.3 J
Cadmium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chromium (total)	10 U	3.3 J	2.8 J	10 U	3.2 J	10 U	10 U	4.0 J	10 U
Iron	58.0 J	207	353	9.60 J	14.4 J	6,310	683	4,260	14,400
Mercury	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.099 J	0.20 U
Manganese	4.30 J	14.0 J	6.90 J	2.30 J	15.0 U	902	599	6,130	685
Nickel	6.4 J	4.9 J	6.5 J	4.9 J	1.6 J	7.9 J	20 J	39 J	5.0 J
Lead	2.2 J	2.6 J	1.6 J	6.4 J	10 U	2.5 J	3.1 J	2.4 J	1.7 J
Antimony	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Selenium	3.3 J	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U
Vanadium	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Zinc	23 J	47 J	20 J	125	6.3 J	9.4 J	22 J	482	10 J

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	6-Oct-09	6-Oct-09	6-Oct-09	6-Oct-09	6-Oct-09	6-Oct-09	6-Oct-09	6-Oct-09	6-Oct-09
Station Location:	EWS1	EWS2	EWS3	EWS4	EWS5	EWM1	EWM2	EWM3	EWG2
Sample ID:	EWS1-10062009	EWS2-10062009	EWS3-10062009	EWS4-10062009	EWS5-10062009	EWM1-10062009	EWM2-10062009	EWM3-10062009	EWG2-10062009
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dichloroethene (total)	51	47	8.1	1.1 J	5.0 U	2.0 J	5.0 U	82	5.0 U
1,1-Dichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,1-Trichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichloroethene	2800 D	1600 D	55	9.9	3.0 J	5.6	5.0 U	16	5.0 U
Toluene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Tetrachloride	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2-Trichloroethane	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	1.0 J	1.2 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chlorobenzene	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Metals									
Silver	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Arsenic	10 U	10 U	10 U	10 U	10 U	8.2 J	10 U	10 U	20.5
Barium	20.9 J	75.1 J	30.7 J	19.7 J	13.3 J	20.5 J	15.9 J	52.4 J	22 J
Beryllium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Cadmium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	0.49 J	5.0 U
Chromium (total)	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Iron	158	798	942	64.1 J	25 J	5720	295	943	14100
Mercury	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Manganese	7.5 J	15.2	11.6 J	4.9 J	1.3 J	887	683	11,000	626
Nickel	6.4 J	4.1 J	5.9 J	6.5 J	2.8 J	6.7 J	11.7 J	34.2 J	3.6 J
Lead	10 U	10 U	1.4 J	15.7	10 U	10 U	10 U	10 U	10 U
Antimony	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Selenium	35 U	35 U	35 U	35 U	3 J	35 U	35 U	35 U	35 U
Vanadium	7.3 J	50 U	4.2 J	50 U	50 U	50 U	50 U	50 U	50 U
Zinc	18.8 J	34.9 J	21.3 J	34.8 J	8.2 J	9.2 J	27.8 J	341	9.8 J

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	5-Jan-10	5-Jan-10	5-Jan-10	5-Jan-10	5-Jan-10	5-Jan-10	5-Jan-10	5-Jan-10	5-Jan-10
Station Location:	EWS1	EWS2	EWS3	EWS4	EWS5	EWM1	EWM2	EWM3	EWG2
Sample ID:	EWS1-01052010	EWS2-01052010	EWS3-01052010	EWS4-01052010	EWS5-01052010	EWM1-01052010	EWM2-01052010	EWM3-01052010	EWG2-01052010
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Volatile Organic Compounds									
Vinyl Chloride	20 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1-Dichloroethene	20 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	40 U	200 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Butanone	40 U	200 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	20 U	52 JB	8.5 B	7.8 B	8.4 B	7.3 B	6.5 B	5.0 U	7.1 B
1,2-Dichloroethene (total)	47	100 U	9.2	5.0 U	5.0 U	5.0 U	5.0 U	260 D	5.0 U
1,1-Dichloroethane	20 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,1-Trichloroethane	20 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	20 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Trichloroethene	1,600 D	5,000 D	99	5.3	5.0 U	3.0 J	5.0 U	16	5.0 U
Toluene	20 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon Tetrachloride	20 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2-Trichloroethane	20 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Tetrachloroethene	20 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chlorobenzene	20 U	100 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Metals									
Silver	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Arsenic	10 U	10 U	10 U	10 U	10 U	12.6	10 U	10 U	21.3
Barium	17.2 J	48.4 J	21.8 J	16.4 J	10.4 J	22.6 J	14.3 J	31.4 J	29.2 J
Beryllium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Cadmium	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chromium (total)	10 U	10 U	5.3 J	10 U	10 U	10 U	10 U	10 U	10 U
Iron	83.6 J	14,600	3,770	100 U	73.9 J	10,200	310	780	19,200
Mercury	0.070 J	0.073 J	0.20 U	0.20 U	0.20 U	0.19 J	0.20 U	0.074 J	0.20 U
Manganese	3.8 J	93.9	26.4	15 U	15 U	1,150	733	3,680	823
Nickel	7.2 J	3.2 J	4.3 J	15.3 J	40 U	10 J	11.5 J	19.6 J	7.7 J
Lead	2.9 J	10 U	3.7 J	22.2	10 U	2.7 J	10 U	10 U	10 U
Antimony	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U	60 U
Selenium	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U	35 U
Vanadium	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Zinc	23.8 J	145	41 J	39.7 J	15.7 J	7.2 J	17 J	191	15.7 J

TABLE 1-2

Extraction Well Analytical Data
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date:	4-Mar-10	4-Mar-10
Station Location:	EW-S5	EW-M3
Sample ID:	EWS5-03042010	EWM3-03042010
	(µg/L)	(µg/L)
Volatile Organic Compounds		
Vinyl Chloride	5.0 U	5.0 U
1,1-Dichloroethene	5.0 U	5.0 U
Acetone	10 U	10 U
2-Butanone	10 U	10 U
Methylene Chloride	5.0 U	5.0 U
1,2-Dichloroethene (total)	5.0 U	11
1,1-Dichloroethane	5.0 U	5.0 U
1,1,1-Trichloroethane	5.0 U	5.0 U
Benzene	5.0 U	5.0 U
Trichloroethene	5.0 U	3.8 J
Toluene	5.0 U	5.0 U
Carbon Tetrachloride	5.0 U	5.0 U
1,1,2-Trichloroethane	5.0 U	5.0 U
Tetrachloroethene	5.0 U	5.0 U
Chlorobenzene	5.0 U	5.0 U
Metals		
Silver	NS	NS
Arsenic	NS	NS
Barium	NS	NS
Beryllium	NS	NS
Cadmium	NS	NS
Chromium (total)	NS	NS
Iron	NS	NS
Mercury	NS	NS
Manganese	NS	NS
Nickel	NS	NS
Lead	NS	NS
Antimony	NS	NS
Selenium	NS	NS
Vanadium	NS	NS
Zinc	NS	NS

Notes:
µg/L = micrograms per liter
NS = Not Sampled
NA = Not Analyzed
D = Sample diluted to bring analyte concentration into the instrument calibration range.
U = Analyte not detected. Reporting limit shown.
J = Estimated concentration below sample reporting limit.
B = Compound found in both blank and sample.
UJ = Estimated reporting limit because surrogates did not meet QC requirements.

Table 1-3
Effluent Toxicity Testing Results
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date	Species	Parameter		
		LC50[a]	C-NOEC[b] Survival	C-NOEC[b] Growth/Reproduction[c]
		Discharge Limits		
		100%	41%	41%
		Testing Results		
June 2000	Fathead Minnow	100%	100%	100%
	Ceriodaphnia	>100%	100%	100%
October 2000	Fathead Minnow	100%	100%	100%
	Ceriodaphnia	>100%	100%	100%
January 2001	Fathead Minnow	100%	100%	100%
	Ceriodaphnia	>100%	100%	100%
April 2001	Fathead Minnow	100%	100%	100%
	Ceriodaphnia	>100%	100%	100%
July 2001	Fathead Minnow	100%	100%	100%
	Ceriodaphnia	>100%	100%	100%
October 2001	Fathead Minnow	100%	100%	100%
	Ceriodaphnia	>100%	100%	100%
January 2002	Fathead Minnow	>100%	100%	100%
	Cerio-daphnia	>100%	100%	100%
April 2002	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	>100%	100%	100%
July 2002	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	>100%	100%	100%
October 2002	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	>100%	100%	100%
December 2002	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	>100%	75%	75%
January 2003	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	89.8%	75%	75%
April 2003	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	92.1%	75%	75%
July 2003	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	>100%	75%	75%
October 2003	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	89.8%	75%	75%
January 2004	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	73.4%	75%	50%

Table 1-3
Effluent Toxicity Testing Results
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date	Species	Parameter		
		LC50[a]	C-NOEC[b] Survival	C-NOEC[b] Growth/Reproduction[c]
		Discharge Limits		
		100%	41%	41%
		Testing Results		
April 2004	Fathead Minnow	>100%	Not Determined[d]	Not Determined[d]
	Ceriodaphnia	88%	75%	75%
October 2004	Fathead Minnow	>100%	100%	100%
	Cerio-daphnia	>100%	100%	100%
January 2005	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	>100%	100%	100%
April 2005	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	>100%	100%	100%
July 2005	Fathead Minnow	>100%	>100%	>100%
	Ceriodaphnia	>100%	>100%	>100%
October 2005	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	>100%	100%	**25%**[e]
January 2006	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	>100%	100%	100%
April 2006	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	>100%	100%	100%
January 2007	Fathead Minnow	>100%	100%	75%
	Ceriodaphnia	>100%	100%	**25%**[e]
April 2007	Fathead Minnow	>100%	100%	**12.5%**[e]
	Ceriodaphnia	>100%	100%	100%
November 2007	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	100%	41%	41%
January 2008	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	>100%	100%	100%
April 2008	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	>100%	100%	100%
July 2008	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	>100%	100%	100%
October 2008	Fathead Minnow	>100%	**<6.25%**[e]	**<6.25%**[e]
	Ceriodaphnia	>100%	100%	25%
January 2009	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	>100%	100%	50%

Table 1-3
Effluent Toxicity Testing Results
Groundwater Extraction and Treatment System
Groveland Wells Superfund Site

Sample Date	Species	Parameter		
		LC50[a]	C-NOEC[b] Survival	C-NOEC[b] Growth/Reproduction[c]
		Discharge Limits		
		100%	41%	41%
		Testing Results		
April 2009	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	>100%	100%	**25%**[e]
July 2009	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	>100%	100%	100%
October 2009	Fathead Minnow	>100%	100%	100%
	Ceriodaphnia	>100%	100%	**12.5%**[e]
January 2010	Fathead Minnow	>100%	100%	**25%**[e]
	Ceriodaphnia	>100%	100%	100%

Notes: Toxicity results are expressed as the percent of effluent.

[a] Median Lethal Concentration

[b] Chronic No Observed Effect Concentration

[c] Growth test is conducted for fathead minnow. Reproduction test is conducted for ceriodaphnia.

[d] These values could not be determined because there was insufficient survival in the dilution water control sample obtained from Mill Pond.

e Discharge limit of 41 percent was not achieved. In most cases where discharge limits were not met, the dilutions with lower effluent concentrations did not meet the 41% criteria, while the dilutions with higher effluent concentrations met the criteria. Test procedures and treatment system operations have been assessed to try explain the inconguous results. However, no correlation between the operations and the results could be determined.

Table 1-4
Analytical Results and Maximum Contaminant Levels
for Volatile Organic Compounds Detected in Groundwater (ug/L) - October 2009
Groveland Wells Site
Groveland, Massachusetts

Analyte		Vinyl chloride	Acetone	trans-1,2-Dichloroethene	cis-1,2-Dichloroethene	Trichloroethene
Maximum Contaminant Level[1]		2	NA	100	70	5
Area / Well / Zone						
North of Main St.						
103	BR	0.50 U	5.0 U	0.50 U	8.4	0.93
104	OB	0.50 U	5.0 U	0.50 U	4.1	0.28 J
South of Main St.						
109	BR	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U
114	BR	0.50 U	5.0 U	0.50 U	0.31 J	0.50 U
NUS-4A	BR	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U
108	BR	0.50 U	5.0 U	0.50 U	0.65	1.3
DEQE-6	OB	0.50 U	5.0 U	0.50 U	0.39 J	1.1
ERT-9[2]	BR	0.69	5.0 U	0.33 J	40.5	2.8
ERT-11	OB	0.50 U	5.0 U	0.50 U	0.50 U	0.65
ERT-13	OB	0.50 U	5.0 U	0.50 U	0.27 J	0.65
ERT-16	OB	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U
Groveland Highway Dept.						
DEQE-4-2	OB	0.50 U	5.0 U	0.50 U	0.39 J	0.76
DEQE-13D	BR	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U
ME-10D	OB	0.50 U	5.0 U	0.50 U	0.50 U	0.28 J
ME-20D	OB	0.50 U	5.0 U	0.50 U	0.34 J	0.68 J
South of Mill Pond						
DEQE-7	OB	0.50 U	5.0 U	0.50 U	0.50 U	0.50 U
DEQE-8	OB	0.50 U	5.0 U	0.50 U	0.76	0.38
Source Area/Valley Mfg.						
TW-12	BR	5.0 U	41	5.0 U	5.0 U	**6.1**
TW-24[2]	BR	5.0 U	5.0 U	0.5 U	0.56	**25**
TW-31	BR	5.0 U	10 U	5.0 U	5.0 U	**5.0 J**

(1) Maxiumum Contaminant Level (MCL) as specified in the Record of Decision (USEPA, 1991).
(2) A field duplicate was collected for this location; the value presented is the average of the two detections.
BOLD/SHADE - Detected concentration exceeds the applicable MCL.
ITALICS - Detection limit is greater than the applicable MCL.
BR - Bedrock
OB - Overburden
MCLs - Maximum Contaminant Level
NA - No cleanup goal set for this parameter
D - Concentration is reported from a dilution of the sample.
J - For Tier I validated data: Quantitation is estimated as it is below the sample-specific detection limits (SSDL).
J - For Tier II validated data: Quantitation is approximate due to limitations identified in the data validation review.
U - Not detected above the SSDL. SSDLs are reported from the analysis for which all detected compounds were within calibration range.
! - The result is at or below the validation blank action level, and is attributable to blank contamination.
B - Organics: Analyte detected in a laboratory blank.

