SECOND FIVE-YEAR REVIEW REPORT FOR DOVER MUNICIPAL WELL NO. 4 SUPERFUND SITE MORRIS COUNTY, NEW JERSEY

Prepared by

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Date

Table of Contents

LIST OF ABBREVIATIONS & ACRONYMS ii
I. INTRODUCTION 1
FIVE-YEAR REVIEW SUMMARY FORM 2
II. RESPONSE ACTION SUMMARY 2
Basis for Taking Action 2
Response Actions 3
Status of Implementation 5
IC Summary Table 6
III. PROGRESS SINCE THE LAST REVIEW 7
IV. FIVE-YEAR REVIEW PROCESS 7
Community Notification, Involvement & Site Interviews 7
Data Review 7
Site Inspection 9
V. TECHNICAL ASSESSMENT 10
QUESTION A: Is the remedy functioning as intended by the decision documents? 10
QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid? 10
QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy? 12
VI. ISSUES/RECOMMENDATIONS 12
OTHER FINDINGS ..... **Error! Bookmark not defined.**
VII. PROTECTIVENESS STATEMENT 12
VIII. NEXT REVIEW 12
APPENDIX A - REFERENCE LIST
APPENDIX B – FIGURES AND MAPS
APPENDIX C – CEA/WRA PERMIT FACT SHEET
APPENDIX D – ISCO EFFECTIVENESS DATA
APPENDIX E – CONCEPTUAL SITE MODEL
APPENDIX F – TREND ANALYSES & MANN-KENDALL TEST RESULTS
APPENDIX G – VI SUMMARY TABLES & TREND ANALYSIS

LIST OF ABBREVIATIONS & ACRONYMS

bgs	Below Ground Surface
CEA	Classification Exception Area
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COCs	Contaminants of Concern
cVOCs	Chlorinated Volatile Organic Compounds
DCE	Dichloroethene
DMW-4	Dover Municipal Well No. 4
EPA	United States Environmental Protection Agency
ft	Feet
FYR	Five-Year Review
gpm	Gallons per Minute
ISCO	In Situ Chemical Oxidation
ICs	Institutional Controls
MCL	Maximum Contaminant Level
MDL	Method Detection Limit
µg/L	Micrograms per Liter
$\mu g/m^3$	Microgram per Cubic Meter
mg/kg	Milligrams per Kilogram
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NJDEP	New Jersey Department of Environmental Protection
NPL	National Priorities List
OU	Operable Unit
PCE	Tetrachloroethene
PDI	Preliminary Design Investigation
RA	Remedial Action
RAO	Remedial Action Objective
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
TCA	Trichloroethane
TCE	Trichloroethene
TOC	Total Organic Carbon
VC	Vinyl Chloride
VI	Vapor Intrusion

I. INTRODUCTION

The purpose of a five-year review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP)(40 CFR Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the second FYR for the Dover Municipal Well No. 4 Superfund site (hereinafter the "Site"). The triggering action for this policy review is the completion date of the previous FYR. The FYR has been prepared due to the fact that the remedial action will not leave hazardous substances, pollutants or contaminants on site above levels that allow for unlimited use and unrestricted exposure but requires five or more years to complete.

The Site consists of two operable units (OUs), and both OUs will be addressed in this FYR. OU1 addresses groundwater contamination at the Site and OU2 addresses the sources of the groundwater contamination.

The Dover Municipal Well No.4 Superfund Site FYR was led by EPA Remedial Project Manager (RPM) Thomas Dobinson. Participants included Rachel Griffiths, EPA Hydrogeologist; Urszula Filipowicz, EPA Human Health Risk Assessor; Nicholas Mazziotta, EPA Ecological Risk Assessor and Natalie Loney, EPA Community Involvement Coordinator. The review began on September 25, 2019. A list of documents reviewed as part of the FYR is included as Appendix A.

Site Background

The Site is located in Dover, Morris County, New Jersey. Although most of the Town of Dover is residential, the Site is located in a commercial and industrial section, approximately 1.5 miles east of three potable water production wells which serve a community of approximately 22,000 people. The Dover Water Commission owns and operates this municipal well field. The Dover Municipal Well No. 4 (DMW-4) public water supply well is located approximately 450 feet north of the Rockaway River, on Lot 15, Block 2314. The location of DMW-4 and surrounding area is shown on Figure 1-1 of Appendix B.

The Site lies within the Rockaway River Valley, which contains a complex three-aquifer, buried- valley hydrogeologic system. In the portion of the valley near the Site, two silt layers separate permeable sands into a "shallow aquifer," an "intermediate aquifer," and a "deep aquifer." The shallow aquifer ranges from 2 feet to 15 feet thick and shallow groundwater flows south toward the Rockaway River. The intermediate aquifer ranges from 6 feet to 32 feet in thickness and is separated from the deep aquifer by a discontinuous confining layer of silt. This silt layer is as much as 50 feet thick in some areas and not present in others. Groundwater in the intermediate and deep aquifers generally flows toward the east. The deep aquifer does not exist beneath the source area property. Groundwater in the area is classified as class II-A, a current source of drinking water.

The up-valley limits of the Site are the Princeton Avenue Well Field, which is 7,000 feet west of DMW-4. The northern and southern limits extend to the edges of the unconsolidated valley-fill deposits. The limits roughly coincide with the sloping topography. The eastern limit ends at Roy Street.

The source of contamination (i.e., source area) to the DMW-4 groundwater is the property located at 272 U.S. Route 46, which is bounded by Route 46 to the north, the former Walt's Radiator Shop and a residential house to the east, Richards Avenue to the south, and Grecco Auto Body to the west. The property is covered with coarse gravel and slopes generally from the north to the south. The property is secured by an eight-foot high chain-link fence with a locked double-swing gate. The property is accessed via Route 46 (main entrance) and along Richards Avenue via two locked secondary sliding gates. The Rockaway River is located approximately 450 feet south of the property.

A Site Location Map, Site Plan and Adjacent Properties Map, Regional Topographic Map, Geologic Cross-Sections, and Potentiometric Surface Maps from 2018 are included as Appendix B.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Dover Municipal Well No.4		
EPA ID: NJD980654131		
Region: 2	**State:** NJ	**City/County:** Dover/Morris
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes	**Has the site achieved construction completion?** Yes	
REVIEW STATUS		
Lead agency: EPA		
Author name (Federal or State Project Manager): Thomas Dobinson		
Author affiliation: EPA		
Review period: 9/23/2015 - 9/23/2020		
Date of site inspection: 10/22/2019		
Type of review: Policy		
Review number: 2		
Triggering action date: 9/23/2015		
Due date: 9/23/2020		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

Drilled in 1962, DMW-4 began pumping in June 1965, and was one of Dover's primary water supply wells with an average pumping rate of 1,100 gallons per minute (gpm). In March 1980, the Town of Dover and the New Jersey Department of Environmental Protection (NJDEP) documented the presence of chlorinated volatile organic compounds (cVOCs), specifically 1,1,1-trichloroethane (1,1,1-TCA), tetrachloroethene (PCE), and trichloroethene (TCE), in the groundwater collected from DMW-4. Based on this information, the Town of Dover voluntarily removed DMW-4 from service and replaced it with standby well No. 3 in September 1980. The Site was placed on the National Priorities List (NPL) in September 1983.

In the mid to late 1980s, a remedial investigation (RI) conducted by NJDEP identified cVOCs in all three aquifers near DMW-4. PCE was detected north of DMW-4 in the intermediate and deep glacial sand and gravel aquifers. cVOCs were also detected in the shallow, intermediate, and deep glacial sand and gravel aquifers at various locations throughout the area. The 1990 RI Report, however, did not identify the source of groundwater contamination.

In October 1992, NJDEP requested that EPA assume the lead for addressing the contamination at the Site. In March 1993, EPA initiated a further investigation to determine the source of the cVOCs in the shallow, intermediate, and deep aquifers. While EPA's investigation located numerous potential sources, EPA was unable to identify the specific source of the groundwater contamination.

Based upon the results of the OU1 RI, a baseline risk assessment was conducted to estimate the risks associated with current and future site conditions. The human health risk assessment concluded that carcinogenic risk was within the range of acceptable exposure and the Hazard Index exceeded one, only for children under a future residential land use scenario. However, cleanup was warranted because groundwater contaminants were present at concentrations exceeding New Jersey Maximum Contaminant Levels (MCLs) in each of the three aquifers. Additionally, these concentrations of PCE and other contaminants in the shallow and intermediate aquifers could migrate into the deeper aquifer because the confining layers between the aquifers are not impermeable.

An environmental evaluation was also conducted for OU1 at that time. It concluded that there was some indication that the potential exists for elevated inorganics in groundwater to produce adverse environmental effects in the event that no response action was taken.

After discovering the dry cleaner was the source of contamination to DMW-4, EPA conducted an OU2 RI. A human health risk assessment conducted as part of the OU2 RI evaluated the following current and future scenarios: residents (adult and child) in the vicinity of the dry cleaner who may contact soil in their yards, or who, in the future, may consume or utilize local groundwater; workers in the vicinity of the dry cleaner who may contact soil or may consume or utilize local groundwater; and construction workers whose work may expose them to soil and/or shallow groundwater during work around an excavation. Results of the assessment indicated exceedances of EPA's cancer risk range threshold of 10^{-6} to 10^{-4} and noncancer hazard of 1 for future residents and outdoor commercial/industrial workers from consumption of PCE and TCE contaminated groundwater. In addition, the noncancer hazard index for the future construction/utility worker exposed dermally to PCE and TCE in shallow groundwater exceeded EPA's target threshold value of 1.

Response Actions

Based on the OU1 RI, EPA selected a remedy for OU1 (groundwater) in a September 1992 Record of Decision (ROD). The remedial action objectives (RAOs) for the groundwater remedy were as follows:

- Continue to prevent exposure, due to groundwater ingestion and inhalation, to contaminants at levels exceeding MCLs;
- Minimize further contamination of DMW-4 and prevent contamination of additional existing wells by minimizing the migration of contaminants; and,
- Restore contaminated groundwater for future use.

The selected remedy included:

- Extraction of contaminated groundwater and restoration of the groundwater to drinking water standards;
- Treatment of extracted groundwater to levels attaining drinking water standards;
- Discharge of treated groundwater to the public water supply system to the extent practicable, with reinjection of any surplus quantity; and,
- Appropriate environmental monitoring to ensure the effectiveness of the remedy.

Between 1999 and 2003, EPA conducted a preliminary design investigation (PDI) as part of the OU1 remedial design, which also focused on identifying the source of groundwater contamination. Based on that work, EPA identified a property located at 272 U.S. Route 46 as the source of the cVOCs found in DMW-4. EPA then began a study to determine the extent of the source-related contamination. After the RI was completed for OU2, EPA signed a ROD in September 2005, for the source area soils and groundwater, and modified the OU1 sitewide groundwater restoration remedy. The 2005 ROD identified the following soil and groundwater RAOs and modified the OU1 sitewide groundwater OUs as follows:

Soil

- Reduce the potential for further migration of contaminants from the contaminated soil into groundwater.

Source Area Groundwater

- Prevent exposure by direct contact with or ingestion of shallow contaminated groundwater.
- Reduce the potential for exposure via inhalation of vapors that may migrate from shallow groundwater.

Site Groundwater

- Prevent public exposure to contaminated groundwater that presents a significant risk to human health and the environment.
- Restore the shallow, intermediate, and deep groundwater contamination to drinking water standards within a reasonable time frame.
- Reduce the potential for exposure via inhalation of vapors that may migrate from shallow groundwater.

Remedy Selection

The major components of the 2005 Remedy included:

- Demolition without replacement of the dry cleaner building to allow for the excavation of contaminated soil beneath it and off-site disposal of demolition debris;
- Excavation of an estimated 2,100 cubic yards of contaminated soil, sampling to verify the soil cleanup criteria or standards were met, and backfilling with clean fill;
- Off-site treatment and/or disposal of contaminated soil; and,
- Chemical oxidation of any remaining sources of groundwater contamination.

In addition, the 2005 ROD modified, the 1992 OU1 sitewide groundwater remedy as follows:

- No extraction, treatment, or discharge of contaminated groundwater;
- Establishment of a network of groundwater monitoring wells;
- Environmental monitoring to ensure the effectiveness of the remedy and the ability of the groundwater to achieve the more stringent of the federal or New Jersey MCLs and/or New Jersey Groundwater Quality Standards; and,
- Institutional controls, such as the implementation of a Classification Exception Area (CEA) to restrict the use of groundwater within the area until the aquifer is restored.

Remedial goals for soil and groundwater identified in the 2005 ROD are identified below in Table 1 and Table 2, respectively.

Table 1: Soil Remedial Goals

Remedial Goals – Soil		
Compounds	**Residential Direct Contact (mg/kg)**	**Impact to Groundwater (mg/kg)**
cis-1,2-Dichloroethylene (cis-1,2-DCE)	79	**1**
Tetrachloroethylene (PCE)	4	**1**
Trichloroethylene (TCE)	23	**1**
Vinyl Chloride (VC)	**2**	10

Note: The value shown in **bold** type is the selected standard. The selected standard is the more stringent for the specified compound.

Table 2: Groundwater Remediation Goals

Remedial Goals – Groundwater			
Compounds	**NJDEP Groundwater Quality Standards (µg/L)**	**Federal MCLs (µg/L)**	**NJDEP Drinking Water MCLs (µg/L)**
cis-1,2-Dichloroethylene (cis-1,2-DCE)	**10**	70	70
Tetrachloroethylene (PCE)	**1**	5	1
1,1,2-Trichloroethane (1,1,2-TCA)	**3**	5	3
Trichloroethylene (TCE)	**1**	5	1
Vinyl Chloride (VC)	5	2	**2**

Note: The value shown in bold type is the selected standard. The selected standard is the more stringent criteria for a specified compound.

Status of Implementation

Building Demolitions

In August 2007, EPA entered into an Agreement for Recovery of Response Costs (the "Agreement") with the former owner of the dry cleaner property which resolved EPA's claims under Section 107(a) of CERCLA. Under the terms of the Agreement, the former owner paid the proceeds of an insurance claim to EPA and NJDEP and transferred title of the source area property to EPA.

In order to facilitate implementation of the OU2 source area remediation activities, EPA acquired the former dry cleaner property. Following real estate closing on the source area property, EPA demolished the former dry cleaner building in December 2007. Soil sampling conducted as part of the soil excavation design determined that soil contamination was present in close proximity to three adjacent residential houses. Due to the poor structural condition of these houses, EPA determined that any excavations could compromise the structures. Therefore, EPA acquired the three residential properties and relocated the tenants in August 2008. Demolition of the houses took place in October 2008. Additional information regarding the demolition activities is documented in *Remedial Action Report Demolition of Dry Cleaner* (EPA, 2008) and *Remedial Action Report Demolition of Three Houses* (EPA, 2008).

Soil Excavation Activities

A Design Report for the soil excavation portion of the work was approved by EPA in March 2009. Extensive sampling of the contaminated areas was conducted prior to completion of the Design Report. Information from the Design Report was used to pre-determine the areas to be excavated. During excavation activities, multiple soil samples were collected from various depths and several locations for delineation purposes. Based on the analytical results, the excavation was either discontinued or expanded to encompass contaminated material. No post-excavation samples were collected below the groundwater table. The depth to groundwater ranged from 8.5 feet along the southern portion to 12.5 feet along the northern portion of the Site.

The depth of excavation varied from 3.5 feet to approximately 12.5 feet below ground surface. The total volume of soil excavated and disposed of off-site was approximately 1,258 cubic yards. All physical work associated with the soil excavation was completed in spring 2009. Additional information regarding the soil excavation activities is documented in *Remedial Action Report Excavation of Soils* (EPA, 2010).

Chemical Oxidation Activities

In-Situ Chemical Oxidation (ISCO) commenced in at OU2 in March 2010 and four phases of oxidant injections have been performed. Phase 1 was conducted in April and May 2010, Phase 2 was conducted in June and July 2011, Phase 3 was conducted in October and November 2012, and Phase 4 in October and November 2014. The remedial technology utilized chemical oxidants (hydrogen peroxide and sodium permanganate) to break down soil and groundwater contamination into harmless byproducts, such as water and carbon dioxide. A two-phased approach was developed utilizing hydrogen peroxide to address the bulk of the contaminant mass, and a subsequent sodium permanganate injection to provide a longer-lasting oxidant breakdown of the contamination.

The details for the implementation of each phase of ISCO treatment are discussed in four Remedial Action (RA) Reports.

In-situ Chemical Oxidation Monitoring

During the four injection phases, monitoring was performed to continuously evaluate the ISCO program effectiveness in reducing contaminant source mass. The monitoring programs include the sampling and analysis of groundwater generated as a result of the oxidation reactions. The overall results of the monitoring program verified that the pre-established performance criteria were met, including the successful demonstration of oxidant distribution (measuring and/or observing oxidants in monitoring wells) and verification of oxidant loading (meeting or exceeding the remedial design required oxidant volumes). Additional ISCO effectiveness monitoring was conducted from 2013 through 2016 to determine the efficacy of ISCO activities at the site. Results of the monitoring are detailed in the *Data Summary Report for In Situ Chemical Oxidation Effectiveness Monitoring at OU2*.

Vapor Intrusion Monitoring

Beginning in 2002, EPA initiated a monitoring program to determine whether contaminated groundwater present beneath residential homes in the vicinity of the Site was a source of vapor intrusion (VI) into indoor air of these structures. EPA performed sub-slab soil gas sampling, and indoor and ambient outdoor air sampling in 12 homes located in close proximity to the Site. Six of the homes indicated a potential for exposure to PCE and TCE. Three of the six homes were demolished as part of the remedy, with the remaining three homes requiring further investigation. EPA has continued to monitor those three houses of interest with the latest sampling conducted in March 2018. Details of the latest sampling event are described in the *Sampling Report for the Vapor Intrusion Investigation at the Dover Municipal Well No. 4 Site*.

Institutional Controls

Due to the groundwater contamination, a classification exception area (CEA)/well restriction area (WRA) was established by the NJDEP for this Site to prevent the installation of any new potable wells into the contaminated aquifer. The CEA/WRA includes all three aquifers and adequately addresses the extent of the plume. The CEA/WRA, preventing groundwater use and well installation, was established by NJDEP on September 6, 2013. The CEA will remain in place until the contaminated groundwater meets the remedial goals. A copy of the CEA/WRA is included as Appendix C.

IC Summary Table

Table 3: Summary of Planned and/or Implemented ICs

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Groundwater	Yes	Yes	See Appendix C	Restrict installation of ground water wells and ground water use.	Classification Exception Area/Well Restriction Area Permit; September 6, 2013

Potential Site impacts from climate change have been assessed, and the performance of the remedy is currently not at risk due to the expected effects of climate change in the region and near the Site.

III. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determinations and statements from the **last** FYR as well as the recommendations from the **last** FYR and the current status of those recommendations.

Table 4: Protectiveness Determinations/Statements from the 2015 FYR

OU #	Protectiveness Determination	Protectiveness Statement
1	Protective	The OU1 remedy is protective of human health and the environment.
2	Protective	The OU2 remedy is protective of human health and environment.
Sitewide	Protective	Both remedies for OU1 and OU2 are considered protective of human health and the environment because the contaminated groundwater is not being used and the remedy is reducing the contaminant concentrations within the plume. In the interim, remedial activities completed to date have adequately addressed all exposure pathways that could result in unacceptable risk.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

On October 1, 2019, EPA Region 2 posted a notice on its website indicating that it would be reviewing site cleanups and remedies at Superfund sites in New York, New Jersey, Puerto Rico, and the U.S. Virgin Islands including the Dover Municipal Well No.4 site. The announcement can be found at the following web address: https://www.epa.gov/aboutepa/fiscal-year-2020-five-year-reviews. In addition to this notification, a public notice was made available at the Dover Free Public Library and website on 1/31/2020, stating that there was a FYR and inviting the public to submit any comments to the U.S. EPA. The results of the review and the report will be made available at the Site information repository located at the Dover Free Public Library, 32 East Clinton Street, Dover, New Jersey, and on the site website: https://www.epa.gov/superfund/dover-well-4.

Data Review

ISCO Effectiveness Monitoring

Groundwater sampling conducted as part of ISCO effectiveness monitoring during the previous FYR period identified an area of elevated PCE concentrations remaining in groundwater centered around well cluster A-3/C-3/D-3. In order to delineate the extent of elevated concentrations, supplemental ISCO effectiveness monitoring of soil and groundwater was performed in January 2017. The scope of work included the advancement of nine soil borings with soil sample collection for VOCs and total organic carbon (TOC) analysis and the collection of groundwater samples from two of the soil borings for VOC analysis. Soil analytical data for the site contaminants of concern (COCs) are summarized on Table 2 of Appendix D together with the TOC results. VOC results for the site COCs are also shown on Figure 6 of Appendix D.

PCE concentrations exceeded the ROD criterion of 1 mg /kg in samples from two borings: B-1 at a depth of 10 feet (ft) below ground surface (bgs) (1.9 mg /kg) and B-6 at a depth of 10 ft bgs (4.1 mg/kg). PCE was detected at concentrations of 0.0015 mg/kg to 0.047 mg/kg at the other boring locations; PCE detections were observed primarily in the shallow (10 to 15 ft bgs) soil intervals. TCE and cis-1,2-DCE were detected at concentrations below their ROD criteria in the shallowest interval (10 ft bgs) samples collected at B-1, B-2, B-3, B-5, and B-6. VC was not detected in any of the soil samples.

Groundwater analytical data for the site COCs are summarized on Table 4 in Appendix D and shown on Figure 6 in Appendix D. PCE and TCE were detected at both of the temporary well points. PCE was reported at a concentration of 7.1 µg/L at location B-8 and at 25 µg/L at location B-9, exceeding the 2005 ROD criterion of 1 µg/L. TCE was detected at trace, estimated concentrations below its ROD criterion of 1 µg/L.

Based on the results of the additional investigation activities conducted in January 2017, a small, localized area of PCE mass remains in the soil at approximately 10 ft bgs in the area between injection well A-3 and the PW-14 cluster. This area is near the former drycleaner sump, where high soil concentrations have been reported historically. Detected concentrations in soil samples in this area ranged from 4.1 to 1.9 mg/kg. Soil in this area was excavated to the top of the water table in 2009 (see Exhibit 1 in Appendix D). The water table at PW-14S fluctuates between approximately 10 and 12 ft bgs. The exact depth of soil excavation in this area is unknown. It is possible that some PCE mass was smeared vertically in this 10-12 ft interval as groundwater levels fluctuated.

Additionally, soil and groundwater results in the area immediately upgradient of PW-7S (i.e., boring locations B-8 and B-9) do not indicate the presence of a PCE source area. Therefore, it is likely that elevated PCE concentrations observed at PW-7 are related to displacement of PCE-containing groundwater during ISCO injection events.

Groundwater

As part of long-term response action (LTRA) activities at the Site, groundwater was monitored semi-annually from 2015 through 2018. As part of each monitoring event, groundwater samples were collected and analyzed for VOCs from up to 28 monitoring wells, including 11 shallow aquifer wells, 10 intermediate aquifer wells, and 4 deep aquifer wells. Additional groundwater elevation gauging, and water quality parameter monitoring was also conducted. The conceptual site model for the Site is included as Appendix E.

Shallow Aquifer Trend Analysis

The April 2018 analytical results from monitoring well MW-11S report PCE at a concentration of 0.65 µg/L, which is below the ROD cleanup criteria of 1 µg/L (Table 5-1, Appendix F). The four other groundwater COCs (TCE, cis-1,2-DCE, VC, and 1,1,2-TCA) were not detected in April 2018. The trend graphs show a decreasing trend in PCE and TCE concentrations over time, and an increasing trend in cis-1,2-DCE concentrations due to an elevated concentration of cis-1,2-DCE in September 2016 (4.2 µg/L). However, cis-1,2-DCE concentrations have continuously been below the ROD cleanup criteria of 10 µg/L.

At source area monitoring well MW-15S, PCE, TCE, cis-1,2-DCE, and VC continue to be reported at concentrations above their respective ROD cleanup criteria of 1, 1, 10, and 2 µg/L. Based on analytical data ranging from October 2000 to September 2018, PCE concentrations at MW-15S demonstrate a decreasing trend. This reduction is likely related to ISCO treatment at OU2. The continued detection of elevated concentrations of PCE degradation products TCE, cis-1,2-DCE, and VC indicates limited intrinsic reductive dechlorination is occurring.

At upgradient monitoring well PW-7S, PCE continues to be detected at concentrations above its corresponding ROD cleanup criteria of 1 µg/L, with concentrations of 150 µg/L in April 2018 and 74 µg/L in September 2018. In addition, TCE was detected at a concentration of 1.2 µg/L in September 2018, which is slightly above its corresponding ROD cleanup criteria of 1 µg/L. Cis-1,2-DCE and VC were not detected during the April and September 2018 events. PCE concentrations at PW-7S demonstrate an increasing trend over time. Based on the results of supplemental ISCO effectiveness monitoring of soil and groundwater performed in January 2017, it was concluded that the elevated PCE concentrations at this well are related to displacement of PCE-containing groundwater during ISCO injection events. Upgradient soil and groundwater do not indicate the presence of a PCE source area for this location. A small excavation was completed in the area of the former dry cleaner's sump, likely creating a vertical smear in the 10 to 12 ft range, which is the same depth that groundwater tends to fluctuate. Transducer data supports the evidence of the displacement of PCE-containing groundwater during ISCO injection events. In addition, high TOC concentrations were observed in the saturated soil at approximately

10 ft bgs which may be serving as a binding site for PCE in the soil. Trend analyses and Mann-Kendall Test results are included as Appendix G.

Intermediate Aquifer Trend Analysis
PCE was the only COC detected above ROD cleanup criteria (1 µg/L) at MW-6I (45 µg/L in April and September 2018), MW-15IR (68 µg/L in April 2018), and PW-5I (48 µg/L in April 2018). Trend graphs demonstrate decreasing trends over time at each location, while Mann-Kendall Tests demonstrate decreasing to probably decreasing trends. The decreasing trends are likely related to ISCO treatments. Trend analyses and Mann-Kendall Test results are included as Appendix G.

Deep Aquifer Trend Analysis
During the April 2018 sampling event, PCE was detected above its ROD cleanup criteria (1 µg/L) at monitoring well MW-1DR (3.5 µg/L), and below the remedial goal at well MW-2D (0.51 µg/L). Based on Mann-Kendall Tests, PCE concentrations in monitoring well MW-1DR exhibited a probably decreasing trend, while concentrations in monitoring well MW-2D are decreasing. Trend analyses and Mann-Kendall Test results are included as Appendix G.

Vapor Intrusion
Vapor intrusion sampling was conducted on March 14-15, 2018 to further evaluate the potential for vapor intrusion at three residential properties located on Richards Avenue in Dover, New Jersey. Sampling included the collection of sub-slab, indoor-air, and ambient-air samples at the three properties. Samples were analyzed for vinyl chloride, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCA, 1,1-DCE, 1,1,1-TCA, TCE, and PCE.

Of the eight compounds analyzed, only TCE and PCE were detected at concentrations about the laboratory method detection limit (MDL). PCE and TCE were detected in sub-slab samples collected at the three properties. Concentrations of PCE and TCE ranged from 15 to 90 µg/m^3 and 0.088 to 0.51 µg/m^3, respectively. The eight volatile organic compounds analyzed were not detected in indoor-air or ambient-air samples at the three properties.

The concentrations of PCE and TCE detected in sub-slab samples at the three residential properties were below the applicable sub-slab screening levels of 360 µg/m^3 for PCE and 16 for TCE µg/m^3. Concentrations of PCE and TCE in sub-slab samples collected at two of the properties on Richards Avenue have been below screening levels since February 2013 and at the third since March 2007.

Details of the latest sampling event are described in the *Sampling Report for the Vapor Intrusion Investigation at the Dover Municipal Well No. 4 Site* (EPA, 2018). Data summary tables and trend analyses for the three properties are included as Appendix C.

Site Inspection

The inspection of the Site was conducted on October 22, 2019. In attendance were Thomas Dobinson, EPA RPM, Urszula Filipowicz, EPA Human Health Risk Assessor, and Nicholas Mazziotta, EPA Ecological Risk Assessor. The purpose of the inspection was to assess the protectiveness of the remedy.

The inspection revealed that the fence around the perimeter of the Site is intact, the gates preventing access to the Site are locked and intact, the injection and monitoring wells are in good condition and maintenance activities are being performed according to schedule. No issues were found that would impact remedy performance or require discussion in this FYR.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

Question A Summary:
The primary objectives of the RODs are to remove the continuing sources of contamination into the groundwater, prevent potential future ingestion of Site-related contaminated groundwater, restore the quality of the groundwater and mitigate the off-site migration of the Site-related contaminated groundwater. EPA's review of Site documents and the results of the Site inspections and a review of all monitoring data indicate that the remedy is functioning as intended.

The source area was identified and excavated circa 2009. Excavation activities effectively removed source contamination in the vadose zone. ISCO effectiveness monitoring after the 2009 soil removal and four ISCO injection events showed a significant decrease in PCE concentrations from pre-RA levels in soil. Groundwater concentrations in the source area have decreased significantly. A hot spot of PCE contamination in the smear zone centered on well cluster A-3/C-3/D-3 was identified and delineated in January 2017. Additional remediation in this area is planned.

In general, groundwater monitoring to date has shown a reduction in PCE concentrations in the shallow, and intermediate aquifers due to removal of contaminated soil and the implementation of ISCO remedial efforts. PCE concentrations in the deep aquifer portion of the plume also show decreasing trends due to the decrease of mass flux from the overlying aquifer zones and through natural attenuation. The monitoring results indicate that the downgradient monitoring network is sufficient to delineate the plume and monitor changes over time.

Due to the effectiveness of the ISCO to shrink the lateral extent of the shallow groundwater plume, recent vapor intrusion data collected in March of 2018 shows that concentrations of PCE and TCE present in sub-slab samples are below their chemical-specific risked-based screening levels. Additionally, concentrations of PCE and TCE in samples collected from indoor air were non-detect. This data demonstrates that subsurface vapor intrusion into indoor air is not occuring at the 3 residential properties of interest that EPA continues to sample. Because there is still some residual contamination in the shallow aquifer, the VI pathway will continue to be assessed at the 3 residential properties on a periodic basis.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

Question B Summary:
There have been no physical changes to the Site that would adversely affect the protectiveness of the remedy. The exposure assumptions and the toxicity values that were used to estimate the potential risks and hazards to human health followed the general risk assessment practice at the time the risk assessment was performed. Although the risk assessment process has been updated and specific parameters and toxicity values may have changed, the risk assessment process that was used is still consistent with current practice and the need to implement a remedial action remains valid.

The human health risk assessment (HHRA), conducted as part of the 2005 RI, evaluated residents, commercial/industrial workers and construction/excavation workers who may come into contact with Site soils or who may in the future utilize local groundwater for potable uses or come into contact with groundwater while conducting excavation work. Results of the HHRA indicated exceedances of EPA's threshold cancer risk range (of 10^{-6} to 10^{-4}) and noncancer hazard of 1 for future residents and outdoor commercial/industrial workers from consumption of PCE and TCE contaminated groundwater. The noncancer hazard index for the future construction/utility worker exposed dermally to PCE and TCE in shallow groundwater also exceeded EPA's target threshold value of 1.

The selected remedy for the Site included excavation of contaminated soils and back filling with clean soils, along with demolition of the former dry cleaner building to allow for the excavation of contaminated soils beneath the building. In 2008, three residences directly adjacent to the former dry cleaners were also demolished after investigations revealed soil contamination below the structures. The HHRAs conducted for the site indicated that although site soils did not pose unacceptable risk to human health, the cleanup of the contaminated soils was necessary to ensure they no longer served as a source of contamination to groundwater. Excavation and chemical oxidation were utilized to target the residual groundwater contamination remaining onsite. An extensive network of monitoring wells exists at the site to characterize the contamination in the shallow, intermediate and deep aquifer. Data collected from the monitoring well network is used to assess the effectiveness of the selected remedy.

The overall remediation goal for the Site is to protect human health and the environment. Additionally, several media-specific RAOs were identified in the 2005 ROD in order to ensure potential risks associated with exposure to contaminants at the Site were mitigated. These RAOs have been listed in the "Response Actions" section of this document and remain valid for the site.

Human exposures associated with potable use of contaminated groundwater from beneath the site is an incomplete exposure pathway because receptors in the vicinity of the site are connected to the public water supply. Additionally, NJDEP has established a CEA/WRA for the affected area which further restricts potable uses of contaminated groundwater. These measures ensure direct exposures associated with potable uses of contaminated groundwater from beneath the site remains an incomplete exposure pathway both in the current and future timeframes. Although the shallow, intermediate and deep groundwater has not yet been restored to drinking water standards, it is expected that with contined source remediation and attenuation this RAO will be met in the future. As discussed in the data review section and Question A of this document, the VI investigation in nearby residential structures, which was initiated in 2002, continues today and ensures the pathway for VI into indoor air is incomplete.

Soil cleanup criteria selected at the time of the 1992 and 2005 RODs were the more stringent of the New Jersey Residential Direct Contact Soil Criteria (NJ RDCSC) and the New Jersey Impact to Groundwater Soil Criteria. Site related soil contaminants of concern (COCs) and their corresponding cleanup goals are shown in Table 1. Out of the four soil COCs, only vinyl chloride has a lower current residential direct contact soil cleanup goal (0.7 mg/kg) as compared with the ROD selected value of 2 mg/kg. However, based on a comparison to EPA's risk-based Regional Screening Levels (RSLs) for residential soil, the current value of 2 mg/kg continues to be protective of human health for both residential and commercial use. Therefore, the ROD established cleanup goals for all soil COCs remain protective of human health.

Cleanup criteria for groundwater included the more stringent of the federal and New Jersey Safe Drinking Water Act MCLs and the New Jersey Groundwater Quality Standards (NJ GWQS). Groundwater COCs and their corresponding cleanup standards are shown in Table 2. With the exception of vinyl chloride, the current applicable state and federal standards are higher than those selected in the ROD and hence remain protective of human health. The current NJ GWQS for vinyl chloride is 1 µg/L which is lower than the ROD selected cleanup goal of 2 µg/L and should be considered when evaluating the completion of the groundwater remedy. It should be noted however that both the federal MCL and NJDEP Drinking Water Standard for vinyl chloride remain at 2 µg/L.

A Screening-Level Ecological Risk Assessment was conducted for both RODs and determined that no ecological risks were present at the Site. Although the ecological risk assessment screening and toxicity values used to support the 1992 and 2005 RODs may not necessarily reflect the current values, the terrestrial exposure pathway is incomplete with the soil being covered by pavement and buildings. Further, the surface water and sediment data collected during the RI were found to be unimpacted by site contamination. Consequently, the exposure assumptions remain appropriate and thus the remedy remains protective of ecological resources.

QUESTION C: Has any **other** information come to light that could call into question the protectiveness of the remedy?

No information has come to light that would call into question the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
OU1 & OU2

VII. PROTECTIVENESS STATEMENT

Protectiveness Statement(s)		
Operable Unit:OU1	*Protectiveness Determination:* Protective	*Planned Addendum Completion Date:* Click here to enter a date
Protectiveness Statement: The OU1 remedy is protective of human health and the environment.		

Protectiveness Statement(s)		
Operable Unit:OU2	*Protectiveness Determination:* Protective	*Planned Addendum Completion Date:* Click here to enter a date
Protectiveness Statement: The OU2 remedy is protective of human health and the environment.		

Sitewide Protectiveness Statement	
Protectiveness Determination: Protective	*Planned Addendum Completion Date:* Click here to enter a date
Protectiveness Statement: Both remedies for OU1 and OU2 are considered protective of human health and the environment.	

VIII. NEXT REVIEW

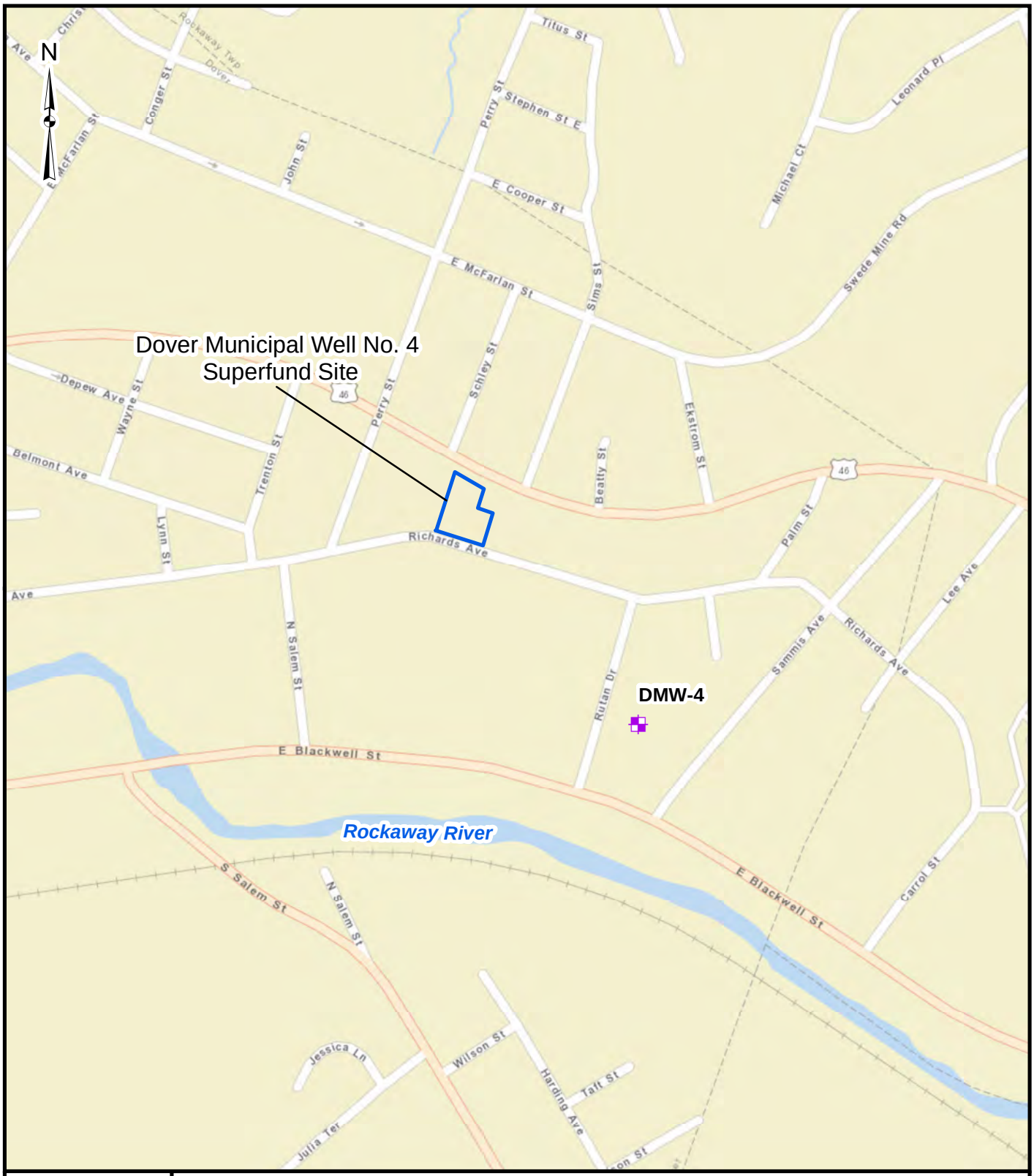
The next FYR report for the Dover Municipal Well No.4 Superfund Site is required five years from the completion date of this review.

APPENDIX A - REFERENCE LIST

DOCUMENTS REVIEWED AS PART OF THE FIVE-YEAR REVIEW

Record of Decision Operable Unit 1	September 1992
Record of Decision Operable Unit 2	September 2005
Classification Exception Area/Well Restriction Area Permit Fact Sheet Form	September 2012
Five-Year Review Report – Dover Municipal Well No. 4 Superfund Site	September 2015
Final Dover Second Annual LTRA Report	August 2016
Final Dover Third Annual LTRA Report	March 2017
Data Summary Report for In Situ Chemical Oxidation Effectiveness Monitoring at OU2	March 2017
Data Summary Report for Supplemental ISCO Effectiveness Monitoring and LTRA Construction Support at OU2	March 2017
Final Dover Fourth Annual LTRA Report	March 2018
Superfund Support Team Sampling Report for the Vapor Intrusion Investigation at the Dover Municipal Well No. 4 Site	March 2018
Final Dover Fifth Annual LTRA Report	March 2019

APPENDIX B – FIGURES AND MAPS



EA Engineering, Science, and Technology, Inc., PBC

GROUNDWATER LONG-TERM RESPONSE ACTION REPORT
GROUNDWATER LONG-TERM MONITORING
DOVER MUNICIPAL WELL NO. 4 SUPERFUND SITE

Figure 1-1
Dover Municipal Well No. 4
Site Location

Site Boundary

Dover Municipal Well #4

Shallow Aquifer Network Well

Intermediate Aquifer Network Well

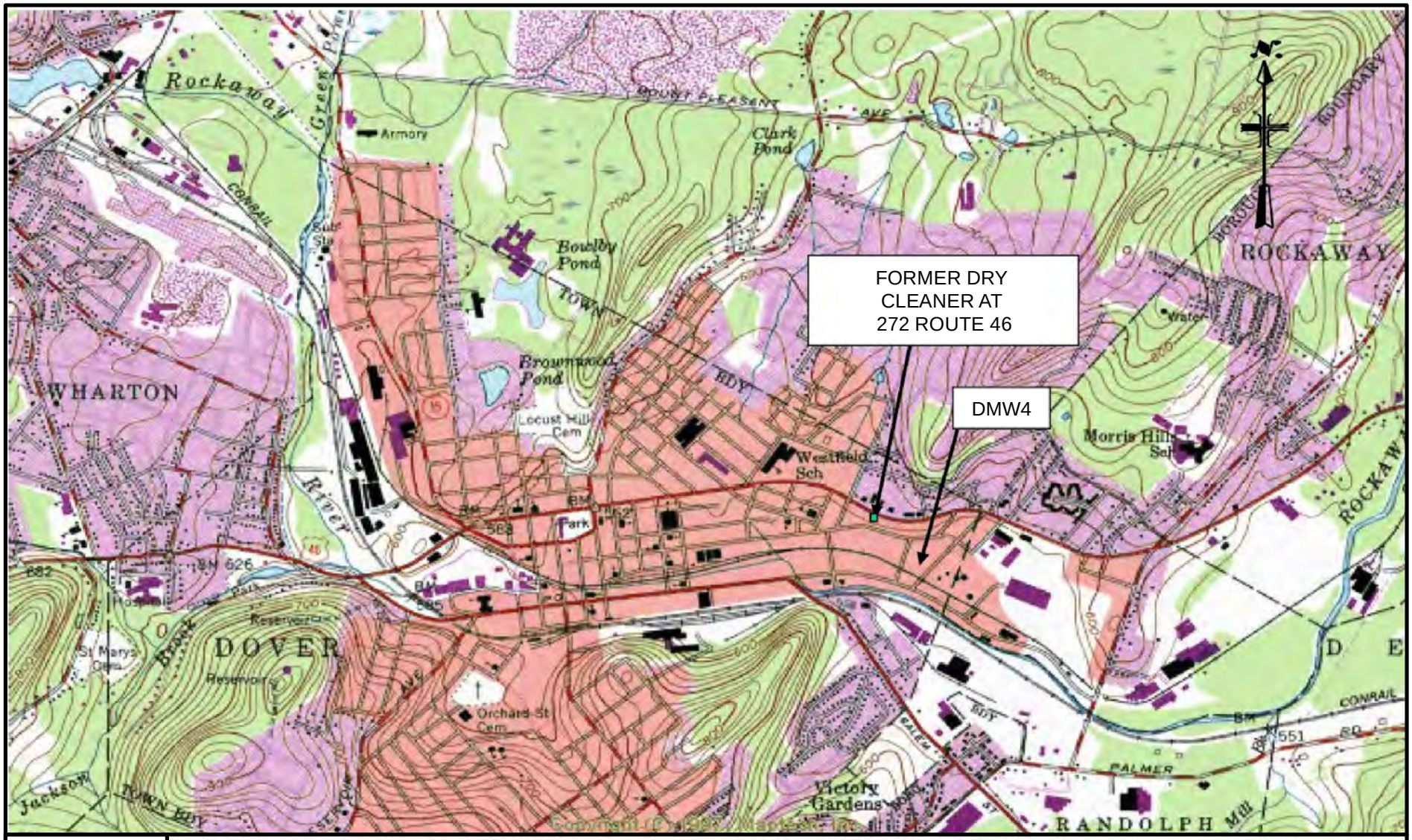
Deep Aquifer Network Well

NOTE: Downgradient wells MW-19DR, MW-7C, and MW-20D are located offsite and not pictured on this figure.

EA Engineering, Science, and Technology, Inc., PBC

GROUNDWATER LONG-TERM RESPONSE ACTION REPORT
GROUNDWATER LONG-TERM MONITORING
DOVER MUNICIPAL WELL No. 4 SUPERFUND SITE

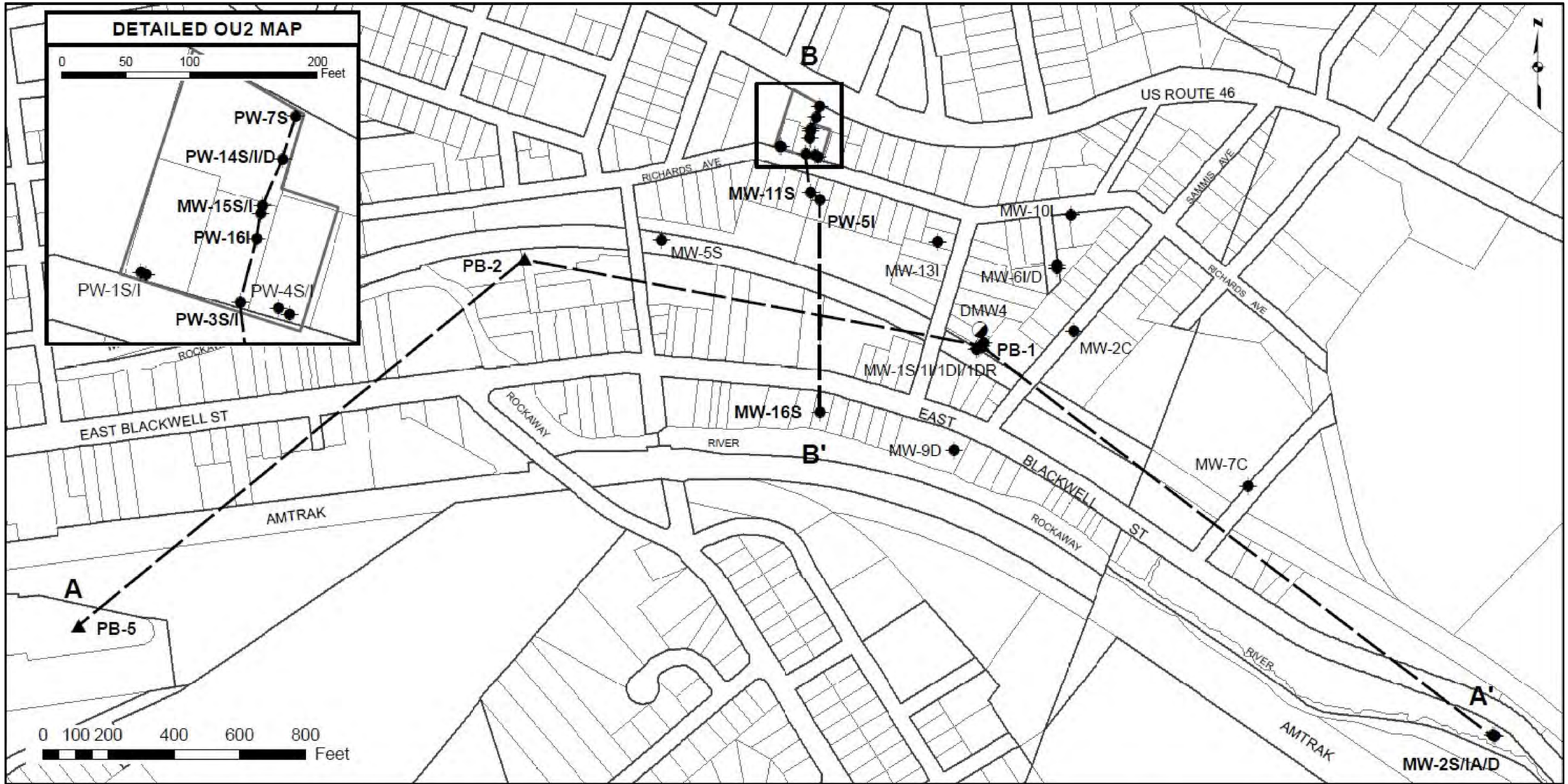
Figure 1-2
Operable Unit 2 (OU2)
Former Dry Cleaner
Site Map and Adjacent Properties



EA Engineering, Science, and Technology, Inc., PBC

GROUNDWATER LONG-TERM RESPONSE ACTION REPORT
GROUNDWATER LONG-TERM RESPONSE ACTION DOVER MUNICIPAL WELL NO. 4 SUPERFUND SITE

Figure 2-1
Regional Topographic Map



NOTE: Figure replicated from Second Annual Long-Term Response Action Groundwater Monitoring Report (ARCADIS 2016)

GROUNDWATER LONG-TERM RESPONSE ACTION REPORT
GROUNDWATER LONG-TERM MONITORING
DOVER MUNICIPAL WELL NO. 4 SUPERFUND SITE

Figure 2-2
Location of Borings used in Geologic Cross Sections A-A' and B-B'

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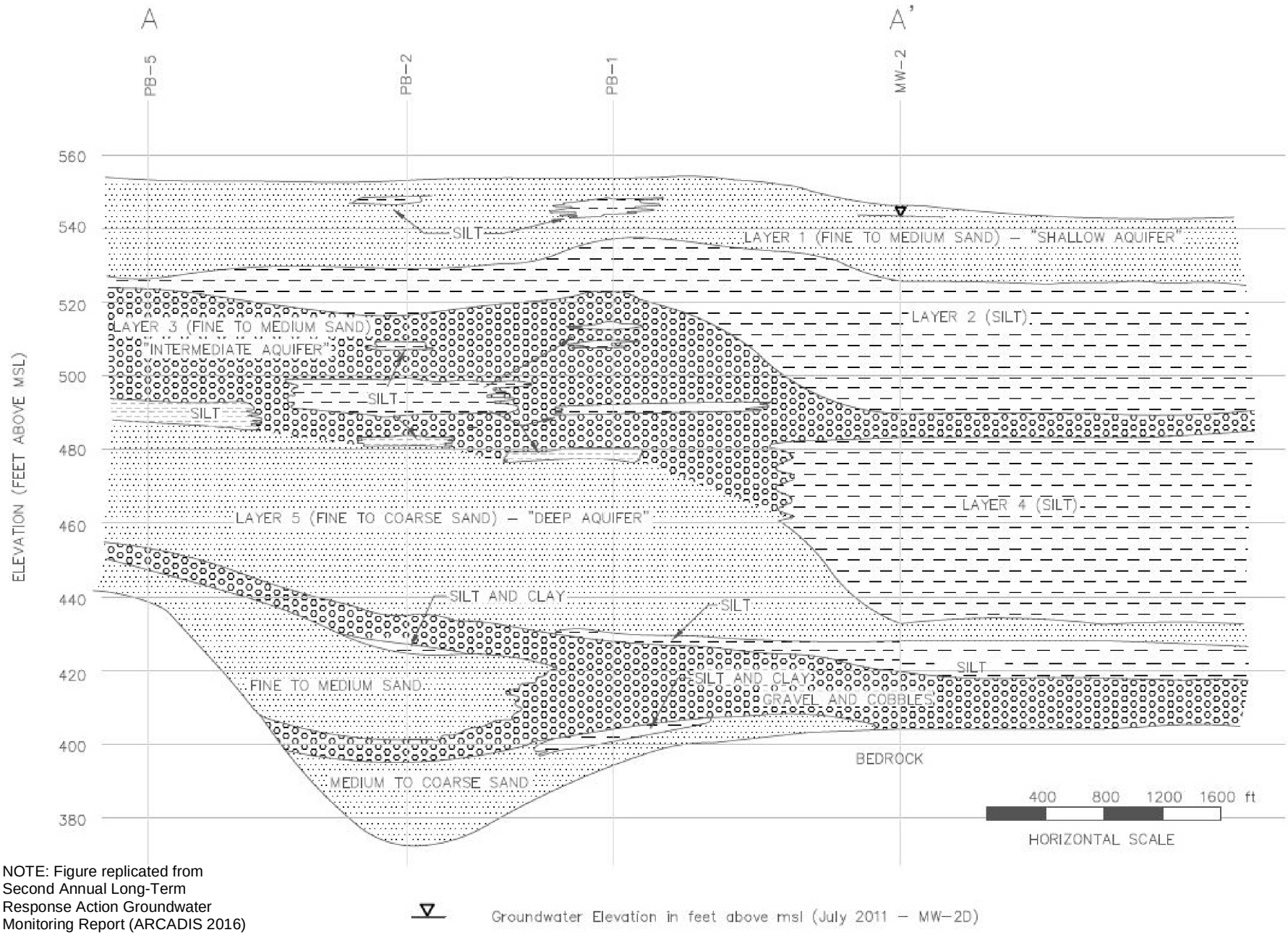

NOTE: Figure replicated from Second Annual Long-Term Response Action Groundwater Monitoring Report (ARCADIS 2016)

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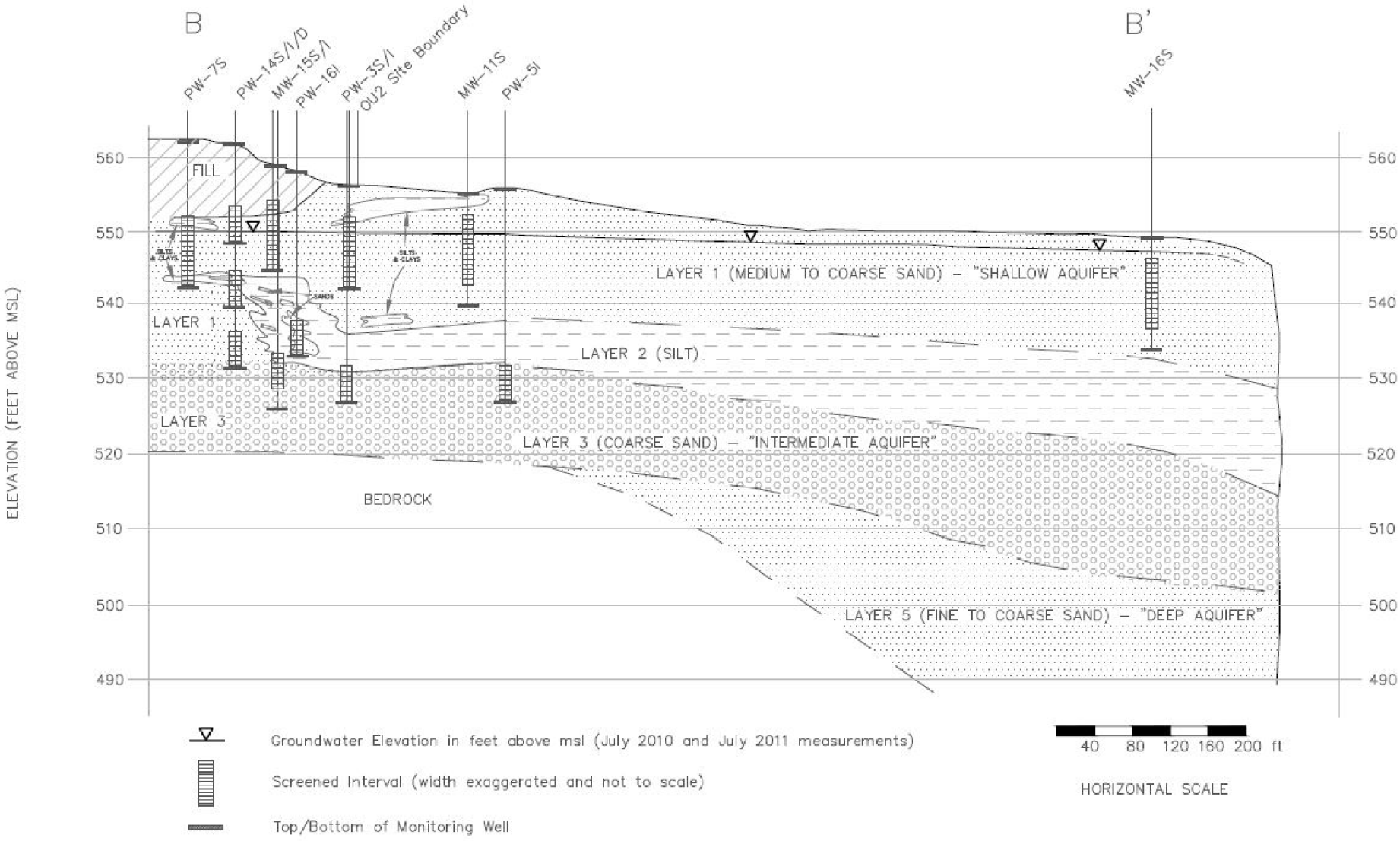
GROUNDWATER LONG-TERM RESPONSE ACTION REPORT
GROUNDWATER LONG-TERM RESPONSE ACTION DOVER MUNICIPAL WELL NO. 4 SUPERFUND SITE

Figure 2-3
Geologic Cross Section A-A'



NOTE: Figure replicated from Second Annual Long-Term Response Action Groundwater Monitoring Report (ARCADIS 2016)

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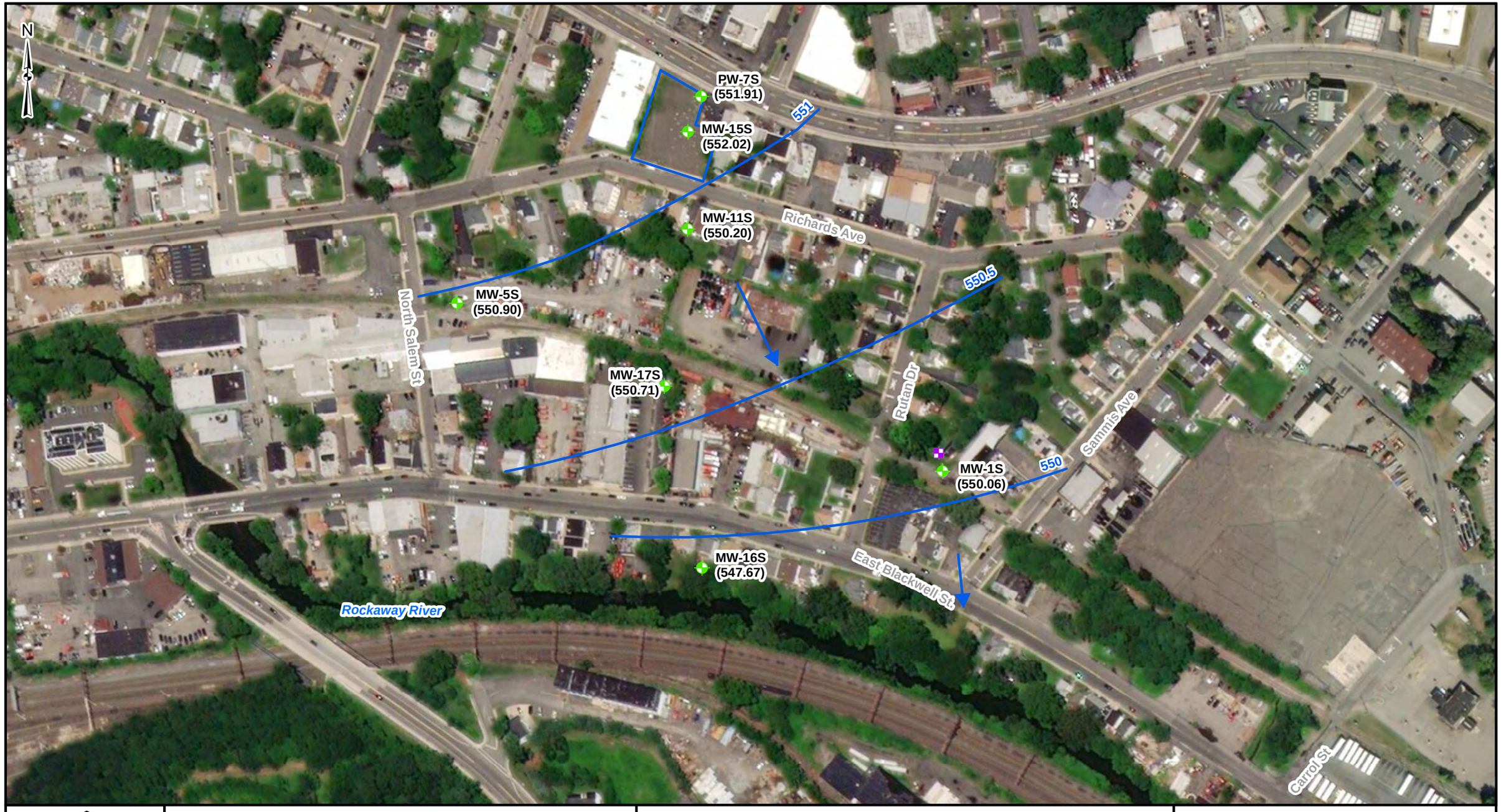
GROUNDWATER LONG-TERM RESPONSE ACTION REPORT
GROUNDWATER LONG-TERM RESPONSE ACTION DOVER MUNICIPAL WELL NO. 4 SUPERFUND SITE

Figure 2-4
Geologic Cross Section B-B'



Dover Municipal Well #4

Shallow Aquifer Network Well

April 2018 Groundwater Contour

Direction of Groundwater Flow

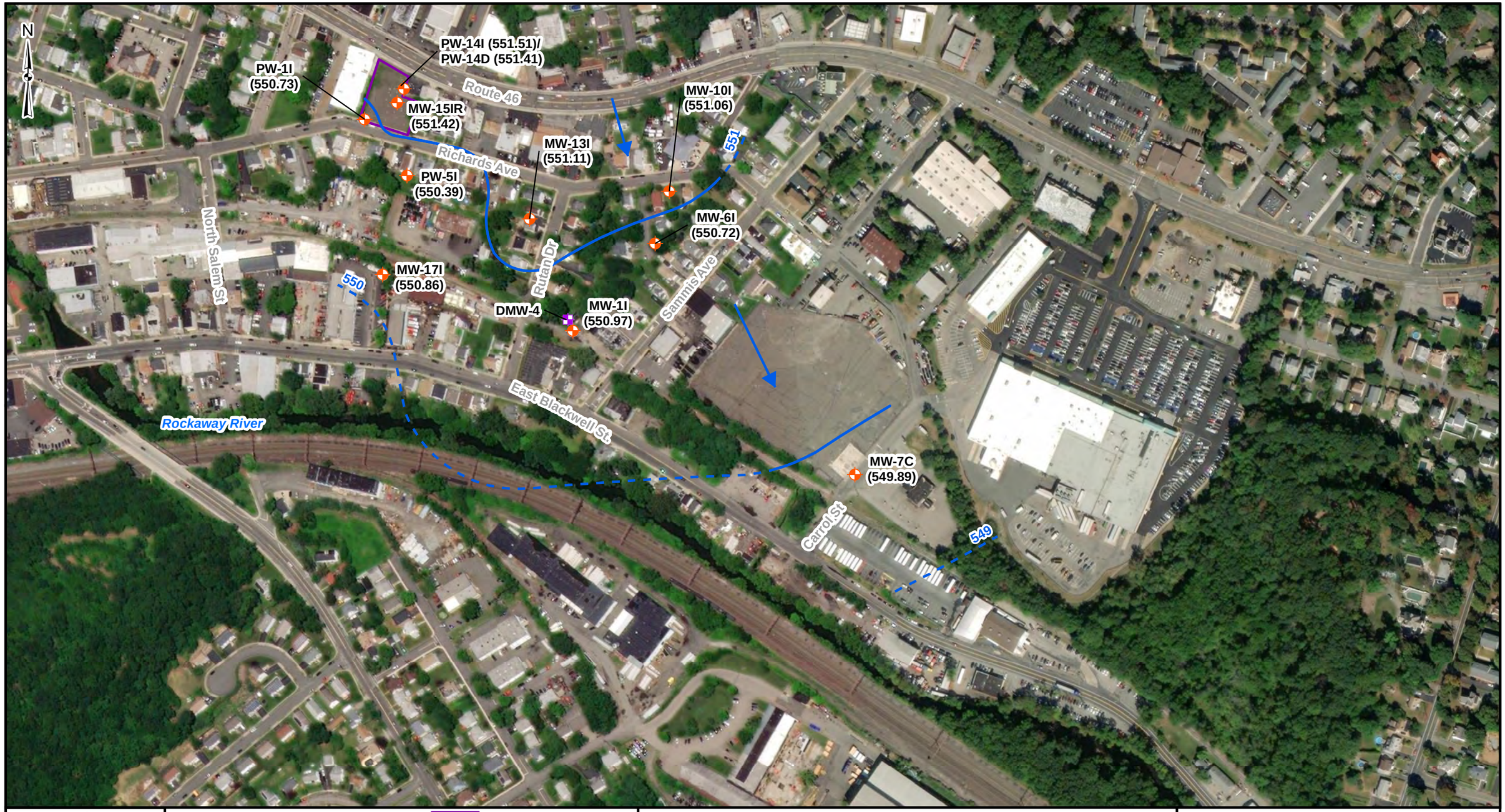
Site Boundary

GROUNDWATER LONG-TERM RESPONSE ACTION REPORT
GROUNDWATER LONG-TERM MONITORING
DOVER MUNICIPAL WELL No. 4 SUPERFUND SITE

Feet
0 100 200 400

Figure 2-5
Potentiometric Surface of Shallow Aquifer
in April 2018

EA Engineering, Science, and Technology, Inc., PBC



Dover Municipal Well #4

Intermediate Aquifer Network Well

April 2018 Groundwater Contour

Inferred APril 2018 Groundwater Contour

Direction of Groundwater Flow

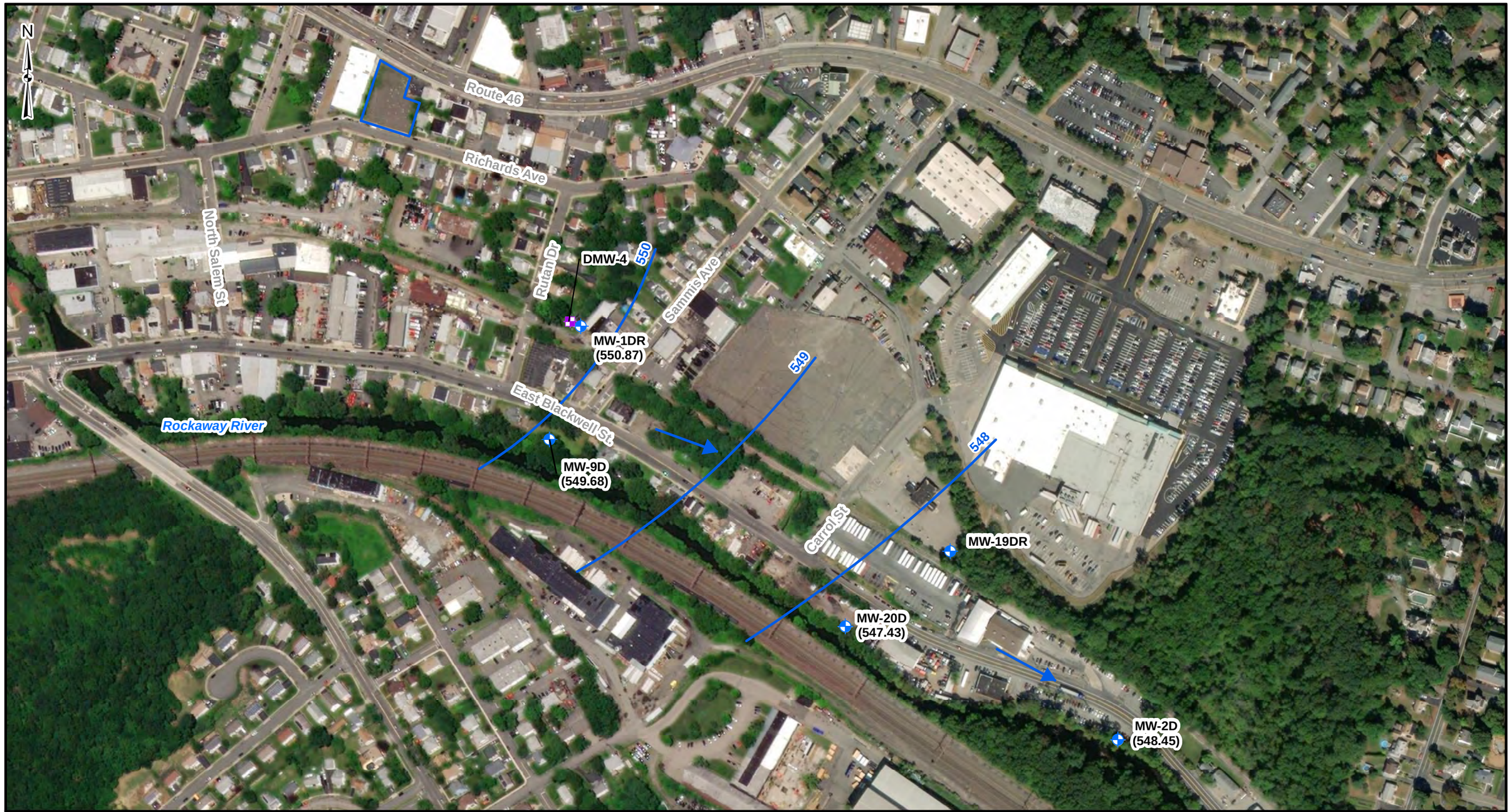
Site Boundary

GROUNDWATER LONG-TERM RESPONSE ACTION REPORT
GROUNDWATER LONG-TERM MONITORING
DOVER MUNICIPAL WELL No. 4 SUPERFUND SITE

0 150 300 600 Feet

Figure 2-6
Potentiometric Surface of Intermediate Aquifer
in April 2018

EA Engineering, Science, and Technology, Inc., PBC



Dover Municipal Well #4

Deep Aquifer Network Well

April 2018 Groundwater Contours

Direction of Groundwater Flow

Site Boundary

GROUNDWATER LONG-TERM RESPONSE ACTION REPORT
GROUNDWATER LONG-TERM MONITORING
DOVER MUNICIPAL WELL NO. 4 SUPERFUND SITE

0 150 300 600 Feet

Figure 2-7
Potentiometric Surface of Deep Aquifer
in April 2018

EA Engineering, Science, and Technology, Inc., PBC

APPENDIX C – CEA/WRA PERMIT FACT SHEET

FIGURES AND MAPS

New Jersey Department of Environmental Protection
Site Remediation Program

CLASSIFICATION EXCEPTION AREA / WELL RESTRICTION AREA (CEA/WRA) PERMIT FACT SHEET FORM

Date Stamp
(For Department use only)

SECTION A. SITE INFORMATION

Site Name: Dover Municipal Well No. 4 Superfund Site

Program Interest (PI) Number(s): NJD980654131 Case Tracking Number(s):

New CEA ☒ Revised CEA ☐ Type of Remedial Action (RA): Natural ☐ Active ☒ RA not yet selected ☐

SECTION B. CEA Component Information

1. **Contaminant(s):** This CEA/WRA applies only to the contaminants above the applicable numeric values established by Ground Water Quality Standards (GWQS), N.J.A.C. 7:9C, listed in the table below. List below the maximum value for all contaminants included in Exhibit A using any well or sampling point used to establish the CEA.