Table 1-5
Baseline Investigation Soil - Treatment Area "D"
Volatile Organic Analysis Data
GROVELAND WELLS SITE REMEDIAL ACTION

SAMPLE_NAME			A2YW2	A2YW3	A2YW4	A2YT9	A2YW0	A2YW1	A2YW5	A2YW6	A2YW7	A2YX0/A2YX1	A2YW9	A2YW8
SAMPLE_LOCATION			AD-01	AD-01	AD-01	AD-02	AD-02	AD-02	AD-03	AD-03	AD-03	AD-04	AD-04	AD-04
SAMPLE_DEPTH (FT BGS)			9 to 10	13 to 14	19 to 20	7 to 8	9 to 10	13 to 14	11 to 12	13 to 14	19 to 20	8 to 9	13 to 14	17 to 18
SAMPLE_DATE			29-Jul-09	29-Jul-09	29-Jul-09	29-Jul-09	29-Jul-09	29-Jul-09	29-Jul-09	29-Jul-09	29-Jul-09	30-Jul-09	30-Jul-09	30-Jul-09
CHEMICAL_NAME	CRQL	Cleanup Level[1]												
1,1,1-Trichloroethane	5	1388	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
1,1,2,2-Tetrachloroethane	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
1,1,2-Trichloroethane	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
1,1-Dichloroethane	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
1,1-Dichloroethene	5	45	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
1,2,3-Trichlorobenzene	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
1,2,4-Trichlorobenzene	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
1,2-Dibromo-3-chloropropane	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
1,2-Dibromoethane	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
1,2-Dichlorobenzene	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
1,2-Dichloroethane	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
1,2-Dichloropropane	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
1,3-Dichlorobenzene	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
1,4-Dichlorobenzene	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
1,4-Dioxane	100	-	120 U	110 U	110 U	120 U	100 U	110 U	110 U	98 U	94 U	99 U	110 U	110 U
2-Butanone	10	-	12 U	11 U	11 U	12 U	10 U	11 U	11 U	9.8 U	9.4 U	9.9 U	11 U	11 U
2-Hexanone	10	-	12 U	11 U	11 U	12 U	10 U	11 U	11 U	9.8 U	9.4 U	9.9 U	11 U	11 U
4-Methyl-2-pentanone	10	-	12 U	11 U	11 U	12 U	10 U	11 U	11 U	9.8 U	9.4 U	9.9 U	11 U	11 U
Acetone	10	-	**93**	11 U	11 U	**38**	10 U	11 U	11 U	9.8 U	9.4 U	9.9 U	11 U	11 U
Benzene	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Bromochloromethane	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Bromodichloromethane	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Bromoform	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Bromomethane	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Carbon disulfide	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Carbon tetrachloride	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Chlorobenzene	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Chloroethane	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Chloroform	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Chloromethane	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
cis-1,2-Dichloroethene	5	418	**10**	5.5 U	**6.1**	**6.1**	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
cis-1,3-Dichloropropene	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Cyclohexane	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Dibromochloromethane	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Dichlorodifluoromethane	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Ethylbenzene	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Isopropylbenzene	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
m,p-Xylene	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Methyl acetate	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Methyl tert-butyl ether	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Methylcyclohexane	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Methylene chloride	5	22	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
o-Xylene	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Styrene	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Tetrachloroethene	5	56	**2.7** J	5.5 U	5.7 U	**7.3**	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Toluene	5	22753	**1.4** J	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
trans-1,2-Dichloroethene	5	626	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
trans-1,3-Dichloropropene	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Trichloroethene	5	77	**1800** D	5.5 U	**11**	**210**	**1.5** J	**1.2** J	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Trichlorofluoromethane	5	-	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U
Vinyl chloride	5	11	5.8 U	5.5 U	5.7 U	5.9 U	5.2 U	5.6 U	5.3 U	4.9 U	4.7 U	4.9 U	5.7 U	5.3 U

NOTES:

1 - Interim Clean up Levels as defined in the Explaination of Significant Differences (2007)
CRQL - Contract Required Quantitation Limit
All values are in micrograms per liter (ug/L).
Bold - Quantitation is esimtated above the Sample-Specific Detection Limit (SSDL).
Shaded - Detected concentrations exceed the Goumdwater Cleanup Goals.
Italic - Reporting Limit is higher than the Interim Groundwater Cleanup Level.

D - Concentration is reported from a dilution of the sample.
E - Quantitation is estimated as it exceeds the calibration range of the analysis
J - Quantitation is estimated as it is below the SSDL, but above the Project Quantitation Limit.
U - Not detected above the SSDL
B - Analyte detected in laboratory blanks.

Table 1-6
Baseline Investigation Soil - Replacement Well Installation
Volatile Organic Analysis Data
GROVELAND WELLS SITE REMEDIAL ACTION

SAMPLE_NAME			A2YY5	A2YY4	A2YZ7	A2YZ8	A2YY7	A2YY8/A2YY9	A2YZ0	A2YX7	A2YX9	A2YZ3	A2YZ4	A2YZ5	A2YY0
SAMPLE_LOCATION			RW-01	RW-01	RW-02	RW-02	RW-03	RW-03	RW-03	RW-04	RW-04	RW-05	RW-05	RW-05	RW-06
SAMPLE_DEPTH (FT BGS)			8 to 9	29 to 40	14 to 15	18 to 19	1 to 2	31 to 32	35 to 36	18 to 20	37 to 38	3 to 4	23 to 24	37 to 38	6 to 7
SAMPLE_DATE			4-Aug-09	4-Aug-09	5-Aug-09	5-Aug-09	4-Aug-09	4-Aug-09	4-Aug-09	30-Jul-09	30-Jul-09	5-Aug-09	5-Aug-09	5-Aug-09	3-Aug-09
CHEMICAL_NAME	CRQL	Cleanup Level[1]													
1,1,1-Trichloroethane	5	1388	5.7 U	5 U	5.1 U	6.2 U	4.5 U	**1.4** J	**6.4**	5.9 U	4.7 U	4.8 U	**38**	**2.3** J	5.2 U
1,1,2,2-Tetrachloroethane	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
1,1,2-Trichloroethane	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	**57**	**9.5**	5.7 U	5.2 U
1,1-Dichloroethane	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	**5.1** J	5.7 U	5.2 U
1,1-Dichloroethene	5	45	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	**1.2** J	5.9 U	4.7 U	**1.5** J	**15**	5.7 U	5.2 U
1,2,3-Trichlorobenzene	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
1,2,4-Trichlorobenzene	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
1,2-Dibromo-3-chloropropane	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
1,2-Dibromoethane	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
1,2-Dichlorobenzene	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
1,2-Dichloroethane	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
1,2-Dichloropropane	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
1,3-Dichlorobenzene	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
1,4-Dichlorobenzene	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
1,4-Dioxane	100	-	110 U	100 U	100 U	120 U	90 U	120 U	100 U	120 U	94 U	96 U	120 U	110 U	100 U
2-Butanone	10	-	11 U	10 U	10 U	12 U	**98**	12 U	**2** J	12 U	9.4 U	9.6 U	12 U	11 U	10 U
2-Hexanone	10	-	11 U	10 U	10 U	12 U	9 U	12 U	10 U	12 U	9.4 U	9.6 U	12 U	11 U	10 U
4-Methyl-2-pentanone	10	-	11 U	10 U	10 U	12 U	9 U	12 U	10 U	12 U	9.4 U	9.6 U	12 U	11 U	10 U
Acetone	10	-	**23**	10 U	10 U	12 U	**360** E	12 U	**8.2** J	12 U	9.4 U	**62**	12 U	11 U	**19**
Benzene	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Bromochloromethane	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Bromodichloromethane	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Bromoform	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Bromomethane	5	-	5.7 U	5 U	5.1 U	6.2 U	**13**	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Carbon disulfide	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Carbon tetrachloride	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Chlorobenzene	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Chloroethane	5	-	5.7 U	5 U	5.1 U	6.2 U	**10**	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Chloroform	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Chloromethane	5	-	5.7 U	5 U	5.1 U	6.2 U	**11**	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
cis-1,2-Dichloroethene	5	418	**4.4** J	5 U	**2.4** J	**2.9** J	**4.9**	14 U	**260** E	5.9 U	**1** J	**100**	**2100** D	**8.1**	5.2 U
cis-1,3-Dichloropropene	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Cyclohexane	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Dibromochloromethane	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Dichlorodifluoromethane	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Ethylbenzene	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Isopropylbenzene	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
m,p-Xylene	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Methyl acetate	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Methyl tert-butyl ether	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Methylcyclohexane	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Methylene chloride	5	22	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
o-Xylene	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Styrene	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Tetrachloroethene	5	56	5.7 U	5 U	**1.1** J	**3.4** J	**5**	6.1 U	**5.4**	5.9 U	4.7 U	**1900** D	**21**	5.7 U	5.2 U
Toluene	5	22753	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
trans-1,2-Dichloroethene	5	626	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	**3** J	5.9 U	4.7 U	4.8 U	**4.3** J	5.7 U	5.2 U
trans-1,3-Dichloropropene	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Trichloroethene	5	77	**82**	5 U	**3.1** BJ	**9** B	**940** D	**5650** D	**6900** D	5.9 U	**1.8** J	**11000** D	**7400** D	**8700** D	**2.9** J
Trichlorofluoromethane	5	-	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U
Vinyl chloride	5	11	5.7 U	5 U	5.1 U	6.2 U	4.5 U	6.1 U	5.2 U	5.9 U	4.7 U	4.8 U	5.8 U	5.7 U	5.2 U

NOTES:

1 - Interim Clean up Levels as defined in the Explaination of Significant Differences (2007)
CRQL - Contract Required Quantitation Limit
All values are in micrograms per liter (ug/L).
Bold - Quantitation is esimtated above the Sample-Specific Detection Limit (SSDL).
Shaded - Detected concentrations exceed the Gourndwater Cleanup Goals.
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D - Concentration is reported from a dilution of the sample.
E - Quantitation is estimated as it exceeds the calibration range of the analysis.
J - Quantitation is estimated as it is below the SSDL, but above the Project Quantitation Limit.
U - Not detected above the SSDL.
B - Analyte detected in laboratory blanks

Table 1-6

Baseline Investigation Soil - Replacement Well Installation

Volatile Organic Analysis Data

GROVELAND WELLS SITE REMEDIAL ACTION

SAMPLE_NAME			A2YY1		A2YY2		A2YY3		A2Z02		A2Z00		A2Z01		A2YZ1		A2YZ2		A2Z03		A2Z04	
SAMPLE_LOCATION			RW-06		RW-07		RW-07		RW-08		RW-08		RW-08		RW-09		RW-09		RW-10		RW-10	
SAMPLE_DEPTH (FT BGS)			18 to 19		18 to 19		29 to 30		9 to 10		14 to 15		46 to 47		14 to 15		39 to 40		8 to 9		38 to 39	
SAMPLE_DATE			3-Aug-09		3-Aug-09		3-Aug-09		6-Aug-09		6-Aug-09		6-Aug-09		4-Aug-09		4-Aug-09		6-Aug-09		6-Aug-09	
CHEMICAL_NAME	CRQL	Cleanup Level[1]																				
1,1,1-Trichloroethane	5	1388	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
1,1,2,2-Tetrachloroethane	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
1,1,2-Trichloroethane	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
1,1-Dichloroethane	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
1,1-Dichloroethene	5	45	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
1,2,3-Trichlorobenzene	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
1,2,4-Trichlorobenzene	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
1,2-Dibromo-3-chloropropane	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
1,2-Dibromoethane	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
1,2-Dichlorobenzene	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
1,2-Dichloroethane	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
1,2-Dichloropropane	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
1,3-Dichlorobenzene	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	1.7	J	5.5	U	5.1	U
1,4-Dichlorobenzene	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
1,4-Dioxane	100	-	120	U	120	U	90	U	97	U	110	U	110	U	94	U	100	U	110	U	100	U
2-Butanone	10	-	12	U	12	U	9	U	9.7	U	11	U	11	U	9.4	U	10	U	11	U	10	U
2-Hexanone	10	-	12	U	12	U	9	U	9.7	U	11	U	11	U	9.4	U	10	U	11	U	10	U
4-Methyl-2-pentanone	10	-	12	U	12	U	9	U	9.7	U	11	U	11	U	9.4	U	10	U	11	U	10	U
Acetone	10	-	12	U	12	U	9	U	**18**		**21**		11	U	9.4	U	10	U	11	U	10	U
Benzene	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Bromochloromethane	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Bromodichloromethane	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Bromoform	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Bromomethane	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Carbon disulfide	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Carbon tetrachloride	5	-	*5.8*	*U*	*6.1*	*U*	*4.5*	*U*	*4.9*	*U*	*5.6*	*U*	*5.4*	*U*	*4.7*	*U*	*5.1*	*U*	*5.5*	*U*	*5.1*	*U*
Chlorobenzene	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Chloroethane	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Chloroform	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Chloromethane	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
cis-1,2-Dichloroethene	5	418	**41**		6.1	U	4.5	U	4.9	U	**14**		5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
cis-1,3-Dichloropropene	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Cyclohexane	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Dibromochloromethane	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Dichlorodifluoromethane	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Ethylbenzene	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Isopropylbenzene	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
m,p-Xylene	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Methyl acetate	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Methyl tert-butyl ether	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Methylcyclohexane	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Methylene chloride	5	22	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
o-Xylene	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Styrene	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Tetrachloroethene	5	56	5.8	U	6.1	U	4.5	U	4.9	U	**87**		5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Toluene	5	22753	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
trans-1,2-Dichloroethene	5	626	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
trans-1,3-Dichloropropene	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Trichloroethene	5	77	**52**		6.1	U	4.5	U	**1.5**	BJ	**220**	B	**2.7**	BJ	4.7	U	**8**		5.5	U	**4.4**	BJ
Trichlorofluoromethane	5	-	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U
Vinyl chloride	5	11	5.8	U	6.1	U	4.5	U	4.9	U	5.6	U	5.4	U	4.7	U	5.1	U	5.5	U	5.1	U

NOTES:

1 - Interim Clean up Levels as defined in the Explaination of Signif

CRQL - Contract Required Quantitation Limit

All values are in micrograms per liter (ug/L)

Bold - Quantitation is esimtated above the Sample-Specific Detect

Shaded - Detected concentrations exceed the Gourndwater Clean

Italic - Reporting Limit is higher than the Interim Groundwater Clea

D - Concentration is reported from a dilution of the sample.

E - Quantitation is estimated as it exceeds the calibration range of the analysis.

J - Quantitation is estimated as it is below the SSDL, but above the Project Quantitation Limit.

U - Not detected above the SSDL.

B - Analyte detected in laboratory blanks.

Table 1-7
Baseline Investigation - Groundwater - Source Area Historic Monitoring Wells
Volatile Organic Analysis Data
GROVELAND WELLS SITE SC REMEDIAL ACTION

SAMPLE_NAME			A2YS4		A2YS1		A2YS2		A2YS3		A2YS6		A2YS5		A2YS7		A2YT2		A2YS8/A2YS9		A2YT3	
SAMPLE_LOCATION			TW-9		TW-11A		TW-15		TW-18		TW-19		TW-23		TW-26		TW-30		TW-31		TW-33	
SAMPLE_DATE			30-Jun-09		30-Jun-09		29-Jun-09		30-Jun-09		30-Jun-09		30-Jun-09		30-Jun-09		1-Jul-09		30-Jun-09		1-Jul-09	
CHEMICAL_NAME	CRQL	Cleanup Levels[1]																				
1,1,1-Trichloroethane	5	200	**3.1**	J	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
1,1,2-Trichloroethane	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
1,1-Dichloroethane	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
1,1-Dichloroethene	5	7	25	U	**0.81**	JB	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
1,2,3-Trichlorobenzene	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
1,2,4-Trichlorobenzene	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
1,2-Dibromo-3-chloropropane	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
1,2-Dibromoethane	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
1,2-Dichlorobenzene	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
1,2-Dichloroethane	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
1,2-Dichloropropane	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
1,3-Dichlorobenzene	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
1,4-Dichlorobenzene	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
1,4-Dioxane	100	-	500	U	100	U	100	U	100	U	100	U	500	U	100	U	100	U	100	U	100	U
2-Butanone	10	-	50	U	10	U	10	U	10	U	10	U	50	U	10	U	10	U	10	U	10	U
2-Hexanone	10	-	50	U	10	U	10	U	10	U	10	U	50	U	10	U	10	U	10	U	10	U
4-Methyl-2-pentanone	10	-	50	U	10	U	10	U	10	U	10	U	50	U	10	U	10	U	10	U	10	U
Acetone	10	-	50	U	10	U	10	U	10	U	10	U	50	U	10	U	10	U	10	U	10	U
Benzene	5	-	25	U	5	U	**0.55**	J	5	U	5	U	25	U	**0.53**	J	5	U	**0.51**	J	5	U
Bromochloromethane	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Bromodichloromethane	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Bromoform	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Bromomethane	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Carbon Disulfide	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Carbon tetrachloride	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Chlorobenzene	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Chloroethane	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Chloroform	5	-	25	U	5	U	**0.56**	JB	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Chloromethane	5	-	25	U	5	U	**0.64**	J	5	U	5	U	25	U	5	U	5	U	5	U	5	U
cis-1,2-Dichloroethene	5	70	**340**		5	U	**17**		**1.6**	J	**20**		**160**		**8.1**		5	U	5	U	5	U
cis-1,3-Dichloropropene	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Cyclohexane	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Dibromochloromethane	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Dichlorodifluoromethane	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Ethylbenzene	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	**0.57**	J
Isopropylbenzene	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
m,p-Xylene	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	**0.56**	J
Methyl acetate	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Methyl tert-butyl ether	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Methylcyclohexane	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Methylene chloride	5	5	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
o-Xylene	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Styrene	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Tetrachloroethene	5	5	**4.8**	J	5	U	**0.59**	J	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Toluene	5	1000	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	**0.91**	J
trans-1,2-Dichloroethene	5	100	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
trans-1,3-Dichloropropene	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Trichloroethene	5	5	**380**	B	**4.5**	JB	**43**	B	**9.6**	B	**78**	B	**300**	B	**38**	B	**1**	JB	**8.7**	B	**2**	JB
Trichlorofluoromethane	5	-	25	U	5	U	5	U	5	U	5	U	25	U	5	U	5	U	5	U	5	U
Vinyl chloride	2	2	**12**		2	U	2	U	2	U	2	U	*10*	U	2	U	2	U	2	U	2	U

NOTES:
1 - Clean up Levels as defined in the Record of Decision (1988)
CRQL - Contract Required Quantitation Limit
All values are in micrograms per liter (ug/L)
Bold - Quantitation is esimtated above the Sample-Specific Detection Limit (SSDL).
Shaded - Detected concentrations exceed the Goundwater Cleanup Goals.
Italic - Reporting Limit is higher than the Groundwater Cleanup Levels.

D - Concentration is reported from a dilution of the sample.
E - Quantitation is estimated as it exceeds the calibration range of the analysis.
J - Quantitation is estimated as it is below the SSDL, but above the Project Quantitation Limit.
U - Not detected above the SSDL. SSDLs are reported from the analysis for which all detected compoundes were within calibration range
B - Analyte detected in laboratory blanks.

Table 1-7

Baseline Investigation - Groundwater - Source Area Historic Monitoring Wells

Volatile Organic Analysis Data

GROVELAND WELLS SITE SC REMEDIAL ACTION

SAMPLE_NAME			A2YT4		A2YT7		A2YT5		A2YT6		A2YT8		A2YT0	
SAMPLE_LOCATION			TW-40		TW-42		TW-43		TW-44D		TW-47		TW-48	
SAMPLE_DATE			1-Jul-09		1-Jul-09		1-Jul-09		1-Jul-09		1-Jul-09		29-Jun-09	
CHEMICAL_NAME	CRQL	Cleanup Levels[1]												
1,1,1-Trichloroethane	5	200	5	U	1000	U	100	U	5	U	5	U	5	U
1,1,2,2-Tetrachloroethane	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
1,1,2-Trichloroethane	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
1,1-Dichloroethane	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
1,1-Dichloroethene	5	7	5	U	1000	U	100	U	0.88	J	5	U	1	JB
1,2,3-Trichlorobenzene	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
1,2,4-Trichlorobenzene	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
1,2-Dibromo-3-chloropropane	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
1,2-Dibromoethane	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
1,2-Dichlorobenzene	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
1,2-Dichloroethane	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
1,2-Dichloropropane	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
1,3-Dichlorobenzene	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
1,4-Dichlorobenzene	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
1,4-Dioxane	100	-	100	U	20000	U	2000	U	100	U	100	U	100	U
2-Butanone	10	-	10	U	2000	U	200	U	10	U	10	U	10	U
2-Hexanone	10	-	10	U	2000	U	200	U	10	U	10	U	10	U
4-Methyl-2-pentanone	10	-	10	U	2000	U	200	U	10	U	10	U	10	U
Acetone	10	-	10	U	2000	U	200	U	10	U	10	U	10	U
Benzene	5	-	5	U	100	J	100	U	0.53	J	5	U	5	U
Bromochloromethane	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Bromodichloromethane	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Bromoform	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Bromomethane	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Carbon Disulfide	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Carbon tetrachloride	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Chlorobenzene	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Chloroethane	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Chloroform	5	-	5	U	110	J B	100	U	5	U	5	U	5	U
Chloromethane	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
cis-1,2-Dichloroethene	5	70	5	U	1000	U	170		200	D	1.3	J	120	
cis-1,3-Dichloropropene	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Cyclohexane	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Dibromochloromethane	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Dichlorodifluoromethane	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Ethylbenzene	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Isopropylbenzene	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
m,p-Xylene	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Methyl acetate	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Methyl tert-butyl ether	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Methylcyclohexane	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Methylene chloride	5	5	5	U	1000	U	100	U	5	U	5	U	5	U
o-Xylene	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Styrene	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Tetrachloroethene	5	5	5	U	1000	U	100	U	2.3	J	5	U	5	U
Toluene	5	1000	5	U	1000	U	100	U	5	U	0.52	J	5	U
trans-1,2-Dichloroethene	5	100	5	U	1000	U	100	U	5	U	5	U	5	U
trans-1,3-Dichloropropene	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Trichloroethene	5	5	5	U	96000	DB	18000	DB	1200	DB	8.3	B	150	B
Trichlorofluoromethane	5	-	5	U	1000	U	100	U	5	U	5	U	5	U
Vinyl chloride	2	2	2	U	400	U	40	U	2	U	2	U	3.2	

NOTES:

1 - Clean up Levels as defined in the Record of Decision (1988)

CRQL - Contract Required Quantitation Limit

All values are in micrograms per liter (ug/L).

Bold - Quantitation is esimtated above the Sample-Specific Detection Limit (SSD

Shaded - Detected concentrations exceed the Gourndwater Cleanup Goals.

Italic - Reporting Limit is higher than the Groundwater Cleanup Levels.

D - Concentration is reported from a dilution of the sample.

E - Quantitation is estimated as it exceeds the calibration range of the analysis.

J - Quantitation is estimated as it is below the SSDL, but above the Project Quantitation Limit.

U - Not detected above the SSDL.

B - Analyte detected in laboratory blanks.

Table 1-8
Baseline Investigation - Groundwater - Source Area Replacement Monitoring Wells
Volatile Organic Analysis Data
GROVELAND WELLS SITE SC REMEDIAL ACTION

SAMPLE_NAME			A2Z08	A2Z09	A2Z10	A2Z11	A2Z12/A2Z13	A2Z14	A2Z15	A2Z16	A2Z17	A2Z18	A2Z19	A2Z20
SAMPLE_LOCATION			RW-01	RW-02	RW-03	RW-04	RW-05	RW-06	RW-07	RW-07B	RW-08	RW-09	RW-10	RW-10B
SAMPLE_DATE			25-Aug-09	25-Aug-09	26-Aug-09	24-Aug-09	26-Aug-09	25-Aug-09	25-Aug-09	26-Aug-09	25-Aug-09	26-Aug-09	26-Aug-09	26-Aug-09
CHEMICAL_NAME	CRQL	Cleanup Levels[1]												
1,1,1-Trichloroethane	5	200	5 U	5 U	**4.9** J	5 U	**6.1**	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	5	-	5 U	5 U	5 U	5 U	**2.5** J	5 U	5 U	5 U	5 U	5 U	**1.2** J	5 U
1,1-Dichloroethene	5	7	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichlorobenzene	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,3-Dichlorobenzene	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,4-Dioxane	100	-	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
2-Butanone	10	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2-Hexanone	10	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Methyl-2-pentanone	10	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone	10	-	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromochloromethane	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	5	-	5 U	5 U	5 U	5 U	**1.8** J	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroethane	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloromethane	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	5	70	5 U	**3.1** J	**260** DJ	**57**	**325** D J	5 U	**37**	**4.5** J	5 U	**2.8** J	**180** D	5 U
cis-1,3-Dichloropropene	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Cyclohexane	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
m,p-Xylene	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl acetate	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methylcyclohexane	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methylene chloride	5	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
o-Xylene	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	5	5	5 U	5 U	**3.2** J	**1.1** J	**4.5** J	5 U	5 U	5 U	5 U	5 U	**1.8** J	5 U
Toluene	5	1000	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	5	100	5 U	5 U	**2.6** J	5 U	**1.8** J	5 U	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene	5	5	5 U	**15**	**11000** D	**290** D	**11000** D	5 U	**83**	**52**	**4** J	**10**	**390** D	**1.4** J
Trichlorofluoromethane	5	-	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Vinyl chloride	2	2	2 U	2 U	**4.8**	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U

NOTES:
1 - Clean up Levels as defined in the Record of Decision (1988).
CRQL - Contract Required Quantitation Limit
All values are in micrograms per liter (ug/L).
Bold - Quantitation is esimtated above the Sample-Specific Detection Limit (SSDL).
Shaded - Detected concentrations exceed the Goundwater Cleanup Goals.
Italic - Reporting Limit is higher than the Groundwater Cleanup Levels.

D - Concentration is reported from a dilution of the sample.
E - Quantitation is estimated as it exceeds the calibration range of the analysis.
J - Quantitation is estimated as it is below the SSDL, but above the Project Quantitation Limit.
U - Not detected above the SSDL.
B - Analyte detected in laboratory blanks.