Contaminant	Concentration (1)	GWQS (2)	SWQS(3)	GWSL(4)
Tetrachloroethene	1300	1		1
cis-1,2-Dichloroethene	170	70		350
Trichloroethene	46	1		1
Vinyl Chloride	7.7	1		1

Notes:
(1) Maximum concentration in Micrograms Per Liter
(2) New Jersey Ground Water Quality Standards, N.J.A.C. 7:9C
(3) Surface Water Quality Standards, N.J.A.C. 7:9B - Applicable only where contaminants in the CEA may discharge to a surface water body.
(4) Current NJDEP Vapor Intrusion Ground Water Screening Levels available at http://www.nj.gov/dep/srp/guidance/vaporintrusion/

☐ Check if attaching an Addendum to list additional contaminants and associated information.

☒ **Exhibit A: Monitor Well/Sampling Point Data** – Per N.J.A.C 7:26E-8.3(b) submit a copy of a table that includes the most recent 24 months of ground water sampling.

2. **CEA Boundaries:**
Lot(s) and Block(s) included in the areal extent of the Classification Exception Area:

Year of tax map used: 2010 For CEA revisions, check here if Block and Lot numbers have changed: ☐

Block(s)	Lot(s)	Check if off-site
23-16	8,9,10,11,12	☒
604	5	☒
23-15	7,8,9,10,11, 12	☒
23-15	13,14,15,16,17	☒
23-15	18,19,19.01,20,21	☒

Block(s)	Lot(s)	Check if off-site
23-15	22,23,24,25	☒
23-14	1,3,4,5,6,7,8,9	☒
23-14	10,11,12,13,14,15	☒
23-14	16,17,18,19,20,21	☒
23-14	22, 23, 24, 27	☒

☒ Check if attaching an Addendum to list additional Blocks/Lots and associated information.

☒ **Exhibit B: Site Location Maps** – USGS Quadrangle Map and Tax Lot and Block Map (N.J.A.C. 7:26E-8.3(b)3i and ii)

☒ **Exhibit C: Site Map(s) and Cross Section** – Including actual/predicted contaminant isopleths, ground water flow direction, CEA boundary, monitor well/sampling point/boring locations/IDs, area(s) of concern. See N.J.A.C 7:26E-8.3(b)3iii through v and instructions regarding maps, the cross section and applicable GIS deliverable requirements.

Narrative description of proposed CEA:

The Dover Municipal Well No. 4 Superfund Site Operable Unit 2 (OU2) is the source area located at a former dry cleaning facility at 272 U.S. Route 46, which will be included in the CEA. However, the CEA will also need to extend to OU1, the groundwater contamination present in the three aquifers (shallow, intermediate and deep) below the Site. The plume has migrated offsite and the chosen remedial action for the OU1 contamination plume is monitored natural attenuation. Regional historical fill is not responsible for this contamination; the source area has been identified at OU2. The three plumes are believed to be located between U.S. Route 46 and East Blackwell Street, as far west as North Salem Street and as far east as Rockaway Township, almost to Dover-Rockaway Road. Please see Exhibit C for mapped figures of the three contamination plumes. The CEA has been delineated based on actual data, and natural attentuation is expected to prevent further migration of the plume.

Name(s) of the affected Geologic Formation(s)/Unit(s): Glaciofluvial Terrace Deposits

Direction of ground water flow: Primarily south in shallow zone; east and south in intermediate and deep zones.

(See instructions. If multiple water bearing zones/predominate flow directions exist within the CEA, leave above blank.)

Ground Water Classification: Class IIA

Vertical Depth of CEA (ft bgs and msl)	Horizontal Extent of CEA (acres or square ft)
3 -150 ft bgs (552.6 - 403.4 msl)	75 acres

☒ **Exhibit D (**CEA/WRA Spreadsheet)**: Vertical Contaminant Depth Data and GIS Deliverable for Cross Section** – A spreadsheet, for the most recent 24 months of data, for each sampling point used to establish the CEA, or the subset of wells indicated in N.J.A.C 7:26E-8.3(b)3iii, iv and v, that includes the depth in feet bgs and msl elevation to: the water table; the approximate maximum depth of contamination; and the thickness of any clean water lens, if one had been identified during the Remedial Investigation. See instructions for this form and spreadsheet for more details.

Exhibit E: Fate and Transport Description and Model Documentation

☐ Historic Fill exemption

☒ All information required pursuant to N.J.A.C. 7:26E-8.3(b)2 and applicable guidance is included.

3. Projected Term of CEA: Based on modeling/calculations in Exhibit E

Proposed Duration in Years: 10 years

SECTION C. CURRENT AND PROJECTED GROUND WATER USE DOCUMENTATION

☒ **Exhibit F: Well Search Results** – Include most recent well search per N.J.A.C. 7:26E-1.17.

Check each item where, pursuant to N.J.A.C. 7:26E-8.3(b)4, written documentation was obtained regarding future ground water use, in the aquifer(s) in which the CEA is located, for a 25-year planning horizon based on:

☐ Municipal master plans
☐ Zoning plans
☐ Local water purveyor plans and planning data pertaining to the existence of water lines and proposed future installation of water lines
☐ Local planning officials
☐ County and local boards of health
☐ Local and/or county ordinances restricting installation of potable wells

SECTION D. WELL RESTRICTION INFORMATION

For Class II-A ground water and pursuant to the GWQS at N.J.A.C. 7:9C-1.6(d), where ground water quality data indicate contaminants exceed the values listed in the Primary Drinking Water Regulations, the Department shall restrict, or require the restriction of, potable ground water uses within any CEA. Therefore, the CEA established for this site is also a Well Restriction Area, the extent of which coincides with the boundaries of the CEA.
Well Restrictions set within the boundaries of the CEA:

☒ Double Case Wells
☒ Sample Potable Wells
☒ Evaluate Production Wells
☐ Other

SECTION E. PUBLIC NOTIFICATION REQUIREMENTS

See instructions regarding N.J.A.C. 7:26E-8.3(b)5vi, otherwise notify the NJDEP that letters were sent per N.J.A.C. 7:26E-8.3(b)5 by checking all applicable entities:

- ☐ Municipal and county clerk(s)
- ☐ Local, county or regional health department(s)
- ☐ Designated County Environmental Health Act agency (if applicable)
- ☐ County Planning Board
- ☐ Pinelands Commission (if applicable)
- ☐ Owners of real property overlying CEA foot print

List of Names and Addresses – Include all persons notified pursuant to N.J.A.C. 7:26E-8.3(b) based on the proposed CEA extent. See instructions regarding last column. Check here if no volatile contaminants in CEA: ☐.

Property Owner Name	Notification Address Used	Date notification sent	Property was evaluated for vapor impacts ☒ if "Yes"
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
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			☐
			☐

SECTION F. LICENSED SITE REMEDIATION PROFESSIONAL INFORMATION AND STATEMENT

LSRP ID Number: _____

First Name: _____ Last Name: _____

Phone Number: _____ Ext: _____ Fax: _____

Mailing Address: _____

City/Town: _____ State: _____ Zip Code: _____

Email Address: _____

This statement shall be signed by the LSRP who is submitting this notification in accordance with SRRA Section 16 d. and Section 30 b.2.

I certify that I am a Licensed Site Remediation Professional authorized pursuant to N.J.S.A. 58:10C to conduct business in New Jersey. As the Licensed Site Remediation Professional of record for this remediation, I:

[SELECT ONE OR BOTH OF THE FOLLOWING AS APPLICABLE]:

☐ *directly oversaw and supervised all of the referenced remediation, and\or*

☐ *personally reviewed and accepted all of the referenced remediation presented herein.*

I believe that the information contained herein, and including all attached documents, is true, accurate and complete.

It is my independent professional judgment and opinion that the remediation conducted at this site, as reflected in this submission to the Department, conforms to, and is consistent with, the remediation requirements in N.J.S.A. 58:10C-14.

My conduct and decisions in this matter were made upon the exercise of reasonable care and diligence, and by applying the knowledge and skill ordinarily exercised by licensed site remediation professionals practicing in good standing, in accordance with N.J.S.A. 58:10C-16, in the State of New Jersey at the time I performed these professional services.

I am aware pursuant to N.J.S.A. 58:10C-17 that for purposely, knowingly or recklessly submitting false statement, representation or certification in any document or information submitted to the board or Department, etc., that there are significant civil, administrative and criminal penalties, including license revocation or suspension, fines and being punished by imprisonment for conviction of a crime of the third degree.

LSRP Signature: _____ Date: _____

LSRP Name/Title: _____ **No Changes Since Last Submittal** ☐

Company Name: _____

Completed forms should be sent to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

ADDENDUM
Classification Exception Area / Well Restriction Area
Permit Fact Sheet Form

Section B. CEA Component Information

1. **Contaminant(s):** This CEA/WRA applies only to the contaminants above the applicable numeric values established by Ground Water Quality Standards (GWQS), N.J.A.C. 7:9C, listed in the table below. List below the maximum value for all contaminants included in Exhibit A using any well or sampling point used to establish the CEA.

Contaminant	Concentration (1)	GWQS (2)	SWQS(3)	GWSL(4)

Notes: (1) Maximum concentration in Micrograms Per Liter
(2) New Jersey Ground Water Quality Standards, N.J.A.C. 7:9C
(3) Surface Water Quality Standards, N.J.A.C. 7:9B - Applicable only where contaminants in the CEA may discharge to a surface water body.
(4) Current NJDEP Vapor Intrusion Ground Water Screening Levels

2. **CEA Boundaries:**
Lot(s) and Block(s) included in the areal extent of the Classification Exception Area:

Year of tax map used: 2010 For CEA revisions, check here if Block and Lot numbers have changed: ☐

Block(s)	Lot(s)	Check if off-site
23-14	22,23,24,27	☒
23-13	1,2,3,4,5,6,7,8,9	☒
23-13	10,11	☒
23-18	1	☒
23-17	1,2,3,4,4.01	☒
23-10	7, 8, 8.01, 9	☐
23-10	4,10,11,12,12.01	☒
23-10	13,14,15,16,17,18	☒
23-10	20,21,23,24	☒

Block(s)	Lot(s)	Check if off-site
Rockaway Twp.	1983 Map	☐
10201	3	☒
10202	27,32,33,34,35,36	☒
10202	37,38,39,40,41,42	☒
10202	43,47,48,49,50	☒
		☐
		☐
		☐
		☐

EXHIBIT A.1
Shallow Aquifer Sampling Point Data

Sample ID	NJDEP GWQS[1]	MW-1S	PW-1S			PW-4S			MW-5S	PW-7S		
Screened Interval (ft. BGS)		3-16	4-14			4-14			3-23	10.3-20.3		
Screened Interval (ft. MSL)		548.8-535-8	552.3-542.3			552.4-542.4			552.6-532.6	552.3-542.3		
Sample Date		7/5/2011	7/23/2010	9/19/2011	2/20/2012	7/26/2010	9/20/2011	2/22/2012	7/7/2011	7/19/2010	9/19/2011	2/20/2012
Volatile Organic Compounds (ug/L)												
Cis-1,2-Dichloroethene	**70**	ND	0.55	5.6	11K	ND	2.5	2.3	ND	ND	ND	ND
Tetrachloroethene	**1**	ND	4.7	6.8	1.6	56	100	76	ND	ND	25	10
Trichloroethene	**1**	ND	0.31 J	12	11	0.75 J	3.5	24	ND	ND	ND	ND
Vinyl Chloride	**1**	ND	ND	2.2	2.6	ND	ND	ND	ND	ND	ND	ND

Notes:
BGS- Below Ground Surface
MSL- Mean Sea Level
1. NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9C
Analyte results shaded grey are above the NJDEP GWQS
J- The identification of the analyte is acceptable; the reported value is an estimate
ND- The analyte was not detected at or above the Reporting Limit
R- The result was qualified as rejected
K - Identification of the analyte is acceptable; reported value may be biased high

EXHIBIT A.1
Shallow Aquifer Sampling Point Data

Sample ID	NJDEP GWQS[1]	MW-11S			PW-14S			MW-15S			MW-16S
Screened Interval (ft. BGS)		3-13			9-14			5-15			3-13
Screened Interval (ft. MSL)		552.2-542.2			553.0-548.0			554.0-544.0			546.5-536.5
Sample Date		7/26/2010	9/19/2011	2/22/2012	7/21/2010	9/21/2011	9/21/2011	7/22/2010	9/20/2011	9/20/2011	7/6//2011
Volatile Organic Compounds (ug/L)											
Cis-1,2-Dichloroethene	**70**	0.76 J	1.6	ND	2.4 J	2.7	1.7	170	81	58	ND
Tetrachloroethene	**1**	130	140	44	470	810	200	1000	330	240	ND
Trichloroethene	**1**	0.55	1.6	ND	ND	2.6	1.3	46 J	26	21	ND
Vinyl Chloride	**1**	0.5 R	ND	ND	ND	ND	ND	ND	ND	0.53	ND

Notes:
BGS- Below Ground Surface
MSL- Mean Sea Level
1. NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9C
Analyte results shaded grey are above the NJDEP GWQS
J- The identification of the analyte is acceptable; the reported value is an estimate
ND- The analyte was not detected at or above the Reporting Limit
R- The result was qualified as rejected
K - Identification of the analyte is acceptable; reported value may be biased high

EXHIBIT A.2

Intermediate Aquifer Sampling Point Data

Sample ID		MW-1I	PW-1I			MW-2C	PW-4I			PW-5I		
Screened Interval (ft. BGS)	NJDEP	51-71	27-32			39-49	26-31			25-30		
Screened Interval (ft. MSL)	GWQS[1]	500.8-480.8	529.4-524.4			513.4-503.4	530.5-525.5			531.1-526.1		
Sample Date		7/5/2011	10/28/2009	7/23/2010	2/20/2012	7/7/2011	7/26/2010	9/20/2011	2/22/2012	7/20/2010	9/19/2011	2/22/2012
Volatile Organic Compounds (ug/L)												
Tetrachloroethene	**1**	ND	ND	ND	ND	3.9	250	96	75	16	96	42
Trichloroethene	**1**	ND	ND	ND	ND	ND	ND	0.88	0.79	ND	0.56	0.63

Notes:
BGS- Below Ground Surface
MSL- Mean Sea Level
1. NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9C
Analyte results shaded grey are above the NJDEP GWQS
J- The identification of the analyte is acceptable; the reported value is an estimate

EXHIBIT A.2

Intermediate Aquifer Sampling Point Data

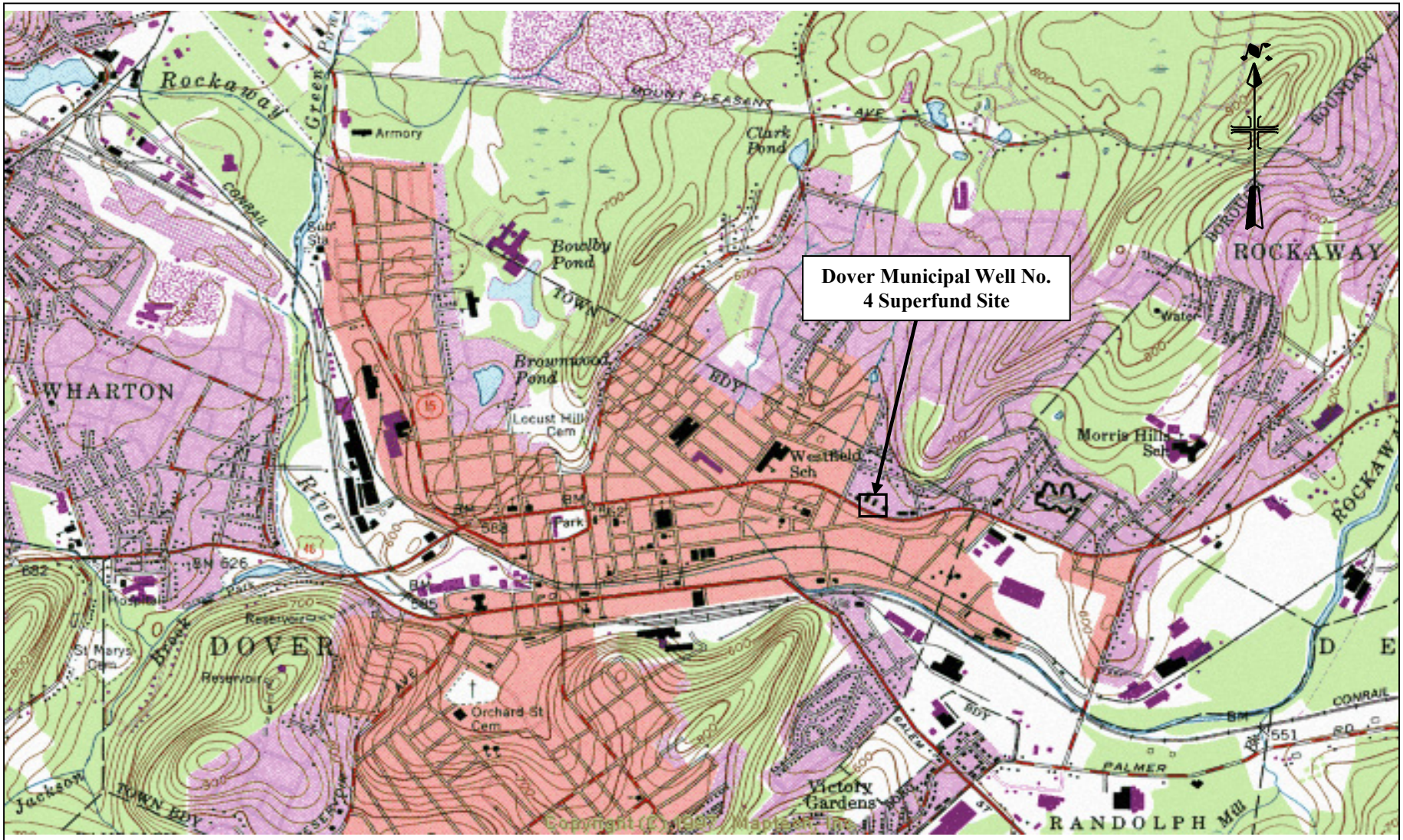
Sample ID	NJDEP GWQS[1]	MW-6I	MW-7C	MW-10I	MW-13I	MW-15I		
Screened Interval (ft. BGS)		3-15	NA	42-52	37-47	26.5-31.5		
Screened Interval (ft. MSL)		552.9-540.9	NA	514.9-504.9	519.9-509.9	532.5-527.5		
Sample Date		7/8/2011	7/6/2011	7/5/2011	7/8/2011	7/22/2010	9/20/2011	2/21/2012
Volatile Organic Compounds (ug/L)								
Tetrachloroethene	**1**	280	ND	ND	4.5	91	25	45
Trichloroethene	**1**	ND	ND	ND	ND	ND	ND	ND

Notes:
BGS- Below Ground Surface
MSL- Mean Sea Level
1. NJDEP Ground Water Quality Standards as per N.J.A.C. 7:9C
Analyte results shaded grey are above the NJDEP GWQS
J- The identification of the analyte is acceptable; the reported value is an estimate

EXHIBIT A.3
Deep Aquifer Sampling Point Data

Sample ID	NJDEP GWQS[1]	MW-1DI	MW-1DR	MW-2D	MW-6D	MW-9D
Screened Interval (ft. BGS)		113-123	140-150	122-130	72-82	122-132
Screened Interval (ft. MSL)		440.6-430.6	413.5-403.5	425.3-417.3	483.8-473.8	427.9-417.9
Sample Date		7/6/2011	7/5/2011	7/7/2011	7/8/2011	7/6/2011
Volatile Organic Compounds (ug/L)						
Tetrachloroethene	**1**	ND	21	0.82	16	ND
Trichloroethene	**1**	ND	ND	ND	ND	1.7

Notes:
BGS- Below Ground Surface
MSL- Mean Sea Level
7:9C
Analyte results shaded grey are above the NJDEP GWQS
J- The identification of the analyte is acceptable; the reported value is an estimate
ND- The analyte was not detected at or above the Reporting Limit



Source: Dover, NJ USGS, 1981

0 scale 2000 ft.

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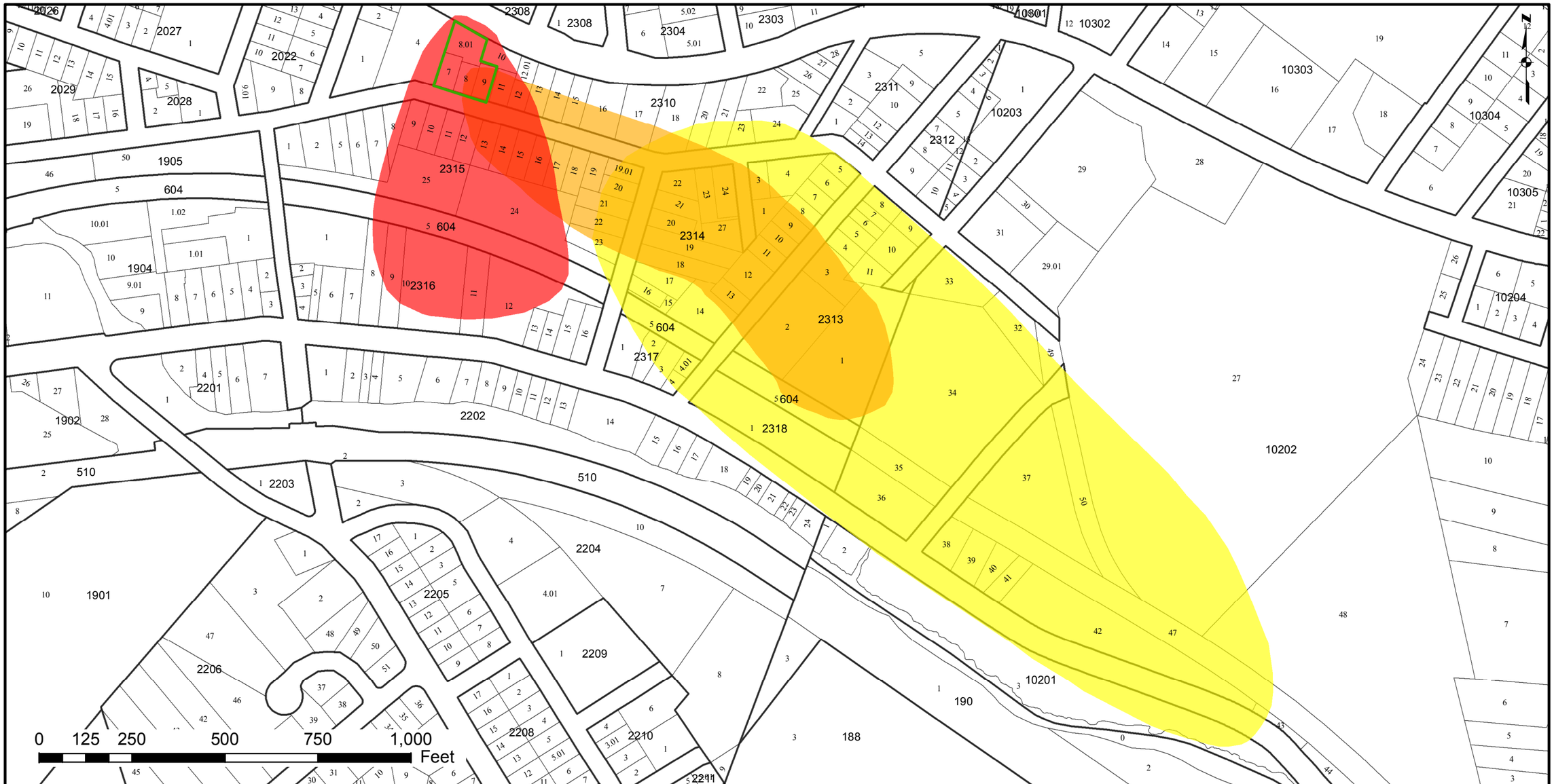
USGS QUADRANGLE SITE MAP
Dover Municipal Well No. 4 Superfund Site
272 ROUTE 46
DOVER, NEW JERSEY

EXHIBIT B.1



Legend

- Source Area: OU2
- 2010 Tax Parcels
- Shallow Plume Extent
- Intermediate Plume Extent
- Deep Plume Extent

G:\project\4553047\GIS\Dover_BlockLotMap.mxd 2/17/2012 3:02 PM

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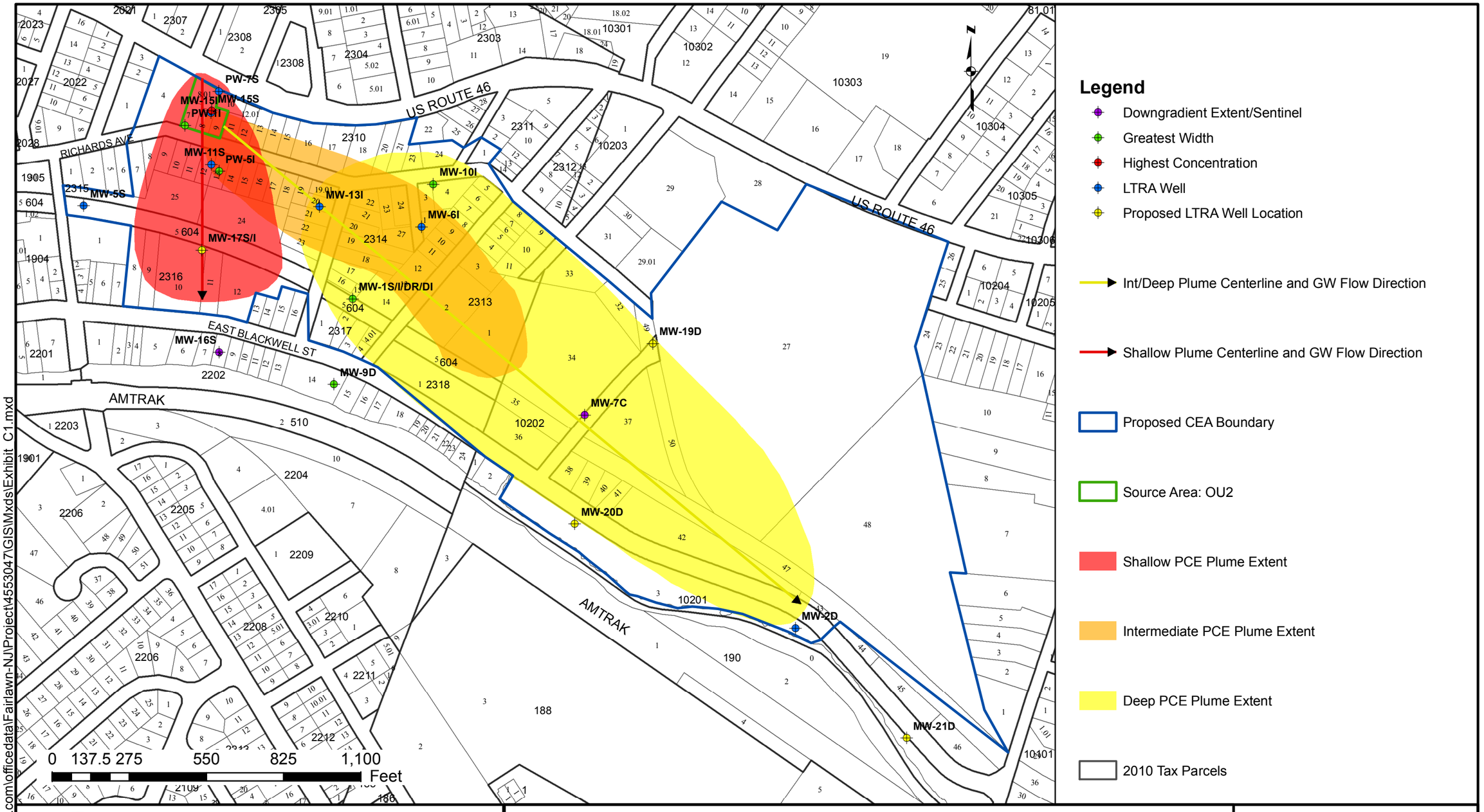
Infrastructure · Water · Environment · Buildings

Dover Municipal Well No. 4 Superfund Site: NJD980654131

Dover, Morris County, New Jersey

Exhibit B.2



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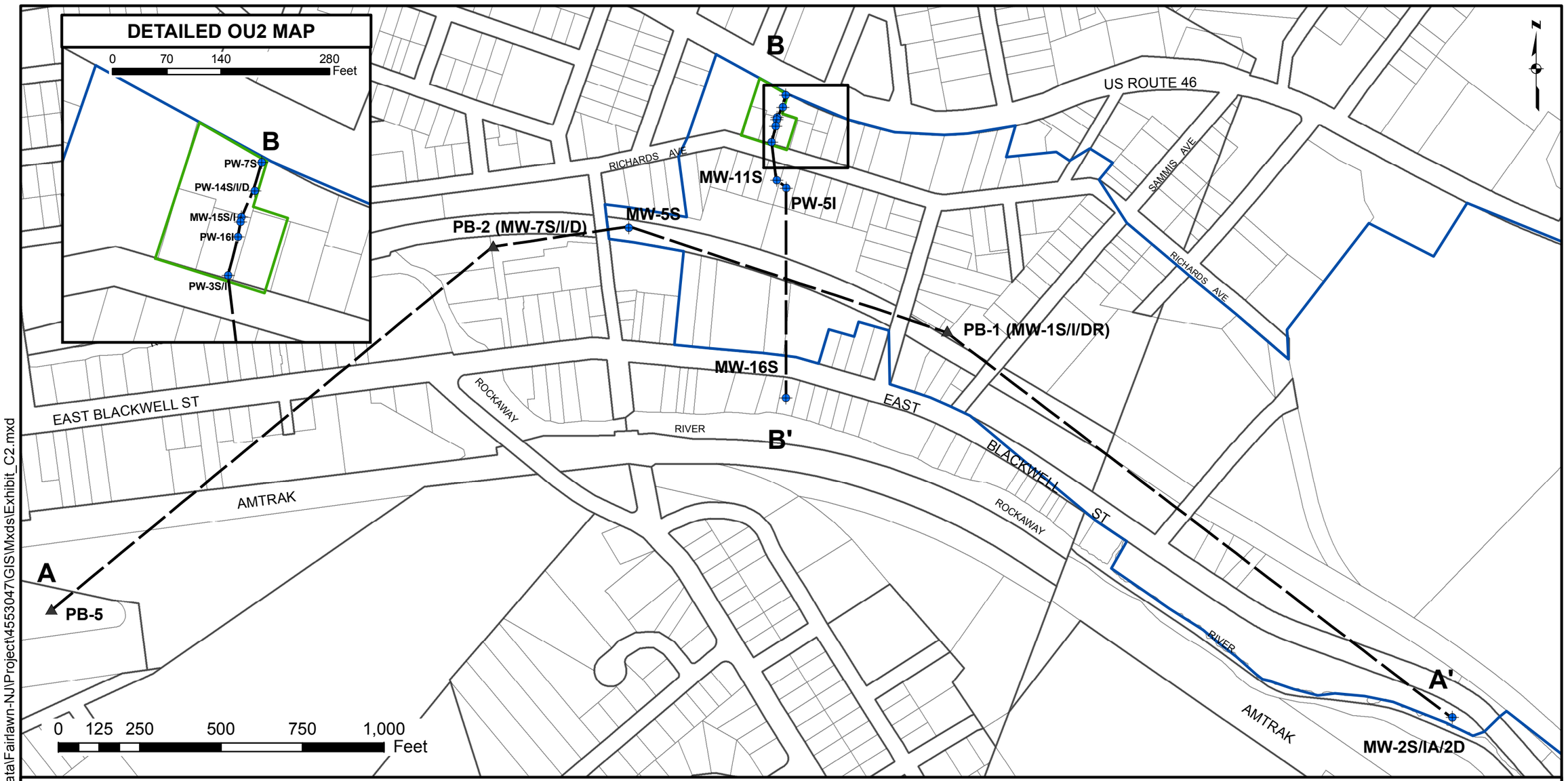
Dover Municipal Well No. 4 Superfund Site: NJD980654131

Dover, Morris County, New Jersey

Exhibit C.1



LEGEND

Monitoring Well | Soil Boring | OU2 Site Boundary | Proposed CEA Boundary | Cross Section

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DOVER MUNICIPAL WELL NO. 4 SUPERFUND SITE: NJD980654131
DOVER, MORRIS COUNTY, NEW JERSEY

LOCATION OF BORINGS USED IN GEOLOGIC CROSS SECTIONS A-A' AND B-B'

EXHIBIT C.2

\\arcadis-us.com\officedata\Fairlawn-NJ\Project\4553047\GIS\Mxds\Exhibit_C2.mxd

A

A'

PB-5

PB-2 (MW-7S/I/D)

MW-5S

PB-1 (MW-1S/I/DI/DR)

MW-2S/IA/D

ESTIMATED SHALLOW PLUME LOCATION

ELEVATION (FEET ABOVE MSL)

560

540

520

500

480

460

440

420

400

380

ND

ND

ND

ND

SILT

LAYER 1 (FINE TO MEDIUM SAND) "SHALLOW AQUIFER"

LAYER 2 (SILT)

LAYER 3 (FINE TO MEDIUM SAND) "INTERMEDIATE AQUIFER"

0.3

SILT

SILT

ND

ND

LAYER 4 (SILT)

LAYER 5 (FINE TO COARSE SAND) – "DEEP AQUIFER"

SILT AND CLAY

ND

ND

SILT

SILT

FINE TO MEDIUM SAND

SILT AND CLAY

GRAVEL AND COBBLES

0.82

21

DEEP PLUME

BEDROCK

MEDIUM TO COARSE SAND

HORIZONTAL SCALE

400 800 1200 1600 ft

Groundwater Elevation in feet above msl (Nov 1998)

ND No PCE Detected

ND PCE Concentration in ug/L (11/1998)

21 PCE Concentration in ug/L (7/2011)

Screened Interval (width not to scale)

Top/Bottom of Monitoring Well

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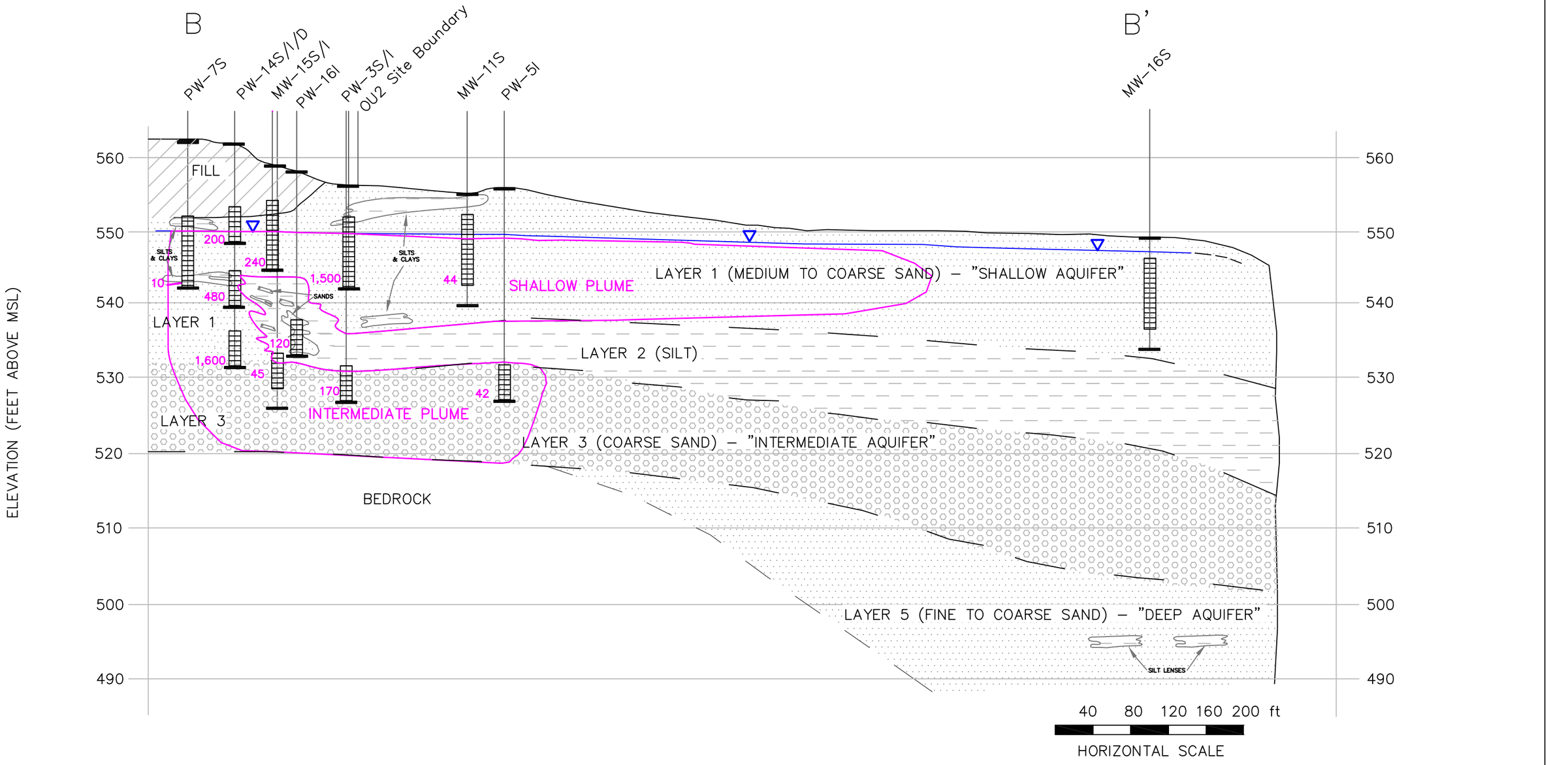
DOVER MUNICIPAL WELL NO.4 SUPERFUND SITE:
NJD980654131
DOVER, MORRIS COUNTY, NEW JERSEY

GEOLOGIC CROSS SECTION A-A'

Exhibit C.3



Groundwater Elevation in feet above msl (July 2010 and July 2011 measurements)

810 PCE Concentrations in ug/L (Post–ISCO II, September 2011)

ND No PCE Detected

Screened Interval (width exaggerated and not to scale)

Top/Bottom of Monitoring Well

ARCADIS MALCOLM PIRNIE

DOVER MUNICIPAL WELL NO.4 SUPERFUND SITE:
NJD980654131
DOVER, MORRIS COUNTY, NEW JERSEY

GEOLOGIC CROSS SECTION B-B'

Exhibit C.4

Exhibit D
Vertical Contaminant Data

Well ID	Ground Elevation (MSL)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Top of Screen (MSL)	Bottom of Screen (MSL)	Depth to Water Table [1] (ft bgs)	Depth to Water Table[1] (MSL)	Approx. Bottom of Plume (ft bgs)	Approx. Bottom of Plume (MSL)	Approx. Top of Plume (ft bgs)	Approx. Top of Plume (MSL)	Thickness of Clean Water Lens (ft)
Shallow Aquifer Monitoring Well Network												
MW-1S	551.79	3	16	548.8	535.8	3	547.25	NA	NA	NA	NA	NA
MW-5S	555.57	3	23	552.6	532.6	5.82	550.07	NA	NA	NA	NA	NA
PW-7S	562.58	10.3	20.3	552.3	542.3	10.53	551.94	20.3	542.3	10.3	552.3	0
MW-11S	555.24 [2]	3	13	552.2	542.2	5.15	550.59	13	542.2	3	552.2	0
MW-15S	558.99 [3]	5	15	554	544	8.15	549.82	15	544	5	554	0
MW-16S	549.51 [2]	3	13	546.5	536.5	2.65	547.36	NA	NA	NA	NA	NA
Intermediate Aquifer Monitoring Well Network												
MW-1I	551.82	51	71	500.8	480.8	1.78	548.76	NA	NA	NA	NA	NA
PW-1I	556.38	27	32	529.4	524.4	6.01	548.36	NA	NA	NA	NA	NA
PW-5I	556.07	25	30	531.1	526.1	5.87	550.23	30	526.1	25	531.1	0
MW-6I	555.94	3	15	552.9	540.9	6.04	550.73	15	540.9	3	552.9	0
MW-7C [4]	550.65	-	-	-	-	2.26	548.39	NA	NA	NA	NA	NA
MW-13I	556.93 [2]	37	47	519.9	509.9	7.3	550.13	47	509.9	37	519.9	29.7
MW-15I	559.04	26.5	31.5	532.5	527.5	8.11	549.76	31.5	527.5	26.5	532.5	0
Deep Aquifer Monitoring Well Network												
MW-1DI	553.58	113	123	440.6	430.6	1.92	551.66	123	430.6	113	440.6	111.08
MW-1DR	553.49	140	150	413.5	403.5	3.8	549.69	150	403.5	140	413.5	136.2
MW-2D	547.28	122	130	425.3	417.3	1.43	544.32	130	417.3	122	425.3	120.57
MW-9D	549.93	122	132	427.9	417.9	0.25	549.93	NA	NA	NA	NA	NA

1- Depth to water table measurements taken for Monitoring Wells (MW) in July 2011; MW-11S, MW-15S, MW-15I and all PW measurements taken in September 2011.

2 - These values were estimated from the Well Construction Logs.

3- These values were obtained during the December 11,2009 surveying event.

4- The screened interval for MW-7C is unkown.

NA- Not Applicable becausewell is outside of contaminant plume area

Exhibit E: Fate and Transport Discussion

This Exhibit presents a discussion of the fate and transport of chlorinated volatile organic compounds (VOCs) identified at the Dover Municipal Well No. 4 Superfund Site (the Site), located in the Town of Dover, Morris County, New Jersey.

1. Site History

Drilled in 1962, Dover Municipal Well No. 4 (DMW4) began pumping in June 1965 and was one of the town's primary water supply wells with an average pumping rate of 1,100 gallons per minute (gpm). In March 1980, the Town of Dover and the New Jersey Department of Environmental Protection (NJDEP) documented the presence of chlorinated VOCs in the groundwater collected from DMW4. Based on this information, in September 1980, the Town of Dover voluntarily removed DMW4 from service and replaced it with standby well #3.

A Hazard Ranking System report was prepared for the Site in December 1982, and the Site was placed on the National Priorities List (NPL) in September 1983. Numerous investigations were conducted by NJDEP in the mid to late 1980s in an attempt to identify the source of groundwater contamination in the shallow, intermediate, and deep aquifers. While the studies identified contamination at various individual properties, they also showed that these facilities were not the source of the contamination at the Site.

In 1990, a Remedial Investigation (RI) conducted by NJDEP identified chlorinated VOCs in all three aquifers near DMW4. Tetrachloroethene (PCE) was detected north of DMW4 in the intermediate and deep glacial sand and gravel aquifers. Chlorinated VOCs were also detected in the shallow, intermediate, and deep glacial sand and gravel aquifers at various locations throughout the area. The 1990 RI Report, however, did not define the nature, extent, and source of groundwater contamination.

On September 30, 1992, the United States Environmental Protection Agency (EPA) issued a record of decision (ROD) based on the results of the 1990 RI Report. The 1992 ROD divided the project into two operable units (OUs). OU1 was defined as the remedy for the groundwater contamination present in the three aquifers beneath DMW4. OU2 was defined as the source investigation for the groundwater contamination found in DMW4. Since the 1990 RI

Report for OU1 could not define the source of groundwater contamination, the 1992 ROD called for a separate Remedial Investigation and Feasibility Study (RI/FS) for OU2.

In October 1992, NJDEP requested that EPA assume the lead for addressing the contamination at the Site. In March 1993, EPA initiated a further investigation to define the nature and extent of chlorinated VOCs in the shallow, intermediate, and deep aquifers. While EPA's investigation located numerous potential sources, EPA was unable to identify the specific source of the groundwater contamination at that time.

Between 1999 and 2003, EPA conducted a Preliminary Design Investigation (PDI) as part of the OU1 remedial design, which also focused on identifying the source of groundwater contamination. Groundwater and soil samples collected in 2001 indicated that a dry cleaner on U.S. Route 46 was the source of the chlorinated VOCs detected in DMW4. Once EPA identified the source of the contamination of DMW4, EPA began an OU2 RI/FS. In 2003, EPA conducted sampling on the dry cleaner property to characterize the contamination beneath and near the dry cleaner building. The OU2 RI/FS was completed in 2004, and on September 30, 2005 the EPA signed the ROD for OU2.

2. Summary of OU1 and OU2 Remedial Activities Performed to Date

In December 2007, after acquiring title of the dry cleaner property, EPA demolished the former dry cleaner building. Soil sampling conducted during the design phase showed that soil contamination also existed in close proximity to three adjacent houses to the south of the dry cleaner property. The three residential properties were acquired by the EPA in August 2008 and the houses were demolished in October 2008. In March through May 2009, unsaturated soil was excavated from portions of the site where the ROD cleanup criteria were exceeded. In general, the soil excavations extended to the water table. Approximately 1,600 cubic yards of soil were removed and disposed off-site, and the excavations were backfilled with clean fill

The selected remedy for OU2 is in situ chemical oxidation (ISCO). EPA installed ISCO performance monitoring wells on the former drycleaner and residential properties in May 2009. Baseline (pre-treatment) soil samples were collected from the soil borings advanced during performance monitoring well installation, and baseline groundwater samples were collected from the performance monitoring wells in June 2009 and October 2009.

Phase 1 ISCO treatment activities commenced at OU2 in March 2010 with the installation of 33 injection wells and two vent wells. Oxidant injections began on April 13, 2010 and were completed on May 27, 2010. ARCADIS/Pirnie performed Phase 1 ISCO treatment effectiveness monitoring in July 2010. The monitoring showed that ISCO treatment was successful in reducing chlorinated VOC concentrations in soil to below ROD criteria. Although down-gradient wells showed decreased concentrations of VOCs, groundwater concentrations increased at wells near the former drycleaner building in the northeast portion of OU2. In October 2010, groundwater samples were collected from eight injection wells in the northeast portion of the site to better delineate this localized source area. Based on the results from the July 2010 and October 2010 monitoring events, nine additional ISCO treatment injection wells were installed in March 2011. Samples were collected from the nine new injection wells in April 2011 to aid in planning Phase 2 of the ISCO treatment.

Phase 2 of ISCO treatment was initiated on June 6, 2011 and was completed on July 22, 2011. ARCADIS/Pirnie performed Phase 2 ISCO effectiveness monitoring to assess site conditions approximately two months and six months after completion of the Phase 2 ISCO treatment, in September 2011 and February 2012. The results from the September 2011 and February 2012 monitoring show that VOC concentrations in the source area near the former drycleaner building decreased significantly. However, VOC concentrations in certain areas were still elevated. EPA is planning to perform one additional round of ISCO treatment to further reduce VOC concentrations in the fall of 2012. A long-term groundwater monitoring program will be initiated after completion of ISCO activities at OU2.

3. Conceptual Site Model

DMW4 extracted groundwater from the deep aquifer from 1965 until 1980, at which time it was taken out of service because of the presence of chlorinated VOCs. During the period while DMW4 was operational, the chlorinated VOCs were pulled from the shallow aquifer to the deep aquifer and ultimately to the well. Unconsolidated sediments, which fill the Rockaway River Valley, consisting of fine sand and silt layers, act as confining units between the more permeable aquifers above and below them. In the part of the valley close to DMW4, two silt layers separate the sand into three aquifers, an upper water table aquifer (shallow aquifer) and two underlying semi-confined aquifers, identified as intermediate and deep aquifers.

The groundwater quality data indicated that the source of the chlorinated VOCs detected in DMW4 was contaminated soil located beneath and adjacent to the former dry cleaner building at 272 Route 46. Elevated PCE concentrations detected in a sediment sample collected from the sump in the basement of the dry cleaner building indicated that one possible release mechanism was the direct discharge of chlorinated cleaning solvents into the sump. Elevated PCE concentrations were also detected in the unsaturated soil in the parking lot east of the dry cleaner building, indicating surface spills or discharges in this area. In March through May 2009, the USEPA excavated and removed contaminated unsaturated soil from the former drycleaner property. Based on soil sampling performed after the first phase of ISCO treatment, concentrations of VOCs sorbed onto saturated soil were significantly reduced. Therefore, the unsaturated and saturated soil at OU2 no longer present a significant source of VOCs to groundwater at the Site.

Once discharged into the sump and adjacent to the building, the chlorinated solvents moved through the unsaturated soil and into the shallow aquifer. Groundwater in the shallow aquifer flows toward the Rockaway River. However, sampling data indicates that groundwater contamination did not extend to the river (see Figure E.1). The presence of compounds typically associated with the biodegradation of PCE (i.e., trichloroethene [TCE], cis-1,2-dichloroethene [cis-1,2-DCE] and vinyl chloride [VC]) indicates that biologically driven natural attenuation may be occurring and may be controlling the rate and extent of shallow aquifer plume migration. Advection, dispersion and sorption are also contributing to the natural attenuation of chlorinated VOC concentrations within the shallow aquifer.

Groundwater sampling results show that chlorinated VOCs have migrated through the shallow aquifer and first aquitard into the intermediate aquifer immediately down-gradient of the dry cleaner. Groundwater flow in the intermediate aquifer is toward the southeast. Chlorinated VOCs have been detected in the intermediate aquifer as far as Carrol Street, a distance of approximately 1,400 feet southeast of the dry cleaner (see Figure E.2). The plume has been relatively stable over time; however, geochemical indicators do not indicate that significant biodegradation is occurring. Advection, dispersion, and sorption processes are contributing to the natural attenuation of the chlorinated VOCs within the intermediate aquifer.

Groundwater sampling results also show that chlorinated VOCs have migrated through the intermediate aquifer into the deep aquifer. Based on the water quality data from samples

collected from an adjacent deep monitoring well (MW-1DR), the contaminant plume has moved northeast of DMW4 as a result of shutting down the well in 1980. Concentrations of PCE slightly above the groundwater standard (i.e., up to 2.6 ug/L versus the groundwater cleanup standard of 1.0 ug/L) have been quantified in samples collected from MW-2D, the furthest down-gradient monitoring well (see Figure E.3). However, for the most recent sampling event (July 2011), groundwater collected from MW-2D contained PCE at a concentration of 0.82 ug/L, slightly below the cleanup standard of 1.0 ug/L.

4. Soil Vapor Investigation

The shallow groundwater plume flows south from property at 272 Route 46 and travels beneath several homes on Richards Avenue. In order to evaluate the potential impact the subsurface contamination may have on indoor air, the EPA conducted indoor and ambient outdoor air sampling, as well as sub-slab and external soil gas sampling, at ten residences on Richards Avenue during 2002 and 2003. PCE and/or TCE concentrations in the basements of ten homes were greater than concentrations in ambient outdoor air in the winter of 2002. In August 2003, however, PCE and TCE concentrations in indoor air in most residences were all less than or equal to concentrations in ambient outdoor air indicating a possible ambient outdoor, rather than subsurface, source.

Sub-slab soil gas samples were collected in conjunction with indoor air samples at seven homes in August 2003. PCE concentrations in the basements of two homes on the north side of Richards Avenue were greater than in the corresponding sub-slab soil gas samples. These findings imply a source, or sources, other than the subsurface since it is unlikely that concentrations in indoor air would exceed those in the corresponding sub-slab soil gas. For the other residences, the subsurface may be contributing to indoor air quality, but, apparently, not significantly.

5. Summary of Natural Attenuation Evaluation

Monitored natural attenuation (MNA) was evaluated as a remedial alternative for the shallow, intermediate, and deep aquifers in the Final Feasibility Study, Dover Municipal Well No. 4, Operable Unit 2, Dover, New Jersey (Malcolm Pirnie, 2005). The 2005 evaluation included plume stability evaluations for chlorinated VOCs in the shallow, intermediate, and deep

aquifers. Geochemical data collected from the three aquifers were also evaluated to assess whether intrinsic bioremediation was occurring. Solute transport modeling was performed using the BIOCHLOR model. The results of the 2005 MNA evaluation are summarized below. Tables and figures from the 2005 MNA evaluation are provided as an attachment to this exhibit.

Plume Stability

For the 2005 MNA evaluation, the concentrations of PCE, TCE, cis-1,2-DCE, and VC were plotted versus time on a logarithmic scale for each monitoring well. The best-fit line was then determine by linear regression and evaluated to determine if the slope of the line was significant at the 95% level (see attachment to Exhibit E, Figures 4-1 to 4-4 for graphs of the data and Table 4-2 for a table showing the F-statistic calculated for the regression analyses). For the shallow aquifer plume, the data suggested that PCE and its daughter products were attenuating down-gradient from the source area. The primary attenuation mechanisms were deemed to be anaerobic biodegradation, advection, and dispersion. The intermediate aquifer plume was determined to be stable, as the data indicated that the total mass and plume size remained essentially the same over the period of time from which data were available. For the deep aquifer plume, data indicated that the plume was relatively stable.

Data collected in 2007 to 2011 support the plume stability evaluation. VOC concentrations have decreased markedly at OU2 following ISCO treatment. VOC concentrations in shallow, intermediate, and deep aquifer wells located down gradient of OU2 have remained generally stable (see Figures E.1, E.2, and E.3).

Geochemical Evaluation

Groundwater geochemical data were evaluated to assess whether intrinsic bioremediation was occurring in the groundwater plumes. In the shallow aquifer, elevated chloride concentrations at source area wells and the presence of PCE daughter products suggested that reductive dechlorination was occurring. However, the absence of ethene and ethane indicated incomplete biotransformation of PCE to ethane and ethane. In the intermediate and deep aquifers, chloride concentrations were higher in downgradient wells than in upgradient wells, suggesting that reductive dechlorination may have been occurring. However, unlike in the shallow aquifer, no PCE daughter products were detected in the intermediate and deep aquifers.