ATTACHMENT 2

SITE INSPECTION CHECKLIST AND INTERVIEW RECORDS

Site Inspection Checklist

I. SITE INFORMATION	
Site name: Groveland Wells Superfund Site	**Date of inspection:** N/A
Location and Region: Groveland, MA – Region 1	**EPA ID:** MAD980732317
Agency, office, or company leading the five-year review: EPA	**Weather/temperature:** N/A

Remedy Includes: (Check all that apply)

- ☐ Landfill cover/containment
- ☐ Access controls
- ☐ Institutional controls
- ☑ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☐ Other ____________________
- ☐ Monitored natural attenuation
- ☐ Groundwater containment
- ☐ Vertical barrier walls

Attachments: ☐ Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager** Robert Ricard (Name) Treatment Plant Operator (Title) 4/28/10 (Date)
   Interviewed ☑ at site ☐ at office ☐ by phone Phone no. (978) 374-3700
   Problems, suggestions; ☐ Report attached No major problems identified by Mr. Ricard.

2. **O&M staff** ____________ (Name) ____________ (Title) ________ (Date)
   Interviewed ☐ at site ☐ at office ☐ by phone Phone no. ________
   Problems, suggestions; ☐ Report attached ____________________

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency
Contact ______________ ______ ______ ______
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached No problems identified.

Agency ______________
Contact ______________ ______ ______ ______
Name Title Date Phone no.
Problems; suggestions; ☐Report attached ______________

Agency ______________
Contact ______________ ______ ______ ______
Name Title Date Phone no.
Problems; suggestions; ☐Report attached ______________

Agency ______________
Contact ______________ ______ ______ ______
Name Title Date Phone no.
Problems; suggestions; ☐ Report attached ______________

4. **Other interviews** (optional) ☐ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**
☑ O&M manual ☑ Readily available ☑ Up to date ☐ N/A
☑ As-built drawings ☑ Readily available ☑ Up to date ☐ N/A
☑ Maintenance logs ☑ Readily available ☑ Up to date ☐ N/A
Remarks____

2. **Site-Specific Health and Safety Plan** ☑ Readily available ☑ Up to date ☐ N/A
☐ Contingency plan/emergency response plan ☑ Readily available ☐ Up to date ☐ N/A
Remarks____

3. **O&M and OSHA Training Records** ☑ Readily available ☑ Up to date ☐ N/A
Remarks____

4. **Permits and Service Agreements**
☐ Air discharge permit ☐ Readily available ☐ Up to date ☑ N/A
☐ Effluent discharge ☐ Readily available ☐ Up to date ☑ N/A
☐ Waste disposal, POTW ☐ Readily available ☐ Up to date ☑ N/A
☐ Other permits________________ ☐ Readily available ☐ Up to date ☑ N/A
Remarks____

5. **Gas Generation Records** ☐ Readily available ☐ Up to date ☑ N/A
Remarks____

6. **Settlement Monument Records** ☐ Readily available ☐ Up to date ☑ N/A
Remarks____

7. **Groundwater Monitoring Records** ☐ Readily available ☐ Up to date ☑ N/A
Remarks____

8. **Leachate Extraction Records** ☐ Readily available ☐ Up to date ☑ N/A
Remarks____

9. **Discharge Compliance Records**
☑ Air ☑ Readily available ☐ Up to date ☐ N/A
☑ Water (effluent) ☑ Readily available ☐ Up to date ☐ N/A
Remarks Permits are not specifically required under Superfund; however the facility complies with the intent of a permit. Effluent sampling is performed monthly and air sampling is performed quarterly.

10. **Daily Access/Security Logs** ☑ Readily available ☑ Up to date ☐ N/A
Remarks____

IV. O&M COSTS	
1.	**O&M Organization** ☐ State in-house ☐ Contractor for State ☐ PRP in-house ☐ Contractor for PRP ☐ Federal Facility in-house ☑ Contractor for Federal Facility ☐ Other ___
2.	**O&M Cost Records** ☐ Readily available ☐ Up to date ☐ Funding mechanism/agreement in place Original O&M cost estimate ___ ☐ Breakdown attached Total annual cost by year for review period if available From ___ (Date) To ___ (Date) ___ (Total cost) ☐ Breakdown attached From ___ (Date) To ___ (Date) ___ (Total cost) ☐ Breakdown attached From ___ (Date) To ___ (Date) ___ (Total cost) ☐ Breakdown attached From ___ (Date) To ___ (Date) ___ (Total cost) ☐ Breakdown attached From ___ (Date) To ___ (Date) ___ (Total cost) ☐ Breakdown attached
3.	**Unanticipated or Unusually High O&M Costs During Review Period** Describe costs and reasons: Mr. Ricard was not aware of any unanticipated or unusually high O&M costs during this review period (2005-2010.

V. ACCESS AND INSTITUTIONAL CONTROLS ☑ Applicable ☐ N/A	
A. Fencing	
1.	**Fencing damaged** ☐ Location shown on site map ☑ Gates secured ☐ N/A Remarks: All the fencing at the Site is in good condition. Some temporary modifications have been made for the ongoing Remedial Action.
B. Other Access Restrictions	
1.	**Signs and other security measures** ☐ Location shown on site map ☑ N/A Remarks: ___

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented ☐ Yes ☐ No ☑ N/A
Site conditions imply ICs not being fully enforced ☐ Yes ☐ No ☑N/A

Type of monitoring (*e.g.*, self-reporting, drive by) ______
Frequency ______
Responsible party/agency ______
Contact ______ ______ ______ ______
Name Title Date Phone no.

Reporting is up-to-date ☐ Yes ☐ No ☑ N/A
Reports are verified by the lead agency ☐ Yes ☐ No ☑ N/A

Specific requirements in deed or decision documents have been met ☐ Yes ☐ No ☑ N/A
Violations have been reported ☐ Yes ☐ No ☑ N/A
Other problems or suggestions: ☐ Report attached
Institutional controls for the Site are currently being prepared by EPA and Mass DEP.

2. **Adequacy** ☐ ICs are adequate ☐ ICs are inadequate ☑ N/A
Remarks ______

D. General

1. **Vandalism/trespassing** ☐ Location shown on site map ☑ No vandalism evident
Remarks ______

2. **Land use changes on site** ☑ N/A
Remarks ______

3. **Land use changes off site** ☐ N/A
Remarks There are currently no known plans for land use changes off site. The development referenced in first five year review did not take place.

VI. GENERAL SITE CONDITIONS

A. Roads ☐ Applicable ☑ N/A

1. **Roads damaged** ☐ Location shown on site map ☐ Roads adequate ☐ N/A
Remarks ______

B. Other Site Conditions
Remarks ______________________________

VII. LANDFILL COVERS ☐ Applicable ☑ N/A			
A. Landfill Surface			
1.	**Settlement** (Low spots) Areal extent______________ Remarks.______________	☐ Location shown on site map Depth______________	☐ Settlement not evident
2.	**Cracks** Lengths__________ Widths__________ Depths__________ Remarks______________	☐ Location shown on site map	☐ Cracking not evident
3.	**Erosion** Areal extent______________ Remarks______________	☐ Location shown on site map Depth______________	☐ Erosion not evident
4.	**Holes** Areal extent______________ Remarks______________	☐ Location shown on site map Depth______________	☐ Holes not evident
5.	**Vegetative Cover** ☑ Grass ☐ Trees/Shrubs (indicate size and locations on a diagram) Remarks______________	☑ Cover properly established	☐ No signs of stress
6.	**Alternative Cover (armored rock, concrete, etc.)** Remarks______________	☐N/A	
7.	**Bulges** Areal extent______________ Remarks______________	☐ Location shown on site map Height______________	☑ Bulges not evident

8.	**Wet Areas/Water Damage**	☐ Wet areas/water damage not evident	
	☐ Wet areas	☐ Location shown on site map	Areal extent______
	☐ Ponding	☐ Location shown on site map	Areal extent______
	☐ Seeps	☐ Location shown on site map	Areal extent______
	☐ Soft subgrade	☐ Location shown on site map	Areal extent______
	Remarks______		

9. **Slope Instability** ☐ Slides ☐ Location shown on site map ☐ No evidence of slope instability
Areal extent______
Remarks______

B. Benches ☐ Applicable ☐ N/A
(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

1. **Flows Bypass Bench** ☐ Location shown on site map ☐ N/A or okay
Remarks______

2. **Bench Breached** ☐ Location shown on site map ☐ N/A or okay
Remarks______

3. **Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay
Remarks______

C. Letdown Channels ☐ Applicable ☐ N/A
(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

1. **Settlement** ☐ Location shown on site map ☐ No evidence of settlement
Areal extent______ Depth______
Remarks______

2. **Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation
Material type______ Areal extent______
Remarks______

3. **Erosion** ☐ Location shown on site map ☐ No evidence of erosion
Areal extent______ Depth______
Remarks______

4.	**Undercutting**	☐ Location shown on site map	☐ No evidence of undercutting		
	Areal extent______	Depth______			
	Remarks______				
5.	**Obstructions** Type______				
	☐ No obstructions				
	☐ Location shown on site map	Areal extent______			
	Size______				
	Remarks______				
6.	**Excessive Vegetative Growth**	Type______			
	☐ No evidence of excessive growth				
	☐ Vegetation in channels does not obstruct flow				
	☐ Location shown on site map	Areal extent______			
	Remarks______				
D. Cover Penetrations	☐ Applicable ☐ N/A				
1.	**Gas Vents**	☐ Active	☑ Passive		
	☐ Properly secured/locked	☐ Functioning	☐ Routinely sampled	☐Good condition	
	☐ Evidence of leakage at penetration		☐ Needs Maintenance		
	☐ N/A				
	Remarks______				
2.	**Gas Monitoring Probes**				
	☐ Properly secured/locked	☐ Functioning	☐ Routinely sampled	☐ Good condition	
	☐ Evidence of leakage at penetration		☐ Needs Maintenance	☐ N/A	
	Remarks______				
3.	**Monitoring Wells** (within surface area of landfill)				
	☐ Properly secured/locked	☐ Functioning	☐ Routinely sampled	☐Good condition	
	☐ Evidence of leakage at penetration		☐ Needs Maintenance	☐ N/A	
	Remarks______				
4.	**Leachate Extraction Wells**				
	☐ Properly secured/locked	☐ Functioning	☐ Routinely sampled	☐ Good condition	
	☐ Evidence of leakage at penetration		☐ Needs Maintenance	☐ N/A	
	Remarks______				
5.	**Settlement Monuments**	☐ Located	☐ Routinely surveyed	☐ N/A	
	Remarks______				

E. Gas Collection and Treatment	☐ Applicable	☐ N/A	
1. **Gas Treatment Facilities** ☐ Flaring ☐ Thermal destruction ☐ Collection for reuse ☐ Good condition ☐ Needs Maintenance Remarks______________________________			
2. **Gas Collection Wells, Manifolds and Piping** ☐ Good condition ☐ Needs Maintenance Remarks______________________________			
3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings) ☐ Good condition ☐ Needs Maintenance ☐ N/A Remarks______________________________			
F. Cover Drainage Layer	☐ Applicable	☐ N/A	
1. **Outlet Pipes Inspected**	☐ Functioning	☐ N/A	
Remarks______________________________			
2. **Outlet Rock Inspected**	☐Functioning	☐ N/A	
Remarks______________________________			
G. Detention/Sedimentation Ponds	☐ Applicable	☐ N/A	
1. **Siltation** Areal extent__________	Depth__________		☐ N/A
☐ Siltation not evident Remarks______________________________			
2. **Erosion** Areal extent__________	Depth__________		
☐ Erosion not evident Remarks______________________________			
3. **Outlet Works**	☐ Functioning	☐ N/A	
Remarks______________________________			
4. **Dam**	☐ Functioning	☐ N/A	
Remarks______________________________			

H. Retaining Walls	☐ Applicable ☐ N/A
1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident Horizontal displacement____________ Vertical displacement______________ Rotational displacement____________ Remarks____	
2. **Degradation** ☐ Location shown on site map ☐ Degradation not evident Remarks____	
I. Perimeter Ditches/Off-Site Discharge	☐ Applicable ☐ N/A
1. **Siltation** ☐ Location shown on site map ☑ Siltation not evident Areal extent______________ Depth____________ Remarks____	
2. **Vegetative Growth** ☐ Location shown on site map ☐ N/A ☐ Vegetation does not impede flow Areal extent______________ Type____________ Remarks____	
3. **Erosion** ☐ Location shown on site map ☑ Erosion not evident Areal extent______________ Depth____________ Remarks____	
4. **Discharge Structure** ☐ Functioning ☐ N/A Remarks____	
VIII. VERTICAL BARRIER WALLS	☐ Applicable ☐ N/A
1. **Settlement** ☐ Location shown on site map ☐ Settlement not evident Areal extent______________ Depth____________ Remarks____	
2. **Performance Monitoring** Type of monitoring__________________________ ☐ Performance not monitored Frequency______________________________ ☐ Evidence of breaching Head differential__________________________ Remarks____	