A bioattenuation screening process was employed in accordance with the *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water* (USEPA, 1998). Table 4-3 in the attachment to Exhibit E presents the results of the scoring performed for various monitoring locations in the shallow, intermediate, and deep aquifer wells. Results of the bioattenuation screening indicated that there was limited evidence of anaerobic biodegradation in the shallow aquifer, and inadequate evidence of anaerobic biodegradation in the intermediate and deep aquifers.

Solute Transport Modeling

Solute transport modeling was conducted using the analytical model BIOCHLOR, which has the ability to simulate 1-dimensional (D) advection, 3-D dispersion, linear adsorption, and biotransformation via reductive dechlorination. Model runs for all aquifers were simulated for a 30-year time period. For the shallow aquifer, biodegradation was incorporated in the model based on the geochemical results described above. The model indicated that the PCE plume would attenuate prior to reaching the nearest shallow aquifer receptor, which was determined to be the Rockaway River. For the intermediate and deep aquifers, model simulations were performed without biodegradation because geochemical data indicated that biodegradation was not a significant attenuating mechanism in these aquifers. In the intermediate aquifer, simulations were performed to evaluate whether other attenuation mechanisms could control the rate and extent of plume migration so that cleanup standards would not be exceeded at the closest receptor (the Howmet property well located at 9-10 Roy Street, approximately 3,000 feet downgradient of MW-2C). The simulations showed that significant attenuation in terms of dilution and dispersion would occur before the chlorinated VOCs in the intermediate aquifer would reach the Howmet well. No potential human or ecological receptors were identified for the deep aquifer (given that DMW4 is no longer used); therefore, the objective of the modeling for the deep aquifer was to assess how far the plume would expand over 30 years. Results from the model simulation suggested the PCE concentrations would attenuate below cleanup standards approximately 500 to 600 feet beyond MW-2D. Figures 4-5 through 4-8 in the attachment to Exhibit E illustrate the BIOCHLOR model output for all three aquifer simulations.

6. Effect of Property Use Changes on Fate and Transport of VOCs

The proposed CEA is in an urban setting that includes primarily commercial/industrial properties and also some residential properties. The former drycleaner property, currently owned by EPA, is vacant with the exception of injection wells and monitoring wells associated with ISCO treatment. Additional ISCO treatment is planned, which is anticipated to further reduce VOC concentrations in the shallow and intermediate aquifers beneath OU2. There are no other known property use changes that would have an effect on the fate and transport of VOCs in groundwater within the CEA boundary.

7. Conclusions

Based on the plume stability and geochemical evaluations discussed above, the output from the BIOCHLOR model, and the hydrogeologic properties of the aquifers (e.g., hydraulic conductivities, groundwater velocity), the ROD for OU2 estimated that once the source of chlorinated VOCs had been remediated, natural attenuation processes would reduce VOC concentrations below the cleanup criteria within approximately 10 years.

Figures E.1, E.2 and E.3

MW-15S (Round 4/5/6/7/9/10/11/12/13/15)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	5,700/8,300/4,700/8,300/16,000B/2,200J/5000/1300/1000/330
cis 1,2-DCE	10	480J/470/590/920/800/140J/200/50/170/81
TCE	1	ND/140/98J/ND/ND/70J140/39/46J/26
Vinyl chloride	2	ND/0.5J/0.92/ND/ND/1/ND/5.8/50UJ/ND
1,1,2-TCA	3	ND/ND/ND/89J/ND/ND/ND/ND/ND/ND

MW-11S (Round 3/7/9/10/11/12/13/15)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	210/25/20/49K/88/81/130/140
cis 1,2-DCE	10	21/0.93J/0.37J/1.6K/ND/ND/0.76J/1.6
TCE	1	4/0.89J/0.49J/1.2K/ND/ND/0.55/1.6
Vinyl chloride	2	10/ND/ND/ND/ND/ND/0.5R/ND
1,1,2-TCA	3	ND/0.36J/ND/ND/ND/ND/ND/ND

MW-7S (Round 1/2)

Compound	Cleanup Std. ug/L	Conc. ug/L
TCE	1	1/1
cis-1,2-DCE	10	0.6J/0.6J

MW-5S (Round 1/2/9/10/14)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	ND/ND/0.82/1.7/ND
cis 1,2-DCE	10	ND/ND/0.13J/2.1/ND

MW-8S (Round 1/2/14)

Compound	Cleanup Std. ug/L	Conc. ug/L
TCE	1	2/2/1.2

SP-1B (ROUND 1)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	0.3J

SP-6 (ROUND 1)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

MW-16S (Round 7/9/10/14)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

PW-8S (Round 11/12/13/15)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	ND/ND/1.4/19

PW-6S (Round 11/12/13)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	ND/ND/3.6/5.2

PW-1S (Round 11/12/13/15)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	ND/ND/4.7/6.8
cis 1,2-DCE	10	ND/24/0.55/5.6
TCE	1	ND/ND/0.31J/12
Vinyl chloride	2	ND/7.7/ND/2.2

HP-25 (ROUND 1)

Compound	Cleanup Std. ug/L	Conc. ug/L
Vinyl chloride	2	0.85
cis-1,2-DCE	10	2.4
PCE	1	0.72

PW-7S (Round 11/12/13/15)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	17/ND/ND/25

PW-14S (Round 11/12/13/15)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	690/220/470/810
TCE	1	ND/ND/ND/2.6
cis 1,2-DCE	10	ND/15/2.4J/2.7

PW-4S (Round 11/12/13/15)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	24/ND/56/100
TCE	1	ND/ND/0.75J/3.5
cis 1,2-DCE	10	ND/ND/ND/2.5

HP-27 (ROUND 6)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	2.9J
cis 1,2-DCE	10	4J
TCE	1	2.4J
Vinyl chloride	2	R

MW-1S (ROUND 1/2/3/9/10/14)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

MW-10S (ROUND 3)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

MW-6SR (ROUND 1/2/3)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

SP-4B (ROUND 1)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

SP-4A (ROUND 1)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

MW-1A (ROUND 1/2)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

MW-7A (ROUND 1/2)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

MW-6A (ROUND 1/2)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

MW-11A (Round 1/2)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

MW-2SA (Round 1/2)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

MW-2S (Round 1/2)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

SP-10 (ROUND 1)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

LEGEND:

- SIMULPROBE BORING
- MONITORING WELL
- DMW4
- HYDROPUNCH SAMPLE LOCATION
- PROPOSED NEW MONITORING WELL
- J ESTIMATED VALUE
- K BIASED HIGH
- ND NON-DETECT
- GROUNDWATER THAT EXCEEDS PCE CLEANUP STANDARD
- MONITORING WELL IN NATURAL ATTENUATION MONITORING NETWORK

CLEANUP STD. – THE CLEANUP STANDARD SELECTED IS THE LOWER OF THE FEDERAL OR STATE MCLs FOR EACH COMPOUND OF CONCERN.

ROUND DATES: 1=9/1998, 2=11/1998, 3=3/2000, 4=10/2000, 5=11/2000, 6=8/2001, 7=12/2002, 8=2/2003, 9=12/2004, 10=5/2007, 11=6/2009, 12=10/2009 13=7/2010, 14=7/2011, 15=9/2011

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DOVER MUNICIPAL WELL NO.4 SUPERFUND SITE
DOVER, NEW JERSEY

HISTORICAL GROUNDWATER CONCENTRATIONS AND PROPOSED LONG-TERM MONITORING NETWORK SHALLOW AQUIFER

FIGURE E.1

MW-15I (4/5/7/9/10/11/12/13/15)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	70/230/120/200/160J/79/68/91/25
cis-1,2-DCE	10	ND/1.4J/ND/ND/ND/ND/ND/ND
TCE	1	ND/0.5J/ND/ND/ND/ND/ND/ND
1,1,2-TCA	3	ND/ND/2J/ND/ND/ND/ND/ND

PW-1I (11/12/15)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCs DETECTED		

PW-4I (11/12/13/15)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	100/120/250/96
TCE	1	ND/ND/ND/0.88

PW-5I (11/12/13/15)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	150/53/16/96
TCE	1	ND/ND/0.21J/0.56

MW-5I (Round 1/2/3)

Compound	Cleanup Std. ug/L	Conc. ug/L
cis-1,2-DCE	10	0.6J/0.8J/0.9J
TCE	1	1/1/0.5J

MW-10I (4/5/9/10/14)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

SP-9 (ROUND 1)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

MW-7I (Round 1/2/3)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	ND/ND/0.3J

MW-6I (1/2/3/7/8/9/10/14)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	77/58/38/300/400J/430/70J/280
1,1,2-TCA	3	ND/ND/ND/5J/ND/ND/ND/ND

MW-13I (4/5/9/10/14)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	ND/0.9J/2.4/1.7/4.5

SP-7 (ROUND 1)

Compound	Cleanup Std. ug/L	Conc. ug/L
TCE	1	3

SP-4B (ROUND 1)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

SP-1C (ROUND 1)

Compound	Cleanup Std. ug/L	Conc. ug/L
TCE	1	0.4J
PCE	1	0.5J

MW-2C (1/2/3/7/9/10/14)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	13/16/6.4/9.7/2.8/3.4

MW-8I (Round 1/2/3/14)

Compound	Cleanup Std. ug/L	Conc. ug/L
TCE	1	2/2/1/1.4

MW-11I (1/2/3/9/10/14)

Compound	Cleanup Std. ug/L	Conc. ug/L
cis 1,2-DCE	10	ND/ND/ND/ND/0.21J/ND
TCE	1	ND/ND/ND/0.46J/ND/ND

MW-7C (1/2/7/9/10/14)

Compound	Cleanup Std. ug/L	Conc. ug/L
PCE	1	ND/ND/ND/0.39J/ND/ND

SP-1B (ROUND 1)

Compound	Cleanup Std. ug/L	Conc. ug/L
TCE	1	0.4J

MW-4I (Round 1/2/3)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

MW-12I (Round 3)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

MW-9I (Round 1/2/3/14)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

MW-6C (Round 1/2)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

MW-2IA (Round 1/2)

Compound	Cleanup Std. ug/L	Conc. ug/L
NO COCS DETECTED		

LEGEND:

- SIMULPROBE BORING
- MONITORING WELL
- DMW4
- HYDROPUNCH SAMPLE LOCATION
- PROPOSED NEW MONITORING WELL
- J ESTIMATED VALUE
- ND NON-DETECT
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ROUND DATES: 1=9/1998, 2=11/1998, 3=3/2000, 4=10/2000, 5=11/2000, 6=8/2001, 7=12/2002, 8=2/2003, 9=12/2004, 10=5/2007, 11=6/2009, 12=10/2009, 13=7/2010, 14=7/2011, 15=9/2011

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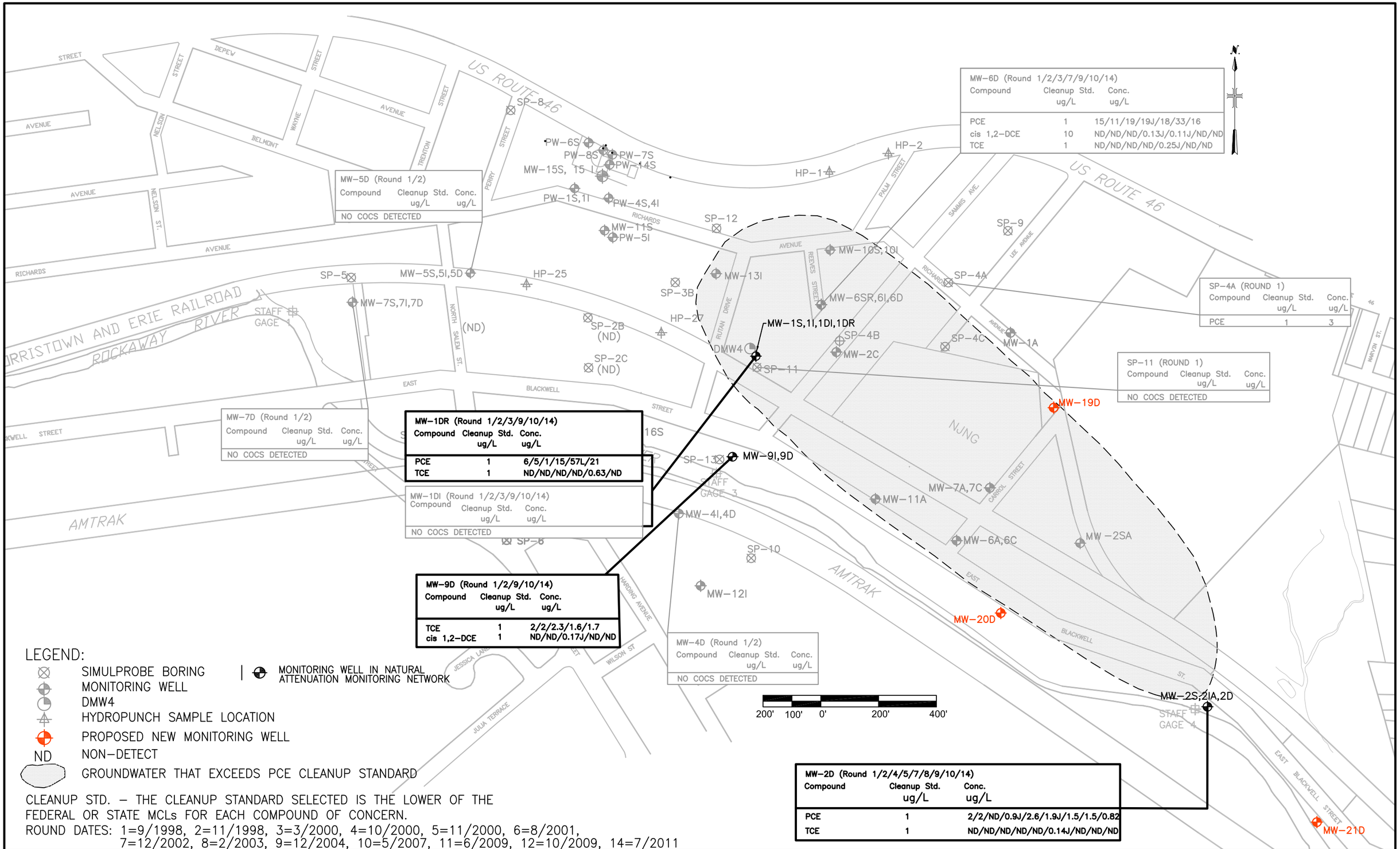
HISTORICAL GROUNDWATER CONCENTRATIONS AND PROPOSED LONG-TERM MONITORING NETWORK INTERMEDIATE AQUIFER

FIGURE E.2



LEGEND:

- SIMULPROBE BORING
- MONITORING WELL
- DMW4
- HYDROPUNCH SAMPLE LOCATION
- PROPOSED NEW MONITORING WELL
- ND NON-DETECT
- GROUNDWATER THAT EXCEEDS PCE CLEANUP STANDARD
- MONITORING WELL IN NATURAL ATTENUATION MONITORING NETWORK

CLEANUP STD. – THE CLEANUP STANDARD SELECTED IS THE LOWER OF THE FEDERAL OR STATE MCLs FOR EACH COMPOUND OF CONCERN.

ROUND DATES: 1=9/1998, 2=11/1998, 3=3/2000, 4=10/2000, 5=11/2000, 6=8/2001, 7=12/2002, 8=2/2003, 9=12/2004, 10=5/2007, 11=6/2009, 12=10/2009, 14=7/2011

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DOVER MUNICIPAL WELL NO.4 SUPERFUND SITE
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HISTORICAL GROUNDWATER CONCENTRATIONS AND PROPOSED LONG-TERM MONITORING NETWORK
DEEP AQUIFER

FIGURE E.3

Attachment to Exhibit E

Tables and Figures from the 2005 Monitored Natural Attenuation Evaluation

TABLE 4-1
MONITORING WELLS USED IN THE EVALUATION OF MNA

Sampling Event	Dates	Round
Draft RI	Sep/Nov 1998	1,2
Phase I PDI	Feb/Mar 2000	3
Phase II PDI	Sep/Oct/Nov 2000	4,5
Phase III PDI	Aug/Sep 2001	6
Phase IV PDI	Dec 2002 to Feb 2003	7,8
Well ID	**# of samples**	**Round**
Shallow		
MW-15S	4	4,5,6,7
MW-11S	2	3,7
MW-16S	1	7
MW-1S	3	1,2,3
Intermediate		
MW-15I	3	4,5,7
MW-6I	4	1,2,3,7,8
MW-2C	4	1,2,3,7
MW-7C	3	1,2,7
Deep		
MW-6D	4	1,2,3,7
MW-2D	5	1,2,4,5,7,8
MW-1DI	2	1,2

TABLE 4-2
F-STATISTIC VALUES CALCULATED TO UNDERSTAND PLUME STABILITY

Monitoring	**PCE**			**TCE**			**cis-DCE**			**VC**		
Well	F-Statistic	Significant	Value	F-Statistic	Significant	Value	F-Statistic	Significant	Value	F-Statistic	Significant	Value
MW-15S	0.194	N	1,2=18.51	10.55	N	1,1=161.45	331	Y	1,2=18.51	ND		
MW-11S	NA			NA			NA			NA		
MW-15I	0.0004	N	1,1=161.45	0.028	N	1,1=161.45	0.028	N	1,1=161.45	ND		
MW-6I	10.82	Y	1,3=10.13	ND			ND			ND		
MW-2C	5.95	N	1,2=18.51	ND			ND			ND		
MW-6D	1.56	N	1,2=18.51	ND			27.32	Y*	1,2=18.51	ND		
MW-2D	0.064	N	1,4=7.71	1.99	N	1,4=7.71	ND			ND		

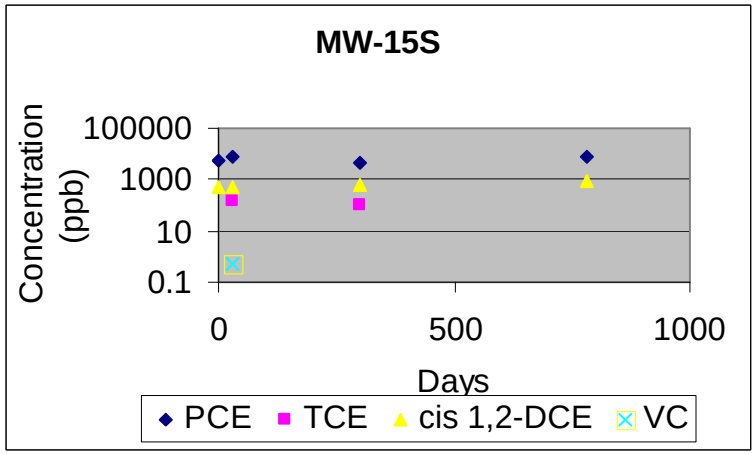
Notes:
(N) - not significant at 95% confidence interval
(Y) - significant at 95% confidence interval
ND - compound not detected, F-statistic value not calculated
NA - Insufficient data points to conduct analysis.
* - cis-DCE was detected during only one sampling event at 0.13 ppb.

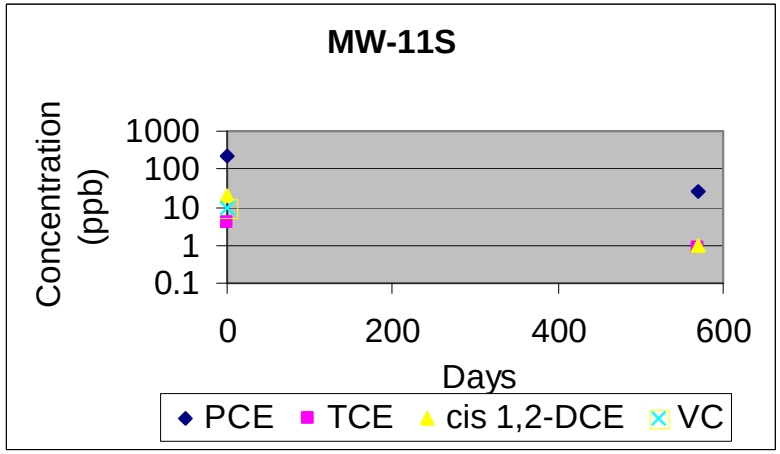
TABLE 4-3
PRELIMINARY SCREENING FOR ANAEROBIC BIODEGRADATION PROCESSES

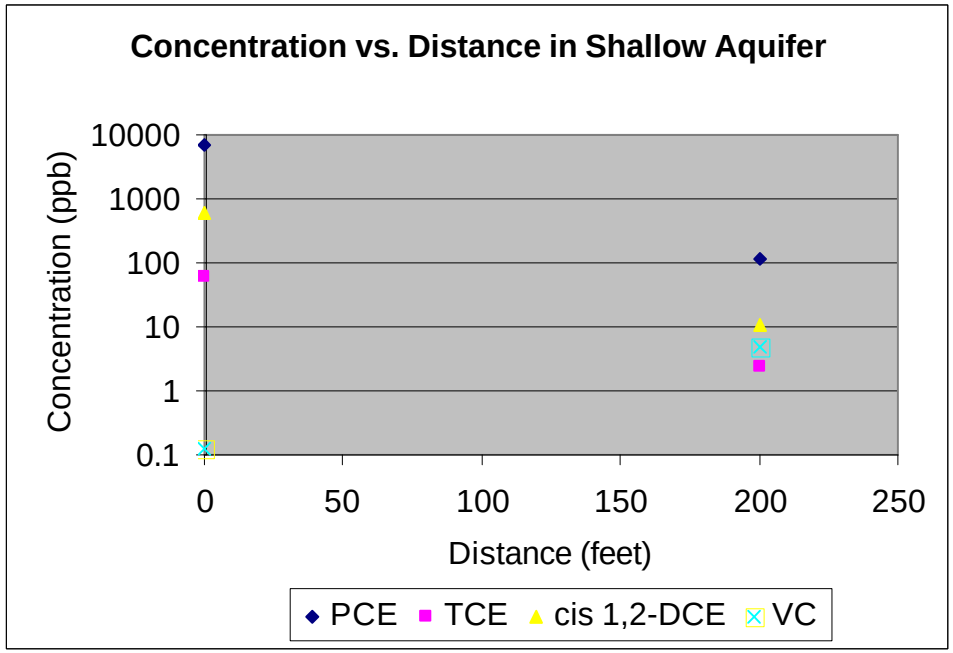
	MW-15S		MW-11S		MW-15I		MW-6I		MW-6D		MW-2D	
Analysis	**Concentration**	**Points Awarded**	**Concentration**	**Points Awarded**	**Concentration**	**Points Awarded**	**Concentration**	**Points Awarded**	**Concentration**	**Points Awarded**	**Concentration**	**Points Awarded**
Dissolved Oxygen	1.8 mg/L	0	5.03 mg/L	0	3.18 mg/L	0	4.37 mg/L	0	0.74 mg/L	0	3.28 mg/L	0
Nitrate	4.51 mg/L	0	0.87 mg/L	0	2.16 mg/L	0	1.61mg/L	0	0.85 mg/L	0	2.26 mg/L	0
Fe(II)	0.0279 mg/L	0	0.037 mg/L	0	0.0722 mg/L	0	0.0098 mg/L	0	0.0752 mg/L	0	0.006 mg/L	0
Sulfate	33.9 mg/L	0	34.6 mg/L	0	18.0 mg/L	2	16.1 mg/L	2	20.8 mg/L	2	17.4 mg/L	2
Sulfide	0.0mg/L	0	0.0mg/L	0	0.0mg/L	0	0.0mg/L	0	0.0mg/L	0	0.0mg/L	0
Methane	0.0 ug/L	0	0.0 ug/L	0	0.0 ug/L	0	0.0 ug/L	0	0.0 ug/L	0	0.0 ug/L	0
Oxidation Reduction Potential	266 mv	0	321 mv	0	269 mv	0	234 mv	0	210 mv	0	262 mv	0
pH	6.09	0	7.18	0	6.13	0	8.34	0	6.2	0	6.78	0
TOC	< 20 mg/L	0	< 20 mg/L	0	< 20 mg/L	0	< 20 mg/L	0	< 20 mg/L	0	< 20 mg/L	0
Temperature	< 20 C	0	< 20 C	0	< 20 C	0	< 20 C	0	< 20 C	0	< 20 C	0
CO2	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0
Alkalinity*	26.8 mg/L as $CaCO_3$	0	77.7 mg/L as $CaCO_3$	0	18.1 mg/L as $CaCO_3$	0	44.9 mg/L as $CaCO_3$	0	70.8 mg/L as $CaCO_3$	0	75.6 mg/L as $CaCO_3$	0
Chloride	149 mg/L	2	247 mg/L	2	127 mg/L	2	83 mg/L	2	140 mg/L	2	61.6 mg/L	0
Hydrogen	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0
VFA	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0
BTEX	<0.1 mg/L	0	<0.1 mg/L	0	<0.1 mg/L	0	<0.1 mg/L	0	<0.1 mg/L	0	<0.1 mg/L	0
PCE	Material released	0	Material released	0	Material released	0	Material released	0	Material released	0	Material released	0
TCE	Daugher product of PCE	2	Daugher product of PCE	2	Negligible amounts	0	ND	0	Negligible amounts	0	ND	0
DCE	Daughter product of TCE	2	Daughter product of TCE	2	Negligible amounts	0	ND	0	Negligible amounts	0	ND	0
VC	Daughter product of DCE	2	Daughter product of DCE	2	Negligible amounts	0	ND	0	Negligible amounts	0	ND	0
Ethane/Ethene	<0.001	0	<0.001	0	<0.001	0	<0.001	0	<0.001	0	<0.001	0
Total Score		**8**		**8**		**4**		**4**		**4**		**2**

* Background alkalinity data unvailable to compare.
NA - Not Analyzed.
ND - Not Detected.

Inadequate evidence for anaerobic biodegradation of chlorinated organics: Score 0-5.
Limited evidence for anaerobic biodegradation of chlorinated organics: Score 6-14.
Adequate evidence for anaerobic biodegradation of chlorinated organics: Score 15-20.
Strong evidence for anaerobic biodegradation of chlorinated organics: Score >20.







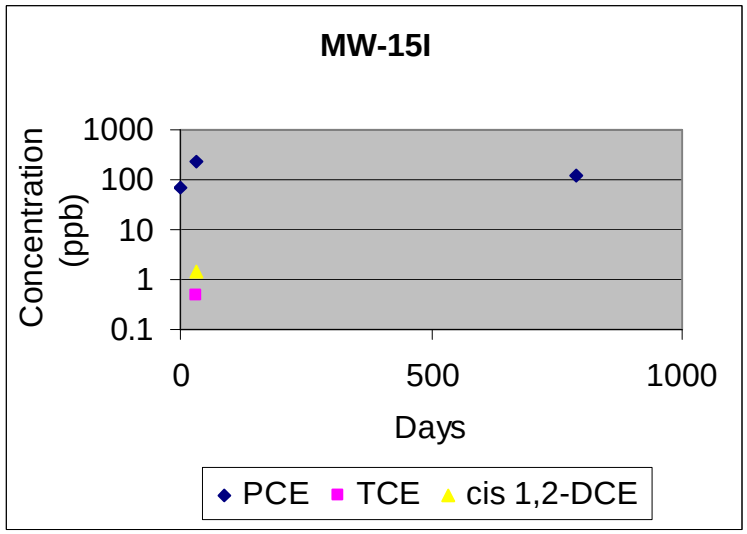
MALCOLM PIRNIE

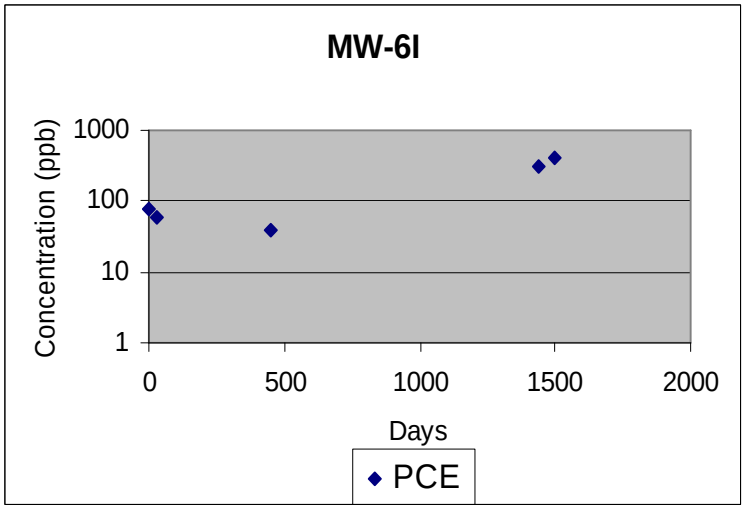
TRENDS IN VOC CONCENTRATIONS IN SHALOW AQUIFER

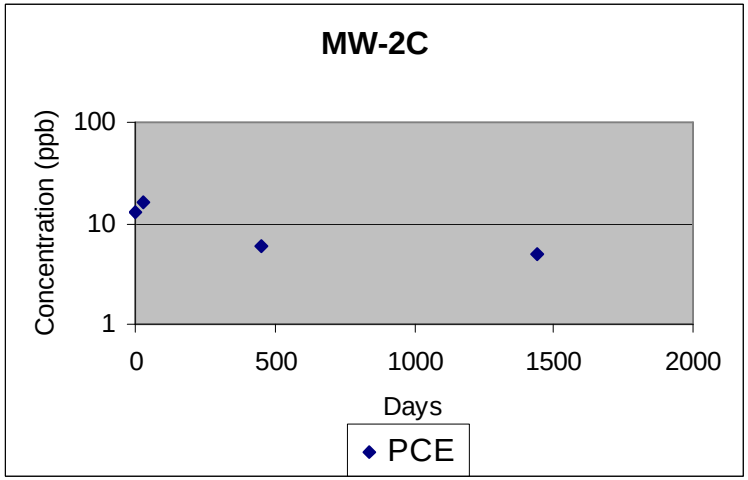
DOVER MUNICIPAL WELL NO. 4
DOVER, NEW JERSEY

MALCOLM PIRNIE, INC.

FIGURE 4-1







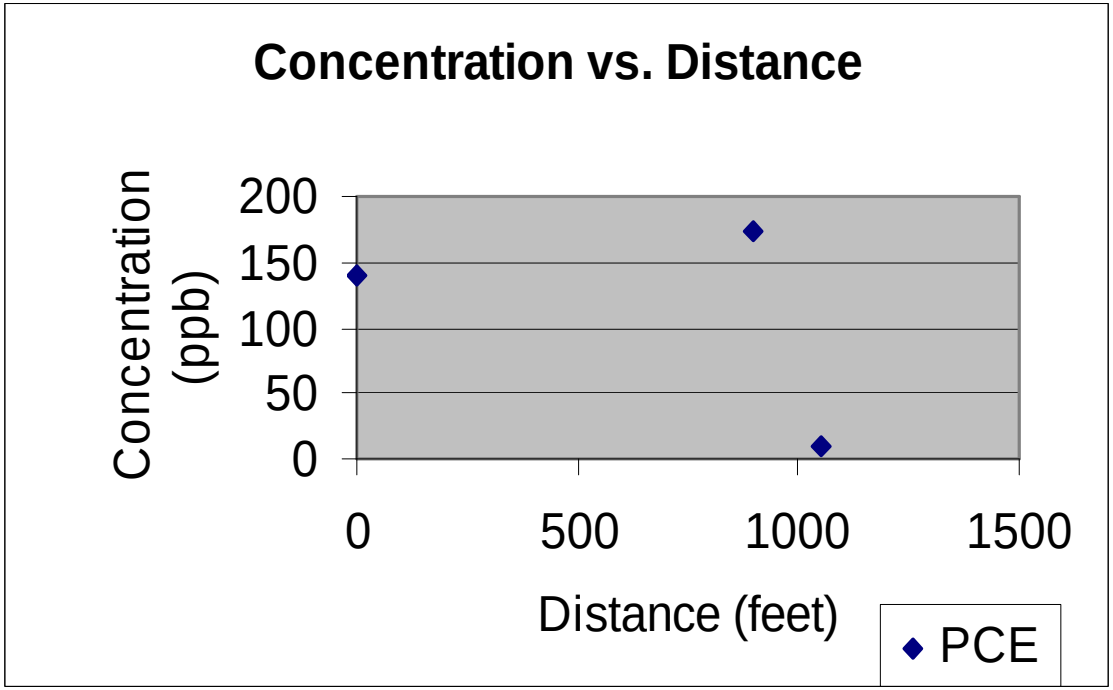
MALCOLM PIRNIE

TRENDS IN VOC CONCENTRATIONS IN INTERMEDIATE AQUIFER

DOVER MUNICIPAL WELL NO. 4
DOVER, NEW JERSEY

MALCOLM PIRNIE, INC.

FIGURE 4-2



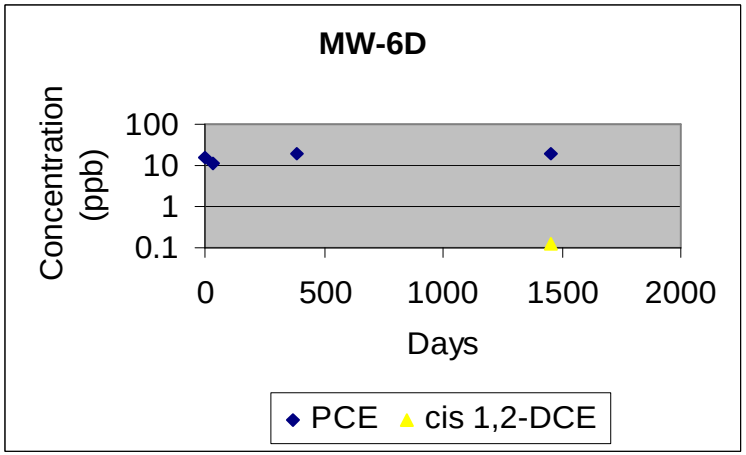
MALCOLM PIRNIE

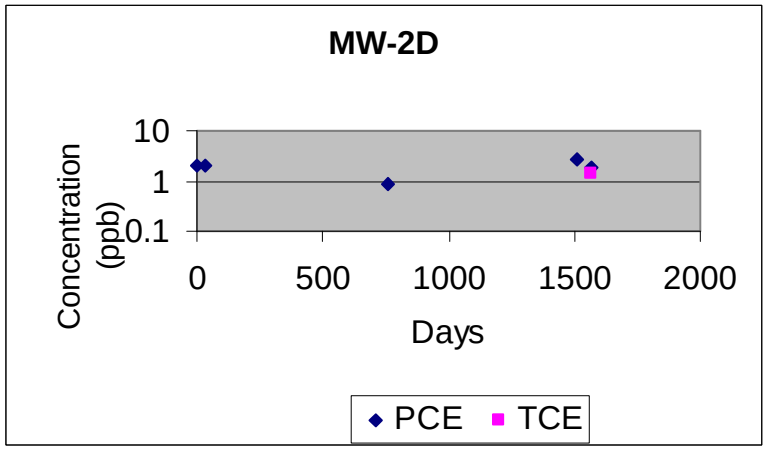
PCE CONCENTRATIONS VERSUS DISTANCE IN INTERMEDIATE AQUIFER

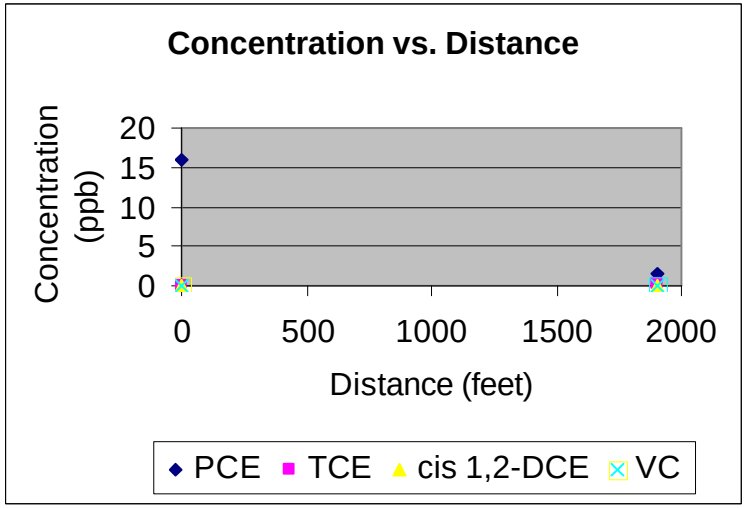
DOVER MUNICIPAL WELL NO. 4
DOVER, NEW JERSEY

MALCOLM PIRNIE, INC.

FIGURE 4-3







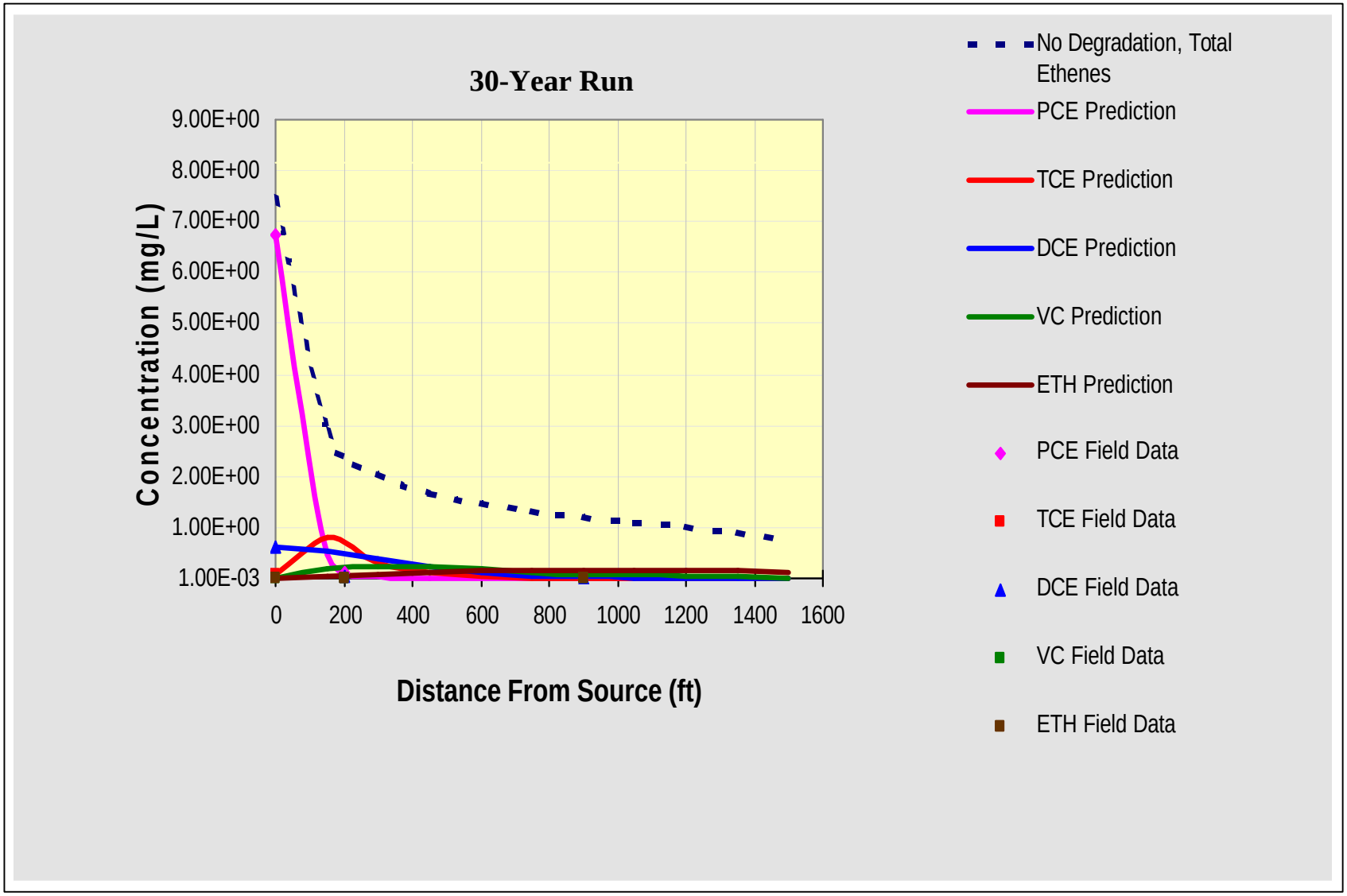
MALCOLM PIRNIE

TRENDS IN VOC CONCENTRATIONS IN DEEP AQUIFER

DOVER MUNICIPAL WELL NO. 4
DOVER, NEW JERSEY

MALCOLM PIRNIE, INC.

FIGURE 4-4



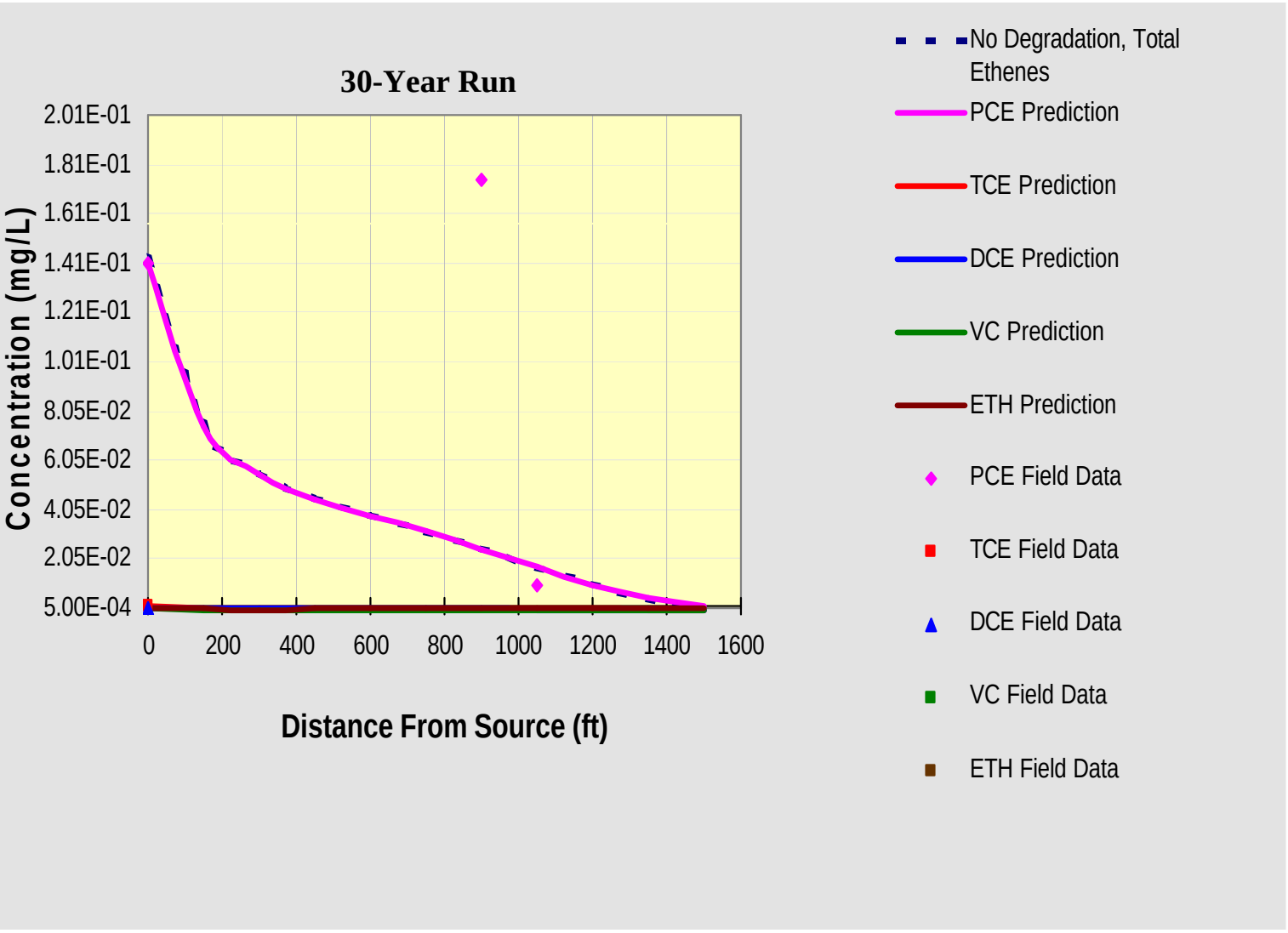
MALCOLM PIRNIE

BIOCHLOR SIMULATION FOR SHALOW AQUIFER

DOVER MUNICIPAL WELL NO. 4
DOVER, NEW JERSEY

MALCOLM PIRNIE, INC.

FIGURE 4-5



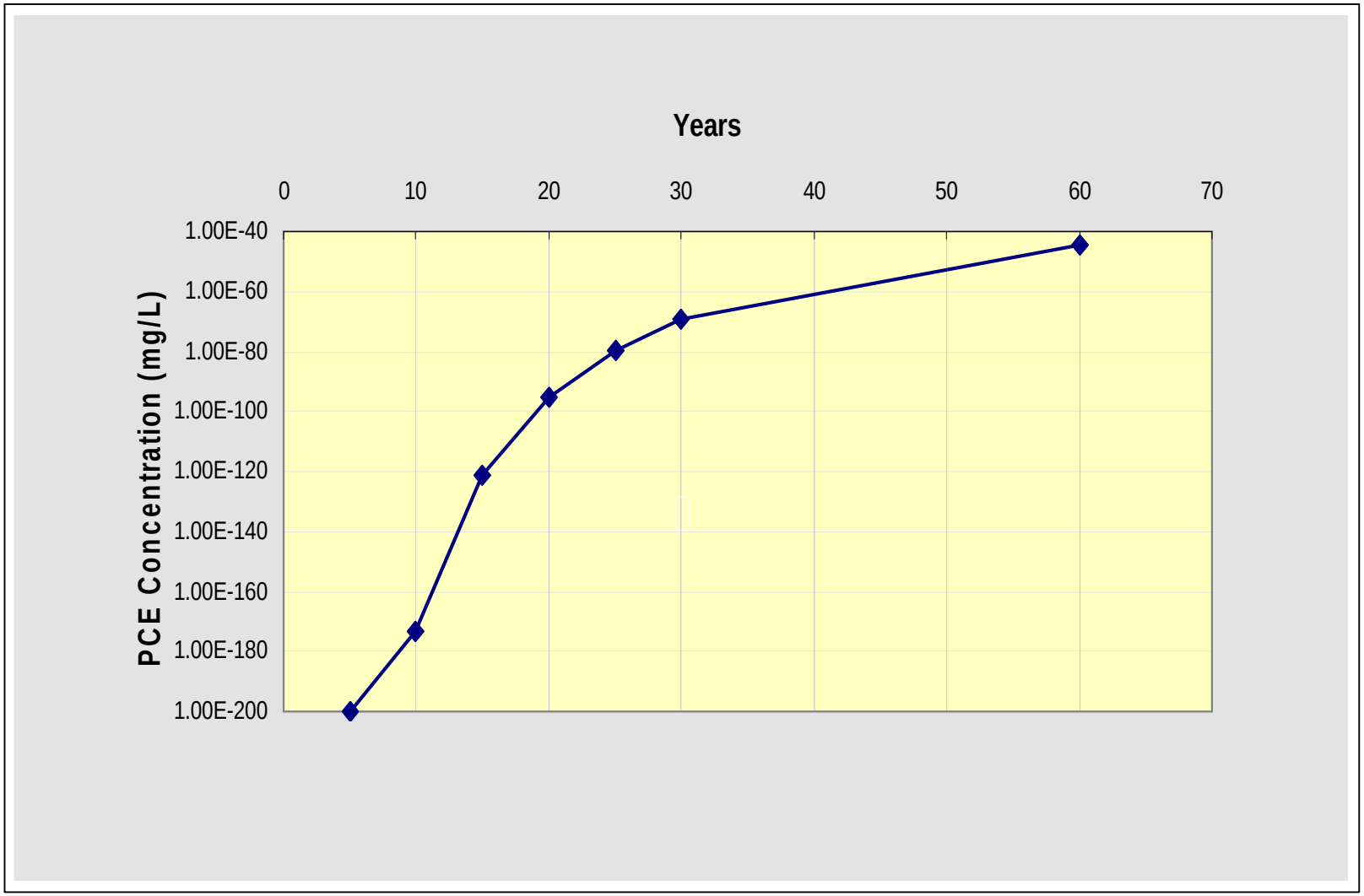
MALCOLM PIRNIE

BIOCHLOR SIMULATION FOR INTERMEDIATE AQUIFER

DOVER MUNICIPAL WELL NO. 4
DOVER, NEW JERSEY

MALCOLM PIRNIE, INC.

FIGURE 4-6



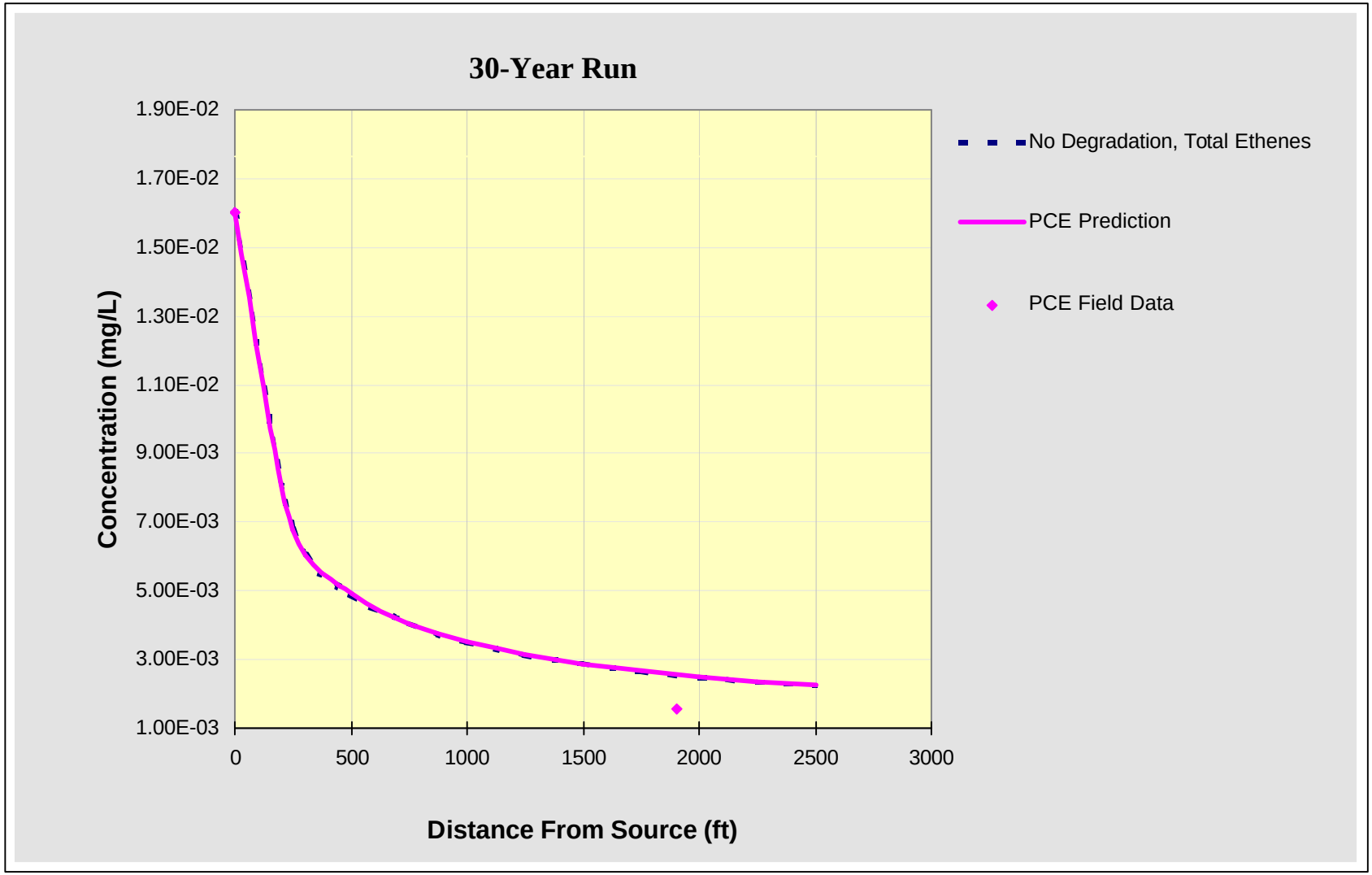
MALCOLM PIRNIE

CONCENTRATION OF PCE AT HOWMET WELL (SLUG ANALYSIS)

DOVER MUNICIPAL WELL NO. 4
DOVER, NEW JERSEY

MALCOLM PIRNIE, INC.

FIGURE 4-7



MALCOLM PIRNIE

BIOCHLOR SIMULATION FOR DEEP AQUIFER

DOVER MUNICIPAL WELL NO. 4
DOVER, NEW JERSEY

MALCOLM PIRNIE, INC.

FIGURE 4-8

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	NJ Grid Coordinate No.	Drilling Company	Proposed Depth (ft bgs)[1]	Proposed Capacity (gpm)[2]	Well Use	Lot	Block	Municipality	County	Permit Issue Date	Latitude	Longitude	Well Date	Canceled	Well ID
2500012554	ALLEN, NILA	2503423	Dale. H. Feakins Co.	75	5	Domestic			Rockaway Twp	Morris	9-Dec-64	405400	743253	--		
2500008501	AMERICAN HOME LNDRY	2503451	Rick Bryan	70	40	Industrial			Dover	Morris	20-May-59	405320	743319	--		
2500037840	AMMCO AMERICAN MODER	2503452	Empire Soils Investigation	20		Monitoring	1,2 & 3	603	Dover	Morris	12-Dec-90	405320	743306	26-Dec-90		MW-6
2500037840	AMMCO AMERICAN MODER	2503452	Empire Soils Investigation	20	0	Monitoring	1,2 & 3	603	Dover	Morris	12-Dec-90	405320	743306	26-Dec-90		MW-6
2500037841	AMMCO AMERICAN MODER	2503452	Empire Soils Investigation	40		Monitoring	1,2 & 3	603	Dover	Morris	12-Dec-90	405320	743306	26-Dec-90		MW-7
2500037841	MODER	2503452	Empire Soils Investigation	40	0	Monitoring	1,2 & 3	603	Dover	Morris	12-Dec-90	405320	743306	26-Dec-90		MW-7
2500003494	AUSTENAL LABORATORIE	2503547	Layne- New York Co., Inc.	52	400	Industrial			Rockaway Twp	Morris	26-May-54	405253	743200	--		
2500003494	AUSTENAL LABORATORIE	2503547	Layne- New York Co., Inc.	52	400	Industrial			Rockaway Twp	Morris	26-May-54	405253	743200	--		
2500014562	AUSTENAL MICROCAST	2503547	Layne- New York Co., Inc.	134	400	Industrial			Rockaway Bor	Morris	18-Oct-67	405253	743200	--		
2500014562	AUSTENAL MICROCAST	2503547	Layne- New York Co., Inc.	134	400	Industrial			Rockaway Bor	Morris	18-Oct-67	405253	743200	--		
2500013450	BAIR, JAMES	2503432	D.F. Well Drilling Co.	0	65	Domestic			Rockaway Twp	Morris	12-Nov-65	405400	743226	--		
2500013450	BAIR, JAMES	2503432	D.F. Well Drilling Co.	0	65	Domestic			Rockaway Twp	Morris	12-Nov-65	405400	743226	--		
2500005573	BAST, GEORGE J	2503464	A. R. Crosswell	60	6	Domestic			Dover	Morris	15-May-56	405306	743240	--		
2500009237	BASTIN STEEL PRODUCT	2503467	D.F. Well Drilling Co.	100	30	Domestic			Randolph Twp	Morris	8-Apr-60	405253	743240	--		
2500009237	BASTIN STEEL PRODUCT	2503467	D.F. Well Drilling Co.	100	30	Domestic			Randolph Twp	Morris	8-Apr-60	405253	743240	--		
2500047833	BELL ATLANTIC - NJ	2503496	Summit Drilling Co., Inc.	12		Monitoring	23	195	Randolph Twp	Morris	18-Sep-95	405226	743213	16-Oct-95		MW 6N
2500047833	BELL ATLANTIC - NJ	2503496	Summit Drilling Co., Inc.	12	0	Monitoring	23	195	Randolph Twp	Morris	18-Sep-95	405226	743213	16-Oct-95		MW 6N
2500046451	BELL ATLANTIC-NEW JE	2503496	Summit Drilling Co., Inc.	20		Monitoring	23	195	Randolph Twp	Morris	19-Jan-95	405226	743213	23-Feb-95		PC2
2500046451	BELL ATLANTIC-NEW JE	2503496	Summit Drilling Co., Inc.	20	0	Monitoring	23	195	Randolph Twp	Morris	19-Jan-95	405226	743213	23-Feb-95		PC2
2500046452	BELL ATLANTIC-NEW JE	2503496	Summit Drilling Co., Inc.	20		Monitoring	23	195	Randolph Twp	Morris	19-Jan-95	405226	743213	23-Feb-95		PC1
2500046452	BELL ATLANTIC-NEW JE	2503496	Summit Drilling Co., Inc.	20	0	Monitoring	23	195	Randolph Twp	Morris	19-Jan-95	405226	743213	23-Feb-95		PC1
2500046453	BELL ATLANTIC-NEW JE	2503496	Summit Drilling Co., Inc.	20		Monitoring	23	195	Randolph Twp	Morris	19-Jan-95	405226	743213	23-Feb-95		MW2N
2500046453	BELL ATLANTIC-NEW JE	2503496	Summit Drilling Co., Inc.	20	0	Monitoring	23	195	Randolph Twp	Morris	19-Jan-95	405226	743213	23-Feb-95		MW2N
2500046454	BELL ATLANTIC-NEW JE	2503496	Summit Drilling Co., Inc.	20		Monitoring	23	195	Randolph Twp	Morris	19-Jan-95	405226	743213	23-Feb-95		MW1N
2500046454	BELL ATLANTIC-NEW JE	2503496	Summit Drilling Co., Inc.	20	0	Monitoring	23	195	Randolph Twp	Morris	19-Jan-95	405226	743213	23-Feb-95		MW1N
2500046455	BELL ATLANTIC-NEW JE	2503496	Summit Drilling Co., Inc.	20		Monitoring	23	195	Randolph Twp	Morris	19-Jan-95	405226	743213	23-Feb-95		MW6
2500046455	BELL ATLANTIC-NEW JE	2503496	Summit Drilling Co., Inc.	20	0	Monitoring	23	195	Randolph Twp	Morris	19-Jan-95	405226	743213	23-Feb-95		MW6
2500002238	BETCHER, WILLIAM C.	2503493	Beatty Brothers	75	25	Industrial			Dover	Morris	17-Nov-52	405239	743213	--		
2500019301	BIG TUB CAR WASH	2503542	D.F. Well Drilling Co.	150	69	Domestic	16	84	Rockaway Bor	Morris	28-Jun-77	405320	743146	--		
2500048268	BRAUN, JUDY	2503541	Summit Drilling Co., Inc.	40		Monitoring	19	81-01	Rockaway Bor	Morris	13-Nov-95	405320	743200	--		
2500004120	BROCK, SHELLIE J.	2503425	Louis Garie	50	5	Domestic			Rockaway Bor	Morris	20-Dec-54	405346	743306	--		
2500001454	BROWN, HARRY A.	2503422	Frank Bott	40	5	Domestic			Dover	Morris	5-Dec-51	405400	743306	--		
2500001454	BROWN, HARRY A.	2503422	Frank Bott	40	5	Domestic			Dover	Morris	5-Dec-51	405400	743306	--		
2500003346	BROWN, HAWK	2503492	Reidar Larsen	50	5	Domestic			Randolph Twp	Morris	23-Mar-54	405239	743226	--		
2500011124	BURROWS, EDGAR	2503422	D.F. Well Drilling Co.	0	65	Domestic			Rockaway Bor	Morris	15-Jan-63	405400	743306	--		
2500011124	BURROWS, EDGAR	2503422	D.F. Well Drilling Co.	0	65	Domestic			Rockaway Bor	Morris	15-Jan-63	405400	743306	--		
2500028477	BUSTIN INDUSTRIAL PR	2503492	Enviro-Sciences	30	5	Monitoring	2	188	Randolph Twp	Morris	11-Sep-86	405232	743219	--	Y	
2500028475	BUSTIN INDUSTRIAL PR	2503492	Enviro-Sciences	30	5	Monitoring	2	188	Randolph Twp	Morris	11-Sep-86	405232	743219	15-Oct-92	N	MW1
2500028475	BUSTIN INDUSTRIAL PR	2503492	Enviro-Sciences	30	5	Monitoring	2	188	Randolph Twp	Morris	11-Sep-86	405232	743219	15-Oct-92	N	MW1
2500028476	BUSTIN INDUSTRIAL PR	2503492	Enviro-Sciences	30	5	Monitoring	2	188	Randolph Twp	Morris	11-Sep-86	405232	743219	15-Oct-92	N	MW2