IX. GROUNDWATER/SURFACE WATER REMEDIES ☑ Applicable ☐ N/A
A. Groundwater Extraction Wells, Pumps, and Pipelines ☑ Applicable ☐ N/A
1. **Pumps, Wellhead Plumbing, and Electrical** ☑ Good condition ☑ All wells properly operating ☐ Needs maintenance ☐ N/A Remarks Occasional maintenance of the pneumatic submersible pumps in EW-M3 and EW-S5 is required to keep them operational.
2. Extraction System Pipelines, Valves, Valve Boxes, and other Appurtenances ☑ Good condition ☐ Needs maintenance Remarks There are occasional problems with the leak detection system in the piping that goes to the lower well field due to condensation during summer months and flooding events. There is ongoing change out of corroded stainless steel pipes in the treatment plant. The corroded stainless steel pipes are being replaced with PVC pipes.
3. Spare Parts and Equipment ☑ Good condition ☑ All wells properly operating ☐ Needs maintenance ☐ N/A Remarks
B. Surface Water Extraction Wells, Pumps, and Pipelines ☐ Applicable ☑ N/A
1. Collection Structures, Pumps, and Electrical ☐ Good condition ☐ All wells properly operating ☐ Needs maintenance ☐ N/A Remarks
2. Surface Water Collection System Pipelines, Valves, Valve Boxes, and other Appurtenances ☐ Good condition ☐ Needs maintenance Remarks
3. Spare Parts and Equipment ☐ Good condition ☐ All wells properly operating ☐ Needs maintenance ☐ N/A Remarks
C. Treatment System ☐ Applicable ☐ N/A

1.	**Treatment Train** (Check components that apply) ☑ Metals removal ☐ Oil/water separation ☐ Bioremediation ☐ Air stripping ☑ Carbon adsorbers ☑ Filters Multi-media quartz sand filters ☑ Additive (*e.g.*, chelation agent, flocculent) Polymer ☑ Others UV Oxidation System ☑ Good condition ☐ Needs Maintenance ☑ Sampling ports properly marked and functional ☑ Sampling/maintenance log displayed and up to date ☑ Equipment properly identified ☑ Quantity of groundwater treated annually: Approximately 36 billion gallons ☐ Quantity of surface water treated annually Remarks Treatment volumes vary based on extraction wells operation and maintenance. Some wells have been turned off and on periodically in an effort to optimize the efficiency of the treatment system.
2.	**Electrical Enclosures and Panels** (properly rated and functional) ☐ N/A ☑ Good condition ☐ Needs Maintenance Remarks
3.	**Tanks, Vaults, Storage Vessels** ☐ N/A ☑ Good condition ☐ Proper secondary containment ☐ Needs Maintenance Remarks
4.	**Discharge Structure and Appurtenances** ☐ N/A ☑ Good condition ☐ Needs Maintenance Remarks
5.	**Treatment Building(s)** ☐ N/A ☑ Good condition (esp. roof and doorways) ☐ Needs repair ☑ Chemicals and equipment properly stored Remarks
6.	**Monitoring Wells** (pump and treatment remedy) ☑ Properly secured/locked ☑ Functioning ☑ Routinely sampled ☑ Good condition ☑ All required wells located ☐ Needs Maintenance ☐ N/A Remarks The monitoring wells were recently upgraded with new locks.
D. Monitoring Data	
1.	Monitoring Data ☑ Is routinely submitted on time ☑ Is of acceptable quality
2.	Monitoring data suggests: ☑ Groundwater plume is effectively contained ☑ Contaminant concentrations are declining Remarks

E. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs Maintenance ☑ N/A
Remarks____

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).
The remedy is functioning as designed and based on available data, has been effective in treating contaminated groundwater and containing the plume. The overall plume size has decreased since treatment system startup 10 years ago.

B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.
No issues noted during this inspection. O&M procedures are sufficient to maintain the long term protectiveness of the remedy. Following the completion of the source area Remedial Action, the overall site cleanup time should be reduced.

C.	Early Indicators of Potential Remedy Problems
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future. There are currently no O&M issues that would compromise the overall protectiveness of the rememedy.

D.	Opportunities for Optimization
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. The source area remedial action is currently under construction. The source area remedial action is anticipated to decrease the overall site cleanup time. After the source area remedial action is complete additional optimization studies of the remedy should be performed to maximize both costs and efficiencies.

INTERVIEW RECORD

Site Name: Groveland Wells Superfund Site		**EPA ID No.: MAD980732317**	
Subject: Second Five-Year Review (2010)		**Time: 1000**	**Date: 4/28/10**
Type: ☐ Telephone ☒ Visit ☐ Other **Location of Visit:**		☐ Incoming	☒ Outgoing

Contact Made By:

Name: Adam Roy	**Title:** Project Scientist	**Organization:** Nobis Eng., Inc.

Individual Contacted:

Name: Robert Ricard	**Title: Treatment Plant Operator**	**Organization:** Weston Solutions

Telephone No: 978-374-3700 **E-Mail Address:** Bob.Ricard@WestonSolutions.com	**Street Address: 62 Washington Street** **City, State, Zip: Groveland, MA 01853**

Summary Of Conversation

Q1: What is your overall impression of the project and site?
A1: Treatment plant is operating as designed. Overall the project has gone efficiently and EPA has done a good job notifying the abutting neighbors.

Q2: Are you aware of any issues the five-year review should focus on?
A2: No.

Q3: Is the remedy functioning as expected?
A3: Yes.

Q4: Has there been any significant changes and/or optimization of the O&M in the last 5 years?
A4: Extraction wells have been shut down over in the last 5 years to limit electrical use and maintenance issues. Replace pneumatic piston pumps in M3 and S5 with pneumatic submersible pumps that greatly decreased O and M with these wells. Put in wireless communications in the well field to decrease the problems associated with lightning strikes. Has greatly increased communication efficiency. Installed a bypass around the clarifier (date unknown). This was done to help eliminated corrosion problems in the clarifier. Swapped the pump in M2 and installed it in S4 to increase flow and contaminant capture. Upgraded the PC in the computer lab.

Q5:Have there been unexpected O&M difficulties or costs at the Site in the last 5 years?
A5: No major incidents or unanticipated O&M of the plant. There was a washout due to flooding at the lower well field during spring 2006 that required rebuilding of the road.

Q6: Is the Town actively involved in the site?
A6: Yes. The town water department checks the back flow preventers at the site on a bi-annual basis. Also the town fire department and police department are primary emergency contacts.

Q7: Have there been any changes in the site or surrounding property in the last 5 years, or are changes planned?
A7: Not aware of any changes.

Q8: Are you aware of any changes in the state and federal groundwater quality standards, effluent discharge standards, etc., since 2005?
A8: No.

Q9: Do you have any comments, suggestions, or recommendations regarding the project?
A9: Consider replacing all the piping coming into the multimedia filters with PVC piping. Possibly consider going to lower power setting on the UV bulbs and save on electrical costs.

INTERVIEW RECORD		
Site Name: Groveland Wells Superfund Site	**EPA ID No.: MAD980732317**	
Subject: Second Five Year Review (2010)	**Time:**	**Date:** 5/18/10
Type: ☐ Telephone ☒ Visit ☐ Other **Location of Visit:**	☐ Incoming	☐ Outgoing

Contact Made By:		
Name: Adam Roy	**Title:** Project Scientist	**Organization:** Nobis Eng., Inc.

Individual Contacted:		
Name: Deborah Young	**Title:** Home owner and abutter	**Organization:** NA
Telephone No: 978-374-4006 **Fax No:** **E-Mail Address:**	**Street Address: 106 Center Street** **City, State, Zip:** Groveland, MA 01843	

Summary Of Conversation

Q1: What is your overall impression of the project and site?
A1: It has been well managed and the workers are always willing to address any concerns.

Q2: Are you aware of any community concerns regarding the site or its operation and administration? If so, please give details.
A2: No.

Q3: Besides yourself, if there anyone else in the community that Nobis Engineering, Inc. should speak to solicit additional input?
A3: The Selectman's Office.

Q4: Do you feel that information related to the site is readily available?
A4: Yes.

Q5: What effects have site operations had on the surrounding community?
A5: The community is well informed of the importance of protecting the water supply with all the new businesses.

Q6: Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please give details.
A6: No.

Q7: Are you aware of any changes in the site or surrounding property in the last 5 years, or of any planned changes?
A7: No.

Q8: Do you feel well informed about the site's activities and progress?
A8: Yes, I have always been informed on any changes.

Q9: Do you have any comments, suggestions, or recommendations regarding the site's management or operation?
A10: I appreciate the courtesy shown to me as an abutter.

INTERVIEW RECORD			
Site Name: Groveland Wells Superfund Site		**EPA ID No.: MAD980732317**	
Subject: Second Five-Year Review (2010)		**Time:**	**Date:**
Type: ☒ Telephone ☐ Visit ☐ Other **Location of Visit:**		☐ Incoming	☒ Outgoing
Contact Made By:			
Name: Adam Roy	**Title:** Project Scientist	**Organization:** Nobis Engineering, Inc.	
Individual Contacted:			
Name: Edward Gallagher	**Title:** Health Agent	**Organization:** Groveland Board of Health	
Telephone No: 978-469-5004 **Fax No:** **E-Mail Address:**		**Street Address: 183 Main Street** **City, State, Zip: Groveland, MA 01834**	
Summary Of Conversation			

Q1: What is your overall impression of the project and site?
A1: Ok

Q2: Are you aware of any issues the five-year review should focus on?
A2: No

Q3: Besides yourself, if there anyone else in the community or Town official that Nobis Engineering, Inc. should speak with to solicit additional input?
A3: No

Q4: : Do you feel that information related to the site is readily available?
A4: Yes

Q5: Is approval required from the Town prior to installing a private water supply well?
A5: Yes

Q6 What, if any restrictions are there for installation of private wells and use of water from private wells? Are there any sampling or monitoring requirements?
A6: All wells are private and agricultural wells are tested privately.

Q7: We would like to determine whether any private water supply wells are located on the residential properties downgradient of the site - north of Mill Pond and south of Main Street (particularly the residence immediately north of the DPW property [Map 33 Lot 7A] and the two residences north of that one [Map 33 Block 1]). Can you provide this information? If wells are located on these properties, do you know how they are used?
A7: We do not have that information at this time.

INTERVIEW RECORD		
Site Name: Groveland Wells Superfund Site	**EPA ID No.:** MAD980732317	
Subject: Second Five-Year Review (2010)	**Time:**	**Date:** 5/7/2010
Type: ☒ Telephone ☐ Visit ☐ Other **Location of Visit:**	☐ Incoming	☒ Outgoing

Contact Made By:		
Name: Adam Roy	**Title:** Project Scientist	**Organization:** Nobis Eng., Inc.

Individual Contacted:		
Name: Janet Waldron	**Title: Remedial Project Manager**	**Organization:** Massachusetts Department of Environmental Protection

Telephone No: 617-556-1156 **Fax No:** 617-292-5530 **E-Mail Address:** Janet.Waldron@State.MA.US	**Street Address:** One Winter Street **City, State, Zip:** Boston, MA 02108

Summary Of Conversation

Q1: What is your overall impression of the project and site?
A1: Overall the project is good.

Q2: Are you aware of any issues the five-year review should focus on?
A2: No specific issues.

Q3: Is the remedy functioning as expected?
A3: OU1 seems to be functioning as expected. OU2 the first SVE system failed. The new thermally enhanced SVE system is currently being installed. Follow up sampling will determine the effectiveness of the OU2 remedy.

Q4: Do you feel that information related to the site is readily available?
A4: Generally speaking yes. However, MassDEP does not see project cost in detail. Since MassDEP is paying 10% of the costs she would like to see more cost details and data.

Q5: Are you aware of any changes in the state ARARs, groundwater quality standards, etc., since 2005?
A5: No.

Q6: Are you aware of any changes in the Site or surrounding property in the last 5 years, or whether any changes are planned?
A6: Nothing new. Janet mentioned that the Town had discussed increasing the well flow rate at Station No. 1, she wasn't sure the status of that proposed increase. Janet also stated that she heard the town had placed a lean on the Valley property.

Q7: Do you have any comments, suggestions, or recommendations regarding the project?
A7: Janet mentioned that she had not seen any plans for studying the extraction well network in the source area following the completion of the OU2 remedial action. She feels that if new extraction wells can be installed to better optimize the treatment system, than it should be done before MassDEP takes over O&M of the treatment system in June of 2011.
Janet also requested editable (i.e. Microsoft Word) documents to use as templates for O&M reports.
Janet inquired about the status of the O&M Manual.

INTERVIEW RECORD			
Site Name: Groveland Wells Superfund Site		**EPA ID No.: MAD980732317**	
Subject: Second Five-Year Review (2010)		**Time:**	**Date:**
Type: ☒ Telephone ☐ Visit ☐ Other **Location of Visit:**		☐ Incoming	☒ Outgoing
Contact Made By:			
Name: Adam Roy	**Title:** Project Scientist	**Organization:** Nobis Engineering, Inc.	
Individual Contacted:			
Name: Thomas Cusick, Jr.	**Title:** Superintendent	**Organization:** Groveland Water and Sewer Department	
Telephone No: 978-556-7200 Ext. 219 **Fax No:** 978-373-6147 **E-Mail Address:** Tcusick@grovelandma.com		**Street Address: 183 Main Street** **City, State, Zip: Groveland, MA 01843**	

Summary Of Conversation

Q1: What is your overall impression of the project and site?
A1: Operations are top notch, informative, and helpful.

Q2: Are you aware of any issues the five-year review should focus on?
A2: Assess the impacts of increasing pumping rate from Station No. 1.

Q3: Whom should Nobis Engineering, Inc. speak to in the community to solicit local input?
A3: Ed Gallagher from the health department.

Q4: Do you feel that information related to the site is readily available?
A4:Yes.

Q5: Have there been any changes in the operation of Municipal Well Station 1 since 2005? Are there any plans to increase the pumping rate of Well Station 1?
A5: Looking to revamp the whole site area around Station No. 1. Town is looking to get ownership of the building. Includes increasing the flow from No. 1, and possibly adding another well located off Center Street and treating everything at Station No. 1.

Q6: Are you aware of any pending or future water needs or any change in water usage in the area?
A6: Increasing public water supply well flows to account for increasing town population.

Q7: Do you still regularly sample sentinel wells upgradient of Station 1? Have all results been below MCLs/MCLGs?
A7: The town regularly samples wells 109 and #3 and Station 1. No exceedences of VOCs in any of them.

Q8: Could you please clarify the status of Well Station 2 (i.e. Has it been permanently decommissioned? Was it shut down because of contamination issues or other water quality problems?)
A8 Station No. 2 has been permanently decommissioned.

Q9: The Groveland Water Department previously requested and was granted permission to use the building that housed the former carbon treatment system for other purposes. What is the status of the building's use? Was the old equipment properly disposed of or scrapped.
A9: The town is still waiting for written permission from EPA to use the building. The town has tested the carbon and been in contact with Calgon Carbon to recycle the carbon. The town is currently working with an engineer on redevelopment of that area.

Q10: Do you know whether there have there been any changes in the Site or downgradient property in the last 5 years, or whether changes are planned?
A10: There was a proposed housing development in the back 40 acre sand pit area, but that has fallen through. The town of Groveland may be interested in purchasing the property for municipal use (i.e. public water supply well, extending municipal sewer service to residents, etc.).

Q11: Are you aware of any changes in the state drinking water quality standards or requirements since 2005 that would change the Site groundwater cleanup requirements?
A11: Last know change was in the manganese standard.

Q12: We would like to verify that the residences downgradient of the site - north of Mill Pond and south of Main Street, are connected to the Municipal Water Supply System (particularly the residence immediately north of the DPW property [Map 33 Lot 7A] and the two residences north of that one [Map 33 Block 1]). Can you provide this information?
A12: They are on municipal water.

ATTACHMENT 3

SUMMARY OF ARARs

Attachment 3 - Table 1
Current Numerical Standards for Groundwater COPCs
Groveland Wells Site
Groveland, Massachusetts

Contaminants Of Potential Concern (COPC)[1]	Federal Drinking Water Stds (SDWA)[2] MCL (mg/L)	Federal Drinking Water Stds (SDWA)[2] MCLG (mg/L)	Massachusetts Drinking Water Stds[3] (mg/L)	Massachusetts Drinking Water Guidelines[4] (mg/L)	RCRA MCL[5] (mg/L)
Organic Compounds					
Acetone	--	--	--	6.3	--
Benzene	0.005	0	0.005	--	--
Chlorobenzene	0.1	0.1	0.1	--	--
1,1-Dichloroethane	--	--	--	0.07	
1,2-Dichloroethane	0.005	0	0.005	--	--
1,1-Dichloroethene	0.007	0.007	0.007	--	--
cis-1,2-Dichloroethene	0.07	0.07	0.07	--	
trans-1,2-Dichloroethene	0.1	0.1	0.1	--	
Methylene chloride	0.005	0	0.005	--	--
Tetrachloroethene	0.005	0	0.005	--	--
Toluene	1	1	1	--	--
1,1,1-Trichloroethane	0.2	0.2	0.2	--	
Trichloroethene	0.005	0	0.005	--	--
Vinyl chloride	0.002	0	0.002	--	--
Inorganic Compounds					
Arsenic	0.01[7]	0	0.01[7]	--	0.05
Barium	2	2	2	--	
Berrylium	0.004	0.004	0.004	--	
Cadmium	0.005	0.005	0.005	--	0.01
Chromium (total)	0.1	0.1	0.1	--	0.05
Mercury (inorganic)	0.002	0.002	0.002	--	0.002
Selenium	0.05	0.05	0.05	--	
Silver	0.1	0.1	0.1	--	
Vanadium	--	--	--	--	
Other Chemicals[8]					
Antimony	0.006	0.006	0.006	--	--
Lead	TT[9]	0	TT[9]	--	0.05
Nickel	--	--	--	0.1	--

Notes:

MCL - Maximum Contaminant Level
MCLG - Maximum Contaminant Level Goal

1. Contaminants of potential concern (COPCs) are those listed in Table 23 of the Management of Migration Operable Unit ROD (1991).
2. National Recommended Water Quality Criteria, 2009. Office of Water (4304T). www.epa.gov/waterscience/criteria/wqctable.
3. Massachusetts Drinking Water Regulations, 310 CMR 22.00, Massachusetts Maximum Contaminant Level (MMCL), last promulgated Spring 2009.
4. Massachusetts Department of Environmental Protection, Office of Research and Standards, Drinking Water Guidelines (ORSGs) Spring 2009. Guidance for contaminants that do not have MMCLs.
5. Federal Resource Conservation and Recovery Act (RCRA) Maximum Concentration of Constituents for Groundwater Protection, 40 CFR 264.94, Table 1. RCRA sets the limits for organic contaminants at background levels.
7. The MCL and MMCL for arsenic were changed and became effective at 0.01 mg/L as of January 2006.
8. Analytes detected in groundwater
9. TT: Treatment technique. Lead and copper are regulated by a Treatment Technique that requires systems to control the corrosiveness of their water. If more than 10% of tap water samples exceed the action level, water systems must take additional steps. For copper the action level is 1.3 mg/L and for lead it is 0.015 mg/L.

Table SC-1
Chemical-Specific ARARs
Groveland Wells Site: OU2 - Source Control
Groveland, Massachusetts

Medium/Authority	Requirement/ Citation	ROD Status	ROD Requirement Synopsis	Consideration in the RI/FS and Remedy	Five-Year Review
Groundwater					
Federal Regulatory Requirements	SDWA - Maximum Contaminant Levels (MCLs) (49 CFR 141.1-141.16)	Relevant and Appropriate	MCLs have been promulgated for a number of common organic and inorganic contaminants. These levels regulate the concentrations of contaminants in public drinking water supplies, and may also be considered relevant and appropriate for groundwater aquifers potentially used for drinking water.	Used to evaluate risks to human health due to consumption of groundwater with contaminants of concern. MCLs were used to set clean-up levels in groundwater for these contaminants. MCLs were also used indirectly to set cleanup levels for soil to prevent leaching of contaminants to groundwater at levels that would exceed MCLs. Some MCLs have changed since completion of the RODs in 1988 and 1991. Current MCLs/MCLGs are provided in Attachment 6 - Table 1.	The Site is located within the Zone II recharge area for Groveland municipal well No. 1 – an active water supply well, which has operated without VOC treatment since 1994. The extent of the groundwater contaminant plume has decreased since the MOM RA began operation in 2000; however portions of the plume still exceed MCLs. Groundwater extraction and treatment is ongoing under the MOM RA. The ISTT SC RA is expected to achieve interim cleanup levels in Source Area soil and groundwater by the end of 2010, which will significantly decrease the time needed to achieve MCLs in downgradient portions of the plume.
Massachusetts Regulatory Requirements and Standards	Massachusetts Groundwater Discharge Permit Program (314 CMR 5.00)	Applicable: **Not ARAR for MOM RA; Applicable for SC RA**	Regulations for groundwater discharge established to meet Massachusetts Groundwater Quality Standards.	Discharges to this Class I aquifer must meet levels set at MCLs.	These regulations are not ARAR for the MOM RA because treated groundwater from the MOM RA is discharged to surface water (Mill Pond) instead of to groundwater as initially conceived. The SC RA will include discharge of treated groundwater back into the ISTT treatment area; however the. treated water will meet MCLs as required by these regulations. Additionally, the treatment/ injection area will be operated with complete hydraulic containment, verified by continuous monitoring.

Table SC-1
Chemical-Specific ARARs
Groveland Wells Site: OU2 - Source Control
Groveland, Massachusetts

Medium/Authority	Requirement/ Citation	ROD Status	ROD Requirement Synopsis	Consideration in the RI/FS and Remedy	Five-Year Review
Massachusetts Regulatory Requirements and Standards (cont.)	Massachusetts Groundwater Quality Standards (314 CMR 6.00)	Applicable: **Now No Longer ARAR – Regulation Rescinded March 2009**	Massachusetts Groundwater Quality Standards were promulgated for many contaminants. Massachusetts standards were used when more stringent than Federal levels.	The Massachusetts Groundwater Standards for iron and manganese were the only Commonwealth standards more stringent than federal standards.	These standards were used to establish discharge limits for discharge to groundwater. Revisions to 314 CMR 5.0 in March 2009 eliminated the need for this regulation. Neither regulation is an ARAR for the MOM RA.
	Massachusetts Drinking Water Standards (310 CMR 22.00)	Relevant and Appropriate	Massachusetts adopted MCLs as its drinking water standards to regulate the concentration of contaminants in public drinking water supplies.	DEQE (now MassDEP) drinking water standards are the same as MCLs. These standards were used to set groundwater clean-up levels for contaminants of concern. MCLs were also used indirectly to set cleanup levels for soil to prevent leaching of contaminants to groundwater at levels that would exceed MCLs. Some MCLs have changed since completion of the RODs in 1988 and 1991. Current MCLs/MCLGs are provided in Attachment 6 - Table 1.	The Site is located within the Zone II recharge area for Groveland municipal well No. 1 – an active water supply well, which has operated without VOC treatment since 1994. Groundwater extraction and treatment is ongoing under the MOM RA. The ISTT SC RA is expected to achieve interim cleanup levels in Source Area soil and groundwater by the end of 2010, which will significantly decrease the time needed to achieve MCLs in downgradient portions of the plume.

Table SC-1
Chemical-Specific ARARs
Groveland Wells Site: OU2 - Source Control
Groveland, Massachusetts

Medium/Authority	Requirement/ Citation	ROD Status	ROD Requirement Synopsis	Consideration in the RI/FS and Remedy	Five-Year Review
Air					
Federal Regulatory Requirements	CAA - State Implementation Plans - 40 CFR 52	Relevant and Appropriate **Now Not ARAR –**	These federally-approved Commonwealth standards were primarily developed to regulate stack (point source) automobile-related pollutants, and volatile organic compounds (VOCs).	Standards for particulate matter and VOCs to be used when assessing excavation and emission controls for soil and groundwater treatment.	This part sets procedures for EPA approval and disapproval of State plans to achieve NAAQS. The requirements relevant and appropriate to the Site RAs are addressed by ARARS 40 CFR 50 and 310 CMR 6.0.
	CAA - National Ambient Air Quality Standards (NAAQS) (40 CFR 50).	Relevant and Appropriate	The standards were developed to protect human health and welfare, by establishing primary and secondary concentrations for certain pollutants, including suspended particulate matter.	Air quality standards will be used to assess the off-site impact of remedial activities.	This ARAR was complied with during remedial construction by using dust suppression when needed to control fugitive dust emission. Dust suppressants will be used as needed during demobilization of the SC RA ISTT system to comply with this ARAR. RA operation and maintenance are not expected to result in the generation of any of the six regulated pollutants. VOCs are not regulated by these standards.
Massachusetts Regulatory Requirements	Massachusetts Air Pollution Control Emission Standards (310 CMR 7.00)	Relevant and Appropriate	These standards were primarily developed to regulate stack (point-source) automobile-related pollutants, and volatile organic compounds (VOCs).	Alternatives involving excavation and emission controls for soil and groundwater treatment would be regulated. Best available control technology would be required for VOCs.	This ARAR was complied with during remedial construction and continues to be complied with at the groundwater treatment plant, where VOC emissions are controlled using Granular Activated Carbon (GAC). The ISTT SC RA will comply with this ARAR by using GAC to control VOC emissions.

Table SC-1
Chemical-Specific ARARs
Groveland Wells Site: OU2 - Source Control
Groveland, Massachusetts

Medium/Authority	Requirement/ Citation	ROD Status	ROD Requirement Synopsis	Consideration in the RI/FS and Remedy	Five-Year Review
Massachusetts Regulatory Requirements (cont.)	Massachusetts Ambient Air Quality Standards (310 CMR 6.00)	Relevant and Appropriate	These standards were developed to protect human health and welfare, by establishing primary and secondary concentrations for certain pollutants, including suspended particulate matter.	Air quality standards will be used to assess the off-site impact of remedial activities.	This ARAR was complied with during remedial construction by using dust suppression when needed to control fugitive dust emission. Dust suppressants will be used as needed during demobilization of the SC RA ISTT system to comply with this ARAR. RA operation and maintenance are not expected to result in the generation of any of the six regulated pollutants. VOCs are not regulated by these standards.
Federal Criteria, Advisories, and Guidance	Threshold Limit Values (TLVs)	Relevant and Appropriate: **Now No Longer ARAR** but remains To Be Considered	These standards were issued as consensus standards for controlling air quality in work place environments.	TLVs could be used for assessing site inhalation risks for workers during remedial action operations.	This guidance was considered during MOM remedial construction and continues to be considered at the groundwater treatment plant, where VOC emissions are controlled using Granular Activated Carbon. TLVs will be considered for worker protection during SC RA construction and operation.