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	Well Location	Completion Date	Finished Depth (ft bgs)	Actual Capacity (gpm)	Driller's Name	NJ License No.	Document Type[3]	Document No.[4]
2500012554	ALLEN, NILA		--					WAP	866110703720.tif
2500008501	AMERICAN HOME LNDRY		--					WAP	864653702263.tif
2500037840	AMMCO AMERICAN MODER		17-Dec-90	20	0	JAWORSKI, JEFFREY M.	J1315	WAP	520627377782.tif
2500037840	AMMCO AMERICAN MODER		17-Dec-90	20	0	JAWORSKI, JEFFREY M.	J1315	WR1	1094689932302.tif
2500037841	AMMCO AMERICAN MODER		18-Dec-90	40	0	JAWORSKI, JEFFREY M.	J1315	WAP	520628377783.tif
2500037841	AMMCO AMERICAN MODER		18-Dec-90	40	0	JAWORSKI, JEFFREY M.	J1315	WR1	1094690932303.tif
2500003494	AUSTENAL LABORATORIE		--					WAP	860903698513.tif
2500003494	AUSTENAL LABORATORIE		--					WR1	925531763141.tif
2500014562	AUSTENAL MICROCAST		--					WAP	867221704831.tif
2500014562	AUSTENAL MICROCAST		--					WR1	931844769454.tif
2500013450	BAIR, JAMES		--					WAP	867009704619.tif
2500013450	BAIR, JAMES		--					WR1	931633769243.tif
2500005573	BAST, GEORGE J		--					WAP	857583695193.tif
2500009237	BASTIN STEEL PRODUCT		--					WAP	869284706894.tif
2500009237	BASTIN STEEL PRODUCT		--					WR1	933906771516.tif
2500047833	BELL ATLANTIC - NJ	242 SUTH SALEM ST.	25-Sep-95	14	0	YOTCOSKI, STEVE	J1622	WAP	537617388634.tif
2500047833	BELL ATLANTIC - NJ	242 SUTH SALEM ST.	25-Sep-95	14	0	YOTCOSKI, STEVE	J1622	WR1	12633061100918.tif
2500046451	BELL ATLANTIC-NEW JE	242 S. SALEM	1-Feb-95	12		YOTCOSKI, STEVE	J1622	WAP	535368386930.tif
2500046451	BELL ATLANTIC-NEW JE	242 S. SALEM	1-Feb-95	12		YOTCOSKI, STEVE	J1622	WR1	12456001083212.tif
2500046452	BELL ATLANTIC-NEW JE	242 S. SALEM	1-Feb-95	12		YOTCOSKI, STEVE	J1622	WAP	535370386930.tif
2500046452	BELL ATLANTIC-NEW JE	242 S. SALEM	1-Feb-95	12		YOTCOSKI, STEVE	J1622	WR1	12456011083213.tif
2500046453	BELL ATLANTIC-NEW JE	242 S. SALEM	1-Feb-95	12		YOTCOSKI, STEVE	J1622	WAP	535371386932.tif
2500046453	BELL ATLANTIC-NEW JE	242 S. SALEM	1-Feb-95	12		YOTCOSKI, STEVE	J1622	WR1	12456021083214.tif
2500046454	BELL ATLANTIC-NEW JE	242 S. SALEM	3-Feb-95	12		YOTCOSKI, STEVE	J1622	WAP	535373386932.tif
2500046454	BELL ATLANTIC-NEW JE	242 S. SALEM	3-Feb-95	12		YOTCOSKI, STEVE	J1622	WR1	12456031083215.tif
2500046455	BELL ATLANTIC-NEW JE	242 S. SALEM	14-Feb-95	12		YOTCOSKI, STEVE	J1622	WAP	535374386932.tif
2500046455	BELL ATLANTIC-NEW JE	242 S. SALEM	14-Feb-95	12		YOTCOSKI, STEVE	J1622	WR1	12456041083216.tif
2500002238	BETCHER, WILLIAM C.		--					WAP	852631690241.tif
2500019301	BIG TUB CAR WASH		--					WAP	512482372187.tif
2500048268	BRAUN, JUDY	214 ANDREA DRIVE	--					WAP	538308389122.tif
2500004120	BROCK, SHELLIE J.		--					WAP	856224693834.tif
2500001454	BROWN, HARRY A.		--					WAP	852846690456.tif
2500001454	BROWN, HARRY A.		--					WR1	917474755084.tif
2500003346	BROWN, HAWK		--					WAP	860352697962.tif
2500011124	BURROWS, EDGAR		--					WAP	865480703090.tif
2500011124	BURROWS, EDGAR		--					WR1	930104767714.tif
2500028477	BUSTIN INDUSTRIAL PR	166 S SALEM ST	--					WAP	513545373080.tif
2500028475	BUSTIN INDUSTRIAL PR	146 S. SALM ST.	30-Sep-86	28	0			WAP	513542373080.tif
2500028475	BUSTIN INDUSTRIAL PR	146 S. SALM ST.	30-Sep-86	28	0			WR1	1006918844531.tif
2500028476	BUSTIN INDUSTRIAL PR	146 S. SALM ST.	1-Oct-96	27	0			WAP	513544373080.tif

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	NJ Grid Coordinate No.	Drilling Company	Proposed Depth (ft bgs)[1]	Proposed Capacity (gpm)[2]	Well Use	Lot	Block	Municipality	County	Permit Issue Date	Latitude	Longitude	Well Date	Canceled	Well ID
2500028476	BUSTIN INDUSTRIAL PR	2503492	Enviro-Sciences	30	5	Monitoring	2	188	Randolph Twp	Morris	11-Sep-86	405232	743219	15-Oct-92	N	MW2
2500040807	CADILLAC PLASTIC GRO	2503443	Hardin-Huber Inc.	15		Monitoring	2 & 3	603	Dover	Morris	5-Mar-92	405320	743333	--	Y	
2500040806	CADILLAC PLASTIC GRO	2503443	Hardin-Huber Inc.	15		Monitoring	2 & 3	603	Dover	Morris	5-Mar-92	405320	743333	17-Mar-92		MW-1
2500040806	CADILLAC PLASTIC GRO	2503443	Hardin-Huber Inc.	15	0	Monitoring	2 & 3	603	Dover	Morris	5-Mar-92	405320	743333	17-Mar-92		MW-1
2500043529	CADILLAC PLASTIC GRO	2503419	Empire Soils Investigation	15		Soil Venting	2 & 3	603	Dover	Morris	13-Jul-93	405333	743333	20-Jan-94		W-2
2500043529	CADILLAC PLASTIC GRO	2503419	Empire Soils Investigation	15	0	Soil Venting	2 & 3	603	Dover	Morris	13-Jul-93	405333	743333	20-Jan-94		W-2
2500043530	CADILLAC PLASTIC GRO	2503419	Empire Soils Investigation	15		Soil Venting	2 & 3	603	Dover	Morris	13-Jul-93	405333	743333	20-Jan-94		W-3
2500043530	CADILLAC PLASTIC GRO	2503419	Empire Soils Investigation	15	0	Soil Venting	2 & 3	603	Dover	Morris	13-Jul-93	405333	743333	20-Jan-94		W-3
2500043531	CADILLAC PLASTIC GRO	2503419	Empire Soils Investigation	15		Soil Venting	2 & 3	603	Dover	Morris	13-Jul-93	405333	743333	20-Jan-94		W-6
2500043531	CADILLAC PLASTIC GRO	2503419	Empire Soils Investigation	15	0	Soil Venting	2 & 3	603	Dover	Morris	13-Jul-93	405333	743333	20-Jan-94		W-6
2500043532	CADILLAC PLASTIC GRO	2503419	Empire Soils Investigation	15		Soil Venting	2 & 3	603	Dover	Morris	13-Jul-93	405333	743333	20-Jan-94		W-7
2500043532	CADILLAC PLASTIC GRO	2503419	Empire Soils Investigation	15	0	Soil Venting	2 & 3	603	Dover	Morris	13-Jul-93	405333	743333	20-Jan-94		W-7
2500016362	CAMPO CONSTR CO	2503492	D.F. Well Drilling Co.	0	65	Domestic			Randolph Twp	Morris	22-May-72	405239	743226	--		
2500016362	CAMPO CONSTR CO	2503492	D.F. Well Drilling Co.	0	65	Domestic			Randolph Twp	Morris	22-May-72	405239	743226	--		
2500041814	CASIO INC.	2503482	Slater Well Drilling Inc.	100	25	Irrigation	1 & 24A	153	Dover	Morris	21-Aug-92	405239	743306	--		
2500002652	CIARDI, A. RAYMOND	2503492	Robert B. Mercer	70	3	Domestic			Randolph Twp	Morris	4-Jun-53	405239	743226	--		
2500004959	CORNELL, ANTHONY	2503545	Louis Garie	70	5	Domestic			Rockaway Twp	Morris	31-Aug-55	405306	743146	--		
2500046078	CRETNICK, STANLEY	2503428	Environmental Drilling	20		Monitoring	5,6,7,8	23-11	Dover	Morris	25-Oct-94	405333	743306	28-Dec-94		MW-1
2500046078	CRETNICK, STANLEY	2503428	Environmental Drilling	20	0	Monitoring	5,6,7,8	23-11	Dover	Morris	25-Oct-94	405333	743306	28-Dec-94		MW-1
2500046079	CRETNICK, STANLEY	2503428	Environmental Drilling	20		Monitoring	5,6,7,8	23-11	Dover	Morris	25-Oct-94	405333	743306	28-Dec-94		MW-2
2500046079	CRETNICK, STANLEY	2503428	Environmental Drilling	20	0	Monitoring	5,6,7,8	23-11	Dover	Morris	25-Oct-94	405333	743306	28-Dec-94		MW-2
2500046080	CRETNICK, STANLEY	2503428	Environmental Drilling	20		Monitoring	5,6,7,8	23-11	Dover	Morris	25-Oct-94	405333	743306	12-Jan-95		3
2500046080	CRETNICK, STANLEY	2503428	Environmental Drilling	20	0	Monitoring	5,6,7,8	23-11	Dover	Morris	25-Oct-94	405333	743306	12-Jan-95		3
2500047324	CRETNICK, STANLEY	2503428	CT&E Environmental Services	20		Monitoring	5,6,7,8	23-11	Dover	Morris	15-Jun-95	405333	743306	26-Sep-95		MW-4
2500047324	CRETNICK, STANLEY	2503428	CT&E Environmental Services	20	0	Monitoring	5,6,7,8	23-11	Dover	Morris	15-Jun-95	405333	743306	26-Sep-95		MW-4
2500045974	DAMELIO, THERESA, ES	2503469	Horizon Environmental Drilling & Excavating	15		Monitoring	45	10202	Rockaway Twp	Morris	4-Oct-94	405253	743213	6-Dec-94		MW-1
2500045974	DAMELIO, THERESA, ES	2503469	Horizon Environmental Drilling & Excavating	15	0	Monitoring	45	10202	Rockaway Twp	Morris	4-Oct-94	405253	743213	6-Dec-94		MW-1
2500004214	DAVIES, GUY D.	2503495	Robert B. Mercer	60	5	Domestic			Randolph Twp	Morris	25-Jan-55	405226	743226	--		
2500002559	DAVIS, GUY D	2503494	Robert B. Mercer	60	3	Domestic			Randolph Twp	Morris	28-Apr-53	405226	743240	--		
2500002559	DAVIS, GUY D	2503494	Robert B. Mercer	60	3	Domestic			Randolph Twp	Morris	28-Apr-53	405226	743240	--		
2500004499	DAVIS, GUY D	2503492	Robert B. Mercer	80	3	Domestic			Randolph Twp	Morris	26-Apr-55	405239	743226	--		
2500003122	DAVIS, GUY D.	2503491	Robert B. Mercer	65	5	Domestic			Randolph Twp	Morris	8-Dec-53	405239	743240	--		
2500004970	DAVIS, JOSEPH	2503482	Robert C. Bixler	150	5	Domestic			Mine Hill Twp	Morris	1-Sep-55	405239	743306	--		
2500037420	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15		Monitoring	2	601	Dover	Morris	3-Oct-90	405306	743319	--	Y	
2500037411	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15		Monitoring	2 & 3	603	Dover	Morris	3-Oct-90	405306	743319	8-Nov-90		GEI-11S
2500037411	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15	0	Monitoring	2 & 3	603	Dover	Morris	3-Oct-90	405306	743319	8-Nov-90		GEI-11S
2500037412	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15		Monitoring	2 & 3	603	Dover	Morris	3-Oct-90	405306	743319	8-Nov-90		GEI-12S
2500037412	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15	0	Monitoring	2 & 3	603	Dover	Morris	3-Oct-90	405306	743319	8-Nov-90		GEI-12S
2500037413	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15		Monitoring	2 & 3	603	Dover	Morris	3-Oct-90	405306	743319	8-Nov-90		GEI-13S
2500037413	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15	0	Monitoring	2 & 3	603	Dover	Morris	3-Oct-90	405306	743319	8-Nov-90		GEI-13S

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	Well Location	Completion Date	Finished Depth (ft bgs)	Actual Capacity (gpm)	Driller's Name	NJ License No.	Document Type[3]	Document No.[4]
2500028476	BUSTIN INDUSTRIAL PR	146 S. SALM ST. P.O.BOX 151,	1-Oct-96	27	0			WR1	1006919844532.tif
2500040807	CADILLAC PLASTIC GRO	RICHBOYTON RD	--					WAP	526902380969.tif
2500040806	CADILLAC PLASTIC GRO	RICHBOYNTON ROAD	5-Mar-92	13	0	WILLEY, MICHAEL	J1362	WAP	526899380969.tif
2500040806	CADILLAC PLASTIC GRO	RICHBOYNTON ROAD	5-Mar-92	13	0	WILLEY, MICHAEL	J1362	WR1	1142839980452.tif
2500043529	CADILLAC PLASTIC GRO	15 RICHBOYNTON RD	19-Jul-93	10	0	WAGNER, BRIAN	J1578	WAP	530728383460.tif
2500043529	CADILLAC PLASTIC GRO	16 RICHBOYNTON RD	19-Jul-93	10	0	WAGNER, BRIAN	J1578	WR1	12035531041166.tif
2500043530	CADILLAC PLASTIC GRO	17 RICHBOYNTON RD	21-Jul-93	10	0	WAGNER, BRIAN	J1578	WAP	530730383460.tif
2500043530	CADILLAC PLASTIC GRO	18 RICHBOYNTON RD	21-Jul-93	10	0	WAGNER, BRIAN	J1578	WR1	12035541041167.tif
2500043531	CADILLAC PLASTIC GRO	19 RICHBOYNTON RD	21-Jul-93	10	0	WAGNER, BRIAN	J1578	WAP	530732383460.tif
2500043531	CADILLAC PLASTIC GRO	20 RICHBOYNTON RD	21-Jul-93	10	0	WAGNER, BRIAN	J1578	WR1	12035551041168.tif
2500043532	CADILLAC PLASTIC GRO	21 RICHBOYNTON RD	22-Jul-93	8	0	WAGNER, BRIAN	J1578	WAP	530733383460.tif
2500043532	CADILLAC PLASTIC GRO	22 RICHBOYNTON RD	22-Jul-93	8	0	WAGNER, BRIAN	J1578	WR1	12035561041169.tif
2500016362	CAMPO CONSTR CO		--					WAP	870915708525.tif
2500016362	CAMPO CONSTR CO		--					WR1	935536773146.tif
2500041814	CASIO INC.	570 MT. PLEASANT AVE	--					WAP	528145381657.tif
2500002652	CIARDI, A. RAYMOND		--					WAP	855254692864.tif
2500004959	CORNELL, ANTHONY		--					WAP	857669695279.tif
2500046078	CRETNICK, STANLEY	340 ROUTE 46	2-Nov-94	18	0	LYNCH, THOMAS	J1499	WAP	534764386467.tif
2500046078	CRETNICK, STANLEY	340 ROUTE 46	2-Nov-94	18	0	LYNCH, THOMAS	J1499	WR1	12406951078307.tif
2500046079	CRETNICK, STANLEY	340 ROUTE 46	1-Nov-94	15	0	LYNCH, THOMAS	J1499	WAP	534766386467.tif
2500046079	CRETNICK, STANLEY	340 ROUTE 46	1-Nov-94	15	0	LYNCH, THOMAS	J1499	WR1	12406961078308.tif
2500046080	CRETNICK, STANLEY	340 ROUTE 46	2-Nov-94	14	0	LYNCH, THOMAS	J1499	WAP	534768386467.tif
2500046080	CRETNICK, STANLEY	340 ROUTE 46	2-Nov-94	14	0	LYNCH, THOMAS	J1499	WR1	12406971078309.tif
2500047324	CRETNICK, STANLEY	340 ROUTE 46	19-Jun-95	15	0	DOLAN, DAVID	J2418	WAP	536796388045.tif
2500047324	CRETNICK, STANLEY	340 ROUTE 46	19-Jun-95	15	0	DOLAN, DAVID	J2418	WR1	12570601094672.tif
2500045974	DAMELIO, THERESA, ES	427 E. BLACKWELL ST	22-Oct-94	12	0	QUINN, BRIAN	J1495	WAP	534593386328.tif
2500045974	DAMELIO, THERESA, ES	428 E. BLACKWELL ST	22-Oct-94	12	0	QUINN, BRIAN	J1495	WR1	12391041076716.tif
2500004214	DAVIES, GUY D.		--					WAP	856019693629.tif
2500002559	DAVIS, GUY D		--					WAP	856664694274.tif
2500002559	DAVIS, GUY D		--					WR1	921292758902.tif
2500004499	DAVIS, GUY D		--					WAP	856804694414.tif
2500003122	DAVIS, GUY D.		--	.				WAP	855019692629.tif
2500004970	DAVIS, JOSEPH		--					WAP	857680695290.tif
2500037420	DAY INTERNATIONAL		--					WAP	519701377242.tif
2500037411	DAY INTERNATIONAL	RICHBOYNTON RD	10-Oct-90	10	0	DECORSO, CARMINE	J1210	WAP	519684377237.tif
2500037411	DAY INTERNATIONAL	RICHBOYNTON RD	10-Oct-90	10	0	DECORSO, CARMINE	J1210	WR1	1089465927078.tif
2500037412	DAY INTERNATIONAL	RICHBOYNTON RD	8-Oct-90	15.5	0	DECORSO, CARMINE	J1210	WAP	519686377237.tif
2500037412	DAY INTERNATIONAL	RICHBOYNTON RD	8-Oct-90	15.5	0	DECORSO, CARMINE	J1210	WR1	1089466927079.tif
2500037413	DAY INTERNATIONAL	RICHBOYNTON RD	8-Oct-90	15	0	DECORSO, CARMINE	J1210	WAP	519687377237.tif
2500037413	DAY INTERNATIONAL	RICHBOYNTON RD	8-Oct-90	15	0	DECORSO, CARMINE	J1210	WR1	1089467927080.tif

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	NJ Grid Coordinate No.	Drilling Company	Proposed Depth (ft bgs)[1]	Proposed Capacity (gpm)[2]	Well Use	Lot	Block	Municipality	County	Permit Issue Date	Latitude	Longitude	Well Date	Canceled	Well ID
2500037414	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15		Monitoring	2 & 3	603	Dover	Morris	3-Oct-90	405306	743319	8-Nov-90		GEI-14S
2500037414	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15	0	Monitoring	2 & 3	603	Dover	Morris	3-Oct-90	405306	743319	8-Nov-90		GEI-14S
2500037415	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15		Monitoring	2 & 3	603	Dover	Morris	3-Oct-90	405306	743319	8-Nov-90		GEI-15S
2500037415	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15	0	Monitoring	2 & 3	603	Dover	Morris	3-Oct-90	405306	743319	8-Nov-90		GEI-15S
2500037416	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15		Monitoring	2 & 3	603	Dover	Morris	3-Oct-90	405306	743319	8-Nov-90		GEI-16S
2500037416	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15	0	Monitoring	2 & 3	603	Dover	Morris	3-Oct-90	405306	743319	8-Nov-90		GEI-16S
2500037417	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15		Monitoring	2 & 3	603	Dover	Morris	3-Oct-90	405306	743319	8-Nov-90		GEI-17S
2500037417	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15	0	Monitoring	2 & 3	603	Dover	Morris	3-Oct-90	405306	743319	8-Nov-90		GEI-17S
2500037419	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15		Monitoring	2	601	Dover	Morris	3-Oct-90	405306	743319	8-Nov-90		GEI-23D
2500037419	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15	0	Monitoring	2	601	Dover	Morris	3-Oct-90	405306	743319	8-Nov-90		GEI-23D
2500037664	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15		Monitoring	2 & 3	603	Dover	Morris	8-Nov-90	405306	743319	28-Mar-91		GEI-18S
2500037664	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15	0	Monitoring	2 & 3	603	Dover	Morris	8-Nov-90	405306	743319	28-Mar-91		GEI-18S
2500037665	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15		Monitoring	2 & 3	603	Dover	Morris	8-Nov-90	405306	743319	28-Mar-91		GEI-20S
2500037665	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15	0	Monitoring	2 & 3	603	Dover	Morris	8-Nov-90	405306	743319	28-Mar-91		GEI-20S
2500037666	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15		Monitoring	2 & 3	603	Dover	Morris	8-Nov-90	405306	743319	28-Mar-91		GEI-21S
2500037666	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15	0	Monitoring	2 & 3	603	Dover	Morris	8-Nov-90	405306	743319	28-Mar-91		GEI-21S
2500037667	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15		Monitoring	2 & 3	603	Dover	Morris	8-Nov-90	405306	743319	28-Mar-91		GEI-19S
2500037667	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15	0	Monitoring	2 & 3	603	Dover	Morris	8-Nov-90	405306	743319	28-Mar-91		GEI-19S
2500037668	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15		Monitoring	2 & 3	603	Dover	Morris	8-Nov-90	405306	743319	28-Mar-91		GEI-22D
2500037668	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15	0	Monitoring	2 & 3	603	Dover	Morris	8-Nov-90	405306	743319	28-Mar-91		GEI-22D
2500037668	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15		Monitoring	2 & 3	603	Dover	Morris	8-Nov-90	405306	743319	28-Mar-91		GEI-22D
2500037668	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	15	0	Monitoring	2 & 3	603	Dover	Morris	8-Nov-90	405306	743319	28-Mar-91		GEI-22D
2500037418	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	65		Monitoring	2 & 3	603	Dover	Morris	3-Oct-90	405306	743319	8-Nov-90		GEI-23S
2500037418	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	65	0	Monitoring	2 & 3	603	Dover	Morris	3-Oct-90	405306	743319	8-Nov-90		GEI-23S
2500037670	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	100		Monitoring	2 & 3	603	Dover	Morris	8-Nov-90	405306	743319	--	Y	
2500037669	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	100		Monitoring	2 & 3	603	Dover	Morris	8-Nov-90	405306	743319	28-Mar-91		GEI-22S
2500037669	DAY INTERNATIONAL	2503454	Summit Drilling Co., Inc.	100	0	Monitoring	2 & 3	603	Dover	Morris	8-Nov-90	405306	743319	28-Mar-91		GEI-22S
2500019071	DENVILLE, TOWNSHIP O	2503571	Unknown	137	700	Public Supply	3	128	Randolph Twp	Morris	25-Mar-77	405239	743200	--		
2500008079	DORMAN, THOMAS R	2503422	Louis Garie	65	5	Domestic			Rockaway Bor	Morris	24-Oct-58	405400	743306	--		
2500008079	DORMAN, THOMAS R	2503422	Louis Garie	65	5	Domestic			Rockaway Bor	Morris	24-Oct-58	405400	743306	--		
2500044105	DOVER - DEPT. PUBLIC	2503425	Summit Drilling Co., Inc.	30		Boring/ probe	1	901	Dover	Morris	19-Oct-93	405346	743306	4-Nov-93		TB1
2500044105	DOVER - DEPT. PUBLIC	2503425	Summit Drilling Co., Inc.	30	0	Boring/ probe	1	901	Dover	Morris	19-Oct-93	405346	743306	4-Nov-93		TB1
2500044106	DOVER - DEPT. PUBLIC	2503425	Summit Drilling Co., Inc.	30		Boring/ probe	1	901	Dover	Morris	19-Oct-93	405346	743306	4-Nov-93		TB2
2500044106	DOVER - DEPT. PUBLIC	2503425	Summit Drilling Co., Inc.	30	0	Boring/ probe	1	901	Dover	Morris	19-Oct-93	405346	743306	4-Nov-93		TB2
2500044107	DOVER - DEPT. PUBLIC	2503425	Summit Drilling Co., Inc.	30		Boring/ probe	1	901	Dover	Morris	19-Oct-93	405346	743306	4-Nov-93		TB3
2500044107	DOVER - DEPT. PUBLIC	2503425	Summit Drilling Co., Inc.	30	0	Boring/ probe	1	901	Dover	Morris	19-Oct-93	405346	743306	4-Nov-93		TB3
2500044108	DOVER - DEPT. PUBLIC	2503425	Summit Drilling Co., Inc.	30		Boring/ probe	1	901	Dover	Morris	19-Oct-93	405346	743306	4-Nov-93		TB4
2500044108	DOVER - DEPT. PUBLIC	2503425	Summit Drilling Co., Inc.	30	0	Boring/ probe	1	901	Dover	Morris	19-Oct-93	405346	743306	4-Nov-93		TB4
2500038091	DOVER ARMORY	2503428	DJ Hawkins Well Drilling	50		Monitoring	1,2,3	151 A	Dover	Morris	5-Feb-91	405333	743306	--		
2500010564	DOVER BRD OF WATER	2503461	Burrows Well Drilling Co.	100	0	Test			Dover	Morris	23-Apr-62	405320	743240	--		
2500010564	DOVER BRD OF WATER	2503461	Burrows Well Drilling Co.	100	0	Test			Dover	Morris	23-Apr-62	405320	743240	--		
2500010565	DOVER BRD OF WATER	2503461	Burrows Well Drilling Co.	136	0	Public Supply			Dover	Morris	23-Apr-62	405320	743240	--		
2500010565	DOVER BRD OF WATER	2503461	Burrows Well Drilling Co.	136	0	Public Supply			Dover	Morris	23-Apr-62	405320	743240	--		
2500029157	DOVER HOLDING CO.	2503466	Empire Soils Investigation	150		Monitoring	24	10202	Rockaway Twp	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029157	DOVER HOLDING CO.	2503466	Empire Soils Investigation	150	0	Monitoring	24	10202	Rockaway Twp	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029158	DOVER HOLDING CO.	2503466	Empire Soils Investigation	150		Monitoring	24	10202	Rockaway Twp	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029158	DOVER HOLDING CO.	2503466	Empire Soils Investigation	150	0	Monitoring	24	10202	Rockaway Twp	Morris	23-Feb-87	405259	743206	25-Sep-87	N	

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	Well Location	Completion Date	Finished Depth (ft bgs)	Actual Capacity (gpm)	Driller's Name	NJ License No.	Document Type[3]	Document No.[4]
2500037414	DAY INTERNATIONAL	RICHBOYNTON RD	14-Oct-90	15	0	DECORSO, CARMINE	J1210	WAP	519689377237.tif
2500037414	DAY INTERNATIONAL	RICHBOYNTON RD	14-Oct-90	15	0	DECORSO, CARMINE	J1210	WR1	1089468927081.tif
2500037415	DAY INTERNATIONAL	RICHBOYNTON RD	14-Oct-90	15.5	0	DECORSO, CARMINE	J1210	WAP	519691377237.tif
2500037415	DAY INTERNATIONAL	RICHBOYNTON RD	14-Oct-90	15.5	0	DECORSO, CARMINE	J1210	WR1	1089469927082.tif
2500037416	DAY INTERNATIONAL	RICHBOYNTON RD	9-Oct-90	15	0	DECORSO, CARMINE	J1210	WAP	519693377237.tif
2500037416	DAY INTERNATIONAL	RICHBOYNTON RD	9-Oct-90	15	0	DECORSO, CARMINE	J1210	WR1	1089470927083.tif
2500037417	DAY INTERNATIONAL	RICHBOYNTON RD	10-Oct-90	14.5	0	DECORSO, CARMINE	J1210	WAP	519695377237.tif
2500037417	DAY INTERNATIONAL	RICHBOYNTON RD	10-Oct-90	14.5	0	DECORSO, CARMINE	J1210	WR1	1089471927084.tif
2500037419	DAY INTERNATIONAL	RICHBOYNTON RD	12-Oct-90	65	0	DECORSO, CARMINE	J1210	WAP	519699377242.tif
2500037419	DAY INTERNATIONAL	RICHBOYNTON RD	12-Oct-90	65	0	DECORSO, CARMINE	J1210	WR1	1089473927086.tif
2500037664	DAY INTERNATIONAL	RICHBOYNTON RD	29-Jan-91	20	0	GRAHAMER, JR., DONAL	M1212	WAP	520274377584.tif
2500037664	DAY INTERNATIONAL	RICHBOYNTON RD	29-Jan-91	20	0	GRAHAMER, JR., DONAL	M1212	WR1	1091581929488.tif
2500037665	DAY INTERNATIONAL	RICHBOYNTON RD	31-Jan-91	18	0	GRAHAMER, JR., DONAL	M1212	WAP	520275377584.tif
2500037665	DAY INTERNATIONAL	RICHBOYNTON RD	31-Jan-91	18	0	GRAHAMER, JR., DONAL	M1212	WR1	1091582929195.tif
2500037666	DAY INTERNATIONAL	RICHBOYNTON RD	31-Jan-91	18	0	GRAHAMER, JR., DONAL	M1212	WAP	520277377584.tif
2500037666	DAY INTERNATIONAL	RICHBOYNTON RD	31-Jan-91	18	0	GRAHAMER, JR., DONAL	M1212	WR1	1091583929196.tif
2500037667	DAY INTERNATIONAL	RICHBOYNTON RD	31-Jan-91	18	0	GRAHAMER, JR., DONAL	M1212	WAP	520278377584.tif
2500037667	DAY INTERNATIONAL	RICHBOYNTON RD	31-Jan-91	18	0	GRAHAMER, JR., DONAL	M1212	WR1	1091584929197.tif
2500037668	DAY INTERNATIONAL	RICHBOYNTON RD	4-Feb-91	49	0	GRAHAMER, JR., DONAL	M1212	WAP	520280377584.tif
2500037668	DAY INTERNATIONAL	RICHBOYNTON RD	4-Feb-91	49	0	GRAHAMER, JR., DONAL	M1212	WR1	1091585929198.tif
2500037668	DAY INTERNATIONAL	RICHBOYNTON RD	4-Feb-91	49	0	GRAHAMER, JR., DONAL	M1212	WAP	520280377584.tif
2500037668	DAY INTERNATIONAL	RICHBOYNTON RD	4-Feb-91	49	0	GRAHAMER, JR., DONAL	M1212	WR1	1091585929198.tif
2500037418	DAY INTERNATIONAL	RICHBOYNTON RD	10-Oct-90	14	0	DECORSO, CARMINE	J1210	WAP	519697377240.tif
2500037418	DAY INTERNATIONAL	RICHBOYNTON RD	10-Oct-90	14	0	DECORSO, CARMINE	J1210	WR1	1089472927085.tif
2500037670	DAY INTERNATIONAL		--					WAP	520285377587.tif
2500037669	DAY INTERNATIONAL	RICHBOYNTON RD	5-Feb-91	8	0	GRAHAMER, JR., DONAL	M1212	WAP	520281377587.tif
2500037669	DAY INTERNATIONAL	RICHBOYNTON RD	5-Feb-91	8	0	GRAHAMER, JR., DONAL	M1212	WR1	1091586929199.tif
2500019071	DENVILLE, TOWNSHIP O		--					WAP	511897371681.tif
2500008079	DORMAN, THOMAS R		--					WAP	859890697500.tif
2500008079	DORMAN, THOMAS R		--					WR1	924518762128.tif
2500044105	DOVER - DEPT. PUBLIC	211 N. SUSSEX	21-Oct-93	32		DECORSO, CARMINE	J1210	WAP	531618384113.tif
2500044105	DOVER - DEPT. PUBLIC	211 N. SUSSEX	21-Oct-93	32		DECORSO, CARMINE	J1210	WR1	12115831049196.tif
2500044106	DOVER - DEPT. PUBLIC	211 N. SUSSEX	21-Oct-93	32		DECORSO, CARMINE	J1210	WAP	531620384113.tif
2500044106	DOVER - DEPT. PUBLIC	211 N. SUSSEX	21-Oct-93	32		DECORSO, CARMINE	J1210	WR1	12115841049197.tif
2500044107	DOVER - DEPT. PUBLIC	211 N. SUSSEX	21-Oct-93	32		DECORSO, CARMINE	J1210	WAP	531621384113.tif
2500044107	DOVER - DEPT. PUBLIC	211 N. SUSSEX	21-Oct-93	32		DECORSO, CARMINE	J1210	WR1	12115851049198.tif
2500044108	DOVER - DEPT. PUBLIC	211 N. SUSSEX	21-Oct-93	32		DECORSO, CARMINE	J1210	WAP	531623384113.tif
2500044108	DOVER - DEPT. PUBLIC	211 N. SUSSEX	21-Oct-93	32		DECORSO, CARMINE	J1210	WR1	12115861049199.tif
2500038091	DOVER ARMORY		--					WAP	521154378058.tif
2500010564	DOVER BRD OF WATER		--					WAP	868670706280.tif
2500010564	DOVER BRD OF WATER		--					WR1	933292770902.tif
2500010565	DOVER BRD OF WATER		--					WAP	868671706281.tif
2500010565	DOVER BRD OF WATER		--					WR1	933293770903.tif
2500029157	DOVER HOLDING CO.		--					WAP	514799374149.tif
2500029157	DOVER HOLDING CO.		--					WR1	1013068850681.tif
2500029158	DOVER HOLDING CO.		--					WAP	514801374149.tif
2500029158	DOVER HOLDING CO.		--					WR1	1013069850682.tif

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	NJ Grid Coordinate No.	Drilling Company	Proposed Depth (ft bgs)[1]	Proposed Capacity (gpm)[2]	Well Use	Lot	Block	Municipality	County	Permit Issue Date	Latitude	Longitude	Well Date	Canceled	Well ID
2500029159	DOVER HOLDING CO.	2503466	Empire Soils Investigation	150		Monitoring	24	10202	Rockaway Twp	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029159	DOVER HOLDING CO.	2503466	Empire Soils Investigation	150	0	Monitoring	24	10202	Rockaway Twp	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500050576	DOVER TOWN	2503419	Lutz Environmental Co., Inc.	35		Monitoring	1	1-Sep	Dover	Morris	17-Apr-97	405333	743333	--		
2500050575	DOVER TOWN	2503419	Lutz Environmental Co., Inc.	35		Monitoring	1	1-Sep	Dover	Morris	17-Apr-97	405333	743333	5-May-97		MW #7
2500050575	DOVER TOWN	2503419	Lutz Environmental Co., Inc.	35	0	Monitoring	1	1-Sep	Dover	Morris	17-Apr-97	405333	743333	5-May-97		MW #7
2500043980	DOVER TWP.	2503461	Tabasco Drilling	25		Monitoring	30	1904	Dover	Morris	30-Sep-93	405320	743240	18-Nov-93		3
2500043980	DOVER TWP.	2503461	Tabasco Drilling	25	0	Monitoring	30	1904	Dover	Morris	30-Sep-93	405320	743240	18-Nov-93		3
2500029162	DOVER WATER COMMISSI	2503465	Empire Soils Investigation	150		Monitoring	15	23-14	Dover	Morris	23-Feb-87	405259	743219	--	Y	
2500029160	DOVER WATER COMMISSI	2503465	Empire Soils Investigation	150		Monitoring	15	23-14	Dover	Morris	23-Feb-87	405259	743219	25-Sep-87	N	
2500029160	DOVER WATER COMMISSI	2503465	Empire Soils Investigation	150	0	Monitoring	15	23-14	Dover	Morris	23-Feb-87	405259	743219	25-Sep-87	N	
2500029161	DOVER WATER COMMISSI	2503465	Empire Soils Investigation	150		Monitoring	15	23-14	Dover	Morris	23-Feb-87	405259	743219	25-Sep-87	N	
2500029161	DOVER WATER COMMISSI	2503465	Empire Soils Investigation	150	0	Monitoring	15	23-14	Dover	Morris	23-Feb-87	405259	743219	25-Sep-87	N	
2500046374	DOVER, TOWN OF	2503452	D.F. Well Drilling Co.	15		Monitoring	26	20-29	Dover	Morris	27-Dec-94	405320	743306	7-Feb-95		MWSCE5
2500046374	DOVER, TOWN OF	2503452	D.F. Well Drilling Co.	15	0	Monitoring	26	20-29	Dover	Morris	27-Dec-94	405320	743306	7-Feb-95		MWSCE5
2500046375	DOVER, TOWN OF	2503452	D.F. Well Drilling Co.	15		Monitoring	26	20-29	Dover	Morris	27-Dec-94	405320	743306	17-Feb-95		MWSCE6
2500046375	DOVER, TOWN OF	2503452	D.F. Well Drilling Co.	15	0	Monitoring	26	20-29	Dover	Morris	27-Dec-94	405320	743306	17-Feb-95		MWSCE6
2500010461	DOVER, TOWN OF	2503461	Burrows Well Drilling Co.	100	0	Test			Dover	Morris	2-Feb-62	405320	743240	--		
2500010461	DOVER, TOWN OF	2503461	Burrows Well Drilling Co.	100	0	Test			Dover	Morris	2-Feb-62	405320	743240	--		
2500042442	DOVER, TOWNSHIP OF	2503482	SBI Environmental Well Drilling, Inc.	20		Monitoring	26	20-29	Dover	Morris	5-Jan-93	405239	743306	26-Jan-93		MW1
2500042442	DOVER, TOWNSHIP OF	2503482	SBI Environmental Well Drilling, Inc.	20	0	Monitoring	26	20-29	Dover	Morris	5-Jan-93	405239	743306	26-Jan-93		MW1
2500042443	DOVER, TOWNSHIP OF	2503482	SBI Environmental Well Drilling, Inc.	20		Monitoring	26	20-29	Dover	Morris	5-Jan-93	405239	743306	26-Jan-93		MW2
2500042443	DOVER, TOWNSHIP OF	2503482	SBI Environmental Well Drilling, Inc.	20	0	Monitoring	26	20-29	Dover	Morris	5-Jan-93	405239	743306	26-Jan-93		MW2
2500042444	DOVER, TOWNSHIP OF	2503482	SBI Environmental Well Drilling, Inc.	20		Monitoring	26	20-29	Dover	Morris	5-Jan-93	405239	743306	26-Jan-93		MW3
2500042444	DOVER, TOWNSHIP OF	2503482	SBI Environmental Well Drilling, Inc.	20	0	Monitoring	26	20-29	Dover	Morris	5-Jan-93	405239	743306	26-Jan-93		MW3
2500037745	DOYLE, RUTAN & FLEIS	2503461	Dunn & Dunn Inc.	20		Monitoring	11	2316	Dover	Morris	26-Nov-90	405320	743240	8-Apr-91		MW#1
2500037745	DOYLE, RUTAN & FLEIS	2503461	Dunn & Dunn Inc.	20	0	Monitoring	11	2316	Dover	Morris	26-Nov-90	405320	743240	8-Apr-91		MW#1
2500048294	DUSENBERG, JOHN	2503548	Jersey Drilling & Boring Co., Inc.	75		Monitoring	12, 13 & 14	195	Randolph Twp	Morris	22-Nov-95	405253	743146	13-May-96		MW-7A
2500048294	DUSENBERG, JOHN	2503548	Jersey Drilling & Boring Co., Inc.	75	0	Monitoring	12, 13 & 14	195	Randolph Twp	Morris	22-Nov-95	405253	743146	13-May-96		MW-7A
2500048295	DUSENBERG, JOHN	2503548	Jersey Drilling & Boring Co., Inc.	75		Monitoring	12, 13 & 14	195	Randolph Twp	Morris	22-Nov-95	405253	743146	13-May-96		MW-8 B

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	Well Location	Completion Date	Finished Depth (ft bgs)	Actual Capacity (gpm)	Driller's Name	NJ License No.	Document Type[3]	Document No.[4]
2500029159	DOVER HOLDING CO.		--					WAP	514802374149.tif
2500029159	DOVER HOLDING CO.		--					WR1	1013070850683.tif
2500050576	DOVER TOWN	211 NORTH SUSSEX ST	--					WAP	543174392822.tif
2500050575	DOVER TOWN	211 NORTH SUSSEX ST.	25-Apr-97	45	0	WESTOVER, TIMOTHY	M1444	WAP	543169392822.tif
2500050575	DOVER TOWN	211 NORTH SUSSEX ST.	25-Apr-97	45	0	WESTOVER, TIMOTHY	M1444	WR1	13031151140724.tif
2500043980	DOVER TWP.	30 RUTAN RD	4-Oct-93	14	0	HITZELBERGER, KARL	J1530	WAP	531426383982.tif
2500043980	DOVER TWP.		4-Oct-93	14	0	HITZELBERGER, KARL	J1530	WR1	12105621048175.tif
2500029162	DOVER WATER COMMISSI	RT 46	--					WAP	514807374152.tif
2500029160	DOVER WATER COMMISSI		--					WAP	514804374152.tif
2500029160	DOVER WATER COMMISSI		--					WR1	1013071850684.tif
2500029161	DOVER WATER COMMISSI		--					WAP	514806374152.tif
2500029161	DOVER WATER COMMISSI		--					WR1	1013072850685.tif
2500046374	DOVER, TOWN OF	MYRTLE AVENUE	17-Jan-85	10		PEPPER, MARTIN A.	J1405	WAP	535248386848.tif
2500046374	DOVER, TOWN OF	MYRTLE AVENUE	17-Jan-85	10		PEPPER, MARTIN A.	J1405	WR1	12444901082102.tif
2500046375	DOVER, TOWN OF	MYRTLE AVENUE	17-Jan-85	10		PEPPER, MARTIN A.	J1405	WAP	535250386848.tif
2500046375	DOVER, TOWN OF	MYRTLE AVENUE	17-Jan-85	10		PEPPER, MARTIN A.	J1405	WR1	12444911082103.tif
2500010461	DOVER, TOWN OF		--					WAP	869919707529.tif
2500010461	DOVER, TOWN OF		--					WR1	934541966305.tif
2500042442	DOVER, TOWNSHIP OF	37 N. SUSSEX ST	7-Jan-93	11		ELLEFSEN, WILLIAM	J1173	WAP	529064382326.tif
2500042442	DOVER, TOWNSHIP OF	37 N. SUSSEX ST	7-Jan-93	11		ELLEFSEN, WILLIAM	J1173	WR1	11869421024555.tif
2500042443	DOVER, TOWNSHIP OF	37 N. SUSSEX ST	7-Jan-93	11		ELLEFSEN, WILLIAM	J1173	WAP	529066382326.tif
2500042443	DOVER, TOWNSHIP OF	37 N. SUSSEX ST	7-Jan-93	11		ELLEFSEN, WILLIAM	J1173	WR1	11869431190303.tif
2500042444	DOVER, TOWNSHIP OF	37 N. SUSSEX ST	8-Jan-93	10		ELLEFSEN, WILLIAM	J1173	WAP	529067382326.tif
2500042444	DOVER, TOWNSHIP OF	37 N. SUSSEX ST	8-Jan-93	10		ELLEFSEN, WILLIAM	J1173	WR1	11869441024557.tif
2500037745	DOYLE, RUTAN & FLEIS	E. BLACKWELL ST.	31-Dec-90	20	0	DUNN, MICHAEL L.	J1172	WAP	520435377656.tif
2500037745	DOYLE, RUTAN & FLEIS	E. BLACKWELL ST.	31-Dec-90	20	0	DUNN, MICHAEL L.	J1172	WR1	1092532930145.tif
2500048294	DUSENBERG, JOHN	220 FRANKLIN RD.	3-Apr-96	42	0	VAN NESS, GEORGE	J1266	WAP	538349389153.tif
2500048294	DUSENBERG, JOHN	220 FRANKLIN RD.	3-Apr-96	42	0	VAN NESS, GEORGE	J1266	WR1	12680231105635.tif
2500048295	DUSENBERG, JOHN	220 FRANKLIN RD.	5-Apr-96	65	0	VAN NESS, GEORGE	J1266	WAP	538351389153.tif

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	NJ Grid Coordinate No.	Drilling Company	Proposed Depth (ft bgs)[1]	Proposed Capacity (gpm)[2]	Well Use	Lot	Block	Municipality	County	Permit Issue Date	Latitude	Longitude	Well Date	Canceled	Well ID
2500048295	DUSENBERG, JOHN	2503548	Jersey Drilling & Boring Co., Inc.	75	0	Monitoring	12, 13 & 14	195	Randolph Twp	Morris	22-Nov-95	405253	743146	13-May-96		MW-8 B
2500048296	DUSENBERG, JOHN	2503548	Jersey Drilling & Boring Co., Inc.	75		Monitoring	12, 13 & 14	195	Randolph Twp	Morris	22-Nov-95	405253	743146	13-May-96		MW-12 A
2500048296	DUSENBERG, JOHN	2503548	Jersey Drilling & Boring Co., Inc.	75	0	Monitoring	12, 13 & 14	195	Randolph Twp	Morris	22-Nov-95	405253	743146	13-May-96		MW-12 A
2500040253	DUSENBERY, JOHN	2503548	Jersey Drilling & Boring Co., Inc.	50		Monitoring	12, 13 & 14	195	Randolph Twp	Morris	3-Dec-91	405253	743146	24-Jan-92		MW2DA
2500040253	DUSENBERY, JOHN	2503548	Jersey Drilling & Boring Co., Inc.	50	0	Monitoring	12, 13 & 14	195	Randolph Twp	Morris	3-Dec-91	405253	743146	24-Jan-92		MW2DA
2500040254	DUSENBERY, JOHN	2503548	Jersey Drilling & Boring Co., Inc.	50		Monitoring	12, 13 & 14	195	Randolph Twp	Morris	3-Dec-91	405253	743146	24-Jan-92		MW8DA
2500040254	DUSENBERY, JOHN	2503548	Jersey Drilling & Boring Co., Inc.	50	0	Monitoring	12, 13 & 14	195	Randolph Twp	Morris	3-Dec-91	405253	743146	24-Jan-92		MW8DA
2500040255	DUSENBERY, JOHN	2503548	Jersey Drilling & Boring Co., Inc.	50		Monitoring	12, 13 & 14	195	Randolph Twp	Morris	3-Dec-91	405253	743146	24-Jan-92		MW10
2500040255	DUSENBERY, JOHN	2503548	Jersey Drilling & Boring Co., Inc.	50	0	Monitoring	12, 13 & 14	195	Randolph Twp	Morris	3-Dec-91	405253	743146	24-Jan-92		MW10
2500040256	DUSENBERY, JOHN	2503548	Jersey Drilling & Boring Co., Inc.	50		Monitoring	12, 13 & 14	195	Randolph Twp	Morris	3-Dec-91	405253	743146	24-Jan-92		MW11
2500040256	DUSENBERY, JOHN	2503548	Jersey Drilling & Boring Co., Inc.	50	0	Monitoring	12, 13 & 14	195	Randolph Twp	Morris	3-Dec-91	405253	743146	24-Jan-92		MW11
2500040257	DUSENBERY, JOHN	2503548	Jersey Drilling & Boring Co., Inc.	50		Monitoring	12, 13 & 14	195	Randolph Twp	Morris	3-Dec-91	405253	743146	24-Jan-92		MW12
2500040257	DUSENBERY, JOHN	2503548	Jersey Drilling & Boring Co., Inc.	50	0	Monitoring	12, 13 & 14	195	Randolph Twp	Morris	3-Dec-91	405253	743146	24-Jan-92		MW12
2500039411	EMERSON QUIET KOOL	2503426	Samuel Stothoff Co., Inc.	40		Monitoring	5	2020	Dover	Morris	8-Aug-91	405346	743253	27-Aug-91	N	MW-101
2500039411	EMERSON QUIET KOOL	2503426	Samuel Stothoff Co., Inc.	40	0	Monitoring	5	2020	Dover	Morris	8-Aug-91	405346	743253	27-Aug-91	N	MW-101
2500039412	EMERSON QUIET KOOL	2503426	Samuel Stothoff Co., Inc.	40		Monitoring	5	2020	Dover	Morris	8-Aug-91	405346	743253	27-Aug-91	N	MW-102
2500039412	EMERSON QUIET KOOL	2503426	Samuel Stothoff Co., Inc.	40	0	Monitoring	5	2020	Dover	Morris	8-Aug-91	405346	743253	27-Aug-91	N	MW-102
2500039413	EMERSON QUIET KOOL	2503426	Samuel Stothoff Co., Inc.	40		Monitoring	5	2020	Dover	Morris	8-Aug-91	405346	743253	27-Aug-91	N	MW-103
2500039413	EMERSON QUIET KOOL	2503426	Samuel Stothoff Co., Inc.	40	0	Monitoring	5	2020	Dover	Morris	8-Aug-91	405346	743253	27-Aug-91	N	MW-103
2500039414	EMERSON QUIET KOOL	2503426	Samuel Stothoff Co., Inc.	40		Monitoring	5	2020	Dover	Morris	8-Aug-91	405346	743253	27-Aug-91	N	MW-104
2500039414	EMERSON QUIET KOOL	2503426	Samuel Stothoff Co., Inc.	40	0	Monitoring	5	2020	Dover	Morris	8-Aug-91	405346	743253	27-Aug-91	N	MW-104
2500039415	EMERSON QUIET KOOL	2503426	Samuel Stothoff Co., Inc.	40		Monitoring	5	2020	Dover	Morris	8-Aug-91	405346	743253	27-Aug-91	N	MW-105
2500039415	EMERSON QUIET KOOL	2503426	Samuel Stothoff Co., Inc.	40	0	Monitoring	5	2020	Dover	Morris	8-Aug-91	405346	743253	27-Aug-91	N	MW-105
2500039416	EMERSON QUIET KOOL	2503426	Samuel Stothoff Co., Inc.	40		Monitoring	5	2020	Dover	Morris	8-Aug-91	405346	743253	27-Aug-91	N	MW-106
2500039416	EMERSON QUIET KOOL	2503426	Samuel Stothoff Co., Inc.	40	0	Monitoring	5	2020	Dover	Morris	8-Aug-91	405346	743253	27-Aug-91	N	MW-106
250024048A	EXXON CO. USA	2503189	Handex Corp.	25		Monitoring	22	197	Rockaway Twp	Morris	8-Aug-83	405406	743246	--	N	
250024048A	EXXON CO. USA	2503189	Handex Corp.	25	0	Monitoring	22	197	Rockaway Twp	Morris	8-Aug-83	405406	743246	--	N	
250024049A	EXXON CO. USA	2503189	Handex Corp.	25		Monitoring	22	197	Rockaway Twp	Morris	8-Aug-83	405406	743246	--	N	
250024049A	EXXON CO. USA	2503189	Handex Corp.	25	0	Monitoring	22	197	Rockaway Twp	Morris	8-Aug-83	405406	743246	--	N	
2500024045	EXXON CO., USA	2503189	Handex Corp.	25		Monitoring	22	197	Rockaway Twp	Morris	8-Aug-83	405406	743246	--	N	
2500024045	EXXON CO., USA	2503189	Handex Corp.	25	0	Monitoring	22	197	Rockaway Twp	Morris	8-Aug-83	405406	743246	--	N	
2500024046	EXXON CO., USA	2503189	Handex Corp.	25		Monitoring	22	197	Rockaway Twp	Morris	8-Aug-83	405406	743246	--	N	

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	Well Location	Completion Date	Finished Depth (ft bgs)	Actual Capacity (gpm)	Driller's Name	NJ License No.	Document Type[3]	Document No.[4]
2500048295	DUSENBERG, JOHN	220 FRANKLIN RD.	5-Apr-96	65	0	VAN NESS, GEORGE	J1266	WR1	12680241105636.tif
2500048296	DUSENBERG, JOHN	220 FRANKLIN RD.	2-Apr-96	43.8	0	VAN NESS, GEORGE	J1266	WAP	538352389153.tif
2500048296	DUSENBERG, JOHN	220 FRANKLIN RD.	2-Apr-96	43.8	0	VAN NESS, GEORGE	J1266	WR1	12680251105637.tif
2500040253	DUSENBERY, JOHN	220 FRANKLIN RD	20-Dec-91	39		SIPPLE, FRANK	J1489	WAP	525744380407.tif
2500040253	DUSENBERY, JOHN	220 FRANKLIN RD	20-Dec-91	39		SIPPLE, FRANK	J1489	WR1	1127420965033.tif
2500040254	DUSENBERY, JOHN	220 FRANKLIN RD.	19-Dec-91	40		SIPPLE, FRANK	J1489	WAP	525746380407.tif
2500040254	DUSENBERY, JOHN	220 FRANKLIN RD.	19-Dec-91	40		SIPPLE, FRANK	J1489	WR1	1127421965034.tif
2500040255	DUSENBERY, JOHN	220 FRANKLIN RD.	20-Dec-91	17.5		SIPPLE, FRANK	J1489	WAP	525748380407.tif
2500040255	DUSENBERY, JOHN	220 FRANKLIN RD.	20-Dec-91	17.5		SIPPLE, FRANK	J1489	WR1	1127422965035.tif
2500040256	DUSENBERY, JOHN	220 FRANKLIN RD.	18-Dec-91	17.5		SIPPLE, FRANK	J1489	WAP	525749380407.tif
2500040256	DUSENBERY, JOHN	220 FRANKLIN RD.	18-Dec-91	17.5		SIPPLE, FRANK	J1489	WR1	1127423965135.tif
2500040257	DUSENBERY, JOHN	220 FRANKLIN RD.	17-Dec-91	18		SIPPLE, FRANK	J1489	WAP	525751380407.tif
2500040257	DUSENBERY, JOHN	220 FRANKLIN RD.	17-Dec-91	18		SIPPLE, FRANK	J1489	WR1	1127424965037.tif
2500039411	EMERSON QUIET KOOL	88 KING ST	14-Aug-91	18	0	WENE, DENNIS A.	M0931	WAP	523934379506.tif
2500039411	EMERSON QUIET KOOL	88 KING ST	14-Aug-91	18	0	WENE, DENNIS A.	M0931	WR1	1120036957649.tif
2500039412	EMERSON QUIET KOOL	88 KING ST	15-Aug-91	17	0	BENNETT, GARY	J1481	WAP	523936379506.tif
2500039412	EMERSON QUIET KOOL	88 KING ST	15-Aug-91	17	0	BENNETT, GARY	J1481	WR1	1120037957650.tif
2500039413	EMERSON QUIET KOOL	88 KING ST	14-Aug-91	17	0	BENNETT, GARY	J1481	WAP	523938379506.tif
2500039413	EMERSON QUIET KOOL	88 KING ST	14-Aug-91	17	0	BENNETT, GARY	J1481	WR1	1120038957651.tif
2500039414	EMERSON QUIET KOOL	88 KING ST	14-Aug-91	17	0	BENNETT, GARY	J1481	WAP	523939379506.tif
2500039414	EMERSON QUIET KOOL	88 KING ST	14-Aug-91	17	0	BENNETT, GARY	J1481	WR1	1120039957652.tif
2500039415	EMERSON QUIET KOOL	88 KING ST	15-Aug-91	17	0	BENNETT, GARY	J1481	WAP	523941379506.tif
2500039415	EMERSON QUIET KOOL	88 KING ST	15-Aug-91	17	0	BENNETT, GARY	J1481	WR1	1120040957653.tif
2500039416	EMERSON QUIET KOOL	88 KING ST	14-Aug-91	21	0	WENE, DENNIS A.	M0931	WAP	523942379506.tif
2500039416	EMERSON QUIET KOOL	88 KING ST	14-Aug-91	21	0	WENE, DENNIS A.	M0931	WR1	1120041957654.tif
250024048A	EXXON CO. USA		--					WAP	505604366135.tif
250024048A	EXXON CO. USA		--					WR1	9763751190287.tif
250024049A	EXXON CO. USA		--					WAP	505607366135.tif
250024049A	EXXON CO. USA		--					WR1	976376827151.tif
2500024045	EXXON CO., USA		--					WAP	505596366135.tif
2500024045	EXXON CO., USA		--					WR1	976370813983.tif
2500024046	EXXON CO., USA		--					WAP	505598366135.tif

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	NJ Grid Coordinate No.	Drilling Company	Proposed Depth (ft bgs)[1]	Proposed Capacity (gpm)[2]	Well Use	Lot	Block	Municipality	County	Permit Issue Date	Latitude	Longitude	Well Date	Canceled	Well ID
2500024046	EXXON CO., USA	2503189	Handex Corp.	25	0	Monitoring	22	197	Rockaway Twp	Morris	8-Aug-83	405406	743246	--	N	
250024047A	EXXON CO., USA	2503189	Handex Corp.	25		Monitoring	22	197	Rockaway Twp	Morris	8-Aug-83	405406	743246	--	N	
250024047A	EXXON CO., USA	2503189	Handex Corp.	25	0	Monitoring	22	197	Rockaway Twp	Morris	8-Aug-83	405406	743246	--	N	
2500024446	EXXON COMPANY USA	2503197	Handex Corp.	30		Monitoring	22	197	Rockaway Twp	Morris	2-Nov-83	405406	743232	--	N	
2500024446	EXXON COMPANY USA	2503197	Handex Corp.	30	0	Monitoring	22	197	Rockaway Twp	Morris	2-Nov-83	405406	743232	--	N	
2500024409	EXXON COMPANY, USA	2503197	Handex Corp.	20		Monitoring	22	197	Rockaway Twp	Morris	18-Oct-83	405406	743232	--	N	
2500024409	EXXON COMPANY, USA	2503197	Handex Corp.	20	0	Monitoring	22	197	Rockaway Twp	Morris	18-Oct-83	405406	743232	--	N	
2500014230	FOCAZIO, JAMES	2503458	D.F. Well Drilling Co.	0	65	Domestic			Randolph Twp	Morris	1-Mar-67	405253	743306	--		
2500053272	FOX DEVELOPMENT CO.	2503493	Rick Bryan	400	65	Test	48	11302	Rockaway Twp	Morris	20-Oct-98	405239	743213	--		
2500005966	GALAVIC, FRANK J	2503431	Louis Garie	70	4	Domestic			Rockaway Twp	Morris	11-Sep-56	405400	743240	--		
2500050790	GETTY PETROLEUM	2503443	ADT-MidAtlantic, Inc.	25		Monitoring	1	1316	Dover	Morris	10-Jun-97	405320	743333	2-Jul-97		MW1
2500050790	GETTY PETROLEUM	2503443	ADT-MidAtlantic, Inc.	25	0	Monitoring	1	1316	Dover	Morris	10-Jun-97	405320	743333	2-Jul-97		MW1
2500050791	GETTY PETROLEUM	2503443	ADT-MidAtlantic, Inc.	25		Monitoring	1	1316	Dover	Morris	10-Jun-97	405320	743333	2-Jul-97		MW2
2500050791	GETTY PETROLEUM	2503443	ADT-MidAtlantic, Inc.	25	0	Monitoring	1	1316	Dover	Morris	10-Jun-97	405320	743333	2-Jul-97		MW2
2500050792	GETTY PETROLEUM	2503443	ADT-MidAtlantic, Inc.	25		Monitoring	1	1316	Dover	Morris	10-Jun-97	405320	743333	2-Jul-97		MW3
2500050792	GETTY PETROLEUM	2503443	ADT-MidAtlantic, Inc.	25	0	Monitoring	1	1316	Dover	Morris	10-Jun-97	405320	743333	2-Jul-97		MW3
2500019469	GILBERT SYSTEMS	2503542	Dan Ballentine Well Drilling	100	20	Domestic	16	84	Rockaway Twp	Morris	1-Sep-77	405320	743146	--		
2500019469	GILBERT SYSTEMS	2503542	Dan Ballentine Well Drilling	100	20	Domestic	16	84	Rockaway Twp	Morris	1-Sep-77	405320	743146	--		
2500035404	HOWMET CORP-ALLOY DI	2503546	Enviro-Sciences	7		Boring/ probe	29	10101	Rockaway Twp	Morris	29-Jan-90	405306	743133	--	Y	
2500047573	HOWMET CORPORATION	2503453	Inland Pollution Services Inc.	20		Piezometer	4	194	Rockaway Twp	Morris	31-Jul-95	405320	743253	20-Sep-95		
2500047573	HOWMET CORPORATION	2503453	Inland Pollution Services Inc.	20	0	Piezometer	4	194	Rockaway Twp	Morris	31-Jul-95	405320	743253	20-Sep-95		
2500023075	HOWMET TURBINE COMPO	2503548	Warren George, Inc.	13		Monitoring			Rockaway Twp	Morris	18-Oct-82	405253	743146	--		
2500023075	HOWMET TURBINE COMPO	2503548	Warren George, Inc.	13	0	Monitoring			Rockaway Twp	Morris	18-Oct-82	405253	743146	--		
2500023078	HOWMET TURBINE COMPO	2503548	Warren George, Inc.	15		Monitoring			Rockaway Twp	Morris	18-Oct-82	405253	743146	--		
2500023078	HOWMET TURBINE COMPO	2503548	Warren George, Inc.	15	0	Monitoring			Rockaway Twp	Morris	18-Oct-82	405253	743146	--		
2500023067	HOWMET TURBINE COMPO	2503543	Warren George, Inc.	17		Monitoring			Rockaway Twp	Morris	18-Oct-82	405320	743133	--		
2500023067	HOWMET TURBINE COMPO	2503543	Warren George, Inc.	17	0	Monitoring			Rockaway Twp	Morris	18-Oct-82	405320	743133	--		

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	Well Location	Completion Date	Finished Depth (ft bgs)	Actual Capacity (gpm)	Driller's Name	NJ License No.	Document Type[3]	Document No.[4]
2500024046	EXXON CO., USA		--					WR1	976371813984.tif
250024047A	EXXON CO., USA		--					WAP	505601366135.tif
250024047A	EXXON CO., USA		--					WR1	976373813985.tif
2500024446	EXXON COMPANY USA		--					WAP	506408366846.tif
2500024446	EXXON COMPANY USA		--					WR1	976574814187.tif
2500024409	EXXON COMPANY, USA		--					WAP	506337366782.tif
2500024409	EXXON COMPANY, USA		--					WR1	976547814160.tif
2500014230	FOCAZIO, JAMES		--					WAP	867598705208.tif
2500053272	FOX DEVELOPMENT CO.	MT. HOPE AVE.	--					WAP	881763719373.tif
2500005966	GALAVIC, FRANK J		--					WAP	858474696084.tif
2500050790	GETTY PETROLEUM	88 E MCFARLIN ST RT 46	25-Jun-97	14	0	MOORE, DENNIS C.	J1471	WAP	544062393543.tif
2500050790	GETTY PETROLEUM	88 E MCFARLIN ST RT 46	25-Jun-97	14	0	MOORE, DENNIS C.	J1471	WR1	13094061147015.tif
2500050791	GETTY PETROLEUM	88 E MCFARLIN ST RT 46	25-Jun-97	11	0	MOORE, DENNIS C.	J1471	WAP	544068393543.tif
2500050791	GETTY PETROLEUM	88 E MCFARLIN ST RT 46	25-Jun-97	11	0	MOORE, DENNIS C.	J1471	WR1	13094071147016.tif
2500050792	GETTY PETROLEUM	88 E MCFARLIN ST RT 46	25-Jun-97	12	0	MOORE, DENNIS C.	J1471	WAP	544072393543.tif
2500050792	GETTY PETROLEUM	88 E MCFARLIN ST RT 46	25-Jun-97	12	0	MOORE, DENNIS C.	J1471	WR1	13094081147017.tif
2500019469	GILBERT SYSTEMS		--					WAP	512886372550.tif
2500019469	GILBERT SYSTEMS		--					WR1	11862101023823.tif
2500035404	HOWMET CORP-ALLOY DI		--					WAP	526231380652.tif
2500047573	HOWMET CORPORATION	FOOT OF ROY ST.	18-Aug-95	13	0	STRZELCZYIK, BOGDAN	J1290	WAP	537201388333.tif
2500047573	HOWMET CORPORATION	FOOT OF ROY ST.	18-Aug-95	13	0	STRZELCZYIK, BOGDAN	J1290	WR1	12596021097214.tif
2500023075	HOWMET TURBINE COMPO		--					WAP	503637364459.tif
2500023075	HOWMET TURBINE COMPO		--					WR1	1102158939771.tif
2500023078	HOWMET TURBINE COMPO		--					WAP	503646364468.tif
2500023078	HOWMET TURBINE COMPO		--					WR1	1102161939774.tif
2500023067	HOWMET TURBINE COMPO		--					WAP	503618364440.tif
2500023067	HOWMET TURBINE COMPO		--					WR1	1102150939763.tif

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	NJ Grid Coordinate No.	Drilling Company	Proposed Depth (ft bgs)[1]	Proposed Capacity (gpm)[2]	Well Use	Lot	Block	Municipality	County	Permit Issue Date	Latitude	Longitude	Well Date	Canceled	Well ID
2500023070	HOWMET TURBINE COMPO	2503546	Warren George, Inc.	20		Monitoring			Rockaway Twp	Morris	18-Oct-82	405306	743133	--		
2500023070	HOWMET TURBINE COMPO	2503546	Warren George, Inc.	20	0	Monitoring			Rockaway Twp	Morris	18-Oct-82	405306	743133	--		
2500023071	HOWMET TURBINE COMPO	2503546	Warren George, Inc.	20		Monitoring			Rockaway Twp	Morris	18-Oct-82	405306	743133	--		
2500023071	HOWMET TURBINE COMPO	2503546	Warren George, Inc.	20	0	Monitoring			Rockaway Twp	Morris	18-Oct-82	405306	743133	--		
2500032825	HOWMET TURBINE COMPO	2503548	Moretrench American Corporation	25		Piezometer	31	10101	Dover	Morris	15-Dec-88	405253	743146	--	Y	
2500032826	HOWMET TURBINE COMPO	2503548	Moretrench American Corporation	25		Piezometer	30	10101	Dover	Morris	15-Dec-88	405253	743146	--	Y	
2500026908	HOWMET TURBINE COMPO	2503500	Warren George, Inc.	50	50	Recovery	2	194	Rockaway Twp	Morris	23-Oct-85	405352	743152	25-Nov-85	N	
2500026908	HOWMET TURBINE COMPO	2503500	Warren George, Inc.	50	50	Recovery	2	194	Rockaway Twp	Morris	23-Oct-85	405352	743152	25-Nov-85	N	
2500023068	HOWMET TURBINE COMPO	2503543	Warren George, Inc.	52		Monitoring			Rockaway Twp	Morris	18-Oct-82	405320	743133	--		
2500023068	HOWMET TURBINE COMPO	2503543	Warren George, Inc.	52	0	Monitoring			Rockaway Twp	Morris	18-Oct-82	405320	743133	--		
2500023073	HOWMET TURBINE COMPO	2503546	Warren George, Inc.	72		Monitoring			Rockaway Twp	Morris	18-Oct-82	405306	743133	--		
2500023073	HOWMET TURBINE COMPO	2503546	Warren George, Inc.	72	0	Monitoring			Rockaway Twp	Morris	18-Oct-82	405306	743133	--		
2500023076	HOWMET TURBINE COMPO	2503548	Warren George, Inc.	72		Monitoring			Rockaway Twp	Morris	18-Oct-82	405253	743146	--		
2500023076	HOWMET TURBINE COMPO	2503548	Warren George, Inc.	72	0	Monitoring			Rockaway Twp	Morris	18-Oct-82	405253	743146	--		
2500023079	HOWMET TURBINE COMPO	2503548	Warren George, Inc.	77		Monitoring			Rockaway Twp	Morris	18-Oct-82	405253	743146	--		
2500023079	HOWMET TURBINE COMPO	2503548	Warren George, Inc.	77	0	Monitoring			Rockaway Twp	Morris	18-Oct-82	405253	743146	--		
2500023069	HOWMET TURBINE COMPO	2503546	Warren George, Inc.	129		Monitoring			Rockaway Twp	Morris	18-Oct-82	405306	743133	--		
2500023069	HOWMET TURBINE COMPO	2503546	Warren George, Inc.	129	0	Monitoring			Rockaway Twp	Morris	18-Oct-82	405306	743133	--		
2500023074	HOWMET TURBINE COMPO	2503546	Warren George, Inc.	138		Monitoring			Rockaway Twp	Morris	18-Oct-82	405306	743133	--		
2500023074	HOWMET TURBINE COMPO	2503546	Warren George, Inc.	138	0	Monitoring			Rockaway Twp	Morris	18-Oct-82	405306	743133	--		
2500023077	HOWMET TURBINE COMPO	2503548	Warren George, Inc.	140		Monitoring			Rockaway Twp	Morris	18-Oct-82	405253	743146	--		
2500023077	HOWMET TURBINE COMPO	2503548	Warren George, Inc.	140	0	Monitoring			Rockaway Twp	Morris	18-Oct-82	405253	743146	--		

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	Well Location	Completion Date	Finished Depth (ft bgs)	Actual Capacity (gpm)	Driller's Name	NJ License No.	Document Type[3]	Document No.[4]
2500023070	HOWMET TURBINE COMPO		--					WAP	503624364446.tif
2500023070	HOWMET TURBINE COMPO		--					WR1	1102153939766.tif
2500023071	HOWMET TURBINE COMPO		--					WAP	503627364449.tif
2500023071	HOWMET TURBINE COMPO		--					WR1	1102154939767.tif
2500032825	HOWMET TURBINE COMPO		--					WAP	521324378157.tif
2500032826	HOWMET TURBINE COMPO		--					WAP	521328378158.tif
2500026908	HOWMET TURBINE COMPO		--					WAP	510911370802.tif
2500026908	HOWMET TURBINE COMPO		--					WR1	978181815794.tif
2500023068	HOWMET TURBINE COMPO		--					WAP	585389427199.tif
2500023068	HOWMET TURBINE COMPO		--					WR1	1102151939764.tif
2500023073	HOWMET TURBINE COMPO		--					WAP	503633364455.tif
2500023073	HOWMET TURBINE COMPO		--					WR1	1102156939769.tif
2500023076	HOWMET TURBINE COMPO		--					WAP	503640364462.tif
2500023076	HOWMET TURBINE COMPO		--					WR1	1102159939772.tif
2500023079	HOWMET TURBINE COMPO		--					WAP	503648364470.tif
2500023079	HOWMET TURBINE COMPO		--					WR1	1102162939775.tif
2500023069	HOWMET TURBINE COMPO		--					WAP	503621364443.tif
2500023069	HOWMET TURBINE COMPO		--					WR1	1102152939765.tif
2500023074	HOWMET TURBINE COMPO		--					WAP	503635364457.tif
2500023074	HOWMET TURBINE COMPO		--					WR1	1102157939770.tif
2500023077	HOWMET TURBINE COMPO		--					WAP	503643364465.tif
2500023077	HOWMET TURBINE COMPO		--					WR1	1102160939773.tif

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One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	NJ Grid Coordinate No.	Drilling Company	Proposed Depth (ft bgs)[1]	Proposed Capacity (gpm)[2]	Well Use	Lot	Block	Municipality	County	Permit Issue Date	Latitude	Longitude	Well Date	Canceled	Well ID
2500023080	HOWMET TURBINE COMPO	2503548	Warren George, Inc.	141		Monitoring			Rockaway Twp	Morris	18-Oct-82	405253	743146	--		
2500023080	HOWMET TURBINE COMPO	2503548	Warren George, Inc.	141	0	Monitoring			Rockaway Twp	Morris	18-Oct-82	405253	743146	--		
2500023072	HOWMET TURBINE COMPO	2503546	Warren George, Inc.	142		Monitoring			Rockaway Twp	Morris	18-Oct-82	405306	743133	--		
2500023072	HOWMET TURBINE COMPO	2503546	Warren George, Inc.	142	0	Monitoring			Rockaway Twp	Morris	18-Oct-82	405306	743133	--		
2500036689	HOWNET CORP-ALLOY DI	2503547	Enviro-Sciences	16		Monitoring	29	10101	Rockaway Twp	Morris	28-Jun-90	405253	743200	9-Jul-90		MW1
2500036689	HOWNET CORP-ALLOY DI	2503547	Enviro-Sciences	16	0	Monitoring	29	10101	Rockaway Twp	Morris	28-Jun-90	405253	743200	9-Jul-90		MW1
2500042334	HOWNET CORPORATION	2503468	McGinnis Drilling	100		Monitoring	2	194	Rockaway Twp	Morris	15-Dec-92	405253	743226	13-Jan-93		1
2500042334	HOWNET CORPORATION	2503468	McGinnis Drilling	100	0	Monitoring	2	194	Rockaway Twp	Morris	15-Dec-92	405253	743226	13-Jan-93		1
2500043816	JAN PACKAGING INC.	2503464	SBI Environmental Well Drilling, Inc.	20		Monitoring	3	188	Dover	Morris	2-Sep-93	405306	743240	5-Nov-93		
2500043816	JAN PACKAGING INC.	2503464	SBI Environmental Well Drilling, Inc.	20	0	Monitoring	3	188	Dover	Morris	2-Sep-93	405306	743240	5-Nov-93		
2500043608	JCP & L	2503443	Summit Drilling Co., Inc.	15		Monitoring	7-15	1307	Dover	Morris	22-Jul-93	405320	743333	17-Aug-93		MW1
2500043608	JCP & L	2503443	Summit Drilling Co., Inc.	15	0	Monitoring	7-15	1307	Dover	Morris	22-Jul-93	405320	743333	17-Aug-93		MW1
2500043609	JCP & L	2503443	Summit Drilling Co., Inc.	15		Monitoring	7-15	1307	Dover	Morris	22-Jul-93	405320	743333	17-Aug-93		MW2
2500043609	JCP & L	2503443	Summit Drilling Co., Inc.	15	0	Monitoring	7-15	1307	Dover	Morris	22-Jul-93	405320	743333	17-Aug-93		MW2
2500002962	KOMINSKY, FRANK P.	2503492	Robert B. Mercer	70	5	Domestic			Randolph Twp	Morris	30-Sep-53	405239	743226	--		
2500034363	L.O. KOVEN & BROTHER	2503464	Enviro-Sciences	15		Monitoring	4A	2204	Dover	Morris	24-Aug-89	405306	743240	21-Aug-92		MW1
2500034363	L.O. KOVEN & BROTHER	2503464	Enviro-Sciences	15	0	Monitoring	4A	2204	Dover	Morris	24-Aug-89	405306	743240	21-Aug-92		MW1
2500005936	LA MALFA, FRANK	2503451	Louis Garie	65	5	Domestic			Randolph Twp	Morris	30-Aug-56	405320	743319	--		
2500037098	LAKELAND BUS COMPANY	2503462	Direct Environmental, Inc.	7		Recovery	42	10202	Dover	Morris	16-Aug-90	405320	743226	5-Feb-93		MW1
2500037098	LAKELAND BUS COMPANY	2503462	Direct Environmental, Inc.	7	0	Recovery	42	10202	Dover	Morris	16-Aug-90	405320	743226	5-Feb-93		MW1
2500029166	LAKELAND BUS LINES	2503466	Empire Soils Investigation	150		Monitoring	42	10202	Rockaway Twp	Morris	23-Feb-87	405259	743206	--	Y	
2500029167	LAKELAND BUS LINES	2503466	Empire Soils Investigation	150		Monitoring	42	10202	Rockaway Twp	Morris	23-Feb-87	405259	743206	--	Y	
2500029168	LAKELAND BUS LINES	2503466	Empire Soils Investigation	150		Monitoring	42	10202	Rockaway Twp	Morris	23-Feb-87	405259	743206	--	Y	
2500048985	LAMARCO, JOSEPH	2503443	Inland Pollution Services Inc.	20		Monitoring	82	73	Randolph Twp	Morris	15-May-96	405320	743333	15-Aug-96		MW1
2500048985	LAMARCO, JOSEPH	2503443	Inland Pollution Services Inc.	20	0	Monitoring	82	73	Randolph Twp	Morris	15-May-96	405320	743333	15-Aug-96		MW1
2500013179	LAWRENCE, ROBERT	2503428	D.F. Well Drilling Co.	0	65	Domestic			Rockaway Twp	Morris	12-Aug-65	405333	743306	--		
2500013179	LAWRENCE, ROBERT	2503428	D.F. Well Drilling Co.	0	65	Domestic			Rockaway Twp	Morris	12-Aug-65	405333	743306	--		
2500029172	LESS,ISADORE ESTATE	2503466	Empire Soils Investigation	150		Monitoring	24	22-02	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029172	LESS,ISADORE ESTATE	2503466	Empire Soils Investigation	150	0	Monitoring	24	22-02	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029173	LESS,ISADORE ESTATE	2503466	Empire Soils Investigation	150		Monitoring	24	22-02	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029173	LESS,ISADORE ESTATE	2503466	Empire Soils Investigation	150	0	Monitoring	24	22-02	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029174	LESS,ISADORE ESTATE	2503466	Empire Soils Investigation	150		Monitoring	24	22-02	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029174	LESS,ISADORE ESTATE	2503466	Empire Soils Investigation	150	0	Monitoring	24	22-02	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	Well Location	Completion Date	Finished Depth (ft bgs)	Actual Capacity (gpm)	Driller's Name	NJ License No.	Document Type[3]	Document No.[4]
2500023080	HOWMET TURBINE COMPO		--					WAP	503651364473.tif
2500023080	HOWMET TURBINE COMPO		--					WR1	1102163939776.tif
2500023072	HOWMET TURBINE COMPO		--					WAP	503630364452.tif
2500023072	HOWMET TURBINE COMPO		--					WR1	1102155939768.tif
2500036689	HOWNET CORP-ALLOY DI	ROY STREET	2-Jul-90	17		DAVIDSON, MICHAEL	J1209	WAP	518066376278.tif
2500036689	HOWNET CORP-ALLOY DI	ROY STREET	2-Jul-90	17		DAVIDSON, MICHAEL	J1209	WR1	1082396920009.tif
2500042334	HOWNET CORPORATION	ROY STREET	16-Dec-92	71		NORTON, JOHN J.	J1584	WAP	528899382217.tif
2500042334	HOWNET CORPORATION	ROY STREET	16-Dec-92	71		NORTON, JOHN J.	J1584	WR1	11847081022321.tif
2500043816	JAN PACKAGING INC.	PO BOX 448 HARRISON ST	2-Sep-93	17		ELLEFSEN, WILLIAM	J1173	WAP	531169383782.tif
2500043816	JAN PACKAGING INC.	PO BOX 448 HARRISON ST	2-Sep-93	17		ELLEFSEN, WILLIAM	J1173	WR1	12088831046496.tif
2500043608	JCP & L	105 E. MCFARLAN	6-Aug-93	14		YOTCOSKI, STEVE	J1622	WAP	530851383553.tif
2500043608	JCP & L	105 E. MCFARLAN	6-Aug-93	14		YOTCOSKI, STEVE	J1622	WR1	12042541041867.tif
2500043609	JCP & L	105 E. MCFARLAN	6-Aug-93	14		YOTCOSKI, STEVE	J1622	WAP	530852383553.tif
2500043609	JCP & L	105 E. MCFARLAN	6-Aug-93	14		YOTCOSKI, STEVE	J1622	WR1	12042551041868.tif
2500002962	KOMINSKY, FRANK P.		--					WAP	854959692569.tif
2500034363	L.O. KOVEN & BROTHER	58 HARDING AVE.	18-Aug-89	12.5	0	QUINN, BRIAN	J1495	WAP	524265379673.tif
2500034363	L.O. KOVEN & BROTHER	58 HARDING AVE.	18-Aug-89	12.5	0	QUINN, BRIAN	J1495	WR1	1063077900690.tif
2500005936	LA MALFA, FRANK		--					WAP	858444696054.tif
2500037098	LAKELAND BUS COMPANY	425 E. BLACKWELL ST	23-Aug-90	7		HESSE, ROBERT M. JR.	M1051	WAP	518955376777.tif
2500037098	LAKELAND BUS COMPANY	425 E. BLACKWELL ST	23-Aug-90	7		HESSE, ROBERT M. JR.	M1051	WR1	1085194922807.tif
2500029166	LAKELAND BUS LINES	RT 46	--					WAP	514814374158.tif
2500029167	LAKELAND BUS LINES	RT 46	--					WAP	514816374158.tif
2500029168	LAKELAND BUS LINES	RT 46	--					WAP	514818374158.tif
2500048985	LAMARCO, JOSEPH	7 GUY ST.	17-May-96	9	0	KOMOSINSKI, MICHAEL	J2420	WAP	539442389942.tif
2500048985	LAMARCO, JOSEPH	7 GUY ST.	17-May-96	9	0	KOMOSINSKI, MICHAEL	J2420	WR1	12769291114541.tif
2500013179	LAWRENCE, ROBERT		--					WAP	866734704344.tif
2500013179	LAWRENCE, ROBERT		--					WR1	9313581012230.tif
2500029172	LESS,ISADORE ESTATE		--					WAP	514825374165.tif
2500029172	LESS,ISADORE ESTATE		--					WR1	1013083850696.tif
2500029173	LESS,ISADORE ESTATE		--					WAP	514827374165.tif
2500029173	LESS,ISADORE ESTATE		--					WR1	1013084850697.tif
2500029174	LESS,ISADORE ESTATE		--					WAP	514828374165.tif
2500029174	LESS,ISADORE ESTATE		--					WR1	1013085850698.tif

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Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	NJ Grid Coordinate No.	Drilling Company	Proposed Depth (ft bgs)[1]	Proposed Capacity (gpm)[2]	Well Use	Lot	Block	Municipality	County	Permit Issue Date	Latitude	Longitude	Well Date	Canceled	Well ID
2500033507	MAHTOOK, JAMES	2503461	Moretrench American Corporation	10		Soil Venting	16	2022	Dover	Morris	1-May-89	405320	743240	17-Nov-89		
2500033507	MAHTOOK, JAMES	2503461	Moretrench American Corporation	10	0	Soil Venting	16	2022	Dover	Morris	1-May-89	405320	743240	17-Nov-89		
2500011199	MANHEIM, JACK	2503542	A. R. Crosswell	80	7	Domestic			Rockaway Bor	Morris	20-Mar-63	405320	743146	--		
2500042124	MAZDA, GRECCO	2503465	Tabasco Drilling Corp.	20		Monitoring	17	1030.3	Rockaway Bor	Morris	22-Oct-92	405306	743226	2-Nov-92		MW-1
2500042124	MAZDA, GRECCO	2503465	Tabasco Drilling Corp.	20	0	Monitoring	17	1030.3	Rockaway Bor	Morris	22-Oct-92	405306	743226	2-Nov-92		MW-1
2500008301	MCCALL, WILLIS	2503469	D.F. Well Drilling Co.	100	5	Domestic			Randolph Twp	Morris	20-Feb-59	405253	743213	--		
2500008301	MCCALL, WILLIS	2503469	D.F. Well Drilling Co.	100	5	Domestic			Randolph Twp	Morris	20-Feb-59	405253	743213	--		
2500047174	MEDRONE, ANNA	2503453	Horizon Environmental Drilling & Excavating	20		Monitoring	9	190A	Dover	Morris	24-May-95	405320	743253	15-Aug-95		MW-1
2500047174	MEDRONE, ANNA	2503453	Horizon Environmental Drilling & Excavating	20	0	Monitoring	9	190A	Dover	Morris	24-May-95	405320	743253	15-Aug-95		MW-1
2500007335	MILES, MACK R.	2503422	Louis Garie	65	5	Domestic			Rockaway Bor	Morris	15-Nov-57	405400	743306	--		
2500007335	MILES, MACK R.	2503422	Louis Garie	65	5	Domestic			Rockaway Bor	Morris	15-Nov-57	405400	743306	--		
2500007815	MILLER, HELEN	2503469	Mabey Bros.	100	6	Domestic			Dover	Morris	17-Jul-58	405253	743213	--		
2500007815	MILLER, HELEN	2503469	Mabey Bros.	100	6	Domestic			Dover	Morris	17-Jul-58	405253	743213	--		
2500007816	MILLER, WALTER E	2503469	Mabey Bros.	100	6	Domestic			Dover	Morris	17-Jul-58	405253	743213	--		
2500007816	MILLER, WALTER E	2503469	Mabey Bros.	100	6	Domestic			Dover	Morris	17-Jul-58	405253	743213	--		
2500005448	MORAN, DAVID	2503465	Robert C. Bixler	60	5	Domestic			Rockaway Twp	Morris	4-Apr-56	405306	743226	--		
2500011059	MORAN, JOHN	2503423	D.F. Well Drilling Co.	0	65	Domestic			Rockaway Twp	Morris	13-Nov-62	405400	743253	--		
2500011059	MORAN, JOHN	2503423	D.F. Well Drilling Co.	0	65	Domestic			Rockaway Twp	Morris	13-Nov-62	405400	743253	--		
2500007044	MORRIS OIL CO.	2503493	Howard W. Smith	90	5	Domestic			Randolph Twp	Morris	3-Sep-57	405239	743213	--		
2500007044	MORRIS OIL CO.	2503493	Howard W. Smith	90	5	Domestic			Randolph Twp	Morris	3-Sep-57	405239	743213	--		
2500023082	MURDOCK, LEWIS	2503495	I. & P. Electrical & Machine Co.	200	10	Domestic	15	142	Randolph Twp	Morris	17-Aug-82	405226	743226	--		
2500023082	MURDOCK, LEWIS	2503495	I. & P. Electrical & Machine Co.	200	10	Domestic	15	142	Randolph Twp	Morris	17-Aug-82	405226	743226	--		
2500050253	N.J. DEPT. OF TRANSP	2503452	Warren George, Inc.	50		Boring/ probe	NA	NA	Dover	Morris	20-Feb-97	405320	743306	26-Mar-97		
2500050253	N.J. DEPT. OF TRANSP	2503452	Warren George, Inc.	50	0	Boring/ probe	NA	NA	Dover	Morris	20-Feb-97	405320	743306	26-Mar-97		
2500023319	N.J. NATURAL GAS CO.	2503465	Warren George, Inc.	45		Monitoring			Dover	Morris	28-Oct-82	405306	743226	--		
2500023320	N.J. NATURAL GAS CO.	2503465	Warren George, Inc.	45		Monitoring			Dover	Morris	28-Oct-82	405306	743226	--		
2500023321	N.J. NATURAL GAS CO.	2503465	Warren George, Inc.	45		Monitoring			Dover	Morris	28-Oct-82	405306	743226	--		
2500023322	N.J. NATURAL GAS CO.	2503465	Warren George, Inc.	45		Monitoring			Dover	Morris	28-Oct-82	405306	743226	--		
2500023323	N.J. NATURAL GAS CO.	2503465	Warren George, Inc.	45		Monitoring			Dover	Morris	28-Oct-82	405306	743226	--		
2500023323	N.J. NATURAL GAS CO.	2503465	Warren George, Inc.	45	0	Monitoring			Dover	Morris	28-Oct-82	405306	743226	--		
2500042728	N.J. TRANSIT	2503454	Jersey Drilling & Boring Co., Inc.	30		Piezometer	16	12 & 13	Dover	Morris	9-Mar-93	405306	743319	13-Apr-93		MW1 B2
2500042728	N.J. TRANSIT	2503454	Jersey Drilling & Boring Co., Inc.	30	0	Piezometer	16	12 & 13	Dover	Morris	9-Mar-93	405306	743319	13-Apr-93		MW1 B2
2500042729	N.J. TRANSIT	2503454	Jersey Drilling & Boring Co., Inc.	30		Piezometer	16	12 & 13	Dover	Morris	9-Mar-93	405306	743319	13-Apr-93		MW2 B14

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	Well Location	Completion Date	Finished Depth (ft bgs)	Actual Capacity (gpm)	Driller's Name	NJ License No.	Document Type[3]	Document No.[4]
2500033507	MAHTOOK, JAMES	32 TRENTON ST.	1-May-89	5	0	WHELAN, LAWRENCE	J1491	WAP	522628378873.tif
2500033507	MAHTOOK, JAMES	32 TRENTON ST.	1-May-89	5	0	WHELAN, LAWRENCE	J1491	WR1	1056358893971.tif
2500011199	MANHEIM, JACK		--					WAP	865555703165.tif
2500042124	MAZDA, GRECCO	410 RT 46	23-Oct-92	16.5	0	HITZELBERGER, KARL	J1530	WAP	528560381934.tif
2500042124	MAZDA, GRECCO		23-Oct-92	16.5	0	HITZELBERGER, KARL	J1530	WR1	11817811019394.tif
2500008301	MCCALL, WILLIS		--					WAP	871345708955.tif
2500008301	MCCALL, WILLIS		--					WR1	935966773576.tif
2500047174	MEDRONE, ANNA	241 E. BLACKWELL ST	9-Jun-95	13	O	QUINN, BRIAN	J1495	WAP	536561387889.tif
2500047174	MEDRONE, ANNA	241 E. BLACKWELL ST	9-Jun-95	13	O	QUINN, BRIAN	J1495	WR1	12557001093312.tif
2500007335	MILES, MACK R.		--					WAP	859244696854.tif
2500007335	MILES, MACK R.		--					WR1	923872761482.tif
2500007815	MILLER, HELEN		--					WAP	859624697234.tif
2500007815	MILLER, HELEN		--					WR1	924252761862.tif
2500007816	MILLER, WALTER E		--					WAP	859625697235.tif
2500007816	MILLER, WALTER E		--					WR1	924253761863.tif
2500005448	MORAN, DAVID		--					WAP	857457695067.tif
2500011059	MORAN, JOHN		--					WAP	864199701809.tif
2500011059	MORAN, JOHN		--					WR1	928823766433.tif
2500007044	MORRIS OIL CO.		--					WAP	859054696664.tif
2500007044	MORRIS OIL CO.		--					WR1	923682761292.tif
2500023082	MURDOCK, LEWIS		--					WAP	503656364478.tif
2500023082	MURDOCK, LEWIS		18-Oct-82	125				WR1	1102165939778.tif
2500050253	N.J. DEPT. OF TRANSP	ROUTE 46	11-Mar-97	50	0	HARRIS, JACOB JR.	B0144	WAP	541922391885.tif
2500050253	N.J. DEPT. OF TRANSP	ROUTE 46	11-Mar-97	50	0	HARRIS, JACOB JR.	B0144	WR1	12991161136725.tif
2500023319	N.J. NATURAL GAS CO.		--					WAP	504122364853.tif
2500023320	N.J. NATURAL GAS CO.		--					WAP	504124364853.tif
2500023321	N.J. NATURAL GAS CO.		--					WAP	504125364853.tif
2500023322	N.J. NATURAL GAS CO.		--					WAP	504127364853.tif
2500023323	N.J. NATURAL GAS CO.		--					WAP	504128364853.tif
2500023323	N.J. NATURAL GAS CO.		--					WR1	1129116966729.tif
2500042728	N.J. TRANSIT	DICKERSON ST	25-Mar-93	11		JUCKETT, RONALD	J1474	WAP	529501382632.tif
2500042728	N.J. TRANSIT	DICKERSON ST	25-Mar-93	11		JUCKETT, RONALD	J1474	WR1	11909341028547.tif
2500042729	N.J. TRANSIT	DICKERSON ST	15-Mar-93	15		JUCKETT, RONALD	J1474	WAP	529502382632.tif

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	NJ Grid Coordinate No.	Drilling Company	Proposed Depth (ft bgs)[1]	Proposed Capacity (gpm)[2]	Well Use	Lot	Block	Municipality	County	Permit Issue Date	Latitude	Longitude	Well Date	Canceled	Well ID
2500042729	N.J. TRANSIT	2503454	Jersey Drilling & Boring Co., Inc.	30	0	Piezometer	16	12 & 13	Dover	Morris	9-Mar-93	405306	743319	13-Apr-93		MW2 B14
2500042730	N.J. TRANSIT	2503454	Jersey Drilling & Boring Co., Inc.	30		Piezometer	16	12 & 13	Dover	Morris	9-Mar-93	405306	743319	13-Apr-93		MW3 B5
2500042730	N.J. TRANSIT	2503454	Jersey Drilling & Boring Co., Inc.	30	0	Piezometer	16	12 & 13	Dover	Morris	9-Mar-93	405306	743319	13-Apr-93		MW3 B5
2500019531	NESTER, ERIC	2503495	D.F. Well Drilling Co.	100	5	Domestic	3	131A	Randolph Twp	Morris	29-Sep-77	405226	743226	--		
2500019531	NESTER, ERIC	2503495	D.F. Well Drilling Co.	100	5	Domestic	3	131A	Randolph Twp	Morris	29-Sep-77	405226	743226	--		
2500033017	NEW JERSEY BELL TELE	2503496	J. E. Fritts & Associates, Inc.	25		Monitoring	23	45	Randolph Twp	Morris	31-Jan-89	405226	743213	14-Feb-89		MW-1
2500033017	NEW JERSEY BELL TELE	2503496	J. E. Fritts & Associates, Inc.	25	0	Monitoring	23	45	Randolph Twp	Morris	31-Jan-89	405226	743213	14-Feb-89		MW-1
2500033018	NEW JERSEY BELL TELE	2503496	J. E. Fritts & Associates, Inc.	25		Monitoring	23	45	Randolph Twp	Morris	31-Jan-89	405226	743213	14-Feb-89		MW-2
2500033018	NEW JERSEY BELL TELE	2503496	J. E. Fritts & Associates, Inc.	25	0	Monitoring	23	45	Randolph Twp	Morris	31-Jan-89	405226	743213	14-Feb-89		MW-2
2500033019	NEW JERSEY BELL TELE	2503496	J. E. Fritts & Associates, Inc.	25		Monitoring	23	45	Randolph Twp	Morris	31-Jan-89	405226	743213	14-Feb-89		MW-3
2500033019	NEW JERSEY BELL TELE	2503496	J. E. Fritts & Associates, Inc.	25	0	Monitoring	23	45	Randolph Twp	Morris	31-Jan-89	405226	743213	14-Feb-89		MW-3
2500035167	NEW JERSEY BELL TELE	2503496	J. E. Fritts & Associates, Inc.	25		Monitoring	23	45	Randolph Twp	Morris	14-Dec-89	405226	743213	29-Dec-89		MW-4
2500035167	NEW JERSEY BELL TELE	2503496	J. E. Fritts & Associates, Inc.	25	0	Monitoring	23	45	Randolph Twp	Morris	14-Dec-89	405226	743213	29-Dec-89		MW-4
2500035168	NEW JERSEY BELL TELE	2503496	J. E. Fritts & Associates, Inc.	25		Monitoring	23	45	Randolph Twp	Morris	14-Dec-89	405226	743213	29-Dec-89		MW-5
2500035168	NEW JERSEY BELL TELE	2503496	J. E. Fritts & Associates, Inc.	25	0	Monitoring	23	45	Randolph Twp	Morris	14-Dec-89	405226	743213	29-Dec-89		MW-5
2500024399	NEW JERSEY NATURAL G	2503422	J. E. Fritts & Associates, Inc.	10		Monitoring	1	23-1	Dover	Morris	2-Nov-83	405352	743259	--	N	
2500024399	NEW JERSEY NATURAL G	2503422	J. E. Fritts & Associates, Inc.	10	0	Monitoring	1	23-1	Dover	Morris	2-Nov-83	405352	743259	--	N	
2500024400	NEW JERSEY NATURAL G	2503425	J. E. Fritts & Associates, Inc.	10		Monitoring	1	23-1	Dover	Morris	2-Nov-83	405339	743259	--	N	
2500024400	NEW JERSEY NATURAL G	2503425	J. E. Fritts & Associates, Inc.	10	0	Monitoring	1	23-1	Dover	Morris	2-Nov-83	405339	743259	--	N	
2500024395	NEW JERSEY NATURAL G	2503422	J. E. Fritts & Associates, Inc.	15		Monitoring	1	23-1	Dover	Morris	2-Nov-83	405352	743259	--	N	
2500024395	NEW JERSEY NATURAL G	2503422	J. E. Fritts & Associates, Inc.	15	0	Monitoring	1	23-1	Dover	Morris	2-Nov-83	405352	743259	--	N	
2500024397	NEW JERSEY NATURAL G	2503424	J. E. Fritts & Associates, Inc.	15		Monitoring	1	23-1	Dover	Morris	2-Nov-83	405339	743312	--	N	
2500024397	NEW JERSEY NATURAL G	2503424	J. E. Fritts & Associates, Inc.	15	0	Monitoring	1	23-1	Dover	Morris	2-Nov-83	405339	743312	--	N	
2500024396	NEW JERSEY NATURAL G	2503421	J. E. Fritts & Associates, Inc.	25		Monitoring	1	23-1	Dover	Morris	2-Nov-83	405352	743312	--	N	
2500024396	NEW JERSEY NATURAL G	2503421	J. E. Fritts & Associates, Inc.	25	0	Monitoring	1	23-1	Dover	Morris	2-Nov-83	405352	743312	--	N	
2500024398	NEW JERSEY NATURAL G	2503424	J. E. Fritts & Associates, Inc.	25		Monitoring	1	23-1	Dover	Morris	2-Nov-83	405339	743312	--	N	
2500024398	NEW JERSEY NATURAL G	2503424	J. E. Fritts & Associates, Inc.	25	0	Monitoring	1	23-1	Dover	Morris	2-Nov-83	405339	743312	--	N	
2500024401	NEW JERSEY NATURAL G	2503422	J. E. Fritts & Associates, Inc.	50		Monitoring	1	23-1	Dover	Morris	2-Nov-83	405352	743259	--	N	
2500024401	NEW JERSEY NATURAL G	2503422	J. E. Fritts & Associates, Inc.	50	0	Monitoring	1	23-1	Dover	Morris	2-Nov-83	405352	743259	--	N	
2500024402	NEW JERSEY NATURAL G	2503422	J. E. Fritts & Associates, Inc.	50		Monitoring	1	23-1	Dover	Morris	2-Nov-83	405352	743259	--	N	
2500024402	NEW JERSEY NATURAL G	2503422	J. E. Fritts & Associates, Inc.	50	0	Monitoring	1	23-1	Dover	Morris	2-Nov-83	405352	743259	--	N	
2500024403	NEW JERSEY NATURAL G	2503422	J. E. Fritts & Associates, Inc.	50		Monitoring	1	23-1	Dover	Morris	2-Nov-83	405352	743259	--	N	
2500024403	NEW JERSEY NATURAL G	2503422	J. E. Fritts & Associates, Inc.	50	0	Monitoring	1	23-1	Dover	Morris	2-Nov-83	405352	743259	--	N	
2500024404	NEW JERSEY NATURAL G	2503424	J. E. Fritts & Associates, Inc.	50		Monitoring	1	23-1	Dover	Morris	2-Nov-83	405339	743312	--	N	
2500024404	NEW JERSEY NATURAL G	2503424	J. E. Fritts & Associates, Inc.	50	0	Monitoring	1	23-1	Dover	Morris	2-Nov-83	405339	743312	--	N	
2500007395	NICHOLS, DONALD E.	2503424	Soren Nelson, Jr.	70	10	Domestic			Dover	Morris	19-Dec-57	405346	743319	--		
2500007395	NICHOLS, DONALD E.	2503424	Soren Nelson, Jr.	70	10	Domestic			Dover	Morris	19-Dec-57	405346	743319	--		
2500041596	NILSEN, ROBERT	2503462	SBI Environmental Well Drilling, Inc.	15		Monitoring	18	2303	Dover	Morris	7-Jul-92	405320	743226	18-Aug-92		

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Dover Municipal Well No. 4 Superfund Site
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Well Permit No.	Owner's Name	Well Location	Completion Date	Finished Depth (ft bgs)	Actual Capacity (gpm)	Driller's Name	NJ License No.	Document Type[3]	Document No.[4]
2500042729	N.J. TRANSIT	DICKERSON ST	15-Mar-93	15		JUCKETT, RONALD	J1474	WR1	11909351028548.tif
2500042730	N.J. TRANSIT	DICKERSON ST	17-Mar-93	15		JUCKETT, RONALD	J1474	WAP	529503382632.tif
2500042730	N.J. TRANSIT	DICKERSON ST	17-Mar-93	15		JUCKETT, RONALD	J1474	WR1	11909361028549.tif
2500019531	NESTER, ERIC		--					WAP	513054372688.tif
2500019531	NESTER, ERIC		--					WR1	11862781023891.tif
2500033017	NEW JERSEY BELL TELE		31-Jan-89	17	0			WAP	521689378382.tif
2500033017	NEW JERSEY BELL TELE		31-Jan-89	17	0			WR1	1051307888920.tif
2500033018	NEW JERSEY BELL TELE		31-Jan-89	17	0			WAP	521691378382.tif
2500033018	NEW JERSEY BELL TELE		31-Jan-89	17	0			WR1	1051308888921.tif
2500033019	NEW JERSEY BELL TELE		31-Jan-89	14	0			WAP	521693378382.tif
2500033019	NEW JERSEY BELL TELE		31-Jan-89	14	0			WR1	1051309888922.tif
2500035167	NEW JERSEY BELL TELE		14-Dec-89	18	0	BELL, JAY II	J1465	WAP	525760380417.tif
2500035167	NEW JERSEY BELL TELE		14-Dec-89	18	0	BELL, JAY II	J1465	WR1	1069650907263.tif
2500035168	NEW JERSEY BELL TELE	242 S. SALEM ST.	15-Dec-89	17.5	0	BELL, JAY II	J1465	WAP	525763380417.tif
2500035168	NEW JERSEY BELL TELE	242 S. SALEM ST.	15-Dec-89	17.5	0	BELL, JAY II	J1465	WR1	1069651907264.tif
2500024399	NEW JERSEY NATURAL G		--					WAP	506314366762.tif
2500024399	NEW JERSEY NATURAL G		--					WR1	976538814151.tif
2500024400	NEW JERSEY NATURAL G		--					WAP	506317366763.tif
2500024400	NEW JERSEY NATURAL G		--					WR1	976539814152.tif
2500024395	NEW JERSEY NATURAL G		--					WAP	506305366753.tif
2500024395	NEW JERSEY NATURAL G		--					WR1	976534814147.tif
2500024397	NEW JERSEY NATURAL G		--					WAP	506310366758.tif
2500024397	NEW JERSEY NATURAL G		--					WR1	976536814149.tif
2500024396	NEW JERSEY NATURAL G		--					WAP	506308366756.tif
2500024396	NEW JERSEY NATURAL G		--					WR1	976535814148.tif
2500024398	NEW JERSEY NATURAL G		--					WAP	506312366759.tif
2500024398	NEW JERSEY NATURAL G		--					WR1	976537814150.tif
2500024401	NEW JERSEY NATURAL G		--					WAP	506320366766.tif
2500024401	NEW JERSEY NATURAL G		--					WR1	976540814153.tif
2500024402	NEW JERSEY NATURAL G		--					WAP	506322366768.tif
2500024402	NEW JERSEY NATURAL G		--					WR1	976541814154.tif
2500024403	NEW JERSEY NATURAL G		--					WAP	506324366770.tif
2500024403	NEW JERSEY NATURAL G		--					WR1	976542814155.tif
2500024404	NEW JERSEY NATURAL G		--					WAP	506327366772.tif
2500024404	NEW JERSEY NATURAL G		--					WR1	976543814156.tif
2500007395	NICHOLS, DONALD E.		--					WAP	859304696914.tif
2500007395	NICHOLS, DONALD E.		--					WR1	923932761542.tif
2500041596	NILSEN, ROBERT	341 RT 46W	17-Jul-92	14	0	ELLEFSEN, WILLIAM	J1173	WAP	527927381496.tif

Exhibit F
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Well Permit No.	Owner's Name	NJ Grid Coordinate No.	Drilling Company	Proposed Depth (ft bgs)[1]	Proposed Capacity (gpm)[2]	Well Use	Lot	Block	Municipality	County	Permit Issue Date	Latitude	Longitude	Well Date	Canceled	Well ID
2500041596	NILSEN, ROBERT	2503462	SBI Environmental Well Drilling, Inc.	15	0	Monitoring	18	2303	Dover	Morris	7-Jul-92	405320	743226	18-Aug-92		
2500048687	NJ NATURAL GAS/JCP&L	2503453	B&B Drilling, Inc.	30		Boring/ probe	34	10202	Dover	Morris	12-Mar-96	405320	743253	--		
2500045202	NJ TRANSIT	2503491	B&B Drilling, Inc.	20		Monitoring	16	12	Dover	Morris	6-Jun-94	405239	743240	13-Sep-94		MW-1
2500045202	NJ TRANSIT	2503491	B&B Drilling, Inc.	20	0	Monitoring	16	12	Dover	Morris	6-Jun-94	405239	743240	13-Sep-94		MW-1
2500045204	NJ TRANSIT	2503491	B&B Drilling, Inc.	20		Monitoring	16	12	Dover	Morris	6-Jun-94	405239	743240	13-Sep-94		MW-3
2500045204	NJ TRANSIT	2503491	B&B Drilling, Inc.	20	0	Monitoring	16	12	Dover	Morris	6-Jun-94	405239	743240	13-Sep-94		MW-3
2500045203	NJ TRANSIT	2503491	B&B Drilling, Inc.	20		Monitoring	16	12	Dover	Morris	6-Jun-94	405239	743240	20-Sep-94		MW-2
2500045203	NJ TRANSIT	2503491	B&B Drilling, Inc.	20	0	Monitoring	16	12	Dover	Morris	6-Jun-94	405239	743240	20-Sep-94		MW-2
2500045205	NJ TRANSIT	2503491	B&B Drilling, Inc.	20		Monitoring	16	12	Dover	Morris	6-Jun-94	405239	743240	20-Sep-94		MW-4
2500045205	NJ TRANSIT	2503491	B&B Drilling, Inc.	20	0	Monitoring	16	12	Dover	Morris	6-Jun-94	405239	743240	20-Sep-94		MW-4
2500043978	OMEGA PLUMBING & HEA	2503452	SBI Environmental Well Drilling, Inc.	25		Monitoring	31	10202	Dover	Morris	30-Sep-93	405320	743306	5-Nov-93		
2500043978	OMEGA PLUMBING & HEA	2503452	SBI Environmental Well Drilling, Inc.	25	0	Monitoring	31	10202	Dover	Morris	30-Sep-93	405320	743306	5-Nov-93		
2500004498	PAINTER, HARRY W	2503492	Robert B. Mercer	70	2	Domestic			Randolph Twp	Morris	26-Apr-55	405239	743226	--		
2500018073	PARK UNION CO. INC.	2503495	D.F. Well Drilling Co.	0	65	Domestic	7	130	Randolph Twp	Morris	9-Sep-75	405226	743226	--		
2500018073	PARK UNION CO. INC.	2503495	D.F. Well Drilling Co.		65	Domestic	7	130	Randolph Twp	Morris	9-Sep-75	405226	743226	--		
2500029169	PATTERSON NELLS	2503466	Empire Soils Investigation	150		Monitoring	23 &24	23-10	Dover	Morris	23-Feb-87	405259	743206	8-Jun-93	N	MW6-S
2500029169	PATTERSON NELLS	2503466	Empire Soils Investigation	150	0	Monitoring	23 &24	23-10	Dover	Morris	23-Feb-87	405259	743206	8-Jun-93	N	MW6-S
2500029170	PATTERSON NELLS	2503466	Empire Soils Investigation	150		Monitoring	23 &24	23-10	Dover	Morris	23-Feb-87	405259	743206	8-Jun-93	N	MW-6I
2500029170	PATTERSON NELLS	2503466	Empire Soils Investigation	150	0	Monitoring	23 &24	23-10	Dover	Morris	23-Feb-87	405259	743206	8-Jun-93	N	MW-6I
2500029171	PATTERSON NELLS	2503466	Empire Soils Investigation	150		Monitoring	23 &24	23-10	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029171	PATTERSON NELLS	2503466	Empire Soils Investigation	150	0	Monitoring	23 &24	23-10	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500008324	PEDERSEN, DANIEL	2503423	Somerville Well Drilling Co.	100	10	Domestic			Randolph Twp	Morris	4-Mar-59	405400	743253	--		
2500008324	PEDERSEN, DANIEL	2503423	Somerville Well Drilling Co.	100	10	Domestic			Randolph Twp	Morris	4-Mar-59	405400	743253	--		
2500022502	PESESKI, ESTELLE	2503432	D.F. Well Drilling Co.	0	5	Domestic	43	195	Rockaway Twp	Morris	14-Dec-81	405400	743226	--		
2500022502	PESESKI, ESTELLE	2503432	D.F. Well Drilling Co.		5	Domestic	43	195	Rockaway Twp	Morris	14-Dec-81	405400	743226	--		
2500006001	PETERSON, ARTHUR	2503456	A. R. Crosswell	60	6	Domestic			Dover	Morris	18-Sep-56	405306	743253	--		
2500006001	PETERSON, ARTHUR	2503456	A. R. Crosswell	60	6	Domestic			Dover	Morris	18-Sep-56	405306	743253	--		
2500013471	PLAMER, HAZEL	2503422	D.F. Well Drilling Co.	0	65	Domestic			Rockaway Twp	Morris	19-Nov-65	405400	743306	--		
2500013471	PLAMER, HAZEL	2503422	D.F. Well Drilling Co.	0	65	Domestic			Rockaway Twp	Morris	19-Nov-65	405400	743306	--		
2500006468	POLPELKA, JOSEPH	2503422	Louis Garie	65	5	Domestic			Rockaway Twp	Morris	5-Mar-57	405400	743306	--		
2500009073	POLYAR, JOHN	2503432	D.F. Well Drilling Co.	75	5	Domestic			Rockaway Twp	Morris	18-Dec-59	405400	743226	--		
2500009073	POLYAR, JOHN	2503432	D.F. Well Drilling Co.	75	5	Domestic			Rockaway Twp	Morris	18-Dec-59	405400	743226	--		
2500003091	POST, LLOYD	2503492	Robert B. Mercer	70	5	Domestic			Randolph Twp	Morris	20-Nov-53	405239	743226	--		
2500034708	POTTER, JOHN	2503548	Advanced Drilling	20	7	Monitoring	12,13,14	195	Randolph Twp	Morris	17-Oct-89	405253	743146	6-Dec-90		MW1
2500034708	POTTER, JOHN	2503548	Advanced Drilling	20	7	Monitoring	12,13,14	195	Randolph Twp	Morris	17-Oct-89	405253	743146	6-Dec-90		MW1
2500034709	POTTER, JOHN	2503548	Advanced Drilling	20	7	Monitoring	12,13,14	195	Randolph Twp	Morris	17-Oct-89	405253	743146	6-Dec-90		MW2
2500034709	POTTER, JOHN	2503548	Advanced Drilling	20	7	Monitoring	12,13,14	195	Randolph Twp	Morris	17-Oct-89	405253	743146	6-Dec-90		MW2
2500034710	POTTER, JOHN	2503548	Advanced Drilling	20	7	Monitoring	12,13,14	195	Randolph Twp	Morris	17-Oct-89	405253	743146	6-Dec-90		MW4
2500034710	POTTER, JOHN	2503548	Advanced Drilling	20	7	Monitoring	12,13,14	195	Randolph Twp	Morris	17-Oct-89	405253	743146	6-Dec-90		MW4
2500034711	POTTER, JOHN	2503548	Advanced Drilling	20	7	Monitoring	12,13,14	195	Randolph Twp	Morris	17-Oct-89	405253	743146	6-Dec-90		MW3
2500034711	POTTER, JOHN	2503548	Advanced Drilling	20	7	Monitoring	12,13,14	195	Randolph Twp	Morris	17-Oct-89	405253	743146	6-Dec-90		MW3

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	Well Location	Completion Date	Finished Depth (ft bgs)	Actual Capacity (gpm)	Driller's Name	NJ License No.	Document Type[3]	Document No.[4]
2500041596	NILSEN, ROBERT		17-Jul-92	14	0	ELLEFSEN, WILLIAM	J1173	WR1	1155023992636.tif
2500048687	NJ NATURAL GAS/JCP&L	E BLACKWELL ST	--					WAP	538963389571.tif
2500045202	NJ TRANSIT	SOUTH BERGEN ST	29-Jul-94	14	0	PEPPER, MARTIN A.	J1405	WAP	533351385388.tif
2500045202	NJ TRANSIT	SOUTH BERGEN ST	29-Jul-94	14	0	PEPPER, MARTIN A.	J1405	WR1	12316641069276.tif
2500045204	NJ TRANSIT	SOUTH BERGEN ST	27-Jul-94	16	0	PEPPER, MARTIN A.	J1405	WAP	533354385388.tif
2500045204	NJ TRANSIT	SOUTH BERGEN ST	27-Jul-94	16	0	PEPPER, MARTIN A.	J1405	WR1	12316661069278.tif
2500045203	NJ TRANSIT	SOUTH BERGEN ST	28-Jul-94	15	0	PEPPER, MARTIN A.	J1405	WAP	533353385388.tif
2500045203	NJ TRANSIT	SOUTH BERGEN ST	28-Jul-94	15	0	PEPPER, MARTIN A.	J1405	WR1	12316651069277.tif
2500045205	NJ TRANSIT	SOUTH BERGEN ST	29-Jul-94	16	0	PEPPER, MARTIN A.	J1405	WAP	533355385388.tif
2500045205	NJ TRANSIT	SOUTH BERGEN ST	29-Jul-94	16	0	PEPPER, MARTIN A.	J1405	WR1	12316671069279.tif
2500043978	OMEGA PLUMBING & HEA	RICHARD & LEE AVENUES	4-Oct-93	13		NEMETZ, JOHN	J1330	WAP	531422383978.tif
2500043978	OMEGA PLUMBING & HEA	RICHARD & LEE AVENUES	4-Oct-93	13		NEMETZ, JOHN	J1330	WR1	12105521048165.tif
2500004498	PAINTER, HARRY W		--					WAP	856803694413.tif
2500018073	PARK UNION CO. INC.		--					WR1	11745091012122.tif
2500018073	PARK UNION CO. INC.		--					WAP	509402369472.tif
2500029169	PATTERSON NELLS		25-Sep-87	15	0	EMPSON, RICHARD P.	J1312	WAP	514819374161.tif
2500029169	PATTERSON NELLS		25-Sep-87	15	0	EMPSON, RICHARD P.	J1312	WR1	1013080850693.tif
2500029170	PATTERSON NELLS		29-Jul-87	58	0	EMPSON, RICHARD P.	J1312	WAP	514822374161.tif
2500029170	PATTERSON NELLS		29-Jul-87	58	0	EMPSON, RICHARD P.	J1312	WR1	1013081850694.tif
2500029170	PATTERSON NELLS		29-Jul-87	58	0	EMPSON, RICHARD P.	J1312	WR2	13526931190302.tif
2500029171	PATTERSON NELLS		--					WAP	514823374161.tif
2500029171	PATTERSON NELLS		--					WR1	1013082850695.tif
2500008324	PEDERSEN, DANIEL		--					WAP	860027697637.tif
2500008324	PEDERSEN, DANIEL		--					WR1	924655762265.tif
2500022502	PESESKI, ESTELLE		--					WR1	1101628939241.tif
2500022502	PESESKI, ESTELLE		--	123				WAP	502514363536.tif
2500006001	PETERSON, ARTHUR		--					WAP	858112695722.tif
2500006001	PETERSON, ARTHUR		--					WR1	922740760350.tif
2500013471	PLAMER, HAZEL		--					WAP	867030704640.tif
2500013471	PLAMER, HAZEL		--					WR1	931654769264.tif
2500006468	POLPELKA, JOSEPH		--					WAP	864520702130.tif
2500009073	POLYAR, JOHN		--					WAP	865028702638.tif
2500009073	POLYAR, JOHN		--					WR1	929652767262.tif
2500003091	POST, LLOYD		--					WAP	856495694105.tif
2500034708	POTTER, JOHN	220 FRANKLIN RD	25-Oct-89	20		SPRONZ, KEVIN F.	J1358	WAP	524906379999.tif
2500034708	POTTER, JOHN	220 FRANKLIN RD	25-Oct-89	20		SPRONZ, KEVIN F.	J1358	WR1	1065561903174.tif
2500034709	POTTER, JOHN	220 FRANKLIN RD	25-Oct-89	20		SPRONZ, KEVIN F.	J1358	WAP	524908379999.tif
2500034709	POTTER, JOHN	220 FRANKLIN RD	25-Oct-89	20		SPRONZ, KEVIN F.	J1358	WR1	1065562903175.tif
2500034710	POTTER, JOHN	220 FRANKLIN RD	25-Oct-89	20		SPRONZ, KEVIN F.	J1358	WAP	524910379999.tif
2500034710	POTTER, JOHN	220 FRANKLIN RD	25-Oct-89	20		SPRONZ, KEVIN F.	J1358	WR1	1065563903176.tif
2500034711	POTTER, JOHN	220 FRANKLIN RD	25-Oct-89	20		SPRONZ, KEVIN F.	J1358	WAP	524912379999.tif
2500034711	POTTER, JOHN	220 FRANKLIN RD	25-Oct-89	20		SPRONZ, KEVIN F.	J1358	WR1	1065564903177.tif

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	NJ Grid Coordinate No.	Drilling Company	Proposed Depth (ft bgs)[1]	Proposed Capacity (gpm)[2]	Well Use	Lot	Block	Municipality	County	Permit Issue Date	Latitude	Longitude	Well Date	Canceled	Well ID
2500034712	POTTER, JOHN	2503548	Advanced Drilling	20	7	Monitoring	12,13,14	195	Randolph Twp	Morris	17-Oct-89	405253	743146	6-Dec-90		MW5
2500034712	POTTER, JOHN	2503548	Advanced Drilling	20	7	Monitoring	12,13,14	195	Randolph Twp	Morris	17-Oct-89	405253	743146	6-Dec-90		MW5
2500034713	POTTER, JOHN	2503548	Advanced Drilling	20	7	Monitoring	12,13,14	195	Randolph Twp	Morris	17-Oct-89	405253	743146	6-Dec-90		
2500034713	POTTER, JOHN	2503548	Advanced Drilling	20	7	Monitoring	12,13,14	195	Randolph Twp	Morris	17-Oct-89	405253	743146	6-Dec-90		
2500038080	POTTER, JOHN	2503548	Advanced Drilling	20		Monitoring	12,13,14	195	Randolph Twp	Morris	31-Jan-91	405253	743146	23-Aug-91		MW8
2500038080	POTTER, JOHN	2503548	Advanced Drilling	20	0	Monitoring	12,13,14	195	Randolph Twp	Morris	31-Jan-91	405253	743146	23-Aug-91		MW8
2500038081	POTTER, JOHN	2503548	Advanced Drilling	20		Monitoring	12,13,14	195	Randolph Twp	Morris	31-Jan-91	405253	743146	23-Aug-91		MW9
2500038081	POTTER, JOHN	2503548	Advanced Drilling	20	0	Monitoring	12,13,14	195	Randolph Twp	Morris	31-Jan-91	405253	743146	23-Aug-91		MW9
2500038082	POTTER, JOHN	2503548	Advanced Drilling	20		Monitoring	12,13,14	195	Randolph Twp	Morris	31-Jan-91	405253	743146	23-Aug-91		MW7
2500038082	POTTER, JOHN	2503548	Advanced Drilling	20	0	Monitoring	12,13,14	195	Randolph Twp	Morris	31-Jan-91	405253	743146	23-Aug-91		MW7
2500011073	PRIMICH, CHARLES	2503446	D.F. Well Drilling Co.	0	65	Domestic			Dover	Morris	27-Nov-62	405306	743333	--		
2500011073	PRIMICH, CHARLES	2503446	D.F. Well Drilling Co.	0	65	Domestic			Dover	Morris	27-Nov-62	405306	743333	--		
2500001206	QUAKER CTY DEV. CO	2503482	Tinc Bros.	50	5	Domestic			Randolph Twp	Morris	31-Aug-51	405239	743306	--		
2500001439	QUAKER CTY DEV. CO.	2503482	Tinc Bros.	50	5	Domestic			Randolph Twp	Morris	27-Nov-51	405239	743306	--		
2500036048	RANDOLPH MOUNTAIN SK	2503495	Advanced Drilling	20	7	Monitoring	2 & 3	199	Randolph Twp	Morris	9-Apr-90	405226	743226	5-Dec-90		MW1
2500036048	RANDOLPH MOUNTAIN SK	2503495	Advanced Drilling	20	7	Monitoring	2 & 3	199	Randolph Twp	Morris	9-Apr-90	405226	743226	5-Dec-90		MW1
2500036049	RANDOLPH MOUNTAIN SK	2503495	Advanced Drilling	20	7	Monitoring	2 & 3	199	Randolph Twp	Morris	9-Apr-90	405226	743226	5-Dec-90		
2500036049	RANDOLPH MOUNTAIN SK	2503495	Advanced Drilling	20	7	Monitoring	2 & 3	199	Randolph Twp	Morris	9-Apr-90	405226	743226	5-Dec-90		
2500010947	REINHARDT, P.W.	2503423	D.F. Well Drilling Co.	0	65	Domestic			Rockaway Bor	Morris	27-Sep-62	405400	743253	--		
2500010947	REINHARDT, P.W.	2503423	D.F. Well Drilling Co.	0	65	Domestic			Rockaway Bor	Morris	27-Sep-62	405400	743253	--		
2500029163	RICH, JOHN	2503466	Empire Soils Investigation	150		Monitoring	24	23-15	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029163	RICH, JOHN	2503466	Empire Soils Investigation	150	0	Monitoring	24	23-15	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029164	RICH,JOHN	2503466	Empire Soils Investigation	150		Monitoring	24	23-15	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029164	RICH,JOHN	2503466	Empire Soils Investigation	150	0	Monitoring	24	23-15	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029165	RICH,JOHN	2503466	Empire Soils Investigation	150		Monitoring	24	23-15	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029165	RICH,JOHN	2503466	Empire Soils Investigation	150	0	Monitoring	24	23-15	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500051083	RITCHIE, ROY	2503515	B&B Drilling, Inc.	30	0	Boring/ probe	12	61601	Denvill Twp	Morris	8-Aug-97	405346	743146	8-Jan-98		SB-1
2500051083	RITCHIE, ROY	2503515	B&B Drilling, Inc.	30	0	Boring/ probe	12	61601	Denvill Twp	Morris	8-Aug-97	405346	743146	8-Jan-98		SB-1
2500005760	ROSENFARB, I.	2503492	Howard W. Smith	70	5	Domestic			Randolph Twp	Morris	9-Jul-56	405239	743226	--		
2500029961	RUSTIC RIDGE APT.	2503422	D.F. Well Drilling Co.		20	Irrigation	2	11004	Rockaway Twp	Morris	8-Jul-87	405400	743306	--	Y	
2500029962	RUSTIC RIDGE APT.	2503422	D.F. Well Drilling Co.		20	Irrigation	2	11004	Rockaway Twp	Morris	8-Jul-87	405400	743306	--	Y	
2500029963	RUSTIC RIDGE APT.	2503422	D.F. Well Drilling Co.		20	Irrigation	2	11004	Rockaway Twp	Morris	8-Jul-87	405400	743306	--	Y	
2500001060	RYAN, CHRIS	2503493	James Jarvis	50	8	Domestic			Dover	Morris	24-Jul-51	405239	743213	--		
2500018175	SALEM TEN HOLDING CO	2503486	Soren Nelson, Jr.	75	15	Sanitary facilities	9	130	Randolph Twp	Morris	12-Nov-75	405226	743253	--		
2500001112	SAMUELS & GOODMAN	2503463	James Jarvis	60	8	Domestic			Rockaway Twp	Morris	6-Aug-51	405320	743213	--		
2500001112	SAMUELS & GOODMAN	2503463	James Jarvis	60	8	Domestic			Dover	Morris	6-Aug-51	405320	743213	--		
2500039629	SHAPSS, FRED	2503457	Wilson Drilling Co.	20		Monitoring	10	23-16	Dover	Morris	11-Sep-91	405253	743319	10-Oct-91	N	MW#1
2500039629	SHAPSS, FRED	2503457	Wilson Drilling Co.	20	0	Monitoring	10	23-16	Dover	Morris	11-Sep-91	405253	743319	10-Oct-91	N	MW#1
2500039630	SHAPSS, FRED	2503457	Wilson Drilling Co.	20		Monitoring	10	23-16	Dover	Morris	11-Sep-91	405253	743319	10-Oct-91	N	MW#2
2500039630	SHAPSS, FRED	2503457	Wilson Drilling Co.	20	0	Monitoring	10	23-16	Dover	Morris	11-Sep-91	405253	743319	10-Oct-91	N	MW#2

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	Well Location	Completion Date	Finished Depth (ft bgs)	Actual Capacity (gpm)	Driller's Name	NJ License No.	Document Type[3]	Document No.[4]
2500034712	POTTER, JOHN	220 FRANKLIN RD	26-Oct-89	20		SPRONZ, KEVIN F.	J1358	WAP	524914379999.tif
2500034712	POTTER, JOHN	220 FRANKLIN RD	26-Oct-89	20		SPRONZ, KEVIN F.	J1358	WR1	1065565903178.tif
2500034713	POTTER, JOHN	220 FRANKLIN RD	26-Oct-89	20		SPRONZ, KEVIN F.	J1358	WAP	524916379999.tif
2500034713	POTTER, JOHN	220 FRANKLIN RD	26-Oct-89	20		SPRONZ, KEVIN F.	J1358	WR1	1065566903179.tif
2500038080	POTTER, JOHN	220 FRANKLIN RD	13-Aug-91	20		SPRONZ, KEVIN F.	J1358	WAP	521132378048.tif
2500038080	POTTER, JOHN	220 FRANKLIN RD	13-Aug-91	20		SPRONZ, KEVIN F.	J1358	WR1	1098020935633.tif
2500038081	POTTER, JOHN	220 FRANKLIN RD	13-Aug-91	20		SPRONZ, KEVIN F.	J1358	WAP	521135378048.tif
2500038081	POTTER, JOHN	220 FRANKLIN RD	13-Aug-91	20		SPRONZ, KEVIN F.	J1358	WR1	1098021935634.tif
2500038082	POTTER, JOHN	220 FRANKLIN RD	13-Aug-91	20		SPRONZ, KEVIN F.	J1358	WAP	521136378048.tif
2500038082	POTTER, JOHN	220 FRANKLIN RD	13-Aug-91	20		SPRONZ, KEVIN F.	J1358	WR1	1098022935635.tif
2500011073	PRIMICH, CHARLES		--					WAP	864224701834.tif
2500011073	PRIMICH, CHARLES		--					WR1	928848766458.tif
2500001206	QUAKER CTY DEV. CO		--					WAP	852398690008.tif
2500001439	QUAKER CTY DEV. CO.		--					WAP	852831690441.tif
2500036048	RANDOLPH MOUNTAIN SK		8-Nov-90	15	0	SPRONZ, KEVIN F.	J1358	WAP	516860375693.tif
2500036048	RANDOLPH MOUNTAIN SK		8-Nov-90	15	0	SPRONZ, KEVIN F.	J1358	WR1	1077534915147.tif
2500036049	RANDOLPH MOUNTAIN SK		8-Nov-90	8	0	SPRONZ, KEVIN F.	J1358	WAP	516863375693.tif
2500036049	RANDOLPH MOUNTAIN SK		8-Nov-90	8	0	SPRONZ, KEVIN F.	J1358	WR1	1077535915148.tif
2500010947	REINHARDT, P.W.		--					WAP	865402703012.tif
2500010947	REINHARDT, P.W.		--					WR1	930026764595.tif
2500029163	RICH, JOHN		--					WAP	514809374155.tif
2500029163	RICH, JOHN		--					WR1	1013074850687.tif
2500029164	RICH,JOHN		--					WAP	514811374155.tif
2500029164	RICH,JOHN		--					WR1	1013075850688.tif
2500029165	RICH,JOHN		--					WAP	514813374155.tif
2500029165	RICH,JOHN		--					WR1	1013076850689.tif
2500051083	RITCHIE, ROY	40 VANDERHOOF AV	20-Aug-97	41	0	BLEWETT, WARREN E	J14578	WAP	831144668754.tif
2500051083	RITCHIE, ROY	40 VANDERHOOF AV	20-Aug-97	41	0	BLEWETT, WARREN E	J14578	WR1	895786733396.tif
2500005760	ROSENFARB, I.		--					WAP	861473699083.tif
2500029961	RUSTIC RIDGE APT.		--					WAP	516259375329.tif
2500029962	RUSTIC RIDGE APT.		--					WAP	516261375331.tif
2500029963	RUSTIC RIDGE APT.		--					WAP	516263375333.tif
2500001060	RYAN, CHRIS		--					WAP	851551689161.tif
2500018175	SALEM TEN HOLDING CO		--					WAP	509662369713.tif
2500001112	SAMUELS & GOODMAN		--					WAP	851603689213.tif
2500001112	SAMUELS & GOODMAN		--					WR1	916231753841.tif
2500039629	SHAPSS, FRED	291 E BLACKWELL ST	25-Sep-91	12	0	WILSON, ALLEN J.	J1278	WAP	524437379765.tif
2500039629	SHAPSS, FRED	291 E BLACKWELL ST	25-Sep-91	12	0	WILSON, ALLEN J.	J1278	WR1	1121861959474.tif
2500039630	SHAPSS, FRED	291 E BLACKWELL ST	25-Sep-91	12	0	WILSON, ALLEN J.	J1278	WAP	524440379765.tif
2500039630	SHAPSS, FRED	291 E BLACKWELL ST	25-Sep-91	12	0	WILSON, ALLEN J.	J1278	WR1	11218621190301.tif