Table SC-2
Action-Specific ARARs
Groveland Wells Site: OU2 - Source Control
Groveland, Massachusetts

Medium/ Authority	Requirement/ Citation	ROD Status	ROD Requirement Synopsis	Consideration in RI/FS and Remedy	Five-Year Review
Federal Regulatory Requirements	RCRA - Standards for Owners and Operators of Permitted Hazardous Waste Facilities (Subpart B, General Facility Standards, 40 CFR 264.10 - 264.19)	Relevant and Appropriate	General facility requirements outline general waste analysis, security measures, inspections, and training requirements.	Any facilities will be constructed, fenced, posted, and operated in accordance with this requirement. All workers will be properly trained. Process wastes will be evaluated for the characteristics of hazardous wastes to assess further handling requirements.	The General Facility Standards do not apply to "remediation waste management sites" according to 40 CFR 264.1(j), but this section provides alternative requirements for such sites regarding waste analysis, security, inspections, and training. The substantive aspects of these alternative requirements are complied with at the groundwater treatment plant, and will be complied with during implementation of the SC RA.
	RCRA - Preparedness and Prevention (40 CFR 264.30 - 264.37)	Relevant and Appropriate	This regulation outlines requirements for safety equipment and spill control.	Safety and communication equipment will be installed at the Site; local authorities will be familiarized with Site operations.	The Preparedness and Prevention Standards do not apply to "remediation waste management sites" according to 40 CFR 264.1(j), but this section provides alternative requirements for such sites in 40 CFR 264.1(j)(6) and (j)(10) to take precautions to prevent accidental ignition or reaction of ignitable or reactive waste, and prevent threats to human health and the environment from such wastes. The substantive aspects of these alternative requirements are complied with at the groundwater treatment plant, and will be complied with during implementation of the SC RA.

Medium/ Authority	Requirement/ Citation	ROD Status	ROD Requirement Synopsis	Consideration in RI/FS and Remedy	Five-Year Review
	RCRA - Contingency Plan and Emergency Procedures (40 CFR 264.50 - 264.56)	Relevant and Appropriate	This regulation outlines the requirements for emergency procedures to be used following explosions, fires, etc.	Plans will be developed and implemented during Site work including installation of monitoring wells, and implementation of Site remedies. Copies of the plans will be kept on-site.	The Contingency Plan and Emergency Procedures Standards do not apply to "remediation waste management sites" according to 40 CFR 264.1(j), but this section provides an alternative requirement for such sites in 40 CFR 264.1(j)(10) to prevent accidents and develop a contingency and emergency plan. The substantive aspects of these alternative requirements are complied with at the groundwater treatment plant, and will be complied with during implementation of the SC RA.
	RCRA - Manifesting, Recordkeeping, and Reporting (40 CFR 264.70 - 264.77)	Relevant and Appropriate	This regulation specifies the recordkeeping and reporting requirements for RCRA facilities.	Records of facility activities will be developed and maintained during remedial actions.	Records are maintained for the groundwater treatment plant. Record will be maintained throughout construction and implementation of the SC RA.
	RCRA - Releases from Solid Waste Management Units (40 CFR 264.90 - 264.101)	Relevant and Appropriate	This regulation details requirements for a corrective action groundwater monitoring program.	A groundwater monitoring program is a component of all alternatives. RCRA regulations will be utilized as guidance during development of this program.	A groundwater monitoring program has been established for the Site and will remain in effect during operation of the groundwater treatment plant and during and following completion of the SC RA to determine the effectiveness of the Remedial Actions.
	RCRA - Closure and Post-Closure (40 CFR 265.110 - 265.120)	Relevant and Appropriate	This regulation details specific requirements for closure and post-closure of interim status hazardous waste facilities.	Those parts of the regulation concerned with long-term monitoring and maintenance of the Site will be considered during remedial design. Remedial action will comply with regulations for closure of storage facility.	Closure of the groundwater treatment plant and closure and demobilization of the ISTT SC RA will be performed in accordance with the substantive requirements of this subpart, such as those regarding disposal or decontamination of equipment.

Medium/ Authority	Requirement/ Citation	ROD Status	ROD Requirement Synopsis	Consideration in RI/FS and Remedy	Five-Year Review
	RCRA - Land Disposal Restrictions (40 CFR 268)	Applicable for Off-Site Disposal Only	This regulation outlines land disposal requirements and restrictions for hazardous wastes.	Contaminated soils will be treated to the Best-Demonstrated-Available-Technology (BDAT) levels before being placed or replaced on the land. Hazardous waste cannot be stored except for accumulation for recovery, treatment, or disposal.	Remedial actions have not and will not include the on-site treatment of soil and replacement back on the site; the SC RA includes in-situ treatment of soil. Wastes from the MOM and SC RAs removed from the Site for off-site disposal are subject to the LDR treatment standards.
	RCRA - Surface Impoundments (40 CFR 264.220 - 264.232)	Relevant and AppropriateN **OW No Longer ARAR**	This regulation details the design, construction, operation, monitoring, inspection, and contingency plans for a RCRA surface impoundment. It also provides three closure options for CERCLA sites; clean closure, containment closure, and alternate closure.	To comply with clean closure, the owner must remove or decontaminate all waste. To comply with containment closure, the owner must eliminate free liquid, stabilize remaining water, and cover impoundment with a cover that complies with the regulation. Cover integrity must be maintained, the groundwater system monitored, and runoff controlled. To comply with alternative closure, the owner must eliminate all pathways of exposure to contaminants and provide long-term monitoring.	This regulation is no longer applicable because no surface impoundments were constructed or operated at the site, and none are planned.
	RCRA - Landfills (40 CFR 264.300 - 264.339)	Applicable for Off-Site Disposal	This regulation details the design, operation, monitoring, inspection, recordkeeping, closure, and permit requirements for a RCRA landfill.	Disposal of contaminated materials from the Valley Site must be to a RCRA-permitted facility that complies with all RCRA landfill regulations.	This regulation does not apply to the site itself because no on-site landfill exists or is planned. Disposal of remediation wastes from the site is performed in accordance with RCRA hazardous waste requirements for any wastes that are characterized as RCRA hazardous wastes.

Medium/ Authority	Requirement/ Citation	ROD Status	ROD Requirement Synopsis	Consideration in RI/FS and Remedy	Five-Year Review
	RCRA - National RCRA Corrective Action Strategy (51 Federal Register 37608)	To Be Considered	This regulation requires a corrective action program to prevent the release of hazardous constituents, through removal or treatment.	To-be-considered in the removal of subsurface disposal systems.	This regulation is not ARAR, but was To Be Considered during remedial construction.
	CAA - NAAQS for Total Suspended Particulates (40 CFR 50)	Relevant and Appropriate	This standard specifies maximum primary and secondary 24-hour concentrations for particulate matter.	Fugitive dust emissions from Site excavation activities will be maintained below 260 ug/m^3 (primary standard) by dust suppressants, if necessary.	This ARAR was complied with during MOM remedial construction and removal of Source Area USTs by using dust suppression when needed to control fugitive dust emissions. It will be complied with in the same manner during SC remedial construction and demobilization of the ISTT system. The current standard relevant for dust emissions (particulate matter smaller than 10 micrometers in diameter) is 150 ug/m^3.
	OSHA - General Industry Standards (29 CFR Part 1910)	Applicable / **NOW No Longer ARAR**, but remains To Be Considered	These regulations specify the 8 hour time weighted average concentration for various organic compounds. Training requirements for workers at hazardous waste operations are specified in 29 CFR 1919.120.	Proper respiratory equipment will be worn, if it is impossible to maintain the work atmosphere below the concentrations. Workers performing remedial activities would be required to complete specified training.	OSHA worker protection standards are no longer considered ARAR for CERCLA response actions, but are To Be Considered. All remedial construction and operation and maintenance activities at the site have been and will be performed in conformance with OSHA worker protection standards.

Table SC-2
Action-Specific ARARs
Groveland Wells Site: OU2 - Source Control
Groveland, Massachusetts

Medium/ Authority	Requirement/ Citation	ROD Status	ROD Requirement Synopsis	Consideration in RI/FS and Remedy	Five-Year Review
	OSHA - Safety and Health Standards (29 CFR Part 1926)	Applicable / **NOW No Longer ARAR**, but remains To Be Considered	This regulation specifies the type of safety equipment and procedures to be followed during Site remediation.	All appropriate safety equipment will be on-site. In addition, safety procedures will be followed during on-site activities.	OSHA worker protection standards are no longer considered ARAR for CERCLA response actions, but are To Be Considered. All remedial construction and operation and maintenance activities at the site have been and will be performed in conformance with OSHA worker protection standards.
	OSHA - Recordkeeping, Reporting, and Related Regulations (29 CFR 1904)	Applicable / **NOW No Longer ARAR**, but remains To Be Considered	This regulation outlines the recordkeeping and reporting requirements for an employer under OSHA.	These requirements apply to all Site contractors and subcontractors and must be followed during all site work.	OSHA worker protection standards are no longer considered ARAR for CERCLA response actions, but are To Be Considered. All remedial construction and operation and maintenance activities at the site have been and will be performed in conformance with OSHA worker protection standards.
	DOT Rules for Transportation of Hazardous Materials (49 CFR Parts 107, 171.1 - 171.5)	Applicable / **NOW No Longer ARAR**	This regulation outlines procedures for the packaging, labeling, manifesting, and transporting of hazardous materials.	Contaminated materials will be packaged, manifested, and transported to a licensed off-site disposal facility in compliance with these regulations.	DOT requirements are no longer considered ARAR for CERCLA response actions. Transport of treatment residuals and chemicals to/from the Site is performed in compliance with DOT Rules.
	U.S. EPA Groundwater Protection Strategy - U.S. EPA Policy Statement (August, 1984)	Applicable / **NOW No Longer ARAR**, but remains To Be Considered	This strategy identifies the desired groundwater quality to be achieved during and upon completion of remedial actions. Strategy is based on aquifer characteristics and use.	To-be-considered in establishing site-specific remedial response objectives.	This policy is not ARAR but remains To Be Considered. The policy was considered during remedial planning and identification of interim cleanup levels for both the MOM and SC Remedial Actions.

Medium/ Authority	Requirement/ Citation	ROD Status	ROD Requirement Synopsis	Consideration in RI/FS and Remedy	Five-Year Review
	U.S. EPA Underground Storage Tank Requirements (Proposed) (52 Federal Register 12662, April 17, 1987). **Now regulation: 40 CFR Part 280,** Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST) - **Subpart G: Section 280.72** Assessing the site at closure or change-in-service	To-Be-Considered **NOW Relevant and Appropriate**	These proposed regulations govern the design, installation, testing, removal and corrective action for underground storage tanks containing either petroleum products or hazardous materials.	To-be-considered in developing testing and corrective action programs.	The regulation is not ARAR for the MOM OU or for the ISTT SC Remedial Action because UST removal is not included in these remedial actions. The substantive requirements of this ARAR were complied with during removal of six USTs from south of the Valley Building in August 2006. However, the USTs were found to contain no oil or hazardous materials. The tanks and associated piping were removed and properly disposed off site and the tank graves were tested for presence of contaminants prior to backfilling, in accordance with the substantive requirements of these regulations. No additional USTs are believed to remain on Site.
Massachusetts Regulatory Requirements	DEQE (now MassDEP) - Hazardous Waste Regulations, Phases I and II (310 CMR 30.000, MGL Ch. 21C)	Relevant and Appropriate	This regulation provides a comprehensive program for the handling, storage and recordkeeping at hazardous waste facilities. They supplement RCRA regulations.	Because these requirements supplement RCRA hazardous waste regulations, they must also be considered at the Valley Site.	These regulations are complied with for off-site transport and disposal of remediation wastes that are classified as hazardous waste. These regulations remain ARAR for MOM RA O&M activities and the ISTT SC RA.
	Massachusetts Environmental Policy Act (MEPA) Regulations (30 CMR 10.00)	Relevant and Appropriate	These regulations describe the process for filing an Environmental Impact Report (EIR).	Remedial activities will be coordinated with the MEPA unit.	Coordination with the Commonwealth was performed during remedial design and construction for the MOM and SC Remedial Actions

Table SC-2
Action-Specific ARARs
Groveland Wells Site: OU2 - Source Control
Groveland, Massachusetts

Medium/ Authority	Requirement/ Citation	ROD Status	ROD Requirement Synopsis	Consideration in RI/FS and Remedy	Five-Year Review
	Massachusetts Ambient Air Quality Standards (310 CMR. 6.00) and Air Pollution Control Regulations (310 CMR 7.00)	Relevant and Appropriate	This regulation outlines the standards and requirements for air pollution control in the Commonwealth of Massachusetts. All provisions, procedures, and definitions are described.	Particulate matter emissions from Site excavation activities must be maintained at an annual geometric mean of 75 ug/m^3 and a maximum 24-hour concentration of 40 mg/m^3 (primary standards). Appropriate emission standards from soil or groundwater treatment systems would have to be met. VOC emissions would be regulated by best available control technology.	The Ambient Air Quality Standards ARAR was complied with during MOM remedial construction and removal of Source Area USTs by using dust suppression when needed to control fugitive dust emissions. It will be complied with in the same manner during SC remedial construction and demobilization of the ISTT system. The Air Pollution Control Regulations will be complied with by using Granular Activated Carbon to control VOC emissions from the MOM and SC Remedial Actions.
	Department of Labor and Industries - Right-to-Know-Program (441 CMR 21.00)	Applicable **NOW No Longer ARAR, but are To Be Considered**	This regulation outlines the procedures whereby employees must disclose the hazardous substances encountered in the workplace.	Remedial activity contractors would be required to prepare a Material Safety Data Sheet (MSDS).	Worker safety rules are no longer considered ARAR for CERCLA response actions but are To Be Considered. MSDS are maintained for all substances used on Site during remedial action activities and monitoring.
	Department of Public Health - Right-to-Know-Program (105 CMR 670.00)	Applicable **NOW No Longer ARAR, but are To Be Considered**	Same as Department of Labor and Industries.	Same as Department of Labor and Industries.	Worker safety rules are no longer considered ARAR for CERCLA response actions but are To Be Considered. MSDS are maintained for all substances used on Site during remedial action activities and monitoring.