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	NJ Grid Coordinate No.	Drilling Company	Proposed Depth (ft bgs)[1]	Proposed Capacity (gpm)[2]	Well Use	Lot	Block	Municipality	County	Permit Issue Date	Latitude	Longitude	Well Date	Canceled	Well ID
2500040108	SHAPSS, FRED	2503454	Wilson Drilling Co.	20		Monitoring	10	23-16	Dover	Morris	12-Nov-91	405306	743319	19-Nov-91		
2500040108	SHAPSS, FRED	2503454	Wilson Drilling Co.	20	0	Monitoring	10	23-16	Dover	Morris	12-Nov-91	405306	743319	19-Nov-91		
2500022569	SHELL OIL COMPANY	2503492	Handex Corp.	20		Monitoring	1.1	184	Dover	Morris	11-Feb-82	405239	743226	--		
2500022569	SHELL OIL COMPANY	2503492	Handex Corp.	20	0	Monitoring	1.1	184	Dover	Morris	11-Feb-82	405239	743226	--		
2500022570	SHELL OIL COMPANY	2503492	Handex Corp.	20		Monitoring	1.1	184	Dover	Morris	11-Feb-82	405239	743226	--		
2500022570	SHELL OIL COMPANY	2503492	Handex Corp.	20	0	Monitoring	1.1	184	Dover	Morris	11-Feb-82	405239	743226	--		
2500022571	SHELL OIL COMPANY	2503492	Handex Corp.	20		Monitoring	1.1	184	Dover	Morris	11-Feb-82	405239	743226	--		
2500022571	SHELL OIL COMPANY	2503492	Handex Corp.	20	0	Monitoring	1.1	184	Dover	Morris	11-Feb-82	405239	743226	--		
2500012245	SHONGUM HEIGHTS ESTATE	2503459	D.F. Well Drilling Co.	0	65	Domestic			Randolph Twp	Morris	17-Aug-64	405253	743253	--		
2500012245	SHONGUM HEIGHTS ESTATE	2503459	D.F. Well Drilling Co.	0	65	Domestic			Randolph Twp	Morris	17-Aug-64	405253	743253	--		
2500007599	SMITH, JOSEPH J	2503426	Howard W. Smith	60	5	Domestic			Rockaway Twp	Morris	16-Apr-58	405346	743253	--		
2500047215	SPARTAN OIL COMPANY	2503452	Handex Corp.	15		Monitoring	50	1904	Dover	Morris	1-Jun-95	405320	743306	3-Aug-95		MW-3
2500047215	SPARTAN OIL COMPANY	2503452	Handex Corp.	15	0	Monitoring	50	1904	Dover	Morris	1-Jun-95	405320	743306	3-Aug-95		MW-3
2500047213	SPARTAN OIL COMPANY	2503452	Handex Corp.	15		Monitoring	50	1904	Dover	Morris	1-Jun-95	405320	743306	17-Jul-95		MW-1
2500047213	SPARTAN OIL COMPANY	2503452	Handex Corp.	15	0	Monitoring	50	1904	Dover	Morris	1-Jun-95	405320	743306	17-Jul-95		MW-1
2500047214	SPARTAN OIL COMPANY	2503452	Handex Corp.	15		Monitoring	50	1904	Dover	Morris	1-Jun-95	405320	743306	17-Jul-95		MW-2
2500047214	SPARTAN OIL COMPANY	2503452	Handex Corp.	15	0	Monitoring	50	1904	Dover	Morris	1-Jun-95	405320	743306	17-Jul-95		MW-2
2500048504	SPARTAN OIL COMPANY	2503455	Handex Corp.	15		Monitoring	50	1904	Dover	Morris	16-Jan-96	405306	743306	--	Y	
2500048505	SPARTAN OIL COMPANY	2503455	Handex Corp.	15		Monitoring	50	1904	Dover	Morris	16-Jan-96	405306	743306	16-May-96		M.W # 5
2500048505	SPARTAN OIL COMPANY	2503455	Handex Corp.	15	0	Monitoring	50	1904	Dover	Morris	16-Jan-96	405306	743306	16-May-96		M.W # 5
2500007604	STRABBLE, WILLIAM JR	2503422	Louis Garie	80	5	Domestic			Rockaway Bor	Morris	17-Apr-58	405400	743306	--		
2500007604	STRABBLE, WILLIAM JR	2503422	Louis Garie	80	5	Domestic			Rockaway Bor	Morris	17-Apr-58	405400	743306	--		
2500007752	STRUBBLE, ROLAND L	2503431	Louis Garie	70	5	Domestic			Rockaway Bor	Morris	19-Jun-58	405400	743240	--		
2500007752	STRUBBLE, ROLAND L	2503431	Louis Garie	70	5	Domestic			Rockaway Bor	Morris	19-Jun-58	405400	743240	--		
2500010475	STUBLE, ROBERT A.	2503423	D.F. Well Drilling Co.	0	4	Domestic			Rockaway Twp	Morris	6-Feb-62	405400	743253	--		
2500010475	STUBLE, ROBERT A.	2503423	D.F. Well Drilling Co.	0	4	Domestic			Rockaway Twp	Morris	6-Feb-62	405400	743253	--		
2500051316	SULLIVAN & COOPER AS	2503453	Inland Pollution Services Inc.	25	0	Monitoring	1901	2	Dover	Morris	16-Sep-97	405320	743253	4-Mar-98		MW4
2500051316	SULLIVAN & COOPER AS	2503453	Inland Pollution Services Inc.	25	0	Monitoring	1901	2	Dover	Morris	16-Sep-97	405320	743253	4-Mar-98		MW4
2500051317	SULLIVAN & COOPER AS	2503453	Inland Pollution Services Inc.	25	0	Monitoring	1901	2	Dover	Morris	16-Sep-97	405320	743253	4-Mar-98		3R
2500051317	SULLIVAN & COOPER AS	2503453	Inland Pollution Services Inc.	25	0	Monitoring	1901	2	Dover	Morris	16-Sep-97	405320	743253	4-Mar-98		3R
2500047981	SULLIVAN & COOPER AS	2503455	SBI Environmental Well Drilling, Inc.	35		Monitoring	2	19.01	Dover	Morris	13-Oct-95	405306	743306	4-Dec-95		1
2500047981	SULLIVAN & COOPER AS	2503455	SBI Environmental Well Drilling, Inc.	35	0	Monitoring	2	19.01	Dover	Morris	13-Oct-95	405306	743306	4-Dec-95		1
2500047982	SULLIVAN & COOPER AS	2503455	SBI Environmental Well Drilling, Inc.	35		Monitoring	2	19.01	Dover	Morris	13-Oct-95	405306	743306	4-Dec-95		2

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	Well Location	Completion Date	Finished Depth (ft bgs)	Actual Capacity (gpm)	Driller's Name	NJ License No.	Document Type[3]	Document No.[4]
2500040108	SHAPSS, FRED		--					WAP	525445380278.tif
2500040108	SHAPSS, FRED		--					WR1	11261671190300.tif
2500022569	SHELL OIL COMPANY		--					WAP	502652363654.tif
2500022569	SHELL OIL COMPANY		--					WR1	1101695939308.tif
2500022570	SHELL OIL COMPANY		--					WAP	502654363654.tif
2500022570	SHELL OIL COMPANY		--					WR1	1101696939309.tif
2500022571	SHELL OIL COMPANY		--					WAP	502655363654.tif
2500022571	SHELL OIL COMPANY		--					WR1	1101697939310.tif
2500012245	SHONGUM HEIGHTS ESTATE		--					WAP	865801703411.tif
2500012245	SHONGUM HEIGHTS ESTATE		--					WR1	930425768035.tif
2500007599	SMITH, JOSEPH J		--					WAP	864651702261.tif
2500047215	SPARTAN OIL COMPANY	RICHARDS AVE.'	13-Jun-95	14	0	BROWN, ROBERT J.	J1575	WAP	536631387946.tif
2500047215	SPARTAN OIL COMPANY	RICHARDS AVE.'	13-Jun-95	14	0	BROWN, ROBERT J.	J1575	WR1	12558781093490.tif
2500047213	SPARTAN OIL COMPANY	RICHARDS AVE.'	13-Jun-95	15	0	BROWN, ROBERT J.	J1575	WAP	536628387946.tif
2500047213	SPARTAN OIL COMPANY	RICHARDS AVE.'	13-Jun-95	15	0	BROWN, ROBERT J.	J1575	WR1	12558761093488.tif
2500047214	SPARTAN OIL COMPANY	RICHARDS AVE.'	13-Jun-95	15	0	BROWN, ROBERT J.	J1575	WAP	536629387946.tif
2500047214	SPARTAN OIL COMPANY	RICHARDS AVE.'	13-Jun-95	15	0	BROWN, ROBERT J.	J1575	WR1	12558771093489.tif
2500048504	SPARTAN OIL COMPANY	200 RICHARDS AVE	--					WAP	538668389350.tif
2500048505	SPARTAN OIL COMPANY	200 RICHARDS AVE.	15-Feb-96	10	0	BROWN, ROBERT J.	J1575	WAP	538670389350.tif
2500048505	SPARTAN OIL COMPANY	200 RICHARDS AVE.	15-Feb-96	10	0	BROWN, ROBERT J.	J1575	WR1	12701341107746.tif
2500007604	STRABBLE, WILLIAM JR		--					WAP	859413697023.tif
2500007604	STRABBLE, WILLIAM JR		--					WR1	924041761651.tif
2500007752	STRUBBLE, ROLAND L		--					WAP	859561697171.tif
2500007752	STRUBBLE, ROLAND L		--					WR1	924189761799.tif
2500010475	STUBLE, ROBERT A.		--					WAP	869933707543.tif
2500010475	STUBLE, ROBERT A.		--					WR1	934555772166.tif
2500051316	SULLIVAN & COOPER AS	5 DICKERSON ST.	20-Jan-98	20	0	KOMOSINSKI, MICHAEL	J2420	WAP	833429671039.tif
2500051316	SULLIVAN & COOPER AS	5 DICKERSON ST.	20-Jan-98	20	0	KOMOSINSKI, MICHAEL	J2420	WR1	898070735680.tif
2500051317	SULLIVAN & COOPER AS	5 DICKERSON ST.	20-Jan-98	19	0	KOMOSINSKI, MICHAEL	J2420	WAP	833430671040.tif
2500051317	SULLIVAN & COOPER AS	5 DICKERSON ST.	20-Jan-98	19	0	KOMOSINSKI, MICHAEL	J2420	WR1	898071735681.tif
2500047981	SULLIVAN & COOPER AS	S. DICKERSON ST	3-Nov-95	21	0	NEMETZ, JOHN	J1330	WAP	537854388805.tif
2500047981	SULLIVAN & COOPER AS	S. DICKERSON ST	3-Nov-95	21	0	NEMETZ, JOHN	J1330	WR1	12652991102911.tif
2500047982	SULLIVAN & COOPER AS	S. DICKERSON ST	2-Nov-95	25	0	NEMETZ, JOHN	J1330	WAP	537856388805.tif

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	NJ Grid Coordinate No.	Drilling Company	Proposed Depth (ft bgs)[1]	Proposed Capacity (gpm)[2]	Well Use	Lot	Block	Municipality	County	Permit Issue Date	Latitude	Longitude	Well Date	Canceled	Well ID
2500047982	SULLIVAN & COOPER AS	2503455	SBI Environmental Well Drilling, Inc.	35	0	Monitoring	2	19.01	Dover	Morris	13-Oct-95	405306	743306	4-Dec-95		2
2500047983	SULLIVAN & COOPER AS	2503455	SBI Environmental Well Drilling, Inc.	35		Monitoring	2	19.01	Dover	Morris	13-Oct-95	405306	743306	4-Dec-95		3
2500047983	SULLIVAN & COOPER AS	2503455	SBI Environmental Well Drilling, Inc.	35	0	Monitoring	2	19.01	Dover	Morris	13-Oct-95	405306	743306	4-Dec-95		3
2500042547	SUN COMPANY, INC.	2503543	Summit Drilling Co., Inc.	20		Monitoring	27	17	Rockaway Twp	Morris	4-Feb-93	405320	743133	18-Feb-93		MW-5A
2500042547	SUN COMPANY, INC.	2503543	Summit Drilling Co., Inc.	20	0	Monitoring	27	17	Rockaway Twp	Morris	4-Feb-93	405320	743133	18-Feb-93		MW-5A
2500042548	SUN COMPANY, INC.	2503543	Summit Drilling Co., Inc.	20		Monitoring	27	17	Rockaway Twp	Morris	4-Feb-93	405320	743133	18-Feb-93		
2500042548	SUN COMPANY, INC.	2503543	Summit Drilling Co., Inc.	20	0	Monitoring	27	17	Rockaway Twp	Morris	4-Feb-93	405320	743133	18-Feb-93		
2500040267	SUN REFINERY & MARKE	2503543	Summit Drilling Co., Inc.	25		Monitoring	27	17	Rockaway Twp	Morris	5-Dec-91	405320	743133	9-Jan-92		MW5
2500040267	SUN REFINERY & MARKE	2503543	Summit Drilling Co., Inc.	25	0	Monitoring	27	17	Rockaway Twp	Morris	5-Dec-91	405320	743133	9-Jan-92		MW5
2500040268	SUN REFINERY & MARKE	2503543	Summit Drilling Co., Inc.	25		Monitoring	27	17	Rockaway Twp	Morris	5-Dec-91	405320	743133	9-Jan-92		MW6
2500040268	SUN REFINERY & MARKE	2503543	Summit Drilling Co., Inc.	25	0	Monitoring	27	17	Rockaway Twp	Morris	5-Dec-91	405320	743133	9-Jan-92		MW6
2500003092	SWINSON, HAROLD F	2503491	Robert B. Mercer	70	5	Domestic			Randolph Twp	Morris	20-Nov-53	405239	743240	--		
2500002914	TAYLOR, LEONARD	2503443	Robert B. Mercer	60	5	Domestic			14	Morris	15-Sep-53	405320	743333	--		
2500006767	THOMAS WILTON, CORP	2503455	A. R. Crosswell	50	6	Domestic			Dover	Morris	19-Jun-57	405306	743306	--		
4500048950	TRANSISTOR DEVICES	2503493	Beatty Well & Pump	200	50	Irrigation	20	195	Randolph Twp	Morris	8-May-96	405239	743213	--		
2500053453	TRANSISTOR DEVICES I	2503493	CT&E Environmental Services	15	0	Monitoring	20	195	Randolph Twp	Morris	1-Dec-98	405239	743213	4-Feb-99		MW-4
2500053453	TRANSISTOR DEVICES I	2503493	CT&E Environmental Services	15	0	Monitoring	20	195	Randolph Twp	Morris	1-Dec-98	405239	743213	4-Feb-99		MW-4
2500053454	TRANSISTOR DEVICES I	2503493	CT&E Environmental Services	15	0	Monitoring	20	195	Randolph Twp	Morris	1-Dec-98	405239	743213	4-Feb-99		MW-5
2500053454	TRANSISTOR DEVICES I	2503493	CT&E Environmental Services	15	0	Monitoring	20	195	Randolph Twp	Morris	1-Dec-98	405239	743213	4-Feb-99		MW-5
2500053452	TRANSISTOR DEVICES I	2503493	CT&E Environmental Services	15	0	Monitoring	20	195	Randolph Twp	Morris	1-Dec-98	405239	743213	20-Jan-99		MW-3
2500053452	TRANSISTOR DEVICES I	2503493	CT&E Environmental Services	15	0	Monitoring	20	195	Randolph Twp	Morris	1-Dec-98	405239	743213	20-Jan-99		MW-3
2500039713	TRI-COUNTY ASPHALT	2503542	Environmental Drilling	20		Monitoring	76.01	40	Rockaway Twp	Morris	17-Sep-91	405320	743146	26-Nov-91	N	MW6
2500039713	TRI-COUNTY ASPHALT	2503542	Environmental Drilling	20	0	Monitoring	76.01	40	Rockaway Twp	Morris	17-Sep-91	405320	743146	26-Nov-91	N	MW6
2500039714	TRI-COUNTY ASPHALT	2503542	Environmental Drilling	20		Monitoring	76.01	40	Rockaway Twp	Morris	17-Sep-91	405320	743146	26-Nov-91	N	MW8
2500039714	TRI-COUNTY ASPHALT	2503542	Environmental Drilling	20	0	Monitoring	76.01	40	Rockaway Twp	Morris	17-Sep-91	405320	743146	26-Nov-91	N	MW8
2500039715	TRI-COUNTY ASPHALT	2503542	Environmental Drilling	20		Monitoring	76.01	40	Rockaway Twp	Morris	17-Sep-91	405320	743146	26-Nov-91	N	MW5
2500039715	TRI-COUNTY ASPHALT	2503542	Environmental Drilling	20	0	Monitoring	76.01	40	Rockaway Twp	Morris	17-Sep-91	405320	743146	26-Nov-91	N	MW5
2500039716	TRI-COUNTY ASPHALT	2503542	Environmental Drilling	20		Monitoring	76.01	40	Rockaway Twp	Morris	17-Sep-91	405320	743146	26-Nov-91	N	MW8MW7
2500039716	TRI-COUNTY ASPHALT	2503542	Environmental Drilling	20	0	Monitoring	76.01	40	Rockaway Twp	Morris	17-Sep-91	405320	743146	26-Nov-91	N	MW8MW7
2500039717	TRI-COUNTY ASPHALT	2503542	Environmental Drilling	20		Monitoring	76.01	40	Rockaway Twp	Morris	17-Sep-91	405320	743146	26-Nov-91	N	MW9
2500039717	TRI-COUNTY ASPHALT	2503542	Environmental Drilling	20	0	Monitoring	76.01	40	Rockaway Twp	Morris	17-Sep-91	405320	743146	26-Nov-91	N	MW9
2500002665	TRZECIAKIEWICZ, A.	2503494	Beatty Brothers	55	6	Domestic			Dover	Morris	9-Jun-53	405226	743240	--		
2500005927	TWILLEY, ALBERT	2503446	John B. Mercer	80	5	Domestic			Dover	Morris	23-Aug-56	405306	743333	--		
2500049087	U.S. ARMY CORPS OF E	2503455	Site Blauvelt Engineers	35		Boring/ probe	NA	NA	Dover	Morris	7-Jun-96	405306	743306	22-Jul-96		B93-1-2
2500049087	U.S. ARMY CORPS OF E	2503455	Site Blauvelt Engineers	35	0	Boring/ probe	NA	NA	Dover	Morris	7-Jun-96	405306	743306	22-Jul-96		B93-1-2
2500024884	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	Well Location	Completion Date	Finished Depth (ft bgs)	Actual Capacity (gpm)	Driller's Name	NJ License No.	Document Type[3]	Document No.[4]
2500047982	SULLIVAN & COOPER AS	S. DICKERSON ST	2-Nov-95	25	0	NEMETZ, JOHN	J1330	WR1	12653001102912.tif
2500047983	SULLIVAN & COOPER AS	S. DICKERSON ST	8-Nov-95	16	0	ELLEFSEN, WILLIAM	J1173	WAP	537857388805.tif
2500047983	SULLIVAN & COOPER AS	S. DICKERSON ST	8-Nov-95	16	0	ELLEFSEN, WILLIAM	J1173	WR1	12653011102913.tif
2500042547	SUN COMPANY, INC.	MAIN ST. & JACKSON AV	10-Feb-93	24		CONROY, SEAN W.	J1522	WAP	529228382455.tif
2500042547	SUN COMPANY, INC.	MAIN ST. & JACKSON AV	10-Feb-93	24		CONROY, SEAN W.	J1522	WR1	11882981025911.tif
2500042548	SUN COMPANY, INC.	MAIN ST. & JACKSON AV	--					WAP	529230382455.tif
2500042548	SUN COMPANY, INC.		--					WR1	11882991025912.tif
2500040267	SUN REFINERY & MARKE	MAIN ST. & JACKSON AV	27-Dec-91	25		DECORSO, CARMINE	J1210	WAP	525767380422.tif
2500040267	SUN REFINERY & MARKE	MAIN ST. & JACKSON AV	27-Dec-91	25		DECORSO, CARMINE	J1210	WR1	1127565965178.tif
2500040268	SUN REFINERY & MARKE	MAIN ST. & JACKSON AV	27-Dec-91	22		DECORSO, CARMINE	J1210	WAP	525770380422.tif
2500040268	SUN REFINERY & MARKE	MAIN ST. & JACKSON AV	27-Dec-91	22		DECORSO, CARMINE	J1210	WR1	1127566965179.tif
2500003092	SWINSON, HAROLD F		--					WAP	856496694106.tif
2500002914	TAYLOR, LEONARD		--					WAP	854911692521.tif
2500006767	THOMAS WILTON, CORP		--					WAP	858877696487.tif
4500048950	TRANSISTOR DEVICES	274 SALEM ST	--					WAP	539385389895.tif
2500053453	TRANSISTOR DEVICES I	274 SOUTH SALEM ST.	2-Dec-98	14		PETLEY, WILLIAM	J13761	WAP	883804721414.tif
2500053453	TRANSISTOR DEVICES I	274 SOUTH SALEM ST.	2-Dec-98	14		PETLEY, WILLIAM	J13761	WR1	948425786035.tif
2500053454	TRANSISTOR DEVICES I	274 SOUTH SALEM ST.	2-Dec-98	15		PETLEY, WILLIAM	J13761	WAP	883805721415.tif
2500053454	TRANSISTOR DEVICES I	274 SOUTH SALEM ST.	2-Dec-98	15		PETLEY, WILLIAM	J13761	WR1	948426786036.tif
2500053452	TRANSISTOR DEVICES I	274 SOUTH SALEM ST.	2-Dec-98	13		PETLEY, WILLIAM	J13761	WAP	883803721413.tif
2500053452	TRANSISTOR DEVICES I	274 SOUTH SALEM ST.	2-Dec-98	13		PETLEY, WILLIAM	J13761	WR1	948424786034.tif
2500039713	TRI-COUNTY ASPHALT	311 W. MAIN ST	23-Sep-91	15		PIJACK, GREGORY W.	J1560	WAP	524598379838.tif
2500039713	TRI-COUNTY ASPHALT	311 W. MAIN ST	23-Sep-91	15		PIJACK, GREGORY W.	J1560	WR1	1122218959831.tif
2500039714	TRI-COUNTY ASPHALT	311 W. MAIN ST	23-Sep-91	15		PIJACK, GREGORY W.	J1560	WAP	524600379838.tif
2500039714	TRI-COUNTY ASPHALT	311 W. MAIN ST	23-Sep-91	15		PIJACK, GREGORY W.	J1560	WR1	1122219959832.tif
2500039715	TRI-COUNTY ASPHALT	311 W. MAIN ST	24-Sep-91	15		PIJACK, GREGORY W.	J1560	WAP	524601379838.tif
2500039715	TRI-COUNTY ASPHALT	311 W. MAIN ST	24-Sep-91	15		PIJACK, GREGORY W.	J1560	WR1	1122220959833.tif
2500039716	TRI-COUNTY ASPHALT	311 W. MAIN ST	24-Sep-91	15		PIJACK, GREGORY W.	J1560	WAP	524603379838.tif
2500039716	TRI-COUNTY ASPHALT	311 W. MAIN ST	24-Sep-91	15		PIJACK, GREGORY W.	J1560	WR1	1122221959834.tif
2500039717	TRI-COUNTY ASPHALT	311 W. MAIN ST	24-Sep-91	15		PIJACK, GREGORY W.	J1560	WAP	524605379838.tif
2500039717	TRI-COUNTY ASPHALT	311 W. MAIN ST	24-Sep-91	15		PIJACK, GREGORY W.	J1560	WR1	1122222959835.tif
2500002665	TRZECIAKIEWICZ, A.		--					WAP	855267692877.tif
2500005927	TWILLEY, ALBERT		--					WAP	858435696045.tif
2500049087	U.S. ARMY CORPS OF E	FARLEY AV & PHIPPS RD	14-Jun-96		0	PARISANO, STEVE	B0293	WAP	539617390087.tif
2500049087	U.S. ARMY CORPS OF E	FARLEY AV & PHIPPS RD	14-Jun-96		0	PARISANO, STEVE	B0293	WR1	12779631115575.tif
2500024884	U.S. GEOLOGICAL SURV		--					WAP	507297367575.tif

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	NJ Grid Coordinate No.	Drilling Company	Proposed Depth (ft bgs)[1]	Proposed Capacity (gpm)[2]	Well Use	Lot	Block	Municipality	County	Permit Issue Date	Latitude	Longitude	Well Date	Canceled	Well ID
2500024884	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30	0	Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024885	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024885	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30	0	Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024886	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024886	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30	0	Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024887	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024887	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30	0	Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024888	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024889	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024889	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30	0	Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024890	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024890	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30	0	Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024891	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024891	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30	0	Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024892	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024892	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30	0	Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024893	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024893	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30	0	Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024894	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024894	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30	0	Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024894	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024894	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30	0	Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024895	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024895	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30	0	Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024896	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024897	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024897	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30	0	Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024898	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024899	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024900	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024901	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024902	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024903	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500024904	U.S. GEOLOGICAL SURV	2503439	State of New Jersey	30		Monitoring			Dover	Morris	26-Apr-84	405326	743206	--	N	
2500052953	USEPA	2503454	B&B Drilling, Inc.	140	0	Monitoring	15	2314	Dover	Morris	21-Aug-98	405306	743319	--	Y	
2500052047	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	25	0	Monitoring	14	22D2	Dover	Morris	19-Feb-98	405306	743333	--	Y	
2500052026	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	25	0	Monitoring	N/A	N/A	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW25A
2500052026	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	25	0	Monitoring	N/A	N/A	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW25A
2500052041	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	25	0	Monitoring	ROW	ROW	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW8S
2500052041	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	25	0	Monitoring	ROW	ROW	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW8S
2500052044	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	25	0	Monitoring	ROW	1904	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW7S
2500052044	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	25	0	Monitoring	ROW	1904	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW7S
2500052027	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	75	0	Monitoring	15	2314	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW1DI
2500052027	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	75	0	Monitoring	15	2314	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW1DI
2500052028	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	75	0	Monitoring	15	2314	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW1DR
2500052028	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	75	0	Monitoring	15	2314	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW1DR

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	Well Location	Completion Date	Finished Depth (ft bgs)	Actual Capacity (gpm)	Driller's Name	NJ License No.	Document Type[3]	Document No.[4]
2500024884	U.S. GEOLOGICAL SURV		--					WR1	976778814391.tif
2500024885	U.S. GEOLOGICAL SURV		--					WAP	507299367577.tif
2500024885	U.S. GEOLOGICAL SURV		--					WR1	976779814392.tif
2500024886	U.S. GEOLOGICAL SURV		--					WAP	507302367580.tif
2500024886	U.S. GEOLOGICAL SURV		--					WR1	976780814393.tif
2500024887	U.S. GEOLOGICAL SURV		--					WAP	507304367582.tif
2500024887	U.S. GEOLOGICAL SURV		--					WR1	976781814394.tif
2500024888	U.S. GEOLOGICAL SURV		--					WAP	507306367584.tif
2500024889	U.S. GEOLOGICAL SURV		--					WAP	507308367586.tif
2500024889	U.S. GEOLOGICAL SURV		--					WR1	976783814396.tif
2500024890	U.S. GEOLOGICAL SURV		--					WAP	507311367589.tif
2500024890	U.S. GEOLOGICAL SURV		--					WR1	976784814397.tif
2500024891	U.S. GEOLOGICAL SURV		--					WAP	507312367590.tif
2500024891	U.S. GEOLOGICAL SURV		--					WR1	976785814398.tif
2500024892	U.S. GEOLOGICAL SURV		--					WAP	507315367593.tif
2500024892	U.S. GEOLOGICAL SURV		--					WR1	976786814399.tif
2500024893	U.S. GEOLOGICAL SURV		--					WAP	507317367595.tif
2500024893	U.S. GEOLOGICAL SURV		--					WR1	976787814400.tif
2500024894	U.S. GEOLOGICAL SURV		--					WAP	507319367597.tif
2500024894	U.S. GEOLOGICAL SURV		--					WR1	976788814401.tif
2500024895	U.S. GEOLOGICAL SURV		--					WAP	507321367599.tif
2500024895	U.S. GEOLOGICAL SURV		--					WR1	976789814402.tif
2500024896	U.S. GEOLOGICAL SURV		--					WAP	507323367601.tif
2500024897	U.S. GEOLOGICAL SURV		--					WAP	507325367603.tif
2500024897	U.S. GEOLOGICAL SURV		--					WR1	976791814404.tif
2500024898	U.S. GEOLOGICAL SURV		--					WAP	507328367606.tif
2500024899	U.S. GEOLOGICAL SURV		--					WAP	507330367608.tif
2500024900	U.S. GEOLOGICAL SURV		--					WAP	507333367610.tif
2500024901	U.S. GEOLOGICAL SURV		--					WAP	507335367613.tif
2500024902	U.S. GEOLOGICAL SURV		--					WAP	507337367615.tif
2500024903	U.S. GEOLOGICAL SURV		--					WAP	507339367617.tif
2500024904	U.S. GEOLOGICAL SURV		--					WAP	507341367619.tif
2500052953	USEPA	RUTAN AVE.	--					WAP	877983715593.tif
2500052047	USEPA C/O MALCOLM PI	RUTAN AVE.	--					WAP	846160683770.tif
2500052026	USEPA C/O MALCOLM PI	RUTAN AVE.	2-Jul-98	15		MYERCHIN, DOUGLAS	M1277	WAP	846063683673.tif
2500052026	USEPA C/O MALCOLM PI	RUTAN AVE.	2-Jul-98	15		MYERCHIN, COUGLAS	M1277	WR1	910692748302.tif
2500052041	USEPA C/O MALCOLM PI	RUTAN AVE.	1-Jul-98	16		MYERCHIN, DAVID	J1635	WAP	846154683764.tif
2500052041	USEPA C/O MALCOLM PI	RUTAN AVE.	1-Jul-98	16		MYERCHIN, DAVID	J1635	WR1	910783748393.tif
2500052044	USEPA C/O MALCOLM PI	RUTAN AVE.	31-Jul-98	23		MYERCHIN, DOUGLAS	M1277	WAP	846157683767.tif
2500052044	USEPA C/O MALCOLM PI	RUTAN AVE.	31-Jul-98	23		MYERCHIN, DOUGLAS	M1277	WR1	910786748396.tif
2500052027	USEPA C/O MALCOLM PI	RUTAN AVE.	14-Aug-98	126		MYERCHIN, DOUGLAS	M1277	WAP	846064683674.tif
2500052027	USEPA C/O MALCOLM PI	RUTAN AVE.	14-Aug-98	126		MYERCHIN, DOUGLAS	M1277	WR1	910693748303.tif
2500052028	USEPA C/O MALCOLM PI	RUTAN AVE.	28-Aug-98	153		MYERCHIN, DOUGLAS	M1277	WAP	846065683675.tif
2500052028	USEPA C/O MALCOLM PI	RUTAN AVE.	28-Aug-98	153		MYERCHIN, DOUGLAS	M1277	WR1	910694748304.tif

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	NJ Grid Coordinate No.	Drilling Company	Proposed Depth (ft bgs)[1]	Proposed Capacity (gpm)[2]	Well Use	Lot	Block	Municipality	County	Permit Issue Date	Latitude	Longitude	Well Date	Canceled	Well ID
2500052029	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	75	0	Monitoring	N/A	N/A	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW2IA
2500052029	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	75	0	Monitoring	N/A	N/A	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW2IA
2500052042	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	75	0	Monitoring	ROW	ROW	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW8I
2500052042	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	75	0	Monitoring	ROW	ROW	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW8I
2500052045	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	75	0	Monitoring	ROW	1904	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW7I
2500052045	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	75	0	Monitoring	ROW	1904	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW7I
2500052048	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	75	0	Monitoring	14	22D2	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW9I
2500052048	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	75	0	Monitoring	14	22D2	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW9I
2500051927	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	125	0	Boring/ probe	N/A	N/A	Dover	Morris	27-Jan-98	405306	743333	29-Oct-98		PB1-PB8
2500051927	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	125	0	Boring/ probe	N/A	N/A	Dover	Morris	27-Jan-98	405306	743333	29-Oct-98		PB1-PB8
2500051928	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	125	0	Boring/ probe	N/A	N/A	Dover	Morris	27-Jan-98	405306	743333	29-Oct-98		SP1-17
2500051928	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	125	0	Boring/ probe	N/A	N/A	Dover	Morris	27-Jan-98	405306	743333	29-Oct-98		SP1-17
2500052043	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	125	0	Monitoring	ROW	ROW	Dover	Morris	19-Feb-98	405306	743333	--	Y	
2500052046	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	125	0	Monitoring	ROW	1904	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW7D
2500052046	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	125	0	Monitoring	ROW	1904	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW7D
2500052049	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	125	0	Monitoring	14	22D2	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW9D
2500052049	USEPA C/O MALCOLM PI	2503446	B&B Drilling, Inc.	125	0	Monitoring	14	22D2	Dover	Morris	19-Feb-98	405306	743333	17-Feb-99		MW9D
2500033589	W.F.& L BARNISH	2503492	Summit Drilling Co., Inc.	20		Monitoring	39A	131	Randolph Twp	Morris	3-May-89	405239	743226	18-May-89		MW#2
2500033589	W.F.& L BARNISH	2503492	Summit Drilling Co., Inc.	20	0	Monitoring	39A	131	Randolph Twp	Morris	3-May-89	405239	743226	18-May-89		MW#2
2500033590	W.F.& L BARNISH	2503492	Summit Drilling Co., Inc.	20		Monitoring	39A	131	Randolph Twp	Morris	3-May-89	405239	743226	18-May-89		MW#3
2500033590	W.F.& L BARNISH	2503492	Summit Drilling Co., Inc.	20	0	Monitoring	39A	131	Randolph Twp	Morris	3-May-89	405239	743226	18-May-89		MW#3
2500033588	W.F.& L BARNISH	2503492	Summit Drilling Co., Inc.	20		Monitoring	39A	131	Randolph Twp	Morris	3-May-89	405239	743226	25-May-89		MW#1
2500033588	W.F.& L BARNISH	2503492	Summit Drilling Co., Inc.	20	0	Monitoring	39A	131	Randolph Twp	Morris	3-May-89	405239	743226	25-May-89		MW#1
2500033235	W.P. REALTY	2503467	Summit Drilling Co., Inc.	20		Monitoring	7	2204	Dover	Morris	17-Mar-89	405253	743240	21-Mar-89		W#4
2500033235	W.P. REALTY	2503467	Summit Drilling Co., Inc.	20	0	Monitoring	7	2204	Dover	Morris	17-Mar-89	405253	743240	21-Mar-89		W#4
2500033236	W.P. REALTY	2503467	Summit Drilling Co., Inc.	20		Monitoring	7	2204	Dover	Morris	17-Mar-89	405253	743240	21-Mar-89		W#4
2500033236	W.P. REALTY	2503467	Summit Drilling Co., Inc.	20	0	Monitoring	7	2204	Dover	Morris	17-Mar-89	405253	743240	21-Mar-89		W#4
2500033238	W.P. REALTY	2503467	Summit Drilling Co., Inc.	20		Monitoring	7	2204	Dover	Morris	17-Mar-89	405253	743240	22-Mar-89		W#3
2500033238	W.P. REALTY	2503467	Summit Drilling Co., Inc.	20	0	Monitoring	7	2204	Dover	Morris	17-Mar-89	405253	743240	22-Mar-89		W#3
2500033237	W.P. REALTY	2503467	Summit Drilling Co., Inc.	20		Monitoring	7	2204	Dover	Morris	17-Mar-89	405253	743240	29-Mar-89		
2500033237	W.P. REALTY	2503467	Summit Drilling Co., Inc.	20	0	Monitoring	7	2204	Dover	Morris	17-Mar-89	405253	743240	29-Mar-89		
2500009215	WATER COMMISSION	2503543	Burrows Well Drilling Co.	100	8	Test			Dover	Morris	4-Apr-60	405320	743133	--		
2500009215	WATER COMMISSION	2503543	Burrows Well Drilling Co.	100	8	Test			Dover	Morris	4-Apr-60	405320	743133	--		
2500004440	WEBER, CARL J	2503454	Robert B. Mercer	60	3	Domestic			Randolph Twp	Morris	5-Apr-55	405306	743319	--		
2500007334	WEBER, FREDERICK	2503423	Louis Garie	85	5	Domestic			Rockaway Bor	Morris	15-Nov-57	405400	743253	--		
2500010560	WHITE, JOHN H	2503438	Howard W. Smith	90	5	Domestic			Rockaway Twp	Morris	18-Apr-62	405333	743226	--		
2500001648	WILLIS, FREDERICK F.	2503423	Beatty Brothers	55	6	Domestic			Dover	Morris	9-Apr-52	405400	743253	--		
2500004729	WINKLER, CLARENCE	2503457	Jucket & Mercer	100	5	Domestic			Mine Hill Twp	Morris	27-Jun-55	405253	743319	--		
2500044175	WOLF, GRACE	2503449	Summit Drilling Co., Inc.	25		Monitoring	13	1214	Dover	Morris	26-Oct-93	405253	743333	--		
2500032262	WP REALTY	2503491	Summit Drilling Co., Inc.	30		Piezometer	7	2204	Dover	Morris	22-Aug-88	405239	743240	--	Y	
2500032263	WP REALTY	2503491	Summit Drilling Co., Inc.	30		Piezometer	7	2204	Dover	Morris	22-Aug-88	405239	743240	--	Y	
2500032264	WP REALTY	2503491	Summit Drilling Co., Inc.	30		Piezometer	7	2204	Dover	Morris	22-Aug-88	405239	743240	--	Y	
2500032259	WP REALTY	2503491	Summit Drilling Co., Inc.	30		Piezometer	7	2204	Dover	Morris	22-Aug-88	405239	743240	27-Sep-88		P-1
2500032260	WP REALTY	2503491	Summit Drilling Co., Inc.	30		Piezometer	7	2204	Dover	Morris	22-Aug-88	405239	743240	27-Sep-88		
2500032260	WP REALTY	2503491	Summit Drilling Co., Inc.	30	0	Piezometer	7	2204	Dover	Morris	22-Aug-88	405239	743240	27-Sep-88		

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	Well Location	Completion Date	Finished Depth (ft bgs)	Actual Capacity (gpm)	Driller's Name	NJ License No.	Document Type[3]	Document No.[4]
2500052029	USEPA C/O MALCOLM PI	RUTAN AVE.	10-Aug-98	61		MYERCHIN, DOUGLAS	M1277	WAP	846066683676.tif
2500052029	USEPA C/O MALCOLM PI	RUTAN AVE.	10-Aug-98	61		MYERCHIN, DOUGLAS	M1277	WR1	910695748305.tif
2500052042	USEPA C/O MALCOLM PI	RUTAN AVE.	29-Jun-98	49		MYERCHIN, DAVID	J1635	WAP	846155683765.tif
2500052042	USEPA C/O MALCOLM PI	RUTAN AVE.	29-Jun-98	49		MYERCHIN, DAVID	J1635	WR1	910784748394.tif
2500052045	USEPA C/O MALCOLM PI	RUTAN AVE.	28-Jul-98	55		MYERCHIN, DOUGLAS	M1277	WAP	846158683768.tif
2500052045	USEPA C/O MALCOLM PI	RUTAN AVE.	28-Jul-98	55		MYERCHIN, DOUGLAS	M1277	WR1	910787748397.tif
2500052048	USEPA C/O MALCOLM PI	RUTAN AVE.	14-Jul-98	62		MYERCHIN, DOUGLAS	M1277	WAP	846161683771.tif
2500052048	USEPA C/O MALCOLM PI	RUTAN AVE.	14-Jul-98	62		MYERCHIN, DOUGLAS	M1277	WR1	910790748400.tif
2500051927	USEPA C/O MALCOLM PI	RUTAN AVE.	3-Sep-98	222		MYERCHIN, DOUGLAS	M1277	WAP	839615677225.tif
2500051927	USEPA C/O MALCOLM PI	RUTAN AVE.	3-Sep-98	222		MYERSHIN, DOUGLAS	M1277	WR1	904244741854.tif
2500051928	USEPA C/O MALCOLM PI	RUTAN AVE.	3-Sep-98	211		MYERCHIN, DOUGLAS	M1277	WAP	839616677226.tif
2500051928	USEPA C/O MALCOLM PI	RUTAN AVE.	3-Sep-98	211		MYERCHIN, DOUGLAS	M1277	WR1	904245741855.tif
2500052043	USEPA C/O MALCOLM PI	RUTAN AVE.	--					WAP	846156683766.tif
2500052046	USEPA C/O MALCOLM PI	RUTAN AVE.	30-Jul-98	129		MYERCHIN, DOUGLAS	M1277	WAP	846159683769.tif
2500052046	USEPA C/O MALCOLM PI	RUTAN AVE.	30-Jul-98	129		MYERCHIN, DOUGLAS	M1277	WR1	910788748398.tif
2500052049	USEPA C/O MALCOLM PI	RUTAN AVE.	15-Jul-98	135		MYERCHIN, DOUGLAS	M1277	WAP	846162683772.tif
2500052049	USEPA C/O MALCOLM PI	RUTAN AVE.	15-Jul-98	135		MYERCHIN, DOUGLAS	M1277	WR1	910791748401.tif
2500033589	W.F.& L BARNISH	236 S. SALEM ST.	18-May-89	15	0	LAURA, MARK	J1486	WAP	522787378943.tif
2500033589	W.F.& L BARNISH	236 S. SALEM ST.	18-May-89	15	0	LAURA, MARK	J1486	WR1	1056601894214.tif
2500033590	W.F.& L BARNISH	236 S. SALEM ST.	19-May-89	15	0	LAURA, MARK	J1486	WAP	522789378943.tif
2500033590	W.F.& L BARNISH	236 S. SALEM ST.	19-May-89	15	0	LAURA, MARK	J1486	WR1	1056602894215.tif
2500033588	W.F.& L BARNISH	236 S. SALEM ST.	18-May-89	15	0	LAURA, MARK	J1486	WAP	522785378943.tif
2500033588	W.F.& L BARNISH	236 S. SALEM ST.	18-May-89	15	0	LAURA, MARK	J1486	WR1	1056600894213.tif
2500033235	W.P. REALTY	58-85 HARRISON ST.	21-Mar-89	17	0	DECORSO, CARMINE	J1210	WAP	522122378626.tif
2500033235	W.P. REALTY	58-85 HARRISON ST.	21-Mar-89	17	0	DECORSO, CARMINE	J1210	WR1	1053914891527.tif
2500033236	W.P. REALTY	58-85 HARRISON ST.	21-Mar-89	17	0	DECORSO, CARMINE	J1210	WAP	522125378626.tif
2500033236	W.P. REALTY	58-85 HARRISON ST.	21-Mar-89	17	0	DECORSO, CARMINE	J1210	WR1	1053915891528.tif
2500033238	W.P. REALTY		22-Mar-89	17	0	DECORSO, CARMINE	J1210	WAP	522127378626.tif
2500033238	W.P. REALTY		22-Mar-89	17	0	DECORSO, CARMINE	J1210	WR1	1053917891530.tif
2500033237	W.P. REALTY		--					WAP	522126378626.tif
2500033237	W.P. REALTY		--					WR1	1053916891529.tif
2500009215	WATER COMMISSION		--					WAP	869262706872.tif
2500009215	WATER COMMISSION		--					WR1	933884771494.tif
2500004440	WEBER, CARL J		--					WAP	856745694355.tif
2500007334	WEBER, FREDERICK		--					WAP	859243696853.tif
2500010560	WHITE, JOHN H		--					WAP	868665706275.tif
2500001648	WILLIS, FREDERICK F.		--					WAP	851941689551.tif
2500004729	WINKLER, CLARENCE		--					WAP	857038694648.tif
2500044175	WOLF, GRACE	38 E DICKERSON ST	--					WAP	531721384176.tif
2500032262	WP REALTY		--					WAP	520256377575.tif
2500032263	WP REALTY		--					WAP	520258377575.tif
2500032264	WP REALTY		--					WAP	520260377575.tif
2500032259	WP REALTY	55-85 HARRISON ST.	12-Sep-88	11.5	0	GRAHAMER, JR., DONAL	M1212	WAP	520250377575.tif
2500032260	WP REALTY		--					WAP	520252377575.tif
2500032260	WP REALTY		--					WR1	1043174880787.tif

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	NJ Grid Coordinate No.	Drilling Company	Proposed Depth (ft bgs)[1]	Proposed Capacity (gpm)[2]	Well Use	Lot	Block	Municipality	County	Permit Issue Date	Latitude	Longitude	Well Date	Canceled	Well ID
2500032261	WP REALTY	2503491	Summit Drilling Co., Inc.	30		Piezometer	7	2204	Dover	Morris	22-Aug-88	405239	743240	27-Sep-88		
2500032261	WP REALTY	2503491	Summit Drilling Co., Inc.	30	0	Piezometer	7	2204	Dover	Morris	22-Aug-88	405239	743240	27-Sep-88		
2500032258	WP REALTY	2503491	Summit Drilling Co., Inc.	30		Piezometer	7	2204	Dover	Morris	23-Aug-88	405239	743240	22-Dec-92		S-B5
2500032258	WP REALTY	2503491	Summit Drilling Co., Inc.	30	0	Piezometer	7	2204	Dover	Morris	23-Aug-88	405239	743240	22-Dec-92		S-B5
2500029154	WP REALTY CO.	2503466	Empire Soils Investigation	70		Monitoring	7 & 8	33-04	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029154	WP REALTY CO.	2503466	Empire Soils Investigation	70	0	Monitoring	7 & 8	33-04	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029155	WP REALTY CO.	2503466	Empire Soils Investigation	70		Monitoring	7 & 8	33-04	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029155	WP REALTY CO.	2503466	Empire Soils Investigation	70	0	Monitoring	7 & 8	33-04	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029156	WP REALTY CO.	2503466	Empire Soils Investigation	70		Monitoring	7 & 8	33-04	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500029156	WP REALTY CO.	2503466	Empire Soils Investigation	70	0	Monitoring	7 & 8	33-04	Dover	Morris	23-Feb-87	405259	743206	25-Sep-87	N	
2500008650	ZIPKO, JOSEPH	2503468	D.F. Well Drilling Co.	125	5	Domestic			Randolph Twp	Morris	15-Jul-59	405253	743226	--		
2500008650	ZIPKO, JOSEPH	2503468	D.F. Well Drilling Co.	125	5	Domestic			Randolph Twp	Morris	15-Jul-59	405253	743226	--		

Notes
1 ft bgs- feet below ground surface
2 gpm- gallons per minute
3 Document types:
WAP- Well Application & Permit
WR1- Well Record
4 Document Number refers to the number of the WAP or WR1 that was found during the one-mile radius manual well search.

Exhibit F
One-Mile Radius Well Search Results
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Well Permit No.	Owner's Name	Well Location	Completion Date	Finished Depth (ft bgs)	Actual Capacity (gpm)	Driller's Name	NJ License No.	Document Type[3]	Document No.[4]
2500032261	WP REALTY		--			GRAHAMER, JR., DONAL		WAP	520254377575.tif
2500032261	WP REALTY		--			GRAHAMER, JR., DONAL		WR1	1043175880788.tif
2500032258	WP REALTY	55-85 HARRISON ST	14-Sep-88	21		GRAHAMER, JR., DONAL	M1212	WAP	520247377575.tif
2500032258	WP REALTY	55-85 HARRISON ST	14-Sep-88	21		GRAHAMER, JR., DONAL	M1212	WR1	1043172880785.tif
2500029154	WP REALTY CO.		--					WAP	514794374146.tif
2500029154	WP REALTY CO.		--					WR1	1013065850678.tif
2500029155	WP REALTY CO.		--					WAP	514796374146.tif
2500029155	WP REALTY CO.		--					WR1	1013066850679.tif
2500029156	WP REALTY CO.		--					WAP	514797374146.tif
2500029156	WP REALTY CO.		--					WR1	1013067850680.tif
2500008650	ZIPKO, JOSEPH		--					WAP	860254697864.tif
2500008650	ZIPKO, JOSEPH		--					WR1	924882762492.tif

Notes
1 ft bgs- feet below ground surface
2 gpm- gallons per minute
3 Document types:
WAP- Well Application & Permit
WR1- Well Record
4 Document Number refers to the number of the WAP or WR1 that was found during the one-mile radius manual well search.

APPENDIX D – ISCO EFFECTIVENESS DATA

Table 2
CONTAMINANTS OF CONCERN IN SOIL - JANUARY 2017
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

	Boring Location		B-1	B-1 (duplicate)	B-1	B-1	B-1
	Sample ID		DMW-B1-10-011117	DMW-B10-15-011117	DMW-B1-15-011117	DMW-B1-19-011117	DMW-B1-26-011117
	Date		1/11/2017	1/11/2017	1/11/2017	1/11/2017	1/11/2017
	Sample Depth		10-10.5	10-10.5	15-15.5	19-19.5	26-26.5
Volatile Organic Compounds							
cis-1,2-Dichloroethene	1000	ug/kg	81	74	< 5.4 U	< 5.0 U	< 4.4 U
Tetrachloroethene	1000	ug/kg	1900	1900	< 5.4 U	< 5.0 U	4.3 J
Trichloroethene	1000	ug/kg	80	62	< 5.4 U	< 5.0 U	< 4.4 U
Vinyl chloride	2000	ug/kg	< 4.7 U	< 4.4 U	< 5.4 U	< 5.0 U	< 4.4 U
Inorganic Analyses							
Total Organic Carbon	---	mg/kg	1960	4140	239	231	188

Concentration exceeds 2005 ROD criterion.

U - The analyte was not detected at or above the reporting limit

J - The identification of the analyte is acceptable; the reported value is an estimate

NA - Not Analyzed

a. Poor core recovery; sample interval shown as entire length of core.

Table 2
CONTAMINANTS OF CONCERN IN SOIL - JANUARY 2017
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

	Boring Location		B-1	B-2	B-2	B-2 (duplicate)	B-2
	Sample ID		DMW-B1-32-011117	DMW-B2-10-011217	DMW-B2-15-011217	DMW-B10-20-011217	DMW-B2-19-011217
	Date		1/11/2017	1/12/2017	1/12/2017	1/12/2017	1/12/2017
	Sample Depth		32-32.5	10-10.5	15-15.5	15-15.5	19-19.5
Volatile Organic Compounds							
cis-1,2-Dichloroethene	1000	ug/kg	< 5.1 U	2.9 J	< 5.2 U	< 4.9 U	< 5.1 U
Tetrachloroethene	1000	ug/kg	< 5.1 U	47	< 5.2 U	2.2 J	6.1
Trichloroethene	1000	ug/kg	< 5.1 U	2.5 J	< 5.2 U	< 4.9 U	< 5.1 U
Vinyl chloride	2000	ug/kg	< 5.1 U	< 5.2 U	< 5.2 U	< 4.9 U	< 5.1 U
Inorganic Analyses							
Total Organic Carbon	---	mg/kg	<130 U	NA	NA	NA	NA

Concentration exceeds 2005 ROD criterion.

U - The analyte was not detected at or above the reporting limit

J - The identification of the analyte is acceptable; the reported value is an estimate

NA - Not Analyzed

a. Poor core recovery; sample interval shown as entire length of core.

Table 2
CONTAMINANTS OF CONCERN IN SOIL - JANUARY 2017
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

	Boring Location		B-2	B-2	B-3	B-3	B-3
	Sample ID		DMW-B2-25-011217	DMW-B2-31-011217	DMW-B3-10-011217	DMW-B3-15-011217	DMW-B3-19-011217
	Date		1/12/2017	1/12/2017	1/12/2017	1/12/2017	1/12/2017
	Sample Depth		25-25.5	31-31.5	10-10.5	15-15.5	19-19.5
Volatile Organic Compounds							
cis-1,2-Dichloroethene	1000	ug/kg	< 4.6 U	< 4.5 U	13	< 4.9 U	< 4.4 U
Tetrachloroethene	1000	ug/kg	< 4.6 U	< 4.5 U	20	< 4.9 U	5.3
Trichloroethene	1000	ug/kg	< 4.6 U	< 4.5 U	2.5 J	< 4.9 U	< 4.4 U
Vinyl chloride	2000	ug/kg	< 4.6 U	< 4.5 U	< 4.9 U	< 4.9 U	< 4.4 U
Inorganic Analyses							
Total Organic Carbon	---	mg/kg	NA	NA	1610	148	<110 U

Concentration exceeds 2005 ROD criterion.

U - The analyte was not detected at or above the reporting limit

J - The identification of the analyte is acceptable; the reported value is an estimate

NA - Not Analyzed

a. Poor core recovery; sample interval shown as entire length of core.

Table 2
CONTAMINANTS OF CONCERN IN SOIL - JANUARY 2017
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

	Boring Location		B-3	B-3	B-4	B-4	B-4
	Sample ID		DMW-B3-26-011217	DMW-B3-32-011217	DMW-B4-10-011217	DMW-B4-15-011217	DMW-B4-22-011217
	Date		1/12/2017	1/12/2017	1/12/2017	1/12/2017	1/12/2017
	Sample Depth		26-26.5	32-32.5	10-10.5	15-15.5	22-22.5
Volatile Organic Compounds							
cis-1,2-Dichloroethene	1000	ug/kg	< 4.8 U	< 4.7 U	< 4.9 U	< 5.7 U	< 5.0 U
Tetrachloroethene	1000	ug/kg	11	< 4.7 U	25	< 5.7 U	< 5.0 U
Trichloroethene	1000	ug/kg	< 4.8 U	< 4.7 U	< 4.9 U	< 5.7 U	< 5.0 U
Vinyl chloride	2000	ug/kg	< 4.8 U	< 4.7 U	< 4.9 U	< 5.7 U	< 5.0 U
Inorganic Analyses							
Total Organic Carbon	---	mg/kg	179	199	NA	NA	NA

Concentration exceeds 2005 ROD criterion.

U - The analyte was not detected at or above the reporting limit

J - The identification of the analyte is acceptable; the reported value is an estimate

NA - Not Analyzed

a. Poor core recovery; sample interval shown as entire length of core.

Table 2
CONTAMINANTS OF CONCERN IN SOIL - JANUARY 2017
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

	Boring Location		B-4	B-4	B-5	B-5	B-5
	Sample ID		DMW-B4-27-011217	DMW-B4-31-011217	DMW-B5-10-011117	DMW-B5-16-011117	DMW-B5-21-011117
	Date		1/12/2017	1/12/2017	1/11/2017	1/11/2017	1/11/2017
	Sample Depth		27-27.5	31-31.5	10-10.5	16-16.5	21-21.5
Volatile Organic Compounds							
cis-1,2-Dichloroethene	1000	ug/kg	< 4.8 U	< 4.5 U	350	3.2 J	< 5.7 U
Tetrachloroethene	1000	ug/kg	< 4.8 U	< 4.5 U	28	1.5 J	18
Trichloroethene	1000	ug/kg	< 4.8 U	< 4.5 U	9.1	< 4.6 U	< 5.7 U
Vinyl chloride	2000	ug/kg	< 4.8 U	< 4.5 U	< 4.3 U	< 4.6 U	< 5.7 U
Inorganic Analyses							
Total Organic Carbon	---	mg/kg	NA	NA	3380	238	149

Concentration exceeds 2005 ROD criterion.

U - The analyte was not detected at or above the reporting limit

J - The identification of the analyte is acceptable; the reported value is an estimate

NA - Not Analyzed

a. Poor core recovery; sample interval shown as entire length of core.

Table 2
CONTAMINANTS OF CONCERN IN SOIL - JANUARY 2017
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

	Boring Location		B-5	B-5	B-6	B-6	B-6
	Sample ID		DMW-B5-24-011117	DMW-B5-30-011117	DMW-B6-10-011017	DMW-B6-15-011017	DMW-B6-25-011017
	Date		1/11/2017	1/11/2017	1/10/2017	1/10/2017	1/10/2017
	Sample Depth		24-29[a]	30-30.5	10-10.5	15-15.5	25-25.5
Volatile Organic Compounds							
cis-1,2-Dichloroethene	1000	ug/kg	< 4.2 U	< 5.8 U	84	< 5.6 U	< 4.7 U
Tetrachloroethene	1000	ug/kg	12	< 5.8 U	4100	< 5.6 U	3.8 J
Trichloroethene	1000	ug/kg	< 4.2 U	< 5.8 U	150	< 5.6 U	< 4.7 U
Vinyl chloride	2000	ug/kg	< 4.2 U	< 5.8 U	< 4.2 U	< 5.6 U	< 4.7 U
Inorganic Analyses							
Total Organic Carbon	---	mg/kg	211	174	NA	NA	NA

Concentration exceeds 2005 ROD criterion.

U - The analyte was not detected at or above the reporting limit

J - The identification of the analyte is acceptable; the reported value is an estimate

NA - Not Analyzed

a. Poor core recovery; sample interval shown as entire length of core.

Table 2
CONTAMINANTS OF CONCERN IN SOIL - JANUARY 2017
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

	Boring Location		B-6	B-6	B-7	B-7 (duplicate)	B-7
		Sample ID	DMW-B6-29-011017	DMW-B6-32-011017	DMW-B7-10-011017	DMW-B10-10-011017	DMW-B7-14-011017
		Date	1/10/2017	1/10/2017	1/10/2017	1/10/2017	1/10/2017
		Sample Depth	29-29.5	32-32.5	10-10.5	10-10.5	14-19[a]
Volatile Organic Compounds							
cis-1,2-Dichloroethene	1000	ug/kg	< 4.6 U	< 5.5 U	1.4 J	< 6.3 U	< 5.6 U
Tetrachloroethene	1000	ug/kg	< 4.6 U	1.2 J	38	21	3.3 J
Trichloroethene	1000	ug/kg	< 4.6 U	< 5.5 U	< 5.7 U	< 6.3 U	< 5.6 U
Vinyl chloride	2000	ug/kg	< 4.6 U	< 5.5 U	< 5.7 U	< 6.3 U	< 5.6 U
Inorganic Analyses							
Total Organic Carbon	---	mg/kg	NA	NA	NA	NA	NA

Concentration exceeds 2005 ROD criterion.

U - The analyte was not detected at or above the reporting limit

J - The identification of the analyte is acceptable; the reported value is an estimate

NA - Not Analyzed

a. Poor core recovery; sample interval shown as entire length of core.

Table 2
CONTAMINANTS OF CONCERN IN SOIL - JANUARY 2017
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

	Boring Location		B-7	B-7	B-8	B-8	B-8
	Sample ID		DMW-B7-19-011017	DMW-B7-25-011017	DMW-B8-10-011617	DMW-B8-15-011617	DMW-B8-19-011617
	Date		1/10/2017	1/10/2017	1/16/2017	1/16/2017	1/16/2017
	Sample Depth		19-24[a]	25-25.5	10-10.5	15-15.5	19-19.5
Volatile Organic Compounds							
cis-1,2-Dichloroethene	1000	ug/kg	< 4.4 U	< 4.8 U	< 5.3 U	< 5.4 U	< 5.5 U
Tetrachloroethene	1000	ug/kg	1.8 J	1.3 J	3.0 J	< 5.4 U	< 5.5 U
Trichloroethene	1000	ug/kg	< 4.4 U	< 4.8 U	< 5.3 U	< 5.4 U	< 5.5 U
Vinyl chloride	2000	ug/kg	< 4.4 U	< 4.8 U	< 5.3 U	< 5.4 U	< 5.5 U
Inorganic Analyses							
Total Organic Carbon	---	mg/kg	NA	NA	NA	NA	NA

Concentration exceeds 2005 ROD criterion.

U - The analyte was not detected at or above the reporting limit

J - The identification of the analyte is acceptable; the reported value is an estimate

NA - Not Analyzed

a. Poor core recovery; sample interval shown as entire length of core.

Table 2
CONTAMINANTS OF CONCERN IN SOIL - JANUARY 2017
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

	Boring Location		B-8	B-8	B-9	B-9	B-9
	Sample ID		DMW-B8-27-011617	DMW-B8-29-011617	DMW-B9-10-011617	DMW-B9-15-011617	DMW-B9-21-011617
	Date		1/16/2017	1/16/2017	1/16/2017	1/16/2017	1/16/2017
	Sample Depth		27-27.5	29-34[a]	10-10.5	15-15.5	21-21.5
Volatile Organic Compounds							
cis-1,2-Dichloroethene	1000	ug/kg	< 4.3 U	< 8.8 U	< 4.8 U	< 5.2 U	< 7.7 U
Tetrachloroethene	1000	ug/kg	< 4.3 U	< 8.8 U	6.2	8.5	< 7.7 U
Trichloroethene	1000	ug/kg	< 4.3 U	< 8.8 U	< 4.8 U	< 5.2 U	< 7.7 U
Vinyl chloride	2000	ug/kg	< 4.3 U	< 8.8 U	< 4.8 U	< 5.2 U	< 7.7 U
Inorganic Analyses							
Total Organic Carbon	---	mg/kg	NA	NA	NA	NA	NA

Concentration exceeds 2005 ROD criterion.

U - The analyte was not detected at or above the reporting limit

J - The identification of the analyte is acceptable; the reported value is an estimate

NA - Not Analyzed

a. Poor core recovery; sample interval shown as entire length of core.

Table 2
CONTAMINANTS OF CONCERN IN SOIL - JANUARY 2017
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

	Boring Location		B-9	B-9
	Sample ID		DMW-B9-26-011617	DMW-B9-32-011617
	Date		1/16/2017	1/16/2017
	Sample Depth		26-26.5	32-32.5
Volatile Organic Compounds				
cis-1,2-Dichloroethene	1000	ug/kg	< 4.8 U	< 6.0 U
Tetrachloroethene	1000	ug/kg	< 4.8 U	5.4 J
Trichloroethene	1000	ug/kg	< 4.8 U	< 6.0 U
Vinyl chloride	2000	ug/kg	< 4.8 U	< 6.0 U
Inorganic Analyses				
Total Organic Carbon	---	mg/kg	NA	NA

Concentration exceeds 2005 ROD criterion.

U - The analyte was not detected at or above the reporting limit

J - The identification of the analyte is acceptable; the reported value is an estimate

NA - Not Analyzed

a. Poor core recovery; sample interval shown as entire length of core.

Table 3
FIELD-MEASURED GROUNDWATER QUALITY PARAMETERS
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

Boring Number	Date	Temp (^{o}C)	DO (mg/L)	pH (s.u.)	Redox (mV)	Conductivity (mS/cm)	Turbidity (NTU)
B8	1/16/2017	14.53	1.6	5.77	132.0	1.66	24.9
B9	1/16/2017	13.16	2.93	6.03	97.0	1.98	19.8

Notes:
^{o}C - Degrees Celsius
mg/L - milligrams per liter
s.u. - standard units
mV - millivolts
mS/cm - milliSiemens per centimeter
NTU - Nephelometric Turbidity Units

Table 4
CONTAMINANTS OF CONCERN IN GROUNDWATER - JANUARY 2017
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

		Location	B-8	B-8 (duplicate)	B-9
		Sample ID	DMW-B8GW-14.5	DMW-B10GW-14.5	DMW-B9GW-14.5
		Sample Date	1/16/2017	1/16/2017	1/16/2017
		Sample Depth (ft bgs)	14.5	14.5	14.5
Analyte	ROD Criterion	Units			
1,1,2-Trichloroethane	3	ug/l	< 0.50 U	< 0.50 U	< 0.50 U
cis-1,2-Dichloroethene	10	ug/l	< 0.50 UJ	< 0.50 UJ	< 0.50 UJ
Tetrachloroethene	1	ug/l	**7.1**	**6.9**	**25**
Trichloroethene	1	ug/l	0.10 J	0.12 J	0.26 J
Vinyl chloride	2	ug/l	< 0.50 U	< 0.50 U	< 0.50 U

Concentration exceeds 2005 ROD criterion.

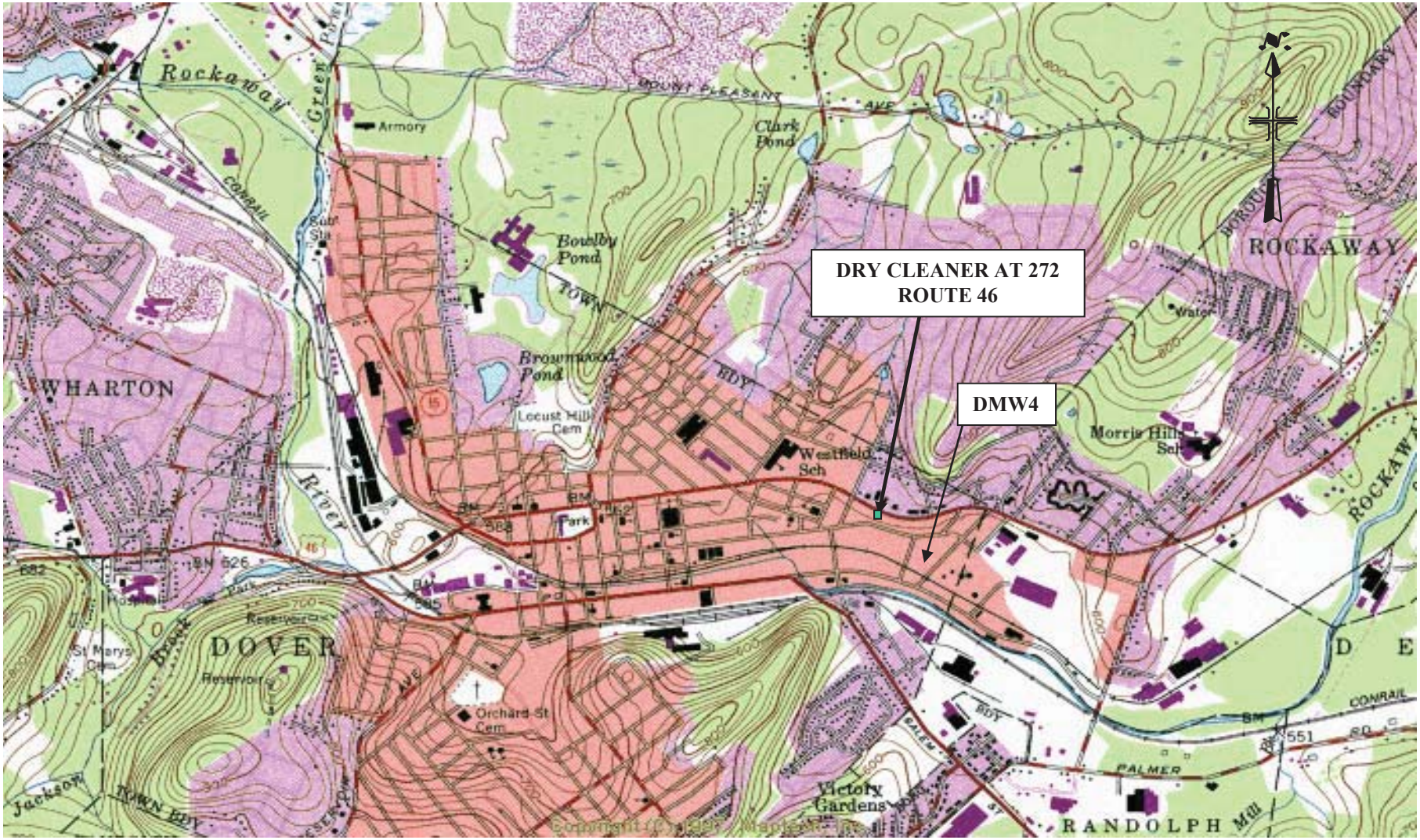
ft bgs = feet below ground surface

U - The analyte was not detected at or above the reporting limit

J - The identification of the analyte is acceptable; the reported value is an estimate

United States Army Corps of Engineers, Kansas City
Dover Municipal Well No. 4 Superfund Site
Dover, New Jersey

FIGURES



Source: Dover, NJ USGS, 1981

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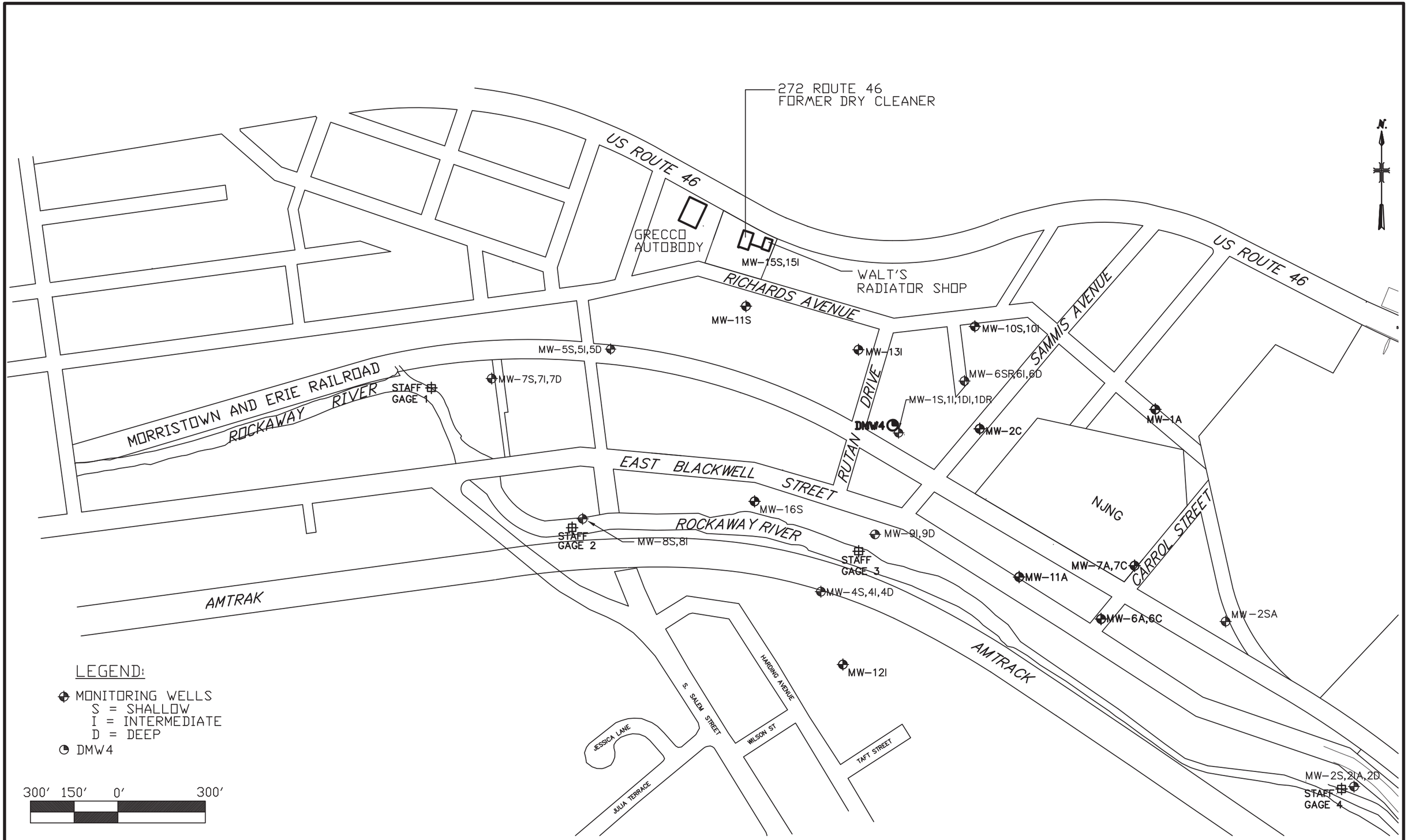
SITE MAP
DOVER MUNICIPAL WELL NO. 4 SUPERFUND SITE
DOVER, NEW JERSEY

FIGURE 1



NOTE: THE PROPERTY BOUNDARIES ARE APPROXIMATE

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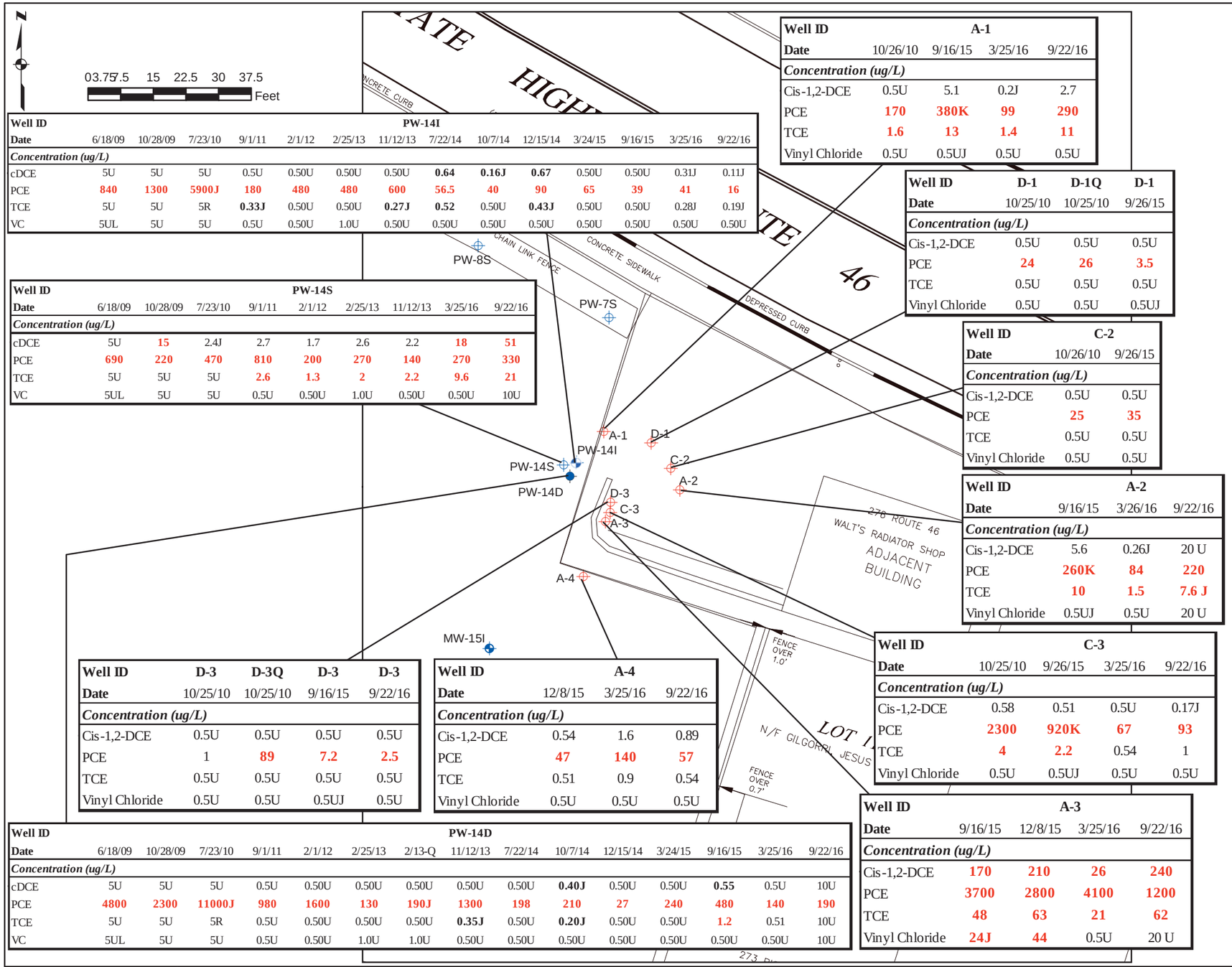
DOVER MUNICIPAL WELL NO.4 SUPERFUND SITE
DOVER, NEW JERSEY

LOCATION OF DOVER MUNICIPAL WELL NO.4 AND SURROUNDING VICINITY

FIGURE 2



Well ID	PW-14I													
Date	6/18/09	10/28/09	7/23/10	9/1/11	2/1/12	2/25/13	11/12/13	7/22/14	10/7/14	12/15/14	3/24/15	9/16/15	3/25/16	9/22/16
Concentration (ug/L)														
cDCE	5U	5U	5U	0.5U	0.50U	0.50U	0.50U	**0.64**	**0.16J**	**0.67**	0.50U	0.50U	0.31J	0.11J
PCE	**840**	**1300**	**5900J**	**180**	**480**	**480**	**600**	**56.5**	**40**	**90**	**65**	**39**	**41**	**16**
TCE	5U	5U	5R	**0.33J**	0.50U	0.50U	**0.27J**	**0.52**	0.50U	**0.43J**	0.50U	0.50U	0.28J	0.19J
VC	5UL	5U	5U	0.5U	0.50U	1.0U	0.50U	0.50U	0.50U	0.50U	0.50U	0.50U	0.50U	0.50U

Well ID	PW-14S								
Date	6/18/09	10/28/09	7/23/10	9/1/11	2/1/12	2/25/13	11/12/13	3/25/16	9/22/16
Concentration (ug/L)									
cDCE	5U	**15**	2.4J	2.7	1.7	2.6	2.2	**18**	**51**
PCE	**690**	**220**	**470**	**810**	**200**	**270**	**140**	**270**	**330**
TCE	5U	5U	5U	**2.6**	**1.3**	**2**	**2.2**	**9.6**	**21**
VC	5UL	5U	5U	0.5U	0.50U	1.0U	0.50U	0.50U	10U

Well ID	A-1			
Date	10/26/10	9/16/15	3/25/16	9/22/16
Concentration (ug/L)				
Cis-1,2-DCE	0.5U	5.1	0.2J	2.7
PCE	**170**	**380K**	**99**	**290**
TCE	**1.6**	**13**	**1.4**	**11**
Vinyl Chloride	0.5U	0.5UJ	0.5U	0.5U

Well ID	D-1	D-1Q	D-1
Date	10/25/10	10/25/10	9/26/15
Concentration (ug/L)			
Cis-1,2-DCE	0.5U	0.5U	0.5U
PCE	**24**	**26**	**3.5**
TCE	0.5U	0.5U	0.5U
Vinyl Chloride	0.5U	0.5U	0.5UJ

Well ID	C-2	
Date	10/26/10	9/26/15
Concentration (ug/L)		
Cis-1,2-DCE	0.5U	0.5U
PCE	**25**	**35**
TCE	0.5U	0.5U
Vinyl Chloride	0.5U	0.5U

Well ID	A-2		
Date	9/16/15	3/26/16	9/22/16
Concentration (ug/L)			
Cis-1,2-DCE	5.6	0.26J	20 U
PCE	**260K**	**84**	**220**
TCE	**10**	**1.5**	**7.6 J**
Vinyl Chloride	0.5UJ	0.5U	20 U

Well ID	C-3			
Date	10/25/10	9/26/15	3/25/16	9/22/16
Concentration (ug/L)				
Cis-1,2-DCE	0.58	0.51	0.5U	0.17J
PCE	**2300**	**920K**	**67**	**93**
TCE	**4**	**2.2**	0.54	1
Vinyl Chloride	0.5U	0.5UJ	0.5U	0.5U

Well ID	A-3			
Date	9/16/15	12/8/15	3/25/16	9/22/16
Concentration (ug/L)				
Cis-1,2-DCE	**170**	**210**	**26**	**240**
PCE	**3700**	**2800**	**4100**	**1200**
TCE	**48**	**63**	**21**	**62**
Vinyl Chloride	**24J**	**44**	0.5U	20 U

Well ID	D-3	D-3Q	D-3	D-3
Date	10/25/10	10/25/10	9/16/15	9/22/16
Concentration (ug/L)				
Cis-1,2-DCE	0.5U	0.5U	0.5U	0.5U
PCE	1	**89**	**7.2**	**2.5**
TCE	0.5U	0.5U	0.5U	0.5U
Vinyl Chloride	0.5U	0.5U	0.5UJ	0.5U

Well ID	A-4		
Date	12/8/15	3/25/16	9/22/16
Concentration (ug/L)			
Cis-1,2-DCE	0.54	1.6	0.89
PCE	**47**	**140**	**57**
TCE	0.51	0.9	0.54
Vinyl Chloride	0.5U	0.5U	0.5U

Well ID	PW-14D														
Date	6/18/09	10/28/09	7/23/10	9/1/11	2/1/12	2/25/13	2/13-Q	11/12/13	7/22/14	10/7/14	12/15/14	3/24/15	9/16/15	3/25/16	9/22/16
Concentration (ug/L)															
cDCE	5U	5U	5U	0.5U	0.50U	0.50U	0.50U	0.50U	0.50U	**0.40J**	0.50U	0.50U	**0.55**	0.5U	10U
PCE	**4800**	**2300**	**11000J**	**980**	**1600**	**130**	**190J**	**1300**	**198**	**210**	**27**	**240**	**480**	**140**	**190**
TCE	5U	5U	5R	0.5U	0.50U	0.50U	0.50U	**0.35J**	0.50U	**0.20J**	0.50U	0.50U	**1.2**	0.51	10U
VC	5UL	5U	5U	0.5U	0.50U	1.0U	1.0U	0.50U	0.50U	0.50U	0.50U	0.50U	0.50U	0.50U	10U

LEGEND

EXISTING WELLS

- Injection Well
- Shallow Monitoring Well
- Intermediate Monitoring Well
- Deep Montioring Well

NOTES

1. Injection Wells were installed in March 2010. The injection well depths are as follow:
   a. A- wells: Screened from 12 to 15 feet below ground surface.
   b. C- wells: Screened from 24 to 27 feet below ground surface.
   c. D -wells: Screened from 33 to 36 feet below ground surface.
2. Concentrations in red exceed the 2005 ROD criteria.
3. Basemap prepared by Stewart Surveying and Engineering, LLC (January, 2010)
4. Q designation in sample name indicates that the sample contained permanganate and was quenched with sodium thiosulfate

Laboratory Qualifiers

J: Reported value is an estimate
U: Analyte was not detected above the reporting limit
K: Reported value may be biased high
L: Reported value may be biased low

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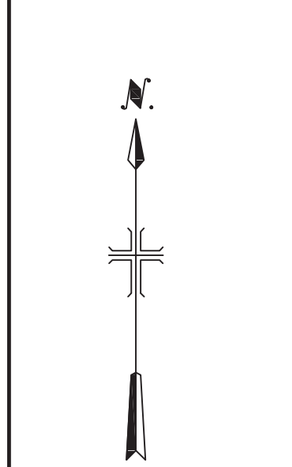
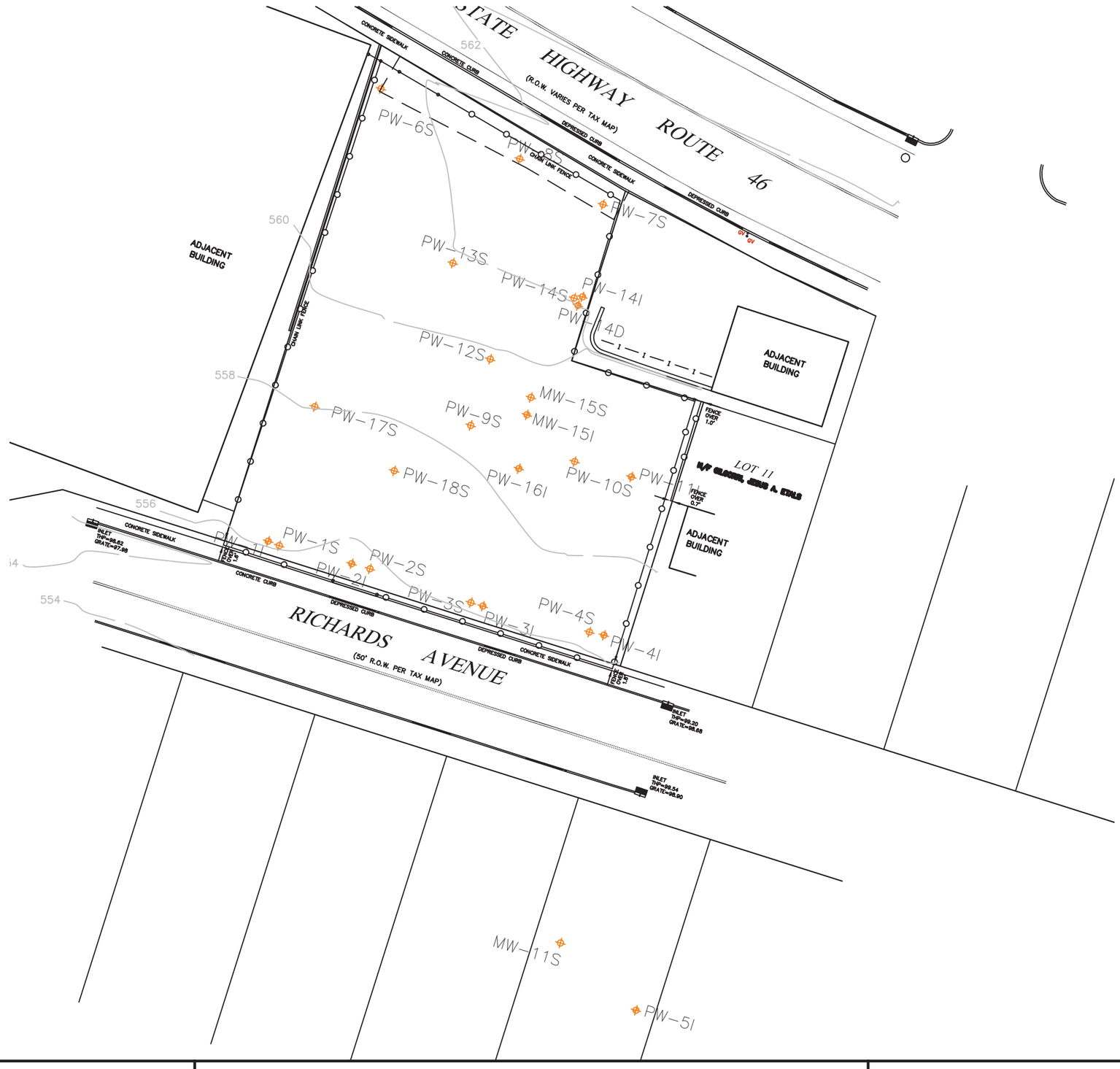
DOVER MUNICIPAL WELL NO. 4 SUPERFUND SITE
DOVER, NJ

FIGURE 3
VOCs in Groundwater from Monitoring Wells and Injection Wells On and Near the Former Walt's Radiator Shop





LEGEND

- 2 FOOT GROUND SURFACE ELEVATION CONTOUR
- SHALLOW MONITORING WELL
- INTERMEDIATE MONITORING WELL
- DEEP MONITORING WELL

NOTES:

1. WELLS WITH PW DESIGNATION WERE INSTALLED IN APRIL AND MAY 2009 TO SERVE AS PERFORMANCE MONITORING WELLS FOR ISCO TREATMENT.
2. MAP SOURCE: STEWART SURVEYING AND ENGINEERING, LLC (JANUARY 2010)

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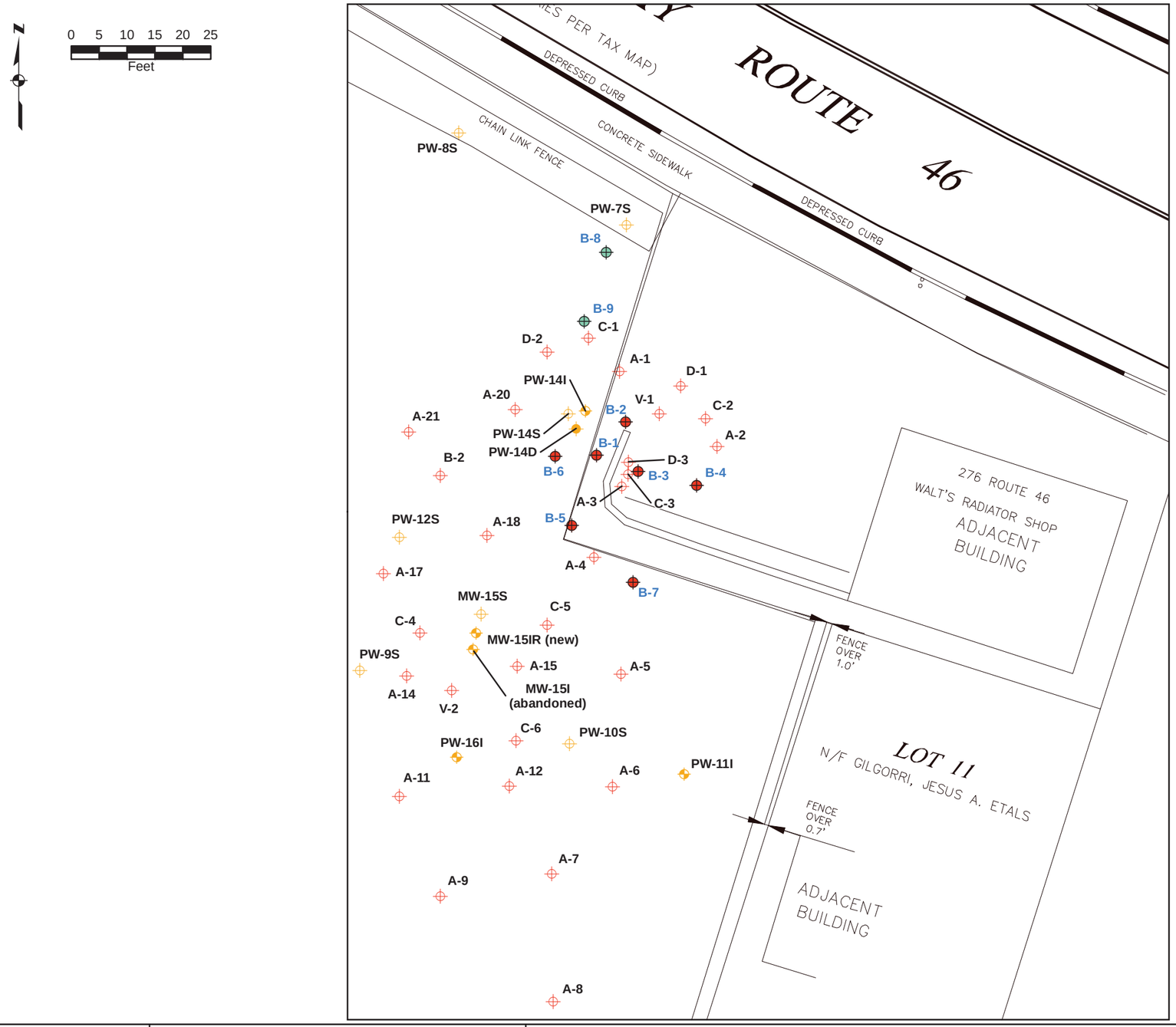
DOVER, NJ

DOVER MUNICIPAL WELL NO. 4 SUPERFUND SITE

OPERABLE UNIT 2 (OU2) FORMER DRY CLEANER

SCALE: 1" = 40'

FIGURE 4



LEGEND

- Soil Boring
- Soil Boring with Temporary Well Screen
- Shallow Monitoring Well
- Intermediate Monitoring Well
- Deep Monitoring Well
- Injection Well

NOTES

1. Injection Wells were installed in March 2010. The injection well depths are as follow:
   a. A- wells: Screened from 12 to 15 feet below ground surface.
   b. C- wells: Screened from 24 to 27 feet below ground surface.
   c. D -wells: Screened from 33 to 36 feet below ground surface.

3. Basemap prepared by Stewart Surveying and Engineering, LLC (January, 2010). Boring locations and MW-15IR location surveyed by Keller and Kirkpatrick on January 17, 2017.

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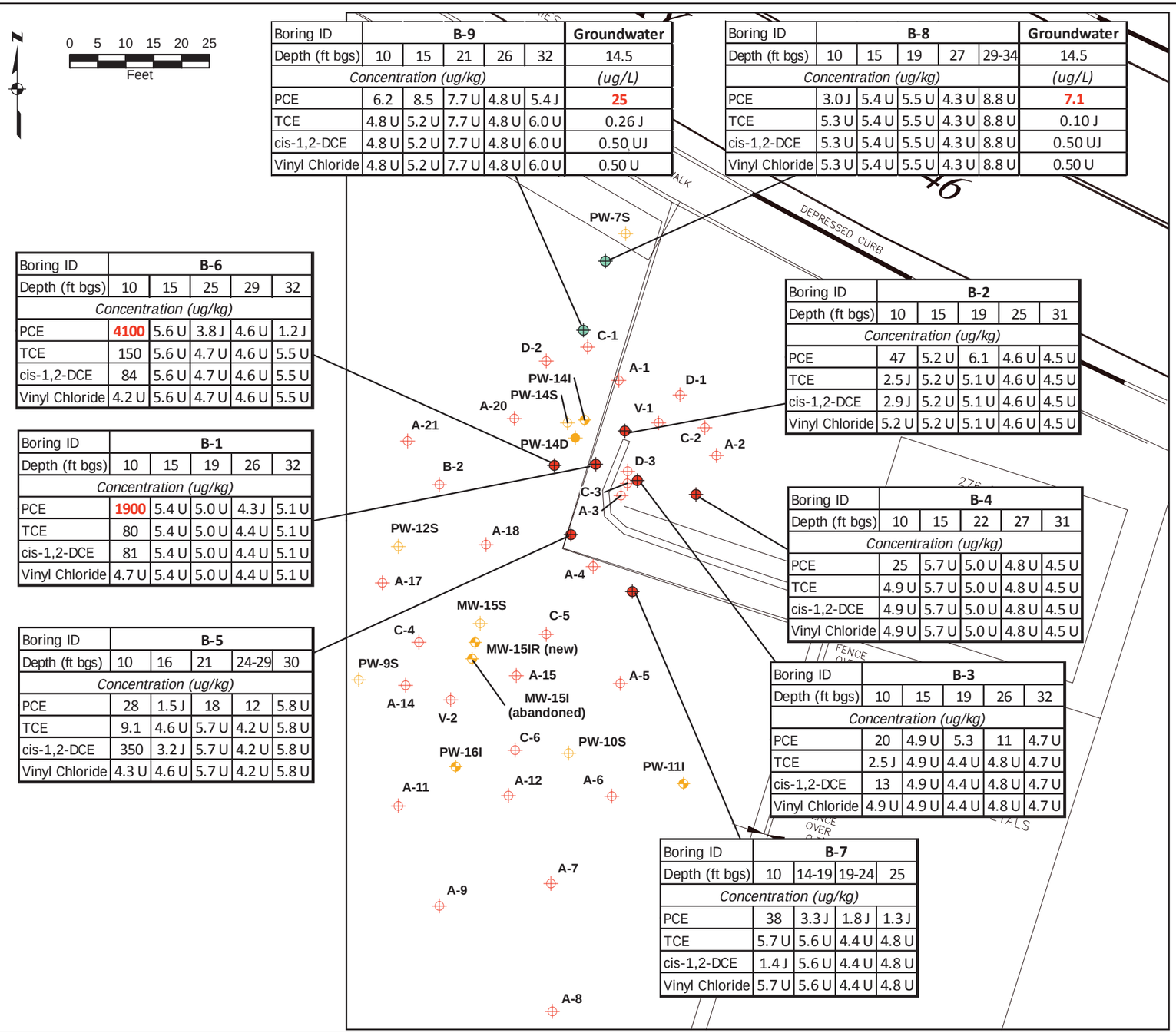
DOVER MUNICIPAL WELL NO. 4 SUPERFUND SITE
DOVER, NJ

FIGURE 5
BORING LOCATIONS



Boring ID	B-9					Groundwater
Depth (ft bgs)	10	15	21	26	32	14.5
Concentration (ug/kg)						*(ug/L)*
PCE	6.2	8.5	7.7 U	4.8 U	5.4 J	**25**
TCE	4.8 U	5.2 U	7.7 U	4.8 U	6.0 U	0.26 J
cis-1,2-DCE	4.8 U	5.2 U	7.7 U	4.8 U	6.0 U	0.50 UJ
Vinyl Chloride	4.8 U	5.2 U	7.7 U	4.8 U	6.0 U	0.50 U

Boring ID	B-8					Groundwater
Depth (ft bgs)	10	15	19	27	29-34	14.5
Concentration (ug/kg)						*(ug/L)*
PCE	3.0 J	5.4 U	5.5 U	4.3 U	8.8 U	**7.1**
TCE	5.3 U	5.4 U	5.5 U	4.3 U	8.8 U	0.10 J
cis-1,2-DCE	5.3 U	5.4 U	5.5 U	4.3 U	8.8 U	0.50 UJ
Vinyl Chloride	5.3 U	5.4 U	5.5 U	4.3 U	8.8 U	0.50 U

Boring ID	B-6				
Depth (ft bgs)	10	15	25	29	32
Concentration (ug/kg)					
PCE	**4100**	5.6 U	3.8 J	4.6 U	1.2 J
TCE	150	5.6 U	4.7 U	4.6 U	5.5 U
cis-1,2-DCE	84	5.6 U	4.7 U	4.6 U	5.5 U
Vinyl Chloride	4.2 U	5.6 U	4.7 U	4.6 U	5.5 U

Boring ID	B-2				
Depth (ft bgs)	10	15	19	25	31
Concentration (ug/kg)					
PCE	47	5.2 U	6.1	4.6 U	4.5 U
TCE	2.5 J	5.2 U	5.1 U	4.6 U	4.5 U
cis-1,2-DCE	2.9 J	5.2 U	5.1 U	4.6 U	4.5 U
Vinyl Chloride	5.2 U	5.2 U	5.1 U	4.6 U	4.5 U

Boring ID	B-1				
Depth (ft bgs)	10	15	19	26	32
Concentration (ug/kg)					
PCE	**1900**	5.4 U	5.0 U	4.3 J	5.1 U
TCE	80	5.4 U	5.0 U	4.4 U	5.1 U
cis-1,2-DCE	81	5.4 U	5.0 U	4.4 U	5.1 U
Vinyl Chloride	4.7 U	5.4 U	5.0 U	4.4 U	5.1 U

Boring ID	B-4				
Depth (ft bgs)	10	15	22	27	31
Concentration (ug/kg)					
PCE	25	5.7 U	5.0 U	4.8 U	4.5 U
TCE	4.9 U	5.7 U	5.0 U	4.8 U	4.5 U
cis-1,2-DCE	4.9 U	5.7 U	5.0 U	4.8 U	4.5 U
Vinyl Chloride	4.9 U	5.7 U	5.0 U	4.8 U	4.5 U

Boring ID	B-5				
Depth (ft bgs)	10	16	21	24-29	30
Concentration (ug/kg)					
PCE	28	1.5 J	18	12	5.8 U
TCE	9.1	4.6 U	5.7 U	4.2 U	5.8 U
cis-1,2-DCE	350	3.2 J	5.7 U	4.2 U	5.8 U
Vinyl Chloride	4.3 U	4.6 U	5.7 U	4.2 U	5.8 U

Boring ID	B-3				
Depth (ft bgs)	10	15	19	26	32
Concentration (ug/kg)					
PCE	20	4.9 U	5.3	11	4.7 U
TCE	2.5 J	4.9 U	4.4 U	4.8 U	4.7 U
cis-1,2-DCE	13	4.9 U	4.4 U	4.8 U	4.7 U
Vinyl Chloride	4.9 U	4.9 U	4.4 U	4.8 U	4.7 U

Boring ID	B-7			
Depth (ft bgs)	10	14-19	19-24	25
Concentration (ug/kg)				
PCE	38	3.3 J	1.8 J	1.3 J
TCE	5.7 U	5.6 U	4.4 U	4.8 U
cis-1,2-DCE	1.4 J	5.6 U	4.4 U	4.8 U
Vinyl Chloride	5.7 U	5.6 U	4.4 U	4.8 U

LEGEND

- Soil Boring
- Soil Boring with Temporary Well Screen
- Shallow Monitoring Well
- Intermediate Monitoring Well
- Deep Monitoring Well
- Injection Well

NOTES

1. Soil and groundwater samples were collected between January 11, 2017 and January 16, 2017.
2. Concentrations in red exceed the 2005 ROD criteria.
3. Basemap prepared by Stewart Surveying and Engineering, LLC (January, 2010). Boring locations and MW-15IR location surveyed by Keller and Kirkpatrick on January 17, 2017.

Laboratory Qualifiers
J: Reported value is an estimate
U: Analyte was not detected above the reporting limit

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DOVER MUNICIPAL WELL NO. 4 SUPERFUND SITE
DOVER, NJ

FIGURE 6
COMPOUNDS OF CONCERN IN SATURATED SOIL AND GROUNDWATER (JANUARY 2017)

APPENDIX E – CONCEPTUAL SITE MODEL

APPENDIX E
CONCEPTUAL SITE MODEL

E.1 CONTAMINANTS OF CONCERN

Groundwater cleanup standards identified in the 2005 ROD are the more stringent of the federal Maximum Contaminant Levels (MCLs), the New Jersey Drinking Water MCLs, and the New Jersey Groundwater Quality Standards (GWQS). A comparison of the VOC concentrations in groundwater to the MCLs and GWQS showed that PCE, TCE, cis-1,2-dichloroethene (cis-1,2-DCE), vinyl chloride (VC), and 1,1,2-TCA are the contaminants of concern (COCs) in groundwater.

E.2 SUMMARY OF HISTORICAL GROUNDWATER DATA

Prior to the LTRA monitoring program, groundwater data were collected at various shallow, intermediate, and deep wells located throughout OU1 during 15 sampling events conducted between September 1998 and September 2011. Groundwater monitoring was performed at 17 wells in early July 2011 to assist in planning for long-term monitoring. Many of the wells sampled during the July 2011 event had not been sampled since May 2007. The results of the September 1998 and July 2011 sampling events along with quarterly sampling data from December 2013 through September 2017 are summarized in tables that are provided in **Appendix D**. An interpretation of the historical groundwater data collected prior to and during the first 4 years of the LTRA groundwater monitoring program from the shallow, intermediate, and deep aquifers is discussed below.

E.3 NATURE AND EXTENT OF CONTAMINANTS OF CONCERN

DMW4 extracted groundwater from the deep aquifer from 1965 until 1980, at which time it was taken out of service because of the presence of chlorinated VOCs. Construction details for DMW4 are provided on **Appendix D, Figure 3-1**. Operation of DMW4 likely accelerated the migration of chlorinated VOCs from the shallow aquifer to the intermediate and deep aquifers, and ultimately to the well. Unconsolidated sediments, which fill the Rockaway River Valley, consist of fine sand and silt layers that act as confining units between the more permeable aquifers above and below them. In the valley close to DMW4, two silt layers separate the sand into three aquifers, an upper water table aquifer (shallow aquifer), and two underlying semi-confined aquifers, identified as intermediate and deep aquifers.

The 1990 RI conducted by NJDEP identified chlorinated VOCs near DMW4. PCE was detected north of DMW4 in the intermediate and deep glacial sand and gravel aquifers.

The 1990 RI did not define the source of the groundwater contamination. Between 1999 and 2003, EPA conducted a Preliminary Design Investigation as part of the OU1 Remedial Design. Groundwater and soil samples collected in 2001 indicated that the source of the chlorinated VOCs detected in DMW4 was contaminated soil located beneath and adjacent to the former dry cleaner building at 272 U.S. Route 46. Elevated PCE concentrations detected in a sediment sample collected from the sump in the basement of the dry cleaner building indicated that one possible release mechanism was the direct discharge of chlorinated cleaning solvents into the sump. Elevated PCE concentrations were also detected in the unsaturated soil beneath the parking lot east of the dry cleaner building indicating surface spills or discharges in this area.

As discussed in Section 1.1, EPA excavated and removed contaminated unsaturated soil from the Site and adjacent properties. Based on soil sampling performed in July 2010, after the first phase of ISCO

treatment, concentrations of VOCs sorbed onto saturated soil were significantly reduced (Malcolm Pirnie, Inc. 2010a), with residual PCE concentrations in soil below the ROD cleanup criteria. The results from the September 2011 and February 2012 monitoring conducted following completion of the Phase 2 ISO treatment showed that VOC concentrations in the source area near the former dry cleaner building had decreased significantly. Subsequent quarterly groundwater monitoring from 2013 through 2015, and semi-annual sampling in 2016 indicated the shallow, intermediate, and deep aquifer PCE plumes were stable or shrinking. However, PCE in the source area wells (i.e., PW-7S, MW-15S, and MW-15IR) continued to be detected at concentrations above cleanup criteria specified in the 2005 ROD.

Once discharged into the sump and adjacent to the building, the chlorinated solvents moved through the unsaturated soil and into the shallow aquifer. Groundwater in the shallow aquifer flows toward the Rockaway River. However, sampling data indicates that groundwater contamination does not extend to the river. **Appendix E, Figure 3-2** shows the COCs in groundwater samples collected from shallow monitoring wells and shows the approximate extent of the shallow groundwater plume. The presence of compounds typically associated with the intrinsic biodegradation of PCE (TCE, cis-1,2-DCE, and VC) indicates that biologically driven natural attenuation may play a role in controlling the rate and extent of shallow aquifer plume migration. Advection, dispersion, and sorption are also contributing to the natural attenuation of chlorinated VOC concentrations within the shallow aquifer.

Groundwater sampling results also show that chlorinated VOCs have migrated through the shallow aquifer and first aquitard into the intermediate aquifer immediately downgradient of the Site. **Appendix E, Figure 3-3** shows the COCs in groundwater samples collected from intermediate monitoring wells and shows the approximate extent of the intermediate groundwater plume. Groundwater flow in the intermediate aquifer is toward the southeast. During previous sampling events, chlorinated VOCs were detected in the intermediate aquifer as far as Carrol Street, approximately 1,400 ft southeast of the Site. The intermediate plume has been relatively stable over time; geochemical indicators do not indicate that significant biodegradation is occurring. Advection, dispersion, and sorption processes are contributing to the natural attenuation of the chlorinated VOCs within the intermediate aquifer.

Groundwater sampling results also show that chlorinated VOCs have migrated through the intermediate aquifer into the deep aquifer. **Appendix E, Figure 3-4** shows the COCs in groundwater samples collected from deep monitoring wells and the extent of contaminated groundwater in the deep aquifer. In May 2017, concentrations of PCE above the groundwater standard of 1.0 micrograms per liter (µg/L) were detected in MW-19DR (15 µg/L), the second furthest downgradient monitoring well. PCE was not detected in groundwater samples collected from furthest downgradient well MW-2D in May 2017. In April 2018, PCE continued to be detected at a concentration above the groundwater standard in MW-19DR (31 µg/L), while PCE concentrations continued to be detected below the 1.0 µg/L groundwater standard.

E.4 CURRENT AND FUTURE POTENTIAL RECEPTORS

The Final RI Report (Malcolm Pirnie 2005a) contained a human health evaluation and screening-level ecological risk assessment, which established current and future potential receptors for groundwater.

Currently, the Town of Dover supplies treated potable water. The water supply is obtained from local groundwater wells not including DMW4, which has been out of service since 1980. Therefore, there are no human receptors currently exposed through potable use of the groundwater. Should DMW4 become operational in the future while groundwater concentrations still exceed health-based screening levels, potential future human receptors include residents and commercial/industrial workers, if exposed to

untreated water. Considering the depth to groundwater in the vicinity of the Site may be as shallow as 4 to 5 ft, construction/utility workers may be exposed to groundwater that infiltrates an excavation for construction/utility work and are therefore current and future potential receptors.

Terrestrial ecological receptors are not expected to have direct contact with contaminated groundwater. Groundwater in the shallow aquifer flows toward the Rockaway River. However, sampling data indicate groundwater contamination does not extend to the river. Therefore, there are no ecological receptors currently exposed to contaminated groundwater.

Vapor intrusion into occupied structures is a potential receptor pathway. In 2003, EPA initiated a monitoring program to determine whether contaminated groundwater present beneath residences in the vicinity of OU2 was a source of vapor intrusion. EPA performed sub-slab soil gas sampling, as well as indoor and ambient outdoor sampling in twelve homes located near the dry cleaner property. Six of the homes indicated a potential for exposure to PCE and TCE. Three of the six homes were demolished as part of the remedy, with the remaining three homes requiring further investigation. EPA is continuing to monitor those homes and will make any necessary adjustments to the monitoring program based on groundwater sampling results.

E.5 SUMMARY OF PREVIOUS MONITORED NATURAL ATTENUATION EVALUATION

MNA was evaluated as a remedial alternative for the shallow, intermediate, and deep aquifers in the Final Feasibility Study, DMW4, OU2, Dover, New Jersey (Malcolm Pirnie Inc. 2005b). The 2005 evaluation included plume stability evaluations for chlorinated VOCs in the shallow, intermediate, and deep aquifers. Geochemical data collected from the three aquifers were also evaluated to assess whether intrinsic bioremediation was occurring. Solute transport modeling was performed using the BIOCHLOR model. The results of the 2005 MNA evaluation are summarized below. Tables and figures from the 2005 MNA evaluation are provided in **Appendix E**.

E.5.1 Plume Stability

A historical database showing statistically significant plume stabilization and/or loss of contaminant mass over time can be used to demonstrate that natural attenuation is occurring at a site. For the 2005 MNA evaluation, the concentrations of PCE, TCE, cis-1,2-DCE, and VC were plotted versus time on a logarithmic scale for each monitoring well. The best-fit line was then determined by linear regression and evaluated to determine if the slope of the line was significant at the 95 percent significance level (**Appendix E**, [Figures 4-1 through 4-4 for graphs of the data, and Table 4-2 for a table showing the F-statistic calculated for the regression analyses]). For the shallow aquifer plume, the data suggested that PCE and its daughter products were attenuating downgradient from the source area. The primary attenuation mechanisms were initially deemed to be anaerobic biodegradation, advection, and dispersion. Anaerobic biodegradation was evaluated in 2005 and is further discussed below. The intermediate aquifer plume was determined to be stable, as the data indicated that the total mass and plume size remained essentially the same over the period of time from which data were available. For the deep aquifer plume, data indicated that the plume was relatively stable.

E.5.2 Geochemical Evaluation

Groundwater geochemical data were evaluated to assess whether intrinsic bioremediation was occurring in the groundwater plumes. In the shallow aquifer, elevated chloride concentrations at source area wells and the presence of PCE daughter products suggested that reductive dechlorination was occurring.

However, the absence of methane/ethane/ethene indicated incomplete biotransformation of PCE to methane/ethane/ethene. In the intermediate and deep aquifers, chloride concentrations were higher in downgradient wells than in upgradient wells, suggesting that reductive dechlorination may have been occurring. However, unlike in the shallow aquifer, no PCE daughter products were detected in the intermediate and deep aquifers.

A bioattenuation screening process was employed in accordance with the Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater (EPA 1998). Table 4-3 in **Appendix B** presents the results of the scoring performed for various monitoring locations in the shallow, intermediate, and deep aquifer wells.

Results of the bioattenuation screening for the 2005 MNA sampling event indicated that there was limited evidence of anaerobic biodegradation in the shallow aquifer, and inadequate evidence of anaerobic biodegradation in the intermediate and deep aquifers. However, other degradation mechanisms, including dilution, dispersion, abiotic degradation, and co-metabolic degradation, may be a factor in reducing contaminant concentrations, particularly in the shallow aquifer. Further evaluation of natural attenuation is planned for a future LTRA event, during which, biodegradation parameters (total organic carbon (TOC), dissolved gases [methane/ethane/ethene], sulfide, sulfate, nitrate, chloride, and ferrous iron) will be collected in addition to the VOC samples using low-flow sampling techniques.

E.5.3 Solute Transport Modeling

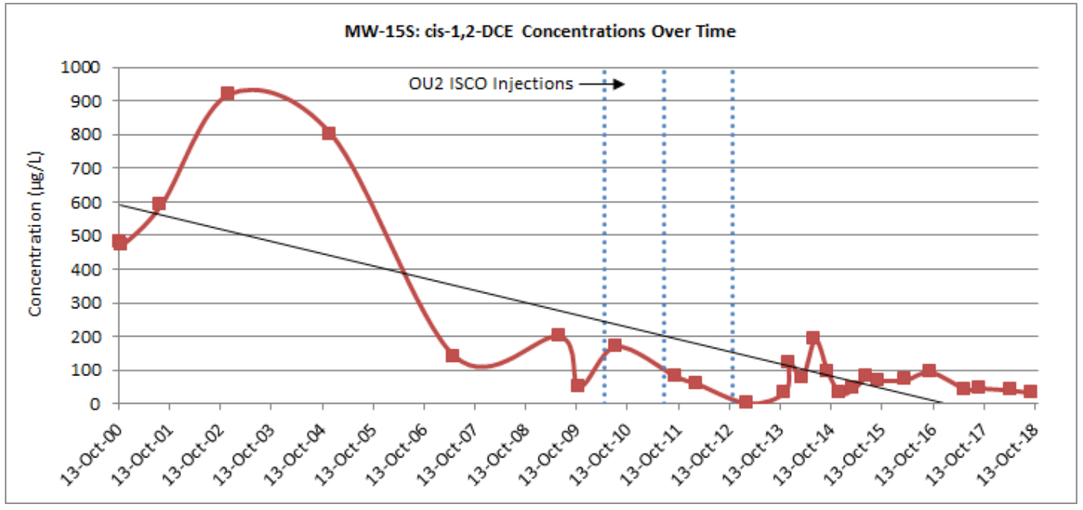
Solute transport modeling was conducted using the analytical model BIOCHLOR, which has the ability to simulate 1-dimensional advection, 3-dimensional dispersion, linear adsorption, and biotransformation via reductive dechlorination. Model runs for all aquifers were simulated for a 30-year time period. For the shallow aquifer, biodegradation was incorporated in the model based on the geochemical results described above. The model indicated that the PCE plume would attenuate prior to reaching the nearest shallow aquifer receptor, which was determined to be the Rockaway River.

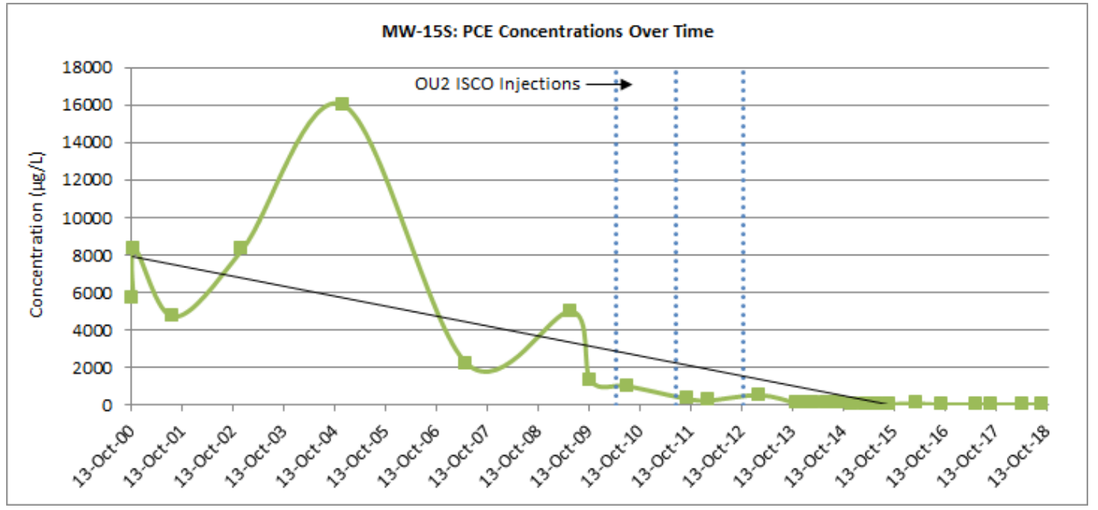
For the intermediate and deep aquifers, model simulations were performed without biodegradation because geochemical data indicated that biodegradation was not a significant attenuating mechanism in these aquifers. In the intermediate aquifer, simulations were performed to evaluate whether other attenuation mechanisms could control the rate and extent of plume migration so that cleanup standards would not be exceeded at the closest receptor (the Howmet property well located at 9-10 Roy Street, approximately 3,000 ft downgradient of MW-2C). The simulations showed that significant attenuation in terms of dilution and dispersion would occur before the chlorinated VOCs in the intermediate aquifer would reach the Howmet well.

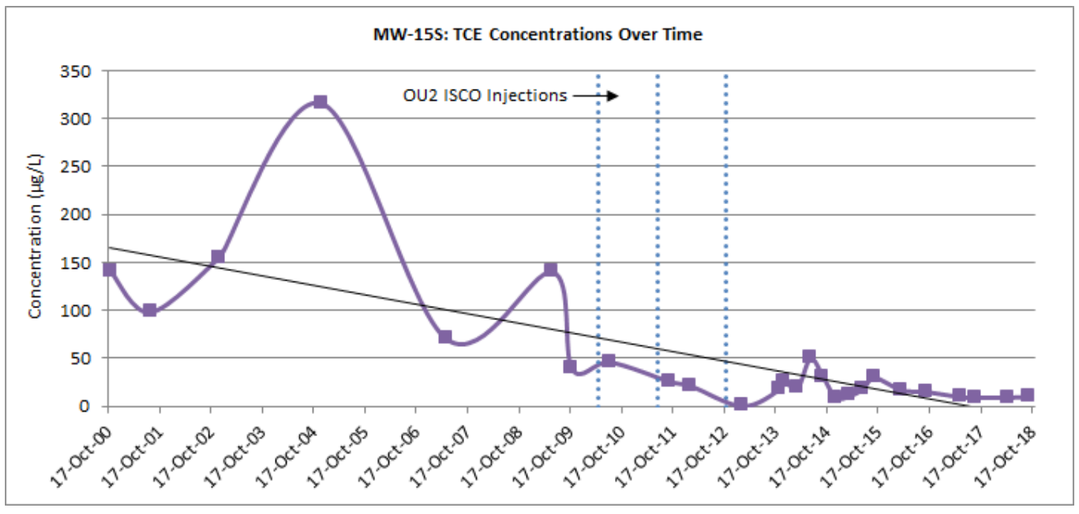
No potential human or ecological receptors were identified for the deep aquifer (given that DMW4 is no longer used); therefore, the objective of the modeling for the deep aquifer was to assess plume behavior over 30 years. Results from the model simulation suggested the PCE concentrations would attenuate below cleanup standards approximately 500 to 600 ft beyond MW-2D. Figures 4-5 through 4-8 in **Appendix D** illustrate the BIOCHLOR model output for all three aquifer simulations.

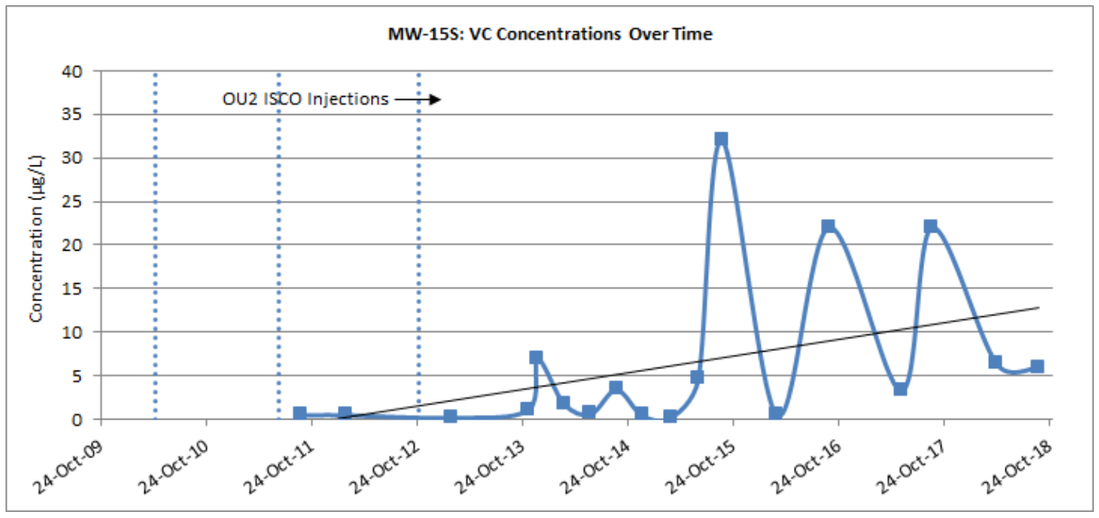
APPENDIX F – TREND ANALYSES & MANN-KENDALL TEST RESULTS

Appendix E
Time-Series Plots for Representative Wells and Select Contaminants
Fifth Annual LTRA Groundwater Monitoring Report
Dover Municipal Well No. 4 Superfund Site, Dover, New Jersey



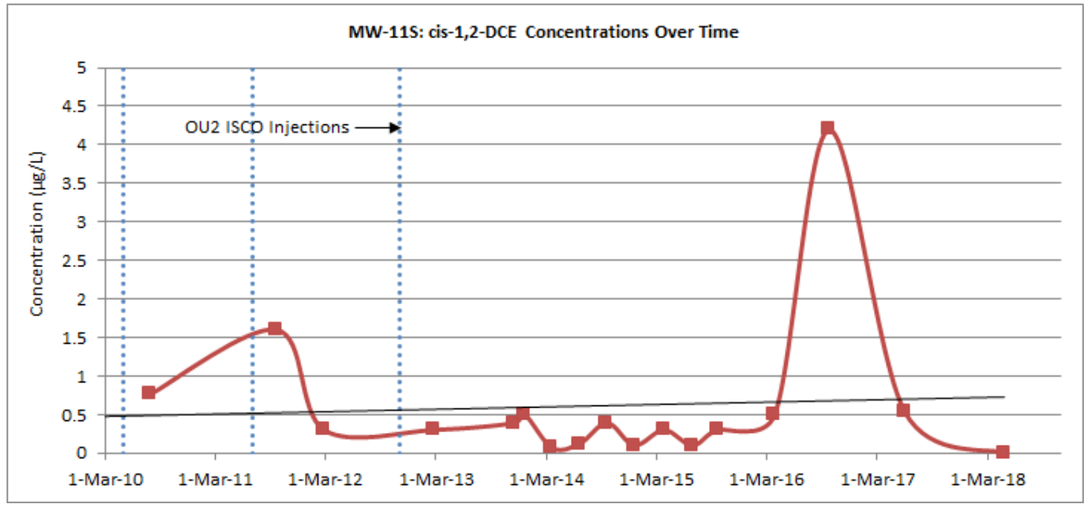


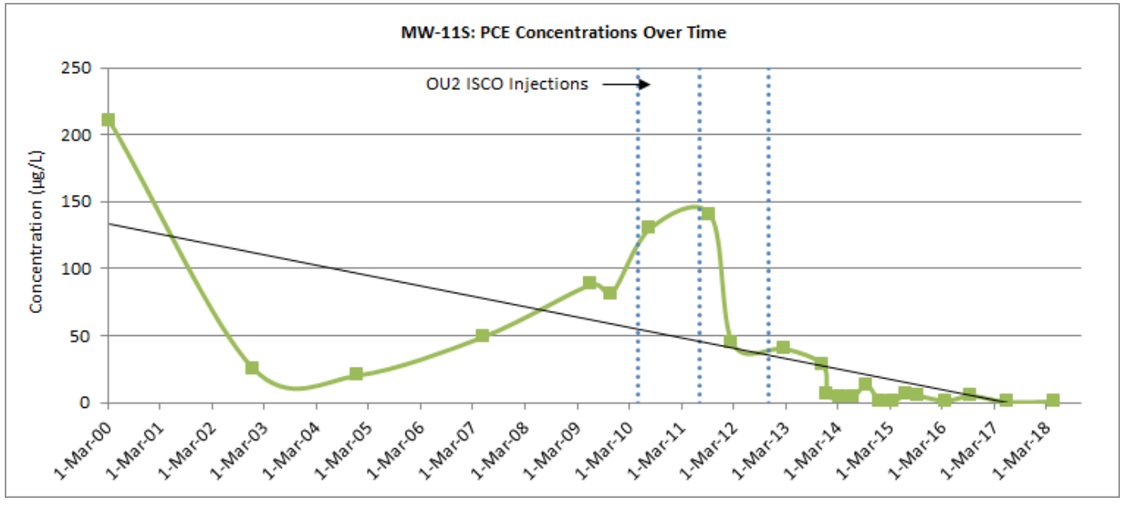


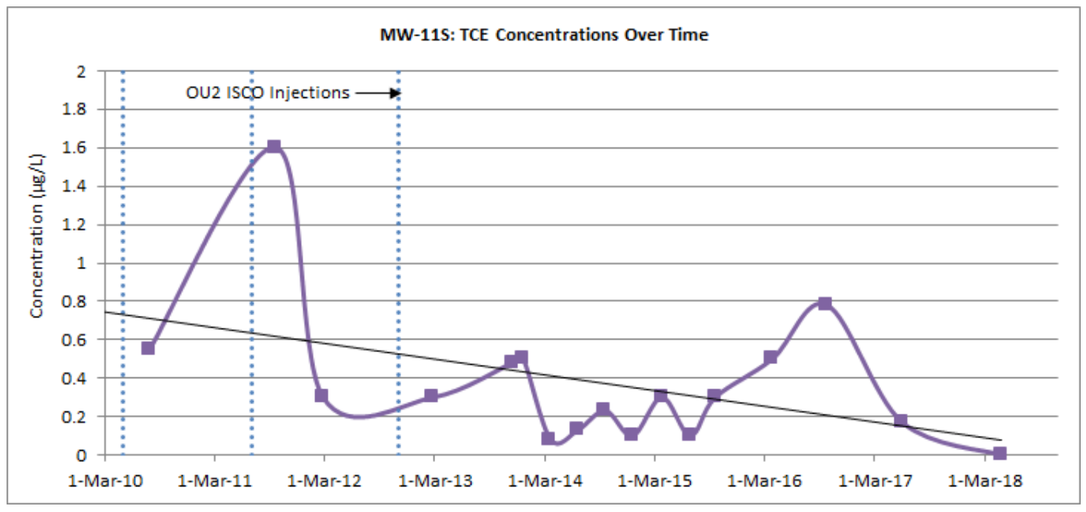


Note: ND values assigned the MDL. OU2 ISCO injections were performed in April/May 2010, June/July 2011 and October/November 2012.