Table SC-2
Action-Specific ARARs
Groveland Wells Site: OU2 - Source Control
Groveland, Massachusetts

Medium/ Authority	Requirement/ Citation	ROD Status	ROD Requirement Synopsis	Consideration in RI/FS and Remedy	Five-Year Review
	DEQE (now MassDEP) - Right-to-Know-Program (310 CMR 33.00)	Applicable **NOW No Longer ARAR, but are To Be Considered**	Same as Department of Labor and Industries.	Same as Department of Labor and Industries.	Worker safety rules are no longer considered ARAR for CERCLA response actions but are To Be Considered. MSDS are maintained for all substances used on Site during remedial action activities and monitoring.
	DEQE (now MassDEP) - Massachusetts Contingency Plan (MCP) (310 CMR 40.00)	Applicable **NOW No Longer ARAR, but are To Be Considered**	This regulation establishes the requirements for response to environmental releases of hazardous chemicals.	All remedial activities must conform with the MCP.	Under 310 CMR 40.0111, sites regulated under the Federal Superfund program are adequately regulated when MADEP concurs with the ROD. MADEP concurred with the RODs for the Groveland site and considers the Site to be adequately regulated. Hence the MCP is no longer considered to be ARAR for the CERCLA response actions. Remedial activities are in compliance with the intent of the MCP.
	Massachusetts Board of Fire Protection Regulations (527 CMR 9.00)	Applicable **NOW Relevant and Appropriate**	These regulations specify procedures for the installation of underground storage tanks, and for testing and removal requirements for tanks containing oil or hazardous waste.	All underground storage tanks will be tested for release of hazardous substances and removed, as necessary.	Six USTs located south of the Valley Building were removed in August 2006. The USTs were found to contain solidified concrete slurry; no oil or hazardous materials were present. The tanks and associated piping were removed and properly disposed off site and the tank graves were tested for presence of contaminants prior to backfilling, in accordance with the substantive requirements of these regulations. No additional USTs are believed to remain on Site.

Table MOM-1
Chemical-Specific ARARs
Groveland Wells Site: OU1 - Management of Migration
Groveland, Massachusetts

Medium/Authority	Requirement/ Citation	ROD Status	Requirement Synopsis	Consideration in the RI/FS and Remedy	Five-Year Review
Groundwater					
Federal Regulatory Requirements and Standards	SDWA - Maximum Contaminant Levels (MCLs) and Non-Zero Maximum Contaminant Level Goals (MCLGs) (40 CFR 141.11 - 141.16 and 141.50 - 141.52)	Relevant and Appropriate	MCLs have been promulgated for a number of common organic and inorganic contaminants. These levels regulate the concentrations of contaminants in public drinking water supplies, and may also be considered relevant and appropriate for groundwater aquifers potentially used for drinking water.	MCLs were used to set interim clean-up levels for Site groundwater. The remedial action will meet these standards in the groundwater beneath the Site. Some MCLs have changed since completion of the RODs in 1988 and 1991. Current MCLs/MCLGs are provided in Attachment 6 - Table 1.	The Site is located within the Zone II recharge area for Groveland municipal well No. 1 – an active water supply well, which has operated without VOC treatment since 1994. The extent of the groundwater contaminant plume has decreased since the MOM RA began operation in 2000; however portions of the plume still exceed MCLs. Groundwater extraction and treatment is ongoing under the MOM RA. The ISTT SC RA is expected to achieve interim cleanup levels in Source Area soil and groundwater by the end of 2010, which will significantly decrease the time needed to achieve MCLs in downgradient portions of the plume.
Massachusetts Regulatory Requirements and Standards	Massachusetts Groundwater Quality Standards (314 CMR 6.00)	Applicable: **Now No Longer ARAR – Regulation Rescinded March 2009**	Massachusetts Groundwater Quality Standards were promulgated for many contaminants. Massachusetts standards were used when more stringent than Federal levels.	Groundwater quality standards exist for a number of contaminants in the groundwater. When state levels are more stringent than the federal levels, the state levels will be used. This remedial action will meet these standards in the groundwater beneath the Site.	These standards were used to establish discharge limits for discharge to groundwater. Revisions to 314 CMR 5.0 in March 2009 eliminated the need for this regulation. Additionally, groundwater discharge regulations are no longer ARARs for the MOM RA because treated groundwater is discharged to surface water (Mill Pond) instead of to groundwater as initially conceived.

Table MOM-1
Chemical-Specific ARARs
Groveland Wells Site: OU1 - Management of Migration
Groveland, Massachusetts

Medium/Authority	Requirement/ Citation	ROD Status	Requirement Synopsis	Consideration in the RI/FS and Remedy	Five-Year Review
	Massachusetts Drinking Water Maximum Contaminant Levels (310 CMR 22.00)	Relevant and Appropriate	Massachusetts drinking water standards (MCLs) adopted to regulate the concentration of contaminants in public drinking water supplies.	These state drinking water standards will be compared to the federal standards. If more stringent, the state standards will be used. The remedial action will meet these standards in the groundwater beneath the Site. Some MCLs have changed since completion of the RODs in 1988 and 1991. Current MCLs/MCLGs are provided in Attachment 6 - Table 1.	The Site is located within the Zone II recharge area for Groveland municipal well No. 1 – an active water supply well, which has operated without VOC treatment since 1994. The extent of the groundwater contaminant plume has decreased since the MOM RA began operation in 2000; however portions of the plume still exceed MCLs. Groundwater extraction and treatment is ongoing under the MOM RA. The ISTT SC RA is expected to achieve interim cleanup levels in Source Area soil and groundwater by the end of 2010, which will significantly decrease the time needed to achieve MCLs in downgradient portions of the plume.

Table MOM-2

Action-Specific ARARs
Groveland Wells Site: OU1 - Management of Migration
Groveland, Massachusetts

Medium/ Authority	Requirement/Citation	ROD Status	Actions to be Taken to Meet Requirements	Five-Year Review
Surface Water				
Federal Regulatory Requirements	CWA - Section 402	Applicable	Substantive requirements are applicable to the treatment system discharge. The treatment system will be designed and operated to achieve Clean Water Act requirements.	The treatment system was designed and is operated to meet discharge limits to Mill Pond that were derived by EPA in accordance with this regulation.
Massachusetts Regulatory Requirements	Surface Water Discharge Permit Program (314 CMR 3.00)	Applicable	Substantive requirements are applicable to the treatment system discharge. The treatment system will be designed and operated to meet these discharge requirements.	The treatment system was designed and is operated to meet discharge limits to Mill Pond that were derived by EPA in accordance with this regulation and the Clean Water Act.
	Surface Water Quality Standards (310 CMR 4.00)	Applicable	Substantive requirements will be applicable to the treatment system discharge. Treatment system will be constructed to ensure that water quality standards are met.	The treatment system was designed and is operated to meet discharge limits to Mill Pond that were derived by EPA in accordance with this regulation and the Clean Water Act.
Air				
Federal Regulatory Requirements	CAA - National Ambient Air Quality Standards (40 CFR Part 50)	Relevant and Appropriate	Substantive requirements will be relevant and appropriate during the construction activities. Dust suppressants will be used as required during construction to minimize fugitive dust emissions.	This ARAR sets standards for six principle pollutants considered harmful to public health, including suspended particulate matter. VOCs are not regulated by these standards. This ARAR was complied with during construction of the MOM RA by using dust suppression when needed. Operation of the MOM RA is not expected to result in generation of any of the six regulated pollutants.
Massachusetts Regulatory Requirements	Ambient Air Quality Standards (310 CMR 6.00)	Relevant and Appropriate	Substantive requirements will be relevant and appropriate during the construction activities. Dust suppressants will be used as required during construction to minimize fugitive dust emissions.	This ARAR sets standards for six principle pollutants, including suspended particulate matter. VOCs are not regulated by these standards. This ARAR was complied with during construction of the MOM RA by using dust suppression when needed. Operation of the MOM RA is not expected to result in generation of any of the six regulated pollutants.

Table MOM-2

Action-Specific ARARs
Groveland Wells Site: OU1 - Management of Migration
Groveland, Massachusetts

Medium/ Authority	Requirement/Citation	ROD Status	Actions to be Taken to Meet Requirements	Five-Year Review
Air (cont.)				
	Air Pollution Control (310 CMR 7.00)	Applicable	Substantive requirements will be applicable to the air discharge from the treatment system.	This ARAR continues to be complied with at the groundwater treatment plant, where VOC emissions are controlled using Granular Activated Carbon.
Waste				
Massachusetts Regulatory Requirements	Operation and Maintenance and Pretreatment Standards for Wastewater Treatment Works and Indirect Discharge (314 CMR 12.00)	Relevant and Appropriate **NOW No Longer Considered an ARAR**	Substantive requirements related to pretreatment of the sludge will be met.	Operation and maintenance of the groundwater treatment plant meets the substantive requirements of this regulation regarding licensed operators, operation and maintenance manuals, and other similar requirements. This regulation is intended for discharges to POTWs and is no longer considered ARAR. Sludge is not pretreated on site; hence any previous requirements that existed regarding sludge pretreatment are not relevant.
	Hazardous Waste Regulations (310 CMR 30.00)	Applicable	These regulations will be looked at to determine the appropriate disposal method for the sludge. Sludge will be evaluated as to whether it is a listed (characteristic) waste to determine appropriate disposal methods. If hazardous, it will be stored in accordance with these regulations. If DNAPL were discovered and determined to be hazardous, it will be stored in accordance with these regulations.	Metal hydroxide sludge from the treatment plant is tested and characterized in accordance with these regulations and disposed off site in accordance with the applicable requirements. No NAPL has been discovered at the Site.
	Supplemental Requirements for Hazardous Waste Management Facilities (314 CMR 8.00)	Applicable	These regulations apply to wastewater treatment facilities exempted from M.G.L. c.21C, which treat, store, or dispose of hazardous wastes. The treatment plant will meet the substantive requirements of 314 CMR 8.05.	The groundwater treatment plant is in compliance with the substantive requirements of this regulation.

Table MOM-3

Location-Specific ARARs
Groveland Wells Site: OU1 - Management of Migration
Groveland, Massachusetts

Authority	Requirement	ROD Status	Actions Taken to Meet Requirements	Five-Year Review
Federal Regulatory Requirements	CWA - Section 404	Applicable	Potentially applicable to construction of discharge piping and outfall near the creek. The routing of the treatment system effluent piping to the creek will avoid wetlands if possible. If passage through a wetland is necessary, the requirement in 33 CFR 330.5(a)(12) and 330.6 shall be met.	This ARAR was complied with for construction of the outfall to Mill Pond. Routing of piping through wetlands was no longer needed once the location of the treatment plant was changed, via an Explanation of Significant Differences, to its current location behind the Valley Building.
	Wetlands Executive Order (EO 11990) (40 CFR, Part 6, Appendix A)	Applicable	Federal agencies are required to minimize destruction, loss or degradation of wetlands and preserve and enhance natural and beneficial value of wetlands. Activities impacting wetlands are prohibited unless there is no practical alternative. The discharge pipe will not be located in wetlands if a practical alternative exists. Impacts will be minimized.	The re-location of the groundwater treatment plant from alongside Johnson Creek, to the area behind the Valley Building, complied with this ARAR by avoiding impacts to the wetlands along Johnson Creek.
	Floodplains Executive Order (EO 11988) (40 CFR, Part 6, Appendix A)	Applicable	Federal agencies are required to reduce risk of flood loss, to minimize impact of floods and to restore and preserve the natural and beneficial value of floodplains. No practical alternative exists for placement of wells and discharge outfall in floodplain. Impacts will be minimized. Will have minimal displacement and will be built to withstand 100 year flood event.	The originally proposed location of the groundwater treatment plant adjacent to Johnson Creek was within the 100-year floodplain. The Explanation of Significant Differences re-located the plant to behind the Valley Building which is outside the 100-year floodplain. Hence, this order was no longer applicable.
Massachusetts Regulatory Requirements	Wetlands Protection (310 CMR 10.00)	Applicable	Any regulated area disturbed by the remedial action will be restored to original conditions. All practical means will be used to minimize wetlands disturbance.	The re-location of the groundwater treatment plant from alongside Johnson Creek, to the area behind the Valley Building, complied with this ARAR by avoiding impacts to the wetlands along Johnson Creek.

ATTACHMENT 4

PUBLIC NOTICE OF START OF SECOND FIVE YEAR REVIEW
GROVELAND WELLS SUPERFUND SITE
JANUARY 2010

EPA Evaluates Cleanup Activities at Groveland Wells Superfund Site

The U.S. Environmental Protection Agency (EPA) is beginning its second Five-Year Review of the Groveland Wells Nos. 1 & 2 Superfund Site off of Washington Street, Groveland, MA. Until cleanup levels are met, this review occurs every five years and evaluates the site's cleanup activities to ensure the continued protection of human health and the environment. The Five-Year Review will be completed by June 2010. The results of the review will be publicly available.

The site is contaminated with a chemical called Trichloroethylene or TCE. TCE is a man-made, hazardous and colorless liquid that was used by the former Valley Manufacturing Company to degrease metal parts and screws. Both soil and groundwater at and near the former Valley Manufacturing building are contaminated with TCE.

EPA and Mass Dept. of Environmental Protection are currently cleaning up the TCE contaminated groundwater through pumping, treatment, and destruction of the TCE. In March 2010, EPA will start using Thermally Enhanced Soil Vapor Extraction to remove, treat, and destroy the TCE contamination in the soil around and inside the former Valley building.

Public participation in the Five-Year Review process is welcomed. If you are interested in participating or if you would like more information, contact:

Derrick Golden, 617-918-1448
golden.derrick@epa.gov

EPA
United States
Environmental Protection
Agency New England