Appendix E
Time-Series Pots for Representative Wells and Select Contaminants
LTRA Groundwater Monitoring Report
Dover Municipal Well No. 4 Superfund Site, Dover, New Jersey

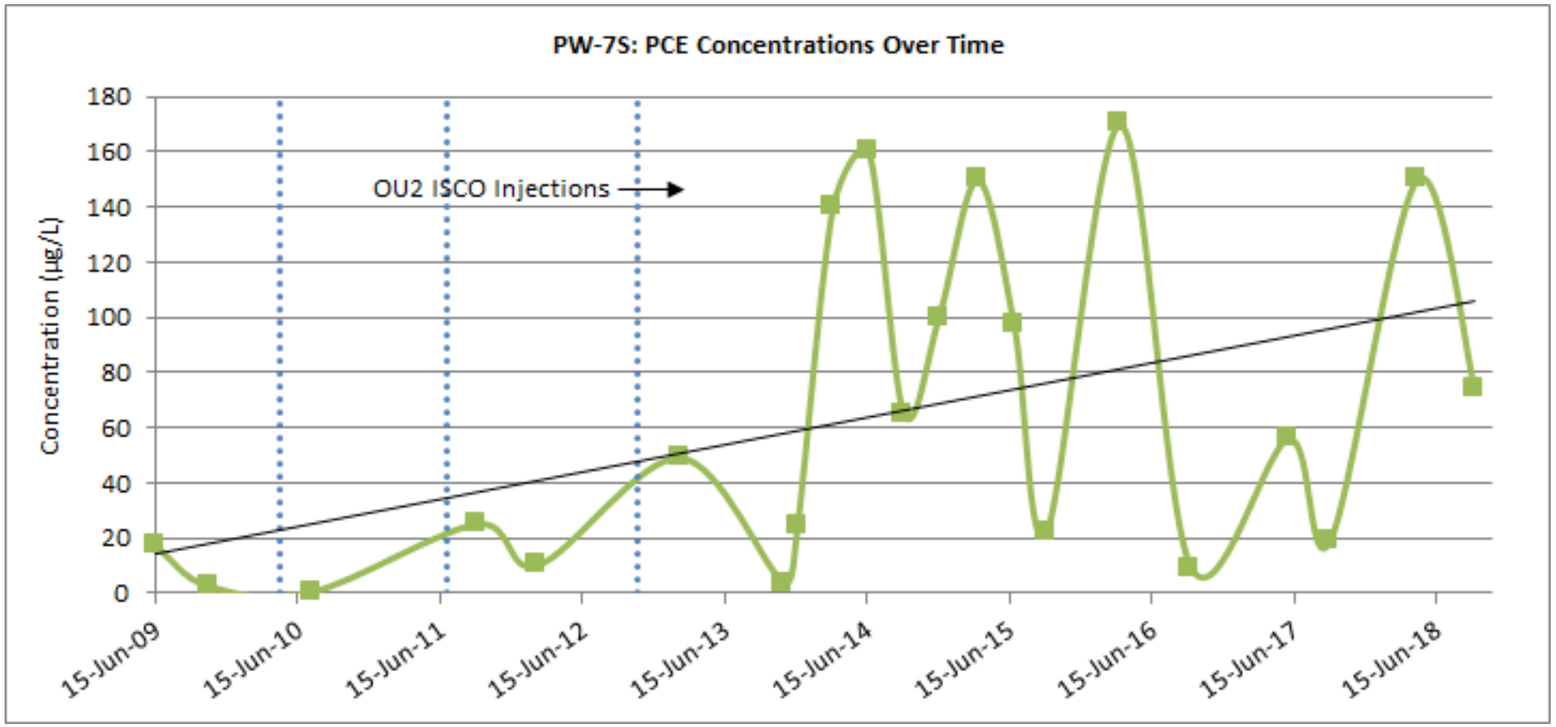






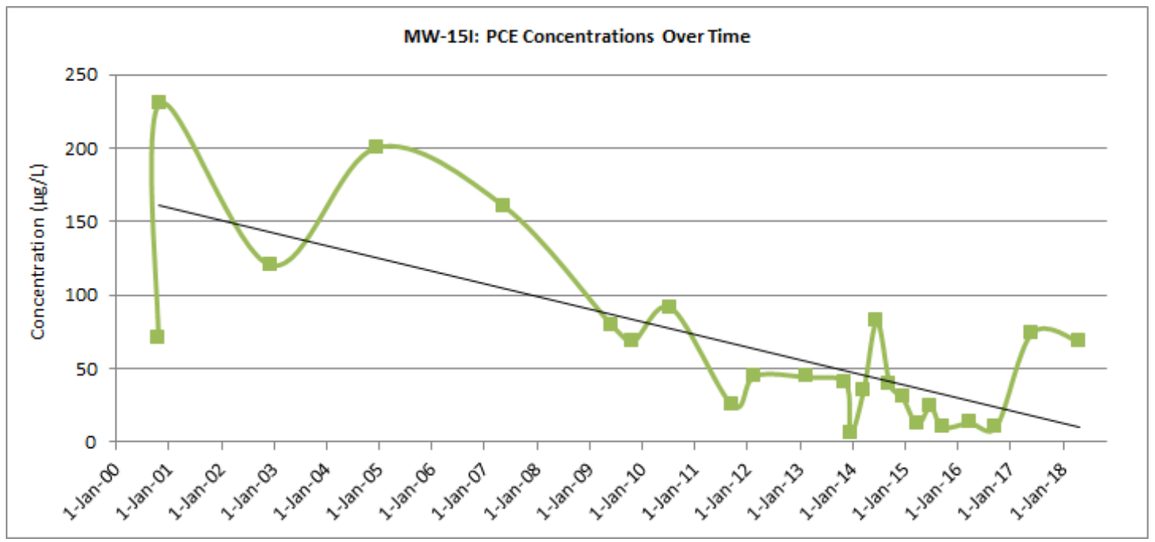
Note: ND values assigned the MDL. OU2 ISCO injections were performed in April/May 2010, June/July 2011 and October/November 2012.

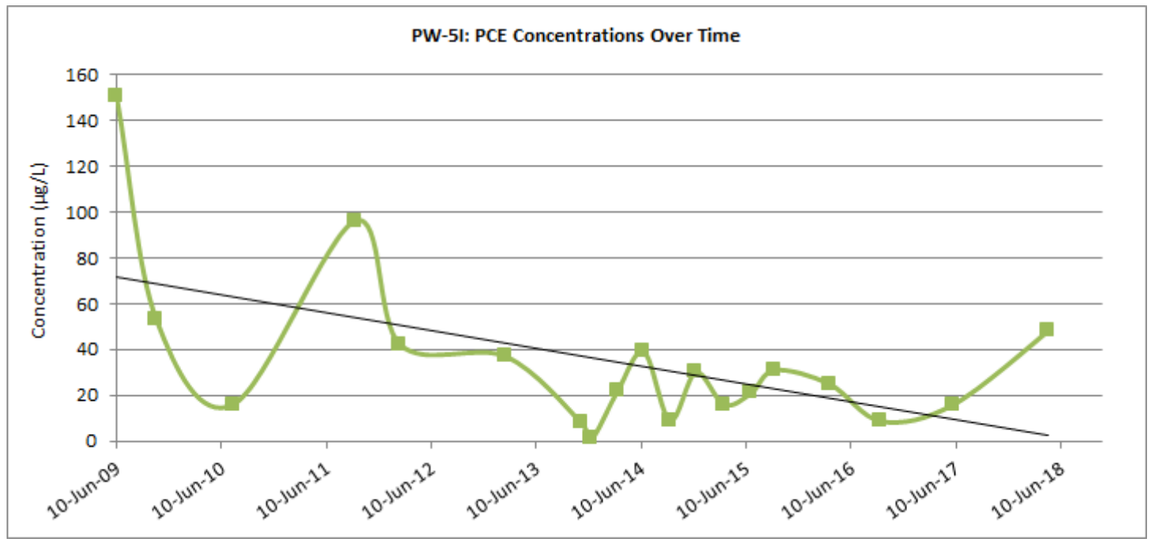
Appendix E
Time-Series Pots for Representative Wells and Select Contaminants
LTRA Groundwater Monitoring Report
Dover Municipal Well No. 4 Superfund Site, Dover, New Jersey

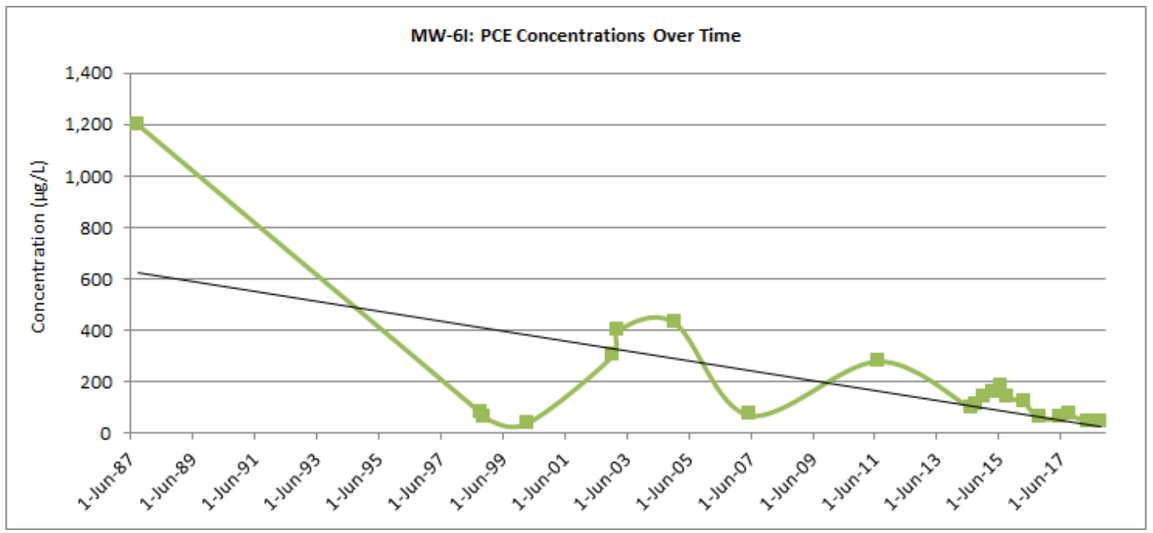


Note: ND values assigned the MDL. OU2 ISCO injections were performed in April/May 2010, June/July 2011 and October/November 2012.

Appendix E
Time-Series Pots for Representative Wells and Select Contaminants
LTRA Groundwater Monitoring Report
Dover Municipal Well No. 4 Superfund Site, Dover, New Jersey

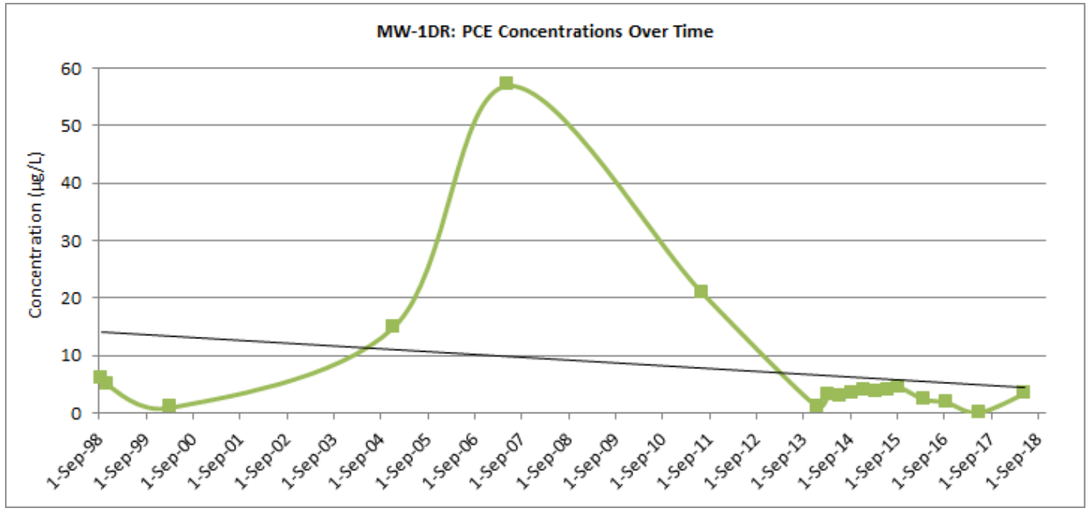


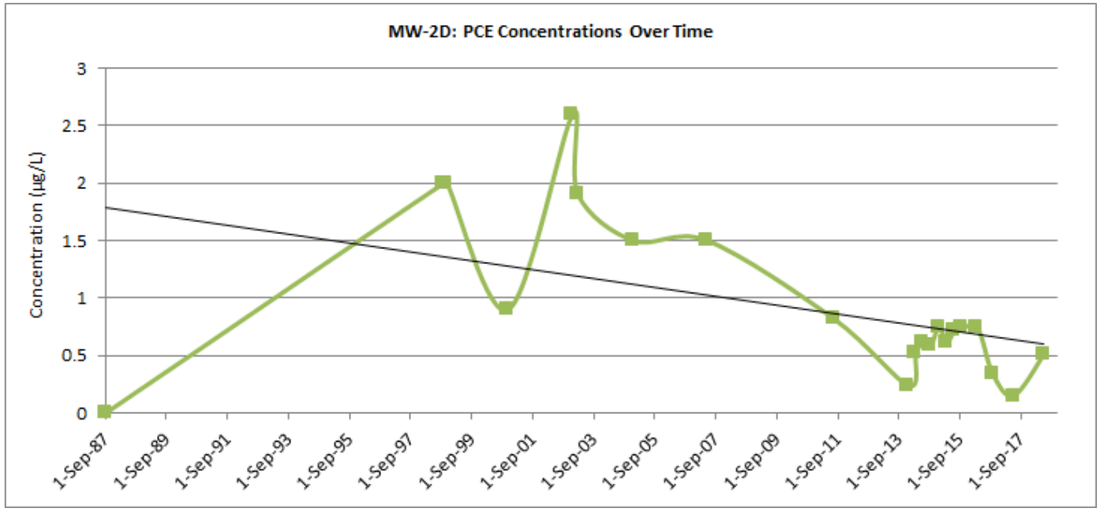




Note: ND values assigned the MDL.

Appendix E
Time-Series Pots for Representative Wells and Select Contaminants
LTRA Groundwater Monitoring Report
Dover Municipal Well No. 4 Superfund Site, Dover, New Jersey





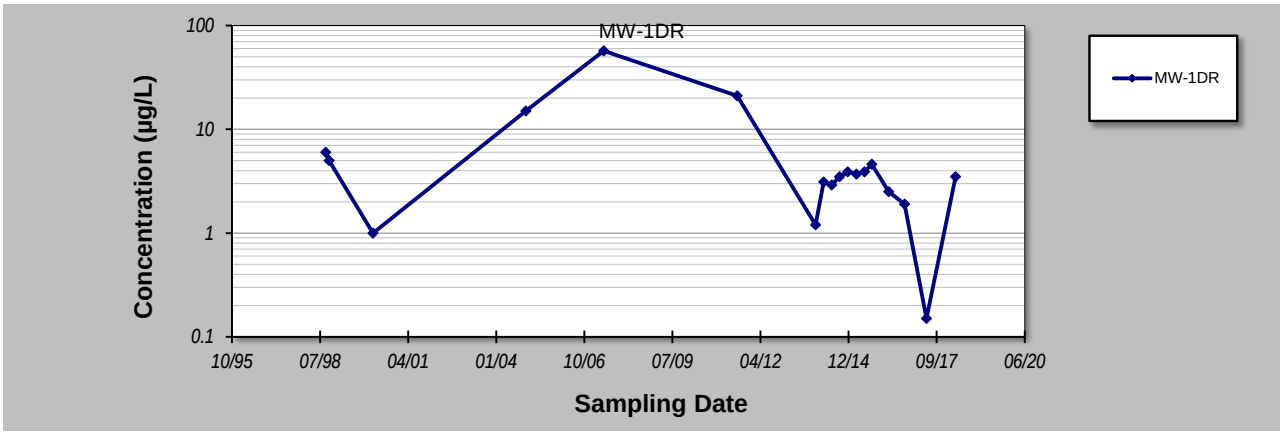
Note: ND values assigned the MDL.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	November-18	Job ID:	LTRA Groundwater Monitoring Program
Facility Name:	Dover Municipal Well No. 4 Superfund Site	Constituent:	PCE
Conducted By:	EA Engineering, Science, and Technology	Concentration Units:	µg/L

Sampling Point ID: MW-1DR

Sampling Event	Sampling Date	PCE CONCENTRATION (µg/L)
1	25-Sep-98	6
2	4-Nov-98	5
3	15-Mar-00	1
4	14-Dec-04	15
5	17-May-07	57
6	10-Jul-11	21
7	18-Dec-13	1.2
8	19-Mar-14	3.1
9	17-Jun-14	2.9
10	16-Sep-14	3.5
11	16-Dec-14	3.9
12	25-Mar-15	3.7
13	26-Jun-15	3.9
14	17-Sep-15	4.6
15	25-Mar-16	2.5
16	23-Sep-16	1.9
17	30-May-17	0.15
18	25-Apr-18	3.5
19		
20		
Coefficient of Variation:		1.71
Mann-Kendall Statistic (S):		-41
Confidence Factor:		93.4%
Concentration Trend:		Prob. Decreasing



Notes:

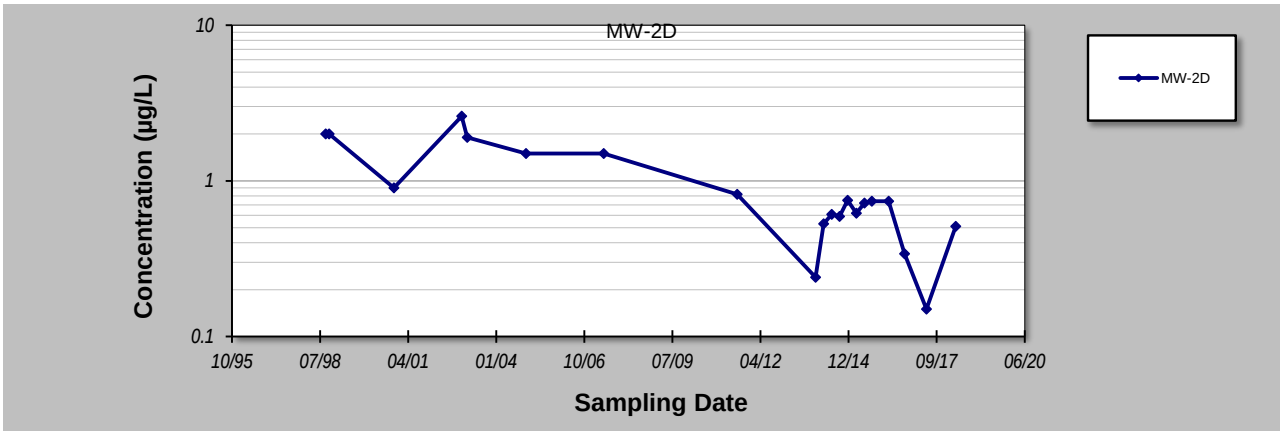
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	November-18	Job ID:	LTRA Groundwater Monitoring Program
Facility Name:	Dover Municipal Well No. 4 Superfund Site	Constituent:	PCE
Conducted By:	EA Engineering, Science, and Technology	Concentration Units:	µg/L

Sampling Point ID: MW-2D

Sampling Event	Sampling Date	PCE CONCENTRATION (µg/L)
1	25-Sep-98	2
2	5-Nov-98	2
3	7-Nov-00	0.9
4	17-Dec-02	2.6
5	19-Feb-03	1.9
6	16-Dec-04	1.5
7	18-May-07	1.5
8	10-Jul-11	0.82
9	17-Dec-13	0.24
10	18-Mar-14	0.53
11	17-Jun-14	0.61
12	16-Sep-14	0.59
13	15-Dec-14	0.75
14	25-Mar-15	0.62
15	26-Jun-15	0.72
16	17-Sep-15	0.74
17	25-Mar-16	0.74
18	23-Sep-16	0.34
19	30-May-17	0.15
20	26-Apr-18	0.51
21		
22		
23		
24		
25		
Coefficient of Variation:		0.69
Mann-Kendall Statistic (S):		-107
Confidence Factor:		>99.9%
Concentration Trend:		Decreasing



Notes:

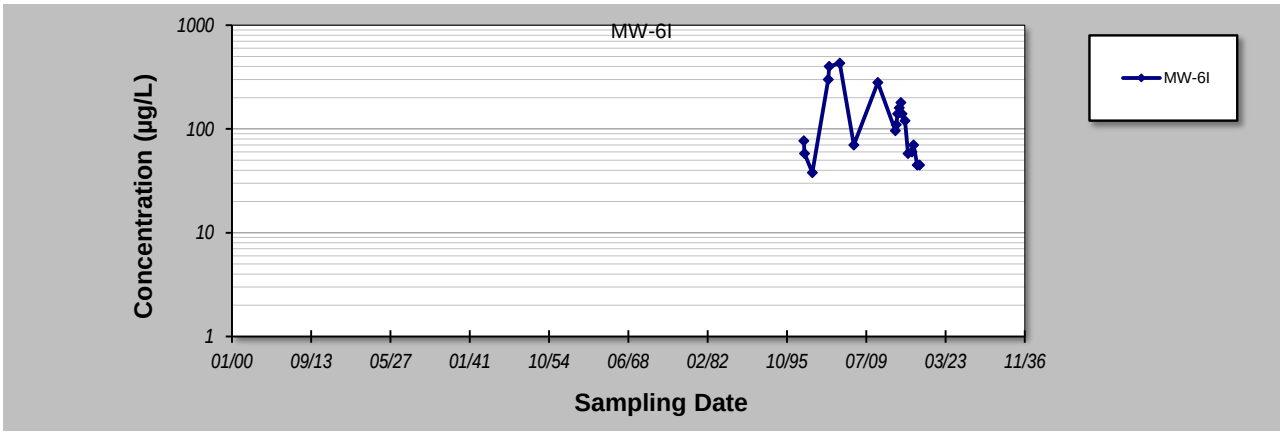
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	November-18	Job ID:	LTRA Groundwater Monitoring Program
Facility Name:	Dover Municipal Well No. 4 Superfund Site	Constituent:	PCE
Conducted By:	EA Engineering, Science and Technology	Concentration Units:	µg/L

Sampling Point ID: MW-6I

Sampling Event	Sampling Date	PCE CONCENTRATION (µg/L)
1	28-Sep-98	77
2	6-Nov-98	58
3	16-Mar-00	38
4	18-Dec-02	300
5	19-Feb-03	400
6	17-Dec-04	430
7	21-May-07	70
8	10-Jul-11	280
9	22-Jul-14	96.4
10	17-Sep-14	110
11	16-Dec-14	140
12	25-Mar-15	160
13	26-Jun-15	180
14	17-Sep-15	140
15	25-Mar-16	120
16	22-Sep-16	58
17	30-May-17	60
18	13-Sep-17	70
19	26-Apr-18	45
20	19-Sep-18	45
21		
22		
23		
24		
25		
Coefficient of Variation:		0.82
Mann-Kendall Statistic (S):		-46
Confidence Factor:		92.7%
Concentration Trend:		Prob. Decreasing



Notes:

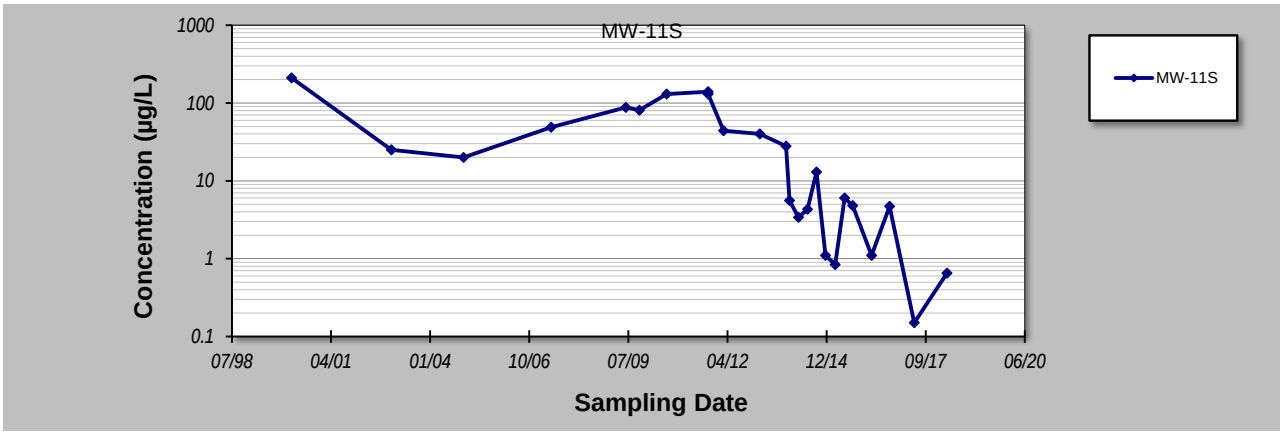
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	November-18	Job ID:	LTRA Groundwater Monitoring Program
Facility Name:	Dover Municipal Well No. 4 Superfund Site	Constituent:	PCE
Conducted By:	EA Engineering, Science, and Technology	Concentration Units:	µg/L

Sampling Point ID: **MW-11S**

Sampling Event	Sampling Date	PCE CONCENTRATION (µg/L)
1	17-Mar-00	210
2	18-Dec-02	25
3	16-Dec-04	20
4	18-May-07	49
5	10-Jun-09	88
6	26-Oct-09	81
7	26-Jul-10	130
8	19-Sep-11	140
9	19-Sep-11	130
10	22-Feb-12	44
11	22-Feb-13	40
12	13-Nov-13	28
13	18-Dec-13	5.6
14	19-Mar-14	3.4
15	18-Jun-14	4.3
16	17-Sep-14	13
17	16-Dec-14	1.1
18	24-Mar-15	0.84
19	26-Jun-15	6
20	17-Sep-15	4.8
21	25-Mar-16	1.1
22	22-Sep-16	4.7
23	30-May-17	0.15
24	25-Apr-18	0.65
25		
Coefficient of Variation:		1.34
Mann-Kendall Statistic (S):		-174
Confidence Factor:		>99.9%
Concentration Trend:		Decreasing



Notes:

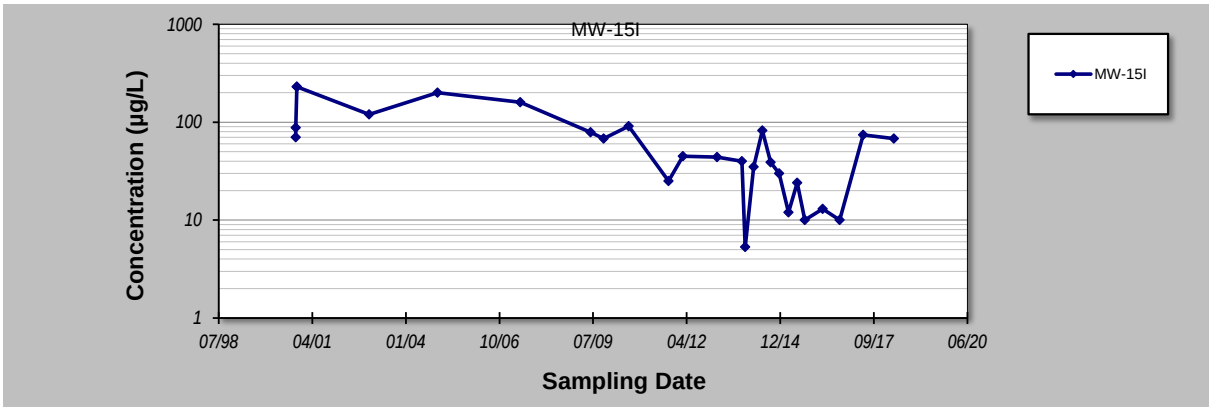
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	November-18	Job ID:	LTRA Groundwater Monitoring Program
Facility Name:	Dover Municipal Well No. 4 Superfund Site	Constituent:	PCE
Conducted By:	EA Engineering, Science, and Technology	Concentration Units:	µg/L

Sampling Point ID: MW-15I

Sampling Event	Sampling Date	PCE CONCENTRATION (µg/L)
1	24-Oct-00	70
2	24-Oct-00	88
3	6-Nov-00	230
4	6-Nov-00	230
5	18-Dec-02	120
6	17-Dec-04	200
7	21-May-07	160
8	9-Jun-09	79
9	27-Oct-09	68
10	22-Jul-10	91
11	20-Sep-11	25
12	21-Feb-12	45
13	20-Feb-13	44
14	13-Nov-13	40
15	17-Dec-13	5.3
16	18-Mar-14	35
17	18-Jun-14	82
18	16-Sep-14	39
19	15-Dec-14	30
20	24-Mar-15	12
21	26-Jun-15	24
22	16-Sep-15	10
23	25-Mar-16	13
24	22-Sep-16	10
25	30-May-17	74
26	25-Apr-18	68
27		
28		
29		
30		
Coefficient of Variation:		0.90
Mann-Kendall Statistic (S):		-176
Confidence Factor:		>99.9%
Concentration Trend:		Decreasing



Notes:

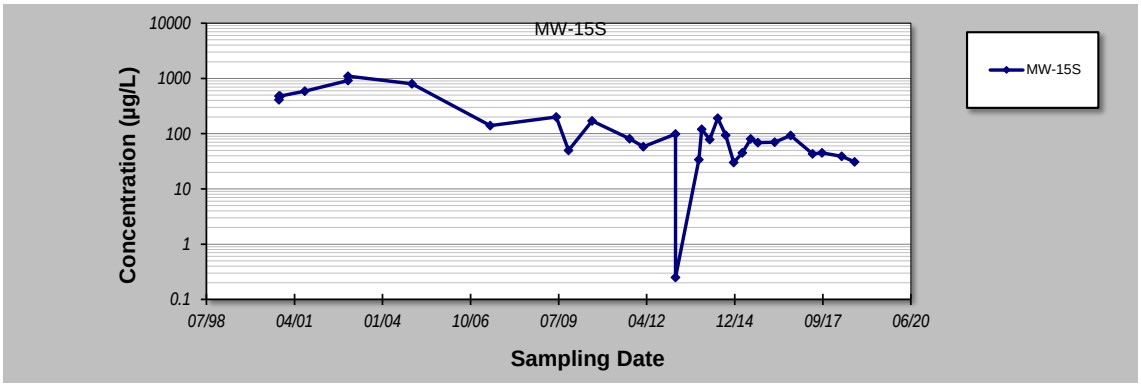
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	November-18	Job ID:	LTRA Groundwater Monitoring Program
Facility Name:	Dover Municipal Well No. 4 Superfund Site	Constituent:	cis-1,2-DCE
Conducted By:	EA Engineering, Science, and Technology	Concentration Units:	µg/L

Sampling Point ID: MW-15S

Sampling Event	Sampling Date	CIS-1,2-DCE CONCENTRATION (µg/L)
1	24-Oct-00	480
2	24-Oct-00	410
3	6-Nov-00	470
4	6-Nov-00	480
5	14-Aug-01	590
6	18-Dec-02	920
7	18-Dec-02	1100
8	14-Dec-04	800
9	21-May-07	140
10	9-Jun-09	200
11	27-Oct-09	50
12	22-Jul-10	170
13	20-Sep-11	81
14	23-Feb-12	58
15	22-Feb-13	99
16	22-Feb-13	0.25
17	14-Nov-13	34
18	17-Dec-13	120
19	18-Mar-14	78
20	18-Jun-14	190
21	16-Sep-14	94
22	15-Dec-14	30
23	24-Mar-15	45
24	26-Jun-15	80
25	16-Sep-15	69
26	25-Mar-16	70
27	22-Sep-16	93
28	30-May-17	43
29	13-Sep-17	45
30	25-Apr-18	39
31	19-Sep-18	31
32		
33		
34		
35		
Coefficient of Variation:		1.25
Mann-Kendall Statistic (S):		-253
Confidence Factor:		>99.9%
Concentration Trend:		Decreasing



Notes:

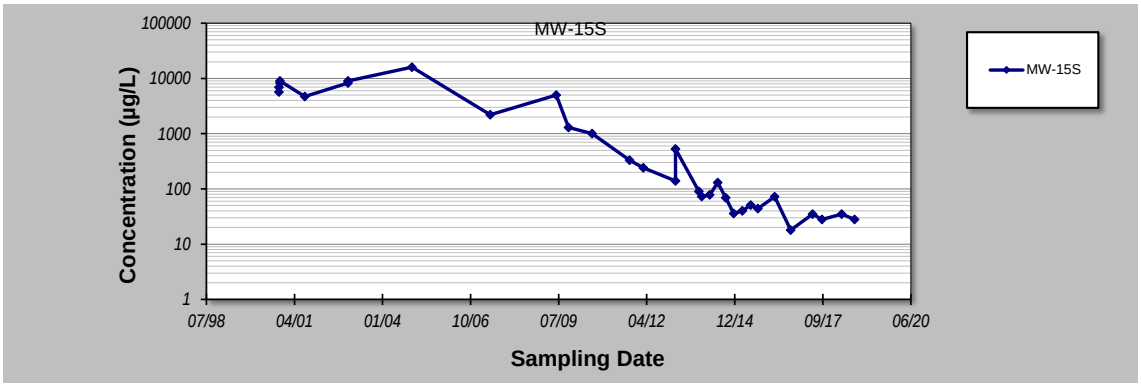
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	November-18	Job ID:	LTRA Groundwater Monitoring Program
Facility Name:	Dover Municipal Well No. 4 Superfund Site	Constituent:	PCE
Conducted By:	EA Engineering, Science, and Technology	Concentration Units:	µg/L

Sampling Point ID: MW-15S

Sampling Event	Sampling Date	PCE CONCENTRATION (µg/L)
1	24-Oct-00	5700
2	24-Oct-00	6900
3	6-Nov-00	8300
4	6-Nov-00	9000
5	14-Aug-01	4700
6	18-Dec-02	8300
7	18-Dec-02	9000
8	14-Dec-04	16000
9	21-May-07	2200
10	9-Jun-09	5000
11	27-Oct-09	1300
12	22-Jul-10	1000
13	20-Sep-11	330
14	23-Feb-12	240
15	22-Feb-13	140
16	22-Feb-13	530
17	14-Nov-13	90
18	17-Dec-13	73
19	18-Mar-14	78
20	18-Jun-14	130
21	16-Sep-14	69
22	15-Dec-14	36
23	24-Mar-15	40
24	26-Jun-15	51
25	16-Sep-15	44
26	25-Mar-16	72
27	22-Sep-16	18
28	30-May-17	35
29	13-Sep-17	28
30	25-Apr-18	35
31	19-Sep-18	28
32		
33		
34		
35		
Coefficient of Variation:		1.57
Mann-Kendall Statistic (S):		-371
Confidence Factor:		>99.9%
Concentration Trend:		Decreasing



Notes:

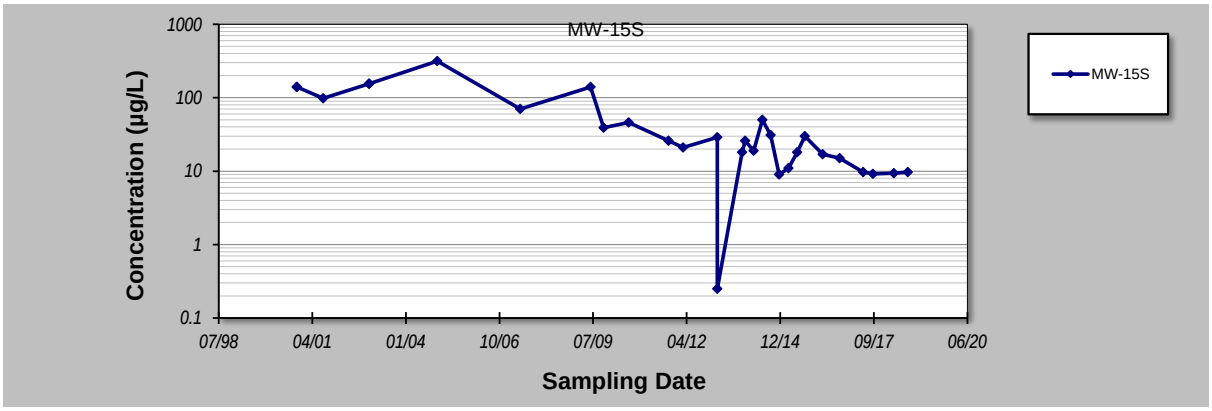
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	November-18	Job ID:	LTRA Groundwater Monitoring Program
Facility Name:	Dover Municipal Well No. 4 Superfund Site	Constituent:	TCE
Conducted By:	EA Engineering, Science, and Technology	Concentration Units:	µg/L

Sampling Point ID: MW-15S

Sampling Event	Sampling Date	TCE CONCENTRATION (µg/L)
1	6-Nov-00	140
2	6-Nov-00	140
3	14-Aug-01	98
4	18-Dec-02	155
5	18-Dec-02	155
6	14-Dec-04	315
7	21-May-07	70
8	9-Jun-09	140
9	27-Oct-09	39
10	22-Jul-10	46
11	20-Sep-11	26
12	23-Feb-12	21
13	22-Feb-13	29
14	22-Feb-13	0.25
15	14-Nov-13	18
16	17-Dec-13	26
17	18-Mar-14	19
18	18-Jun-14	50
19	16-Sep-14	31
20	15-Dec-14	9
21	24-Mar-15	11
22	26-Jun-15	18
23	16-Sep-15	30
24	25-Mar-16	17
25	22-Sep-16	15
26	30-May-17	9.7
27	13-Sep-17	9.2
28	25-Apr-18	9.4
29	19-Sep-18	9.7
30		
Coefficient of Variation:		1.23
Mann-Kendall Statistic (S):		-257
Confidence Factor:		>99.9%
Concentration Trend:		Decreasing



Notes:

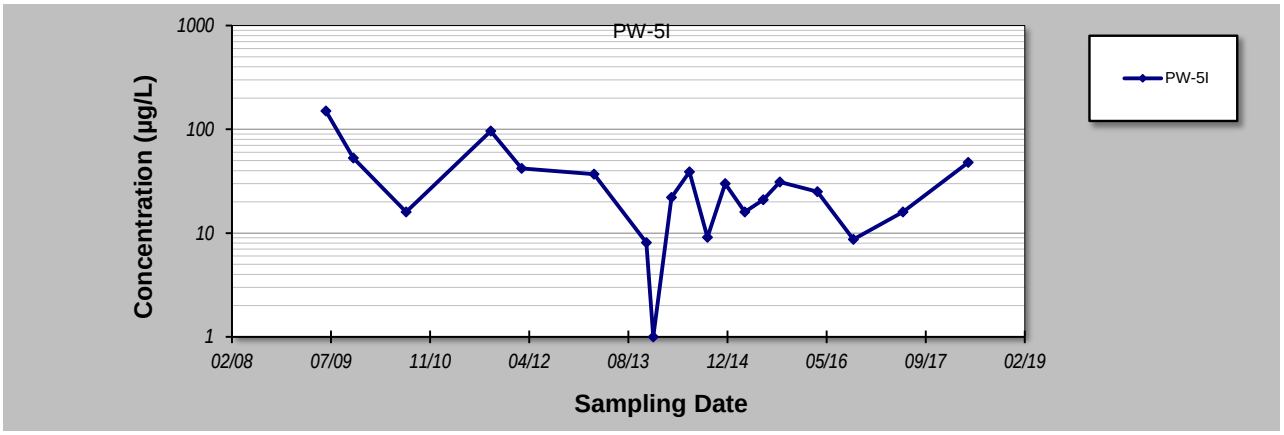
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	November-18	Job ID:	LTRA Groundwater Monitoring Program
Facility Name:	Dover Municipal Well No. 4 Superfund Site	Constituent:	PCE
Conducted By:	EA Engineering, Science, and Technology	Concentration Units:	µg/L

Sampling Point ID: **PW-5I**

Sampling Event	Sampling Date	PCE CONCENTRATION (µg/L)
1	10-Jun-09	150
2	26-Oct-09	53
3	20-Jul-10	16
4	19-Sep-11	96
5	22-Feb-12	42
6	22-Feb-13	37
7	13-Nov-13	8.1
8	18-Dec-13	1
9	19-Mar-14	22
10	18-Jun-14	39
11	17-Sep-14	9.1
12	16-Dec-14	30
13	24-Mar-15	16
14	26-Jun-15	21
15	17-Sep-15	31
16	25-Mar-16	25
17	22-Sep-16	8.7
18	30-May-17	16
19	25-Apr-18	48
20		
Coefficient of Variation:		1.00
Mann-Kendall Statistic (S):		-42
Confidence Factor:		92.3%
Concentration Trend:		Prob. Decreasing



Notes:

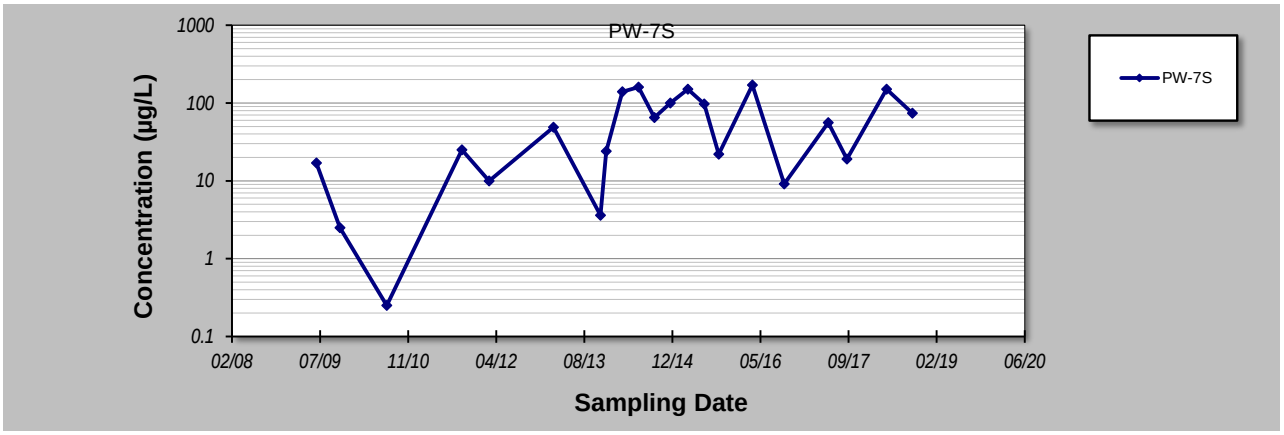
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	March-00	Job ID:	LTRA Groundwater Monitoring Program
Facility Name:	Dover Municipal Well No. 4 Superfund Site	Constituent:	PCE
Conducted By:	EA Engineering, Science, and Technology	Concentration Units:	µg/L

Sampling Point ID: PW-7S

Sampling Event	Sampling Date	PCE CONCENTRATION (µg/L)
1	15-Jun-09	17
2	27-Oct-09	2.5
3	19-Jul-10	0.25
4	19-Sep-11	25
5	20-Feb-12	10
6	20-Feb-13	49
7	13-Nov-13	3.6
8	17-Dec-13	24
9	18-Mar-14	140
10	18-Jun-14	160
11	16-Sep-14	65
12	15-Dec-14	100
13	24-Mar-15	150
14	26-Jun-15	97
15	16-Sep-15	22
16	25-Mar-16	170
17	22-Sep-16	9.1
18	30-May-17	56
19	13-Sep-17	19
20	25-Apr-18	150
21	19-Sep-18	74
22		
23		
24		
25		
Coefficient of Variation:		0.93
Mann-Kendall Statistic (S):		69
Confidence Factor:		98.0%
Concentration Trend:		Increasing



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water* , 41(3):355-367, 2003.

APPENDIX G – VI SUMMARY TABLES & TREND ANALYSIS

Table 4 - 274 RICHARDS AVENUE MULTI-YEAR COMPARISON (µg/m^3) Dover Municipal Well # 4 Site												
	PCE											
	Jul '06	**Aug '06**	**Mar '07**	**Jan '09**	**Mar '09**	**Feb '10**	**Mar '11**	**Feb '12**	**Feb '13**	**Mar '14**	**Mar '15**	**Mar '18**
Sub-slab	930	910	1400	1020	806	524	NS	550	76	40	62	15
Indoor Air – Basement	NS	1.30	0.73	NS	0.94	0.73	31.00	0.91	ND	0.54	ND	ND
Indoor Air – First Floor Apt. A	NS	0.62	0.75	NS	ND	ND	2.00	0.58	NS	3.7	NS	ND
Indoor Air – First Floor Apt. B	NS	NS	NS	NS	1.45	0.93	NS	0.59	ND	NS	ND	ND
Ambient Air (Outdoor)	NS	NS	NS	ND	ND	ND	1.20	ND	ND	ND	ND	ND
	TCE											
	Jul '06	**Aug' 06**	**Mar '07**	**Jan '09**	**Mar '09**	**Feb '10**	**Mar '11**	**Feb '12**	**Feb '13**	**Mar '14**	**Mar '15**	**Mar '18**
Sub-slab	ND	ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	0.088
Indoor Air – Basement	NS	1.70	0.25	NS	ND	ND	1.50	3.90	0.61	0.29	ND	ND
Indoor Air – First Floor Apt. A	NS	2.20	ND	NS	ND	0.89	4.20	5.50	NS	0.40	NS	ND
Indoor Air – First Floor Apt. B	NS	NS	NS	NS	ND	ND	NS	1.7	0.27	NS	ND	ND
Ambient Air-Outdoor	NS	NS	NS	ND	ND	ND	2.00	ND	ND	ND	ND	ND

ND – Non-detect, NS – Not sample

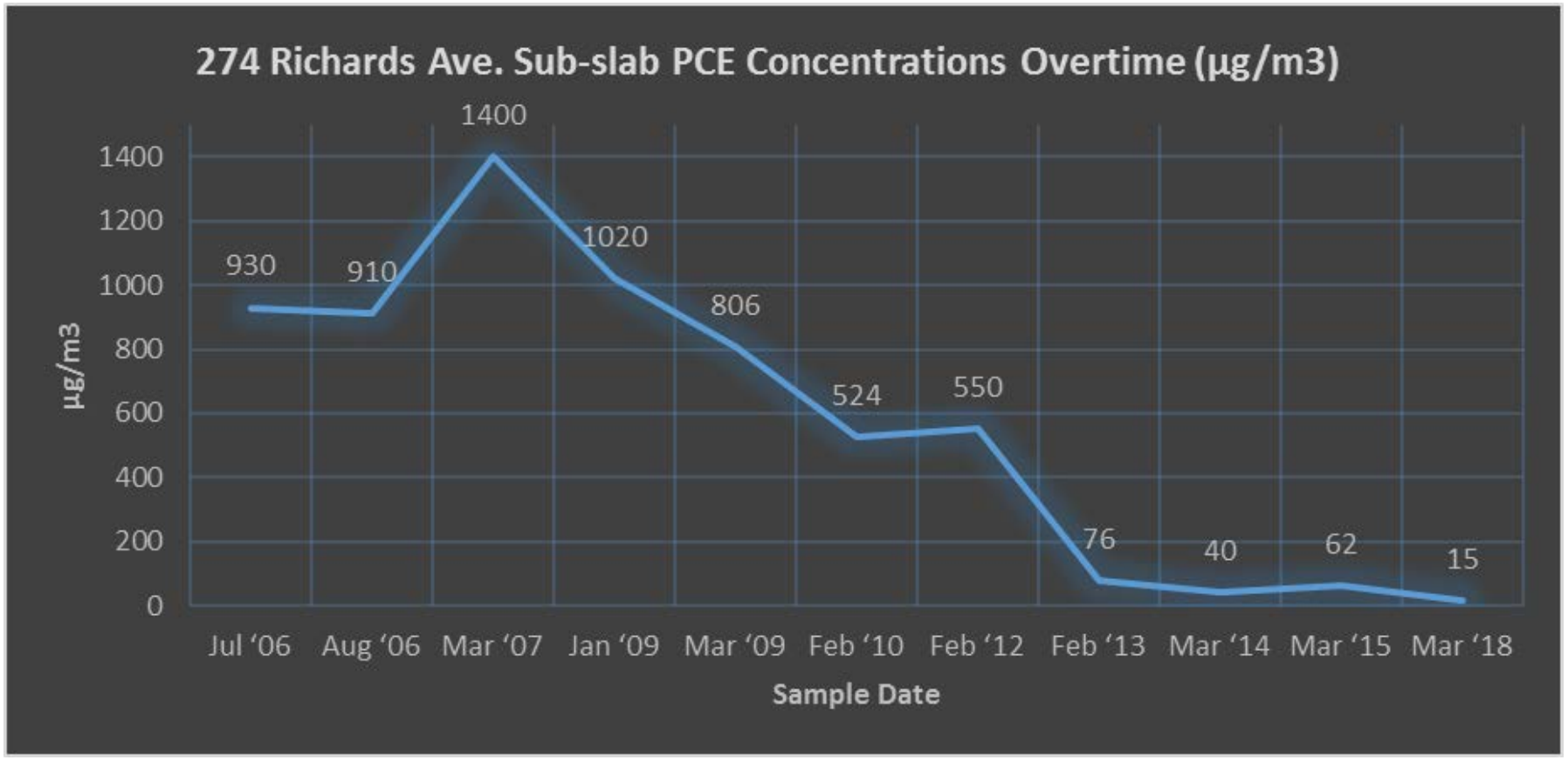


Figure 1 - 274 Richards Ave. Sub-slab PCE Concentrations Overtime

Table 5 - 278 RICHARDS AVENUE Dover Municipal Well # 4 Site MULT-YEAR COMPARISON (µg/m³)												
	PCE											
	Jul '06	**Aug '06**	**Mar '07**	**Jan '09**	**Mar '09**	**Feb '10**	**Mar '11**	**Feb '12**	**Feb '13**	**Mar '14**	**Mar '15**	**Mar '18**
Sub-slab	2400	4000	680	543	537	509	172	520	210	100	25	90
Indoor Air – Basement	NS	0.45	0.40	NS	0.46	ND	0.75	ND	ND	0.24	ND	ND
Indoor Air – First Floor	NS	NS	NS	NS	NS	ND	1.4	0.59	ND	0.26	0.54	ND
Ambient Air (Outdoor)	NS	NS	NS	NS	ND	ND	NS	NS	NS	NS	NS	NS
	TCE											
	Jul '06	**Aug '06**	**Mar '07**	**Jan '09**	**Mar '09**	**Feb '10**	**Mar '11**	**Feb '12**	**Feb '13**	**Mar '14**	**Mar '15**	**Mar '18**
Sub-slab	19.00	22.00	5.80	ND	ND	ND	3.40	ND	ND	ND	ND	0.51
Indoor Air – Basement	NS	4.10	0.23	NS	ND	ND	1.70	0.83	ND	0.25	ND	ND
Indoor Air – First Floor	NS	NS	NS	NS	NS	NS	1.80	1.0	0.23	ND	ND	ND
Ambient Air (Outdoor)	NS	NS	NS	NS	0.5	ND	NS	NS	NS	NS	NS	NS

ND – Non-detect, NS – Not sampled

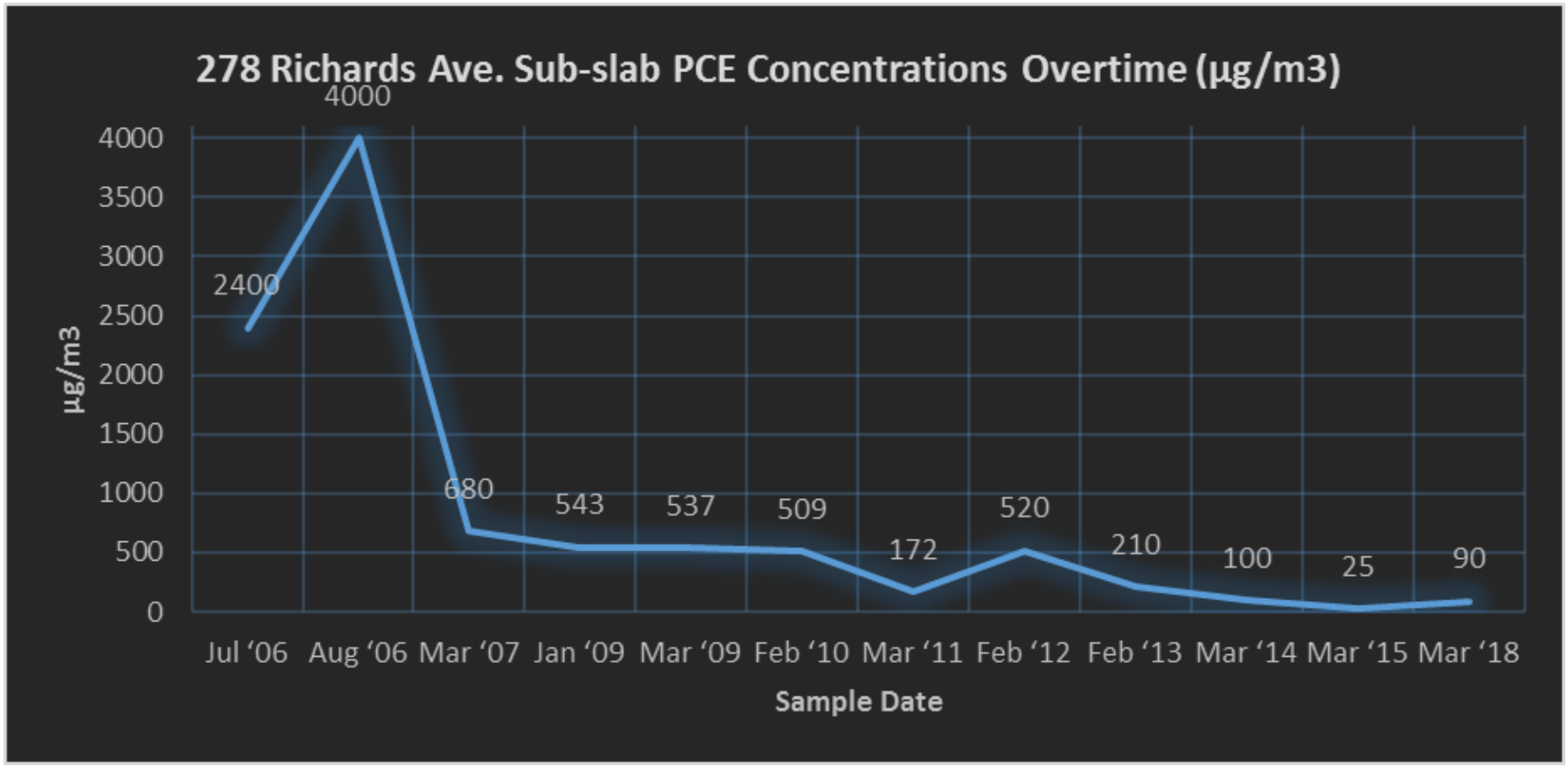


Figure 2 - 278 Richards Ave. Sub-slab PCE Concentrations Overtime

Table 6 - 280 RICHARDS AVENUE Dover Municipal Well # 4 Site MULT-YEAR COMPARISON (µg/m³)												
	PCE											
	Jul '06	**Aug '06**	**Mar '07**	**Jan '09**	**Mar '09**	**Feb '10**	**Mar '11**	**Feb '12**	**Feb '13**	**Mar '14**	**Mar '15**	**Mar '18**
Sub-slab	1200	2000	160	113	73.4	NS	1.80	51	210	19	260	37
Indoor Air – Basement	NS	Failed Sample	0.47	NS	0.65	0.92	1.00	ND	ND	0.29	ND	ND
Indoor Air – First Floor	NS	0.56	NS	NS	ND	ND	0.60	ND	ND	0.24	ND	ND
Ambient Air (Outdoor)	NS	1.7	ND	NS	NS	NS	NS	NS	NS	NS	NS	NS
	TCE											
	Jul '06	**Aug '06**	**Mar '07**	**Jan '09**	**Mar '09**	**Feb '10**	**Mar '11**	**Feb '12**	**Feb '13**	**Mar '14**	**Mar '15**	**Mar '18**
Sub-slab	4.20	9.80	ND	ND	ND	NS	0.29	ND	9.6	ND	ND	0.25
Indoor Air – Basement	NS	Failed Sample	0.29	NS	ND	ND	1.50	0.84	ND	0.23	ND	ND
Indoor Air – First Floor	NS	5.90	NS	NS	ND	ND	1.00	0.81	0.28	0.30	ND	ND
Ambient Air (Outdoor)	NS	9.7	0.2	NS	NS	NS	NS	NS	NS	NS	NS	NS

ND – Non-detect, NS – Not sampled

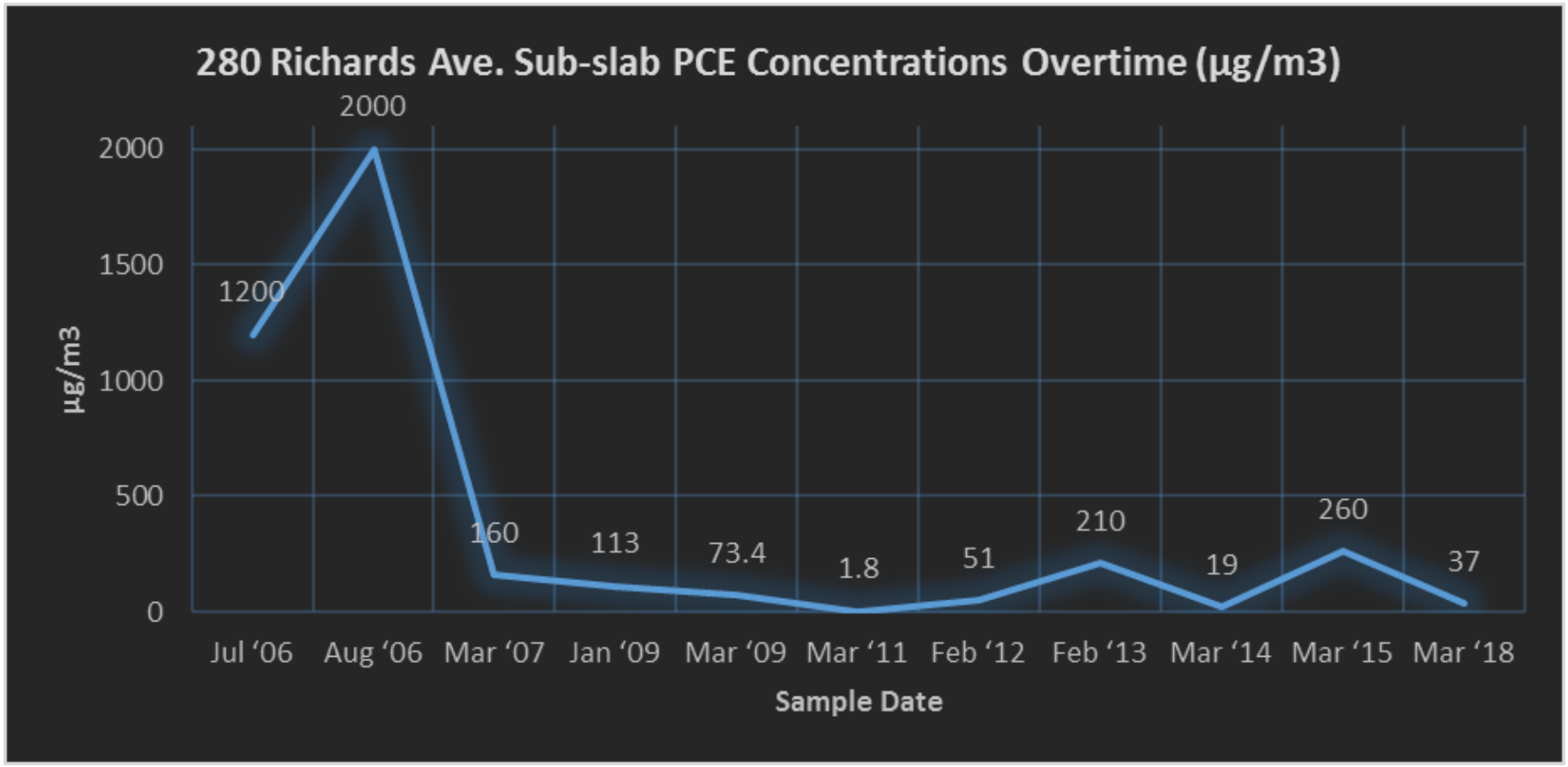


Figure 3 - 280 Richards Ave. Sub-slab PCE Concentrations Overtime